Department of Public Works

Invitation to Bid

Camp Dutton Road Drainage

Litchfield, Connecticut

The Town of Litchfield is accepting bids for Drainage work on Camp Dutton Road. All bids must be submitted on forms and in accordance with specifications supplied by the Town of Litchfield, Public Works Department, 101 Russell Street, Litchfield CT. Bids will be received at the Public Works office until 11:00 a.m. on Wednesday, June 15, 2022 and will be opened and read publicly at that time in said office The bid and specifications are available to download from the Town of Litchfield web site: www.townoflitchfield.org.

Instructions to Bidders

1. Intent

The intent of these specifications is to obtain a Contractor to install drainage per specifications. The Contractor shall have adequate licenses, equipment, and materials for this project to insure completion within Thirty (30) business days from the agreed upon starting date.

All Bidders shall observe the following instructions and specifications:

2. General Provisions

Place of Opening: Public Works Office, 101 Russell St., Litchfield, CT 06759

Time of Opening: Wednesday, June 15, 2022 at 11:00 a.m.

Bid Return Envelope: Bidders shall submit bids in an envelope clearly marked, with the bid title and opening date to prevent a sealed bid from being opened prior to the opening date. Any bid not so marked and opened by the Town shall be rejected. The following forms must be submitted:

A. Bid Schedule
B. Hold Harmless Agreement and Supplemental Agreement
C. Non-Collusion
D. Non-Discrimination
E. References

3. Proposal Questions

Any questions pertaining to the scope of the work or content or procedure for submitting proposals should be directed to Raz Alexe, Director of Public Works by e-mail to be received no later than June 13, 2022. Any questions received after that date will not be answered. Contact information is as follows:

Raz Alexe, Director of Public Works
ralexe@townoflitchfield.org

4. Basis of Award

It is intended this Contract shall be awarded to the Bidder that best meets the needs of the Town of Litchfield with respect to qualifications, contractor's submitted start date and cost. Qualifications shall include the ability of the Contractor to complete all work within the stated time frame.

5. Notice of Award

The Town shall give notice of Acceptance of a bid to the successful bidder by mail to the Bidder's address stated in the bid. Individuals are invited to attend the Bid Opening, with official bid results pending notification of the successful bidder.

6. Award of Contract

The Town reserves the right to reject any and all bids for any reason the Town deems advisable, and to award contract or contracts to any Contractors bidding on the work, regardless of the amount of bid.

7. Bid Security

A bid bond or certified check **is not** required for this bid.

8. Performance; Labor and Material Bond

A Performance Bond for 100% of the project is required for this bid.

9. Scope of Work Change

The Town reserves the right to change the scope of the project after the bid is awarded, without penalty to the Town. All changes in scope will be issued in writing by the Director of Public Works or his designee.

10. Substitution of Named Brands

Should brand names appear in this bid, before bidding on any item considered equal to or better than a named item, the Bidder must get written approval from the Director of Public Works.

11. Price, Discounts, and Payment

Prices bid shall not include any taxes, Local, State, or Federal, as the Town is not liable. In addition to the price bid, each Bidder may quote binding discounts, which will be considered when making the award.

12. Delays

Contract time delays for completion of work shall be authorized in writing by the Director of Public Works.

13. Liquidated Damages

The amount of two hundred dollars ($200) is agreed upon as liquidated damages and shall be paid for every day the Contractor exceeds the allowable contract time for completion, thirty (30) business days. This sum shall be paid by the Contractor to the Town or withheld from final payment to the Contractor. The contract time period must start with the Notice to Proceed from the Town of Litchfield.

14. Assignment of Contract

Contractor shall not sublet, sell, transfer, assign, or dispose of contract or any portion thereon or of right, title, or interest therein of obligations thereunder, without written consent of the Town.

15. Acceptance of Subcontractor

Submission of name of Subcontractor in proposal shall be deemed to constitute an acceptance by Contractor, if awarded contract of bid, of such Subcontractor. Any alteration therein, after award of contract, shall be subject to the approval of the Town.

16. Basis of Payment

Payment for this work shall be at the lump sum bid for work completed and accepted, except as noted herein and shall include all equipment, materials, labor, and tools incidental to the completion of this work.

17. Payments for Extra Work

Written notice of claims for extra work shall be given by Contractor within ten (10) days after receipt of written instruction from the Town as approved by the Director of Public Works or his designee, to proceed with extra work and also before any work is commenced, except in emergency endangering life or property. No claim shall be valid unless so made. In all cases, Contractor's itemized sheet showing all labor and material must be submitted to the Director of Public Works. Town order for extra work shall specify any extension of contract time and one of the following methods of payment:

A. Unit Prices or combination of unit prices.
B. A lump sum based on Contractor's estimate accepted by owner and approved by the Director of Public Works.
C. Actual costs plus ten percent (10%) for overhead and profit.

18. Payment Requests, Retainage and Guarantee Period

Contractor must submit a payment request for payment once each month for work done and materials delivered and installed on the site. East request for payment must be computed from work completed, less ten percent (10%) to be retained until expiration of the guarantee period, which is one (1) year from written acceptance of work.

19. Insurance

The contractor will file with the Town of Litchfield, the following evidence of insurance. Certificates must be on file with the Town before acceptance of Bid or work commences.

<u>Workers Compensation</u>

Coverage A: Statutory
Coverage B: Employers Liability:

Bodily injury by accident	$ 100,000 per person
Bodily injury by disease	$ 100,000 per person
Bodily injury	$ 500,000 aggregate

<u>Comprehensive Commercial Liability</u>

Bodily injury; General Limit	$ 1,000,000 aggregate
Products/Completed Operations	$ 1,000,000 aggregate
Personal and Advertising Injury	$ 1,000,000 aggregate
Each Occurrence	$ 1,000,000 aggregate
Fire Damage Limit	$ 100,000 aggregate
Medical Expenses	$ 10,000 per person

Coverages:

Premises/Independent Contractors
Contractual/Completed Operations/Products
Contractual/Liability will be Broad Form
XCU (explosion/collapse/underground utilities)
Comprehensive Broad Form Liability endorsement or Equivalent
Broad Form property Damage Liability

Automobile Liability

Bodily Injury	$1,000,000 per person
Aggregate	$1,000,000 per person
Property Damage	$1,000,000 per person

Coverages:

All owned/non owned/hired/borrowed
Contractual liability to be included

Contractors must name the Town of Litchfield as an additional named insured on all certificates. All policies will provide thirty (30) days' notice of cancellation as well as ten (10) days' notice of material change in the policies to the First Selectman's Office of the Town of Litchfield.

20. Environmental. Health and Safety Compliance

The contractor must comply with all local, state and federal environmental health and safety regulations. The contractor's employees must have all required Occupational Health and Safety Administration, Environmental Protection Agency, Connecticut Department of Environmental Protection and Connecticut Department of Health training and certifications. Copies of all applicable training records shall be submitted as part of or in addition to a Health and Safety Plan to the Director of Public Works prior to commencing the project. Safety Data Sheets must be submitted prior to commencing work for all materials used prior to beginning the project.

21. Permits

The contractor is responsible for obtaining all local, state and federal permits required for completion of the project. Copies of all permits will be submitted to the Director of Public Works prior to commencing work. In instances where the governing body waives a permit a copy of the communication in lieu of the permit.

22. Hold Harmless Agreement

The Contractor agrees to hold harmless the Town of Litchfield and its respective officers, agents, and employees from any loss, costs, damages, expenses, judgements, and liability whatsoever kind or nature howsoever the same may be caused resulting directly or

indirectly by any act of omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable resulting in bodily injury including sickness and death, personal injury, or damage to property directly or indirectly, including the loss of use resulting therefrom as permitted by law. The Contractor will be required to sign the enclosed Hold Harmless Agreement prepared by the Town.

23. Supplemental Agreement

The Contractor named below is an independent contractor and neither the Contractor nor its employees nor the Contractor's Subcontractor(s) under any circumstances, will be considered servants or agents of the Town of Litchfield and the Town will be at no time legally responsible for any negligence or other wrong doing by the Contractor, its servants or agents or the Contractor's Subcontractor(s). The Town will not withhold from contract payments to the Contractor any Federal or State unemployment taxes, Federal or State Income Taxes, Social Security Tax, or any other amount for benefits to the Contractor. The lump sum or unit charges for service provided does not represent gross wages and further the Town will not provide the Contractor any insurance coverage or other benefits, including Worker's Compensation, normally provided by the Town to its employees. The Contractor will be required to sign the enclosed Supplemental Agreement prepared by the Town.

24. Length of Contract

The Town of Litchfield is requesting bid proposals for the time period beginning **June 23, 2022**. The Town of Litchfield reserves the right to negotiate with the Contractor selected, additional periods beyond June 23, 2022 if deemed to be in the best interest of the Town.

CAMP DUTTON ROAD

PAVEMENT AND DRAINAGE IMPROVEMENT PLANS

CAMP DUTTON ROAD

LITCHFIELD, CONNECTICUT

Hrica Associates LLC

Engineers *Surveyors*

LIST OF DRAWINGS

SHEET	TITLE
C1-C3	PAVEMENT & DRAINAGE IMPROVEMENT PLANS
C4	SUPER ELEVATION SPOT GRADING PLAN
C5	CONSTRUCTION NOTES & DETAILS
C6	EROSION & SEDIMENT CONTROL NOTES

Not Valid Without Original Seal

Kenneth S. Hrica, PE,RLS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759

860-567-2112 (business)
860-567-0491 (facsimile)

