

TABLE OF CONTENTS OF SPECIAL PROVISIONS

Note: This Table of Contents has been prepared for the convenience of those using this contract with the sole express purpose of locating quickly the information contained herein; and no claims shall arise due to omissions, additions, deletions, etc., as this Table of Contents shall not be considered part of the contract.

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June 27, 2018
FEDERAL AID PROJECT NO. 000T(067)
STATE PROJECT NO. 171-432

Replacement of Roadway Illumination Systems in District 1

Towns of Berlin, Glastonbury, Manchester, New Britain and Wethersfield

Federal Aid Project No. 000T(067)

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, 2016, as revised by the Supplemental Specifications dated January 2018 (otherwise referred to collectively as "ConnDOT Form 817") is hereby made part of this contract, as modified by the Special Provisions contained herein. Form 817 is available at the following DOT website link <http://www.ct.gov/dot/cwp/view.asp?a=3609&q=430362>. The current edition of the State of Connecticut Department of Transportation's "Construction Contract Bidding and Award Manual" ("Manual"), is hereby made part of this contract. If the provisions of this Manual conflict with provisions of other Department documents (not including statutes or regulations), the provisions of the Manual will govern. The Manual is available at the following DOT website link <http://www.ct.gov/dot/cwp/view.asp?a=2288&q=259258>. The Special Provisions relate in particular to the Replacement of Roadway Illumination Systems in District 1 in the Towns of Berlin, Glastonbury, Manchester, New Britain and Wethersfield.

CONTRACT TIME AND LIQUIDATED DAMAGES

In order to minimize the hazard, cost and inconvenience to the traveling public and pollution of the environment, it is necessary to limit the time of construction work, which interferes with traffic as specified in Article 1.08.04 of the Special Provisions.

There will be two assessments for liquidated damages and they will be addressed in the following manner:

1. For this contract, an assessment per day for liquidated damages, at a rate of Four Thousand One Hundred Dollars (\$4,100.00) per day shall be applied to each calendar day the work runs in excess of the Six Hundred Eighty-Five (685) allowed calendar days for the contract.
2. For this contract, an assessment per hour for liquidated damages shall be applied to each hour, or any portion thereof, in which the Contractor interferes with normal traffic operations during the restricted hours given in Article 1.08.04 of the Special Provisions. The liquidated damages shall be as shown in the following tables entitled "Liquidated Damages Per Hour" for each hour, or any portion thereof, in

which the Contractor interferes with normal traffic operations during the restricted hours.

For the purpose of administering this contract, normal traffic operations are considered interfered with when:

1. Any portion of the travel lanes or shoulders is occupied by any personnel, equipment, materials, or supplies including signs.
2. The transition between the planes of pavement surfaces is at a rate of one inch in less than fifteen feet longitudinally.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 9 Northbound - Berlin

2 Lane Section Southern Project Limits to Exit 23 (Christian Ln) On-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 3,000
2nd Hour of Restrictive Period	\$ 10,000	\$ 10,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 15,000	\$ 20,000

SITE 1

Route 9 Northbound – Berlin/New Britain

2 Lane Section Ex. 23 (Christian Ln) On-Ramp to Lane Add S/O Exit 26		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 6,000
2nd Hour of Restrictive Period	\$ 10,000	\$ 30,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 25,000	\$ 50,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 9 Northbound – New Britain

3 Lane Section Lane Add S/O Exit 26 to Exit 28 (Route 72) Off-Ramp				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 6,000
2 nd Hour of Restrictive Period	\$ 500	\$ 10,000	\$ 500	\$ 25,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 25,000	\$ 500	\$ 45,000

SITE 1

Route 9 Northbound – New Britain

2 Lane Section Exit 28 (Route 72) Off-Ramp to Route 72 EB On-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 1,000	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “3” or “E” for 3-lane sections and “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 9 Southbound - Berlin

2 Lane Section Southern Project Limits to Exit 23 (Christian Ln) Off-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 2,000
2nd Hour of Restrictive Period	\$ 5,000	\$ 10,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 8,000	\$ 25,000

SITE 1

Route 9 Southbound – Berlin/New Britain

2 Lane Section Ex23 (Christian Ln) Off-Ramp to Lane Drop S/O Ex25 (Ellis St)		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 3,000	\$ 3,000
2nd Hour of Restrictive Period	\$ 20,000	\$ 15,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 30,000	\$ 30,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 9 Southbound – New Britain

3 Lane Section Lane Drop S/O Exit 25 (Ellis St) to Lane Drop S/O Route 72 EB On-Ramp				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 3,000	\$ 500	\$ 3,000
2 nd Hour of Restrictive Period	\$ 500	\$ 15,000	\$ 500	\$ 10,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 30,000	\$ 500	\$ 30,000

SITE 1

Route 9 Southbound – New Britain

4 Lane Section Lane Drop S/O Route 72 EB On-Ramp to Route 72 EB On-Ramp						
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	A.M. 3 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure	P.M. 3 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 3,000	\$ 500	\$ 500	\$ 3,000
2nd Hour of Restrictive Period	\$ 500	\$ 500	\$ 15,000	\$ 500	\$ 500	\$ 10,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500	\$ 30,000	\$ 500	\$ 500	\$ 30,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “3” or “E” for 3-lane sections and “4” or “E” for 4-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 9 Southbound – New Britain

2 Lane Section Route 72 EB On-Ramp to Exit 28 (Route 72 WB) Off-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections..

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 571 Eastbound - Berlin

2 Lane Section Route 71A (High Rd) to Route 9 SB On-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

SITE 1

Route 571 Westbound – Berlin

2 Lane Section Route 71A (High Rd) to Route 9 NB On-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 72 Eastbound – New Britain

2 Lane Section End of Expressway to Route 9 NB Off-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 1,000	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

SITE 1

Route 72 Eastbound – New Britain

3 Lane Section Route 9 NB Off-Ramp to I-84 WB On-Ramp				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 7,000	\$ 500	\$ 500
2 nd Hour of Restrictive Period	\$ 500	\$ 40,000	\$ 500	\$ 5,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 60,000	\$ 500	\$ 15,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections and “3” or “E” for 3-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 1

Route 72 Westbound – New Britain

2 Lane Section Begin Expressway to Route 9 SB On-Ramp		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500

SITE 1

Route 72 Westbound – New Britain

3 Lane Section Route 9 SB On-Ramp to Lane Drop E/O I-84 Off-Rmap				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 1,000
2 nd Hour of Restrictive Period	\$ 500	\$ 3,000	\$ 500	\$ 15,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 5,000	\$ 500	\$ 45,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections and “3” or “E” for 3-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 2

Route 2 Eastbound - Glastonbury

2 Lane Section Within Project Limits		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 5,000
2nd Hour of Restrictive Period	\$ 500	\$ 20,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 45,000

SITE 2

Route 2 Westbound – Glastonbury

2 Lane Section Within Project Limits		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 2,000	\$ 500
2nd Hour of Restrictive Period	\$ 20,000	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 30,000	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR

SITE 3

Route 15 Northbound – Wethersfield/Hartford

2 Lane Section Within Project Limits		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 15,000	\$ 2,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 30,000	\$ 2,000

SITE 3

Route 15 Southbound – Wethersfield/Hartford

2 Lane Section Within Project Limits		
If Working Periods Extends Into	A.M. 1 Lane Closure	P.M. 1 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 1,000	\$ 6,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 15,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “2” or “E” for 2-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR**SITE 4****Route 384 Eastbound – Manchester**

4 Lane Section Western Project Limits (Spencer St. Overpass) to Exit 3 (South Main St.) Off-Ramp						
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	A.M. 3 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure	P.M. 3 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 10,000
2nd Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 40,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 500	\$ 2,000	\$ 80,000

SITE 4**Route 384 Eastbound – Manchester**

3 Lane Section Exit 3 (South Main St.) Off-Ramp to Eastern Project Limits				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 500
2 nd Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 8,000
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500	\$ 500	\$ 20,000

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “4” or “E” for 4-lane sections and “3” or “E” for 3-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR**SITE 4****Route 384 Westbound – Manchester**

3 Lane Section Western Project Limits (Spencer St. Overpass) to Start of HOV Lane				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 10,000	\$ 500	\$ 500
2 nd Hour of Restrictive Period	\$ 8,000	\$ 60,000	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 3,000	\$ 80,000	\$ 500	\$ 500

SITE 4**Route 384 Westbound – Manchester**

4 Lane Section Start of HOV Lane to Exit 3 (Charter Oak St.) On-Ramp						
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	A.M. 3 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure	P.M. 3 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 500	\$ 7,000	\$ 500	\$ 500	\$ 500
2nd Hour of Restrictive Period	\$ 500	\$ 500	\$ 35,000	\$ 500	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 500	\$ 50,000	\$ 500	\$ 500	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “3” or “E” for 3-lane sections and “4” or “E” for 4-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

LIQUIDATED DAMAGES PER HOUR**SITE 4****Route 384 Westbound – Manchester**

3 Lane Section Exit 3 (Charter Oak St.) On-Ramp to Eastern Project Limits				
If Working Periods Extends Into	A.M. 1 Lane Closure	A.M. 2 Lane Closure	P.M. 1 Lane Closure	P.M. 2 Lane Closure
1st Hour of Restrictive Period	\$ 500	\$ 3,000	\$ 500	\$ 500
2 nd Hour of Restrictive Period	\$ 500	\$ 10,000	\$ 500	\$ 500
3rd Hour or any Subsequent Hour of Restrictive Period	\$ 500	\$ 10,000	\$ 500	\$ 500

The above liquidated damages apply to those hours shown on the Limitation of Operations charts designated with a “3” or “E” for 3-lane sections.

For each hour shown on the Limitation of Operations charts designated with an “E”, liquidated damages of \$500 per hour shall apply if all available shoulder widths are not available to traffic.

Liquidated damages in the amount of \$500 shall apply for each hour that the Contractor interferes with existing traffic operations on any ramps during the non-allowable hours.

NOTICE TO CONTRACTOR – PRE-BID QUESTIONS AND ANSWERS

Questions pertaining to DOT advertised construction projects must be presented through the CTDOT Pre-Bid Q and A Website. The Department cannot guarantee that all questions will be answered prior to the bid date. **PLEASE NOTE - at 9:00 am Monday (i.e. typical Wednesday Bid Opening) the project(s) being bid will be closed for questions, at which time questions can no longer be submitted through the Q and A Website.**

Answers may be provided by the Department up to 12:00 noon, the day before the bid. At this time, the Q and A for those projects will be considered final, unless otherwise stated and/or the bid is postponed to a future date and time to allow for further questions and answers to be posted.

If a question needs to be asked the day before the bid date, please contact the Contracts Unit staff and email your question to dotcontracts@ct.gov immediately.

Contractors must identify their company name, contact person, contact email address and phone number when asking a question. The email address and phone number will not be made public.

The questions and answers (if any) located on the Q and A Website are hereby made part of the bid/contract solicitation documents (located on the State Contracting Portal), and resulting contract for the subject project(s). It is the bidder's responsibility to monitor, review, and become familiar with the questions and answers, as with all bid requirements and contract documents, prior to bidding. By signing the bid proposal and resulting contract, the bidder acknowledges receipt of, and agrees to the incorporation of the final list of Q and A, into the contract document.

Contractors will not be permitted to file a future claim based on lack of receipt, or knowledge of the questions and answers associated with a project. All bidding requirements and project information, including but not limited to contract plans, specifications, addenda, Q and A, Notice to Contractors, etc., are made public on the State Contracting Portal and/or the CTDOT website.

NOTICE TO CONTRACTOR – PROJECT DESCRIPTION

This project consists of the replacement of existing roadway lighting systems in District 1 at the following locations:

- **Site No. 1** - Route 9 from south of Christian Lane to Stanley Street in Berlin and New Britain, Route 72 from Route 9 to Wooster Street in New Britain, SR 571 from Route 71A to Route 9 in Berlin, and Route 372 from the SR 918/Farmington Avenue west junction to Route 71A in New Britain and Berlin.
- **Site No. 2** - Route 2 at the Route 83 interchange in Glastonbury.
- **Site No. 3** - Route 15 from the Berlin Turnpike to north of Route 99 in Wethersfield.
- **Site No. 4** - Interstate 384 from Spencer Street to west of Gardner Street in Manchester.
- **Site No. 5** - Replace lighting control cabinet located at the intersection of Route 3 and Main Street in Glastonbury.

The work involves the replacement of the existing light standards, light standard foundations, high pressure sodium (HPS) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets with new light standards, light standard foundations, light emitting diode (LED) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets.

Demolition work includes the removal of the existing electrical facilities as follows:

- The removal of lighting control cabinets, cabinet foundations, and concrete handholes.
- The removal of light fixtures, HPS lamps, light standards, and light standard foundations.

The underground circuitry/conduits will be abandoned in place.

Earth work includes trenching and backfilling for the installation of underground circuitry/conduits and excavation and backfilling for the installation and removal of light standard foundations, concrete handholes and lighting control cabinet foundations. Topsoil and seeding will be provided as necessary to restore any areas where the grass is disturbed. Pavement will be saw cut and removed in areas where circuitry/conduits cross under the roadway. Roadway will be patched and restored as required.

Environmental work includes lead and asbestos abatement and the removal and disposal of regulated items associated with the lighting work as indicated in the NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS.

NOTICE TO CONTRACTOR – CAD FILES

The Contractor is hereby advised that CAD files will not be provided to construction contract bidders, the Contractor, or any subcontractor. Contract documents, including plans, are provided in Portable Document Format (PDF).

The Department AEC Applications unit has prepared technical reference materials on extending the utility of PDF contract plan sheets. See the Repurposing PDF Contract Plan Sheets web page (<http://www.ct.gov/dot/cwp/view.asp?a=2288&Q=567262&PM=1>).

The Contractor shall bid the Project accordingly.

NOTICE TO CONTRACTOR – CONSTRUCTION CONTRACTOR
DIGITAL SUBMISSIONS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through a system of paperless electronic means as outlined in the special provision for Section 1.05 herein.

Shop drawings, working drawings, and product data shall be created, digitally signed and delivered by the Contractor in accordance with the Department's [Contractor Digital Submission Manual](#) (CDSM). Other deliverables that are required by other special provisions shall be similarly submitted.

Access credentials will be provided to the Contractor by the Department.

The Department will provide the Contractor with a list of email addresses that are to be used for each submittal type.

The Department shall not be held responsible for delays, lack of processing or response to submittals that do not follow the specified guidelines in the CDSM.

NOTICE TO CONTRACTOR – Federal Wage Determinations (Davis Bacon Act)

The following Federal Wage Determinations are applicable to this Federal- Aid contract and are hereby incorporated by reference. During the bid advertisement period, it is the bidder’s responsibility to obtain the latest Federal wage rates from the US Department of Labor website, as may be revised 10 days prior to bid opening. Any revisions posted 10 days prior to the bid opening shall be the wage determinations assigned to this contract.

Check Applicable WD# (DOT Use Only)	WD#	Construction Type	Counties
	CT1	Highway	Fairfield, Litchfield, Middlesex, New Haven, Tolland, Windham
	CT2	Highway	New London
X	CT3	Highway	Hartford
	CT5	Heavy Dredging (Hopper Dredging)	Fairfield, Middlesex, New Haven, New London
	CT6	Heavy Dredging	Statewide
	CT13	Heavy	Fairfield
	CT14	Heavy	Hartford
	CT15	Heavy	Middlesex, Tolland
	CT16	Heavy	New Haven
	CT17	Heavy	New London
	CT26	Heavy	Litchfield, Windham
	CT18	Building	Litchfield
	CT19	Building	Windham
	CT20	Building	Fairfield
	CT21	Building	Hartford
	CT22	Building	Middlesex
	CT23	Building	New Haven
	CT24	Building	New London
	CT25	Building	Tolland
	CT4	Residential	Litchfield, Windham
	CT7	Residential	Fairfield
	CT8	Residential	Hartford
	CT9	Residential	Middlesex
	CT10	Residential	New Haven
	CT11	Residential	New London
	CT12	Residential	Tolland

The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (<http://www.wdol.gov/dba.aspx>) as may be revised 10 days prior to bid opening. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents. These applicable Federal wage rates will be incorporated in the final contract document executed by both parties. If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

To obtain the latest Federal wage rates, go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose “Selecting DBA WDs” and follow the instruction to search the latest wage rates for the State, County and Construction Type.

NOTICE TO CONTRACTOR – USE OF STATE POLICE OFFICERS

The Department will reimburse services of State Police Officers as a direct payment to the Department of Emergency Services and Public Protection. Payment for State Police Officers must be approved by the Engineer. Any State Police Officers used by the Contractor for its convenience is the responsibility of the Contractor. A separate payment item for State Police Officers is not included in this Contract.

Any costs associated with coordination and scheduling of State Police Officers shall be included in the lump sum bid price for Item No. 0971001A – Maintenance and Protection of Traffic.

NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation has been conducted for the Replacement of Roadway Illumination Systems in District 1, Berlin, Glastonbury, Manchester, New Britain & Wethersfield, Connecticut. TRC's survey consisted of inspecting a representative amount (~10%) of homogeneous lighting poles from each of the following areas in District 1 (Site No. 1, Site No. 2, Site No. 3, Site No. 4 & Site No. 5):

- Route 9 from south of Christian Lane (mile 32.70) to Stanley Street (mile 36.25) in Berlin and New Britain. Route 72 from Route 9 (mile 0.00) to Wooster Street (mile 2.50) in New Britain. SR 571 from Route 71A (mile 0.00) to Route 9 (mile 1.34) in Berlin. Route 372 from the SR 918/Farmington Avenue west junction (mile 6.13) to Route 71A (mile 6.27) in New Britain and Berlin.
- Route 2 at the Route 83 interchange (mile 9.30 to 10.50) in Glastonbury.
- Route 15 from the Berlin Turnpike (mile 77.74) to Route 99 (mile 79.92) in Wethersfield.
- Interstate 384 from Spencer Street (mile 1.34) to west of Gardner Street (mile 4.95) in Manchester.
- Replace lighting control cabinet located at the intersection of Route 3 and Main Street in Glastonbury.

Results of the survey identified all representative metal lighting poles to be unpainted (galvanized), therefore no lead paint was identified. Paint associated with control cabinet No. 07-1 & control cabinet on Whiting Street in New Britain (Site No. 1) were found to have detectable amounts of lead. The paint waste debris associated with the control cabinet No. 07-1 (Site No. 1) was characterized as non-hazardous, non-RCRA waste. The paint waste debris associated with the control cabinet on Whiting St. (Site No. 1) was characterized as CTDEEP/RCRA hazardous waste. Paint associated with control cabinet No. 76-6 in Manchester (Site No. 4) and the control cabinet along Folly Brook Boulevard in Wethersfield (Site No. 3) were found to have no detectable amounts of lead and therefore any paint waste debris to be generated would be non-hazardous, non-RCRA waste. Control Cabinet Nos. 76-3 in Manchester (Site No. 4). & Control Cabinet No. 53-2 in Glastonbury (Site No. 2) were inaccessible (locked fencing) therefore the paint is presently presumed to be lead-containing and any paint waste generated from those 2 cabinets would be handled as CTDEEP/RCRA hazardous waste. The control cabinet off Veterans Drive in New Britain (Site No. 1), the control cabinet No. 53-3 in Glastonbury (Site No. 5) were unpainted and therefore no lead paint was identified.

All steel and metal generated from work tasks (painted or not) shall be segregated and recycled as scrap metal at a scrap metal recycling facility. The recycling of scrap metal (regardless of lead paint concentration) is exempt from USEPA RCRA and CTDEEP Hazardous Waste Regulation.

Electric soft light grey putty caulking (EP1) on penetrations of control cabinet No. 07-1 on Route 71 in New Britain (Site No. 1) was sampled and found to contain asbestos. Brittle white

caulking (C1) on control cabinet 76-6 in Manchester (Site No. 4) was sampled and found to contain no asbestos.

Potential universal waste (UW) and Connecticut Regulated Waste (CRW) halogen mercury luminaire light fixtures, as well as, UW printed circuit boards associated with the lighting control cabinets were identified.

Mice, mouse nests, urine, droppings, etc. were observed inside the majority of the roadway illumination poles.

The Contractor is hereby notified that these hazardous materials requiring special management or disposal procedures will be encountered during various construction activities conducted within the project limits. The Contractor will be required to implement appropriate health and safety measures for all construction activities impacting these materials. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination and personnel training. **WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.**

The Department, as Generator, will provide an authorized representative to sign all manifests and waste profile documentation required by disposal facilities for disposal of hazardous materials.

The Sections which shall be reviewed by the Contractor include, but are not limited to, the following:

- Item No. 0020903A – Lead Compliance for Miscellaneous Exterior Tasks
- Item No. 0020801A – Asbestos Abatement
- Item No. 0101143A – Handling and Disposal of Regulated Items

The Contractor is alerted to the fact that a Department environmental consultant may be on site for abatement and related activities, to collect environmental samples (if necessary), and to observe site conditions for the State.

Information pertaining to the results of the limited hazardous materials investigation discussed can be found in the document listed below. This document shall be available for review electronically.

- HazMat Inspection Letter, Replacement of Roadway Illumination Systems in District 1, Berlin, Glastonbury, Manchester, New Britain & Wethersfield, CT, TRC Environmental Corporation, February 7, 2018.

SECTION 1.02 – PROPOSAL REQUIREMENTS AND CONDITIONS

Article 1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work:

Replace the third sentence of the last paragraph with:

The Department cannot ensure a response to inquiries received later than ten (10) days prior to the original scheduled opening of the related bid.

SECTION 1.03 – AWARD AND EXECUTION OF CONTRACT

Article 1.03.02 - Award and Execution of Contract:

After the second sentence of the only paragraph add the following:

The successful bidder is hereby notified of the Department's intent to award this contract within 45 days of the bid opening.

Article 1.03.08 - Notice to Proceed and Commencement of Work:

Change the first paragraph to read as follows:

The Contractor shall commence and proceed with the Contract work on the date specified in a written Notice to Proceed issued by the Engineer to the Contractor. The date specified will be no later than 45 calendar days after the date of the execution of the Contract by the Department.

SECTION 1.05 – CONTROL OF THE WORK

Replace Article 1.05.02 with the following:

1.05.02—Contractor Submittals, Working Drawings, Shop Drawings, Product Data, Submittal Preparation and Processing - Review Timeframes, Department’s Action:

1. Contractor Submittals: The plans provided by the Department show the details necessary to give a comprehensive idea of the construction contemplated under the Contract. The plans will generally show the location, character, dimensions, and details necessary to complete the Project. If the plans do not show complete details, they will show the necessary dimensions and details, which when used along with the other Contract documents, will enable the Contractor to prepare working drawings, shop drawings or product data necessary to complete the Project.

The Contractor shall prepare submittals as Portable Document Format (PDF) files. The Contractor is also required to acquire, maintain access and use the Department’s document management system for delivery of submittals. The format, digital signing requirements, delivery processes and document tracking procedures shall be performed in accordance with this specification and the [Contractor’s Digital Submission Manual](#) (CDSM).

The submittals shall be sent to the Department’s reviewer(s), sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods as specified herein (including any necessary revisions, resubmittal, and final review), and acquisition of materials, without causing a delay of the Project.

2. Working Drawings: When required by the Contract or when ordered to do so by the Engineer, the Contractor shall prepare and submit the working drawings, signed, sealed and dated by a qualified Professional Engineer licensed to practice in the State of Connecticut, for review. The drawings shall be delivered sufficiently in advance of the work detailed, to allow for their review in accordance with the review periods specified herein (including any necessary revisions, resubmittal, and final review).

There will be no direct payment for furnishing any working drawings, procedures or supporting calculations, but the cost thereof shall be considered as included in the general cost of the work.

a. Working Drawings for Permanent Construction: The Contractor shall supply to the Assistant District Engineer a certificate of insurance in accordance with 1.03.07 at the time that the working drawings for the Project are submitted.

The Contractor’s designer, who prepares the working drawings, shall secure and maintain at no direct cost to the State a Professional Liability Insurance Policy for errors and omissions in the minimum amount of \$2,000,000 per error or omission. The Contractor’s designer may elect to obtain a policy containing a maximum \$250,000 deductible clause, but if the Contractor’s designer should obtain a policy containing such a clause, they shall be liable to the extent of at

least the deductible amount. The Contractor's designer shall obtain the appropriate and proper endorsement of its Professional Liability Policy to cover the indemnification clause in this Contract, as the same relates to negligent acts, errors or omissions in the Project work performed by them. The Contractor's designer shall continue this liability insurance coverage for a period of

- (i) 3 years from the date of acceptance of the work by the Engineer, as evidenced by a State of Connecticut, Department of Transportation form entitled "Certificate of Acceptance of Work," issued to the Contractor; or
- (ii) 3 years after the termination of the Contract, whichever is earlier, subject to the continued commercial availability of such insurance.

b. Working Drawings for Temporary Construction: The Contractor shall submit drawings, calculations, procedures and other supporting data to the Assistant District Engineer.

3. Shop Drawings: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver shop drawings to the Designer for review. Review timeframes and submission locations are as specified herein.

There will be no direct payment for furnishing any shop drawings, but the cost thereof shall be considered as included in the general cost of the work.

4. Product Data: When required by the Contract, or when ordered to do so by the Engineer, the Contractor shall prepare and deliver product data.

The Contractor shall submit the product data in a single submittal for each element or group of elements of construction.

The Contractor shall mark each copy of the product data submittal to show applicable choices and options. Where product data includes information on several products that are not required, copies shall be marked to indicate the applicable information. Product data shall include the following information and confirmation of conformance with the Contract to the extent applicable: manufacturer's printed recommendations, compliance with recognized trade association standards, compliance with recognized testing agency standards, application of testing agency labels and seals, notation of coordination requirements, Contract item number, and any other information required by the individual Contract provisions.

There will be no direct payment for furnishing any product data, but the cost thereof shall be considered as included in the general cost of the work.

5. Submittal Preparation and Processing – Review Timeframes: The Contractor shall allow 30 calendar days for submittal review by the Department, from the date receipt is acknowledged by the Department's reviewer. For any submittals marked with "Revise and Resubmit" or "Rejected," the Department is allowed an additional 20 calendar days for review of any resubmissions.

An extension of Contract time will not be authorized due to the Contractor's failure to transmit submittals sufficiently in advance of the work to permit processing.

The furnishing of shop drawings, working drawings or product data, or any comments or suggestions by the Designer or Engineer concerning shop drawings, working drawings or product data, shall not relieve the Contractor of any of its responsibility for claims by the State or by third parties, as per 1.07.10.

The furnishing of the shop drawings, working drawings and product data shall not serve to relieve the Contractor of any part of its responsibility for the safety or the successful completion of the Project construction.

- 6. Department's Action:** The Designer or Engineer will review each submittal, mark each with a self-explanatory action stamp, and return the stamped submittal promptly to the Contractor. The Contractor shall not proceed with the part of the Project covered by the submittal until the submittal is marked "No Exceptions Noted" or "Exceptions as Noted" by the Designer or Engineer. The Contractor shall retain sole responsibility for compliance with all Contract requirements. The stamp will be marked as follows to indicate the action taken:
- a. If submittals are marked "No Exceptions Noted," the Designer or Engineer has not observed any statement or feature that appears to deviate from the Contract requirements. This disposition is contingent on being able to execute any manufacturer's written warranty in compliance with the Contract provisions.
 - b. If submittals are marked "Exceptions as Noted" the considerations or changes noted by the Department's Action are necessary for the submittal to comply with Contract requirements. The Contractor shall review the required changes and inform the Designer or Engineer if they feel the changes violate a provision of the Contract or would lessen the warranty coverage.
 - c. If submittals are marked "Revise and Resubmit," the Contractor shall revise the submittals to address the deficiencies or provide additional information as noted by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.
 - d. If submittals are marked "Rejected," the Contractor shall prepare and submit a new submittal in accordance with the Designer's or Engineer's notations. The resubmissions require an additional review and determination by the Designer or Engineer. The Contractor shall allow an additional review period as specified in 1.05.02-5.

SECTION 1.06 – CONTROL OF MATERIALS

Article 1.06.01 - Source of Supply and Quality:

Add the following:

For the following materials the Contractor shall submit a complete description of the item consisting of the latest manufacturer product data/catalog cuts, shop drawings and other descriptive literature which completely illustrates the material presented for formal approval. The submittals shall clearly call-out all material and operational properties for the item specific to the project. Such approval shall not change the requirements for a certified test report and materials certificate as may be called for.

- Light Standards
- Foundations
- Conductors
- Luminaires
- Conduit
- Fuses and Fuse Holders
- Service Items
- Handholes
- Junction Boxes
- Temporary Illumination Unit
- Spare Parts
- Cable in Duct

Required submittals for all items listed above shall be submitted at the same time. Submittals shall be created and delivered by the Contractor in accordance with the Department's Contractor Digital Submission Manual (CDSM). Please note: the list of items above is a "general" list of items. Certain items listed may or may not be present in a specific project. Please consult the Detailed Estimate sheet for project specific items.

Once the submittal(s) has been uploaded to the Department's Document Management System, the Contractor shall send an email notification in accordance with the CDSM to the following:

jon.andrews@ct.gov
DOT.ConstrD1@ct.gov

Article 1.06.07 - Certified Test Reports and Materials Certificates:

Add the following:

1) For the materials in the following items, a Certified Test Report will be required confirming their conformance to the requirements set forth in these plans or specifications or both. Should the consignee noted on a Certified Test Report be other than the Prime Contractor, then Materials Certificates shall be required to identify the shipment.

Light Standards
Conductors
Anchor Bolts
Conduit

2) For the materials in the following items, a Materials Certificate will be required confirming their conformance to the requirements set forth in these plans or specifications or both.

Light Standards
Conductors
Luminaires
Conduit
Anchor Bolts
Service Items

Please note: the list of items above is a “general” list of items. Certain items listed may or may not be present in a specific project. Please consult the Detailed Estimate sheet for project specific items.

SECTION 1.07 – LEGAL RELATIONS AND RESPONSIBILITIES

Article 1.07.10 - Contractor's Duty to Indemnify the State against Claims for Injury or Damage:

Add the following after the only paragraph:

“It is further understood and agreed by the parties hereto, that the Contractor shall not use the defense of Sovereign Immunity in the adjustment of claims or in the defense of any suit, including any suit between the State and the Contractor, unless requested to do so by the State.”

SECTION 1.08 – PROSECUTION AND PROGRESS

Article 1.08.04 - Limitation of Operations - Add the following:

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be permitted to perform any work which will interfere with the described traffic operations on all project roadways as follows:

Interstate 384, Route 2, Route 9, Route 15, Route 72, and Route 571

On the following State observed Legal Holidays:

New Year's Day
Good Friday, Easter*
Memorial Day
Independence Day
Labor Day
Thanksgiving Day**
Christmas Day

The following restrictions also apply:

On the day before and the day after any of the above Legal Holidays.

On the Friday, Saturday, and Sunday immediately preceding any of the above Holidays celebrated on a Monday.

On the Saturday, Sunday, and Monday immediately following any of the above Holidays celebrated on a Friday.

* From 6:00 a.m. the Thursday before the Holiday to 8:00 p.m. the Monday after the Holiday.

** From 6:00 a.m. the Wednesday before the Holiday to 8:00 p.m. the Monday after the Holiday.

During all other times

The Contractor shall maintain and protect traffic as shown on the accompanying "Limitation of Operations" charts, which dictate the minimum number of lanes that must remain open for each day of the week.

The contractor will be allowed to halt traffic not to exceed 10 minutes for the installation of new or removal of existing electrical facilities as approved by the Engineer, between 12:01 a.m. and 5:00 a.m. on all non-Holiday days.

SITE 1 Route 9 Northbound Southern Project Limits to Lane Add S/O Exit 26 Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	2
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	E	2	2	2	2	2	E
3 PM	E	E	E	E	E	E	E
4 PM	E	E	E	E	E	E	E
5 PM	E	E	E	E	E	E	E
6 PM	E	2	2	2	2	2	E
7 PM	E	2	2	2	2	2	E
8 PM	2	2	2	2	2	2	E
9 PM	1	1	1	1	1	1	2
10 PM	1	1	1	1	1	1	2
11 PM	1	1	1	1	1	1	1

SITE 1 Route 9 Southbound Southern Project Limits to Lane Drop S/O Exit 25 Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	E	E	E	E	E	2
8 AM	2	E	E	E	E	E	2
9 AM	2	2	2	2	2	E	E
10 AM	E	2	2	2	2	E	E
11 AM	E	2	2	2	2	E	E
Noon	E	2	2	2	2	E	E
1 PM	E	2	2	2	2	E	E
2 PM	E	2	2	2	2	E	E
3 PM	2	E	E	E	E	E	E
4 PM	2	E	E	E	E	E	E
5 PM	2	E	E	E	E	E	E
6 PM	2	2	2	2	2	E	E
7 PM	2	2	2	2	2	2	2
8 PM	1	2	2	2	2	2	2
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 1 Route 9 Northbound Lane Add S/O Exit 26 to Exit 28 (Route 72) Off-Ramp Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	3	2	2	2	2	2	3
3 PM	3	E	E	E	E	E	3
4 PM	3	E	E	E	E	E	3
5 PM	3	E	E	E	E	E	3
6 PM	3	2	2	2	2	2	3
7 PM	2	2	2	2	2	2	3
8 PM	2	1	1	1	1	1	2
9 PM	1	1	1	1	1	1	2
10 PM	1	1	1	1	1	1	2
11 PM	1	1	1	1	1	1	1

SITE 1 Route 9 Southbound Lane Drop S/O Exit 25 (Ellis St) to Lane Drop S/O Route 72 EB On-Ramp Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	3	3	3	3	3	2
8 AM	1	3	3	3	3	3	2
9 AM	2	2	2	2	2	3	3
10 AM	3	2	2	2	2	3	3
11 AM	3	2	2	2	2	3	3
Noon	3	2	2	2	2	3	3
1 PM	3	2	2	2	2	3	3
2 PM	2	2	2	2	2	3	3
3 PM	2	E	E	E	E	E	3
4 PM	2	E	E	E	E	E	3
5 PM	2	E	E	E	E	E	2
6 PM	2	2	2	2	2	2	2
7 PM	2	2	2	2	2	2	2
8 PM	1	1	1	1	2	2	2
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 1 Route 9 Northbound Exit 28 (Route 72) Off-Ramp to Route 72 EB On-Ramp Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	2	1	1	1	1	1	2
3 PM	2	E	E	E	E	E	2
4 PM	2	E	E	E	E	E	2
5 PM	2	E	E	E	E	E	2
6 PM	2	1	1	1	1	1	2
7 PM	2	1	1	1	1	1	2
8 PM	1	1	1	1	1	1	2
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 1 Route 9 Southbound Lane Drop S/O Route 72 EB On-Ramp to Route 72 EB On-Ramp Number of Through Lanes: 4							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	3	3	3	3	3	2
8 AM	1	3	3	3	3	3	2
9 AM	2	2	2	2	2	3	3
10 AM	3	2	2	2	2	3	3
11 AM	3	2	2	2	2	3	3
Noon	3	2	2	2	2	3	3
1 PM	3	2	2	2	2	3	3
2 PM	2	2	2	2	2	3	3
3 PM	2	3	3	3	3	3	3
4 PM	2	3	3	3	3	3	3
5 PM	2	3	3	3	3	3	2
6 PM	2	2	2	2	2	2	2
7 PM	2	2	2	2	2	2	2
8 PM	1	1	1	1	2	2	2
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 1 Route 9 Southbound Route 72 EB On-Ramp to Exit 28 (Route 72 WB) Off-Ramp Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	1	1	1	1	1	2
10 AM	2	1	1	1	1	1	2
11 AM	2	1	1	1	1	1	2
Noon	2	1	1	1	1	1	2
1 PM	2	1	1	1	1	1	2
2 PM	2	1	1	1	1	1	2
3 PM	2	E	E	E	E	E	2
4 PM	1	E	E	E	E	E	2
5 PM	1	E	E	E	E	E	2
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period.

SITE 1 Route 571 Eastbound Within Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	2	2	2	2	2	1
4 PM	1	2	2	2	2	2	1
5 PM	1	2	2	2	2	2	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 1 Route 571 Westbound Within Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	2	2	2	2	2	1
4 PM	1	2	2	2	2	2	1
5 PM	1	2	2	2	2	2	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 1 CT 72 Eastbound Route 9 SB On-Ramp (Chestnut St Overpass) to Route 9 NB Off-Ramp (Route 71 Overpass) Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	1	1	1	1	1	1
4 PM	1	2	2	2	2	2	1
5 PM	1	2	2	2	2	2	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 1 CT 72 Westbound Route 9 NB Off-Ramp (Stanley St Overpass) to Route 9 SB On-Ramp (Route 71 Overpass) Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	2	2	2	2	2	1
4 PM	1	2	2	2	2	2	1
5 PM	1	2	2	2	2	2	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 1 CT 72 Eastbound Route 9 NB Off-Ramp (Route 71 Overpass) to I-84 WB On-Ramp Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	2	3	3	3	3	3	2
7 AM	2	3	3	3	3	3	2
8 AM	2	3	3	3	3	3	2
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	2	2	2	2	2	2
4 PM	2	3	3	3	3	3	2
5 PM	2	3	3	3	3	3	2
6 PM	2	2	2	2	2	2	2
7 PM	2	2	2	2	2	2	2
8 PM	1	1	1	1	1	2	2
9 PM	1	1	1	1	1	2	2
10 PM	1	1	1	1	1	2	2
11 PM	1	1	1	1	1	2	2

SITE 1 CT 72 Westbound Rte 9 SB On-Ramp (Route 71 Overpass) to Lane Drop E/O I-84 Off-Ramp Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	2	3	3	3	3	3	2
7 AM	2	3	3	3	3	3	2
8 AM	2	3	3	3	3	3	2
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	3	3	3	3	3	2
4 PM	2	3	3	3	3	3	2
5 PM	2	3	3	3	3	3	2
6 PM	2	2	2	2	2	2	2
7 PM	2	2	2	2	2	2	2
8 PM	1	1	1	1	1	2	2
9 PM	1	1	1	1	1	2	2
10 PM	1	1	1	1	1	2	2
11 PM	1	1	1	1	1	2	2

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 2 Route 2 Eastbound Within Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	2	1	1	1	1	2	2
10 AM	2	1	1	1	1	2	2
11 AM	2	1	1	1	1	2	2
Noon	2	1	1	1	1	2	2
1 PM	2	1	1	1	1	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	E	E	E	E	E	2
4 PM	2	E	E	E	E	E	2
5 PM	2	E	E	E	E	E	2
6 PM	1	2	2	2	2	2	2
7 PM	1	1	1	1	1	2	2
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 2 Route 2 Westbound Within Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	2	1	1	1	1	1	1
Noon	2	1	1	1	1	1	1
1 PM	2	1	1	1	1	1	1
2 PM	2	2	2	2	2	2	1
3 PM	2	2	2	2	2	2	2
4 PM	2	2	2	2	2	2	2
5 PM	2	2	2	2	2	2	2
6 PM	2	1	1	1	1	1	1
7 PM	2	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 3 Route 15 Northbound Southern Project Limits to Silas Deane Hwy NB On-Ramp Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	E	E	E	E	E	1
4 PM	1	E	E	E	E	E	1
5 PM	1	E	E	E	E	E	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 3 Route 15 Southbound Southern Project Limits to Silas Deane Hwy SB Off-Ramp Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	1	1	1	1	1	1
10 AM	1	1	1	1	1	1	1
11 AM	1	1	1	1	1	1	1
Noon	1	1	1	1	1	1	1
1 PM	1	1	1	1	1	1	1
2 PM	1	1	1	1	1	1	1
3 PM	1	E	E	E	E	E	1
4 PM	1	E	E	E	E	E	1
5 PM	1	E	E	E	E	E	1
6 PM	1	1	1	1	1	1	1
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 3 Route 15 Northbound Silas Deane Hwy NB On-Ramp to Northern Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	2	2	2	2	2	1
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	E	E	E	E	E	2
4 PM	2	E	E	E	E	E	2
5 PM	2	E	E	E	E	E	2
6 PM	1	2	2	2	2	2	2
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 3 Route 15 Southbound Silas Deane Hwy SB Off-Ramp to Northern Project Limits Number of Through Lanes: 2							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	E	E	E	E	E	1
7 AM	1	E	E	E	E	E	1
8 AM	1	E	E	E	E	E	1
9 AM	1	2	2	2	2	2	1
10 AM	1	2	2	2	2	2	1
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	E	E	E	E	E	2
4 PM	2	E	E	E	E	E	2
5 PM	2	E	E	E	E	E	2
6 PM	1	2	2	2	2	2	2
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 4							
Interstate 384 Eastbound							
Western Project Limits (Spencer St Overpass) to Exit 3 (South Main St) Off-Ramp							
Number of Through Lanes: 4							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	2	2	2	2	2	2	2
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	3	4	4	4	4	4	3
4 PM	3	4	4	4	4	4	3
5 PM	3	4	4	4	4	4	3
6 PM	2	2	2	2	2	2	2
7 PM	2	2	2	2	2	2	2
8 PM	2	2	2	2	2	2	2
9 PM	1	1	1	1	1	2	2
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 4							
Interstate 384 Westbound							
Western Project Limits (Spencer St Overpass) to Start of HOV Lane							
Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	2	2	2	2	2	1
6 AM	2	E	E	E	E	E	2
7 AM	2	E	E	E	E	E	2
8 AM	2	E	E	E	E	E	2
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	3	3	3	3	3	2
4 PM	2	3	3	3	3	3	2
5 PM	2	3	3	3	3	3	2
6 PM	1	2	2	2	2	2	2
7 PM	1	1	1	1	1	2	2
8 PM	1	1	1	1	1	2	2
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 4 Interstate 384 Eastbound Exit 3 (South Main St) Off-Ramp to Eastern Project Limits Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	1	2	2	2	2	2	1
7 AM	1	2	2	2	2	2	1
8 AM	1	2	2	2	2	2	1
9 AM	2	1	1	1	1	1	2
10 AM	2	1	1	1	1	1	2
11 AM	2	1	1	1	1	1	2
Noon	2	1	1	1	1	1	2
1 PM	2	1	1	1	1	1	2
2 PM	2	2	2	2	2	2	2
3 PM	2	3	3	3	3	3	2
4 PM	2	3	3	3	3	3	2
5 PM	2	3	3	3	3	3	2
6 PM	2	2	2	2	2	2	2
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

SITE 4 Interstate 384 Westbound Start of HOV Lane to Exit 3 (Charter Oak St) On-Ramp Number of Through Lanes: 4							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	3	E	E	E	E	E	3
7 AM	3	E	E	E	E	E	3
8 AM	3	E	E	E	E	E	3
9 AM	2	2	2	2	2	2	2
10 AM	2	2	2	2	2	2	2
11 AM	2	2	2	2	2	2	2
Noon	2	2	2	2	2	2	2
1 PM	2	2	2	2	2	2	2
2 PM	2	2	2	2	2	2	2
3 PM	2	2	2	2	2	2	2
4 PM	2	2	2	2	2	2	2
5 PM	2	2	2	2	2	2	2
6 PM	2	2	2	2	2	2	2
7 PM	1	1	1	1	1	1	1
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period

SITE 4 Interstate 384 Westbound Exit 3 (Charter Oak St) On-Ramp to Eastern Project Limits Number of Through Lanes: 3							
Hour Beginning	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Mid	1	1	1	1	1	1	1
1 AM	1	1	1	1	1	1	1
2 AM	1	1	1	1	1	1	1
3 AM	1	1	1	1	1	1	1
4 AM	1	1	1	1	1	1	1
5 AM	1	1	1	1	1	1	1
6 AM	2	3	3	3	3	3	2
7 AM	2	3	3	3	3	3	2
8 AM	2	3	3	3	3	3	2
9 AM	2	1	1	1	1	1	2
10 AM	2	1	1	1	1	1	2
11 AM	2	1	1	1	1	1	2
Noon	2	1	1	1	1	1	2
1 PM	2	1	1	1	1	1	2
2 PM	2	1	1	1	1	1	2
3 PM	2	2	2	2	2	2	2
4 PM	2	2	2	2	2	2	2
5 PM	2	2	2	2	2	2	2
6 PM	2	1	1	1	1	1	2
7 PM	2	1	1	1	1	1	2
8 PM	1	1	1	1	1	1	1
9 PM	1	1	1	1	1	1	1
10 PM	1	1	1	1	1	1	1
11 PM	1	1	1	1	1	1	1

On Holidays and within Holiday Periods, all Hours shall be ‘E.’

‘E’ = maintain existing traffic operations = all available travel lanes, including exit only lanes, climbing lanes and all available shoulder widths shall be open to traffic during this period.

SITE 1
Ramps, Turning Roadways, State & Local Roads

Site 1: All Ramps and Turning Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.

Site 1: Route 174 (East Main Street)

Monday through Friday between 7:00 a.m. and 9:00 a.m. & between 2:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 1: Route 555 (West Main Street)

Monday through Friday between 7:00 a.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 1: Route 372 (Corbin Avenue) at Route 72 Off-Ramps in New Britain

Monday through Friday between 7:00 a.m. and 9:00 a.m. & between 2:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 1: Route 372 (Corbin Avenue) at end of Route 571 in Berlin

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 1: Route 71 (New Britain Road)

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 1: All Other Roads

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

SITE 2
Ramps, Turning Roadways, State & Local Roads

Site 2: All Ramps and Turning Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.

Site 2 : All Other Roads

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

SITE 3
Ramps, Turning Roadways, State & Local Roads

Site 3: All Ramps and Turning Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.

Site 3: Route 919 (Berlin Turnpike) Southbound, North of Route 15 SB Merge

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 3: Wolcott Hill Road

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 3: Route 314 (Jordan Lane)

Monday through Friday between 7:00 a.m. and 7:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 3: Route 99 (Silas Deane Highway)

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 3: All Other Roads

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

SITE 4
Ramps, Turning Roadways, State & Local Roads

Site 4: All Ramps and Turning Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.

Site 4: Route 502 (Spencer Street)

Monday through Friday between 7:00 a.m. and 7:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 4: Keeney Street

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 4: Route 83 (South Main Street)

Monday through Friday between 7:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 7:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Site 4: All Other Roads

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

SITE 5

Ramps, Turning Roadways, State & Local Roads

Site 5: Main Street in Glastonbury

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m.
Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Additional Lane Closure Restrictions

It is anticipated that work on adjacent projects will be ongoing simultaneously with this project. The Contractor shall be aware of those projects and anticipate that coordination will be required to maintain proper traffic flow at all times on all project roadways, in a manner consistent with these specifications and acceptable to the Engineer.

The Contractor will not be allowed to perform any work that will interfere with traffic operations on a roadway when traffic operations are being restricted on that same roadway, unless there is at least a one mile clear area length where the entire roadway is open to traffic or the closures have been coordinated and are acceptable to the Engineer. The one mile clear area length shall be measured from the end of the first work area to the beginning of the signing pattern for the next work area.

Article 1.08.07 - Determination of Contract Time:

Delete the second, third and fourth paragraphs and replace them with the following:

When the contract time is on a calendar day basis, it shall be the number of consecutive calendar days stated in the contract, INCLUDING the time period from December 1 through March 31 of each year. The contract time will begin on the effective date of the Engineer's order to commence work, and it will be computed on a consecutive day basis, including all Saturdays, Sundays, Holidays, and non-work days.

1.08.08 - Extension of Time:

Delete the sixth paragraph, "If an approved extension of Contract time.... the following April 1".

Article 1.08.09 - Failure to Complete Work on Time:

Delete the second paragraph, "If the last day...the project is substantially completed" and replace it with "Liquidated damages as specified in the Contract shall be assessed against the Contractor per calendar day from that day until the date on which the project is substantially completed."

SECTION 1.10 – ENVIRONMENTAL COMPLIANCE

In Article 1.10.03--Water Pollution Control: REQUIRED BEST MANAGEMENT PRACTICES

Add the following after Required Best Management Practices Number 13:

14. The Contractor is hereby notified that the State listed endangered species timber rattlesnake (*Crotalus horridus*), is present within the Project limits. In Connecticut, timber rattlesnakes are active between April 1 and October 31. Timber rattlesnakes are one of Connecticut's **venomous** snakes. These rattlesnakes are more likely to be out basking during the day in spring and fall. Snakes cannot regulate their body temperature internally and must warm themselves in the sun. Over the warmer months they are more nocturnal. This Project Site is located within their summer foraging range. Timber rattlesnake encounters are possible and the Contractor shall take all precautions to avoid harming the snakes and their habitat and also in protecting workers.

All construction activities taking place within the Project will need to be coordinated with the Office of Environmental Planning (OEP) through the Engineer. At least 10 days prior to the commencement of any construction activities, the Contractor shall, through the Engineer, arrange for an CT DOT Environmental Scientist from the OEP or their authorized representative to meet and discuss proper protocol for maintaining environmental commitments made for the protection of this species and habitat. OEP will provide oversight through the Engineer to ensure that the following protocols are followed and maintained during the course of the Project.

For any work done during the timber rattlesnake's active period (April 1 to October 31) the Department will require the following precautionary measures to protect the timber rattlesnake and timber rattlesnake habitat:

- a. All construction personnel working within the timber rattlesnake habitat must be apprised of the species description and the possible presence of a listed species.
- b. Exclusionary practices will be required in order to prevent any timber rattlesnakes access to construction areas. These measures will need to be installed at the limits of disturbance as shown on the plans.
- c. Exclusionary fencing shall be at least 20" tall and must be secured to and remain in contact with the ground. It shall be regularly inspected / maintained to prevent any gaps or openings at ground level. Standard silt fence is adequate; fencing with netting shall not be used.
- d. The Contractor must search the work area each morning for the presence of this listed species prior to any work being done.

- e. Any timber rattlesnakes encountered within the work area shall be left alone and immediately reported to the Engineer. These snakes are venomous and will strike if agitated. Construction workers shall not attempt to handle, guide or relocate them. Prior to any ground activities, an on-Site meeting with construction staff will be conducted by an Environmental Scientist from the OEP to discuss this species biology, life cycle, and proper protocol as well as the proper procedures when encountering a snake and where to seek medical help if bitten. **This meeting is required for all personnel working in the Project area.**
- f. All staging and storage areas in the vicinity of snake habitat, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed by and receive written approval from OEP through the Engineer.
- g. No heavy machinery or vehicles may be parked in any timber rattlesnake habitat.
- h. Exclusionary fencing shall be removed when it is no longer needed, and silt fence shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.

Work may take place during the timber rattlesnakes inactive (hibernation) period (November 1 to March 31) with the following additional precautionary measure:

- a. Exclusionary fencing must be installed and the area inspected for snakes by the Engineer or Engineer's approved representative prior to October 1.

These practices will be applied to the entire Project unless a sketch is attached, which identifies specific areas of concern.

This species is protected by State laws, which prohibit killing, harming, taking, or keeping them in your possession. Photographs and the laws protecting timber rattlesnakes shall be posted in the Contractor's and DOT field offices (species ID sheets will be provided by OEP).

- 15. The Contractor is hereby notified that the State listed species of Special Concern eastern box turtle (*Terrapene carolina carolina*), is present within the Project limits. In Connecticut, this terrestrial turtle lives in a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically however, eastern box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Eastern box turtles overwinter in upland forest, typically covered by leaf litter or woody debris. As temperatures drop, the turtles burrow down into soft ground.

All construction activities taking place within the Project limits will need to be coordinated with the Office of Environmental Planning (OEP) through the Engineer. At

least 10 days prior to the commencement of any construction activities, the Contractor shall, through the Engineer, arrange for a CT DOT Environmental Inspector from the OEP or their authorized delegate to meet and discuss proper protocol for maintaining environmental commitments made for the protection of this species and habitat. OEP will provide oversight through the Engineer to ensure that the following protocols are followed and maintained during the course of the Project.

For any work done during the eastern box turtle's active period (April 1 to October 31) the Department will require the following precautionary measures to protect the eastern box turtle and eastern box turtle habitat:

- a. All areas within the Project limits must be surveyed and cleared of any turtles immediately prior to the commencement of initial clearing and grubbing activities.
- b. All construction personnel working within eastern box turtle habitat must be apprised of the species description and the possible presence of this listed species.
- c. Exclusionary practices will be required in order to prevent any eastern box turtle access to construction areas. These measures will need to be installed at the limits of disturbance as shown on the plans.
- d. Exclusionary fencing shall be at least 20" tall and must be secured to and remain in contact with the ground. It shall be regularly inspected / maintained to prevent any gaps or openings at ground level. Standard silt fence is adequate; fencing with netting shall not be used.
- e. The Contractor must search the work area each morning for the presence of this listed species prior to any work being done.
- f. Any eastern box turtles encountered within the immediate work area shall be carefully moved to an adjacent area outside of the excluded area and the Engineer shall be immediately informed in order to contact OEP with the location.
- g. All staging and storage areas in the vicinity of turtle habitat, outside of previously paved locations, regardless of the duration of time they will be utilized, must be reviewed by and receive written approval from OEP through the Engineer.
- h. No heavy machinery or vehicles may be parked in any unapproved eastern box turtle habitat.
- i. Exclusionary fencing shall be removed when it is no longer needed, and silt fence shall be removed as soon as the area is stable to allow for reptile and amphibian passage to resume.

Work may take place during the eastern box turtle's inactive (hibernation) period (November 1 to March 31) with the following additional precautionary measure:

- b. Exclusionary fencing must be installed and the area inspected for turtles by the Engineer or Engineer's approved representative prior to October 1.

These practices will be applied to the entire Project unless a sketch is attached, which identifies specific areas of concern.

This species is protected by State laws, which prohibit killing, harming, taking, or keeping them in your possession. Photographs and the laws protecting eastern box turtles shall be posted in the Contractor's and DOT field offices (species ID sheets will be provided by OEP).

16. The Contractor is hereby notified that the location of the Project occurs within a public watershed, well head protection area, aquifer protection area (APA), or sole source aquifer (SSA). The Contractor is hereby notified that the location of 171-432 occurs within one of these sensitive areas. The protected areas encompass the area of contribution and recharge for the protected resource, as depicted on the graphical map. Please note that the Office of Environmental Planning will provide the graphical map to the District after the Project has been awarded as this information is considered proprietary. As a result of this location, special requirements must be followed for cleaning machinery, storage of materials, and servicing/fueling equipment.

- a. All Contractors and their employees must be informed of the sensitive area that they are working in. No pollutants may be discharged that could have adverse effects on the public drinking water supply. Any fuel or other hazardous chemical spills must be reported immediately to the DEEP Oil and Chemical Spills Unit at (860) 424-3338, the Department of Public Health's Drinking Water Division at (860) 509-7333, and Valley Water Systems, Inc. (New Britain, Woodford Avenue APA) at (860) 747-8000, Manchester Water Department (Manchester, Charter Oak Street APA) at (860) 647-3115, Metropolitan District Commission (Glastonbury – Route 2, Cold Brook Reservoir Public Water Supply Watershed and Public Water Supply Wells) at (860) 278-7850, **no exceptions**.

When working within the Pootatuck SSA in *Newtown* or within the Pawcatuck SSA in *North Stonington* which also encompasses areas in *Sterling*, *Stonington* and *Voluntown*, Mr. Jeff Butensky from the Environmental Protection Agency (EPA) must be contacted at (617) 918-1665. Mr. Robert Adler from the EPA must also be contacted at (617) 918-1396, if a Project is near the Rhode Island state border.

- b. Contractors must adhere to specialized cleanup procedures while working within the watershed, well head protection area, APA or SSA. No cleaning of any machinery shall be performed within one hundred (100) feet of any water body within the sensitive area.

- i. Specifically for cleanup associated with pavers, material transfer vehicles (MTV) and concrete mixers, the Contractor must move the equipment off line onto a tarp. The tarp must be in an acceptable condition so as to prevent liquids and solids from passing through to the ground beneath, when the area is used for paving operations. The cleanup area shall have oil absorbent pads placed on the tarp. The equipment shall be cleaned over the absorbent pads in a manner that will allow the pads to collect any liquids that are used for cleanup.
 - ii. Specifically for cleanup associated with dump trucks, a liquid tight five gallon pail shall be placed at each corner of the dump body below the lower hinges to capture any materials generated during the cleanup.
- c. All materials generated during the cleanup procedures shall be removed off-site at the end of each day and disposed of in a manner consistent with all applicable laws and regulations. These materials shall not be buried outside of the roadway limits.
- d. Servicing and fueling of equipment shall be conducted outside of a public watershed area, APA, SSA, and/or well head protection area.
 - i. If equipment cannot be serviced and refueled outside of the watershed area, well head protection area, APA, or SSA then the Contractor shall utilize the proper spoils handling areas that are identified on the plans.
 - ii. Servicing and fueling of equipment is not permitted within a 500 foot radius of a non-community well and within a 1000 foot radius of a community well.
 - iii. Any fuel and/or hazardous materials that must be kept within these sensitive areas during working hours shall be stored in an enclosed spill proof container.
 - iv. Spill containment systems must be utilized during fueling operations, and shall be manufactured by Sentry Lite Berms, Collapse-a-tainer, or approved equal. It shall have a minimum capacity of 80-gallons and shall be made of plastic or vinyl which is inert to all fuel types.
 - v. Fuel spill remediation kits shall be stored on-site so that spills may be contained and cleaned quickly.
- e. Construction staging and laydown areas are prohibited within a watershed area, APA, SSA, and/or well head protection area. The Contractor shall submit to the Engineer the desired location of trailer(s), construction staging/laydown areas, containment systems, and sedimentation control systems for review and approval prior to the start of construction.
- f. Millings may be re-used as asphalt material. Disposal of excess millings must be performed off-site in a manner consistent with all applicable laws and regulations. At no time can millings be dumped or buried outside of the roadway limits.

SECTION 6.03 – STRUCTURAL STEEL

Section 6.03 is amended as follows:

6.03.03—Construction Methods: Revise Subarticle 4(f) “High Strength Bolted Connections” as follows:

Replace the first paragraph and Table A: "Minimum Bolt Tension in kips" with the following:

" The assembly of structural connections using high-strength bolts shall be installed so as to develop the minimum required bolt tension specified in Table A. The Manufacturer’s certified test report; including the rotational capacity test results must accompany the fastener assemblies. Fastener Assemblies delivered without the certified reports will be rejected.

Table A: Minimum Bolt Tension in kips*

<u>Bolt Diameter (Inches)</u>	<u>ASTM F3125 Grade A325</u>	<u>ASTM F3125 Grade A490</u>
5/8	19	24
3/4	28	35
7/8	39	49
1	51	64
1 1/8	64	80
1 1/4	81	102
1 3/8	97	121
1 1/2	118	148

*Equal to 70% of specified minimum tensile strength of bolts (as specified in ASTM Specifications for tests of full-size F3125 Grade A 325 and F3125 Grade A 490 bolts with UNC threads, loaded in axial tension) rounded to the nearest kip.

Revise the last sentence of the sixteenth paragraph, "Rotational-Capacity Tests" as follows:

" When performed in the field, the procedure shall meet the requirements of ASTM F3125 Annex A2."

In Table C, insert the word "Grade" in the third row before every occurrence of "A325" and "A490."

SECTION M.04 BITUMINOUS CONCRETE MATERIALS

Section M.04 is being deleted in its entirety and replaced with the following:

M.04.01—Bituminous Concrete Materials and Facilities

M.04.02—Mix Design and Job Mix Formula (JMF)

M.04.03—Production Requirements

M.04.01—Bituminous Concrete Materials and Facilities: Each source of component material, Plant and laboratory used to produce and test bituminous concrete must be qualified on an annual basis by the Engineer. AASHTO or ASTM Standards noted with an (M) have been modified and are detailed in Table M.04.03-6.

Aggregates from multiple sources of supply must not be blended or stored in the same stockpile.

1. Coarse Aggregate:

All coarse aggregate shall meet the requirements listed in Section M.01.

2. Fine Aggregate:

All fine aggregate shall meet the requirements listed in Section M.01

3. Mineral Filler:

Mineral filler shall conform to the requirements of AASHTO M 17.

4. Performance Graded (PG) Asphalt Binder:

a. General:

i. PG asphalt binder shall be uniformly mixed and blended and be free of contaminants such as fuel oils and other solvents. Binder shall be properly heated and stored to prevent damage or separation.

ii. The binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29. The Contractor shall submit a Certified Test Report and bill of lading representing each delivery in accordance with AASHTO R 26(M). The Certified Test Report must also indicate the binder specific gravity at 77°F; rotational viscosity at 275°F and 329°F and the mixing and compaction viscosity-temperature chart for each shipment.

iii. The Contractor shall submit the name(s) of personnel responsible for receipt, inspection, and record keeping of PG binder. Contractor plant personnel shall document specific storage tank(s) where binder will be transferred and stored until used, and provide binder samples to the Engineer upon request. The person(s) shall assure that each shipment is accompanied by a statement certifying that the transport vehicle was inspected before loading and was found acceptable for the material

shipped, and, that the binder is free of contamination from any residual material, along with two (2) copies of the bill of lading.

iv. The blending or combining of PG binders in one storage tank at the Plant from different suppliers, grades, or additive percentages is prohibited.

b. Basis of Approval:

The request for approval of the source of supply shall list the location where the material will be manufactured, and the handling and storage methods, along with necessary certification in accordance with AASHTO R 26(M). Only suppliers/refineries that have an approved "Quality Control Plan for Performance Graded Binders" formatted in accordance with AASHTO R 26(M) may supply PG binders to Department projects.

c. Standard Performance Grade (PG) Binder:

i. Standard PG binder shall be defined as "Neat". Neat PG binders shall be free from modification with: fillers, extenders, reinforcing agents, adhesion promoters, thermoplastic polymers, acid modification and other additives such as re-refined motor oil, and shall indicate such information on each bill of lading and certified test report.

ii. The standard asphalt binder grade shall be PG 64S-22.

d. Modified Performance Grade (PG) Binder:

The modified asphalt binder shall be Performance Grade PG 64E-22 asphalt modified solely with a Styrene-Butadiene-Styrene (SBS) polymer. The polymer modifier shall be added at either the refinery or terminal and delivered to the bituminous concrete production facility as homogenous blend. The stability of the modified binder shall be verified in accordance with ASTM D7173 using the Dynamic Shear Rheometer (DSR). The DSR $G^*/\sin(\delta)$ results from the top and bottom sections of the ASTM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report. The binder shall meet the requirements of AASHTO M 332 (including Appendix X1) and AASHTO R 29.

e. Warm Mix Additive or Technology:

i. The warm mix additive or technology must be listed on the North East Asphalt User Producer Group (NEAUPG) Qualified Warm Mix Asphalt (WMA) Technologies List at the time of bid, which may be accessed online at <http://www.neaupg.uconn.edu>.

ii. The warm mix additive shall be blended with the asphalt binder in accordance with the manufacturer's recommendations.

iii. The blended binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29 for the specified binder grade. The Contractor shall submit a Certified Test Report showing the results of the testing demonstrating the binder grade. In addition, it must include the grade of the virgin

binder, the brand name of the warm mix additive, the manufacturer's suggested rate for the WMA additive, the water injection rate (when applicable) and the WMA Technology manufacturer's recommended mixing and compaction temperature ranges.

5. Emulsified Asphalts:

a. General:

- i. The emulsified asphalt shall meet the requirements of AASHTO M 140 or AASHTO M 208 as applicable.
- ii. The emulsified asphalts shall be free of contaminants such as fuel oils and other solvents.
- iii. The blending at mixing plants of emulsified asphalts from different suppliers is prohibited.

b. Basis of Approval

- i. The request for approval of the source of supply shall list the location where the material is manufactured, the handling and storage methods, and certifications in accordance with AASHTO PP 71. Only suppliers that have an approved "Quality Control Plan for Emulsified Asphalt" formatted in accordance with AASHTO PP 71 and submit monthly split samples per grade to the Engineer may supply emulsified asphalt to Department projects.
- ii. Each shipment of emulsified asphalt delivered to the project site shall be accompanied with the corresponding Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon at 77°F and Material Certificate.
- iii. Anionic emulsified asphalts shall conform to the requirements of AASHTO M-140. Materials used for tack coat shall not be diluted and meet grade RS-1 or RS-1H. When ambient temperatures are 80°F and rising, grade SS-1 or SS-1H may be substituted if permitted by the Engineer.
- iv. Cationic emulsified asphalt shall conform to the requirements of AASHTO M-208. Materials used for tack coat shall not be diluted and meet grade CRS-1. The settlement and demulsibility test will not be performed unless deemed necessary by the Engineer. When ambient temperatures are 80°F and rising, grade CSS-1 or CSS-1h may be substituted if permitted by the Engineer.

6. Reclaimed Asphalt Pavement (RAP):

- a. General: RAP is a material obtained from the cold milling or removal and processing of bituminous concrete pavement. RAP material shall be crushed to 100% passing the ½ inch sieve and free from contaminants such as joint compound, wood, plastic, and metals.
- b. Basis of Approval: The RAP material will be accepted on the basis of one of the following criteria:
 - i. When the source of all RAP material is from pavements previously constructed on Department projects, the Contractor shall provide a Materials Certificate listing the detailed locations and lengths of those pavements and that the RAP is only from those locations listed.
 - ii. When the RAP material source or quality is not known, the Contractor shall request for approval to the Engineer at least 30 calendar days prior to the start of the paving operation. The request shall include a Material Certificate and applicable test results stating that the RAP consists of aggregates that meet the specification requirements of sub articles M.04.01-1 through 3, and, that the binder in the RAP is substantially free of solvents, tars and other contaminants. The Contractor is prohibited from using unapproved material on Department projects and shall take necessary action to prevent contamination of approved RAP stockpiles. Stockpiles of unapproved material shall remain separate from all other RAP materials at all times. The request for approval shall include the following:
 - 1. A 50-pound sample of the RAP to be incorporated into the recycled mixture.
 - 2. A 25-pound sample of the extracted aggregate from the RAP.

7. Crushed Recycled Container Glass (CRCG):

- a. Requirements: The Contractor may propose to use clean and environmentally-acceptable CRCG in an amount not greater than 5% by weight of total aggregate.
- b. Basis of Approval: The Contractor shall submit to the Engineer a request to use CRCG. The request shall state that the CRCG contains no more than 1% by weight of contaminants such as paper, plastic and metal and conform to the following gradation:

CRCG Grading Requirements	
<u>Sieve Size</u>	<u>Percent Passing</u>
3/8-inch	100
No. 4	35-100
No. 200	0.0-10.0

The Contractor shall submit a Materials Certificate to the Engineer stating that the CRCG complies with all the applicable requirements in this specification.

8. Joint Seal Material:

- a. Requirements: Joint seal material must meet the requirements of ASTM D 6690 – Type 2. The Contractor shall submit a Material Certificate in accordance with Article 1.06.07 certifying that the joint seal material meets the requirements of this specification.

9. Recycled Asphalt Shingles (RAS)

- a. Requirements: RAS shall consist of processed asphalt roofing shingles from post-consumer asphalt shingles or from manufactured shingle waste. The RAS material under consideration for use in bituminous concrete mixtures must be certified as being asbestos free and shall be entirely free of whole, intact nails. The RAS material shall meet the requirements of AASHTO MP 23.

The producer shall test the RAS material to determine the asphalt content and the gradation of the RAS material. The producer shall take necessary action to prevent contamination of RAS stockpiles.

The Contractor shall submit a Materials Certificate to the Engineer stating that the RAS complies with all the applicable requirements in this specification.

10. Plant Requirements:

- a. General: The Plant producing bituminous concrete shall comply with AASHTO M 156.
- b. Storage Silos: The Contractor may use silos for short-term storage with the approval of the Engineer. A silo must have heated cones and an unheated silo cylinder if it does not contain a separate internal heating system. When multiple silos are filled, the Contractor shall discharge one silo at a time. Simultaneous discharge of multiple silos for the same Project is not permitted.

<u>Type of silo cylinder</u>	<u>Maximum storage time for all classes (hr)</u>	
	HMA	WMA/PMA
Open Surge	4	Mfg Recommendations*
Unheated – Non-insulated	8	Mfg Recommendations*
Unheated – Insulated	18	Mfg Recommendations*
Heated – No inert gas	TBD by the Engineer	

*Not to exceed HMA limits

- c. Documentation System: The mixing plant documentation system shall include equipment for accurately proportioning the components of the mixture by weight and in the proper order, controlling the cycle sequence and timing the mixing operations. Recording equipment shall monitor the batching sequence of each component of the

mixture and produce a printed record of these operations on each Plant ticket, as specified herein.

If recycled materials are used, the Plant tickets shall include their dry weight, percentage and daily moisture content.

If a WMA Technology is added at the Plant, the Plant tickets shall include the actual dosage rate.

For drum Plants, the Plant ticket shall be produced at 5 minute intervals and maintained by the vendor for a period of three years after the completion of the project.

For batch Plants, the Plant ticket shall be produced for each batch and maintained by the vendor for a period of three years after the completion of the project. In addition, an asterisk (*) shall be automatically printed next to any individual batch weight(s) exceeding the following tolerances:

Each Aggregate Component	±1.5% of individual or cumulative target weight for each bin
Mineral Filler	±0.5% of the total batch
Bituminous Material	±0.1% of the total batch
Zero Return (Aggregate)	±0.5% of the total batch
Zero Return (Bituminous Material)	±0.1% of the total batch

The entire batching and mixing interlock cut-off circuits shall interrupt and stop the automatic batching operations when an error exceeding the acceptable tolerance occurs in proportioning.

The scales shall not be manually adjusted during the printing process. In addition, the system shall be interlocked to allow printing only when the scale has come to a complete rest. A unique printed character (m) shall automatically be printed on the ticket when the automatic batching sequence is interrupted or switched to auto-manual or full manual during proportioning.

- d. Aggregates: Aggregate stockpiles shall be managed to prevent segregation and cross contamination. For drum plants only, the percent moisture content at a minimum prior to production and half way through production shall be determined.
- e. Mixture: The dry and wet mix times shall be sufficient to provide a uniform mixture and a minimum particle coating of 95% as determined by AASHTO T 195(M) .

Bituminous concrete mixtures shall contain no more than 0.5% moisture when tested in accordance with AASHTO T 329.

- f. RAP: RAP moisture content shall be determined a minimum of twice daily (prior to production and halfway through production).
- g. Asphalt Binder: A binder log shall be submitted to the Department's Central Lab on a monthly basis.
- h. Warm mix additive: For mechanically foamed WMA, the water injection rate shall be monitored during production and not exceed 2.0% by total weight of binder. For additive added at the Plant, the dosage rate shall be monitored during production.
- i. Plant Laboratory: The Contractor shall maintain a laboratory at the production facility to test bituminous concrete mixtures during production. The laboratory shall have a minimum of 300 square feet, have a potable water source and drainage in accordance with the CT Department of Public Health Drinking Water Division, and be equipped with all necessary testing equipment as well as with a PC, printer, and telephone with a dedicated hard-wired phone line. In addition, the PC shall have internet connection and a functioning web browser with unrestricted access to <https://ctmail.ct.gov>. This equipment shall be maintained in working order at all times and be made available for use by the Engineer.

The laboratory shall be equipped with a heating system capable of maintaining a minimum temperature of 65°F. It shall be clean and free of all materials and equipment not associated with the laboratory. Sufficient light and ventilation must be provided. During summer months, adequate cooling or ventilation must be provided so the indoor air temperature shall not exceed the ambient outdoor temperature.

The laboratory testing apparatus, supplies, and safety equipment shall be capable of performing all tests in their entirety that are referenced in AASHTO R 35 and AASHTO M 323. The Contractor shall ensure that the Laboratory is adequately supplied at all times during the course of the project with all necessary testing supplies and equipment.

The Contractor shall maintain a list of laboratory equipment used in the acceptance testing processes including but not limited to, balances, scales, manometer/vacuum gauge, thermometers, gyratory compactor, clearly showing calibration and/or inspection dates, in accordance with AASHTO R 18. The Contractor shall notify the Engineer if any modifications are made to the equipment within the laboratory. The Contractor shall take immediate action to replace, repair, and/or recalibrate any piece of equipment that is out of calibration, malfunctioning, or not in operation.

M.04.02—Mix Design and Job Mix Formula (JMF)

1. Curb Mix:

- a. Requirements: The Contractor shall use bituminous concrete that meets the requirements of Table M.04.02-1. RAP may be used in 5% increments by weight up to 30%.

- b. **Basis of Approval:** Annually, an approved JMF based on a mix design for curb mix must be on file with the Engineer prior to use. .
Any change in component source of supply or consensus properties must be approved by the Engineer. A revised JMF shall be submitted prior to use.

**TABLE M.04.02 – 1:
Control Points for Curb Mix Mixtures**

Notes: (a) Compaction Parameter 50gyration N_{des} . (b) The percent passing the #200 sieve shall not exceed the percentage of bituminous asphalt binder.		
Mix	Curb Mix	Production Tolerances from JMF target
Grade of PG Binder content %	PG 64S-22 6.5 - 9.0	0.4
Sieve Size		
# 200	3.0 – 8.0 (b)	2.0
# 50	10 - 30	4
# 30	20 - 40	5
# 8	40 - 70	6
# 4	65 - 87	7
1/4"		
3/8 "	95 - 100	8
1/2 "	100	8
3/4"		8
1"		
2"		
Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%		
Mixture Temperature		
Binder	325°F maximum	
Aggregate	280-350° F	
Mixtures	265-325° F	
Mixture Properties		
Air Voids (VA) %	0 – 4.0 (a)	

2. Superpave Design Method – S0.25, S0.375, S0.5, and S1

- a. **Requirements:** All designated mixes shall be designed using the Superpave mix design method in accordance with AASHTO R 35. A JMF based on the mix design shall meet the requirements of Tables M.04.02-2 through Table M.04.02-5. Each JMF must be submitted no less than seven (7) days prior to production and must be approved by the Engineer prior to use. All approved JMFs expire at the end of the calendar year.

All aggregate component consensus properties and tensile strength ratio (TSR) specimens shall be tested at an AASHTO Materials Reference Laboratory (AMRL) by NETTCP certified technicians.

All bituminous concrete mixes shall be tested for stripping susceptibility by performing the tensile strength ratio (TSR) test procedure in accordance with AASHTO T 283(M) at a minimum every 36 months. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. TSR specimens, and corresponding JMF shall be submitted with each test report.

i. Superpave Mixtures with RAP: RAP may be used with the following conditions:

- RAP amounts up to 15% may be used with no binder grade modification.
- RAP amounts up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance with AASHTO M 323 Appendix X1, or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.
- Two representative samples of RAP shall be obtained. Each sample shall be split and one split sample shall be tested for binder content in accordance with AASHTO T 164 and the other in accordance AASHTO T 308.
- RAP material shall not be used with any other recycling option.

ii. Superpave Mixtures with RAS: RAS may be used solely in HMA S1 mixtures with the following conditions:

- RAS amounts up to 3% may be used.
- RAS total binder replacement up to 15% may be used with no binder grade modification.
- RAS total binder replacement up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added. The JMF shall be accompanied by a blending chart and supporting test results in accordance to AASHTO M 323 appendix X1 or by testing that shows the combined binder (recovered binder from the RAP, virgin binder at the mix design proportions, warm mix asphalt additive and any other modifier if used) meets the requirements of the specified binder grade.
- Superpave Mixtures with RAS shall meet AASHTO PP 78 design considerations. The RAS asphalt binder availability factor (F) used in AASHTO PP 78 shall be 0.85.

iii. Superpave Mixtures with CRCG: CRCG may be used solely in HMA S1 mixtures. One percent of hydrated lime, or other accepted non-stripping agent, shall be added to all mixtures containing CRCG. CRCG material shall not be used with any other recycling option.

- b. Basis of Approval: The following information must be included with the JMF submittal:
- Gradation, consensus properties and specific gravities of the aggregate, RAP or RAS.
 - Average asphalt content of the RAP or RAS by AASHTO T 164.
 - Source of RAP or RAS, and percentage to be used.
 - Warm mix Technology, manufacturer's recommended additive rate and tolerances and manufacturer recommended mixing and compaction temperatures.
 - TSR test report and anti-strip manufacturer and recommended dosage rate if applicable.
 - Mixing and compaction temperature ranges for the mix with and without the warm-mix technology incorporated.
 - JMF ignition oven correction factor by AASHTO T 308.

With each JMF submittal, the following samples shall be submitted to the Division of Materials Testing:

- 4 - one quart cans of PG binder, with corresponding Safety Data Sheet (SDS)
- 1 - 50 lbs bag of RAP
- 2 - 50 lbs bag of plant blended virgin aggregate

A JMF may not be approved if any of the properties of the aggregate components or mix do not meet the verification tolerances as described in the Department's current QA Program for Materials, Acceptance and Assurance Testing Policies and Procedures.

Any material based on a JMF, once approved, shall only be acceptable for use when it is produced by the designated plant, it utilizes the same components, and the production of material continues to meet all criteria as specified herein, and component aggregates are maintained within the tolerances shown in Table M.04.02-2. A new JMF must be submitted to the Engineer for approval whenever a new component source is proposed.

Only one mix with one JMF will be approved for production at any one time. Switching between approved JMF mixes with different component percentages or sources of supply is prohibited.

- c. Mix Status: Each facility will have each type of mixture rated based on the results of the previous year's production. Mix Status will be provided to each bituminous concrete producer annually prior to the beginning of the paving season.

The rating criteria are based on compliance with Air Voids and Voids in Mineral Aggregate (VMA) as indicated in Table M.04.03-4 and are calculated as follows:

Criteria A: Percentage of acceptance test results with compliant air voids.

Criteria B: The average of the percentage of acceptance test results with compliant VMA, and percentage of acceptance test results with compliant air voids.

The final rating assigned will be the lower of the rating obtained with Criteria A or B.

Mix status is defined as:

“A” – Approved:

Assigned to each mixture type from a production facility with a current rating of 70% or greater, or to each mixture type completing a successful PPT.

“PPT” – Pre-Production Trial:

Temporarily assigned to each mixture type from a production facility when:

1. there are no compliant acceptance production test results submitted to the Department from the previous year;
2. there is a source change in one or more aggregate components
3. there is a component percentage change of more than 5% by weight;
4. there is a change in RAP percentage;
5. the mixture has a rating of less than 70% from the previous season;
6. a new JMF not previously submitted.

Bituminous concrete mixtures with a “PPT” status cannot be used on Department projects. Testing shall be performed by the Producer with NETTCP certified personnel on material under this status. Test results must confirm that specifications requirements in Table M.04.02-2 and Table M.04.02-5 are met before material can be used. One of the following methods must be used to verify the test results:

Option A: Schedule a day when a Department Inspector can be at the facility to witness testing or,

Option B: When the Contractor or their representative performs testing without being witnessed by an Inspector, the Contractor shall submit the test results and a split sample including 2 gyratory molds, 5,000 grams of boxed bituminous concrete, and 5,000 grams of cooled loose bituminous concrete for verification testing and approval.

Option C: When the Contractor or their representative performs testing without being witnessed by a Department Inspector, the Engineer may verify the mix in the Contractor’s laboratory.

Witnessing or verifying by the Department of compliant test results will change the mix’s status to an “A”.

The differences between the Department’s test results and the Contractor’s must be within the “C” tolerances included in the Department’s QA Program for Materials, Acceptance and Assurance Testing Policies and Procedures in order to be verified.

“U” – Not Approved:

Status assigned to a type of mixture that does not have an approved JMF. . Bituminous concrete mixtures with a “U” status cannot be used on Department projects.

TABLE M.04.02– 2: Superpave Mixture Design Criteria

Notes: ⁽¹⁾ For all mixtures using a WMA technology, the mix temperature shall meet PG binder and WMA manufacturer's recommendations.								
Sieve	S0.25		S0.375		S0.5		S1	
	CONTROL POINTS		CONTROL POINTS		CONTROL POINTS		CONTROL POINTS	
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)
2.0	-	-	-	-	-	-	-	-
1.5	-	-	-	-	-	-	100	-
1.0	-	-	-	-	-	-	90	100
3/4	-	-	-	-	100	-	-	90
1/2	100	-	100	-	90	100	-	-
3/8	97	100	90	100	-	90	-	-
#4	75	90	-	75	-	-	-	-
#8	32	67	32	67	28	58	19	45
#16	-	-	-	-	-	-	-	-
#30	-	-	-	-	-	-	-	-
#50	-	-	-	-	-	-	-	-
#100	-	-	-	-	-	-	-	-
#200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0
VMA (%)	16.5 ± 1		16.0 ± 1		15.0 ± 1		13.0 ± 1	
VA (%)	4.0 ± 1		4.0 ± 1		4.0 ± 1		4.0 ± 1	
Gse	JMF value		JMF value		JMF value		JMF value	
Gmm	JMF ± 0.030		JMF ± 0.030		JMF ± 0.030		JMF ± 0.030	
Dust / binder	0.6 – 1.2		0.6 – 1.2		0.6 – 1.2		0.6 – 1.2	
Mix Temp ⁽¹⁾	265 – 325°F		265 – 325°F		265 – 325°F		265 – 325°F	
TSR	≥ 80%		≥ 80%		≥ 80%		≥ 80%	
T-283 Stripping	Minimal, as determined by the Engineer							

TABLE M.04.02–3: Superpave Consensus Properties Requirements for Combined Aggregate

Notes: (1) 95/90 denotes that a minimum of 95% of the coarse aggregate, by mass, shall have one fractured face and that a minimum of 90% shall have two fractured faces.. (2) Criteria presented as maximum Percent by mass of flat and elongated particles of materials retained on the #4 sieve, determined at 5:1 ratio.					
Traffic Level	Design ESALs (80 kN), Millions	Coarse Aggregate Angularity ⁽¹⁾ ASTM D 5821, Minimum %	Fine Aggregate Angularity AASHTO T 304, Method A Minimum %	Flat and Elongated Particles ⁽²⁾ ASTM D 4791, Maximum %	Sand Equivalent AASHTO T 176, Minimum %
1	< 0.3	55/- -	40	10	40
2	0.3 to < 3.0	75/- -	40	10	40
3	≥ 3.0	95/90	45	10	45

TABLE M.04.02– 4: Superpave Traffic Levels and Design Volumetric Properties

Traffic Level	Design ESALs (million)	Number of Gyration by Superpave Gyrotory Compactor			Percent Density of Gmm from HMA/WMA specimen			Voids Filled with Asphalt (VFA) Based on Nominal mix size – inch			
		Nini	Ndes	Nmax	Nini	Ndes	Nmax	0.25	0.375	0.5	1
1	< 0.3	6	50	75	≤ 91.5	96.0	≤ 98.0	70 - 80	70 - 80	70 - 80	67 - 80
2	0.3 to < 3.0	7	75	115	≤ 90.5	96.0	≤ 98.0	65 - 78	65 - 78	65 - 78	65 - 78
3	≥ 3.0	8	100	160	≤ 90.0	96.0	≤ 98.0	65 - 77	73 - 76	65 - 75	65 - 75

**TABLE M.04.02– 5:
Superpave Minimum Binder Content by Mix Type and Level**

Mix Type	Level	Binder Content Minimum
S0.25	1	5.70
S0.25	2	5.60
S0.25	3	5.50
S0.375	1	5.70
S0.375	2	5.60
S0.375	3	5.50
S0.5	1	5.10
S0.5	2	5.00
S0.5	3	4.90
S1	1	4.60
S1	2	4.50
S1	3	4.40

M.04.03— Production Requirements:

1. Standard Quality Control Plan (QCP) for Production:

The QCP for production shall describe the organization and procedures which the Contractor shall use to administer quality control. The QCP shall include the procedures used to control the production process, to determine when immediate changes to the processes are needed, and to implement the required changes. The QCP must detail the inspection, sampling and testing protocols to be used, and the frequency for each.

Control Chart(s) shall be developed and maintained for critical aspect(s) of the production process as determined by the Contractor. The control chart(s) shall identify the material property, applicable upper and lower control limits, and be updated with current test data. As a minimum, the following quality characteristics shall be included in the control charts: percent passing #4 sieve, percent passing #200 sieve, binder content, air voids, Gmm and VMA. The control chart(s) shall be used as part of the quality control system to document variability of the bituminous concrete production process. The control chart(s) shall be submitted to the Engineer the first day of each month.

The QCP shall also include the name and qualifications of a Quality Control Manager. The Quality Control Manager shall be responsible for the administration of the QCP, including compliance with the plan and any plan modifications.

The Contractor shall submit complete production testing records to the Engineer within 24 hours in a manner acceptable to the Engineer.

The QCP shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor. The QCP must also include a list of sampling & testing methods and frequencies used during production, and the names of all Quality Control personnel and their duties.

Approval of the QCP does not imply any warranty by the Engineer that adherence to the plan will result in production of bituminous concrete that complies with these specifications. The Contractor shall submit any changes to the QCP as work progresses.

2. Acceptance Requirements:

i. General:

Acceptance samples shall be obtained from the hauling vehicles and tested by the Contractor at the Plant.

The Contractor shall submit all acceptance tests results to the Engineer within 24 hours or prior to the next day's production. All acceptance test specimens and supporting documentation must be retained by the Contractor and may be disposed of with the approval of the Engineer. All quality control specimens shall be clearly labeled and separated from the acceptance specimens.

Contractor personnel performing acceptance sampling and testing must be present at the facility prior to, during, and until completion of production, and be certified as a NETTCP HMA Plant Technician or Interim HMA Plant Technician and be in good standing. Production of material for use on State projects must be suspended by the Contractor if such personnel are not present. Technicians found by the Engineer to be non-compliant with NETTCP policies and procedures or Department policies may be removed by the Engineer from participating in the acceptance testing process for Department projects until their actions can be reviewed.

Anytime during production that testing equipment becomes defective or inoperable, production can continue for a maximum of 1 hour. The Contractor shall obtain box sample(s) in accordance with Table M.04.03-2 to satisfy the daily acceptance testing requirement for the quantity shipped to the project. The box sample(s) shall be tested once the equipment issue has been resolved to the satisfaction of the Engineer. Production beyond 1 hour may be considered by the Engineer. Production will not be permitted beyond that day until the subject equipment issue has been resolved.

Verification testing will be performed by the Engineer in accordance with the Department's QA Program for Materials.

Should the Department be unable to verify the Contractor's acceptance test result(s) due to a failure of the Contractor to retain acceptance test specimens or supporting documentation, the Contractor shall review its quality control plan, determine the cause of the nonconformance and

respond in writing within 24 hours to the Engineer describing the corrective action taken. In addition, the Contractor must provide supporting documentation or test results to validate the subject acceptance test result(s). The Engineer may invalidate any adjustments for material corresponding to the subject acceptance test(s). Failure of the Contractor to adequately address quality control issues at a facility may result in suspension of production for Department projects at that facility.

ii. Curb Mix Acceptance Sampling and Testing Procedures:

Curb Mix shall be tested in accordance to Table M.04.03-1 by the Contractor at a frequency of one test per every 250 tons of cumulative production, regardless of the day of production.

TABLE M.04.03 – 1: Curb Mix Acceptance Test Procedures

Protocol	Reference	Description
1	AASHTO T 30(M)	Mechanical Analysis of Extracted Aggregate
2	AASHTO T 168	Sampling of Bituminous Concrete
3	AASHTO T 308	Binder content by Ignition Oven method (adjusted for aggregate correction factor)
4	AASHTO T 209(M)⁽²⁾	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
5	AASHTO T 312⁽²⁾	⁽¹⁾ Superpave Gyrotory molds compacted to N _{des}
6	AASHTO T 329	Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method

Notes: ⁽¹⁾ One set equals two six-inch molds. Molds to be compacted to 50 gyrations

⁽²⁾ Once per year or when requested by the Engineer

a. Determination of Off-Test Status:

- i. Curb Mix is considered “off test” when the test results indicate that any single value for bitumen content or gradation are not within the tolerances shown in Table M.04.02-1. If the mix is “off test”, the Contractor must take immediate actions to correct the deficiency and a new acceptance sample shall be tested on the same day or the following day of production.
- ii. When multiple silos are located at one site, mixture supplied to one project is considered as coming from one source for the purpose of applying the “off test” status.
- iii. The Engineer may cease supply from the plant when test results from three consecutive samples are not within the JMF tolerances or the test results from two consecutive samples not within the control points indicated in Table M.04.02-1 regardless of production date.

b. JMF revisions

- i. If a test indicates that the bitumen content or gradation are outside the tolerances, the Contractor may make a single JMF revision as allowed by the Engineer prior to any additional testing. Consecutive test results outside the requirements of Table M.04.02-1 JMF tolerances may result in rejection of the mixture.
- ii. Any modification to the JMF shall not exceed 50% of the JMF tolerances indicated in Table M.04.02-1 for any given component of the mixture without approval of the Engineer. When such an adjustment is made to the bitumen, the corresponding production percentage of bitumen shall be revised accordingly.

iii. Superpave Mix Acceptance:

a. Sampling and Testing Procedures

Production Lot: The Lot will be defined as one of the following types:

- Non-PWL Production Lot for total estimated project quantities per mixture less than 3500 tons: All mixture placed during a single continuous paving operation.
- PWL Production Lot for total estimated project quantities per mixture of 3500 tons or more: Each 3500 tons of mixture produced within 30 calendar days.

Production Sub Lot:

- For Non-PWL: As defined in Table M.04.03 – 2
- For PWL: 500 tons (the last Sub Lot may be less than 500 tons)

Partial Production Lots (For PWL only): A Lot with less than 3500 tons due to:

- completion of the Course
- a Job Mix Formula revision due to changes in:
 - o cold feed percentages over 5%
 - o target combined gradation over 5%
 - o target binder over 0.15%
 - o any component specific gravity
- a Lot spanning 30 calendar days

The acceptance sample(s) location(s) shall be selected using stratified – random sampling in accordance with ASTM D 3665 based on:

- the total daily estimated tons of production for non-PWL lots, or
- the total lot size for PWL lots.

One acceptance sample shall be obtained and tested per Sub Lot. The Engineer may direct that additional acceptance samples be obtained. For non-PWL lots, one acceptance test shall always be performed in the last sub-lot based on actual tons of material produced.

For Non-PWL lots, quantities of the same mixture per plant may be combined daily for multiple State projects to determine the number of sub lots.

The payment adjustment will be calculated as described in 4.06.

**TABLE M.04.03 – 2:
Superpave Acceptance Testing Frequency per Type/Level/Plant for Non-PWL lots**

Daily quantity produced in tons (lot)	Number of Sub Lots/Tests
0 to 150	0, Unless requested by the Engineer
151 to 500	1
501 to 1,000	2
1,001 to 2,000	3
2,001 or greater	1 per 500 tons or portions thereof

The following test procedures shall be used for acceptance:

TABLE M.04.03– 3: Superpave Acceptance Testing Procedures

Protocol	Procedure	Description
1	AASHTO T 168	Sampling of bituminous concrete
2	AASHTO R 47	Reducing samples to testing size
3	AASHTO T 308	Binder content by ignition oven method (adjusted for aggregate correction factor)
4	AASHTO T 30(M)	Gradation of extracted aggregate for bituminous concrete mixture
5	AASHTO T 312	⁽¹⁾ Superpave gyratory molds compacted to N_{des}
6	AASHTO T 166	⁽²⁾ Bulk specific gravity of bituminous concrete
7	AASHTO R 35	⁽²⁾ Air voids, VMA
8	AASHTO T 209(M)	Maximum specific gravity of bituminous concrete (average of two tests)
9	AASHTO T 329	Moisture content of bituminous concrete

Notes: ⁽¹⁾ One set equals two six-inch molds. Molds to be compacted to N_{max} for PPTs and to N_{des} for production testing. The first subplot of the year will be compacted to N_{max}

⁽²⁾ Average value of one set of six-inch molds.

If the average ignition oven corrected binder content differs by 0.3% or more from the average of the Plant ticket binder content in five (5) consecutive tests regardless of the production date (moving average), the Contractor shall immediately investigate, determine an assignable cause and correct the issue. When two consecutive moving average differences are 0.3% or more and no assignable cause has been established, the Engineer may require a new ignition oven aggregate correction factor to be performed or to adjust the current factor by the average of the differences between the corrected binder content and production Plant ticket for the last five (5) acceptance results.

The test specimen must be placed in an ignition oven for testing in accordance with AASHTO T 308 within thirty minutes of being obtained from the hauling vehicle and the test shall start immediately after.

The Contractor shall perform TSR testing within 30 days after the start of production for all design levels of HMA- and PMA- S0.5 plant-produced mixtures, in accordance with AASHTO T 283(M). The TSR test shall be performed at an AMRL certified laboratory by NETTCP certified technicians. The compacted specimens may be fabricated at the Plant and then tested at an AMRL accredited facility. The test results and specimens shall be submitted to the Engineer for review. Superpave mixtures that require anti-strip additives (either liquid or mineral) shall continue to meet all requirements specified herein for binder and bituminous concrete. The Contractor shall submit the name, manufacturer, percent used, technical datasheet and SDS for the anti-strip additive (if applicable) to the Engineer.

b. Determination of Off-Test Status:

- i. Superpave mixes shall be considered “*off test*” when any Control Point Sieve, binder content, VA, VMA, or Gmm value is outside of the limits specified in Table M.04.03-4 or the target binder content at the Plant is below the minimum binder content stated in Table M.04.02-5. Note that further testing of samples or portions of samples not initially tested for this purpose cannot be used to change the status.
- ii. Any time the bituminous concrete mixture is considered Off-test:
 1. The Contractor shall notify the Engineer when the Plant is “*off test*” for any mix design that is delivered to the project in any production day. When multiple silos are located at one site, mixture supplied to one project is considered as coming from one source for the purpose of applying the “*off test*” determination.
 2. The Contractor must take immediate actions to correct the deficiency, minimize “*off test*” production to the project, and obtain an additional Process Control (PC) test after any corrective action to verify production is in conformance to the specifications. A PC test will not be used for acceptance and is solely for the use of the Contractor in its quality control process.

c. Cessation of Supply for Superpave Mixtures in non-PWL lots:

A mixture shall not be used on Department’s projects when it is “off test” for:

- i. four (4) consecutive tests in any combination of VA, VMA or Gmm, regardless of date of production, or,
- ii. two (2) consecutive tests in the Control Point sieves in one production shift.

As a result of cessation of supply, the mix status will be changed to PPT.

d. JMF revisions:

JMF revisions are only permitted prior to or after a production shift. A JMF revision is effective from the time it was submitted and is not retroactive to the previous test(s).

JMF revisions shall be justified by a documented trend of test results.

Revisions to aggregate and RAP specific gravities are only permitted when testing is performed at an AMRL certified laboratory by NETTCP certified technicians.

A JMF revision is required when the Plant target RAP and/or bin percentage deviates by more than 5% and/or the Plant target binder content deviates by more than 0.15% from the active JMF.

