

TOWN OF LEDYARD CONNECTICUT

741 Colonel Ledyard Highway
Ledyard, CT 06339-1541
(Phone)(860) 464-8740
(Fax)(860) 464-1126

BID PACKAGE

for

DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS

BID # 2012-05

AUGUST 2011

**LEGAL NOTICE
TOWN OF LEDYARD, CONNECTICUT
INVITATION TO BID -- BID # 2012-05**

DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS

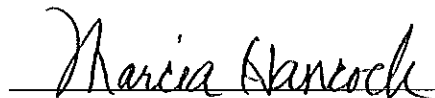
August 22, 2011

The Town of Ledyard seeks drainage improvements at Shewville and Pumpkin Hill Roads. Project Plans, Technical Specifications, and Bid Proposal Forms may be obtained on-line at www.ledyardct.org or in person at the Ledyard Town Hall, 741 Colonel Ledyard Highway, Ledyard, CT 06339.

Sealed proposals will be received by the Director of Finance, Ledyard Town Hall, 741 Colonel Ledyard Highway, Ledyard, CT. 06339, until **3:00 p.m., Thursday, September 8, 2011**, at which time they will be opened and read aloud. Proposals received after that time will not be accepted and will be returned to the bidder unopened. Proposals should be clearly marked **"SEALED BID #2012-05: DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS"**.

Prospective Bidders may contact Public Works Director Steve Masalin at (860) 464-1100 for additional information or clarification of the bidding process. The Town of Ledyard reserves the right to waive any technical defects in the bids; to reject any bids which do not conform to terms and conditions described in the specifications; to reject any or all bids and to again invite bids; and waive informalities or irregularities in the bidding process.

The contract will be awarded to the lowest responsible and qualified bidder whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary to perform the work in good faith.


Marcia Hancock
Director of Finance

AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER

TOWN OF LEDYARD, CONNECTICUT
BID # 2012-05

DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS

BID PROPOSAL FORM

Date _____

PROPOSAL OF

Bidder's Name

Bidder's Address

Bidder's Phone and Fax Numbers

Signature

TO: TOWN OF LEDYARD, CONNECTICUT

1. Pursuant to, and in compliance with your invitation to bid for **DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS**, (I/we) propose to furnish labor and materials, installed as required, for the above-named project, furnishing all necessary equipment, machinery, fuel, tools, labor and other means of construction, and all materials specified in the manner and at the time prescribed, according to the full scope of Technical Specifications, together with all addenda issued by the Town and received prior to the scheduled closing time for the receipt of bids, and in conformity with the requirements of the Town of Ledyard and any laws or departmental regulations of the State of Connecticut or of the United States which may affect the same, for and in consideration of bids stated in this proposal.

2. THIS BID IS DETERMINED AS FOLLOWS:

ITEM NO.	DESCRIPTION OF ITEM	NUMBER OF UNITS	UNIT BID	UNIT PRICE	TOTAL FOR ITEM
1.	Mobilization	1	L.S.	L.S.	\$ _____
5.	Single Catch Basin	4	EA	\$ _____	\$ _____
6a.	15" HDPE	108	L.F.	\$ _____	\$ _____
6b.	18" HDPE	64	L.F.	\$ _____	\$ _____
6c.	24" HDPE	30	L.F.	\$ _____	\$ _____
7a.	15" Flared End	2	EA	\$ _____	\$ _____
7b.	18" Flared End	2	EA	\$ _____	\$ _____
7c.	24" Flared End	2	EA	\$ _____	\$ _____
8.	New Headwall	3	EA	\$ _____	\$ _____
9.	Replace Catch Basin Tops	5	EA	\$ _____	\$ _____

TOTAL BID \$

(WRITTEN TOTAL BID – TYPED OR IN INK)

In the event of any discrepancy between the amount written in words and the amount written in numerical figures, the amount written in words will be controlling.

3. UNCERTAINTY OF QUANTITIES

- A. The quantities shown in the plans have been determined from field inspection, and, coupled with the specifications, provide adequate accuracy and detail for lump sum bids. The work under certain items may be materially greater or less than those given in the bid document in order to complete the contemplated project, but unless the quantities are appreciably different than represented in the plans and specifications, the lump sum prices will stand. If an appreciable material difference is encountered, it will have to be agreed to by the Town before an adjustment in Contract price is negotiated.
- B. Under the Contract, the Town of Ledyard reserves the right to increase or decrease the scope of the work as shown in this bid.
- C. Only such quantities of the items of work actually performed and accepted will be paid for.

4. INSTRUCTIONS TO BIDDERS

- A. The Total Bid price of this proposal includes all work indicated on the Project Plans and/or as described in the Technical Specifications.
- B. Bids must be submitted in sealed envelopes addressed to Director of Finance, Ledyard Town Hall, 741 Colonel Ledyard Highway, Ledyard, Connecticut 06339, and are to be endorsed in the lower left-hand corner as follows:

**“SEALED BID # 2012-05, DRAINAGE IMPROVEMENTS SHEWVILLE AND
PUMPKIN HILL ROADS”**

- C. In submitting this Bid, Bidder's agree to hold their bid open for 60 days after the actual bid opening date.
- D. Any bid once deposited with the Town of Ledyard may only be withdrawn by letter of request, signed by the depositing Bidder, and presented to the Director of Finance of the Town of Ledyard prior to the time of scheduled bid opening for the project.
- E. Bids shall be submitted only on the prepared forms furnished by the Town of Ledyard for this specific project. Any bid showing any omission, alteration in form, additions not called for, and any conditional bids, alternative bids or bids showing irregularities of any kind will be rejected. Any bid received after the scheduled closing time for bid receipt will be returned to the bidder unopened.
- F. The Town of Ledyard, Connecticut, reserves the right to waive technical defects in the bids, to reject any bids which do not conform to the terms and conditions described herein, and to accept or reject any part of any bid, and to reject all bids and to again invite bids.

- =====
- G. Bidders shall complete and fill out all blanks in the attached Statement of Bidder's Qualifications.

5. CONTRACT AWARD

- A. For purpose of Award, consideration will be given only to proposals submitted by qualified and responsible bidders, as determined on the basis of successful completion of similar road paving and storm water drainage projects elsewhere.
- B. Subject to the rights reserved to the Town of Ledyard, the Award will be made on the basis of the lowest responsive Total Bid, which is a summation of all bid items. Bids must be made on each separate item of work shown in the bid proposal form, with reasonable relation to the probable cost of doing the work included in such item.
- C. Within thirty (30) days after the opening of the bids, the Town will accept one of the bids or reject all bids. Notice of Award will be in writing and mailed to the address designated in the proposal. The notice shall contain appropriate instructions regarding all bonds and certificates of insurance that may be required.

6. CONNECTICUT SALES & USE TAX EXEMPTION

The Town of Ledyard is exempt from tax on material, supplies and labor per Conn. General Statutes, section 12-412(a). Connecticut sales or use taxes shall not be included as part of any bid.

7. CONTRACT SCHEDULES

All work under this Contract shall be completed within thirty (30) consecutive calendar days after receiving written Notice to Proceed, unless the completion date is extended in writing by the Public Works Director. The Bidder shall notify the Public Works Director of the planned startup date.

8. CONTRACTOR'S INSURANCE REQUIRED

The Contractor must carry insurance under which the Town is named as an assured, as follows:

- A. Worker's Compensation - as required by State statute.

B. Commercial Liability as follows:

- \$ 2,000,000 -- General Aggregate
- \$ 2,000,000 -- Products Completed Operations Aggregate
- \$ 1,000,000 -- Personal & Advertising Injury
- \$ 1,000,000 -- Each Occurrence Bodily Injury & Property Damage
- \$ 100,000 -- Fire Damage, Any One Fire
- \$ 5,000 -- Medical Payments, Any One Person Including Explosion
Collapse & Underground

C. Automobile Liability: \$1,000,000 Combined Single Limit Bodily Injury & Property Damage.

Such insurance must be by insurance companies licensed to write such insurance in the State of Connecticut against the above risks and in the amounts indicated. All insurance must provide for a thirty (30) day notice to the Town of cancellation or restrictive amendment. Certificates of Insurance do not have to be submitted as part of the bid, however they must be submitted to the Director of Public Works within ten (10) days after the Notification of Award. Failure to provide and to keep current the required insurance and certificates may be held to be a willful and substantial breach of this Contract.

9. INDEMNIFICATION

The Contractor shall at all times indemnify and save harmless the Town of Ledyard, Connecticut, and its respective officers, agents and employees on account of any and from any and all claims, damages, losses, judgments, workers' compensation payments, litigation expenses, and legal counsel fees arising out of injuries to persons (including death) or damage to property alleged to have been sustained by (a) officers, agents and employees of the Town of Ledyard or (b) the Contractor, his subcontractors or material men or (c) any other person, which injuries are alleged to have occurred on or near the work or to have been caused in whole or in part by the acts, omissions, or neglect of the Contractor or his subcontractor or material men, or by reason of his or their use of faulty, defective, or unsuitable materials, tools, or equipment of defective design in constructing or performing the work. The existence of insurance shall in no way limit the scope of this indemnification. The Contractor further undertakes to reimburse the Town of Ledyard for damage to property of the Town of Ledyard caused by the Contractor or his employees, agents, subcontractors, or material men, or by faulty, defective, or unsuitable material or equipment used by him or them.

10. CONTRACTOR'S PAYMENT SCHEDULE

All of the work shall be performed according to the Project Plans & Technical Specifications, and shall be inspected and approved by the Town of Ledyard's Public Works Director prior to any payments for the work. Payment will be made upon project completion.

11. FINAL PAYMENT REQUISITION

The Contractor shall provide proof to the Town's Public Works Director that all of the Contractor's Subcontractors and Material Suppliers have been fully paid for all work and materials furnished on this project. Upon receipt of the above proof, the Town's Public Works Director will approve the final payment requisition from the Contractor.

