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INLAND WETLANDS & WATERCOURSES COMMISSION
TOWN OF BROOKLYN, CONECTICUT

Date _____ Application # 041321D

APPLICATION -- INLAND WETLANDS & WATERCOURSES

APPLICANT A. KAISCH & SONS MAILING ADDRESS 15 BEACH VIEW RD EXT, VOLUNTOWN
APPLICANT'S INTEREST IN PROPERTY OWNER PHONE _____ _____ EMAIL _____

PROPERTY OWNER IF DIFFERENT _____ PHONE _____ _____
MAILING ADDRESS _____ EMAIL _____

ENGINEER/SURVEYOR (IF ANY) ARCHER SURVEYING, LLC, CLA ENGINEERS
ATTORNEY (IF ANY) _____

PROPERTY LOCATION/ADDRESS POMFRET LANDING RD / CHURCH STREET
MAP # 37 LOT # 20/21 ZONE RA TOTAL ACRES 29± ACRES OF WETLANDS ON PROPERTY 6±
37 17

PURPOSE AND DESCRIPTION OF THE ACTIVITY WETLANDS CROSSING FOR DRIVEWAY
2 RESIDENCE HOMES, SEPTIC SYSTEM, WELL - MINOR GRADING

WETLANDS EXCAVATION AND FILL:
FILL PROPOSED _____ CUBIC YDS _____ SQ FT [redacted] 3,650 SQFT
EXCAVATION PROPOSED _____ CUBIC YDS _____ SQ FT 0
LOCATION WHERE MATERIAL WILL BE PLACED: ON SITE ✓ OFF SITE _____
TOTAL REGULATED AREA ALTERED: SQ FT [redacted] 20,000 ACRES .05 .4±

EXPLAIN ALTERNATIVES CONSIDERED (REQUIRED): _____

MITIGATION MEASURES (IF REQUIRED): WETLANDS/WATERCOURSES CREATED: CY _____ SQFT _____ ACRES _____

IS PARCEL LOCATED WITHIN 500FT OF AN ADJOINING TOWN? No IF YES, WHICH TOWN(S) _____
IS THE ACTIVITY LOCATED WITHIN THE WATERSHED OF A WATER COMPANY AS DEFINED IN CT GENERAL STATUTES 25-32A? No

THE OWNER AND APPLICANT HEREBY GRANT THE BROOKLYN IWWC, THE BOARD OF SELECTMAN AND THEIR AUTHORIZED AGENTS PERMISSION TO ENTER THE SUBJECT PROPERTY FOR THE PURPOSE OF INSPECTION AND ENFORCEMENT OF THE IWWC REGULATIONS OF THE TOWN OF BROOKLYN. IF THE COMMISSION DETERMINES THAT OUTSIDE REVIEW IS REQUIRED, APPLICANT WILL PAY CONSULTING FEE.

NOTE: DETERMINATION THAT THE INFORMATION PROVIDED IS INACCURATE MAY INVALIDATE THE IWWC DECISION AND RESULT IN ENFORCEMENT ACTION.

APPLICANT: [signature] DATE 4/5/21

OWNER: [signature] DATE 4/5/21

Revised 10/26/16

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

GIS CODE #: ____ ____ ____ ____ ____ ____ ____ ____ ____
For DEEP Use Only

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions, only use one code): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): Brooklyn
   does this project cross municipal boundaries (check one)? yes ☐ no ☑
   if yes, list the other town(s) in which the action is occurring (print name(s)): _____, _____
6. LOCATION (see instructions for information): USGS quad name: Danielson or number: 43
   subregional drainage basin number: _____
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): A. Kaiser & Sons
8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): Elliott St / ~~Darby Rd~~ Pomfret Landing
   briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☑ description:
   Dwelling, Residential Homes
9. ACTIVITY *PURPOSE* CODE (see instructions, only use one code): B
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 1, 9, 12, _____
11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
    wetlands: .08 acres open water body: _____ acres stream: _____ linear feet
12. UPLAND AREA ALTERED (must provide acres): .005 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): Ø acres

DATE RECEIVED: **PART III: To Be Completed By The DEEP** DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO

REQUIREMENTS

_____ APPLICATION FEE $ 150 STATE FEE ($60.00) 60 $210

_____ COMPLETION OF CT DEEP REPORTING FORM

_____ ORIGINAL PLUS COPIES OF ALL MATERIALS REQUIRED - **NUMBER TO BE DETERMINED BY STAFF**

_____ PRE-APPLICATION MEETING WITH THE WETLANDS AGENT IS RECOMMENDED TO EXAMINE THE SCOPE OF THE ACTIVITY

_____ SITE PLAN SHOWING LOCATION OF THE WETLANDS WITH EXISTING AND PROPOSED CONDITIONS. APPLICANT MAY BE REQUIRED TO HAVE A CERTIFIED **SOIL SCIENTIST IDENTIFY THE WETLANDS.**

_____ COMPLIANCE WITH THE CONNECTICUT EROSION & SEDIMENTATION CONTROL MANUAL

_____ IF THE PROPOSED ACTIVITY IS DEEMED TO BE A "SIGNIFICANT IMPACT ACTIVITY" A PUBLIC HEARING IS REQUIRED ALONG WITH THE FOLLOWING INFORMATION:

- NAMES AND ADDRESSES OF ABUTTING PROPERTY OWNERS
- ADDITIONAL INFORMATION AS CONTAINED IN IWWC REGULATIONS ARTICLE 7.6

ADDITIONAL INFORMATION/ACTION NEEDED:

_____

_____

_____

OTHER APPLICATIONS MAY BE REQUIRED. CONTACT THESE AGENCIES FOR FURTHER INFORMATION:

APPLICATION TO STATE OF CONNECTICUT DEEP
INLAND WATER RESOURCES DIVISION
79 ELM ST.
HARTFORD, CT. 06106
1-860-424-3019

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MA. 01742
1-860-343-4789

STAFF USE ONLY:

_____ DECLARATORY RULING: AS OF RIGHT & NON-REGULATED USES (SEE IWWC REGULATIONS SECTION 4)

_____ PERMIT REQUIRED:

_____ AUTHORIZED BY STAFF/CHAIR (NO ACTIVITY IN WETLANDS/WATERCOURSE AND MINIMAL IMPACT)

_____ _____
CHAIR, BROOKLYN IWWC WETLANDS OFFICER

_____ AUTHORIZED BY IWWC

_____ SIGNIFICANT ACTIVITY/PUBLIC HEARING

_____ NO PERMIT REQUIRED

_____ OUTSIDE OF UPLAND REVIEW AREA

_____ NO IMPACT

_____ _____
CHAIR, BROOKLYN IWWC WETLANDS OFFICER

_____ TIMBER HARVEST

CONTINUE - SEE SHEET 2

WETLAND CROSSING 1
PROVIDE 15" DRAIN
PIPE UNDER DRIVEWAY

WETLAND CROSSING 2
PROVIDE 15" DRAIN PIPE (2)
UNDER DRIVEWAY

PROVIDE 50' LONG X 20' WIDE
PASSING AREA

PROVIDE 12' WIDE
SHARED GRAVEL DRIVEWAY
(SEE DETAIL.)

WETLAND CROSSING 3
PROVIDE 15" DRAIN
PIPE UNDER DRIVEWAY

50'x20' ANTI-TRACKING PAD
(2" STONE ON FILTER FABRIC)

PROVIDE BIT.
CONC. APRON

PROVIDE & MAINTAIN
SILT FENCE

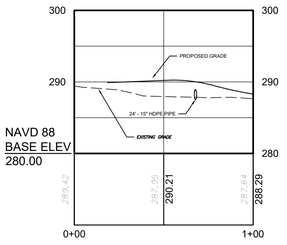
125' REGULATED AREA (TYP.)