e-mail:
hricaassociates@optonline.net

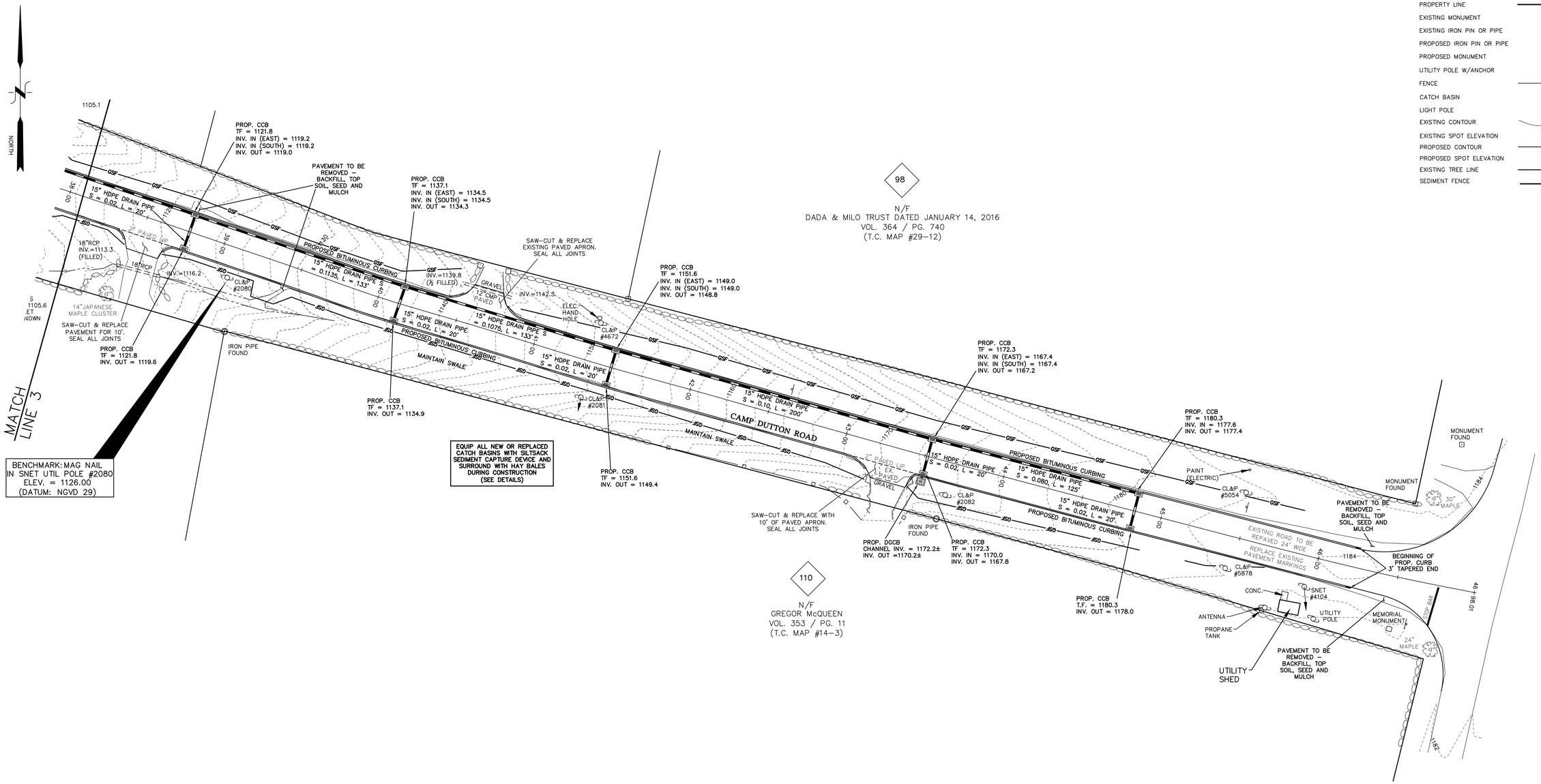
MAY 12, 2022
Date

Latest Revision

CAMP DUTTON ROAD

PAVEMENT AND DRAINAGE IMPROVEMENT PLANS

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT



LEGEND

PROPERTY LINE	
EXISTING MONUMENT	
EXISTING IRON PIN OR PIPE	
PROPOSED IRON PIN OR PIPE	
PROPOSED MONUMENT	
UTILITY POLE W/ANCHOR	
FENCE	
CATCH BASIN	
LIGHT POLE	
EXISTING CONTOUR	310
EXISTING SPOT ELEVATION	311.5
PROPOSED CONTOUR	310
PROPOSED SPOT ELEVATION	311+5
EXISTING TREE LINE	
SEDIMENT FENCE	GSF

NOT VALID WITHOUT ORIGINAL SEAL

PAVEMENT & DRAINAGE IMPROVEMENT PLAN
TOWN OF LITCHFIELD

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT

1 0 1 2
INCHES

Hrica Associates LLC

Engineers *Surveyors*

Kenneth S. Hrica, PE,RLS
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P.O. Box 1861
Litchfield, Connecticut 06759

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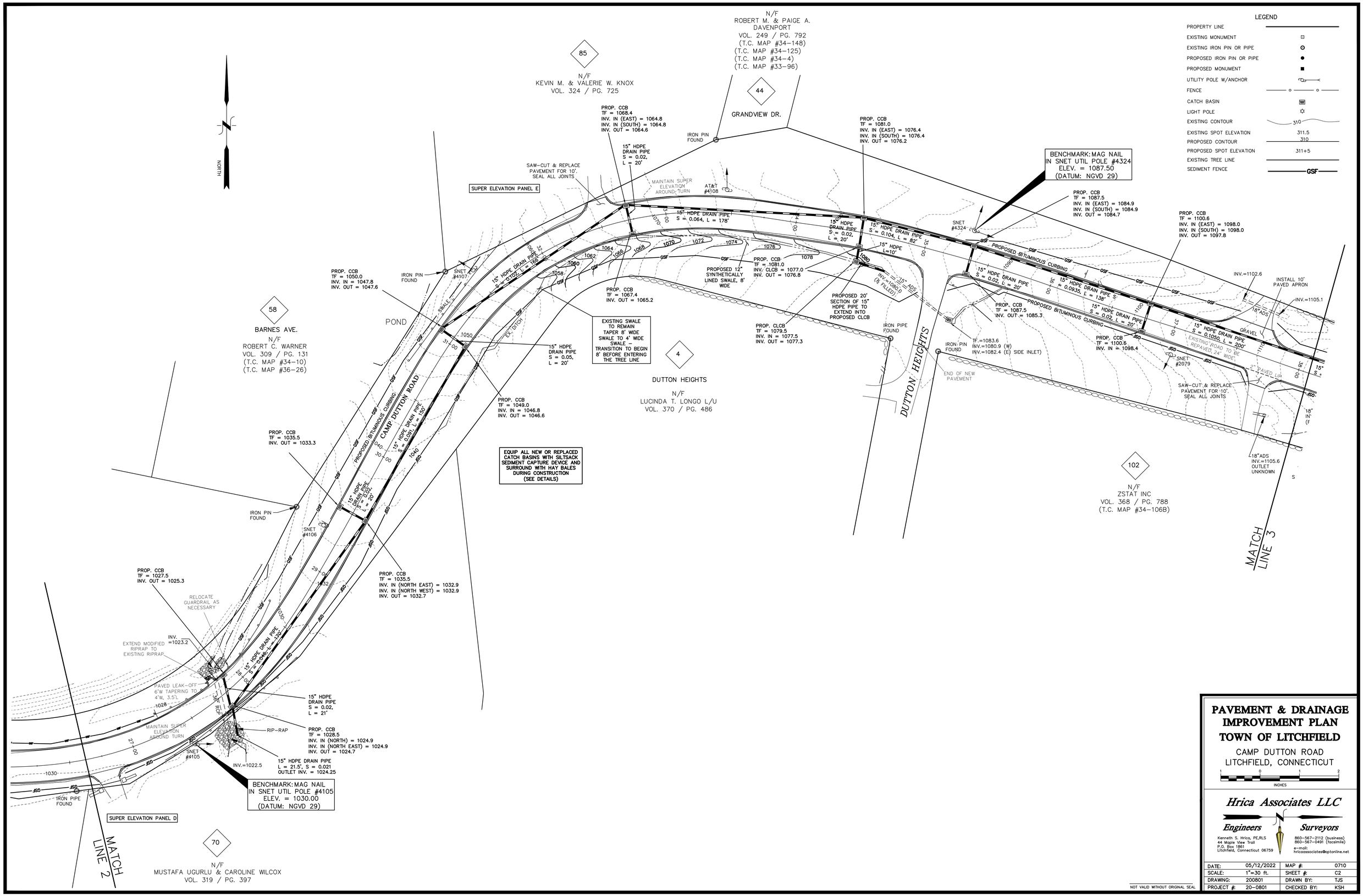
860-567-0491 (facsimile)
e-mail:
hricaassociates@optonline.net

DATE:	05/12/2022	MAP #:	0710
SCALE:	1"=30 ft.	SHEET #:	C1
DRAWING:	200801	DRAWN BY:	TJS
PROJECT #:	20-0801	CHECKED BY:	KSH



PAVEMENT & DRAINAGE IMPROVEMENT PLAN
TOWN OF LITCHFIELD

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT

1 0 1 2
INCHES

Hrica Associates LLC

Engineers *Surveyors*

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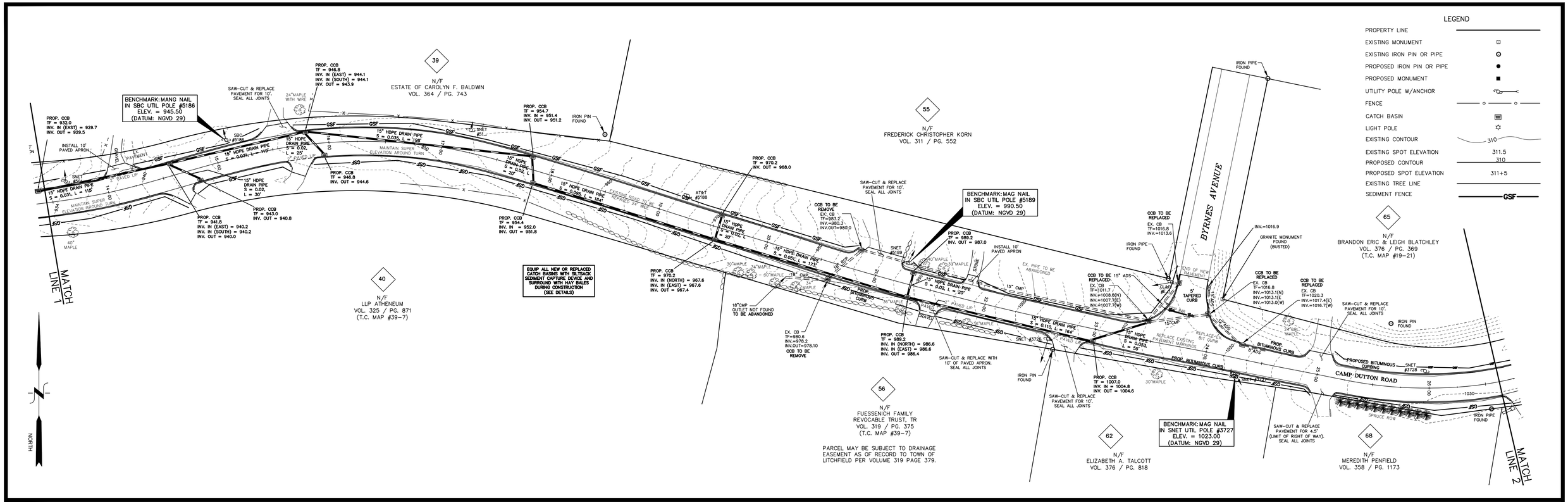
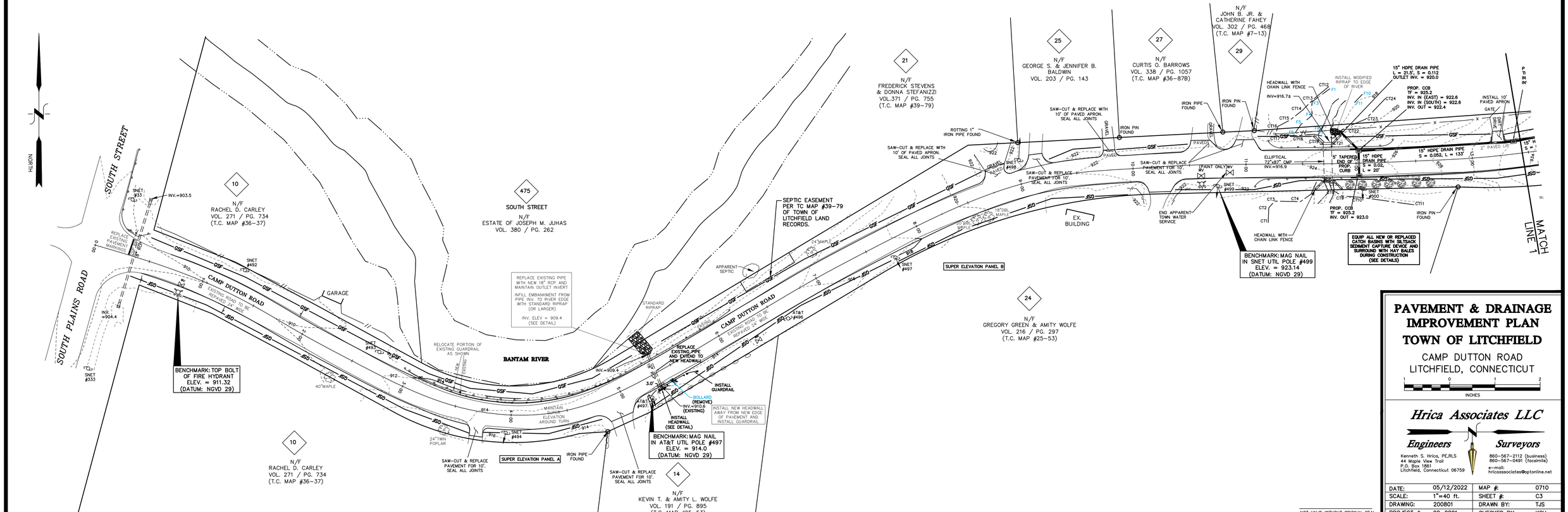
DATE:	05/12/2022	MAP #:	0710
SCALE:	1"=30 ft.	SHEET #:	C2
DRAWING:	200801	DRAWN BY:	TJS
PROJECT #:	20-0801	CHECKED BY:	KSH