TABLE M.04.03– 4: Superpave Mixture Production Requirements

Notes: (1) 300°F minimum after October 15. (2) JMF tolerances shall be defined as the limits for production compliance. (3) For all mixtures with WMA technology, changes to the minimum aggregate temperature will require Engineer's approval. (4) For PMA and mixtures with WMA technology, the mix temperature shall meet manufacturer's recommendations. In addition, for all mixtures with WMA technology, the maximum mix temperature shall not exceed 325°F.(5) 0.4 for PWL lots (6) 1.3 for PWL lots (7) 1.2 for PWL lots									
	S0.25		S0.375		S0.5		S1		Tolerances
Sieve	CONTROL POINTS		CONTROL POINTS		CONTROL POINTS		CONTROL POINTS		From JMF Targets (2)
inches	Min(%)	Max(%)	Min(%)	Max(%)	Min(%)	Max(%)	Min(%)	Max(%)	±Tol
1.5	-	-	-	-	-	-	100	-	
1.0	-	-	-	-	-	-	90	100	
3/4	-	-	-	-	100	-	-	90	
1/2	100	-	100	-	90	100	-	-	
3/8	97	100	90	100	-	90	-	-	
#4	75	90	-	75	-	-	-	-	
#8	32	67	32	67	28	58	19	45	
#16	-	-	-	-	-	-	-	-	
#200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0	
Pb	JMF value		JMF value		JMF value		JMF value		0.3 ⁽⁵⁾
VMA (%)	16.5		16.0		15.0		13.0		1.0 ⁽⁶⁾
VA (%)	4.0		4.0		4.0		4.0		1.0 ⁽⁷⁾
Gmm	JMF value		JMF value		JMF value		JMF value		0.030
Agg. Temp ⁽³⁾	280 – 350F		280 – 350F		280 – 350F		280 – 350F		
Mix Temp ⁽⁴⁾	265 – 325 F ⁽¹⁾		265 – 325 F ⁽¹⁾		265 – 325 F ⁽¹⁾		265 – 325 F ⁽¹⁾		
Prod. TSR	N/A		N/A		≥80%		N/A		
T-283 Stripping	N/A		N/A		Minimal as determined by the Engineer		N/A		

**TABLE M.04.03– 5:
Superpave Traffic Levels and Design Volumetric Properties**

Traffic Level	Design ESALs	Number of Gyration by Superpave Gyrotory Compactor	
	(million)	Nini	Ndes
1	< 0.3	6	50
2	0.3 to < 3.0	7	75
3	≥3.0	8	100

**TABLE M.04.03-6:
Modifications to Standard AASHTO and ASTM Test Specifications and Procedures**

AASHTO Standard Method of Test	
Reference	Modification
T 30	Section 7.2 thru 7.4 Samples are not routinely washed for production testing
T 168	<p>Samples are taken at one point in the pile. Samples from a hauling vehicle are taken from only one point instead of three as specified.</p> <p>Selection of Samples: Sampling is equally important as the testing, and the sampler shall use every precaution to obtain samples that are truly representative of the bituminous mixture.</p> <p>Box Samples: In order to enhance the rate of processing samples taken in the field by construction or maintenance personnel the samples will be tested in the order received and data processed to be determine conformance to material specifications and to prioritize inspections by laboratory personnel.</p>
T 195	Section 4.3 only one truck load of mixture is sampled. Samples are taken from opposite sides of the load.
T 209	<p>Section 7.2 The average of two bowls is used proportionally in order to satisfy minimum mass requirements.</p> <p>8.3 Omit Pycnometer method.</p>
T 283	When foaming technology is used, the material used for the fabrication of the specimens shall be cooled to room temperature, and then reheated to the manufactures recommended compaction temperature prior to fabrication of the specimens.

AASHTO Standard Recommended Practices	
Reference	Modification
R 26	<p>All laboratory technician(s) responsible for testing PG-binders be certified or Interim Qualified by the New England Transportation Technician Certification Program (NETTCP) as a PG Asphalt Binder Lab Technician.</p> <p>All laboratories testing binders for the Department are required to be accredited by the AASHTO Materials Reference Laboratory (AMRL).</p> <p>Sources interested in being approved to supply PG-binders to the Department by use of an “in-line blending system,” must record properties of blended material, and additives used.</p> <p>Each source of supply of PG-binder must indicate that the binders contain no additives used to modify or enhance their performance properties. Binders that are manufactured using additives, modifiers, extenders etc., shall disclose the type of additive, percentage and any handling specifications/limitations required.</p> <p>All AASHTO M 320 references shall be replaced with AASHTO M 332.</p> <p>Once a month, one split sample and test results for each asphalt binder grade and each lot shall be submitted by the PG binder supplier to the Department’s Central Lab. Material remaining in a certified lot shall be re-certified no later than 30 days after initial certification. Each April and September, the PG binder supplier shall submit test results for two (2) BBR tests at two (2) different temperatures in accordance with AASHTO R 29.</p>

SECTION M.06 – METALS

Section M.06 is amended as follows:

M.06.01—Reinforcing Steel:

Delete the entire last paragraph in Subarticle 1 "Bar Reinforcement" that reads: "Prior to the incorporation... ..and type of bar reinforcement."

M.06.02—Structural Steel:

Revise Subarticle 2 "Anchor Bolts" as follows:

"(a) Anchor bolt assemblies shall meet the requirements of ASTM F1554, and the grade shall be as specified on the plans. All components of the bolt assembly shall be galvanized in accordance with ASTM F2329."

Replace Subarticle 3 "High Strength Bolts" with the following:

" **3. High-Strength Bolts:** High-strength bolts, including suitable nuts and hardened washers, shall meet the following requirements:

- (a) High-strength bolts shall meet the requirements of ASTM F3125 Grade A325 or ASTM F3125 Grade A490 as shown on the plans. High-strength bolts used with coated steel shall be mechanically galvanized, unless otherwise specified. High-strength bolts used with uncoated weathering grades of steel shall be Type 3.

Nuts for ASTM F3125 Grade A325 bolts shall meet the requirements of ASTM A563, Grades DH, DH3, C, C3 and D. Where galvanized high-strength bolts are used, the nuts shall be galvanized, heat-treated Grade DH. Where Type 3 high-strength bolts are used, the nuts shall be Grade C3 or DH3.

Nuts for ASTM F3125 Grade A490 bolts shall meet the requirements of ASTM A563, Grade DH. Where Type 3 high-strength bolts are used, the nuts shall be Grade DH3.

All galvanized nuts shall be lubricated with a lubricant containing a visible dye of any color that contrasts with the color of the galvanizing. Black bolts must be oily to the touch when delivered and installed.

Circular flat and square or rectangular beveled, hardened steel washers shall meet the requirements of ASTM F436. Unless otherwise specified, galvanized washers shall be furnished when galvanized high-strength bolts are specified, and washers with atmospheric corrosion resistance and weathering characteristics shall be furnished when Type 3 high-strength bolts are specified.

Compressible-washer-type direct tension indicator washers, used in conjunction with high-strength bolts, shall meet the requirements of ASTM F959. Where galvanized high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695,

Class 55. Where Type 3 high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695, Class 55 and coated with epoxy.

- (b) Identifying Marks:** ASTM F3125 Grade A325 for bolts and the specifications referenced therein for nuts require that bolts and nuts manufactured to the specification be identified by specific markings on the top of the bolt head and on one face of the nut. Markings may be raised or depressed at the manufacturer's option and shall be visible after coating if coating is required. Head markings must identify the grade by the symbol "A325," the manufacturer and the type, if Type 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "A325." Other washer markings must identify the manufacturer and if Type 3, the type.

ASTM F3125 Grade A490 for bolts and the specifications referenced therein for nuts require that bolts and nuts manufactured to the specifications be identified by specific markings on the top of the bolt head and on one face of the nut. Markings may be raised or depressed at the manufacturer's option and shall be visible after coating if coating is required. Head markings must identify the grade by the symbol "A490," the manufacturer and the type, if Type 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "A490." Other washer markings must identify the manufacturer and if Type 3, the type.

ASTM F3125 Grade A325 and ASTM F3125 Grade A490 bolt lengths up to 4 times the diameter which are fully threaded but which are not required to be fully threaded by the relevant ASME standard shall be marked with a "T" immediately after the grade designation, for example "A325T." Bolts with any other non-standard dimensions, including thread length, shall be marked with an "S" immediately after the grade designation, for example "A325S." All other markings, if used, such as a private label distributor's mark shall also be separate and distinct.

- (c) Dimensions:** Bolt and nut dimensions shall meet the requirements for Heavy Hexagon Structural Bolts and for Heavy Semi-Finished Hexagon Nuts given in ASME Standard B18.2.6.
- (d) Galvanized Bolts:** Galvanized bolts shall meet the requirements of ASTM F3125 Grade A325, Type 1. The bolts shall be hot-dip galvanized in accordance with ASTM F2329, to a thickness of 50 µm or mechanically galvanized in accordance with ASTM B695, Class 55. Bolts, nuts, and washers of any assembly shall be galvanized by the same process. The nuts shall be overtapped to the minimum amount required for the fastener assembly, and shall be lubricated with a lubricant containing a visible dye so a visual check can be made for the lubricant at the time of field installation. Galvanized bolts shall be tension tested after galvanizing. ASTM F3125 Grade A490 bolts shall be uncoated or shall be coated in accordance with either ASTM F1136 Grade 3 or ASTM F2833 Grade 1.
- (e) Test Requirements:** The maximum hardness of ASTM F3125 Grade A325 bolts shall be 34 HRC. The maximum hardness of ASTM F3125 Grade A490 bolts shall be 38 HRC. Plain, ungalvanized nuts shall have a minimum hardness of 89 HRB.
- Proof load tests, in accordance with the requirements of ASTM F606 Method 1, shall be required for the bolts. Wedge tests of full-size bolts are required in accordance with Section 10.1 of ASTM F3125. Galvanized bolts shall be wedge tested after galvanizing.

Proof load tests of ASTM A563 are required for nuts. Proof load tests for nuts used with galvanized bolts shall be performed after galvanizing, overtapping and lubricating.

Rotational-capacity tests are required and shall be performed on all plain or galvanized (after galvanizing) bolt, nut and washer assemblies by the manufacturer or distributor prior to shipping and by the Contractor at the Site.

The thickness of galvanizing on bolts, nuts and washers shall be measured. On bolts, it shall be measured on the wrench flats or on top of the bolt head, and on nuts it shall be measured on the wrench flats.

- (f) **Certified Test Reports and Materials Certificates:** The Contractor shall submit notarized copies of Certified Test Reports and Materials Certificates in accordance with Article 1.06.07 for fastener assemblies. In addition the Certified Test Reports and Materials Certificates shall include the following:
1. Mill test reports shall indicate the place where the material was melted and manufactured.
 2. Test reports for proof load tests, wedge tests, and rotational-capacity tests shall indicate where the tests were performed, date of tests, location of where the components were manufactured and lot numbers.
 3. The test report for galvanized components shall indicate the thickness of the galvanizing.
- (g) **Material Samples:** Prior to incorporation into the work, the Contractor shall submit samples of the bolt assemblies to the Engineer for testing in accordance with the latest edition of the "[Materials Testing Manual](#) (Chapter 8, Minimum Schedule for Acceptance Testing)." Samples shall be submitted for each diameter, length, material designation, grade, coating and manufacturer of bolt assembly."

M.06.03—Galvanizing:

Replace the entire subarticle with the following:

" **M.06.03—Galvanizing:** Unless otherwise specified on the plans or in the special provisions, the zinc coating on all iron and steel materials, other than wire, shall meet the requirements of ASTM A123, A153 or F2329, whichever shall apply.

When mechanical galvanizing is used it shall meet the requirements of ASTM B695 Class 55."

SECTION M.10 – RAILING AND FENCE

M.10.02 – Metal Beam-Type Rail and Anchorages:

9. Plastic Blockouts:

Replace *NCHRP Report 350* with *MASH*

ON-THE-JOB TRAINING (OJT) WORKFORCE DEVELOPMENT PILOT

Description

To provide construction industry related job opportunities to minorities, women and economically disadvantaged individuals; and to increase the likelihood of a diverse and inclusive workforce on Connecticut Department of Transportation (ConnDOT) projects.

All contractors (existing and newcomers) will be automatically placed in the Workforce Development Pilot. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level for new projects. Instead, these requirements will be applicable on an annual basis for each contractor performing work on ConnDOT projects.

The OJT Workforce Development Pilot will allow a contractor to train employees on Federal, State and privately funded projects located in Connecticut. However, contractors should give priority to training employees on ConnDOT Federal Aid funded projects.

Funding

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal aid projects will be allocated from the ½ of 1% provided for OJT funding, and will be based on hours trained, not to exceed a maximum of \$25,000.00 per year; per contractor.

Minorities and Women

Developing, training and upgrading of minorities, women and economically disadvantaged individuals toward journeyman level status is the primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority, women and economically disadvantaged individuals as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Coordinator, will assign training goals for a calendar year based on the contractor's past two year's activities and the contractor's anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time, the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from one (1) to six (6) per

contractor per calendar year. Each January, a summary of the trainees required and the OJT Workforce Development Pilot package will be sent to participating contractors. The number of trainees assigned to each contractor in the summary will increase proportionately not to exceed 6, as shown in the following table. This package will also be provided to contractors as they become newly eligible for the OJT Workforce Development Pilot throughout the remainder of the year. Projects awarded after September 30 will be included in the following year's Program.

The dollar thresholds for training assignments are as follows:

\$4.5 – 8 million=	1 trainee
\$ 9 – 15 million=	2 trainees
\$16 – 23 million=	3 trainees
\$24 – 30 million=	4 trainees
\$31 – 40 million=	5 trainees
\$41 – and above=	6 trainees

Training Classifications

Preference shall be given to providing training in the following skilled work classifications. However, the classifications established are not all-inclusive:

Equipment Operators	Electricians
Laborers	Painters
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has on file common training classifications and their respective training requirements; that may be used by the contractors. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and the number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

Where feasible, 25% percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment in the program and submit all required reports documenting company compliance under these contract requirements. These documents and any other information shall be submitted to the OJT Program Coordinator as requested.

Upon the trainee's completion and graduation from the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

In order to determine the continued effectiveness of the OJT Program in Connecticut, the department will periodically conduct personal interviews with current trainees and may survey recent graduates of the program. This enables the OJT Program Coordinator to modify and improve the program as necessary. Trainee interviews are generally conducted at the job site to ensure that the trainees' work and training is consistent with the approved training program.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no case, will the trainee be paid less than the prevailing rate for general laborer as shown in the contract wage decision (must be approved by the Department of Labor).

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee currently enrolled or who becomes enrolled in the approved training program and providing they receive the required training under the specific training program. Trainees will be allowed to be transferred between projects if required by the Contractor's schedule and workload. The OJT Program Coordinator must be notified of transfers within five (5) days of the transfer or reassignments by email (Phylisha.Coles@ct.gov).

Where a contractor does not or cannot achieve its annual training goal with female or minority trainees, they must produce adequate Good Faith Efforts documentation. Good Faith Efforts are those designed to achieve equal opportunity through positive, aggressive, and continuous result-oriented measures. 23 CFR § 230.409(g) (4). Contractors should request minorities and females from unions when minorities and females are underrepresented in the contractor's workforce.

Whenever a contractor requests ConnDOT approval of someone other than a minority or female, the contractor must submit documented evidence of its Good Faith Efforts to fill that position with a minority or female. When a non-minority male is accepted, a contractor must continue to attempt to meet its remaining annual training goals with females and minorities.

Where a contractor has neither attained its goal nor submitted adequate Good Faith Efforts documentation, ConnDOT will issue a letter of non-compliance. Within thirty (30) days of receiving the letter of non-compliance, the contractor must submit a written Corrective Action Plan (CAP) outlining the steps that it will take to remedy the non-compliance. The CAP must be approved by ConnDOT. Failure to comply with the CAP may result in your firm being found non-responsive for future projects.

Measurement and Payment

Optional reimbursement will be made to the contractor for providing the required training under this special provision on ConnDOT Federal6Aid funded projects only.

Contractor will be reimbursed at \$0.80 for each hour of training given to an employee in accordance with an approved training or apprenticeship program. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement.

Reimbursement for training is made annually or upon the trainees completion and not on a monthly basis. No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the Contractor.

Program reimbursements will be made directly to the prime contractor on an annual basis. To request reimbursement, prime contractors must complete the Voucher for OJT Workforce Development Pilot Hourly Reimbursement for each trainee in the OJT Program. This form is included in the OJT Workforce Development Pilot package and is available on the Department's web site at:

www.ct.gov/dot

The completed form must be submitted to the Office of Contract Compliance for approval. The form is due on the 15th day of January for each trainee currently enrolled and for hours worked on ConnDOT Federal6Aid funded projects only.

D.B.E. SUBCONTRACTORS AND MATERIAL SUPPLIERS OR MANUFACTURERS

January 2013

I. ABBREVIATIONS AND DEFINITIONS AS USED IN THIS SPECIAL PROVISION

A. *CTDOT* means the Connecticut Department of Transportation.

B. *USDOT* means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration (“FHWA”), the Federal Transit Administration (“FTA”), and the Federal Aviation Administration (“FAA”).

C. *Broker* means a party acting as an agent for others in negotiating Contracts, Agreements, purchases, sales, etc., in return for a fee or commission.

D. *Contract, Agreement or Subcontract* means a legally binding relationship obligating a seller to furnish supplies or services (including but not limited to, construction and professional services) and the buyer to pay for them. For the purposes of this provision, a lease for equipment or products is also considered to be a Contract.

E. *Contractor* means a consultant, second party or any other entity under Contract to do business with CTDOT or, as the context may require, with another Contractor.

F. *Disadvantaged Business Enterprise (“DBE”)* means a for profit small business concern:

1. That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and
2. Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it; and
3. Certified by CTDOT under Title 49 of the Code of Federal Regulations, Part 26, (Title 49 CFR Part 23 of the Code of Federal Regulations for Participation of Disadvantaged Business Enterprise in Airport Concessions)

G. *USDOT-assisted Contract* means any Contract between CTDOT and a Contractor (at any tier) funded in whole or in part with USDOT financial assistance.

H. *Good Faith Efforts (“GFE”)* means all necessary and reasonable steps to achieve a DBE goal or other requirement which by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

I. *Small Business Concern* means, with respect to firms seeking to participate as DBEs in USDOT-assisted Contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration (“SBA”) regulations implementing it (13 CFR Part 121) that also does not exceed the cap on average annual gross receipts in 49 CFR Part 26, Section 26.65(b).

J. *Socially and Economically Disadvantaged Individual* means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

1. Any individual who CTDOT finds, on a case-by-case basis, to be a socially and economically disadvantaged individual.
2. Any individuals in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:
 - “Black Americans”, which includes persons having origins in any of the Black racial groups of Africa;
 - “Hispanic Americans”, which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - “Native Americans”, which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians.
 - “Asian-Pacific Americans”, which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, or Federated States of Micronesia;
 - “Subcontinent Asian Americans”, which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
 - Women;
 - Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

K. *Commercially Useful Function (“CUF”)* means the DBE is responsible for the execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved with its own forces and equipment. The DBE must be responsible for procuring, determining quantity, negotiating price, determining quality and paying for all materials (where applicable) associated with their work. The DBE must also perform at least 30% of the total cost of its contract with its own workforce.

II. ADMINISTRATIVE REQUIREMENTS

A. General Requirements

A DBE goal percentage equaling **8.5** percent (%) of the Contract value has been established for this Contract. This DBE goal percentage will be applied to the final Contract value to ultimately determine the required DBE goal. If additional work is required, DBE firms should be provided the appropriate opportunities to achieve the required DBE goal.

In order to receive credit toward the Contract DBE goal, the firms utilized as DBE subcontractors or suppliers must be certified as DBEs in the type of work to be counted for credit by CTDOT’s Office of Contract Compliance prior to the date of the execution of the subcontract. Neither CTDOT nor the State of Connecticut’s Unified Certification Program (UCP) makes any representation as to any DBE’s technical or financial ability to perform the work. Prime contractors are solely responsible for performing due diligence in hiring DBE subcontractors.

All DBEs shall perform a CUF for the work that is assigned to them. The Contractor shall monitor and ensure that the DBE is in compliance with this requirement. The Connecticut DBE UPC Directory of certified firms can

be found on the CTDOT website <http://www.ct.gov/dot>. The directory lists certified DBE firms with a description of services that they are certified to perform. Only work identified in this listing may be counted towards the project's DBE goal. A DBE firm may request to have services added at any time by contacting CTDOT's Office of Contract Compliance. No credit shall be counted for any DBE firm found not to be performing a CUF.

Once a Contract is awarded, all DBEs that were listed on the pre-award DBE commitment document must be utilized. The Contractor is obligated to provide the value and items of the work originally established in the pre-award documentation to the DBE firms listed in the pre-award documentation. Any modifications to the pre-award commitment must follow the procedure established in Section II-C.

The Contractor shall designate a liaison officer who will administer the Contractor's DBE program. Upon execution of this Contract, the name of the liaison officer shall be furnished in writing to CTDOT's unit administering the Contract, CTDOT's Office of Contract Compliance and CTDOT's Office of Construction ("OOC"). Contact information for the designated liaison officer shall be furnished no later than the scheduled date for the pre-construction meeting.

The Contractor shall submit a bi-monthly report to the appropriate CTDOT unit administering the Contract. This report shall indicate what work has been performed to date, with the dollars paid and percentage of DBE goal completed.

Verified payments made to DBEs shall be included in this bi-monthly report. A sample form is included on the CTDOT website.

In addition, the report shall include:

1. A projected time frame of when the remaining work is to be completed for each DBE.
2. A statement by the Contractor either confirming that the approved DBEs are on schedule to meet the Contract goal, or that the Contractor is actively pursuing a GFE.
3. If retainage is specified in the Contract specifications, then a statement of certification that the subcontractors' retainage is being released in accordance with 1.08.01 (Revised or supplemented).

Failure by the Contractor to provide the required reports may result in CTDOT withholding an amount equal to one percent (1%) of the monthly estimate until the required documentation is received.

The Contractor shall receive DBE credit when a DBE, or any combination of DBEs, perform work under the Contract in accordance with this specification.

Only work actually performed by and/or services provided by DBEs which are certified for such work and/or services, as verified by CTDOT, can be counted toward the DBE goal. Supplies and equipment a DBE purchases or leases from the Contractor or its affiliate cannot be counted toward the goal.

Monitoring of the CUF will occur by CTDOT throughout the life of the project. If it is unclear that the DBE is performing the work specified in its subcontract with the prime Contractor, further review may be required. If it is determined that the DBE is not performing a CUF, then the work performed by that DBE will not be counted towards the DBE goal percentage.

B. Subcontract Requirements

The Contractor shall submit to CTDOT's OOC all requests for subcontractor approvals on the standard CLA-12 forms provided by CTDOT. The dollar amount and items of work identified on the CLA-12 form must, at minimum, equal the dollar value submitted in the pre-award commitment. CLA-12 forms can be found at <http://www.ct.gov/dot/construction> under the "Subcontractor Approval" section. All DBE subcontractors must be identified on the CLA-12 form, regardless of whether they are being utilized to meet a Contract goal percentage. A copy of the legal Contract between the Contractor and the DBE subcontractor/supplier, a copy of the Title VI Contractor Assurances and a copy of the Required Contract Provision for Federal Aid Construction Contracts (Form FHWA-1273) (Federal Highway Administration projects only) must be submitted along with a request for subcontractor approval. These attachments cannot be substituted by reference.

If retainage is specified in the Contract specifications, then the subcontract agreement must contain a prompt payment mechanism that acts in accordance with Article 1.08.01 (Revised or supplemented).

If the Contract specifications do not contain a retainage clause, the Contractor shall not include a retainage clause in any subcontract agreement, and in this case, if a Contractor does include a retainage clause, it shall be deemed unenforceable.

In addition, the following documents are to be included with the CLA-12, if applicable:

- An explanation indicating who will purchase material.
- A statement explaining any method or arrangement for utilization of the Contractor's equipment.

The subcontract must show items of work to be performed, unit prices and, if a partial item, the work involved by all parties. If the subcontract items of work or unit prices are modified, the procedure established in Section II-C must be followed.

Should a DBE subcontractor further sublet items of work assigned to it, only lower tier subcontractors who are certified as a DBE firm will be counted toward the DBE goal. If the lower tier subcontractor is a non-DBE firm, the value of the work performed by that firm will not be counted as credit toward the DBE goal.

The use of joint checks between a DBE firm and the Contractor is acceptable, provided that written approval is received from the OOC prior to the issuance of any joint check. Should it become necessary to issue a joint check between the DBE firm and the Contractor to purchase materials, the DBE firm must be responsible for negotiating the cost, determining the quality and quantity, ordering the material and installing (where applicable), and administering the payment to the supplier. The Contractor should not make payment directly to suppliers.

Each subcontract the Contractor signs with a subcontractor must contain the following assurance:

"The subcontractor/supplier/manufacture shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor/subcontractor/supplier/manufacture to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate."

C. Modification to Pre-Award Commitment

Contractors may not terminate for convenience any DBE subcontractor or supplier that was listed on the pre-award DBE commitment without prior written approval of the OOC. This includes, but is not limited to, instances

in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Prior to approval, the Contractor must demonstrate to the satisfaction of the OOC, that it has good cause, as found in 49CFR Part 26.53 (f)(3), for termination of the DBE firm.

Before transmitting its request for approval to terminate pre-award DBE firms to the OOC, the Contractor must give written notice to the DBE subcontractor and include a copy to the OOC of its notice to terminate and/or substitute, and the reason for the notice.

The Contractor must provide five (5) days for the affected DBE firm to respond. This affords the DBE firm the opportunity to advise the OOC and the Contractor of any reasons why it objects to the termination of its subcontract and why the OOC should not approve the Contractor's action.

Once the Contract is awarded, should there be any amendments or modifications of the approved pre-award DBE submission other than termination of a DBE firm, the Contractor shall follow the procedure below that best meets the criteria associated with the reason for modification:

1. If the change is due to a scope of work revision or non-routine quantity revision by CTDOT, the Contractor must notify CTDOT's OOC in writing or via electronic mail that their DBE participation on the project may be impacted as soon as they are aware of the change. In this case, a release of work from the DBE firm may not be required; however the Contractor must concurrently notify the DBE firm in writing, and copy the OOC for inclusion in the project DBE file. This does not relieve the Contractor of its obligation to meet the Contract specified DBE goal, or of any other responsibility found in this specification.
2. If the change is due to a factor other than a CTDOT directive, a request for approval in writing or via electronic mail of the modification from the OOC must be submitted, along with an explanation of the change(s), prior to the commencement of work. The Contractor must also obtain a letter of release from the originally named DBE indicating their concurrence with the change, and the reason(s) for their inability to perform the work. In the event a release cannot be obtained, the Contractor must document all efforts made to obtain it.
3. In the event a DBE firm that was listed in the pre-award documents is **unable** or **unwilling** to perform the work assigned, the Contractor shall:
 - Notify the OOC Division Chief immediately and make efforts to obtain a release of work from the firm.
 - Submit documentation that will provide a basis for the change to the OOC for review and approval prior to the implementation of the change.
 - Use the DBE Directory to identify and contact firms certified to perform the type of work that was assigned to the unable or unwilling DBE firm. The Contractor should also contact CTDOT's Office of Contract Compliance for assistance in locating additional DBE firms to the extent needed to meet the contract goal.

Should a DBE subcontractor be terminated or fail to complete work on the Contract for any reason, the Contractor must make a GFE to find another DBE subcontractor to substitute for the original DBE. The DBE replacement shall be given every opportunity to perform at least the same amount of work under the Contract as the original DBE subcontractor.

If the Contractor is unable to find a DBE replacement:

- The Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE. (Refer to GFE in Section III.)
- The Contractor must demonstrate that the originally named DBE, who is unable or unwilling to perform the work assigned, is in default of its subcontract, or identify other issues that affected the DBE firm's ability to perform the assigned work. **The Contractor's ability to negotiate a more advantageous agreement with another subcontractor is not a valid basis for change.**

III. GOOD FAITH EFFORTS

The DBE goal is **NOT** reduced or waived for projects where the Contractor receives a Pre-Award GFE determination from the Office of Contract Compliance prior to the award of the Contract. It remains the responsibility of the Contractor to make a continuing GFE to achieve the specified Contract DBE goal. The Contractor shall pursue every available opportunity to obtain additional DBE firms and document all efforts made in such attempts.

At the completion of all Contract work, the Contractor shall submit a final report to CTDOT's unit administering the Contract indicating the work done by and the dollars paid to DBEs. Only verified payments made to DBEs performing a CUF will be counted towards the Contract goal.

Goal attainment is based on the total Contract value, which includes all construction orders created during the Contract. If the Contractor does not achieve the specified Contract goal for DBE participation or has not provided the value of work to the DBE firms originally committed to in the pre-award submission, the Contractor shall submit documentation to CTDOT's unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

A GFE should consist of the following, where applicable (CTDOT reserves the right to request additional information):

1. A detailed statement of the efforts made to replace an unable or unwilling DBE firm, and a description of any additional subcontracting opportunities that were identified and offered to DBE firms in order to increase the likelihood of achieving the stated goal.
2. A detailed statement, including documentation of the efforts made to contact and solicit bids from certified DBEs, including the names, addresses, and telephone numbers of each DBE firm contacted; the date of contact and a description of the information provided to each DBE regarding the scope of services and anticipated time schedule of work items proposed to be subcontracted and the response from firms contacted.
3. Provide a detailed explanation for each DBE that submitted a subcontract proposal which the Contractor considered to be unacceptable stating the reason(s) for this conclusion.
4. Provide documentation, if any, to support contacts made with CTDOT requesting assistance in satisfying the specified Contract goal.

5. Provide documentation of all other efforts undertaken by the Contractor to meet the defined goal. Additional documentation of efforts made to obtain DBE firms may include but will not be limited to:
 - Negotiations held in good faith with interested DBE firms, not rejecting them without sound reasons.
 - Written notice provided to a reasonable number of specific DBE firms in sufficient time to allow effective participation.
 - Those portions of work that could be performed by readily available DBE firms.

In instances where the Contractor can adequately document or substantiate its GFE and compliance with other DBE Program requirements, the Contractor will have satisfied the DBE requirement and no administrative remedies will be imposed.

IV. PROJECT COMPLETION

At the completion of all Contract work, the Contractor shall:

1. Submit a final report to CTDOT's unit administering the Contract indicating the work done by, and the dollars paid to DBEs.
2. Submit verified payments made to all DBE subcontractors for the work that was completed.
3. Submit documentation detailing any changes to the DBE pre-award subcontractors that have not met the original DBE pre-award commitment, including copies of the Department's approvals of those changes.
4. Retain all records for a period of three (3) years following acceptance by CTDOT of the Contract and those records shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and Federal agencies. If any litigation, claim, or audit is started before the expiration of the three (3) year period, the records shall be retained until all litigation, claims, or audit findings involving the records are resolved.

If the Contractor does not achieve the specified Contract goal for DBE participation in addition to meeting the dollar value committed to the DBE subcontractors identified in the pre-award commitment, the Contractor shall submit documentation to CTDOT's unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

V. SHORTFALLS

A. Failure to meet DBE goals

As specified in (II-A) above, attainment of the Contract DBE goal is based on the final Contract value. The Contractor is expected to achieve the amount of DBE participation originally committed to at the time of award; however, additional efforts must be made to provide opportunities to DBE firms in the event a Contract's original value is increased during the life of the Contract.

The Contractor is expected to utilize the DBE subcontractors originally committed in the DBE pre-award documentation for the work and dollar value that was originally assigned.

If a DBE is terminated or is unable or unwilling to complete its work on a Contract, the Contractor shall make a GFE to replace that DBE with another certified DBE to meet the Contract goal.

The Contractor shall immediately notify the OOC of the DBE's inability or unwillingness to perform, and provide reasonable documentation and make efforts to obtain a release of work from the firm.

If the Contractor is unable to find a DBE replacement, then the Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE.

When a DBE is unable or unwilling to perform, or is terminated for just cause, the Contractor shall make a GFE to find other DBE opportunities to increase DBE participation to the extent necessary to at least satisfy the Contract goal.

For any DBE pre-award subcontractor that has been released appropriately from the project, no remedy will be assessed, provided that the Contractor has met the criteria described in Section II-C.

B. Administrative Remedies for Non-Compliance:

In cases where the Contractor has failed to meet the Contract specified DBE goal or the DBE pre-award commitment, and where no GFE has been demonstrated, then one or more of the following administrative remedies will be applied:

1. A reduction in Contract payments to the Contractor as determined by CTDOT, not to exceed the shortfall amount of the **DBE goal**. The maximum shortfall will be calculated by multiplying the Contract DBE goal (adjusted by any applicable GFE) by the final Contract value, and subtracting any verified final payments made to DBE firms by the Contractor.
2. A reduction in Contract payments to the Contractor determined by CTDOT, not to exceed the shortfall amount of the **pre-award commitment**. The maximum shortfall will be calculated by subtracting any verified final payments made by the Contractor to each DBE subcontractor from the amount originally committed to that subcontractor in the pre-award commitment.
3. A reduction in Contract payments to the Contractor determined by CTDOT for any pre-award DBE subcontractor who has not obtained the dollar value of work identified in the DBE pre-award commitment and has not followed the requirements of Section II-C or for any DBE firm submitted for DBE credit that has not performed a CUF.
4. The Contractor being required to submit a written DBE Program Corrective Action Plan to CTDOT for review and approval, which is aimed at ensuring compliance on future projects.
5. The Contractor being required to attend a Non-Responsibility Meeting on the next contract where it is the apparent low bidder.
6. The Contractor being suspended from bidding on contracts for a period not to exceed six (6) months.

VI. CLASSIFICATIONS OTHER THAN SUBCONTRACTORS

A. Material Manufacturers

Credit for DBE manufacturers is 100% of the value of the manufactured product. A manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

If the Contractor elects to utilize a DBE manufacturer to satisfy a portion of, or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

B. Material Suppliers (Dealers)

Credit for DBE dealers/suppliers is limited to 60% of the value of the material to be supplied, provided such material is obtained from an approved DBE dealer/supplier.

In order for a firm to be considered a regular dealer, the firm must own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. At least one of the following criteria must apply:

- To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating or maintaining a place of business if the person both owns and operates distribution equipment for the products. Any supplementing of the regular dealers' own distribution equipment shall be by long term lease agreement, and not on an ad hoc or contract to contract basis.
- Packers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph.

If the Contractor elects to utilize a DBE supplier to satisfy a portion or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

C. Brokering

- Brokering of work for DBE firms who have been listed by the Department as certified brokers is allowed. Credit for those firms shall be applied following the procedures in Section VI-D.
- Brokering of work by DBEs who have been approved to perform subcontract work with their own workforce and equipment is not allowed, and is a Contract violation.

- Firms involved in the brokering of work, whether they are DBEs and/or majority firms who engage in willful falsification, distortion or misrepresentation with respect to any facts related to the project shall be referred to the U.S. DOT, Office of the Inspector General for prosecution under Title 18, U.S. Code, Part I, Chapter 47, Section 1020.

D. Non-Manufacturing or Non-Supplier DBE Credit

Contractors may count towards their DBE goals the following expenditures with DBEs that are not manufacturers or suppliers:

- Reasonable fees or commissions charged for providing a bona fide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment materials or supplies necessary for the performance of the Contract, provided that the fee or commission is determined by the OOC to be reasonable and consistent with fees customarily allowed for similar services.
- The fees charged only for delivery of materials and supplies required on a job site when the hauler, trucker, or delivery service is a DBE, and not the manufacturer, or regular dealer of the materials and supplies, and provided that the fees are determined by the OOC to be reasonable and not excessive as compared with fees customarily allowed for similar services.
- The fees or commissions charged for providing bonds or insurance specifically required for the performance of the Contract, provided that the fees or commissions are determined by CTDOT to be reasonable and not excessive as compared with fees customarily allowed for similar services.

E. Trucking

While technically still considered a subcontractor, the rules for counting credit for DBE trucking firms are as follows:

- The DBE must own and operate at least one fully licensed, insured, and operational truck used on the Contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may lease trucks from a non-DBE firm; however the DBE may only receive credit for any fees or commissions received for arranging transportation services provided by the non-DBE firms. Additionally, the DBE firm must demonstrate that they are in full control of the trucking operation for which they are seeking credit.

VII. Suspected DBE Fraud

In appropriate cases, CTDOT will bring to the attention of the USDOT any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g. referral to the

Department of Justice for criminal prosecution, referral to USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49 CFR Part 31.

**CONNECTICUT DEPARTMENT OF TRANSPORTATION
(OFFICE OF CONSTRUCTION)
BUREAU OF ENGINEERING AND CONSTRUCTION**

This affidavit must be completed by the State Contractor's DBE notarized and attached to the contractor's request to utilize a DBE supplier or manufacturer as a credit towards its DBE contract requirements; failure to do so will result in not receiving credit towards the contract DBE requirement.

State Contract No.

Federal Aid Project No.

Description of Project

I, _____, acting in behalf of _____,
(Name of person signing Affidavit) (DBE person, firm, association or corporation)

of which I am the _____ certify and affirm that _____
(Title of Person) (DBE person, firm, association or corporation)

is a certified Connecticut Department of Transportation DBE. I further certify and affirm that I have read and understand 49 CFR, Sec. 26.55(e)(2), as the same may be revised.

I further certify and affirm that _____ will assume the actual and
(DBE person, firm, association or Corporation)

for the provision of the materials and/or supplies sought by _____.

If a manufacturer, I operate or maintain a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract an of the general character described by the specifications.

If a supplier, I perform a commercially useful function in the supply process. As a regular dealer, I, at a minimum, own and operate the distribution equipment for bulk items. Any supplementing of my distribution equipment shall be by long-term lease agreement, and not on an ad hoc or contract-by-contract basis.

I understand that false statements made herein are punishable by Law (Sec. 53a-157), CGS, as revised).

(Name of Corporation or Firm)

(Signature & Title of Official making the Affidavit)

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

Notary Public (Commissioner of the Superior Court)

My Commission Expires _____

CERTIFICATE OF CORPORATION

I, _____, certify that I am the _____
(Official) (President)

of the Corporation named in the foregoing instrument; that I have been duly authorized to affix the seal of the Corporation to such papers as require the seal; that _____, who signed said instrument on behalf of the Corporation, was then _____ of said corporation; that said instrument was duly signed for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporation powers.

(Signature of Person Certifying)

(Date)

ITEM #0020801A – ASBESTOS ABATEMENT

Description:

Work under this item shall include the abatement of asbestos containing materials (ACM) and associated work by persons who are knowledgeable, qualified, trained and licensed in the removal, treatment, handling, and disposal of ACM and the subsequent cleaning of the affected environment. ACM shall include material composed of any type of asbestos in amounts greater than one percent (1%) by weight. The Contractor performing this work shall possess a valid Asbestos Abatement Contractor license issued by the Connecticut Department of Public Health (CTDPH).

These Specifications govern all work activities that disturb asbestos containing materials. All activities shall be performed in accordance with, but not limited to, the current revision of the OSHA General Industry Standard for Asbestos (29 CFR 1926.1001), the OSHA Asbestos in Construction Regulations (29 CFR 1926.1101), the USEPA Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations (40 CFR Part 61 Subpart M), the CTDPH Standards for Asbestos Abatement, Licensure and Training (19a-332a-1 through 16, 20-440-1 through 9 & 20-441), and the CTDEEP Special Waste Disposal Regulations (22a-209-8(i)).

The asbestos abatement work shall include the removal and disposal of all ACM as identified on the Contract Plans and Specifications prior to the planned renovation/demolition project. This Item 0020801A – Asbestos Abatement was designed by Mr. Stephen Arienti, a State of Connecticut licensed Asbestos Project Designer (#000284).

Deviations from these Specifications require the written approval of the Engineer.

Materials:

All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description.

No damaged or deteriorating materials shall be used. If material becomes contaminated with asbestos, the material shall be decontaminated or disposed of as asbestos-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.

Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating four (4) or six (6) mil thickness.

Six (6) mil polyethylene disposable bags shall have pre-printed OSHA/EPA/DOT labels and shall be transparent.

Tape (or equivalent) capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.

Surfactant is a chemical wetting agent added to water to improve penetration and shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent. The surfactant shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water, or as directed by the manufacturer.

Spray equipment must be capable of mixing necessary chemical agents with water, generating sufficient pressure and volume; and equipped with adequate hose length to access all necessary work areas.

Drills, saws, sanders, grinders, wire brushes and needle-gun type removal equipment shall be equipped with a High Efficiency Particulate Air (HEPA) filtered vacuum dust collection system.

Containers for storage, transportation and disposal of asbestos containing waste material shall be impermeable and both air and watertight.

Labels and warning signs shall conform to OSHA 29 CFR 1926.1101, USEPA 40 CFR Part 61.152, and USDOT 49 CFR Part 172 as appropriate.

Encapsulant, a material used to chemically entrap asbestos fibers to prevent these fibers from becoming airborne, shall be of the type which has been approved by the Engineer. Use shall be in accordance with manufacturer's printed technical data. The encapsulant shall be clear and must be compatible with new materials being installed, if any.

Any planking, bracing, shoring, barricades and/or temporary sheet piling, necessary to appropriately perform work activities shall conform to all applicable federal, state and local regulations.

Air filtration devices and vacuum units shall be equipped with HEPA filters.

Construction Methods:

(1) Pre-Abatement Submittals and Notices

- (a) The scope of work for this project includes the removal of exterior non-friable ACM, which is not defined as "Asbestos Abatement" under the CTDPH Asbestos Abatement Standards (19a-332a-1) nor as Regulated asbestos containing materials (RACM) under the EPA Asbestos NESHAP. Therefore, the Contractor is **not required to submit an Asbestos Abatement Notification to CTDPH or EPA, prior to the commencement of work, so long as work practices will not render more than 25 square feet (SF) (CTDPH) or 160 SF (EPA) of the exterior non-friable ACM into a friable state.**

- (b) Fifteen (15) working days prior to the commencement of asbestos abatement work, the Contractor shall submit to the Engineer for review and acceptance and/or acknowledgment of the following:
1. Permits and licenses for the removal of asbestos-containing or contaminated materials, including a CTDPH valid asbestos removal contractor's license.
 2. Documentation dated within the previous twelve (12) months, certifying that all employees have received USEPA Model Accreditation Plan approved asbestos worker/supervisor training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis, and copies of all employees CTDPH asbestos worker and/or supervisor licenses.
 3. Documentation from the Contractor, typed on company letterhead and signed by the Contractor, certifying that all employees listed therein have received the following:
 - a. medical monitoring within the previous twelve (12) months, as required in 29 CFR 1926.1101;
 - b. respirator fit testing within the previous twelve (12) months as detailed in 29 CFR 1910.134 (for all employees who must also don a tight-fitting face piece respirator).
 4. Copies of the EPA/State-approved certificates for the proposed asbestos landfill.
- (c) No abatement shall commence until a copy of all required submittals have been received and found acceptable to the Engineer. Those employees added to the Contractor's original list will be allowed to perform work only upon submittal to, and receipt of, all required paperwork by the Engineer.

(2) Asbestos Abatement Provisions:

(a) General Requirements

The Abatement Contractor/Subcontractor shall possess a valid State of Connecticut Asbestos Contractor License. Should any portion of the work be subcontracted, the subcontractor must also possess a valid State of Connecticut Asbestos Contractor License. The Asbestos Abatement Site Supervisor employed by the Contractor shall be in control on the job site at all times during asbestos abatement work. All employees of the Contractor who shall perform work (i.e. Asbestos Abatement Site Supervisor, Asbestos Abatement Worker) shall be properly certified/licensed by the State of Connecticut to perform such duties.

All labor, materials, tools, equipment, services, testing, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications shall be provided by the Contractor. The Contractor shall be prepared to work all shifts and weekends throughout the course of this project.

Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions at the site for safety reasons. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.

The Contractor shall, when necessary, provide temporary power and adequate lighting and ensure safe installation of electrical equipment, including ground fault protection and power cables, in compliance with applicable electrical codes and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.

If sufficient electrical service is unavailable, the Contractor may need to supply electrical power to the site by fuel operated generator(s). Electrical power supply shall be sufficient for all equipment required for this project in operation throughout the duration of the project.

Water service may not be available at the site. Contractor shall supply sufficient water for each shift to operate the decontamination shower units as well as to maintain the work areas adequately wet.

Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.

Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.

Data provided regarding asbestos sampling conducted throughout the structure(s) is for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the presence, location and/or quantity of all asbestos containing materials. The Contractor shall verify all field conditions affecting performance of the work as described in these Specifications in accordance with OSHA, USEPA, USDOT, DEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.

The Engineer will provide a Project Monitor to oversee the activities of the Contractor. No asbestos work shall be performed until the Project Monitor is on-site. Pre-abatement, during abatement and post-abatement air sampling will be conducted as deemed necessary by the Project Monitor. Waste stream testing will be performed, as necessary, by the Project Monitor prior to waste disposal.

(b) Set-Up

Pre-clean the work areas using HEPA filtered equipment (vacuum) and/or wet methods as appropriate, collecting and properly containing all loose debris as asbestos-containing/asbestos contaminated waste. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

The Contractor shall establish a remote Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series, as detailed below. Access to the Regulated Area shall only be through this enclosure.

Access between rooms in the Worker Decontamination Enclosure System shall be through airlocks. Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be contiguously connected with taped airtight edges.

The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.

The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be provided for each eight (8) workers. Showers shall be equipped with hot and cold or warm running water through the use of electric hot water heaters supplied by the Contractor. No worker or other person shall leave a Regulated Area without showering. Shower water shall be collected and filtered using best available technology and disposed of in an approved sanitary drain. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate.

The Contractor shall ensure that no personnel or equipment be permitted to leave the Regulated Area until proper decontamination procedures (including HEPA vacuuming, wet wiping and showering) to remove all asbestos debris have occurred.

Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of workplace enclosure barriers.

Alternate set up requirements for exterior non-friable asbestos abatement procedures

In lieu of the establishment of a negative pressure enclosure (NPE) system as described by CTDPH Sections 19a-332a-5(c), 5(d), 5(e), and 5(h), non-friable ACM will be removed from exterior work areas within an outdoor Regulated Area(s). The regulated work area will be established by the use of appropriately labeled barrier tape and postings in compliance with CTDPH 19a-332a-5(a) as well as OSHA 29 CFR 1926.1101. A remote personnel

decontamination unit as specified in Section 19a-332a-6 will be required. This method shall only be utilized provided exposure assessment air sampling data collected during the removal of the exterior non-friable materials indicates that the exposure levels during removal of such materials do not exceed 0.1 asbestos f/cc. Should exposure assessment air sampling data exceed this level, and engineering efforts to reduce the airborne fiber levels not be successful in reducing the levels to less than 0.1 f/cc, removal shall occur within these areas under full containment conditions.

(c) Personnel Protection

The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with OSHA, USEPA, USDOT, CTDEEP and CTDPH regulations.

The Contractor shall provide and require all workers to wear protective clothing in the Regulated Areas where asbestos fiber concentrations may reasonably be expected to exceed the OSHA established Permissible Exposure Limits (PEL) or where asbestos contamination exists. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings.

Respiratory protection shall be provided and shall meet the requirements of OSHA as required in 29 CFR 1910.134, and 29 CFR 1926.1101 as well as the requirements of the CTDPH regulations. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.1101 and 29 CFR 1910.134. The Contractor shall provide respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11.

All other necessary personnel protective equipment (i.e. hardhat, work boots, safety glasses, hearing protection, etc.) required to perform the asbestos abatement work activities shall conform to all applicable federal, state and local regulations.

All other qualified and authorized persons entering into a Regulated Area (i.e. Project Monitor, Regulatory Agency Representative) shall adhere to the requirements of personnel protection as stated in this section.

(d) Asbestos Abatement Procedures

The Asbestos Abatement Site Supervisor, as the OSHA Competent Person shall be at the site at all times.

The Contractor shall not begin abatement work until authorized by the Project Monitor, following a pre-abatement visual inspection.

All workers and authorized persons shall enter and leave the Regulated Area through the Worker Decontamination Enclosure System, leaving contaminated protective clothing in the Equipment Room for reuse or disposal of as asbestos contaminated waste. No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in a Regulated Area.

The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer. Proceed through the sequencing of the work phases under the direction of the Engineer.

District 1 Roadway Illumination Systems

Site No. 1 - Control Cabinet No. 07-1 on Route 71 in New Britain, CT

Includes the removal of:

- **Electric soft light grey putty caulking (EP1) on control cabinet penetrations**

A regulated area(s) shall be established at the perimeter of the work area(s), and access shall be controlled by the Contractor. A remote personnel decontamination unit shall be utilized. Removal shall be undertaken in accordance with OSHA Class II and USEPA Asbestos NESHAP requirements.

During removal, the Contractor shall spray asbestos materials with amended water using airless spray equipment capable of providing a "mist" application to reduce the release of airborne fibers. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Regulated Area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases and/or run-off from the regulated area.

The Contractor shall continue to spray the asbestos materials with amended water, as necessary, throughout removal activities to ensure the asbestos materials remain adequately wet. The asbestos materials shall not be allowed to dry out.

In order to minimize airborne asbestos concentrations inside the Regulated Area, the Contractor shall remove the adequately wetted asbestos in manageable sections. In addition, asbestos materials removed from any elevated level shall be carefully lowered to the floor.

The Contractor shall promptly place the adequately wet asbestos material in disposal containers (six (6) mil polyethylene bags/fiber drum/poly-lined dumpsters, etc.) as it is removed. Large components removed intact may be wrapped in two (2) layers of six (6) mil polyethylene sheeting secured with tape. As the disposal containers are filled, the Contractor shall promptly seal the containers, apply caution labels and clean the containers before transportation from the regulated area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Small components and asbestos-containing waste with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) which could tear polyethylene bags and sheeting shall be placed in clean drums and sealed with locking ring tops. All waste containers shall be leak-tight, (typically consisting of two layers of 6 mil poly (or bags)), and shall be properly labeled and placarded with OSHA Danger labels, DOT shipping labels, markings and placards and USEPA NESHAP generators labels. Containers shall be decontaminated by wet cleaning and HEPA vacuuming prior to exiting the regulated area.

If at any time during asbestos removal, the Project Monitor should suspect contamination of areas outside the Regulated Area, the Contractor shall immediately stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and/or visual inspections determine decontamination.

After completion of abatement work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work the surfaces being cleaned shall be kept wet. Cleaning shall also include the use of HEPA filtered vacuum equipment.

The Contractor shall also remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene engineering controls/barriers.

The Contractor shall remove contamination from the exteriors of the scaffolding, ladders, extension cords, hoses and other equipment inside the Regulated Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning. The Contractor shall wet wipe the Regulated Area using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Waste water shall be filtered using best available technology into leak-proof containers prior to being transported to a sanitary sewer for discharge.

Once the Regulated Area surfaces have dried, the Project Monitor shall perform a thorough post abatement visual inspection utilizing protocols from the ASTM Standard E1368-90 *Standard Practice for Visual Inspection of Asbestos Abatement Projects*. All surfaces within the Regulated Area, including but not limited to ledges, beams, and hidden locations shall be inspected for visible residue. Evidence of asbestos contamination identified during this inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractor's expense, until the standard of cleaning is achieved.

Once the area has received a satisfactory post-abatement visual inspection, any equipment, tools or materials not required for completion of the work, shall be removed by the Contractor from the Regulated Area.

(e) Air Monitoring Requirements

1. The Contractor shall:

- a. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
- b. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Documentation of air

sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.

2. The Project Monitor, acting as the representative of the Engineer during abatement activities, will:
 - a. Collect air samples in accordance with the current revision of the NIOSH 7400 Method of Air Sampling for Airborne Asbestos Fibers while overseeing the activities of the Abatement Contractor. Frequency and duration of the air sampling during abatement will be representative of the actual conditions at the abatement site. The size and configuration of the asbestos project will be a factor in the number of samples required to monitor the abatement activities and shall be determined by the Project Monitor. The following schedule of samples may be collected by the Project Monitor:
 1. Pre-Abatement (Optional)
 - a. Background areas
 - b. Area(s) adjacent to Work Area(s)
 - c. Work Area(s)
 2. During Abatement (Optional)
 - a. Within Regulated Area(s)
 - b. Area(s) adjacent to Regulated Areas(s)
(exterior to critical barriers)
 - c. At the Decontamination Enclosure System

Abatement Activity	Pre-Abatement	During Abatement	Post-Abatement
Exterior Friable/Non-Friable	---	PCM	---

If air samples collected outside of the Regulated Area during abatement activities indicate airborne fiber concentrations greater than original background levels, or greater than 0.1 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Regulated Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

(f) Post Abatement Work Area Deregulation

The Contractor shall remove all remaining polyethylene, including critical barriers, drop-cloths, and Decontamination Enclosure Systems. HEPA vacuum and/or wet wipe any visible residue which is uncovered during this process. All waste generated during this disassembly process shall be discarded as ACM waste.

A final visual inspection of the work area shall be conducted by the Competent Person and the Project Monitor to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the abatement project remain.

The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to the Engineer.

(g) Waste Disposal

Unless otherwise specified, all removed materials and debris resulting from execution of this project shall become the responsibility of the Contractor and removed from the premises. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.

Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and shall be taped into place.

OSHA "Danger" signs must be attached to vehicles used to transport asbestos-containing waste prior to loading ACM waste. The signs must be posted so that they are plainly visible.

Ensure all waste containers (bags, drums, etc.) are properly packed, sealed and labeled with USEPA NESHAP generator labels, OSHA danger labels and DOT shipping labels. For each shipment of ACM waste, the Contractor shall complete an EPA-approved asbestos waste shipment record.

Authorized representatives signing waste shipment records on behalf of the generator must have USDOT Shipper Certification training in accordance with HMR 49 CFR Parts 171-180.

Transport vehicles hauling ACM waste shall have appropriate USDOT placards visible on all four (4) sides of the vehicle.

The Contractor shall dispose of asbestos-containing and/or asbestos contaminated material at an EPA authorized site and must be in compliance with the requirements of the Special Waste Provisions of the Office of Solid Waste Management, Department of Energy & Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.

Any asbestos-containing and/or asbestos-contaminated waste materials which also contain other hazardous contaminants shall be disposed of in accordance with the EPA's Resource Conservation and Recovery Act (RCRA), CTDEEP and ConnDOT requirements. Materials may be required to be stored on-site and tested by the Project Monitor to determine proper waste disposal requirements.

(h) Project Closeout Data:

1. Provide the Engineer, within 30 days of completion of asbestos abatement, a compliance package; which shall include, but not be limited to, the following:
 - a. Asbestos Abatement Site Supervisor job log;
 - b. OSHA personnel air sampling data;
 - c. Completed waste shipment records.

The Contractor shall submit the original completed waste shipment records to the Engineer.

Method of Measurement:

No measurement will be made for the work in this Section. The completed work shall be paid as a lump sum.

Basis of Payment:

The lump sum bid price for this item shall include the specialty services of the Asbestos Removal Contractor including: labor, materials, equipment, insurance, permits, notifications, submittals, personal air sampling, personal protection equipment, temporary enclosures, utility costs, incidentals, fees and labor incidental to the removal, transport and disposal of ACM, including close out documentation.

Final payment for asbestos abatement will not be made until all the project closeout data submittals have been completed (including waste shipment record(s) signed by an authorized disposal facility representative) and provided to the Engineer. Once the completed package has been received in its entirety, the Engineer will make the final payment to the Contractor.

<u>Pay Item</u>	<u>Pay Unit</u>
Asbestos Abatement	Lump Sum

ITEM #0020903A – LEAD COMPLIANCE FOR MISCELLANEOUS EXTERIOR TASKS

Description:

Work under this item shall include the special handling measures and work practices required for miscellaneous exterior tasks that impact materials containing or covered by lead paint. Lead paint includes paint found to contain **any** detectable amount of lead by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF). Examples of typical miscellaneous exterior tasks includes; work impacting signs, guiderails, minor bridge rehabilitation, catenary structures, canopy structures, spot paint removal, etc.

All activities shall be performed in accordance with the OSHA Lead in Construction Regulations (29 CFR 1926.62), the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260 through 274), and the CTDEEP Hazardous Waste Regulations (RCSA 22a-209-1 and 22a-449(c)).

All activities shall be performed by individuals with appropriate levels of OSHA lead awareness and hazard communication training and shall supervised by the Contractors Competent Person on the job site at all times. The Contractors Competent Person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Deviations from these Specifications require the written approval of the Engineer.

Materials:

All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description, with MSDS sheets as applicable.

No damaged or deteriorating materials shall be used. If material becomes contaminated with lead, the material shall be decontaminated or disposed of as lead-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.

The following material requirements are to be met if to be used during the work:

Fire retardant polyethylene sheet shall be in roll size to minimize the frequency of joints, with factory label indicating minimum six (6) mil thickness.

Polyethylene disposable bags shall be minimum six (6) mils thick.

Tape (or equivalent) product capable of sealing joints in adjacent polyethylene sheets and for the attachment of polyethylene sheets to finished or unfinished surfaces must be capable of adhering under both dry and wet conditions.

Cleaning Agents and detergent shall be lead specific, such as TriSodium Phosphate (TSP).

Chemical strippers and chemical neutralizers shall be compatible with the substrate as well as with each other. Such chemical stripper shall contain less than 50% Volatile Organic Compounds (VOCs) by weight in accordance with RCSA 22a-174-40 Table 40-1.

Labels and warning signs shall conform to 29 CFR 1926.62, 40 CFR 260 through 274 and 49 CFR 172 as appropriate.

Air filtration devices and vacuum units shall be equipped with High-Efficiency Particulate Air (HEPA) filters.

Construction Methods:

(1) Pre-Abatement Submittals and Notices

A. Prior to the start of **any** work on a contiguous per site basis that will generate hazardous lead waste above conditionally exempt small quantities (greater than 100 kg/month or greater than 1000 kg at any time), the Contractor shall obtain from the Engineer on a contiguous per site basis a temporary EPA Hazardous Waste Generators ID number, unless otherwise directed by the Engineer.

B. Fifteen (15) working days prior to beginning work that impacts lead paint, the Contractor shall submit the following to the Engineer:

1. Work plan for work impacting lead paint including engineering controls, methods of containment of debris and work practices to be employed, as needed, to minimize employee exposure and prevent the spread of lead contamination outside the Regulated Area.
2. Copies of all employee certificates, dated within the previous twelve (12) months, relating to OSHA lead awareness and hazard communication training and training in the use of lead-safe work practices. SSPC training programs may be accepted as meeting these requirements if it can be demonstrated that such training addressed all required topics.

This information shall be updated and resubmitted annually, or as information changes, for the duration of the activities impacting lead to verify continued compliance.

3. Name and qualifications of Contractor's OSHA Competent Person under 29 CFR 1926.62.
4. Documentation from the Contractor, typed on company letterhead and signed by the Contractor, certifying that all employees listed therein have received the following:
 - a. medical monitoring within the previous twelve (12) months, as required in 29 CFR 1926.62;
 - b. biological monitoring within the previous six (6) months, as required in 29 CFR 1926.62;
 - c. respirator fit testing within the previous twelve (12) months, as required in 29 CFR 1910.134 (for those who don a tight-fitting face piece respirator)

This information shall be updated and resubmitted annually, or as information changes, for the duration of the activities impacting lead to verify continued compliance.

5. Names of the proposed non-hazardous construction and demolition (C&D) lead debris bulky waste disposal facility (CTDEEP-permitted Solid Waste landfill).
6. Names of the proposed scrap metal recycling facilities. The Contractor shall submit to the Engineer all documentation necessary to demonstrate the selected facility is able to accept lead-painted scrap metal.
7. Names of the proposed hazardous waste disposal facility (selected from the Department approved list provided herein), and copies of each facilities acceptance criteria and sampling frequency requirements.
8. Copies of the proposed hazardous waste transporters current USDOT Certificate of Registration for Hazardous Materials Transport, and the proposed transporters current Hazardous Waste Transporter Permits for the State of Connecticut and the waste destination State.
9. Negative exposure assessments conducted within the previous 12 months documenting that employee exposure to lead for each task is below the OSHA Action Level of $30 \mu\text{g}/\text{m}^3$. If a negative exposure assessment has not been conducted, the Contractor shall submit its air monitoring program for the work tasks as part of the Work Plan. Until a negative exposure assessment is developed for each task impacting lead paint, the Contractor shall ensure that all workers and authorized persons entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62.

No activity shall commence until all required submittals have been received and found acceptable to the Engineer. Those employees added to the Contractor's original list will be

allowed to perform work only upon submittal of acceptable documentation to, and review by, the Engineer.

Contractor shall provide the Engineer with a minimum of 48 hours notice in advance of scheduling, changing or canceling work activities.

(2) Lead Abatement Provisions

A. General Requirements:

All employees of the Contractor who perform work impacting lead paint shall be properly trained to perform such duties. In addition, the Contractor shall instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.

Contractor shall provide all labor, materials, tools, equipment, services, testing, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these Specifications.

Prior to beginning work, the Engineer and Contractor shall perform a visual survey of each work area and review conditions.

As necessary, the Contractor shall:

Shut down and lock out electrical power, including all receptacles and light fixtures, where feasible. The use or isolation of electrical power will be coordinated with all other ongoing uses of electrical power at the site.

If adequate electrical supply is not available at the site, the Contractor shall supply temporary power. Such temporary power shall be sufficient to provide adequate lighting and power the Contractor's equipment. The Contractor is responsible for proper connection and installation of electrical wiring and shall ensure safe installation of electrical equipment in compliance with applicable electrical codes and OSHA requirements.

If water is not available at the site for the Contractor's use, the Contractor shall supply sufficient water for each shift to operate the wash facility/decontamination shower units in addition to the water needed at the work area.

The Engineer may provide a Project Monitor to monitor compliance of the Contractor and protect the interests of the Department. In such cases, no activity impacting lead paint shall be performed until the Project Monitor is on-site. Where no Project Monitor will be provided, Contractor shall proceed at the direction of the Engineer. Environmental sampling, including ambient air sampling, TCLP waste stream sampling, and dust wipe sampling, will be conducted by the State as it deems necessary throughout the project. Air monitoring to comply with the Contractor's obligations under OSHA remains solely responsibility of the Contractor.

If at any time, procedures for engineering, work practice, administrative controls or other topics are anticipated to deviate from those documented in the submitted and accepted Lead Work Plan, the Contractor shall submit a modification of its existing plan for review and acceptance by the Engineer prior to implementing the change.

If air samples collected outside of the Regulated Area during activities impacting lead paint indicate airborne lead concentrations greater than original background levels or 30 ug/m^3 , whichever is larger, or if at any time visible emissions of lead paint extend out from the Regulated Area, an examination of the Regulated Area shall be conducted and the cause of such emissions corrected. Cleanup of surfaces outside the Regulated Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming work.

Work outside the initial designated area(s) will not be paid for by the Engineer. The Contractor will be responsible for all costs incurred from these activities including repair of any damage.

B. Regulated Area

The Contractor shall establish a Regulated Area through the use of appropriate barrier tape or other means to control unauthorized access into the area where activities impacting lead paint are occurring. Warning signs meeting the requirements of 29 CFR 1926.62 shall be posted at all approaches to Regulated Areas. These signs shall read:

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK, OR SMOKE IN THIS AREA

The Contractor shall implement appropriate engineering controls such as poly drop cloths, local exhaust ventilation, wet dust suppression methods, etc. as necessary, and as approved by the Engineer, to prevent the spread of lead contamination beyond the Regulated Area in accordance with the Contractor's approved work plan. Should the previously submitted work plan prove to be insufficient to contain the contamination, the Contractor shall modify its plan and submit it for review by the Engineer.

C. Wash Facilities:

The Contractor shall provide handwash facilities in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62 regardless of airborne lead exposure.

If employee exposure to airborne lead exceeds the OSHA Permissible Exposure Limit of 50 micrograms per cubic meter ($\mu\text{g/m}^3$), shower rooms must be provided. The Shower Room shall be of sufficient capacity to accommodate the number of workers. One shower stall shall be

provided for each eight (8) workers. Showers shall be equipped with hot and cold or warm running water. Shower water shall be collected and filtered using best available technology and disposed of in accordance with all Federal, State and local laws, regulations and ordinances.

D. Personal Protection:

The Contractor shall initially determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 $\mu\text{g}/\text{m}^3$. Assessments shall be based on initial air monitoring results as well as other relevant information. The Contractor may rely on historical air monitoring data obtained within the past 12 months under workplace conditions closely resembling the process, type of material, control methods, work practices and environmental conditions used and prevailing in the Contractors current operations to satisfy the exposure assessment requirements. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.

Until a negative exposure assessment is developed for each task impacting lead paint, the Contractor shall ensure that all workers and authorized person entering the Regulated Area wear protective clothing and respirators in accordance with OSHA 29 CFR 1926.62. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Sufficient quantities shall be provided to last throughout the duration of the project.

Protective clothing provided by the Contractor and used during chemical removal operations shall be impervious to caustic materials. Gloves provided by the Contractor and used during chemical removal shall be of neoprene composition with glove extenders.

Respiratory protective equipment shall be provided and selection shall conform to 42 CFR Part 84, 29 CFR Part 1910.134, and 29 CFR Part 1926.62. A formal respiratory protection program must be implemented in accordance with 29 CFR Part 1926.62 and Part 1910.134.

E. Air Monitoring Requirements

The Contractor shall:

1. Provide air monitoring equipment including sample filter cassettes of the type and quantity required to properly monitor operations and personnel exposure surveillance throughout the duration of the project.
2. Conduct initial exposure monitoring to determine if any employee performing construction tasks impacting lead paint may be exposed to lead at or above the OSHA Action Level of 30 micrograms per cubic meter. Monitoring shall continue as specified in the OSHA standard until a negative exposure assessment is developed.
3. Conduct personnel exposure assessment air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA

Standard 1926.62. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.

F. Lead Abatement Procedures

The Contractor's Competent Person shall be at the job site at all times during work impacting lead.

Work impacting lead paint shall not begin until authorized by the Engineer, following a pre-work visual inspection by the Project Monitor or Engineer to verify existing conditions.

Any activity impacting lead painted surfaces shall be performed in a manner which minimizes the spread of lead dust contamination and generation of airborne lead.

The Contractor shall conduct exposure assessments for all tasks which impact lead paint in accordance with 29 CFR 1926.62(d) and shall implement appropriate personal protective equipment until negative exposure assessments are developed.

All work impacting the materials identified below shall be conducted within an established Regulated Area with a remote wash facility/decontamination system in accordance with "C. Wash Facilities" and the OSHA Lead in Construction Standard. In accordance with 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

The Contractor shall ensure proper entry and exit procedures for workers and authorized persons who enter and leave the Regulated Area. All workers and authorized persons shall leave the Regulated Area and proceed directly to the wash or shower facilities where they will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Lead chips and dust must not be removed by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with Federal, State and local water discharge standards. Any permit required for such discharge shall be the responsibility of the Contractor.

No one shall eat, drink, smoke, chew gum or tobacco, or apply cosmetics while in the Regulated Area.

Data from the limited lead testing performed by the Engineer is documented in the reports listed in the "Notice to Contractor – Hazardous Materials Investigations" or is presented herein. Under no circumstances shall this information be the sole means used by the Contractor for determining the extent of lead painted materials. The Contractor shall be responsible for verification of all field conditions affecting performance of the work as described in these Specifications in

accordance with OSHA, USEPA, USDOT and CTDEEP standards. Compliance with the applicable requirements is solely the responsibility of the Contractor.

The following details the extent of each phase of operation designated for this project. Phase areas may be combined or divided at the direction of the Engineer. Proceed through the sequencing of the work phases under the direction of the Engineer.

District 1 Roadway Illumination Systems

Site No. 1 - Control Cabinet 07-1, Route 71, New Britain, CT

- Detectable amounts of lead were identified on the painted metal control cabinet surfaces for Control Cabinet 07-1 on Route 71:

Control Cabinet	Metal	Grey	0.1-0.2 mg/cm ²
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- TCLP waste stream sampling/analysis of the paint associated with the control cabinet surfaces characterized the paint waste as non-hazardous, non-RCRA waste.

Paint debris	0.54 mg/L
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Site No. 1 - Control Cabinet on Whiting St., New Britain, CT

- Detectable amounts of lead were identified on the painted metal control cabinet surfaces for Control Cabinet on Whiting St.:

Control Cabinet	Metal	Green	0.1-0.2 mg/cm ²
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- TCLP waste stream sampling/analysis of the paint associated with the control cabinet surfaces characterized the paint waste as CTDEEP/RCRA hazardous waste.

Paint debris	16 mg/L
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Site No. 2 - Control Cabinet No. 53-2, Quarry Rd., Glastonbury, CT

- Due to inaccessibility, lead paint is presumed present on the painted control cabinet surfaces of Control Cabinet No. 53-2.
- Any paint waste to be generated is presumed as RCRA/CT DEEP hazardous waste.

Site No. 3 - Control Cabinet on Folly Brook Boulevard, Wethersfield, CT

- No detectable amounts of lead were identified on the painted metal control cabinet surfaces for Control Cabinet on Folly Brook Boulevard:

Control Cabinet	Metal	Grey	0.0 mg/cm ² ND<0.10% by weight
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- Since no detectable amounts of lead were present on painted metal controller cabinet any paint waste generated would be classified as non-hazardous, non-RCRA waste.

****Note:** Folly Brook Blvd cabinet is remaining onsite and being reused.

Site No. 4 - Control Cabinet No. 76-3, Keeney St., Manchester, CT

- Due to inaccessibility, lead paint is presumed present on the painted control cabinet surfaces of Control Cabinet 76-3.
- Any paint waste to be generated is presumed as RCRA/CT DEEP hazardous waste.

Site No. 4 - Control Cabinet 76-6 Spencer St., Manchester, CT

- No detectable amounts of lead were identified on the painted metal control cabinet surfaces for Control Cabinet 76-6:

Control Cabinet	Metal	Grey	0.0 mg/cm ² ND<0.10% by weight
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- Since no detectable amounts of lead were present on painted metal controller cabinet any paint waste generated would be classified as non-hazardous, non-RCRA waste.

While conducting work to the control cabinets, where it is necessary to impact the lead painted surfaces, the Contractor shall either:

- Remove the paint to be impacted prior to impacting the substrate in accordance with OSHA Lead in Construction Standard 29CFR 1926.62, or
- Impact the substrate using mechanical means with the paint in place in accordance with OSHA Lead in Construction Standard 29CFR 1926.62.

The Contractor shall submit a Work Plan to ConnDOT outlining the exact procedures that will be used to perform the work, contain the spread of lead debris and protect the employees performing the required renovation work impacting the lead paint. No work shall be started by the Contractor until the Work Plan is approved by the Engineer.

All work impacting the lead paint materials shall be conducted within an established Regulated Area with a remote wash facility/decontamination system in accordance with “C. Wash Facilities” and the OSHA Lead in Construction Standard. In accordance with 29 CFR 1926.62, engineering controls and work practices shall be utilized to prevent the spread of lead dust and debris beyond the Regulated Area and limit the generation of airborne lead. All wastes containing lead paint shall be properly contained and secured for storage, transportation and disposal.

The Engineer has characterized or has presumed the paint waste stream associated with the control cabinet components at the Whiting St. Control Cabinet (Site No. 1) and Control Cabinet Nos. 76-3 (Site No. 4) & 53-2 (Site No. 2) as RCRA hazardous waste. If the paint is removed from the metal surfaces of the control cabinet components, the paint shall be handled and disposed of in accordance with USEPA/CTDEEP Hazardous Waste Regulations as described under this Item 0020903A.

At Control Cabinet Nos, 07-1 (Site No. 1), 76-6 (Site No. 4) & Folly Brook Boulevard (Site No. 3) Control Cabinet, the Engineer has characterized the paint waste stream associated with the control cabinet components as non-hazardous. If the paint is required to be removed from the metal surfaces of the control cabinet components, the paint shall be handled and disposed of as non-hazardous, non-RCRA waste as described under this Item 0020903A.

All steel and metal components generated from the miscellaneous exterior work tasks (painted or not) shall be segregated and recycled as scrap metal. The recycling of scrap metal (regardless of lead paint concentration) is exempt from USEPA RCRA and CTDEEP Hazardous Waste Regulation.

Should lead contamination be discovered outside of the Regulated Area, the Contractor shall immediately stop all work in the Regulated Area, eliminate causes of such contamination and take steps to decontaminate non-work areas.

Special Requirements:

1. Demolition/Renovation:
 - a. Demolish/renovate in a manner which minimizes the spread of lead contamination and generation of lead dust.
 - b. Implement dust suppression controls, such as misters, local exhaust ventilation, etc. to minimize the generation of airborne lead dust.

- c. Segregate work areas from non-work areas through the use of barrier tape, drop cloths, etc.
 - d. Clean up immediately after renovation/demolition has been completed
2. Chemical Removal:
- a. Apply chemical stripper in quantities and for durations specified by manufacturer.
 - b. Where necessary, scrape lead paint from surface down to required level of removal (i.e. stabilized surface, bare substrate with no trace of residual pigment, etc.). Use sanding, hand scraping, and dental picks to supplement chemical methods as necessary.
 - c. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
 - d. Protect adjacent surfaces from damage from chemical removal.
 - e. Maintain a portable eyewash station in the work area.
 - f. Wear respirators that will protect workers from chemical vapors.
 - g. Do not apply caustic agents to aluminum surfaces.
3. Mechanical Paint Removal:
- a. Provide sanders, grinders, rotary wire brushes, or needle gun removers equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - b. Provide HEPA vacuums that are high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. The HEPA vacuum shall be equipped with a pivoting vacuum head.
 - c. Remove lead paint from surface down to required level of removal (i.e. stabilized surface, bare substrate with no trace of residual pigment, etc.). Use chemical

methods, hand scraping, and dental picks to supplement abrasive removal methods as necessary.

- d. Protect adjacent surfaces from damage from abrasive removal techniques.
 - e. "Sandblasting" type removal techniques shall not be allowed.
4. Component Removal/Replacement:
- a. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
 - b. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the components by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
 - c. Clean up immediately after component removals have been completed. Remove any dust located behind the component removed.

G. Prohibited Removal Methods:

The use of heat guns in excess of 700 degrees Fahrenheit to remove lead paint is prohibited.

The use of sand, steel grit, air, CO₂, baking soda, or any other blasting media to remove lead or lead paint without the use of a HEPA ventilated contained negative pressure enclosure is prohibited.

Power/pressure washing shall not be used to remove lead paint.

Compressed air shall not be utilized to remove lead paint.

Chemical strippers containing Methylene Chloride are prohibited. Any chemical stripping may be prohibited on a project by project basis.

Power tool assisted grinding, sanding, cutting, or wire brushing of lead paint without the use of cowed HEPA vacuum dust collection systems is prohibited.

Lead paint burning, busting of rivets painted with lead paint, welding of materials painted with lead paint, and torch cutting of materials painted with lead paint is prohibited. Where cutting, welding, busting, or torch cutting of materials is required, lead paint in the affected area must be removed first.

Chemical stripping of coatings from bridge components is generally prohibited unless specifically allowed on a project by project basis.

H. Clean-up and Visual Inspection:

The Contractor shall remove and containerize all lead waste material and visible accumulations of debris, paint chips and associated items.

During clean-up the Contractor shall utilize rags and sponges wetted with lead-specific detergent and water as well as HEPA filtered vacuum equipment.

The Engineer will conduct a visual inspection of the work areas in order to document that all surfaces have been maintained as free as practicable of accumulations of lead in accordance with 29 CFR 1926.62(h). If visible accumulations of waste, debris, lead paint chips or dust are found in the work area, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

I. Post-Work Regulated Area Deregulation:

Following an acceptable visual inspection, any engineering controls implemented may be removed.

A final visual inspection of the work area shall be conducted by the Competent Person and the Project Monitor or Engineer to ensure that all visible accumulations of suspect materials have been removed and that no equipment or materials associated with the lead paint removal remain. If this final visual inspection is acceptable, the Contractor will reopen the Regulated Area and remove all signage.

The Contractor shall restore all work areas and auxiliary areas utilized during work to conditions equal to or better than original. Any damage caused during the performance of the work activity shall be repaired by the Contractor at no additional expense to the State.

J. Waste Disposal/Recycling:

Non-metallic building debris waste materials tested and found to be non-hazardous shall be disposed of properly at a CTDEEP approved Solid Waste landfill as described under this Item 0020903A.

Metallic debris shall be segregated and recycled as scrap metal at an approved metal recycling facility.

Concrete, brick, etc. coated with any amount of lead paint cannot be crushed, recycled or buried on-site to minimize waste disposal unless tested and found to meet the RSR GA/Residential standards.

Hazardous lead debris shall be disposed of as described under this Item 0020903A.

The Contractor shall comply with the latest requirements of the USEPA RCRA Hazardous Waste Regulations 40 CFR 260-274 and the DEEP Hazardous/Solid Waste Management Standards 22a-449(c).

Hazardous lead debris shall be transported from the Project by a licensed hazardous waste transporter approved by the Department and disposed of at an EPA-permitted and Department-approved hazardous waste landfill within 90 days from the date of generation.

The Contractor must use one or more of the following Department-approved disposal facilities for the disposal of hazardous waste:

Clean Earth of North Jersey, Inc., (CENJ) 115 Jacobus Avenue, South Kearny, NJ 07105 Phone: (973) 344-4004; Fax: (973) 344-8652	Clean Harbors Environmental Services, Inc. 2247 South Highway 71, Kimball, NE 69145 Phone: (308) 235-8212; Fax: (308) 235-4307
Clean Harbors of Braintree, Inc. 1 Hill Avenue, Braintree, MA 02184 Phone: (781) 380-7134; Fax: (781) 380-7193	ACV Enviro(CycleChem)(General Chem Co) 217 South First Street, Elizabeth, NJ 07206 Phone: (908) 355-5800; Fax (908) 355-0562
Triumverate (EnviroSafe Corp Northeast) (Jones Environmental Services (NE), Inc.) 263 Howard Street, Lowell, MA 01852 Phone: (978) 453-7772; Fax: (978) 453-7775	US Ecology Environmental Quality Detroit, Inc. 1923 Frederick Street, Detroit, MI 48211 Phone: (800) 495-6059; Fax: (313) 923-3375
Stericycle (Republic Environmental Systems) 2869 Sandstone Drive, Hatfield, PA 19440 Phone: (215) 822-8995; Fax: (215) 997-1293	Clean Harbors – Spring Grove Facility 4879 Spring Grove Ave, Cincinnati OH 45322 Phone: (513) 681-6242; Fax: (513) 681-0869
Envirite of PA (US Ecology) 730 Vogelsong Road, York, PA 17404 Phone: (717) 846-1900; Fax: (717) 854-6757	Stablex, Canada, Inc. 760 Industrial Bl, Blainville Quebec J7C3V4 Phone: (451) 430-9230; Fax: (451) 430-4642
Environmental Quality Company: Wayne Disposal Facility 49350 North I-94 Service Drive Belleville, MI 48111 Phone: (800) 592-5489; Fax: (800) 592-5329	Stericycle (Northland Environmental, Inc.) (PSC Environmental Systems) 275 Allens Avenue, Providence, RI 02905 Phone: (401) 781-6340; Fax: (401) 781-9710

The Contractor shall submit in writing (1) a letter listing the names of the hazardous waste disposal facilities (from the above list) that the Contractor will use to receive hazardous material from this Project, and (2) a copy of each facility's acceptance criteria and sampling frequency requirements.

Failure to comply with all of the above requirements may result in the rejection of the bid.

No facility may be substituted for the one(s) designated in the Contractor's submittal without the Engineer's prior approval. If the material cannot be accepted by any of the Contractor's designated facilities, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Prior to the generation of any hazardous waste, the Contractor shall notify the Engineer of its selected hazardous waste transporter and disposal facility. The Contractor must submit to the Engineer (1) the transporter's current US DOT Certificate of Registration and (2) the transporter's current Hazardous Waste Transporter Permits for the State of Connecticut, the hazardous waste destination state and any other applicable states. The Engineer will then obtain on a contiguous per site basis a temporary EPA Generators ID number for the site that he will forward to the Contractor. Any changes in transporter or facility shall be immediately forwarded to the Engineer for review.

Handling, storage, transportation and disposal of hazardous waste materials generated as a result of execution of this project shall comply with all Federal, State and Local regulations including the USEPA RCRA Hazardous Waste Regulations (40 CFR Parts 260-271), the CTDEEP Hazardous Waste Regulations (22a-209 and 22a-449(c)), and the USDOT Hazardous Materials Regulations (49 CFR Part 171-180).

All debris shall be contained and collected daily or more frequently as directed by the Engineer, due to debris buildup. Debris shall be removed by HEPA vacuum collection. Such debris and paint chips shall be stored in leak-proof storage containers in the secured storage site, or as directed by the Engineer. The storage containers and storage locations shall be reviewed by the Engineer and shall be located in areas not subject to ponding. Storage containers shall be placed on pallets and closed and covered with tarps at all times except during placement, sampling and disposal of the debris.

Hazardous waste materials are to be properly packed and labeled for transport by the Contractor in accordance with EPA, CTDEEP and USDOT regulations. The disposal of debris characterized as hazardous waste shall be completed within 90 calendar days of the date on which it began to be accumulated in the lined containers. Storage of containers shall be in accordance with current DEEP/EPA procedures.

The Contractor shall label hazardous waste storage containers with a 6-inch square, yellow, weatherproof, Hazardous Waste sticker in accordance with USDOT regulations.

Materials other than direct paint related debris which are incidental to the paint removal work activities (tarps, poly, plywood, PPE, gloves, decontamination materials, etc.) which may be contaminated with lead, shall be stored separately from the direct paint debris, and shall be sampled by the Engineer for waste disposal characterization testing. Such materials characterized as hazardous shall be handled/disposed of as described herein, while materials characterized as non-hazardous shall be disposed of as non-hazardous CTDEEP Solid Waste.

Direct paint related debris materials not previously sampled and characterized for disposal, which may be originally presumed to be hazardous waste, shall also be stored separately and

sampled by the Engineer for ultimate waste disposal characterization testing and handled/disposed of based on that testing.

Project construction waste materials unrelated to the paint removal operations shall NOT be combined/stored with paint debris waste and/or incidental paint removal materials as they are not lead contaminated and shall NOT be disposed of as hazardous waste. The Engineer's on-site Inspectors shall conduct inspections to verify materials remain segregated.

The Contractor shall obtain and complete all paperwork necessary to arrange for material disposal, including disposal facility waste profile sheets. It is solely the Contractor's responsibility to co-ordinate the disposal of hazardous materials with its selected treatment/recycling/disposal facility(s). Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and treatment/recycling/disposal of the materials in accordance with all Federal and State regulations. **No claim will be considered based on the failure of the Contractor's disposal facility(s) to meet the Contractor's production rate or for the Contractor's failure to select sufficient facilities to meet its production rate.**

The Contractor shall process the hazardous waste such that the material conforms with the requirements of the selected treatment/disposal facility, including but not limited to specified size and dimension. Refusal on the part of the treatment/disposal facility to accept said material solely on the basis of non-conformance of the material to the facility's physical requirements is the responsibility of the Contractor and no claim for extra work shall be accepted for reprocessing of said materials to meet these requirements.

All DOT shipping documents, including the Uniform Hazardous Waste Manifests utilized to accompany the transportation of the hazardous waste material shall be prepared by the Contractor and reviewed/signed by an authorized agent representing ConnDOT, as Generator, for each load of hazardous material that is packed to leave the site. The Contractor shall not sign manifests on behalf of the State as Generator. The Contractor shall forward the appropriate original copies of all manifests to the Engineer the same day the material leaves the Project site.

Materials not related to lead paint removal and/or characterized as non-hazardous waste shall NOT be shipped for hazardous waste disposal in accordance with USEPA RCRA hazardous waste minimization requirements.

A load-specific certificate of disposal, signed by the authorized agent representing the waste disposal facility, shall be obtained by the Contractor and promptly delivered to the Engineer for each load.

In addition to all pertinent Federal, State and local laws or regulatory agency polices, the Contractor shall adhere to the following precautions during the transport of hazardous materials off-site:

- All vehicles departing the site are to be properly logged to show the vehicle

identification, driver's name, time of departure, destination, and approximate volume, and contents of materials carried. Vehicles shall display the proper USDOT placards for the type and quantity of waste;

- No materials shall leave the site unless a disposal facility willing to accept all of the material being transported has agreed to accept the type and quantity of waste;
- Documentation must be maintained indicating that all applicable laws have been satisfied and that the materials have been successfully transported and received at the disposal facility; and,
- The Contractor shall segregate the waste streams (i.e. concrete, wood, etc.) as directed by the receiving disposal facility.

Any spillage of debris during disposal operations during loading, transport and unloading shall be cleaned up in accordance with EPA 40 CFR 265 Subparts C & D, at the Contractor's expense.

The Contractor is liable for any fines, costs or remediation costs incurred as a result of their failure to be in compliance with this Item and all Federal, State and Local laws.

K. Project Closeout Data:

Provide the Engineer, within thirty (30) days of completion of the project site work, a compliance package; which shall include, but not be limited to, the following:

1. Competent persons (supervisor) job log;
2. OSHA-compliant personnel air sampling data;
3. Completed waste shipment papers for non-hazardous lead construction and demolition (C&D) waste disposal or recycling and scrap metal recycling.
4. Copies of completed Hazardous Waste Manifests (signed by authorized disposal facility representative).

Method of Measurement:

The completed work shall be paid as a lump sum. This item will include all noted services, equipment, facilities, testing and other associated work for up to three (3) ConnDOT project representatives. Services provided to any ConnDOT project representatives in excess of three (3) representatives will be measured for payment in accordance with Article 1.09.04 – “Extra and Cost-Plus Work.”

Basis of Payment:

The lump sum price bid for this item shall include: services, materials, equipment, all permits, notifications, submittals, personal air sampling, personal protection equipment, temporary enclosures, incidentals, fees and labor incidental to activities impacting lead removal, treatment

and handling of lead contaminated materials, and the transport and disposal of any hazardous and/or non-hazardous lead construction and demolition (C&D) bulky waste.

Final payment will not be made until all project closeout data submittals have been completed and provided to the Engineer. Once the completed package has been received in its entirety and accepted by the Engineer, final payment will be made to the Contractor.

<u>Pay Item</u>	<u>Pay Unit</u>
Lead Compliance for Miscellaneous Exterior Tasks	Lump Sum

END OF SECTION

ITEM #0090693A – SPARE PARTS

DESCRIPTION: This item shall consist of furnishing surge suppressors and electronic drivers for use as replacement parts for LED roadway luminaires.

MATERIALS: Surge suppressors shall be 20kV (UL 1449) and shall be rated for use in 480 volt circuits. The surge suppressor shall be supplied by the manufacturer of the LED luminaires approved for use on this project (installed under contract Item Nos. 1005601A and 1005602A) and shall be identical in all respects to the surge suppressors supplied with the LED luminaires. The Contractor shall supply the following quantities:

480 volt suppressors: Quantity = 80 units.

Electronic Drivers shall be rated for 480 volt circuits and shall operate at 60 Hz. The electronic drivers shall be supplied by the manufacturer of the LED luminaires approved for use on this project (installed under contract Item Nos. 1005601A and 1005602A) and shall be identical in all respects to the drivers supplied with the LED luminaires. The Contractor shall supply the following quantities:

LED Luminaire – Type 1: (480 volt): Quantity = 20 units.

LED Luminaire – Type 2: (480 volt): Quantity = 20 units.

CONSTRUCTION METHODS: Under this item the Contractor shall supply replacement (spare) parts consisting of surge suppressors and electronic drivers in the quantities listed. The spare parts shall be supplied by the same manufacturer of the LED luminaires approved for use on this project (installed under contract Item Nos. 1005601A and 1005602A) and shall be identical in all respects to the materials supplied under those items.

The Contractor shall contact the Electrical Maintenance Supervisor at ConnDOT District 1 Electrical Maintenance (tel: 860-566-3156) at least 48 hours in advance to coordinate the transfer of the spare parts to ConnDOT. Prior to pick-up, the spare parts shall be stored in a secure, weatherproof environment at the Contractor's project construction trailer/storage site. The Contractor shall assist ConnDOT Electrical personnel in loading the material onto ConnDOT vehicles for transport.

METHOD OF MEASUREMENT: This work will be measured for payment as a lump sum for the materials as specified, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract lump sum price for "Spare Parts", complete and accepted in place, which price shall include all materials including surge suppressors, electronic drivers, storage, transfer, loading, and all labor, tools, equipment and work incidental thereto.

ITEM #0101143A – HANDLING AND DISPOSAL OF REGULATED ITEMS

Description:

Work under this item shall include the management (handling and disposal) of regulated items and all associated work by persons who are employed by a CTDEEP permitted Spill Contractor and trained/certified in accordance with OSHA Hazard Communication regulations. Regulated items include hazardous and other materials and wastes, the disposal of which is restricted by Federal and/or State laws and regulations, and which may be a component of equipment or other items located on-site. Regulated items include those listed herein, or additional similar items identified on site by the Engineer. Work under this item does not include asbestos containing materials, lead paint, contaminated or hazardous soils.

Activities shall be performed in accordance with, but not limited to, the current revision of the USEPA & CTDEEP Hazardous Waste Regulations (40 CFR 260-282, 22a-209 and 22a-449(c)), USEPA PCB Regulations (40 CFR 761), USEPA Protection of Stratospheric Ozone (40 CFR 82), OSHA Hazard Communication (29 CFR 1910.1200), OSHA Hazardous Waste & Emergency Response Regulations (29 CFR 1910.120), USDOT Hazardous Materials Regulation (49 CFR 171-180), OSHA, RCRA, CERCLA, CAA, TSCA, and all other laws and regulations.

The work activities include the removal, handling, packing, labeling, transport, manifesting, and recycling or disposal of various regulated items at the Project site prior to beginning planned renovation/demolition activities.

The Contractor is solely responsible for verifying actual locations and quantities of the items with hazardous/regulated material/waste constituents and for their proper handling and disposal. The recycling or proper disposal, as appropriate, of all regulated items shall be completed prior to the initiation of any demolition or renovation activities.

Materials:

All materials shall be suitable for the management of regulated items and shall meet all applicable federal, state and local regulations. Such materials include, but are not limited to, proper containers, packing materials, labels, signs, shipping papers, personnel protective equipment (PPE) and spill kits.

Construction Methods:

(1) Allowable Disposal/Recycling Facilities

Disposal facilities for RCRA-hazardous, TSCA-hazardous, Connecticut Regulated, and Universal wastes shall be chosen from among those listed below. No other facility shall be used for these types of wastes without the written approval of the Engineer.

Advanced Disposal Services
Greentree Landfill
635 Toby Road
Kersey, PA 15846
Phone: (814) 265-1744 Fax: (814) 265-8745
MSW, C&D, asbestos, PCB remediation waste <50
ppm, petroleum contaminated soils, nonhazardous solid
wastes

Advanced Disposal
(managed by Interstate Waste Services)
7095 Glades Pike
Summerset, PA 15501
Phone: (814) 444-0112 Fax: (814) 444-0127
MSW, C&D debris, residual waste, sewer sludge,
incinerator ash, asbestos

Allied Waste Niagara Falls Landfill, LLC
5600 Niagara Falls Blvd.
Niagara, NY 14304
Phone: (716) 285-3344 Fax: (716) 285-3398
Non-hazardous waste, industrial solid waste, municipal
sewage treatment sludge, contaminated soil & debris,
asbestos waste, C&D debris, industrial process sludge

American Lamp Recycling, LLC
26 Industrial Way
Wappingers Falls, NY 12590
Phone: (845) 896-0058 Fax: (845) 896-1520
Mercury containing device, universal waste

Tradebe (Bridgeport United Recycling, Inc.)
50 Cross Street
Bridgeport, CT 06610
Phone: (203) 334-1666 Fax: (203) 334-1439
RCRA & CRW waste oil, fuel, wastewater

Clean Earth of Carteret
24 Middlesex Ave.,
Carteret, NJ 07008
Phone: (732) 541-8909 Fax: (732) 541-8505
Concrete, brick, block, street sweepings, stone, rock,
asphalt and petroleum contaminated soil

Clean Earth of Philadelphia, Inc.
3201 South 61 St.,
Philadelphia, PA 19153
Phone: (215) 724-5520 Fax: (215) 724-2939
Petroleum contaminated soil

Clean Earth of North Jersey, Inc. (aka CENJ)
115 Jacobus Ave,
South Kearny, NJ 07105
Phone: (973) 344-4004 Fax: (973) 344-8652
RCRA liquid and solid, asbestos

Clean Earth of Southeast Pennsylvania, Inc.
7 Steel Road,
Morrisville, PA 19067
Phone: (215) 428-1700 Fax: (215) 428-1704
Petroleum contaminated soil
Clean Harbors Environmental Services, Inc.
2247 South Hwy. 71,
Kimball, NE 69145
Phone: (308) 235-1012 Fax: (308) 235-4307
RCRA liquid, solid & sludge

Clean Harbors Environmental Services, Inc.
Cleveland Facility
2900 Rockefeller Ave.,
Cleveland, OH 44115
Phone: (216) 429-2401 Fax: (216) 883-1918
RCRA liquid: aqueous organic & inorganic wastewater

Clean Harbors Environmental Services, Inc.
Spring Grove Facility
4879 Spring Grove Ave.,
Cincinnati, OH 45232
Phone: (513) 681-6242 Fax: (513) 681-0869
RCRA liquid, solid & sludge: aqueous organic &
inorganic wastewater, PCB wastewater treatment

Clean Harbors of Baltimore, Inc.
1910 Russell St,
Baltimore, MD 21230
Phone: (410) 244-8200 Fax: (410) 752-2647
RCRA liquid: aqueous organic & inorganic wastewater

Clean Harbors of Braintree, Inc.
1 Hill Avenue,
Braintree, MA 02184
Phone: (781) 380-7134 Fax: (781) 380-7193
RCRA & TSCA liquid & solid

Clean Harbors of Connecticut, Inc.
51 Broderick Road,
Bristol, CT 06010
Phone: (860) 583-8917 Fax: (860) 583-1740
RCRA & CRW liquid

Clean Harbors of Woburn
(Murphy's Waste Oil Services, Inc.)
252 Salem Street,
Woburn, MA 01801
Phone: (781) 935-9066 Fax: (781) 935-8615
RCRA liquid: oil, oil/water mixtures; CRW oil filters,
oily soil & debris, F001/F002 contaminated oils,
antifreeze

Clinton Landfill
242 Church Street
Clinton, MA 01510
Phone: (978) 365-4110 Fax: (978) 365-4106
Comm-97 soils and other materials subject to a BUD
and additional review by MADEP (*2-week lead time
for review by MADEP)

Colonie Landfill (Waste Connections, Inc.)
1319 Loudon Rd,
Cohoes, New York 12047
Phone: (518) 783-2827 Fax: (518) 786-7331
Non-haz. wastes, special wastes, contaminated soil

Cumberland County Landfill
(aka Community Refuse Services
Managed by Interstate Waste Services)
135 Vaughn Road,
Shippensburg, PA 17257
Phone: (717) 729-2060 Fax: (717) 423-6822
Municipal solid waste, non-hazardous waste

ACV Enviro (aka Cycle Chem & General
Chemical Corp.)
217 South First Street,
Elizabeth, NJ 07206
Phone: (908) 355-5800 Fax: (908) 355-0562
RCRA, TSCA liquid and solid

Envirite of PA (US Ecology)
730 Vogelsong Road,
York, PA 17404
Phone: (717) 846-1900 Fax: (717) 854-6757
RCRA hazardous wastes

Environmental Quality Company:
Wayne Disposal Facility
(aka EQ Michigan Disposal Waste Treatment Plant
and Wayne Disposal Inc. Site #2)
49350 North I-94 Service Drive
Belleville, MI 48111
Phone: (734) 697-2200 Fax: (734) 699-3499
RCRA & TSCA liquid and solid

US Ecology (Environmental Quality Detroit Inc.)
1923 Frederick Street,
Detroit MI 48211
Phone: (734) 329-8017 Fax: (313) 923-3375
RCRA & CRW liquid wastewater
Environmental Soil Management of New York,
LLC (ESMI of New York)
304 Towpath Road,
Fort Edward, NY 12828
Phone: (518) 747-5500 Fax: (518) 747-1181
Petroleum contaminated soil

Environmental Soil Management of NH
67 International Dr.
Loudon, NH 03307
Phone: (603) 783-0228 Fax: (603) 783-0104
Petroleum contaminated soil

Triumvirate (Formerly EnviroSafe Corporation
Northeast & Jones Environmental Services)
263 Howard Street,
Lowell, MA 01852
Phone: (978) 453-7772 Fax: (978) 453-7775
RCRA & TSCA liquid and solid

Hazelton Creek Properties, LLC*
(Hazelton Mine Reclamation Project)
280 South Church St.,
Hazelton, PA 18201
Phone: (570) 574-1010 Fax: (570) 457-3395
Fresh, brackish or marine dredge material, coal ash,
cement kiln dust, lime kiln dust, co-gen ash, regulated
fill
*Please note that if this facility is to be used, each bin
letter will require an additional 10 day (or more) waiting
period on top of the 15 day lab period designated in the
specs to allow for PADEP review.