CHURCH STREET

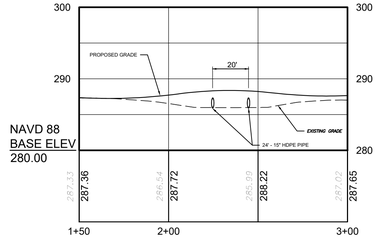
PLAN

40' 0 40' 80'

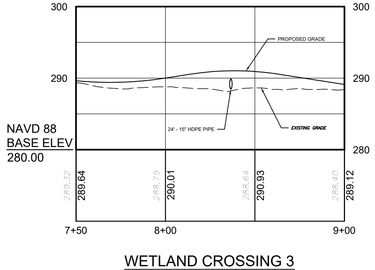
SCALE: 1"=40'



WETLAND CROSSING 1
SHARED DRIVEWAY
STA 0+00 TO STA 1+00
Horiz. Scale= 1"= 40'
Vert. Scale= 1"= 10'

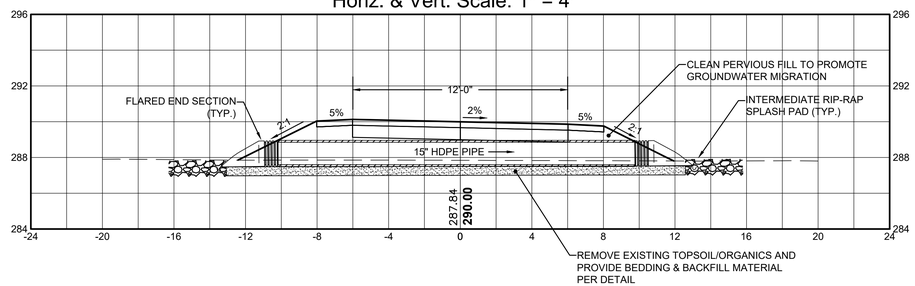


WETLAND CROSSING 2
SHARED DRIVEWAY
STA 1+50 TO STA 3+00
Horiz. Scale= 1"= 40'
Vert. Scale= 1"= 10'



WETLAND CROSSING 3
SHARED DRIVEWAY
STA 7+50 TO STA 9+00
Horiz. Scale= 1"= 40'
Vert. Scale= 1"= 10'

Typical Wetland Crossing
Shared Driveway
Horiz. & Vert. Scale: 1" = 4'



CLA Engineers, Inc.
CIVIL · STRUCTURAL · SURVEYING
317 Main Street Norwich, CT 06360
(860) 886-1966 Fax (860) 886-9165

No.	DATE	REVISION

A. KAUSCH & SONS, LLC

LOTS 019-37-17, 019-37-20 & 019-37-21
CHURCH ST. SITE DEVELOPMENT
BROOKLYN, CT

GRADING & SITE DESIGN

Project No.	CLA-6639
Proj. Engineer	R.A.D.
Date:	03/31/21
Sheet No.	1

CLA

SELECT FILL SPECIFICATION

SELECT FILL PLACED WITHIN AND ADJACENT TO LEACHING SYSTEM AREAS SHALL BE COMPRISED OF CLEAN SAND, OR SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. THE SELECT FILL SHALL MEET THE FOLLOWING REQUIREMENTS PER THE CONNECTICUT PUBLIC HEALTH CODE FOR USE WITHIN THE LEACHING AREA:

1. THE SELECT FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THE THREE (3) INCH SLEEVE.
2. UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SLEEVE (THIS IS THE GRAVEL PORTION OF THE SAMPLE).
3. THE MATERIAL THAT PASSES THE #4 SIEVE IS THEN REWEIGHED AND THE SIEVE ANALYSIS STARTED,
4. THE REMAINING SAMPLE SHALL MEET THE FOLLOWING CRITERIA:

	PERCENT PASSING	
SIEVE SIZE	WET SIEVE	DRY SIEVE
#4	100	100
#10	70–100	70–100
#40	10–50*	10–75
#100	0–20	0–5
#200	0–5	0–2.5

* PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75 IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10 AND THE #200 SIEVE DOES NOT EXCEED 5.

SEPTIC NOTES

1. PROPOSED SEPTIC SYSTEM TO BE STAKED IN THE FIELD BY A LAND SURVEYOR LICENSED IN THE STATE OF CONNECTICUT.
2. A BENCHMARK SHALL BE SET WITHIN 10'–15' OF THE PROPOSED SEPTIC SYSTEM PRIOR TO CONSTRUCTION.
3. ALL WORK AND MATERIAL (SEPTIC TANK, DISTRIBUTION BOX, PIPE) SHALL CONFORM TO THE CONNECTICUT PUBLIC HEALTH CODE REGULATIONS AND STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEM.
4. SEWER LINE FROM FOUNDATION WALL TO SEPTIC TANK SHALL BE 4" SCHEDULE 40 PVC – ASTM D 1785 AND JOINTS PER HEALTH DEPT. CODE. PIPE FROM SEPTIC TANK TO DISTRIBUTION LINES SHALL BE 4" SOLID PVC CONFORMING TO STMD–3034 AND SDR–35.
5. SYSTEMS SHALL BE SET LEVEL FOR ENTIRE LENGTH AND HAVE A CENTER TO CENTER SPACING AS CALLED FOR IN THE CONNECTICUT PUBLIC HEALTH CODE. THERE ARE PRESENTLY NO KNOWN WATER WELLS WITHIN 75' OF THE PROPOSED SEPTIC SYSTEMS.
6. CLEAR AND GRUB THE AREA WHERE THE SEPTIC SYSTEMS AND HOUSES ARE TO BE CONSTRUCTED. ALL TOPSOIL IS TO BE STRIPPED AND STOCKPILED FOR FUTURE USE.
7. ALL FILL MATERIAL SHALL BE CLEAN EARTH FREE OF STUMPS, ORGANICS, CONSTRUCTION DEBRIS AND TOPSOIL.
8. TOPSOIL SHALL BE RE–APPLIED OVER ALL FILL AREAS AND ALL DISTURBED AREAS TO PROVIDE A MINIMUM DEPTH OF FOUR INCHES IN ACCORDANCE WITH THE SLOPE STABILIZATION DETAILS..

DEEP TEST PIT DATA / SOIL DESCRIPTIONS

PERFORMED BY:Donovan Moe

WITNESSED BY:NORTHEAST DISTRICT DEPARTMENT OF HEALTH DATE: 03/30/2021

TEST PIT: 1

0" - 10" Topsoil / Organics
10" - 16" Orange Brown Fine Sand Loam
16" - 34" Tan Compact Sand Loam
34" - 78" Grey Sand & Gravel

MOTTLES:	36"
GROUNDWATER:	66"
LEDGE:	NO
ROOTS:	46"
RESTRICTIVE:	NO

TEST PIT: 2

0" - 10" Topsoil / Organics
10" - 27" Dark Brown Fine Sand
27" - 48" Grey Compact Sand
48" - 70" Sand & Gravel

MOTTLES:	32"
GROUNDWATER:	62"
LEDGE:	NO
ROOTS:	32"
RESTRICTIVE:	NO

TEST PIT: 3

0" - 12" Topsoil / Organics
12" - 30" Tan Orange Fine Sand Loam
30" - 48" Grey Sand Layer
48" - 72" Sand & Gravel

MOTTLES:	30"
GROUNDWATER:	65"
LEDGE:	NO
ROOTS:	NO
RESTRICTIVE:	NO

TEST PIT: 4

0" - 10" Topsoil / Organics
10" - 24" Tan Orange Fine Sand Loam
24" - 80" Saturated Grey Sand & Gravel

MOTTLES:	28"
GROUNDWATER:	74"
LEDGE:	NO
ROOTS:	30"
RESTRICTIVE:	NO

PERCOLATION DATA

PERC 1 - DEPTH 23"

TIME	DROP (INCHES)
11:10	6.0
11:12	7.0
11:14	8.0
11:16	8.5
11:18	9.25
11:20	9.5
11:22	10.0
11:25	11.0
11:28	11.5
11:31	12.0

PERCOLATION RATE > 6.0 MIN./IN.