NOT VALID WITHOUT ORIGINAL SEAL





PAVEMENT & DRAINAGE IMPROVEMENT PLAN
TOWN OF LITCHFIELD

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT

1 0 1 2
INCHES

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e-mail:
hricaassociates@optonline.net

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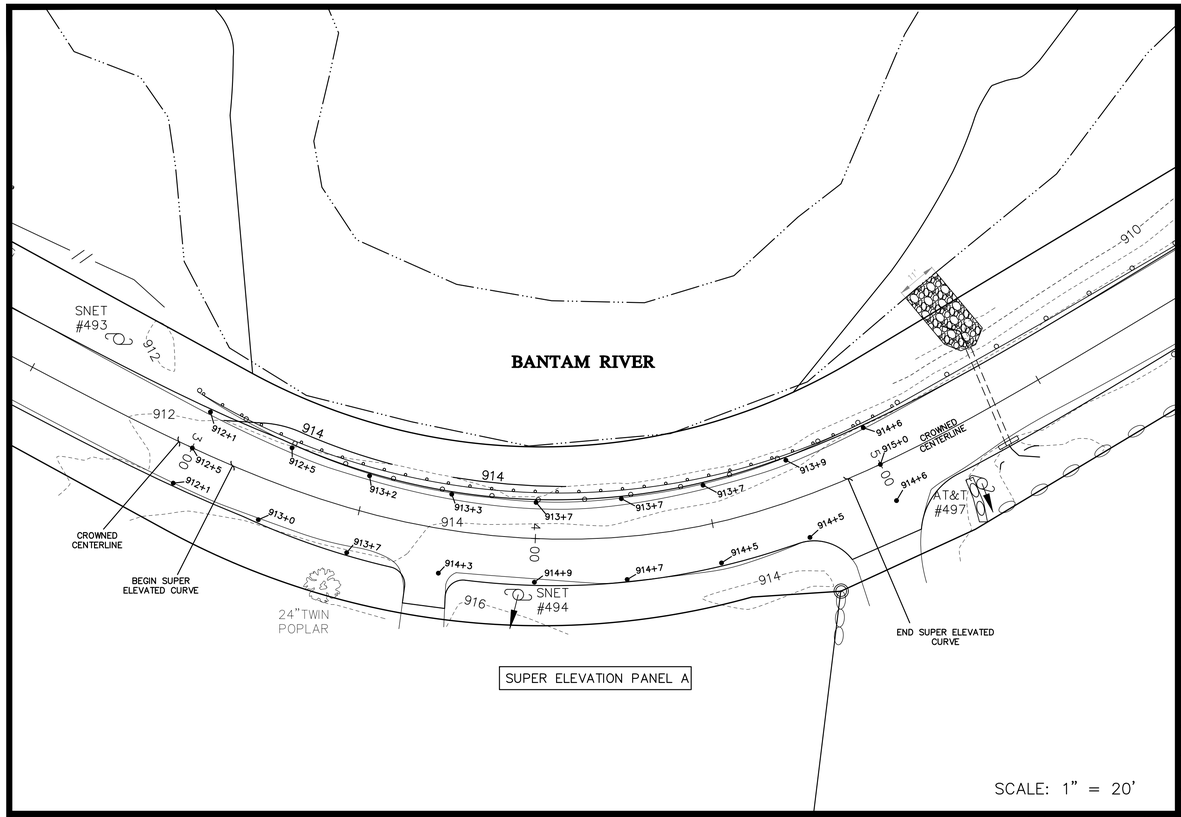
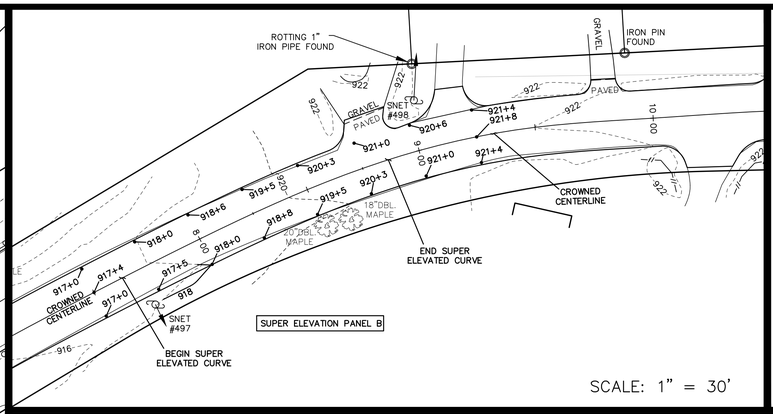
PROJECT #:	20-0801	CHECKED BY:	KSH

