TOWN OF LEDYARD
CONNECTICUT

Planning & Zoning Commission

~ AGENDA ~

741 Colonel Ledyard Highway
Ledyard, Connecticut 06339

Chairman Marty Wood

Regular Meeting

Thursday, September 11, 2025 **6:00 PM** **Council Chambers - Hybrid Format**

REMOTE MEETING INFORMATION

Join Zoom Meeting
https://us06web.zoom.us/j/83794205155?pwd=R0M7KGVV9Ga9D6U7MOqZVfGZcSK6v3.1

Meeting ID: 837 9420 5155 Passcode: 435606

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL AND APPOINTMENT OF ALTERNATES

IV. APPROVAL OF ADDITIONS TO AND/OR CHANGES TO THE ORDER OF THE AGENDA

V. CITIZENS PETITIONS (NON-AGENDA ITEMS ONLY)

VI. PRE APPLICATION DISCUSSION AND/OR WORKSHOP

None.

VII. PUBLIC HEARINGS/APPLICATIONS

None.

VIII. OLD BUSINESS

A. Discussion of Reports – Center for Housing Opportunities, Beth Sabilia, Exec. Director:

1. New Report: Room at the Table: Increasing participation in local land use decision-making
2. Op-Ed: "A seat at the Table for Everyone" (The Day, July 17, 2025)
3. Webinar: Making Room at the Table

Attachments: ASeatAtTheTableForEveryone TheDayAticle Rec080725
RoomAtTheTableIncreasingCivicParticipationInLocalLandUseDecisionMaking Rec080725

B. PZ#25-4SITE - 8, 9 & 11 Colby Drive (Parcel IDS: 68-520-8, 68-520-9, 68-520-11); Colby Drive (Parcel ID: 68/530/680); and 16 Highview Terrace (Easement Only)

(Parcel ID: 68/960/16), Ledyard, CT, - Applicant/Agent, Norm Eccleston - Owner, Habitat for Humanity of Eastern CT for approval of regulated activities for construction of 27 one and two family structures for 38 dwelling units and associated site improvements, inc. completion of Colby Drive, inc. utilities, drainage structures, and detention pond. (Submitted 5/20/2025, Date of Receipt 6/12/25, Tabled to 7/10/25 & 8/14/25, Orig. DRD 8/16/25, Tabled to 9/11/25 w 26-day Ext. Time, New DRD 9/11/25).

Attachments:
FD#1 PZ#25-4SITE ApplicationForm 052725
FD#2 PZ#25-4SITE StormWaterManagementReport 052025
FD#3 PZZ#25-4SITE PlanSetFHFColbyDrive 052725
FD#4 PZ#25-4SITE DevelopmentNarrative 052725
FD#5 PZ#25-4SITE PermissionAccessSite 052025
FD#6 PZ#25-4SITE ArcchitechturalPlans 052725
FD#7 PZ#25-4SITE TransmittalLttrTownStaff 052925
FD#8 #25-4SITE EmailLuflerHFH ReAffordabilityPlan 061125
FD#9 #25-4SITE HFH ReAffordability Plan 061125
FD#10 PZ#25-4SITEE LUDRqstTableReview Rec07072025
FD#11 #25-4SITE WaterSewerMainExtAgreement Ledyard-HabitatForHumanity 12212024
FD#12 25-4SITE 8,9,&11ColbyDrEtAl PlannerComments1 072125
FD#13 #25-4SITE EmailWWalter-Masalin ReEngineering Rec 073125
FD#14 25-4SITE HFH ReqTable091125MtngWithExtTime Rec081225
FD#15 PZ#25-4SITE HFHResponseComments Rec090825
FD#16 PZ#25-4SITE RevisedStormwaterManagementReport Rec090825
FD#17 PZ#25-4SITE Deedsa&Maps Rec090825
FD#18 PZ#25-4SITE RevisedPlanSet Rec090825
FD#19 25-4SITE RevisedPZCApplicationForm Rec090825
FD#20 PZ#25-4SITE SitePlanChecklist Rec090825

C. PZ#25-5SITE - 750 (aka "748") Colonel Ledyard Highway (Parcel ID: 67-530-750), Ledyard, CT - Property Owner, Dominick Ceravolo - Applicant, Ryan Forrestt, Ryan's Reliable Services, LLC for site plan approval for commercial businesses. (Submitted to Land Use Dept. 7/09/25, Date of Receipt 7/10/25, tabled to 8/14/25, tabled to 9/11/25, DRD 9/12/25).

Attachments: FD#1 PZ#25-5SITE ApplicationPZCReview Rec 070925
FD#2 PZ#25-5SITE SitePlan Rec070925
FD#3 PZ#25-5SITE Deed&TaxMapPropertyCard Rec072225
FD#4 PZ#25-5SITE TransmittalLttrTownStaff Rec072225
FD#5 PZ#25-5SITE - EmailToRyanForresttRqstSiteAccessLetter Rec 080425
FD#6 PZ#25-5SITE EmailLUDToApplicantIncompleteApp Rec 080425
FD#7 25-5SITE 750 CLH PlannerComments1 080425
FD#8 PZ#25-5SITE EmailPeterGardnerRequestToTableForRevision Rec080725
FD#9 PZ#25-5SITE Rev2SitePlan Rec082625

D. Discussion & Decision: PZ#25-2ZRA- Applicant/Agent: Eric Treaster for Proposed Zoning Regulations Text Amendments for the Development of multifamily dwellings. (Submitted 3/12/25, Date of Receipt 3/13/25, PH must open within 65 days by 5/16/25. PH orig. set for 5/8/25, Opening of PH postponed to 6/12/25 with 27-day ext. granted., PH opened 6/12/25PH Cont. to 6/26/25, PH cont. 7/10/25, PH cont. to 7/31/25 with 16-day ext. granted, PH must close by 7/31/25, PH Closed 7/31/25, Tabled to 8/14/25 & 9/11/25, DRD 10/4/25).

IX. NEW BUSINESS

A. C.G.S. 8-24 Referral – 19 Avery Hill Rd Ext. (Parcel ID: 50/130/19), Ledyard, CT – Transfer of Town-Owned Open Space property (Glacial Park) to Avalonia Land Conservancy to be combined with property at 173 & 175 Stoddards Wharf Road owned by DDJJM, LLC also to be transferred to Avalonia Land Conservancy.

B. C.G.S. 8-24 Referral – 13 Applewood Drive (Parcel ID: 99-530-13), Ledyard, CT – Transfer of Town-Owned Open Space property to Avalonia Land Conservancy to be combined with the Avalonia Pike Marshall Preserve at 104 Gallup Hill Road (Parcel ID: 85-810-104), Ledyard, CT.

X. APPROVAL OF THE MINUTES OF PREVIOUS MEETINGS

A. PZC Regular Meeting Minutes of August 14, 2025

XI. CORRESPONDENCE

XII. REPORTS

A. ZEO Staff Report of September 11, 2025

B. Planner's Report of September 11, 2025

XIII. ADJOURNMENT

DISCLAIMER: Although we try to be timely and accurate these are not official records of the Town.

TOWN OF LEDYARD

741 Colonel Ledyard Highway
Ledyard, CT 06339-1511

File #: 25-2327 **Agenda Date:** 8/14/2025 **Agenda #:** A.

GENERAL DISCUSSION ITEM

Subject:
Discussion of Reports - Center for Housing Opportunities, Beth Sabilia, Exec. Director:

1. New Report: Room at the Table: Increasing participation in local land use decision-making
2. Op-Ed: "A seat at the Table for Everyone" (The Day, July 17, 2025)
3. Webinar: Making Room at the Table

Background:
(type text here)

Department Comment/Recommendation:
(type text here)

The Day Guest Opinions

Thu Aug 07 2025

A seat at the table for everyone

10

By Beth Sabilia
Special to The Day

Published: Jul 16, 2025 12:01 AM
Updated: Jul 15, 2025 4:02 PM

In Connecticut, we often take pride in "local control." We cherish our town halls, commissions and the volunteers who step up to serve their communities. But when it comes to decisions about how land is used — what kinds of homes we can build, where families can live and who has access to opportunity — we need to take a hard look at who actually holds the power.

Local land use boards, like Planning & Zoning Commissions and Zoning Boards of Appeal, determine whether new housing gets built, whether that housing is affordable and what kind of community we become. This system is intended to ensure land use decisions reflect the needs of all residents.

In New London County, 97% of board members are white, while just 73% of county residents are. Nearly three-quarters of those are men, but more than 52% of the population is female. The median age is 63, compared to 41 for the broader population. And while 30% of residents are renters, 92% of board members own their homes. These findings, pulled from demographic data collected by the Centers for Housing Opportunity in Fairfield County and Eastern Connecticut and published in a new report, **Room at the Table**, reveal that our local land use boards do not accurately reflect the communities they serve.

Across Connecticut — and especially here in Eastern Connecticut — housing reforms face delay or opposition amid political inaction. Proposals to allow duplexes or townhomes or

make housing more affordable are often tabled or watered down, with little meaningful public input. The result is exclusionary zoning that locks people out of our towns and stifles opportunity.

Some say, "That's local control." But we ask: *Control by whom?* When renters, shift workers, caregivers and newer residents can't access decision-making spaces, we're not honoring democracy — we're reinforcing exclusion.