NOTES:
PERCOLATION TEST PERFORMED ON 3/30/2021
PERFORMED BY Donovan Moe

PERCOLATION DATA

PERC 2 - DEPTH 17"

TIME	DROP (INCHES)
11:04	6.25
11:10	8.25
11:16	9.75
11:22	10.625
11:34	12.125
11:46	13.125
11:58	14.625

PERCOLATION RATE > 8.0 MIN./IN.

NOTES:
PERCOLATION TEST PERFORMED ON 3/30/2021
PERFORMED BY Donovan Moe

CONCEPT SEPTIC SYSTEM DESIGN

PROPOSED LOT 1
PRIMARY LEACHING AREA
4 BEDROOM RESIDENCE
PERCOLATION RATE: 6.0 MIN./INCH (NDDH FILE #21000307)
LEACHING AREA REQUIRED: 557.5 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 557.5 SF / 3 SF/LF = 186 LF

MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 32"
SLOPE = 5.0%
HYDRAULIC FACTOR (HF) = 32
FLOW FACTOR (FF) = 1.0
PERCOLATION FACTOR (PF) = 1.75 (LESS THAN 10.0 MIN./INCH)
MLSS REQUIRED: 32 x 1.0 x 1.75 = 52.5 LF

PROPOSED SYSTEM
USE 3 ROWS OF 65 LF
LEACHING AREA PROVIDED = 585 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM

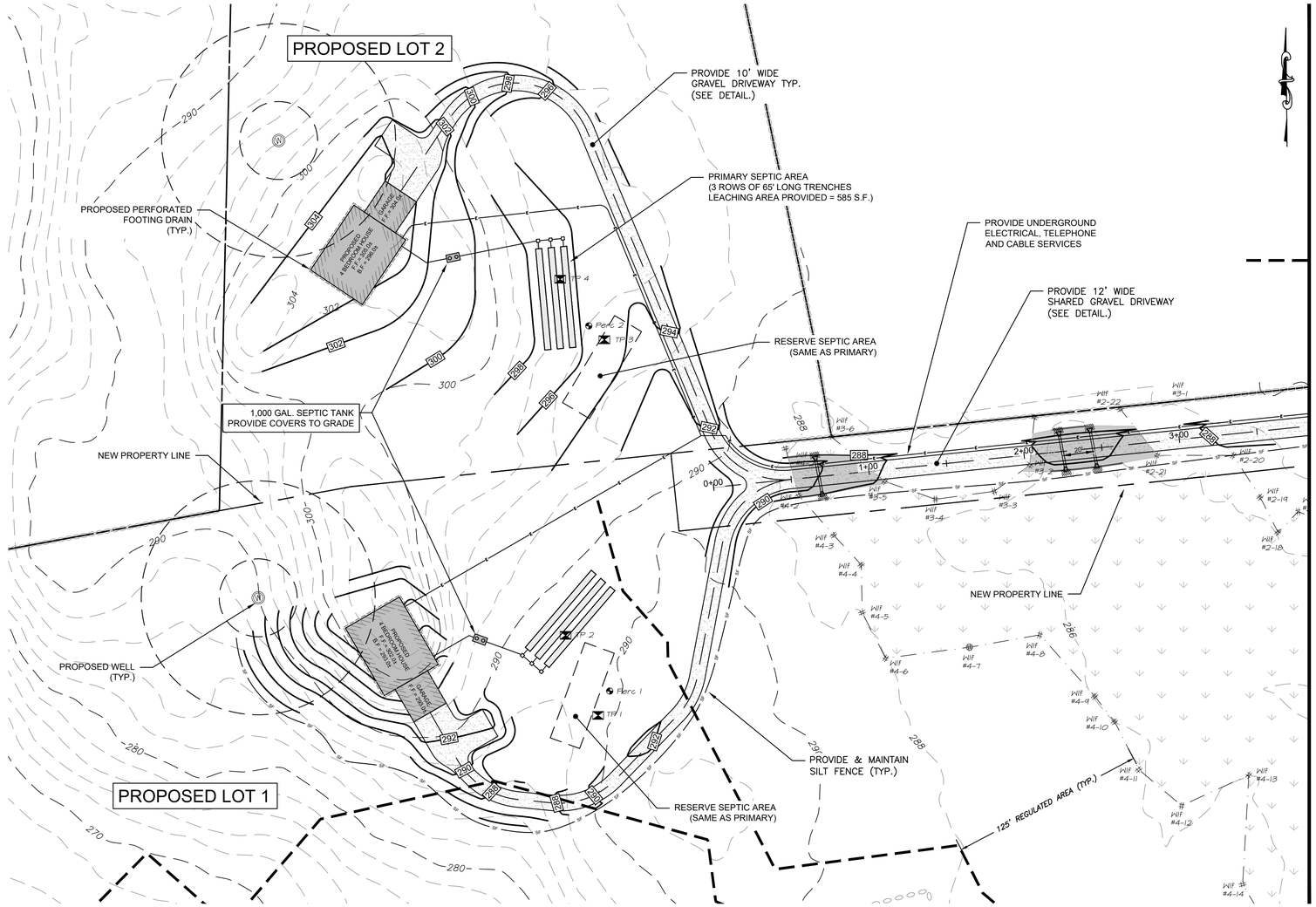
PROPOSED LOT 2
PRIMARY LEACHING AREA
4 BEDROOM RESIDENCE
PERCOLATION RATE: 8.0 MIN./INCH (NDDH FILE #21000307)
LEACHING AREA REQUIRED: 557.5 SF

USE TRADITIONAL TRENCH
EFFECTIVE LEACHING AREA OF LEACHING TRENCH 3.0 SF/LF
REQUIRED LENGTH = 557.5 SF / 3 SF/LF = 186 LF

MLSS CALCULATION
HYDRAULIC FACTORS
DEPTH TO RESTRICTIVE LAYER = 28"
SLOPE = 4.0%
HYDRAULIC FACTOR (HF) = 34
FLOW FACTOR (FF) = 1.0
PERCOLATION FACTOR (PF) = 1.75 (LESS THAN 10.0 MIN./INCH)
MLSS REQUIRED: 34 x 1.0 x 1.75 = 59.5 LF

PROPOSED SYSTEM
USE 3 ROWS OF 65 LF
LEACHING AREA PROVIDED = 585 SF

RESERVE LEACHING AREA
USE SAME AS PRIMARY SYSTEM



PLAN

40' 0 40' 80'

SCALE: 1"=40'

CONTINUE - SEE SHEET 1

No.	DATE	REVISION

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Project No. CLA–6639
Proj. Engineer R.A.D.
Date: 03/31/21
Sheet No. 2