Heritage Hazardous Waste Landfill (Heritage
Environmental Services, LLC)
4370 W County Rd 1275 N
Roachdale, IN 46172
Phone: (765) 435-2704 Fax: (315) 687-3898
Hazardous Wastes, Asbestos

Manchester Landfill
311 Olcutt St.,
Manchester, CT 06040
Phone: (860) 647-3248 Fax: (860) 647-3238
Municipal solid waste, non-hazardous waste,
contaminated soil

Northeast Lamp Recycling, Inc.
250 Main Street,
East Windsor, CT 06088
Phone: (860) 292-1992 Fax: (860) 292-1114
CRW solid waste, mercury containing devices &
universal waste
Stericycle (Northland Environmental, LLC)
(aka PSC Environmental Systems)
275 Allens Ave.,
Providence RI 02905
Phone: (401) 781-6340 Fax: (401) 781-9710
RCRA liquid and solid

Ontario County Landfill
(Managed by Casella Waste)
3555 Post Farm Road,
Stanley, NY 14561
Phone: (585) 526-4420 Fax: (585) 526-5459
Municipal solid waste, non-hazardous waste solid,
special wastes including asbestos, ash from
boilers/incinerators, contaminated soil, demo debris

Paradise Heating Oil, Inc.
Quimby Street,
Ossining, NY 10562
Phone: (631) 926-2576 Fax: (718) 294-2226
CRW waste oil liquid

Phoenix Soil, LLC
58 North Washington Street
Plainville, CT 06062
Phone: (860) 747-8888 Fax: (203) 757-4933
Contaminated Soil

Red Technologies Soil
232 Airline Avenue
Portland, CT 06980
Phone: (860) 342-1022 Fax: (860) 342-1042
Temporary Storage & Transfer of contaminated soil

Republic Services Conestoga Landfill
420 Quarry Road
Morgantown, PA 19543
Phone: (610) 286-6844 Fax: (610) 286-7048
MSW, C&D debris, residual waste, contaminated soil,
asbestos *Please note that if this facility is to be used,
each bin letter will require an additional 10 day (or
more) waiting period on top of the 15 day lab period
designated in the specs to allow for PADEP review.

Stericycle (Formerly Republic Environmental
Systems (aka Philip Services Corporation (PSC)
Republic)
2869 Sandstone Dr.,
Hatfield PA 19440
Phone: (215) 822-8995 Fax: (215) 997-1293
RCRA & TSCA industrial solid & sludge, aqueous
waste, contaminated soil, PCB waste, oil & petroleum
waste, organic waste
Soil Safe, Inc.
378 Route 130, Logan Township,
Bridgeport NJ 08085
Phone: (410) 872-3990 x1120
Fax: (410) 872-9082
Soil contaminated with petroleum or metals, some
industrial waste solids

The Southbridge Recycling & Disposal Park
165 Barefoot Rd.
Southbridge, MA 01550
Phone: (508) 765-9723, (603) 235-3597
Fax: (508) 765-6812
MSW, non-hazardous C & D waste, contaminated soil
for cover

Stablex Canada, Inc.
760 Industrial Blvd.
Blainville Quebec J7C 3V4
Phone: (450) 430-9230 Fax: (450) 430-4642
RCRA liquid and solid, industrial wastes

Ted Ondrick Company, LLC
58 Industrial Road,
Chicopee, MA 01020
Phone: (413) 592-2566 Fax: (413) 592-7451
Petroleum contaminated soil

Tradebe Treatment & Recycling
136 Gracey Ave.
Meriden, CT 06451
Phone: (203) 238-8114 Fax: (203) 238-6772
RCRA, CRW wastewater, oil, hazardous waste fuels,
hazardous and non-hazardous waste water

Tunnel Hill Reclamation
2500 Township Road, 205 Route 2
New Lexington, OH 43764
Phone: (914) 713-0203 Fax: (914) 713-0672
Municipal solid waste, non-hazardous waste,
contaminated soils

Waste Management
RCI Fitchburg Landfill
Fitchburg Princeton Road,
Westminister, MA 01473
Phone: (978) 355-6821 Fax: (978) 355-6317
Solid: MSW, non-hazardous waste, C&D, contaminated
soil for use as cover material under MADEP COMM-97
policy

Turnkey Landfill (Waste Management of NH)
TLR III Refuse Disposal Facility
90 Rochester Neck Road, PO Box 7065
Rochester, NH 03839
Phone: (603) 330-2197 Fax: (603) 330-2130
Solid: MSW, C&D, PCB remediation waste (<50ppm),
virgin petroleum contaminated soil, CRW solid waste

The category of material accepted by each facility listed above is for informational purposes only. The Contractor shall verify facility acceptance of each type of regulated item.

(2) Submittals

Thirty (30) days prior to commencement of work involving the management of regulated items, the Contractor shall submit to the Engineer for approval, the following documentation:

1. Copy of Spill Contractor Permit registration issued by the CTDEEP.
2. Hazard communication training for all employees performing this work.
3. Names of the treatment facilities, recycling facilities and/or disposal facilities the Contractor intends to use to receive each type of regulated item.
4. Hazardous Material Transporter USDOT Certificate of Registration for each waste transporter.
5. Hazardous Material Transporter Permit for the State of Connecticut, the destination state(s), and all other applicable states for each waste transporter.

Contractor shall provide the Engineer with a minimum of 48 hours notice in advance of scheduling, changing or canceling work activities.

(3) Regulated Item Management Provisions

(a) General Requirements

The Contractor's OSHA Competent Person shall be in control on the job site at all times during hazardous material management work activities. This person must be capable of identifying existing hazards, possess the authority to implement corrective measures to reduce/eliminate the hazards, comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract. All employees who perform regulated material management related work shall be properly trained and qualified to perform such duties.

All labor, materials, tools, equipment, services, testing, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations, industry standards and codes, and these specifications, shall be provided by the Contractor.

Ladders and/or scaffolds shall be in compliance with OSHA requirements, and of adequate length, strength and sufficient quantity to support the scope of work. Use of ladders/scaffolds shall be in conformance with OSHA 29 CFR 1926 Subpart L and X requirements.

Work performed at heights exceeding six feet (6') shall be performed in accordance with the OSHA Fall Protection Standard 29 CFR 1926 Subpart M including the use of fall arrest systems as applicable.

Inventory data from investigative surveys throughout the buildings are included herein and are presented for informational purposes only. Under no circumstances shall this information be the sole means used by the Contractor for determining the quantities or extent of the regulated items to be managed. The Contractor shall be responsible for verification of all field conditions affecting performance of the work. The Contractor shall submit to the Engineer for concurrence any additional items not listed herein that it believes to be regulated items included under this item. However, compliance with applicable requirements is solely the responsibility of the Contractor.

The Engineer will provide a Project Monitor to monitor the activities of the Contractor and inspect the work required. Environmental sampling shall be conducted as deemed necessary by the Engineer. Spill areas shall be cleaned by the Contractor until accepted by the Engineer. The Engineer may sample the spill area to demonstrate Contractor compliance with an acceptable standard.

(b) Personnel Protection

Prior to commencing work, the Contractor shall provide hazard communication training to all employees as necessary in accordance with OSHA 29 CFR 1926.59 and 29 CFR 1910.1200 and instruct all workers in all aspects of personnel protection, work procedures, emergency procedures and use of equipment including procedures unique to this project. Worker health and safety protocols that address potential and/or actual risk of exposure to site specific hazards are solely the responsibility of the Contractor.

The Contractor shall provide respiratory protection that meets the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1000. A formal respiratory protection program, including appropriate medical surveillance, must be implemented in accordance with OSHA standards. The Contractor shall, as necessary, conduct exposure assessment air sampling, analysis and reporting to ensure the workers are afforded appropriate respiratory protection.

The Contractor shall provide and require all workers to wear appropriate personnel protective equipment, including protective clothing and respiratory protection, as required, within regulated work areas which exceed OSHA Personnel Exposure Limits (PELs) or when handling hazardous materials.

(c) Regulated Item Management Work Procedures

The Contractor shall not begin work until the Project Monitor is on-site.

Prior to beginning work on-site, the Contractor shall prepare waste characterization profile forms for each type of waste stream to be generated and forward such forms to the Engineer for review, approval and signature. Upon approval, the Contractor shall forward such forms to the appropriate disposal facilities for acceptance.

The Contractor shall utilize all appropriate engineering controls and safety and protective equipment while performing the work in accordance with OSHA, USEPA, USDOT, CTDEEP and Connecticut Department of Public Health DPH regulations.

The Contractor shall employ work practices so as to minimize the disturbance of the constituents in the regulated items, and prevent breakage and spills. In the event of a spill, the Contractor shall cordon off the area and notify the Engineer. The Contractor is responsible to have spills and the effected areas decontaminated to the acceptance of the Engineer by personnel trained in hazardous waste operator emergency response.

The Contractor shall carefully and properly remove, handle, pack, label and manifest all of the regulated items in waste containers specified and suitable to contain the waste in accordance with all federal and state regulations.

Prior to transportation and recycling and/or disposal, all proper USEPA, OSHA, CTDEEP and USDOT labels and placards shall be affixed to the waste containers and hazardous materials shipping papers such as waste manifests/bills of lading shall be completed.

District 1 Roadway Illumination Systems (Site No. 1, Site No. 2, Site No. 3, Site No. 4 & Site No. 5):

- **Route 9 from south of Christian Lane (mile 32.70) to Stanley Street (mile 36.25) in Berlin and New Britain. Route 72 from Route 9 (mile 0.00) to Wooster Street (mile 2.50) in New Britain. SR 571 from Route 71A (mile 0.00) to Route 9 (mile 1.34) in Berlin. Route 372 from the SR 918/Farmington Avenue west junction (mile 6.13) to Route 71A (mile 6.27) in New Britain and Berlin.**
- **Route 2 at the Route 83 interchange (mile 9.30 to 10.50) in Glastonbury.**
- **Route 15 from the Berlin Turnpike (mile 77.74) to Route 99 (mile 79.92) in Wethersfield.**
- **Interstate 384 from Spencer Street (mile 1.34) to west of Gardner Street (mile 4.95) in Manchester.**
- **Replace lighting control cabinet located at the intersection of Route 3 and Main Street in Glastonbury.**

Prior to construction activity which would disturb such materials, properly remove, handle, pack, label, transport, manifest and recycle or dispose of the regulated items from those listed below:

The following hazardous/regulated materials, wastes and items have been identified in the roadway illumination poles/control cabinets in District 1:

- **Universal waste (UW) - Printed Circuit Boards – Control Cabinets for Roadway Illumination Poles**

- **Universal waste (UW) - Mercury (Hg) lamps – Luminaire Light Fixtures**
- **Universal waste (UW) - Used Electronic Ballasts – Luminaire Light Fixtures**
- **Connecticut Regulated Waste – PCB/DEHP ballasts – Luminaire Light Fixtures**
- **Mouse nests, urine, droppings, etc. – Viruses/bacteria**

Mouse nests, urine, droppings, etc. were observed in the roadway illumination poles in District 1. Contractor shall use trained and appropriately protected staff to remove and dispose of the mouse nests in the illumination poles. Waste generated should be removed from the poles in sealed plastic bags and disposed of as general bulky C&D waste debris. Employees conducting cleaning shall have received hazard communication training and be afforded proper PPE as determined by a Competent Person (N95 respirators, eye protection, protective clothing and gloves minimum).

Upon discovery of any previously unidentified regulated items during renovation activities, the Contractor shall immediately notify the Engineer and work shall cease in that area until the Engineer can determine the extent of any impact and proper handling procedures are implemented.

Efforts shall be made to recycle the constituents of the regulated items rather than dispose of them in accordance with the waste minimization efforts required under RCRA.

RCRA hazardous waste shall not be stored on the job site in excess of 90 calendar days from the accumulation start date.

Connecticut Regulated Waste shall not be transported to a RCRA or TSCA permitted facility for disposal, unless otherwise allowed by the Engineer in writing.

All non-RCRA hazardous waste materials, regulated waste materials and recyclable waste items shall be manifested separately from RCRA and TSCA hazardous waste, and documented properly on non-hazardous waste manifests, waste shipment records, bills of lading or other appropriate shipping papers for transportation to the recycling and/or disposal facility.

The Contractor shall prepare each lab pack list and shipping document (manifests, waste shipment records, bills of lading, etc.) with all of the required information completed (including types of waste, proper shipping name, categories, packing numbers, amounts of waste, etc.) in accordance with applicable federal and state regulations. The document will be signed by an authorized agent representing ConnDOT as the Generator for each load that is packed to leave the site.

The Contractor shall forward the appropriate original copies of shipping papers to the Engineer the same day the regulated items leave the project site.

All vehicles departing the site transporting hazardous materials shall display proper USDOT placards, as appropriate for the type of waste being transported.

(d) Project Closeout Documents:

Within thirty (30) days after completion of the on-site project work, the Contractor shall submit to the Engineer copies of the following completed documents:

1. Hazardous Waste Manifests
2. Waste Shipment Records/Bills of Lading
3. Recycling Receipts

Documents 1. through 3. must include the signature of an authorized disposal facility representative acknowledging receipt of hazardous materials.

Method of Measurement:

The work of “Handling and Disposal of Regulated Items” shall be provided for in accordance with Article 1.04.05 – Extra Work.

Basis of Payment:

The work of “Handling and Disposal of Regulated Items” shall be paid for in accordance with Article 1.04.05 – Extra Work, which price shall include the management, removal, handling, packing, labeling, transport, manifesting, recycling or disposal of the regulated constituents in the specific equipment/items scheduled for impact at the project site, and all equipment, materials, tools and labor incidental to the work.

Final payment will not be made until completed copies of all Manifest(s), Waste Shipment Records, Bills of Lading and/or Recycling Receipts have been provided to the Engineer. Once completed and facility-signed copies have been received in their entirety, the Engineer will make the final payment.

<u>Pay Item</u>	<u>Pay Unit</u>
Handling and Disposal of Regulated Items	Estimate

END OF SECTION

ITEM #0602903A – DRILLING HOLES

DESCRIPTION: This work shall consist of core drilling through a concrete bridge parapet, wingwall or retaining wall at the locations as shown on the plans, and in accordance with this specification. The drilled hole shall be used to allow the passage of rigid metal conduit into an existing junction box.

MATERIALS: Mortar shall conform to the requirements of Article M.11.04.

Sealant shall be silicone based rated for outdoor use.

CONSTRUCTION METHODS: The Contractor shall core drill through a concrete bridge parapet, wingwall or retaining wall at the locations as shown on the plans. The drilled hole shall have a diameter no larger than the minimum diameter required to accept the size conduit as specified on the plans. The Contractor shall avoid damaging existing reinforcing bars when drilling through the structure wall. The location of the existing rebar shall be determined using a pachometer. Where a hole is drilled into the back of an existing junction box, the hole shall be cleaned and all loose dust removed prior to installation of the conduit. Once the conduit has been inserted through the drilled hole, the Contractor shall seal around the conduit using a silicone based sealant rated for outdoor use. Conduit shall be secured to the junction box using lock nuts, and shall be terminated with an insulated bonding bushing (locknuts and bushings to be furnished, installed, and paid for under the item for conduit).

The drilling method used shall not cause spalling or other damage to the concrete. Concrete spalled or otherwise damaged by the Contractor's operations shall be repaired with mortar and finished flush to match the existing outside face of the parapet or wingwall.

METHOD OF MEASUREMENT: This work will be measured for payment by the actual number of holes drilled, complete and accepted.

BASIS OF PAYMENT: This work shall be paid for at the contract unit price each for "Drilling Holes" of the diameter and depth required, complete and accepted in place, which price shall include locating rebar, drilling, sealing around conduit, mortar, and all material, tools, equipment, labor, and work incidental thereto.

ITEM #0969062A – CONSTRUCTION FIELD OFFICE, MEDIUM

Description: Under the item included in the bid document, adequate weatherproof office quarters with related furnishings, materials, equipment and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size	Small	Med.	Large	Extra Large
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.	400	400	1000	2000
Minimum number of exterior entrances.	2	2	2	2
Minimum number of parking spaces.	7	7	10	15

Office Layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

- A. 120/240 volt, 1 phase, 3 wire
- B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
- C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
- D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
- E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
- F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
- G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
- H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
- I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68°-80° Fahrenheit within the field office.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium and Large field office this shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. For an Extra-Large field office this shall consist of four (4) telephone lines: three (3) lines for phone/voice service and one (1) line dedicated for facsimile machine. The Contractor shall pay all charges.

Data Communications Facility Wiring: Contractor shall install a Category 6 568B patch panel in a central wiring location and Cat 6 cable from the patch panel to each PC station, Smart Board location, Multifunction Laser Printer/Copier/Scanner/Fax, terminating in a (Category 6 568B) wall or surface mount data jack. The central wiring location shall also house either the data circuit with appropriate power requirements or a category 5 cable run to the location of the installed data circuit. The central wiring location will be determined by the CTDOT OIS staff in coordination with the designated field office personnel as soon as the facility is in place.

For Small, Medium and Large field offices the Contractor shall run a CAT 6 LAN cable a minimum length of 25 feet for each CTDOT networked device (including but not limited to: smartboards and Multi-Function Laser Printer/Copier/Scanner/Fax) to LAN switch area leaving an additional 10 feet of cable length on each side with terminated RJ45 connectors. For an Extra-Large field office the Contractor shall run CAT 6 LAN cables from workstations, install patch panel in data circuit demark area and terminate runs with RJ45 jacks at each device location. Terminate runs to patch panel in LAN switch area. Each run / jack shall be clearly labeled with an identifying Jack Number.

The Contractor shall supply cables to connect the Wi-Fi printer to the Contractor supplied internet router and to workstations/devices as needed. These cables shall be separate from the LAN cables and data Jacks detailed above for the CTDOT network.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner/Fax, and smartboards listed below.

The installation of a data communication circuit between the field office and the CTDOT OIS in Newington will be coordinated between the CTDOT District staff, CTDOT OIS staff and the local utility company once the Contractor supplies the field office phone numbers and anticipated installation date. The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02. This is required to facilitate data line and computer installations.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field Office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size			
	Small	Med.	Large	Extra Large
	Quantity			
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.	1	3	5	8
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.	-	-	-	1
Personal computer tables (4 ft. x 2.5 ft.).	2	3	5	8
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.	1	1	1	2
Conference table, 3 ft. x 12 ft.	-	-	-	1
Table – 3 ft. x 6 ft.	-	-	-	1
Office Chairs.	2	4	8	20
Mail slot bin – legal size.	-	-	1	1
Non-fire resistant cabinet.	-	-	2	4
Fire resistant cabinet (legal size/4 drawer), locking.	1	1	2	3
Storage racks to hold 3 ft. x 5 ft. display charts.	-	-	1	2
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.	1	1	2	2
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.	-	-	1	2
Case of cardboard banker boxes (Min 10 boxes/case)	1	1	2	3
Open bookcase – 3 shelves – 3 ft. long.	-	-	2	2
White Dry-Erase Board, 36" x 48" min. with markers and eraser.	1	1	1	1
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.	-	-	6	6
Coat rack with 20 coat capacity.	-	-	-	1
Wastebaskets - 30 gal., including plastic waste bags.	1	1	1	2
Wastebaskets - 5 gal., including plastic waste bags.	1	3	6	10
Electric wall clock.	-	-	-	2
Telephone.	1	1	1	-
Full size stapler 20 (sheet capacity, with staples)	1	2	5	8
Desktop tape dispensers (with Tape)	1	2	5	8
8 Outlet Power Strip with Surge Protection	3	4	6	9
Rain Gauge	1	1	1	1

Business telephone system for three lines with ten handsets, intercom capability, and one speaker phone for conference table.	-	-	-	1
Mini refrigerator - 3.2 c.f. min.	1	1	1	1
Hot and cold water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project.	1	1	1	1
Microwave, 1.2 c.f. , 1000W min.	1	1	1	1
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.	*	*	*	*
Electric pencil sharpeners.	1	2	2	2
Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.	1	1	2	4
Small Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .	1	1		
Large Multi-Function Laser Printer/Copier/Scanner/Fax combination unit, network capable, as specified below under <u>Computer Related Hardware and Software</u> .			1	1
Field Office Wi-Fi Connection as specified below under <u>Computer Related Hardware and Software</u>	1	1	1	1
Wi-Fi Printer as specified below under <u>Computer Related Hardware and Software</u> .	1	1	1	1
Digital Camera as specified below under <u>Computer Related Hardware and Software</u> .	1	1	3	3
Video Projector as specified below under <u>Computer Related Hardware and Software</u> .	-	-	-	1
Smart Board as specified below under <u>Computer Related Hardware and Software</u> .	-	-	-	1
Infrared Thermometer, including annual third party certified calibration, case, and cleaning wipes.	1	1	1	2
Concrete Curing Box as specified below under Concrete Testing Equipment.	1	1	1	1
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.	1	1	1	1
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.	1	1	1	1
First Aid Kit	1	1	1	1
Flip Phones as specified under <u>Computer Related Hardware and</u>	-	-	-	-

<u>Software.</u>				
Smart Phones as specified under <u>Computer Related Hardware and Software.</u>	-	-	-	-

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Computer Related Hardware and Software: The CTDOT will supply by its own means the actual Personal Computers for the CTDOT representatives. The Contractor shall supply the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors, and Smart Board(s) as well as associated hardware and software, must meet the requirements of this specification as well as the latest minimum specifications posted, as of the project advertising date, at CTDOTs web site <http://www.ct.gov/dot/cwp/view.asp?a=1410&q=563904>

Within 10 calendar days after the signing of the Contract but before ordering/purchasing the Wi-Fi Printer (separate from the Multifunction Laser Printer/Copier/Scanner/Fax), Field Office Wi-Fi, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projector(s) and Smart Board(s) as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The Wi-Fi Printer, Wi-Fi Router, Flip Phones, Smart Phones, digital cameras, Projector(s) and Smart Board(s) will be reviewed by CTDOT District personnel. The Multifunction Laser Printer/Copier/Scanner/Fax will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation and setup of the field office Wi-Fi, Wi-Fi printer, and the configuration of the wireless router as directed by the CTDOT. Installation will be coordinated with CTDOT District and Project personnel.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the Field Office Wi-Fi Connection, Wi-Fi Printer, Digital Camera(s), Flip Phones, Smart Phones, Multifunction Laser Printer/Copier/Scanner/Fax, Video Projectors and Smart Board(s), as well as associated hardware, software, supplies, and support documentation.

The Contractor shall provide all supplies, paper, maintenance, service and repairs (including labor and parts) for the Wi-Fi printers, copiers, field office Wi-Fi, fax machines and other equipment and facilities required by this specification for the duration of the Contract. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then an equal or better replacement must be provided.

Once the Contract has been completed, the hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply install and maintain a rain gauge for the duration of the project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rain water from the top of the post into the rain gauge. The Location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

- A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.
- B) Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.
- C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

All testing equipment will remain the property of the Contractor at the completion of the project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars (\$5,000) in order to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. These losses shall include, but not be limited to: theft, fire, and physical damage. The CTDOT will be responsible for all maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, the CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount

of the insurance coverage, the CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During the occupancy by the CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement: The furnishing and maintenance of the construction field office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

Basis of Payment: The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for “Construction Field Office, Medium,” which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements of this specified this specification.

<u>Pay Item</u>	<u>Pay Unit</u>
Construction Field Office, Medium	Month

ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description is supplemented by the following:

The Contractor shall maintain and protect traffic as described by the following and as limited in the Special Provision "Prosecution and Progress":

Interstate 384, Route 2, Route 9, Route 15, Route 72, and Route 571

The Contractor shall maintain and protect the minimum number of through lanes and shoulders as dictated in the Special Provision for Section 1.08 - Prosecution and Progress "Limitations of Operations - Minimum Number of Lanes to Remain Open" Chart, on a paved travel path not less than 12 feet in width per lane.

The Contractor shall be allowed to halt traffic for a period of time not to exceed 10 minutes for the purpose of installing new or removing existing electrical facilities. If more than one 10-minute period is required, the Contractor shall allow all stored vehicles to proceed through the work area prior to the next stoppage.

SITE 1

Ramps, Turning Roadways, State & Local Roads

Site 1: All Ramps and Turning Roadways

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic, on a paved travel path not less than 12 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to close any ramp where the available width is less than 30 feet and detour traffic. The Contractor shall provide the proposed detour route to the Engineer two weeks prior to any ramp closures.

Site 1: Route 174 (East Main Street)

The Contractor shall maintain and protect a minimum of two lanes of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least one lane of traffic in each direction and existing left turn lanes, each on a paved travel path not less than 11 feet in width.

Site 1: Route 555 (West Main Street)

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

Site 1 :Route 372 (Corbin Avenue) at Route 72 Off-Ramps in New Britain

The Contractor shall maintain and protect a minimum of two lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least one lane of traffic in each direction, each on a paved travel path not less than 11 feet in width.

Site 1 :Route 372 (Corbin Avenue) at end of Route 571 in Berlin

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

Site 1: Route 71 (New Britain Road)

The Contractor shall maintain and protect a minimum of two lanes of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least one lane of traffic in each direction, each on a paved travel path not less than 11 feet in width.

Site 1: All Other Roads

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

SITE 2

Ramps, Turning Roadways, State & Local Roads

Site 2: All Ramps and Turning Roadways

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic, on a paved travel path not less than 12 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to close any ramp where the available width is less than 30 feet and detour traffic. The Contractor shall provide the proposed detour route to the Engineer two weeks prior to any ramp closures.

Site 2: All Other Roads

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

SITE 3
Ramps, Turning Roadways, State & Local Roads

Site 3: All Ramps and Turning Roadways

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic, on a paved travel path not less than 12 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to close any ramp where the available width is less than 30 feet and detour traffic. The Contractor shall provide the proposed detour route to the Engineer two weeks prior to any ramp closures.

Site 3: Route 919 (Berlin Turnpike) Southbound, North of Route 15 SB Merge

The Contractor shall maintain and protect a minimum of two lanes of traffic, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic, on a paved travel path not less than 11 feet in width.

Site 3: Wolcott Hill Road

The Contractor shall maintain and protect a minimum of two lanes of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a

minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Site 3: Route 314 (Jordan Lane)

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

Site 3: Route 99 (Silas Deane Highway)

The Contractor shall maintain and protect a minimum of two lanes of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Site 3: All Other Roads

The Contractor shall maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

SITE 4
Ramps, Turning Roadways, State & Local Roads

Site 4: All Ramps and Turning Roadways

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic, on a paved travel path not less than 12 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to close any ramp where the available width is less than 30 feet and detour traffic. The Contractor shall provide the proposed detour route to the Engineer two weeks prior to any ramp closures.

Site 4: Route 502 (Spencer Street)

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Where turn lanes exist, the Contractor shall provide an additional 10 feet of paved travel path to be used for turning vehicles only. This additional 10 feet of travel path shall be a minimum length of 150 feet. It shall be implemented so that sufficient storage, taper length, and turning radius are provided.

Site 4: Keeney Street

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Site 4: Route 83 (South Main Street)

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic on a paved travel path not less than 11 feet in width.

Site 4: All Other Roads

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an alternating one-way traffic operation, on a paved travel path not less than 11 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet and there shall be no more than one alternating one-way traffic operation within the project limits without prior approval of the Engineer.

SITE 5
State & Local Roads

Site 5: Main Street in Glastonbury

The Contractor shall maintain and protect a minimum of two lanes of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor shall be allowed to maintain and protect a minimum of one lane of traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Commercial and Residential Driveways

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the project limits. The Contractor will be allowed to close said driveways to perform the required work during those periods when the businesses are closed, unless permission is granted from the business owner to close the driveway during business hours. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure.

Article 9.71.03 - Construction Method is supplemented as follows:

General

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific contract plans and provisions to temporarily lower these structures prior to the completion of work.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing for trenching shall be completed by the end of a workday (work night), or as directed by the Engineer. When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3-foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the end of the workday, if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary traversable slope of 4:1 or flatter that is acceptable to the Engineer.

The Contractor, during the course of active construction work on luminaires, shall close the lanes directly below the work area for the entire length of time overhead work is being undertaken.

The Contractor shall not store any material on-site which would present a safety hazard to motorists or pedestrians (e.g. fixed object or obstruct sight lines).

The field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed, except during the allowable periods.

Construction vehicles entering travel lanes at speeds less than the posted speed are interfering with traffic, and shall not be allowed without a lane closure. The lane closure shall be of sufficient length to allow vehicles to enter or exit the work area at posted speeds, in order to merge with existing traffic.

Existing Signing

The Contractor shall maintain all existing overhead and side-mounted signs throughout the project limits during the duration of the project.

Requirements for Winter

The Contractor shall schedule a meeting with representatives from the Department including the offices of Maintenance and Traffic, and the Town/City to determine what interim traffic control measures the Contractor shall accomplish for the winter to provide safety to the motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

Signing Patterns

The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS

The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for the safe and efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

TRAFFIC CONTROL PATTERNS

Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder. For each situation, the installation of traffic control devices shall be based on the following:

- Speed and volume of traffic
- Duration of operation
- Exposure to hazards

Traffic control patterns shall be uniform, neat and orderly so as to command respect from the motorist.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

If a lane reduction taper is required to shift traffic, the entire length of the taper should be installed on a tangent section of roadway so that the entire taper area can be seen by the motorist.

Any existing signs that are in conflict with the traffic control patterns shall be removed, covered, or turned so that they are not readable by oncoming traffic.

When installing a traffic control pattern, a Buffer Area should be provided and this area shall be free of equipment, workers, materials and parked vehicles.

Typical traffic control plans 19 through 25 may be used for moving operations such as line striping, pot hole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns will not be required when vehicles are on an emergency patrol type activity or when a short duration stop is made and the equipment can be contained within the shoulder. Flashing lights and appropriate trafficperson shall be used when required.

Although each situation must be dealt with individually, conformity with the typical traffic control plans contained herein is required. In a situation not adequately covered by the typical traffic control plans, the Contractor must contact the Engineer for assistance prior to setting up a traffic control pattern.

PLACEMENT OF SIGNS

Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads), where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

ALLOWABLE ADJUSTMENT OF SIGNS AND DEVICES SHOWN ON THE TRAFFIC CONTROL PLANS

The traffic control plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans whenever possible.

The proper application of the traffic control plans and installation of traffic control devices depends on actual field conditions.

Adjustments to the traffic control plans shall be made only at the direction of the Engineer to improve the visibility of the signs and devices and to better control traffic operations. Adjustments to the traffic control plans shall be based on safety of work forces and motorists, abutting property requirements, driveways, side roads, and the vertical and horizontal curvature of the roadway.

The Engineer may require that the traffic control pattern be located significantly in advance of the work area to provide better sight line to the signing and safer traffic operations through the work zone.

Table I indicates the minimum taper length required for a lane closure based on the posted speed limit of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the traffic control plans cannot be achieved.

TABLE I – MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT MILES PER HOUR	MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE
30 OR LESS	180
35	250
40	320
45	540
50	600
55	660
65	780

SECTION 1. WORK ZONE SAFETY MEETINGS

- 1.a) Prior to the commencement of work, a work zone safety meeting will be conducted with representatives of DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the project. Other work zone safety meetings during the course of the project should be scheduled as needed.
- 1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. Any issues that can't be resolved at these meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda should include:
- Review Project scope of work and time
 - Review Section 1.08, Prosecution and Progress
 - Review Section 9.70, Trafficpersons
 - Review Section 9.71, Maintenance and Protection of Traffic
 - Review Contractor's schedule and method of operations.
 - Review areas of special concern: ramps, turning roadways, medians, lane drops, etc.
 - Open discussion of work zone questions and issues
 - Discussion of review and approval process for changes in contract requirements as they relate to work zone areas

SECTION 2. GENERAL

- 2.a) If the required minimum number of signs and equipment (i.e. one High Mounted Internally Illuminated Flashing Arrow for each lane closed, two TMAs, Changeable Message Sign, etc.) are not available; the traffic control pattern shall not be installed.
- 2.b) The Contractor shall have back-up equipment (TMAs, High Mounted Internally Illuminated Flashing Arrow, Changeable Message Sign, construction signs, cones/drums, etc.) available at all times in case of mechanical failures, etc. The only exception to this is in the case of sudden equipment breakdowns in which the pattern may be installed but the Contractor must provide replacement equipment within 24 hours.
- 2.c) Failure of the Contractor to have the required minimum number of signs, personnel and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for loss time.
- 2.d) In cases of legitimate differences of opinion between the Contractor and the Inspection staff, the Inspection staff shall err on the side of safety. The matter shall be brought to

the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

- 3.a) Lane Closures shall be installed beginning with the advance warning signs and proceeding forward toward the work area.
- 3.b) Lane Closures shall be removed in the reverse order, beginning at the work area, or end of the traffic control pattern, and proceeding back toward the advance warning signs.
- 3.c) Stopping traffic may be allowed:
 - As per the contract for such activities as blasting, steel erection, etc.
 - During paving, milling operations, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
 - To move slow moving equipment across live traffic lanes into the work area.
- 3.d) Under certain situations when the safety of the traveling public and/or that of the workers may be compromised due to conditions such as traffic volume, speed, roadside obstructions, or sight line deficiencies, as determined by the Engineer and/or State Police, traffic may be briefly impeded while installing and/or removing the advance warning signs and the first ten traffic cones/drums only. Appropriate measures shall be taken to safely slow traffic. If required, traffic slowing techniques may be used and shall include the use of Truck Mounted Impact Attenuators (TMAs) as appropriate, for a minimum of one mile in advance of the pattern starting point. Once the advance warning signs and the first ten traffic cones/drums are installed/removed, the TMAs and sign crew shall continue to install/remove the pattern as described in Section 5 and traffic shall be allowed to resume their normal travel.
- 3.e) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.
- 3.f) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travel path prior to merging/exiting with/from the main line traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.
- 3.g) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.

- 3.h) On limited access roadways, workers are prohibited from crossing the travel lanes to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

SECTION 4. USE OF HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

- 4.a) On limited access roadways, one Flashing Arrow shall be used for each lane that is closed. The Flashing Arrow shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the traffic control plan. For multiple lane closures, one Flashing Arrow is required for each lane closed. If conditions warrant, additional Flashing Arrows should be employed (i.e.: curves, major ramps, etc.).
- 4.b) On non-limited access roadways, the use of a Flashing Arrow for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the Flashing Arrow.
- 4.c) The Flashing Arrow shall not be used on two lane, two-way roadways for temporary alternating one-way traffic operations.
- 4.d) The Flashing Arrow board display shall be in the “arrow” mode for lane closure tapers and in the “caution” mode (four corners) for shoulder work, blocking the shoulder, or roadside work near the shoulder. The Flashing Arrow shall be in the “caution” mode when it is positioned in the closed lane.
- 4.e) The Flashing Arrow shall not be used on a multi-lane roadway to laterally shift all lanes of traffic, because unnecessary lane changing may result.

SECTION 5. USE OF TRUCK MOUNTED IMPACT ATTENUATOR VEHICLES (TMAs)

- 5.a) For lane closures on limited access roadways, a minimum of two TMAs shall be used to install and remove traffic control patterns. If two TMAs are not available, the pattern shall not be installed.
- 5.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to utilize the TMAs.
- 5.c) Generally, to establish the advance and transition signing, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane. The flashing arrow board mounted on the TMA should be in the “flashing arrow” mode when taking the lane. The sign truck and workers should be immediately ahead of

the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Changeable Message Signs, signs, Flashing Arrows, and cones/drums are installed. The flashing arrow board mounted on the TMA should be in the “caution” mode when traveling in the closed lane.

- 5.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The flashing arrow board mounted on the TMA should be in the “caution” mode when in the closed lane.
- 5.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to the specification entitled “Truck-Mounted or Trailer-Mounted Impact Attenuator”. Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) should be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.
- 5.f) TMAs should be paid in accordance with how the unit is utilized. When it is used as a TMA and is in the proper location as specified, and then it should be paid at the specified hourly rate for “Truck-Mounted or Trailer-Mounted Impact Attenuator”. When the TMA is used as a Flashing Arrow, it should be paid at the daily rate for “High Mounted Internally Illuminated Flashing Arrow”. If a TMA is used to install and remove a pattern and then is used as a Flashing Arrow, the unit should be paid as a “Truck-Mounted or Trailer-Mounted Impact Attenuator” for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove), and is also paid for the day as a “High Mounted Internally Illuminated Flashing Arrow”.

SECTION 6. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

- 6.a) Traffic drums shall be used for taper channelization on limited-access roadways, ramps, and turning roadways and to delineate raised catch basins and other hazards.
- 6.b) Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.
- 6.c) Traffic Cones less than 42 inches in height shall not be used on limited-access roadways or on non-limited access roadways with a posted speed limit of 45 mph and above.
- 6.d) Typical spacing of traffic drums and/or cones shown on the Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

SECTION 7. USE OF REMOTE CONTROL CHANGEABLE MESSAGE SIGNS (CMS)

- 7.a) For lane closures on limited access roadways, one CMS shall be used in advance of the traffic control pattern. Prior to installing the pattern, the CMS shall be installed and in operation, displaying the appropriate lane closure information (i.e.: Left Lane Closed - Merge Right). The CMS shall be positioned ½ - 1 mile ahead of the lane closure taper. If the nearest Exit ramp is greater than the specified ½ - 1 mile distance, than an additional CMS shall be positioned a sufficient distance ahead of the Exit ramp to alert motorists to the work and therefore offer them an opportunity to take the exit.
- 7.b) CMS should not be installed within 1000 feet of an existing CMS.
- 7.c) On non-limited access roadways, the use of CMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the CMS.
- 7.d) The advance CMS is typically placed off the right shoulder, 5 feet from the edge of pavement. In areas where the CMS cannot be placed beyond the edge of pavement, it may be placed on the paved shoulder with a minimum of five (5) traffic drums placed in a taper in front of it to delineate its position. The advance CMS shall be adequately protected if it is used for a continuous duration of 36 hours or more.
- 7.e) When the CMS are no longer required, they should be removed from the clear zone and have the display screen cleared and turned 90° away from the roadway.
- 7.f) The CMS generally should not be used for generic messages (ex: Road Work Ahead, Bump Ahead, Gravel Road, etc.).
- 7.g) The CMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs (Examples include: Exit 34 Closed Sat/Sun - Use Exit 35, All Lanes Closed - Use Shoulder, Workers on Road - Slow Down).
- 7.h) Messages that need to be displayed for long periods of time, such as during stage construction, should be displayed with construction signs. For special signs, please coordinate with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.
- 7.i) The messages that are allowed on the CMS are as follows:

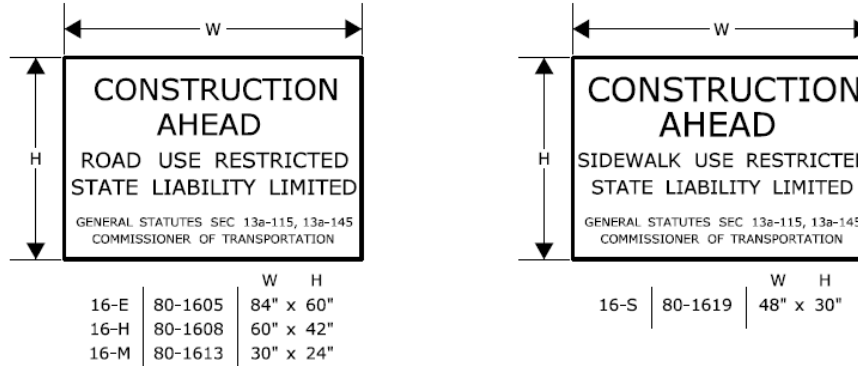
<u>Message No.</u>	<u>Frame 1</u>	<u>Frame 2</u>	<u>Message No.</u>	<u>Frame 1</u>	<u>Frame 2</u>
1	LEFT LANE CLOSED	MERGE RIGHT	9	LANES CLOSED AHEAD	REDUCE SPEED
2	2 LEFT LANES CLOSED	MERGE RIGHT	10	LANES CLOSED AHEAD	USE CAUTION
3	LEFT LANE CLOSED	REDUCE SPEED	11	WORKERS ON ROAD	REDUCE SPEED
4	2 LEFT LANES CLOSED	REDUCE SPEED	12	WORKERS ON ROAD	SLOW DOWN
5	RIGHT LANE CLOSED	MERGE LEFT	13	EXIT XX CLOSED	USE EXIT YY
6	2 RIGHT LANES CLOSED	MERGE LEFT	14	EXIT XX CLOSED USE YY	FOLLOW DETOUR
7	RIGHT LANE CLOSED	REDUCE SPEED	15	2 LANES SHIFT AHEAD	USE CAUTION
8	2 RIGHT LANES CLOSED	REDUCE SPEED	16	3 LANES SHIFT AHEAD	USE CAUTION

For any other message(s), approval must be received from the Office of Construction prior to their use. No more than two (2) displays shall be used within any message cycle.

SECTION 8. USE OF STATE POLICE OFFICERS

- 8.a) State Police may be utilized only on limited access highways and secondary roadways under their primary jurisdiction. One Officer may be used per critical sign pattern. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Likewise in areas with moderate traffic and wide, unobstructed medians, left lane closures can be implemented without State Police presence. Under some situations it may be desirable to have State Police presence, when one is available. Examples of this include: nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur, however they are not required.
- 8.b) Once the pattern is in place, the State Police Officer should be positioned in a non-hazardous location in advance of the pattern. If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall be repositioned prior to the backup to give warning to the oncoming motorists. The State Police Officer and TMA should not be in proximity to each other.
- 8.c) Other functions of the State Police Officer(s) may include:
- Assisting entering/exiting construction vehicles within the work area.
 - Enforcement of speed and other motor vehicle laws within the work area, if specifically requested by the project.
- 8.d) State Police Officers assigned to a work site are to only take direction from the Engineer.

SERIES 16 SIGNS



THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

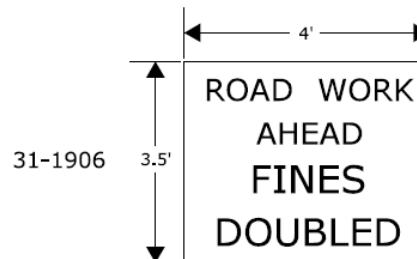
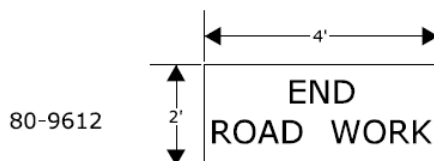
REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHERE THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
REQUIRED SIGNS

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.
2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.
3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.
4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.
5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.
6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.
7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).
8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.
9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.
10. SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

METRIC CONVERSION CHART (1" = 25mm)


ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm

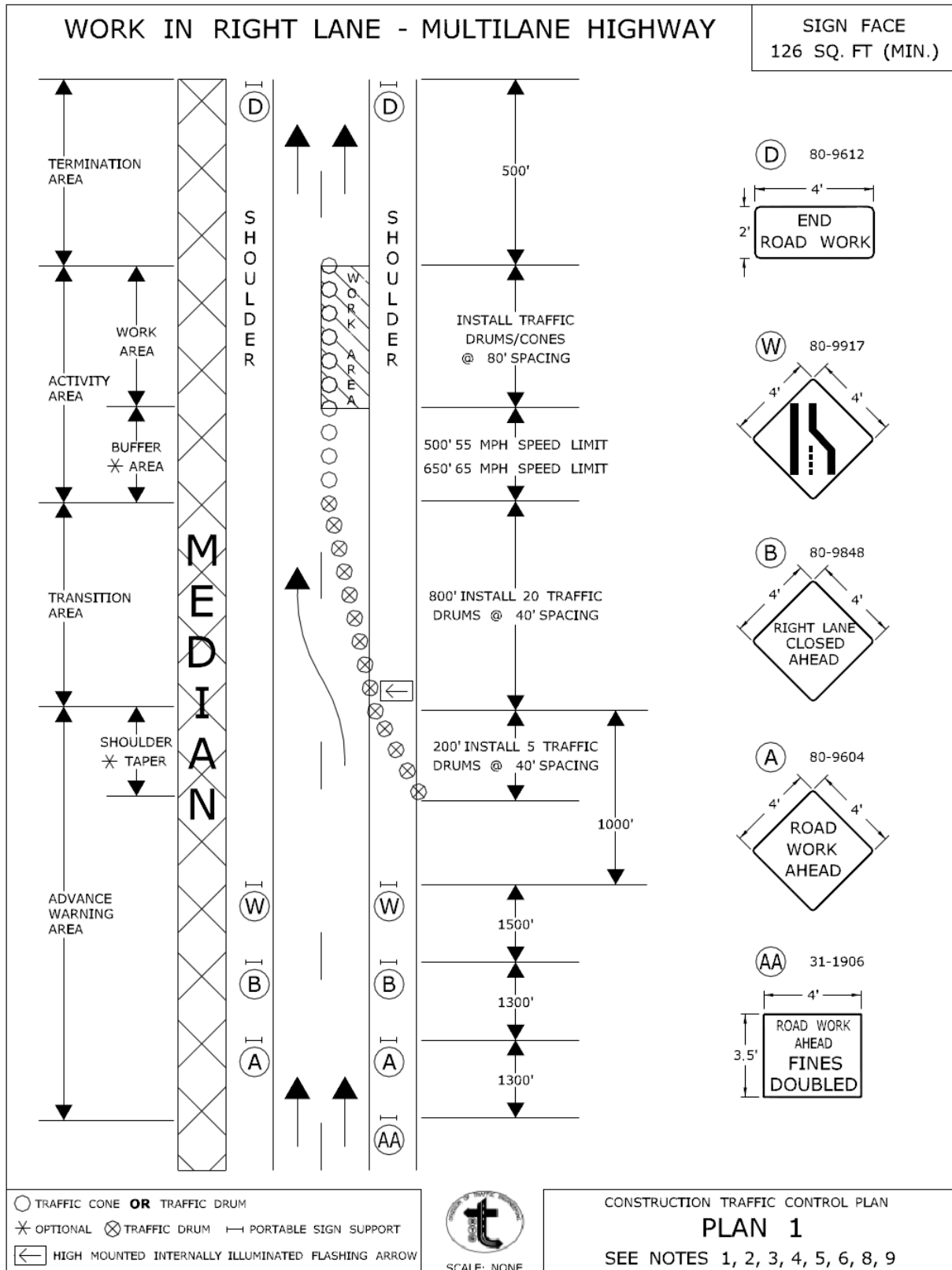


SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN NOTES

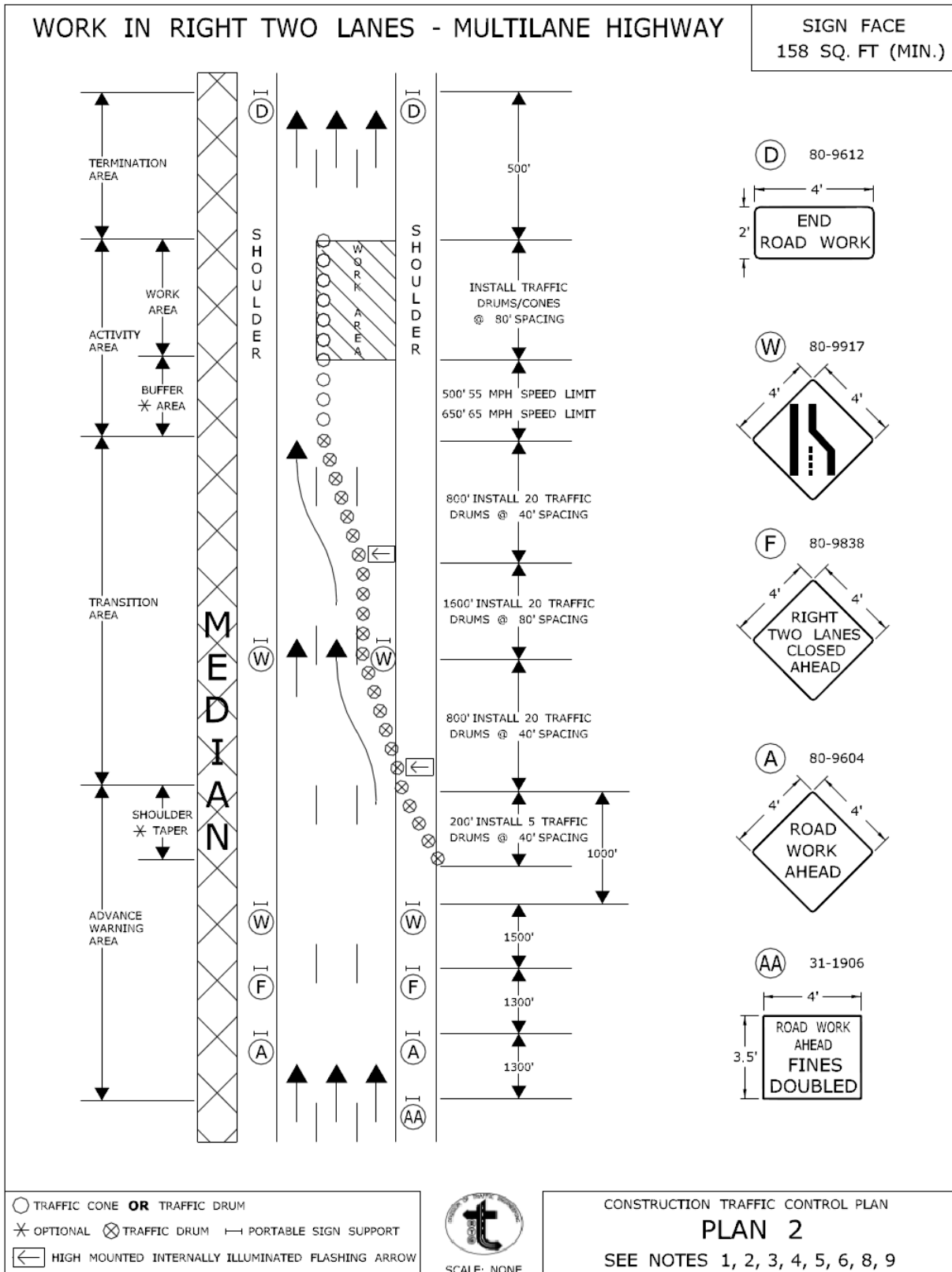
CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED  Charles S. Harlow
2012.06.05 15:50:35-0400
PRINCIPAL ENGINEER



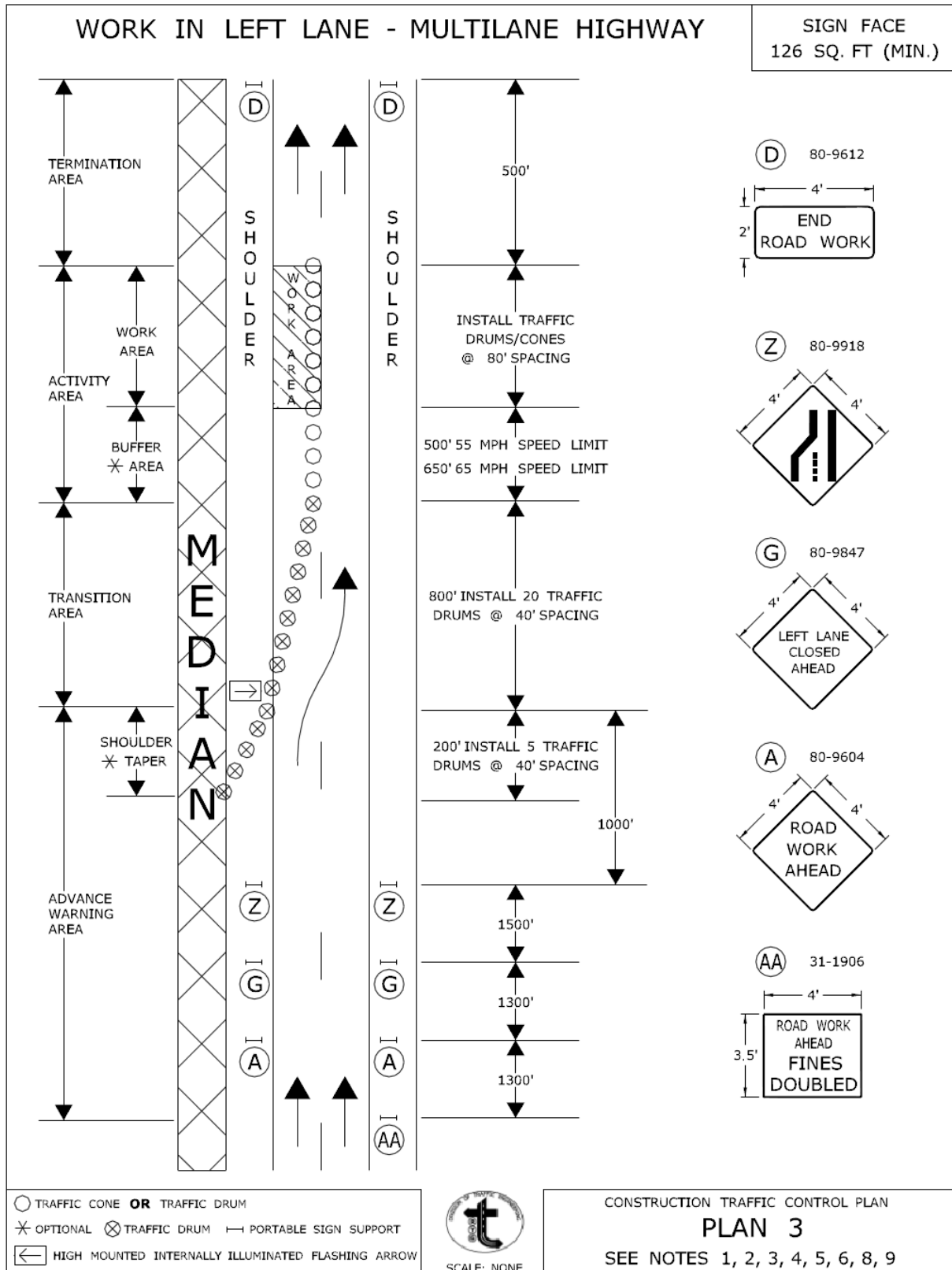
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BUREAU OF ENGINEERING & CONSTRUCTION

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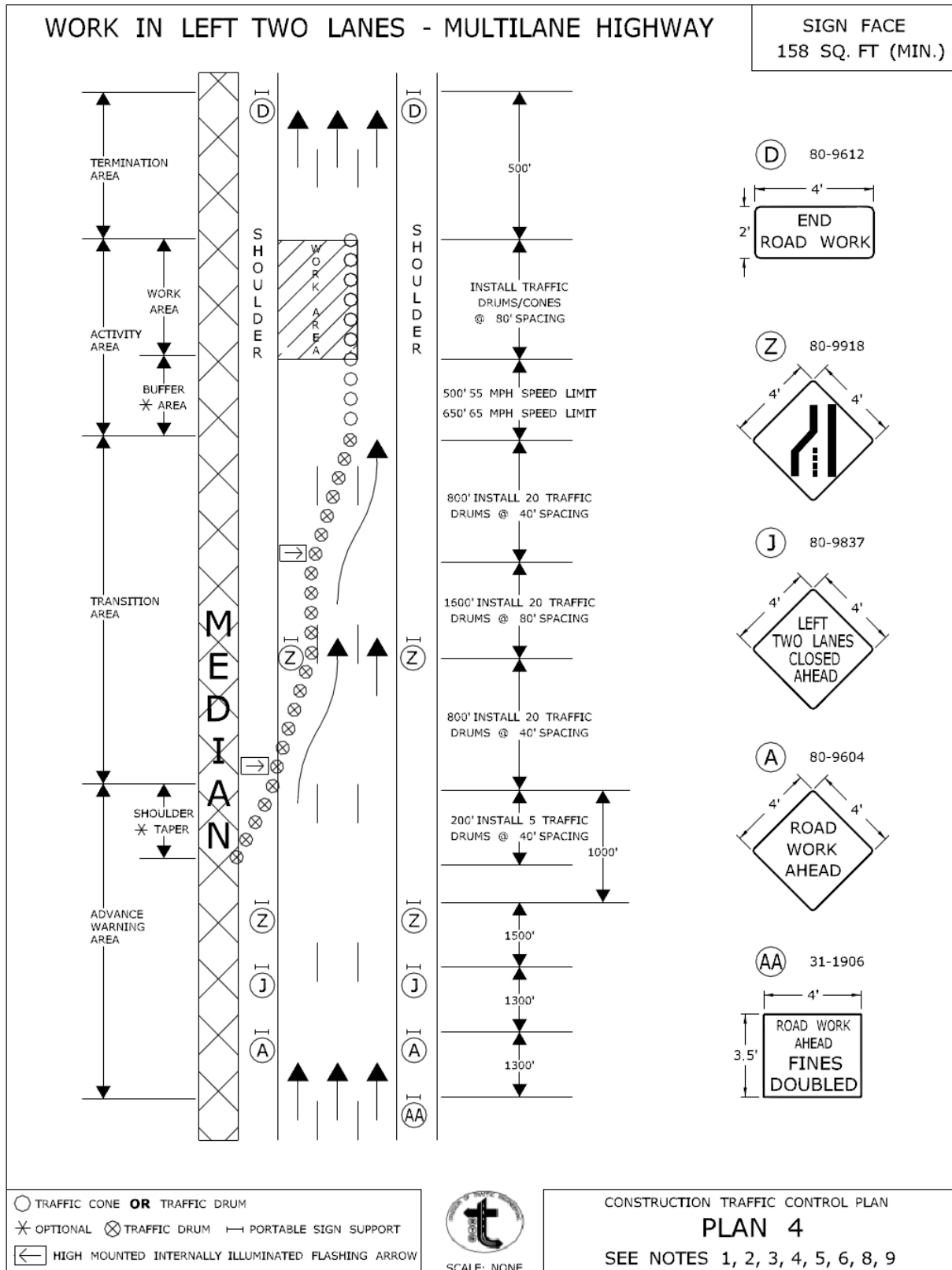


CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow*
 Charles S. Harlow
 2012.06.05 15:51:23-04'00"
 PRINCIPAL ENGINEER



APPROVED *Charles S. Harlow*
 Charles S. Harlow
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 PRINCIPAL ENGINEER



CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

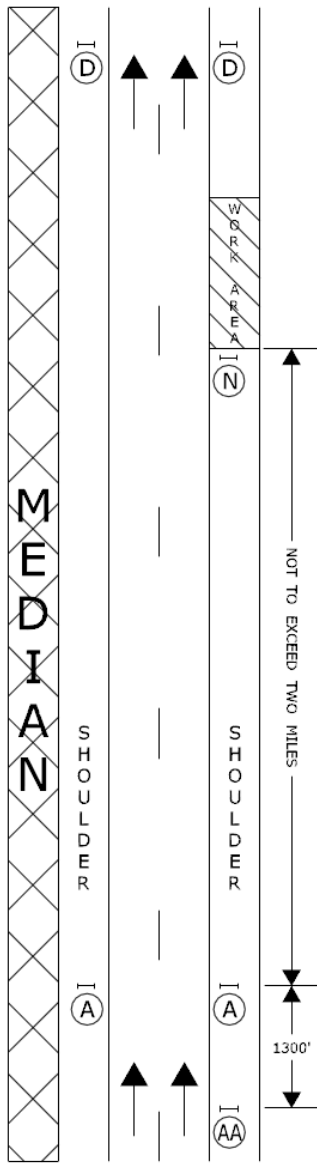
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 4
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9

APPROVED *Charles S. Harlow*
PRINCIPAL ENGINEER

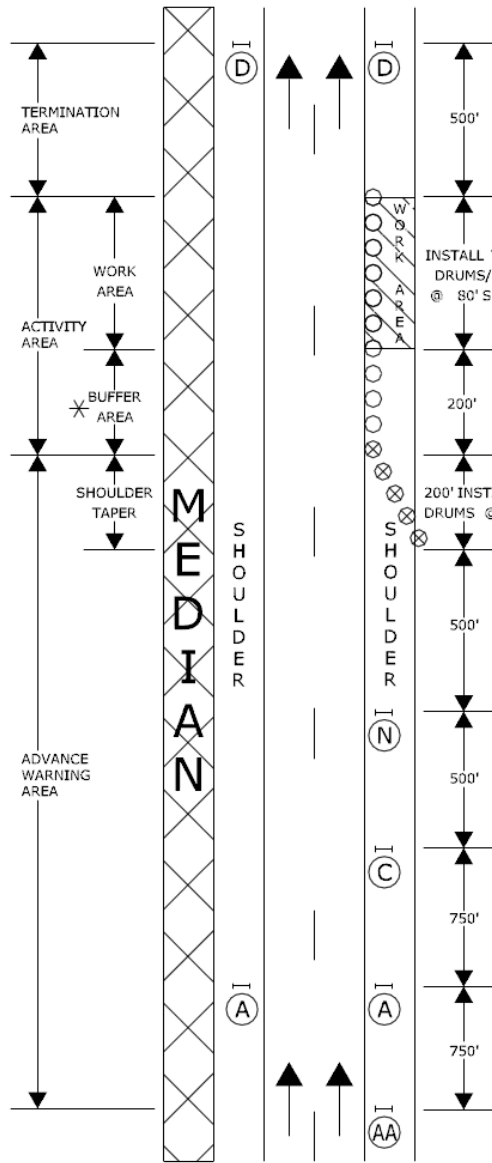
Charles S. Harlow
2012.06.05 15:52:10-0400

WORK IN SHOULDER AREA - MULTILANE HIGHWAY

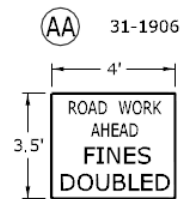
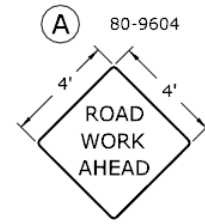
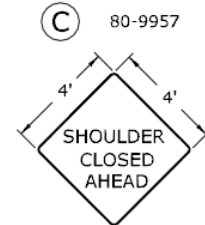
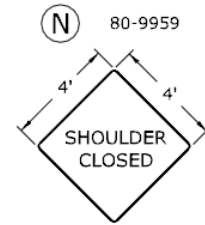
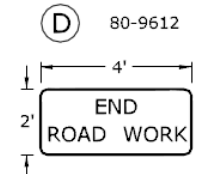
SIGN FACE
94 SQ. FT (MIN.)



MOVING OPERATION



STATIONARY OPERATION



- TRAFFIC CONE OR TRAFFIC DRUM
- ✱ OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
- ◀ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN

PLAN 6

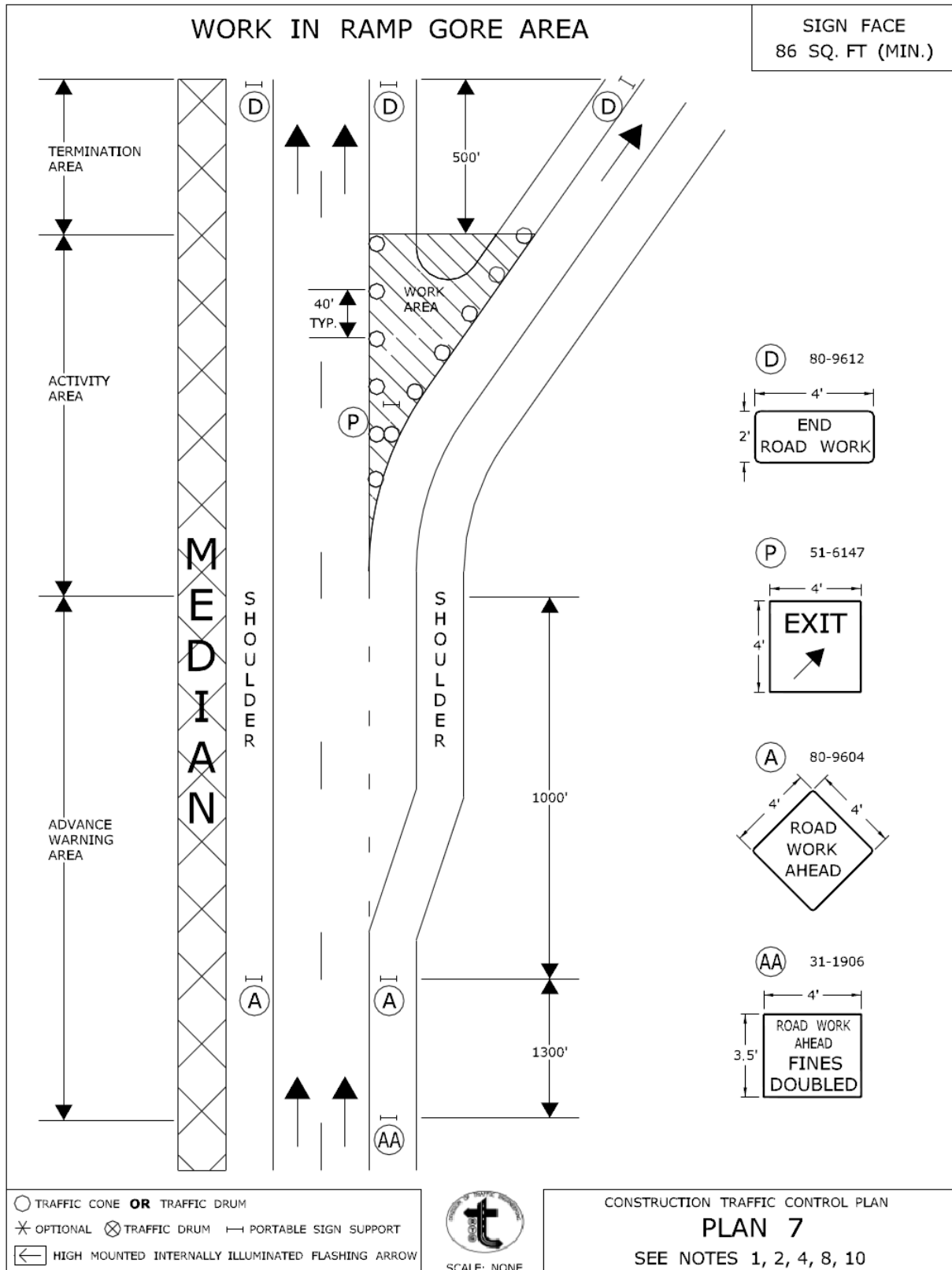
SEE NOTES 1, 2, 4, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Charles S. Harlow
PRINCIPAL ENGINEER

Charles S. Harlow
2012.06.05 15:52:38-04'00"



CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

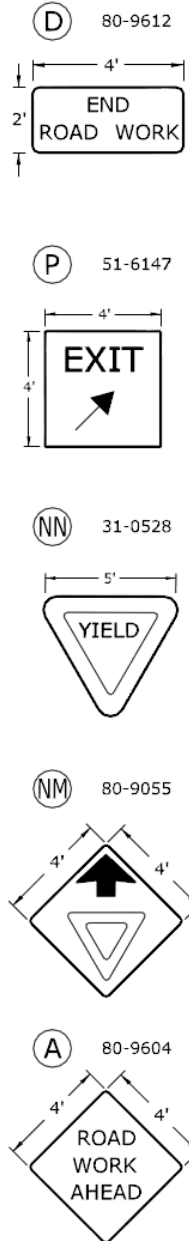
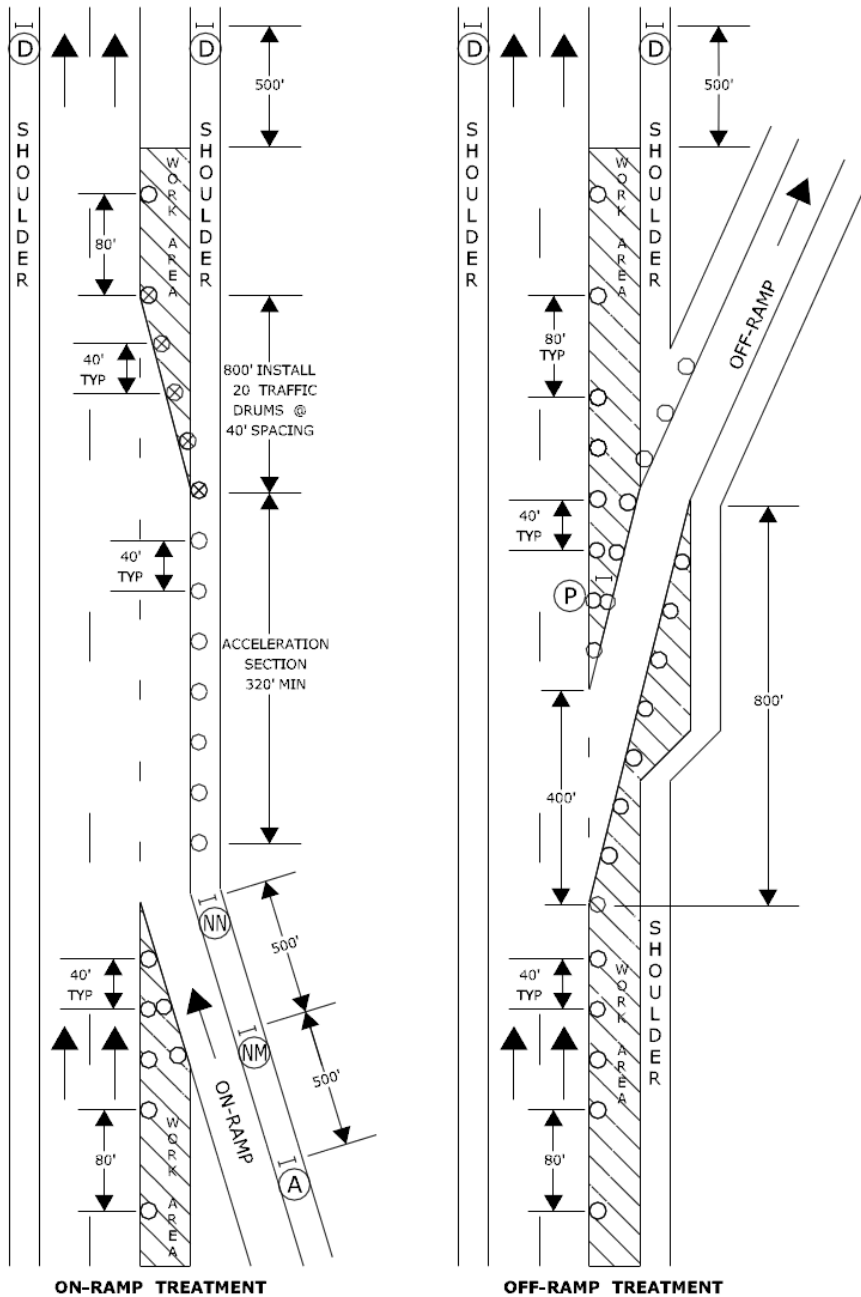


CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 7
SEE NOTES 1, 2, 4, 8, 10

APPROVED *Charles S. Harlow*
PRINCIPAL ENGINEER Charles S. Harlow
2012.06.05 15:53:03-0400

TYPICAL RAMP TREATMENTS FOR MAINLINE LANE CLOSURE - MULTILANE HIGHWAY

SIGN FACE
SQ. FT VARIES



USE TRAFFIC CONTROL PLAN 1 TO CLOSE THE RIGHT LANE

- TRAFFIC CONE **OR** TRAFFIC DRUM
- ✱ OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
- ◀ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

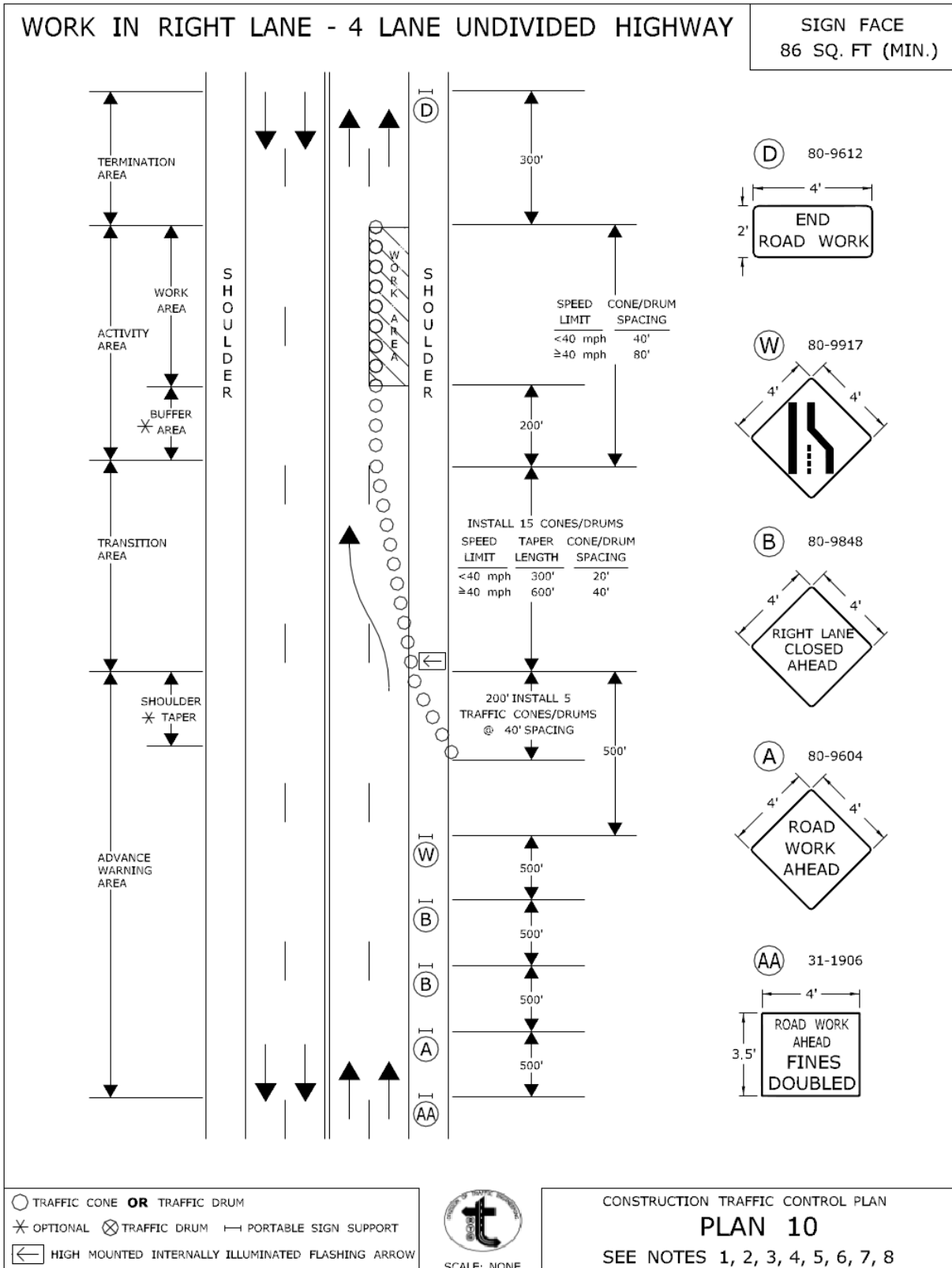


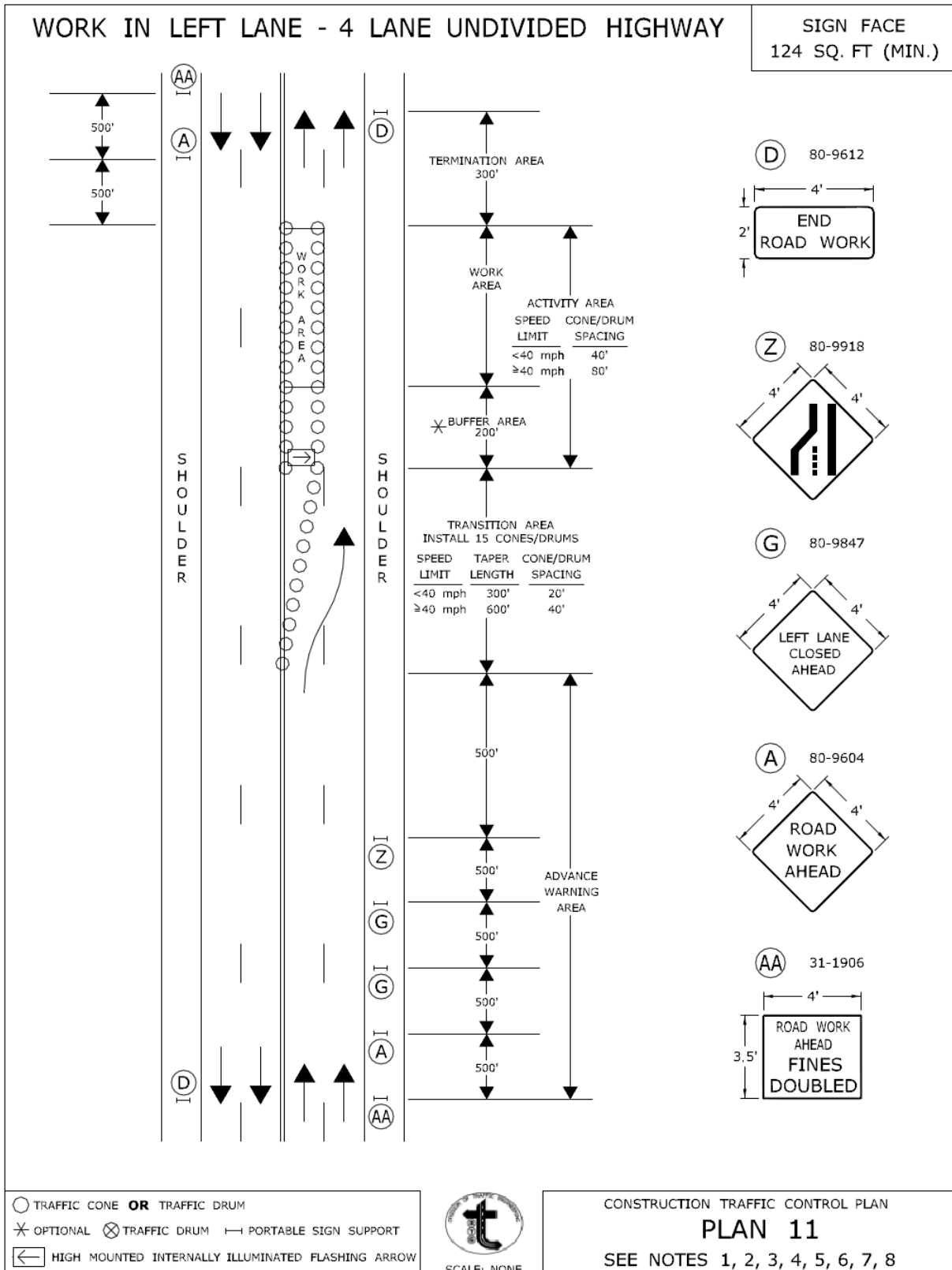
SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 8
SEE NOTES 1, 2, 3, 4, 5, 6, 8, 9, 10

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

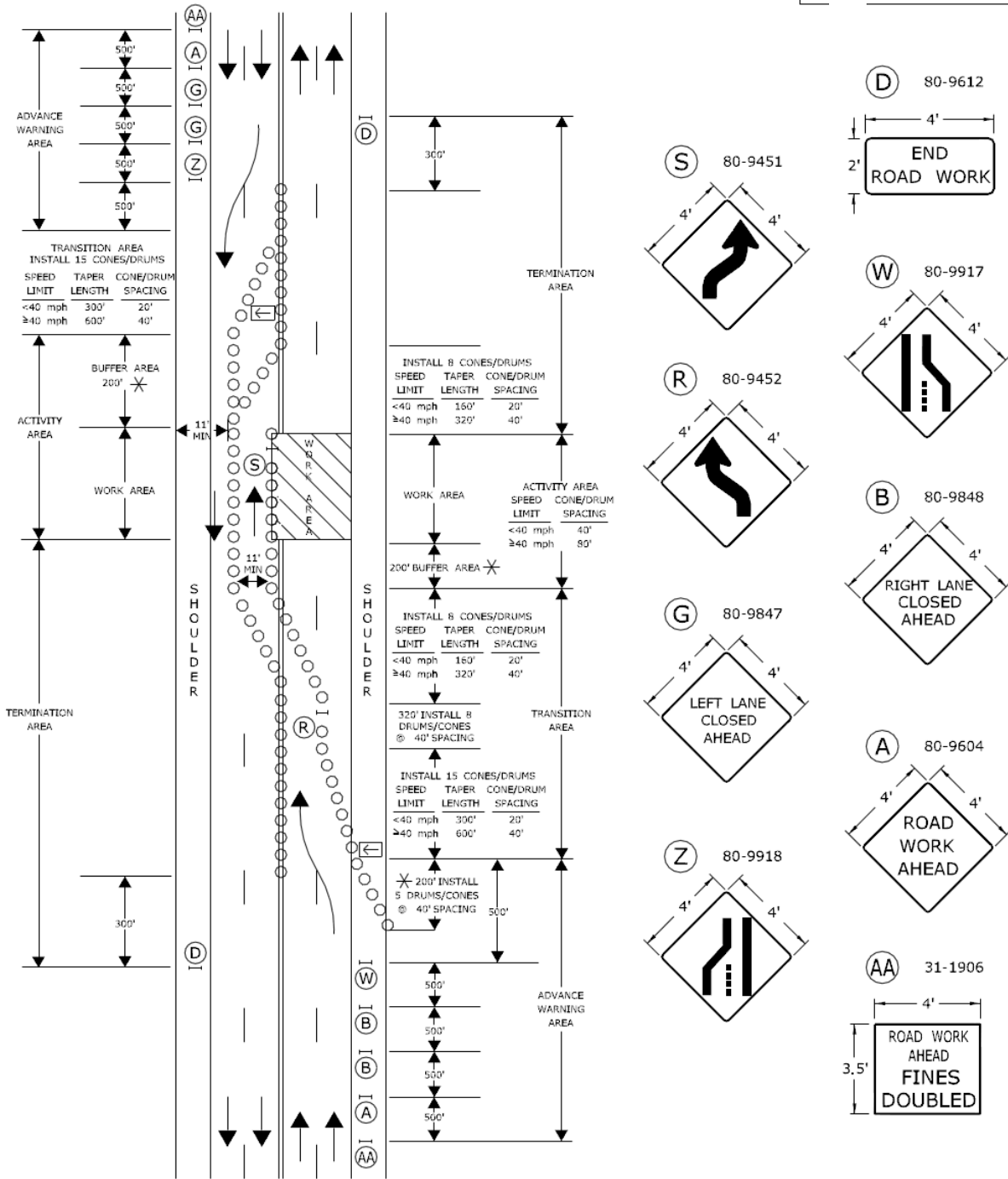
APPROVED *Charles S. Harlow* Charles S. Harlow
2012.06.05 15:53:31-0400
PRINCIPAL ENGINEER





WORK IN BOTH LANES - 4 LANE UNDIVIDED HIGHWAY

SIGN FACE
204 SQ. FT. (MIN.)



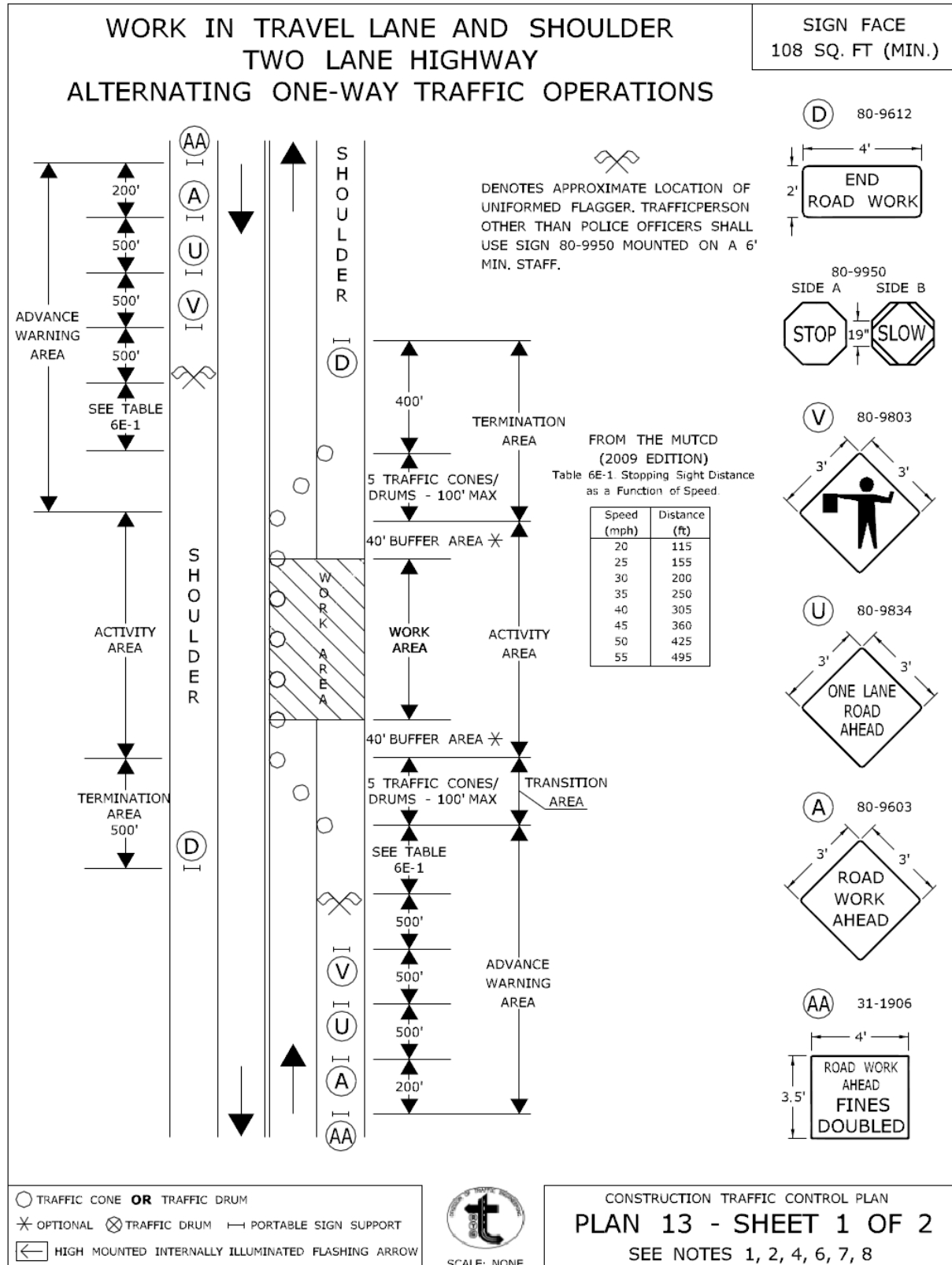
- TRAFFIC CONE **OR** TRAFFIC DRUM
- ✱ OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
- ← HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW



CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 12
SEE NOTES 1, 2, 3, 4, 5, 6, 7, 8

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APPROVED *Charles S. Harlow*
PRINCIPAL ENGINEER
Charles S. Harlow
2012.06.05 15:55:01-0400'



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BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow* Charles S. Harlow
2012.06.05 15:55:23-04'00"
PRINCIPAL ENGINEER

WORK IN TRAVEL LANE AND SHOULDER TWO LANE HIGHWAY ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.



B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.



C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.