This isn't just about fairness. It's about real consequences. When land use boards lack a range of lived experiences, it becomes harder to approve the housing Eastern Connecticut desperately needs: homes for families, seniors, essential workers and those earning under $60,000 a year. Instead, we keep restrictive zoning that drives up costs and pushes out the very people who keep our communities running — teachers, tradespeople, childcare providers and small business workers.

When those most impacted by the housing crisis aren't at the table, the table tilts toward those with the most privilege — and the least urgency for change.

The Room at the Table report also found that 10% of land use board seats are vacant, and another 10% are held by people serving expired terms. That's a problem, but also an opportunity.

Municipalities must do more to make these civic roles accessible. That means they need to clearly advertise vacancies, remove barriers like a lack of childcare or inflexible meeting times, and offer stipends and hybrid options. It also means providing training and mentorship — especially for those who've never been invited to serve — and actively recruiting renters, younger residents and people of color to participate.

Put simply, here's what towns should do now:

Conduct inclusive outreach to fill land use board vacancies.

Offer training, stipends and hybrid meetings to reduce barriers.

Clearly post role descriptions and transparent appointment processes.

But the responsibility doesn't fall on town halls alone.

Local political parties play a critical role in determining who holds power. They decide who gets nominated, who appears on ballots and who is recommended for appointment. If party leaders aren't actively recruiting new voices — especially renters, people of color and younger residents — they're reinforcing exclusion.

To our local party committees:

Stop recycling the same names and networks.

Create open, transparent ways for people to express interest.

Invest in outreach and support for new, underrepresented leaders.

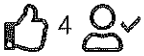
If party leaders fail to act, they are not protecting local democracy — they are obstructing it.

To residents of Eastern Connecticut: if you care about housing, fairness and your town's future, this is your moment. There are seats to fill. Run. Apply. Show up. Speak up. Push your town, your local party and your neighbors to build a more inclusive process.

Because local control should mean *shared* control — and a seat at the table for all of us.

Beth Sabilia is Director of the Center for Housing Opportunity Eastern Connecticut.





IMPACT

Room at the Table: Increasing civic participation in local land use decision-making

CREATED BY

Introduction

In Connecticut, local land use boards composed of elected and appointed officials make the decisions on how land is used in a community–where homes and businesses are permitted, how large buildings can be, how much parking is required, etc. These boards include Planning & Zoning Commissions (PZCs), Planning Commissions (PCs), Zoning Commissions (ZCs) and Zoning Boards of Appeal (ZBAs). These decisions fundamentally shape the past, present and future of our communities by regulating the type, scale and location of development, infrastructure and open space, and setting the stage for how spaces are used and who they serve.



download fact sheet

Local decision-making has a long and cherished history in Connecticut.

Local decision-making has a long and cherished history in Connecticut. The quintessential American democratic concept of a "town hall" meeting comes from 17th century New England meeting halls, where local residents would debate consequential issues in the community. Today as it was back then, local participation can ensure that decisionmaking and policy is responsive to local desires and circumstances.

The citizens who voluntarily serve on land use boards provide a valuable public service, weighing the benefits and impacts of land use proposals and shaping the immediate and long-term future of their towns and cities. Given this extremely consequential role, ***all* local citizens should have a chance to serve on these bodies and contribute to local decision-making**. Access to the local decision-making process is part of the democratic spirit and history of this practice.

10%

on local land use boards in Fairfield and New London Counties are vacant.



10% of land use board members are serving in expired terms in Fairfield and New London Counties.

Anecdotally, however, we know that it can be difficult for municipalities to fill seats on these all-volunteer boards, and broad citizen participation can be challenging for a number of reasons: the time commitment required of those who serve; evening meetings that conflict with childcare and work obligations; and general lack of awareness of how to get involved. A national survey of land-use decision makers published by the Urban Institute in 2023 noted that there is limited support for participation on land use boards, and that "the vast majority of positions are uncompensated, burdensome (requiring at least one day's work per month to attend and prepare for meetings), and lack important supports such as child care." Additionally, training is limited for board members, who may or may not have experience with land use and zoning regulations, policies, and best practices. Taken together, these challenges represent barriers to participation. They can lead to land use board memberships that skew towards people who face fewer of these barriers, resulting in land use decision making that does not necessarily reflect the full range of views and needs in local communities.

Now, through the Centers for Housing Opportunity (CHO) in Fairfield County and Eastern Connecticut, the Housing Collective has gathered demographic data on the composition of land use boards in Fairfield County and New London County that confirms this. Findings reveal that 10% of land use decision-making seats in both counties are unfilled, 10% of land

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; are serving in expired terms, and decision makers as a whole are not demographically representative of the residents in their local communities or regions.

Fairfield County Land Use Board Membership

New London County Land Use Board Membership

In order to expand and better support broader civic participation in the land use decision-making process, local communities and organizations should consider how to make the process more accessible to a wider range of residents, starting by addressing some of the well-known challenges and barriers to entry noted above.

d Use Decisions Made in Connecticut?

The state of Connecticut grants municipalities the authority to make land use decisions at the local level, via State Statute, §8-2. Land use boards in municipalities across the state meet regularly, typically one or more times per month, to review and approve or deny applications related to how land can be used in a community. This includes Planning Commissions, Zoning Commissions, (combined) Planning & Zoning Commissions, and Zoning Boards of Appeals. Responsibilities of these boards include, but are not limited to:

Planning Commissions: Planning Commissions are responsible for revising the town's plan of conservation and development, and regulating the way individuals subdivide and develop land, which includes requirements for drainage; parks and open space; and streets, curbs and sidewalks. The planning function includes commenting on the location of proposed streets, parks, schools, public housing projects, and utilities.

Zoning Commissions: Zoning Commissions are responsible for how people can use their land. The commissions establish categories of land uses (commercial, residential, or industrial uses, for example) and designate districts or zones where those uses are permitted.

Planning & Zoning Commissions: A combined Planning and Zoning Commission handles the responsibilities of both the planning and zoning commission, although it still enacts the functions of planning and zoning separately.

Zoning Boards of Appeals: Zoning Boards of Appeals are responsible for hearing and deciding appeals to the zoning code and special permits and exceptions from the zoning code. They are also responsible for granting variances (in other words, exceptions) from existing zoning regulations.

Each of these boards are composed of community members who are elected or appointed to serve staggered terms of two to six years, with four-year terms the most common. For those who serve, the commitment is substantial. Board members attend one or more evening meetings a month that very often run late into the night, review technical application materials to prepare for these meetings, and often physically visit sites that are the subject of applications.

FEATURED EVENT

see all events

Making Room at the Table

Jul 22, 2025
12:00-1:00pm

Land use commissioners, planners, and staff from the Centers for Housing Opportunity (CHO) will share new CHO research about the obstacles to civic participation on land use boards, and explore how communities can bring more voices into the land use decision making process.

Hosted By	**Centers for Housing Opportunity**
Region	**Eastern CT; Fairfield County, CT; CT**

Who Makes Land Use Decisions in Fairfield and New London Counties?

Access to these land use boards is generally limited to community members who are engaged with or connected to the life of their local government and are able to make a substantial time commitment. While a broader group of residents may be engaged with schools, youth sports and other local activities, this produces a dynamic in which only a subset of a community's population tends to serve on its land use boards. This bears out in the data, which reveals that in both Fairfield and New London Counties, land use board members are disproportionately male and are older and whiter than the populations of their local communities and their counties.

For example, according to the US Census' 2021 American Community Survey, the overall male population in Fairfield and New London Counties is 49% and 48%, respectively. But of those who serve on land use boards, 69% and 72% are men. Notable differences also exist with respect to race. In Fairfield and New London Counties, the overall population is 58% and 73% white, respectively. However, among those who serve on land use boards, the percentages are 92% and 97% white. The median age of those who serve on land use boards in Fairfield and New London Counties is 60 and 63 respectively, while the median age of residents in those counties is 40 and 41.

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rs are overrepresented on these boards compared to the overall resident population. In Fairfield and New London Counties, 90% and 92% of those who serve on land use boards are homeowners, respectively, while homeowners represent 67% and 68% of the population in these counties. In other words, only 10% and 8% respectively of those community members who are in land use decision making positions are renters.

	Fairfield County Board Members	Fairfield County Population	New London County Board Members	New London County Population	Total Board Members
Male	70%	49%	72%	48%	70%
Female	30%	51%	28%	52%	30%
White	94%	58%	97%	73%	94%
Non-White	6%	42%	3%	27%	6%
Homeowners	91%	67%	92%	68%	91%
Median Age	61	40	63	41	61

Source: Centers for Housing Opportunity survey; US Census - American Community Survey, 2021

These findings are consistent with the Urban Institute's 2023 study, which found that in the Northeast region of the United States, 73% of land use board members were men and 91% of members were white.

PATHS TO PARTICIPATION: APPOINTMENT AND ELECTION

Of the 52 boards surveyed in Fairfield County, 35 boards consist of elected members and 17 consist of appointed members. Of the 53 boards surveyed in New London County, 28 boards consist of elected members and 25 boards consist of appointed members. Together, these boards have 879 seats, including members and alternates. As previously noted, approximately 10% of seats on these boards in both Fairfield and New London Counties are currently vacant and an additional 10% of current members are serving on expired terms.

