ABBREVIATIONS

Bit.	BITUMINOUS
CMP	CORRUGATED METAL PIPE
CPEP	CORRUGATED POLYETHYLENE PIPE
EL.	ELEVATION
INV.	INVERT
N/F	NOW OR FORMERLY
PEFE	POLYETHYLENE FLARED END
RCP	REINFORCED CONCRETE FLARED END
T.F.	TOP OF FRAME
T.O.W.	TOP OF WALL
TYP.	TYPICAL

LEGEND

Existing		PROPOSED
100	INDEX CONTOUR	100
98	INTERMEDIATE CONTOUR	98
× 99.0	SPOT ELEVATION	99.00
	DECIDUOUS TREE	
	LAWN EDGE	
	STONE WALL	
	WATER EGDE	
WF 1	WETLAND FLAG	
	WETLAND LINE	
	GRAVEL EDGE	
	PAVEMENT EDGE	
	BITUMINOUS CONCRETE CURB	
	METAL BEAM GUIDERAIL	
	MAILBOX	
	CATCH BASIN	GRATE
	MANHOLE	
	FLARED END	
	STORM PIPE	
	SURVEY CONTROL	
	SURVEY MONUMENT	
	STREET LINE	
	PROPERTY LINE	
	PERMANENT EASEMENT	
	BORING	
	SAWCUT PAVEMENT	
	PLANTING	
	CLEARING	
	REMOVE TREE	
	PROTECT TREE	
	SEDIMENT BARRIER	
	SEDIMENT BARRIER AT DRAINAGE STRUCTURE	
	REMOVE BITUMINOUS CONCRETE PAVEMENT AND CURBING	
	ROADWAY PAVEMENT	
	EROSION CONTROL BLANKET	
	RIPRAP	
	BROOK BOTTOM MATERIAL	
	50-YEAR FLOOD ELEVATION (CALCULATED)	

FINAL DESIGN
OCTOBER 2025

TOWN OF
EAST HADDAM
CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

BOARD OF SELECTMEN
IRENE M. HAINES, FIRST SELECTWOMAN
ERIK W. DILL
TANYA M BOURGOIN

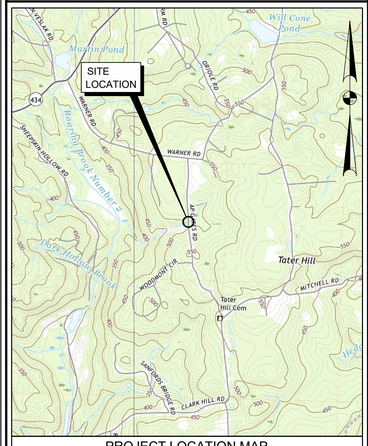
PUBLIC WORKS DIRECTOR
MICHELE M. VELEZ

SCHEDULE OF DRAWINGS

SHEET No.	TITLE
1 OF 18	COVER SHEET
2 OF 18	TOPOGRAPHIC SURVEY
3 OF 18	DEMOLITION PLAN
4 OF 18	ROADWAY PLAN
5 OF 18	ROADWAY PROFILE
6 OF 18	HYDRAULIC PROFILE
7 OF 18	EROSION AND SEDIMENT CONTROL AND PLANTING PLAN
8 OF 18	EROSION AND SEDIMENT CONTROL NOTES
9 OF 18	EROSION AND SEDIMENT CONTROL DETAILS
10 OF 18	MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
11 OF 18	STORM SEWER DETAILS
12 OF 18	SITE DETAILS AND NOTES
13 OF 18	CULVERT GENERAL PLAN
14 OF 18	CULVERT DETAILS
15 OF 18	WINGWALL DETAILS
16 OF 18	PARAPET AND RETAINING WALL DETAILS
17 OF 18	FIGURES FOR DATES ON BRIDGE PARAPETS
18 OF 18	ENVIRONMENTAL IMPACT PLAN

CTDOT STANDARD DRAWINGS

SHEET No.	TITLE
HW-822_01	TEMPORARY PRECAST CONCRETE BARRIER CURB
HW-910_21	METAL BEAM RAIL (R-B MASH) GUIDERAIL
HW- 910_23	METAL BEAM RAIL (R-B MASH) HALF AND QUARTER POST SPACING
HW-911_01	R-B END ANCHORAGE TYPE I AND II
TR-1208_02	METAL SIGN POSTS AND SIGN MOUNTING DETAILS
TR-1220_01	SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS
TR-1220_02	CONSTRUCTION SIGN SUPPORTS AND CHANNELIZING DEVICES



PROJECT LOCATION MAP
SCALE: 1" = 2,000'
2,000 1,000 0 2,000 4,000
(SCALE IN FEET)

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STATE OF CONNECTICUT
J. HOWARD PFROMMER
LICENSED PROFESSIONAL ENGINEER

J. Howard Pfrommer, P.E.
2025.10.10 08:02:23-04'00'

J. HOWARD PFROMMER, P.E.
CT REGISTRATION No. 15871

PROJECT NO. 0659012 - PROJECT NAME: REPLACEMENT OF CULVERT CARRYING AP GATES ROAD OVER BROOK - FINAL DESIGN - DATE: OCTOBER 2025

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N/F
Andrew N. Priest
& Joann M. Priest

N/F
Jonathan Clarke
& Jennifer Clarke

CT. GRID N 729,600 E 1,104,200

AP Gates Road

Brook

Survey Control
MAG-3
N 729,583.24
E 1,104,288.49

Survey Control
SRP-2
N 729,722.82
E 1,104,315.20

Benchmark
Spike in Pole
CL&P 4450
El. 499.75

Drainage Easement Appx. Location

Gravel Driveway

Vehicle Path

Bit. Conc. Driveway Apron

Bit. Conc. Curb, (Typ.)

Metal Beam Guiderail, (Typ.)

Conc. Block Headwall

Stone Wall, (Typ.)

Mailbox

To Tater Hill Road

To Warner Road

Type "C" Catch Basin
T.F. 494.5
Inv. 490.8 (E)
Inv. 487.4 (S)
Inv. 486.6 (N)

Type "C" Catch Basin
T.F. 494.7
Inv. 491.0

18" CMP

B-1

B-2

E 1,104,400 N 729,550

N/F
Arthur J. Wasley Jr.
& Toni S. Wasley

NOTES:

1. This survey was prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 as a Class T-2 Topographic Survey (Vertical Accuracy Class V-2). Boundary lines depicted hereon are based on records research, other maps and limited field survey and do not represent a boundary opinion.
2. Underground or overhead encroachments, structures, and systems were not investigated as a part of this survey, except as shown or noted hereon.
3. Stone walls and/or fences may deviate slightly from principal courses shown.
4. Peripheral property lines of adjacent owners are shown for general informational purposes only and are not to be construed as being accurately located or shown hereon.
5. Horizontal datum is NAD83. Vertical datum is NAVD88.
6. Parcels are shown on Tax Map 31.
7. Wetlands boundaries were delineated in the field by Richard Snarski, CPSS, and located by field survey.
8. Parcels may be subject to such rights and easements as appear of record or are apparent by usage. This survey reflects encumbrances noticed and discovered by the surveyor in the normal course of work and does not necessarily show every possible condition affecting the property. Easements, servitudes, local ordinances, zoning and other legal encumbrances may exist which are not reflected hereon. Consult a title attorney to discover all legal encumbrances, if any, attached to this property.
9. Background imagery is 2019 orthophotography from CTECO.
10. Reference is made to the following maps on file in the East Haddam Land Records:
    A. "SUBDIVISION PLAN OF GATES ROAD ESTATES PREPARED FOR RICHARD HARDING DATE JULY 25, 1977", by Ferdinand Czwiczka, L.S., E.H.L.R. Map No. 957
    B. "PHASE I & II RECORD SUBDIVISION MAP GATES-WARNER SUBDIVISION A.P. GATES ROAD AND WARNER ROAD EAST HADDAM CONNECTICUT DATE: 3-7-88 SCALE: 1" = 100' SHEET 3/4", last revised 6/29/88, by DeCarlo & Doll, Inc., E.H.L.R. Map No. 1920

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GRAPHIC SCALE
10 8 6 4 2 0 10 20
SCALE: 1"=10'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

TOPOGRAPHIC SURVEY

FINAL DESIGN

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Tel: (860) 526-4522 Fax: (860) 526-5416
www.nlja.com
Jacobson An Affiliate of Nathan L. Jacobson & Associates, Inc.

NOT VALID WITHOUT ORIGINAL SEAL

Jeffrey A. Sanborn
No. 12883
Licensed
Land Surveyor
State of Connecticut
05/09/2025

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

JEFFREY A. SANBORN, L.S.
CT REGISTRATION No. 12883

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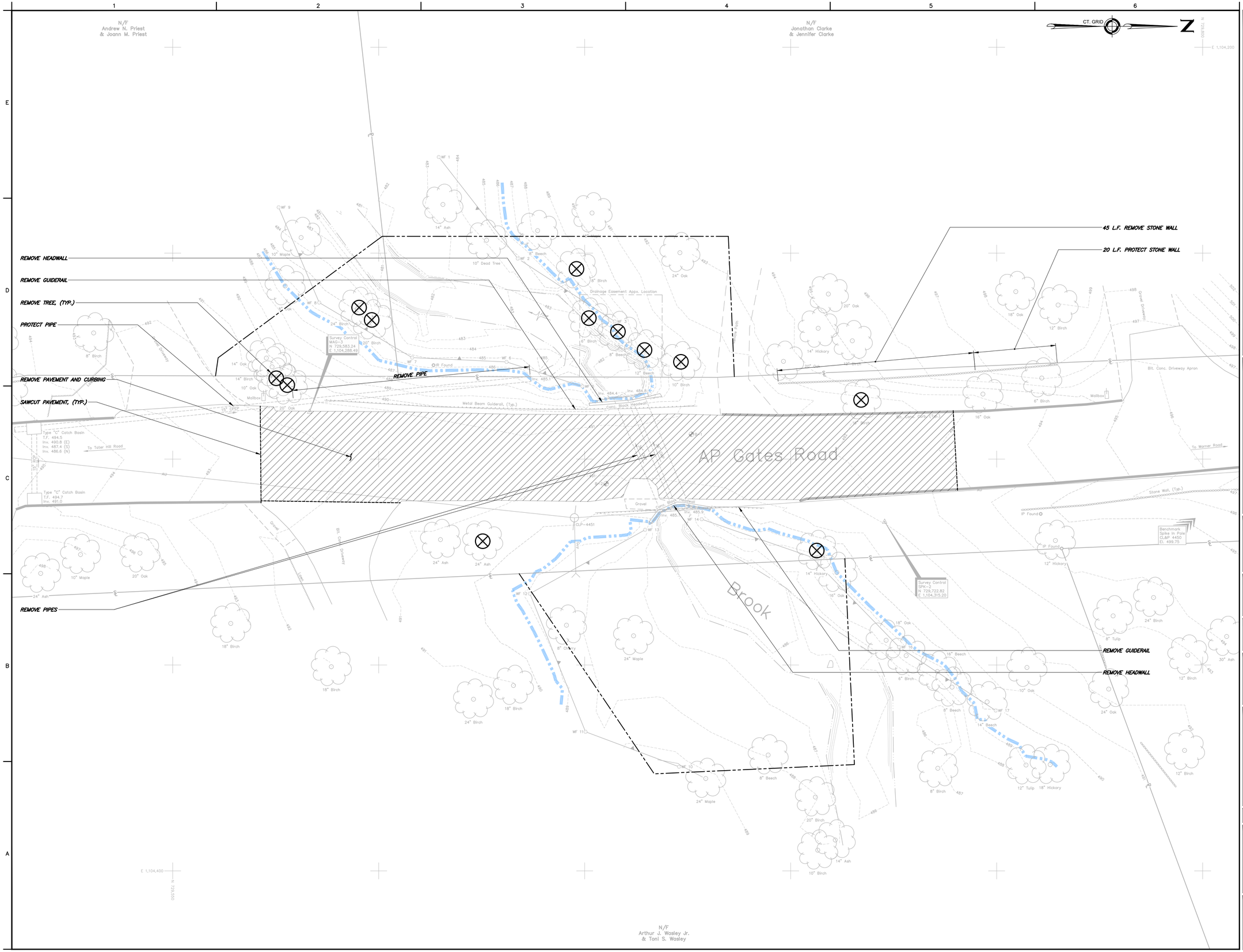
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FIELD BOOK:	-
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SHEET No.:
2 OF 18

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NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALE

10 8 6 4 2 0 10 20

SCALE: 1"=10'

TOWN OF
EAST HADDAM,
CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

DEMOLITION PLAN

FINAL DESIGN

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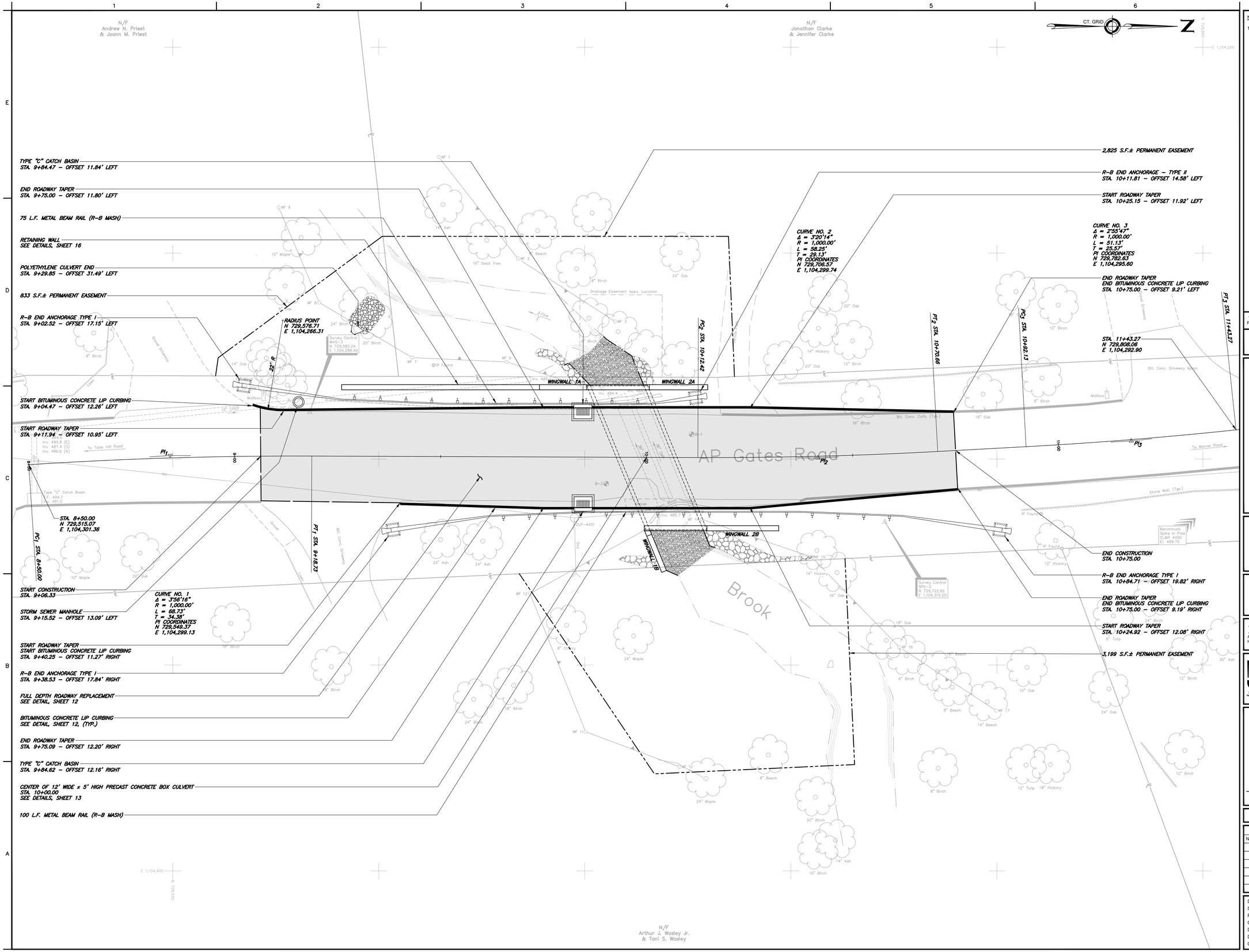
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DRAWN:	AJG
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SHEET No.:

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NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALE
10 8 6 4 2 0 10 20
SCALE: 1"=10'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

ROADWAY PLAN

FINAL DESIGN

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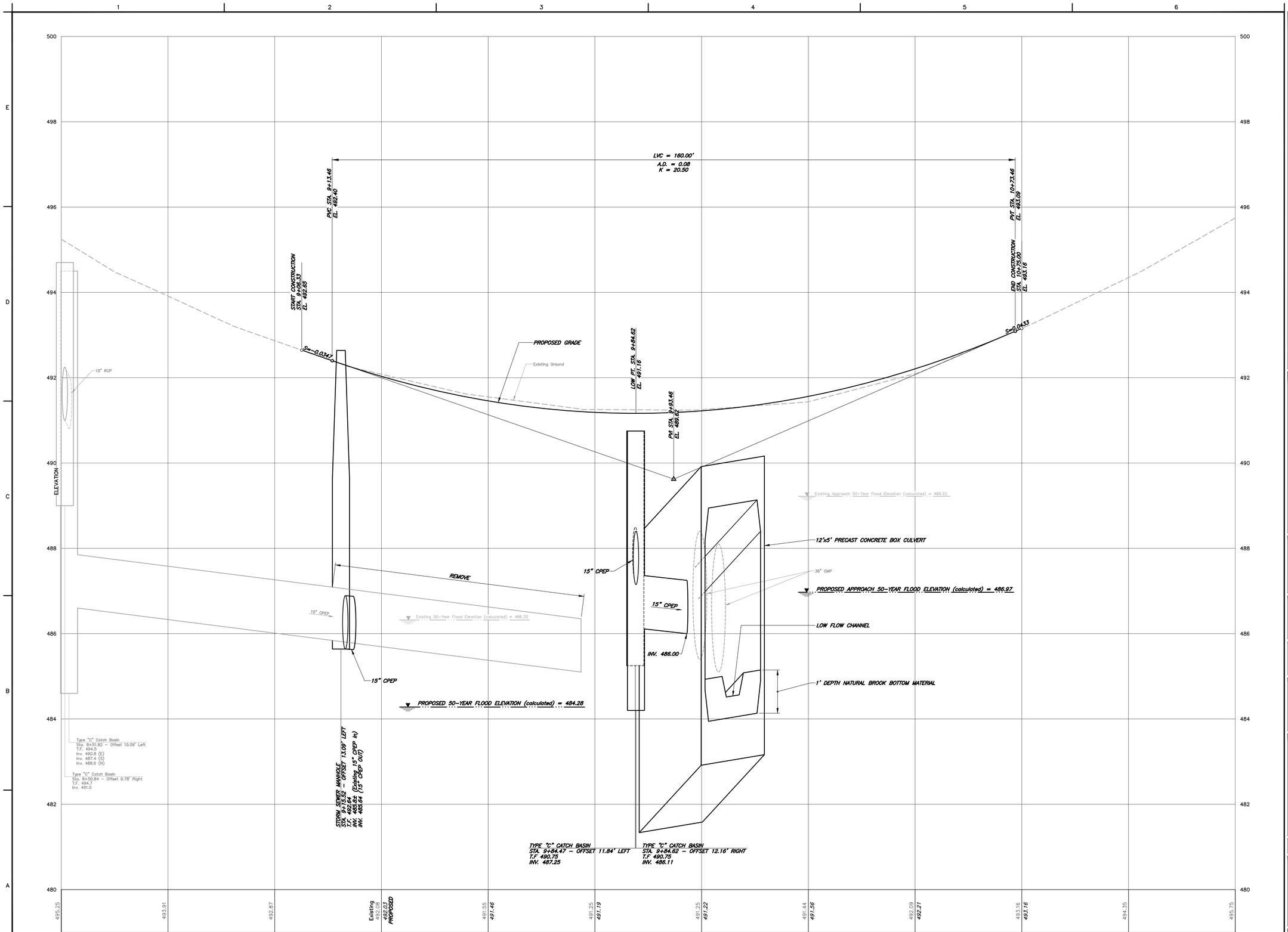
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NOTES:

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GRAPHIC SCALES

10 8 6 4 2 0 10 20
HORIZONTAL SCALE: 1"=10'

1.0 0.8 0.6 0.4 0.2 0 1 2
VERTICAL SCALE: 1"=1'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

ROADWAY PROFILE

FINAL DESIGN

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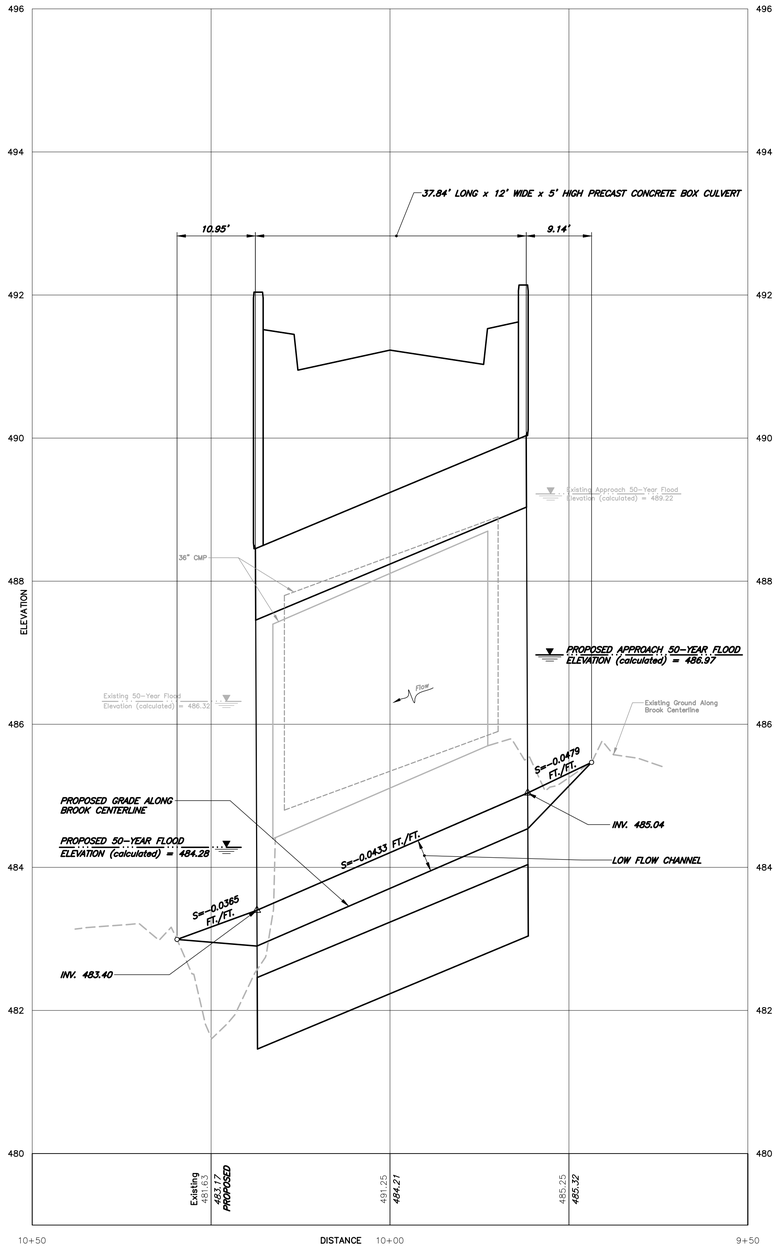
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NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALES

10 8 6 4 2 0 10 20

HORIZONTAL SCALE: 1"=10'

1.0 0.8 0.6 0.4 0.2 0 1 2

VERTICAL SCALE: 1"=1'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

HYDRAULIC PROFILE

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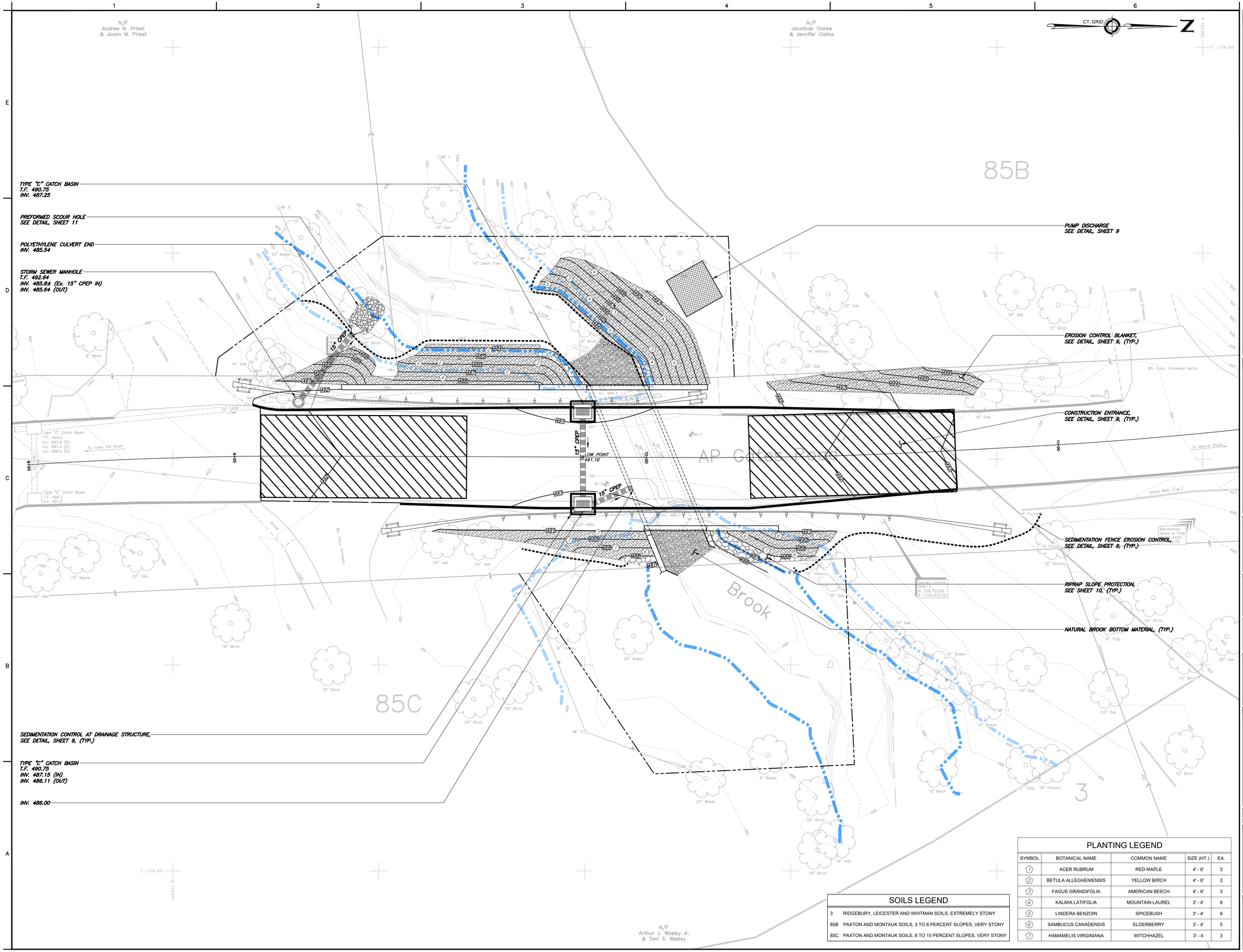
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6 OF 18

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NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.
2. UNLESS SHOWN TO BE COVERED OTHERWISE, UPLAND AREAS SHALL BE SEEDED WITH " NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX", OR ACCEPTED SUBSTITUTION.

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GRAPHIC SCALE

10 8 6 4 2 0 10 20

SCALE: 1"=10'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

EROSION AND SEDIMENT CONTROL AND PLANTING PLAN

FINAL DESIGN

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REVISIONS

No.	DESCRIPTION	DATE

PLANTING LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE (HT.)	EA.
1	ACER RUBRUM	RED MAPLE	4' - 6'	2
2	BETULA ALLEGHENIENSIS	YELLOW BIRCH	4' - 6'	2
3	FAGUS GRANDIFOLIA	AMERICAN BEECH	4' - 6'	3
4	KALMIA LATIFOLIA	MOUNTAIN LAUREL	3' - 4'	6
5	LINDERA BENZOIN	SPICEBUSH	3' - 4'	6
6	SAMBUCUS CANADENSIS	ELDERBERRY	3' - 4'	5
7	HAMAMELIS VIRGINIANA	WITCHHAZEL	3' - 4	3

SOILS LEGEND

3	RIDGEBURY, LEICESTER AND WHITMAN SOILS, EXTREMELY STONY
85B	PAXTON AND MONTAUK SOILS, 3 TO 8 PERCENT SLOPES, VERY STONY
85C	PAXTON AND MONTAUK SOILS, 8 TO 15 PERCENT SLOPES, VERY STONY

DATE:	OCTOBER 2025
SCALE:	1"=10'
PROJECT No.:	09590012
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DESIGNED:	WJE
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SHEET No.:

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PROJECT NARRATIVE:

THE SUBJECT PROJECT INCLUDES THE REPLACEMENT OF AN EXISTING PIPE CULVERT WITH A PRECAST CONCRETE BOX CULVERT.

ADDRESS OF PROPOSED USE:

AP GATES ROAD OVER UNNAMED BROOK
EAST HADDAM, CT

OWNER'S AGENT:

MICHELE M. VELEZ, PUBLIC WORKS DIRECTOR
1 HOOD LANE
EAST HADDAM, CT 06469
Tel: 860-873-5023

CONSTRUCTION SCHEDULING:

IT IS PROPOSED TO BEGIN CONSTRUCTION IN SUMMER AND TO ACHIEVE SUBSTANTIAL COMPLETION IN THE FALL OF THE SAME YEAR. IN GENERAL, THE SEQUENCE FOR SITE CONSTRUCTION AND SITE STABILIZATION MAY BE AS FOLLOWS:

1. INSTALL EROSION CONTROLS TO THE MAXIMUM EXTENT POSSIBLE AND OBTAIN APPROVAL OF THE INSTALLATION (NOT THE DESIGN) FROM THE LOCAL INLAND WETLANDS AND WATERCOURSES COMMISSION OFFICER PRIOR TO THE START OF CONSTRUCTION.
2. REMOVE TREES AND SELECTIVELY CLEAR AND GRUB WOODY VEGETATION.
3. INSTALL DETOUR SIGNS AND CLOSE ROAD.
4. INITIATE WATER HANDLING.
5. REMOVE EXISTING CULVERT AND INSTALL CULVERT AND WINGWALLS.
6. CONCLUDE WATER HANDLING.
7. INSTALL PARAPETS.
8. PERFORM ROADWAY DEMOLITION AND COMPLETE EARTHWORK.
9. INSTALL ROADWAY SUBBASE AND BASE MATERIAL.
10. INSTALL ROADWAY PAVEMENT.
11. INSTALL GUIDERAIL.
12. FINE GRADE, TOPSOIL FERTILIZE, LIME SEED AND MULCH DISTURBED AREAS NOT SHOWN TO BE COVERED OTHERWISE.
13. REMOVE DETOUR SIGNS AND OPEN ROAD.
14. REMOVE EROSION CONTROLS ONCE VEGETATION HAS BEEN ESTABLISHED.

THE CONTRACTOR SELECTED TO CONSTRUCT THIS PROJECT WILL BE RESPONSIBLE FOR IMPLEMENTATION OF SEDIMENT AND EROSION CONTROL MEASURES ON THIS SITE. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR WILL PROVIDE THE TOWN OF MARLBOROUGH CONSERVATION COMMISSION OFFICIAL WITH THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE RESPONSIBLE PERSON. SHOULD ANY PROBLEMS OCCUR, THEN THE OWNER'S AGENT, MICHELE M. VELEZ, PUBLIC WORKS DIRECTOR, SHOULD BE CONTACTED.

CONTINGENCY PLAN

A MINIMUM OF TWO WEEKS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE OWNER'S AGENT AND THE TOWN SEDIMENT AND EROSION OFFICIAL WITH THE NAMES AND TELEPHONE NUMBERS OF THE RESPONSIBLE PERSONS TO BE CONTACTED IN THE EVENT OF AN EROSION AND/OR SEDIMENT CONTROL PROBLEM.

THE CONTRACTOR SHALL AT ALL TIMES KEEP SUFFICIENT ADDITIONAL SEDIMENTATION CONTROL FENCE AND/OR HAY BALES ON THE PROJECT SITE TO CONTROL UNFORESEEN EROSION AND/OR SEDIMENT PROBLEMS. IN THE EVENT OF A PROBLEM THE CONTRACTOR SHALL PROMPTLY STABILIZE THE PROBLEM AND CONTAIN ANY SEDIMENT AND THEN NOTIFY THE OWNER'S AGENT.

EROSION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN FOR THE PROJECT.

THE MINIMUM STANDARDS FOR ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE THOSE OUTLINED IN THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", LATEST REVISION. ALTERNATIVE MEASURES, METHODS, MEANS AND TECHNIQUES MAY BE ALLOWED WITH THE PRIOR APPROVAL OF THE OWNER'S AGENT.

GENERAL GUIDELINES:

1. NO CONSTRUCTION ACTIVITY SHALL TAKE PLACE WITHIN AREAS DESIGNATED AS INLAND WETLANDS, WATERCOURSES OR FLOODPLAINS, DESIGNATED UPLAND REVIEW ZONES OR WITHIN STREAM CHANNEL ENCROACHMENT LINES WITHOUT ALL REQUIRED APPROVALS AND/OR PERMITS.
2. TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
3. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED CONTINUOUSLY AND SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED.
4. THE CONTRACTOR SHALL LIMIT THE DISTURBANCE OF LAND TO THOSE AREAS SHOWN ON THE DRAWINGS AND SHALL TAKE REASONABLE CARE TO PROTECT AND PRESERVE EXISTING VEGETATION WITHIN THE LIMITS OF DISTURBANCE WHERE FEASIBLE.
5. WHERE PRACTICABLE, THE CONTRACTOR SHALL PLAN HIS CONSTRUCTION OPERATIONS SO AS TO LIMIT THE AREAS OF EXPOSED SOIL TO AREAS ACTIVELY UNDER CONSTRUCTION. THE CONTRACTOR SHALL TAKE REASONABLE CARE TO LIMIT THE PERIOD OF EXPOSURE OF DISTURBED AREAS. THE INSTALLATION OF PERMANENT VEGETATIVE MEASURES SHALL BE ACCOMPLISHED AS SOON AS IS PRACTICABLE.
6. ADEQUATE PROVISIONS SHALL BE TAKEN TO PROTECT ALL EXPOSED CUT AND FILL SLOPES FROM SURFACE WATER FLOW DAMAGE.
7. ALL MATERIAL FROM CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF IN A LAWFUL MANNER.
8. WATER FROM DEWATERING OPERATIONS SHALL NOT BE DISCHARGED DIRECTLY TO ANY WETLAND OR WATERCOURSE. SUCH WATER SHALL BE DISCHARGED TO AN APPROVED SEDIMENT BASIN AND/OR FILTER DEVICE OR TO A STORM DRAINAGE SYSTEM ONLY WHEN APPROVED. NO WATER FROM DEWATERING OPERATIONS SHALL BE DISCHARGED INTO A SANITARY SEWER SYSTEM.
9. THE STORAGE, WASHING, FUELING AND MAINTENANCE OF EQUIPMENT AND VEHICLES SHALL TAKE PLACE IN DESIGNATED AREAS ONLY. IN THE EVENT OF A CONTAMINANT SPILL THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION OIL AND CHEMICAL SPILL RESPONSE DIVISION (860-424-3338) AND THE OWNER'S AGENT.

PRESERVE AND CONSERVE SOIL

TOPSOILING

MATERIALS

SITE INVESTIGATIONS SHALL BE MADE TO DETERMINE IF THERE IS A SUFFICIENT QUANTITY OF TOPSOIL OF GOOD QUALITY ON THE SITE 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 TO DETERMINE THE PROPER APPLICATION RATES OF LIME AND FERTILIZER.

INSTALLATION REQUIREMENTS

1. STRIPPING OF TOPSOIL SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. THE DEPTH OF REMOVAL MAY VARY DEPENDING ON THE SITE CONDITIONS. ALL SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO BEGINNING STRIPPING OPERATIONS.
2. TOPSOIL SHALL BE STOCKPILED IN SUCH A MANNER THAT NATURAL SURFACE WATER FLOW IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT.
3. SIDE SLOPES OF STOCKPILES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.
4. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILES.
5. TEMPORARY SEEDING OF STOCKPILES SHALL BE COMPLETED WITHIN 30 DAYS OF THE FORMATION OF THE STOCKPILE, IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE COVER REQUIREMENTS.
6. PREVIOUSLY ESTABLISHED GRADES ON THE AREAS TO BE TOPSOILED SHALL BE MAINTAINED ACCORDING TO THE DRAWINGS.
7. WHERE THE pH OF THE SUBSOIL IS 6.0 OR LESS, GROUND AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH THE SOIL TEST TO A pH OF 6.0 TO 6.5 OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.
8. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SCARIFYING OR TRACKING TO A DEPTH OF AT LEAST 4 INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
9. 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 6 INCHES, UNLESS OTHERWISE NOTED. 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.
10. TOPSOIL SHALL BE COMPACTED ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A UNIFORM FIRM SEEDBED FOR THE ESTABLISHMENT OF A DURABLE TURF. UNDUE COMPACTION IS TO BE AVOIDED AS IT INCREASES RUNOFF VELOCITY AND VOLUME, AND PREVENTS SEED GERMINATION.
11. IMMEDIATELY FOLLOWING TOPSOIL APPLICATION, PROTECT THE TOPSOIL FROM EROSION BY EITHER SODDING, SEEDING AND/OR MULCHING.

LAND GRADING

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
3. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.
4. FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS.
5. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
6. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.
7. TOPSOILING SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS FOR TOPSOILING.
8. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

DUST CONTROL

INSTALLATION REQUIREMENTS

WATER

1. THE EXPOSED SOIL SURFACE SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE QUANTITIES OF WATER TO CONTROL DUST.

STONE

1. COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. IN AREAS ADJACENT TO WATERWAYS USE CHEMICALLY STABLE AGGREGATE.

MAINTENANCE

1. WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHALL BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.

VEGETATIVE SOIL COVER

TEMPORARY SEEDING

INSTALLATION REQUIREMENTS

SITE PREPARATION

1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR LAND GRADING.
2. INSTALL NEEDED EROSION CONTROL MEASURES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, SEDIMENT BASINS AND GRASSED WATERWAYS.