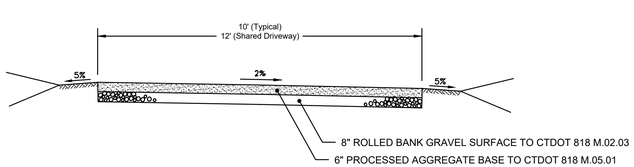
CLA

EROSION & SEDIMENTATION CONTROL NARRATIVE

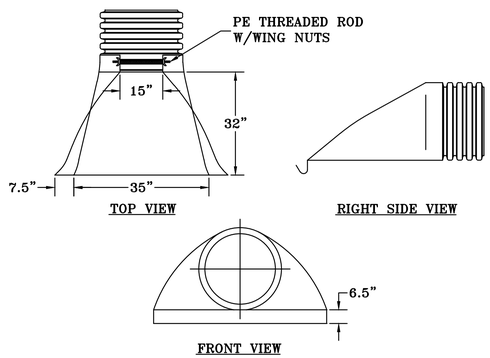
1. THE EROSION & SEDIMENTATION CONTROL PLAN AND DETAILS HAVE BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
2. THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL MEASURES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDED SILT FENCE, STONE CHECK DAMS AND/OR OTHER EROSION CONTROL MEASURES AS NEEDED OR DIRECTED BY THE ENGINEER OR TOWN STAFF TO ADEQUATELY PREVENT SEDIMENT TRANSPORT.
3. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE.
4. THE CONTRACTOR SHALL INSPECT, REPAIR AND/OR REPLACE EROSION CONTROL MEASURES EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT. SEDIMENT DEPOSITS MUST BE REMOVED WHEN WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
5. STAKED HAY BALE SILT BARRIERS OR SILT FENCE SHALL BE INSTALLED AROUND ANY TEMPORARY STOCKPILE AREAS. TEMPORARY VEGETATIVE COVER MAY BE REQUIRED (SEE NOTE).
6. INLET SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED UNDER THE GRATES OF ALL NEW CATCH BASINS AT THE TIME OF INSTALLATION, AND UNDER THE GRATES OF EXISTING CATCH BASINS IN THE CONSTRUCTION AREA.
7. CONTINUOUS DUST CONTROL USING WATER, CALCIUM CHLORIDE OR APPROVED EQUAL SHALL BE PROVIDED FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS, SURFACES OF BACKFILLED TRENCHES AND GRAVELED ROADWAY SURFACES.
8. IF DEWATERING IS NECESSARY DURING ANY TIME OF CONSTRUCTION A CLEAR WATER DISCHARGE SHALL BE PROVIDED AS SHOWN IN THE HAY-BALE BARRIER DEWATERING DETAIL OR ALTERNATE METHOD PROPOSED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
9. ALL DISTURBED AREAS SHALL BE RESTORED PER THE SLOPE STABILIZATION AND PERMANENT VEGETATION DETAILS. ALL DISTURBED AREAS THAT ARE SLOPED LESS THAN THREE HORIZONTAL TO ONE VERTICAL (3:1) SLOPE SHALL BE LOAMED, SEEDED, FERTILIZED AND MULCHED PER THE PERMANENT VEGETATIVE COVER SPECIFICATIONS. EROSION CONTROL MATTING SHALL BE PROVIDED ON ALL DISTURBED AREAS THAT ARE SLOPED MORE THAN THREE HORIZONTAL TO ONE VERTICAL (3:1).
10. IF FINAL SEEDING OF DISTURBED AREAS IS NOT TO BE COMPLETED BEFORE OCTOBER 15, THE CONTRACTOR SHALL PROVIDE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING.
11. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISHED GRADED SHALL BE COMPLETED PRIOR TO OCTOBER 15.
12. ANY EROSION WHICH OCCURS WITHIN THE DISTURBED AREAS SHALL BE IMMEDIATELY REPAIRED AND STABILIZED. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT SHALL BE RETURNED TO THE SITE. POST SEEDING, INTERCEPTED SEDIMENT, IF ANY, SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE TOWN AND ENGINEER.
13. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL VEGETATION IS RE-ESTABLISHED OR SLOPES ARE STABILIZED AND REMOVAL IS APPROVED BY THE TOWN.
14. UNFORESEEN PROBLEMS WHICH ARE ENCOUNTERED IN THE FIELD SHALL BE SOLVED ACCORDING TO THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" BY THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION IN COOPERATION WITH THE CONNECTICUT DEP.
15. THE CONTRACTOR SHALL PROVIDE THE NAME AND EMERGENCY CONTACT INFORMATION FOR THE PROJECT PERSONNEL RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROLS PRIOR TO THE START OF CONSTRUCTION.

NOTE: THE CONTRACTOR SHALL CONTINUALLY STORE THE FOLLOWING MATERIALS ONSITE DURING CONSTRUCTION TO MEET UNEXPECTED EROSION NEEDS

* 100 LF OF SILT FENCE
* 10 HAY BALES
* 10 CY OF WOOD CHIPS OR CRUSHED STONE



TYPICAL DRIVEWAY CROSS SECTION
NOT TO SCALE



HDPE FLARED END SECTION
NOT TO SCALE

TEMPORARY VEGETATIVE COVER

A TEMPORARY SEEDING OF RYE GRASS WILL BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF STOCKPILES. IF THE SOIL IN THE STOCKPILES HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS IT SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE THE FERTILIZER, LIME AND SEED IS APPLIED. 10-10-10 FERTILIZER AT A RATE OF 7.5 POUNDS PER 1000 S.F. LIMESTONE AT A RATE OF 90 LBS. PER 1000 S.F. SHALL BE USED. RYE GRASS APPLIED AT A RATE OF 1 LB. PER 1000 S.F. SHALL PROVIDE THE TEMPORARY VEGETATIVE COVER. STRAW FREE FROM WEEDS AND COARSE MATTER SHALL BE USED AT A RATE OF 70-90 LBS. PER 1000 S.F. AS A TEMPORARY MULCH. APPLY MULCH AND DRIVE TRACKED EQUIPMENT UP AND DOWN SLOPE OVER ENTIRE SURFACE SO CLEAT MARKS ARE PARALLEL TO THE CONTOURS.

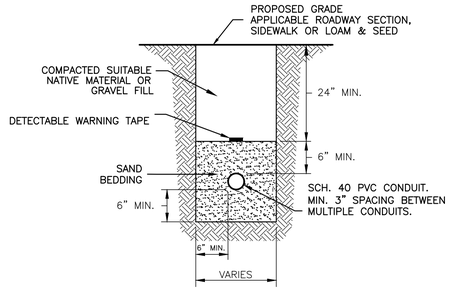
PERMANENT VEGETATIVE COVER

TOPSOIL WILL BE REPLACED ONCE THE EXCAVATIONS HAVE BEEN COMPLETED AND THE SLOPES ARE GRADED AS SHOWN ON THE PLANS. PROVIDE SLOPE PROTECTION AS CALLED FOR ON THE PLANS AND DETAILS. TOPSOIL SHALL BE SPREAD AT A MINIMUM COMPACTED DEPTH OF 4 INCHES. ONCE THE TOPSOIL HAS BEEN SPREAD, ALL STONES TWO INCHES OR LARGER IN ANY DIMENSION WILL BE REMOVED AS WELL AS DEBRIS.

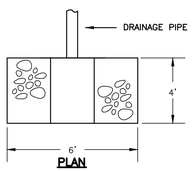
- APPLY AGRICULTURAL GROUND LIMESTONE AT THE RATE OF TWO TONS PER ACRE OR 100 LBS. PER 1000 S.F.
- APPLY 10-10-10 FERTILIZER OR EQUIVALENT AT A RATE OF 300 LBS. PER ACRE OR 7.5 LBS. PER 1000 S.F.
- WORK LIMESTONE AND FERTILIZER INTO THE SOIL TO A DEPTH OF 4 INCHES.
- INSPECT SEEDBED BEFORE SEEDING.
- IF TRAFFIC HAS COMPACTED THE SOIL, RETILL COMPACTED AREAS.
- APPLY THE FOLLOWING GRASS SEED MIX:

TYPICAL SEED MIXTURE

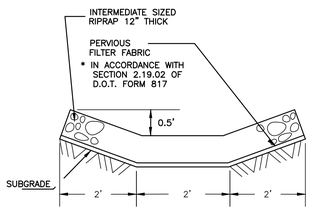
ALL DISTURBED AREAS	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	20	0.45
CREEPING RED FESCUE	20	0.45
PERENNIAL RYEGRASS	5	0.10
	45	1.00