Land Use Boards

	Fairfield County	New London County	Total
Boards	**52**	**53**	**105**
Elected	35	28	63

	Fairfield County	New London County	Total
Appointed	17	25	42

Land Use Board Seats

	Fairfield County	New London County	Total
Seats	**435**	**444**	**879**
Filled Seats	90%	89%	90%
Vacant Seats	10%	11%	10%
Serving In Expired Term	14%	6%	10%

Source: Centers for Housing Opportunity survey

The process of joining local land use decision-making boards varies depending upon if boards are appointed or elected. In communities where boards are appointed, participation is typically solicited through posting of opportunities to serve on municipal websites, newsletters, or other public communications, and also by word of mouth. Generally, those who seek to be considered for an opening go through an application process and are considered for appointment and then appointed by the chief elected official or governing body (eg, city/town council, board of alders, representative town meeting, etc.). One consideration is the “minority representation rule,” which requires most municipalities in Connecticut to ensure that one political party does not have all seats on a board or commission. As a result, at least one seat must be filled by a member of the opposing political party.

In communities where land use boards are elected, individuals are elected through the democratic process, whereby community members vote for these individuals in an open election. Connecting with local political party leadership and expressing interest is generally the first step in order to appear on the ballot. The candidate must be endorsed through a formal political party process to be included as a candidate on the election ballot for the next election. Unaffiliated candidates- those who do not affiliate with either major political party- may be able to fill a spot on a political party’s ballot if that party is willing to work with the candidate.

Recommendations

and New London Counties demonstrates civic participation in local land use decision-making has room to grow. There is room for more people to serve, so land use boards can operate at full capacity. There is room for a greater diversity of people to serve, so land use boards can more closely resemble the communities they serve and benefit from the variety of opinion this would provide. And there is room for more education and training for land use board members who come from a variety of backgrounds and experiences and who may not be deeply familiar with land use planning and zoning and/or related regulatory frameworks and technical skills.

Communities can make it easier to recruit new members, and make it easier for members to participate.

Anecdotal evidence demonstrates that it can be difficult for communities to recruit new members, difficult for members to sustain their participation, and difficult to ensure that members receive the education and training they need. Communities can respond by making it easier to recruit new members, easier for members to participate on boards, and easier to access and participate in training. As a result, the local land use decision-making process can become more democratic in alignment with its stated purpose, and ensure local decisions are well-informed and responsive to the needs and desires of all residents.

The following recommendations, if implemented, could help increase and support participation and well-informed decision making on local land use boards.

INCREASING PARTICIPATION

Expand Awareness on How to Become a Board Member

Municipalities and/or relevant government and non-government organizations should create a simple, clear pamphlet on 'How to Join a Land Use Board,' post it online for easy access, and distribute it to the general public as a first step in raising awareness. Even the most basic online resource can help shift public perception and help more residents understand they can play a role in decision making.

Municipalities can also take steps to encourage greater participation on land use boards by more residents by advertising open positions on websites and social media pages and having a system for regularly updating their list of available positions. Other opportunities to consider include partnering with libraries and/or community organizations to host information sessions on becoming involved.

Draft a "Role Description"

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ld consider drafting clear, simple, yet comprehensive descriptions of the roles, responsibilities, and requirements of land use board members, and make these descriptions broadly available. This "role description" would outline the position requirements - e.g., evening meeting frequency and duration, training requirements, availability of virtual meeting participation, etc. This will help to ensure that those who aspire to membership clearly understand the required responsibilities and commitment.

Outreach to Underrepresented Groups

Municipalities should take steps to proactively engage people who are underrepresented on land use boards, especially renters.

SUPPORTING PARTICIPATION

Ensure Effective Meetings

Municipalities should consider auditing their land use board meetings to identify opportunities to improve efficiency and effectiveness. Such an audit could include a review of meeting minutes and/or recordings to identify opportunities to improve facilitation and/or items/situations where administrative review could potentially be introduced. The intended result of such an audit would be recommendations for enhancing meeting facilitation, streamlining application review procedures and other related strategies, which would improve meeting efficiency and effectiveness for board members, applicants, and the general public.

Provide Childcare

Providing childcare during meetings would make board membership more accessible to parents.

Expand Hybrid Meetings to Increase Accessibility

Providing the option to participate remotely would reduce barriers to participation, allowing board members to attend from any location and more easily manage other responsibilities that may conflict with meetings. Additionally, hybrid meetings and sharing recordings of meetings are also opportunities to provide greater public access to meetings, deliberations, and decision making.

Consider Providing Stipends

Participation on a land use board often requires the time and expertise of a part-time job. For those who are working, those working more than one job, those who would have to pay for childcare, those who lack transportation options, and those facing other economic barriers to participation, a stipend could make the difference between participating or not. Offering a stipend can expand the universe of residents who can sit on land use boards.

ON & TRAINING

equips board members with the knowledge, skills and tools necessary to make well-informed decisions that align with community objectives and legal frameworks. With a clear understanding of board member roles and responsibilities, land use, zoning and housing laws, planning principles, environmental consequences, and public engagement methodologies, board members can more effectively assess development proposals, resolve conflicts, and promote sustainable growth. This also mitigates legal risks by ensuring compliance with statutory requirements and comprehensive plans. Ultimately, land use education empowers land use board members to serve more effectively, fostering transparent and well-informed governance within communities. Specifically, local communities should consider the following:

Complete Required Training in Year One

In Connecticut, land use board members are required to participate in four hours of training every four years. Communities should ensure that all newly elected or appointed land use board members complete the required four hours of training within their first year of service.

Promote Continued Land Use Education

The required training should be considered a minimum, not a maximum, and communities should encourage and incentivize land use board members to not only participate in training to meet the stated requirement, but to approach education and training as an integral part of their participation on their local land use board.

Monitor for Additional Training Opportunities

Communities should consider monitoring for and informing their land use board members of relevant available training opportunities.

Pay for Additional Training & Incidentals

Communities should consider paying for the cost of training and related incidentals (such as childcare and parking), and potentially providing compensation for the time commitment required to participate in trainings.

Provide Meeting Facilitation Training for Land Use Board Chairs

Communities should consider providing facilitation training to land use board chairs to ensure meetings are effective.

Conclusion

The democratic process is the foundation of American civic life. Making sure that, to the greatest extent possible, all citizens have an equal opportunity to participate is essential to

To ensure that more residents have the opportunity to participate on their local land use boards, relevant stakeholders should work to address existing challenges to participation. This includes increasing public awareness about land use boards and vacancies, clarifying election and appointment processes, and proactively expanding access to more residents.

Additionally, municipalities should provide support and resources, like efficiency audits, role outlines, childcare, hybrid meeting options, and training opportunities on land use and zoning issues to those who volunteer their time serving on these boards to ensure that the land use boards are representative of the communities and regions they serve and that members have the information they need to make well informed decisions.

Appendices

APPENDIX A: ELECTED AND APPOINTED LAND USE BOARDS

Fairfield County

Municipality	P&Z Commission, or Planning Commission & Zoning Commission where not combined	Zoning Board of Appeals
Bethel	Elected	Elected
Bridgeport	Appointed	Appointed
Brookfield	Elected	Elected
Danbury	Elected	Appointed
Darien	Elected	Appointed
Easton	Appointed	Elected (Alternates Appointed)
Fairfield	Elected	Elected
Greenwich	Appointed	Appointed
Monroe	Elected	Appointed
New Canaan	Appointed	Appointed
New Fairfield	Elected	Elected
Newtown	Elected	Elected

	mmission, or Planning Commission & Zoning Commission where not combined	Zoning Board of Appeals
Norwalk	Appointed	Appointed
Redding	Elected	Elected
Ridgfield	Elected	Elected
Shelton	Elected	Appointed
Sherman	Elected	Elected (Alternates Appointed)
Stamford	Appointed	Appointed
Stratford	Elected (Alternates Appointed)	Elected (Alternates Appointed)
Trumbull	Elected	Elected
Weston	Elected	Elected
Wesport	Elected	Elected
Wilton	Elected	Elected

New London County

Municipality	Planning, Zoning, or Planning & Zoning Commission	Zoning Board of Appeals
Bozrah	Appointed	Elected
Colchester	Appointed	Appointed
East Lyme	Elected	Appointed
Franklin	Elected	Elected
Griswold	Elected	Elected
Groton City	Appointed	Appointed
Groton Town	Appointed	Appointed
Lebanon	Elected	Elected
Ledyard	Appointed	Appointed
Lisbon	Elected	Elected
Lyme	Elected	Elected
Montville	Appointed	Appointed

	anning, Zoning, or Planning & Zoning Commission	Zoning Board of Appeals
New London	Appointed	Appointed
North Stonington	Elected	Elected
Norwich	Appointed	Appointed
Old Lyme	Elected	Elected
Preston	Elected	Elected
Salem	Elected	Elected
Sprague	Elected	Appointed
Stonington	Appointed	Appointed
Voluntown	Elected	Elected
Waterford	Appointed	Elected

APPENDIX B: DATA COLLECTION METHODOLOGY

This report includes an analysis of the demographic composition of Planning Commissions, Zoning Commissions, Planning & Zoning Commissions, and Zoning Boards of Appeal in Fairfield County and New London County, collectively referred to herein as "land use boards."