SEEDBED PREPARATION

1. 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 MAGNESIUM OXIDE) AS FOLLOWS:

SOIL TEXTURE	TONS/ACRE	LBS/1,000 SQUARE FEET
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.

SEEDING

1. ANNUAL RYE GRASS 40 LBS/ACRE, 1 LB/1000 SF
2. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER LIME AND SEED.
3. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. HYDROSEEDINGS WHICH INCLUDE MULCH, MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED BY 10 PERCENT WHEN HYDROSEEDING.
4. SPRING SEEDINGS USUALLY GIVE THE BEST RESULTS. SPRING SEEDINGS OF ALL SEED LEGUMES IS RECOMMENDED, HOWEVER, LATE SUMMER SEEDINGS PRIOR TO SEPTEMBER 1 CAN BE MADE. WHEN CROWN VETCH IS SEEDED IN LATE SUMMER AT LEAST 35 PERCENT OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED), THE RECOMMENDED SEEDING DATES ARE:

MARCH 15 THROUGH JUNE 15
AUGUST 15 THROUGH OCTOBER 15

PERMANENT SEEDING

INSTALLATION REQUIREMENTS

1. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. ALL GRADING SHOULD BE BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR LAND GRADING.

SEEDBED PREPARATION

1. 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 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 USING 10-10-10 OR EQUIVALENT. IN ADDITION, 300 POUNDS OF 30-0-0 PER ACRE OR EQUIVALENT OF SLOW RELEASE NITROGEN MAY BE USED FOR TOPDRESSING. APPLY GROUND LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AS FOLLOWS:

SOIL TEXTURE	TONS/ACRE	LBS/1,000 SQUARE FEET
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.

2. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRING TOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHALL BE ON THE GENERAL CONTOUR. CONTINUE TILLAGE UNTIL A REASONABLY UNIFORM, FINE SEEDBED IS PREPARED. ALL BUT CLAY OR SILTY SOILS AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEEDBED WHEREVER FEASIBLE.
3. REMOVE FROM THE SURFACE ALL STONES ONE AND ONE-QUARTER INCHES OR LARGER IN ANY DIMENSION UNLESS OTHERWISE SPECIFIED. REMOVE ALL OTHER DEBRIS SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS OR OTHER UNSUITABLE MATERIAL.
4. INSPECT SEEBBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

SEEDING DATES

1. SPRING SEEDINGS USUALLY GIVE THE BEST RESULTS. SPRING SEEDINGS OF ALL SEED MIXES WITH LEGUMES IS RECOMMENDED, HOWEVER LATE SUMMER SEEDINGS PRIOR TO SEPTEMBER 15 CAN BE MADE. WHEN CROWN VETCH IS SEEDED IN LATE SUMMER AT LEAST 35 PERCENT OF THE SEED SHOULD BE HARD SEED (UNSCARIFIED). THE RECOMMENDED SEEDING DATES ARE:

MARCH 15 THROUGH JUNE 30
AUGUST 15 THROUGH OCTOBER 30

2. WITH THE EXCEPTION OF CROWN VETCH, THE FINAL SEEDING DATE MAY BE EXTENDED 15 DAYS IN THE COASTAL TOWNS OF NEW LONDON, MIDDLESEX, NEW HAVEN AND FAIRFIELD COUNTIES.

SEEDING

1. UNLESS OTHERWISE SPECIFIED, THE SEED MIXTURE SHALL BE NEW ENGLAND CONSERVATION/WILDLIFE MIX FROM NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA, OR ACCEPTED SUBSTITUTION.
2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER TYPE SEEDER OR HYDROSEEDER. NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDINGS WHICH ARE MULCHED MAY BE LEFT ON SOIL SURFACE.
3. 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.
4. FROST CRACK SEEDING MUST BE DONE IN LATE WINTER OR EARLY SPRING. SUITABLE WEATHER CONDITIONS ARE FREEZING NIGHTS AND THAWING DAYS WITH LITTLE OR NO SNOW COVER. SEEDING RATES MUST BE INCREASED 10 PERCENT WHEN USING THIS METHOD.
5. HYDRAULIC APPLICATION (HYDROSEEDING), IS A SUITABLE METHOD FOR USE ON CRITICAL AREAS. WHEN HYDROSEEDING, A SEEDBED IS PREPARED IN THE CONVENTIONAL WAY OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN ONE AND ONE-QUARTER INCHES IN DIAMETER. SLOPES MUST BE NO STEEPER THAN 2 TO 1 (2 FEET HORIZONTALLY TO ONE 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 BY 10 PERCENT WHEN HYDROSEEDING.
6. APPLY MULCH ACCORDING TO THE TEMPORARY MULCHING MEASURE.
7. IF SEEDING CANNOT BE DONE WITHIN THE SEEDING DATES, USE THE TEMPORARY MULCHING MEASURE TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.

MAINTENANCE

1. LIME ACCORDING TO A SOIL TEST OR AT A MINIMUM OF EVERY FIVE YEARS USING A RATE OF TWO TONS PER ACRE (100 POUNDS PER 1,000 SQUARE FEET).
2. WHERE GRASSES PREDOMINATE, FERTILIZE ACCORDING TO A SOIL TEST OR BROADCAST BIENNIALLY, 300 POUNDS OF 10-10-10 OR EQUIVALENT PER ACRE (7.5 POUNDS PER 1,000 SQUARE FEET).
3. WHERE LEGUMES PREDOMINATE, FERTILIZE ACCORDING TO A SOIL TEST OR BROADCAST EVERY THREE YEARS 300 POUNDS OF 0-20-20 PER ACRE OR EQUIVALENT (7.5 POUNDS PER 1,000 SQUARE FEET).

NON-LIVING SOIL PROTECTION

MULCH FOR SEED

MATERIALS

1. SELECT MULCH MATERIALS BASED ON SITE CONDITIONS, AVAILABILITY OF MATERIALS AND LABOR AND EQUIPMENT. OTHER MATERIALS MAY BE USED ONLY WITH THE PERMISSION OF THE APPROVING AUTHORITY.

INSTALLATION REQUIREMENTS

ORGANIC MULCHES

1. ORGANIC MULCHES MAY BE USED IN ANY AREA WHERE MULCH IS REQUIRED, SUBJECT TO THE RESTRICTIONS NOTED BELOW:

	RATES	
MULCHES	PER ACRE	PER 1,000 SQUARE FEET
STRAW OR HAY	1 1/2 - 2 TONS	35-45 LBS

APPLICATION

1. MULCH MATERIALS SHALL BE SPREAD UNIFORMLY, BY HAND OR MACHINE. WHEN SPREADING STRAW OR HAY MULCH BY HAND, DIVIDE THE AREA TO BE MULCHED INTO APPROXIMATELY 1,000 SQUARE FOOT SECTIONS AND PLACE 35-45 POUNDS (3/4 TO 1 BALE) OF STRAW OR HAY IN EACH SECTION TO ENSURE UNIFORM DISTRIBUTION.

ANCHORING

1. HAY OR STRAW MULCHES MUST BE ANCHORED IMMEDIATELY AFTER APPLICATION TO PREVENT WINDBLOWING. HAY OR STRAW MULCH MAY BE ANCHORED BY TRACKING WITH CRIMPING EQUIPMENT, BUT NOT BY USING NETTING.

MAINTENANCE

1. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH SHOULD BE APPLIED. NETS SHALL BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NET AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE. INSPECTIONS SHALL TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. GRASSES SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED WHICH IS MATURE ENOUGH TO CONTROL SOIL EROSION AND TO SURVIVE SEVERE WEATHER CONDITIONS. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.

TEMPORARY EROSION CONTROL BLANKET

DEFINITION

1. A MANUFACTURED BLANKET COMPOSED OF BIODEGRADABLE/PHOTODEGRADABLE NATURAL OR POLYMER FIBERS AND/OR FILAMENTS THAT HAVE BEEN MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX.

PURPOSE

1. TO PROVIDE TEMPORARY SURFACE PROTECTION TO NEWLY SEEDED AND/OR DISTURBED SOILS TO ABSORB RAINDROP IMPACT AND TO REDUCE SHEET AND RILL EROSION AND TO ENHANCE THE ESTABLISHMENT OF VEGETATION.

APPLICABILITY

1. ON DISTURBED SOILS WHERE SLOPES ARE 2:1 OR STEEPER.
2. WHERE WIND AND TRAFFIC GENERATED AIR FLOW MAY DISLODGE STANDARD, UNARMORED MULCHES.
3. MAY BE USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION.
4. MAY BE USE AS A SUBSTITUTE FOR MULCH FOR SEED.

PLANNING CONSIDERATION

1. THE SUCCESS OF TEMPORARY EROSION CONTROL BLANKETS IS DEPENDENT UPON STRICT ADHERENCE TO THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.

MATERIALS

1. TEMPORARY EROSION CONTROL BLANKETS SHALL BE COMPOSED OF FIBERS AND/OR FILAMENTS THAT:
   A. ARE BIODEGRADABLE OR PHOTODEGRADABLE WITHIN TWO YEARS BUT WITHOUT SUBSTANTIAL DEGRADATION OVER THE PERIOD OF INTENDED USAGE (FIVE MONTHS MAXIMUM);
   B. ARE MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX OF EVEN THICKNESS AND DISTRIBUTION THAT RESIST RAINDROP SPLASH AND WHEN USED WITH SEEDINGS ALLOW VEGETATION TO PENETRATE THE BLANKET;
   C. ARE OF SUFFICIENT STRUCTURAL STRENGTH TO WITHSTAND STRETCHING OR MOVEMENT BY WIND OR WATER WHEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS;
   D. ARE FREE OF ANY SUBSTANCE TOXIC TO PLANT GROWTH AND UNPROTECTED HUMAN SKIN OR WHICH INTERFERES WITH SEED GERMINATION.
   E. CONTAIN NO CONTAMINANTS THAT POLLUTE THE AIR OR WATERS OF THE STATE WHEN PROPERLY APPLIED;
   F. PROVIDE EITHER 80% - 95% SOIL COVERAGE WHEN USED AS A SUBSTITUTE FOR MULCH FOR SEED OR 100% INITIAL SOIL COVERAGE WHEN USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION MEASURE, AND;
   G. DO NOT CONTAIN NETTING.
2. MATERIALS SHALL BE SELECTED AS APPROPRIATE FOR THE SPECIFIC SITE CONDITIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. USE OF ANY PARTICULAR TEMPORARY EROSION CONTROL BLANKET SHOULD BE SUPPORTED BY MANUFACTURER'S TEST DATA THAT CONFIRMS THE BLANKET MEETS THESE MATERIAL SPECIFICATIONS AND WILL PROVIDE THE SHORT TERM EROSION CONTROL CAPABILITIES NECESSARY FOR THE SPECIFIC PROJECT.

SITE PREPARATION AND INSTALLATION

1. PREPARE THE SURFACE, REMOVE PROTRUDING OBJECTS AND INSTALL TEMPORARY EROSION CONTROL BLANKETS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ENSURE THAT THE ORIENTATION AND ANCHORING OF THE BLANKET IS APPROPRIATE FOR THE SITE.
2. THE BLANKET CAN BE LAID OVER AREAS WHERE SPRIGGED GRASS SEEDLINGS HAVE BEEN INSERTED INTO THE SOIL.
3. WHERE LANDSCAPE PLANTINGS ARE PLANNED, LAY THE BLANKET FIRST AND THEN PLANT THROUGH THE BLANKET IN ACCORDANCE WITH LANDSCAPE PLANTING MEASURE.
4. INSPECT THE INSTALLATION TO INSURE THAT ALL LAP JOINTS ARE SECURE, ALL EDGES ARE PROPERLY ANCHORED AND ALL STAKING OR STAPLING PATTERNS FOLLOW MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE

1. INSPECT TEMPORARY EROSION CONTROL BLANKETS 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 FOR FAILURES. BLANKET FAILURE HAS OCCURRED WHEN (1) SOILS BENEATH THE BLANKET HAVE WASHED AWAY FROM BENEATH OR WITHIN THE MAT, RESULTING IN CONTINUE TO ERODE AT AN ACCELERATED RATE, AND/OR (2) THE BLANKET HAS BECOME DISLODGED FROM THE SOIL SURFACE OR IS TORN.
2. IF WASHOUTS OR BREAKOUTS OCCUR, RE-INSTALL THE BLANKET AFTER REGRADING AND RE-SEEDING, ENSURING THAT BLANKET INSTALLATION STILL MEETS DESIGN SPECIFICATIONS. WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION, REVIEW CONDITIONS AND LIMITATIONS FOR USE AND DETERMINE IF DIVERSIONS, STONE CHECK DAMS OR OTHER MEASURES ARE NEEDED TO REDUCE FAILURE RATE.
3. REPAIR ANY DISLODGED OR FAILED BLANKETS IMMEDIATELY.
4. WHEN USED AS A SUBSTITUTE FOR MULCH FOR SEED, CONTINUE TO INSPECT AS REQUIRED BY THE SEEDING MEASURE. WHEN USED AS A SUBSTITUTE FOR TEMPORARY SOIL PROTECTION, CONTINUE TO INSPECT UNTIL IT IS REPLACED BY OTHER EROSION CONTROL MEASURES OR UNTIL WORK RESUMES.

PERMANENT TURF REINFORCEMENT MAT

DEFINITION

1. A MANUFACTURED MAT COMPOSED OF NON-BIODEGRADABLE POLYMER OR SYNTHETIC FIBERS MECHANICALLY, STRUCTURALLY OR CHEMICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX.

PURPOSE

1. TO PROVIDE PERMANENT TURF REINFORCEMENT WHERE DESIGN FLOWS EXCEED THE STABILITY OF THE SOILS AND/OR PROPOSED VEGETATION.
2. TO ENHANCE THE ESTABLISHMENT OF VEGETATION AS THE FINAL SURFACE PROTECTION.

APPLICABILITY

1. IN CHANNELS WHERE DESIGN VELOCITIES EXCEED THE STABILITY LIMITS OF THE SOIL AND/OR VEGETATION, AND A SOFT-ARMORED APPROACH IS DESIRED.
2. ON UNSTABLE SOILS WHERE INTERMITTENT FLOW EXISTS.
3. ON DISTURBED SOILS WITH SLOPES 2:1 OR FLATTER. ON SHORELINES ABOVE A PROTECTED OR STABLE TOE TO REDUCE SOIL EROSION.

PLANNING CONSIDERATIONS

1. AS A RULE OF THUMB, WHEN FLOWS OVER EXPOSED SOILS EXCEED 2 FEET PER SECOND AND FLOWS OVER PROPOSED TURF AREAS EXCEED 5-6 FEET PER SECOND, THE SOIL EROSION CAN BE EXPECTED.

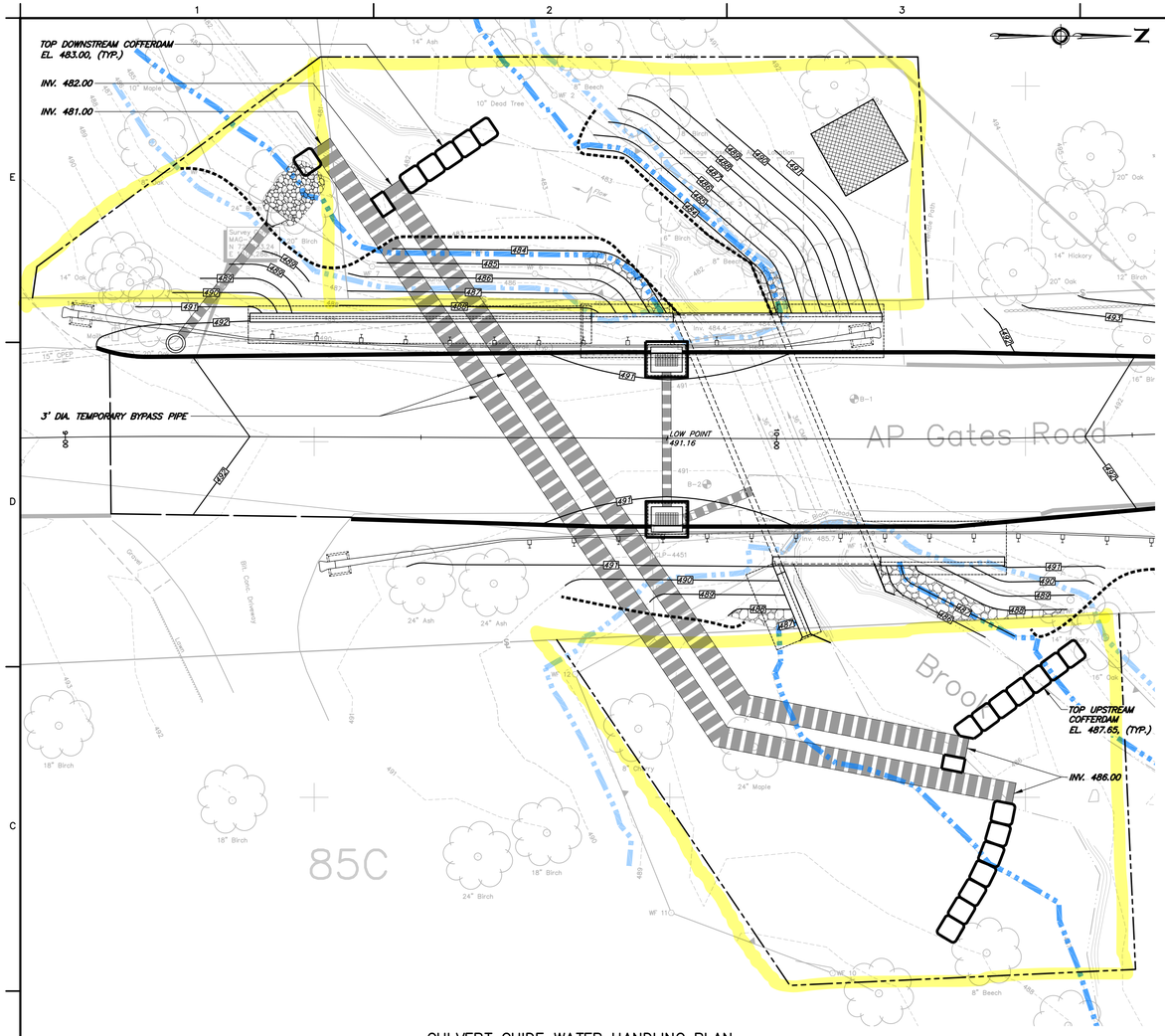
DESIGN CRITERIA

1. WHERE TURF REINFORCEMENT MATS ARE USED IN AREAS OF CONCENTRATED FLOWS AN ENGINEERED DESIGN IS REQUIRED. FOR OTHER APPLICATIONS REFER TO THE MANUFACTURER'S RECOMMENDATIONS.