12. MATERIALS & CONSTRUCTION STANDARDS

All materials and articles incorporated in the work are to be new and of the best grade of their respective kinds, per Connecticut DOT Form 816, as amended. Additional required Town Standards are included in "An Ordinance Amending An Ordinance Regulating The Addition Of Any New Street Or Highway To The Highway System Of The Town Of Ledyard," as amended. All material and workmanship shall be subject to examination by the Public Works Director or his agent at any and all times during construction.

13. PERFORMANCE AND LABOR & MATERIALS BOND

A Performance Bond in the full amount of the bid and a Labor and Materials Bond in the same amount will be required from the successful bidder for the faithful performance of the Contract if the contract amount is greater than twenty-five thousand (25,000) dollars. The Bonds must be made out in favor of the Town of Ledyard and executed by a Surety Company authorized to do business in the State of Connecticut. In lieu of the above Bonds, alternate surety in the same amount, in the form of a secured passbook, if acceptable to the Town Treasurer, may be substituted. The security must be posted and accepted within thirty (30) days of the notification of award and prior to the commencement of any work under the Contract.

14. EQUAL OPPORTUNITY & AFFIRMATIVE ACTION

The Contractor and all Subcontractors agree to provide equal opportunities to all qualified persons solely on the basis of job-related skills, ability and merit, and to take affirmative action to ensure that qualified applicants are employed and that employees are treated during their employment without regard to race, color, religion, gender, national origin, ancestry, age, physical disability, marital status, or mental retardation. Contractors and Subcontractors shall make good faith efforts to comply with all Federal and State laws, and with the Town of Ledyard policy, regarding equal opportunities in employment and affirmative action, pursuant to the Connecticut General Statutes, Section 46a-60, et. seq.

-- END OF SECTION --

**TOWN OF LEDYARD, CONNECTICUT
BID #2012-05**

**DRAINAGE IMPROVEMENTS SHEWVILLE AND PUMPKIN HILL ROADS
TECHNICAL SPECIFICATIONS**

GENERAL

The Project consists of miscellaneous drainage improvements in support of road restoration of portions of Shewville and Pumpkin Hill Roads. Resurfacing will be accomplished through a separate contract after completion of these improvements. The Town is seeking resurfacing to commence immediately following this work; the work should be finished within 30 days of notice to proceed. The improvements are individually minor, and consist of catch basin top replacement and resetting, catch basin and drain pipe installation, and cross-culvert replacement. The Project is described in the Project Plans and these Specifications.

The Contractor shall furnish all labor, materials, supplies, equipment, fuel, and other appurtenances necessary and proper for project completion. These Plans and Specifications are intended to adequately describe and illustrate the materials and work necessary to complete the project. However, it is incumbent upon Bidders to fully apprise themselves of site conditions, through on-site inspection, if necessary. The Town assumes that Bidders have adequately appraised themselves of the scope of the work, and assumes no risk if Bidder(s) fail to do so.

DETAILED

Contractors will be responsible for effecting work according to normal practices. The following specification elements are provided to cover the requirements for each job, as they may apply.

1. MOBILIZATION

The work described under this item consists of the movement of personnel and equipment to the project site. Also included under this item is the removal of all of the above from the project site after completion of the work.

Basis for payment: This work will be paid for at the Contract **Lump Sum** price.

2. CLEARING and GRUBBING (includes removal of pavement and curbs)

The work described under this item consists of clearing the work area of all roadway pavement and curbs, and other materials which would interfere with the work and are located within the limits of work. All of the above materials are to be disposed of off-site by the Contractor at his expense.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

3. PUBLIC SAFETY, MAINTENANCE & PROTECTION OF TRAFFIC

The work described under this item consists of the Contractor keeping the roadway under construction open to traffic for the full length of the project. The Contractor shall close and/or backfill all construction trenches at the end of each workday. The Contractor shall provide appropriate traffic control measures when work requires alternating one-way traffic. Suitable ingress and egress shall be provided at all times for all intersection roads and for all driveways. Road closure and/or traffic detours will not be allowed unless approved by the Town's Public Works Director. The Contractor shall defer to any requirements specified by the Ledyard Police.

Basis for payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

4. ROCK EXCAVATION

This item shall consist of the removal of all rocks/boulders larger than 1.0 cubic yard in volume. When rock is encountered, the Contractor shall strip or expose the rock so that the Town's Public Works Director or his Agent can take the required measurements.

Basis for payment: If encountered, the Town will compensate the Contractor at \$100 per yard. For payment purposes, rock must be set aside, measured, and accepted by the Town. This item's Contract unit price shall include all costs for the on-site movement, compaction and utilization of the fractured rock pieces, and also for all off-site disposal of the bedrock, rocks and boulders.

5. CATCH BASIN (CB)

This item shall include the furnishing and installation of a complete catch basin. These items include the pre-cast concrete structure, frame and grate, excavation, gravel backfill and compaction, and connection of pipes. The tops shall be set to properly receive stormwater flow, as verified by the Public Works Director or his Agent. This item includes excavation, removal, and disposal of any existing structures. This item includes 2" of temporary pavement of the disturbed road area around the basin.

Basis for payment: This item will be paid for at the Contract unit price per **Each** "Single Catch Basin."

6. DRAINAGE PIPE

This item shall include the furnishing and installation of drainage pipe of the size and type specified on the Project Plans. This item includes the trench excavation, dewatering, stone, gravel, backfill and compaction for the pipe, and the removal of existing pipe, if applicable. This item includes 2" temporary trench pavement.

Basis for payment: This item will be paid for at the Contract unit price per **Linear Foot** of Pipe.

7. FLARED END UNIT

This item shall consist of the furnishing and the installation of a flared end unit of the size specified on the Project Plans. This item includes the excavation, stone bedding, backfill and compaction the area of the flared end with appropriate shaping of the inlet or discharge area, as applicable.

Basis for payment: This item will be paid for at the Contract unit price per **Each** "Flared End Unit."

8. HEADWALL

This item shall consist of the installation of a concrete headwall according to the detailed requirements specified on the Project Plans. This item includes the excavation, stone bedding, backfill and compaction the area of the headwall with appropriate shaping of the inlet or discharge area, as applicable.

Basis for payment: This item will be paid for at the Contract unit price per **Each** "New Headwall."

9. REPLACE CATCH BASIN TOPS

The work described under this item shall consist of replacement of existing Type "C" and "CL" tops with new Type "C" and "CL" tops where and as indicated on the Project Plans. The new tops will be set at a grade to properly receive stormwater flow, as verified by the Public Works Director or his Agent. This item includes 2" of temporary pavement of the disturbed road area around the basin. Any adjustment to the basin structures to achieve required grade is included in this item. Beyond this adjustment, any additional repair work to existing catch basins necessary to restore the functional integrity of the basin shall be undertaken in accordance with direction from the Ledyard Public Works Director or his agent. Such work will entitle the Contractor to additional compensation on a time and materials basis.

Basis for payment: This item will be paid for at the Contract unit price per **Each** "New Catch Basin Top."

10. CONSTRUCTION SIGNS / CONES / DRUMS

The Contractor shall utilize signs, cones and drums to notify the travelers of local construction activities and for traffic flow. The Town's Public Works Director or Ledyard Police may direct the Contractor to utilize additional signs, cones and drums, at no additional cost to the Town, if the Contractor does not provide an adequate quantity for the project.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

11. DISPOSAL OF SURPLUS & UNSUITABLE MATERIAL

The Contractor shall dispose off-site all surplus and unsuitable material resulting from this project, including but not limited to, removed trees, pipe, pavements and curbs, according to directions of the Town's Public Works Director. The Contractor shall pay all costs associated with removing, transporting and the disposal of this material.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

12. PROPERTY PROTECTION & PAVEMENT RESTORATION

Any property damaged outside the limits of the construction and/or on private property shall be restored to its original condition at the Contractor's expense. Road pavement, curbing, mail boxes, lawns, fences, stone walls, shrubs, trees, etc. damaged by the Contractor shall be replaced/repared to the Owners satisfaction.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

13. FINAL CLEANING

The Contractor, preparatory to final inspection by the Town, shall provide final cleaning of the project area. If the Contractor fails to clean up, the Town may do so and the cost thereof charged to the Contractor.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

14. MATERIAL & CONSTRUCTION STANDARDS

All materials and articles incorporated in the work are to be new and of the best grade of their respective kinds in accordance with the Connecticut DOT, Form 816, as amended. All construction, materials and workmanship shall be subject to inspection and examination by the Town's Public Works Director or his Agent at any and all times during the construction. The Town's Standards shall be utilized on this project unless otherwise approved by the Town's Public Works Director.

15. GUARANTEES & WARRANTIES

The Contractor shall guarantee all materials and workmanship for a period of one (1) year from the date of substantial completion of the project.

16. WORKING HOURS

Unless otherwise specifically permitted, **no work** shall be done between the hours of 6:00 P.M. and 7:00 A.M., or on Sundays or legal holidays, except as necessary for the proper care and protection of the work already performed.

17. SUBCONTRACTORS

Assurance of compliance with the Town Standards by Subcontractors shall be the responsibility of the Contractor.

18. BURIED UTILITIES

The Contractor shall notify "CALL BEFORE YOU DIG" at 1-800-922-4455 to verify all utility locations, depths, and sizes prior to construction. The Contractor shall make his own investigations of the extent and location of utilities, and shall plan his operations accordingly. The Contractor shall include all costs of this work in the Bid. No additional payment will be made to the Contractor for locating, protecting and making arrangements for relocating public utilities or for any delays caused thereby. No claim for any delays, damage or extra work occasioned thereby will be allowed.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

19. SEDIMENTATION, EROSION & STORMWATER CONTROL

At all times, the Contractor shall protect excavations, trenches and all items of construction or installation from damage by rain, surface water and subsurface water usual for the vicinity. Sediment and erosion controls such as silt fence and staked hay bales shall be installed by the Contractor prior to commencing any construction activities. If required by the Town of Ledyard, additional control measures shall be installed immediately by the Contractor. Failure to install or properly maintain these protective devices may result in suspension of work by the Town of Ledyard.