- TRAFFIC CONE **OR** TRAFFIC DRUM
- * OPTIONAL ⊗ TRAFFIC DRUM — PORTABLE SIGN SUPPORT
- ◀ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

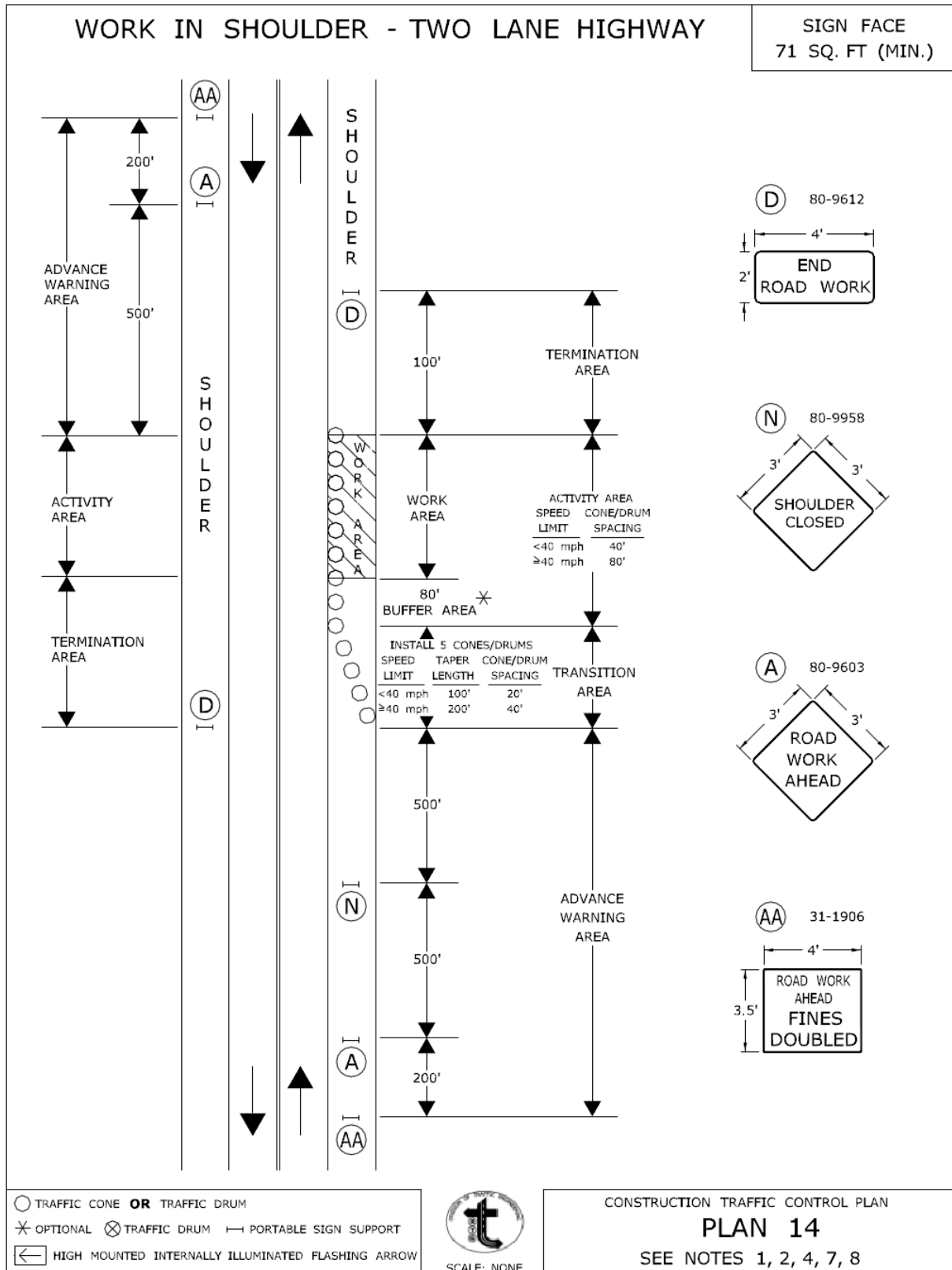


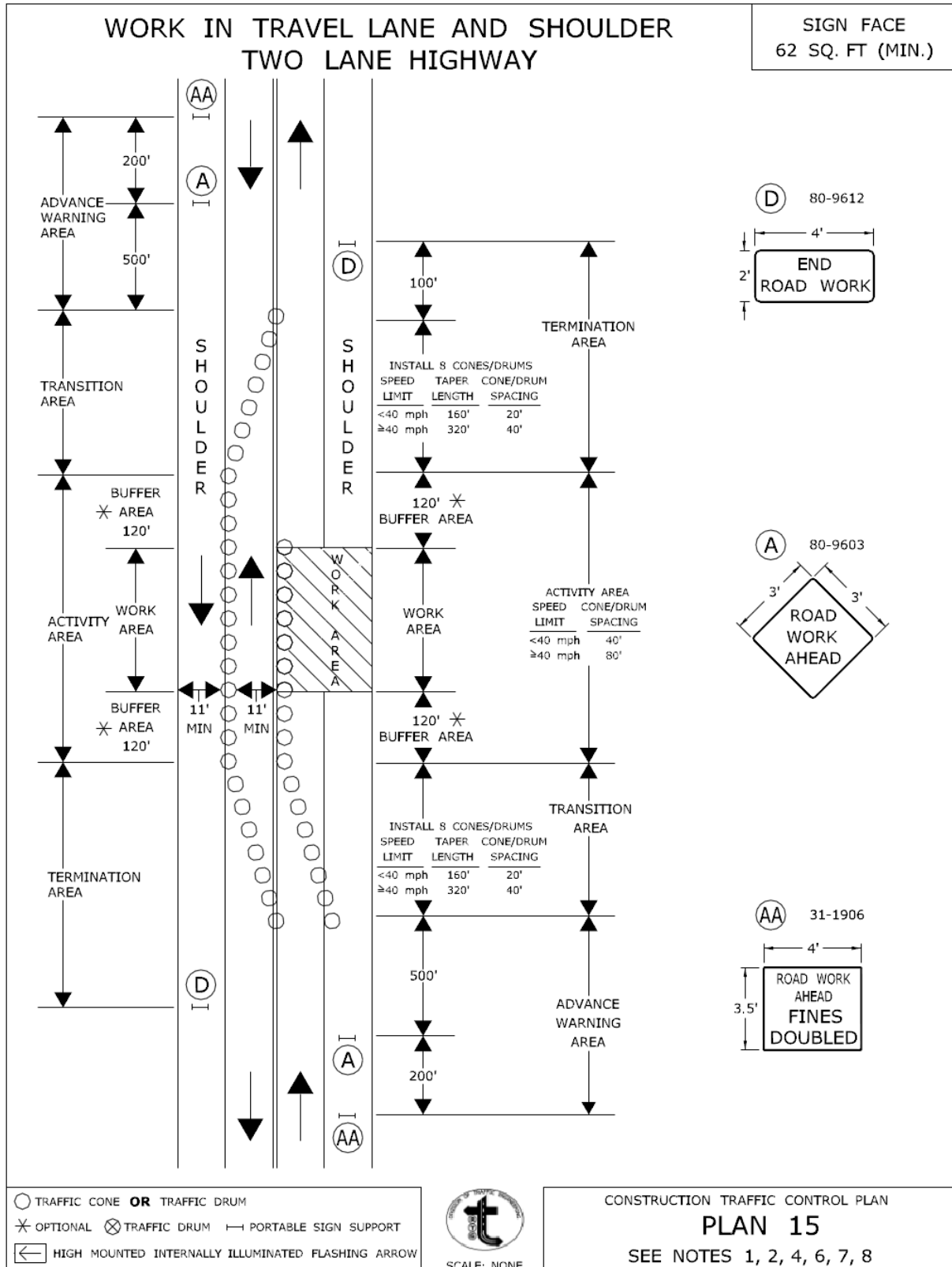
SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow
2012.06.05 15:55:45-04'00'
PRINCIPAL ENGINEER

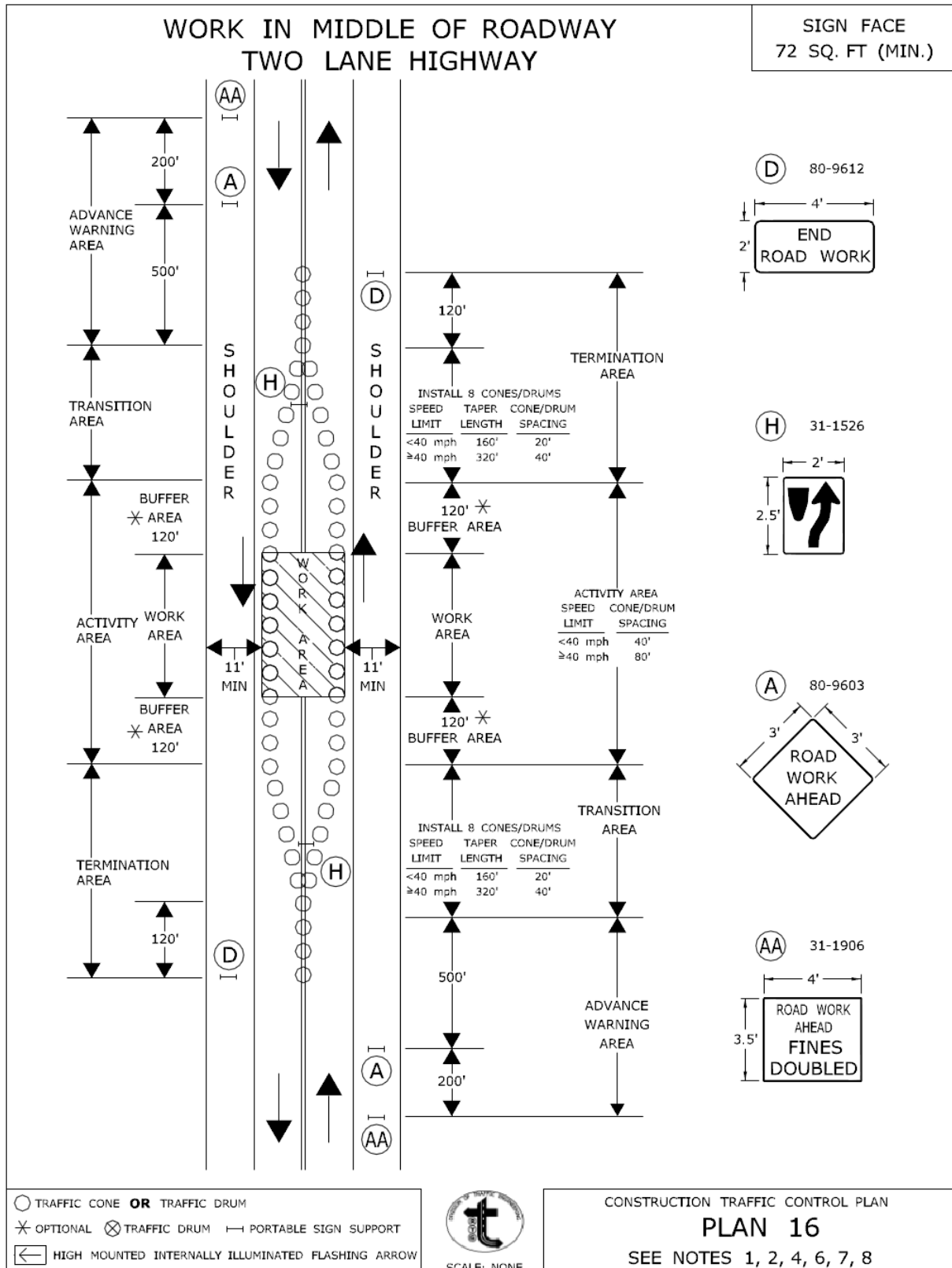


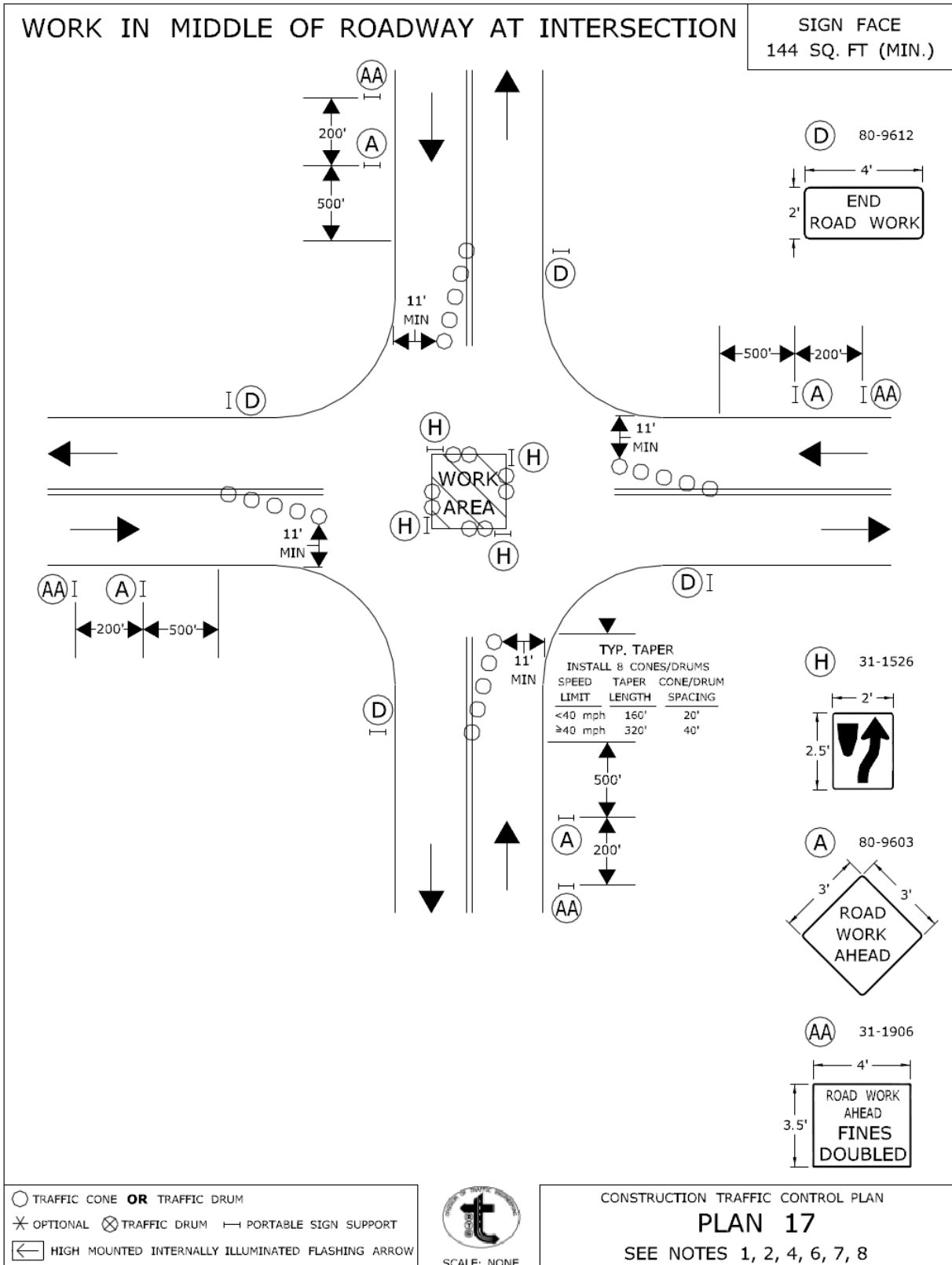


CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

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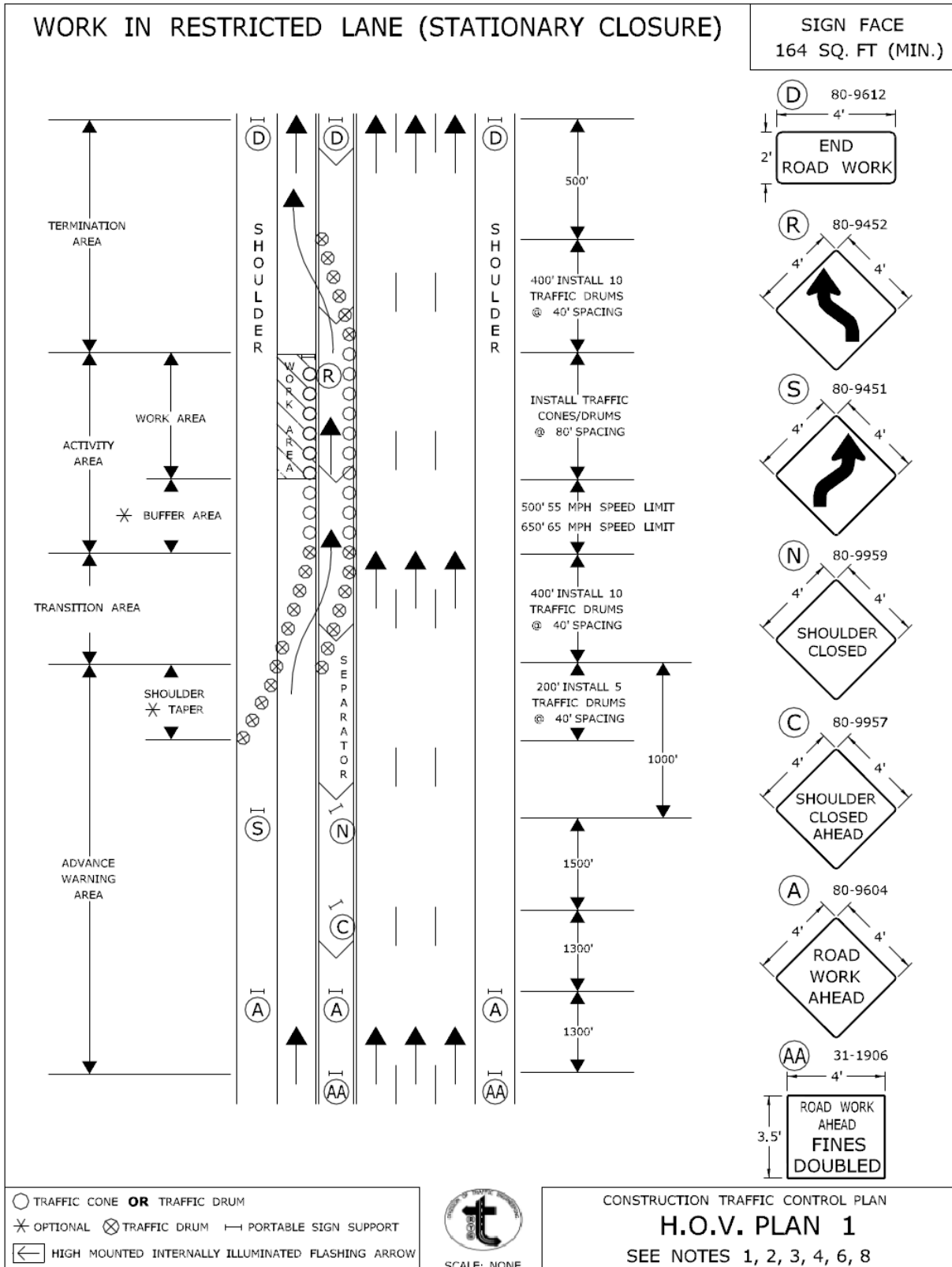
Charles S. Harlow
Charles S. Harlow
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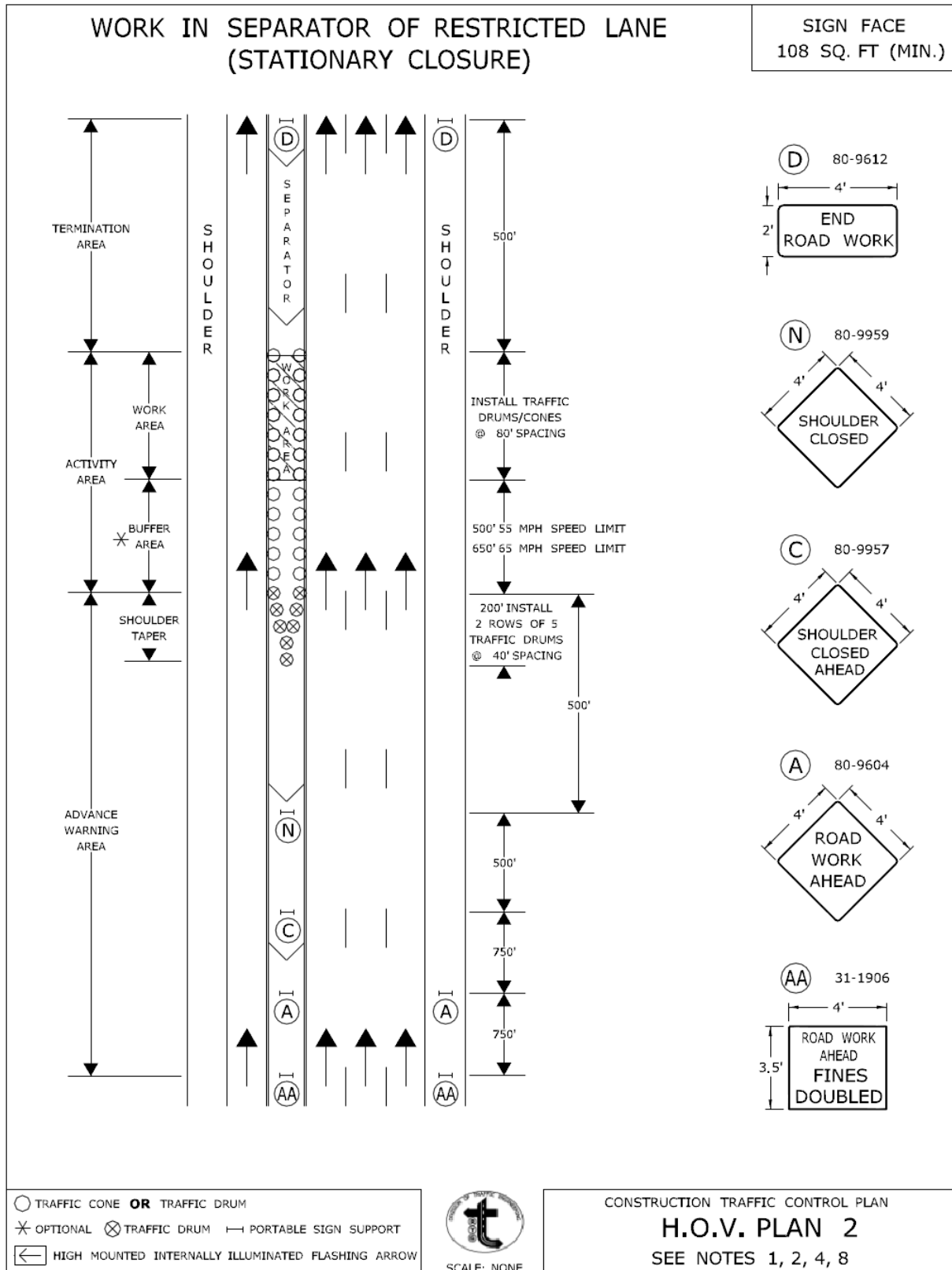




CONNECTICUT DEPARTMENT OF TRANSPORTATION
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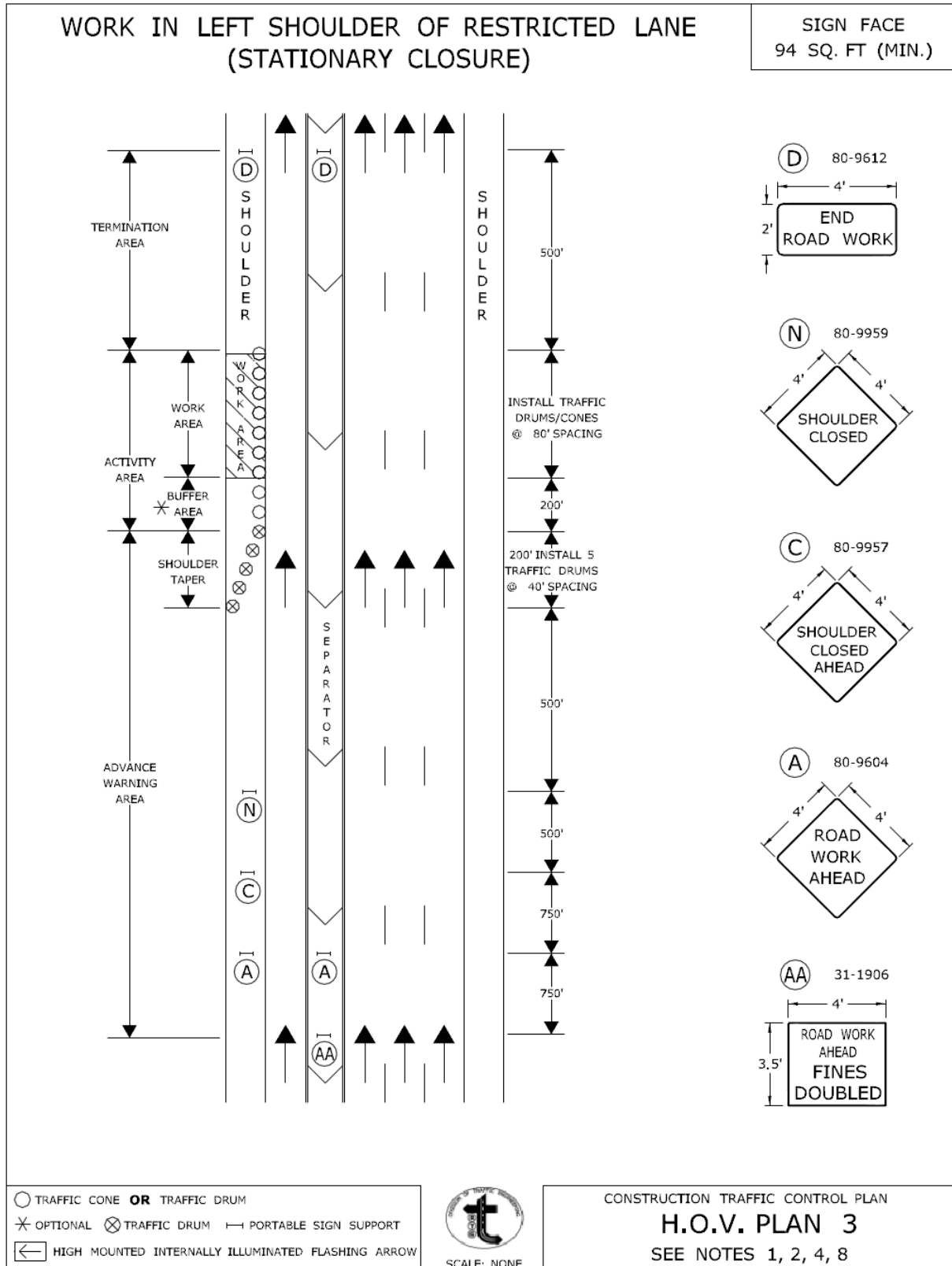
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 PRINCIPAL ENGINEER
 2012.08.05 15:57:16-04'00"





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BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow*
PRINCIPAL ENGINEER Charles S. Harlow
2012.06.05 15:49:33-04'00"



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BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED *Charles S. Harlow* Charles S. Harlow
2012.06.05 15:50:10-0400
PRINCIPAL ENGINEER

Article 9.71.05 – Basis of Payment is supplemented by the following:

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item “Maintenance and Protection of Traffic.”

ITEM #1002300A – LIGHT STANDARD

DESCRIPTION: Under this item the Contractor shall furnish and install a transformer base light standard of the dimensions indicated on the plans. The installation shall consist of erecting the light standard with bracket on the new foundation.

MATERIALS: The materials shall conform to Section M.15.04. The light standard shall provide a 40 foot luminaire mounting height over the roadway with a truss arm bracket length of 20 feet. Additional pole dimensions shall be as called for on the plans.

CONSTRUCTION METHODS: The light standard shall be installed in conformance with Section 10.03.03.

METHOD OF MEASUREMENT: The work will be measured for payment by the number of light standards installed complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Light Standard" as specified, which price shall include the light standard, transformer base, bracket arm, connecting hardware, pole dampener, pole cap, bolt covers, connections, grounding, installation of the light standard and all work, tools and equipment incidental thereto.

ITEM #1003906A – REMOVE LIGHT STANDARD

DESCRIPTION: Under this item the Contractor shall remove an existing light standard with transformer base, bracket, and luminaire as indicated on the plans or as directed by the Engineer. The removed light standard, transformer base, bracket, and luminaire, shall remain the property of the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove a light standard, transformer base, bracket, and luminaire, where required. The removed materials shall remain the property of the Contractor.

All removed materials shall be properly disposed of by the Contractor. The removed luminaire contains regulated materials. All regulated materials shall be as described and disposed of under Item No. 0101143A – Handling and Disposal of Regulated Items.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of light standards with associated equipment removed and disposed of complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Light Standard" complete, which price shall include the removal of a light standard with associated transformer base, bracket, luminaire, lamp, cable and hardware, delivering, disposing, hauling, and including all materials, tools, equipment, labor and work incidental thereto.

ITEM #1003912A – REMOVE CONCRETE LIGHT STANDARD BASE

DESCRIPTION: Under this item the Contractor shall remove an existing concrete light standard base where shown on the plans or as directed. The removed concrete base shall remain the property of the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove a concrete light standard base where required. The removed base shall be properly disposed of by the Contractor. The hole shall be backfilled and graded to match surroundings, unless otherwise noted on the plans.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of concrete light standard bases removed and disposed of, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Concrete Light Standard Base", which price shall include all materials, equipment and work incidental thereto including excavation, removal, backfill when necessary, hauling and disposing of the concrete base.

ITEM #1003925A – REMOVE EXISTING LUMINAIRE

DESCRIPTION: Under this item the Contractor shall remove an existing luminaire, and associated equipment as indicated on the plans or as directed and in accordance with these specifications. The removed luminaire and lamp shall be properly disposed of by the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove an existing luminaire, and associated equipment where required. The removed luminaire and lamp shall be properly disposed of by the Contractor.

H.I.D. lamps which are to be disposed of by the Contractor, must be handled as hazardous waste, and be subject to the provisions of the Resources Conservation and Recovery Act (RCRA) Subtitle C and chapter 446 of the Connecticut General Statutes. The removed lamps shall not be landfilled or incinerated, but must be handled and disposed of, or recycled, at an approved facility.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of luminaires with associated equipment, removed and disposed of complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Existing Luminaire", which price shall include removal of luminaire and associated equipment, hauling and unloading, disposal, and all materials, tools, equipment and labor incidental thereto.

ITEM #1005601A – LED LUMINAIRE - TYPE 1

DESCRIPTION: This item shall consist of furnishing and installing a light emitting diode (LED) luminaire of the wattage, distribution, and voltage as specified, completely wired and attached to the arm or bracket of the pole in accordance with the plans and specifications.

MATERIALS: The LED luminaire shall be one of the following:

Philips Road Focus, catalog number: **RFM-108W48LED4K-T-R2M-HVU-API-SP2-004-GY3**, with the following characteristics: 106 watts, 12,222 lumens, 700mA, 4000 CCT, 480 volt, Type II light distribution, and 20kV surge suppression.

American Electric, Autobahn, catalog number: **ATB0-30BLEDE10-480-R2-NR-20K-NL**, with the following characteristics: 105 watts, 12,414 lumens, 1000mA, 4000 CCT, 480 volt, Type II light distribution, and 20kV surge suppression.

Cooper Lighting, Navion, catalog number: **NVN-AF-02-E-8-SL2-1000-20K-AP**, with the following characteristics: 113 watts, 11,941 lumens, 1000mA, 4000 CCT, 480 volt, Type II medium light distribution, and 20kV surge suppression.

No alternate luminaires will be accepted. A catalog cut will be required.

The luminaire housing shall be powder coated grey in color.

The luminaire housing shall not have a photocontrol receptacle.

The luminaire's onboard circuitry shall include a surge protection device (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference. The LED luminaire shall be provided with integral 20kV surge protection which shall conform and be labeled as UL 1449 compliant. The SPD protects the luminaire from damage and failure for common and differential mode transient peak currents up to 10 kA (minimum). SPD performance shall have been tested per procedures in ANSI C136.2/IEEE C62.41-2:2002 category C high exposure. The SPD shall be connected so that in the event of catastrophic failure the luminaire will no longer operate and the driver and light engine will be isolated from additional spikes. The SPD shall be field replaceable.

The LED luminaire shall carry a limited 5 year warranty on the LEDs and the Driver, and shall be ARRA compliant.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN and rated for 600 volts. The equipment grounding conductor shall be No. 10 AWG, THHN/THWN, rated for 600 volts. The ground wire shall be green in color.

Fuses and fuse holders shall conform to the requirements of Article M.15.05. Fuses shall be "slow-blow" type rated at 10 amps.

CONSTRUCTION METHODS: The LED luminaire shall be installed at the end of the bracket and shall be securely fastened, properly oriented, connected to the power supply conductors, cleaned, and ready for operation. The luminaire shall be leveled by placing an electronic (digital) level along the flat bottom face of the luminaire. All luminaires suspected of not being leveled shall be re-leveled by the Contractor at the discretion of the Engineer.

The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected between the ground rod/system in the light pole base and the grounding lug in the luminaire.

Fuse holders and fuses shall be installed in the pole base or in the adjacent cast iron junction box for bridge parapet mounted poles.

The Contractor shall ensure that once installed the LED luminaire functions properly.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of LED luminaires installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "LED Luminaire – Type 1" of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor, conductors, fuses, fuse holders, connections, leveling, grounding, and all labor, tools, equipment and work incidental thereto.

ITEM #1005602A – LED LUMINAIRE - TYPE 2

DESCRIPTION: This item shall consist of furnishing and installing a light emitting diode (LED) luminaire of the wattage, distribution, and voltage as specified, completely wired and attached to the arm or bracket of the pole in accordance with the plans and specifications.

MATERIALS: The LED luminaire shall be one of the following:

For luminaires with a Type II light distribution:

Philips Lumec, Road Focus, catalog number: **RFL-145W64LED4K-T-R2M-HVU-SP2-GY3**, with the following characteristics: 137 watts, 16,046 lumens, 700mA, 4000 CCT, 480 volt, Type II light distribution, and 20kV surge suppression.

American Electric, Autobahn, catalog number: **ATB2-60BLEDE70-480-R2-NR-20K-NL**, with the following characteristics: 130 watts, 18,193 lumens, 700mA, 4000 CCT, 480 volt, Type II light distribution, and 20kV surge suppression.

Cooper Lighting, Navion, catalog number: **NVN-AF-04-E-8-SL2-20K-600-AP**, with the following characteristics: 129 watts, 15,759 lumens, 600mA, 4000 CCT, 480 volt, Type II medium light distribution, and 20kV surge suppression.

For luminaires with a Type III light distribution:

Philips Lumec, Road Focus, catalog number: **RFL-145W64LED4K-T-R3M-HVU-SP2-GY3**, with the following characteristics: 137 watts, 15,697 lumens, 700mA, 4000 CCT, 480 volt, Type III light distribution, and 20kV surge suppression.

American Electric, Autobahn, catalog number: **ATB2-60BLEDE70-480-R3-NR-20K-NL**, with the following characteristics: 130 watts, 17,714 lumens, 700mA, 4000 CCT, 480 volt, Type III light distribution, and 20kV surge suppression.

Cooper Lighting, Navion, catalog number: **NVN-AF-04-E-8-SL3-20K-600-AP**, with the following characteristics: 129 watts, 16,053 lumens, 600mA, 4000 CCT, 480 volt, Type III medium light distribution, and 20kV surge suppression.

No alternate luminaires will be accepted. A catalog cut will be required.

Required light distribution shall be as indicated on the plans.

The luminaire housing shall be powder coated grey in color.

The luminaire housing shall not have a photocontrol receptacle.

The luminaire's onboard circuitry shall include a surge protection device (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference. The LED luminaire shall be provided with integral 20kV surge protection which shall conform and be labeled as UL 1449 compliant. The SPD protects the luminaire from damage and failure for common and differential mode transient peak currents up to 10 kA (minimum). SPD performance shall have been tested per procedures in ANSI C136.2/IEEE C62.41-2:2002 category C high exposure. The SPD shall fail in such a way as the Luminaire will no longer operate and the driver will be isolated from additional spikes. The SPD shall be field replaceable.

The LED luminaire shall carry a limited 5 year warranty on the LEDs and the Driver.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN and rated for 600 volts. The equipment grounding conductor shall be No. 10 AWG, THHN/THWN, rated for 600 volts. The ground wire shall be green in color.

Fuses and fuse holders shall conform to the requirements of Article M.15.05. Fuses shall be "slow blow" type.

CONSTRUCTION METHODS: The LED luminaire shall be installed at the end of the bracket and shall be securely fastened, properly oriented, connected to the power supply conductors, cleaned, and ready for operation. The luminaire shall be leveled by placing an electronic (digital) level along the flat bottom face of the luminaire. All luminaires suspected of not being leveled shall be re-leveled by the Contractor at the discretion of the Engineer.

The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected between the ground rod/system in the light pole base and the grounding lug in the luminaire.

Fuse holders and fuses shall be installed in the pole base or in the adjacent cast iron junction box for bridge parapet mounted poles.

The Contractor shall ensure that once installed the LED luminaire functions properly.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of LED luminaires installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "LED Luminaire - Type 2" of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor, conductors, fuses, fuse holders, connections, leveling, grounding, and all labor, tools, equipment and work incidental thereto.

ITEM #1006000A – UNDERBRIDGE LUMINAIRE - LED (WALL MOUNTED)

DESCRIPTION: This item shall consist of furnishing and installing a light emitting diode (LED) wall mounted underbridge luminaire as specified with necessary mountings, conduit, conductors, fuses, and fuseholders, completely wired and attached to the bridge wall in accordance with the plans and details.

MATERIALS: The LED luminaire shall be one of the following, or approved equal:

Holophane Lighting, model **W4GLED-20C-1000-40K-T3M-480-GYSDP**.

Lithonia Lighting, model **THWLED-20C-1000-40K-T3M-480-DNAXD**.

For LED luminaires other than the specified luminaires, the Contractor shall submit a sample fixture (if requested by the Engineer) and a manufacturer's catalog cut. A catalog cut will be required for all submitted luminaires. The Department reserves the right to disapprove any alternate luminaire based solely on photometric performance, lumen maintenance, and construction. Alternate luminaires are required to meet average illuminance and uniformity ratio as recommended by the Illuminating Engineering Society of North America (RP-8-00) for the given roadway application as calculated by the Department.

The housing of the luminaire shall be heavy-duty die-cast aluminum with an impact resistant tempered glass lens that is fully gasketed. The housing shall be completely sealed against moisture and environmental contaminants. The LED luminaire shall be IP-55 rated. The housing shall feature standard grey thermal-setting polyester powder coat paint. The fixture shall be designed for wall mounting and shall have a threaded top and back knock-out for 3/4" conduit attachment.

LED optics shall consist of sealed LED "light bars" with an IP66 rating. The luminaire optics shall provide warm white light at a standard 4000K CCT. The LEDs shall operate at a drive current of 1000mA. The luminaire shall provide an initial delivered lumen output of 7,000 lumens or greater, and shall provide an IESNA type III distribution. The luminaire shall produce a minimum of 95 lumens per watt. Integral aluminum heat sinks shall transfer heat rapidly away from the LED circuit boards.

The LED luminaire shall draw approximately 72 watts or less. The LED luminaire shall be provided with integral surge suppression protection meeting a minimum Category C low for 120-277 volts (per ANSI/IEEE C62.41.2). The LED luminaire electronic driver shall be Class 1 with a power factor >90% and THD <20%, and expected life of 100,000 hours. The luminaire shall operate at 480 volts. The luminaire shall be rated for -40°C minimum ambient. The luminaire's LM87 rating shall be greater than 100,000 hours at 25°C. The luminaire shall be supplied with a spare surge suppressor.

The LED luminaire shall carry a limited 5 year warranty on the LEDs and the Driver.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN.

Mechanical anchors shall be stainless steel, 3/8" in diameter, with length as recommend by the manufacturer for the application and the expected load.

Flexible conduit shall be LFNC-B (Liquidtight Flexible Nonmetallic Conduit) with a trade size diameter as indicated on the plans. LFNC shall be listed for UL Standard UL1660 and marked for outdoor applications. LFNC shall be flame resistant and UV/sunlight resistant. LFNC and fittings shall be wet location rated.

The 3/4" fiberglass conduit shall be standard wall type with a minimum wall thickness of 0.070 inches. The conduit shall be reinforced thermosetting resin conduit using the single circuit filament winding process and shall be free from defects including non-circularity and foreign inclusions. The conduit shall be nominally uniform (as commercially practical) in color, density, and physical properties and shall be straight with the ends cut square to the inside diameter. Each section of conduit shall be supplied with an overall length of 20'. The conduit color shall be grey. The complete conduit system shall be UL listed and shall meet or exceed the requirements of UL 2515 Above Ground Standard. All conduit, elbows and fittings shall be durably and legibly marked in accordance with and Fittings and NEMA TC 14. All conduit joints shall feature tapered buttress threads which shall be permanently bonded using a joint adhesive supplied by the conduit manufacturer. The joint adhesive shall be applied to the conduit as specified by the manufacturer. The resin system shall be epoxy anhydride-cured with no fillers. A complete line of fittings, adapters, expansion fittings and elbows shall be available and shall be manufactured from the same materials and manufacturing process as the conduit. Expansion fittings shall be supplied by the conduit manufacturer and shall provide a minimum of 8" of lateral movement at all bridge expansion joints and 4" of lateral movement at all non-expansion locations. The conduit shall have an operating range of -40F to +250F and shall contain a ultra-violet (UV) inhibitor to meet the appropriate UL, CSA or NEMA specification. Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to concrete bridge structure shall be two hole type. All clamp materials shall be rated for outdoor wet environments. Threaded rods, anchor bolts, nuts and washers shall be 316 stainless steel. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap.

CONSTRUCTION METHODS: The LED luminaire with associated conduit and conductors shall be installed in conformance with Section 10.06. The LED underbridge luminaire shall be surface mounted to the bridge pier or abutment wall at the location and to the dimensions as indicated on the plans. The luminaire shall be leveled, securely fastened, properly oriented, connected to the power supply conductors, cleaned, and ready for operation.

The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected to the system ground wire.

Fuse holders and fuses shall be installed in the cast iron junction box surface mounted to the bridge abutment. The cast iron Junction box shall be furnished and installed under a separate bid item.

Surface conduit and conductors shall be installed in conformance with section 10.08.03-1. Fiberglass conduit shall be securely clamped to the structure with a clamp spacing as recommended by the NEC for reinforced thermosetting resin conduit (RTRC). Support spacing shall not exceed 3'-0" as specified in N.E.C. 355.30 or as listed by the conduit manufacturer. Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to the concrete bridge structure shall be two hole type. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap. Expansion Joints and conduit shall be supplied by the same manufacturer. All expansion joints shall be installed using the manufacturers recommended guidelines. For conduit lengths under 50 feet no expansion joints will be required. For conduit lengths between 50 feet to 200 feet one expansion joint (4" movement) shall be installed at the mid-point of the conduit. For conduit lengths over 200 feet an expansion joint (4" movement) shall be installed every 200 feet. At bridge expansion joints, conduit expansion joints shall be "double" type with an overall lateral movement of 8". In areas where structural movement or expansion is anticipated and a standard conduit expansion coupling cannot be properly installed, the Contractor can install a sufficient length of LFNC to account for the anticipated movement. Surface mounted conduit shall be installed where indicated on the plans; using mounting brackets and/or clamps as approved by the Department. All joints shall be glued together using the Manufacturers recommended adhesive as well as the manufactures recommended procedure. The surface of the conduit shall be dry and clean, free of dust, moisture, oil, grease, or any other contaminant. Any field cuts shall be hand sanded to remove the resin glaze and to provide mechanical adhesion. The adhesive shall be applied only within the temperature range as specified by the manufacture. The Contractor shall ensure that no adhesive has formed on the interior wall of the conduit.

The Contractor shall ensure that once installed the LED luminaire functions properly.

The spare surge suppressor shall be turned over to the project inspector for transfer to District Electrical Maintenance personnel.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of underbridge luminaires installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Underbridge Luminaire – LED (Wall Mounted)" of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor, spare surge suppressor, conductors, conduit, liquid tight flexible conduit, reducers,

conduit nipples, fuses, anchors, drilling, mounting, connections, and all labor, tools, equipment and work incidental thereto.

ITEM #1006001A – UNDERBRIDGE LUMINAIRE - LED (PENDANT MOUNTED)

DESCRIPTION: This item shall consist of furnishing and installing a light emitting diode (LED) luminaire to be used for underbridge lighting as specified with necessary mountings, conduit, conductors, fuses, and fuseholders, completely wired and attached to the mounting pendant in accordance with the plans and details.

MATERIALS: The LED underbridge luminaire shall be one of the following:

Holophane, Parkpak LED, catalog number: **PPSQL2-P70-40K-48-GL-T5W-STM-GYSDP-SPD**, with the following characteristics: 80 watts, 8,366 lumens, 4000k CCT, 480 volt, and Type 5 wide light distribution.

Lithonia Lighting, D-Series LED Parking Garage fixture, catalog number: **DSXPG-LED-30C-700-40K-T5W-480-SPD-DNAXD** with the following characteristics: 67 watts, 8,019 lumens, 700mA, 4000k CCT, 480 volt, and Type 5 wide light distribution.

Philips Gardco, G3 LED Garage and Canopy fixture, catalog number: **G3-5-32L-800-NW-G2-480-MGY-NP**, with the following characteristics: 85 watts, 10,020 lumens, 800mA, 4000k CCT, 480 volt, and Type 5 symmetrical light distribution.

No alternate luminaires will be accepted. A catalog cut will be required.

The luminaire housing shall be powder coated grey or natural aluminum in color.

The luminaire housing shall not have a photocontrol receptacle.

The luminaire's onboard circuitry shall include a surge protection device (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference. The LED luminaire shall be provided with integral 10kV surge protection which shall conform and be labeled as UL 1449 compliant. The SPD protects the luminaire from damage and failure for common and differential mode transient peak currents up to 5kA (minimum). SPD performance shall have been tested per procedures in ANSI C136.2/IEEE C62.41-2:2002 category C high exposure. The SPD shall be field replaceable.

A spare surge suppressor shall be supplied with the luminaire and turned over to the Engineer for delivery to ConnDOT District Electrical Maintenance personnel.

The LED luminaire shall carry a limited 5 year warranty on the LEDs and the Driver.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN and rated for 600 volts. The equipment grounding conductor shall be No. 10 AWG, THHN/THWN, rated for 600 volts. The ground wire shall be green in color.

Flexible conduit shall be LFNC-B (Liquidtight Flexible Nonmetallic Conduit) with a trade size diameter as indicated on the plans. LFNC shall be listed for UL Standard UL1660 and marked for outdoor applications. LFNC shall be flame resistant and UV/sunlight resistant. LFNC and fittings shall be wet location rated.

The 3/4" fiberglass conduit shall be standard wall type with a minimum wall thickness of 0.070 inches. The conduit shall be reinforced thermosetting resin conduit using the single circuit filament winding process and shall be free from defects including non-circularity and foreign inclusions. The conduit shall be nominally uniform (as commercially practical) in color, density, and physical properties and shall be straight with the ends cut square to the inside diameter. Each section of conduit shall be supplied with an overall length of 20'. The conduit color shall be grey. The complete conduit system shall be UL listed and shall meet or exceed the requirements of UL 2515 Above Ground Standard. All conduit, elbows and fittings shall be durably and legibly marked in accordance with and Fittings and NEMA TC 14. All conduit joints shall feature tapered buttress threads which shall be permanently bonded using a joint adhesive supplied by the conduit manufacturer. The joint adhesive shall be applied to the conduit as specified by the manufacturer. The resin system shall be epoxy anhydride-cured with no fillers. A complete line of fittings, adapters, expansion fittings and elbows shall be available and shall be manufactured from the same materials and manufacturing process as the conduit. Expansion fittings shall be supplied by the conduit manufacturer and shall provide a minimum of 8" of lateral movement at all bridge expansion joints and 4" of lateral movement at all non-expansion locations. The conduit shall have an operating range of -40F to +250F and shall contain a ultra-violet (UV) inhibitor to meet the appropriate UL, CSA or NEMA specification. Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to concrete bridge structure shall be two hole type. All clamp materials shall be rated for outdoor wet environments. Threaded rods, anchor bolts, nuts and washers shall be 316 stainless steel. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap.

CONSTRUCTION METHODS: The LED underbridge luminaire with associated conduit and conductors shall be installed in conformance with Section 10.06. The luminaire shall be installed at the end of the pendant mount bracket and shall be securely fastened, properly oriented, leveled, connected to the power supply conductors, cleaned, and ready for operation. A waterproof thread sealer shall be applied to the threaded joint between the pendant and the luminaire. The exact method of attaching the luminaire to the pendant will be luminaire specific and shall maintain the luminaire's IP66/U.L. wet location rating. The Contractor shall contact the luminaire manufacturer to determine the required mounting method to maintain the IP66/U.L. wet location rating of the fixture. Mounting methods may include:

- Direct mount to 1 1/4" pendant with a 3/4" NPT threaded reducer.
- Mount to 4"x4"x2" galvanized cast iron junction box with 3/4" threaded backwall conduit hub

threaded onto pendant with a 3/4" reducer.

It is the Contractor's responsibility to verify that the mounting method retains the IP66/U.L. wet location rating of the fixture and that all connections to the pendant are watertight and suitable for outdoor locations. The mounting method shall be submitted for approval as part of the shop drawing submittal process. A waterproof thread sealer shall be applied to all threaded pendant connections including the threaded joint between the pendant and the luminaire.

The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected between the system ground wire in the adjacent junction box and the grounding lug in the luminaire.

Fuse holders and fuses shall be installed in the cast iron junction box surface mounted to the bridge abutment. The cast iron Junction box shall be furnished and installed under a separate bid item.

Surface conduit and conductors shall be installed in conformance with section 10.08.03-1. Surface conduit and conductors shall be installed in conformance with section 10.08.03-1.

Fiberglass conduit shall be securely clamped to the structure with a clamp spacing as recommended by the NEC for reinforced thermosetting resin conduit (RTRC). Support spacing shall not exceed 3'-0" as specified in N.E.C. 355.30 or as listed by the conduit manufacturer.

Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to the concrete bridge structure shall be two hole type. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap. Expansion Joints and conduit shall be supplied by the same manufacturer. All expansion joints shall be installed using the manufacturers recommended guidelines. For conduit lengths under 50 feet no expansion joints will be required. For conduit lengths between 50 feet to 200 feet one expansion joint (4" movement) shall be installed at the mid-point of the conduit. For conduit lengths over 200 feet an expansion joint (4" movement) shall be installed every 200 feet. At bridge expansion joints, conduit expansion joints shall be "double" type with an overall lateral movement of 8". In areas where structural movement or expansion is anticipated and a standard conduit expansion coupling cannot be properly installed, the Contractor can install a sufficient length of LFNC to account for the anticipated movement.

Surface mounted conduit shall be installed where indicated on the plans; using mounting brackets and/or clamps as approved by the Department. All joints shall be glued together using the Manufacturers recommended adhesive as well as the manufactures recommended procedure. The surface of the conduit shall be dry and clean, free of dust, moisture, oil, grease, or any other contaminant. Any field cuts shall be hand sanded to remove the resin glaze and to provide mechanical adhesion. The adhesive shall be applied only within the temperature range as specified by the manufacture. The Contractor shall ensure that no adhesive has formed on the interior wall of the conduit.

The Contractor shall ensure that once installed the LED luminaire functions properly.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of LED luminaires installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Underbridge Luminaire - LED (Pendant Mounted)" of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor (with spare), conductors, fuses, conduit, pendant bracket including conduit, conduit fittings, condulets and junction box, flexible conduit, fuse holders, anchors, hardware, connections, thread sealer, leveling, mounting, grounding, drilling, and all labor, tools, equipment and work incidental thereto.

ITEM #1006131A – LED WALL MOUNTED LUMINAIRE (TYPE 1)

DESCRIPTION: This item shall consist of furnishing and installing a light emitting diode (LED) wall mounted tunnel luminaire as specified with necessary mountings, surface conduit, conductors, fuses, and fuseholders, completely wired and attached to the bridge wall in accordance with the plans and details.

MATERIALS: The LED wall mounted luminaire shall be Holophane model TNLED-6-4K-7-AH-WCR-DGRA-S-TW or approved equal. For alternate luminaires, the LED wall mounted luminaire shall be designed specifically for tunnel lighting applications. The housing of the luminaire shall be die-cast aluminum A360 alloy with integral heat sink fins to optimize thermal management through conductive and convective cooling. The access door shall feature stainless steel latches for easy access to the LED drivers, surge devices, luminaire disconnect plug, and terminal block. The fixture housing shall be vibration rated to 3G applications per ANSI C136.31-2001. The luminaire shall be IP66 rated per IEC 60529. The housing shall be completely sealed against moisture and environmental contaminants and shall be UL/CUL 1598, 40°C, wet location rated. The housing shall feature standard grey TGIC powder coat paint finish over an anodized aluminum pre-finish. The finish shall pass a 9,000 hour salt fog test per ASTM B117 and D1654. The fixture shall be designed for continuous row mounting and optionally as a raceway. A single ¾" – 14 NPT top entry and two ¾" – 14 NPT side entries shall be provided in the housing. The approximate luminaire dimensions shall be: 24" x 17.5" x 9" (H x W x D). The approximate luminaire weight shall be 60 lbs. Wall mounting brackets shall be fabricated of type 316 stainless steel and shall be provided by the manufacturer of the luminaire.

LED optics shall consist of multi-die LED chip on board technology. The luminaire optics shall provide warm white light at a standard 4000K CCT. The LEDs shall operate at a drive current of 700mA. The luminaire shall provide an initial delivered lumen output of 17,320 lumens or greater, and shall provide a crossbeam distribution. The luminaire shall produce a minimum of 108 lumens per watt. The luminaire's LM85 rating shall be $\geq 90,000$ hours at 25°C. LM70 shall be $> 100,000$ hours at 25°C.

The LED luminaire shall draw approximately 161 watts or less. The LED luminaire shall be provided with integral surge suppression protection meeting a minimum 10KV/5KA per ANSI/IEEE C62.41.2-2002. The LED luminaire electronic driver shall be Class 1 with a power factor $\geq 90\%$ and THD $\leq 20\%$, and expected life of 100,000 hours. The luminaire shall operate at 480 volts. The luminaire shall be supplied with a spare surge suppressor.

The LED luminaire shall carry a limited 5 year warranty on the LEDs and the Driver.

Testing compliance shall meet the following requirements:

- IEC 61000 – Electromagnetic Compatibility Test (EMC)
- FCC Title 47 CFR Part 18 – Federal Communications Commission
- ANSI/IEEE C62.41.2-2002 Surge Protection

IEEE 519 – Harmonic Control in Electrical Power Systems
ANSI C82.77:2002 – Harmonic Distortion
ANSI C136.31:2001 – Luminaire Vibration
ASTM B 117:2003 Salt Spray Test
IEC 60529 – Degrees of Protection provided by enclosure (IP)
UL/CUL 1598, 40°C, wet location. 30°C when used as a raceway
UL/CUL 1598A – marine Outside Type (salt water)
ROHS Compliant – surge protection device, LED driver, COB arrays

If requested by the Department, the Contractor shall submit a sample fixture. The Department reserves the right to disapprove any submitted luminaire based solely on photometric performance, lumen maintenance, and construction. The photometric output of submitted luminaires shall produce average illuminance and uniformity ratio as recommended by the Illuminating Engineering Society of North America (RP-8-00) for the given roadway application as calculated by the Department.

Conductors shall be #10 AWG in accordance with Article M.15.11 of the Standard Specifications. Insulation shall be THHN/THWN.

Flexible conduit shall be LFNC-B (Liquidtight Flexible Nonmetallic Conduit) with a trade size diameter of 3/4". LFNC shall be listed for UL Standard UL1660 and marked for outdoor applications. LFNC shall be flame resistant and UV/sunlight resistant. LFNC and fittings shall be wet location rated.

The 3/4" fiberglass conduit shall be standard wall type with a minimum wall thickness of 0.070 inches. The conduit shall be reinforced thermosetting resin conduit using the single circuit filament winding process and shall be free from defects including non-circularity and foreign inclusions. The conduit shall be nominally uniform (as commercially practical) in color, density, and physical properties and shall be straight with the ends cut square to the inside diameter. Each section of conduit shall be supplied with an overall length of 20'. The conduit color shall be grey. The complete conduit system shall be UL listed and shall meet or exceed the requirements of UL 2515 Above Ground Standard. All conduit, elbows and fittings shall be durably and legibly marked in accordance with and Fittings and NEMA TC 14. All conduit joints shall feature tapered buttress threads which shall be permanently bonded using a joint adhesive supplied by the conduit manufacturer. The joint adhesive shall be applied to the conduit as specified by the manufacturer. The resin system shall be epoxy anhydride-cured with no fillers.

A complete line of fittings, adapters, expansion fittings and elbows shall be available and shall be manufactured from the same materials and manufacturing process as the conduit. Expansion fittings shall be supplied by the conduit manufacturer and shall provide a minimum of 8" of lateral movement at all bridge expansion joints and 4" of lateral movement at all non-expansion locations. The conduit shall have an operating range of -40F to +250F and shall contain a ultra-violet (UV) inhibitor to meet the appropriate UL, CSA or NEMA specification. Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to concrete bridge structure shall be two hole type. All clamp materials shall be rated for outdoor wet environments. Threaded rods, anchor bolts, nuts and washers shall be 316

stainless steel. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap.

Fuses and fuse holders shall conform to the requirements of Article M.15.05.

CONSTRUCTION METHODS: The LED Wall Mounted Luminaire with associated conduit and conductors shall be installed in conformance with Section 10.06. The LED wall mounted luminaire shall be surface mounted to the bridge abutment at the location and to the dimensions as indicated on the plans. The luminaire shall be leveled, securely fastened, properly oriented, connected to the power supply conductors, cleaned, and ready for operation.

The luminaire shall be properly grounded with a No. 10 AWG equipment ground connected to the system ground wire.

Fuse holders and fuses shall be installed in the non-metallic junction box surface mounted to the bridge abutment. The junction box shall be furnished and installed under a separate bid item.

Surface conduit and conductors shall be installed in conformance with section 10.08.03-1. Fiberglass conduit shall be securely clamped to the structure with a clamp spacing as recommended by the NEC for reinforced thermosetting resin conduit (RTRC). Support spacing shall not exceed 3'-0" as specified in N.E.C. 355.30 or as listed by the conduit manufacturer. Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to the concrete bridge structure shall be two hole type. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure, the two hole strap shall be sized to allow the conduit to laterally expand within the strap. Expansion Joints and conduit shall be supplied by the same manufacturer. All expansion joints shall be installed using the manufacturers recommended guidelines. For conduit lengths under 50 feet no expansion joints will be required. For conduit lengths between 50 feet to 200 feet one expansion joint (4" movement) shall be installed at the mid-point of the conduit. For conduit lengths over 200 feet an expansion joint (4" movement) shall be installed every 200 feet. At bridge expansion joints, conduit expansion joints shall be "double" type with an overall lateral movement of 8". In areas where structural movement or expansion is anticipated and a standard conduit expansion coupling cannot be properly installed, the Contractor can install a sufficient length of LFNC to account for the anticipated movement. Surface mounted conduit shall be installed where indicated on the plans; using mounting brackets and/or clamps as approved by the Department. All joints shall be glued together using the Manufacturers recommended adhesive as well as the manufactures recommended procedure. The surface of the conduit shall be dry and clean, free of dust, moisture, oil, grease, or any other contaminant. Any field cuts shall be hand sanded to remove the resin glaze and to provide mechanical adhesion. The adhesive shall be applied only within the temperature range as specified by the manufacture. The Contractor shall ensure that no adhesive has formed on the

interior wall of the conduit. LFNC-B shall be used to connect the wall mounted luminaire to the Surface mounted fiberglass conduit.

The Contractor shall ensure that once installed the LED luminaire functions properly.

The spare surge suppressor shall be turned over to the project inspector for transfer to District Electrical Maintenance personnel.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of LED Wall Mounted Luminaires installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "LED Wall Mounted Luminaire (Type I) of the type and size specified, complete and accepted in place, which price shall include all materials including luminaire, LEDs, driver, surge suppressor, spare surge suppressor, conductors, conduit, liquid tight flexible conduit, reducers, conduit nipples, fuses, anchors, drilling, mounting, connections, and all labor, tools, equipment and work incidental thereto.

ITEM #1006151A – REMOVE UNDERBRIDGE LUMINAIRE

DESCRIPTION: Work under this item shall consist of removal of an existing underbridge luminaire at the location shown on the plans or as directed. All removed underbridge luminaires, lamps, mountings, conduits, conductors, fuses and fuse holders shall be disposed of by the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove an underbridge luminaire where required. All removed underbridge luminaires, lamps, mountings, conduits, conductors, fuses and fuse holders shall be disposed of by the Contractor.

All removed materials shall be properly disposed of by the Contractor. The removed luminaire contains regulated materials. All regulated materials shall be as described and disposed of under Item No. 0101143A – Handling and Disposal of Regulated Items.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of underbridge luminaires with associated equipment, removed and disposed of, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Underbridge Luminaire" complete, which price shall include removal of materials, disposing, delivering, hauling, including all materials, tools, equipment, labor and work incidental thereto.

ITEM #1008644A – 2 ½" FIBERGLASS CONDUIT - SURFACE

ITEM #1008665A – 2 ½" FIBERGLASS CONDUIT IN TRENCH

ITEM #1008682A – 2 ½" FIBERGLASS CONDUIT UNDER ROADWAY

DESCRIPTION: This item shall consist of furnishing and installing conduit of the size and type specified with necessary fittings, where called for, at locations shown on the plans or as directed by the Engineer and in accordance with these specifications.

Work under the above items shall conform to Section 10.08.03-1 of the standard specifications, supplemented and amended as follows:

MATERIALS: The 2½" fiberglass conduit shall be extra heavy wall type with a minimum wall thickness of 0.250 inches. The conduit shall be reinforced thermosetting resin conduit using the single circuit filament winding process and shall be free from defects including non-circularity and foreign inclusions. The conduit shall be nominally uniform (as commercially practical) in color, density, and physical properties and shall be straight with the ends cut square to the inside diameter. Each section of conduit shall be supplied with an overall length of 20'. The conduit color shall be grey.

The complete conduit system shall be UL listed and shall meet or exceed the requirements of UL 2515 Above Ground Standard. All conduit, elbows and fittings shall be durably and legibly marked in accordance with and Fittings and NEMA TC 14.

All conduit joints shall be straight socket type and shall be permanently bonded using a joint adhesive supplied by the conduit manufacturer. The joint adhesive shall be applied to the conduit as specified by the manufacturer. The resin system shall be epoxy anhydride-cured with no fillers.

A complete line of fittings, adapters, expansion fittings and elbows shall be available and shall be manufactured from the same materials and manufacturing process as the conduit. Expansion fittings shall be supplied by the conduit manufacturer and shall provide a minimum of 8" of lateral movement.

The conduit shall have an operating range of -40F to +250F and shall contain a ultra-violet (UV) inhibitor to meet the appropriate UL, CSA or NEMA specification.

Clamps for attaching the conduit to the steel bridge structure shall be single hole type. Clamps for attaching the conduit to concrete bridge structure shall be two hole type. All clamp materials shall be stainless steel and rated for outdoor wet environments. Threaded rods, anchor bolts, nuts and washers shall be 316 stainless steel. When clamping the fiberglass conduit to the steel bridge structure, a slip collar shall be installed at the clamp location to allow the conduit to laterally expand within the clamp. When clamping the fiberglass conduit to the concrete bridge structure,

the two hole strap shall be sized to allow the conduit to laterally expand within the strap. Threaded rods, anchor bolts, nuts and washers shall conform to ASTM A449 and shall be stainless steel.

Flexible conduit shall be LFNC-B (Liquidtight Flexible Nonmetallic Conduit) with a trade size diameter equivalent to the rigid conduit that it is connected to. LFNC shall be listed for UL Standard UL1660 and marked for outdoor applications. LFNC shall be flame resistant and UV/sunlight resistant. LFNC and fittings shall be wet location rated.

CONSTRUCTION METHODS: Construction methods for surface mounted conduit shall conform to Section 10.08.03-1 of the Standard Specifications and to the manufacturer's instructions. Construction methods for conduit in trench shall conform to Section 10.08.03-2 of the Standard Specifications and to the manufacturer's instructions.

For surface mounted conduit:

Fiberglass conduit shall be securely clamped to the structure wall with clamp spacing as recommended by the NEC for reinforced thermosetting resin conduit (RTRC). Support spacing shall not exceed 5'-0" as specified in N.E.C. 355.30.

Expansion Joints and conduit shall be supplied by the same manufacturer. All expansion joints shall be installed using the manufacturers recommended guidelines. For conduit lengths under 50 feet no expansion joints will be required. For conduit lengths between 50 feet to 200 feet one expansion joint shall be installed at the mid-point of the conduit. For conduit lengths over 200 feet an expansion joint shall be installed every 200 feet.

Surface mounted conduit shall be installed where indicated on the plans; using mounting brackets and/or clamps as approved by the Department.

All joints shall be glued together using the Manufacturers recommended adhesive as well as the manufactures recommended procedure. The surface of the conduit shall be dry and clean, free of dust, moisture, oil, grease, or any other contaminant. Any field cuts shall be sanded to remove the resin glaze and to provide mechanical adhesion. The adhesive shall be applied only within the temperature range as specified by the manufacture. The Contractor shall ensure that no adhesive has formed on the interior wall of the conduit.

Prior to beginning work and fabrication of any materials, the Contractor shall take all field measurements necessary to assure the proper fit of the finished structure mounted conduit. This shall include all supports, brackets and hangers, fixed and flexible sweep bends, expansion/contraction fittings, junction boxes, and other structure mounted appurtenances. The Contractor shall submit shop drawings to the Engineer for approval in accordance with Section 1.06.01.

Liquid tight flexible non-metallic conduit shall be installed at all bridge deck to superstructure transitions.

For conduit in trench:

When installing fiberglass conduit in trench under existing pavement, the Contractor shall saw cut the trench to minimize disruption of the pavement surface. The Contractor shall reconstruct the roadway to match the existing pavement structure. All trenches in paved areas shall have a minimum of 12" of processed aggregate as a sub-base layer. The cost of trenching and saw cutting shall be included in the contract item for Trenching and Backfilling (Item No. 1001001).

METHOD OF MEASUREMENT: The conduit shall be measured for payment by the actual number of linear feet of the type and size installed and accepted. Expansion fittings, fixed sweep-bends, conduit, brackets, clamps, and assorted fittings, will not be measured for payment but shall be included in the pay item for the conduit of the type and size specified. The measured length shall be from end to end along the centerline through all fittings.

The pull tape and conduit testing will not be measured for payment but shall be included in the pay item for the conduit of the type and size specified.

BASIS OF PAYMENT: This work shall be paid for at the contract unit price per foot for "2½" Fiberglass Conduit – Surface", "2½" Fiberglass Conduit in Trench", or "2½" Fiberglass Conduit Under Roadway", within the limits shown on the plans and in the details. This price shall include all materials required including conduit, couplings, threaded connectors, elbows, clamps/brackets, attachment hardware expansion fittings, fixed and flexible sweep-bends, conduit fittings, caps, pull-rope, inserts, structural supports, adhesive, equipment, tools, labor, drilling and all work incidental thereto.

ITEM #1009300A – STEEL JUNCTION BOX COVER

DESCRIPTION: This work shall consist of replacing a missing or damaged steel junction box cover on a bridge parapet/wingwall or retaining wall, with a new galvanized steel cover (with gasket and cover bolts) in accordance with this special provision.

MATERIALS: The steel junction box cover shall be a minimum 1/4" steel conforming to the requirements of ASTM - A36 and shall be hot-dip galvanized conforming to the requirements of ASTM - A123. The dimensions of the cover shall be applicable to the existing junction box on which it is to be installed. The cover shall properly fit within the recessed front opening of the existing junction box. Holes for cover bolts shall be recessed in the cover plate to accept a 7/16" socket wrench.

The cover shall be attached with stainless steel socket cap bolts of the size and dimension required to match the existing threaded bolt holes in the existing cast iron junction boxes. Cover bolts shall have a 7/16" socket (hex) head.

Replacement gaskets shall be neoprene.

CONSTRUCTION METHODS: The Contractor shall replace a missing or damaged steel junction box cover on a bridge parapet/wingwall or retaining wall, with a new galvanized steel cover with gasket and cover bolts.

All existing bolt holes shall be properly cleaned prior to installing the new cover bolts. If an existing cover bolt is broken off in the bolt hole the Contractor may omit the installation of a new bolt in this bolt hole provided the overall quantity of bolts installed is at least equal to 50% of the bolt holes in the junction box, and provided there will be at least one bolt installed in each side of the cover plate.

If necessary, the Contractor shall extract/drill-out a broken cover bolt and re-tap the threads in the bolt hole so that the new cover bolt can be properly installed. Anti-seize compound shall be applied to all installed cover bolts.

The removed covers shall be disposed of by the Contractor.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of steel junction box covers replaced, complete and accepted in place.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Steel Junction Box Cover" of the size required complete and accepted in place, which price shall include cover, gasket, screws, removal and disposal of existing cover, drilling and tapping, anti-seize compound, and all materials, tools, equipment and labor incidental thereto.

ITEM #1009503A – 16" X 14" X 6" NEMA 4X NON-METALLIC JUNCTION BOX

DESCRIPTION: This item shall consist of furnishing and installing a surface mounted thermoplastic 16"x14"x6" NEMA 4X non-metallic junction box at the location as shown on the plans or as directed by the Engineer.

MATERIALS: Junction boxes and covers shall be constructed of hot compression molded fiberglass reinforced polyester, manufactured from a thermoset non-halogenated material. The enclosure shall be completely weatherproof, rated for outdoor use, and shall meet NEMA Standard 250, as well as UL/cUL 50 File E64358. The box shall be rated NEMA 4X and be supplied with stainless steel hardware. The enclosure shall have a molded in flange in order to secure the enclosure to the structural concrete.

The enclosure shall meet ASTM D1435 – *Standard Method of Outdoor Weathering of Plastics* and ASTM D4364 - *Standard Method of Accelerated Outdoor Weathering of Plastics using Concentrated Natural Sunlight*. The integral urethane gasket attached to the cover shall be constructed of elastomeric material that will meet the environmental construction and performance requirements. The cover shall be supplied with a stainless steel beaded chain attached to the enclosure in order to secure the cover after the cover bolts have been removed. All cover bolts shall be stainless steel. The enclosure shall have threaded brass inserts which shall be sized to accept the stainless steel cover bolts.

The Non-Metallic Junction box shall be warranted to be free from defects in workmanship for a period of 10 years.

CONSTRUCTION METHODS: The Contractor shall install the junction box at the location and to the dimensions as detailed on the plans. Conduit entrance holes shall be drilled into the junction box at the required locations using a hole-saw of the minimum diameter required to accommodate the conduit connector. All conduit connections shall be glued. The non-metallic enclosure shall be attached to the structural concrete using stainless steel mechanical anchors with flat washers, lock washers, and hex nuts. The location of the junction box shall be installed between the median barrier walls of a bridge structure as indicated on the plans and details. All conduit attachments shall utilize a weatherproof sealing ring to ensure that the installation is watertight.

METHOD OF MEASUREMENT: Each junction box of the size specified shall be measured as a unit, complete and accepted in place.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "16"x14"x6" NEMA 4X Non-Metallic Junction Box", complete in place, which price shall include junction box, cover, attachment hardware, mechanical anchors, flat washers, lock washers, hex nuts, drilling, anchoring, and all materials, equipment, tools and labor incidental thereto.

ITEM #1010902A – REMOVE CONCRETE HANDHOLE

DESCRIPTION: Under this item the Contractor shall remove an existing concrete handhole where shown on the plans or as directed. The removed concrete handhole shall be disposed of by the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove and dispose of a concrete handhole where shown on the plans or as directed. The hole shall be backfilled and graded to match surroundings, unless otherwise noted on the plans.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of concrete handholes removed and disposed of, complete and accepted.

BASES OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Concrete Handhole", which price shall include all materials, equipment and work incidental thereto including excavation, backfill when necessary, hauling and disposing of concrete handholes.

ITEM #1014174A – CABLE IN DUCT (THREE NO. 2 CONDUCTORS AND ONE NO. 6 GROUND)

DESCRIPTION: This item shall consist of furnishing and installing three conductor, 600 volt, PVC power cable, with ground wire, suitable for direct burial applications, at locations as called for on the plans or as directed by the Engineer and in accordance with these specifications.

Work under the above items shall conform to Section 10.14 of the standard specifications, supplemented and amended as follows:

MATERIALS: The Cable in Duct shall be Three Conductor (3/C), 600 volt, XLPE XHHW-2, Type TC-ER, PVC power cable, rated for direct burial applications.

The insulated conductors shall be Class B compressed stranded bare copper per ASTM B3 and ASTM B8 and shall be No. 2 AWG. Conductor insulation shall be Cross Linked Polyethylene (XLPE) Type XHHW-2, rated for 600 volts. The allowable conductor ampacity at 90°C shall be 130 amps. The insulated conductors shall feature colored XLPE insulation. Conductor colors shall be black, red and blue. The grounding conductor shall be Class B compressed stranded bare copper per ASTM B3 and ASTM B8 and shall be No. 6 AWG. The overall pre-assembled cable jacket shall consist of a Polyvinyl Chloride (PVC) Jacket with a thickness of 80 mils or greater. The cable in duct shall feature a paper filler. The cable in duct shall be constructed such that the conductors cannot be removed from the PVC jacket.

The Cable in Duct (Three No. 2 Conductors and One No. 6 Ground) shall be suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, aerial supported by a messenger, and where superior electrical properties are desired. The cables shall be capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation in wet and dry locations, 130°C for emergency overload, and 250°C for short circuit conditions. For uses in Class I, II, and III, Division 2 hazardous locations per NEC Article 501 and 502.

The Cable in Duct shall feature a factory printed permanent legend applied directly to the PVC jacket. The printed Legend shall contain the following information:

Manufacturer, (UL) [#AWG Or #kcmil] CU XHHW-2 XLPE/PVC-SIM 600V Type TC-ER For CT USE SUN. RES. For DIRECT BURIAL FT4 YEAR (NESC) [Sequential Feet Marks]

The Cable and Duct shall conform to the following specifications:

- ASTM B3 Soft or Annealed Copper
- ASTM B8 Concentric-lay-standard copper
- UL 44 Thermoset Insulated wires And cables
- UL 1277 Electrical Power and Control Cable

- UL 1685 - Flame Test
- UL 1581 - Electrical Wires, Cables and Flexible Cords
- IEEE 1202/FT4 - Vertical Tray Flame Test (70,000 Btu/hr) and ICEA T-29-520 – (210,000 Btu/hr)
- ICEA S-58-679 - Control Cable Conductor Identification Method 4
- ICEA S-95-658 NEMA WC70 - Power cables rated 2000 volts or less for the distribution of electrical energy

The Contractor shall submit catalog cuts to the Engineer for approval in accordance with Section 1.06.01 and 1.05.02.

CONSTRUCTION METHODS: Work under the above items shall conform to Section 10.14 of the standard specifications.

As per Section 10.14 and the plan details, the Cable in Duct shall be encased in sand, with a depth of 4” of sand above the conduit and a depth of 4” of sand below the conduit (total depth of sand to equal 8”). The trench shall be backfilled in conformance with Section 10.01, and as such, no stones, boulders, or coarse material shall be placed adjacent to the conduit or cable. Trenching and backfilling shall be paid for under item 1001001.

The cable in duct shall be cut by an approved cutting tool in a manner that will not damage the conductors or conductor insulation. Sufficient slack for splices shall be provided in cast iron junction boxes, concrete handholes, and light standard bases in accordance with the details. Splices shall be made only at approved locations and in accordance with NEC and insulated to maintain the voltage rating of the insulation of the conductor. All splices shall be made as shown on plans and details using approved waterproof devices and materials.

METHOD OF MEASUREMENT: The length of Cable in Duct (Three No. 2 Conductors and One No. 6 Ground) to be included for payment shall be the amount accepted and measured from centerline to centerline of light standards or concrete hand holes, as the case may be, plus 8 feet.

BASIS OF PAYMENT: This work will be paid for at the Contract unit price per linear foot for "Cable in Duct (Three No. 2 Conductors and One No. 6 Ground)" of the size, type, and number of conductors specified, complete in place, which price shall include all materials such as terminators, sealing compound, connections, grounding, disposal of surplus material, and all equipment, tools and labor incidental thereto. Necessary excavation, including sand encasement will be paid for as "Trenching and Backfilling" in accordance with the provisions of Article 10.01.05.

ITEM #1014901A – REMOVE CABLE

DESCRIPTION: This item shall consist of removing highway lighting circuit conductors from existing conduit complete, as shown on the plans or as ordered and in accordance with these specifications. The removed cable shall remain the property of the Contractor.

CONSTRUCTION METHODS: The Contractor shall remove all single conductors from conduit at the locations where new lighting conductors are to be installed in existing conduit. Prior to the installation of new conductors (under a separate bid item), the conduit shall be completely cleaned of all obstructions and debris. The Contractor shall remove all sand, silt and other debris from the conduit using one of the following methods:

- 1) Rodding.
- 2) High pressure jet water spray.
- 3) Compressed air.
- 4) Pulling a mandrel through the conduit.

If the conduit is found to be damaged to the extent that the cleaning process will not clear the obstruction the Contractor shall notify the Engineer and await further instruction. Under no circumstances shall the Contractor pull new conductors into a partially obstructed conduit.

The removed cable shall be neatly coiled, tied and disposed of by the Contractor.

Where the existing cables are removed from rigid metal conduit, the Contractor shall also remove the existing bonding bushings from the conduit ends, and install new bonding bushings of the type indicated in the electrical details.

METHOD OF MEASUREMENT: This work shall be measured for payment by the actual number in linear feet of conduit from which the cable is removed.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per linear foot for "Remove Cable" which price shall include the removal of single conductors, the cleaning of the conduit, the installation of new bonding bushings on the ends of the existing rigid metal conduit, the proper disposal of the removed conductors and bushings, and all equipment, labor and work incidental thereto.

ITEM #1017001A – SERVICE ENTRANCE AND CABINET - TYPE I

DESCRIPTION: This item shall consist of furnishing and installing a Service Entrance and Cabinet of the type specified to power a highway lighting system as detailed on the plans and at the location shown on the plans or as directed by the Engineer and in accordance with these specifications.

MATERIALS: The materials for this work shall conform to the requirements of Article M.15.15 with the following revisions:

Sub-section 16 - *Main Disconnect Safety Switch*: shall be revised as follows: The main disconnect safety switch (cold sequence meter main) shall conform to all requirements set forth in the latest edition of the Eversource “Information & Requirements for Electric Supply below 600 volts” handbook. The meter main shall feature a 200 amp, 7 terminal, ringless, heavy-duty, lever bypass meter socket. A circuit breaker (3 pole, 200 amp, 600 volt) shall be located on the line side of the meter socket. The meter main shall be housed in a NEMA Type 3R housing suitable for underground or underground/overhead service connection as called for on the plans. The meter main housing shall be equipped with removable, lockable door panels. The complete meter main shall be UL-listed, and suitable for use as outdoor service equipment. The meter main shall include an appropriate service grounding kit.

Additional requirements are as follows:

The PVC slip meter riser shall be as detailed on the plans and shall conform to all utility company requirements.

Slotted channel rail shall be 1-5/8”, 12 gauge, formed from ASTM B783 (Type 316N2-33) stainless steel.

Aluminum cabinet riser box shall be fabricated from 0.125” thick aluminum and shall have the same dimensional foot print as the lighting control cabinet that it will support. All four sides of the riser box shall be flanged at the top and bottom of the box and shall have anchor bolt holes which will match the mounting holes on the bottom of the lighting cabinet and on the foundation to which it is to be attached. If necessary, the fabricator shall install side wall stiffening members. All welds shall be ground smooth.

Pressure treated wood posts used in the construction of remote meter main support structures shall be free of cracks and blemishes.

CONSTRUCTION METHODS: The Service Entrance and Cabinet – Type I shall be installed in conformance with the requirements set forth in Section 10.17.03 amended as follows:

The main disconnect safety switch (cold sequence meter main) shall be installed either on the back of the lighting control cabinet or remote to the cabinet as indicated on the plans (specific to

the particular service location). Remote supports shall be securely cast into concrete footings and there shall be no sway or movement of the installation when complete. If movement of the support structure is encountered then additional support(s) or bracing shall be installed as approved by the Engineer. All supports and bracing shall be suitable for outdoor installation. Connection of the underground electric service conduits to the meter main shall be made using appropriately sized slip meter risers.

Where indicated on the plans, the lighting control cabinet shall be installed on an aluminum riser box.

The utility service lateral conduit shall be installed as indicated on the plans. Installation of the service lateral may require removal and replacement of existing sidewalk slabs, concrete saw-cutting, or core drilling through a concrete wall. All conduit, conduit elbows, conduit couplings, and associated trenching and backfilling shall be paid for under the Service Entrance and Cabinet item. The service lateral conduit shall be terminated in a 90 degree bend at the base of the utility service pole. The Contractor shall furnish to Eversource a sufficient length of conduit (same type and size as lateral conduit) to reach from ground level to the top of the service utility pole. This riser conduit shall be installed by Eversource. The Contractor shall install a braided pull-tape in the conduit. Utility service conductors shall be furnished, installed, and connected by Eversource.

Where the cabinet is to be mounted to an existing concrete slab, stainless steel mechanical anchors shall be installed in appropriately sized drill holes and to the installation requirements as set forth by the anchor manufacturer. Anchor dimensions shall be as indicated on the plans.

A concrete pad shall be positioned in front of the cabinet door opening as detailed on the plans (unless otherwise noted). The top of the pad shall be level with the surrounding grade. Where called for on the plans a concrete retaining slab shall be installed adjacent to the concrete pad (opposite side from cabinet) to stabilize the sloped grade in the area of the pad.

All utility company construction costs (materials and labor) associated with the Service Entrance and Cabinet installation shall be paid for under the Service Entrance and Cabinet item. If the installation requires the utility company to install one or more wood utility poles, secondary cabling, transformers, etc., the cost of these items (materials and labor) shall be paid for under this item.

The Contractor shall stage the installation of the Service Entrance and Cabinet in such a manner as to maintain the existing lighting control cabinet “in service” for as long as possible. The installation shall be carried out so that there is no disruption in the proper nighttime operation of the highway lighting system. Nighttime power to the lighting system can be supplied by the existing lighting service cabinet, the new lighting service cabinet, or a combination of both cabinets operating concurrently.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of Service Entrance and Cabinets of the type specified, installed, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Service Entrance and Cabinet – Type I" which price shall include all materials including all electrical components, concrete foundations, concrete pad, concrete slabs, lighting control cabinet, cabinet riser box, main disconnect safety switch, meter main and cabinet, slotted channel rail, anchor bolts, mechanical anchors, mounting hardware, meter main support structure and components, slip meter risers, service lateral conduit, pull tape, fittings, standoffs, conduit, riser conduit, conduit fittings, conduit bushings, conductors, control transformer, circuit breakers, meter socket, photoelectric control, transformer pad, GFCI receptacle, device boxes, lighting contactor, convenience light, pedestal, fence, manual switch, fuses, fuseholders, ground rod, grounding conductor, excavation, trenching and backfilling, drilling, concrete saw cutting, concrete sidewalk removal, concrete, concrete core drilling, and all equipment, tools, labor and work incidental thereto including clearing or removal of brush, backfill, grading, topsoil, sodding or turf establishment, and all utility company construction charges. Where rock is encountered in excavation, it will be paid for as "Rock in Trench Excavation" in accordance with the provisions of Article 10.01.05.

ITEM #1017052A – REMOVE SERVICE

DESCRIPTION: Work under this item shall consist of removal of an existing electric service cabinet for highway lighting at the location shown on the plans.

MATERIALS: The Contractor shall be responsible for damage to all equipment and material incurred during removal and hauling to specified area. All repairs or replacements due to damage or loss by the Contractor shall be made at the Contractor's expense.

CONSTRUCTION METHODS: The Contractor shall notify The Utility Co. to disconnect service 30 days prior to removing the service equipment. The service cabinet with all components shall be removed and shall be transported to the Contractor's storage yard for the project.

The Contractor shall contact ConnDOT District 1 Electrical (tel: 860-566-3156) and arrange for ConnDOT Electrical personnel to have the opportunity to inspect the cabinet and to salvage the cabinet as a unit or salvage specific components. The Contractor shall assist ConnDOT Electrical personnel in loading the material onto ConnDOT vehicles for transport. Any material not selected for salvage shall remain the property of the Contractor.

The electric meter shall be returned to the appropriate Utility Company representative and the Contractor shall note the date on which the meter was returned and forward this information to the Project Inspector.

The concrete foundation and chain link fence enclosure (where present) shall be removed and disposed of by the Contractor unless otherwise noted on the plans. The resulting excavation shall be properly backfilled, graded and seeded to match the surrounding area or as indicated on the plans. Where an existing concrete pad is to remain and serve as the base to the new lighting cabinet, existing conduit stub-ups within the pad shall be cut off flush with the top of the pad and the openings grouted flush with the top of the pad.

The Contractor shall remove the cabinet enclosure mechanically as a whole unit (minus salvage of components by ConnDOT) so as to minimize the disturbance or removal of paint from the cabinet surfaces.

The Contractor shall not remove the existing cabinet until the new lighting control cabinet(s) have been installed and are operational.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of services removed and delivered, complete and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "Remove Service" which price shall include removal, delivery and unloading of the cabinet, removal and

disposal of the foundation and chain link enclosure, conduit cutting, grouting, excavation, backfilling, grading, seeding, and all equipment, labor, work and incidentals thereto.

ITEM #1019053A – AERIAL CABLE (3 NO. 2)

DESCRIPTION: This work shall consist of furnishing and installing aerial cable, with insulators and brackets, on proposed poles at the location indicated on the plans.

MATERIALS: Aerial cable shall be 7 strand aluminum containing a No. 2 AWG bare messenger with three No. 2 AWG cross-linked polyethylene insulated conductors rated at 600 volts.

CONSTRUCTION METHODS: The aerial cable shall be used as temporary circuitry to maintain nighttime roadway lighting, on the roadways within the project limits open to vehicular traffic. Aerial cable shall be attached to proposed fiberglass poles or aluminum light standards (with insulators), including all connections as indicated on the plans or as directed by the Engineer. When necessary, the aerial cable shall be relocated to maintain different illumination circuits as dictated by the construction stages. Aerial cable used for temporary lighting shall be removed once the permanent lighting is installed and operational. Removed aerial cable shall remain the property of the Contractor.

METHOD OF MEASUREMENT: This work will be measured for payment by the actual number of linear feet of aerial cable installed and accepted, including attachments.

BASIS OF PAYMENT: This work will be paid for at the contract unit price per linear foot for "Aerial Cable (3 No. 2)" of the size and voltage specified, complete in place, which price shall include, insulators, entrance cap and attachment, bracket, all materials, tools, connections, equipment, labor, and work incidental thereto. The unit cost for this item is a one time only cost. The cost of removing and relocating the aerial cable to maintain different illumination circuits shall be included in the unit cost.

ITEM #1020030A – TEMPORARY ILLUMINATION UNIT

DESCRIPTION: Under this item the Contractor shall furnish and install a fiberglass light pole, bracket, luminaire, and associated hardware, to be used for temporary lighting during construction, as indicated on the plans or as directed by the Engineer. At the end of the project the temporary illumination unit shall become the property of the Contractor.

MATERIALS: The pole shaft shall be fiberglass reinforced composite (FRC). The pole shaft shall be constructed by the filament winding process from thermosetting polyester resin and contain a minimum of 65 percent of “E” type fiberglass by weight. The filament windings shall be continuously applied with uniform tension and shall be placed on the pole helically at low angles to provide axial strength. Additional windings shall be placed on the pole in a circular manner to provide compressive strength. The pole is to be round, tapered, hollow, and reinforced in the support arm and hardware attachment areas. The pole is to be non-conductive and chemically inert. The pole shall meet the current AASHTO LTS-2 *Street Lighting Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, and shall be approved by FHWA for use on Federal Aid projects. A 2 ½” x 5” handhole shall be provided at the base of the pole shaft at approximately 18” above the finished grade line.

The pole exterior surface is to be grey with a natural (textured) finish. The surface of the pole will be uniform for the entire length of the pole. The laminate shall contain colored pigment, the color of the final coating, and be of uniform color throughout the entire wall thickness of the pole. A coating shall be applied to the pole to maintain surface integrity against the damaging effects of sunlight and extremes in weather. The coating is to be highly weather resistant pigmented polyurethane. The coating thickness shall have minimum dry film thickness of 1-1/2 mils.

The surface shall be tested for a minimum of 5000 hours of accelerated testing in accordance with ASTM G154 (UV-A lamp 340 NM wave length, 130° F, cycle lamp 4 hours on 4 hours off) with the following results: Fiber exposure: none, Crazing: none, Checking: none, Chalking: none, Color: may dull slightly.

The pole shall be suitable for direct burial and shall conform to the breakaway requirements of the current AASHTO *Standard Specification for Structural Supports for Highway Signs, Luminaires and Traffic Signals*. For direct buried break-away poles the butt end shall be enlarged so as to provide resistance to rotation and pull out.

Where indicated on the plans, the pole shaft shall be equipped with an anchor base of heavy duty A356-T6 aluminum which shall be permanently bonded to the outside of the fiberglass shaft. The anchor base pole shall be installed on a concrete foundation, parapet anchorage, or other fixed anchorage as called for on the plans. The anchor base pole shall be non-breakaway, but shall be attached to the anchorage using breakaway couplings as indicated on the plans or as directed by the Engineer

Each pole is to be permanently marked in characters 3/16" minimum high on a brass or stainless steel plate with the manufacturer's identification symbol, month and year of manufacture. Each pole shall be individually packaged for protection during shipping and storage. The pole shall be warranted to be free of defects in materials and workmanship for a period of three years from the date of purchase.

The top of the pole is to be pre-drilled for two 5/8" thru bolts on 9-1/2" centers starting 4" below the top of the pole. A 1-1/2" wire exit hole shall be centered 1/2 the distance between the two holes.

A cast aluminum removable cap shall be securely mounted to the top of the pole. The cap shall be corrosion resistant and must remain in place when subjected to the maximum wind loading for which the pole is designed.

The luminaire bracket arm shall be 12' in length (single member) of an upsweep design fabricated from tubular aluminum. The luminaire end shall have a 2-3/8" outside diameter.

Anchors shall conform to the pertinent requirements of Article M.16.04-2b, c, d, and e.

The luminaire shall conform to the pertinent requirements of Article M.15.05, and shall be high pressure sodium. The luminaire wattage shall be 250 watt or as called for on the plans. The socket shall be adjustable to provide I.E.S. light distribution type M-C-II. The ballast shall be under guarantee of the manufacturer for a period of one year commencing when the unit is installed and accepted

The contractor may re-use a temporary illumination unit which was salvaged from another Connecticut DOT project provided the unit meets the requirements of the current project, is in excellent structural condition, and retains full breakaway and operational performance. The contractor shall submit a shop drawing, Materials Certificate, and Certified Test Report for the salvaged temporary illumination unit. The Materials Certificate and Certified Test Report shall be in full compliance with the requirements of Section 1.06.07.

CONSTRUCTION METHODS: The fiberglass pole shall be set in the earth to the required depth and proper compaction of backfill provided around the pole and then attached to the anchors with guys as necessary. For anchor base poles the pole base shall be securely bolted to the anchor bolts of the fixed anchorage (breakaway couplings shall be used where directed). The bracket shall be attached to the pole and shall provide a luminaire mounting height over the roadway of 35'. The bracket and luminaire assembly shall be installed perpendicular to the center line of the roadway. When necessary, the temporary light pole and luminaire shall be relocated to maintain different illumination circuits as dictated by the construction stages.

Upon completion of the project the temporary illumination unit shall be removed and shall remain the property of the Contractor.

Upon removal of the pole, the resulting excavation shall be properly backfilled to match the surrounding area.

METHOD OF MEASUREMENT: This work will be measured for payment by the number of temporary illumination units installed and accepted.

BASIS OF PAYMENT: This work will be paid for at the contract unit price each for "TEMPORARY ILLUMINATION UNIT" complete in place, which price shall include all materials, fiberglass poles, breakaway base, anchor base (when required), anchors, guys, brackets, luminaires, lamps, ballasts, hardware, connections, hauling, and all equipment, tools, labor and all work incidental thereto including excavating, auguring, removal of bituminous overlay, backfilling, removal, hauling, relocation, and disposal. The unit cost for this item is a one-time only cost. The cost of removing and relocating the temporary illumination unit to maintain different illumination circuits shall be included in the unit cost.

PERMITS AND/OR REQUIRED PROVISIONS

The following Permits and/or Supplemental to Form 817 and Required Provisions follow this page and are hereby made part of this Contract.

- **PERMITS AND/OR PERMIT APPLICATIONS**

CTDOT Flood Management General Permit Approved March 8, 2018

- **SUPPLEMENTAL SPECIFICATIONS TO STANDARD SPECIFICATIONS FORM 817**

- **Construction Contracts - Required Contract Provisions (FHWA Funded Contracts)**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

FLOOD MANAGEMENT GENERAL CERTIFICATION

Project No.: 171-432

Description: Replacement of Roadway Illumination
Systems In District 1


Town: Glastonbury Manchester, Wethersfield,
Berlin, New Britain

Date: February 2, 2018

m e m o r a n d u m

to: Mr. Michael E. Masayda
Trans. Principal Engineer
Hydraulics and Drainage
Bureau of Engineering and Construction

from: Mr. Christopher J. Bonsignore
Trans. Principal Engineer
Facilities Design
Bureau of Engineering and Construction

 Christopher J. Bonsignore, P.E.
2018.02.08 15:58:44-05'00

Please review this request for Flood Management General Certification and indicate your concurrence below.

Certification (to be completed by designer)

I have read the Flood Management General Certification and the descriptions for the approved DOT minor activities. This project qualifies for the Flood Management General Certification under:

- Minor Safety Improvements and Streetscape Projects
- Roadway Repaving, Maintenance & Underground Utilities
- Minor Stormwater Drainage Improvements
- Removal of Sediment or Debris from a Floodplain
- Wetland Restoration Creation or Enhancement
- Scour Repairs at Structures; (*Must acquire DEEP Fisheries Concurrence to be eligible*)
- Guide Rail Installation
- Deck and Superstructure Replacements
- Minor Bridge Repairs and Access
- Fisheries Enhancements
- Surveying and Testing
- Bicycle / Pedestrian, Multi Use Trails and Enhancement Projects

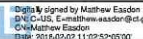
The following required documentation is attached in support of this certification:

- Project description
- Location plan(s)
- Description of Floodplain involvement and how project qualifies for general certification
- 8-1/2" by 11" excerpt copy of the FEMA Flood Insurance Rate Map (FIRM) and Floodway Boundary Map (if applicable)
- Design plans, (dated October 2017) with FEMA floodplain and floodway boundaries plotted, cross sections and profiles, as necessary, that clearly depict the floodplain involvement
- FEMA 100-year flood elevation plotted on elevation view (for structures)

Print Name: Matthew Easdon

Title: Tran. Eng. III

Signature: Matthew Easdon

 Digitally signed by Matthew Easdon
DN: cn=Matthew Easdon, o=CT DOT, ou=Facilities Design,
c=US, email=Matthew.Easdon@dot.gov, ou=Matthew Easdon,
serial=2018.02.02.11:02:52-05'00


Date:

Concurrence (to be completed by Hydraulics and Drainage)

Based on the documentation submitted, I hereby concur that the project qualifies for Flood Management General Certification.

If there are any changes to the proposed activities within the floodplain or floodway, the project must be re-submitted for review and approval.

Signature

 Michael Masayda
P.E.
2018.03.08
12:50:55-05'00

Date 3-8-18

**Replacement of Roadway
Illumination Systems in District 1
Towns/Cities: Berlin, New Britain,
Glastonbury, Manchester &
Wethersfield
State Project No. 171-432**

Project Description

The project consists of the replacement of existing roadway lighting systems, which involves the replacement of the existing light standards, light standard foundations, high pressure sodium (HPS) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets with new light standards, light standard foundations, light emitting diode (LED) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets. The purpose of this project is to improve the operation and reduce the maintenance requirements of several roadway lighting systems located in District 1 that have reached the end of their life cycles. The project has several locations. The project is located in District 1 at the following locations: Route 9 from south of Christian Lane (mile 32.70) to Stanley Street (mile 36.25) in Berlin and New Britain, Route 72 from Route 9 (mile 0.00) to Wooster Street (mile 2.50) in New Britain, SR 571 from Route 71A (mile 0.00) to Route 9 (mile 1.34) in Berlin, Route 372 from SR 918/Farmington Avenue west junction (mile 6.13) to Route 71A (mile 6.27) in New Britain and Berlin, Route 2 at the Route 83 interchange (mile 9.30 to 10.50) in Glastonbury, Route 15 from the Berlin Turnpike (mile 77.74) to north of Route 99 (80.18) in Wethersfield, I-384 from Spencer Street (mile 1.34) to west of Gardner Street (mile 4.95) in Manchester, and Route 3 at Main Street in Glastonbury. The project will be federally and state funded.

**SCOPE OF WORK FOR REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN
DISTRICT 1
PROJECT #171-0432
As of 5/11/17**

GENERAL:

This project consists of the replacement of existing roadway lighting systems in District 1 at the following locations:

- Route 9 from south of Christian Lane (mile 32.70) to Stanley Street (mile 36.25) in Berlin and New Britain. Route 72 from Route 9 (mile 0.00) to Wooster Street (mile 2.50) in New Britain. SR 571 from Route 71A (mile 0.00) to Route 9 (mile 1.34) in Berlin. Route 372 from the SR 918/Farmington Avenue west junction (mile 6.13) to Route 71A (mile 6.27) in New Britain and Berlin.
- Route 2 at the Route 83 interchange (mile 9.30 to 10.50) in Glastonbury.
- Route 15 from the Berlin Turnpike (mile 77.74) to north of Route 99 (mile 80.18) in Wethersfield.
- Interstate 384 from Spencer Street (mile 1.34) to west of Gardner Street (mile 4.95) in Manchester.
- Replace lighting control cabinet located at the intersection of Route 3 and Main Street in Glastonbury.

The work involves the replacement of the existing light standards, light standard foundations, high pressure sodium (HPS) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets with new light standards, light standard foundations, light emitting diode (LED) type light fixtures, concrete handholes, underground circuitry/conduits, and lighting control cabinets.

DEMOLITION:

This project includes the removal of the existing electrical facilities as follows:

- The removal of lighting control cabinets, cabinet foundations, and concrete handholes.
- The removal of light fixtures, HPS lamps, light standards, and light standard foundations.

The underground circuitry/conduits will be abandoned in place.

EARTH WORK:

This project includes trenching and backfilling for the installation of underground circuitry/conduits and excavation and backfilling for the installation and removal of light standard foundations, concrete handholes and lighting control cabinet foundations. Topsoil and seeding will be provided as necessary to restore any areas where the grass is disturbed. Pavement will be saw cut and removed in areas where circuitry/conduits cross under the roadway. Roadway will be patched and restored as required.