MATERIAL

PERMANENT TURF REINFORCEMENT MATS SHALL:

1. CONSIST OF ULTRAVIOLET LIGHT RESISTANT POLYMER OR SYNTHETIC FIBERS MECHANICALLY, STRUCTURALLY, AND/OR CHEMICALLY BOUND TOGETHER FOR A CONTINUOUS MATRIX OF CONSISTENT THICKNESS;
2. CONTAIN NO CONTAMINANTS THAT POLLUTE THE AIR OR WATERS OF THE STATE WHEN PROPERLY INSTALLED, AND BE FREE OF ANY SUBSTANCE TOXIC TO PLANT GROWTH AND UNPROTECTED HUMAN SKIN OR WHICH INTERFERES WITH SEED GERMINATION;
3. MATERIALS SHALL BE SELECTED AS APPROPRIATE FOR THE SPECIFIC SITE COND



CULVERT GUIDE WATER HANDLING PLAN

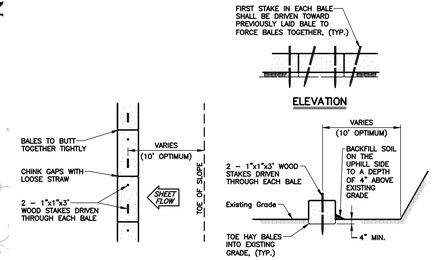
SCALE: 1"=10'

TEMPORARY HYDRAULIC DATA

DRAINAGE AREA	0.2 SQ. MI.
AVERAGE DAILY FLOW	0.39 CFS
AVERAGE SPRING FLOW	0.74 CFS
TEMPORARY DESIGN DISCHARGE	28.4 CFS
TEMPORARY DESIGN FREQUENCY	2 YEAR
TEMPORARY WSEL (AT CULVERT FACE) UPSTREAM	487.65
TEMPORARY WSEL (AT CULVERT FACE) DOWNSTREAM	483.06

GUIDE WATER HANDLING PLAN NOTES:

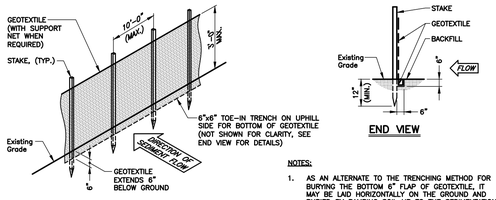
1. THE COFFERDAM(S) SHOWN ON THIS DRAWING REPRESENTS A MINIMUM GUIDELINE ONLY FOR THE HANDLING OF WATER AS IT RELATES TO THE INSTALLATION OF THE FRAME AND WINGWALLS.
2. COFFERDAM LAYOUT SHOWN ON THE DRAWINGS IS FOR ILLUSTRATION ONLY. ACTUAL LAYOUT CONFIGURATION FOR INSTALLATION SHALL BE SELECTED AND DESIGNED BY THE CONTRACTOR TO CONFORM TO THE CONTRACTOR'S PROPOSED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND SAFETY.
3. CONTRACTOR SHALL DESIGN AND PROVIDE TIGHTLY SEALED COFFERDAMS TO DEWATER THE WORK AREA AND FOR CONVEYANCE OF FLOWS THROUGH THE CONSTRUCTION SITE IN A CONTROLLED MANNER, FOR NOT LESS THAN THE TEMPORARY DESIGN STORM FREQUENCY, DISCHARGE AND WATER SURFACE ELEVATION SHOWN IN THE TEMPORARY HYDRAULIC DATA BELOW.
4. AT LEAST 30 DAYS PRIOR TO CONSTRUCTING OR INSTALLING COFFERDAMS, THE CONTRACTOR SHALL SUBMIT DETAILED COFFERDAM PLANS AND COMPUTATIONS TO THE ENGINEER FOR INFORMATIONAL PURPOSES ONLY. THE FURNISHING OF SUCH PLANS, COMPUTATIONS AND METHODS, AND THE REVIEW COMMENTS OR LACK THEREOF BY THE ENGINEER ON SAID INFORMATION, SHALL NOT SERVE TO RELIEVE THE CONTRACTOR OF ITS SOLE RESPONSIBILITY FOR THE SAFETY OF THE WORK, SUCCESS OF THE COFFERDAMS, AND THE SUCCESSFUL COMPLETION OF THE PROJECT.
5. TAKE MEASURES DURING DEWATERING OPERATIONS TO PREVENT THE DISCHARGE OF DISCOLORED WATER. THE DETERMINATION OF THE TERM "DISCOLORED" SHALL BE AS DETERMINED BY THE ENGINEER.
6. SHOULD THE CONTRACTOR ELECT TO LAY BACK A PORTION OF THE EXISTING EARTH ADJACENT TO AN EXCAVATION OTHERWISE SHOWN TO BE COFFERDAMMED ON THE DRAWINGS, ANY REQUIRED EXTENSION OF THE COFFERDAM NECESSARY TO KEEP WATER FROM ENTERING THE EXCAVATION, OR ADDITIONAL PUMPING, SHALL BE FURNISHED AND INSTALLED AT NO COST TO THE OWNER.
7. WHERE A COFFERDAM IS USED, THE COST OF DEWATERING THE ENTIRE EXCAVATION, REGARDLESS OF THE SOURCE OF WATER, SHALL BE INCLUDED IN THE CONTRACT PRICE.
8. WHERE REQUIRED BY LAWS AND REGULATIONS, PROVIDE COMPLIANT ANTI-FALL AND MOTOR VEHICLE PROTECTION AT OPEN EXCAVATIONS.



BALED HAY OR STRAW EROSION CHECKS

(SHEET FLOW APPLICATIONS)

N.T.S.

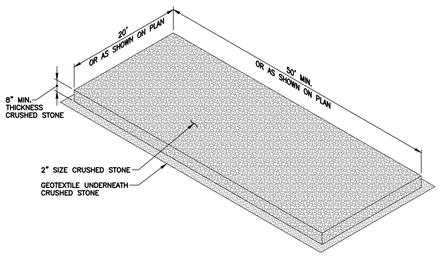


SEDIMENTATION FENCE

N.T.S.

NOTES:

1. AS AN ALTERNATE TO THE TRENCHING METHOD FOR BURRYING THE BOTTOM 6" FLAP OF GEOTEXTILE, IT MAY BE LAID HORIZONTALLY ON THE GROUND AND BURIED BY RAMPING SOIL UP TO THE SEDIMENTATION FENCE AS SPECIFIED IN SECTION 2.19.03 OF THE STATE OF CT, DEPT. OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES AND INCIDENTAL CONSTRUCTION, FORM 819, 2024, AS AMENDED TO DATE.

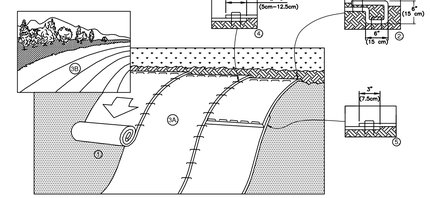


CONSTRUCTION ENTRANCE

N.T.S.

SLOPE INSTALLATION

NORTH AMERICAN GREEN



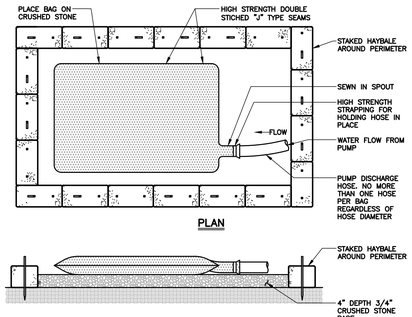
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM™ STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm–12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH* ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com

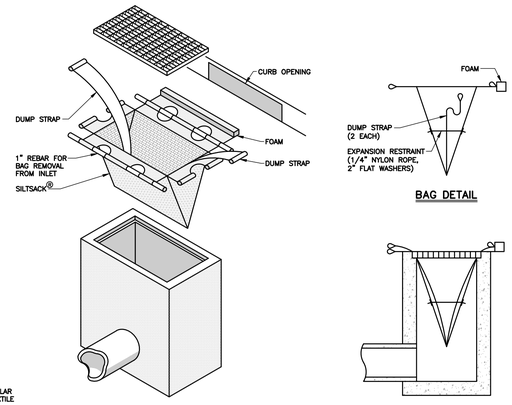
TEMPORARY EROSION CONTROL BLANKET

N.T.S.



NON-WOVEN GEOTEXTILE PUMP DISCHARGE

N.T.S.



PRIOR TO TOP COURSE PAVING

NOTES:

1. THIS DETAIL APPLIES TO STRUCTURES IN PAVEMENT AND NOT TO STRUCTURES OFF PAVEMENT.

AFTER TOP COURSE PAVING

NOTES:

1. FOR DRAINAGE STRUCTURES OFF PAVEMENT, THIS DETAIL APPLIES IMMEDIATELY AFTER THEIR CONSTRUCTION
2. REMOVE SEDIMENT WHEN HALF FULL.

SEDIMENTATION CONTROL AT DRAINAGE STRUCTURE

N.T.S.

NOTES:

1. TYPE "C" CATCH BASIN HEAD SHOWN FOR CLARITY ONLY. THIS DETAIL APPLIES TO ALL STORM DRAINAGE STRUCTURES WITH GRATES AS MAY BE SHOWN ON THE PLAN.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

THIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION.

GRAPHIC SCALE

10 8 6 4 2 0 10 20

SCALE: 1"=10'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

EROSION AND SEDIMENT CONTROL DETAILS

FINAL DESIGN

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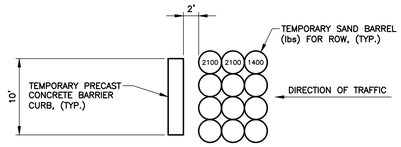
REVISIONS

No.	DESCRIPTION	DATE

DATE:	OCTOBER 2025
SCALE:	AS NOTED
PROJECT No.:	09590012
CADD FILE:	09590012ED
DESIGNED:	WJE
DRAWN:	AJG
CHECKED:	-

SHEET No.: 9 OF 18

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TEMPORARY IMPACT ATTENUATION SYSTEM

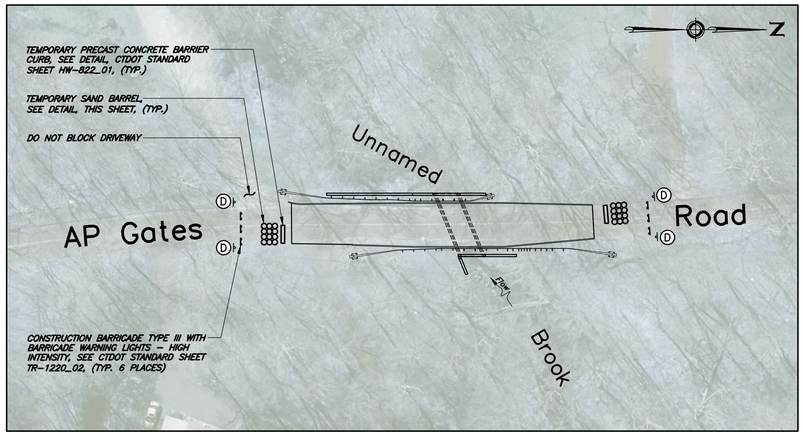
N.T.S.

NOTES:

1. IMPACT ATTENUATION SYSTEM DESIGNED FOR INITIAL SPEED FOR 4,400 LB. VEHICLE OF 30 MPH, SUBSEQUENT DECELERATION <15g AND VELOCITY AFTER LAST BARRIER <10 MPH.
2. INSTALL IN MIRROR IMAGE TO THAT SHOWN, AS NEEDED.

CONTRACTOR NOTE:

THE CONTRACTOR SHALL TO THE MAXIMUM FEASIBLE EXTENT, MINIMIZE THE PERIOD DURING WHICH AP GATES ROAD IS CLOSED TO TRAFFIC. THE CONTRACTOR SHALL SCHEDULE ALL WORK WHICH MUST OCCUR PRIOR TO INSTALLATION OF THE CULVERT, TO BE PERFORMED IN CONTINUOUS COORDINATED SUCCESSION IMMEDIATELY PRECEDING THE DATE ESTABLISHED FOR DELIVERY AND INSTALLATION OF THE COMPONENTS. THIS REQUIREMENT SHALL BE INTEGRATED WITH THE OVERALL PROJECT SCHEDULE.

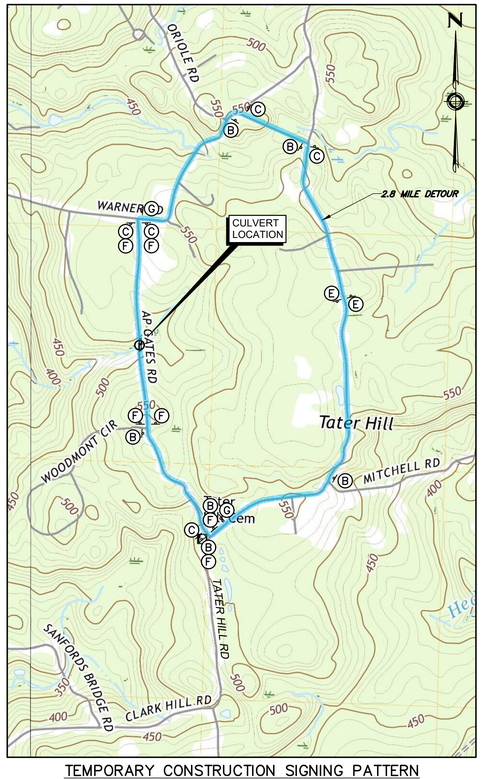


TEMPORARY CONSTRUCTION ROAD CLOSURE PLAN

SCALE: 1"=40'

CONSTRUCTION SIGN LEGEND

SIGN DESIGNATION	CTDOT SIGN NUMBER	DIMENSION	SIGN FACE
Ⓐ	80-9079	72"x48"	AP GATES ROAD CLOSED TO THRU TRAFFIC FROM 00/00 TO 00/00
Ⓑ	80-9919 80-9710	30"x10" 30"x24"	AP GATES ROAD DETOUR →
Ⓒ	80-9919 80-9710	30"x10" 30"x24"	AP GATES ROAD DETOUR ←
Ⓓ	80-9082	48"x30"	BRIDGE OUT
Ⓔ	80-9919 80-9710	30"x10" 30"x24"	AP GATES ROAD DETOUR ↑
Ⓕ	80-9078	60"x30"	BRIDGE CLOSED 00 MILES AHEAD LOCAL TRAFFIC ONLY
Ⓖ	80-9708	24"x18"	END DETOUR



TEMPORARY CONSTRUCTION SIGNING PATTERN

SCALE: 1"=1,000'

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

1. WORK SHALL BE PERFORMED IN ACCORDANCE WITH SPECIAL PROVISIONS FOR "MAINTENANCE AND PROTECTION OF TRAFFIC" AND "SECTION 1.08 - PROSECUTION AND PROGRESS".
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC, INCLUDING FURNISHING ALL NECESSARY TRAFFIC CONTROL AND SAFETY SIGNS, DEVICES, FLAGMAN, ETC.
3. THE CONTRACTOR SHALL NOTIFY THE TOWN AND THEIR EMERGENCY SERVICES AT LEAST FOURTEEN (14) DAYS IN ADVANCE OF AN ANTICIPATED ROADWAY CLOSURE.
4. FOR SIGN FACE MATERIAL DETAILS, SEE CTDOT STANDARD SHEET TR-1220_01.
5. FOR SIGN INSTALLATION DETAILS, SEE CTDOT STANDARD SHEET TR-1208_02 AND SHEET TR-1220_02.
6. THE PLACEMENT OF SIGNS SHALL NOT OBSCURE ANY PRESENT SIGNING OR SIGHTLINES FROM DRIVEWAYS OR INTERSECTING ROUTES. COORDINATE EXACT PLACEMENT OF SIGNS WITH THE ENGINEER.
7. SIGNS SHALL BE PLACED ON THE SPECIFIC METAL SIGN POSTS. THEY SHALL NOT BE PLACED ON EXISTING POSTS, UTILITY POLES OR TREES.
8. LOCATION AND DISTANCE BETWEEN CONSTRUCTION SIGNS MAY BE REVISED BY THE ENGINEER TO MEET FIELD CONDITIONS.
9. EXISTING TRAFFIC SIGNS SHALL BE REMOVED OR COVERED WITH AN OPAQUE COVER IF IN CONFLICT WITH THE TEMPORARY CONSTRUCTION DETOUR PLAN.
10. APPROXIMATE MILEAGE FOR SIGN "F" SHALL SHOW ON THE SIGN AND THE SIGN SHALL BE PLACED IN THE FIELD ACCORDINGLY.
11. PROVIDE BARRICADE WARNING LIGHTS - HIGH INTENSITY ON SIGN "D" AND SIGN "F" AND ON CONSTRUCTION BARRICADES.
12. THE "MAINTENANCE AND PROTECTION OF TRAFFIC PLAN" IS A MINIMUM GUIDELINE ONLY FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC. A SPECIFIC MAINTENANCE AND PROTECTION OF TRAFFIC PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
13. TWO WEEKS PRIOR TO INITIATING THE DETOUR, INSTALL TWO SIGN #80-9079 "A" AS DIRECTED BY TOWN. THESE SIGNS SHALL BE REMOVED ONCE THE DETOUR IS IN EFFECT. PERTINENT DATES SHALL BE SHOWN ON SIGN ACCORDINGLY.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

THIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION.

GRAPHIC SCALES

40 30 20 10 0 40 80
SCALE: 1"=40'
1,000 750 500 250 0 1,000 2,000
SCALE: 1"=1,000'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

MAINTENANCE AND PROTECTION OF TRAFFIC PLAN

FINAL DESIGN

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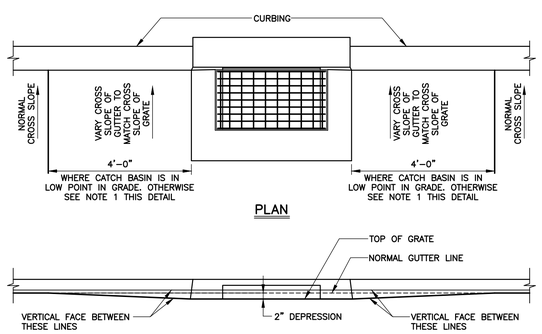
REVISIONS

No.	DESCRIPTION	DATE

DATE:	OCTOBER 2025
SCALE:	AS NOTED
PROJECT No.:	09590012
CADD FILE:	09590012MPT
DESIGNED:	WJE
DRAWN:	AJG
CHECKED:	-

SHEET No.: 10 OF 18

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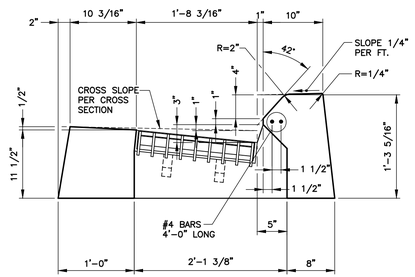


DEPRESSED GUTTER STRIP

SCALE: 1/2"=1'-0"

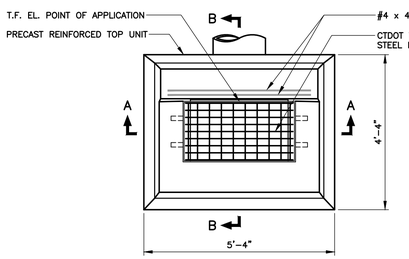
NOTES:

1. 6'-0" ON UPGRADE SIDE OF CONTINUOUS GRADE. 1'-0" ON DOWNGRADE SIDE OF CONTINUOUS GRADE OR AS DIRECTED.