Basis for Payment: Compensation for such work, including all labor and equipment shall be considered to be included in the prices bid for the other items of the work.

-- END OF SECTION --

BIDDER'S QUALIFICATION STATEMENT

Bidder's Name: _____

Bidder's Address: _____

How many years have you been engaged in the consulting business under the present firm name? _____

Owners of Company with titles: _____

Have you ever refused to sign a Contract at your original bid, or have you ever defaulted on a contract? _____

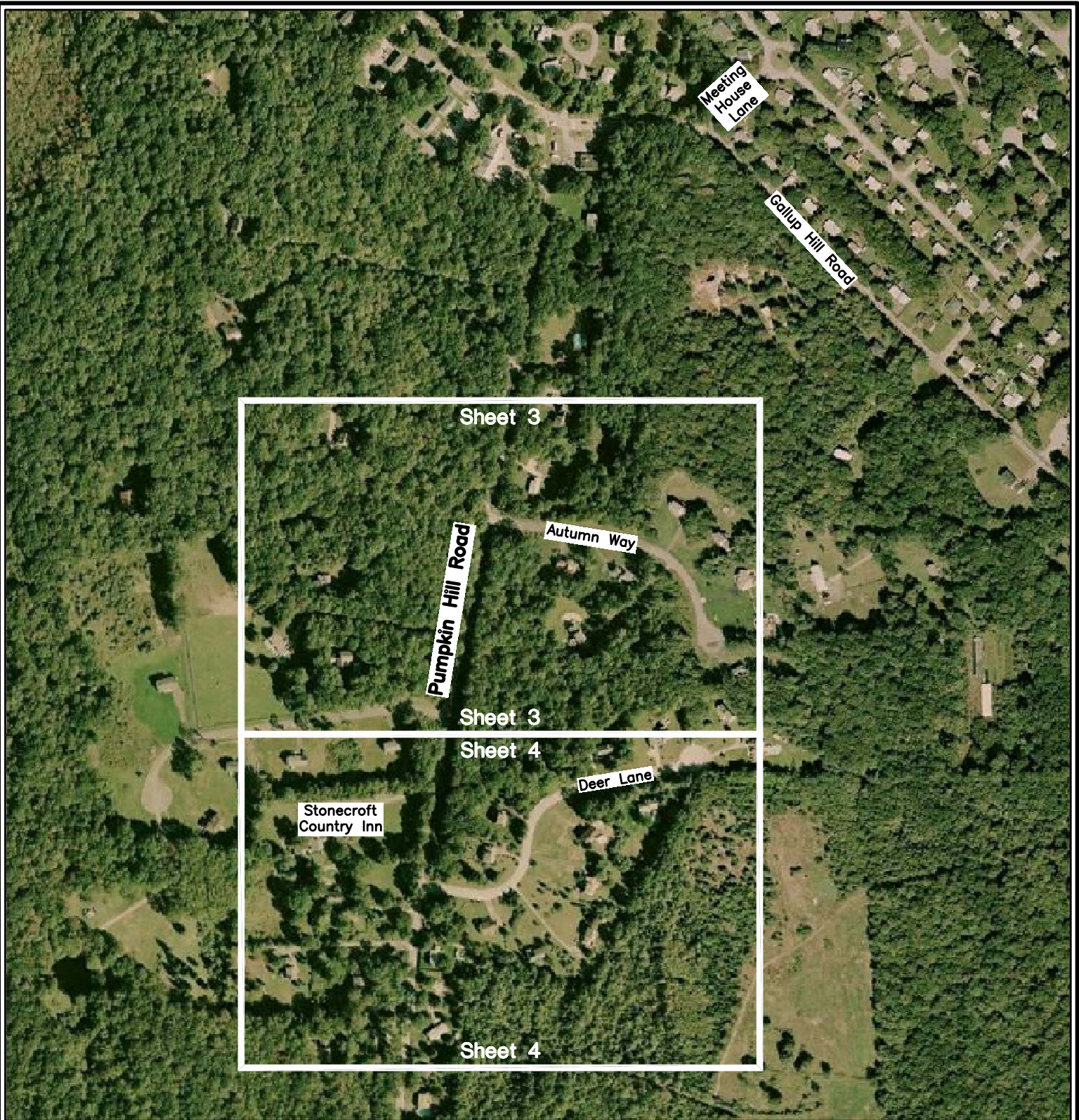
If yes, indicate when, where and why: _____

List projects your Company is presently working on, include location and owner representative's name and phone number

List three (3) equivalent projects your Company has worked on within the last five (3) years; include location, owner's name and phone number:

List subconsultants to be used on this project, including description and approximate dollar value of their work:

-- END OF SECTION --



Location Map: Pumpkin Hill Road



SCALE: 1"=500'



CLA Engineers, Inc.
CIVIL · STRUCTURAL · SURVEYING

317 Main Street Norwich, CT 06360
(860) 886-1966 Fax (860) 886-9165

Town of Ledyard, Connecticut

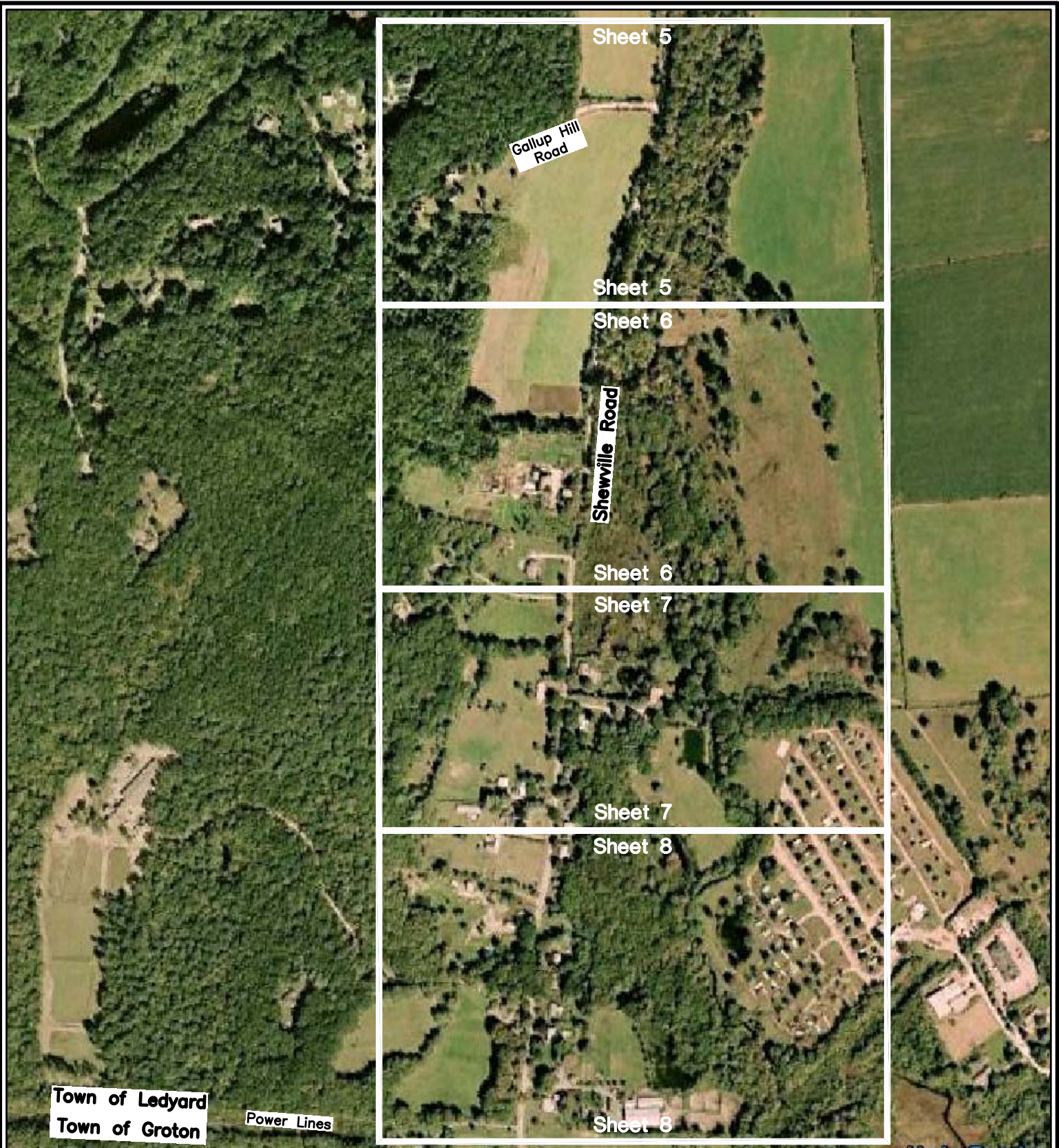
**Shewville Road & Pumpkin Hill Road
Drainage Improvements**

Date: 8/19/11 Rev: 8/19/11

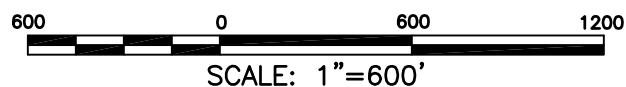
Scale: As Noted

Project No. CLA-4843

Sheet No. **1 of 14**



Location Map: Shewville Road



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Town of Ledyard, Connecticut