TRENCH DETAIL: ELECTRICAL CONDUIT
NOT TO SCALE

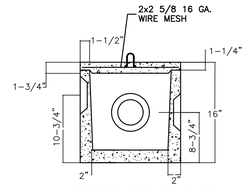


PLAN

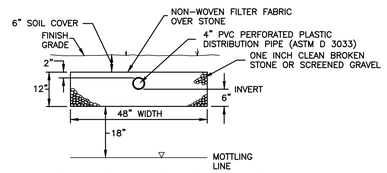


SECTION

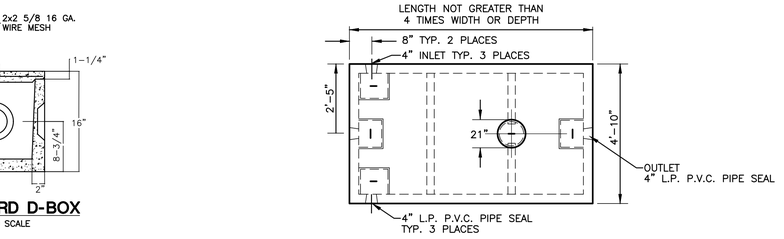
RIP-RAP SPLASH PAD DETAIL
NOT TO SCALE



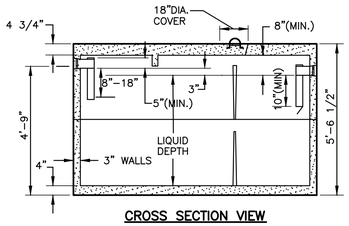
STANDARD D-BOX
NOT TO SCALE



12" x 48" LEACHING TRENCH
NOT TO SCALE

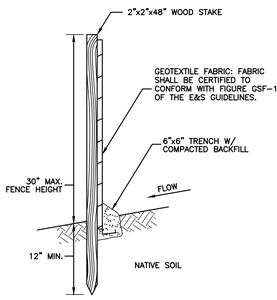


PLAN VIEW

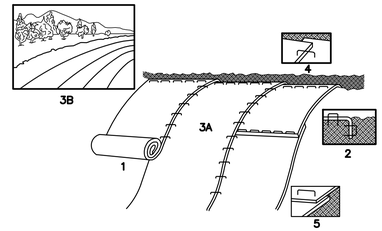


CROSS SECTION VIEW

1,000 GALLON SEPTIC TANK
NOT TO SCALE



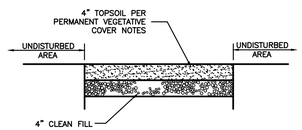
SILT FENCE SECTION
NOT TO SCALE



1. PROVIDE 4" THICKNESS OF TOPSOIL OVER CLEAN FILL. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED MIX PER PERMANENT VEGETATIVE COVER NOTES. (SHALL BE PAID FOR AT THE UNIT PRICE FOR LOAM, SEED, FERTILIZE & MULCH)
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP x 6" WIDE TRENCH, BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKET (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 4" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

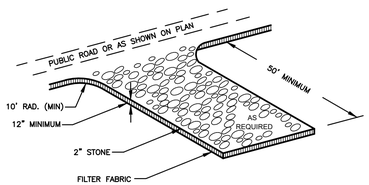
NOTE: ALL PERMANENT EROSION CONTROL BLANKETS ARE TO BE NORTH AMERICAN GREEN BIONET C125BN OR APPROVED EQUAL.

EROSION CONTROL MATTING DETAIL
(FOR 3:1 SLOPES OR GREATER)

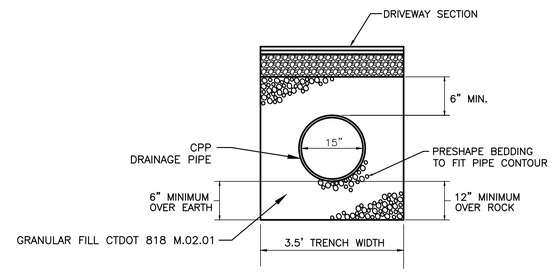


TYPICAL LOAM & SEED SECTION DETAIL
(FOR ALL DISTURBED AREAS)

SLOPE STABILIZATION DETAILS
NOT TO SCALE



ANTI-TRACKING PAD DETAIL
NOT TO SCALE



DRAINAGE PIPE BEDDING DETAIL
NOT TO SCALE

100' 0 100' 200'
SCALE: 1"=100'

No.	DATE	REVISION

CLA Engineers, Inc.
CIVIL • STRUCTURAL • SURVEYING
317 Main Street Norwich, CT 06360
(860) 886-1966 Fax (860) 886-9165

A. KAUSCH & SONS, LLC

LOTS 019-37-17, 019-37-20 & 019-37-21
CHURCH ST. SITE DEVELOPMENT
BROOKLYN, CT

NOTES & CONSTRUCTION DETAILS

Project No. CLA-6639
Proj. Engineer R.A.D.
Date: 03/31/21
Sheet No. 3

CLA

DRAINAGE NARRATI`VE

3-Lot Subdivision
Church Street, Brooklyn, CT
Prepared for
Kausch & Sons, LLC

The existing parcels consist of a total of approximately 27 acres of undeveloped woodlands located to the west of Church Street in Brooklyn Connecticut. There are inland wetlands located in the north and southern parts of the site.

The proposed development consists of 2 residential building lots served by approximately 950 L.F. of new shared driveway access from Church Street. Presently, storm water in the proposed development area drains north to south, exiting the site via the wetlands and eventually discharging to the Quinebaug River to the east.

The shared driveway for the building lots is required to cross existing wetlands in three locations. The crossing locations have been determined to minimize impact to the wetland. The crossing lengths are approximately 50, 75 and 73 feet respectively.

The following determines the size of the drainage culverts required to pass the 25-year storm event with inlet control.

Methodology:
In accordance with the Town of Brooklyn's Public Improvement Specifications, the site's watershed was analyzed using the Rational method for the 25-year storm. The Rational method predicts the peak runoff according to the formula: Q=CiA, where C is a runoff coefficient, i is the rainfall intensity, and A is the sub-catchment area.

Rainfall intensities used in the calculations were taken from the Brooklyn (06-0918) weather station readings accessed via the NOAA Atlas 14 Point Precipitation Frequency website.

DEEP watershed basin boundaries and Connecticut Elevation (Lidar) Data (See SK-1) was used to determine the approximate watershed area contributing to each driveway crossing.

The site consists primarily undeveloped woodlands. A run-off coefficient (C) of 0.2 (Unimproved Surface) was utilized. The Time of Concentration for each catchment was determined using the TR-55 method.

The peak discharge (Q) for the 25-year storm event was calculated as follows:

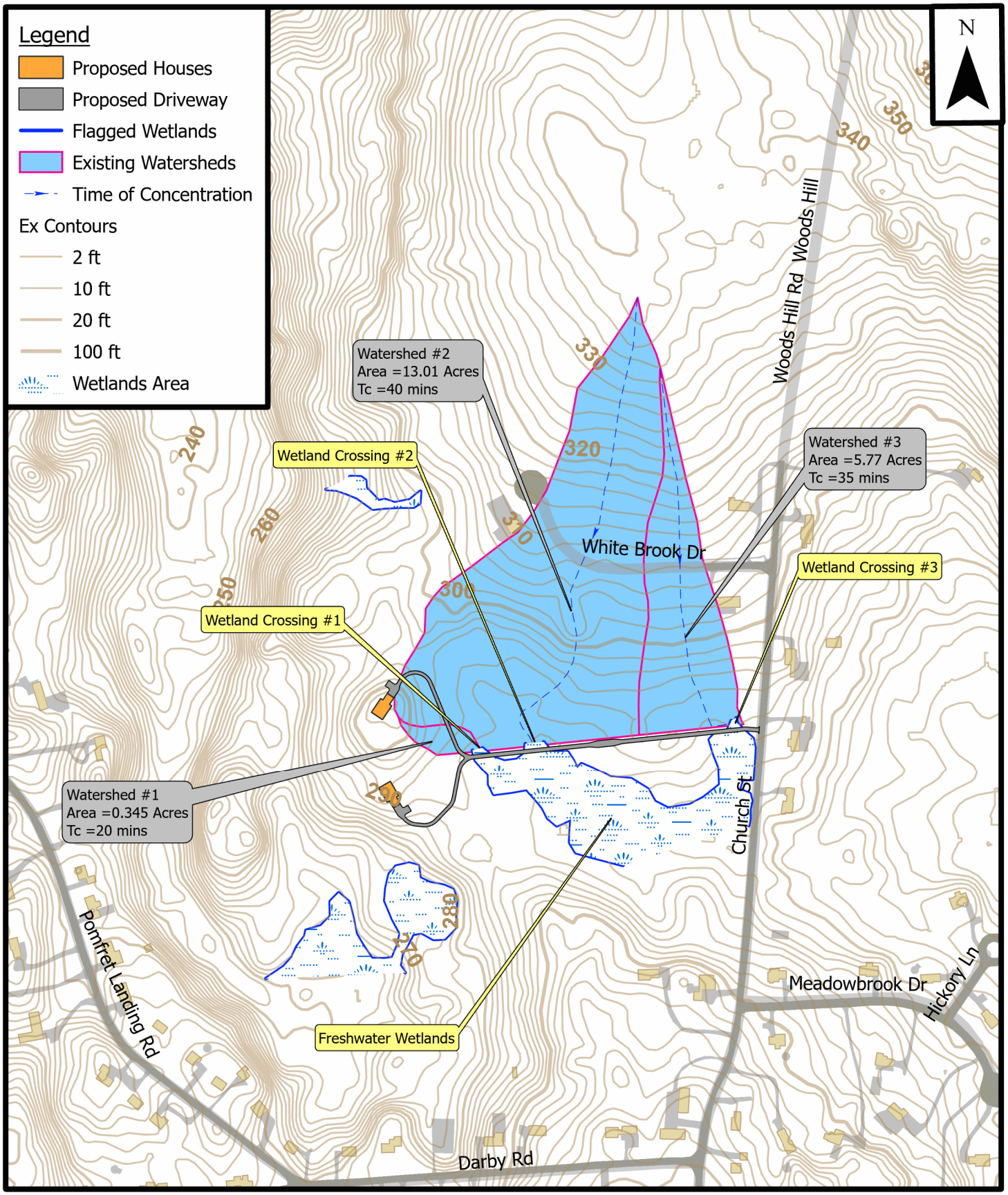
Peak Volume (Q) = CiA = 0.2 x 6.11 in/hr x Area (acres)