How we identified the demographic composition of land use boards

Our approach was to send a survey to every municipality in Fairfield and New London Counties, requesting the following information for each board (Planning & Zoning Commission, or Planning Commission and Zoning Commission; and Zoning Board of Appeals) and each member member and alternate member serving on the land use boards-

Fairfield County

Board information requested-

- Elected or appointed
- Seats filled
- Seats vacant

Board member information requested-

- First/last name of the commissioner
- Commissioner's position on board

gender

- Commissioner's age/age range
- Commissioner's race/ethnicity (multiple choice)
- Commissioner's profession
- When commissioner's current term began
- When commissioner's current term will end
- Has the commissioner's term expired but they continue to serve? (multiple choice)
- Does the commissioner own or rent their home? (multiple choice)

New London County

Member Self Survey-

- First/Last Name
- Town or Village serving
- Year began serving
- Race and Gender
- Ethnicity
- Whether Own or Rent
- Profession
- Email

Direct Outreach to Town Clerks-

- Confirm number of seats
- Confirm vacancies
- Confirm, where possible, members serving on expired terms

In Fairfield County, surveys were sent to all municipalities via email with Housing Collective staff reaching out directly to staff in each municipality to encourage participation. Follow up emails were sent out three weeks after the initial survey distribution to encourage participation. 43% of municipalities in Fairfield County completed the survey.

In New London County, surveys were sent to decision makers and to town planners for distribution to and self reporting by commissioners. 55 respondents in New London County self reported demographic information. Follow up telephone calls and emails were sent during a two month period to gather additional information.

Housing Collective staff filled in survey data gaps in both counties through public database research. Resources utilized included municipal webpages and town charters, CT Secretary

errecords.com, municipal property records, LinkedIn, Facebook, board and commission meeting recordings, and name searches. Telephone conversations with municipal staff were also conducted to confirm survey data.

APPENDIX C: LAND USE BOARDS SURVERYED

Fairfield County

Municipality	Planning & Zoning Commission	Planning Commission	Zoning Commission	Zoning Board of Appeals
Bethel	x			x
Bridgeport	x			x
Brookfield		x	x	x
Danbury		x	x	x
Darien	x			x
Easton	x			x
Fairfield	x			x
Greenwich	x			x
Monroe	x			x
New Canaan	x			x
New Fairfield		x	x	x
Newton	x			x
Norwalk	x			x
Redding		x	x	x
Ridgfield	x			x
Shelton	x			x
Sherman	x			x
Stamford		x	x	x
Stratford		x	x	x
Trumbull	x			x
Weston	x			x
Wesport	x			x

	g & Zoning Commission	Planning Commission	Zoning Commission	Zoning Board of Appeals
Wilton	x			x

New London County

Municipality	Planning & Zoning Commission	Planning Commission	Zoning Commission	Zoning Board of Appeals
Bozrah	x			x
Colchester	x			x
East Lyme		x	x	x
Franklin	x			x
Griswold	x			x
Groton City	x			x
Groton Town	x			x
Lebanon	x			x
Ledyard	x			x
Lisbon	x			x
Lyme	x			x
Montville	x			x
New London	x			x
North Stonington	x			x
Norwich				x
Old Lyme		x	x	x
Preston	x			x
Salem	x			x
Sprague	x			x
Stonington	x			x
Voluntown	x			x

	ning & Zoning Commission	Planning Commission	Zoning Commission	Zoning Board of Appeals
Waterford	x			x

Initiative	**Centers for Housing Opportunity**
Topic	**Housing Affordability; Land Use; Zoning**
Region	**Eastern CT; Fairfield County, CT**
Authors	**Melissa Kaplan-Macey, Beth Sabilia, Lynn Haig, Emma Heintz, Mark McNulty, Nicole McCormack; Additional contributions and data collection by Ron Flores, Connecticut College Professor of Sociology, and interns Mahika Ahmed, Tiana Brathwaite, Annika Brown, Joshua Caskey, Ava Gebhart, and Kiersten Posey**

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RESEARCH

Eastern Connecticut 2025 Impact Report

Initiative	**Center for Housing Opportunity Eastern Connecticut**
Topic	**Housing Affordability; Capacity Building; Collective Impact**



RESEARCH

Initiative	**Fairfield County Center for Housing Opportunity**
Topic	**Housing Affordability; Capacity Building; Collective Impact**

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File #: 25-1965 **Agenda Date:** 9/11/2025 **Agenda #:** B.

LAND USE APPLICATION

Subject/Application:
PZ#25-4SITE - 8, 9 & 11 Colby Drive (Parcel IDS: 68-520-8, 68-520-9, 68-520-11); Colby Drive (Parcel ID: 68/530/680); and 16 Highview Terrace (Easement Only) (Parcel ID: 68/960/16), Ledyard, CT, - Applicant/Agent, Norm Eccleston - Owner, Habitat for Humanity of Eastern CT for approval of regulated activities for construction of 27 one and two family structures for 38 dwelling units and associated site improvements, inc. completion of Colby Drive, inc. utilities, drainage structures, and detention pond. (Submitted 5/20/2025, Date of Receipt 6/12/25, Tabled to 7/10/25 & 8/14/25, Orig. DRD 8/16/25, Tabled to 9/11/25 w 26-day Ext. Time, New DRD 9/11/25).

Background:
(type text here)

Land Use Director/Town Planner:
(type text here)

FD#1

RECEIVED
MAY 27 2025
Land Use Department

TOWN OF LEDYARD

APPLICATION FOR PLANNING & ZONING COMMISSION REVIEW

Application Number PZ#25-4SITE Submission Date 5/20/25 Official Receipt Date 6/12/25

FEE: $360 DATE PAID 5/20/25 RECEIPT # 575060

==========

Applicant/Agent Norm Eccleston, Habitat for Humanity
(Please Print Legibly)

Signature: Norm Eccleston

Address: 377 Broad Street, New London, CT 06320 Telephone 860-232-0762

E-Mail Address: constructionservices@habitatect.org

Owner Name (if different): Habitat for Humanity

Address of Owner: 377 Broad Street, New London, CT 06320 Telephone 860-232-0762

Location of Work (Street Address) 8, 9, and 11 Colby Drive

Tax Assessor's Map. 68 Block 520 Lot 8, 9, 11 Zone MFDD

Is this property within 500 feet of another municipality? Y ○ N ◉ CAM Zone Y ○ N ◉

Existing Use Undeveloped, heavily wooded CAM Exempt Y ◉ N ○

☐ Special Permit ☑ Site Plan Review ☐ Regulation Change ☐ Zone Map Change

☐ CAM Review ☐ Other:

Details:

Construction of a multi-family residential affordable housing development per C.G.S. §8-30g for 16 single-family dwellings and 11 duplex dwellings and associated site improvements, including the extension of Colby Drive.

Stormwater Management Report

Habitat For Humanity Residential Development

8, 9, and 11 Colby Drive, Ledyard CT



Prepared For:

Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

Prepared By:

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Issued:

December 2024
Revised March 2025

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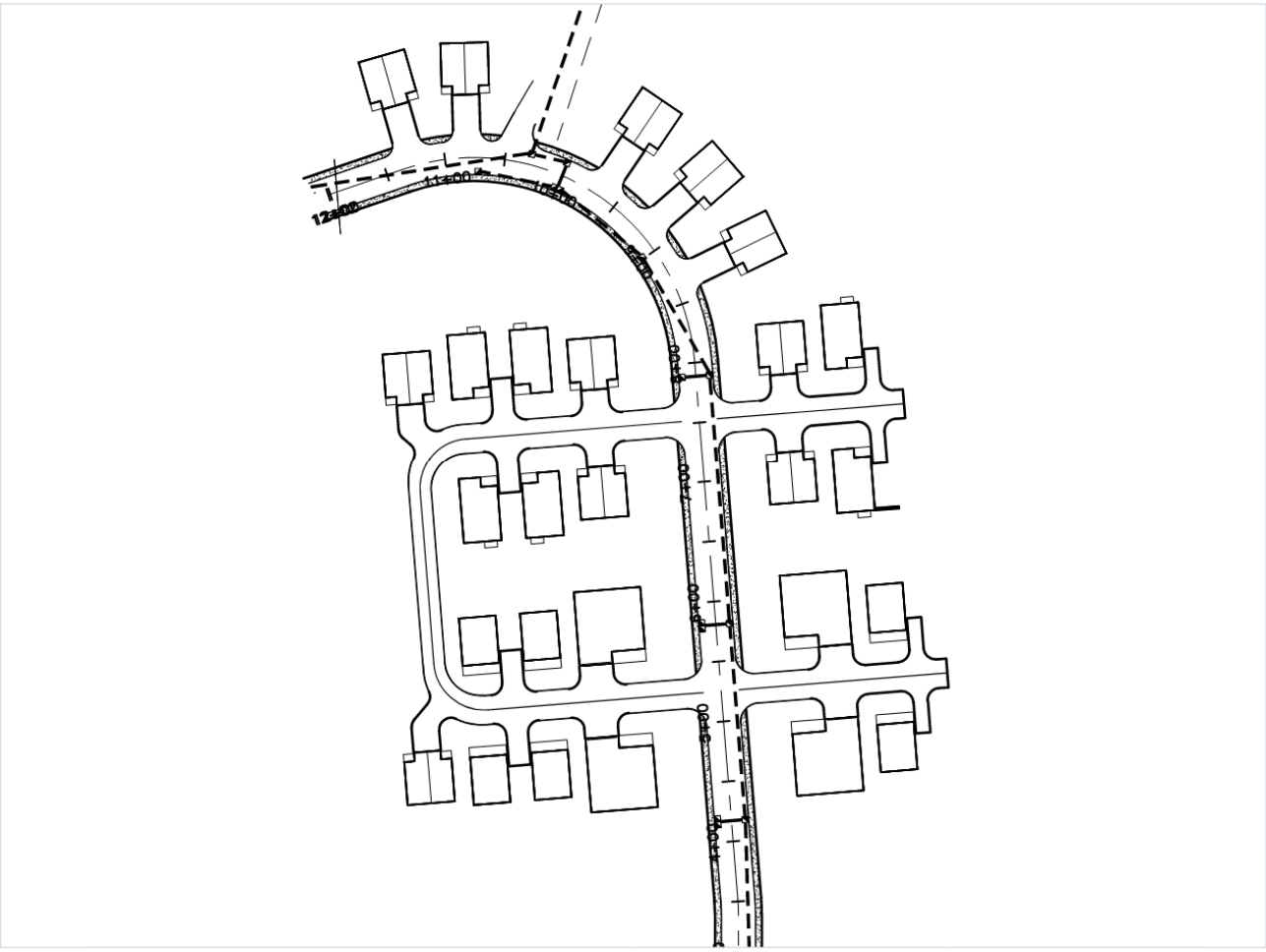
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PROPOSED RESIDENTIAL DEVELOPMENT