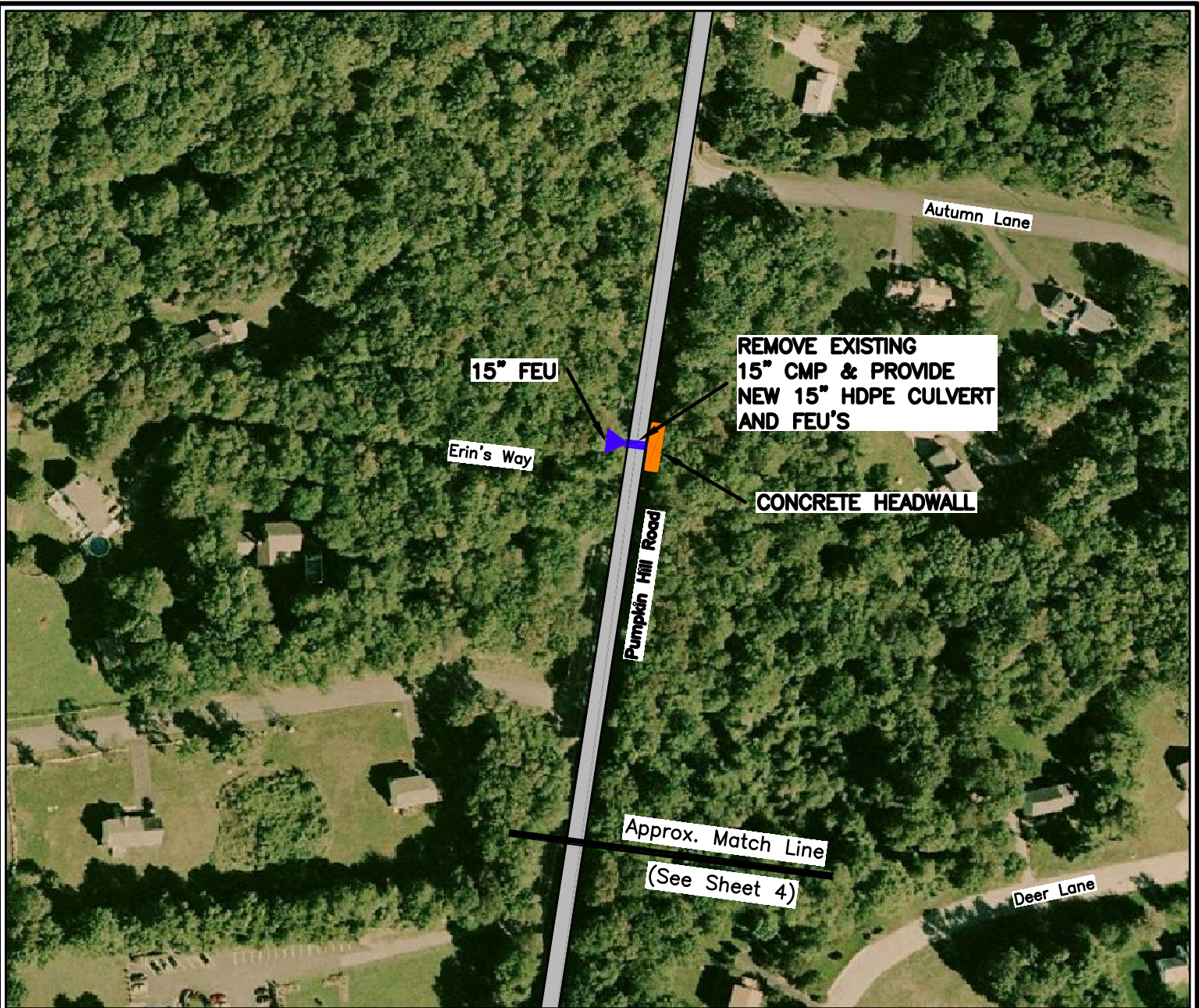
**Shewville Road & Pumpkin Hill Road
Drainage Improvements**

Date: 8/19/11 Rev: 8/19/11

Scale: As Noted

Project No. CLA-4843

Sheet No. **2 of 14**

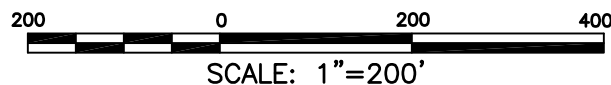


**Estimated Quantities
(This Sheet Only)**

Item	Quantity (This Sheet)	Unit
15" HDPE	32	L.F.
Flared End Unit	1	Ea.
Concrete Headwall	1	Ea.

Legend

- Existing Catch Basin – Top to be Replaced (Approximate Location)
- New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
- New Culvert
- ◀ New Flared End Unit
- New Concrete Headwall



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Town of Ledyard, Connecticut

**Shewville Road & Pumpkin Hill Road
Drainage Improvements**

Date:	Rev: 8/19/11
Scale:	As Noted
Project No.	CLA-4843
Sheet No.	3 of 14

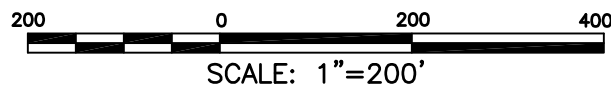


**Estimated Quantities
(This Sheet Only)**

Item	Quantity (This Sheet)	Unit
Replace Catch Basin Top	3	Ea.

Legend

- Existing Catch Basin – Top to be Replaced (Approximate Location)
- New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
- ▬ New Culvert
- ◀ New Flared End Unit
- New Concrete Headwall

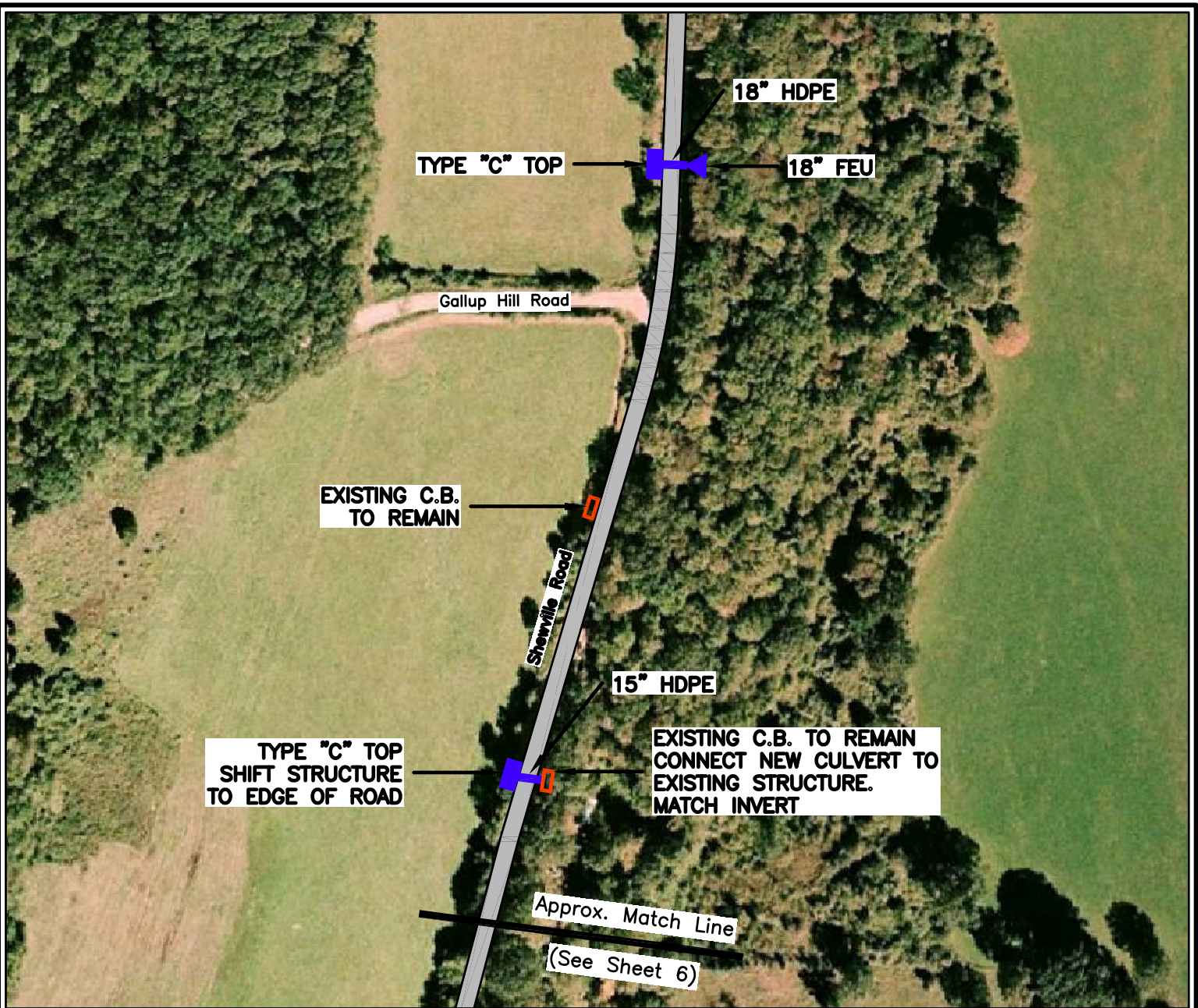


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Town of Ledyard, Connecticut

**Shewville Road & Pumpkin Hill Road
Drainage Improvements**

Date:	Rev: 8/19/11
Scale:	As Noted
Project No.	CLA-4843
Sheet No.	4 of 14



**Estimated Quantities
(This Sheet Only)**

Item	Quantity (This Sheet)	Unit
New Catch Basin	2	Ea.
Connect to Ex. Structure	1	Ea.
15" HDPE	28	L.F.
18" HDPE	28	L.F.
Flared End Unit	1	Ea.