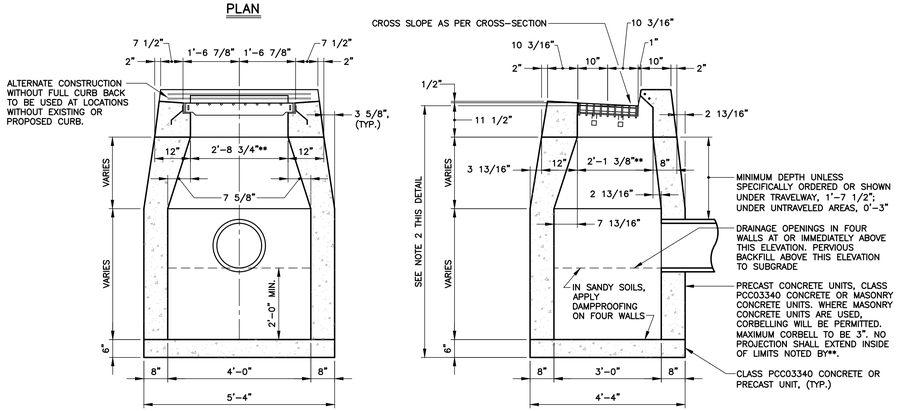
TYPE "C" CATCH BASIN HEAD
BITUMINOUS CONCRETE CURBING

SCALE: 1"=1'-0"



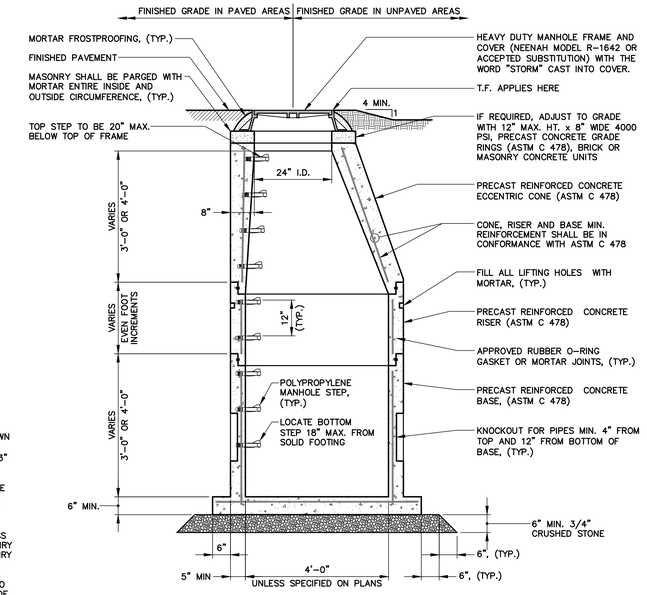
NOTES:

1. WHERE SHOWN ON THE PLANS OR WHERE DIRECTED BY THE ENGINEER, CATCH BASINS SHALL BE CONSTRUCTED WITH PAVED INVERTS AND NO SUMPS, OR DEEP SUMPS.
2. WALLS OF CATCH BASINS OVER 10' DEEP TO BE INCREASED TO 12" THICKNESS. INSIDE DIMENSION TO REMAIN THE SAME.
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.
4. CURB INLET TYPE VARIES ACCORDING TO ADJACENT CURBING.
5. PROVIDE MORTAR ON ALL HORIZONTAL SURFACES BETWEEN CATCH BASIN COMPONENTS.



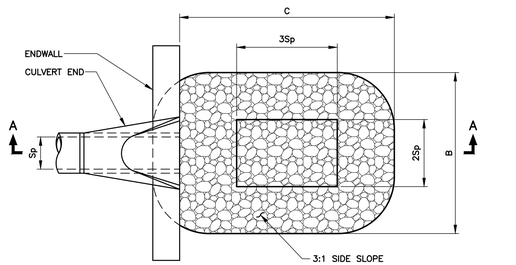
TYPE "C" CATCH BASIN

N.T.S.



STANDARD PRECAST STORM SEWER MANHOLE

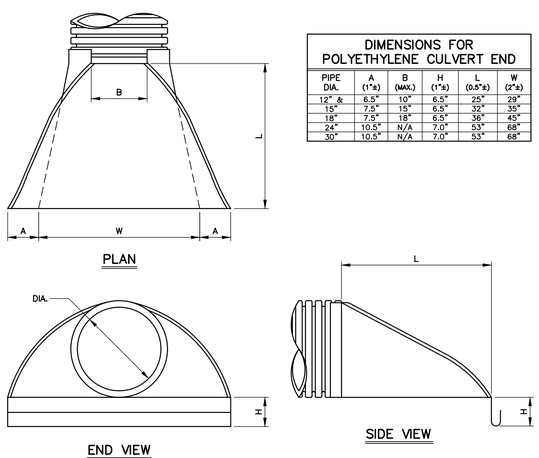
N.T.S.



PREFORMED SCOUR HOLE

N.T.S.

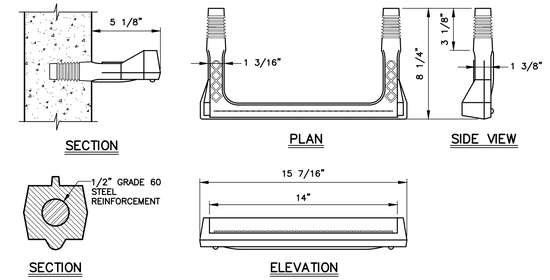
DIMENSIONS FOR PREFORMED SCOUR HOLE										
	PIPE DIAMETER OR SPAN (in)									
TYPE 1	12	15	18	24	30	36	42	48	54	60
B	5	6	8	10	13	15	18	20	23	25
C	6	8	9	12	15	18	21	24	27	30
D	DEPENDS ON RIPRAP TYPE									
2Sp	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
3Sp	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
F=0.5 Sp	0.5	0.625	0.75	1	1.25	1.5	1.75	2	2.25	2.5
	PIPE DIAMETER OR SPAN (in)									
TYPE 2	12	15	18	24	30	36	42	48	54	60
B	8	10	12	16	20	24	28	32	36	40
C	9	11	14	18	23	27	32	36	41	45
D	DEPENDS ON RIPRAP TYPE									
2Sp	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
3Sp	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
F=Sp	1.0	1.3	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0



DIMENSIONS FOR POLYETHYLENE CULVERT END						
PIPE DIA.	A (1"±)	B (MAX.)	H (1"±)	L (0.5"±)	W (2"±)
12" & 15"	6.5"	10"	6.5"	25"	29"
18"	7.5"	15"	6.5"	32"	35"
24"	7.5"	18"	6.5"	36"	45"
30"	10.5"	N/A	7.0"	53"	68"
36"	10.5"	N/A	7.0"	53"	68"

POLYETHYLENE CULVERT END

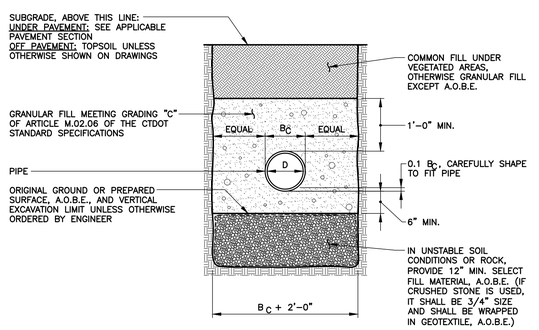
N.T.S.



M.A. INDUSTRIES INC. PS2-PFSL OR ACCEPTED SUBSTITUTION

POLYPROPYLENE PLASTIC MANHOLE STEP

N.T.S.



TYPICAL TRENCH SECTION
STORM DRAINAGE PIPE

N.T.S.

NOTES:

1. CONTRACTOR SHALL PROTECT EXCAVATIONS BY SHORING, BRACING, SHEET PILING, UNDERPINNING OR OTHER METHODS TO PREVENT CAVE-IN OR LOOSE SOIL FROM FALLING INTO THE EXCAVATION AND DAMAGING THE WORK OR ADJACENT STRUCTURES AND UTILITIES.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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TOWN OF
EAST HADDAM,
CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

STORM SEWER DETAILS

FINAL DESIGN

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REVISIONS

No.	DESCRIPTION	DATE

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DESIGNED:	WJE
DRAWN:	AJG
CHECKED:	-

SHEET No.: 11 OF 18

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PROJECT NOTES:

1. IN-RIVER CONSTRUCTION WINDOW: THE IN-RIVER CONSTRUCTION WINDOW FOR UNCONFINED CONSTRUCTION ACTIVITIES SHALL BE JULY 1 TO SEPTEMBER 30, INCLUSIVE, OF THE SAME YEAR. IN-RIVER UNCONFINED CONSTRUCTION ACTIVITIES SHALL NOT OCCUR AT ANY OTHER TIME OF THE YEAR EXCEPT DURING THE IN-RIVER CONSTRUCTION WINDOW PERIOD. "CONFINED" SHALL BE DEFINED AS BEHIND A COFFERDAM.
2. DEWATERING: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF WATER TO ENABLE CONSTRUCTION IN THE DRY, INCLUDING BUT NOT LIMITED TO TRENCHES, EXCAVATIONS, WATER CONTROL STRUCTURES AND COFFERDAMS, THAT MAY BE REQUIRED TO PROPERLY COMPLETE THE WORK. PARTICULAR ATTENTION IS CALLED TO FLUCTUATIONS IN WATER FLOWS AND LEVELS THAT MAY OCCUR DUE TO PRECIPITATION EVENTS. NO EXTRA MONETARY COMPENSATION WILL BE ALLOWED DUE TO WATER FLOW OR LEVEL FLUCTUATIONS. WHETHER PUMPING OR SIPHONING FOR DEWATERING IS USED OR NOT, IN ALL CASES, THE DISCHARGE SHALL BE HANDLED SO AS TO AVOID EROSION AND SEDIMENTATION AS APPROVED BY THE ENGINEER. TAKE ALL NECESSARY PRECAUTIONS AND FURNISH EQUIPMENT REQUIRED TO HANDLE ALL SURFACE, SUBSURFACE AND FLOOD FLOWS WHICH MAY BE ENCOUNTERED AT ANY TIME DURING CONSTRUCTION.
3. TEMPORARY HYDRAULIC FACILITIES: PROVIDE TEMPORARY HYDRAULIC FACILITIES TO CARRY THE WATERCOURSE THROUGH THE CONSTRUCTION SITE IN A CONTROLLED MANNER. TEMPORARY HYDRAULIC FACILITIES SHALL BE DESIGNED FOR THE TEMPORARY CRITERIA SHOWN ON SHEET 9. THE CONTRACTOR SHALL INCLUDE THESE CRITERIA IN HIS COFFERDAM SUBMISSION.
4. CONSTRUCTION FLOOD CONTINGENCY OPERATION PLAN: ALL TEMPORARY STRUCTURES, MATERIAL, EQUIPMENT NOT SPECIFICALLY DESIGNATED AS PART OF THE CONTRACTOR'S WATER HANDLING PLAN SHALL BE REMOVED FROM THE FLOOD PLAIN UPON A 'FLOOD WARNING NOTIFICATION' FOR THE PROJECT AREA ISSUED BY THE U.S. WEATHER SERVICE.
5. NATURAL BROOK BOTTOM MATERIAL: REMOVE EXISTING CHANNEL SUBSTRATE WITHIN AREA OF BROOK DISTURBANCE, STOCKPILE ON AN IMPERVIOUS SURFACE DURING CONSTRUCTION, AND THEN RE-INSTALL TO RE-ESTABLISH BROOK BOTTOM. REMOVE SURPLUS MATERIAL OR PROVIDE AN ACCEPTABLE NATURAL BROOK BOTTOM MATERIAL IF THERE IS A DEFICIT.
6. EROSION CONTROLS: INSTALL EROSION CONTROLS TO THE MAXIMUM EXTENT POSSIBLE AND OBTAIN APPROVAL OF THE INSTALLATION (NOT THE DESIGN) FROM THE TOWN OF EAST HADDAM INLAND WETLANDS AND WATERCOURSES COMMISSION OFFICIAL PRIOR TO THE START OF CONSTRUCTION.
7. MAINTENANCE OF EROSION CONTROLS: INSPECT EROSION CONTROLS REGULARLY AND IMMEDIATELY AFTER RAINFALL EVENTS AND MAINTAIN AND MODIFY AS NECESSARY OR AS DIRECTED BY THE TOWN TO ENSURE OPTIMUM PERFORMANCE.
8. PERMITS: ALL ACTIVITIES SHALL COMPLY WITH LOCAL, STATE AND FEDERAL AUTHORIZATIONS; SEE PROJECT MANUAL SECTION ON PERMITS.
9. SWEEPING: SWEEP OFF ROADWAY DAILY FROM DIRT AND DEBRIS FROM CONSTRUCTION ACTIVITIES.
10. STOCKPILES: INSTALL EROSION CONTROLS AROUND THE BASE OF ALL STOCKPILES, AND TEMPORARILY SEED OR COVER THE PILES WITH AN IMPERVIOUS COVER IF THEY WILL REMAIN ON THE SITE LONGER THAN ONE MONTH.
11. CONSTRUCTION VEHICLES: NO CONSTRUCTION VEHICLES WILL BE STORED, SERVICED, REFUELED, WASHED, OR FLUSHED OUT IN A LOCATION WHERE LEAKS, SPILLAGE, WASTE MATERIALS, CLEANERS, OR WATERS WILL BE INTRODUCED OR FLOW INTO WETLANDS OR WATERCOURSES.
12. SPILL KIT: PROVIDE AND MAINTAIN A SUPPLY OF ABSORBENT SPILL RESPONSE BOOMS AND BLANKETS ON-SITE FOR THE ENTIRE CONSTRUCTION PERIOD.
13. CONTAINMENT SPILLS: NO EQUIPMENT STORAGE, CLEANING, REPAIRING, OR REFUELING SHALL BE CONDUCTED WITHIN 25' OF AN INLAND WETLAND BOUNDARY. SHOULD ANY CONTAMINANT SPILL OCCUR, IMMEDIATELY NOTIFY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION, OIL AND CHEMICAL SPILL RESPONSE DIVISION AT 860-424-3338 AND THE ENGINEER.
14. EQUIPMENT MAINTENANCE AND REFUELING: DURING CONSTRUCTION, ROUTINE EQUIPMENT MAINTENANCE AND REFUELING SHALL OCCUR AWAY FROM STORMWATER CATCH BASINS ON IMPERVIOUS SURFACE WITH OIL ABSORBENT SPILL RESPONSE MATERIALS IN PLACE. NON-ROUTINE MAINTENANCE OF EQUIPMENT SHALL BE CONDUCTED OFF-SITE. SHOULD ANY CONTAMINANT SPILL OCCUR, IMMEDIATELY NOTIFY THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION, OIL AND CHEMICAL SPILL RESPONSE DIVISION AT 860-424-3338 AND THE ENGINEER.
15. FUEL STORAGE: BULK FUEL FOR CONSTRUCTION PURPOSES SHALL NOT BE STORED ON-SITE.
16. HAZARDOUS MATERIAL STORAGE: DURING CONSTRUCTION, ALL OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHALL BE STORED OFF-SITE, OR IF ON-SITE, THEN WITHIN A SECONDARY CONTAINMENT STRUCTURE WITH AN IMPERVIOUS FLOOR THAT WILL BE SECURED DURING NON-WORKING HOURS.
17. TREES: TREES AND VEGETATION TO BE REMOVED MAY NOT ALL BE SHOWN. IN ALL CASES, CLEARING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO PERFORM THE CONSTRUCTION AS APPROVED BY THE TOWN. TREES TO BE REMOVED SHALL BE INDIVIDUALLY VERIFIED IN THE FIELD WITH THE ENGINEER PRIOR TO THE DISTURBANCE.
18. MATERIAL DISPOSAL: SURPLUS OR UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL ORDINANCES, RULES, REGULATIONS AND CODES.
19. CUTTING PAVEMENT: PAVEMENTS TO BE CUT SHALL BE SAW CUT. PRIOR TO PAVING, CLEAN FACE OF EXISTING PAVEMENT AND PAINT WITH LIQUID BITUMEN. MATCH EXISTING GRADES WITH NEW PAVEMENT.
20. UNDERGROUND UTILITIES: FOR LOCATION OF UNDERGROUND ELECTRIC, TELEPHONE, GAS, CABLE TV, AND OTHER FACILITIES OF PUBLIC UTILITY COMPANIES, INQUIRE OF "CALL BEFORE YOU DIG, INC." AT 1-800-922-4455.
21. UTILITIES: PROTECT AND MAINTAIN ALL EXISTING UTILITIES LOCATED WITHIN THE VICINITY OF THE CONSTRUCTION SITE, UNLESS OTHERWISE NOTED. IF ANY UTILITY IS DAMAGED OR SERVICE INTERRUPTED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES INCLUDING RESTORING SERVICE IN A SAFE MANNER, TO THE COMPLETE SATISFACTION OF THE UTILITY OWNER AND THE ENGINEER.

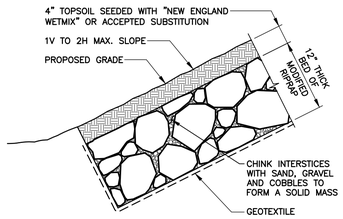
    ELECTRIC - EVERSOURCE ENERGY
    TELEPHONE - FRONTIER COMMUNICATIONS OF CONNECTICUT
    CABLE TELEVISION - COMCAST OF CONNECTICUT, INC.

    INFORMATION OR DATA SHOWN ON OR INDICATED IN THE CONTRACT DOCUMENTS WITH RESPECT TO EXISTING UNDERGROUND PIPES, CABLES, CONDUITS, STRUCTURES OR OTHER UNDERGROUND FACILITIES IS BELIEVED TO BE REASONABLY CORRECT BUT IS NOT GUARANTEED TO BE EXACT OR COMPLETE. SUCH INFORMATION SHALL BE CONSIDERED TO HAVE BEEN PROVIDED FOR THE CONVENIENCE OF THE CONTRACT AND TO ALERT THE CONTRACTOR TO THE EXISTENCE OF SUCH UNDERGROUND FACILITIES WITHIN OR CONTIGUOUS TO THE PROJECT SITE AND THE TOWN, ENGINEER AND THEIR CONSULTANTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA.

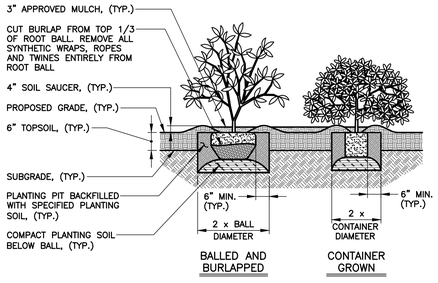
    THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL INFORMATION AND DATA DESCRIBED ABOVE, FOR LOCATING ALL SUCH UNDERGROUND FACILITIES SHOWN OR INDICATED IN THE CONTRACT DOCUMENTS, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION, FOR THE SAFETY AND PROTECTION THEREOF, AND FOR REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK, THE COST OF ALL WHICH WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE.
22. CONTRACT LIMIT LINE: SHALL BE EASEMENT AND RIGHT OF WAY LINES AS SHOWN ON THE DRAWINGS.
23. SITE DISTURBANCE: SITE DISTURBANCE SHALL BE KEPT TO A MINIMUM.
24. SITE FEATURES: NEATLY REMOVE, STORE AND PROTECT AS APPLICABLE, AND REINSTALL OR REPLACE AS APPLICABLE, EXISTING SITE FEATURES DISTURBED BY CONSTRUCTION, REQUIRED FOR FINISHED CONSTRUCTION.
25. SALVAGE ITEMS: NONE.
26. NOISE: PROPERLY CONTROL MUFFLERS AND NOISE CONTROL DEVICES. REPLACE DEFECTIVE DEVICES AS NECESSARY AND LOCATE DEWATERING PUMPS AS FAR AS POSSIBLE FROM RESIDENTIAL STRUCTURES, SO AS TO MINIMIZE THE AMOUNT OF NOISE GENERATED AT THE SITE THAT WILL REACH RESIDENTIAL STRUCTURES.
27. CONTRACTOR SHALL BE:
    A. SOLELY RESPONSIBLE FOR PROTECTION OF PERSONS AND THE PUBLIC IN GENERAL, THE WORK TO BE PERFORMED UNDER THE CONTRACT, PUBLIC AND PRIVATE PROPERTY, AND EASEMENTS AND RIGHTS-OF-WAY DURING THE COURSE OF THE WORK OF THE CONTRACTOR AND HIS SUBCONTRACTORS;
    B. LIABLE FOR ALL DAMAGES AND CLAIMS RECEIVED OR SUSTAINED BY ANY PERSONS, CORPORATIONS OR PROPERTY IN CONSEQUENCE OF DAMAGE TO EXISTING UTILITIES, ROADWAYS, THEIR APPURTENANCES, OR OTHER FACILITIES CAUSED DIRECTLY OR INDIRECTLY BY THE OPERATIONS OF THE CONTRACTOR, AND;
    C. SOLELY RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
28. IN GENERAL, Lower Case Text Identifies Existing Features/Conditions.
29. IN GENERAL, *UPPER CASE TEXT IDENTIFIES PROPOSED FEATURES/CONDITIONS* UNLESS OTHERWISE SPECIFIED.