(Schematic Layout)

8, 9, and 11 Colby Drive

Ledyard, CT 06339

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1 INTRODUCTION

1.1 General Information

The subject parcels addressed 8, 9, and 11 Colby Drive, Ledyard, CT consist of approximately 15.71 acres and are located at the end of Colby drive, where it curves and extends down to Colonel Ledyard Highway. It is situated in the MFDD (Multi Family Development District) Zone and the subject parcels are denoted as and owned by:

- 8 Colby Drive – Book 560 / Page 433 G - Habitat for Humanity of Eastern CT Inc.
- 9 Colby Drive – Book 560 / Page 436 G - Habitat for Humanity of Eastern CT Inc.
- 11 Colby Drive – Book 560 / Page 436 G - Habitat for Humanity of Eastern CT Inc.

The project proposes the development of the existing parcels along with a full roadway construction to town standards. The proposed development will consist of twenty-seven (27) housing structures and the following site features:

- New Bituminous Pavement and Curbing
- New Concrete Walks
- Utilities and Storm Drainage system. (including detention)
- Revised Site Landscaping
- Single and Multi-Family Residential Buildings

The existing site is comprised of approximately 15.7 acres that is predominately wooded. This site has been the subject of multiple, various, applications over the past 40 – 50 years, all of which included the completion of a town road extending from the Colby Drive cul-de-sac through the site and connecting to Colonel Ledyard Highway. The natural low spot of the site is the northwestern portion, which is comprised of a large wetlands system. Based on discussions with town staff, it is our understanding that this wetlands system was utilized to provide stormwater management in the 1980s through the following construction:

- Construction of an earthen berm along the northern boundary line created a defined volume.
- A concrete outlet control structure, with a large RCP outlet pipe was placed to regulate flow out of the pond.
- The RCP pipe discharges to the property to the north (16 Highview Terrace). A stream has formed at this outlet pipe, and it runs south to north through the property. It appears a drainage easement was designed as part of a previous plan set, but the easement may have never been formalized and filed on the town land records.

This stormwater management system was designed to manage flow from the Colby Drive cul-de-sac development, as well as a previously approved development for the subject property (8, 9 and 11 Colby Drive). The flows from the subject property were assumed to be generated by a 24' wide paved road

extension (between the cul-de-sac and Colonel Ledyard Highway) and several commercial buildings. Therefore, the increased flows that truly need to be accounted for, for the proposed development, would only be the increased imperviousness from the previously approved commercial development and the proposed multi-family residential development.

However, the detention basin was never formally accepted by the Town. Therefore, in coordination with the Town staff, we have designed our proposed stormwater management with the following assumptions:

- The "existing" conditions consist of the current conditions (selectively cleared ROW and gravel drive) and NOT a 24' wide paved roadway with several commercial buildings. This resulted in the existing peak flows, as generated by our hydrologic model, being significantly lower than we could perhaps take credit for. This forced us to design the proposed conditions to a much high level of detention than would've otherwise been required.
- We surveyed the basin area and compared the contours to the existing topography, as shown on a map from approximately 1990. It is our opinion that this comparison indicates the elevations and shape of the detention basin under current conditions is substantially in conformance with the original design in the 1980s. We inspected the basin, and it is also our opinion that the facilities (berm, piping, outlet structure, etc.) are functioning as intended. We are providing several maintenance items in Section 2.3 of the report, which are to be expected after approximately 50 years, but the facility appears to be working as designed. Also, we have no knowledge of any complaints of flooding directly downstream of this basin.
- We have designed new stormwater management upgradient of the new paved road extension to manage and regulate all increased flows associated with the proposed development. This methodology has been designed to be very conservative, specifically to provide the Town with a level of comfort that the entirety of stormwater management will treat and regulate peak stormwater flow beyond that required by the applicable regulations. Our proposed design assumes that the discharge point of our development is the existing detention basin on the northern portion of the property. We are reducing peak flows from our site, to this basin, under proposed conditions for all the required design storms.

The proposed development includes an additional detention/infiltration basin and French drain to meet the 2024 CT DEEP Stormwater Quality Manual requirements for water quality and provide zero increase in runoff rate. Previously installed structures and pipes will be used if feasible after inspection and verification of suitability,

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Site Location Map

The project was designed utilizing the Town of Ledyard Zoning Regulations, the 2002 Connecticut Department of Transportation (ConnDOT) Drainage Manual for pipe sizing, the latest Connecticut Guidelines for Soil Erosion and Sediment Control, and the latest Connecticut Department of Energy and Environmental (CT DEEP) Water Quality Manual.

1.2 Project Summary

This project proposes to:

- Construct a new roadway for the town of Ledyard
- Construct multiple private driveways
- Construct multiple housing units
- Provide adequate site drainage and water quality.
- Provide ADA accessibility
- Construct utility connections to the buildings and site.

The project will disturb approximately 9.20 acres between the subject parcels and the ROW.

1.3 Existing Site Conditions

1.3.1 Topography

The project site slopes generally from south to north, with flow being directed to wetlands/existing detention basin northeast of the site. The proposed extension of Colby Drive is located within the previously approved right-of-way in approximately the same location. A portion of the drainage was previously constructed and will be inspected and reused to the extent possible. Elevations (NAVD 88) range from approximately 318 ft at the southern property border to 218 located at the northeaster property corner.

1.3.2 Soils

NRCS soils mapping indicates 4 soil types located within the project limits; defined as:

- 47C – Woodbridge Fine Sandy Loam – Hydrologic Soil Group C
- 84B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C
- 85B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C
- 86B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C

Exploratory borings and test pits were completed onsite on October 24, 2024 and November 5, 2024 supervised by Down to Earth Consulting LLC. Groundwater was found to be 5-10.5 ft below the existing grade at ±257 and ±254 (NAVD 88). Infiltration testing was performed using the Falling Head Test. And revealed the pond location can infiltrate at a rate of 0.21in/hr, and a rate of 0.94in/hr at the location of the proposed French Drain.

The locations of Boring and Infiltration tests and results are included in Appendix G.

1.3.3 On-site and Adjacent Waterbody Information

There are wetlands adjacent to this project site. All flow from this site under existing conditions, both sheet flow and concentrated pipe flow, discharges to wetlands. This site is not located within an aquifer protection area, per Ledyard, CT Map (June 2024)

1.3.4 Additional Site Considerations

- The existing stormwater management area has some organic overgrowth (phragmites, and down trees/root balls, etc.).
- The existing RCP discharge pipe into and out of the pond is not equipped with rip rap outlet control.
- The detention pond outlet control is comprised of a concrete block structure with a metal grate on the side (to prevent clogging of the low-flow orifice) and on top (to prevent clogging of the overflow spillway). Although the structure is structurally sound, the metal contains rust and the block mortar is slightly deteriorating in some locations.
- The site is currently undeveloped, except for the roughed in roadway, detention basin and catch basins which were installed for the previously approved roadway.
- A majority of existing soils have limiting exfiltration characteristics.
- The site is not located within a Natural Diversity Database Area, per Ledyard, CT Map, (June 2024)

2 HYDROLOGY

2.1 Methodology

The analysis to determine peak flows generated from the site was prepared using TR-55 procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs. HydroCAD software was utilized to perform hydrologic computations. Rainfall Frequency Estimates for precipitation frequency, based on National Oceanic and Atmospheric Administration (NOAA) data from Colby Drive, Ledyard, CT, were utilized to generate the flows. The following 24-hour, precipitation estimates were utilized:

2-Year	3.46 inches
10-Year	5.11 inches
25-Year	6.15 inches
50-Year	6.92 inches
100-Year	7.74 inches

Design Storm Type: NOAA, 24-hour Type D

Project Type: New Construction

2.2 Existing Conditions

2.2.1 Watershed Boundaries and Design Points.

Drainage from the existing site is contained within one (1) watershed for analysis.