Legend

- Existing Catch Basin - Top to be Replaced (Approximate Location)
- New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
- New Culvert
- ▶ New Flared End Unit
- New Concrete Headwall

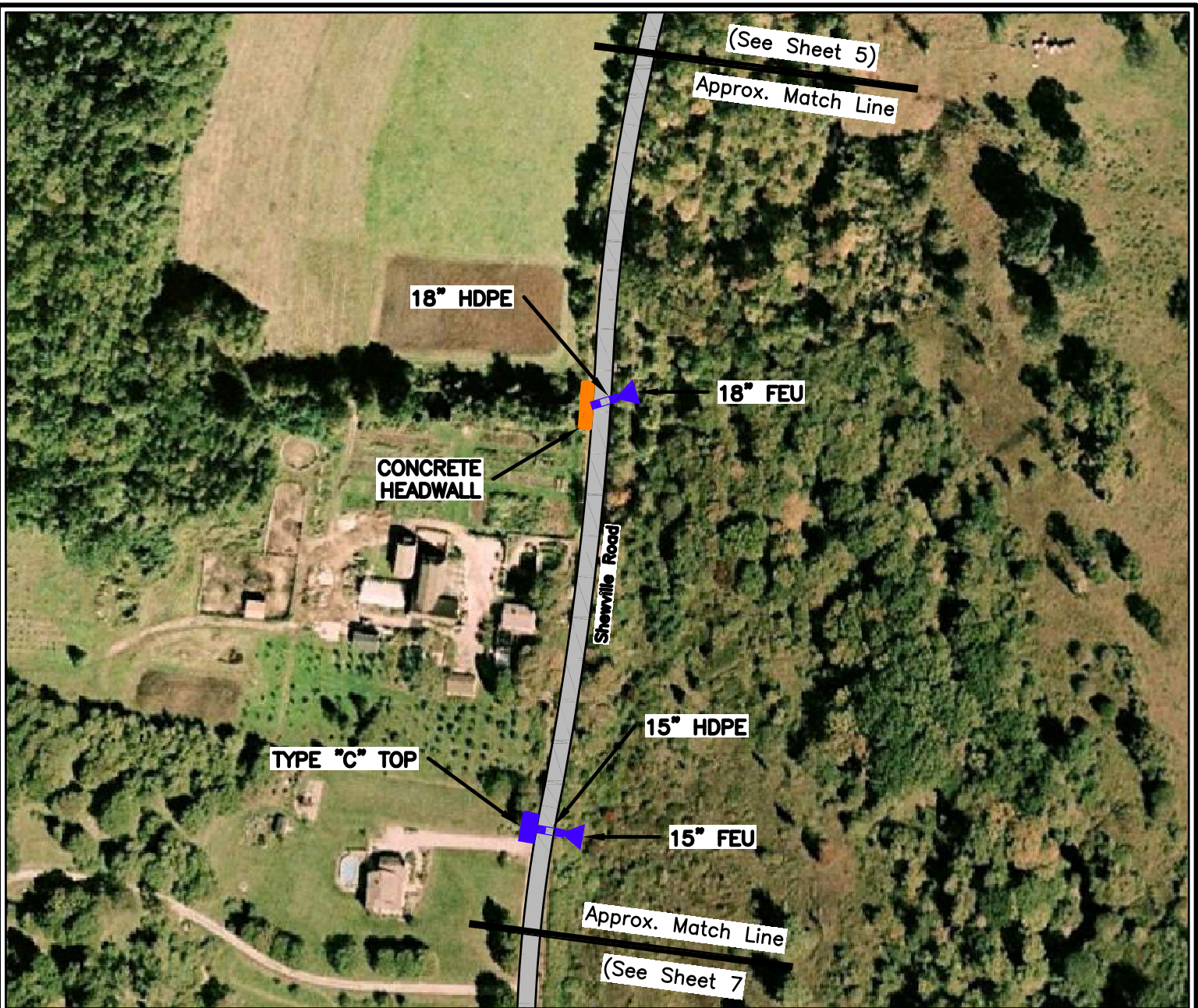


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Town of Ledyard, Connecticut

**Shewville Road & Pumpkin Hill Road
 Drainage Improvements**

Date: 8/19/11
 Scale: As Noted
 Project No. CLA-4843
 Sheet No. **5 of 14**



**Estimated Quantities
(This Sheet Only)**

Item	Quantity (This Sheet)	Unit
New Catch Basin	1	Ea.
Concrete Headwall	1	Ea.
15" HDPE	22	L.F.
18" HDPE	36	L.F.
Flared End Units	2	Ea.

Legend

-  Existing Catch Basin - Top to be Replaced (Approximate Location)
-  New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
-  New Culvert
-  New Flared End Unit
-  New Concrete Headwall



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Town of Ledyard, Connecticut

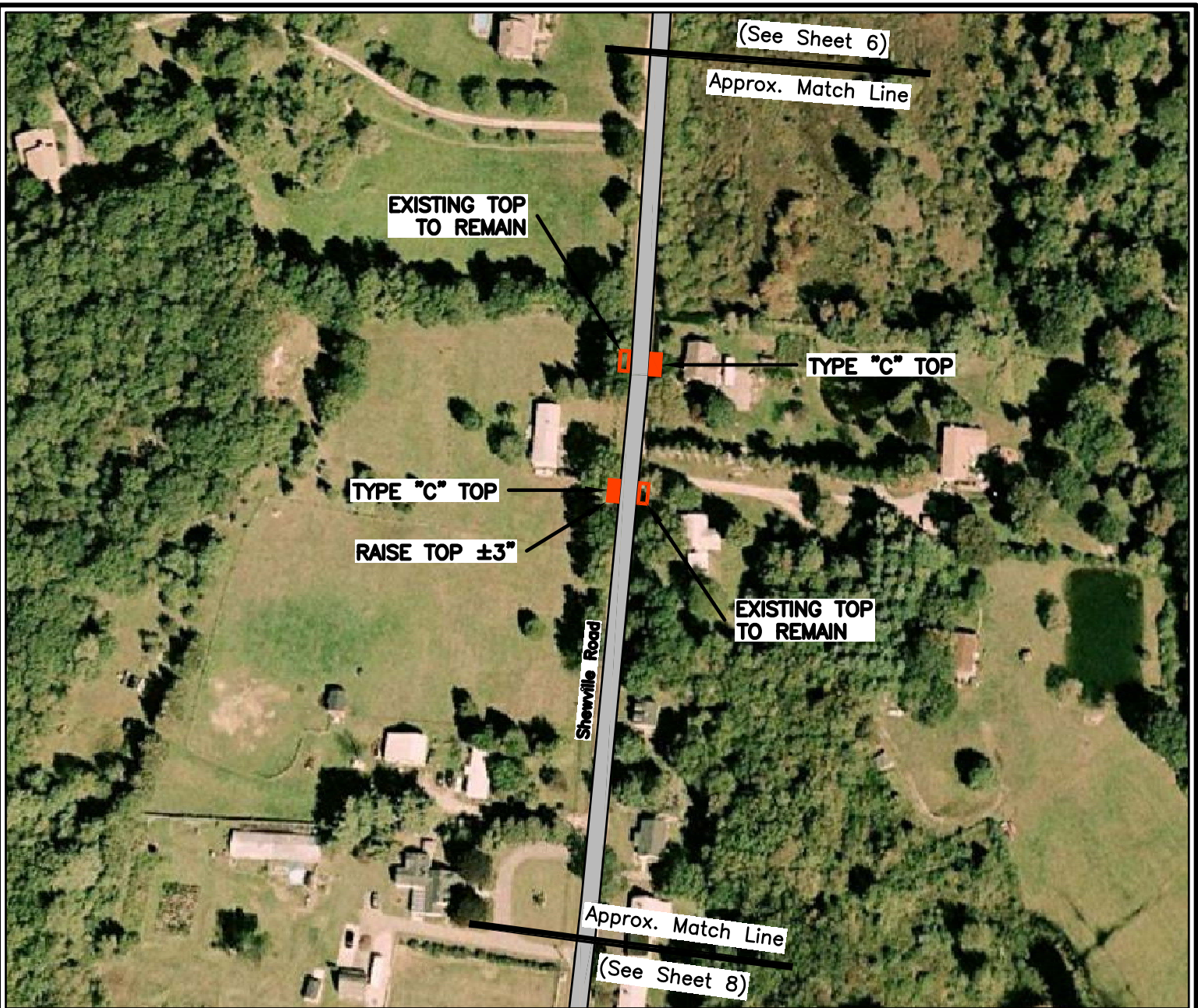
**Shewville Road & Pumpkin Hill Road
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Date: 8/19/11 Rev: 8/19/11

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Project No. CLA-4843

Sheet No. **6 of 14**

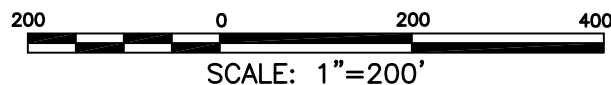


Estimated Quantities
(This Sheet Only)

Item	Quantity (This Sheet)	Unit
Replace Catch Basin Top	2	Ea.

Legend

-  Existing Catch Basin - Top to be Replaced (Approximate Location)
-  New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
-  New Culvert
-  New Flared End Unit
-  New Concrete Headwall



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Town of Ledyard, Connecticut