Notes:

1. Environmental remediation work will be addressed by Environmental Compliance.

**Replacement of Roadway
Illumination Systems in District 1
Towns/Cities: Berlin, New Britain,
Glastonbury, Manchester &
Wethersfield
State Project No. 171-432**

Floodplain Involvement

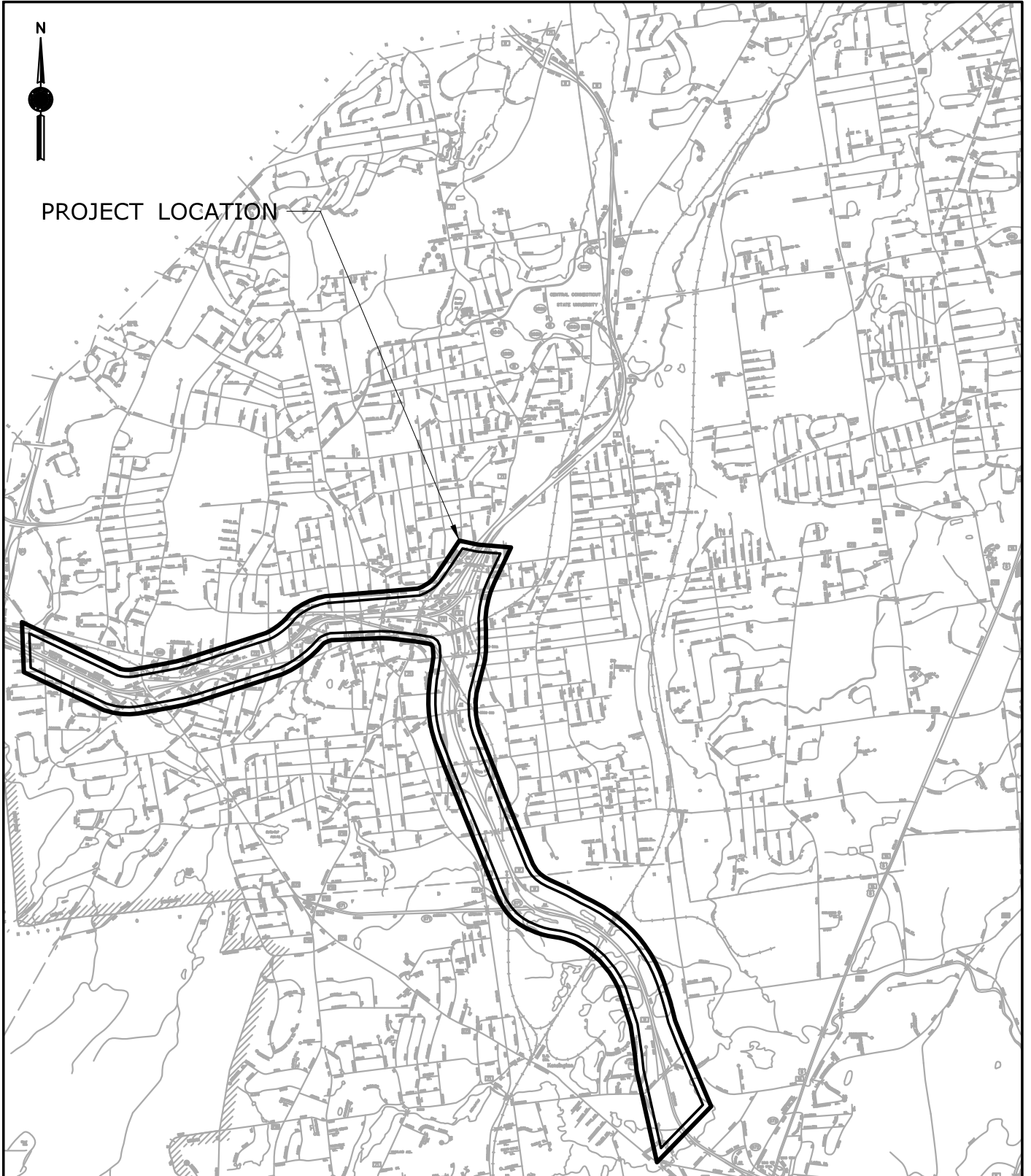
The project is located in District 1 at the following locations: Route 9 from south of Christian Lane (mile 32.70) to Stanley Street (mile 36.25) in Berlin and New Britain, Route 72 from Route 9 (mile 0.00) to Wooster Street (mile 2.50) in New Britain, SR 571 from Route 71A (mile 0.00) to Route 9 (mile 1.34) in Berlin, Route 372 from SR 918/Farmington Avenue west junction (mile 6.13) to Route 71A (mile 6.27) in New Britain and Berlin, Route 2 at the Route 83 interchange (mile 9.30 to 10.50) in Glastonbury, Route 15 from the Berlin Turnpike (mile 77.74) to north of Route 99 (80.18) in Wethersfield, I-384 from Spencer Street (mile 1.34) to west of Gardner Street (mile 4.95) in Manchester, and Route 3 at Main Street in Glastonbury.

Of the above project sites, five are located in FEMA Flood Hazard AE. The current stormwater runoff patterns will not be changed. Sedimentation and erosion control measures, in accordance with the 2002 CT E&S Control Guidelines and Section 1.10 of Form 816, will be installed and maintained during construction.

This project qualifies for general flood management certification under the category “Minor Safety Improvements, Streetscape, and Transportation Facility and Enhancement Projects”. There will be no negative change to the flood storage capacity.



PROJECT LOCATION



SCALE IN FEET



STATE PROJECT NO.:
0171-0432

CITY/TOWN:
NEW BRITAIN
AND BERLIN



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

RT. 72 (RT. 9 TO WOOSTER ST.)
AND
RT. 9 (CHRISTIAN LANE TO STANLEY ST.)

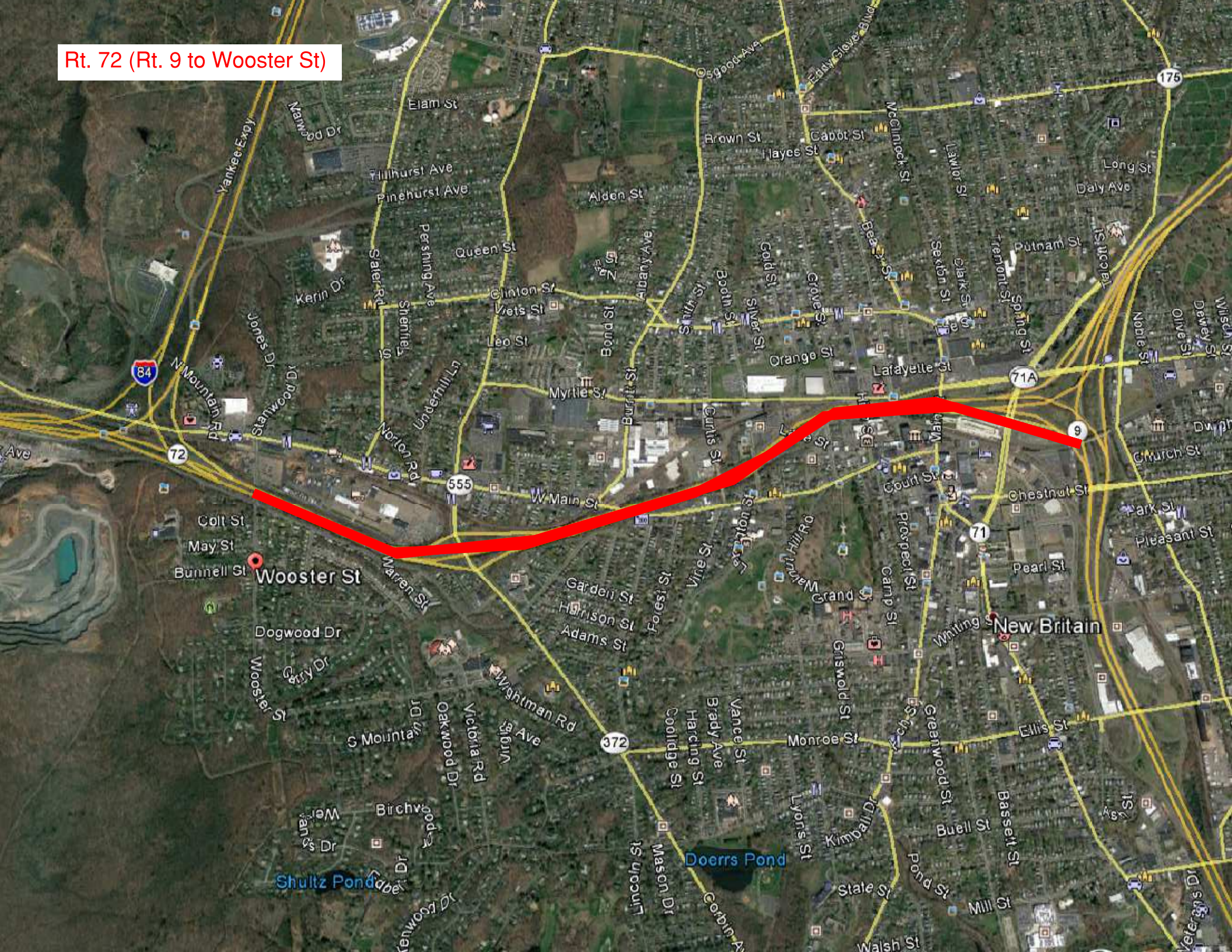


OFFICE OF
ENGINEERING

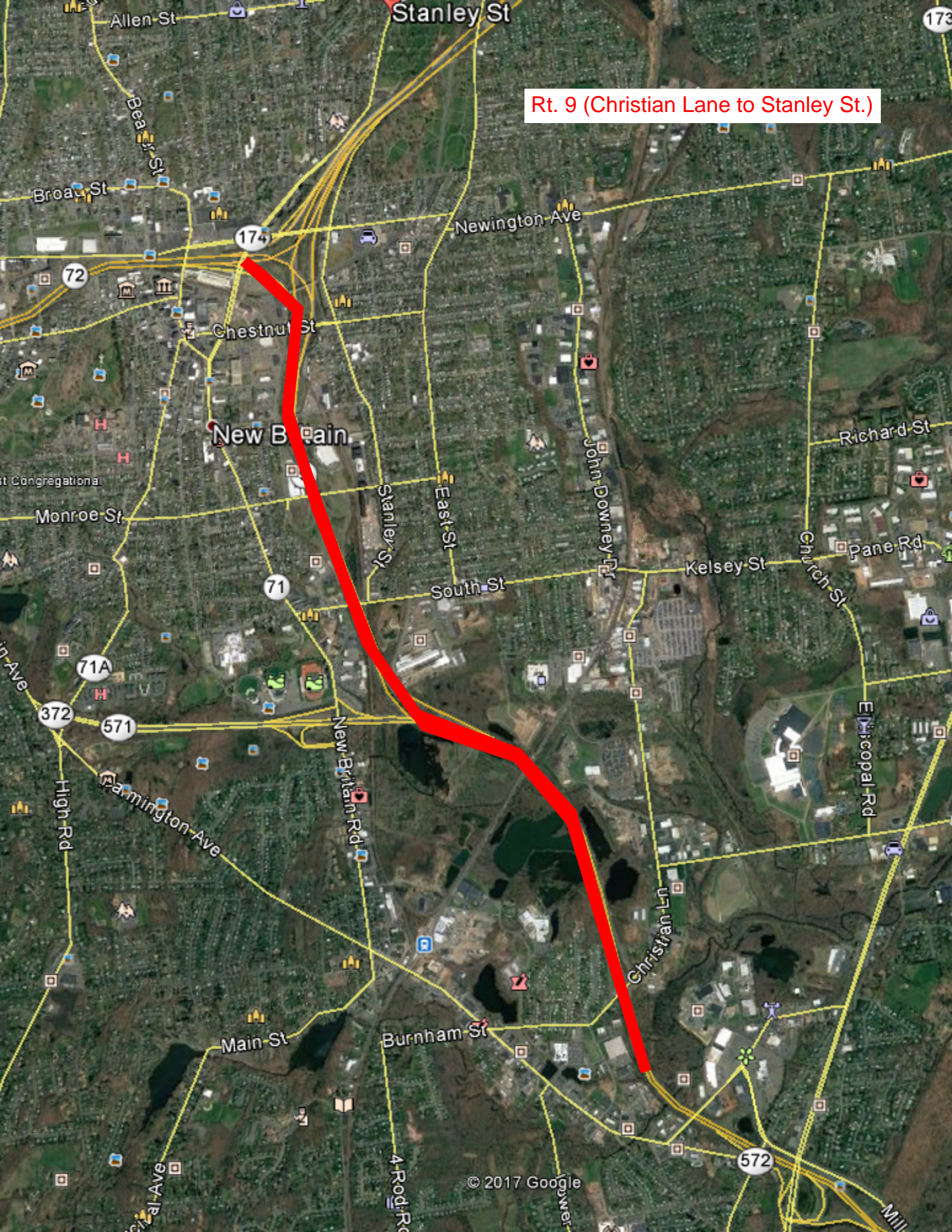


DATE:
01/30/2018

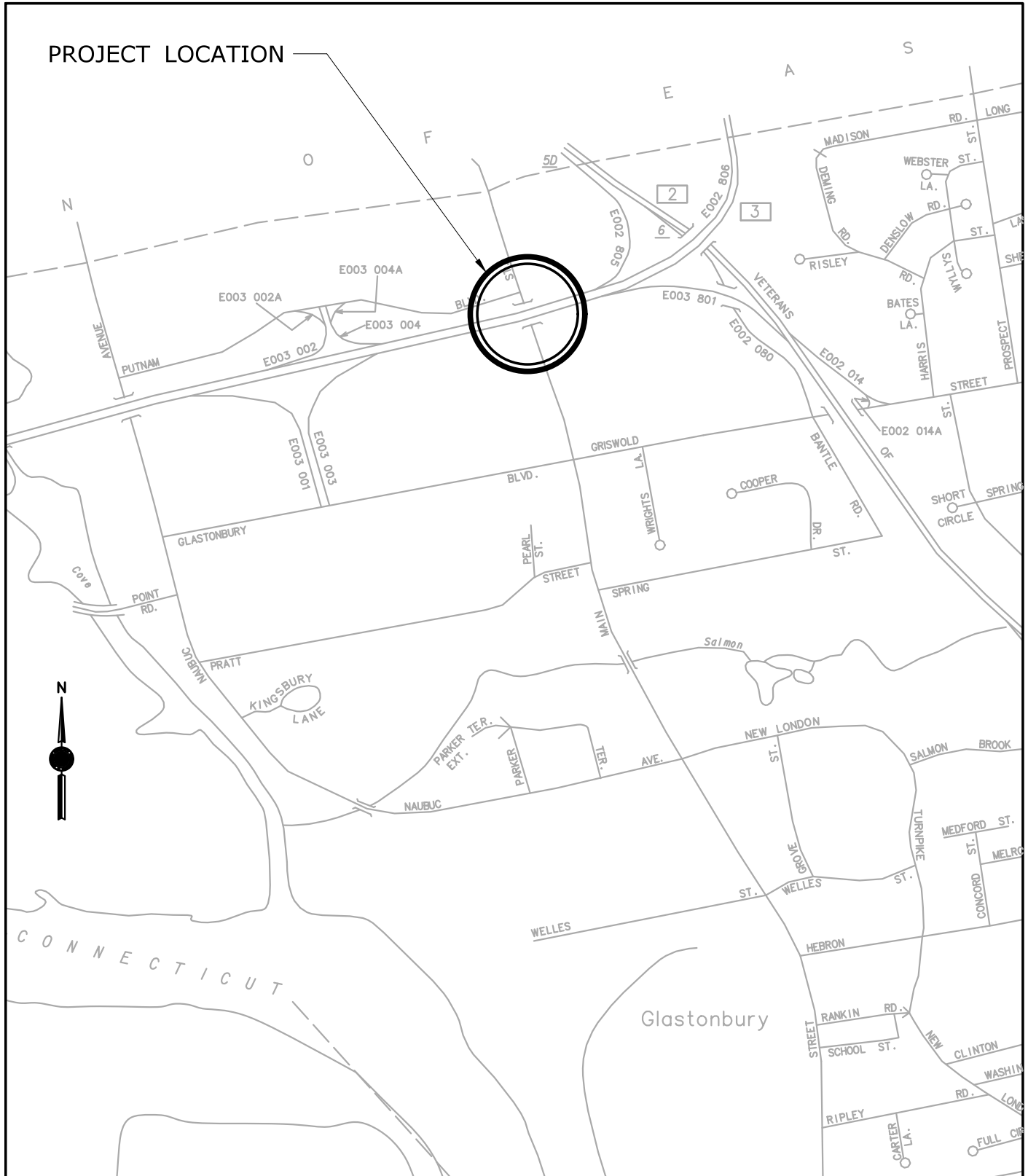
Rt. 72 (Rt. 9 to Wooster St)



Rt. 9 (Christian Lane to Stanley St.)



PROJECT LOCATION



SCALE IN FEET



STATE PROJECT NO.:

0171-0432

CITY/TOWN:

GLASTONBURY



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

LIGHTNING CABINET GLASTONBURY
(RT. 3 AND MAIN ST. INTERSECTION)



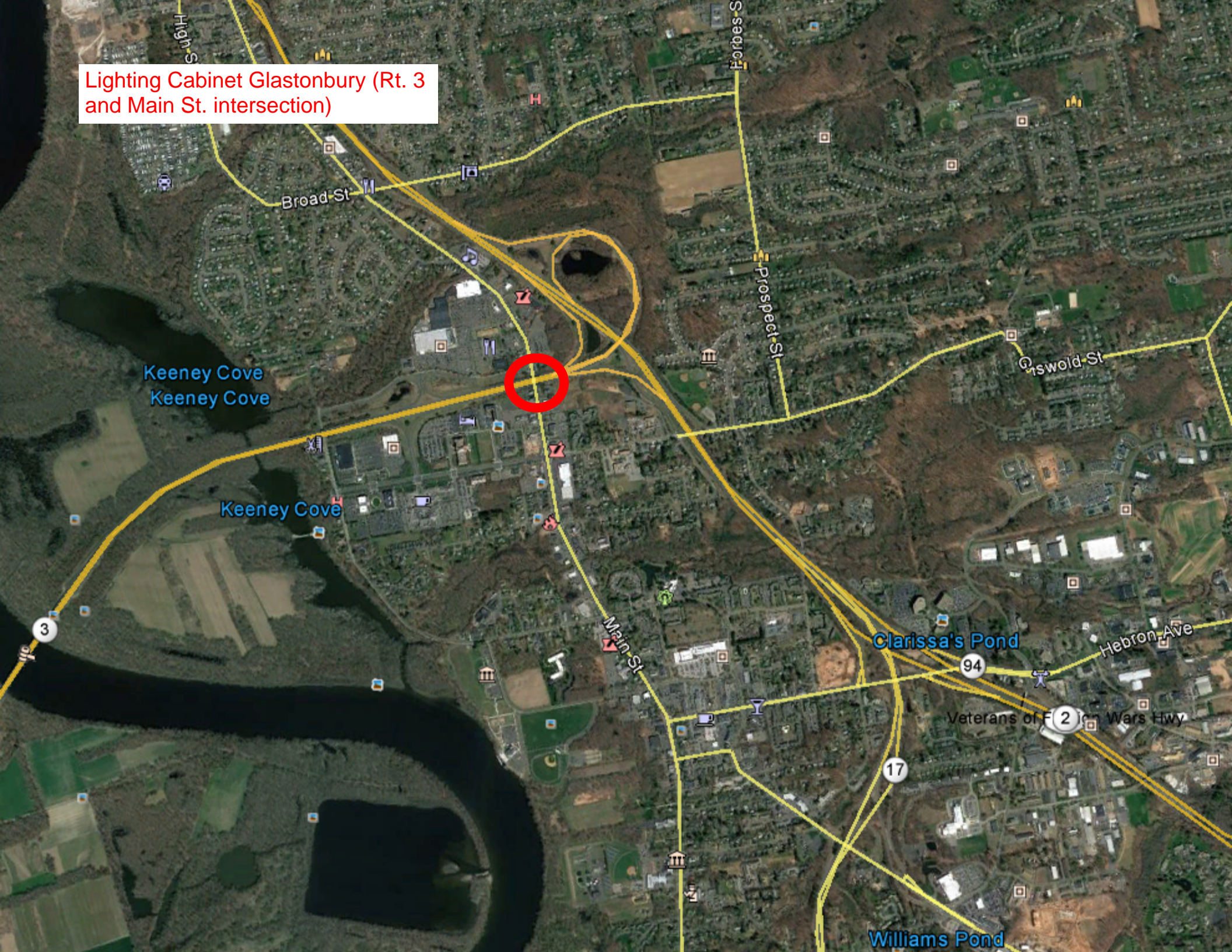
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ENGINEERING

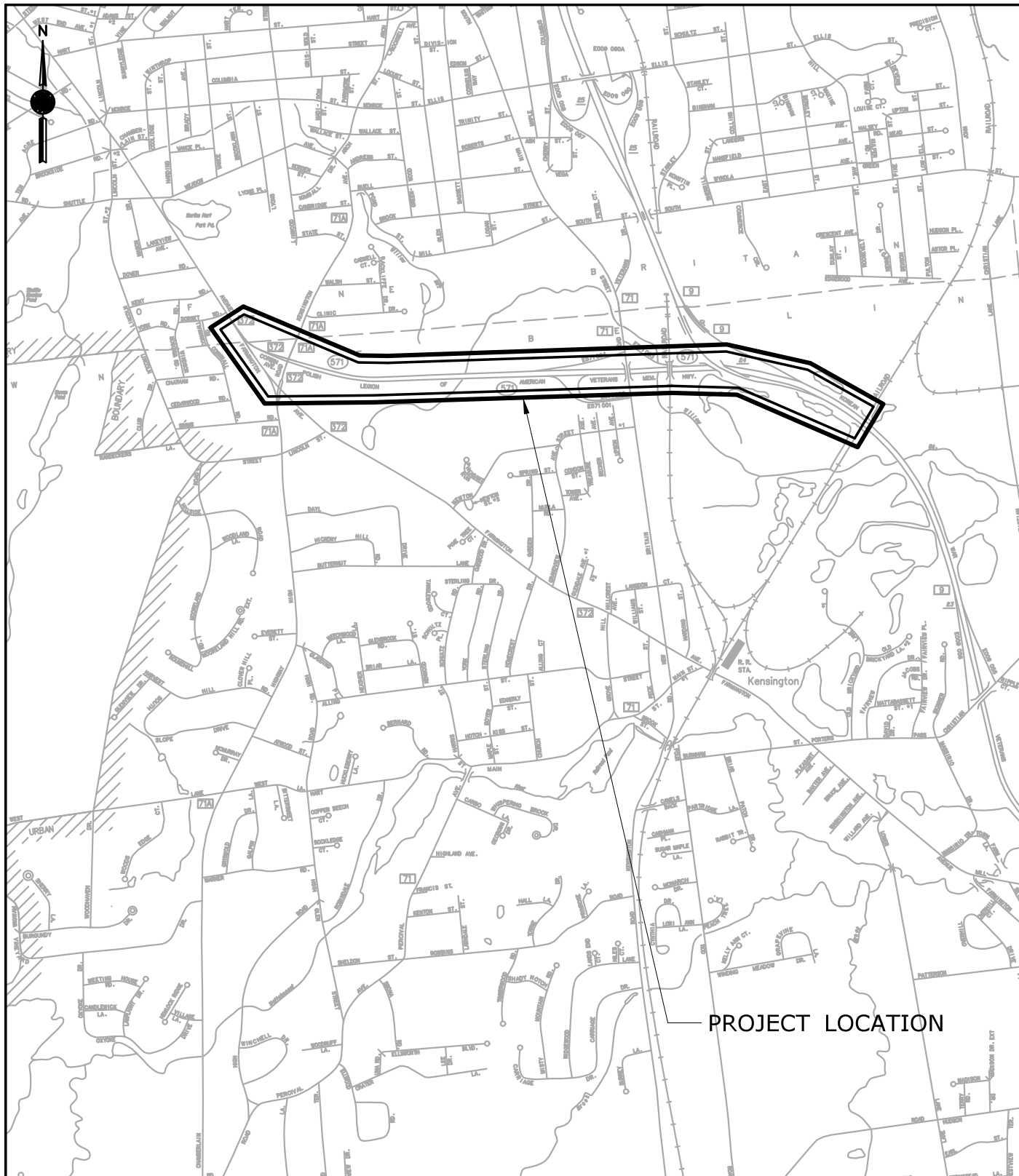


DATE:

01/17/2018

Lighting Cabinet Glastonbury (Rt. 3 and Main St. intersection)





SCALE IN FEET



STATE PROJECT NO.:

0171-0432

CITY/TOWN:

BERLIN AND
NEW BRITAIN

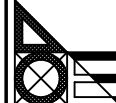


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



RT. 571 (RT. 71A TO RT. 9)
AND RT. 372 (SR 918/FARMINGTON AVE. TO RT. 71A)

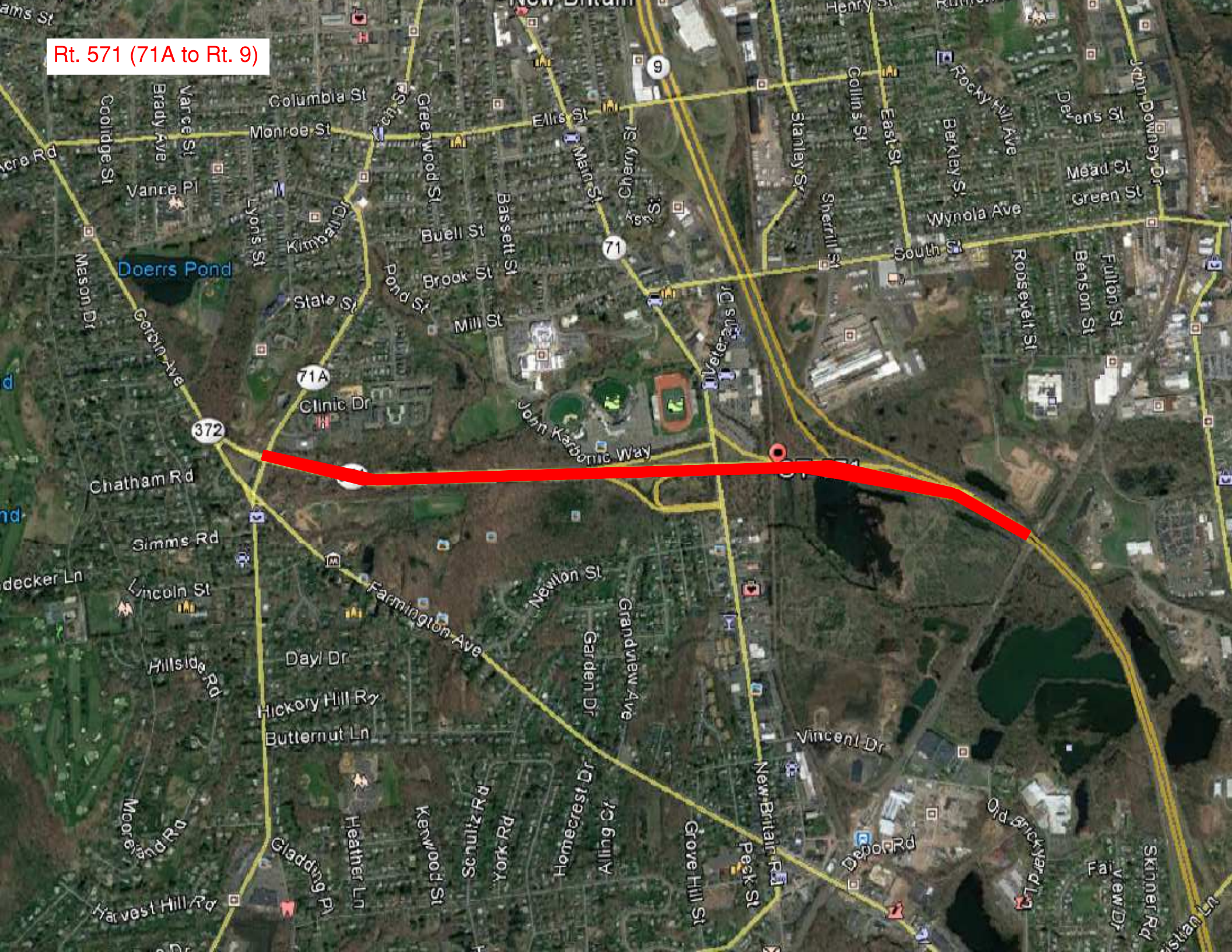
OFFICE OF
ENGINEERING



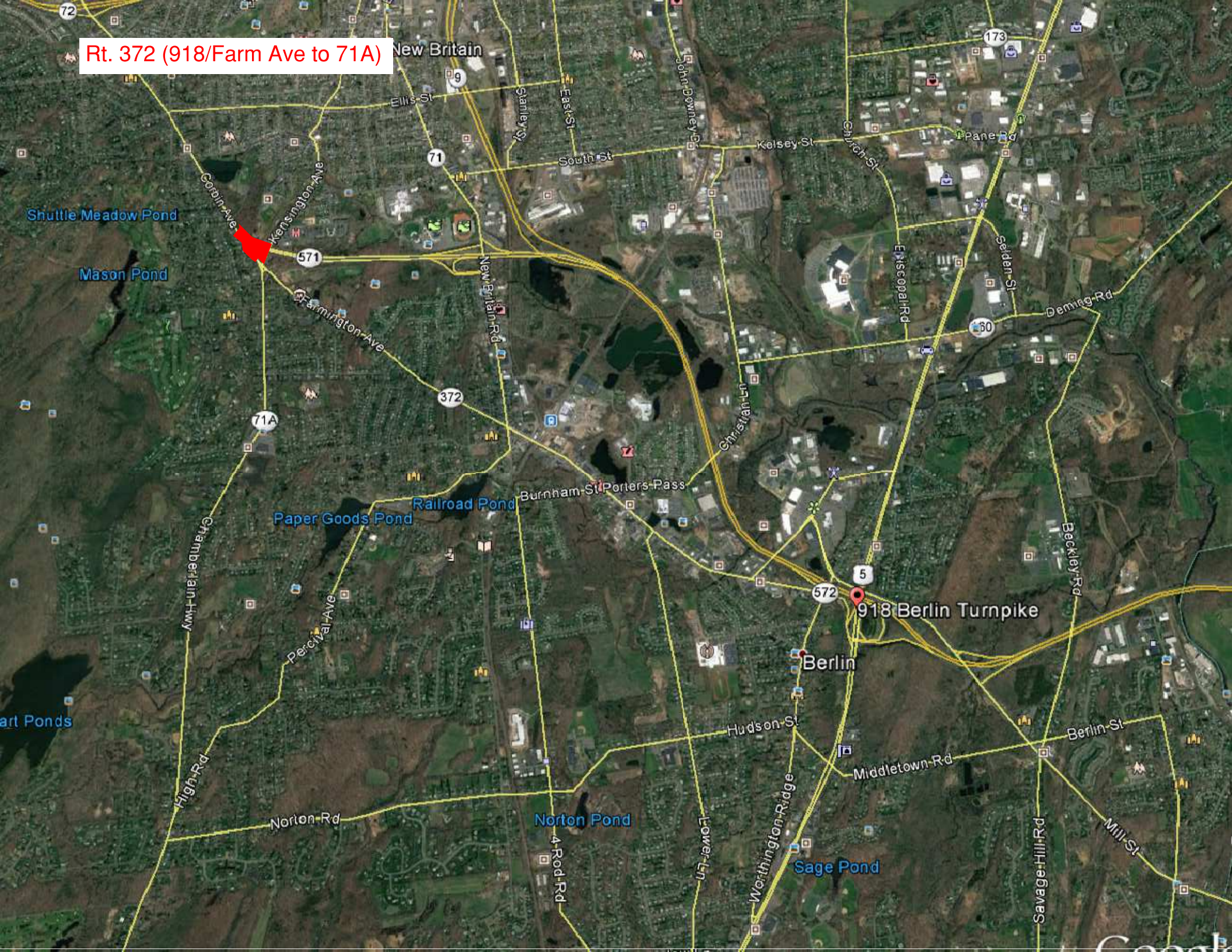
DATE:

01/30/2018

Rt. 571 (71A to Rt. 9)



Rt. 372 (918/Farm Ave to 71A)



Shuttle Meadow Pond

Mason Pond

Paper Goods Pond

Railroad Pond

Norton Pond

Sage Pond

918 Berlin Turnpike

Berlin

New Britain

71A

372

572

5

60

173

72

71

High Rd

Norton Rd

4 Rod Rd

Lower Ln

Worthington Ridge

Middletown Rd

Savage Rd

Mill St

Beckley Rd

Selden St

Deming Rd

Church St

Episcopal Rd

Kelsey St

South St

East St

Stanley St

Ellis St

John Downey Dr

Gorbin Ave

Kensington Ave

Farmington Ave

New Britain Rd

Christian Ln

Burnham St

Porters Pass

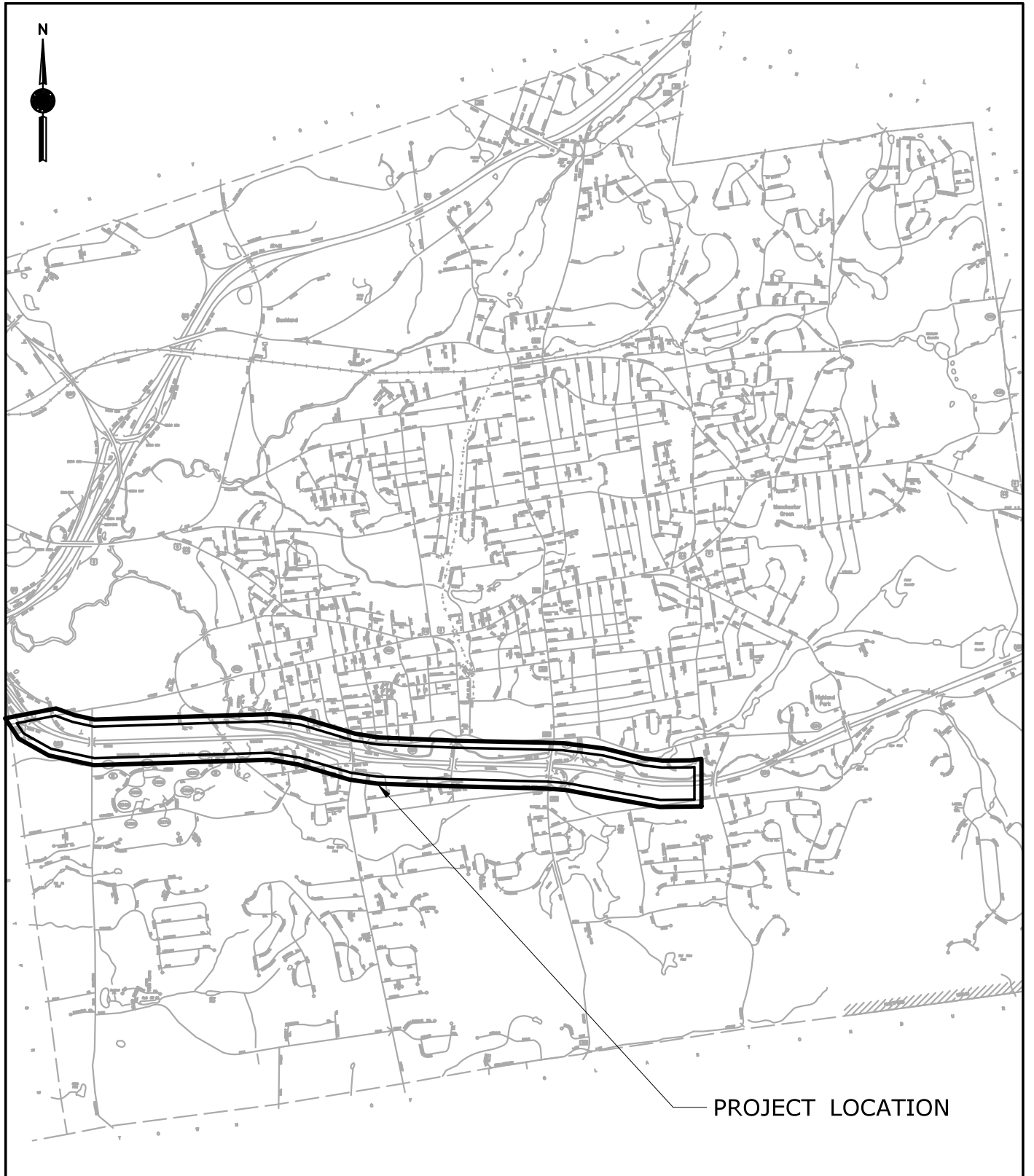
Hudson St

Berlin St

Mill St

art Ponds

Google



SCALE IN FEET



STATE PROJECT NO.:

0171-0432

CITY/TOWN:

MANCHESTER



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



OFFICE OF
ENGINEERING

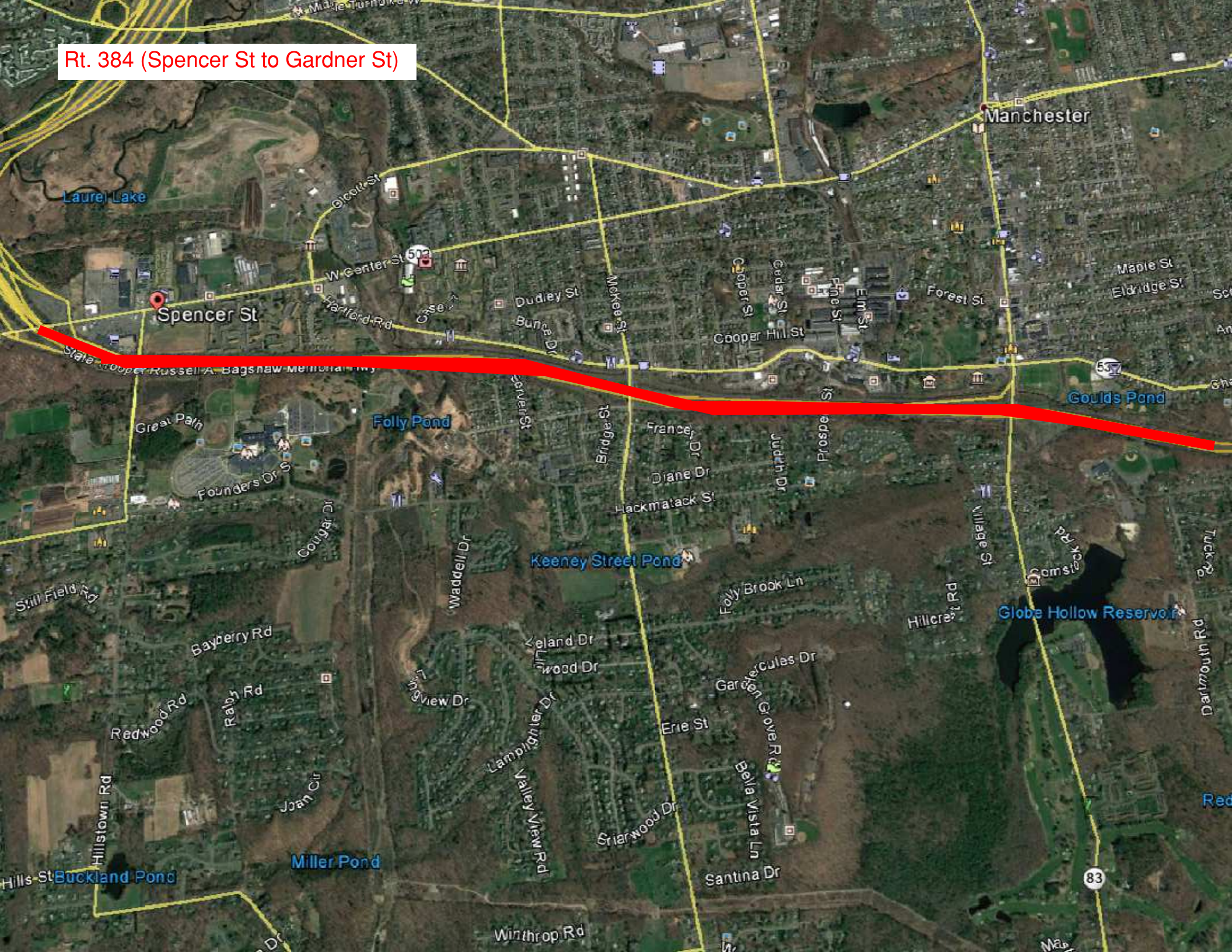


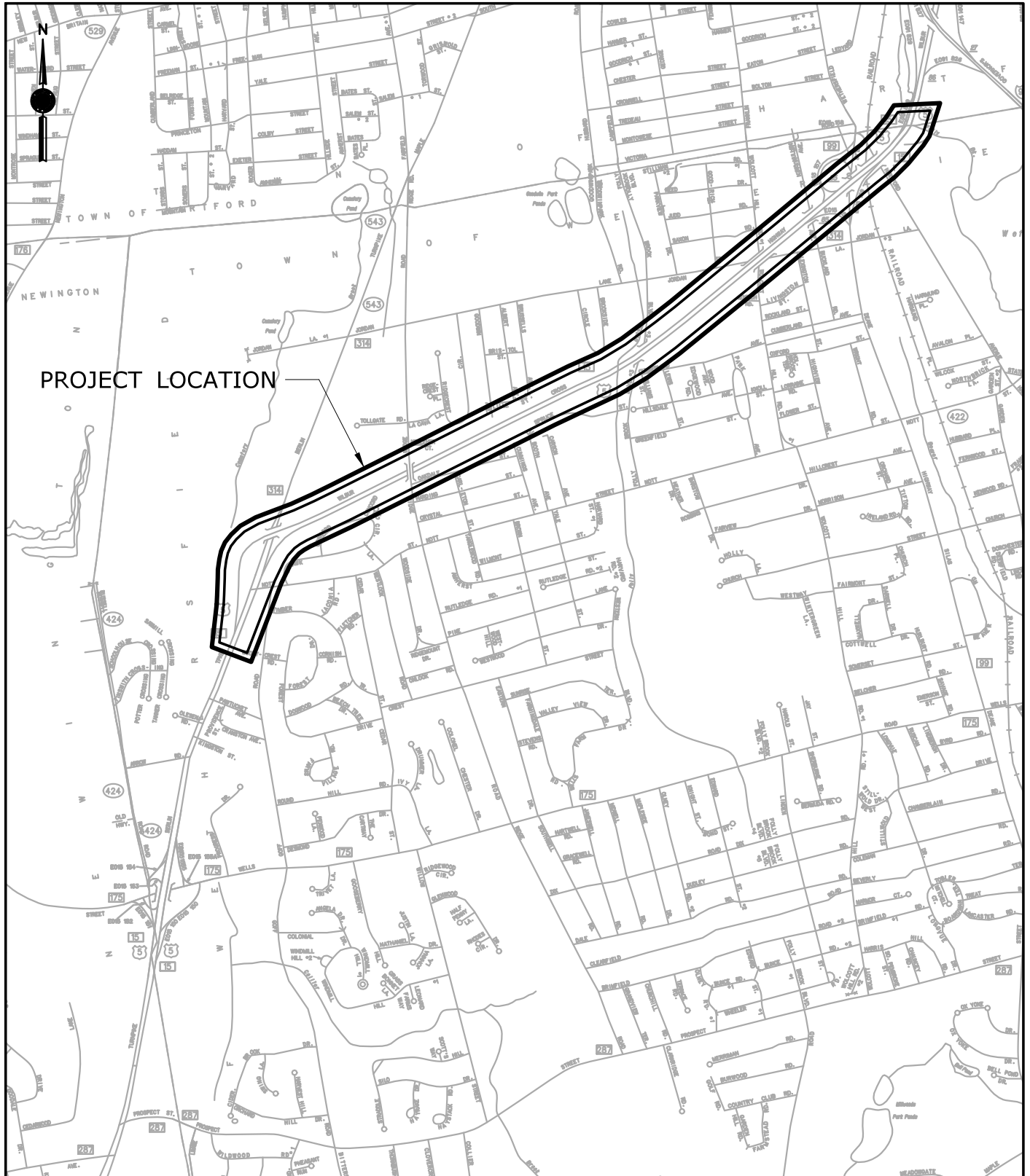
DATE:

01/30/2018

RT. 384
(SPENCER ST. TO GARDNER ST.)

Rt. 384 (Spencer St to Gardner St)





PROJECT LOCATION

SCALE IN FEET



STATE PROJECT NO.:
0171-0432

CITY/TOWN:
WETHERSFIELD

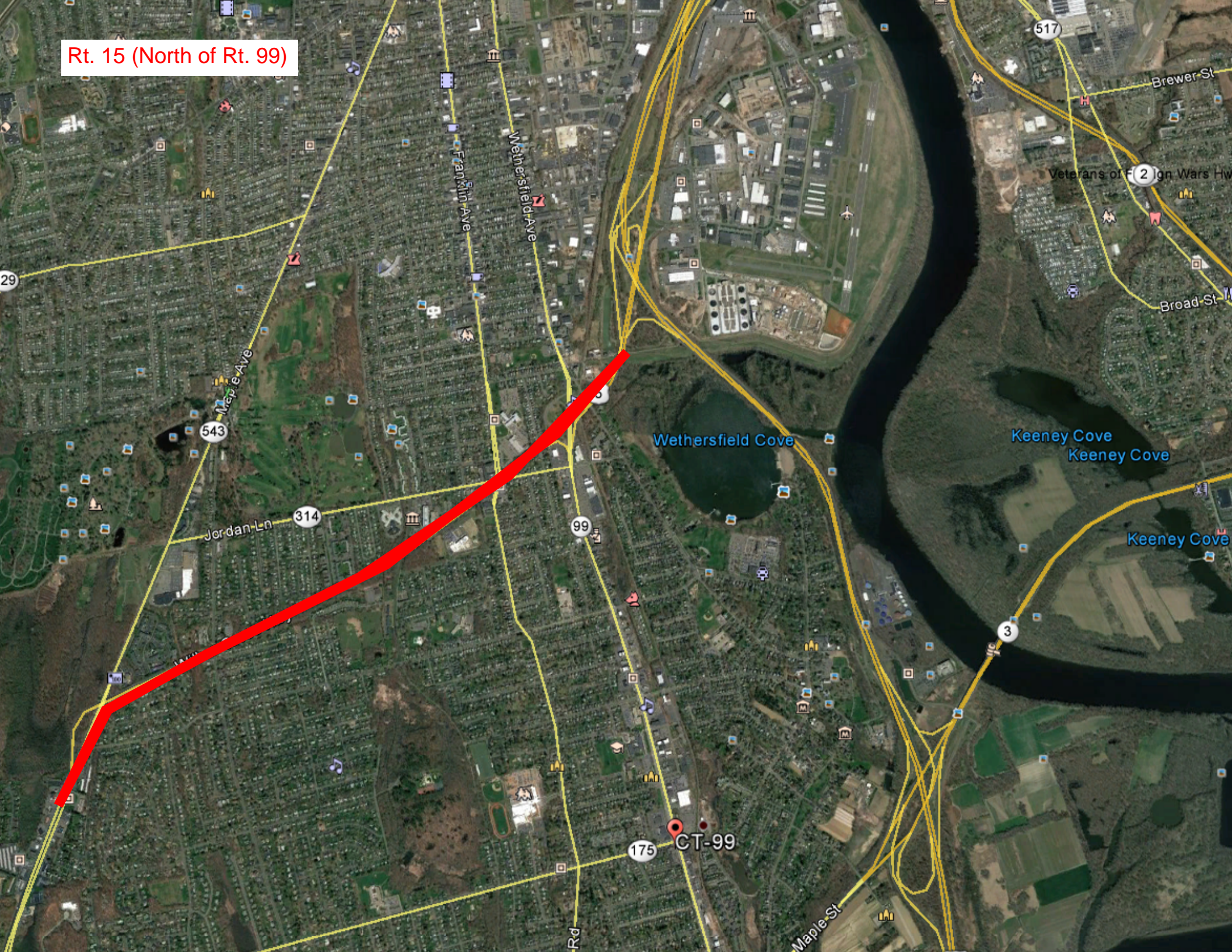


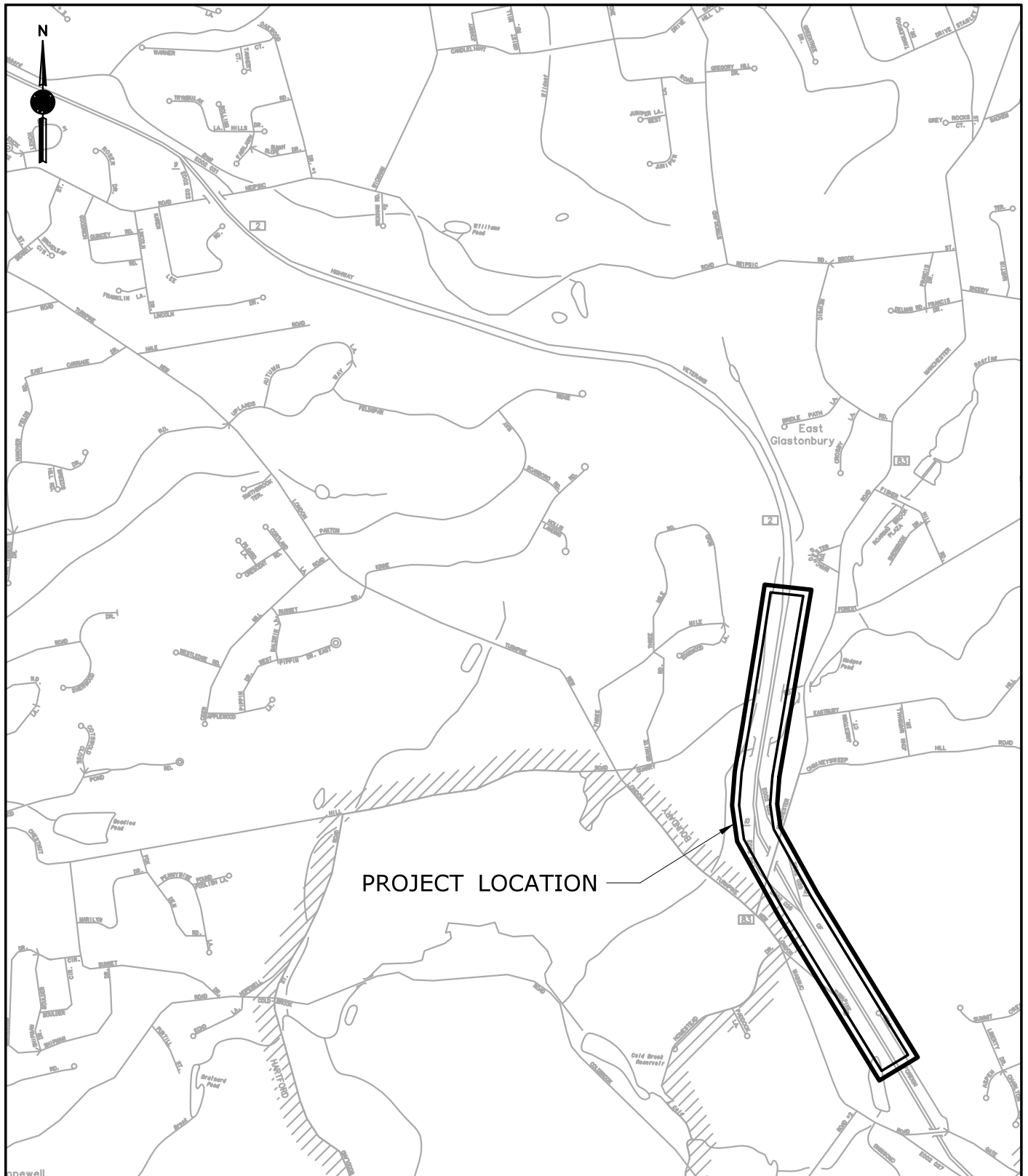
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
RT. 15
(BERLIN TURNPIKE TO NORTH OF RT. 99)



DATE:
01/24/2018

Rt. 15 (North of Rt. 99)





PROJECT LOCATION

SCALE IN FEET



STATE PROJECT NO.:

0171-0432

CITY/TOWN:

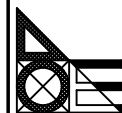
GLASTONBURY



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



OFFICE OF
ENGINEERING

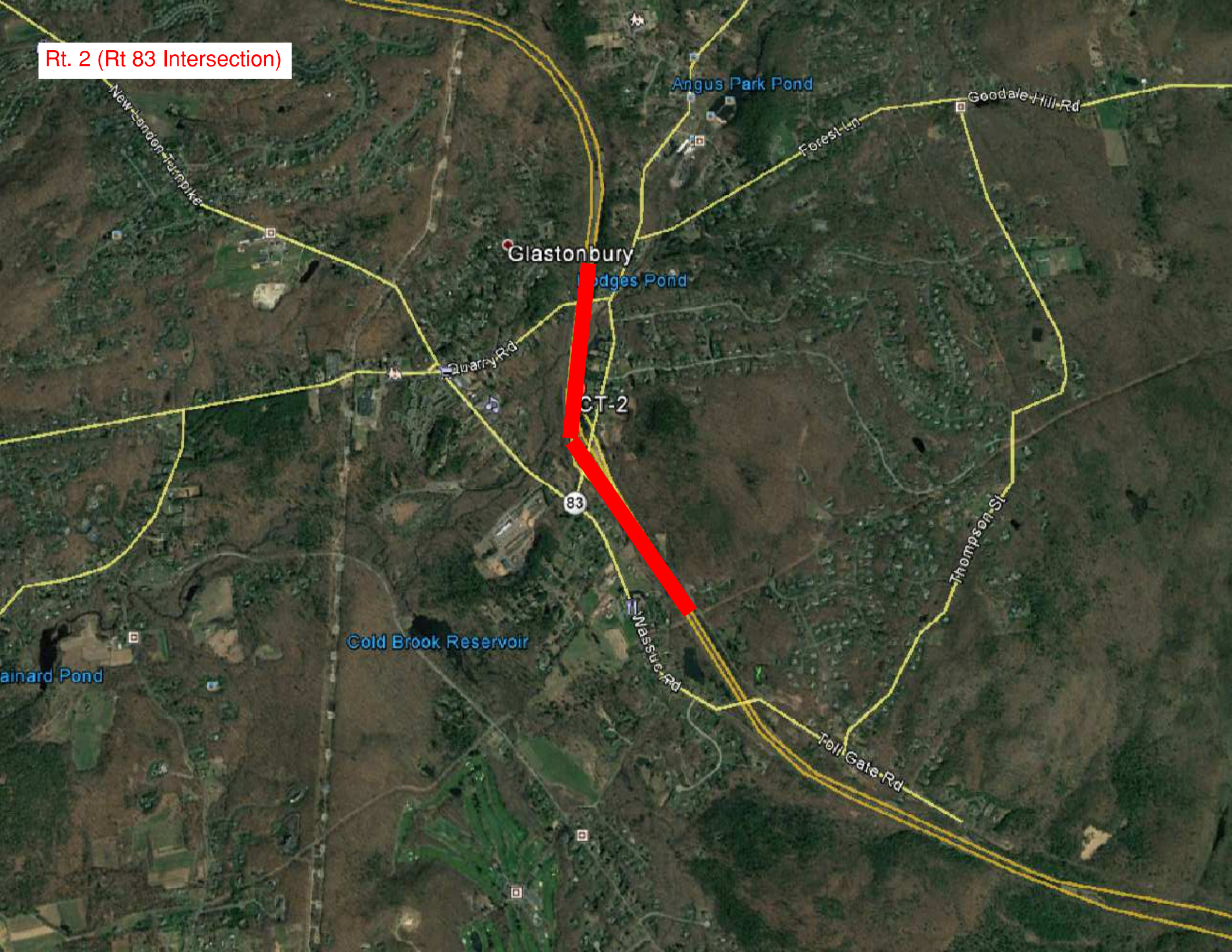


DATE:

01/24/2018

RT. 2
(RT. 83 INTERSECTION)

Rt. 2 (Rt 83 Intersection)



Illumination Index Plan - Site No. 1



ROUTE 72

FLOOD HAZARD INFORMATION

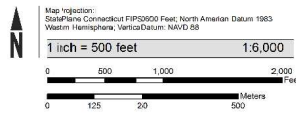
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.gov)

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, AE, AF With BFE or Depth Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas less than one square mile Zone X
OTHER AREAS OF FLOOD HAZARD	Future Conditions 1% Annual Chance Flood Hazard Zone X
OTHER AREAS OF FLOOD HAZARD	Area with Reduced Flood Risk due to Levee See Note, Zone X
OTHER AREAS OF FLOOD HAZARD	Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
OTHER AREAS OF FLOOD HAZARD	Area of Indetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel Culvert, or Storm Sewer
GENERAL STRUCTURES	Levee, Dike, or Floodwall
OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
OTHER FEATURES	Coastal Transect
OTHER FEATURES	Coastal Transect Baseline
OTHER FEATURES	Profile Baseline
OTHER FEATURES	Hydrographic Feature
OTHER FEATURES	Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
OTHER FEATURES	Jurisdiction Boundary

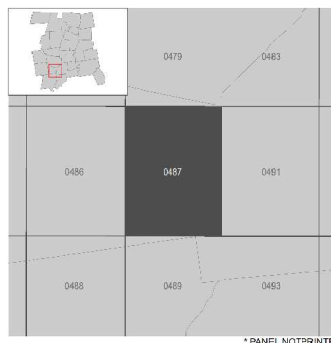
NOTES TO USERS

For information and questions about the Flood Insurance Rate Map (FIRM), available products associated with the FIRM including flood zones, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FIRM Map Information Center at 1-877-252-2522 or visit www.fema.gov. For more information on the NFIP, visit www.fema.gov. Available products are the Flood Insurance Rate Map (FIRM), Flood Hazard Boundary Sheet (FHBS), Flood Insurance Study (FIS), and Flood Insurance Study (FIS) Panel. The FIRM, FHBS, FIS, and FIS Panel are available in digital format at MSC.FEMA.gov. Communities receiving land to acquire FIRM panels must obtain a current copy of the adjacent panel as well as the current FIS Panel. These may be ordered directly from the Flood Map Service Center at the number listed above. For community and countywide map data refer to the Flood Insurance Study report for this jurisdiction. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-368-6622. Base map information shown on the FIRM was provided by the U.S. Geological Survey at a GSD of 30 meters.

SCALE



PANEL LOCATOR



National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

Hartford County, CT
 (ALL JURISDICTIONS)
PANEL 0487 of 0675

Panel Contains:

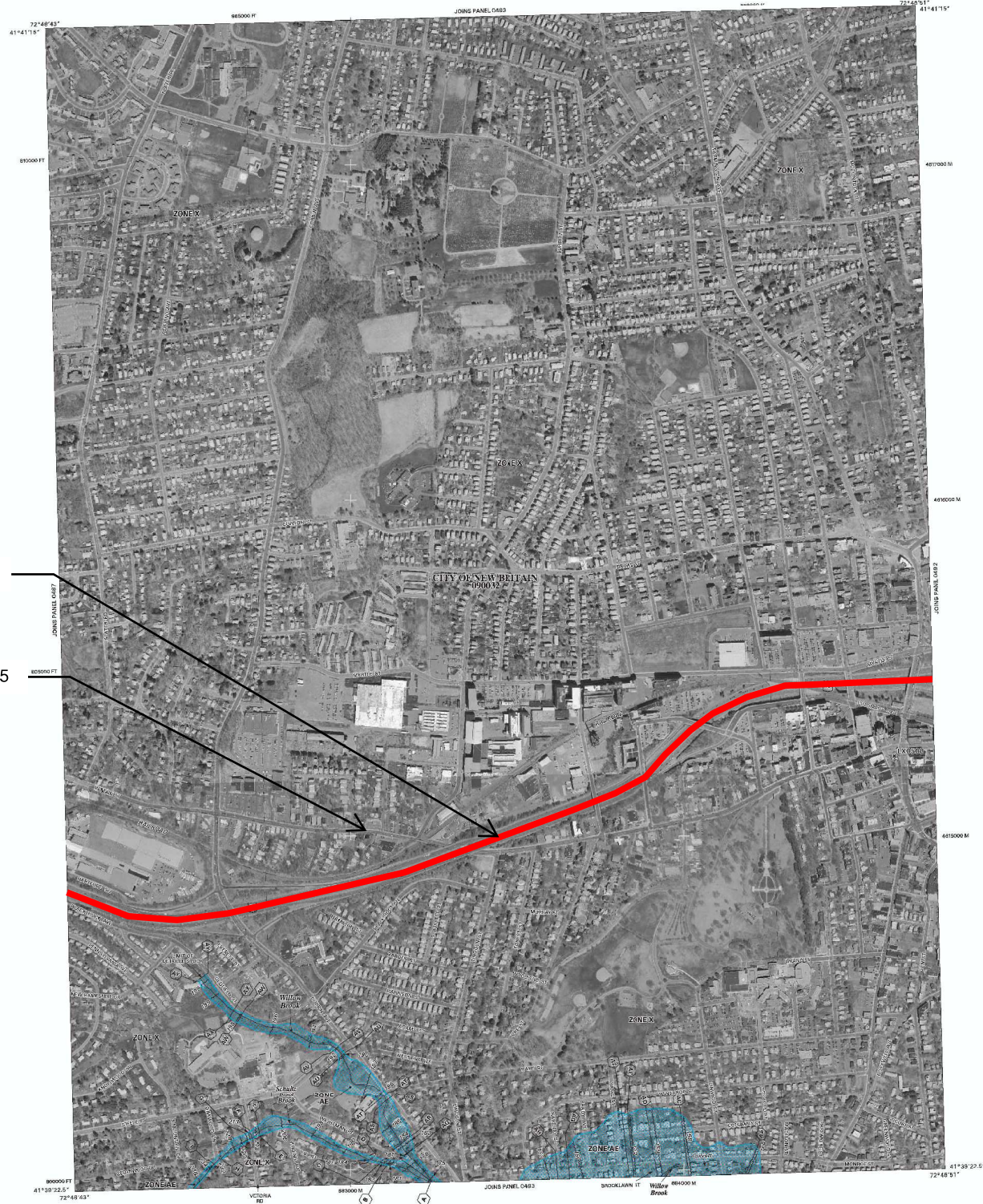
COMMUNITY	NUMBER	PANEL	SUFFIX
NEW BRITAIN, CITY OF	090032	047	G
PLAINVILLE, TOWN OF	090034	047	G

VERSION NUMBER
2.3.3.2

MAP NUMBER
0903C0487G

MAP REVISED
Mar 16, 2017

Illumination Index Plan - Site No. 1



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones AE, AH, AO, A1, A2, A3, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A: No base flood elevations determined.

ZONE AE: Base flood elevations determined.

ZONE AH: Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of substantial flooding, velocities also determined.

ZONE AR: Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently abandoned. Zone AR indicates that the former flood control system is being removed to provide protection from the 1% annual chance of a greater flood event.

ZONE A99: Area in an unincorporated area 1% annual chance flood event by a natural flood protection system under construction; no base flood elevations determined.

ZONE V: Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE: Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS (IN ZONE AE)

The Floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE D: Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average velocity of less than 3 feet per second, or areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X: Areas determined to be outside the 0.2% annual chance floodplain.

ZONE U: Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
 Base Flood Elevation (BFE) value where uniform within zone, elevation in feet (E, 987)

*Referenced to the North American Vertical Datum of 1988

(A) — (A) Cross Section Line
 (2) - - - (2) Transect Line
 97°07'00", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 42760000 1000-meter Universal Transverse Mercator grid values, zone 18
 100000 FT 5000-foot grid ticks
 D>5510 X Bench mark (see explanation in Notes to Users section of the FIRM panel)
 M1.5 River Miles

MAP REPOSITORY
 Refer to Repository Listing on Index Map
 EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 26, 2008
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 800-338-6622.

MAP SCALE 1" = 500'
 250 0 500 1000 FEET
 150 0 110 300 METERS

ROUTE 72

ROUTE 555

PANEL 0491F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY,
 CONNECTICUT
 (ALL JURISDICTIONS)

PANEL 491 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NON-METROPOLITAN CITY OF	00000	0491	F

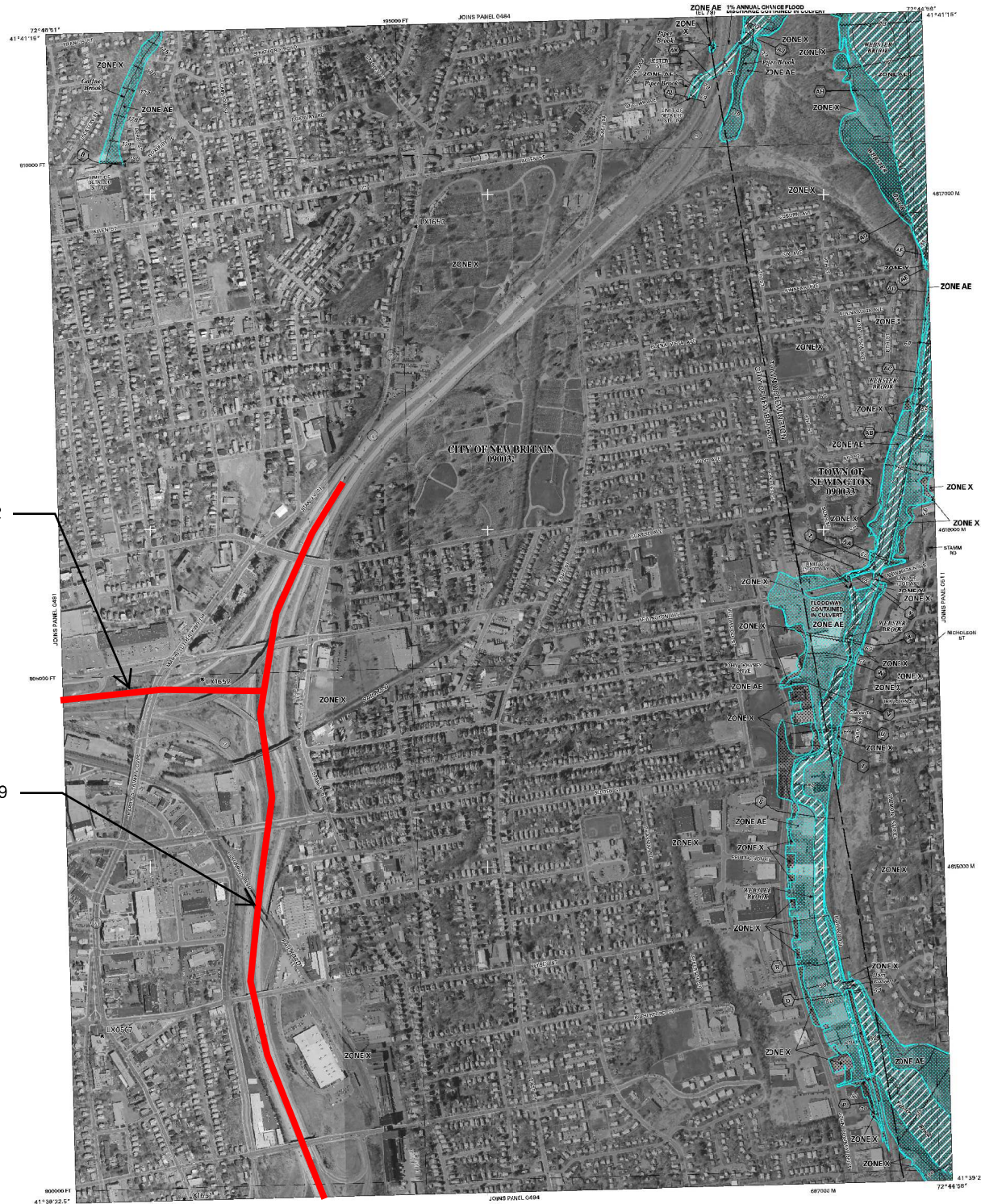
Notice to User: This Map Number shown below should be used when placing this notice. The Community Number shown above should be used on insurance applications for the insured community.

MAP NUMBER
 05003G0491F

EFFECTIVE DATE:
 SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 1



ROUTE 72

ROUTE 9

LEGEND

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT**
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AX, AD, AV, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.
- ZONE A** No base flood elevations determined.
 - ZONE AE** Base flood elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (unless areas of ponding); base flood elevations determined.
 - ZONE AD** Flood depths of 1 to 3 feet (unless areas of ponding); average depths determined. For areas of shallow fan flooding, velocities also determined.
 - ZONE AR** Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently abandoned. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
 - ZONE AV** Area to be protected from 1% annual chance flood event by a coastal flood protection system under construction; no base flood elevations identified.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); base flood elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- The Floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood areas of 1% annual chance flood with an average width of one-half mile, and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
 - ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
 - 0.2% annual chance floodplain boundary
 - Floodway boundary
 - Floodway boundary
 - Zone D boundary
 - CBRS and OPA boundary
 - Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
 - Base Flood Elevation (values shown where indicated in feet)
 - Base Flood Elevation value where uniform within zone elevation in feet
- (BL 957)
- Cross Section Line
 - Transect Line
 - Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 - 4776600A 1000-meter Universal Transverse Mercator grid values, zone 18
 - 600000 FT 5000-foot grid ticks
 - DX5510 X North mark, also explanation in Notes to Users section of this FIRM panel.
 - M1.5 River Mile
- MAP REPOSITORY**
- Refer to Repository Listing on Index Map
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
- SEPTEMBER 26, 2008
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**
- For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for that jurisdiction.
- To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6820.



PANEL 0482F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 492 OF 675

(SEE MAP INDEX FOR FIRM PANEL LOCUS)

CONTAINS:

COUNTY	TOWN	PANEL	SUFFIX
NEW BRITAIN CITY OF	0803	042	F
NEWTON TOWN OF	0803	042	F

MAP NUMBER
0003C0402F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 1



ROUTE 71A
ROUTE 571

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has an average recurrence interval of one year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, A1, A2, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A
No base flood elevations determined.

ZONE AE
Base flood elevations determined.

ZONE AH
Flood depths of 1 to 3 feet (areas of ponds); base flood elevations determined.

ZONE AO
Flood depths of 1 to 3 feet (areas of ponds); average depths determined. For areas of shallow flow, velocities also determined.

ZONE AR
Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently destroyed. Zone AR areas are not subject to flood control systems being restored to provide protection from the 1% annual chance or greater flood event.

ZONE AV
Areas in which the protection from the annual chance flood event by a flood control system under construction; no base flood elevations determined.

ZONE V
Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE
Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The Floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increases in flood heights.

OTHER FLOOD AREAS

ZONE X
Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot.

OTHER AREAS

ZONE X
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE C
Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- Base Flood Elevation (BFE) values shown in feet above mean sea level (MSL).
- Base Flood Elevation value where uniform within zone; elevation in feet.

*Referenced to the North American Vertical Datum of 1988

- Circle A: Cross Section Line
- Circle B: Transsect Line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4276/6000: 1000-meter Universal Transverse Mercator grid values, zone 18
- 600000 FT: 5000-foot grid ticks
- DX5510 X: Bench mark, see explanation in Notes to Users section of this FRM panel.
- M1.5: River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP:
SEPTEMBER 26, 2008

EFFECTIVE DATES OF REVISIONS TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map history table located in the Flood Insurance Study report for the jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 800-638-6626.

MAP SCALE 1" = 500'

200 0 500 1000
150 0 150 300
FEET
METERS

PANEL 0493F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 493 OF 675
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

SCHEME:

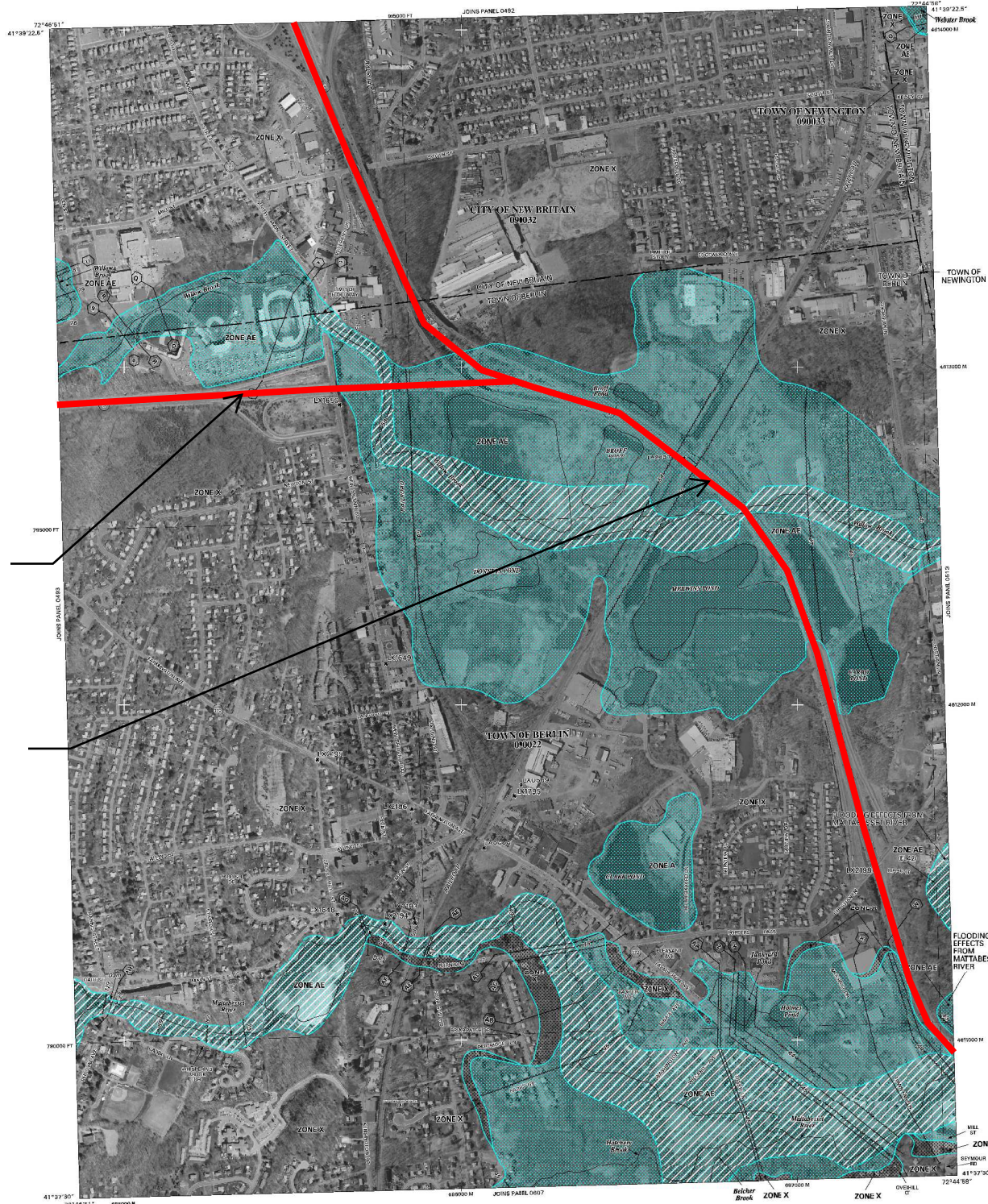
COMMUNITY	NUMBER	PANEL	SUFFIX
HARTFORD, TOWN OF	36030	043	F
NEW BRITAIN, CITY OF	36032	043	F

MAP NUMBER 050030-0-030F

EFFECTIVE DATE: SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 1



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% Annual Chance Flood (100-year flood) also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AFB, Y, and V. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AD Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of structural flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was substantially destroyed. Zone AR indicates that the former flood control system is being repaired to provide protection from the 1% annual chance or greater flood event.

ZONE AFB Area to be protected from 1% annual chance flood event by a natural flood protection system under construction; no base flood elevations determined.

ZONE Y Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood areas of 1% annual chance flood with average depths or velocities.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Roadway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
 Base Flood Elevation (feet and/or velocity) in feet or
 Base Flood Elevation value where uniform within zone; elevation in 0'

(IL 957)

*Referenced to the North American Vertical Datum of 1985

(A) Cross Section Line
 (2) Tract Line
 Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 475000M 1000-meter Universal Transverse Mercator grid value, zone 18
 500000 FT 5000-foot grid tick
 DX5510 X Bench mark (see explanation in Notes to Users section of this FIRM panel)
 • M1.5 River Mile

MAP REPOSITORY
 Refer to Repository Listing on Index Map
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 26, 2008
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 800-638-6820.

MAP SCALE 1" = 500'
 250 0 250 500
 METERS

ROUTE 571

ROUTE 9

PANEL 0494F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT
 (ALL JURISDICTIONS)

PANEL 494 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

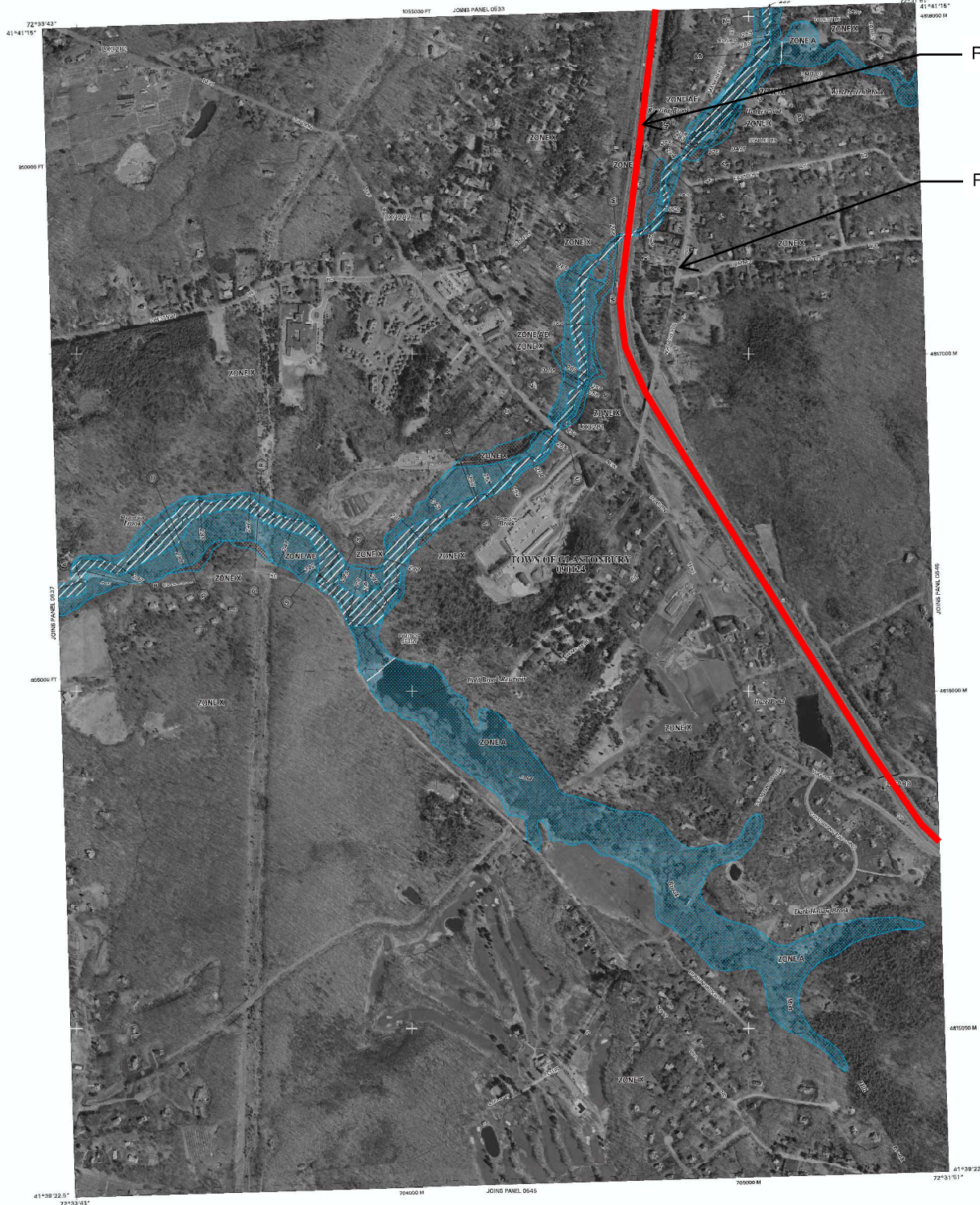
COMMUNITY	NUMBER	PANEL	STATUS
BERLIN TOWN OF	30032	0494	F
NEW BRITAIN CITY OF	30033	0494	F
NEWINGTON TOWN OF	30034	0494	F

Notice to User: The Map Number shown herein should be used when placing map orders. The Community Number should always appear on the insurance contract for the subject community.

MAP NUMBER 08003G0494F
EFFECTIVE DATE: SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 2



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood) also known as the base flood is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include zones A, AE, AH, AO, X, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually about flow on sloping terrain); average depths determined. For areas of unusual fast flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently described. Zone AR indicates that the former flood control system is being assessed to provide protection from the 1% annual chance or greater flood event.

ZONE AV Area to be protected from 1% annual chance flood event by a Federal flood control system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE A/E

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of 1 to 3 feet, and areas with average depths less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood Depths or Velocities
 Base Flood Elevation values are in feet, elevation in +'
 Base Flood Elevation values where uniform within zone elevation in +'

*Referenced to the North American Vertical Datum of 1985

(A) Cross Section Line
 (2) Transsect Line
 97°57'30", 32°22'30"
 476,000M
 1000-meter Universal Transverse Mercator grid values, zone 18
 600000 FT
 5000-foot grid ticks

DX5210 X
 Bench mark (see explanation in Note to Users section of this firm panel).
 River Mile
 ● M.1.5

MAP REPOSITORY
 Refer to Repository Listing on Index Map
 EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 26, 2008
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800)638-6626.

MAP SCALE 1" = 500'
 250 0 500 1000
 150 0 150 300
 METERS FEET

PANEL 0541F

FIRM
FLOOD INSURANCE RATE MAP
 HARTFORD COUNTY,
 CONNECTICUT
 (ALL JURISDICTIONS)

PANEL 541 OF 675
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY: NUMBER PANEL SURFEX
 EASTONBURY, TOWN OF 38124 0541 F

Notice to User: The Map Number shown below should be used when identifying maps. The Community Number shown above should be used on the same application for the subject community.

MAP NUMBER
 05000504-1F

EFFECTIVE DATE:
 SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 3



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The region Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazards include Zones A, AE, AO, AV, AR, and V. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base Flood elevations determined.

ZONE AEI Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually about flow on sloping terrain); average depths determined. For areas of about on flooding, velocities also determined.

ZONE AR Areas of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently abandoned. Zone AR flood hazard areas are flood control systems being restored to provide protection from the 1% annual chance or greater flood event.

ZONE AV Areas to be protected from the 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain area that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot and average areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or velocities.
 Base Flood Elevation value where uniform within zone; elevation in feet
 (E.L. 887)

Referenced to the North American Vertical Datum of 1988

(A) Cross Section Line
 (2) Transient Line
 Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 427600M 1000 meter Universal Transverse Mercator grid values, zone 18
 600000 FT 5000-foot grid ticks
 DX5510 X Bench mark (see explanation in Notes to Users section of the FIRM panel).
 M1.5 River Mile

MAP REPOSITORY
 Refer to Repository Listing and Index Map
 EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 26, 2008
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 898-8622.

MAP SCALE 1" = 500'
 250 500 1000 FEET
 150 0 150 300 METERS

ROUTE 15

PANEL 0504F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY,
 CONNECTICUT
 (ALL JURISDICTIONS)

PANEL 504 OF 675
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER PANEL SUFFIX
 WETHERSFIELD, TOWN 06000 0504 F

Notice to User: The Map Number shown below should be used when ordering the map. The Community Number shown above should be used on insurance applications for the subject community.

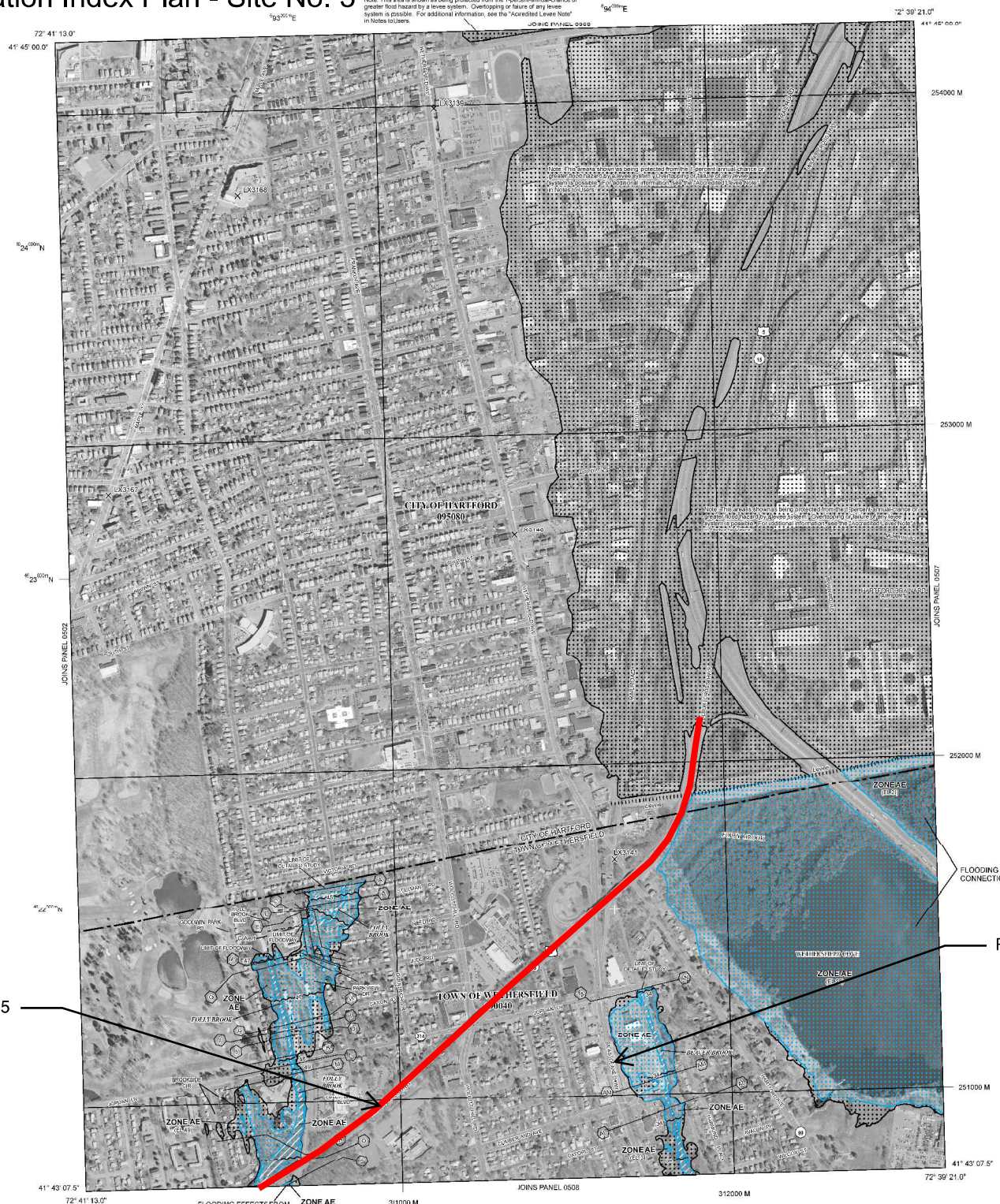
MAP NUMBER
06000C0504F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 3

Note: This area is shown as being protected from the 1-percent-annual-chance-of-greater flood hazard by a levee system. Overlapping of failure of any levee system is possible. For additional information, see the "Accredited Levee Notes" in Notes to Users.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, AV, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of arid); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually on steep terrain); average depths determined. For areas of elevated fill flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently determined. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AV** Area to be protected from the 1% annual chance flood by a recent mass protection system under construction; no base flood elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or floodway areas less than 1 square mile and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% Annual Chance Floodplain boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value; elevation in feet (EL 48.7)
- Base Flood Elevation value where uniform within zone; elevation in feet

Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- (S) — (S) — Trenchless pipe
- (C) — (C) — Culvert
- (B) — (B) — Bridge

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

- 499500 M 2000-meter UTM; Connecticut State Plane Zone
- 41° 43' 00" N UTM Zone 18Q00; Lambert Conformal Conic projection
- 1000-meter Universal Transverse Mercator grid values, zone 18Q
- D0550 X Bench mark (see explanation in Notes to Users section of this FIRI panel)
- M115 River Mile

MAP REPOSITORIES
 Refer to Map Repositories list of Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
 September 28, 2008

EFFECTIVE DATE(S) OF REVISIONS TO THIS PANEL
 September 16, 2011 - To change map notes and flood boundaries to reflect the accreditation of formerly privately-accredited levees.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-625-6920.

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0506G

FIRM
FLOOD INSURANCE RATE MAP
HARTFORD COUNTY, CONNECTICUT
(ALL JURISDICTIONS)

PANEL SUB OF 010
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
HARTFORD, CT	0506G	0506	G
WETHERFIELD, CT	0506G	0506	G
TOWN OF			

Notice to Users: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

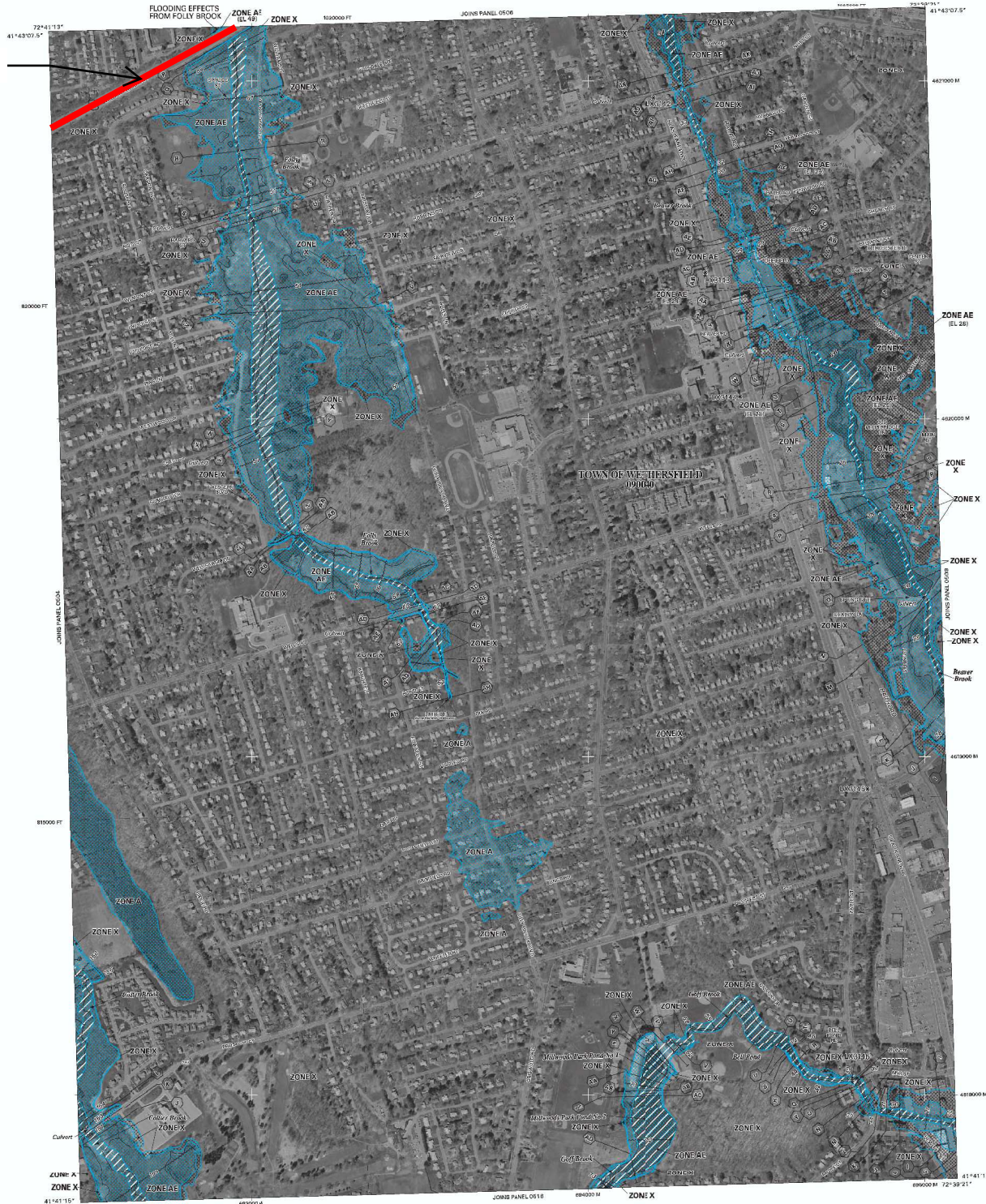
MAP NUMBER
09003C0506G

MAP REVISED
SEPTEMBER 16, 2011

Federal Emergency Management Agency

Illumination Index Plan - Site No. 3

ROUTE 15



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood) also known as the base flood is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.
ZONE AE Base flood elevations determined.
ZONE AH Flood depths of 1 to 3 feet (unless areas of ponding; base flood elevations determined).
ZONE AO Flood depths of 1 to 3 feet (unless sheet flow on sloping terrain; average depths determined. For areas of elevated ten flooding, velocities also determined).
ZONE AR Areas of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently dismantled. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE:
 The Floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood areas of 1% annual chance flood with average depths of less than 1 foot or with average wave base less than 1 square mile; and areas protected by levees from 1% annual chance flood.
OTHER AREAS
ZONE K Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCE SYSTEM (CBRS) AREAS
OTHERWISE PROTECTED AREAS (OPAs)
 CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or velocities
 Open flood elevation (no wave velocity elevation)
 Base Flood Elevation value, where uniform within zone, elevation in 0'

*Referenced to the North American Vertical Datum of 1988

(A) --- (A) Cross Section Line
 (A) - - - - (A) Tract Line
 97°17'32", 32°12'30" Geographic coordinate referenced to the North American Datum of 1983 (NAD 83)
 62760004 1000-meter Universal Transverse Mercator grid values, zone 18
 600000 FT 5000-foot grid ticks
 DX3510 X Bench mark; see explanation in Notes to Users section of the FIRI map
 M1.5 River Mile

MAP REPOSITORY:
 Refer to Repository Listing on Index Map
 EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: SEPTEMBER 26, 2008
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 688-8620.

MAP SCALE 1" = 500'
 250 0 500 1000 FEET
 150 0 150 300 METERS

PANEL 0508F

FIRM FLOOD INSURANCE RATE MAP
 HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 504 OF 675
 (SEE MAP INDEX FOR FIRM PANEL LOCATION)

COUNTY	NUMBER	PANEL	SUFFIX
HARTFORD COUNTY	0504	0508	F

Notice to User: The Map Number shown below should be used when referring to the Flood Insurance Study Report. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 60003C1508F
EFFECTIVE DATE: SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 4



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A
No base flood elevations determined.

ZONE AE
Base flood elevations determined.

ZONE AH
Flood depths of 1 to 3 feet usually across of ponding; base flood elevations determined.

ZONE AO
Flood depths of 3 to 6 feet usually across of ponding; average depths determined. For areas of alternate fast flooding, velocities also determined.

ZONE AR
Area of special flood hazard formally protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AE indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE ARB
Area to be protected from 1% annual chance flood event by a Federal flood protection system (under construction); no base flood elevations determined.

ZONE AV
Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE E
Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X
Areas of 0.2% annual chance flood risk of 1% annual chance flood with average depth of less than 1 foot or with drainage areas less than flood.

OTHER AREAS

ZONE E
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE F
Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations; flood depths or velocities
- Base Flood Elevation (mean value elevation in 0')
- Base Flood Elevation value where uniform within zone; elevation in 0'

*Referenced to the North American Vertical Datum of 1988

- Dress Section Line
- Traverse Line
- Boundary reference to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid values, zone 18
- 100000 FT
- 5000-foot grid ticks
- DX5510 X
- Bench mark (see explanation in Notes to Users section of the FIRM panel)
- 1 M.T. 5
- River Mile

MAP REPOSITORY
Refer to Repository Listing on Index Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
SEPTEMBER 26, 2008

EFFECTIVE DATES OF REVISIONS TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for the jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-8520.

MAP SCALE 1" = 500'

200 0 500 1000
150 0 150 300
METERS FEET

I-384

PANEL 0389F

FIRM
FLOOD INSURANCE RATE MAP
HARTFORD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 389 OF 675

SEE MAP INDEX FOR FIRM PANEL LAYOUT

CONTINUED:

JURISDICTION	NUMBER	PANEL	SUFFIX
EAST HARTFORD, TOWN OF	00059	0088	F
MANCHESTER, TOWN OF	00071	0088	F

Notice to User: This Map Worksheet shown below should be used when filed by the user. The Community Mapsheet shown above should be used on insurance applications for the subject community.

MAP NUMBER
000000009F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 4



I-384

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AEI, AEII, AEIII, AEIV, AEV, AEVI, AEVII, AEVIII, AEIX, AE X, AE XI, AE XII, AE XIII, AE XIV, AE XV, AE XVI, AE XVII, AE XVIII, AE XIX, AE XX.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AEI Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AEII Flood depths of 1 to 3 feet (usually about flow on sloping terrain); average depths determined. For areas of shallow fan flooding, velocities also determined.