- **Watershed E1 (To Wetlands):** This watershed consists of the entirety of the existing site. There is a previously graded, but unconstructed roadway designed directly through the middle of the site. The roadway was analyzed as constructed, along with the water which comes down the hill from outside the property onto the site. The majority of the existing site is a heavily wooded area, with some impervious cover. All flow from this watershed discharges through the existing detention pond to the wetlands or directly to the wetlands located northeast of the project site.

  Existing Watershed Data (Existing Cover Characteristics, Existing Watershed Area Map, and Hydrologic Computations) have been included in Appendix A.

2.3 Proposed Conditions

2.3.1 Watershed Boundaries and Design Points

This project proposes to provide stormwater management in the form of a detention pond. Peak flow reduction is achieved using an outlet control structure to control stormwater discharge from the pond. The elevation of the bottom orifice and pond size have been calculated to meet the water quality requirement for the entire site. Drainage from the proposed site consists of four (4) subwatersheds for analysis.

- **Watershed 1:** This watershed has been further divided into subwatersheds for further analysis

    - **Watershed P1-1 (Direct to Wetlands):** This watershed consists of the area along the Eastern and northern borders on the downslope of the roadway, including a portion of the roadway, and a minor section of the slope from the pond. There is impervious cover from thirteen (13) Single and multi-family residential buildings, two (2) private drives and a portion of the proposed Colby Drive extension. There is proposed grass around all areas in this watershed which have been designed to be disturbed and regraded.

- **Watershed P1-2 (To Detention Pond):** The majority of Colby Drive is within this watershed. Along with Colby Drive, there is a proposed private drive loop, fourteen (14) proposed residential buildings and, pavement from offsite which sheet flows downhill from the west, to make up the proposed impervious cover of this watershed. The proposed detention pond and all disturbed areas around the proposed residential buildings make up the grass cover for this watershed. There is woodland offsite to the west which remains undisturbed and remains the same condition as existing.
- **Watershed P1-2A (To French Drain):** The majority of this watershed is undisturbed wooded area, there is a small area in the north of the watershed, where the French Drain is proposed, which will be disturbed and replaced with grass. Test pits in the area showed an infiltration rate of 0.94 in/hour within the French drain. Minimal water will infiltrate and the majority will be collected by a catch basin at the end of the French Drain and pipe flow to the detention pond.
- **Watershed P1-3 (Bypass to Wetlands):** This watershed consists of a small area on the western portion of the site, less than an acre, of offsite flow which is collected by a singular catch basin to then be directed offsite to the wetlands. There is impervious cover within this watershed, which consists of offsite paved area. The remaining offsite area is undisturbed woodland. A small portion of the eastern watershed boundary will consist of grass cover type.

Proposed Watershed Data (Proposed Cover Characteristics, Proposed Watershed Area Map, and Hydrologic Computations) have been included in Appendix B.

2.3.2 Existing Detention Basin Renovations

Based upon our site walk, following are the proposed renovations to the existing stormwater detention basin:

- Selectively remove the phragmite stand, as well as downed trees, stump and associated root balls in the area adjacent the pond inlet pipe.
- Place rip rap outlet control at the end of the existing RCP discharging into and out of the detention pond. The rip rap has been sized per ConnDOT criteria and the computations are shown in Appendix H.
- Remove the rust off the outlet control structure metal grates and remove the moss off the concrete block portion of the structure.
- Parge the interior portion of the concrete block structure to address the slight deterioration of existing mortar.

2.4 Compliance with Performance Criteria

2.4.1 Compliance with Local Criteria

This project has been designed per the Town of Ledyard's Stormwater Management Regulations.

2.4.2 Compliance with Connecticut Stormwater Quality Manual

2.4.2.1 Standard 1 – Runoff Volume Reduction

The method of analysis for this stormwater management system is providing site specific peak runoff volume reduction for the 2, 10, 25, 50, or 100-year Type NOAA, 24-hr Type D storm.

Low impact development practices have been implemented throughout this stormwater management design utilizing a series of treatment practices to remove temporarily suspended solids from the discharge location. Under existing conditions there are multiple catch basins and double catch basins, none of which receive significant flow as they have been set to the proposed elevation of the previously approved roadway and grading has only been performed to subgrade.

For the proposed detention pond, infiltration testing revealed an infiltration rate of 0.21in/hr. For the proposed French drain, infiltration testing revealed an infiltration rate of 0.94 in/hr. The French Drain has been modeled as a narrow but long infiltration basin to accommodate offsite flow.

Water quality volume calculations are provided in Appendix D.

Peak Flow Comparison

Peak flows at the off-site analysis point are as follows:

Proposed Watershed Hydrologic Characteristics Colby Drive Ledyard, CT Project # 0725-500010.00			
Comparison of Existing to Proposed Peak Flow Rate			
Watershed	**Storm Event (NOAA Type D)**	**Existing Flow (cfs)**	**Proposed Flow (cfs)**
To Wetlands	**2-year**	13.95	8.01
	10-year	28.75	23.42
	25-year	39.05	32.57
	50-year	46.80	40.89
	100-year	55.16	49.44

Conclusion, total site peak flows will be reduced under proposed conditions for all design storms.

2.4.2.2 Standard 2 – Stormwater Runoff Quantity Control

See Peak Flow Comparison above.

3 HYDRAULICS

The intent of the hydraulic analysis is to ensure that proposed on-site drainage facilities are designed to accommodate and safely convey runoff produced up to and including the 25-year storm event.

3.1 Compliance with Performance Criteria

The site has been designed with a series of structural drainage facilities, including twenty (20) catch basins, three (3) double catch basins, four (4) concrete area drains, (1) French Drain, three (3) manholes, one (1) detention pond, three (3) flared end structures, one (1) outlet control structure and one (1) emergency overflow. This drainage system has been designed to remove stormwater from driving surfaces and divert it to the proposed detention pond, or directly to the wetlands.

3.1.1 Compliance with Local Criteria

The proposed storm sewer system has been designed in compliance with Town of Ledyard Drainage Regulations.

3.1.2 Compliance with State Criteria

The proposed storm sewer system has been designed in compliance with the State of Connecticut's drainage regulations per the 2002 ConnDOT Drainage Manual. (as amended)

Computations for the hydraulic analysis can be viewed in Appendix C.

4 WATER QUALITY

4.1 Methodology

The project has been designed to address both short-term and long-term stormwater quality. Short term (during construction) water quality has been provided in the form of erosion control measures and long-term (post construction) water quality has been provided through the use of primary and secondary treatment practices. Erosion control has been designed per the latest Connecticut Erosion Control Guidelines and long-term stormwater quality has been designed per the latest CT DEEP Stormwater Quality Manual.

4.2 Compliance with Performance Criteria

4.2.1 Compliance with Local Criteria

The proposed stormwater management system is designed to provide water quality volume for the entirety of the proposed development and treat the 1.3" storm as required by the 2024 CT DEEP Stormwater Quality Manual.

4.2.2 Compliance with Connecticut Stormwater Quality Manual

4.2.2.1 Standard 1 – Pollutant Reduction

Long Term Stormwater Quality

The project was designed with guidance from the latest Connecticut Stormwater Quality Manual.

The site was designed to divert all surface stormwater to the proposed detention basin, where floatables, debris and other pollutants will be filtered out of the water prior to discharge to the onsite wetlands. The detention pond is designed to provide 100% of the required water quality volume.

Computations for Water Quality can be viewed in Appendix D.

5 SOIL EROSION AND SEDIMENT CONTROL

5.1 Methodology

The proposed soil erosion and sediment controls have been designed in accordance with local regulations, the Connecticut Guidelines for Soil Erosion and Sediment Control, and the requirements of the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, as applicable. The proposed design considers the specific site characteristics of the site and anticipated construction activities. See the plan set for location and design of proposed short term soil erosion and sediment control measures to be used throughout construction.

Short Term Erosion Control

The proposed erosion and sedimentation controls consider the specific characteristics of the site and the anticipated construction activities. They have been designed in accordance with the latest CT DEEP Guidelines for Soil Erosion and Sediment Control.

Construction Entrances

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Erosion Control Barriers

Prior to any construction activity, hay bales, silt fence, or combination hay bale/silt fence barriers will be placed at the downgradient limits of construction and adjacent to the wetlands. Throughout construction, additional barriers will be installed as necessary at the toe of slopes equal to or in excess of 15 feet. These barriers will be inspected once every seven calendar days

and within 24 hours after every rainfall generating a discharge and replaced as necessary. Collected silt will be removed when one-half the barrier height is reached.

Temporary Seeding

Temporary Seeding will be utilized on portions where the phasing and sequencing require an initial disturbance followed by an extended period of inactivity that is greater than 30 days but less than 1 year. Temporary seeding will be conducted within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

Soil Stabilization- Mulches

Structural (non-living) soil stabilization will be utilized to protect the soil surface on a temporary basis without the intention of promoting plant growth. When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, disturbed areas will be stabilized within 7 days of the suspension of grading through the use of mulch, non-bituminous tackifiers, erosion control netting, or other approved materials appropriate for use as a temporary soil protector. For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use temporary seeding, seeding-type mulch (hay, straw, or cellulose fiber) or when slopes are less than 3:1, wood chips, bark chips or shredded bark.