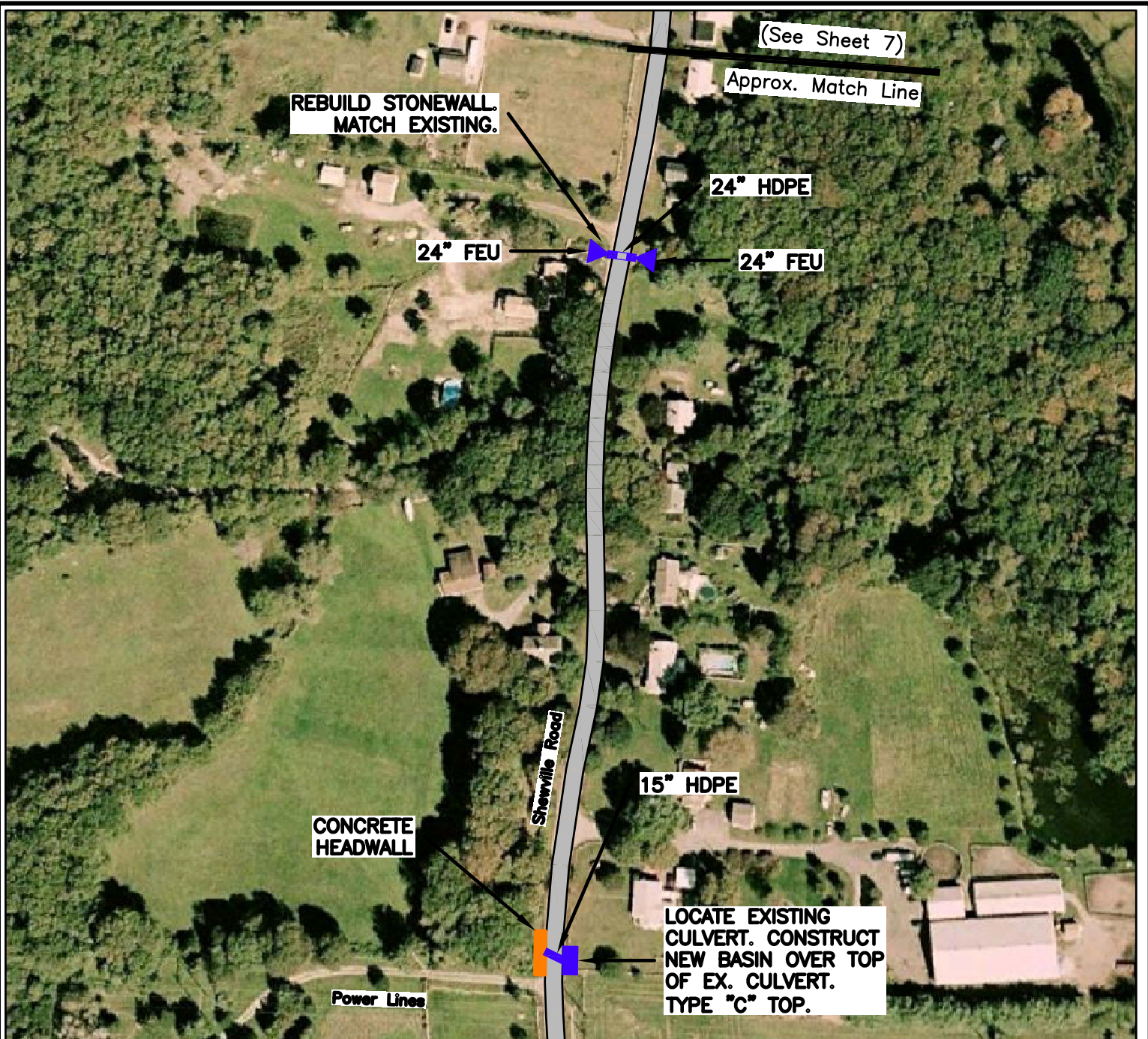
**Shewville Road & Pumpkin Hill Road
Drainage Improvements**

Date: Rev: 8/19/11

Scale: As Noted

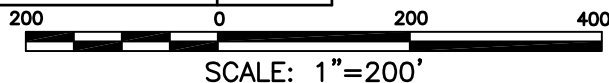
Project No. CLA-4843

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Estimated Quantities (This Sheet Only)

Item	Quantity (This Sheet)	Unit
New Catch Basin	1	Ea.
Concrete Headwall	1	Ea.
15" HDPE	26	L.F.
24" HDPE	30	L.F.
Flared End Units	2	Ea.



SCALE: 1"=200'

Legend

- Existing Catch Basin – Top to be Replaced (Approximate Location)
- New Catch Basin (Approximate Location. Adjust Top of Frame and Inverts to Match Existing Conditions. Verify Location With Director of Public Works Prior to Installation.)
- New Culvert
- ▲ New Flared End Unit
- New Concrete Headwall



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**Shewville Road South & Pumpkin Hill Road
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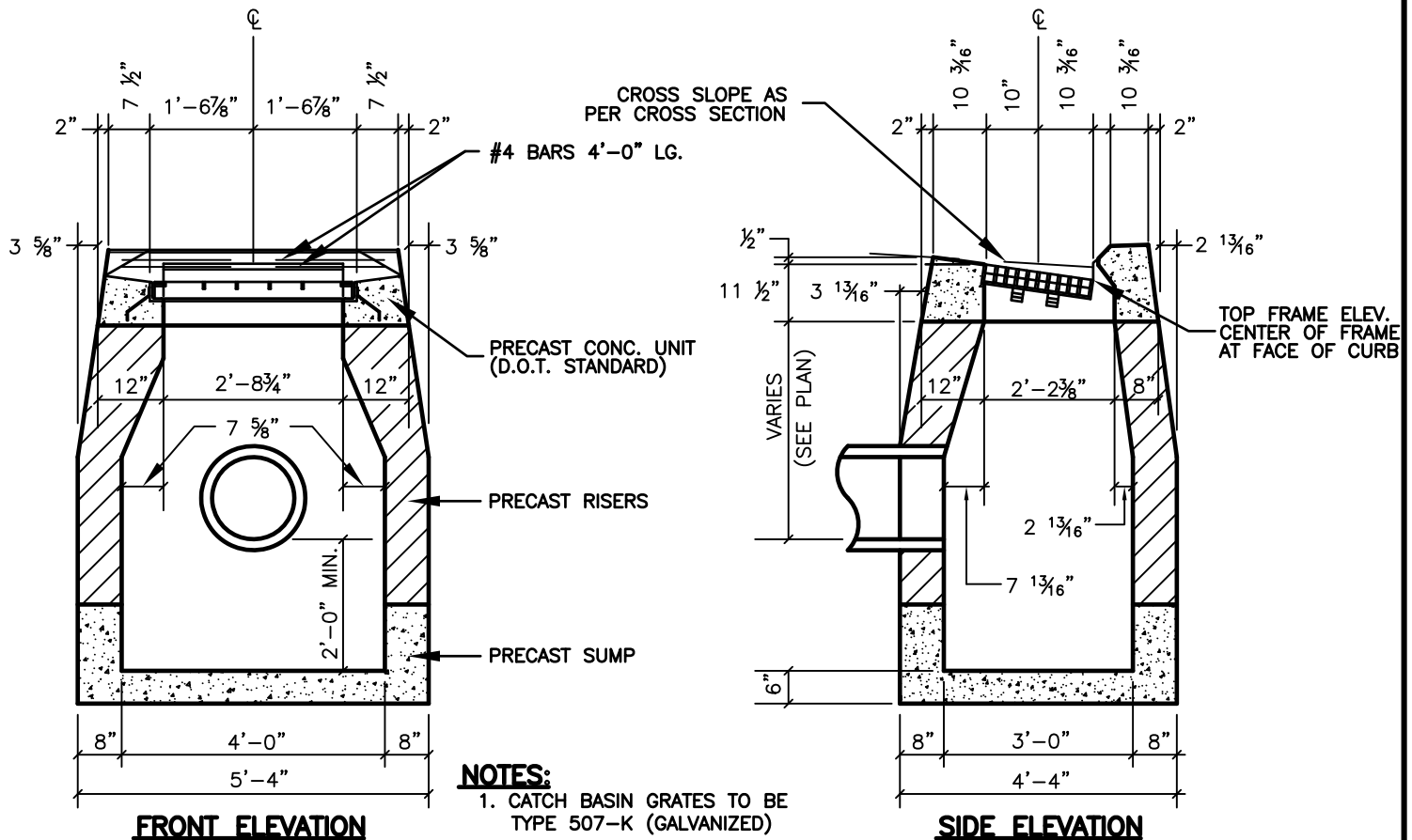
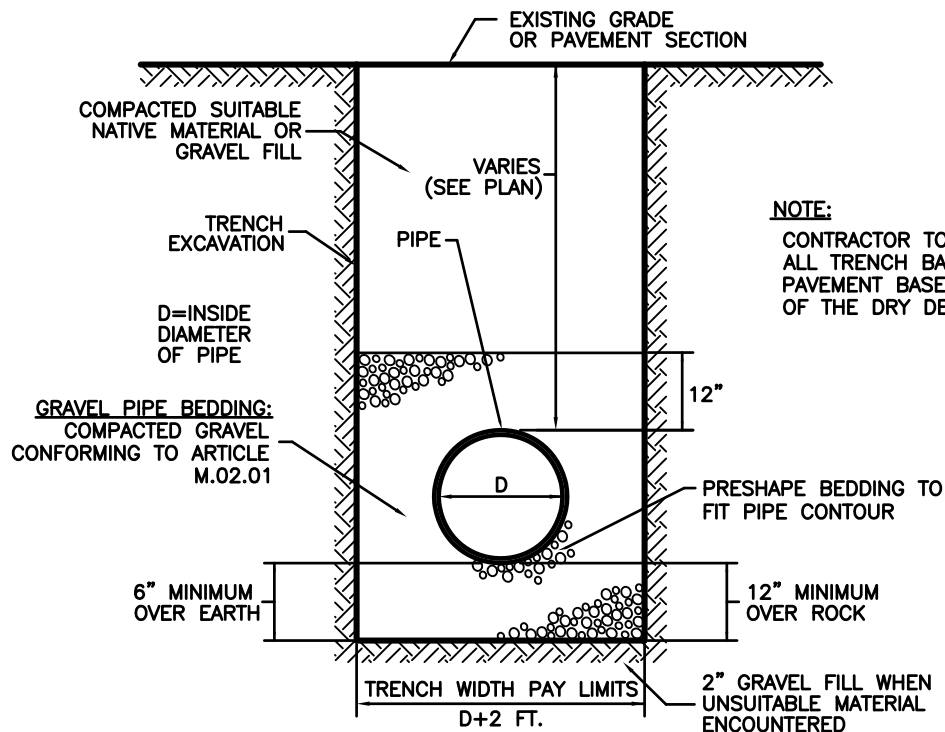
Sheet No. **8 of 14**