Analysis of each culvert crossing was performed using Hydraflow Express culvert modeler (used in HDS-5 Hydraulic Design of Highway Culverts).

The resultant analysis determined the size and number of culverts required to be installed at a grade consistent with the existing wetland (See Appendix 2).

The following table presents the results for each crossing:

Location	Watershed Area	Tc (Mins)	Peak Volume (cfs	Pipe Required
Crossing 1	0.34	20	0.37	1 x 15”
Crossing 2	13.01	40	9.7	3 x 15”
Crossing 3	5.77	35	4.6	1 x 15”



CLA Engineers, Inc.
CIVIL • STRUCTURAL • SURVEYING
317 Main Street Norwich, Connecticut
(860) 886-1966 Fax (860) 886-9165
e-mail: cla@claengineers.com

PROPOSED WATERSHED MAP

CHURCH STREET SITE DEVELOPMENT
BROOKLYN, CT

DATE: 4/5/2021

SCALE: 1 " = 400 Ft

FIGURE

SK-1

Hydrograph Report

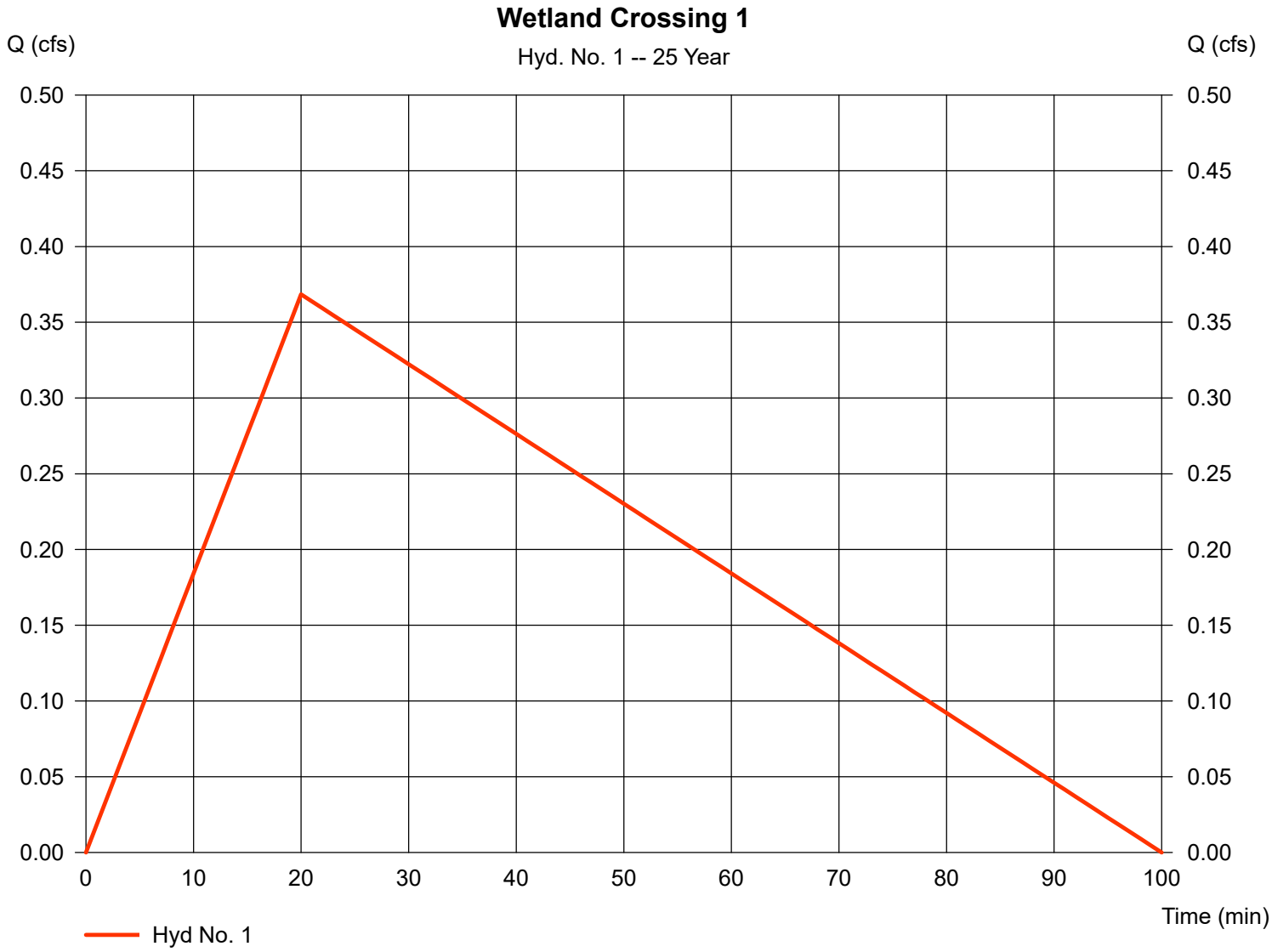
APPPENDIX 1

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066 Monday, Apr 5, 2021

Hyd. No. 1

Wetland Crossing 1

Hydrograph type	=	Rational	Peak discharge	=	0.368 cfs
Storm frequency	=	25 yrs	Time to peak	=	20 min
Time interval	=	1 min	Hyd. volume	=	1,105 cuft
Drainage area	=	0.345 ac	Runoff coeff.	=	0.2
Intensity	=	5.339 in/hr	Tc by TR55	=	20.00 min
IDF Curve	=	6639 Church_St.IDF	Asc/Rec limb fact	=	1/4