Temporary Filter Inserts

Temporary Filter Inserts will be placed in each existing catch basin and yard drains prior to the start of construction, and in each new catch basin or yard drain during construction. These devices will be removed upon final site stabilization. Filter inserts will be inspected once every seven (7) calendar days and within 24 hours after every rainfall generating a discharge. Replacement of the inserts will be as often as necessary to maintain function of the drainage structure and prevent excessive ponding due to clogged fabric. Ripped or otherwise damaged inserts will be replaced immediately.

Stockpile Management

The topsoil stockpiles which will be idle for at least 30 days will be stabilized with temporary seed and mulch no later than 7 days from the last use. Small stockpiles may be covered with impervious tarps or erosion control matting in lieu of seeding and mulching.

A geotextile silt fence or hay bale barrier will be installed around the stockpile area approximately 10 feet from the proposed toe of the slope.

6 OPERATION AND MAINTENANCE

6.1 Inspection Frequency and Criteria

Maintenance and operation will be provided as follows.

During Construction

- **Dust Control:** Moisten disturbed soil areas with water periodically, or use a non-asphaltic soil tacifier to minimize dust.
- **Temporary Soil Protection:** Inspect seeded areas weekly and within 24 hours after a storm generating a discharge.
- **Catch Basin Filter Inserts:** Inspect the fabric at least once a week and within 24 hours after the end of a storm generating a discharge. Check the fabric for structural soundness (i.e. tears), proper anchoring/alignment within the grate and ability to drain runoff (i.e. percent of clogging by sediment). Remove the sediment every week, or sooner if ponding is excessive. Each time the sediment is removed, replace the section of fabric removed with a new section. Do not remove the sediment and reuse the same section of fabric.
- **Hay Bale/ Silt Fence Barrier:** Inspect the barrier at least once a week and within 24 hours after the end of a storm generating a discharge. For dewatering operations, inspect frequently before, during and after pumping operations. Remove the sediment deposits when the depth reaches one half the barrier's height. Repair or replace a barrier within 24 hours of observed failure. Maintain the barrier until the contributing disturbed area is stabilized.
- **Construction Entrance/Exit Pad:** Maintain the pad in a condition that will prevent tracking and washing of sediment onto paved surfaces. Place additional clean gravel on top of gravel that has become silted, or remove the silted gravel and replace the gravel to the depth removed with clean gravel, as conditions warrant. Remove immediately all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to the construction site shall be cleaned at the end of each day by hand sweeping or sweeper truck.
- **Existing Catch Basins and Sumps:** Inspect the filter baskets as specified above. After final removal of the filter baskets at the end of construction, clean the sump of all silt and debris.
- **New Catch Basins and Sumps:** As new catch basins are constructed, a sediment trap shall be installed in the unit and a sediment barrier installed around the grate. Inspect the

trap and barrier weekly and within 24 hours after a storm generating a discharge. After stabilization of the drainage area entering the catch basin, remove the trap and barrier and clean the basin sump of all silt and debris.

- **Temporary Stockpiles:** Inspect temporary stockpiles at the end of each workday to ensure that tarps are in place and secured. Temporary stockpiles that are expected to be inactive for more than 30 days should be temporarily seeded (see above).

After Construction

- **Driveway Sweeping:** At least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.
- **Catch Basins and Sumps:** Maintenance includes removal of trash from the grate and the sump, as well as sediment from the sump. They shall be inspected semi-annually and cleaned when the sump is one half full of sediment. One of the inspections shall be after the snow and ice removal season is over, and prior to the spring rainfall events. If the sumps is filled more than half-filled with sediment at the semi-annual inspections, they shall be inspected quarterly.
- **Landscaped Areas:** Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.
- **Detention Pond:** Inspect several times during the first few months to ensure that grass cover is established. Inspect the basin semi-annually and after major rain events for the first year, then annually after the first year. Trash should be removed as accumulated. Sediment building up should be removed when it's depth is greater than four (4) inches. Grass should be reseeded if the side slope or bottom exhibit erosion. Grass should be mowed once per month (depending on species) and should be cut to leave at least two (2) inches of height. Mowing should not occur when the ground is soft, to avoid rutting.
- **French Drain:** Inspect for sediment and debris build up on top of stone trench annually, if degradation of function is noticed and overflow flow is not contained within the drain, inspect pipe manually using a snake or camera equipment.

APPENDIX A

Existing Watershed Data

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

47C - WOODBRIDGE FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

E1 - TO WETLANDS
AREA: 13.51 AC
CN: 74
TC: 14.2 MINS

73C - CHARLTON-CHATFIELD COMPLEX
HYDROLOGIC SOIL GROUP: B

86D - PAXTON MONTAUK FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

84B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

COLBY DRIVE

COLONEL LEDYARD HIGHWAY

SCALE: 1" = 50'

Prepared by:
benesch
Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
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Prepared for:
Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

PROJECT NO.: 0725 500010.00
SCALE: 1" = 50'
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

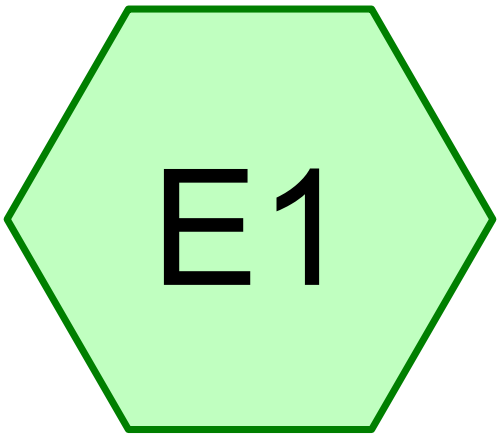
EXISTING WATERSHED AREA MAP

DRAWING NO.:
EWAM

Existing Watershed Cover Characteristics
Colby Drive Ledyard, CT
Project # 0725-500010.00

Watershed	Description	Total Area (AC)	Woods	Gravel	Impervious	CN	Tc (min)
			C	C			
			Good	W - ROW			
			70	89	98		
E1	**To Wetlands**	13.51	11.33	1.38	0.79	74	14.2

* 1.38 acres of gravel accounts for previously approved impervious surface discharge into existing detention basin



To Wetlands

Subcat Reach Pond Link

Routing Diagram for 0725-500010.00 EWAM
Prepared by Alfred Benesch & Company, Printed 5/16/2025
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	NOAA10 24-hr	D	Default	24.00	1	3.46	2
2	10-year	NOAA 24-hr	D	Default	24.00	1	5.11	2
3	25-year	NOAA 24-hr	D	Default	24.00	1	6.15	2
4	50-year	NOAA 24-hr	D	Default	24.00	1	6.92	2
5	100-year	NOAA 24-hr	D	Default	24.00	1	7.74	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.385	89	Gravel roads, HSG C (E1)
0.795	98	Paved parking, HSG C (E1)
11.330	70	Woods, Good, HSG C (E1)
13.510	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
13.510	HSG C	E1
0.000	HSG D	
0.000	Other	
13.510		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.385	0.000	0.000	1.385	Gravel roads	E1
0.000	0.000	0.795	0.000	0.000	0.795	Paved parking	E1
0.000	0.000	11.330	0.000	0.000	11.330	Woods, Good	E1
0.000	**0.000**	**13.510**	**0.000**	**0.000**	**13.510**	**TOTAL AREA**	