REFERENCES:

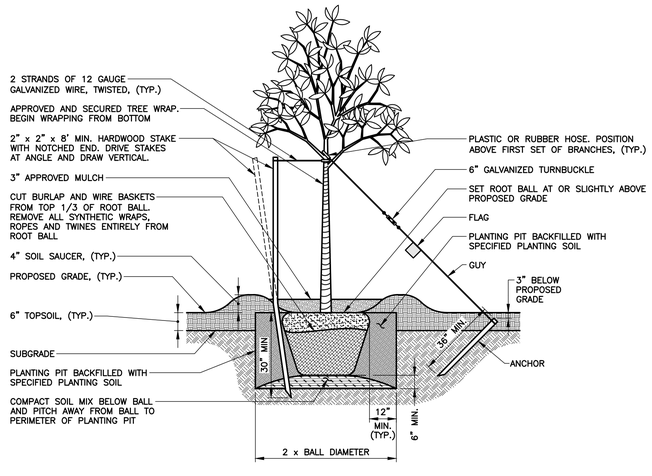
1. VERTICAL DATUM IS NAVD88. HORIZONTAL DATUM IS NAD83.
2. GROUND BASED TOPOGRAPHIC SURVEY WAS PERFORMED ON 05-17-2024 AND 05-20-2024 BY LAND SURVEY & TECHNICAL SERVICES, INC., CHESTER, CT.
3. WETLANDS WERE FLAGGED IN THE FIELD ON 02-25-2024 BY R. RICHARD SNARSKI, CPSS, MARLBOROUGH, CT.
4. GEOTECHNICAL REPORT DATED 11-11-2024 WAS PREPARED BY WELTI GEOTECHNICAL, P.C.



TYPICAL SECTION
RIPRAP SLOPE PROTECTION
N.T.S.



SHRUBS



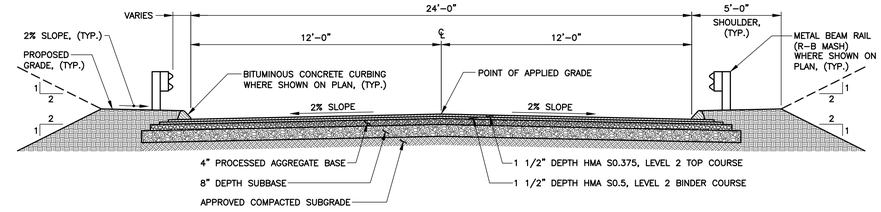
STAKING
DECIDUOUS TREES 3" CALIPER OR LESS, EVERGREENS 8' OR LESS IN HEIGHT

GUYING
DECIDUOUS TREES OVER 3" CALIPER. EVERGREENS OVER 8' IN HEIGHT

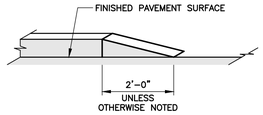
TREE/SHRUB PLANTING DETAIL
N.T.S.

NOTES:

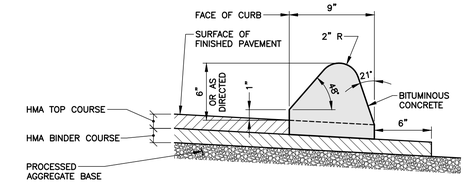
1. FOR TREES 3" – 6" CALIPER: PROVIDE 3 GUYS AND ANCHORS. GUYS SHALL CONSIST OF 3 STRANDS OF 11 GAUGE WIRE, TWISTED. ANCHORS SHALL BE 3"x3"x36" STAKES, NOTCHED, AND DRIVEN AT A 45 DEGREE ANGLE.
2. FOR TREES 6" – 12" CALIPER: PROVIDE 4 GUYS AND ANCHORS. GUYS SHALL BE 1/2", 7 STRAND CABLE. PROVIDE EACH GUY WITH A TURNBUCKLE. ANCHORS SHALL BE 8" DIA. x 48" DEADMEN, BURIED 48" DEEP.
3. FOR TREES OVER 12" CALIPER: PROVIDE 6 GUYS AND ANCHORS. GUYS SHALL BE 5/8", 7 STRAND CABLE. PROVIDE EACH GUY WITH A TURNBUCKLE. ANCHORS SHALL BE 8" DIA. x 48" DEADMEN, BURIED 48" DEEP.
4. THE ABOVE GUYING REQUIREMENTS ARE MINIMUMS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL GUYING AND STAKING AS REQUIRED TO SECURE THE TREE. THE GUYS SHALL BE CONTINUOUSLY INSPECTED, AND TIGHTENED AS NEEDED. ASSURE THAT THE TREE GUYS ARE ADEQUATELY MARKED TO CLEARLY FOREWARN PEDESTRIANS. MARKING SHALL BE CONTINUOUSLY INSPECTED AND REPAIRED AS NEEDED.
5. PRUNING SHALL BE IN ACCORDANCE WITH APPROVED HORTICULTURAL STANDARDS IN ORDER TO PRESERVE THE NATURAL FORM OF THE SPECIFIC PLANT. IF APPLICABLE AND APPROVED BY THE ENGINEER, ONE FOURTH TO ONE THIRD OF THE WOOD SHALL BE REMOVED BY THINNING OUT TO BALANCE ROOT LOSS DUE TO TRANSPLANTING.



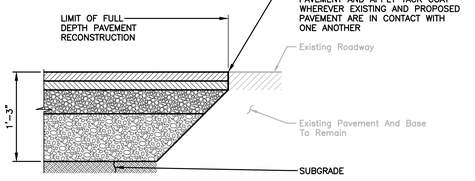
TYPICAL SECTION
FULL DEPTH ROADWAY
N.T.S.



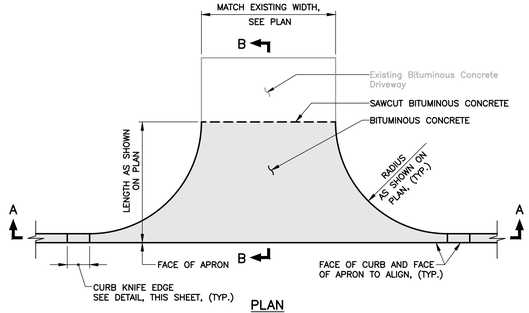
CURB KNIFE EDGE
N.T.S.



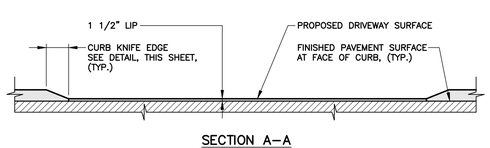
BITUMINOUS CONCRETE LIP CURBING
N.T.S.



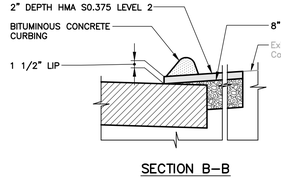
ROADWAY PAVEMENT TRANSITION
SCALE: 1"=1'–0"



PLAN



SECTION A–A



SECTION B–B

DRIVEWAY APRON
N.T.S.

NOTES:

1. BITUMINOUS CONCRETE DRIVEWAY TO USE SAME CROSS–SECTION.

THIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION.

TOWN OF
EAST HADDAM,
CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

SITE DETAILS AND NOTES

FINAL DESIGN

ANY ALTERATIONS TO THIS DRAWING MADE WITHOUT THE EXPRESSED WRITTEN APPROVAL OF NATHAN L. JACOBSON & ASSOCIATES, INC. WILL BE AT THE SOLE RISK OF THE PERSON OR FIRM MAKING SUCH UNAUTHORIZED ALTERATIONS AND NATHAN L. JACOBSON & ASSOCIATES, INC. WILL NEITHER HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAID UNAUTHORIZED ALTERATIONS.

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Jacobson Consulting Civil and Environmental Engineers Since 1972

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J. HOWARD PFROMMER, P.E.
CT REGISTRATION No. 15871

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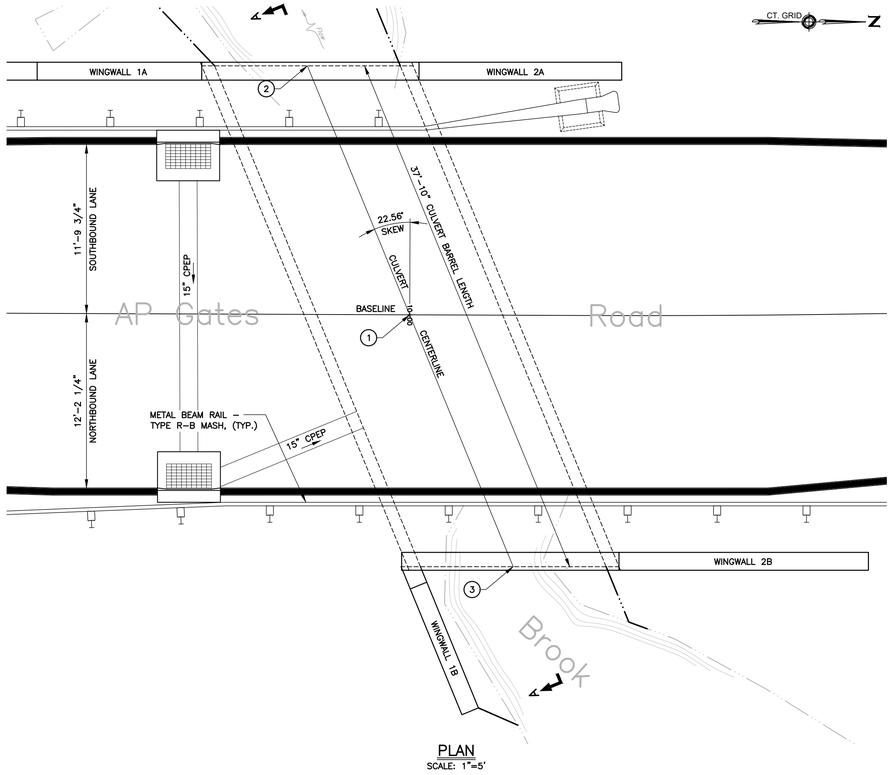
REVISIONS

No.	DESCRIPTION	DATE

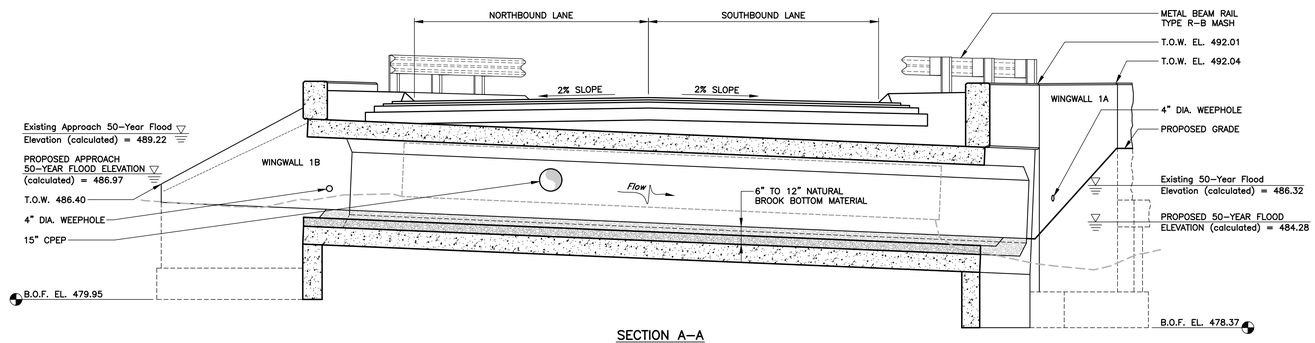
DATE:	OCTOBER 2025
SCALE:	AS NOTED
PROJECT No.:	09590012
CADD FILE:	09590012DT
DESIGNED:	WJE
DRAWN:	AJG
CHECKED:	-

SHEET No.:
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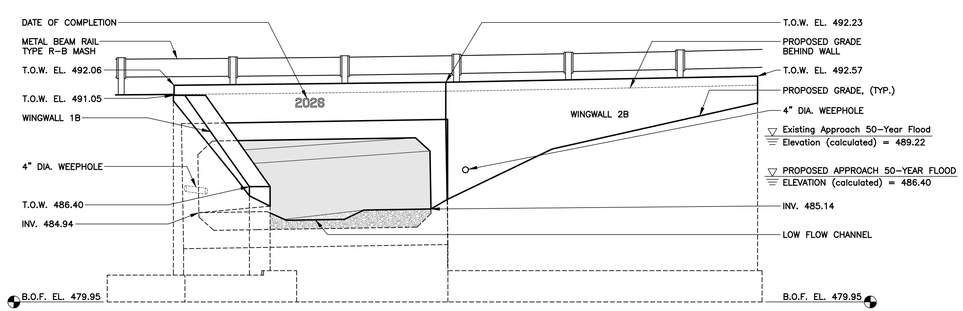
PLAN
SCALE: 1"=5'



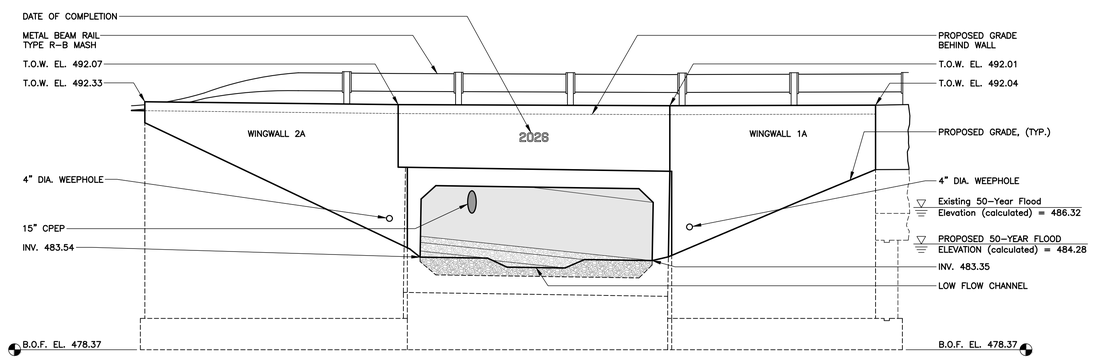
SECTION A–A
PARALLEL TO CULVERT CENTERLINE AT STA. 10+00.00 LOOKING SOUTH
SCALE: 1/4"=1'-0"

NOTES:

1. WEEPHOLES NOT SHOWN IN BARREL.



UPSTREAM ELEVATION
SCALE: 1/4"=1'-0"



DOWNSTREAM ELEVATION
SCALE: 1/4"=1'-0"

CULVERT LAYOUT / ELEVATION TABLE

POINT	DESCRIPTION	NORTHING - EASTING	ELEVATION
1	FINISHED PAVEMENT AT CULVERT CENTERLINE	N 729,665.02 - E 1,104,299.58	491.23
2	CENTERLINE CULVERT BARREL WEST FACE	N 729,657.87 - E 1,104,282.18	-
3	CENTERLINE CULVERT BARREL EAST FACE	N 729,672.25 - E 1,104,317.18	-

NOTES:

1. POINTS 2 AND 3 APPLY ON BARREL ROOF.

HYDRAULIC DATA	
DRAINAGE AREA	0.2 SM
DESIGN FREQUENCY	50 YEAR
DESIGN DISCHARGE	86.2 CFS
UPSTREAM DESIGN WATER SURFACE ELEVATION	486.97 FT.
DOWNSTREAM DESIGN WATER SURFACE ELEVATION	484.18 FT.

TRANSPORATION DIMENSIONS AND WEIGHT				
MEMBER	SHIPPING LENGTH	SHIPPING HEIGHT	SHIPPING WIDTH	SHIPPING WEIGHT
PRECAST BOX	13'-8"	7'-0"	TBD BY CONTRACTOR	5.5 Klf

BESIDES CULVERT BARREL AND PARAPET, CUT-OFF WALLS, RETURN WALLS, WINGWALLS AND RETAINING WALL MAY BE PRECAST

CULVERT GENERAL NOTES:

1. SPECIFICATIONS: PREPARED BY NATHAN L. JACOBSON & ASSOCIATES, INC. TECHNICAL PORTION IS BASED SUBSTANTIALLY ON CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 819, 2024 AND SUPPLEMENTAL SPECIFICATIONS DATED JULY 2025.
2. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003), REVISED THROUGH DECEMBER 2019.
3. ALLOWABLE DESIGN STRESSES:

   CLASS PCC03340 CONCRETE BASED ON f'_c = 3,000 psi
   CLASS PCC04462 CONCRETE BASED ON f'_c = 4,000 psi
   CLASS PRC05062 CONCRETE BASED ON f'_c = 5,000 psi
   REINFORCEMENT (ASTM A 615 GRADE 60) f_y = 60,000 psi

   THE CONCRETE STRENGTH, f'_c, USED IN DESIGN OF THE CONCRETE COMPONENTS IS NOTED ABOVE. THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE CONSTRUCTED COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF 6.01 - CONCRETE FOR STRUCTURES, AND M.03 - PORTLAND CEMENT CONCRETE.
4. LIVE LOAD: AASHTO HL-93, LEGAL AND PERMIT LOADS.
5. FUTURE PAVING ALLOWANCE: NONE.
6. CLASS PRC05062 CONCRETE: CLASS PRC05062 CONCRETE SHALL BE USED FOR PRECAST CONCRETE.
7. CLASS PCC03340 CONCRETE: CLASS PCC03340 CONCRETE SHALL BE USED FOR CAST-IN-PLACE CONCRETE FOOTINGS, CUT-OFF WALLS, RETURN WALLS, WINGWALLS AND RETAINING WALL STEM.
8. CLASS PCC04462 CONCRETE: CLASS PCC04462 CONCRETE SHALL BE USED FOR CAST-IN-PLACE CONCRETE PARAPETS.
9. JOINT SEAL: SEE SPECIFICATIONS.
10. EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1" x 1" UNLESS DIMENSIONED OTHERWISE.
11. CONCRETE COVER: REINFORCEMENT SHALL HAVE 2" COVER UNLESS DIMENSIONED OTHERWISE.
12. REINFORCEMENT: REINFORCEMENT SHALL BE ASTM A 615 GRADE 60 AND GALVANIZED AFTER FABRICATION UNLESS NOTED OTHERWISE. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A767, CLASS 1, INCLUDING SUPPLEMENTAL REQUIREMENTS.
13. CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE DRAWINGS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
14. CAST-IN-PLACE CONCRETE: THE SAME READY MIX CONCRETE SUPPLIER SHALL BE USED FOR ALL CAST-IN-PLACE CONCRETE.
15. LAP SPLICES: LAP SPLICES, OTHER THAN THOSE SHOWN ON THE DRAWINGS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
16. MINIMUM LAP SPLICE LENGTHS: UNLESS OTHERWISE SHOWN:

    #4 30"
    #5 48"
    #6 60"
    #7 72"
    #8 72"
17. CAST INSERTS OR HOLES: INSERTS OR HOLES CAST INTO THE PRECAST SECTIONS FOR THE SOLE PURPOSE OF HANDLING AND SEATING THE UNITS SHALL BE GROUTED OVER TO A SMOOTH FINISH UPON COMPLETION OF THE WORK.
18. INSERTS: INSERTS SHALL HAVE A CORROSIVE RESISTANT COATING AND SHALL BE ONE OF THE FOLLOWING:

    STAR EXPANSION INDUSTRIES CORP. TYPE P35T
    RICHMOND SCREW ANCHOR COMPANY TYPE LF
    DAYTON SUPERIOR CORPORATION TYPE FS7
19. THREADED BARS: BARS WITH THREADED ENDS SHALL BE COMPATIBLE WITH THREADED INSERTS. THREADS SHALL BE LONG ENOUGH TO FULLY ENGAGE THE INSERTS. THREADED BARS SHALL CONFORM TO THE REQUIREMENTS FOR REINFORCEMENT IN NOTES 3 AND 11.
20. DOWEL BAR SPLICER ASSEMBLIES: DOWEL BAR SPLICER ASSEMBLIES SHALL BE ONE OF THE FOLLOWING:

    RICHMOND SCREW ANCHOR COMPANY DB-SAE AND DOWEL-IN
    DAYTON SUPERIOR CORPORATION D50 DBR COUPLER
    OKABE COMPANY, INC. DS SPLICE CLIP

NOTICE TO BRIDGE INSPECTORS

THE TOWN'S PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS. (THE LISTING FOR COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE TOWN.