NOT VALID WITHOUT ORIGINAL SEAL



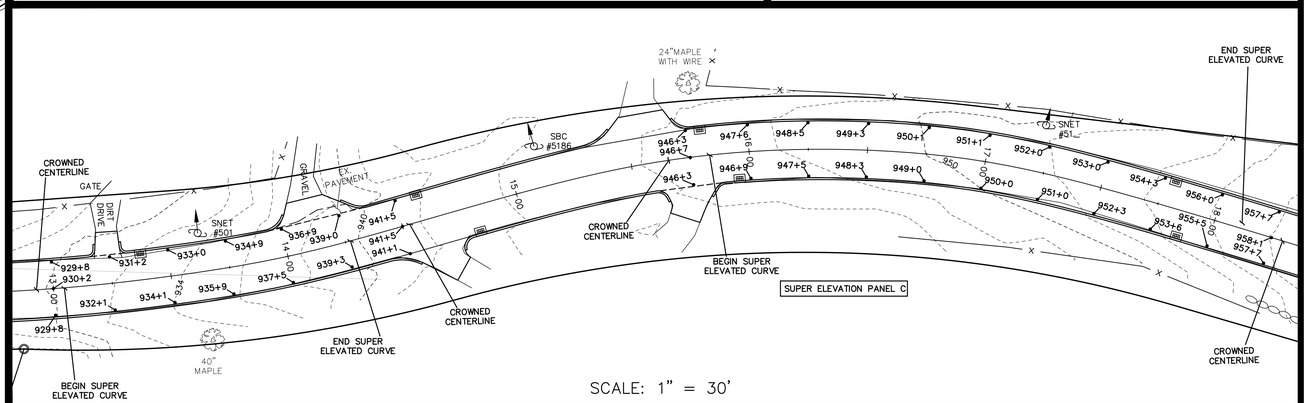


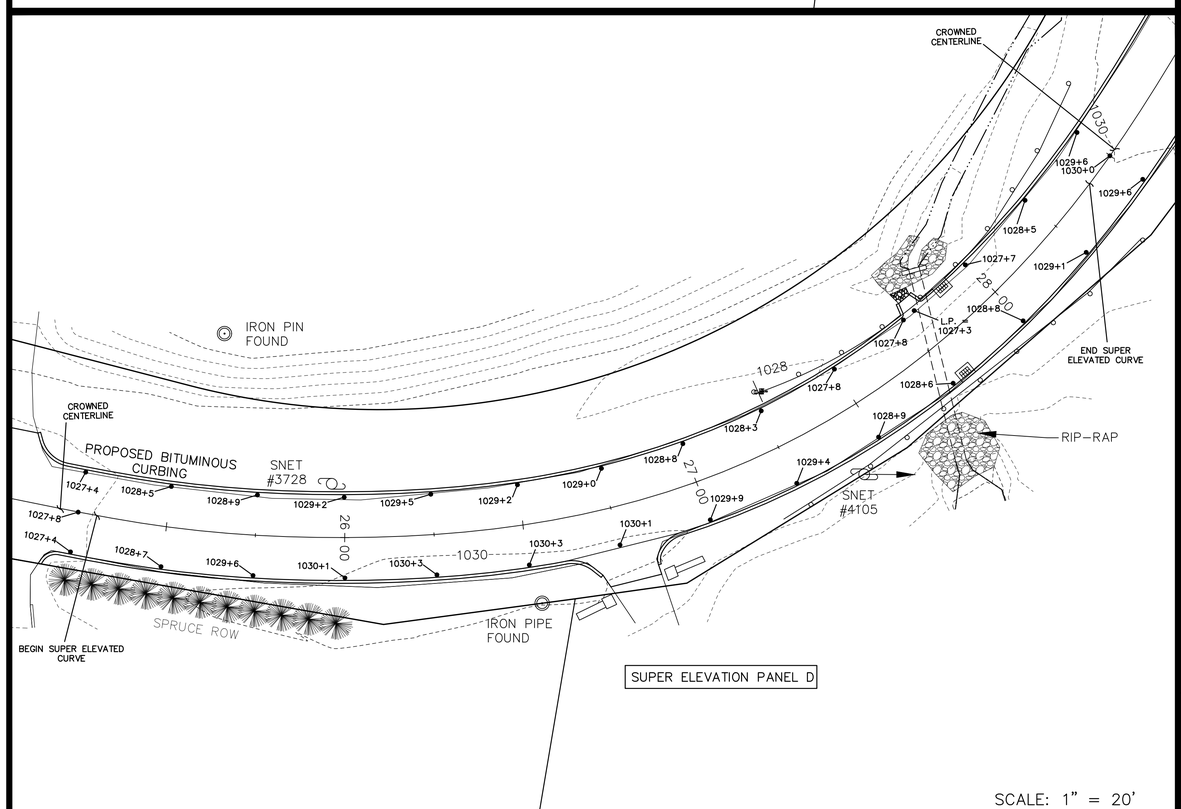
LEGEND

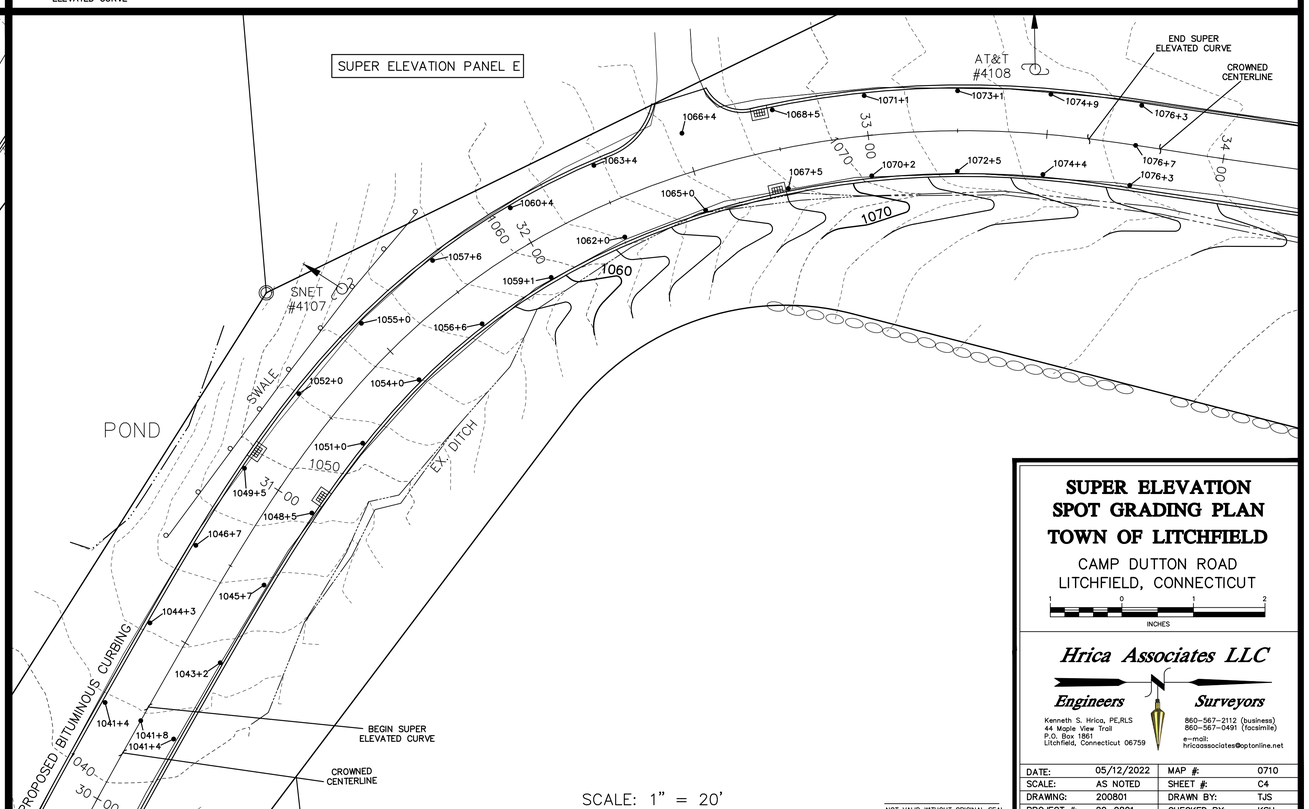
PROPERTY LINE	
EXISTING MONUMENT	
EXISTING IRON PIN OR PIPE	
EXISTING SPOT ELEVATION	311.5
PROPOSED CONTOUR	310
PROPOSED SPOT ELEVATION	311+5

NORTH

(DECLINATION FOR ALL PANELS)







NOT VALID WITHOUT ORIGINAL SEAL

SUPER ELEVATION SPOT GRADING PLAN TOWN OF LITCHFIELD

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT

1 0 1 2
INCHES

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DATE:	05/12/2022	MAP #:	0710
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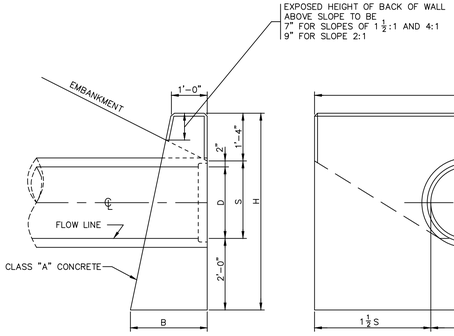
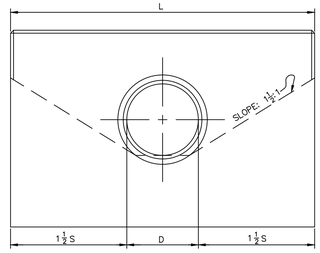
PROJECT #:	20-0801	CHECKED BY:	KSH



WALL AT FOOT OF SLOPE



FRONT ELEVATION

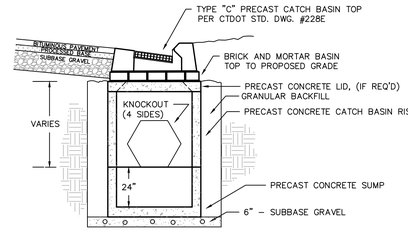
H=TOTAL HEIGHT OF ENDWALL
B=BASE
D=INSIDE DIAMETER OF PIPE
S=HEIGHT OF SLOPE ABOVE FLOW LINE AT FACE OF WALL
L=LENGTH OF WALL=3S+D

ALL EDGES OF EXPOSED SURFACES TO BE CHAMFERED APPROXIMATELY ONE INCH

DIMENSIONS					
D	S	H	L	BATTER	B
IN.	FT. & IN.	FT. & IN.	FT. & IN.	IN./FT.	FT. & IN.
12"	1'-2"	4'-6"	4'-6"	2 1/2"	1'-11 1/4"
15"	1'-5"	4'-9"	5'-6"	2 1/2"	1'-11 7/8"
18"	1'-8"	5'-0"	6'-6"	2 1/2"	2'-0 1/2"
24"	2'-2"	5'-6"	8'-6"	2 1/2"	2'-1 3/4"
30"	2'-8"	6'-0"	10'-6"	2 1/2"	2'-3"
36"	3'-2"	6'-6"	12'-6"	3"	2'-7 1/2"
42"	3'-8"	7'-0"	14'-6"	3"	2'-9"
48"	4'-2"	7'-6"	16'-6"	3"	2'-10 1/2"

STANDARD ENDWALL

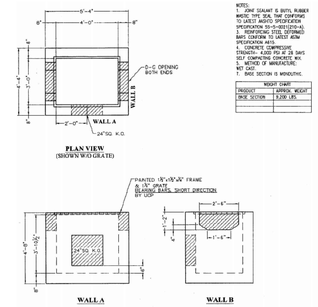
NOT TO SCALE



NOTE - 1) ALL PRECAST COMPONENTS TO BE ABLE TO WITHSTAND HS-20 WHEEL LOADING
- 2) BACKFILL TO BE COMPACTED IN 8" LIFTS AROUND BASIN
- 3) TYPE C-L OR C-G BASIN TOP MAY SUBSTITUTED ABOVE WHERE CALLED FOR ON THE PLANS.

DETAIL - PRECAST CATCH BASIN WITH TYPE "C" CATCH BASIN TOP

SCALE 1/4"=1'-0"

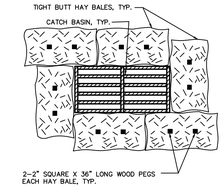


NOTES:
1. USE SIKAFLEX 1A BUTYL RUBBER BASED TYPE SEAL TAPE COVERING TO LATEST AASHTO SPECIFICATION SPECIFICATION SS-R-00312(10-4).
2. REINFORCING STEEL DEFORMED BARS TO MEET LATEST ASTM SPECIFICATION A615.
3. CONCRETE COMPRESSIVE STRENGTH 4,000 PSI AT 28 DAYS TEST USING STANDARD CONCRETE MIX.
4. METHOD OF MANUFACTURE: WET CAST.
5. BASE SECTION IS MONOLITHIC.

WEIGHT CHART	
PRODUCT	APPROX. WEIGHT
BASE SECTION	3,230 LBS.

TYPE D-G PRECAST HEADWALL DETAIL

NOT TO SCALE



TYPICAL DETAIL - PLAN VIEW EROSION CONTROL AT CATCH BASIN

N.T.S.

GENERAL NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO: STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 817, 2019.

- ALL NEW CATCH BASIN TOPS AND REPLACEMENT TOPS SHALL BE INSTALLED TO MATCH EXISTING ROADWAY GRADES, AND GRADED TO ACCEPT STORM WATER RUNOFF.

- THE INTEGRITY OF EXISTING DRAINAGE STRUCTURES (CATCH BASINS AND MANHOLES,) SHALL BE VERIFIED BY THE TOWN AND/OR DESIGN ENGINEER ONCE OPENED AND REPLACED AS NECESSARY.

- ALL WORK TO MEET TOWN OR CITY, STATE AND FEDERAL CODES, REGULATIONS AND STANDARDS AS APPLICABLE.

- DISCREPANCIES IN THE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY FOR RESOLUTION.

- ALL PERMITS SHALL BE OBTAINED PRIOR TO CONSTRUCTION.

- CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING REQUIRED PERMITS AND NOTIFYING THE TOWN OR CITY DEPARTMENTS AND THE ENGINEER FOR INSPECTIONS.

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET CONNECTICUT D.O.T. STANDARDS FOR ITEMS NOT SPECIFIED IN THE TOWN OR CITY REGULATIONS.

-ALL CATCH BASINS, MANHOLES, PIPING AND OTHER UTILITY COMPONENTS WITHIN TRAFFIC AREAS SHALL BE CAPABLE OF SUPPORTING H-20 LOADING.

- IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL ON-SITE HAVE OCCURRED SINCE THE ISSUANCE OF THIS PLAN. THE DESIGN ENGINEER IS TO BE NOTIFIED OF ANY CHANGES WHICH CONFLICT WITH THIS PLAN.

- THE EROSION CONTROL LINE (GSF) IS TO BE CONSIDERED AS THE LIMIT OF CONSTRUCTION UNLESS OTHERWISE NOTED.

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND QUANTITIES SHOWN ON THESE PLANS PRIOR TO PROCEEDING WITH CONSTRUCTION AND ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER WHOM SHALL HAVE FINAL SAY AS TO THE ACTUAL DIMENSIONS TO CONSTRUCT BY.