ZONE AEIII Areas of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently determined to be inoperable. Flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE AEIV Areas to be protected from the annual chance flood event by a flood protection system under construction; no base flood elevations determined.

ZONE AEV Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE AEVI Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOOD HAZARD AREAS IN ZONE AE

The footcure is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depth of less than 1 foot and average wave rise less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or velocities.
- Base Flood Elevation lines and velocity direction by A-F
- Base Flood Elevation value where uniform within zone; elevation in feet

REL 1977

Horizontal to the North American Vertical Datum of 1988

- Gross Section Line
- Transect Line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4,769,000 1000-meter Universal Transverse Mercator grid values, zone 18
- 603,000 FT 5000-foot grid ticks
- DXS110 X Bench mark (see explanation in Notes to Users section of this FIRI panel).
- River Mile
- M1.5

MAP REPOSITORY

Refer to Repository Listing on Inside Map

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 800-338-6629.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

PANEL 0393F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY,
CONNECTICUT
(ALL JURISDICTIONS)

PANEL 393 OF 675
(SEE MAP INDD FOR FIRM PANEL LAYOUT)

COMPANY: _____
COMMUNITY: _____ NUMBER: _____ PANEL: _____ SUFFIX: _____

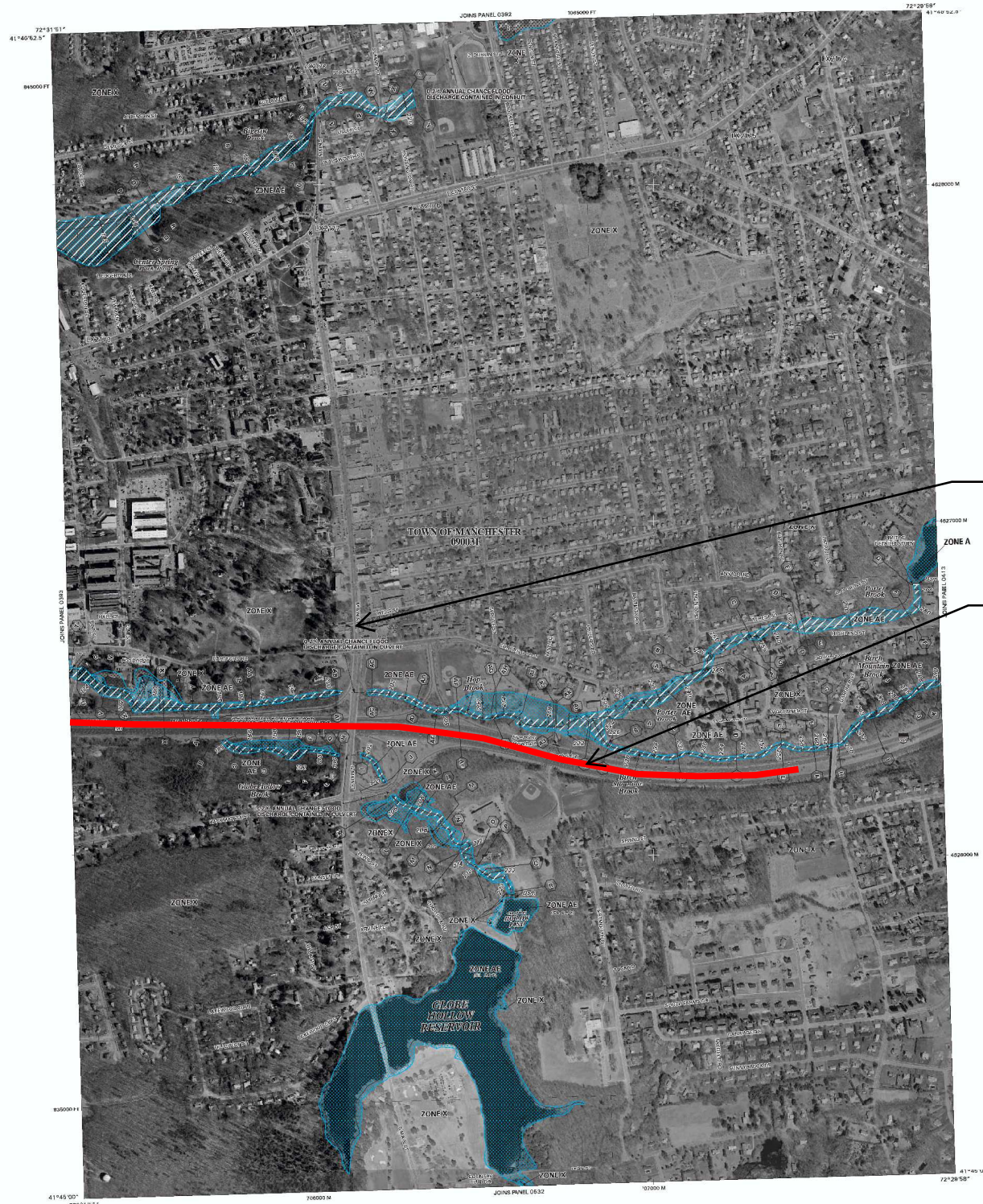
Map Member shown below should be used when showing map orders. The Community Member shown below should be used on the same requirements to the extent community.

MAP NUMBER 0000C0393F

EFFECTIVE DATE: SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 4



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Series A, AE, AH, AO, AX, X, Y, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AF Flood depths of 1 to 3 feet (local areas of ponding); base flood elevations determined.

ZONE AR Flood depths of 1 to 3 feet (local areas of ponding); average depths determined. For areas of altered or flooded wetlands, velocities also determined.

ZONE AV Areas of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently abandoned. Zone AV indicates the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE X Areas not previously shown as Special Flood Hazard Areas by Federal Flood Protection systems under construction; no base flood elevations determined.

ZONE Y Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE A/C

The Floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE D Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with average wave rise from 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE U Areas determined to be outside the 0.2% annual chance floodplain.

ZONE I Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCE SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary
 Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood depths or velocities
 Base Flood Elevation line and water elevation in feet
 Base Flood Elevation value where uniform within zone; elevation in feet
 (L 967)

Cross Section Line
 Transsect Line
 4275000M
 500000 FT
 05510 X
 M 1.5

MAP REPOSITORY
 Refer to Repository Listing on Index Map
 EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP
 SEPTEMBER 26, 2008
 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for the jurisdiction.
 To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6630.

MAP SCALE 1" = 500'
 250 500 1000
 METERS FEET

Route 83

I-384

PANEL 0394F

FIRM FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 394 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

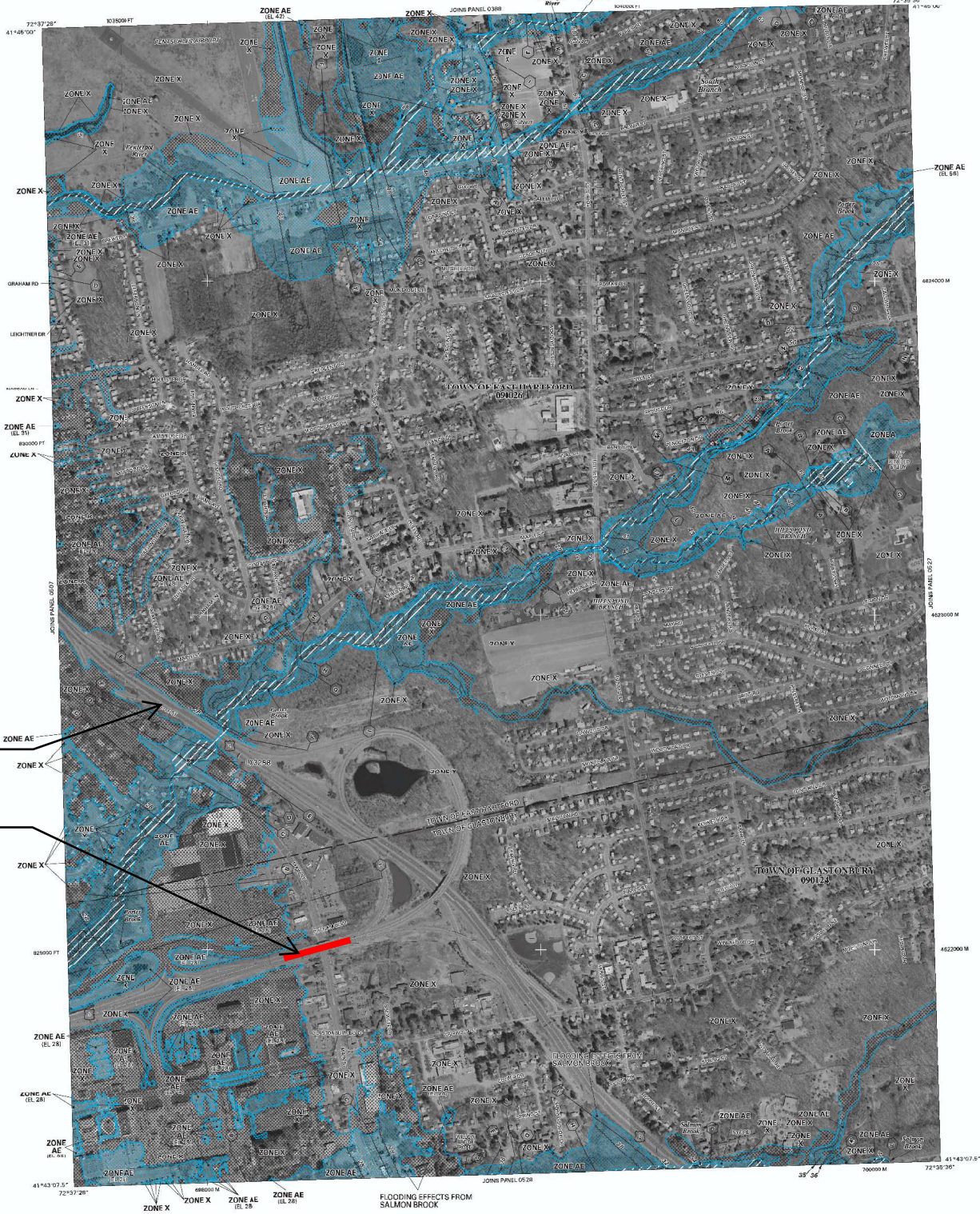
CONTAINS:
 COMMUNITY NUMBER PANEL OFFICE
 MANCHESTER, TOWN OF 06041 0394 F

Notice to User: The Map Number shown below should be used when making a claim to the Community Number shown above should be used in insurance applications for the subject community.

MAP NUMBER 6003C0394F
EFFECTIVE DATE: SEPTEMBER 26, 2008

Federal Emergency Management Agency

Illumination Index Plan - Site No. 5



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood flow of water having a 1% chance of being equaled or exceeded in any given year. The Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AF Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AC Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of elevated flow velocities also determined.

ZONE AR Areas of special flood hazard formed from the 1% annual chance flood event by a flood control system that was subsequently abandoned. Zone AE indicates that the former flood control system is being removed to provide protection from the 1% annual chance or greater flood event.

ZONE AO Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with a return period of more than 1 year. Areas of flood with a return period of 1 year or less are protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Flood Depths or Velocities
- Base Flood Elevation lines and water elevations to 4'
- Base Flood Elevation values where uniform within zone; elevation in 0'

EL 927'

*Referenced to the North American Vertical Datum of 1988

A Cross Section Line

25 Transit Line

97°07'30" N, 32°22'30" W Bearings determined to the North American Datum of 1983 (NAD 83)

476900A 1000-meter Universal Transverse Mercator grid values, zone 18

660000 FT 5000-foot grid scale

DX5510 X Bench mark (see explanation in Note to Users section of this FIRM panel).

M 1.5 River Mile

MAP REVISION

Refer to Regulatory Listing (previous Map)

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP

SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mappings, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6622.

MAP SCALE 1" = 500'

250 0 500 1000
150 0 150 300
FEET
METERS

Route 2

Route 3

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0526F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 526 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

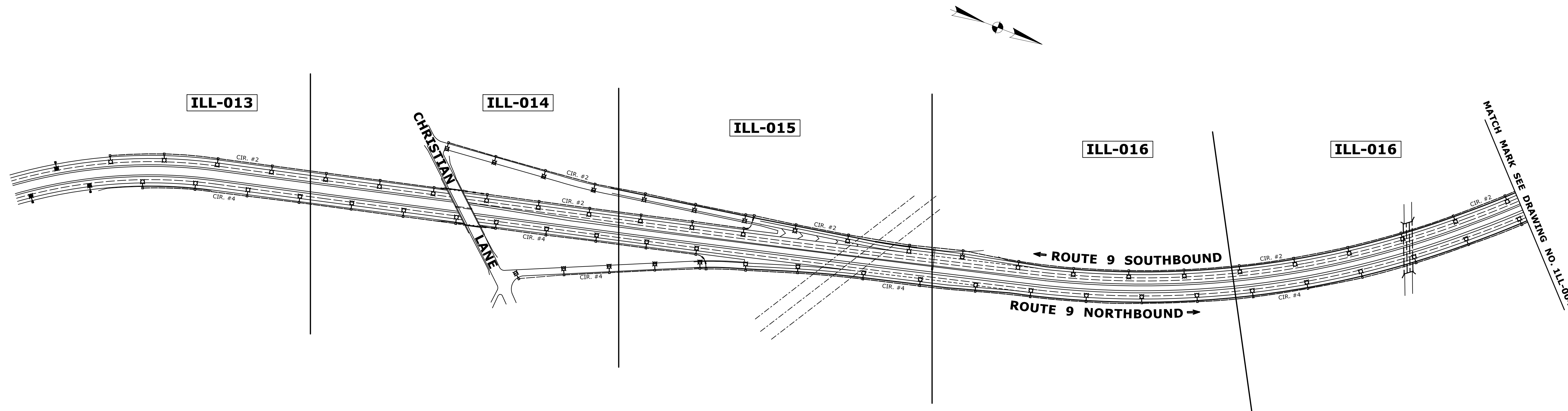
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST HARTFORD, TOWN OF	56200	0504	F
EAST HARTFORD, TOWN OF	38174	0504	F

MAP NUMBER 0902C 026F

EFFECTIVE DATE: SEPTEMBER 26, 2008

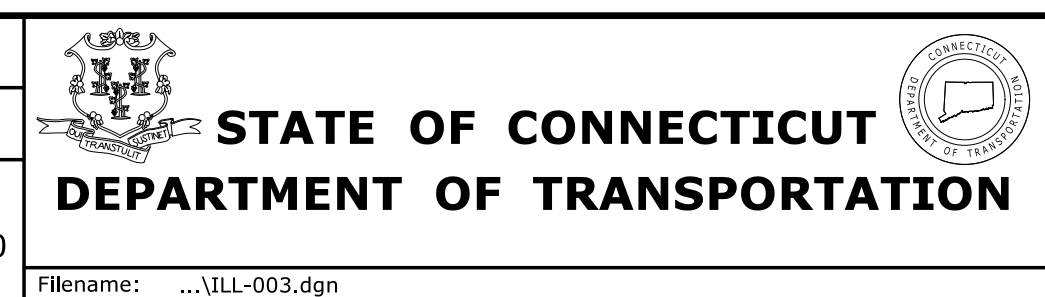
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

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CHECKED BY:
JA
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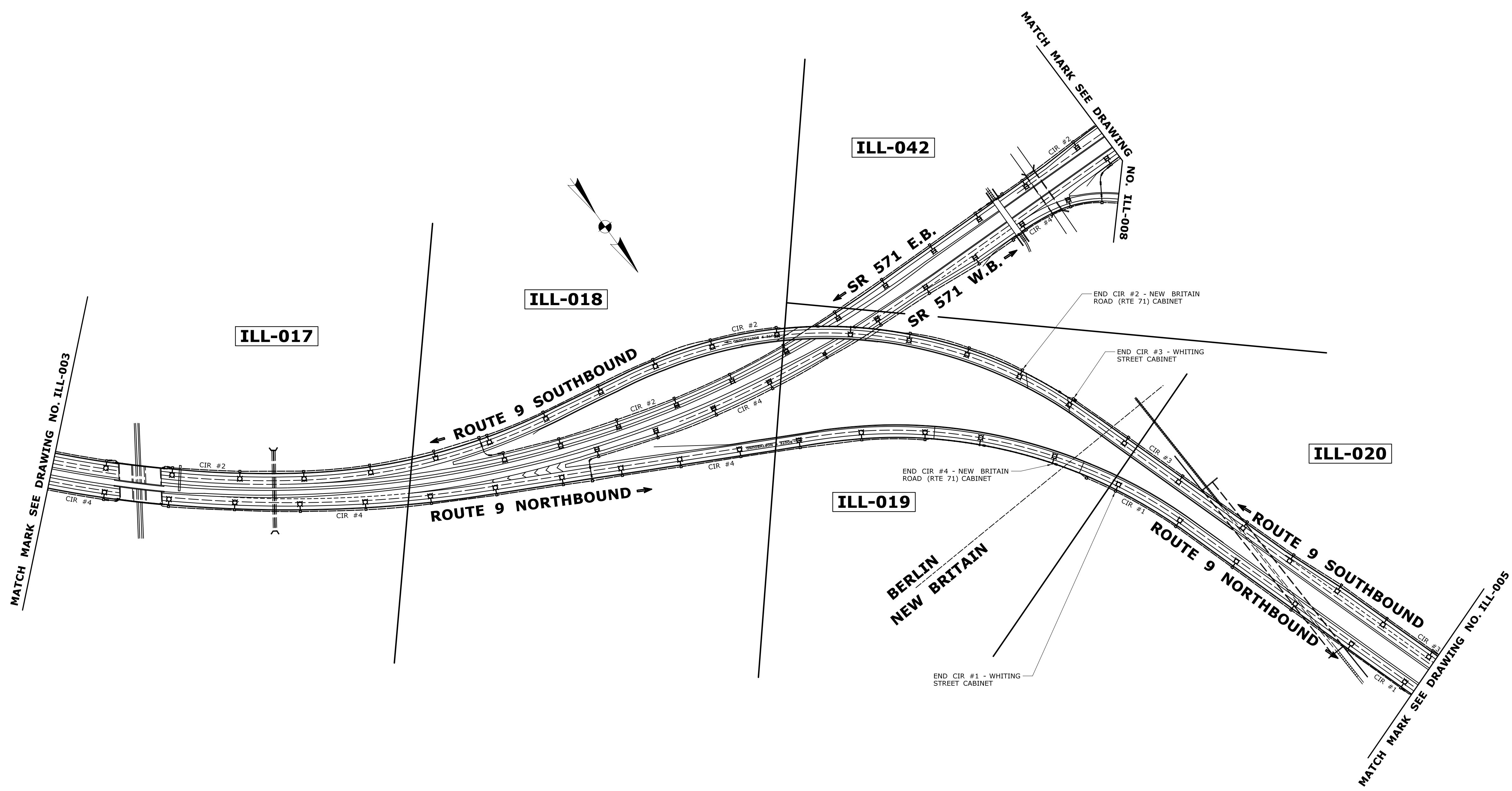


SIGNATURE/
BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:
[Signature]

PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN:
BERLIN AND NEW BRITAIN
DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 1

PROJECT NO.
171-432
DRAWING NO.
ILL-003
SHEET NO.
03.003

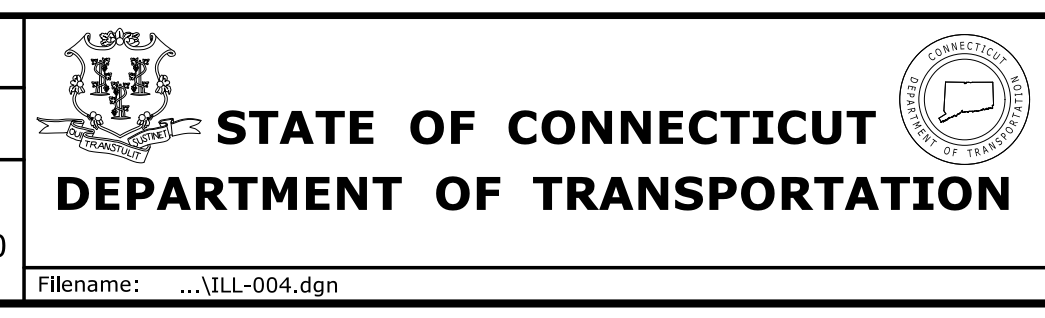


REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 9/19/2017

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 CHECKED BY: **JA**
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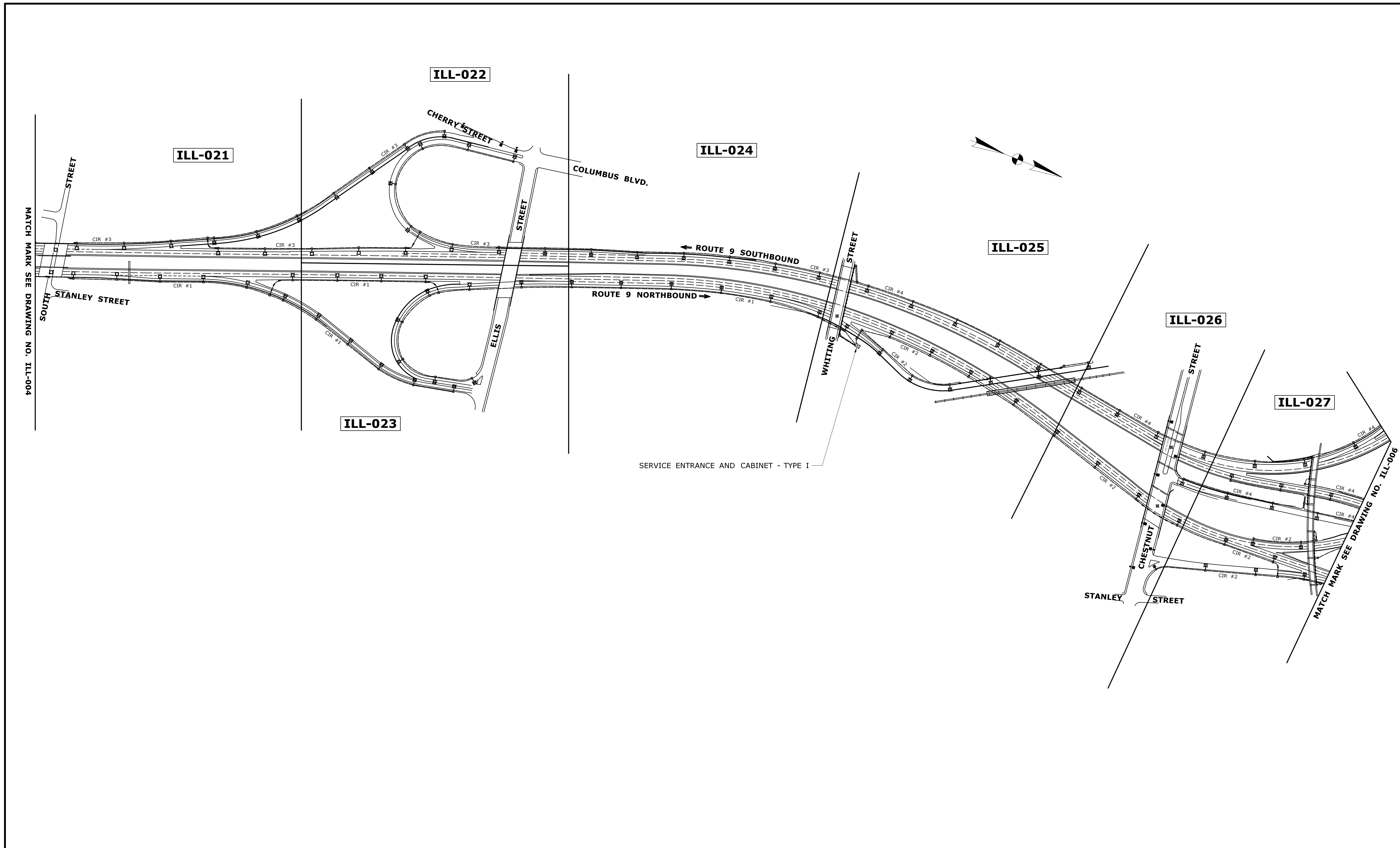


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OFFICE OF ENGINEERING
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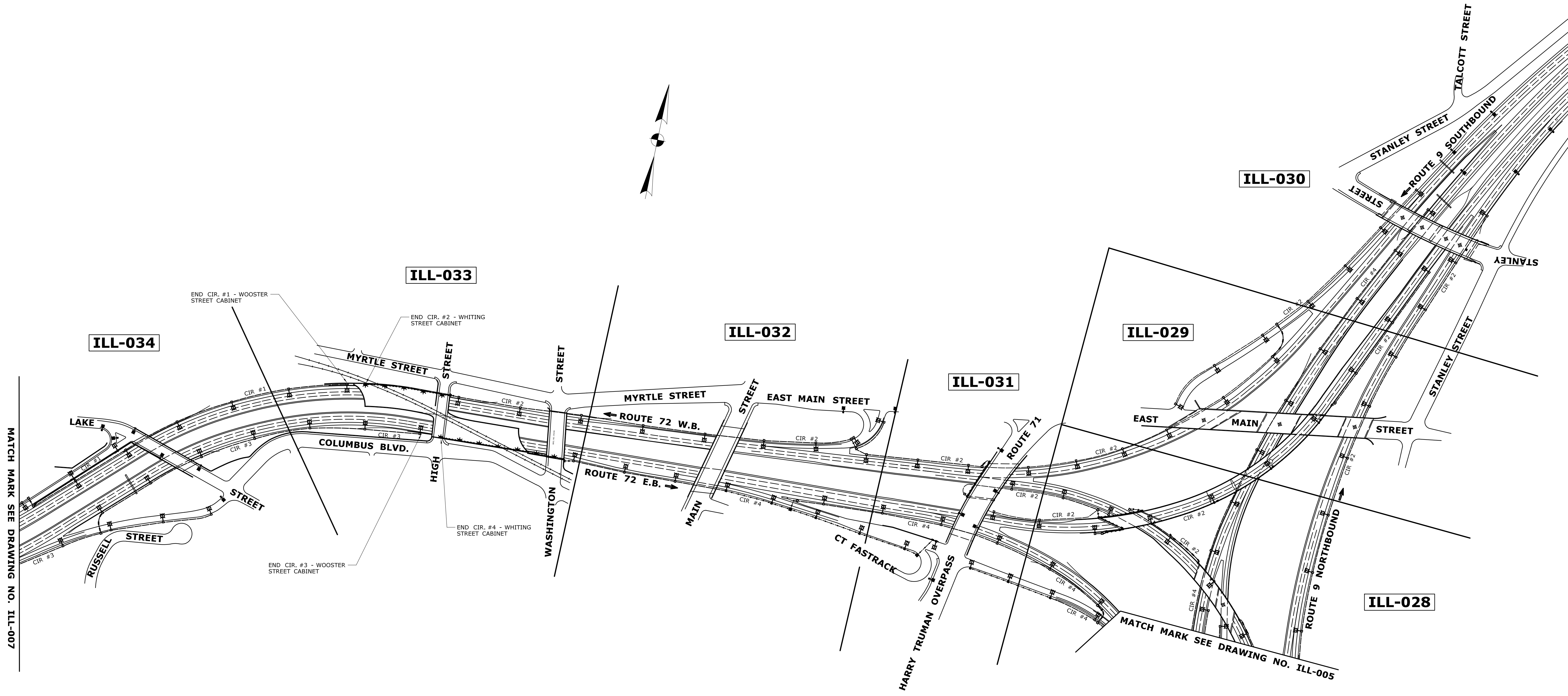
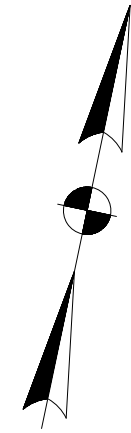
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REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN: **BERLIN AND NEW BRITAIN**
 DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 1

PROJECT NO. **171-432**
 DRAWING NO. **ILL-004**
 SHEET NO. **03.004**



THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MSB	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: 	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: BERLIN AND NEW BRITAIN	PROJECT NO. 171-432
CHECKED BY: JA	SCALE IN FEET SCALE 1"=200'	APPROVED BY: 		DRAWING NO. ILL-005			
REV. DATE REVISION DESCRIPTION SHEET NO. Plotted Date: 9/19/2017			Filename: ...ILL-005.dgn			SHEET NO. 03.005	DRAWING TITLE: ILLUMINATION INDEX PLAN - SITE NO. 1

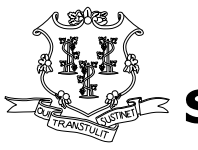


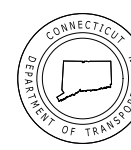
MATCH MARK SEE DRAWING NO. ILL-007

MATCH MARK SEE DRAWING NO. ILL-005


REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017

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CHECKED BY:
JA
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SCALE 1"=200'


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION



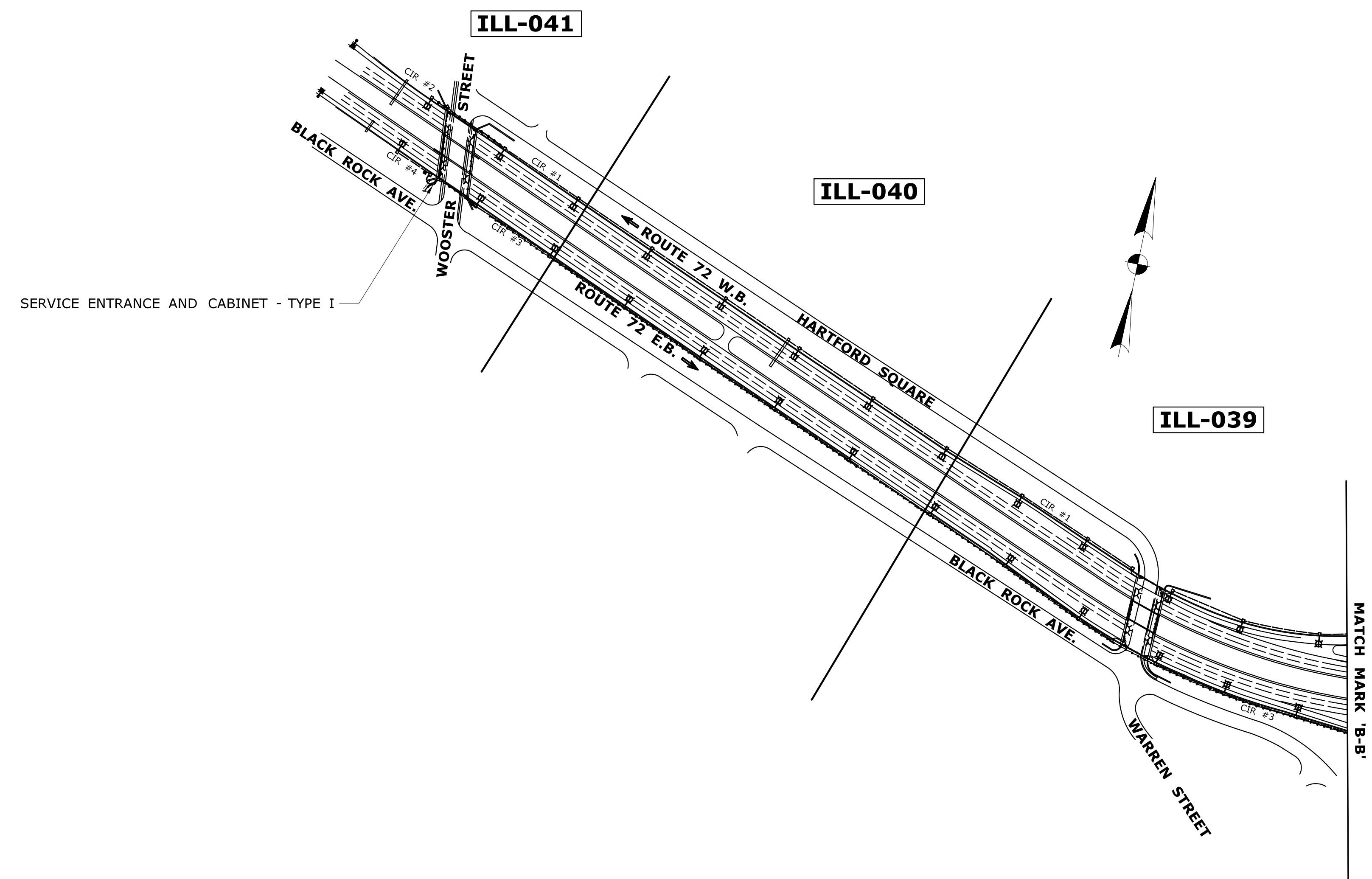
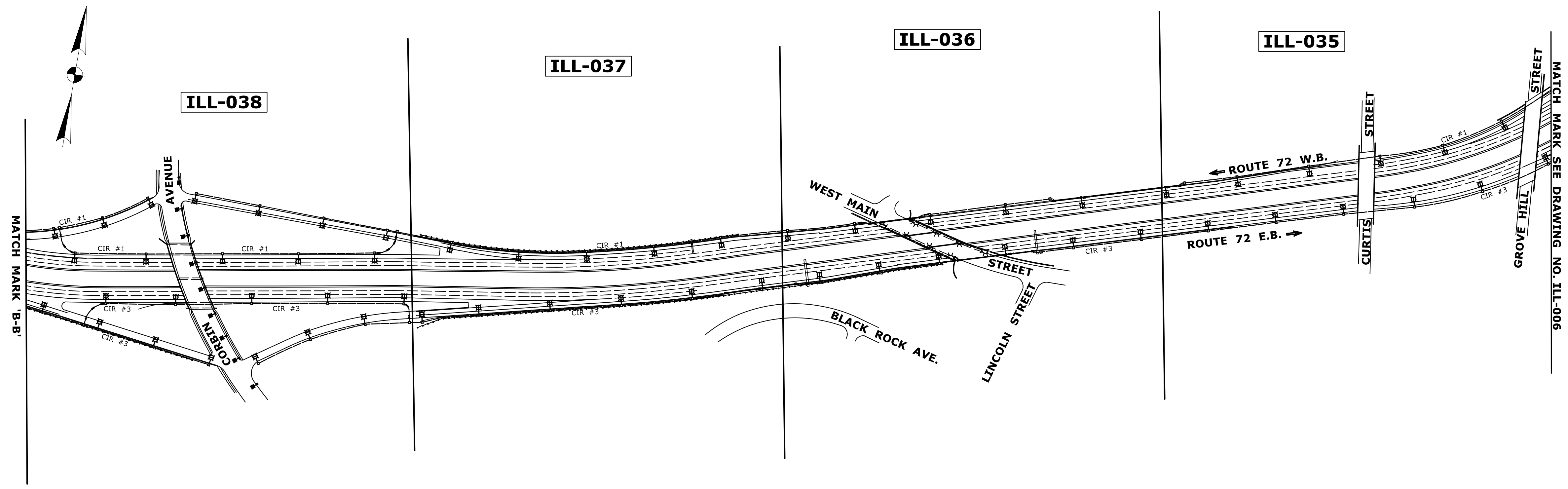
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SIGNATURE/
BLOCK:
OFFICE OF ENGINEERING
APPROVED BY:


PROJECT TITLE:
**REPLACEMENT OF ROADWAY
ILLUMINATION SYSTEMS
IN DISTRICT 1**

TOWN:
**BERLIN AND
NEW BRITAIN**
DRAWING TITLE:
**ILLUMINATION INDEX
PLAN - SITE NO. 1**

PROJECT NO.
171-432
DRAWING NO.
ILL-006
SHEET NO.
03.006



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 9/19/2017

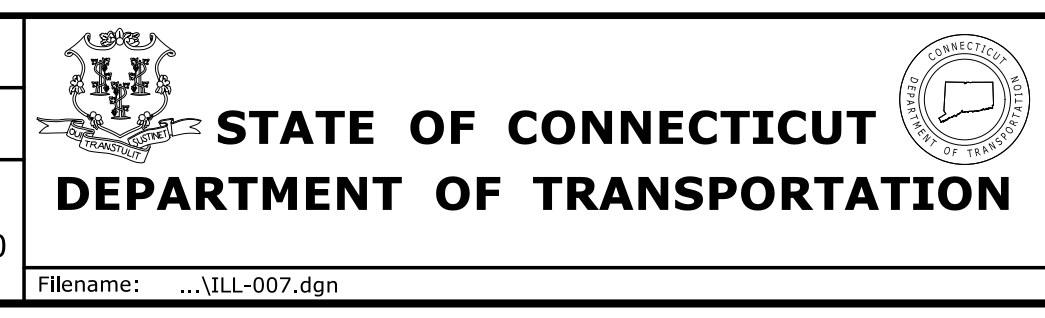
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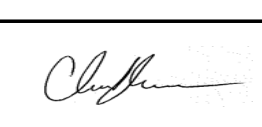
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SIGNATURE/
BLOCK:

OFFICE OF ENGINEERING

APPROVED BY:



PROJECT TITLE:

REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN:

BERLIN AND NEW BRITAIN

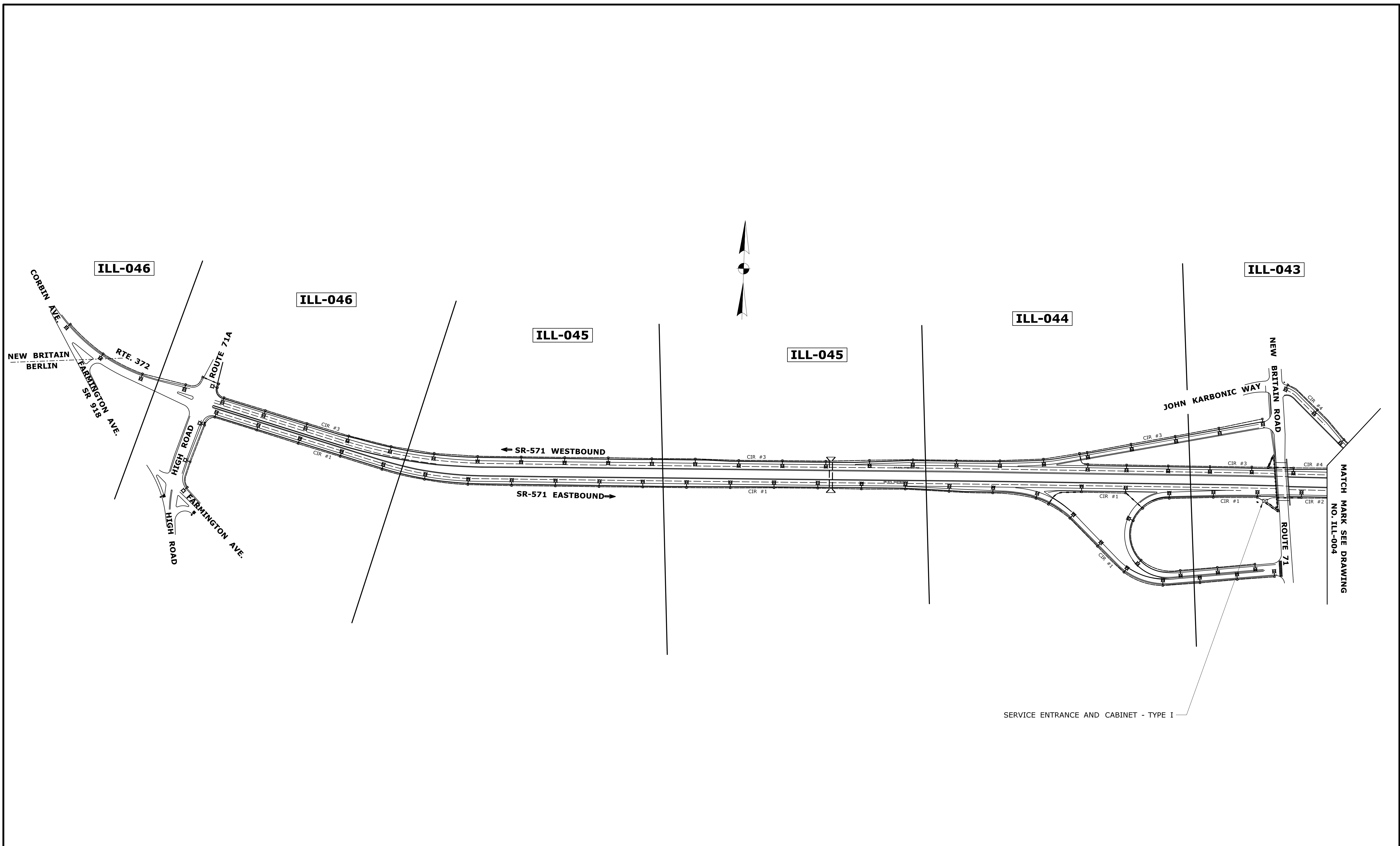
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ILLUMINATION INDEX PLAN - SITE NO. 1

PROJECT NO.
171-432

DRAWING NO.
ILL-007

SHEET NO.
03.007



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 9/19/2017

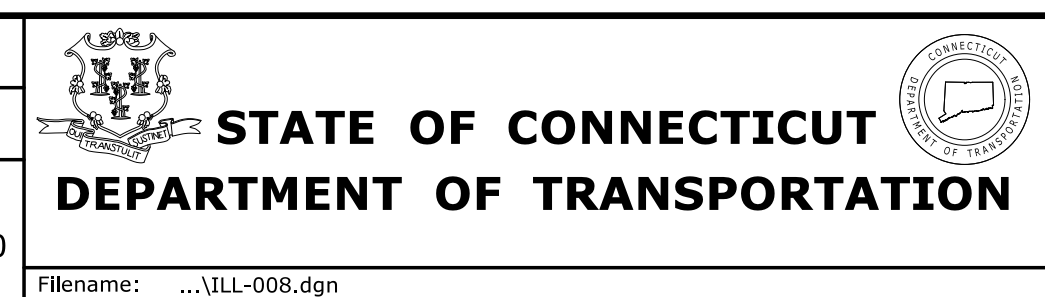
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CHECKED BY:
JA

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SCALE 1" = 200'



SIGNATURE/
BLOCK:

OFFICE OF ENGINEERING

APPROVED BY:

Cliff

PROJECT TITLE:

REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN:

BERLIN AND NEW BRITAIN

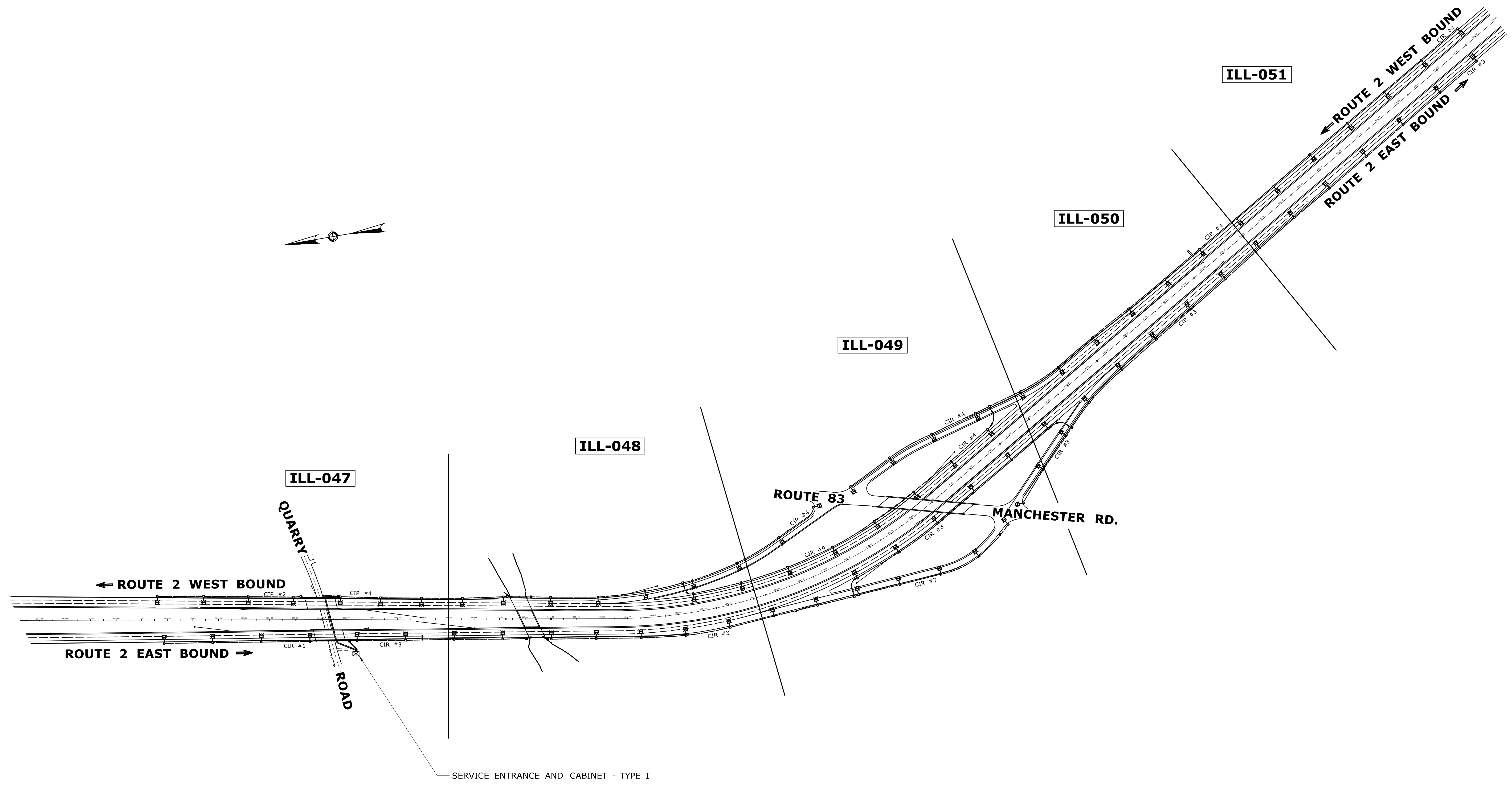
DRAWING TITLE:

ILLUMINATION INDEX PLAN - SITE NO. 1

PROJECT NO.
171-432

DRAWING NO.
ILL-008

SHEET NO.
03.008

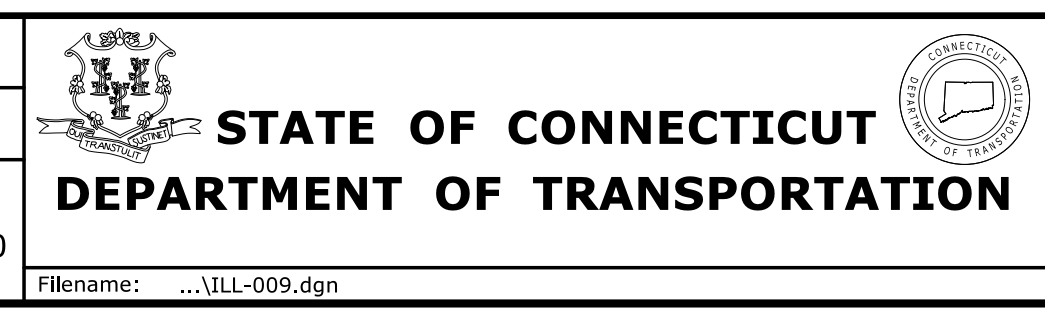


REV.	DATE	REVISION DESCRIPTION	SHEET NO.

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Plotted Date: 9/19/2017

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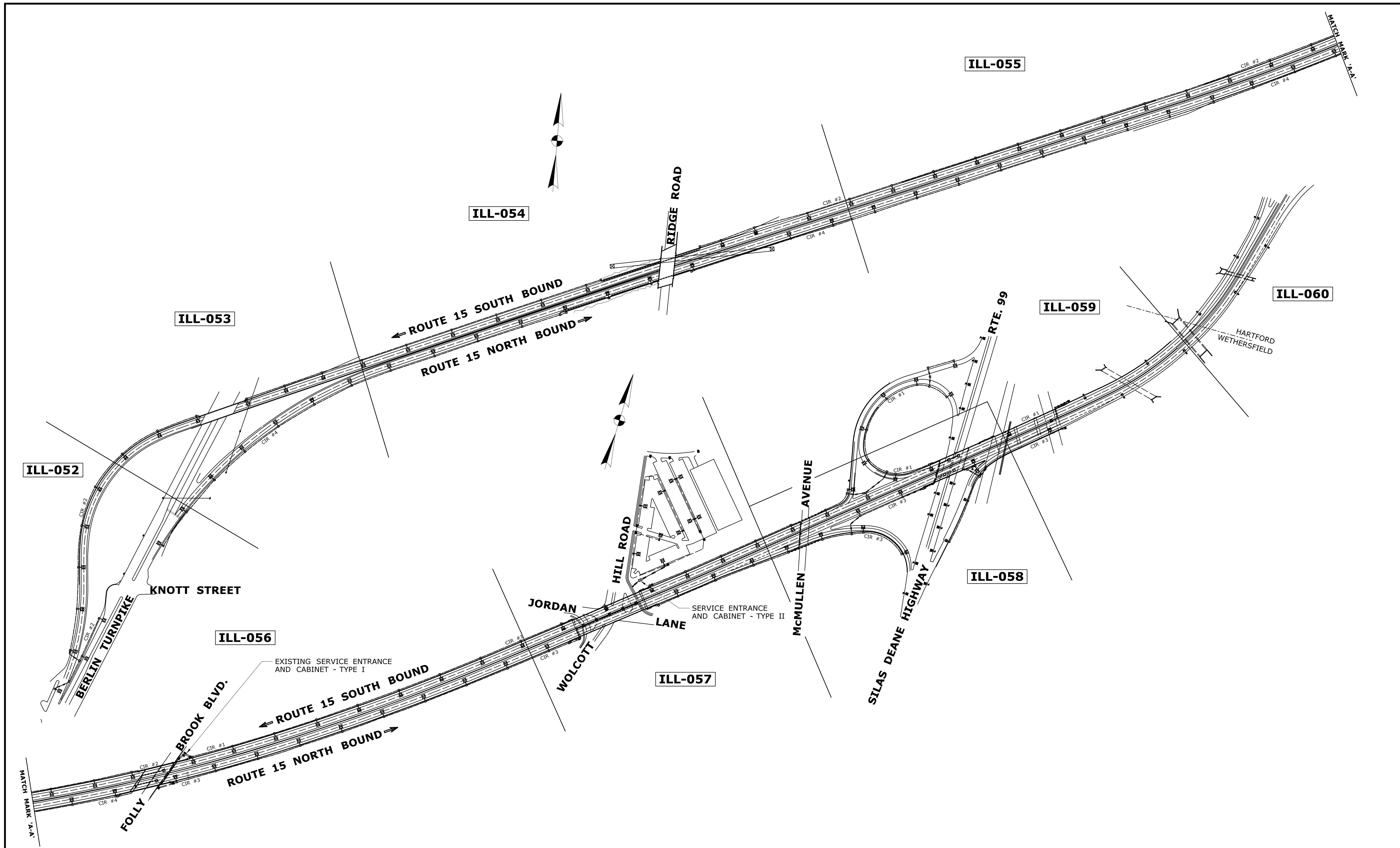


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 APPROVED BY:

PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN: **GLASTONBURY**
 DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 2

PROJECT NO. **171-432**
 DRAWING NO. **ILL-009**
 SHEET NO. **03.009**

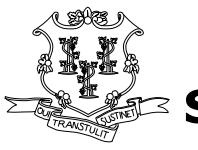


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Plotted Date: 9/19/2017

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

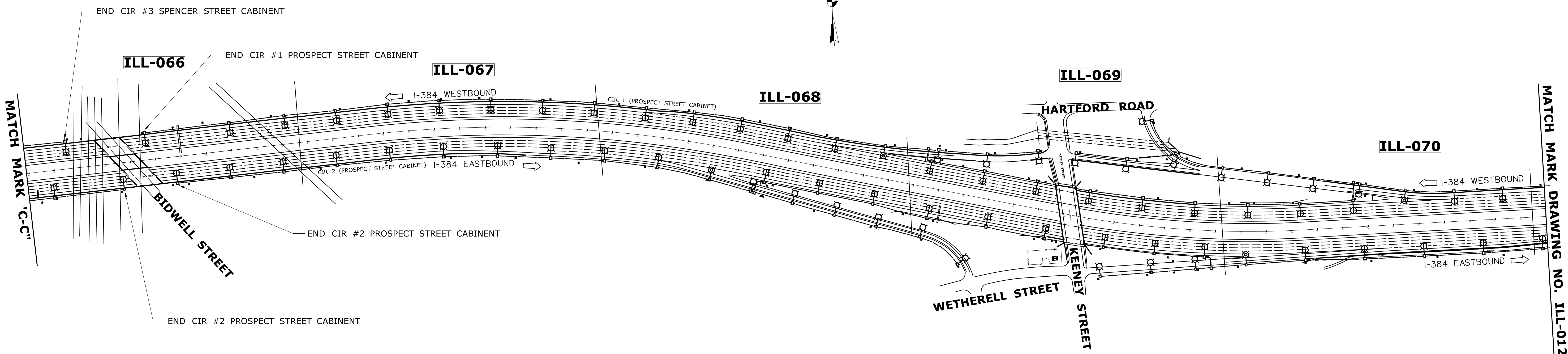
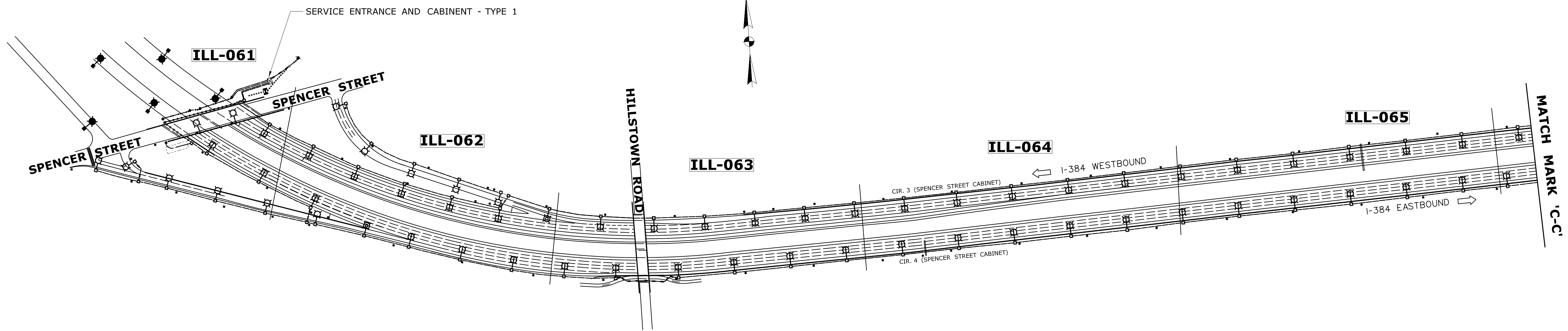
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 OFFICE OF ENGINEERING
 APPROVED BY:


PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN: **WETHERSFIELD**
 DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 3

PROJECT NO. **171-432**
 DRAWING NO. **ILL-010**
 SHEET NO. **03.010**



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

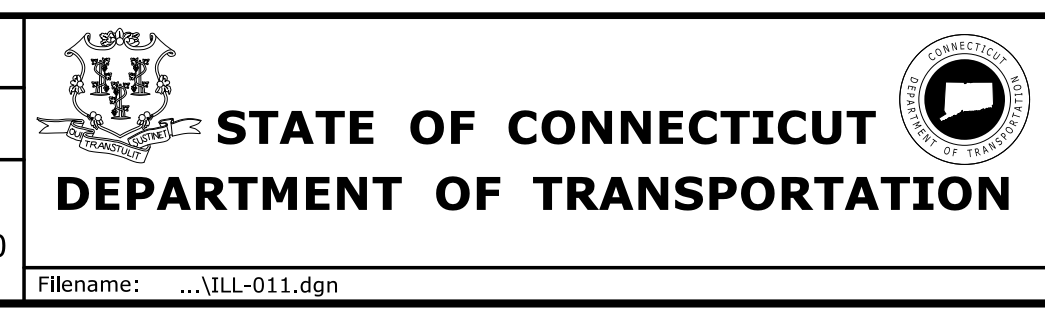
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 9/29/2017

DESIGNER/DRAFTER:
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SCALE IN FEET
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SCALE 1"=200'



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BLOCK:
OFFICE OF ENGINEERING

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PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN:
MANCHESTER

DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 4

PROJECT NO.
171-432

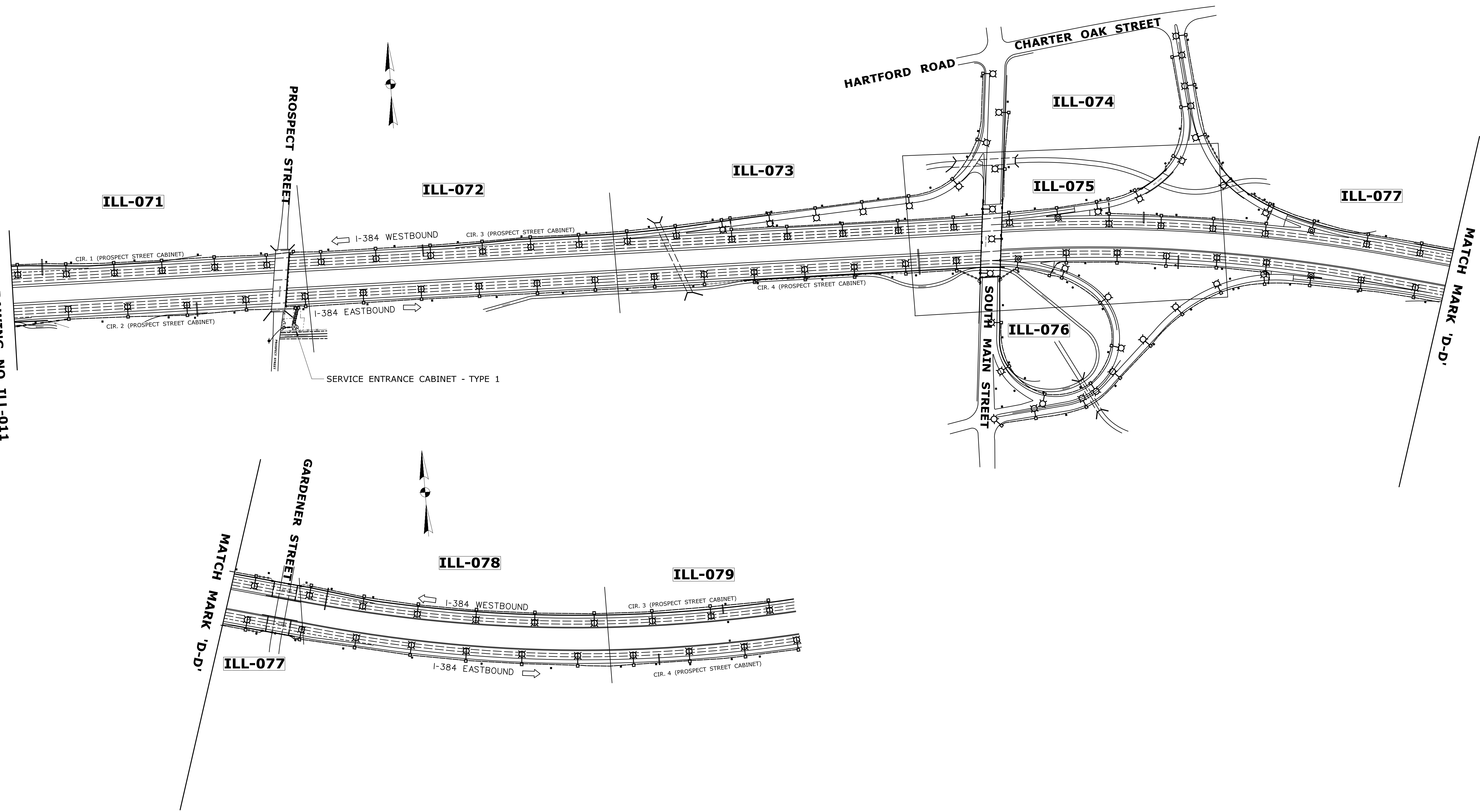
DRAWING NO.
ILL-011

SHEET NO.
03.011

MATCH MARK DRAWING NO. ILL-011

MATCH MARK 'D-D'

MATCH MARK 'D-D'



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

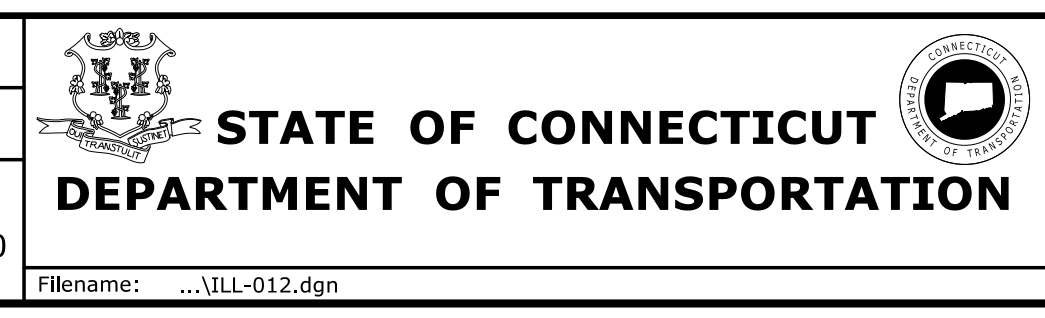
THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

Plotted Date: 9/29/2017

DESIGNER/DRAFTER:
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CHECKED BY:
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SIGNATURE/
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OFFICE OF ENGINEERING

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PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

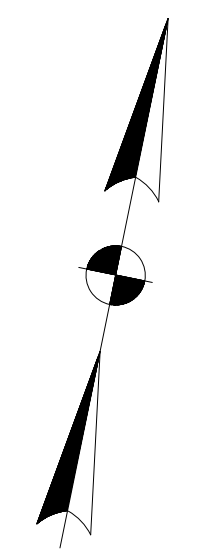
TOWN:
MANCHESTER

DRAWING TITLE:
ILLUMINATION INDEX PLAN - SITE NO. 4

PROJECT NO.
171-432

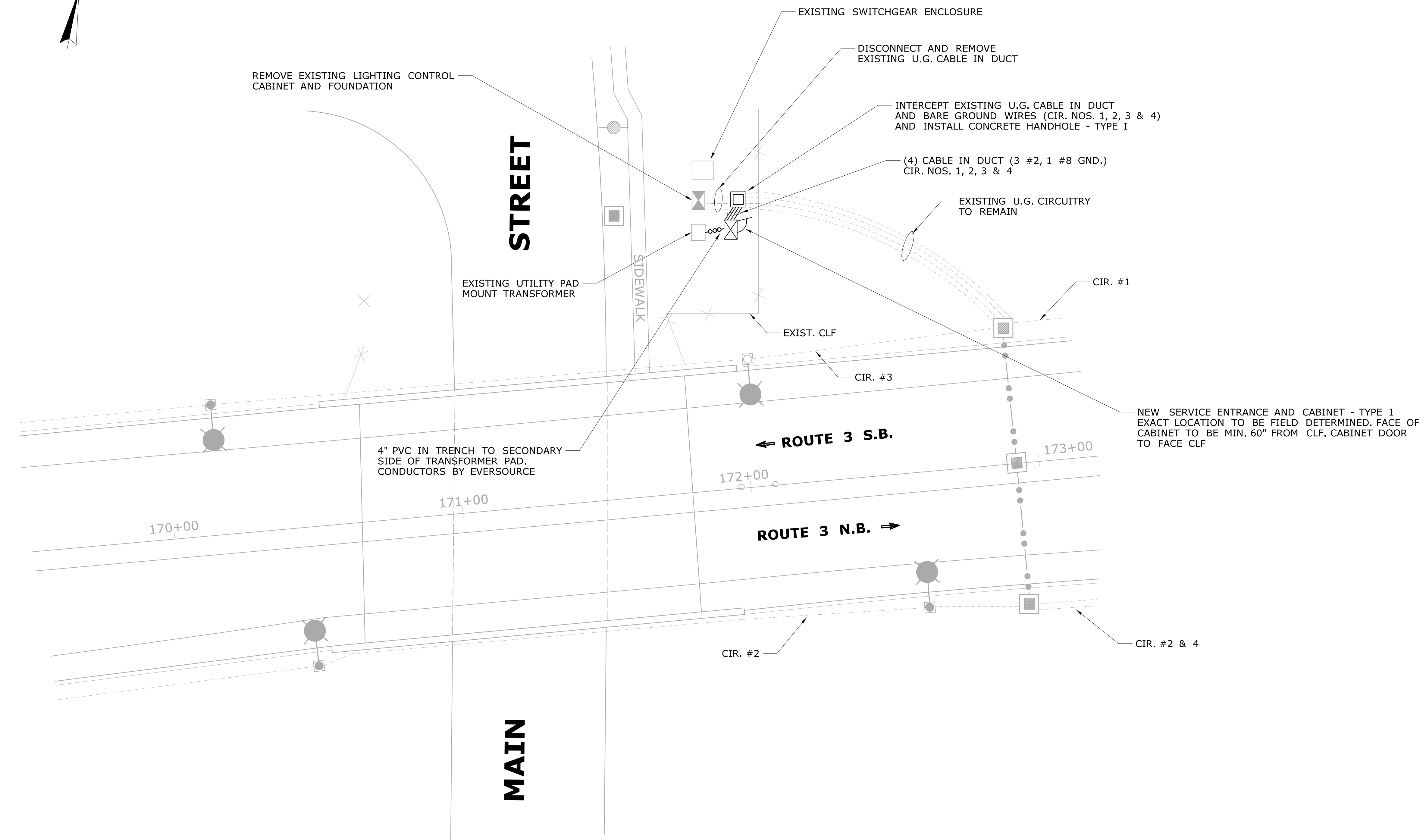
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03.012

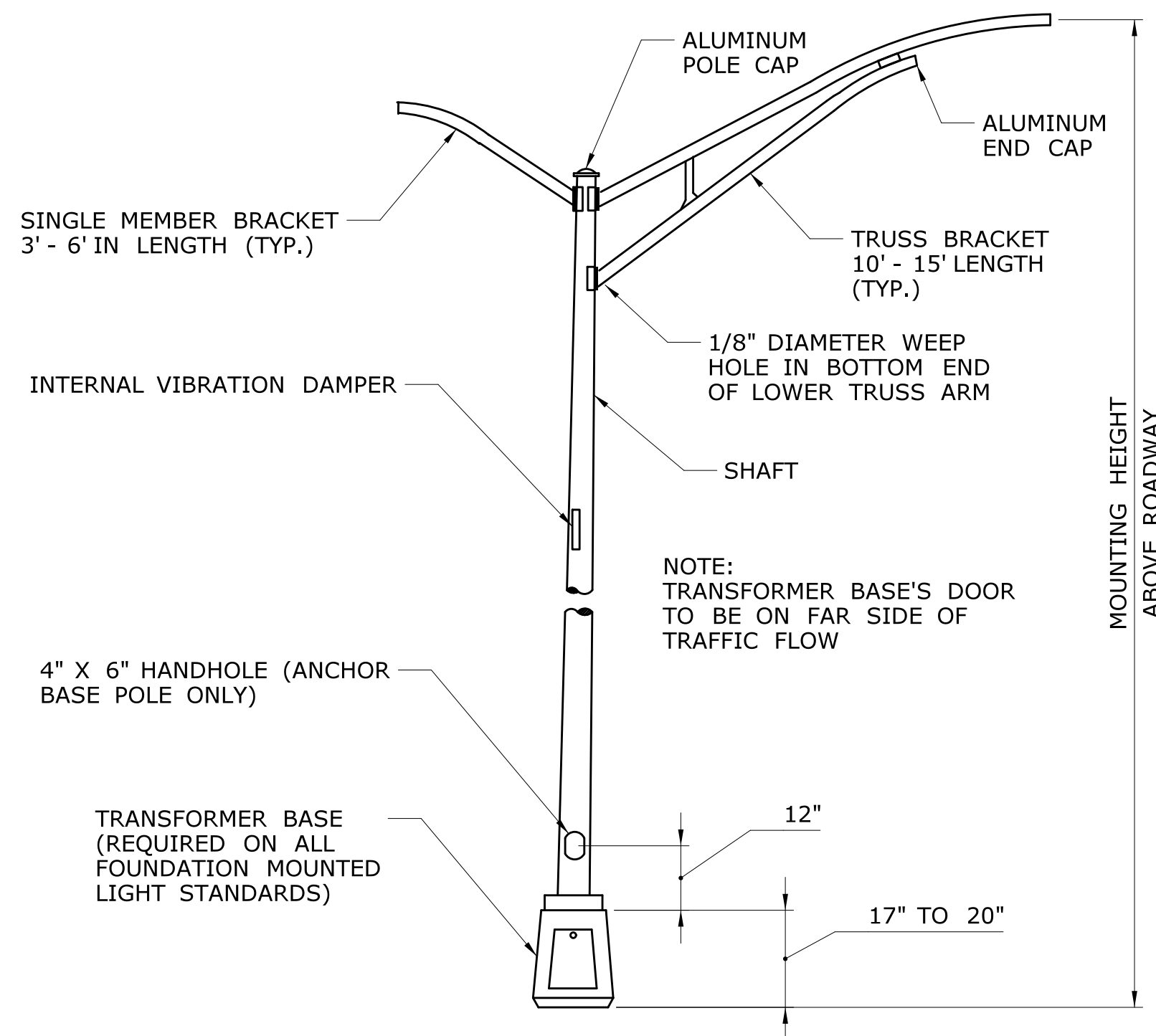


CONSTRUCTION NOTES:

1) THE WORK SHOWN ON THIS DRAWING SHALL BE CARRIED OUT IN SUCH A MANNER THAT THERE IS NO DISRUPTION IN THE PROPER NIGHTTIME OPERATION OF THE HIGHWAY LIGHTING CIRCUITS. SWITCH OVER OF THE ELECTRIC SERVICE AND LIGHTING CIRCUITS SHALL BE CARRIED OUT DURING DAYLIGHT HOURS. UNDER NO CIRCUMSTANCES SHALL THE PROPER NIGHTTIME OPERATION OF THE HIGHWAY LIGHTING CIRCUITS BE IMPACTED.



THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MSB	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: 	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: GLASTONBURY	PROJECT NO. 171-432
CHECKED BY: JA	SCALE IN FEET SCALE 1"=20'	APPROVED BY: 		DRAWING TITLE: ILLUMINATION PLAN SITE NO. 5		SHEET NO. 03.080	
REV. DATE REVISION DESCRIPTION SHEET NO.	Plotted Date: 9/19/2017	File name: ...ILL-080.dgn					

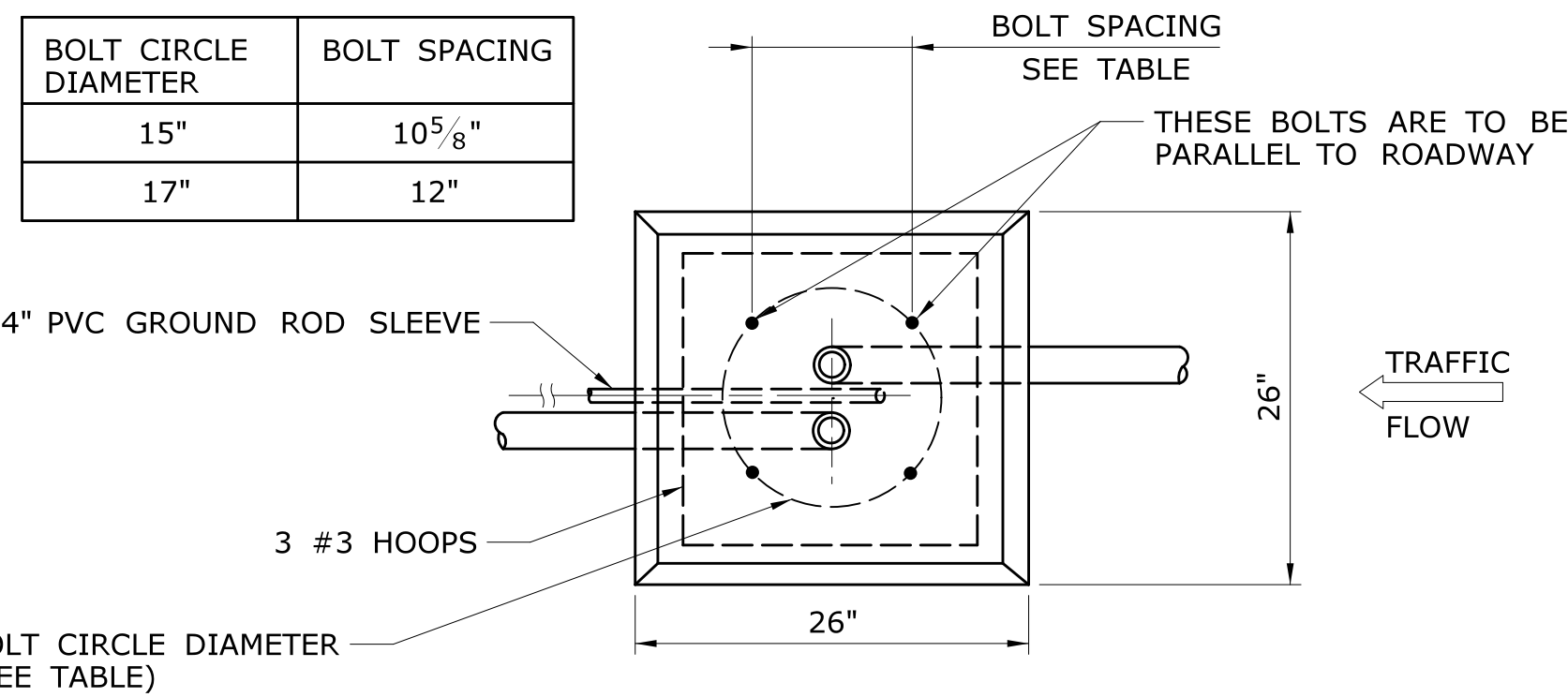


ALUMINUM LIGHT STANDARD

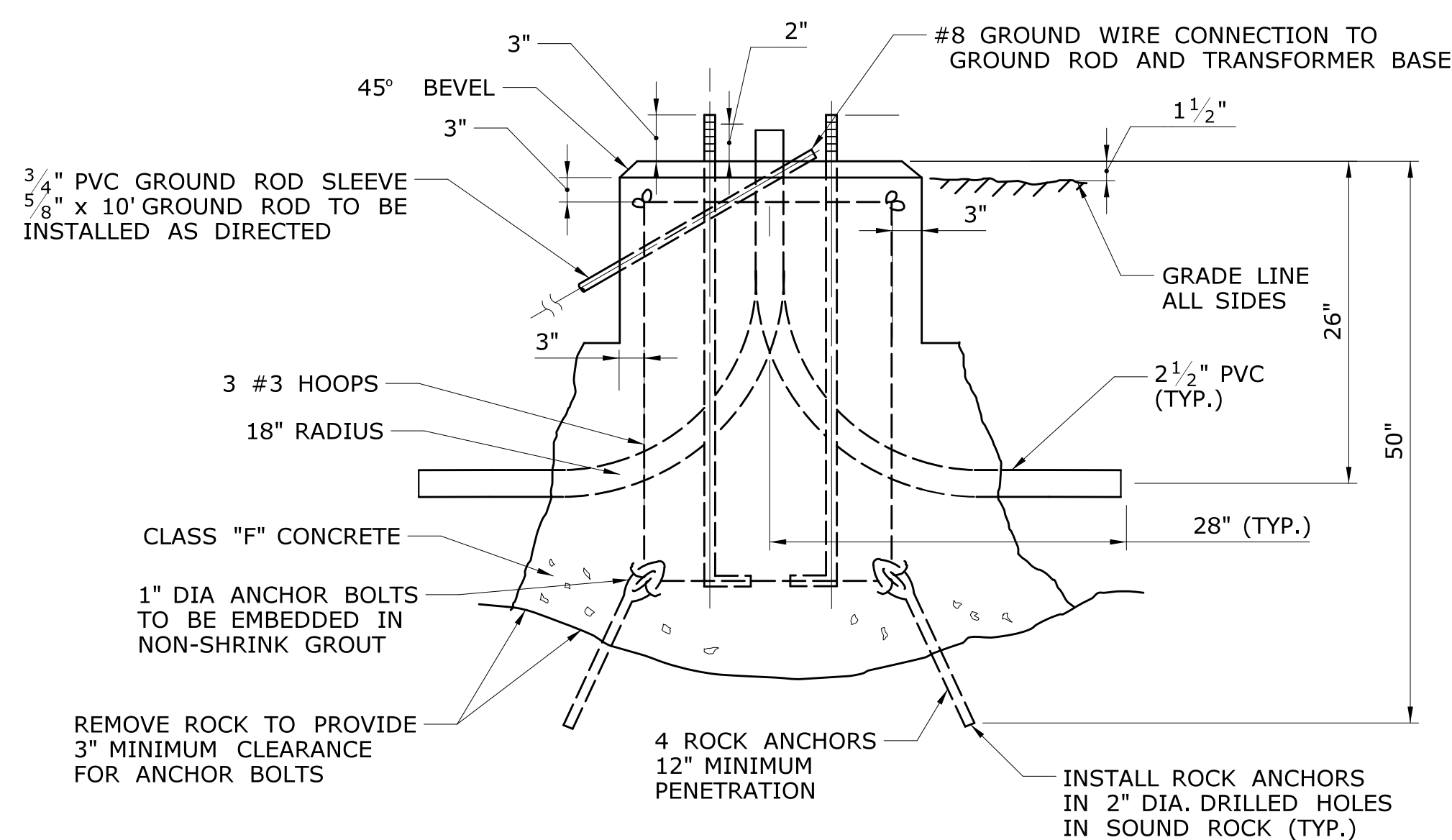
ALUMINUM LIGHT STANDARD - DIMENSION TABLE							
MOUNTING HEIGHT	BRACKET LENGTH	SHAFT DIAMETER		SHAFT WALL THICKNESS	BASE TYPE	ANCHOR BOLT SIZE	BOLT CIRCLE DIAMETER
		BOTTOM	TOP				
35'	6'	8"	6"	.188"	TRANSFORMER	1" x 40"	15"
35'	10'	8"	6"	.250"	ANCHOR	1" x 40"	11"
35'	12'	8"	6"	.250"	TRANSFORMER	1" x 40"	15"
35'	12'	8"	6"	.250"	ANCHOR	1" x 40"	11"
35'	15'	8"	6"	.250"	TRANSFORMER	1" x 40"	15"
35'	TWIN 12'	10"	6"	.250"	TRANSFORMER	1" x 40"	15"
40'	6'	10"	6"	.156"	TRANSFORMER	1" x 40"	15"
40'	6'	10"	6"	.188"	ANCHOR	1" x 40"	15"
40'	10'	10"	6"	.250"	ANCHOR	1" x 40"	15"
40'	12'	10"	6"	.188"	TRANSFORMER	1" x 40"	15"
40'	15'	10"	6"	.188"	TRANSFORMER	1" x 40"	15"
40'	20'	10"	6"	.250"	TRANSFORMER	1" x 40"	15"

LIGHT STANDARD NOTES:

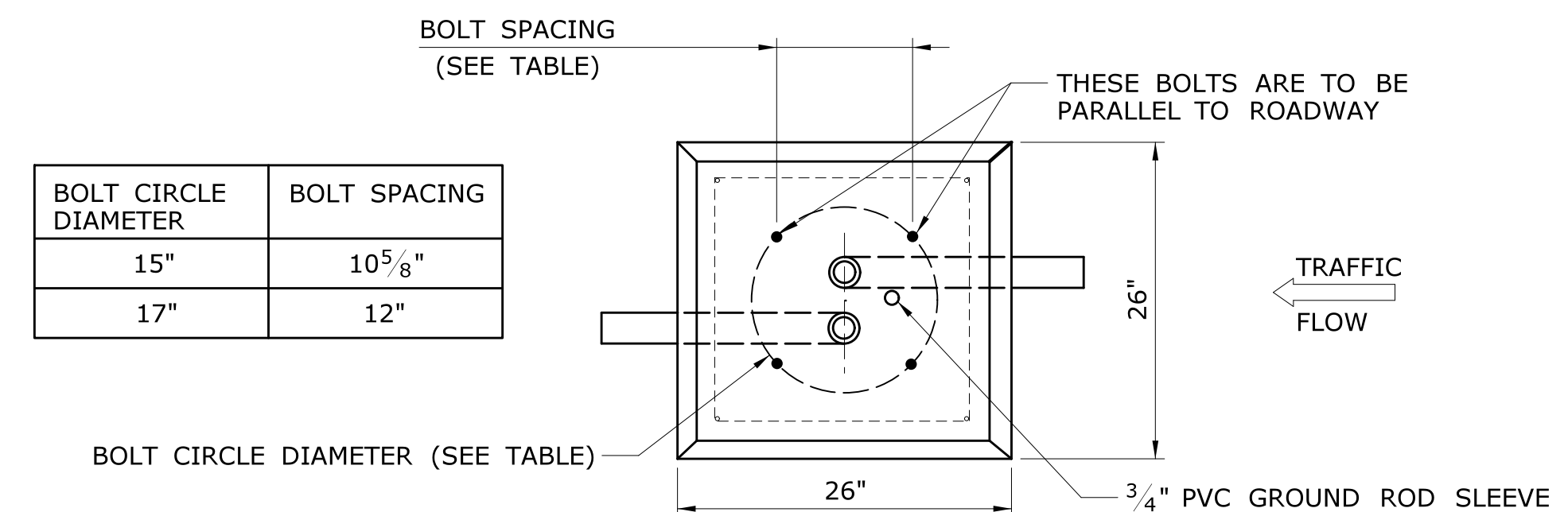
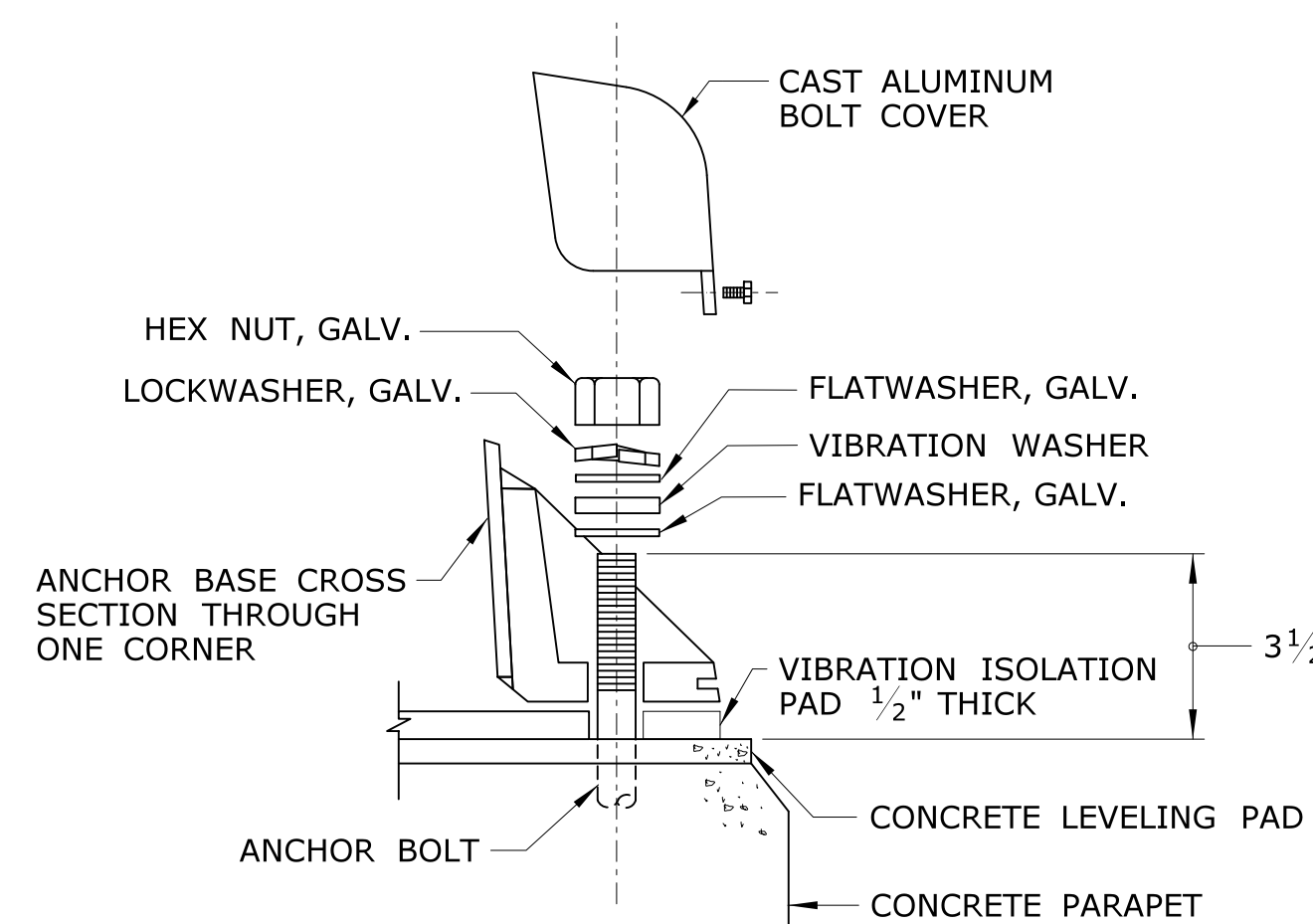
- ALUMINUM ALLOY SHALL BE 6063, T6 TEMPER.
- BOLT CIRCLE SHOWN IS FOR ANCHOR BASE BOTTOM OR TRANSFORMER BASE BOTTOM (WHICHEVER IS APPLICABLE).
- TO BE DESIGNED TO AASHTO "STANDARD SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" FOR 90 M.P.H. WINDS.
- WELDING DESIGN AND FABRICATION SHALL CONFORM TO THE LATEST EDITION OF THE ANSI/AWS D1.2, STRUCTURAL WELDING CODE - ALUMINUM.
- FOR BASE CONNECTION WELDS, FABRICATION INSPECTION AND TESTING SHALL BE PERFORMED AS NECESSARY PRIOR TO ASSEMBLY, DURING ASSEMBLY, DURING WELDING, AND AFTER WELDING, TO ENSURE THAT MATERIALS AND WORKMANSHIP MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. FABRICATION INSPECTION AND TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR. VERIFICATION INSPECTION AND TESTING IS THE PREROGATIVE OF THE ENGINEER (CONNDOT).
- NON-DESTRUCTIVE TESTING FOR ALUMINUM SHALL BE AS FOLLOWS: A RANDOM 25% OF ALL BASE CONNECTION WELDS SHALL BE INSPECTED IN ACCORDANCE WITH ASTM E-165 STANDARD PRACTICE FOR LIQUID PENETRANT INSPECTION METHOD.



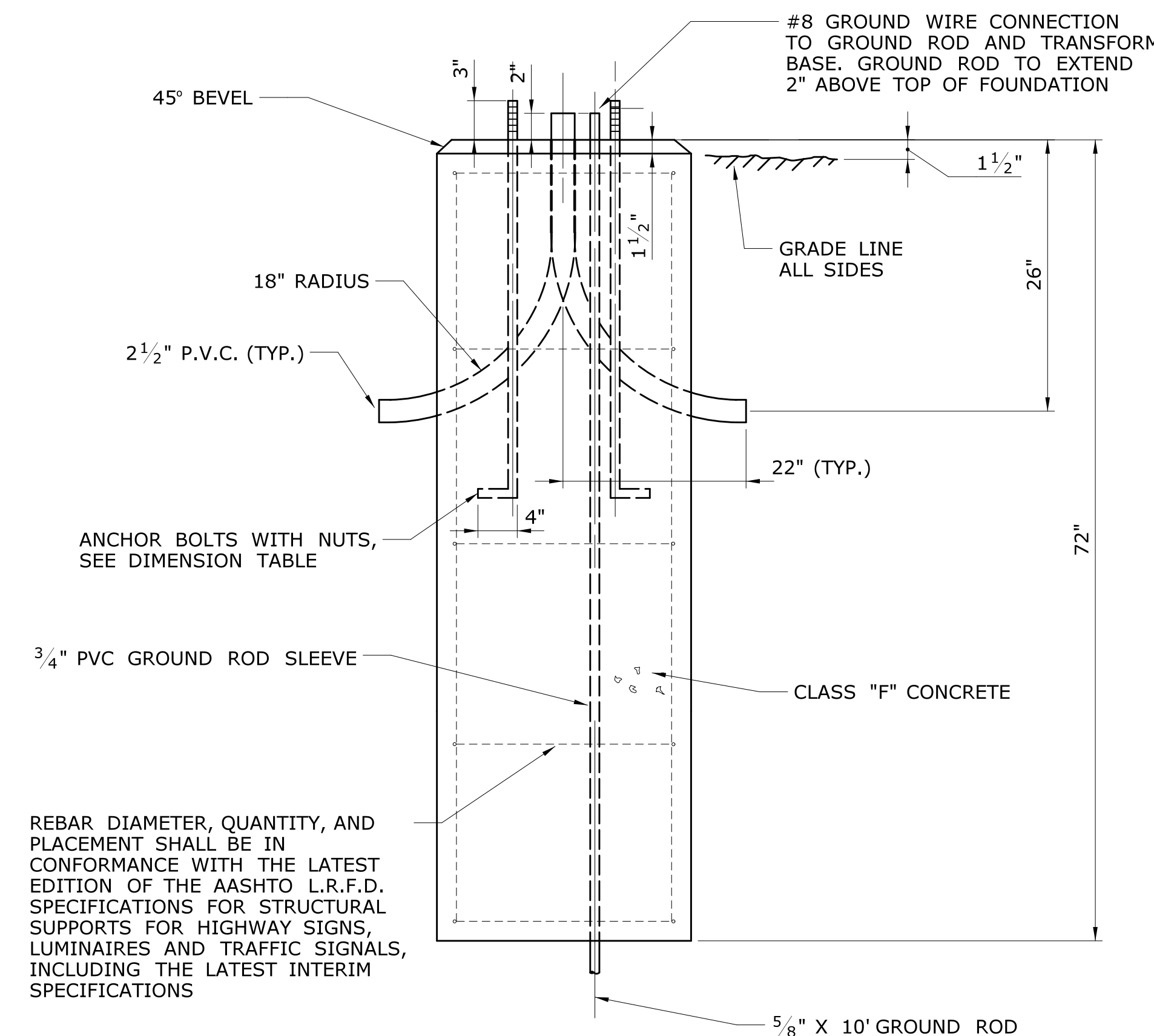
LIGHT STANDARD FOUNDATION - TYPE II



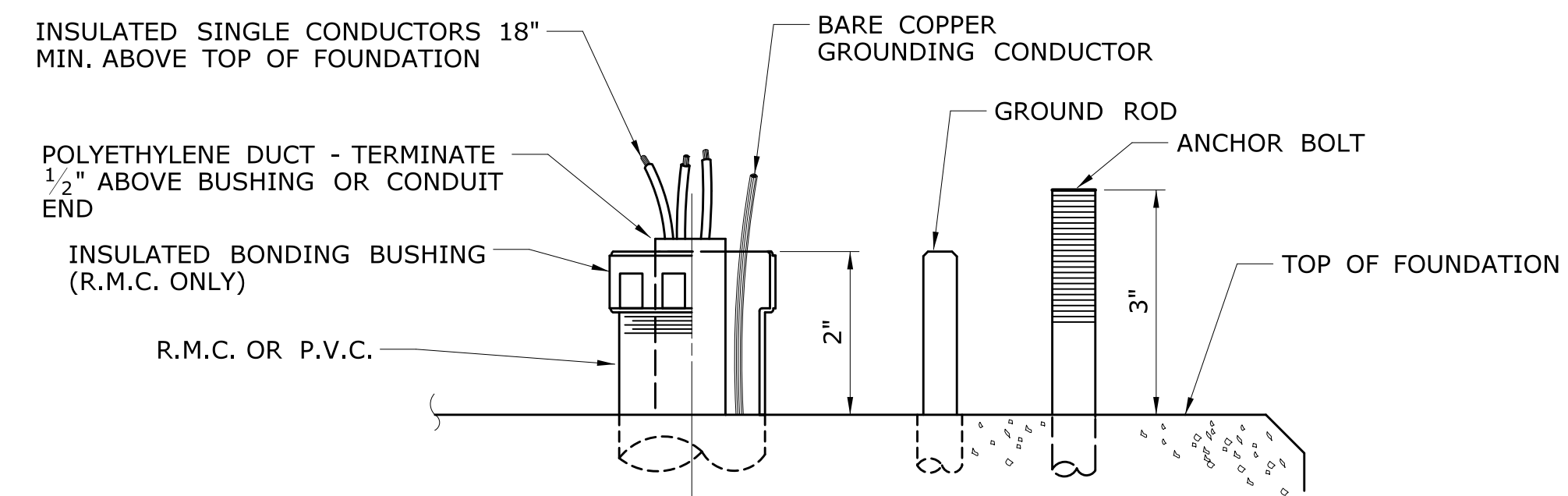
ANCHOR BASE LIGHT STANDARD MOUNTING HARDWARE

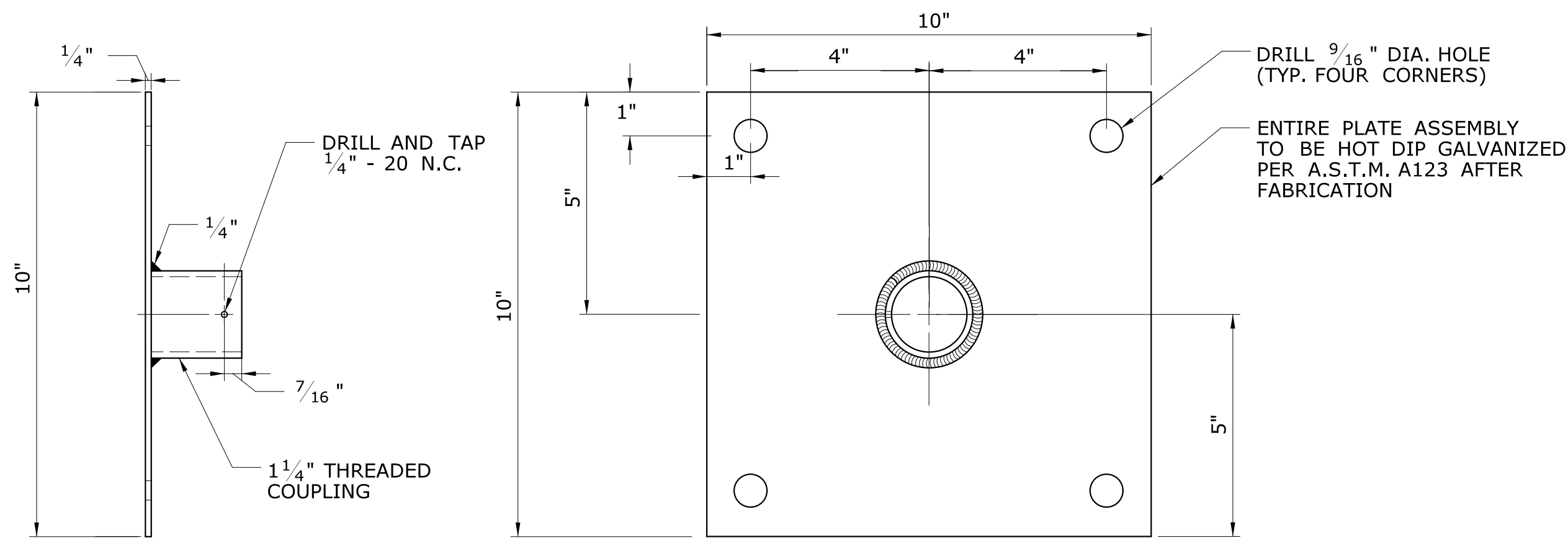


LIGHT STANDARD FOUNDATION - TYPE I



CABLE IN DUCT TERMINATION AT LIGHT STANDARD BASE

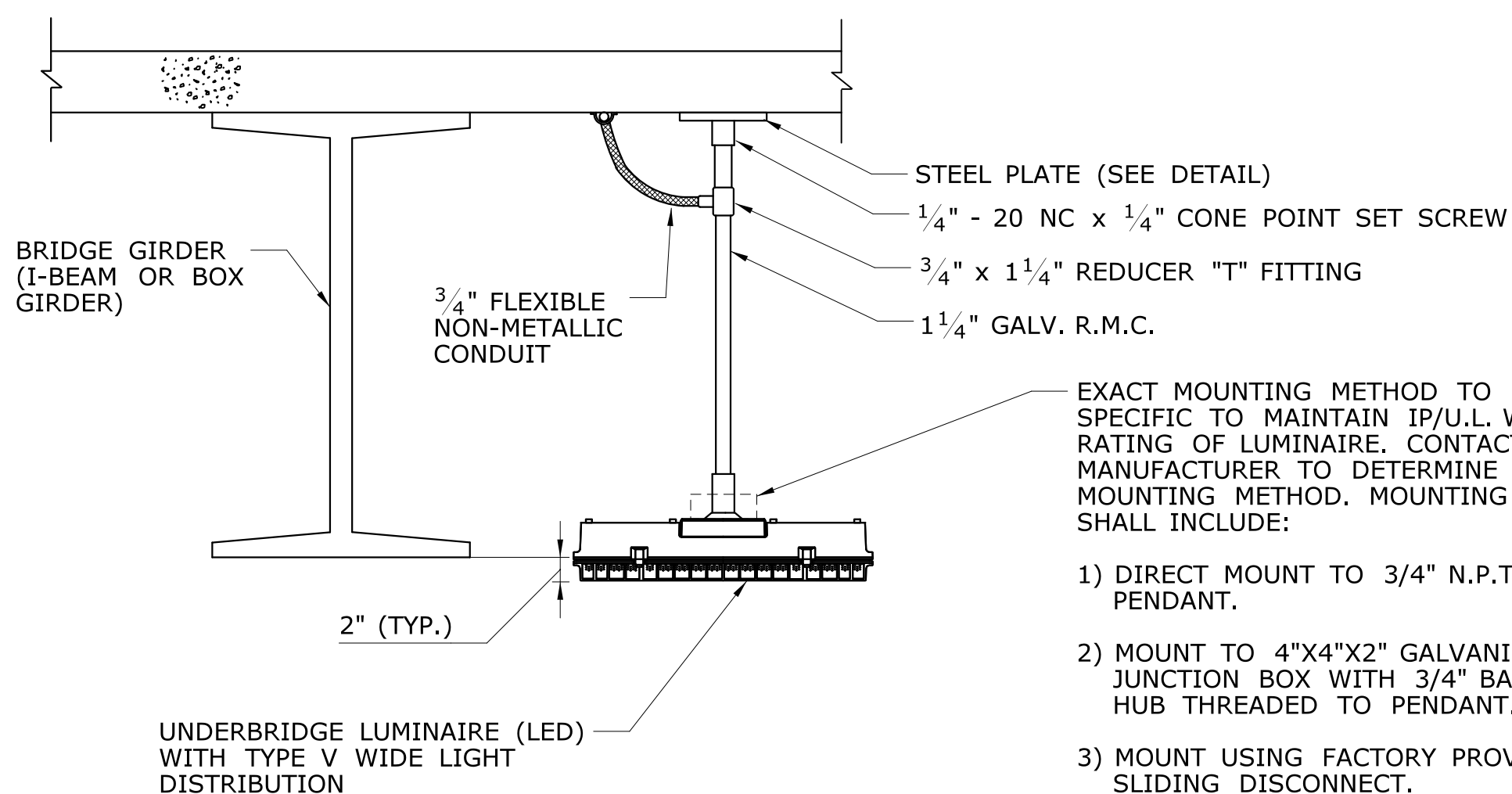




NOTE:

STEEL PLATE TO BE ATTACHED TO BRIDGE DECK USING CONNECTICUT D.O.T. APPROVED MECHANICAL ANCHOR (2). THREADED ROD SHALL BE 1/2" IN DIAMETER, HOT DIP GALVANIZED PER A.S.T.M. - A123. MECHANICAL ANCHOR SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S SPECIFICATIONS.