COMPONENTS AND DETAIL	DRAWING NUMBER REFERENCE
NONE	NONE

BRIDGE IDENTIFICATION PLACARDS

PROVIDE AND INSTALL NEW BRIDGE IDENTIFICATION SIGNS AT THE LEADING END OF EACH BRIDGE ON THE PARAPET. THE SIGNS SHALL BE FABRICATED WITH 40 GAUGE ALUMINUM SHEET METAL. THE SIGNS SHALL BE 4"x12" WITH 3" WHITE RETROREFLECTIVE BLOCK LETTERS ON GREEN RETROREFLECTIVE SHEETING. EACH SIGN SHALL READ: 040025. THE BRIDGE SIGNS SHALL BE SIGN FACE SHEET ALUMINUM (TYPE IX RETROREFLECTIVE SHEETING). THE FINAL LOCATION AND ATTACHMENT METHOD FOR THE SIGNS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

THIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION.

GRAPHIC SCALES
5 4 3 2 1 0 5 10
SCALE: 1"=5'-0"
4 3 2 1 0 4 8
SCALE: 1"=4'-0"

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

CULVERT GENERAL PLAN

FINAL DESIGN

ANY ALTERATIONS TO THIS DRAWING MADE WITHOUT THE EXPRESSED WRITTEN APPROVAL OF NATHAN L. JACOBSON & ASSOCIATES, INC. WILL BE AT THE SOLE RISK OF THE PERSON OR FIRM MAKING SUCH UNAUTHORIZED ALTERATIONS AND NATHAN L. JACOBSON & ASSOCIATES, INC. WILL NEITHER HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAID UNAUTHORIZED ALTERATIONS.

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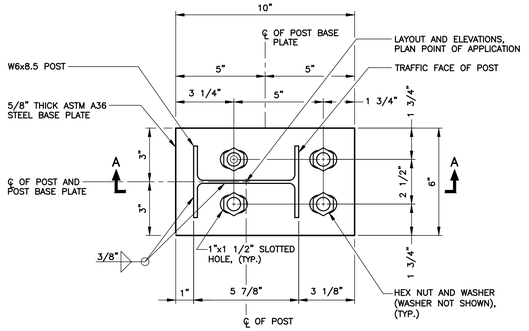
REVISIONS

No.	DESCRIPTION	DATE

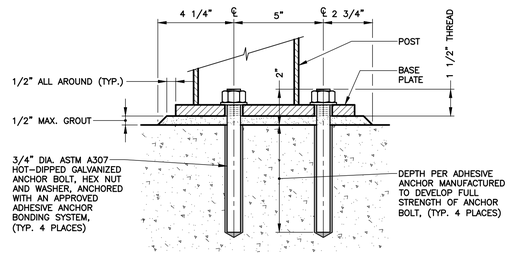
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PROJECT No.:	09590012
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DRAWN:	AJG
CHECKED:	

SHEET No.: 13 OF 18

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PLAN



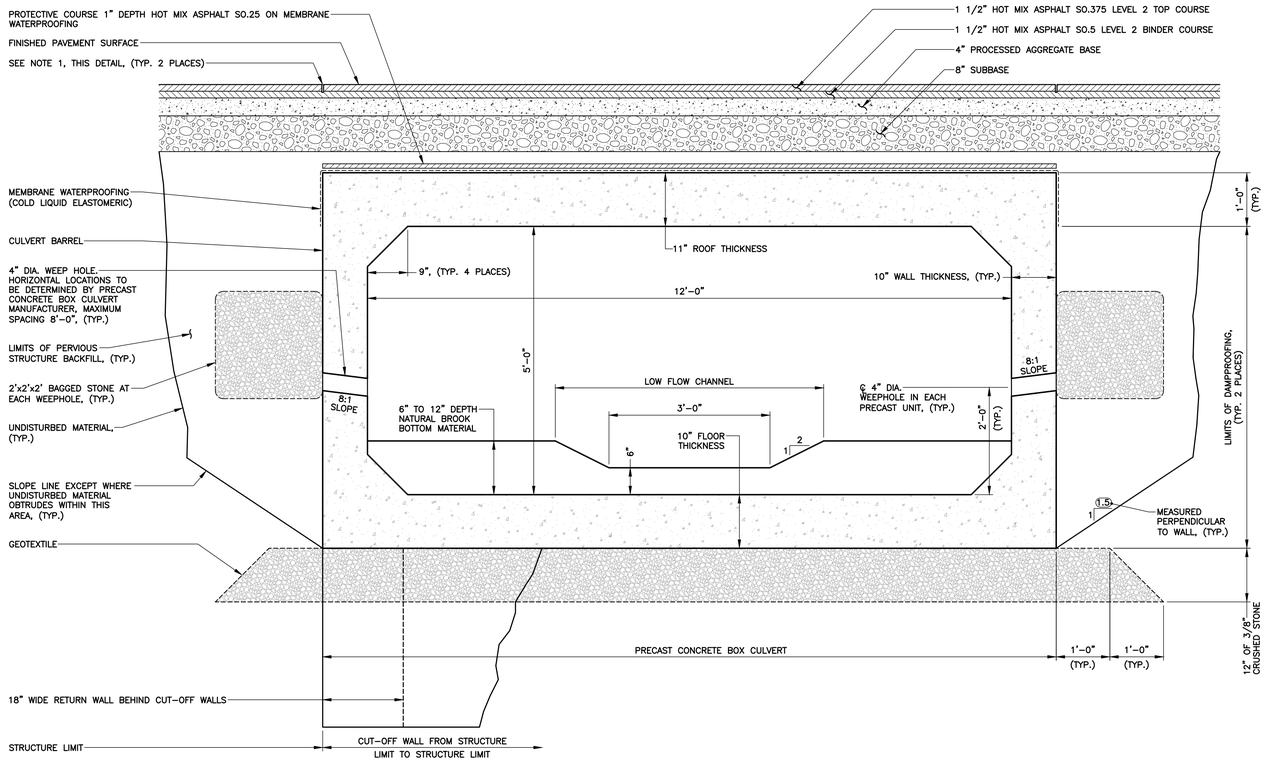
SECTION "A–A"

POST BASE PLATE FOR METAL BEAM RAIL (R–B MASH) (MODIFIED)

SCALE: 3"=1'–0"

NOTES:

1. THIS WORK IS TO BE INCLUDED FOR PAYMENT UNDER THE ITEM "METAL BEAM RAIL (R–B) MASH HALF POST SPACING (MODIFIED)".

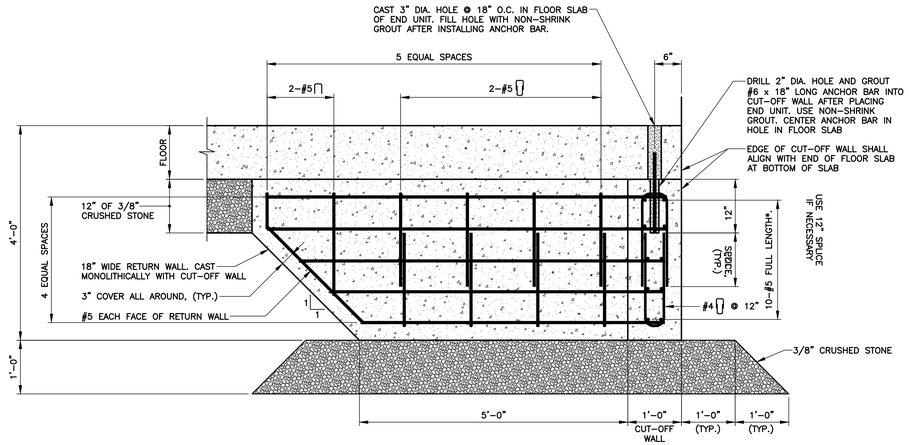


TYPICAL SECTION
PRECAST CONCRETE BOX CULVERT

SCALE: 3/4"=1'–0"

NOTES:

1. CUT OVERLAY WITH A 3/8"x1–3/4" DEEP KERF CUT AND FILL WITH POURABLE BITUMINOUS SEALANT.
2. IF UNSUITABLE MATERIAL IS ENCOUNTERED, IT SHALL BE EXCAVATED TO A DEPTH DETERMINED BY ENGINEER AND REPLACED WITH ADDITIONAL 3/8" CRUSHED STONE, AS ORDERED BY ENGINEER.
3. MAXIMUM ALLOWABLE DESIGN FOUNDATION PRESSURE = 4,000 psf.

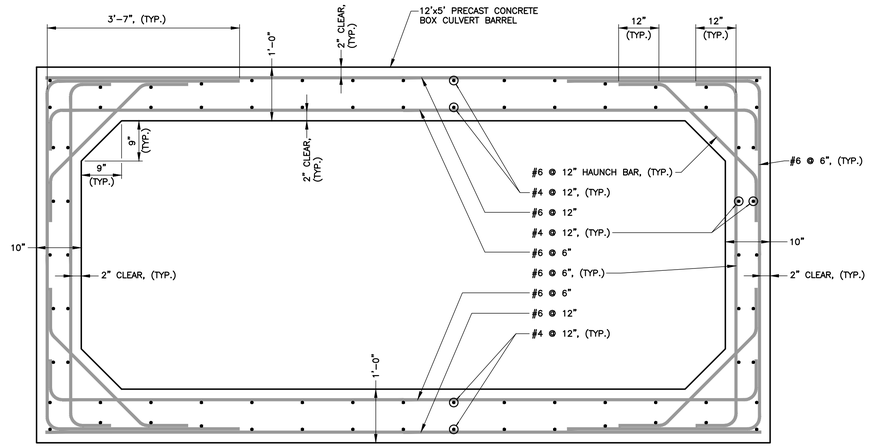


TYPICAL SECTION
RETURN WALL AND CUT–OFF WALL

N.T.S.

NOTES:

1. RETURN WALL AND CUT–OFF WALL CAN BE PRECAST AT THE CONTRACTOR'S DISCRETION, AND IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE PROJECT MANUAL.
2. ALL REINFORCEMENT IN RETURN AND CUT–OFF WALL SHALL BE HOT–DIPPED GALVANIZED.
3. BARREL SLOPE NOT SHOWN.



TYPICAL SECTION
PRECAST CONCRETE BOX CULVERT BARREL REINFORCEMENT

SCALE: 3/4"=1'–0"

NOTES:

1. ALL REINFORCEMENT SHALL BE HOT–DIPPED GALVANIZED.
2. MANUFACTURER TO ESTABLISH SECTION LENGTHS.
3. MANUFACTURER SHALL PROVIDE A KEYED JOINT BETWEEN ADJACENT SECTIONS CONTAINING A CONTINUOUS GASKET MADE OF PLASTIC, RUBBER OR NEOPRENE THAT SHALL FORM AND MAINTAIN A WATERTIGHT AND FLEXIBLE JOINT, UNLESS OTHERWISE APPROVED.
4. THE MINIMUM COVER FOR REINFORCEMENT SHALL BE 2".
5. WEEPHOLES NOT SHOWN. ADJUST REINFORCING STEEL LOCATIONS TO AVOID WEEPHOLES.
6. OTHER THAN WHAT IS SHOWN IN THIS DRAWING SET, NO OTHER PRECAST COMPONENT DESIGN WORK IS PROVIDED. CONTRACTOR TO PROVIDE ANY OTHER PRECAST COMPONENT DESIGN WORK HE DEEMS NECESSARY FOR HANDLING AND INSTALLATION.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALES

0" 2" 4" 6" 8" 10" 1'-0"

SCALE: 3"=1'-0"

12" 9" 6" 3" 0 1'-0"

SCALE: 3/4"=1'-0"

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

CULVERT DETAILS

FINAL DESIGN

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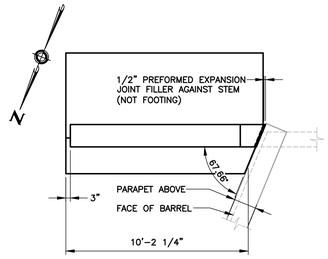
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DESIGNED:	WJE
DRAWN:	AJG
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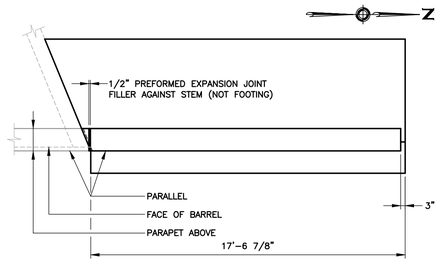
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14 OF 18

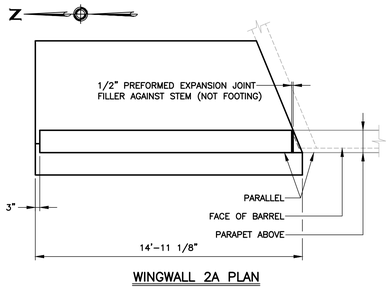
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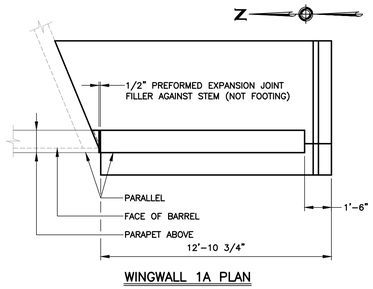
WINGWALL 1B PLAN



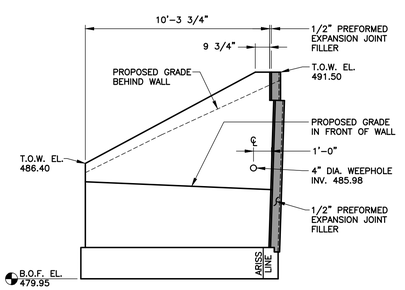
WINGWALL 2B PLAN



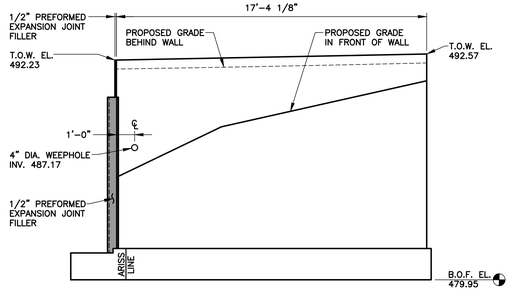
WINGWALL 2A PLAN



WINGWALL 1A PLAN



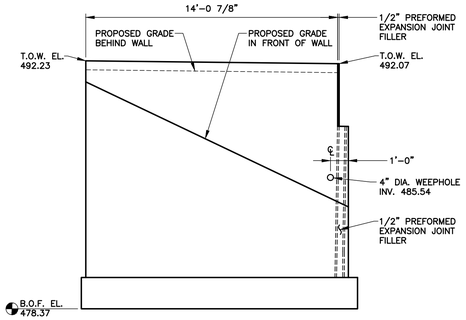
WINGWALL 1B ELEVATION



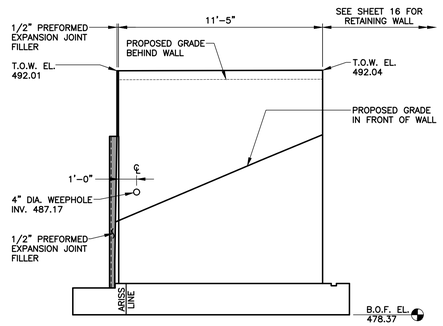
WINGWALL 2B ELEVATION

UPSTREAM WINGWALLS

SCALE: 1/4"=1'-0"



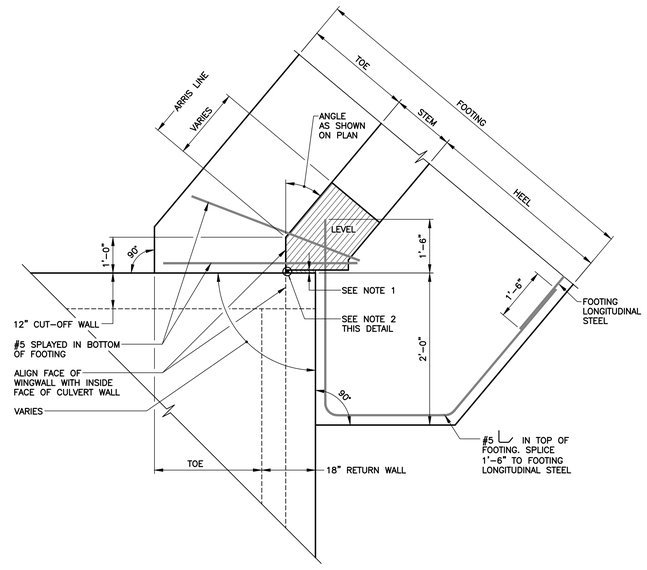
WINGWALL 2A ELEVATION



WINGWALL 1A ELEVATION

DOWNSTREAM WINGWALLS

SCALE: 1/4"=1'-0"

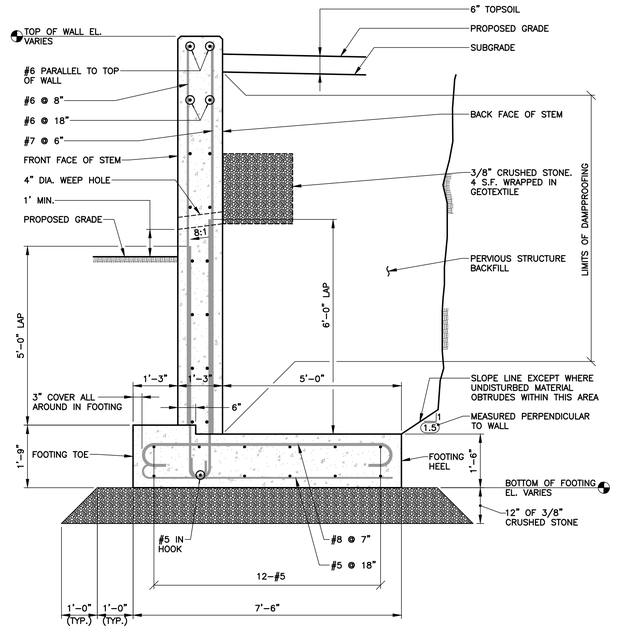


TYPICAL PLAN AT WINGWALL/CULVERT INTERFACE

N.T.S.