- STRICT ADHERENCE TO ALL OSHA, TOWN OR CITY AND STATE OF CONNECTICUT REGULATIONS REGARDING CONSTRUCTION IS REQUIRED AT ALL TIMES.

- CONTRACTOR SHALL NOTIFY CALL-BEFORE-YOU-DIG (1-800-922-4455) FOR UTILITY MARKOUT PRIOR TO CONSTRUCTION.

- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR JOB SAFETY.

- ALL UTILITIES TO BE INSTALLED UNDERGROUND.

- UTILITY LOCATIONS WILL BE AS DETERMINED BY THE UTILITY COMPANIES.

- THE LOCATION AND ELEVATION OF UNDERGROUND UTILITIES IS UNKNOWN. IF THEY ARE INDICATED AT ALL ON THESE PLANS, THEY ARE APPROXIMATE AND HRICA ASSOCIATES, LLC, IT'S PRINCIPALS OR EMPLOYEES, SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES AND/OR ADDITIONAL COSTS WHICH MIGHT RESULT FROM THE EXISTENCE OF SAID UTILITIES.

- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING ANY WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

- ALL GRADING SHALL BE PERFORMED TO ELIMINATE LOW POINTS AND DEPRESSIONS WHICH WOULD TRAP SURFACE WATER. CONTACT THE DESIGN ENGINEER IF CHANGES ARE WARRANTED.

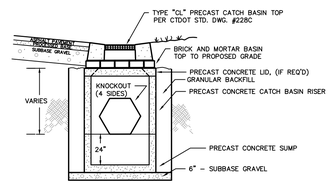
- GRADING TO BE TO ALL APPLICABLE REGULATIONS AND NORMAL STANDARDS OF GOOD PRACTICE.

- MINOR GRADING CHANGES ARE PERMITTED TO MEET FIELD CONDITIONS PROVIDED PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER.

- GRADING SHALL MAINTAIN EXISTING RUNOFF CONDITIONS.

- ALL BACKFILL FOR BUILDINGS, TRENCHES, STRUCTURES, PARKING, DRIVEWAY AND SIDEWALK ETC. SHALL BE ADEQUATELY COMPACTED TO PREVENT EXCESSIVE SETTLEMENT. CONTACT THE ENGINEER SHOULD ADDITIONAL CLARIFICATION BE NECESSARY.

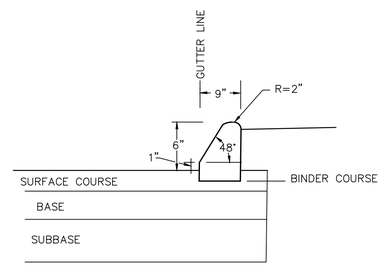
- PAINTED STOP BARS, CENTERLINE, AND TRAVEL WAY MARKINGS SHALL MEET THE REQUIREMENTS AS SET FORTH IN THE MOST CURRENT EDITION OF THE M.U.T.C.D. THE STOP BARS AND TRAVEL WAY MARKINGS SHALL BE PAINTED WHITE, AND THE DOUBLE CENTERLINE SHALL BE PAINTED YELLOW.



NOTE - 1) ALL PRECAST COMPONENTS TO BE ABLE TO WITHSTAND HS-20 WHEEL LOADING
- 2) BACKFILL TO BE COMPACTED IN 8" LIFTS AROUND BASIN
-3) TYPE C OR C-G BASIN TOP MAY BE SUBSTITUTED ABOVE WHERE CALLED FOR ON THE PLANS.

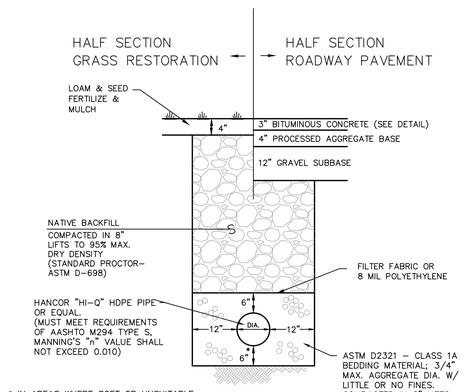
DETAIL - PRECAST CATCH BASIN WITH TYPE CL CATCH BASIN TOP

SCALE 1/4"=1'-0"



BIT. CONC. CURB DETAIL

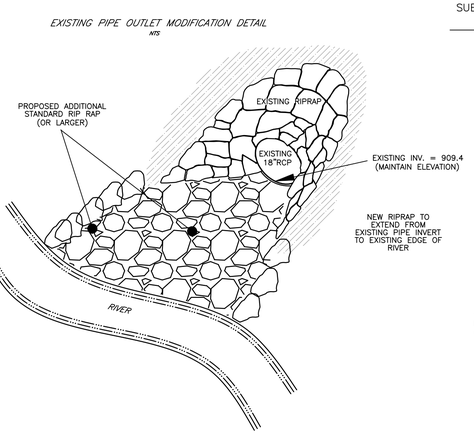
N.T.S.

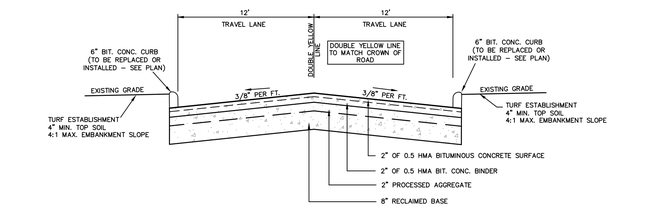


* IN AREAS WHERE SOFT OR UNSUITABLE FOUDATION CONDITIONS EXIST (MUCK eg.), THE UNSUITABLE MATERIAL SHALL BE EXCAVATED AND REPLACED WITH 2'± OF COMPACTED BEDDING MATERIAL.

DETAIL - STORM SEWER TRENCH

N.T.S.





CAMP DUTTON ROAD MILL AND PAVE CROSS-SECTION 24' WIDE ROAD

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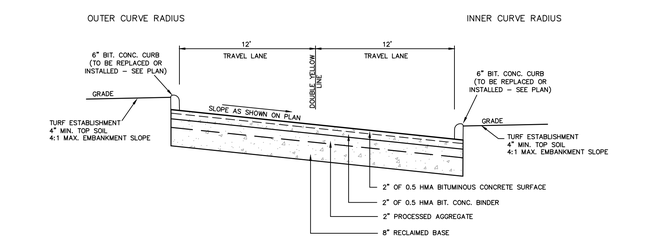
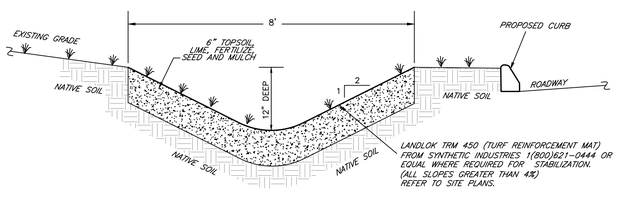


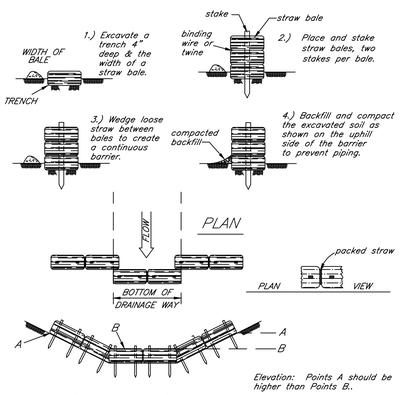
CAMP DUTTON ROAD MILL AND PAVE CROSS-SECTION 24' WIDE ROAD WITH SUPER ELEVATION

N.T.S.



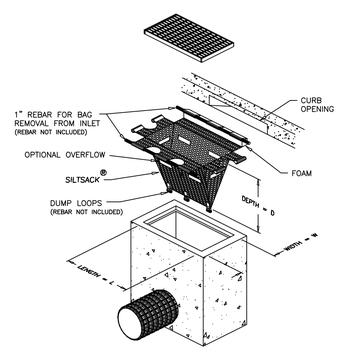
12" DEEP SYNTHETICALLY LINED GRASS SWALE

N.T.S.

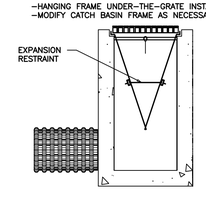


STAKED HAY BALES

NOT TO SCALE



-HANGING FRAME UNDER-THE-GRATE INSTALLATION
-MODIFY CATCH BASIN FRAME AS NECESSARY



INSTALLATION DETAIL

SILTSACK CATCH BASIN SEDIMENT CAPTURE DEVICE

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK® WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS.

REGULAR FLOW SILTSACK®
(FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

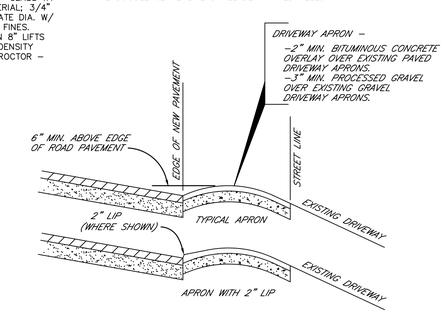
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	600 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.50 SEC -1

HI-FLOW SILTSACK®
(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

OIL-ABSORBANT SILTSACK®
(FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK®, WITH A WOVEN PILLOW INSERT.



RESIDENTIAL DRIVEWAY APRON SECTION DETAIL

NOT TO SCALE

CONSTRUCTION NOTES & DETAILS
TOWN OF LITCHFIELD

CAMP DUTTON ROAD
LITCHFIELD, CONNECTICUT

1 0 1 2
INCHES

Hrica Associates LLC

Engineers **Surveyors**

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P.O. Box 1861
Litchfield, Connecticut 06759

860-567-2112 (business)
860-567-0491 (facsimile)
e-mail:
hricaassociates@optonline.net

DATE:	05/12/2022	MAP #:	0710
SCALE:	N/A	SHEET #:	C5
DRAWING:	200801	DRAWN BY:	TJS
PROJECT #:	20-0801	CHECKED BY:	KSH

(TO) TOPSOILING

- MATERIALS
  SITE INVESTIGATIONS SHALL BE MADE TO DETERMINE IF THERE IS SUFFICIENT TOPSOIL OF GOOD QUALITY TO JUSTIFY STRIPPING. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM). OTHER SOIL TYPES WITH HIGH ORGANIC CONTENT MAY BE FOUND SUITABLE AFTER TESTING. IT SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS, AND NOXIOUS WEEDS. IT SHALL GIVE EVIDENCE OF BEING ABLE TO SUPPORT HEALTHY VEGETATION. IT SHALL CONTAIN NO SUBSTANCE THAT IS POTENTIALLY TOXIC TO PLANT GROWTH.

  ALL TOPSOIL SHALL BE TESTED BY A RECOGNIZED LABORATORY FOR THE FOLLOWING AND SHALL MEET THE REQUIREMENTS GIVEN:

  CONTAINING NOT LESS THAN 6% AND NOT MORE THAN 20% ORGANIC MATTER AS DETERMINED BY LOSS-ON-IGNITION OF OVEN DRIED SAMPLES DRIED AT 105 DEGREES CENTIGRADE.
  pH RANGE SHALL BE 6.0–7.5. IF pH IS LESS THAN 6.0, LIME SHALL BE ADDED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
  SOLUBLE SALTS SHALL NOT EXCEED 500 PPM.