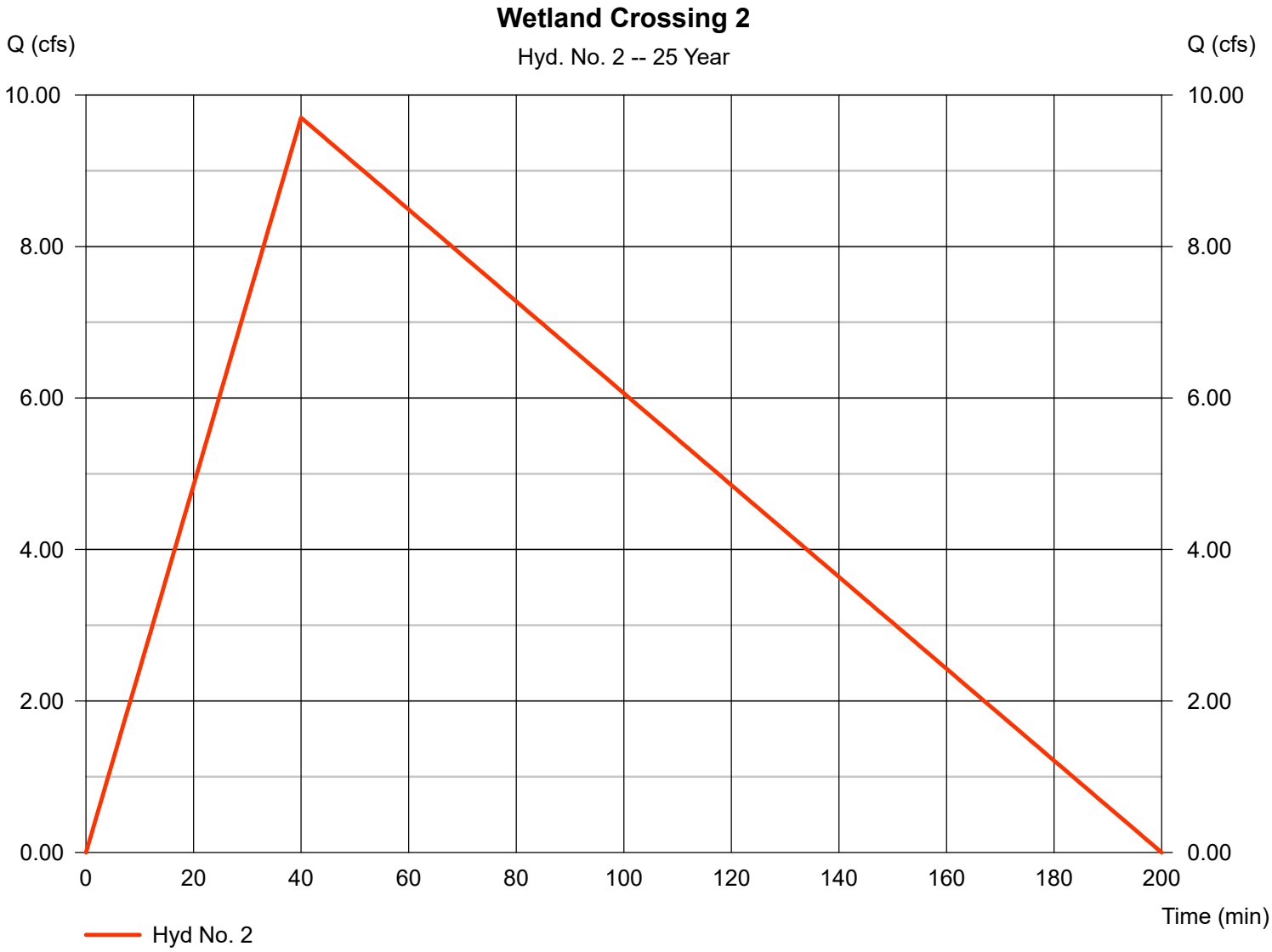


Hydrograph Report

Hyd. No. 2

Wetland Crossing 2

Hydrograph type	=	Rational	Peak discharge	=	9.701 cfs
Storm frequency	=	25 yrs	Time to peak	=	40 min
Time interval	=	1 min	Hyd. volume	=	58,207 cuft
Drainage area	=	13.010 ac	Runoff coeff.	=	0.2
Intensity	=	3.728 in/hr	Tc by TR55	=	40.00 min
IDF Curve	=	6639 Church_St.IDF	Asc/Rec limb fact	=	1/4

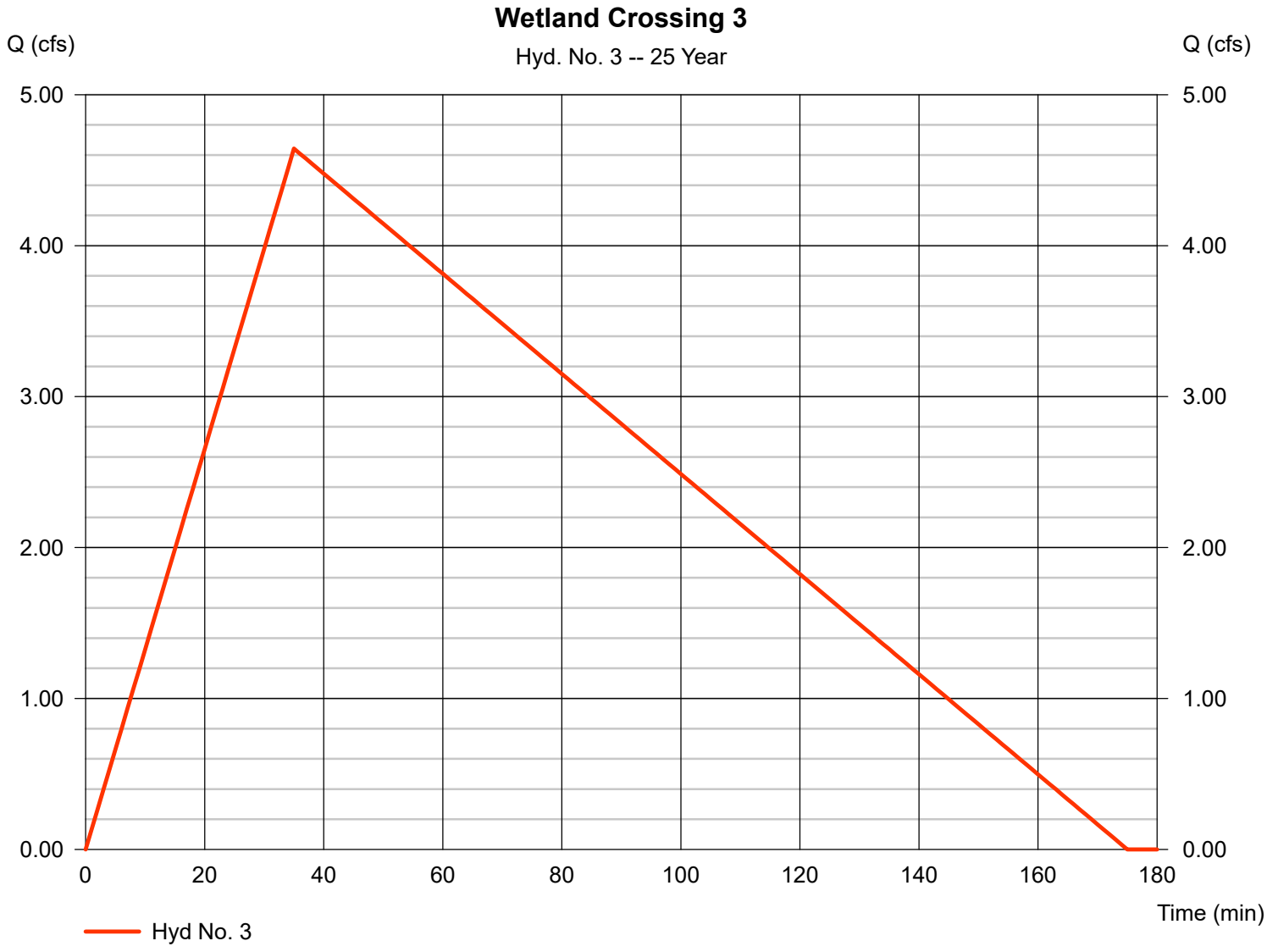


Hydrograph Report

Hyd. No. 3

Wetland Crossing 3

Hydrograph type	=	Rational	Peak discharge	=	4.643 cfs
Storm frequency	=	25 yrs	Time to peak	=	35 min
Time interval	=	1 min	Hyd. volume	=	24,375 cuft
Drainage area	=	5.770 ac	Runoff coeff.	=	0.2
Intensity	=	4.023 in/hr	Tc by TR55	=	35.00 min
IDF Curve	=	6639 Church_St.IDF	Asc/Rec limb fact	=	1/4