STEEL PLATE FOR PENDANT LUMINAIRE



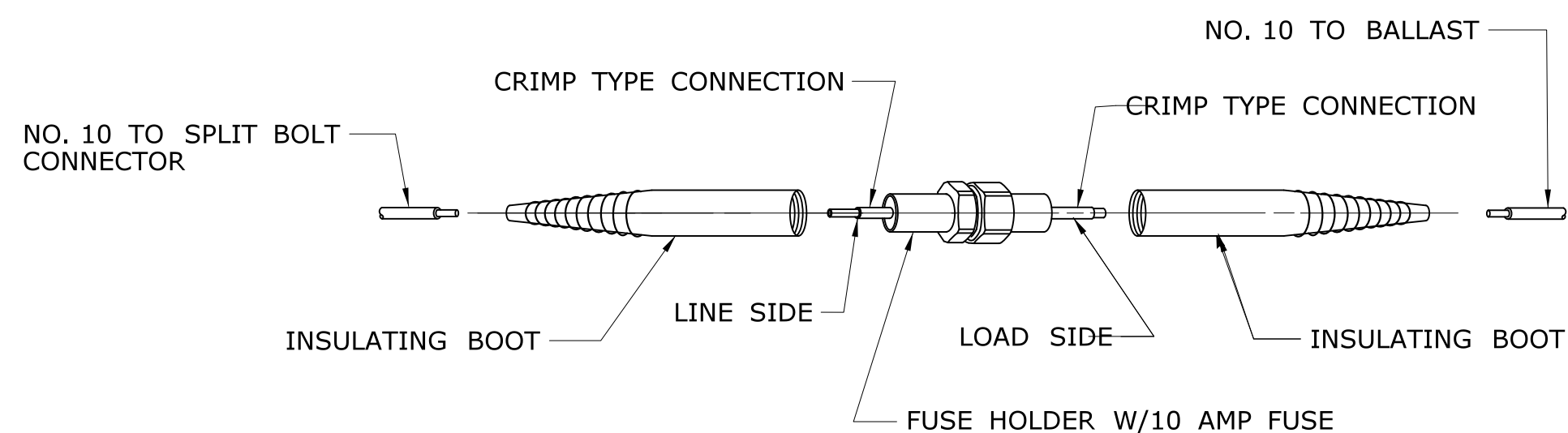
EXACT MOUNTING METHOD TO BE LUMINAIRE SPECIFIC TO MAINTAIN IP/U.L. WET LOCATION RATING OF LUMINAIRE. CONTACT LUMINAIRE MANUFACTURER TO DETERMINE REQUIRED MOUNTING METHOD. MOUNTING METHODS SHALL INCLUDE:

- 1) DIRECT MOUNT TO 3/4" N.P.T. THREADED PENDANT.
- 2) MOUNT TO 4"x4"x2" GALVANIZED CAST IRON JUNCTION BOX WITH 3/4" BACKWALL CONDUIT HUB THREADED TO PENDANT.
- 3) MOUNT USING FACTORY PROVIDED GASKETED SLIDING DISCONNECT.

* LUMINAIRE MOUNTING METHOD SHALL MAINTAIN IP65/66 RATING OR U.L. WET LOCATION LISTING OF LUMINAIRE

NOTE: FOR LOW CLEARANCE STRUCTURES, HEIGHT OF LUMINAIRE BOTTOM ABOVE ROADWAY SHALL NOT BE LESS THAN 14' - 3"

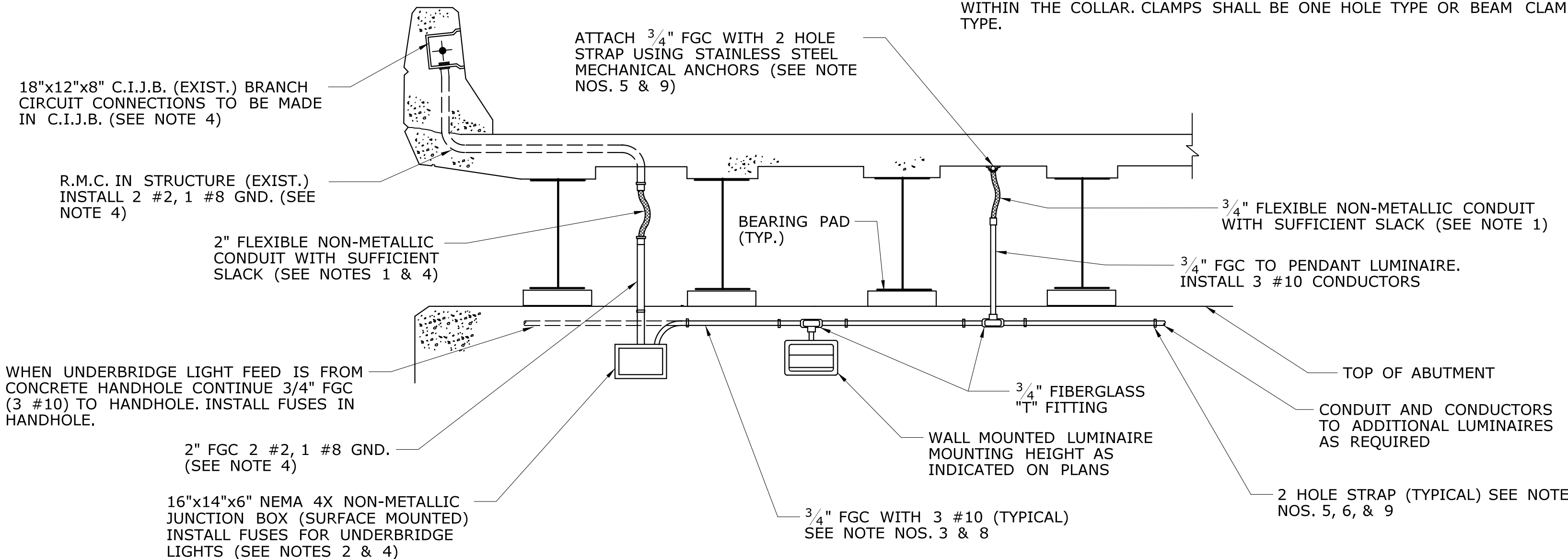
UNDERBRIDGE LUMINAIRE - PENDENT MOUNTING



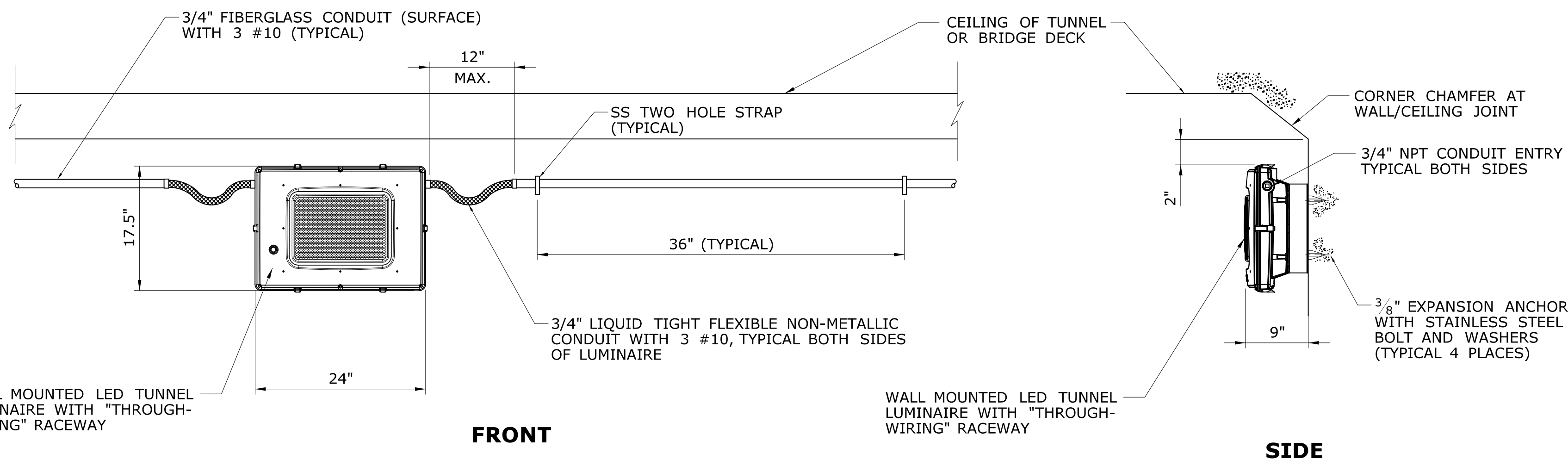
INSULATED FUSE CONNECTOR

NOTES:

1. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE THE MAXIMUM AMOUNT OF MOVEMENT BETWEEN THE BRIDGE SUPERSTRUCTURE AND THE ABUTMENT/PIER. AN APPROPRIATE LENGTH OF FLEXIBLE CONDUIT SHALL BE INSTALLED TO ACCOMMODATE THIS MOVEMENT.
2. SURFACE MOUNTED JUNCTION BOX SHALL BE PAID FOR UNDER ITEM NO. 1009503A. 2" FGC (SURFACE), 2" FLEXIBLE CONDUIT (LFNC), NO. 2 CONDUCTORS, AND NO. 8 GROUNDING CONDUCTOR TO BE INCLUDED AS PART OF UNDERBRIDGE LIGHT ITEM.
3. 3/4" FIBERGLASS CONDUIT (FGC) SHALL BE STANDARD WALL TYPE (0.070" WALL THICKNESS). 2" FIBERGLASS CONDUIT SHALL BE EXTRA HEAVY WALL TYPE (0.250" WALL THICKNESS)
4. IF THE LIGHTING PLANS INDICATE THAT THE ELECTRICAL FEED TO THE UNDERBRIDGE LUMINAIRE IS TO COME FROM AN ADJACENT CONCRETE HANDHOLE, THEN THE SURFACE MOUNTED JUNCTION BOX, 2" LFNC, 2" FGC, AND CONDUCTORS BACK TO THE CIJB ARE NOT TO BE INSTALLED. FOR FEED FROM CONCRETE HANDHOLE, EXTEND 3/4" FGC (WITH 3 #10) TO HANDHOLE, INSTALL FUSE KITS, AND MAKE CIRCUIT CONNECTION IN HANDHOLE.
5. CONDUIT SUPPORT SPACING SHALL NOT EXCEED 3'-0" AS PER N.E.C. 355.30.
6. ALL MECHANICAL ANCHORS AND MOUNTING HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
7. WHEN THE FGC IS 50' TO 200' LONG, INSTALL ONE SINGLE EXPANSION CONDUIT JOINT (4" MOVEMENT) AT THE MID-POINT OF THE CONDUIT RUN. FOR CONDUIT LENGTHS OVER 200', INSTALL ONE SINGLE EXPANSION CONDUIT JOINT EVERY 200'. AT BRIDGE EXPANSION JOINTS, INSTALL ONE DOUBLE EXPANSION (8" MOVEMENT) CONDUIT JOINT. CONDUIT EXPANSION JOINTS SHALL HAVE AN INTERNAL O-RING.
8. WHERE FIBERGLASS CONDUIT IS FIELD CUT, THE OUTSIDE SURFACE OF THE CUT END SHALL BE SANDED TO REMOVE THE RESIN GLAZE PRIOR TO APPLYING ADHESIVE.
9. WHEN ATTACHING FGC TO CONCRETE, TWO HOLE MOUNTING STRAPS SHALL BE USED. THE TWO HOLE MOUNTING STRAPS SHALL BE SIZED TO ALLOW THE CONDUIT TO FLOAT FREELY WITHIN THE STRAP.
10. WHEN ATTACHING FGC TO STEEL, A "SLIP COLLAR" SHALL BE INSTALLED AT ALL CLAMP LOCATIONS TO ALLOW THE CONDUIT TO FLOAT FREELY WITHIN THE COLLAR. CLAMPS SHALL BE ONE HOLE TYPE OR BEAM CLAMP TYPE.

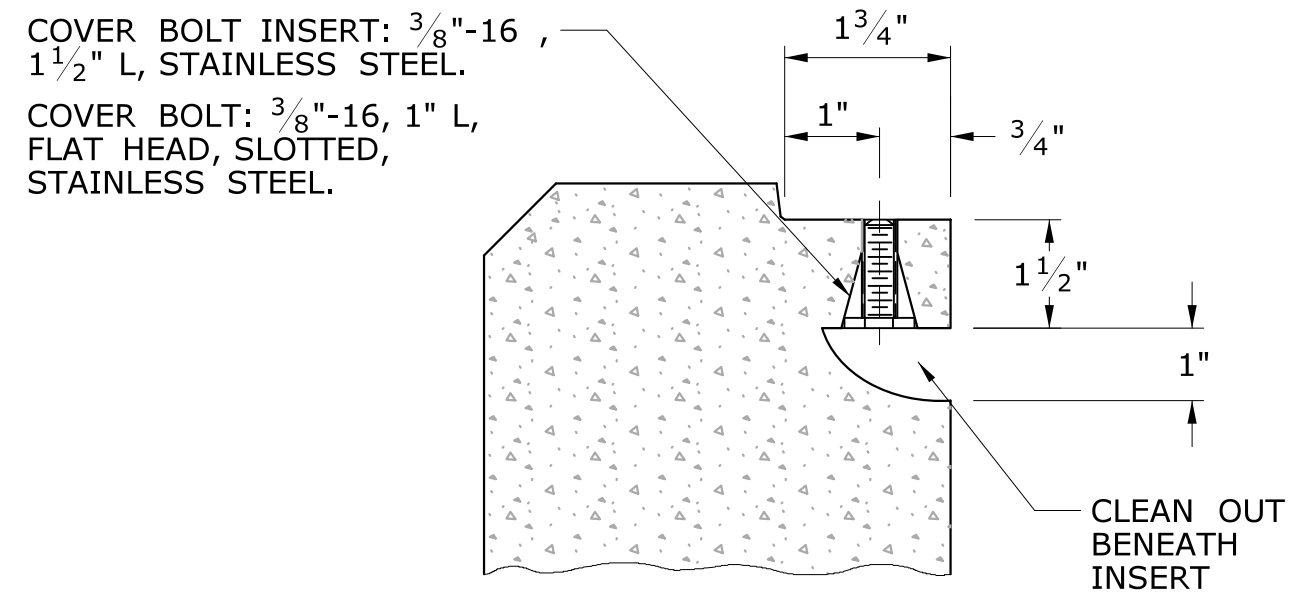
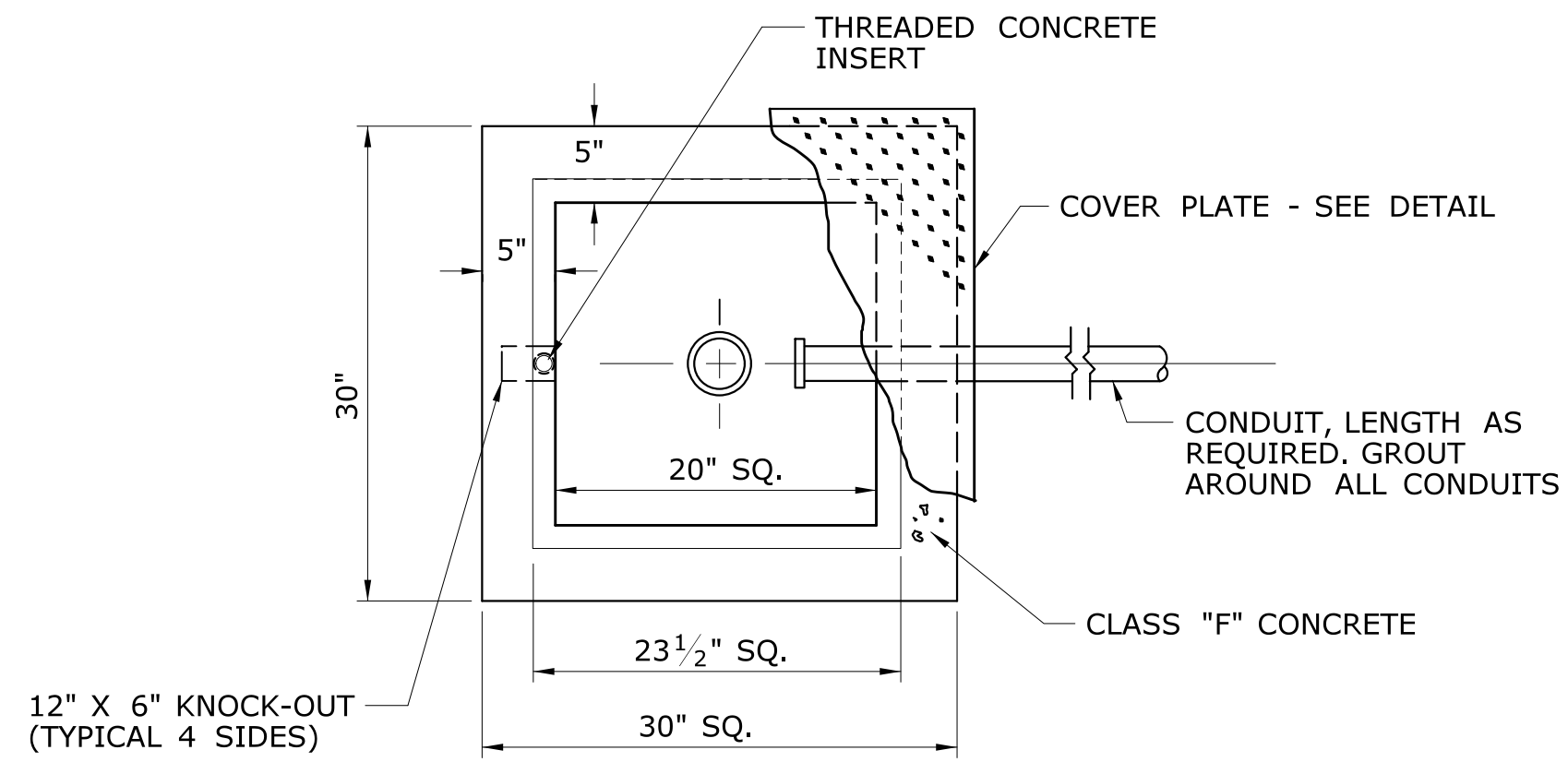


TYPICAL LAYOUT AND FEED FOR UNDERBRIDGE LUMINAIRE, WALL OR PENDANT MOUNTED

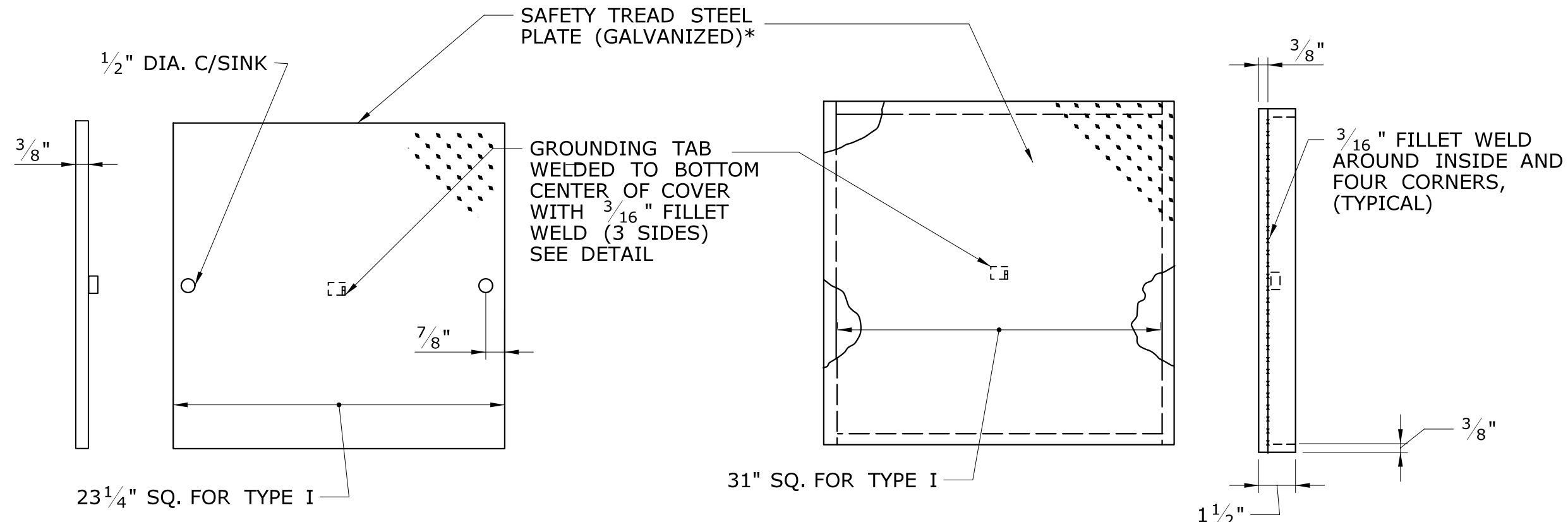


TYPICAL LAYOUT AND FEED FOR TUNNEL LUMINAIRE AT ROUTE 72 TUNNEL

REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017	DESIGNER/DRAFTER: MSB	CHECKED BY: JA	NO SCALE	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: DATE:	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432 DRAWING NO. ILL-082 SHEET NO. 03.082
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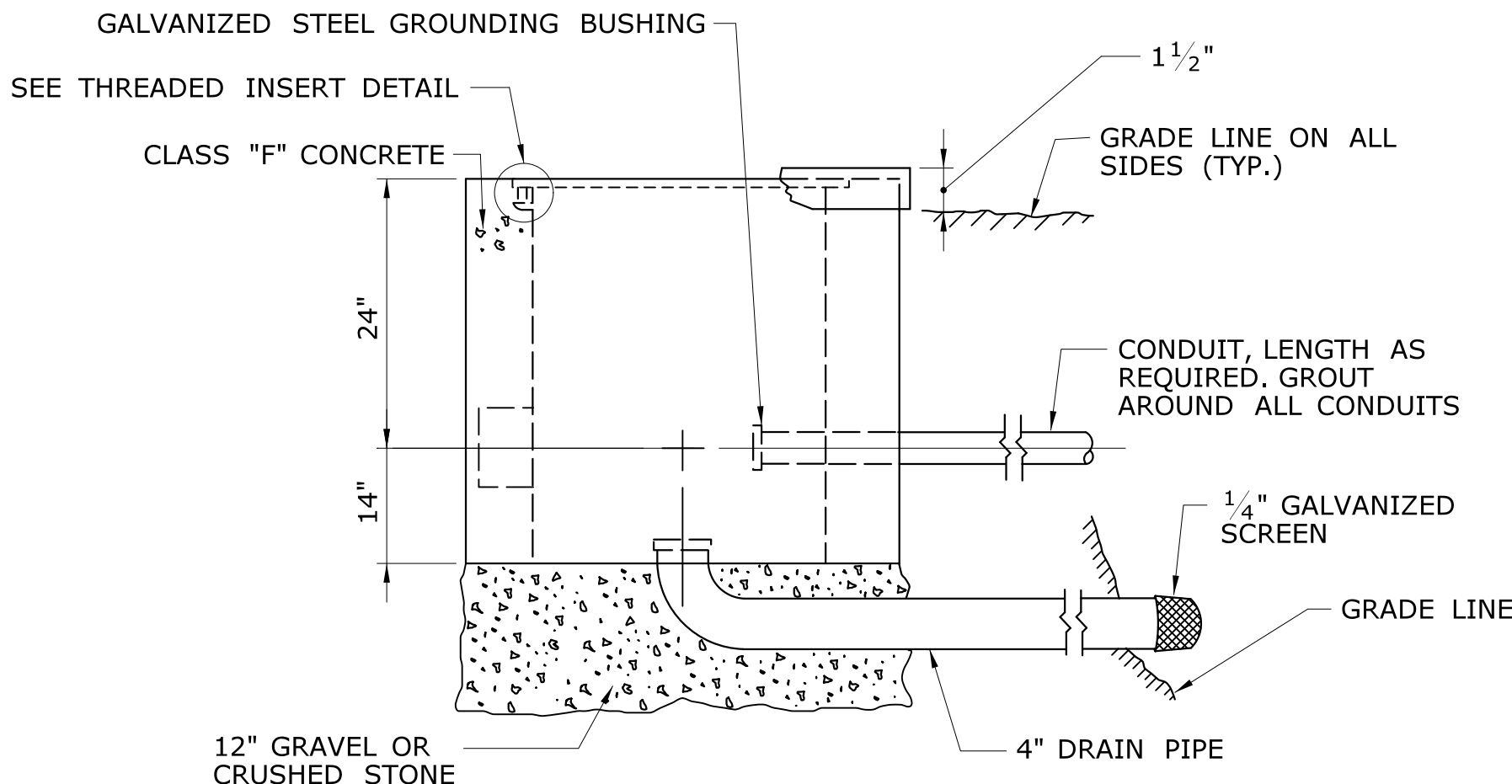
THREADED INSERT



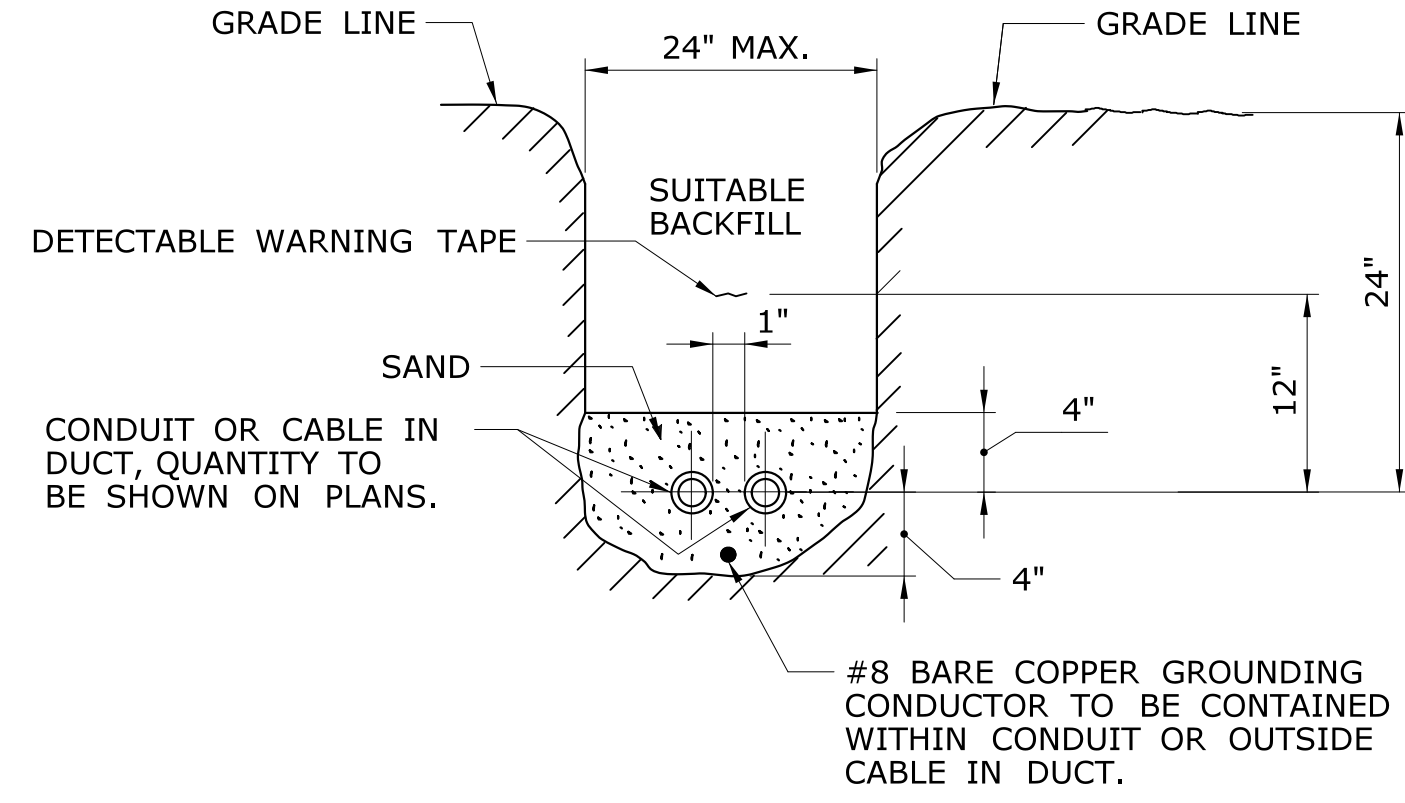
*GALVANIZE COMPLETE COVER ASSEMBLY AFTER WELDING
 RECESSED COVER TO BE USED IN MEDIAN, IN PAVEMENT, IN SIDEWALK, OR WHERE INDICATED ON PLANS.

RECESSED TYPE COVER

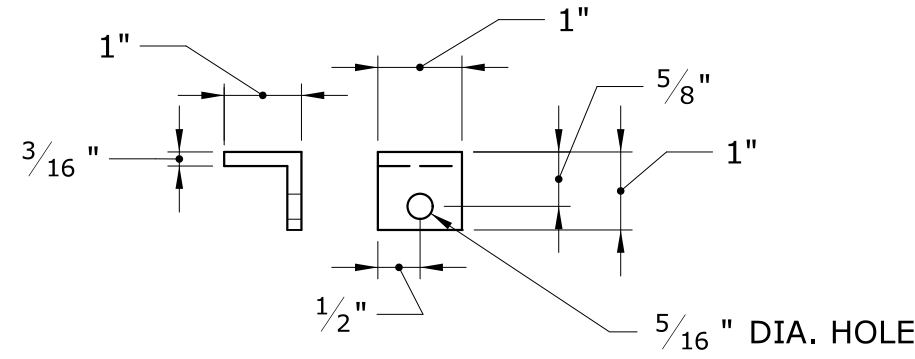
OVERLAP TYPE COVER



CONCRETE HANDHOLE - TYPE I

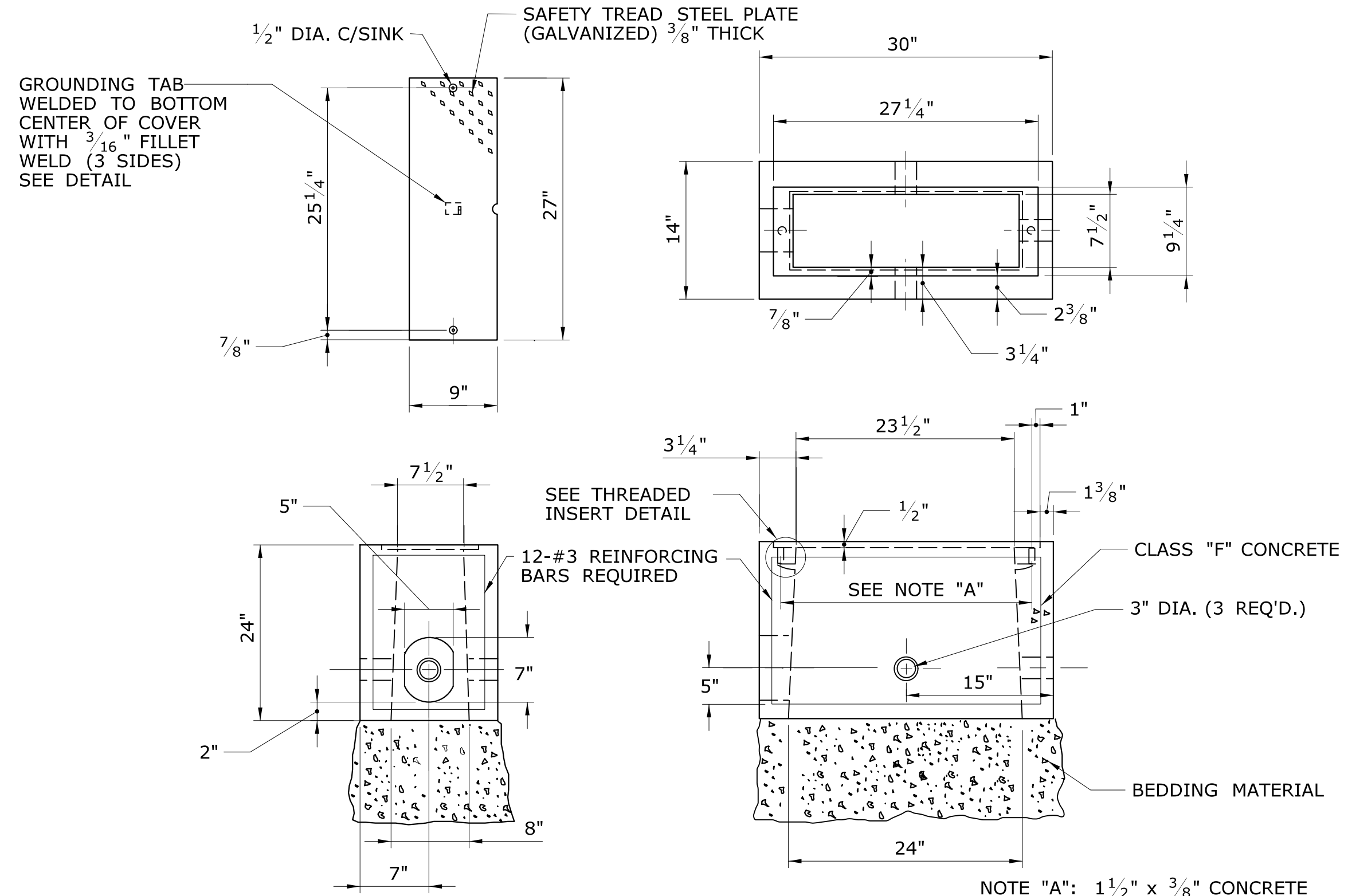


BURIED CONDUIT OR CABLE IN DUCT



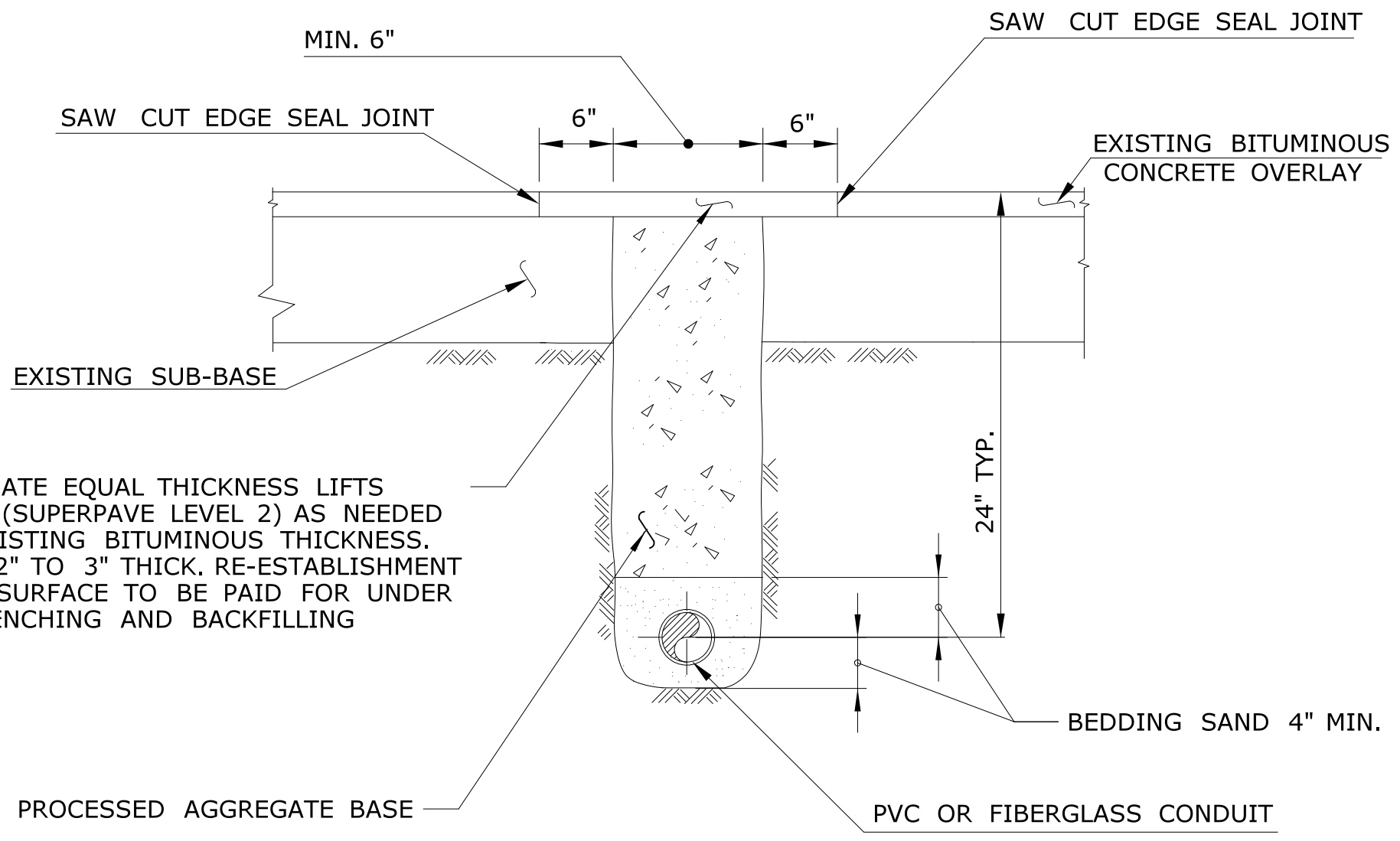
NOTE: ATTACH 72" LENGTH OF NO. 8 GROUND WIRE TO GROUNDING TAB WITH ONE HOLE LUG, 1/4" X 3/4" LG. SST HEX HEAD BOLT, AND SST FLAT WASHER. ATTACH FREE END OF GROUND WIRE TO NO. 8 BARE GROUND WIRE IN HANDHOLE.

STEEL GROUNDING TAB



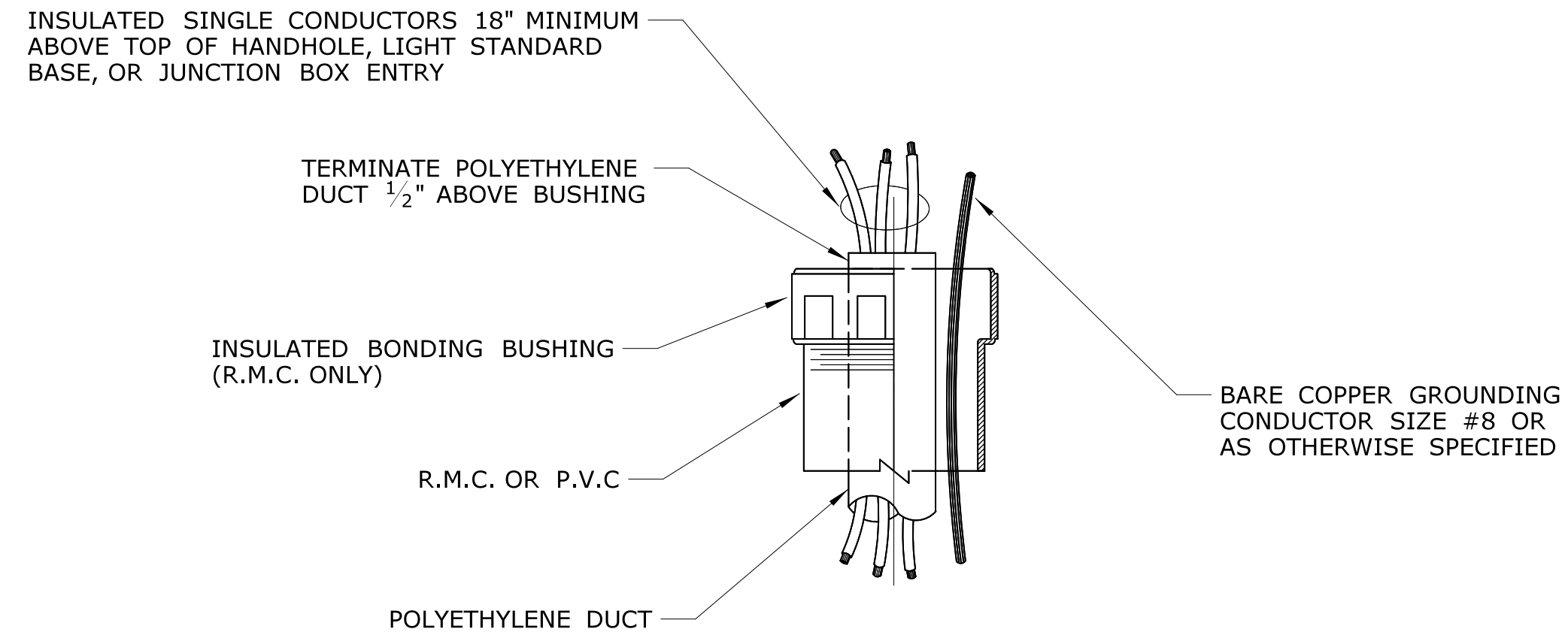
NOTE "A": 1 1/2" X 3/8" CONCRETE INSERT, STANDARD THREAD, FLAT HEAD BOLT, RECESSED IN PLATE COVER 24 1/4" O.C.

CONCRETE HANDHOLE - TYPE II

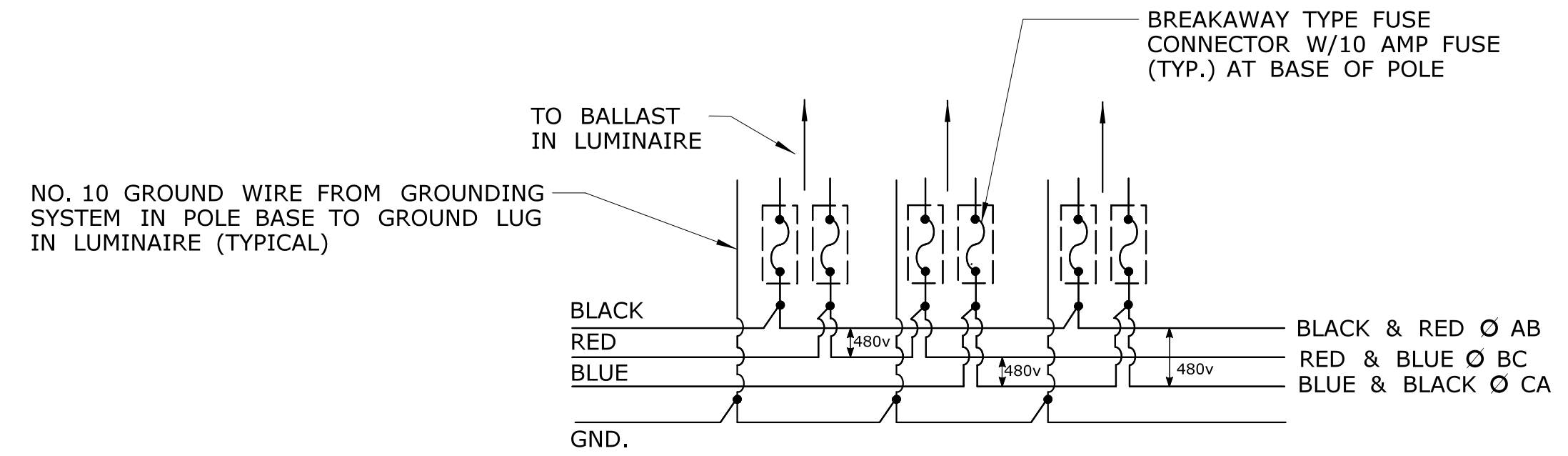


CONDUIT UNDER ROADWAY

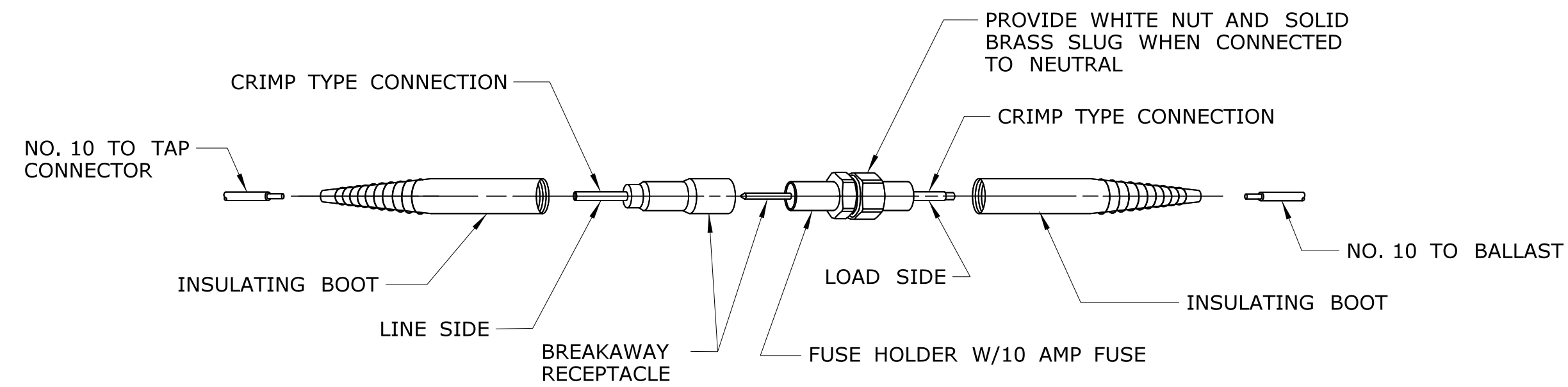
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017			



CABLE IN DUCT TERMINATION AT LIGHT STANDARD BASE, HANDHOLE AND CAST IRON JUNCTION BOX

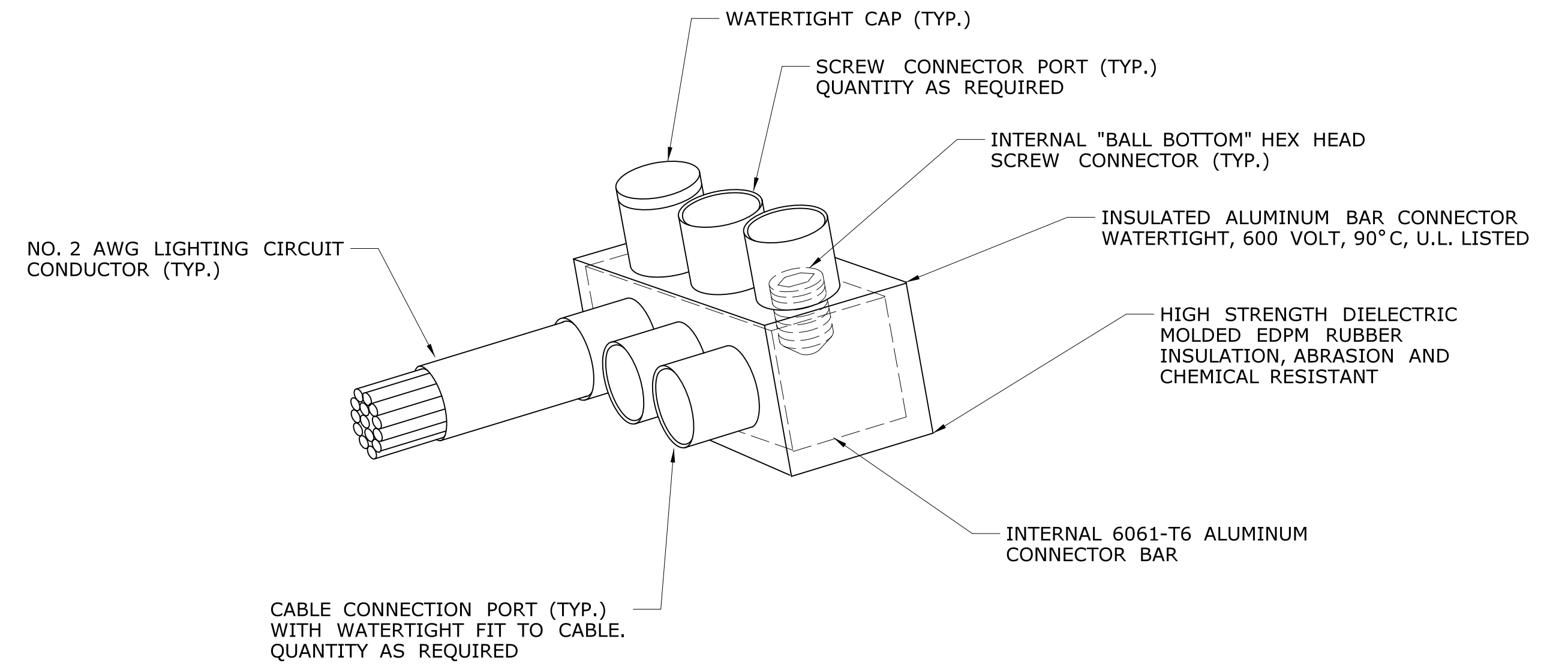


3 PHASE 3 WIRE SYSTEM



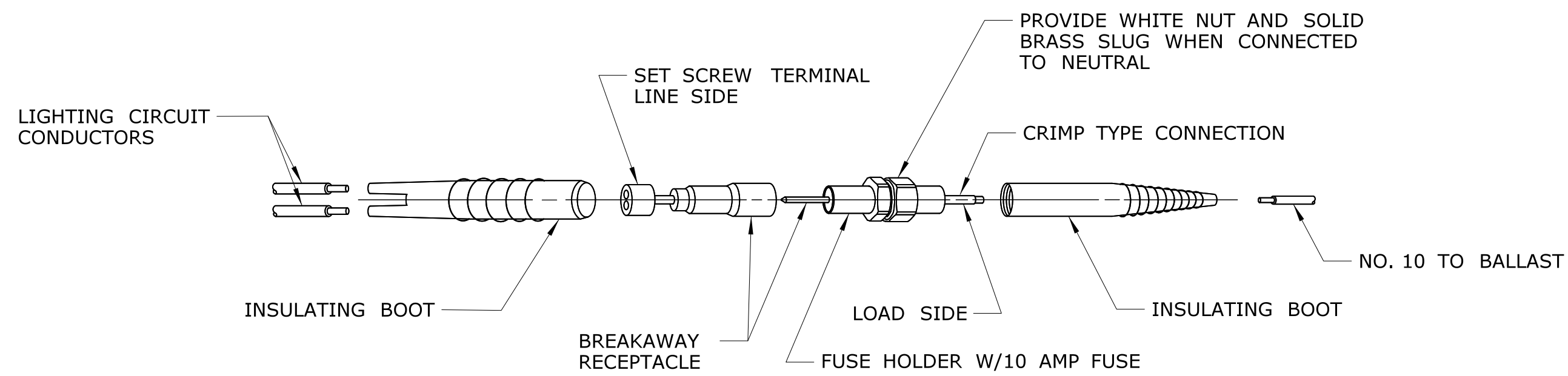
BREAKAWAY FUSE CONNECTOR

TO BE USED WITH TWIN LUMINAIRE LIGHT STANDARDS (4 REQUIRED PER LIGHT STANDARD) AND UNDERBRIDGE LUMINAIRES



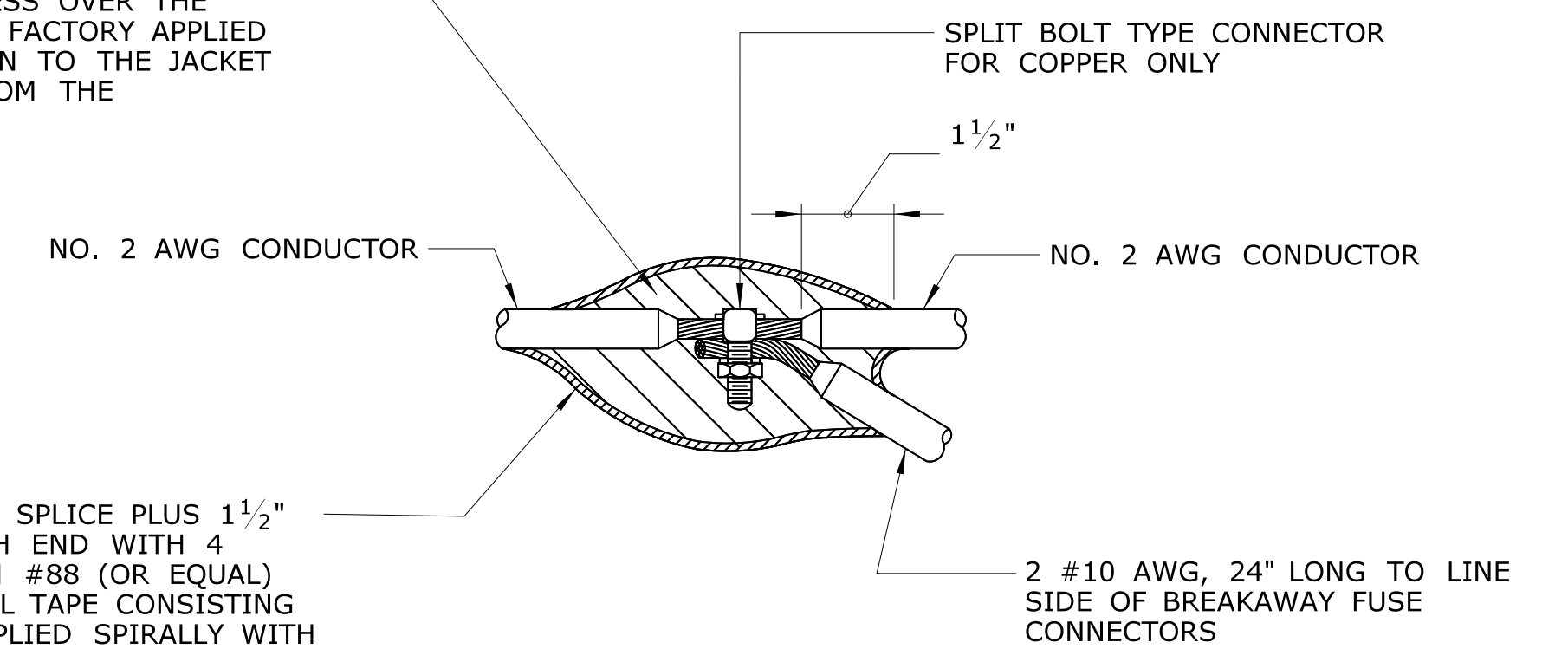
WATERTIGHT CONNECTOR

TO BE USED IN HANDHOLES AND JUNCTION BOXES



BREAKAWAY FUSE CONNECTOR

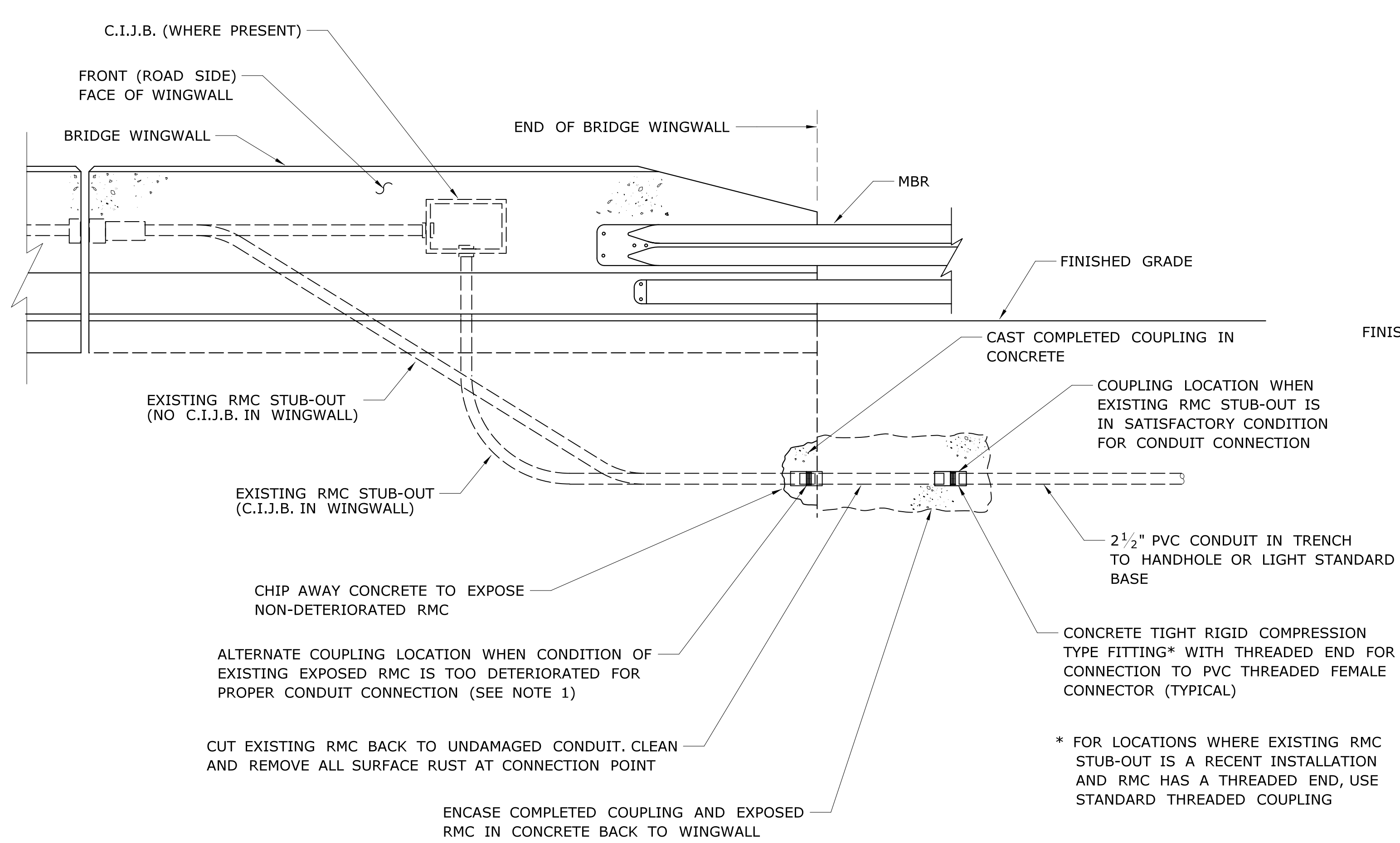
APPLY RUBBER SPLICING TAPE WITH APPROX. 50% OVERLAP TO A THICKNESS OVER THE CONNECTOR 1 1/2 TIMES THE FACTORY APPLIED INSULATION AND TAPER DOWN TO THE JACKET AT A POINT APPROX. 1 1/2" FROM THE EDGE OF PENCIL



TAP CONNECTOR

TO BE USED W/TWIN LUMINAIRE LIGHT STANDARDS

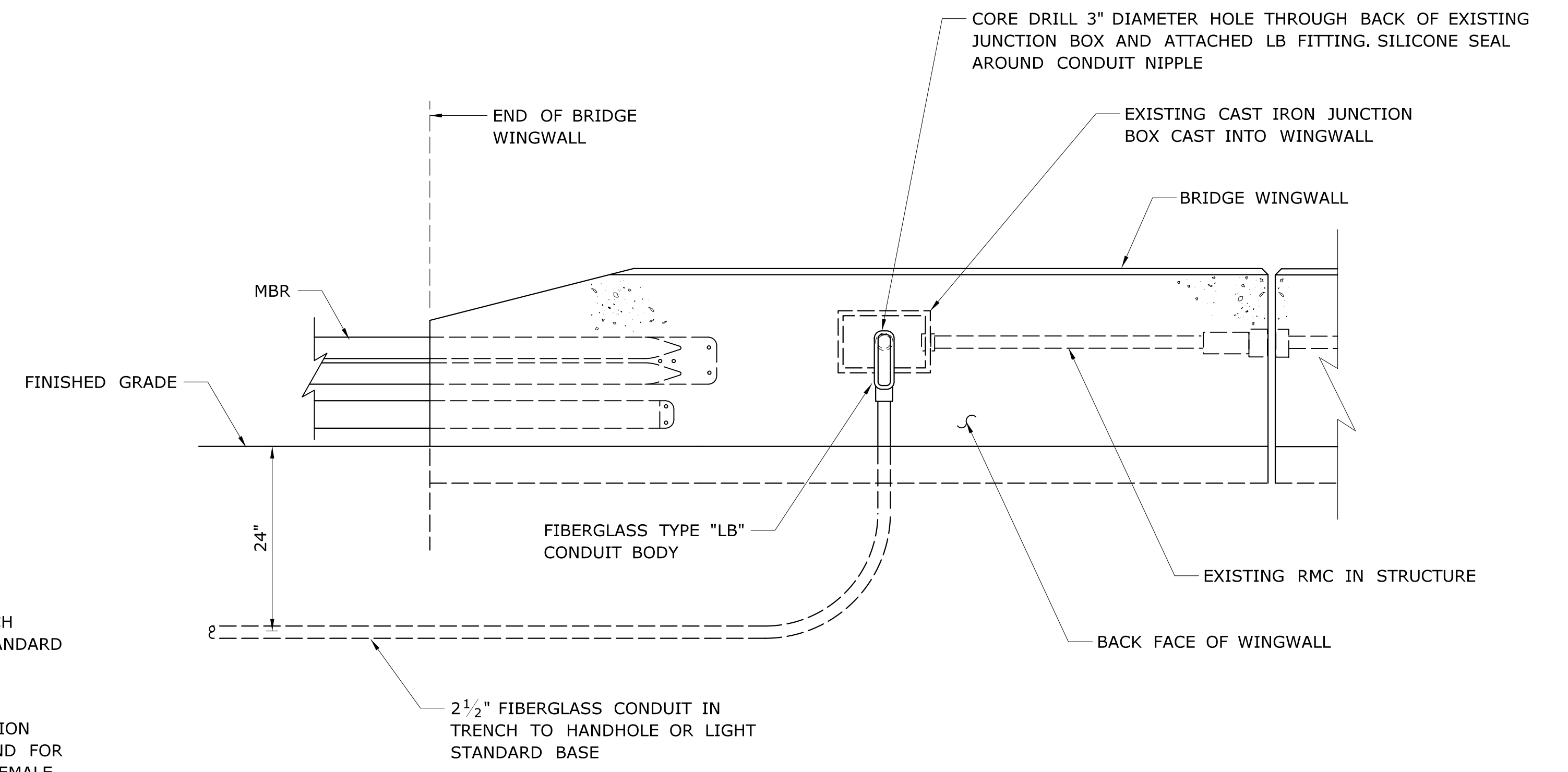
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CHECKED BY: JA						
NO SCALE		Plotted Date: 9/19/2017 Filename: ...\\engineering_data\ILL-084.dgn				



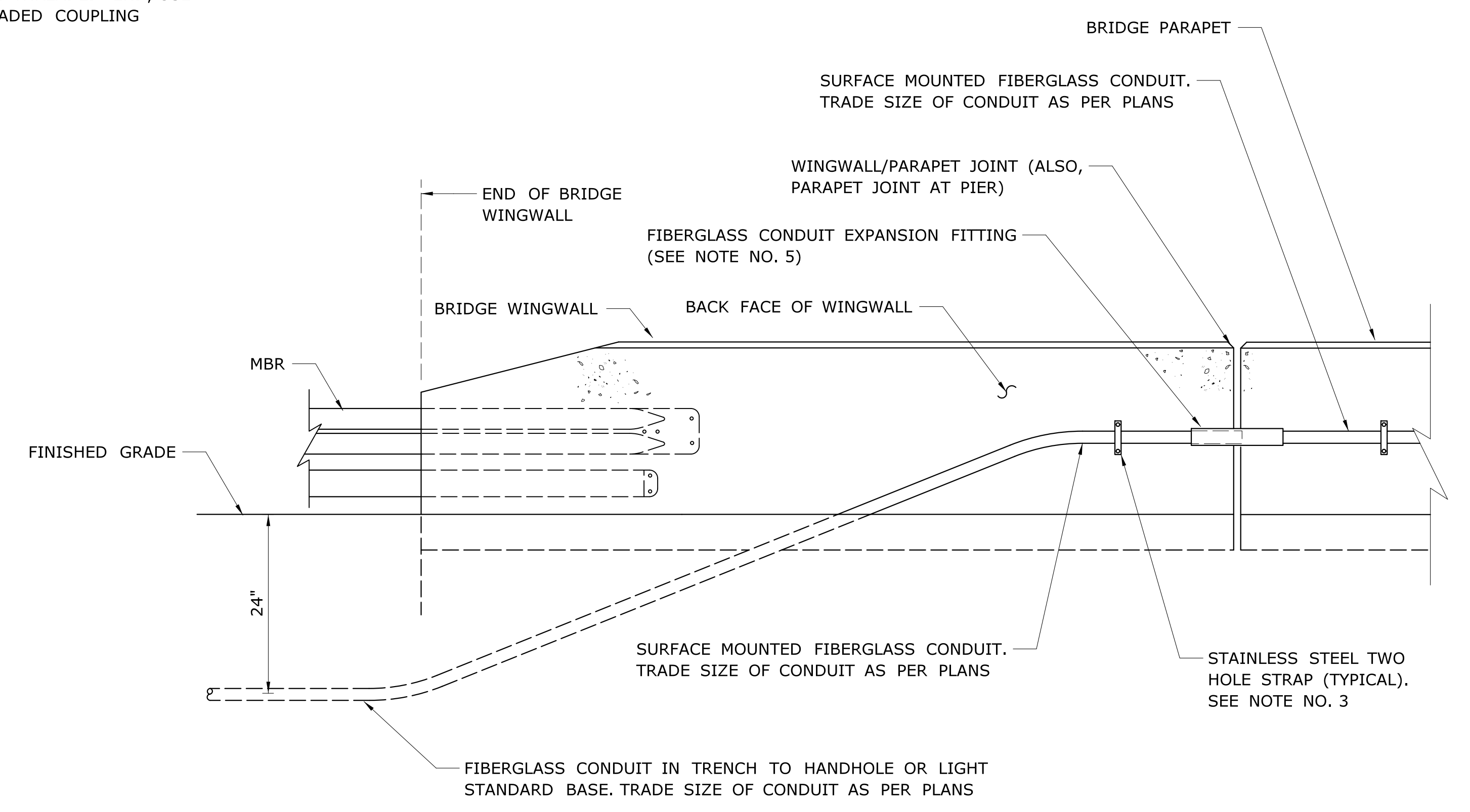
A CONDUIT CONNECTION AT WINGWALL RE-USING EXISTING RMC STUB-OUT (SEE NOTE 1)

NOTES:

- 1) IN LOCATIONS WHERE THE EXISTING EXPOSED RMC STUB-OUT IS DETERIORATED TO SUCH A DEGREE THAT THE CONDUIT CONNECTION CANNOT BE PROPERLY MADE, THE CONTRACTOR HAS TWO INSTALLATION OPTIONS AS FOLLOWS:
 - I) CHIP AWAY EXISTING CONCRETE WINGWALL MATERIAL TO EXPOSE NON-DETERIORATED RMC AS SHOWN IN DETAIL **A**.
 - II) CARRY OUT CONDUIT CONNECTION AS SHOWN IN DETAIL **B**.
- 2) FIBERGLASS CONDUIT SHALL BE "EXTRA HEAVY" WALL TYPE WITH A WALL THICKNESS OF 0.250".
- 3) FIBERGLASS CONDUIT SUPPORT SPACING SHALL NOT EXCEED 6'-0" AS PER N.E.C. 355.30.
- 4) ALL CONDUIT BEAM CLAMPS AND ATTACHMENT HARDWARE SHALL BE STAINLESS STEEL.
- 5) INSTALL ONE FIBERGLASS CONDUIT EXPANSION FITTING EVERY 50' OF CONDUIT LENGTH, AND AT ALL BRIDGE EXPANSION JOINTS.
- 6) WHERE FIBERGLASS CONDUIT IS FIELD CUT, THE OUTSIDE SURFACE OF THE CUT END SHALL BE SANDED TO REMOVE THE RESIN GLAZE PRIOR TO APPLYING ADHESIVE.
- 7) COST OF CONCRETE REMOVAL AND CONCRETE ENCASEMENT SHALL BE COVERED UNDER THE COST OF THE CONDUIT.
- 8) COST OF CORE DRILLING INTO THE BACK OF A C.I.J.B. SHALL BE COVERED UNDER THE ITEM: 0602903A - DRILLING HOLES.



B CONDUIT CONNECTION AT WINGWALL WHERE EXISTING RMC STUB-OUT IS DETERIORATED

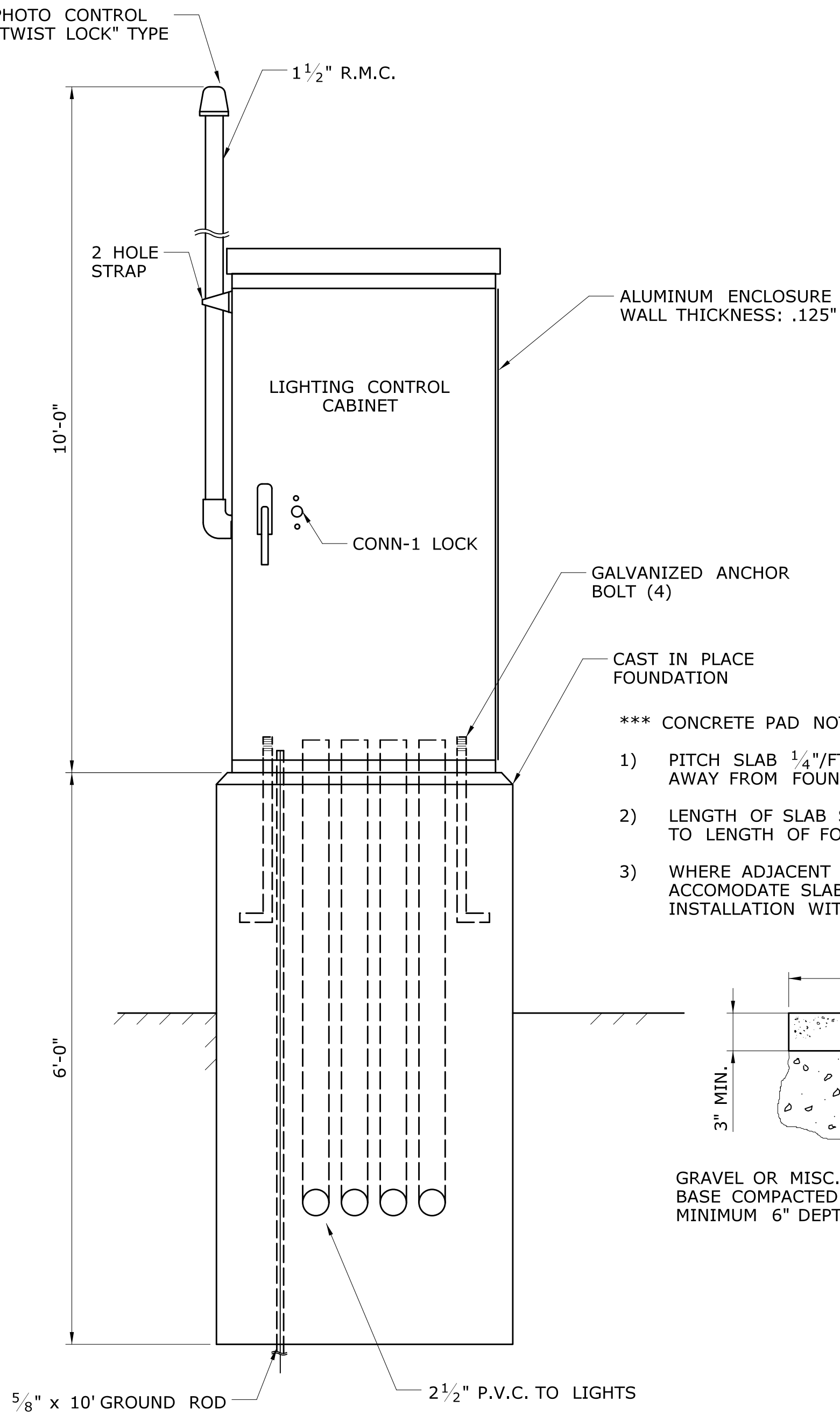
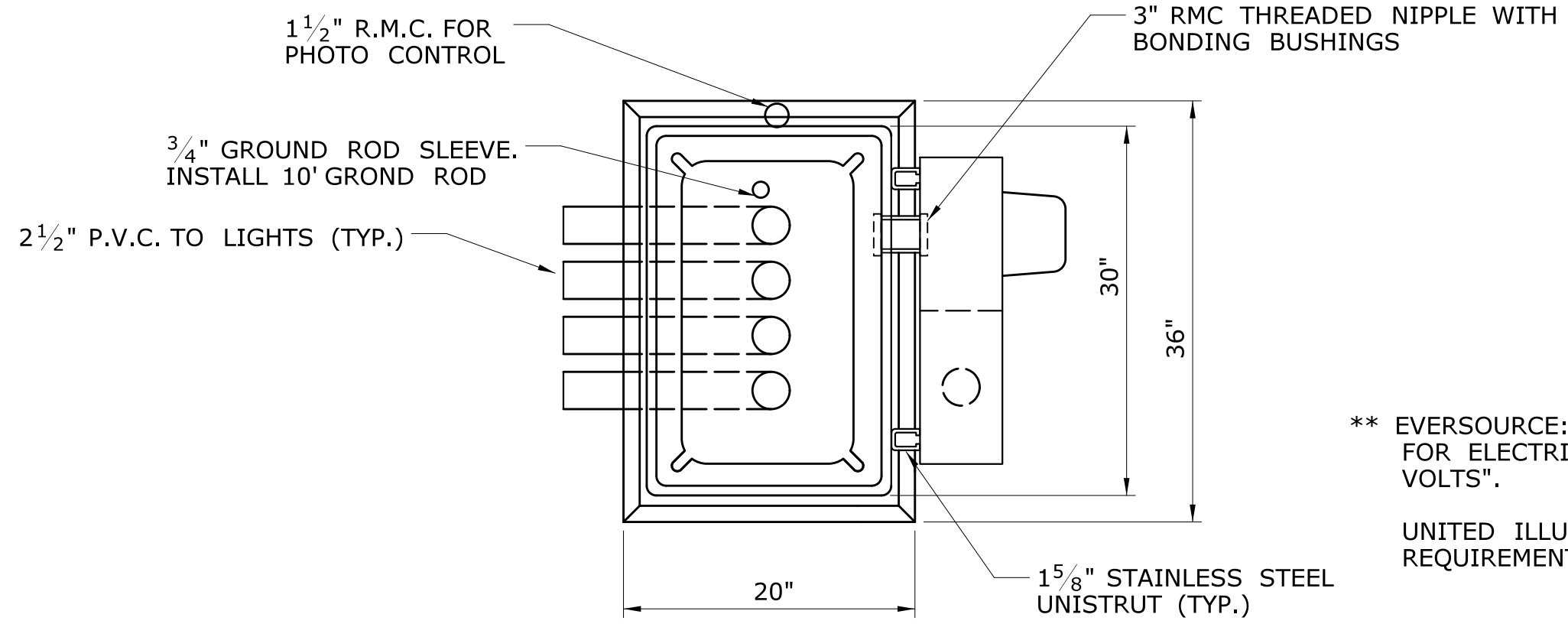


C SURFACE MOUNTED FIBERGLASS CONDUIT

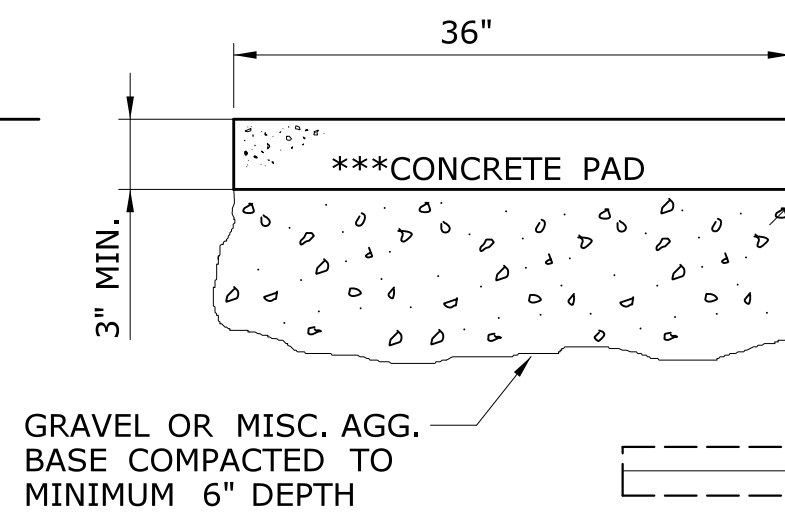
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CHECKED BY: JA						DRAWING NO. ILL-085
NO SCALE		FILENAME: ...engineering_data\ILL-085.dgn	DRAWING TITLE: CONDUIT CONNECTION AT BRIDGE WINGWALL		SHEET NO. 03.085	
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017		

NOTE:

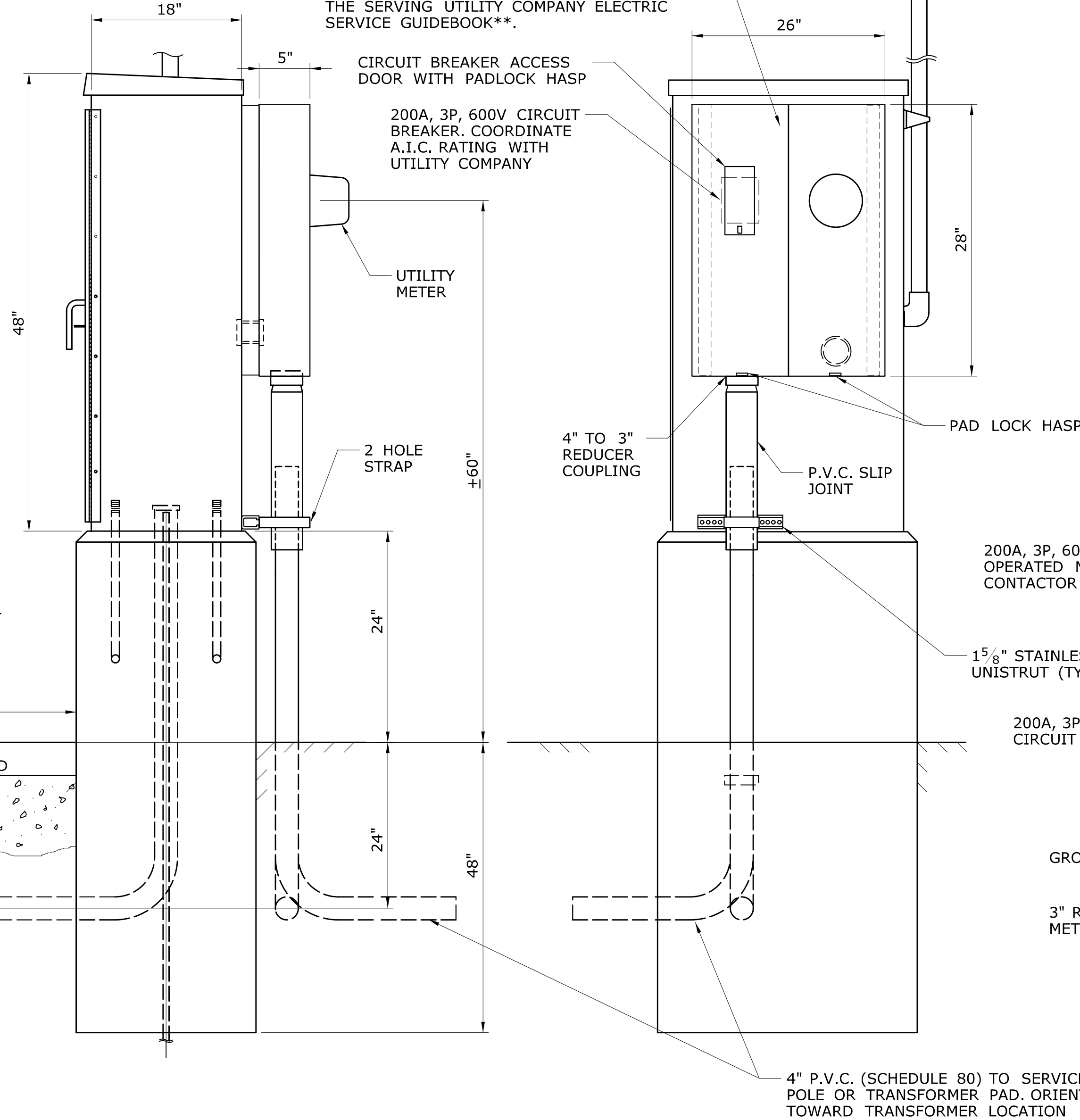
ALL WORK INDICATED ON THIS DRAWING (INCLUDING UTILITY CONSTRUCTION COSTS) SHALL BE PAID FOR UNDER THE ITEM FOR SERVICE ENTRANCE AND CABINET - TYPE I



- *** CONCRETE PAD NOTES:
- 1) PITCH SLAB 1/4"/FT AWAY FROM FOUNDATION
 - 2) LENGTH OF SLAB SHALL BE EQUAL TO LENGTH OF FOUNDATION
 - 3) WHERE ADJACENT SLOPE DOES NOT ACCOMODATE SLAB, COORDINATE INSTALLATION WITH ENGINEER

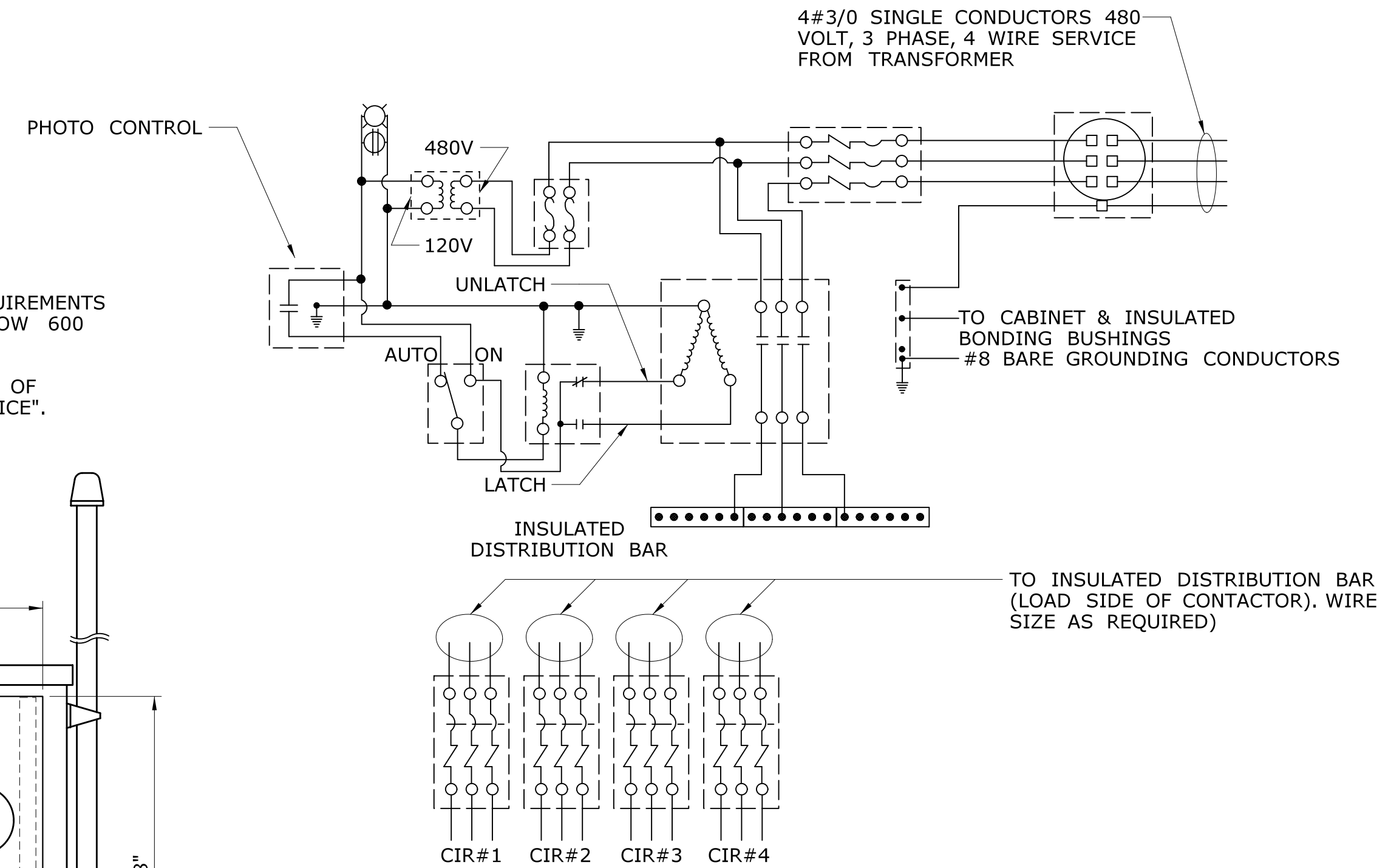


COLD SEQUENCE METER MAIN, 200 AMP, 7 TERMINAL, NEMA 3R ENCLOSURE AS PER THE REQUIREMENTS IN THE LATEST EDITION OF THE SERVING UTILITY COMPANY ELECTRIC SERVICE GUIDEBOOK**.

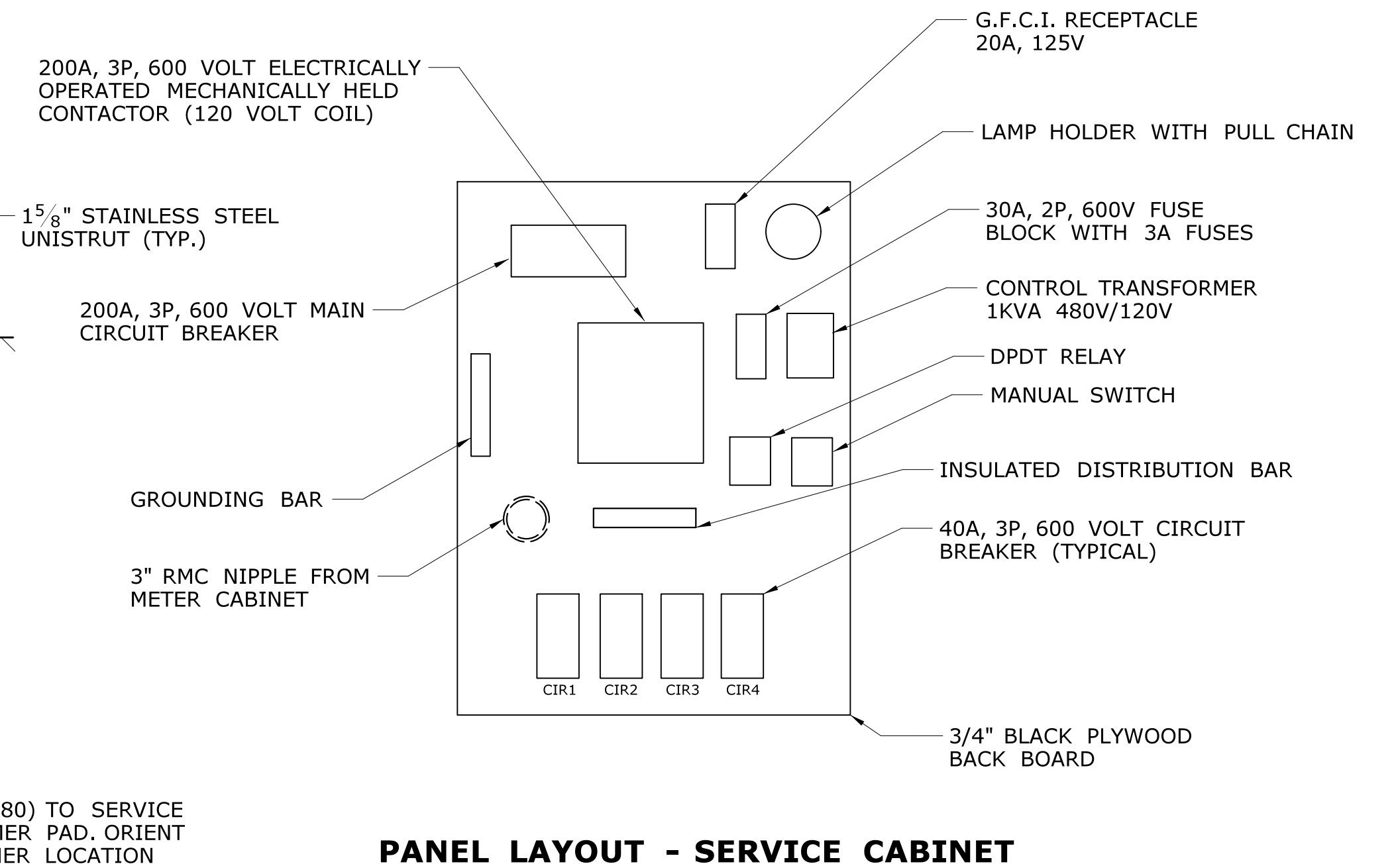


** EVERSOURCE: "INFORMATION & REQUIREMENTS FOR ELECTRIC SERVICE SUPPLY BELOW 600 VOLTS".

UNITED ILLUMINATING: "GUIDEBOOK OF REQUIREMENTS FOR ELECTRIC SERVICE".