  IF ADDITIONAL OFF-SITE TOPSOIL IS NEEDED, IT MUST MEET THE STANDARDS STATED ABOVE.
- STRIPPING
  STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. A 4 TO 6 INCH STRIPPING DEPTH IS COMMON, BUT DEPTH MAY VARY DEPENDING ON THE PARTICULAR SOIL. ALL PERIMETER DIKES, BASINS, AND OTHER SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO STRIPPING.
- STOCKPILING
  –TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT.
  –TOPSOIL STOCKPILES NEED TO BE LOCATED AWAY FROM ALL CONSTRUCTION ACTIVITIES.
- SIDE SLOPES
  THE SIDE SLOPES OF ALL STOCKPILES SHALL NOT EXCEED 2 TO 1
- SEDIMENT BARRIER
  A SEDIMENT BARRIER OF GEOSYNTHETIC SILT FENCE SHALL SURROUND ALL TOPSOIL STOCKPILES.
- TEMPORARY SEEDING
  TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 30 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER MEASURE.
- SITE PREPARATION
  BEFORE TOPSOILING, ESTABLISH NEEDED EROSION AND SEDIMENT CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, WATERWAYS, SILT FENCE AND SEDIMENT BASINS. THESE MEASURES MUST BE MAINTAINED DURING TOPSOILING.
- GRADING
  PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE APPROVED PLAN.
- LIMING
  WHERE THE pH OF THE SUBSOIL IS 6.0 OR LESS, GROUND AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE SOIL TEST OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
- BONDING
  AFTER THE AREA TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING SCARIFYING OR TRACKING TO A DEPTH OF AT LEAST 4 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
- APPLYING TOPSOIL
  TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
  IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A UNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A HIGH MAINTENANCE TURF. HOWEVER, UNDUE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVENTS SEED GERMINATION.
- TOPSOIL AND HERBICIDES
  PERMANENT SEEDINGS OR SOD WILL NOT BE ESTABLISHED IN TOPSOIL THAT HAS BEEN TREATED WITH HERBICIDES WHICH WOULD INHIBIT GRASS GROWTH. TOPSOIL SO TREATED WILL BE STOCKPILED FOR ONE YEAR TO ALLOW BREAKDOWN OF HERBICIDE RESIDUES OR TOPSOIL WILL BE COVERED WITH 6 INCHES OF UNTREATED TOPSOIL TO SERVE AS A SEEDBED.

(MS) MULCH

Specifications
Materials
Mulch for seed, including tackifiers and nettings used to anchor much, shall be: Biodegradable or photo-degradable within 2 years but without substantial degradation over a period of 6 weeks, free of contaminants that pollute the air or waters of the State when properly applied, free of foreign material, coarse stems and any substance toxic to plant growth or which interferes with seed germination, and capable of being applied evenly such that it provides 80%-95% soil coverage and still adheres to the soil surface, does not slip on slopes when it rains or is watered, does not blow off site, dissipates raindrop splash, holds soil moisture, moderates soil temperatures and does not interfere with seed growth.

Types of mulches within this specification include, but are not limited to. Hay: The dried stems and leafy parts of plants cut and harvested, such as alfalfa, clovers, other forage legumes and the finer stemmed, leafy grasses. Stem length should not average less than 4 inches. Hay that can be windblown must be anchored. Preferred mulch when seeding occurs outside of the recommended seeding dates.
Straw: Cut and dried stems of herbaceous plants, such as wheat barley, cereal rye, or broom. The average stem length should not be less than 4 inches. Straw that can be windblown should be anchored to hold it in place.
Cellulose Fiber: Fiber origin is either virgin wood, post-industrial/pre-consumer wood or post consumer wood complying with materials specification (collectively referred to as "wood fiber"), newspaper, kraft paper, cardboard (collectively referred to as "paper fiber") or a combination of wood and paper fiber. Paper fiber, in particular, shall not contain boron, which inhibits seed germination.

Tackifiers within this specification include, but are not limited to:
Water soluble materials that cause much particles to adhere to one another. Emulsified asphalt is specifically prohibited for use as tackifiers due to its potential for causing water pollution following its application.

Nettings with this specification include, but are not limited to:
Prefabricated openwork fabrics made of cellulose cords, ropes, threads, or biodegradable synthetic material that is woven, knotted or molded in such a manner that it holds much in place until vegetation growth is sufficient to stabilize the soil. Generally used in areas where no mowing is planned.
Examples of netting are tobacco netting (used where flows are not concentrated) and jute netting (typically used in drainage ways).

Where much anchoring is required a Temporary Erosion Control Blanket may be used.

Application
Timing: Applied immediately following seeding. Some cellulose fiber may be applied with seed to assist in marking where seed has been sprayed, but expect to apply a second application of cellulose fiber to meet the requirements of Much for Seed.
Spreading: Much material shall be spread uniformly by hand or machine resulting in 80%-95% coverage of the disturbed soil when seeding within the recommended seeding dates. Applications that are uneven can result in excessive much smothering the germinating seeds. For hay or straw anticipate an application rate of 2 tons per acre. For cellulose fiber follow manufacturer's recommended application rates to provide 80%-95% coverage. When seeding outside the recommended seeding dates, increase much application rate to provide between 95%-100% coverage of the disturbed soil. For hay or straw anticipate an application rate of 2.5 to 3 tons per acre. When spreading hay much by hand, divide the area to be much into approximately 1,000 square feet and place 1.5–2 bales of hay in each section to facilitate uniform distribution. For cellulose fiber much, expect several spray passes to attain adequate coverage, to eliminate shadowing, and to avoid slippage (similar to spraying with paint).
Anchoring: When needed, much anchoring is applied either with the much as with cellulose fiber or applied immediately following much application. Except the need for much anchoring along the shoulders of actively traveled roads, hill tops and long open slopes not protected by wind breaks. When using netting, the most critical aspect is to ensure that the netting maintains substantial contact with the underlying much and the much, in turn, maintains continuous contact with the soil surface.

Maintenance
Inspect much after a heavy rain. Much that has been washed out should be replaced or repaired within 48 hours of the end of a storm with a rainfall amount of 0.5 inch or greater until the grass has germinated to determine maintenance needs where much has been moved or where soil erosion has occurred, determine the cause of the failure. If it was the result of wind, then repair erosion damage (if any), re-apply much (and seed as needed) and consider applying a netting or tackifiers. If much failure was caused by concentrating water, install additional measures to control water and sediment movement, repair erosion damage, re-apply much and consider applying a netting or tackifiers or use the Temporary Erosion Control Blanket measure. Once grass has germinated, inspections should continue as required by Temporary Seeding and Permanent Seeding.

(PS) PERMANENT SEEDING

TIMING
SEED WITH A PERMANENT SEED MIXTURE WITHIN 7 DAYS AFTER ESTABLISHING FINAL GRADES OR WHEN GRADING WORK WITHIN A DISTURBED ARE IS TO BE SUSPENDED FOR A PERIOD OF MORE THAN 1 YEAR. SEEDING IS RECOMMENDED FROM APRIL 1 THROUGH JUNE 15 AND AUGUST 15 THROUGH OCTOBER 1.
FOR THE COASTAL TOWNS AND IN THE CONNECTICUT RIVER VALLEY FINAL FALL SEEDING DATES CAN BE EXTENDED AN ADDITIONAL 15 DAYS, AND
DORMANT OR FROST CRACK SEEDING IS DONE AFTER THE GROUND IS FROZEN.

A. SITE PREPARATION
GRADE IN ACCORDANCE WITH THE SITE GRADING PLAN. INSTALL ALL SURFACE WATER CONTROLS. FOR AREAS TO BE MOWED REMOVE ALL STONES 2 INCHES OR LARGER. REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
NOTE: ON AREAS WHERE WOOD CHIPS AND/OR BARK MULCH WAS PREVIOUSLY APPLIED, EITHER REMOVE THE MULCH OR INCORPORATE IT INTO THE SOIL WITH A NITROGEN FERTILIZER ADDED. NITROGEN APPLICATION RATE IS DETERMINED BY SOIL TEST AT TIME OF SEEDING; ANTICIPATE 12lbs NITROGEN PER TON OF WOOD CHIPS AND/OR BARK MULCH.
DO NOT USE PERMANENT SEEDING ON SLOPES STEEPER THAN 2 TO 1.

B. SEEDBED PREPARATION
APPLY TOPSOIL IF NECESSARY.
APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY. SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIOUS SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET USING 10–10–10 OR EQUIVALENT. IN ADDITION, 300 POUNDS OF 38–0–0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED FOR TOPDRESSING. APPLY GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESUM OXIDE) AS FOLLOWS:

SOIL TEXTURE	TONS/AC.	LBS./1000 SQ.FT.
CLAY, CLAY LOAM AND HIGH ORGANIC SOIL	3	135
SANDY LOAM, LOAM, SILT LOAM	2	90
LOAMY SAND, SAND	1	45

REFER TO COUNTY SOIL SURVEY REPORT FOR SOIL TEXTURES AT THE SITE.
WORK LIME AND FERTILIZE INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COURSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
REMOVE FROM THE SURFACE ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

D. SEEDING
SELECT A MIXTURE FROM BELOW OR USE MIXTURE RECOMMENDED BY THE SOIL CONSERVATION SERVICE. INOCULATE ALL LEGUME SEED WITH THE CORRECT TYPE AND AMOUNT OF INOCULANT.
APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDINGS WHICH ARE MULCHED MAY BE LEFT ON SOIL SURFACE.
WHERE FEASIBLE, EXCEPT WHERE EITHER A CULTIPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
HYDRAULIC APPLICATION (HYDROSEEDING), IS A SUITABLE METHOD FOR USE IN CRITICAL AREA. WHEN HYDROSEEDING, A SEEDBED IS PREPARED IN THE CONVENTIONAL WY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN SIX INCHES IN DIAMETER. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO 1 FOOT VERTICALLY). LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). FIBER MULCH DOES NOT PROVIDE ADEQUATE SEEDBED PROTECTION. BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH. SEEDING RATES MUST BE INCREASED 10 PERCENT WHEN HYDROSEEDING.
SEED WARM SEASON GRASSES DURING THE SPRING PERIOD ONLY.