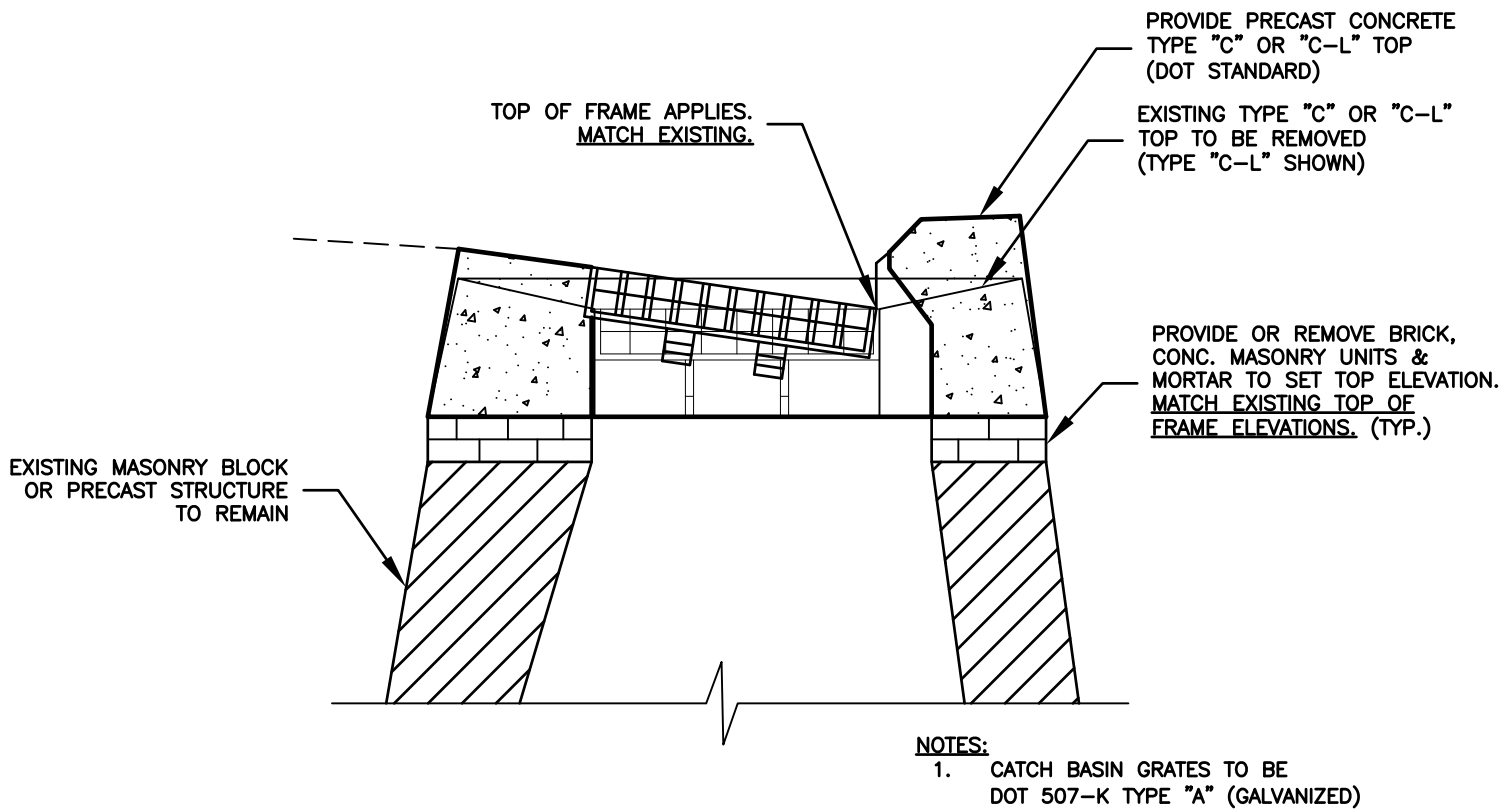
General Notes

1. PRIOR TO BIDDING THE PROJECT, THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS.
2. CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 PRIOR TO THE START OF CONSTRUCTION.
3. PASSAGE OF TRAFFIC ON ROADWAYS: A MINIMUM OF ONE LANE FOR TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL PERFORM HIS OPERATIONS TO MINIMIZE DISRUPTIONS TO TRAFFIC WITHIN THE PROJECT SITE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF TRAFFIC AND TRAFFIC CONTROL. ALL COSTS ASSOCIATED WITH MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE INCLUDED IN OTHER ITEMS.
5. ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER TO MATCH EXISTING CONDITIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT AND ROADWAYS OUTSIDE OF THE PROJECT AREA, AND SHALL REPAIR SUCH DAMAGE AT NO ADDITIONAL COST TO THE OWNER.
7. UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.
8. ALL STREET SIGNS, MAILBOXES, PLANTINGS, ORNAMENTAL OBJECTS, LIGHTS, LANDSCAPE SHRUBBERY, ETC., SHALL BE PROTECTED FROM DAMAGE AND SHALL BE REPLACED IN THE SAME OR BETTER CONDITION BY THE CONTRACTOR IF DISTURBED OR DAMAGED BY THE CONTRACTOR DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY AND PERMANENT SUPPORT OF ALL EXISTING UTILITY POLES IN AN ADJACENT TO THE CONSTRUCTION AREA AND SHALL COMPLY WITH ALL THE REQUIREMENTS AND SPECIAL DETAILS FOR THE SUPPORT OF UTILITIES REQUIRED BY UTILITY AGENCIES.
10. RESIDENTS WITH DRIVES AFFECTED BY CONSTRUCTION SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS BEFORE CONSTRUCTION BEGINS AND SHALL BE ALLOWED ACCESS TO THEIR PROPERTY.
11. MATERIAL STOCKPILE AND STAGING AREAS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING STOCKPILE, MATERIAL STORAGE AND EQUIPMENT STORAGE AREAS. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL IDENTIFY THESE AREAS AND PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED.
12. DISPOSAL OF CONSTRUCTION MATERIALS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ALL EXCESS CONSTRUCTION MATERIALS, INCLUDING EXCESS BACKFILL OR PAVEMENT.
13. CONTINUOUS DUST CONTROL USING WATER, CALCIUM CHLORIDE OR EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCK PILES, EARTH PILED ALONG EXCAVATIONS AND RECLAIMED ROADWAY SURFACES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY AND STAKEOUT AS THEY NEED.
15. WHERE EXISTING FOOTING DRAINS, FOUNDATION DRAINS, YARD DRAINS, ETC. ARE ENCOUNTERED DURING CONSTRUCTION, THEY SHALL REMAIN CONNECTED TO THE EXISTING CATCH BASINS OR CULVERT OR SHALL BE RECONNECTED TO THE PROPOSED DRAINAGE SYSTEM.
16. ALL WORK TO CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION SUPPLEMENTED FORM 816, DATED JULY 2010, AS REVISED.
17. **EXISTING CATCH BASIN GRATES SHALL BE REMOVED AND DELIVERED TO THE LEDYARD PUBLIC WORKS COMPLEX.**

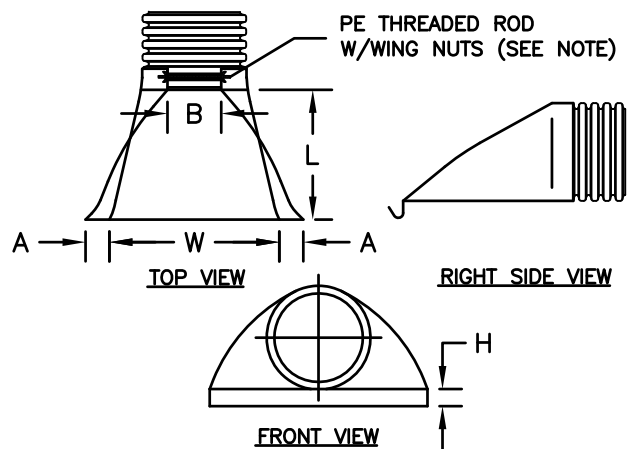
Erosion and Sedimentation Control Notes

1. ALL COSTS FOR EROSION AND SEDIMENTATION CONTROL SHALL BE INCLUDED IN OTHER ITEMS.
2. THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE. ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DETERMINED TO BE NECESSARY BY THE TOWN. CONSTRUCTION MAY NOT COMMENCE UNTIL THE EROSION AND SEDIMENTATION CONTROL MEASURES HAVE BEEN INSTALLED TO THE SATISFACTION OF THE TOWN.
3. CONTRACTOR TO INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES AT LEAST WEEKLY AND AFTER EVERY STORM EVENT AND REPAIR AND MAINTAIN AS NECESSARY.
4. STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. TEMPORARY VEGETATIVE COVER MAY BE REQUIRED.
5. INLET SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED UNDER THE GRATES OF ALL NEW CATCH BASINS AT THE TIME OF INSTALLATION, AND UNDER THE GRATES OF EXISTING CATCH BASINS IN THE CONSTRUCTION AREA.
6. ALL DISTURBED AREAS SHALL BE RESTORED WITH A MINIMUM OF 4" OF LOAM, SEED, FERTILIZER AND MULCH.
7. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED OR SLOPES ARE STABILIZED.
8. DURING THE STABILIZATION PERIOD, ANY EROSION WHICH OCCURS WITHIN THE DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED.
9. UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
10. NO EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED AND REMOVAL IS APPROVED BY THE TOWN.
11. IF NECESSARY, THE PUBLIC WORKS DEPARTMENT WILL BE PREPARED TO STEP IN AND TAKE ACTION TO ADDRESS ANY POTENTIAL EROSION PROBLEMS. ANY WORK DONE BY THE PUBLIC WORKS DEPARTMENT WILL BE BACK CHARGED TO THE CONTRACTOR.
12. THE CONTRACTOR SHALL PROVIDE THE NAME AND CONTACT INFORMATION FOR THE PROJECT PERSONNEL RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS.