NOTES:

1. PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER FROM TOP OF FOOTING TO JOINT SEAL AT TOP OF WALL.
2. PROVIDE 1/2"x1/2" JOINT SEAL ON BACK FACE OF STEM FROM TOP OF FOOTING TO TOP OF WINGWALL AND ACROSS TOP TO FRONT FACE.
3. THIS DETAIL IS SIMILAR AT ALL FOUR CORNERS OF CULVERT, BUT MAY BE IN MIRROR IMAGE TO THAT SHOWN DEPENDING ON THE CORNER UNDER CONSIDERATION. IF CULVERT IS SKEWED, ADJUST DETAIL ACCORDINGLY.
4. REINFORCING SHOWN ON WINGWALL TYPICAL SECTION NOT SHOWN FOR CLARITY, BUT SHOULD EXTEND TO FULL LENGTH ALLOWING FOR COVER SPECIFIED.



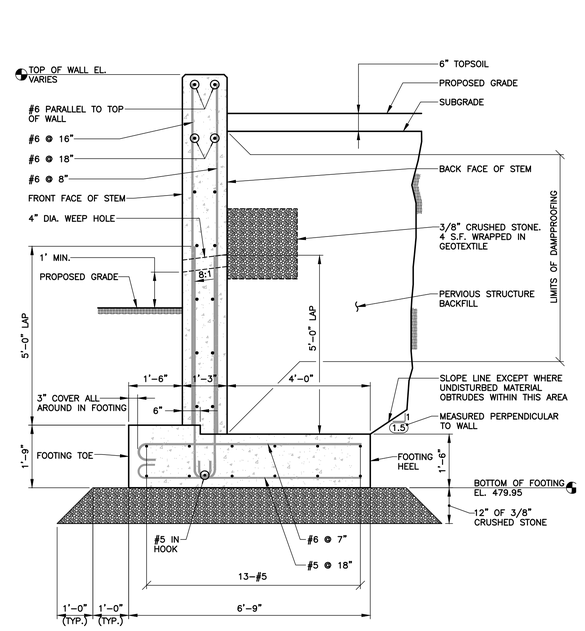
TYPICAL SECTION

WINGWALLS 1A, 2A, 2B

SCALE: 1/2"=1'-0"

NOTES:

1. MAXIMUM DESIGN FOUNDATION PRESSURE = 2.87 ksf.



TYPICAL SECTION

WINGWALL 1B

SCALE: 1/2"=1'-0"

NOTES:

1. MAXIMUM DESIGN FOUNDATION PRESSURE = 2.65 ksf.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALES

12" 0 1'-0"

SCALE: 1/2"=1'-0"

12" 0 1'-0" 2'-0" 3'-0" 4'-0"

SCALE: 1/4"=1'-0"

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

WINGWALL DETAILS

FINAL DESIGN

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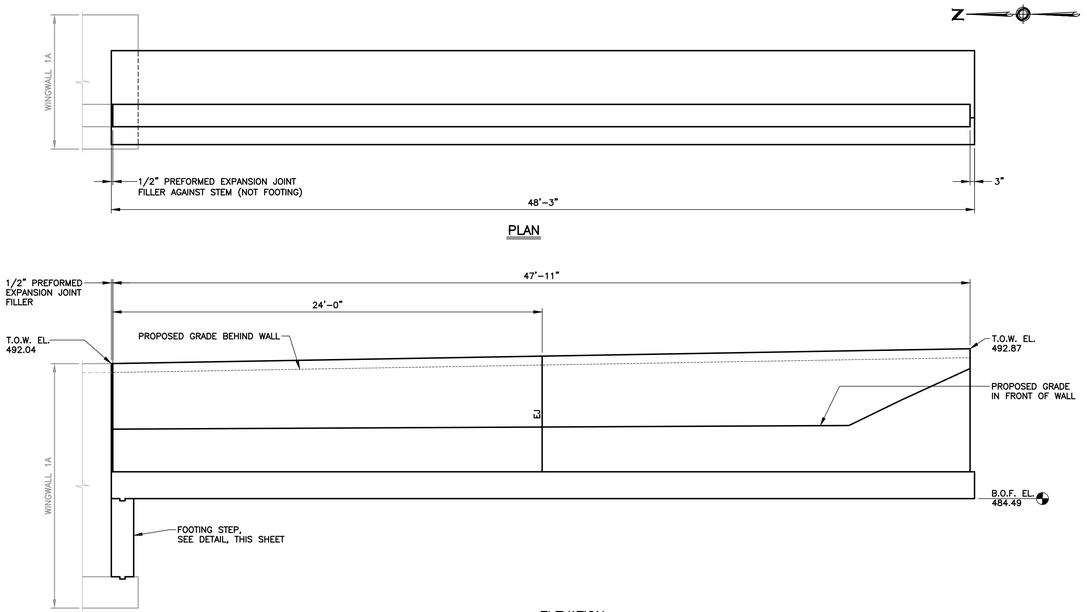
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DESIGNED:	WJE
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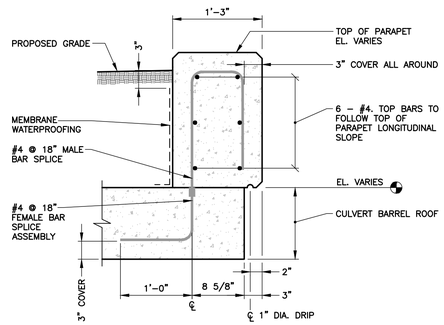
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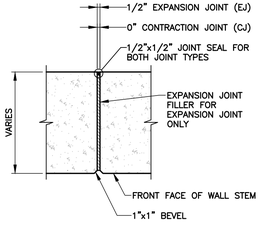
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ELEVATION
RETAINING WALL
SCALE: 1/4"=1'-0"



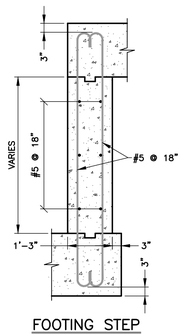
TYPICAL SECTION
PARAPET
SCALE: 1"=1'-0"



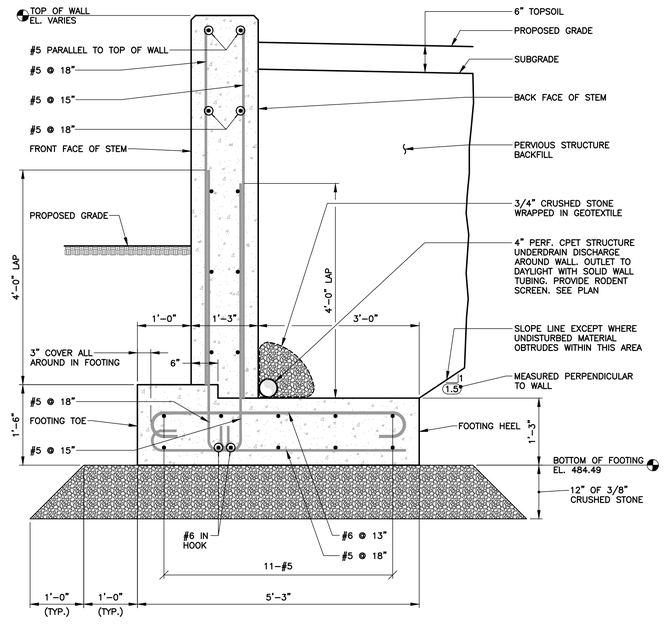
CONSTRUCTION JOINT DETAIL
SCALE: 1/2"=1'-0"

NOTES:

1. JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF WALL AND HORIZONTALLY ALONG TOP OF WALL TO FRONT FACE OF WALL UNLESS OTHERWISE DIRECTED BY ENGINEER.
2. NO REINFORCEMENT SHALL PASS THROUGH CONTRACTION OR EXPANSION JOINTS.
3. REINFORCEMENT SHALL PASS THROUGH CONSTRUCTION JOINTS.



FOOTING STEP
SCALE: 1/2"=1'-0"



TYPICAL SECTION
RETAINING WALL
SCALE: 3/4"=1'-0"

NOTES:

1. MAXIMUM DESIGN FOUNDATION PRESSURE = 2.87 ksf.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALES

12" 9" 6" 3" 0 1'-0"
SCALE: 1"=1'-0"
12" 8" 4" 0 1'-0"
SCALE: 3/4"=1'-0"
12" 0 1'-0"
SCALE: 1/2"=1'-0"
12" 0 1'-0" 2'-0" 3'-0" 4'-0"
SCALE: 1/4"=1'-0"

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

PARAPET AND RETAINING WALL DETAILS

FINAL DESIGN

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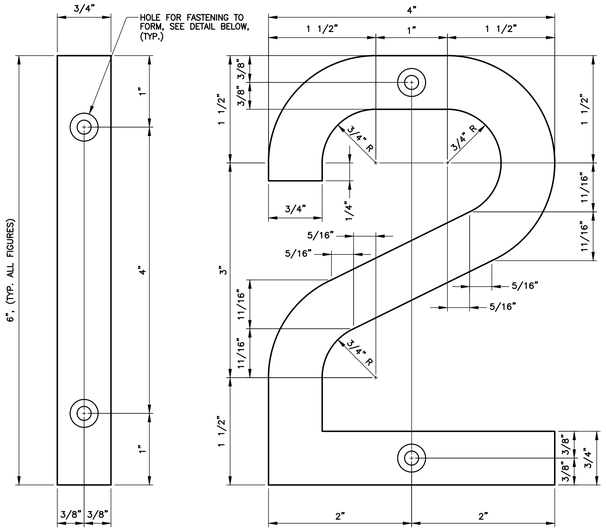
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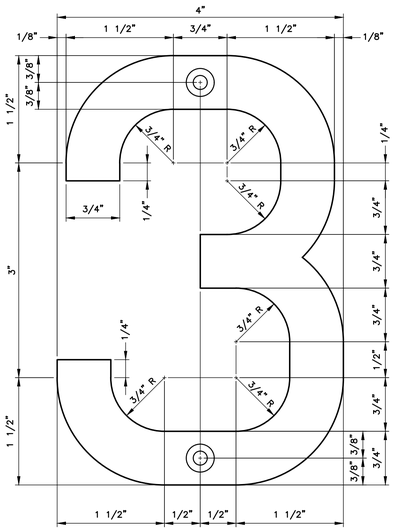
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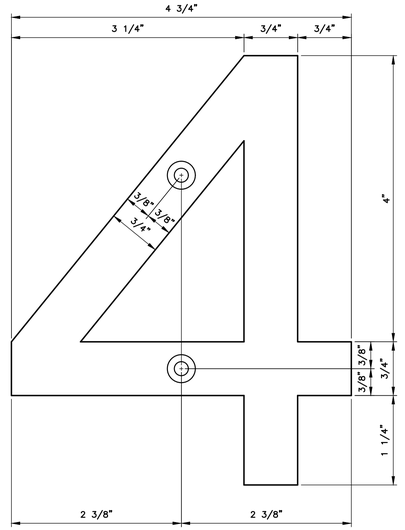
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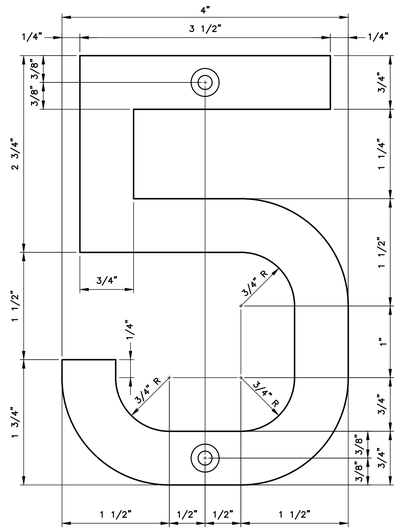
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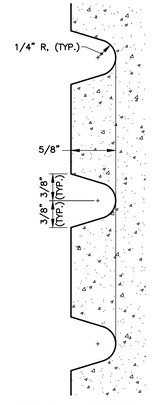
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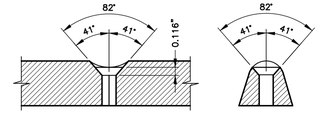








TYPICAL SECTION THROUGH FIGURES
N.T.S.



HOLE FOR FASTENING TO FORM
N.T.S.

NOTES:

1. DRILL HOLE WITH NO.9 DRILL AND COUNTERSINK FOR STANDARD 3/16" – 24 T.P.I. FLATHEAD STOVE BOLT OR NO. 10 – 24 T.P.I. FLATHEAD MACHINE SCREW.

NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

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GRAPHIC SCALE
1" 3/4" 1/2" 1/4" 0 1" 2"
SCALE: 1"=1"

TOWN OF
EAST HADDAM,
CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

FIGURES FOR DATES ON BRIDGE PARAPETS

FINAL DESIGN

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J. HOWARD PFROMMER, P.E.
CT REGISTRATION No. 15871

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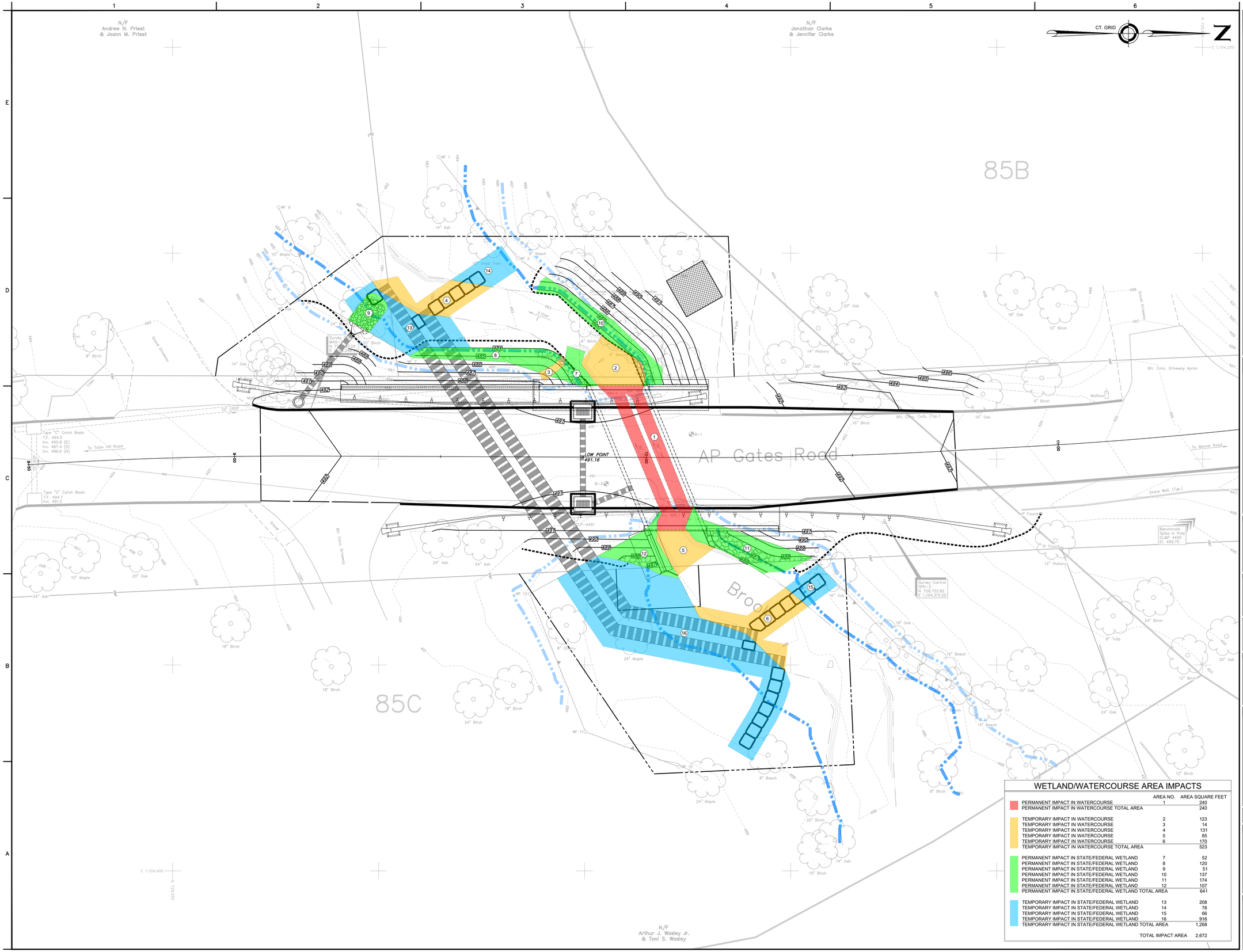
REVISIONS

No.	DESCRIPTION	DATE

DATE:	OCTOBER 2025
SCALE:	AS NOTED
PROJECT No.:	09590012
CADD FILE:	095900120T
DESIGNED:	WJE
DRAWN:	AJG
CHECKED:	-

SHEET No.: 17 OF 18

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NOTES:

1. SEE SHEET 12 FOR PROJECT NOTES.

THIS DRAWING IS INTENDED TO BE USED FOR INFORMATION AND REVIEW PURPOSES ONLY AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION.

GRAPHIC SCALE

10 8 6 4 2 0 10 20

SCALE: 1"=10'

TOWN OF EAST HADDAM, CONNECTICUT

REPLACEMENT OF BRIDGE No. 040025 AP GATES ROAD OVER UNNAMED BROOK

ENVIRONMENTAL IMPACT PLAN

FINAL DESIGN

ANY ALTERATIONS TO THIS DRAWING MADE WITHOUT THE EXPRESSED WRITTEN APPROVAL OF NATHAN L. JACOBSON & ASSOCIATES, INC. WILL BE AT THE SOLE RISK OF THE PERSON OR FIRM MAKING SUCH UNAUTHORIZED ALTERATIONS AND NATHAN L. JACOBSON & ASSOCIATES, INC. WILL NEITHER HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAID UNAUTHORIZED ALTERATIONS.

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WETLAND/WATERCOURSE AREA IMPACTS

		AREA NO.	AREA SQUARE FEET
	PERMANENT IMPACT IN WATERCOURSE	1	240
	PERMANENT IMPACT IN WATERCOURSE TOTAL AREA		240
	TEMPORARY IMPACT IN WATERCOURSE	2	123
	TEMPORARY IMPACT IN WATERCOURSE	3	14
	TEMPORARY IMPACT IN WATERCOURSE	4	131
	TEMPORARY IMPACT IN WATERCOURSE	5	85
	TEMPORARY IMPACT IN WATERCOURSE	6	170
	TEMPORARY IMPACT IN WATERCOURSE TOTAL AREA		523
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	7	52
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	8	120
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	9	51
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	10	137
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	11	174
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND	12	107
	PERMANENT IMPACT IN STATE/FEDERAL WETLAND TOTAL AREA		641
	TEMPORARY IMPACT IN STATE/FEDERAL WETLAND	13	208
	TEMPORARY IMPACT IN STATE/FEDERAL WETLAND	14	78
	TEMPORARY IMPACT IN STATE/FEDERAL WETLAND	15	66
	TEMPORARY IMPACT IN STATE/FEDERAL WETLAND	16	916
	TEMPORARY IMPACT IN STATE/FEDERAL WETLAND TOTAL AREA		1,268
	TOTAL IMPACT AREA		2,672

REVISIONS

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18 OF 18

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