APPLY MULCH ACCORDING TO THE TEMPORARY MULCHING MEASURE OF THE GUIDELINES.
IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, USE THE TEMPORARY MULCHING MEASURE IN THE GUIDELINES TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

MAINTENANCE
INITIAL ESTABLISHMENT
INSPECT SEEDED AREA AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER DURING THE GROWING SEASON.
WHERE SEED HAS BEEN REMOVED OR WHERE SOIL EROSION HAS OCCURRED DETERMINE THE CAUSE OF THE FAILURE. BIRD DAMAGE MAY BE PROBLEM IF MULCH WAS APPLIED TO THINLY TO PROTECT SEED. RE-SEED AND RE-MULCH. IF MOVEMENT WAS THE RESULT OF WIND, REPAIR EROSION DAMAGE ANY), RE-APPLY SEED AND MULCH, AND APPLY MULCH ANCHORING FAILURE WAS CAUSED BY CONCENTRATED WATER, (1) INSTALL ADDITIONAL MEASURES TO CONTROL WATER AND SEDIMENT MOVEMENT, (2) REPAIR EROSION DAMAGE, (3) RE-SEED AND (4) RE-APPLY MULCH WITH ANCHORING OR USE TEMPORARY EROSION CONTROL BLANKET AND/OR "PERMANENT TURF REINFORCEMENT MAT MEASURE.
CONTINUE INSPECTION UNTIL AT LEAST 100 PLANTS PER SQUARE FOOT HAVE GROWN AL LEAST 6 INCHES TALL OR UNTIL THE FIRST MOWING.

FIRST MOWING
ALLOW THE MAJORITY OF PLANTS TO ACHIEVE A HEIGHT OF AT LEAST 6 INCHES BEFORE MOWING THE FIRST TIME. DO NOT MOW WHILE THE SURFACE IS WET. MOWING WHILE THE SURFACE IS WET MAY PULL MANY SEEDLING FROM THE SOIL AND OFTEN LEAVES A SERIES OF UNNECESSARY RUTS. THE FIRST MOWING SHOULD REMOVE APPROXIMATELY ONE THIRD OF THE GROWTH, DEPENDING ON THE TYPE OF GRASS AND WHERE IT IS BEING USED. DO NOT MOW GRASS BELOW 3 INCHES.
IF THE SEEDING WAS MULCHED, DO NOT ATTEMPTED TO RAKE OUT THE MULCHING MATERIAL. NORMAL MOWING WILL GRADUALLY REMOVE ALL UNWANTED DEBRIS.
ONE THIRD OF THE GROWTH, DEPENDING ON THE TYPE OF GRASS

LONG TERM MAINTENANCE
MOW AND FERTILIZE AT A RATE THAT SUSTAINS AN AREA CONDITION THAT SUPPORTS THE INTENDED USE. IF APPROPRIATE THE HEIGHT OF THE CUT MAY BE ADJUSTED DOWNWARD, BY DEGREES, AS NEW PLANTS BECOME ESTABLISHED. CARRY OUT ANY FERTILIZATION PROGRAM ACCORDANCE WITH APPROVED SOIL TEST THAT DETERMINE THE PROPER AMOUNT OF LIME AND FERTILIZER NEED TO MAINTAIN A VIGOROUS SOD YET PREVENT EXCESSIVE LEACHING OF NUTRIENTS TO THE GROUND-WATER OR RUNOFF TO SURFACE WATER.
ALTHOUGH WEEDS MAY APPEAR TO BE A PROBLEM, THEY SHADE THE NEW SEEDLINGS AND HELP CONSERVE SURFACE MOISTURE.
DO NOT APPLY WEED CONTROL UNTIL THE NEW SEEDLING HAVE BEEN MOWED AT LEAST FOUR TIMES.

SELECTING SEED MIX TO MATCH NEED

AREA TO BE SEEDED	MIXTURE NUMBER1 MOWING DESIRED	MOWING NOT REQUIRED
BORROW AREAS, ROADSIDES, DIKES, LEVEES, POND BANKS AND OTHER SLOPES AND BANKS		
A) WELL OR EXCESSIVELY DRAINED SOILS2	1,2,3,4,5, OR 8	5,6,7,8,9,10,11,12,16,22
B) SOMEWHAT POORLY DRAINED SOILS2	2	5,6
C) VARIABLE DRAINAGE SOILS2	2	5,6,11
DRAINAGE DITCH AND CHANNEL BANKS		
A) WELL OR EXCESSIVELY DRAINED SOILS2	1,2,3, OR 4	
B) SOMEWHAT POORLY DRAINED SOILS2	2	9,10,11,12
C) VARIABLE DRAINAGE SOILS2	2	
DIVERSIONS		
A) WELL OR EXCESSIVELY DRAINED SOILS	2,3, OR 4	9,10,11
B) SOMEWHAT POORLY DRAINED SOILS	2	
C) VARIABLE DRAINAGE SOILS	2	
EFFLUENT DISPOSAL		5 OR 6
GRAVEL PITS3		26,27,28
GULLIED AND ERODED AREAS		3,4,5,8,10,11,12
MINESPOIL & WASTE AND OTHER SPOIL BANKS (IF TOXIC SUBSTANCES AND PHYSICAL PROPERTIES NOT LIMITING)3		15,16,17,18,26,27,28
SHORELINES (FLUCTUATING WATER LEVELS)		5 OR 6
SKI SLOPES		4,10
SOD WATERWAYS AND SPILLWAYS	1,2,3,4,6,7, OR 8	1,2,3,4,6,7, OR 8
SUNNY RECREATION AREAS (PICNIC AREAS AND PLAYGROUNDS OR DRIVING AND ARCHERY RANGES, NATURE TRAILS)	1,2, OR 23	
CAMPING AND PARKING, NATURE TRAILS (SHADED)	19,21, OR 23	
SAND DUNES (BLOWING SAND)	25	
WOODLAND ACCESS ROADS, SKID TRAILS AND LOG YARDING AREAS		9,10,16,22,26
LAWNS AND HIGH MAINTENANCE	1,19,21,OR 29	

FOOTNOTES:
1 THE NUMBERS FOLLOWING IN THESE COLUMNS REFER TO SEED MIXTURES IN FOLLOWING TABLE. MIXES FOR SHADY AREAS ARE IN BOLD ITALICS PRINT (INCLUDING MIXES 20 THROUGH 24).
2 SEE COUNTY SOIL SURVEY FOR DRAINAGE CLASS. SOIL SURVEYS ARE AVAILABLE FROM THE COUNTY SOIL AND WATER CONSERVATION DISTRICT OFFICE.
3 USE MIX 26 WHEN SOIL PASSING A 200 MESH SIEVE IS LESS THAN 15% OF TOTAL WEIGHT. USE MIX 26 & 27 WHEN SOIL PASSING A 200 MESH SIEVE IS BETWEEN 15 AND 29 % OF TOTAL WEIGHT . USE MIX 26,27 & 28 WHEN SOIL PASSING A 200 MESH SIEVE IS ABOVE 20% OF TOTAL WEIGHT.

SEED MIXTURES FOR PERMANENT SEEDING

No.	SEED MIXTURE (VARIETY)4	LBS/ACRE	LBS/1,000 SF
15	KENTUCKY BLUEGRASS	20	.45
	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	5	.10
		TOTAL 45	1.00
25	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	REDTOP (STREEKER, COMMON)	2	.05
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	.45
		TOTAL 42	.95
35	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT1	8	.20
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	20	.45
		TOTAL 48	1.10
45	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	20	.45
	OR TALL FESCUE (KENTUCKY 31)	2	.05
	REDTOP (STEEKER, COMMON)	8	.20
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) W/INOCULANT1	TOTAL 30	.70
55	WHITE CLOVER	10	.25
	PERENNIAL RYE GRASS	2	.05
		TOTAL 12	.30
65	CREEPING RED FESCUE	20	.50
	REDTOP (STREEKER, COMMON)	2	.05
	PERENNIAL RYE GRASS	20	.50
		TOTAL 42	1.05
75	SMOOTH BROMEGRASS (SARATOGA, LINCOLN)	15	.35
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) W/INOCULANT1	10	.25
		TOTAL 30	.79
85	SWTCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	10₁	.25
	WEEPING LOVEGRASS	3	.07
	LITTLE BLUESTEM (BLAZE, ALDOUS, CAMPER)	10₁	.25
		TOTAL 23	.57
95	CREEPING RED FESCUE (PENNLAWN, WINTEGREEN)	10	.25
	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
	OR (FLATPEA (LATHCO) WITH INOCULANT1)	(30)	(.75)
	TALL FESCUE (KENTUCKY 31) OR SMOOTH BROMEGRASS (SARATOGA, LINCOLN) REDTOP (STREEKER, COMMON)	15	.35
		2	.05
		TOTAL 42 (OR 57)	1.00 (OR 1.25)
105	CREEPING RED FESCUE (PENNLAWN, WINTEGREEN)	20	.45
	REDTOP (STREEKER, COMMON)	2	.05
	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
	OR (FLATPEA (LATHCO) WITH INOCULANT1)	(30)	(.75)
		TOTAL 37 (OR 52)	.85 (OR 1.25)
115	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT1	8	.20
	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
	CREEPING RED FESCUE (PENNLAWN, WINTEGREEN)		
126	SWTCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	10₁	.25
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	5	.10
	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
		TOTAL 45	1.05
136	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	10	.25
	OR (FLATPEA (LATHCO) WITH INOCULANT1)	(30)	(.75)
	SWTCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	51	.10
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	5	.10
		TOTAL 20 (OR40)	.45 (OR .95)
146	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
	OR (FLATPEA (LATHCO) WTH INOCULANT1)	(30)	(.75)
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	10	.25
		TOTAL 25 (OR40)	.60 (OR 1.00)
156	SWTCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	5	.10
	BIG BLUESTEM (NIAGRA, KAW) OR LITTLE BLUESTEM (BLAZE, ALSOUS,CAMPER)	5	.10
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT1	5	.10
		TOTAL 20	.40
166	TALL FESCUE (KENTUCKY 31)	20	.45
	FLATPEA (LATHCO) WITH INOCULANT1	30	.75
		TOTAL 50	1.20
176	DEER TONGUE (TIOGA) WITH INOCULANT1	10	.25
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT1	8	.20
	PERENNIAL RYEGRASS (NORLEA, MANHATTEN)	3	.07
		TOTAL 21	.52
186	DEER TONGUE (TIOGA) WITH INOCULANT1	10	.25
	CROWN VETCH (CHEMUING, PENNGIFT) WITH INNOCULANT1	15	.35
	PERENNIAL RYEGRASS (NORLEA, MANHATTAN)	3	.07
		TOTAL 28	.67
195	CHEWINGS FESCUE	35	.80
	HARD FESCUE	30	.70
	COLONIAL BENTGRASS	5	.10
	BIRDS FOOT TREFOIL (EMPIRE, VIKING) WITH INOCULANT1	10	.20
	PERENNIAL RYEGRASS	20	.50
		TOTAL 100	2.30
205	DELETED DUE TO INVASIVE SPECIES		
215	CREEPING RED FESCUE (PENNLAWN, WINTEGREEN)	TOTAL 60	1.35
225	CREEPING RED FESCUE (PENNLAWN, WINTEGREEN)	40	.90
	TALL FESCUE (KENTUCKY 31)	20	.45
		TOTAL 60	3.60
235	CREEPING RED FESCUE (PENNLAWN, WINTERGREEN)	15	.35
	FLATPEA (LATHCO) WITH INOCULANT1	30	.75
		TOTAL 45	3.60
245	TALL FESCUE (KENTUCKY 31)	TOTAL 150	3.60
255	AMERICAN BEACHGRASS (CAPE)	58,500 CULMS/ACRE	1,345 CULMS/100 SF
266	SWTCHGRASS (BLACKWELL, SHELTER, CAVE-IN-ROCK)	4.0	.10
	BIG BLUESTEM (NIAGRA, KAW)	4.0	.10
	LITTLE BLUESTEM (BLAZE, ALDOUS, CAMPER)	2.0	.05
	SAND LOVEGRASS (NE-27, BEND)	1.5	.03
	BIRD'S-FOOT TREFOIL (EMPIRE VIKING)	2.0	.05
		TOTAL 13.5	.33
275	FLATPEA (LATHCO)	10	.20
	PERENNIAL PEA (LANCER)	2	.05
	CROWN VETCH (CHEMUNG, PENNGIFT)	10	.20
	TALL FESCUE (KENTUCKY 31)	2	.20
		TOTAL 24	.65
285	ORCHARDGRASS (PENNLATE, KAY,POTOMAC)	5	.10
	TALL FESCUE (KENTUCKY 31)	10	.20
	REDTOP (STREEKER, COMMON)	2	.05
	BIRD'S-FOOT TREFOIL (EMPIRE VIKING)	5	.10
		TOTAL 22	.45
29	TURF TYPE TALL FESCUE (BONANZA, MUSTANG, REBEL II, SPARTAN, JAGUAR) OR PERENNIAL RYE ("FUTURE 200" MIX: FIESTA II, BLAZER II, AND DASHER II)	175 – 250	6 TO 8