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. Tuesday, Apr 6 2021

Wetland Crossing 1

Invert Elev Dn (ft)	=	287.80
Pipe Length (ft)	=	24.00
Slope (%)	=	0.21
Invert Elev Up (ft)	=	287.85
Rise (in)	=	15.0
Shape	=	Cir
Span (in)	=	15.0
No. Barrels	=	1
n-Value	=	0.012
Inlet Edge	=	Projecting
Coeff. K,M,c,Y,k	=	0.0045, 2, 0.0317, 0.69, 0.5

Embankment

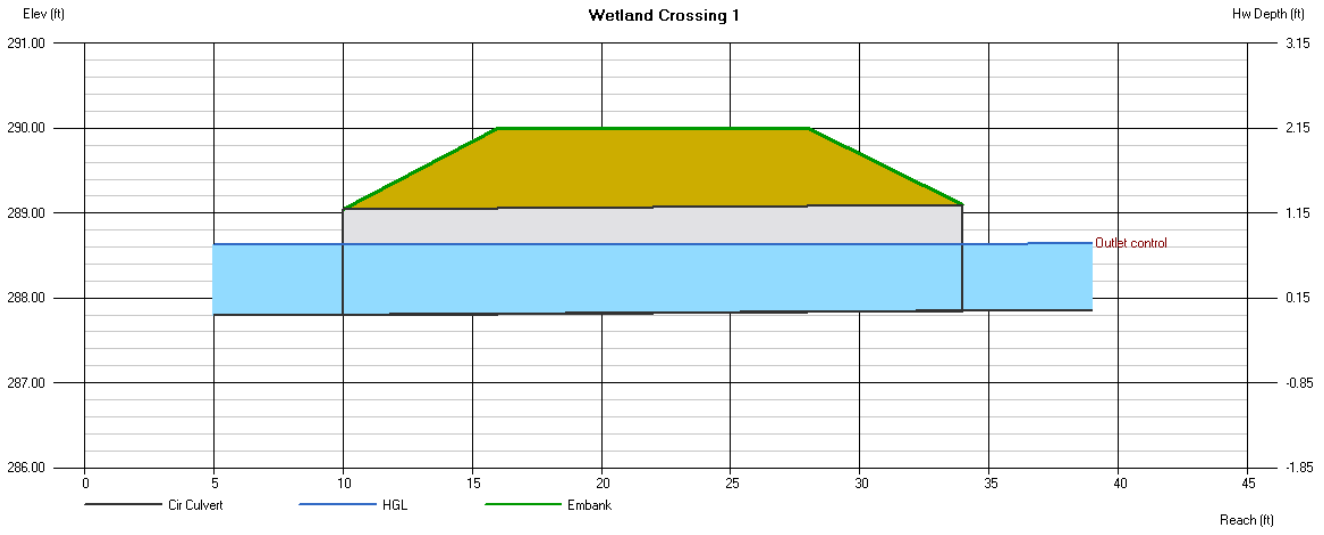
Top Elevation (ft)	=	290.00
Top Width (ft)	=	12.00
Crest Width (ft)	=	50.00

Calculations

Qmin (cfs)	=	1.00
Qmax (cfs)	=	1.00
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	1.00
Qpipe (cfs)	=	1.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	1.17
Veloc Up (ft/s)	=	1.24
HGL Dn (ft)	=	288.62
HGL Up (ft)	=	288.63
Hw Elev (ft)	=	288.64
Hw/D (ft)	=	0.63
Flow Regime	=	Outlet Control



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. Tuesday, Apr 6 2021

Wetland Crossing 2

Invert Elev Dn (ft)	=	285.90
Pipe Length (ft)	=	24.00
Slope (%)	=	0.83
Invert Elev Up (ft)	=	286.10
Rise (in)	=	15.0
Shape	=	Cir
Span (in)	=	15.0
No. Barrels	=	2
n-Value	=	0.012
Inlet Edge	=	Projecting
Coeff. K,M,c,Y,k	=	0.0045, 2, 0.0317, 0.69, 0.5

Embankment

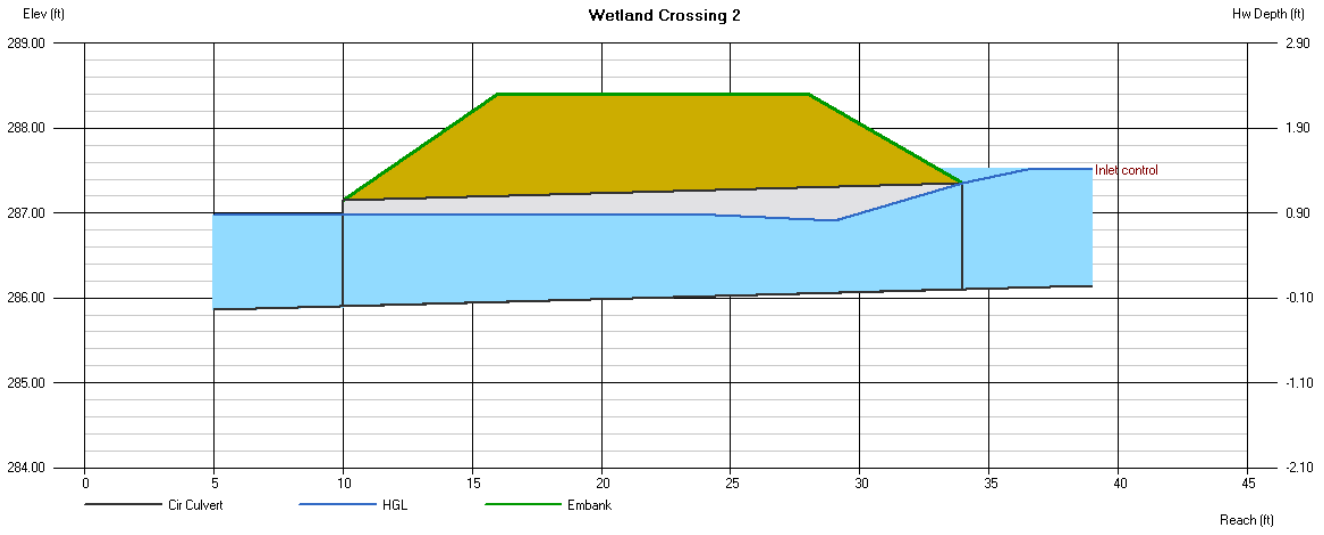
Top Elevation (ft)	=	288.40
Top Width (ft)	=	12.00
Crest Width (ft)	=	50.00

Calculations

Qmin (cfs)	=	5.00
Qmax (cfs)	=	15.00
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	10.00
Qpipe (cfs)	=	10.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	4.44
Veloc Up (ft/s)	=	5.21
HGL Dn (ft)	=	286.98
HGL Up (ft)	=	287.01
Hw Elev (ft)	=	287.51
Hw/D (ft)	=	1.13
Flow Regime	=	Inlet Control



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. Tuesday, Apr 6 2021

Wetland Crossing 3

Invert Elev Dn (ft)	=	287.80
Pipe Length (ft)	=	24.00
Slope (%)	=	6.25
Invert Elev Up (ft)	=	289.30
Rise (in)	=	15.0
Shape	=	Cir
Span (in)	=	15.0
No. Barrels	=	1
n-Value	=	0.012
Inlet Edge	=	Projecting
Coeff. K,M,c,Y,k	=	0.0045, 2, 0.0317, 0.69, 0.5

Embankment

Top Elevation (ft)	=	291.00
Top Width (ft)	=	12.00
Crest Width (ft)	=	50.00

Calculations

Qmin (cfs)	=	1.00
Qmax (cfs)	=	10.00
Tailwater Elev (ft)	=	(dc+D)/2

Highlighted

Qtotal (cfs)	=	5.00
Qpipe (cfs)	=	5.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	4.44
Veloc Up (ft/s)	=	5.22
HGL Dn (ft)	=	288.88
HGL Up (ft)	=	290.21
Hw Elev (ft)	=	290.71
Hw/D (ft)	=	1.13
Flow Regime	=	Inlet Control