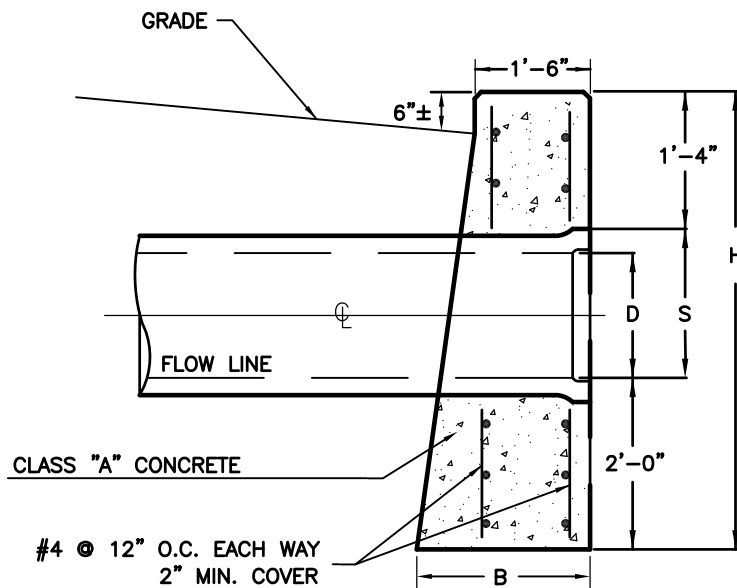
CATCH BASIN TOP REPLACEMENT DETAIL
NOT TO SCALE



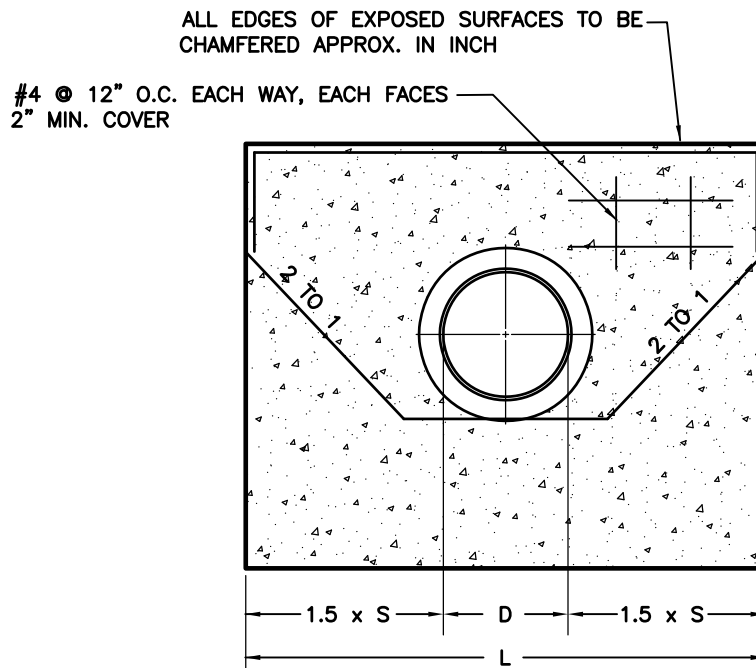
PIPE SIZE	A	B (MAX)	H	L	W
15"	6.5"	10"	6.5"	25"	29"
24"	7.5"	15"	6.5"	32"	35"
24"	7.5"	18"	6.5"	36"	45"

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"-24". 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURER'S RECOMMENDATIONS.

HDPE FLARED END UNIT DETAIL
NOT TO SCALE



CROSS-SECTION



FRONT ELEVATION

D	S	H	L	BATTER	B	VOL.
INS.	FT.&INS.	FT.&INS.	FT.&INS.	INS./FT.	FT.&INS.	CU.YD.
12"	1'-2"	4'-6"	4'-6"	2 1/2"	29 1/4"	1.10
15"	1'-5"	4'-9"	5'-6"	2 1/2"	29 7/8"	1.45
18"	1'-8"	5'-0"	6'-6"	2 1/2"	30 1/2"	1.83
24"	2'-2"	5'-6"	8'-6"	2 1/2"	30 3/4"	2.72

H = TOTAL HEIGHT OF HEADWALL
 B = BASE
 D = INSIDE DIAMETER OF PIPE
 S = HEIGHT OF SLOPE ABOVE
 FLOW LINE AT FACE OF WALL
 (MINIMUM = D+2"
 L = LENGTH OF WALL = 3S+D

ALL EDGES OF EXPOSED
 SURFACES TO BE CHAMFERED
 APPROXIMATELY ONE INCH.

CONCRETE HEADWALL DETAIL

NOT TO SCALE

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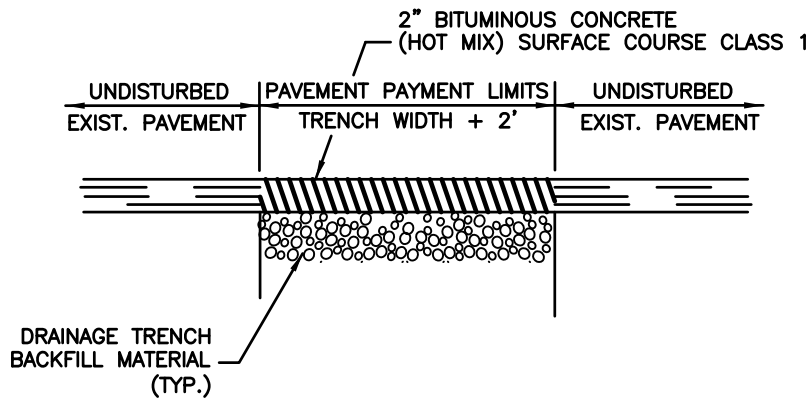
**Shewville Road South & Pumpkin Hill Road
 Drainage Improvements**

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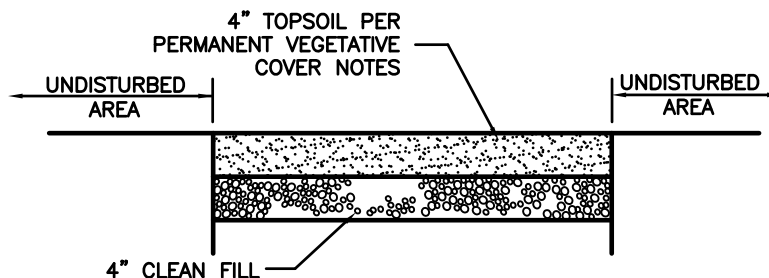
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TEMPORARY PAVEMENT REPAIR

NOT TO SCALE



LOAM & SEED SECTION DETAIL

NOT TO SCALE

PERMANENT VEGETATIVE COVER

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATIONS HAVE BEEN COMPLETED AND THE SLOPES ARE GRADED AS SHOWN ON THE PLANS. PROVIDE SLOPE PROTECTION AS CALLED FOR ON THE PLANS AND DETAILS. TOPSOIL SHALL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS, APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F. APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER S.F.. WORK LIMESTONE INTO THE SOIL TO A DEPTH OF 4 INCHES. INSPECT SEEDBED BEFORE SEEDING. IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS. APPLY THE FOLLOWING GRASS SEED MIX:

	<u>LBS./ACRE</u>	<u>LBS./1000 S.F.</u>
KENTUCKY BLUEGRASS	20	0.45
CREeping RED FESCUE	20	0.45
PERENNIAL RYEGRASS	5	0.10
	<u>45</u>	<u>1.00</u>

THE RECOMMENDED SEEDING DATES ARE:

APRIL 1 – JUNE 15 AND AUGUST 15 – OCTOBER 15

IMMEDIATELY FOLLOWING SEEDING, FIRM SEED BED WITH A ROLLER AND MULCH WITH WEED FREE STRAW. IF PERMANENT VEGETATIVE COVER IS HAS NOT BEEN ESTABLISHED BY SEPTEMBER 30, APPLY A TEMPORARY VEGETATIVE COVER ON THE TOPSOIL.

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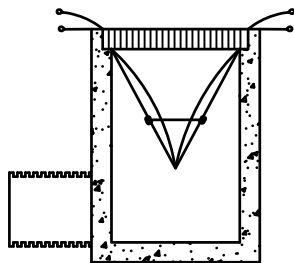
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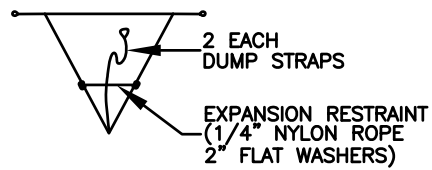
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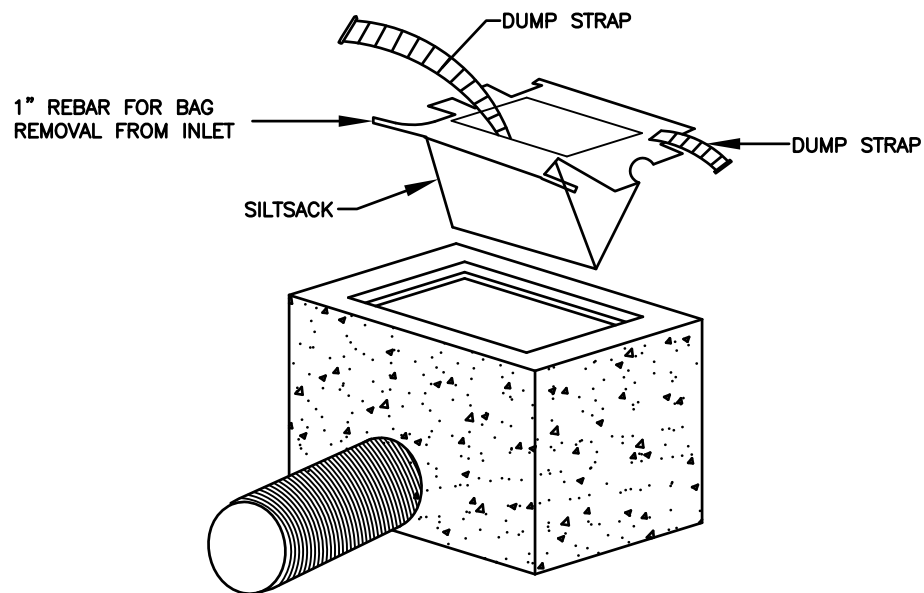
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INSTALLATION DETAIL



BAG DETAIL



INLET SEDIMENT CONTROL DEVICE DETAIL

NOT TO SCALE