FOOTNOTES:
1 USE PROPER INOCULANT FOR LEGUME SEEDS, USE FOUR TIMES RECOMMENDED RATE WHEN HYDROSEEDING.
2 USE PURE LIVE SEED (PLS) = $\frac{\text{(% GERMINATION) x (% PURITY)}}{100}$
EXAMPLE: COMMON BERMUDA SEED WITH 70% GERMINATION AND 80% PURITY= $\frac{70 \text{ x } 80}{100}$ OR 56%
10LBS PLS/ACRE/56% = 17.9 LBS/ACRE OF BAGGED SEED
3 D.O.T. ALL PURPOSE MIX
4 WILD FLOWER MIX CONTAINING NEW ENGLAND ASTER, BABYS BREATH, BLACK EYE SUSAN, CATCHFLY, DWARF COLUMBINE, PURPLE CONEFLOWER, LANCED-LEAVED COREOPSIS, CORNFLOWER, OX-EYE DAISY, SCARLET FLAX, FOXGLOVE, GAYFEATHER, ROCKY LARKSPUR, SPANISH LARKSPUR, CORN POPPY, SPURRED SNAPDRAGON, WALLFLOWER AND/OR YARROW MIX.
BE ADDED TO ANY SEED MIX GIVEN. MOST SEED SUPPLIERS CARRY A WILD FLOWER MIXTURE THAT IS SUITABLE FOR THE NORTHEAST AND CONTAINS A VARIETY OF BOTH ANNUAL AND PERENNIAL FLOWERS. SEEDING RATES FOR THE SPECIFIC MIXTURES SHOULD BE FOLLOWED.
5 CONSIDERED TO BE A COOL SEASON MIX.
6 CONSIDERED TO BE A WARM SEASON MIX.

(TS) TEMPORARY SEEDING

- SITE PREPARATION
  GRADE AS ACORDING TO PLAN TO ALLOW FOR THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE MEASURE FOR LAND GRADING PER THE GUIDELINES.
  INSTALL NEEDED EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT BASINS AND GRASSED WATERWAYS.
- SEEDBED PREPARATION
  LOOSEN THE TOPSOIL TO A DEPTH OF 3–4 INCHES WITH A SLIGHTLY ROUGHENED SURFACE. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS (SUCH AS THOSE OFFERED BY THE UNIVERSITY OF CONNECTICUT SOIL TESTING LABORATORY.) SOIL SAMPLE MAILERS ARE AVAILABLE FROM THE LOCAL COOPERATIVE EXTENSION SERVICE OFFICE. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET OF 10–10–10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESUM OXIDE) AS FOLLOWS:

SOIL TEXTURE	TONS/AC.	LBS./1000SQ.FT.
CLAY, CLAY LDAM AND HIGH ORGANIC SOIL	3	135
SANDY LDAM, LDAM, SILT L

Bid Schedule

Camp Dutton Road Drainage

Town of Litchfield

Lump sum: $_____

Written amount:_____

The undersigned is familiar with the conditions surrounding this call for bids, is aware that the Town reserves the right to reject any and all bids, and is submitting this bid without collusion with any other person, individual, or corporation.

Bidder _____

By _____
(Signature) (Title)

_____Date _____
(Name – Typed)

Address _____

_____

Phone _____

Email _____

HOLD HARMLESS AGREEMENT

The Contractor named below agrees that it will indemnify and hold harmless the Town of Litchfield and its respective officers, agents and employees from any loss, costs, damages, expenses, judgments and liability whatsoever kind or nature howsoever the same may be caused resulting directly or indirectly by any negligent act or omission of the contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable resulting in bodily injury including sickness and death, personal injury or damage to property directly or indirectly, including the loss of use resulting therefrom as permitted by law, unless and to the extent caused by the Town of Litchfield's negligence or its willful acts.

SUPPLEMENTAL AGREEMENT

The Contractor named below is an independent contractor and neither the Contractor nor its employees nor the Contractor's subcontractors under any circumstances, will be considered servants or agents of the Town of Litchfield and the Town will be at no time legally responsible for any negligence or other wrong doing by the Contractor, its servants or agents or the Contractor's subcontractors. The Town will not withhold from the contract payments to the Contractor for any federal or state unemployment taxes, federal or state income taxes, Social Security tax, or any other amounts for benefits to the Contractor. The lump sum or unit charges for the services provided does not represent gross wages and further the Town will not provide the Contractor any insurance coverage or other benefits, including Workers' Compensation, normally provided by the Town for its employees.

STATE OF CONNECTICUT)
) ss:
COUNTY OF)

Signed:_____

Print Name:_____
Title:_____
Company:_____
Address:_____
_____

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

_____
Notary Public

TOWN OF LITCHFIELD

NONDISCRIMINATION CERTIFICATION

Representation by Individual

Written representation that complies with the nondiscrimination agreements and warranties under the Connecticut General Statutes ss/ss 4a-60(a)(1) and 4a-60a(a)(1) as amended.

Instructions:

For use by an individual who is not an entity (corporation, limited liability company, or partnership) when entering into any contract type with the Town of Litchfield, regardless of contract value. Submit to the awarding agency prior to contract execution.

Representation of an Individual:

I, _____, of _____,
Signatory Business Address

Represent that I will comply with the nondiscrimination agreements and warranties of Connecticut General Statutes ss/ss 4a-60(a)(1) and 4a-60 (a) (1) as amended.

_____ _____
Signatory Date

_____
Printed Name

TOWN OF LITCHFIELD

NONDISCRIMINATION CERTIFICATION

Representation by Entity

Written representation that complies with the nondiscrimination agreements and warranties under the Connecticut General Statutes ss/ss 4a-60(a)(1) and 4a-60a(a)(1) as amended.

Instructions:

For use by an entity (corporation, limited liability company, or partnership) when entering into any contract type with the Town of Litchfield, regardless of contract value. Submit to the awarding agency prior to contract execution.

Representation of an Entity:

I, _____, _____, of _____,
Authorized Signatory Title Name of Entity

An entity duly formed and existing under the laws of _____,
Name State of Commonwealth

Represent that I am authorized to execute and deliver this representation on behalf of

_____ and that _____ has a
Name of Entity Name of Entity

Policy in place that complies with the nondiscrimination agreements and warranties of Connecticut General Statutes ss/ss 4a-60(a)(1) and 4a-60 (a) (1) as amended.

_____ _____
Authorized Signatory Date

_____
Printed Name

NON-COLLUSION AFFIDAVIT

(This affidavit must be signed and sworn to by the person signing bid)

AFFIDAVIT FOR INDIVIDUAL BIDDER

STATE OF_____

COUNTRY OF _____

_____ Being first duly sworn, deposes and says:
(Persons Name)

That they are the person who is the Bidder submitting the accompanying bid for Town Project, and that they, having read, understood, and agreed to all the terms and provisions thereof, signed this affidavit; and the accompanying bid; and that such bid is genuine and not a sham or collusive or made in the interest or on behalf of any person not therein named; and that said Bidder has not directly or indirectly, induced or solicited any other Bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding and that said Bidder has not in any manner sought by collusion to secure said Bidder any advantage over any other Bidder; and that said Bidder has not otherwise taken any action in restraint of free competitive bidding in connection with the subject bid.

Signed and sworn to before me this _____day of _____, 20___

_____My Commission expires_____
Notary Public
(Seal)

_____
(Signature of named individual)

NON-COLLUSION AFFIDAVIT

(This affidavit must be signed and sworn to by the person signing bid)

AFFIDAVIT FOR CO-PARTNERSHIP BIDDER

STATE OF_____

COUNTRY OF _____

_____

(Persons Names)

Each being first duly sworn, each deposes and each for themselves says: That they are a member of and that the persons listed above collectively compose the co-partnership firm designated as

_____who is the Bidder submitting the

(Firm Name)

accompanying bid for Town Project, and that they, being duly authorized, signed this affidavit on behalf of said Bidder; and that such bid is genuine and not a sham or collusive or made in the interest or on behalf of any person not therein named; and that said Bidder has not directly or indirectly, induced or solicited any other Bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding and that said Bidder has not in any manner sought by collusion to secure said Bidder any advantage over any other Bidder; and that said Bidder has not otherwise taken any action in restraint of free competitive bidding in connection with the subject bid.

Signed and sworn to before me this _____day of _____, 20__

_____My Commission expires_____

Notary Public

(Seal)

Signatures of Named Principals:

_____

_____

_____

NON-COLLUSION AFFIDAVIT

(This affidavit must be signed and sworn to by the person signing bid)

AFFIDAVIT FOR CORPORATION BIDDER

STATE OF_____

COUNTRY OF _____

_____ Being first duly sworn, deposes and says:
(Persons Name)

That they are the _____of the corporation who
(Official Title of Cooperate Officer or Agent)

Is the Bidder submitting the accompanying bid for Town Project, and that they, being duly authorized, signed this affidavit on behalf of said Bidder; and that such bid is genuine and not a sham or collusive or made in the interest or on behalf of any person not therein named; and that said Bidder has not directly or indirectly, induced or solicited any other Bidder to put in a sham bid, or any other person, firm or corporation to refrain from bidding and that said Bidder has not in any manner sought by collusion to secure said Bidder any advantage over any other Bidder; and that said Bidder has not otherwise taken any action in restraint of free competitive bidding in connection with the subject bid.

Signed and sworn to before me this _____day of _____, 20__

_____My Commission expires_____
Notary Public
(Seal)

_____
(Signature of Cooperate Officer or Agent)