WIRING DIAGRAM



PANEL LAYOUT - SERVICE CABINET

FRONT VIEW

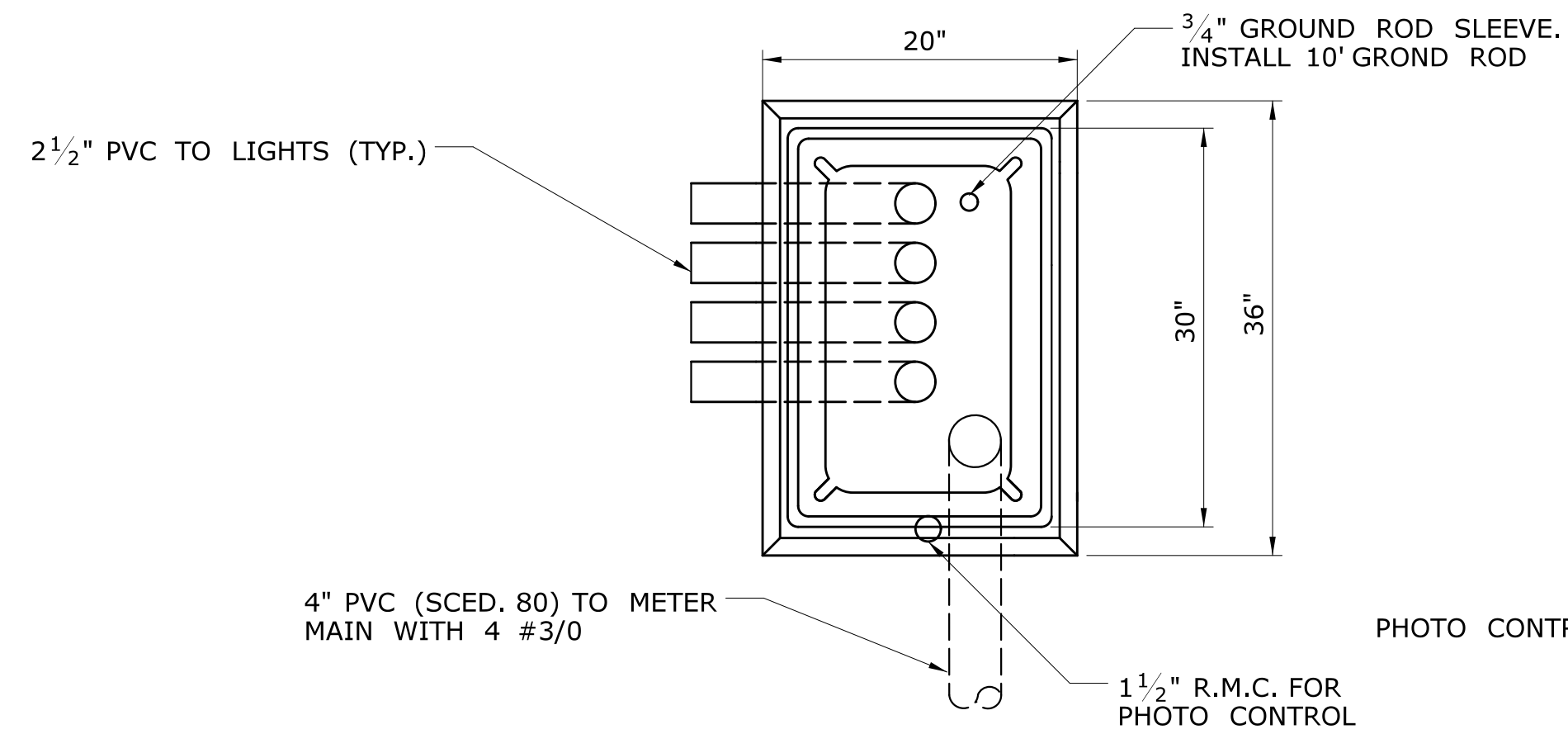
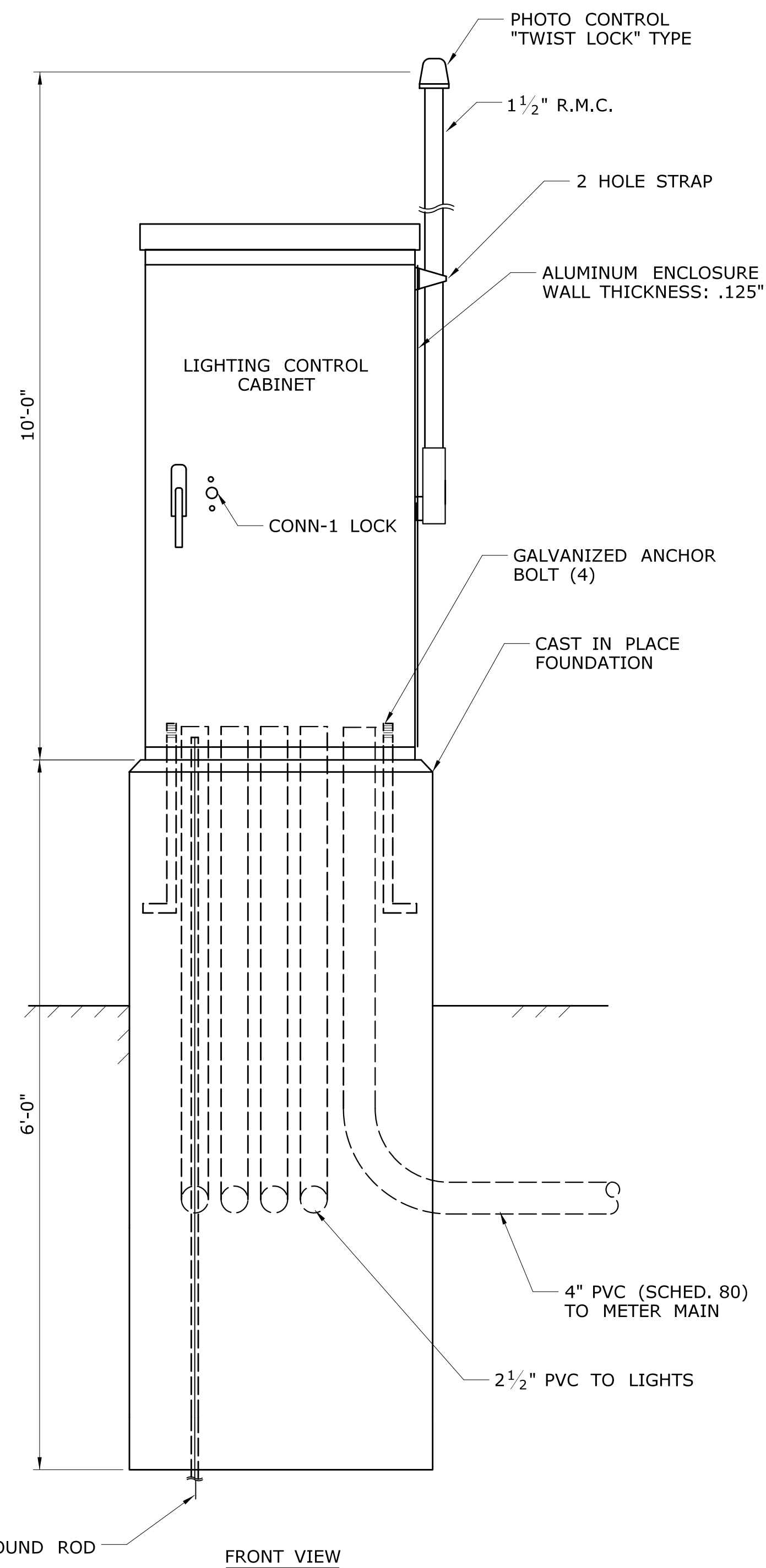
SERVICE ENTRANCE AND CABINET TYPE I

BACK VIEW

DESIGNER/DRAFTER: MSB		<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: <i>[Signature]</i>	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432 DRAWING NO. ILL-086 SHEET NO. 03.086
CHECKED BY: JA						
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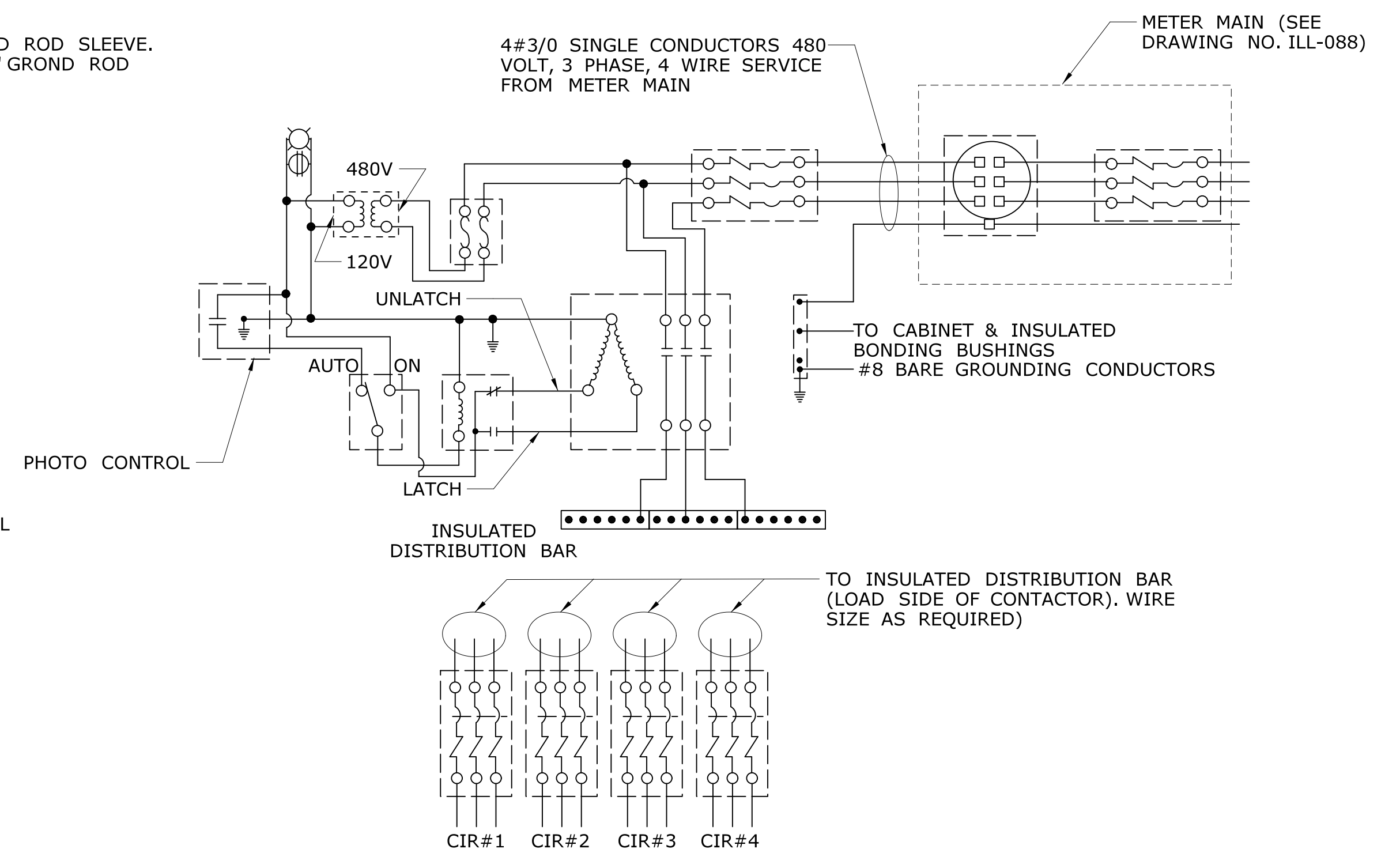
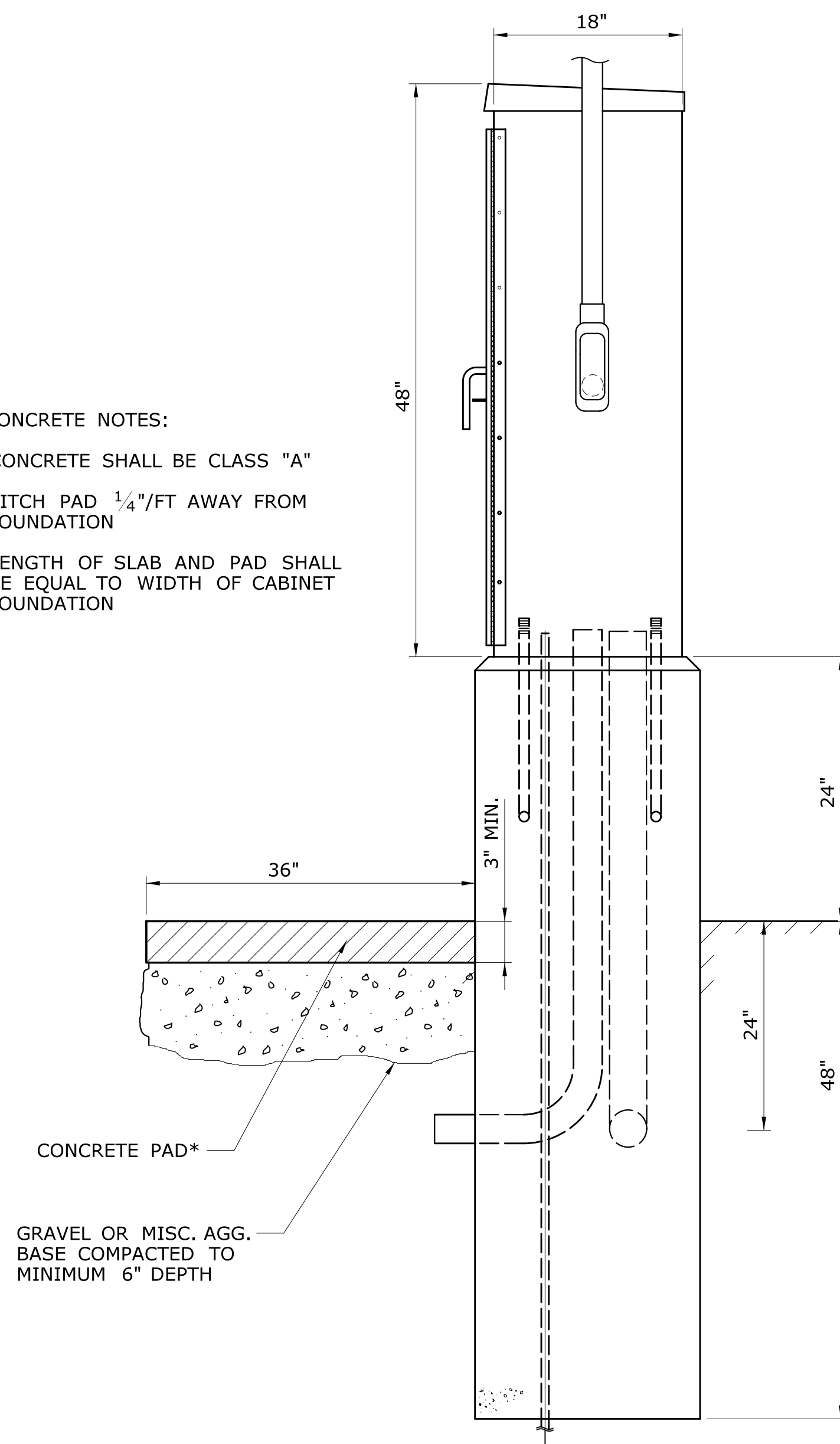
NOTE:

ALL WORK INDICATED ON THIS DRAWING (INCLUDING UTILITY CONSTRUCTION COSTS) SHALL BE PAID FOR UNDER THE ITEM FOR SERVICE ENTRANCE AND CABINET - TYPE I

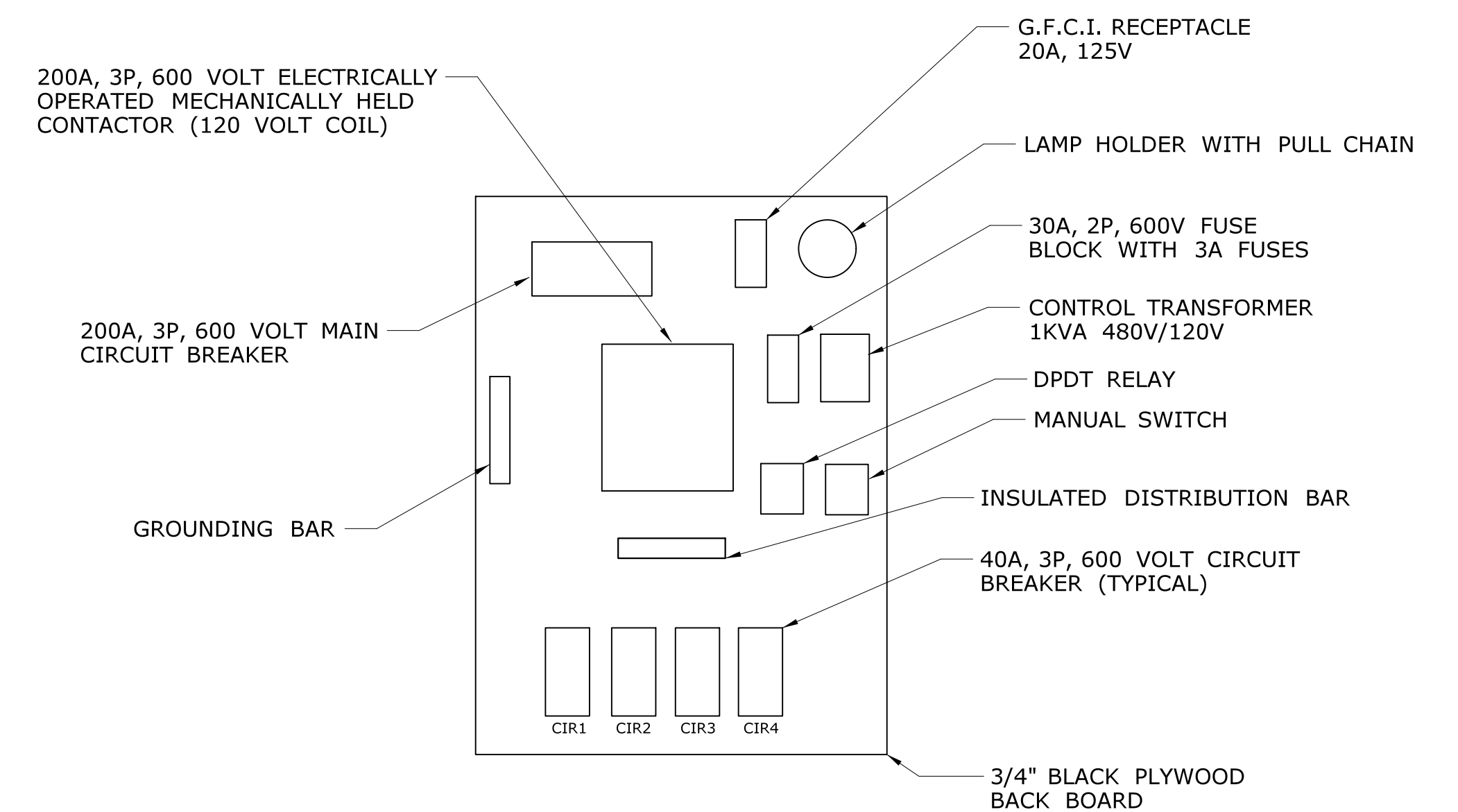


*** CONCRETE NOTES:**

- 1) CONCRETE SHALL BE CLASS "A"
- 2) PITCH PAD 1/4"/FT AWAY FROM FOUNDATION
- 3) LENGTH OF SLAB AND PAD SHALL BE EQUAL TO WIDTH OF CABINET FOUNDATION



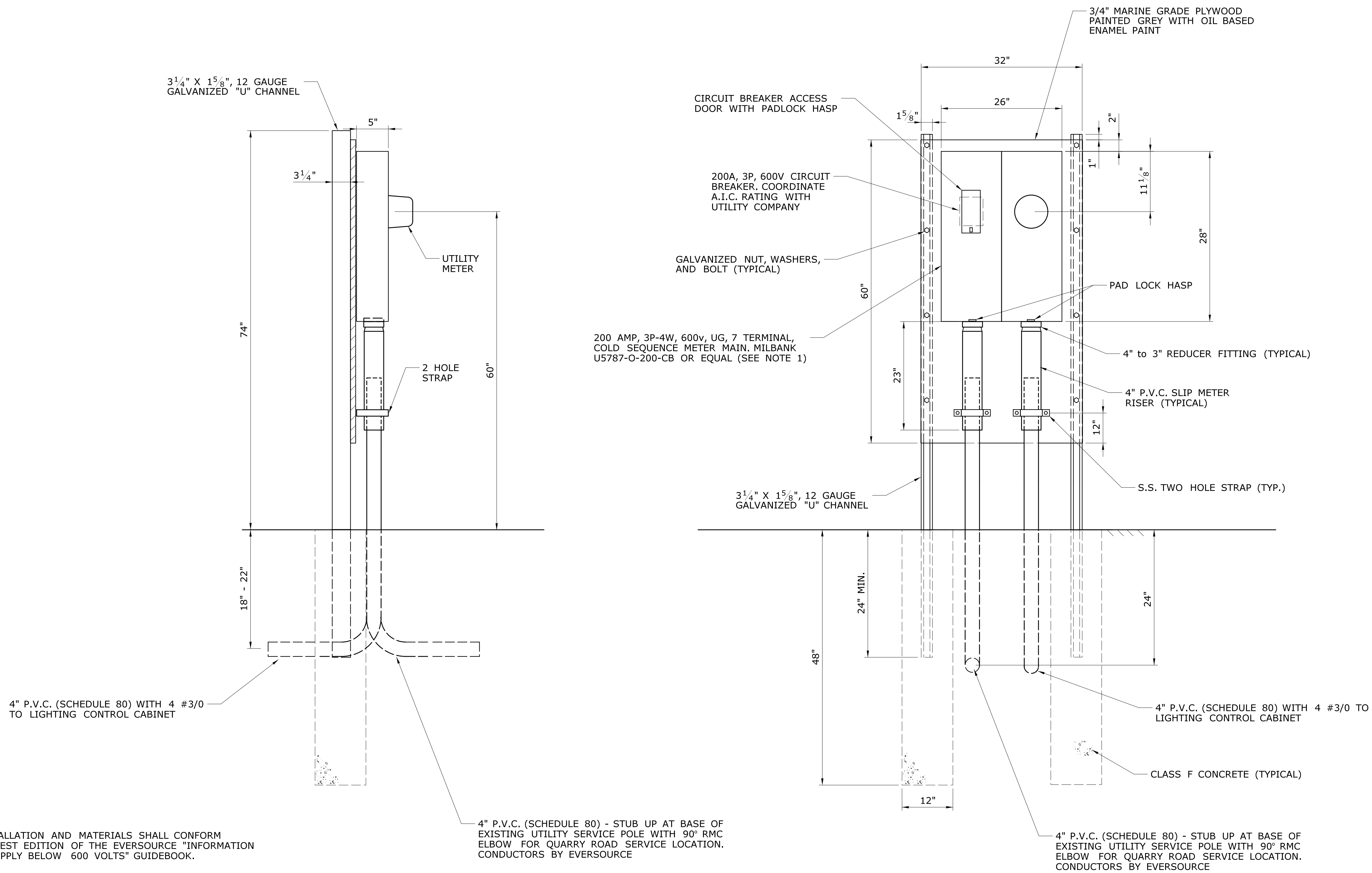
WIRING DIAGRAM



PANEL LAYOUT - SERVICE CABINET



**SERVICE ENTRANCE AND CABINET TYPE I
QUARRY ROAD GLASTONBURY**

DESIGNER/DRAFTER: MSB		<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432
CHECKED BY: JA						DRAWING NO. ILL-087
NO SCALE		Filename: ...\\engineering_data\ILL-087.dgn	APPROVED BY: 	DRAWING TITLE: QUARRY ROAD LIGHTING CABINET		SHEET NO. 03.087
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017		



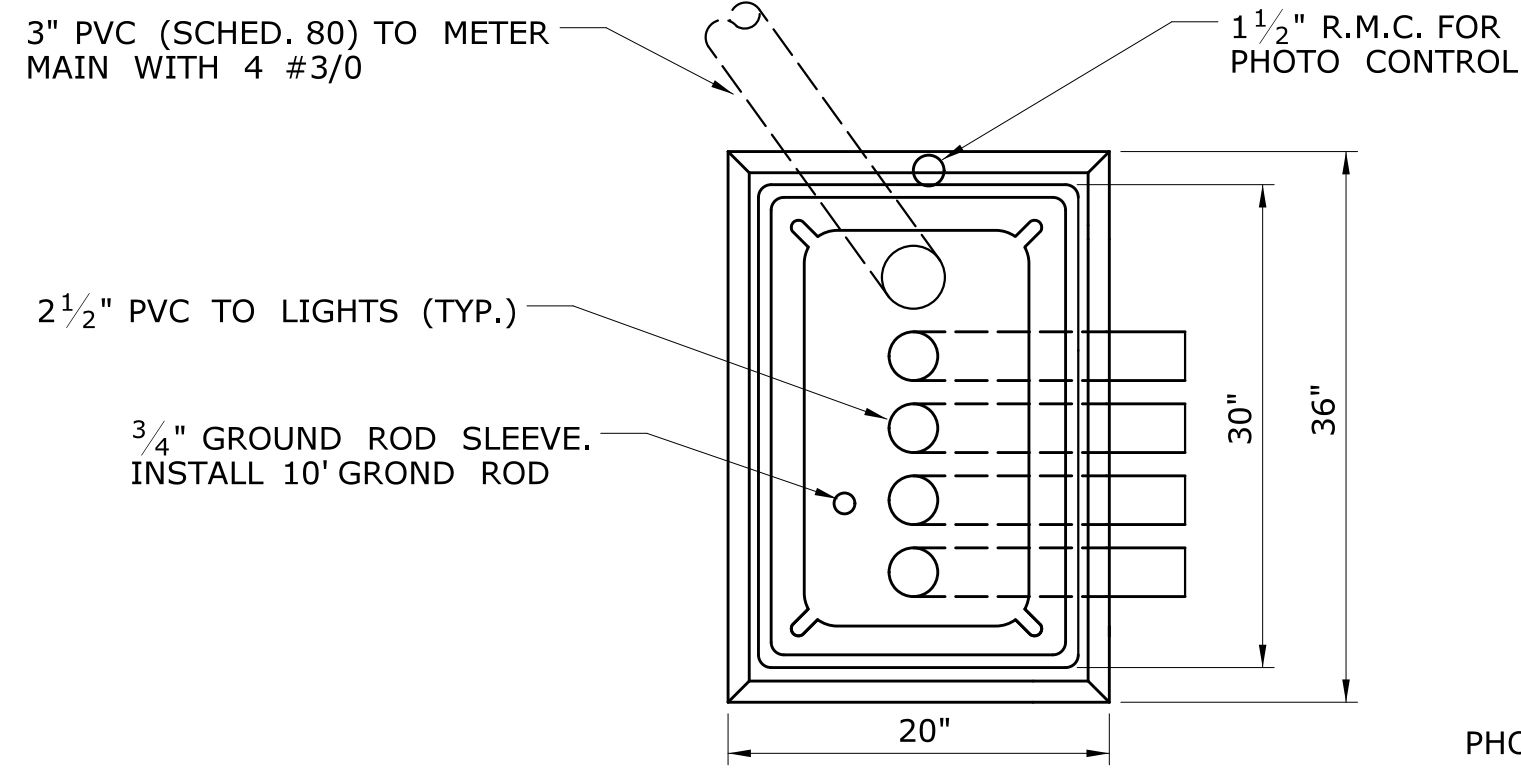
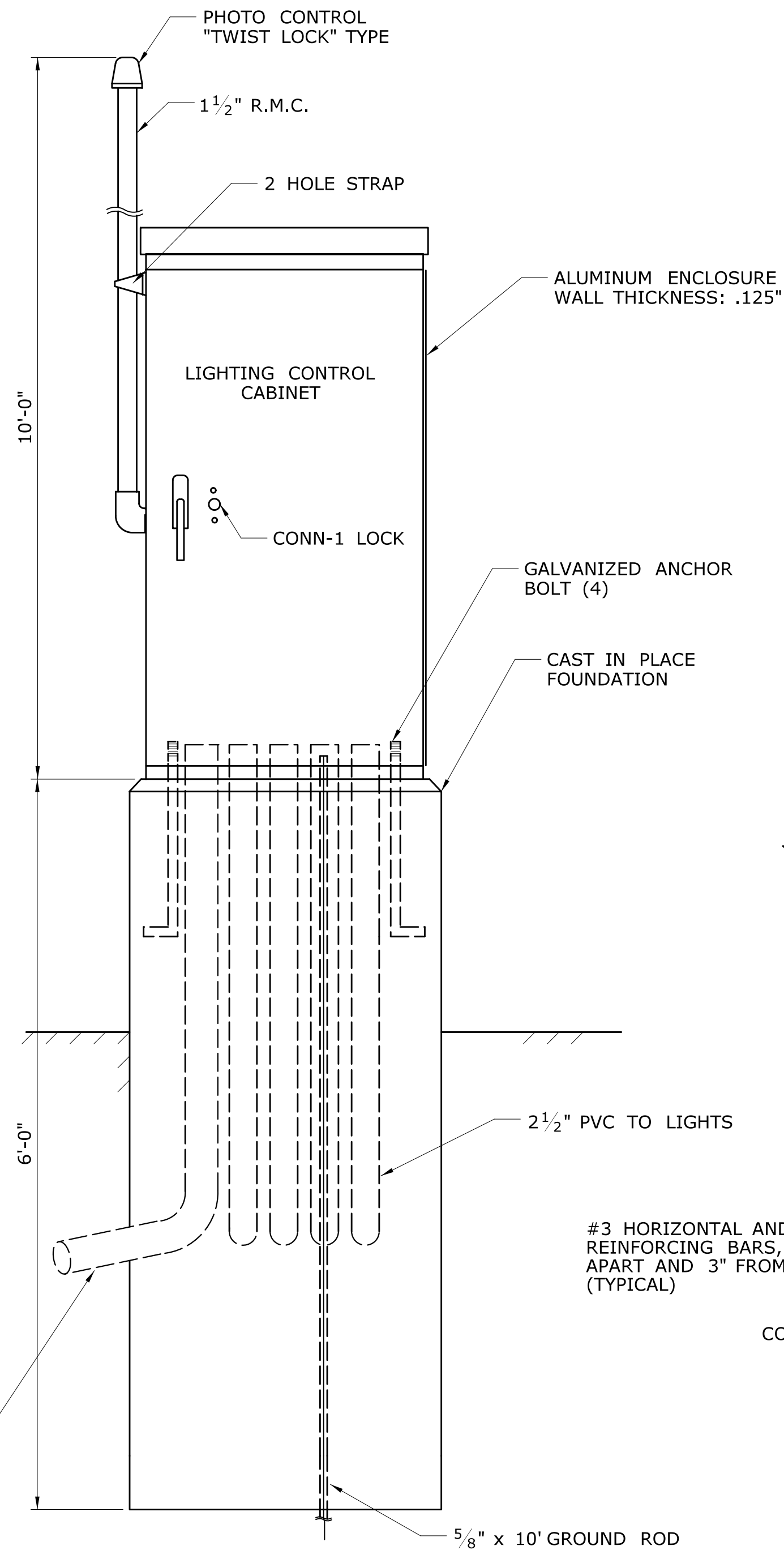
- NOTES:
- 1) COLD SEQUENCE METER MAIN INSTALLATION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS IN THE LATEST EDITION OF THE EVERSOURCE "INFORMATION & REQUIREMENTS FOR ELECTRIC SUPPLY BELOW 600 VOLTS" GUIDEBOOK.
 - 2) EXACT LOCATION OF METER MAIN SHALL BE COORDINATED WITH EVERSOURCE AND APPROVED BY EVERSOURCE.
 - 3) ALL WORK INDICATED ON THIS DRAWING (INCLUDING UTILITY CONSTRUCTION COSTS) SHALL BE PAID FOR UNDER THE ITEM FOR SERVICE ENTRANCE AND CABINET - TYPE I

**COLD SEQUENCE METER MAIN
QUARRY ROAD SERVICE**

DESIGNER/DRAFTER: MSB		 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/ BLOCK: OFFICE OF ENGINEERING APPROVED BY: 	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432
CHECKED BY: JA					DRAWING NO. ILL-088	
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REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017		

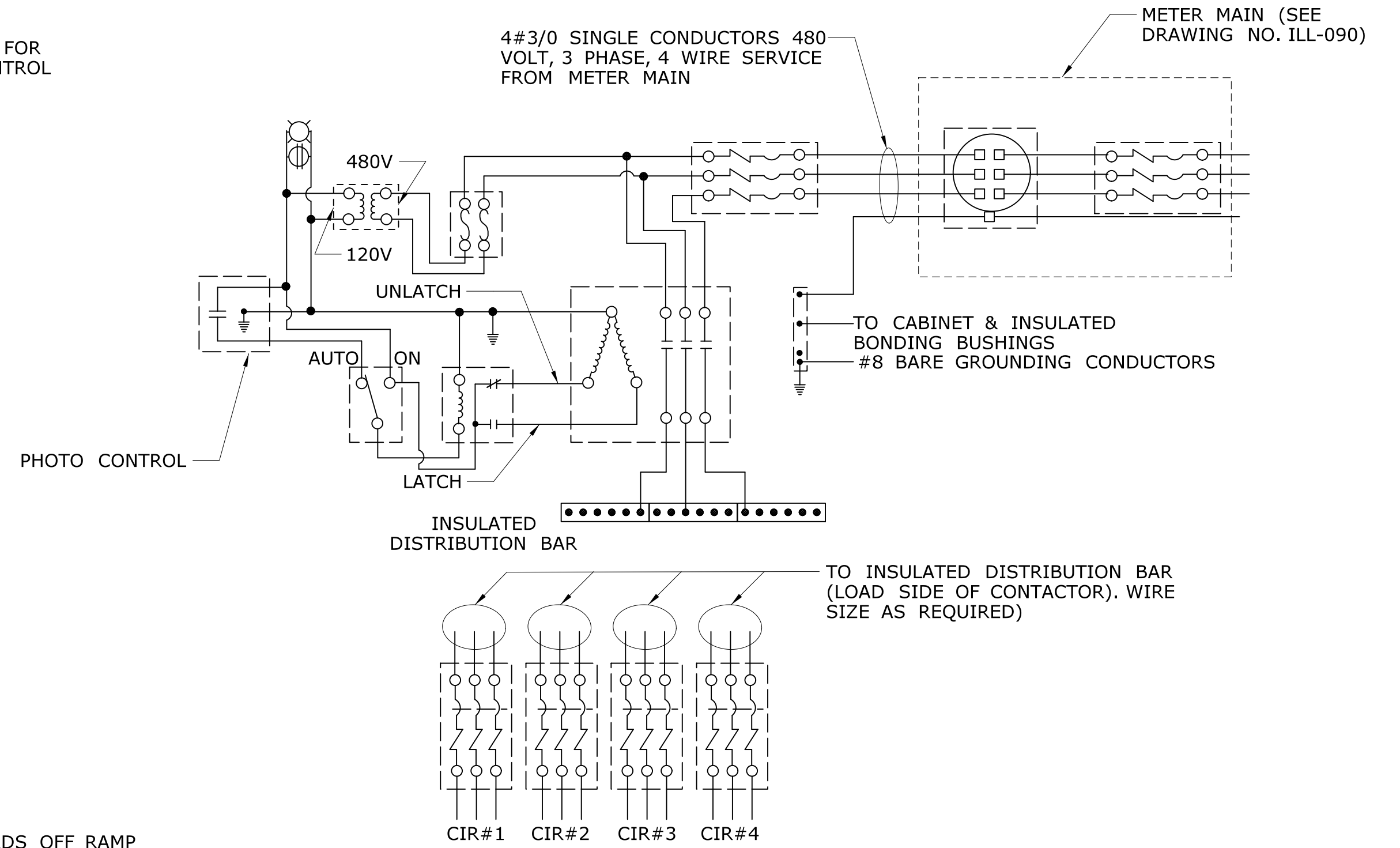
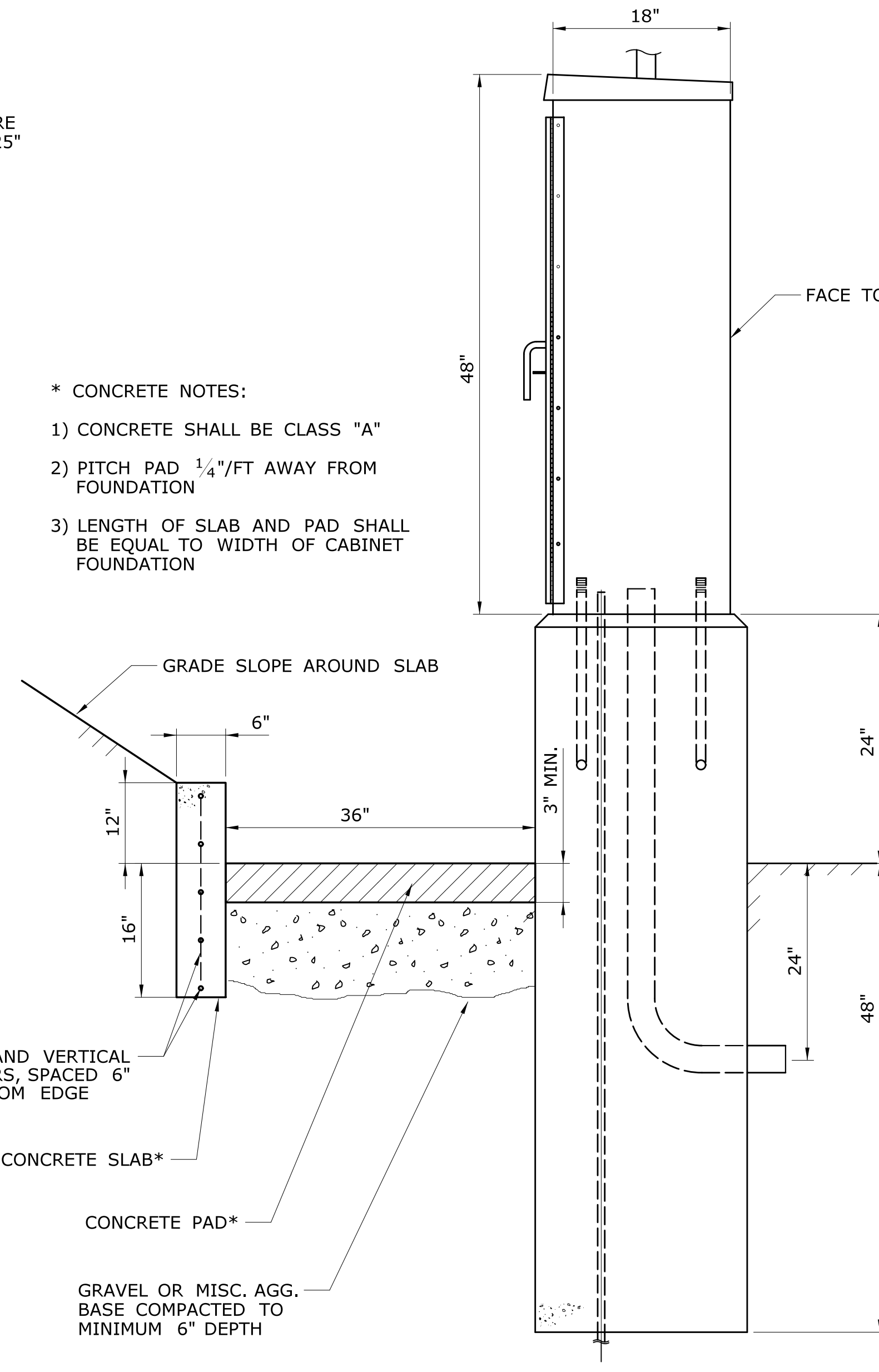
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ALL WORK INDICATED ON THIS DRAWING (INCLUDING UTILITY CONSTRUCTION COSTS) SHALL BE PAID FOR UNDER THE ITEM FOR SERVICE ENTRANCE AND CABINET - TYPE I

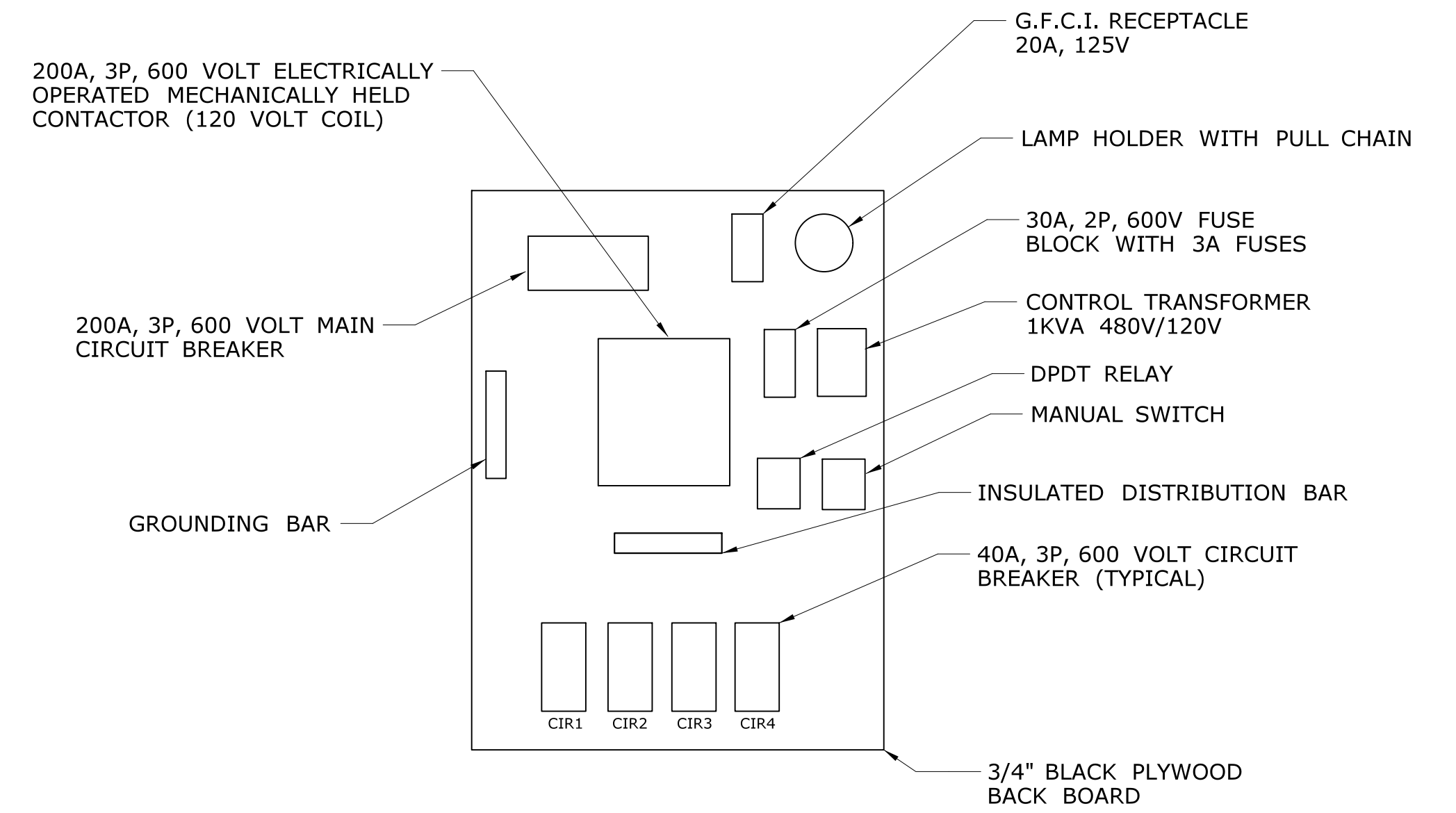


*** CONCRETE NOTES:**

- 1) CONCRETE SHALL BE CLASS "A"
- 2) PITCH PAD 1/4"/FT AWAY FROM FOUNDATION
- 3) LENGTH OF SLAB AND PAD SHALL BE EQUAL TO WIDTH OF CABINET FOUNDATION



WIRING DIAGRAM

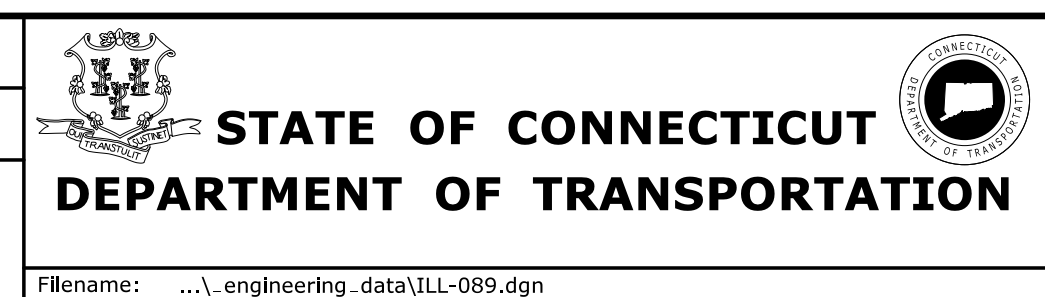


PANEL LAYOUT - SERVICE CABINET

**SERVICE ENTRANCE AND CABINET TYPE I
 WHITING STREET NEW BRITAIN**

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

DESIGNER/DRAFTER: **MSB**
 CHECKED BY: **JA**
 NO SCALE



SIGNATURE/BLOCK:
 OFFICE OF ENGINEERING
 APPROVED BY:

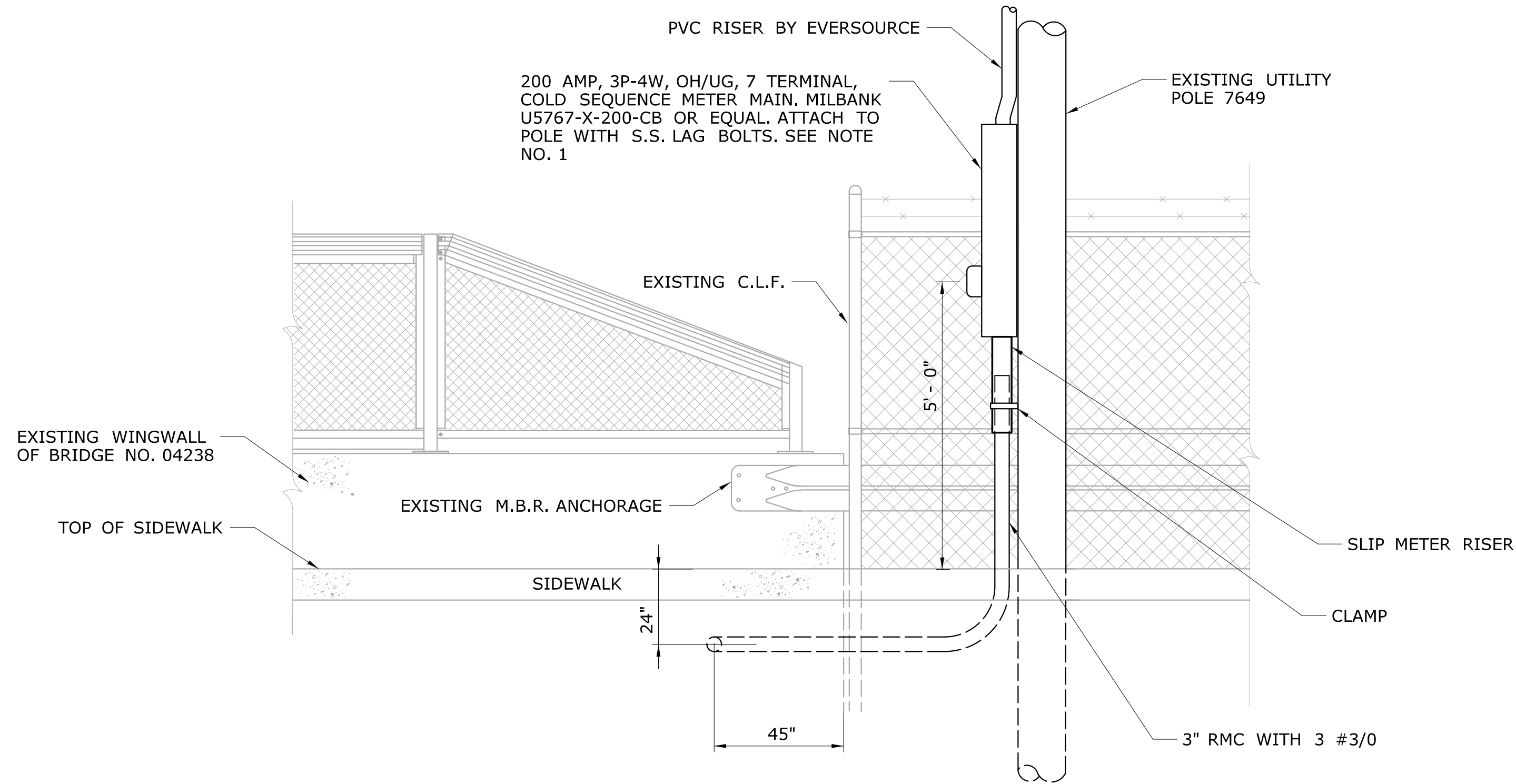
PROJECT TITLE:
REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1

TOWN: **VARIOUS**
 DRAWING TITLE:
WHITING STREET LIGHTING CABINET

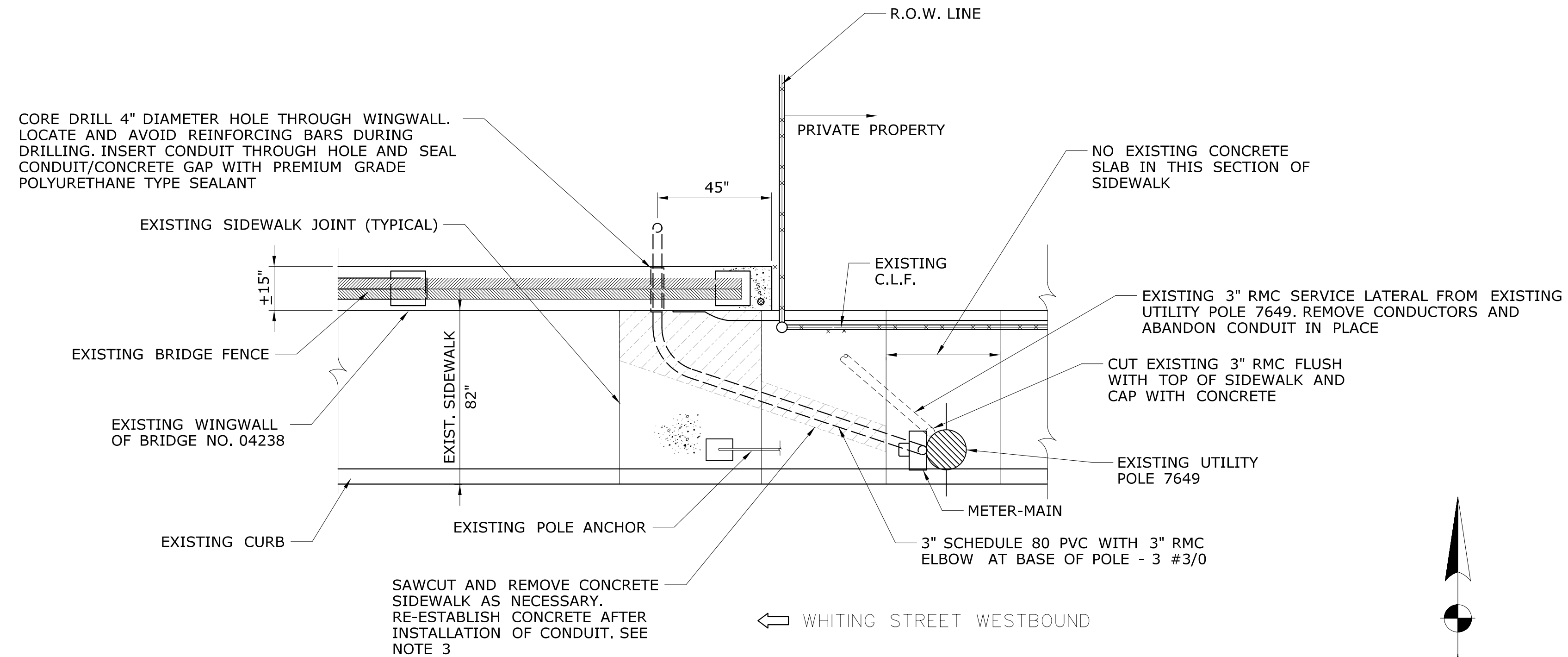
PROJECT NO. **171-432**
 DRAWING NO. **ILL-089**
 SHEET NO. **03.089**

NOTES:

- 1) COLD SEQUENCE METER MAIN INSTALLATION AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS IN THE LATEST EDITION OF THE EVERSOURCE "INFORMATION & REQUIREMENTS FOR ELECTRIC SUPPLY BELOW 600 VOLTS" GUIDEBOOK.
- 2) EVERSOURCE TO INSTALL NEW THREE PHASE TRANSFORMER BANK (3P, 480/277V SECONDARY) ON EXISTING UTILITY POLE NO. 7649.
- 3) NEW SIDEWALK CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 9.21.
- 4) COORDINATE PLACEMENT OF METER-MAIN WITH EVERSOURCE.
- 5) ALL WORK INDICATED ON THIS DRAWING (INCLUDING UTILITY CONSTRUCTION COSTS) SHALL BE PAID FOR UNDER THE ITEM FOR SERVICE ENTRANCE AND CABINET - TYPE I

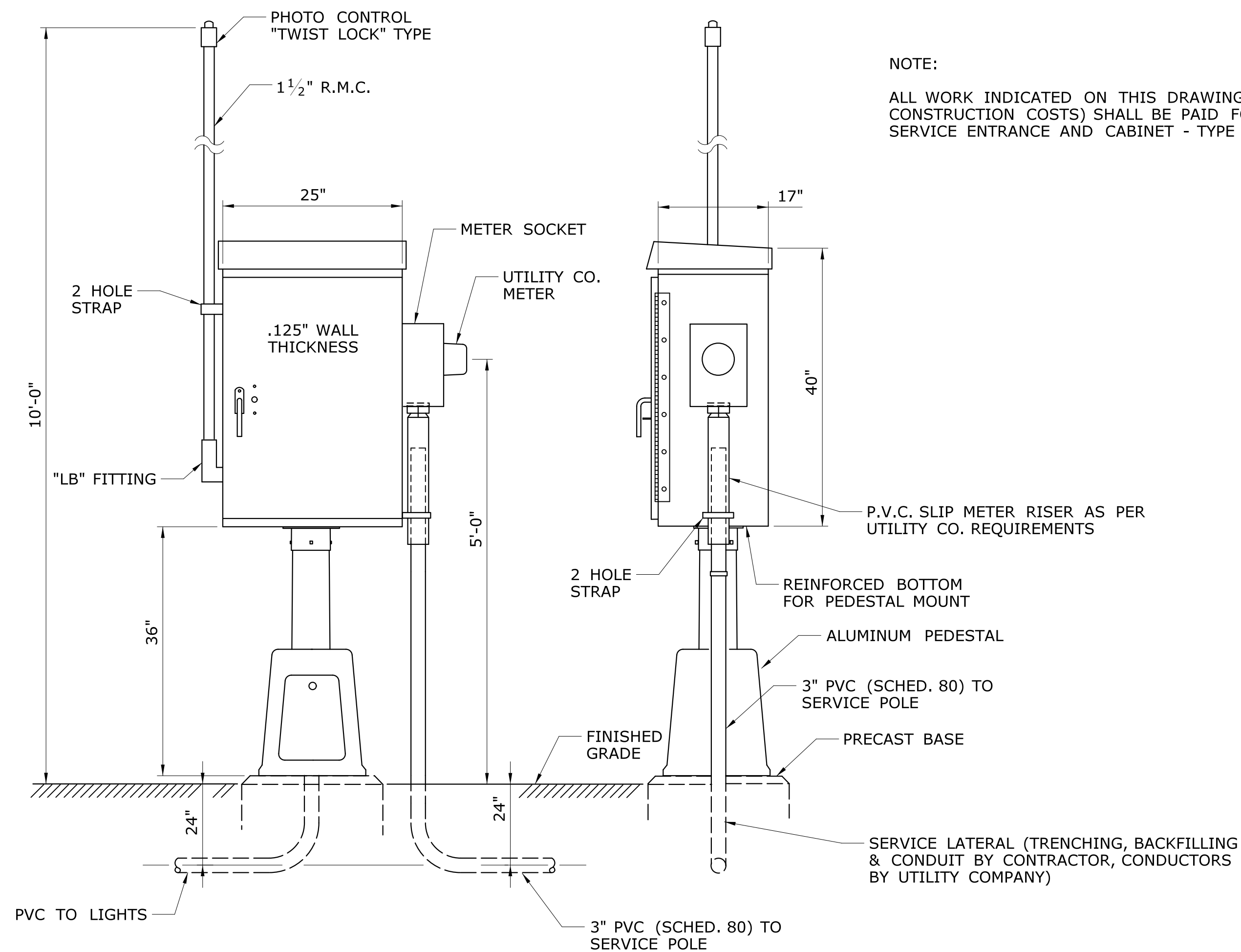


**WHITING STREET - SERVICE CONNECTION
ELEVATION VIEW**

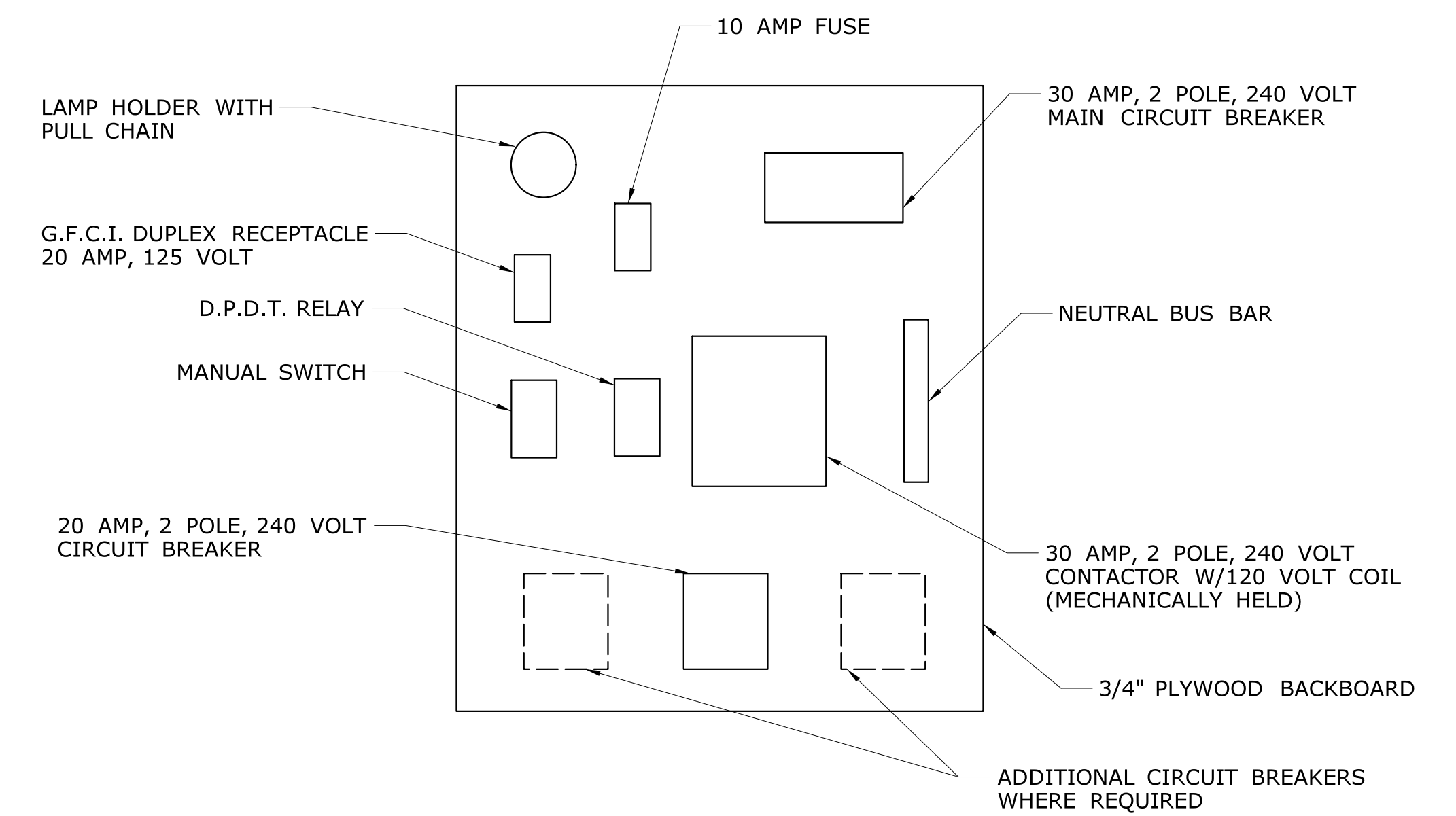


**WHITING STREET - SERVICE CONNECTION
TOP VIEW**

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MSB CHECKED BY: JA NO SCALE	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: <i>[Signature]</i>	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432 DRAWING NO. ILL-090 SHEET NO. 03.090
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017	Filename: ...\\engineering_data\ILL-090.dgn		

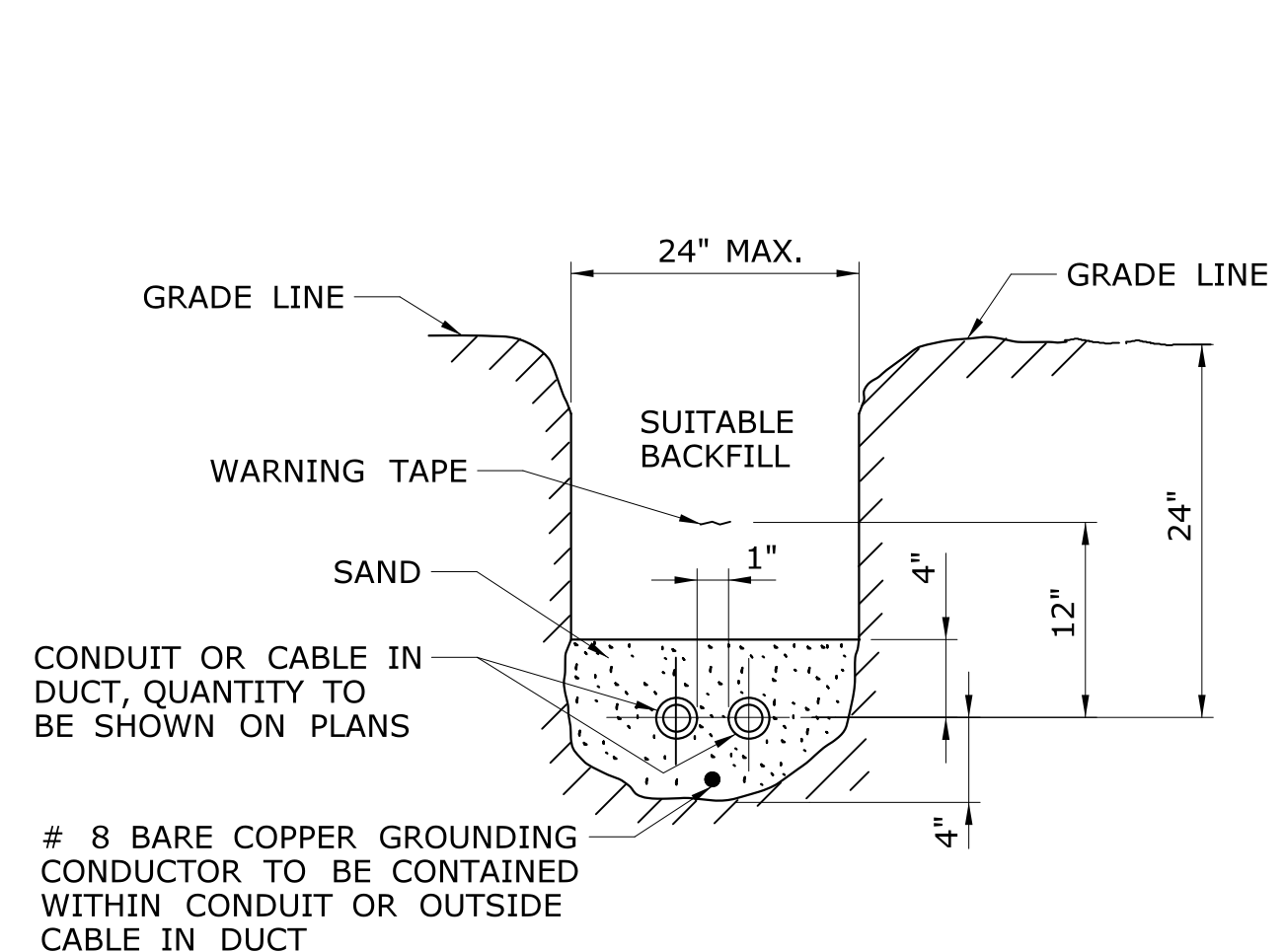


NOTE:
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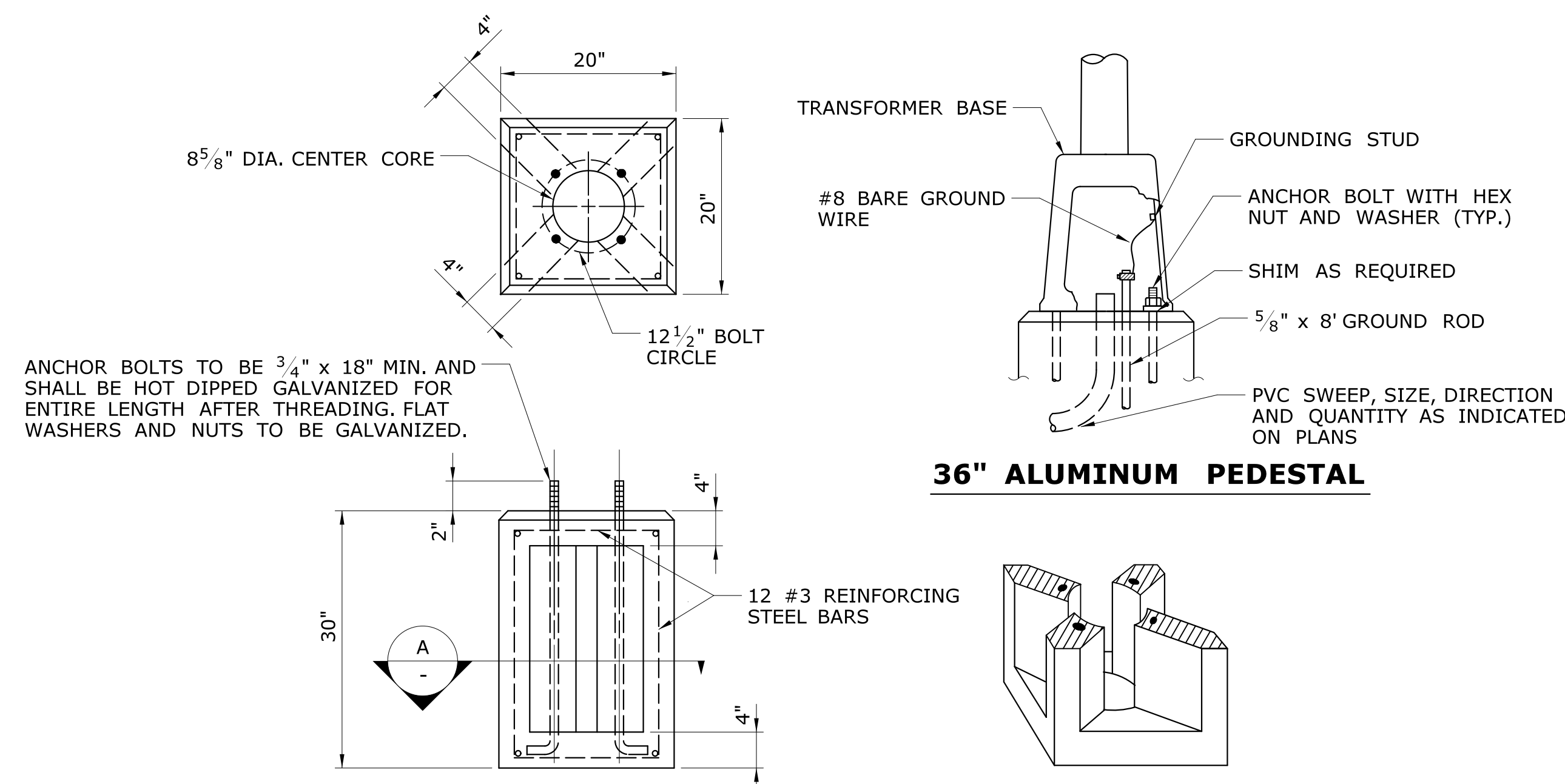


**PANEL LAYOUT
 SERVICE ENTRANCE AND CABINET TYPE II**

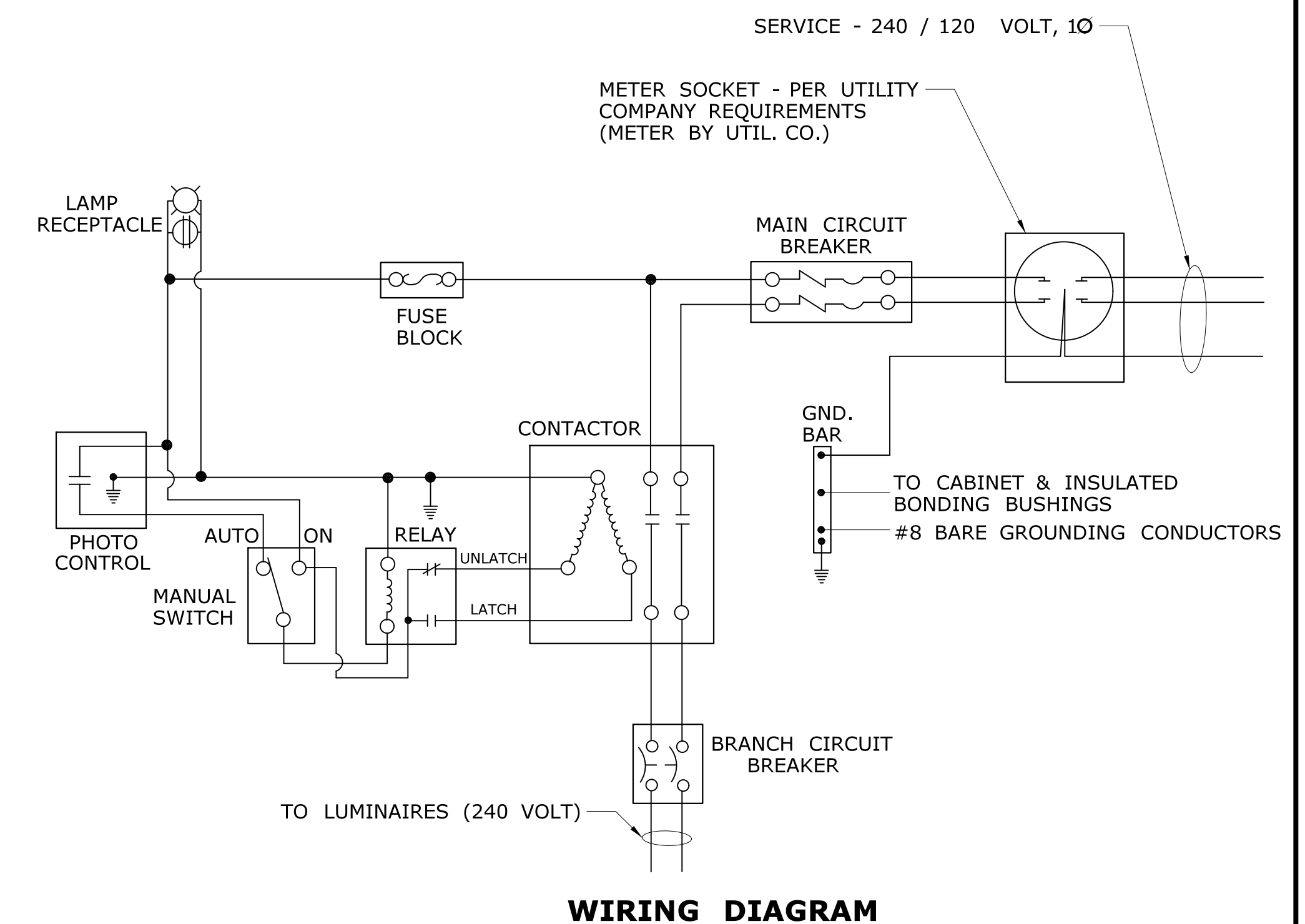
SERVICE ENTRANCE AND CABINET TYPE II



BURIED CONDUIT OR CABLE IN DUCT



PRECAST PEDESTAL BASE - TYPE I



WIRING DIAGRAM

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.		DESIGNER/DRAFTER: MSB CHECKED BY: JA NO SCALE	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION Filename: ...engineering_data\ILL-091.dgn	SIGNATURE/BLOCK: OFFICE OF ENGINEERING APPROVED BY: DATE:	PROJECT TITLE: REPLACEMENT OF ROADWAY ILLUMINATION SYSTEMS IN DISTRICT 1	TOWN: VARIOUS	PROJECT NO. 171-432 DRAWING NO. ILL-091 SHEET NO. 03.091
REV.	DATE	REVISION DESCRIPTION	SHEET NO.	Plotted Date: 9/19/2017			

**Construction Contracts - Required Contract Provisions
(FHWA Funded Contracts)**

Index

1. Federal Highway Administration (FHWA) Form 1273 (Revised May 1, 2012)
2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements
3. Contractor Work Force Utilization (Federal Executive Order 11246) / Specific Equal Employment Opportunity
4. Requirements of Title 49, CFR , Part 26, Participation by DBEs
5. Contract Wage Rates
6. Americans with Disabilities Act of 1990, as Amended
7. Connecticut Statutory Labor Requirements
 - a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
 - b. Debarment List - Limitation on Awarding Contracts
 - c. Construction Safety and Health Course
 - d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
 - e. Residents Preference in Work on Other Public Facilities (Not Applicable to Federal Aid Contracts)
8. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)
9. Executive Orders (State of CT)
10. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised)
11. Whistleblower Provision
12. Connecticut Freedom of Information Act
 - a. Disclosure of Records
 - b. Confidential Information
13. Service of Process
14. Substitution of Securities for Retainages on State Contracts and Subcontracts
15. Health Insurance Portability and Accountability Act of 1996 (HIPAA)
16. Forum and Choice of Law
17. Summary of State Ethics Laws

18. Audit and Inspection of Plants, Places of Business and Records
19. Campaign Contribution Restriction
20. Tangible Personal Property
21. Bid Rigging and/or Fraud – Notice to Contractor
22. Consulting Agreement Affidavit
23. Federal Cargo Preference Act Requirements (46 CFR 381.7(a)-(b))

Index of Exhibits

- EXHIBIT A – FHWA Form 1273 (Begins on page 14)
- EXHIBIT B – Title VI Contractor Assurances (page 35)
- EXHIBIT C – Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity (page 36)
- EXHIBIT D – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 43)
- EXHIBIT E - Campaign Contribution Restriction (page 51)
- EXHIBIT F – Federal Wage Rates (Attached at the end)
- EXHIBIT G - State Wage Rates (Attached at the end)

1. Federal Highway Administration (FHWA) Form 1273

The Contractor shall comply with the Federal Highway Administration (FHWA), Form 1273 attached at Exhibit A, as revised, which is hereby made part of this contract. The Contractor shall also require its subcontractors to comply with the FHWA – Form 1273 and include the FHWA – Form 1273 as an attachment to all subcontracts and purchase orders.

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit B, all of which are hereby made a part of this Contract.

3. Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity

- (a) The Contractor shall comply with the Contractor Work Force Utilization (Federal Executive Order 11246) / Equal Employment Opportunity requirements attached at Exhibit C and hereby made part of this Contract, whenever a contractor or subcontractor at any tier performs construction work in excess of \$10,000. These goals shall be included in each contract and subcontract. Goal achievement is calculated for each trade using the hours worked under each trade.
- (b) Companies with contracts, agreements or purchase orders valued at \$10,000 or more will develop and implement an Affirmative Action Plan utilizing the ConnDOT Affirmative Action Plan Guideline. This Plan shall be designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuation program. Plans shall be updated as required by ConnDOT.

4. Requirements of Title 49, Code of Federal Regulations (CFR), Part 26, Participation by DBEs

Pursuant to 49 CFR 26.13, the following paragraph is part of this Contract and shall be included in each subcontract the Contractor enters into with a subcontractor:

“The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26, Participation by DBEs, in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this contract or such other remedy as ConnDOT (recipient) deems appropriate.”

5. Contract Wage Rates

The Contractor shall comply with:

The Federal and State wage rate requirements indicated in Exhibits F and G hereof, as revised, are hereby made part of this Contract. The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website

(<http://www.wdol.gov/dba.aspx>) as may be revised 10 days prior to bid opening. These applicable Federal wage rates will be physically incorporated in the final contract document executed by both parties. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents, prior to the bid opening date. During the bid advertisement period, bidders are responsible for obtaining the appropriate Federal wage rates from the US Department of Labor website.

To obtain the latest Federal wage rates go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose "Selecting DBA WDs" and follow the instruction to search the latest wage rates for the State, County and Construction Type. Refer to the Notice to Contractor (NTC) - Federal Wage Determinations (Davis Bacon Act).

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by Section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 816), as may be revised, every Contractor or subcontractor performing project work on a Federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

6. Americans with Disabilities Act of 1990, as Amended

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

7. Connecticut Statutory Labor Requirements

(a) Construction, Alteration or Repair of Public Works Projects; Wage Rates. The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of section 31-53 of the Connecticut 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 persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

(b) Debarment List. Limitation on Awarding Contracts. The Contractor shall comply with Section 31-53a of the Connecticut General Statutes, as revised.

(c) Construction Safety and Health Course. The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner 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 of the Connecticut General Statutes, as revised, 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.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

(d) Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited. The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

(e) Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS. Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states

8. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased.

Forms and instructions are available anytime by:

Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or

Telephone: Call 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

9. Executive Orders

This contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the contract as if they had been fully set forth in it. The contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy, promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order No. 14 and/or Executive Order No. 49 are applicable, they are deemed to be incorporated into and are made a part of the contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

10. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised): References to "minority business enterprises" in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

(a) For purposes of this Section, the following terms are defined as follows:

- i. "Commission" means the Commission on Human Rights and Opportunities;
- ii. "Contract" and "contract" include any extension or modification of the Contract or contract;
- iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- iv. "gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
- v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- vii. "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;
- viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

- ix. "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the 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 Connecticut General Statutes § 32-9n; and
- x. "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the State, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

- (b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

- (c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.
- (e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.
- (f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.
- (g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.
- (h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with,

litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.”

The Nondiscrimination Certifications can be found at the Office of Policy and Management website.

<http://www.ct.gov/opm/cwp/view.asp?a=2982&Q=390928>

11. Whistleblower Provision

The following clause is applicable if the Contract has a value of Five Million Dollars (\$5,000,000) or more.

Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

12. Connecticut Freedom of Information Act

- (a) **Disclosure of Records.** This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.
- (b) **Confidential Information.** The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt

from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.*, Conn. Gen. Stat. §1-210(b)(5)(A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

13. Service of Process

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

14. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-112a of the General Statutes of the State of Connecticut, as revised.

15. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit D, and hereby made part of this Contract.

16. Forum and Choice of Law

Forum and Choice of Law. The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

18. Audit and Inspection of Plants, Places of Business and Records

- (a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
- (b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.
- (c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.
- (d) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.
- (e) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
- (f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

19. Campaign Contribution Restriction

For all State contracts, defined in Conn. Gen. Stat. §9-612(f)(1) as having a value in a calendar year of \$50,000 or more, or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," a copy of which is attached hereto and hereby made a part of this contract, attached as Exhibit E.

20. Tangible Personal Property

- (a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

- (1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.
- (b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.
- (c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

21. Bid Rigging and/or Fraud – Notice to Contractor

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The "HOT LINE" telephone number will be available during normal working hours (8:00 am – 5:00 pm EST). Information will be treated confidentially and anonymity respected.

22. Consulting Agreement Affidavit

The Contractor shall comply with Connecticut General Statutes Section 4a-81(a) and 4a-81(b), as revised. Pursuant to Public Act 11-229, after the initial submission of the form, if there is a change in the information contained in the form, a contractor shall submit the updated form, as applicable, either (i) not later than thirty (30) days after the effective date of such change or (ii) prior to execution of any new contract, whichever is earlier.

The Affidavit/Form may be submitted in written format or electronic format through the Department of Administrative Services (DAS) website.

23. Cargo Preference Act Requirements (46 CFR 381.7(a)-(b)) – Use of United States Flag Vessels

The Contractor agrees to comply with the following:

(a) ***Agreement Clauses.***

- (1) Pursuant to Pub. L. 664 ([43 U.S.C. 1241\(b\)](#)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.
- (2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) ***Contractor and Subcontractor Clauses.*** The contractor agrees—

- (1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- (2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
- (3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

EXHIBIT A

FHWA-1273 -- Revised May 1, 2012

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the

assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential

minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26, and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26, in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating

areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or

any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is

registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit

any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under

construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered

transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with

obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency,

a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL
ACCESS ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

EXHIBIT B**TITLE VI CONTRACTOR ASSURANCES**

During the performance of this Contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. **Compliance with Regulations:** The Contractor shall comply with the regulations relative to nondiscrimination in federally assisted programs of the United States Department of Transportation (hereinafter, "USDOT"), Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the grounds of race, color, national origin, sex, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Subsection 5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:**

In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, sex, age, or disability.

4. **Information and Reports:** The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Connecticut Department of Transportation (ConnDOT) or the Funding Agency (FHWA, FTA and FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to ConnDOT or the Funding Agency, as appropriate, and shall set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the ConnDOT shall impose such sanctions as it or the Funding Agency may determine to be appropriate, including, but not limited to:

- A. Withholding contract payments until the Contractor is in-compliance; and/or
- B. Cancellation, termination, or suspension of the Contract, in whole or in part.

6. **Incorporation of Provisions:** The Contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the ConnDOT or the Funding Agency may -direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the ConnDOT to enter into such litigation to protect the interests of the Funding Agency, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States

EXHIBIT C**CONTRACTOR WORKFORCE UTILIZATION (FEDERAL EXECUTIVE ORDER 11246) /
EQUAL EMPLOYMENT OPPORTUNITY
(Federal - FHWA)****1. Project Workforce Utilization Goals:**

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted or funded) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where the work is actually performed.

Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications which contain the applicable goals for minority and female participation.

The goals for minority and female utilization are expressed in percentage terms for the contractor's aggregate work-force in each trade on all construction work in the covered area, are referenced in the attached Appendix A.

2. Executive Order 11246

The Contractor's compliance with Executive Order 11246 and 41-CFR Part 60-4 shall be based on its implementation of the specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(A) and its efforts to meet the goals established for the geographical area where the contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hour performed.

If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Pan does not excuse any covered Contractor's or subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

The Contractor shall implement the specific affirmative action standards provided in a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in

which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs (OFCCP) Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant hereto.

In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites; and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
- b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason thereafter; along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notification to the Director when the Union or Unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or women sent by the Contractor, or when the Contractor has other

information that the Union referral process has impeded the Contractor's efforts to meet its obligations.

- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO Policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company EEO Policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment, decisions including specific Foreman, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO Policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work-force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and

employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non-segregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work-force participation, makes a good faith effort to meet with individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of Executive Order 11246 if a particular group is employed in a substantially disparate manner, (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under utilized).

The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in these

specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status, (e.g. mechanic, apprentice, trainee, helper, or laborer) dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

Nothing herein provided shall be construed as a limitation upon the application of their laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

The Director of the Office of Federal Contract Compliance Programs, from time to time, shall issue goals and timetables for minority and female utilization which shall be based on appropriate workforce, demographic or other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or timetables, shall be published as notices in the Federal Register, and shall be inserted by the Contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2.

FEDERALLY FUNDED OR ASSISTED PROJECTS**APPENDIX A****(Labor Market Goals)****Standard Metropolitan Statistical Area (SMSA)****Female****Minority**

Bridgeport – Stamford – Norwalk – Danbury	10.2%
6.9%	

Bethel	Bridgeport	Brookfield	Danbury
Darien	Derby	Easton	Fairfield
Greenwich	Milford	Monroe	New Canaan
New Fairfield	Newton	Norwalk	Redding
Shelton	Stamford	Stratford	Trumbull
Weston	Westport	Wilton	

Hartford – Bristol – New Britain	6.9%
6.9%	

Andover	Avon	Berlin	Bloomfield
Bolton	Bristol	Burlington	Canton
Colchester	Columbia	Coventry	Cromwell
East Granby	East Hampton	East Hartford	East Windsor
Ellington	Enfield	Farmington	Glastonbury
Granby	Hartford	Hebron	Manchester
Marlborough	New Britain	New Hartford	Newington
Plainville	Plymouth	Portland	Rocky Hill
Simsbury	South Windsor	Southington	Stafford
Suffield	Tolland	Vernon	West Hartford
Wethersfield	Willington	Windsor	Windsor Locks

New Haven – Waterbury – Meriden	9.0%
6.9%	

Beacon Falls	Bethany	Branford	Cheshire
Clinton	East Haven	Guilford	Hamden
Madison	Meriden	Middlebury	Naugatuck
New Haven	North Branford	North Haven	Orange
Prospect	Southbury	Thomaston	Wallingford
Waterbury	Watertown	West Haven	Wolcott
Woodbridge	Woodbury		

New London – Norwich	4.5%
6.9%	

Bozrah	East Lyme	Griswold	Groton
Ledyard	Lisbon	Montville	New London
Norwich	Old Lyme	Old Saybrook	Preston
Sprague	Stonington	Waterford	

Non SMSA**Female****Minority**

Litchfield – Windham			5.9%
6.9%			
Abington	Ashford	Ballouville	Bantam
Barkhamsted	Bethlehem	Bridgewater	Brooklyn
Canaan	Canterbury	Central Village	Cahplin
Colebrook	Cornwall	Cornwall Bridge	Danielson
Dayville	East Canaan	East Killingly	East Woodstock
Eastford	Falls Village	Gaylordsville	Goshen
Grosvenor Dale	Hampton	Harwinton	Kent
Killigly	Lakeside	Litchfield	Moosup
Morris	New Milford	New Preston	New Preston Marble Dale
Norfolk	North Canaan	No. Grosvenordale	North Windham
Oneco	Pequabuck	Pine Meadow	Plainfield
Pleasant Valley	Pomfret	Pomfret Center	Putnam
Quinebaug	Riverton	Rogers	Roxbury
Salisbury	Scotland	Sharon	South Kent
South Woodstock	Sterling	Taconic	Terryville
Thompson	Torrington	Warren	Warrenville
Washington	Washington Depot	Wauregan	West Cornwall
Willimantic	Winchester	Winchester Center	Windham
Winsted	Woodstock	Woodstock Valley	

EXHIBIT D**Health Insurance Portability and Accountability Act of 1996 (“HIPAA”).**

- (a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.
- (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
- (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
- (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
- (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
- (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions
 - (1) “Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

- (6) "Individual" shall have the same meaning as the term "individual" in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
 - (7) "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.
 - (8) "Protected Health Information" or "PHI" shall have the same meaning as the term "protected health information" in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
 - (9) "Required by Law" shall have the same meaning as the term "required by law" in 45 C.F.R. § 164.103.
 - (10) "Secretary" shall mean the Secretary of the Department of Health and Human Services or his designee.
 - (11) "More stringent" shall have the same meaning as the term "more stringent" in 45 C.F.R. § 160.202.
 - (12) "This Section of the Contract" refers to the HIPAA Provisions stated herein, in their entirety.
 - (13) "Security Incident" shall have the same meaning as the term "security incident" in 45 C.F.R. § 164.304.
 - (14) "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.
 - (15) "Unsecured protected health information" shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).
- (h) Obligations and Activities of Business Associates.
- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
 - (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
 - (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
 - (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.
- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

- A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
- B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)) . A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
- C. The Business Associate agrees to include in the notification to the Covered Entity at least the following information:
1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
 2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
 3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
 4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
 5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to

individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

- D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.
 - E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.
- (i) Permitted Uses and Disclosure by Business Associate.
- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.
 - (2) Specific Use and Disclosure Provisions
 - (A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.
 - (B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.
 - (C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).
- (j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
 - (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
 - (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.
- (k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.
- (l) Term and Termination.
- (1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
 - (2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:
 - (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
 - (3) Effect of Termination
 - (A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity

within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

(7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the

HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (*italicized words are defined on the reverse side of this page*).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract or state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor or principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."

DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. “Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

EXHIBIT F

(federal wage rate package will be inserted here for final executed contract only. Refer to NTC – Federal Wage Determinations)

EXHIBIT G

(state wages will be inserted here)

Project: Replacement Of Roadway Illumination Systems In District One

**Minimum Rates and Classifications
for Heavy/Highway Construction**

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

ID#: H 25018

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: Project Town: Rocky Hill
FAP Number: 000T(067) State Number: 171-432
Project: Replacement Of Roadway Illumination Systems In District One

CLASSIFICATION	Hourly Rate	Benefits
01) 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 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	33.48	31.66
2) Carpenters, Piledrivermen	32.60	25.34

Project: Replacement Of Roadway Illumination Systems In District One

2a) Diver Tenders	32.60	25.34
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3) Divers	41.06	25.34
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03a) Millwrights	33.14	25.74
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4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	49.75	21.05
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4a) Painters: Brush and Roller	33.62	21.05
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4b) Painters: Spray Only	36.62	21.05
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4c) Painters: Steel Only	35.62	21.05
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Project: Replacement Of Roadway Illumination Systems In District One

4d) Painters: Blast and Spray	36.62	21.05
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4e) Painters: Tanks, Tower and Swing	35.62	21.05
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5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	40.00	25.97+3% of gross wage
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6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	35.47	35.14 + a
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7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade 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)	42.62	31.21
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---LABORERS----

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	30.05	20.10
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Project: Replacement Of Roadway Illumination Systems In District One

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	30.30	20.10
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10) Group 3: Pipelayers	30.55	20.10
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11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	30.55	20.10
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12) Group 5: Toxic waste removal (non-mechanical systems)	32.05	20.10
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13) Group 6: Blasters	31.80	20.10
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Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	31.05	20.10
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Group 8: Traffic control signalmen	16.00	20.10
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Project: Replacement Of Roadway Illumination Systems In District One

Group 9: Hydraulic Drills	29.30	18.90
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---LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and
Liner Plate Tunnels in Free Air.---

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	32.22	20.10 + a
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13b) Brakemen, Trackmen	31.28	20.10 + a
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---CLEANING, CONCRETE AND CAULKING TUNNEL---

14) Concrete Workers, Form Movers, and Strippers	31.28	20.10 + a
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15) Form Erectors	31.60	20.10 + a
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Project: Replacement Of Roadway Illumination Systems In District One

---ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL
IN FREE AIR:----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	20.10 + a
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17) Laborers Topside, Cage Tenders, Bellman	31.17	20.10 + a
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18) Miners	32.22	20.10 + a
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---TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED
AIR: ----

18a) Blaster	38.53	20.10 + a
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19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	20.10 + a
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Project: Replacement Of Roadway Illumination Systems In District One

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	20.10 + a
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21) Mucking Machine Operator	39.11	20.10 + a
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---TRUCK DRIVERS---(*see note below)

Two axle trucks	29.13	23.33 + a
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Three axle trucks; two axle ready mix	29.23	23.33 + a
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Three axle ready mix	29.28	23.33 + a
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Four axle trucks, heavy duty trailer (up to 40 tons)	29.33	23.33 + a
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Project: Replacement Of Roadway Illumination Systems In District One

Four axle ready-mix	29.38	23.33 + a
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Heavy duty trailer (40 tons and over)	29.58	23.33 + a
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Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.38	23.33 + a
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---POWER EQUIPMENT OPERATORS---		
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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. & Over, Tunnel Boring Machines. (Trade License Required)	39.55	24.05 + 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)	39.23	24.05 + a
<hr/>		
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; 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)	38.49	24.05 + a
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Project: Replacement Of Roadway Illumination Systems In District One

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	38.10	24.05 + a
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Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; 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)	37.51	24.05 + a
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Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	37.51	24.05 + a
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Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	37.20	24.05 + 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 Mandrel).	36.86	24.05 + a
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Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	36.46	24.05 + a
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Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	36.03	24.05 + a
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Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. 33.99 24.05 + a

Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. 33.99 24.05 + a

Group 12: Wellpoint Operator. 33.93 24.05 + a

Group 13: Compressor Battery Operator. 33.35 24.05 + a

Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). 32.21 24.05 + a

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. 31.80 24.05 + a

Group 16: Maintenance Engineer/Oiler 31.15 24.05 + a

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Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	35.46	24.05 + a
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Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	33.04	24.05 + a
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**NOTE: SEE BELOW

---LINE CONSTRUCTION---(Railroad Construction and Maintenance)---

20) Lineman, Cable Splicer, Technician	48.19	6.5% + 22.00
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21) Heavy Equipment Operator	42.26	6.5% + 19.88
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22) Equipment Operator, Tractor Trailer Driver, Material Men	40.96	6.5% + 19.21
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As of:

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Project: Replacement Of Roadway Illumination Systems In District One

23) Driver Groundmen	26.50	6.5% + 9.00
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23a) Truck Driver	40.96	6.5% + 17.76
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---LINE CONSTRUCTION---

24) Driver Groundmen	30.92	6.5% + 9.70
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25) Groundmen	22.67	6.5% + 6.20
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26) Heavy Equipment Operators	37.10	6.5% + 10.70
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27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
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Project: Replacement Of Roadway Illumination Systems In District One

28) Material Men, Tractor Trailer Drivers, Equipment Operators

35.04

6.5% + 10.45

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Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

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.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

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Project: Replacement Of Roadway Illumination Systems In District One

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.

As of:

Thursday, July 12, 2018

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

- a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Information Bulletin ***Occupational Classifications***

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

- The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

- If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

- An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ****License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. **License required by Connecticut General Statutes: R-1,2,5,6.*

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- **INSULATOR**

- Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal)).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

- Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

- Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ****License required, crane operators only, per Connecticut General Statutes.***

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- **SHEETMETAL WORKERS**

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

****License required per Connecticut General Statutes: F-1,2,3,4.***

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are requires to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ****License required, drivers only, per Connecticut General Statutes.***

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

➤ *Any questions regarding the proper classification should be directed to:*
Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543.

Statute 31-55a

Last Updated: June 02, 2008

You are here: [DOL Web Site](#) ▶ [Wage and Workplace Issues](#) ▶ Statute 31-55a

- Special Notice -

To All State and Political Subdivisions, Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the *contractor's* responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace

Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd.,
Wethersfield, CT 06109 at (860)263-6790.

[Workplace Laws](#)

Published by the Connecticut Department of Labor, Project Management Office

November 29, 2006

Notice
To All Mason Contractors and Interested Parties
Regarding Construction Pursuant to Section 31-53 of the
Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, 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) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite 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;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute 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/wgemenu.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. Proof of completion required for employees on public building projects. Enforcement. Regulations. (a) Each contract entered into on or after July 1, 2007, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by an political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars, shall contain a provision requiring that, not later than thirty days after the date such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building, pursuant to such contract, have 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, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268.

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

(c) Not later than January 1, 2007, 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 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) For the purposes of this section, "public building" means a structure, paid for in whole or in part with state funds, within a roof and within exterior walls or fire walls, designed for the housing, shelter, enclosure and support or employment of people, animals or property of any kind, including, but not limited to, sewage treatment plants and water treatment plants, "Public building" does not include site work, roads or bridges, rail lines, parking lots or underground water, sewer or drainage systems including pump houses or other utility systems.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

I, _____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

Street

City

and all of its subcontractors will pay all workers on the

Project Name and Number

Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

Signed

Subscribed and sworn to before me this _____ day of _____, 2004.

Notary Public

 Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109