Summary for Subcatchment E1: To Wetlands

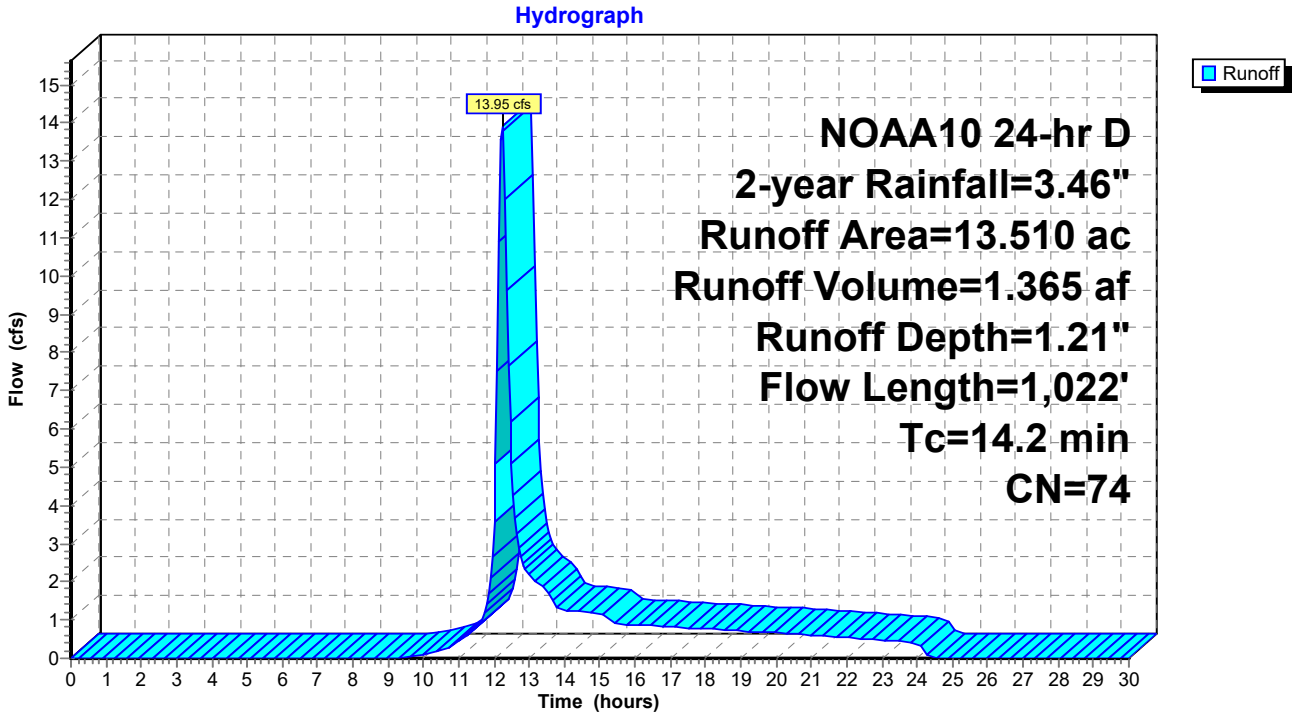
Runoff = 13.95 cfs @ 12.23 hrs, Volume= 1.365 af, Depth= 1.21"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA10 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
11.330	70	Woods, Good, HSG C
0.795	98	Paved parking, HSG C
1.385	89	Gravel roads, HSG C
13.510	74	Weighted Average
12.715		94.12% Pervious Area
0.795		5.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0950	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
1.8	539	0.1000	5.09		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	213	0.0470	4.40		**Shallow Concentrated Flow, Road** Paved Kv= 20.3 fps
0.5	170	0.1350	5.92		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.2	1,022	Total			

Subcatchment E1: To Wetlands



Summary for Subcatchment E1: To Wetlands

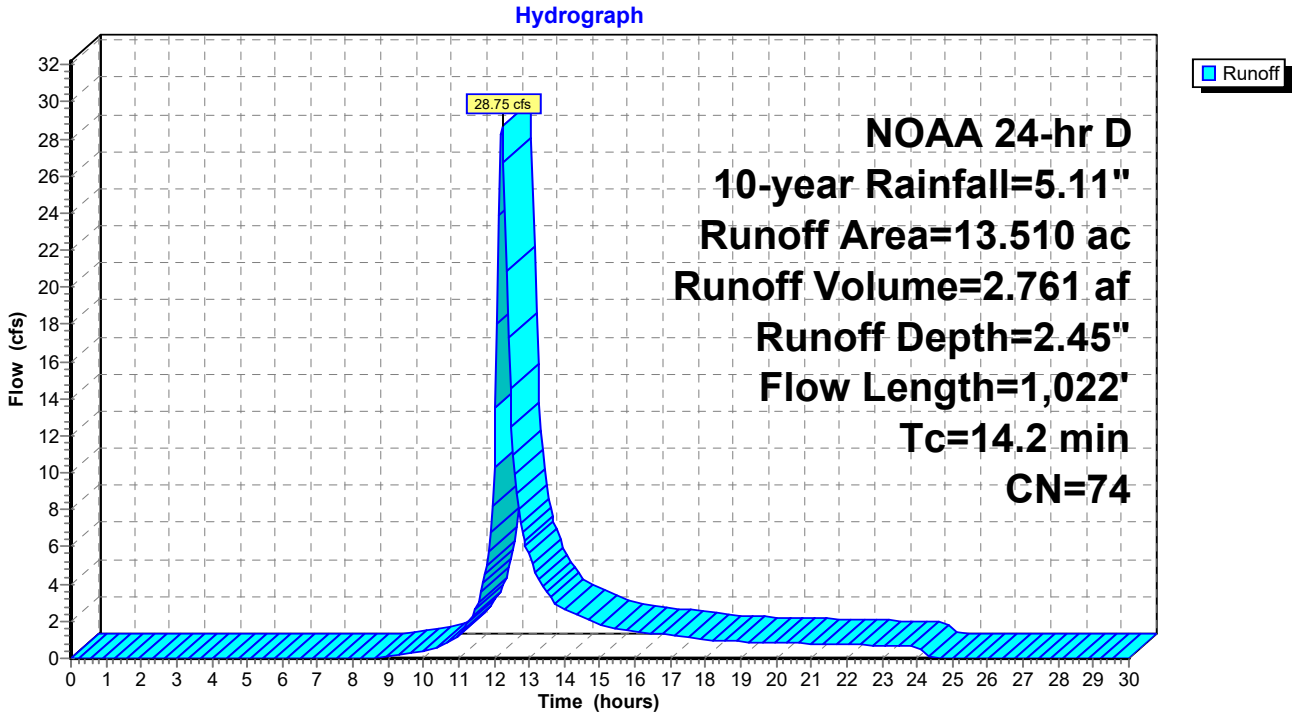
Runoff = 28.75 cfs @ 12.23 hrs, Volume= 2.761 af, Depth= 2.45"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
11.330	70	Woods, Good, HSG C
0.795	98	Paved parking, HSG C
1.385	89	Gravel roads, HSG C
13.510	74	Weighted Average
12.715		94.12% Pervious Area
0.795		5.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0950	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
1.8	539	0.1000	5.09		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	213	0.0470	4.40		**Shallow Concentrated Flow, Road** Paved Kv= 20.3 fps
0.5	170	0.1350	5.92		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.2	1,022	Total			

Subcatchment E1: To Wetlands



Summary for Subcatchment E1: To Wetlands

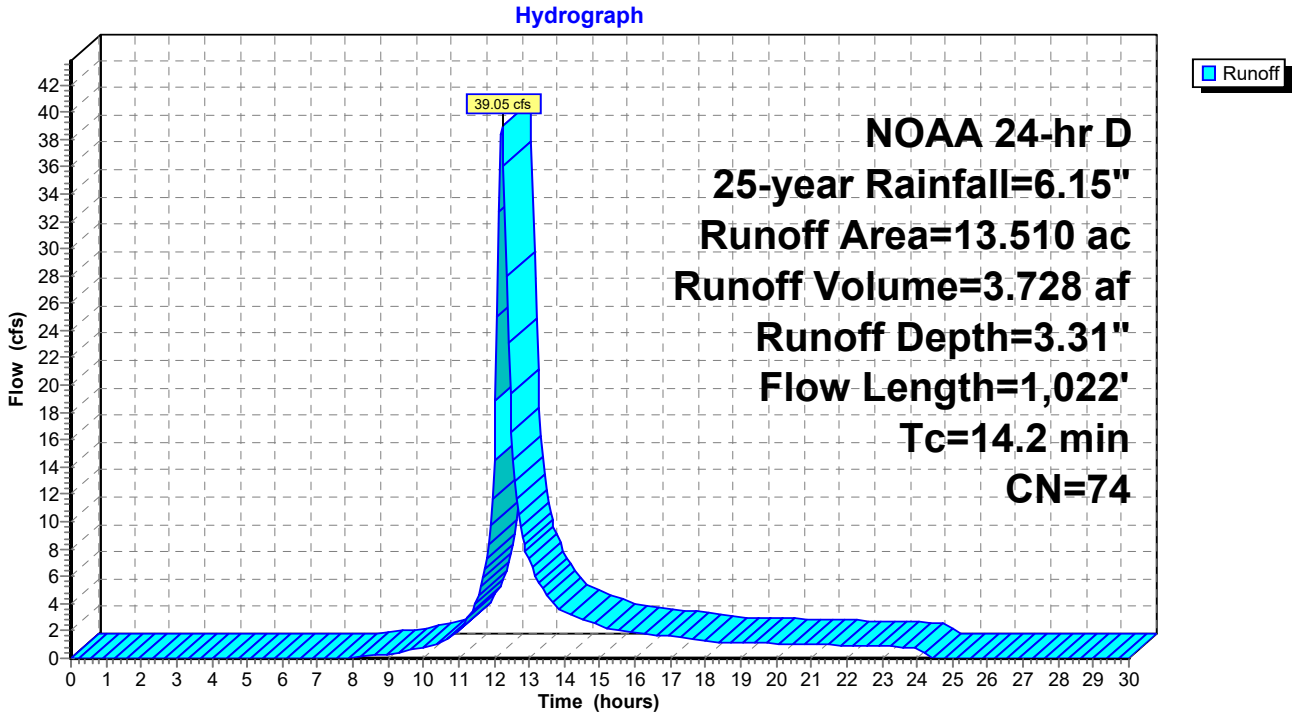
Runoff = 39.05 cfs @ 12.22 hrs, Volume= 3.728 af, Depth= 3.31"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
11.330	70	Woods, Good, HSG C
0.795	98	Paved parking, HSG C
1.385	89	Gravel roads, HSG C
13.510	74	Weighted Average
12.715		94.12% Pervious Area
0.795		5.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0950	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
1.8	539	0.1000	5.09		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	213	0.0470	4.40		**Shallow Concentrated Flow, Road** Paved Kv= 20.3 fps
0.5	170	0.1350	5.92		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.2	1,022	Total			

Subcatchment E1: To Wetlands



Summary for Subcatchment E1: To Wetlands

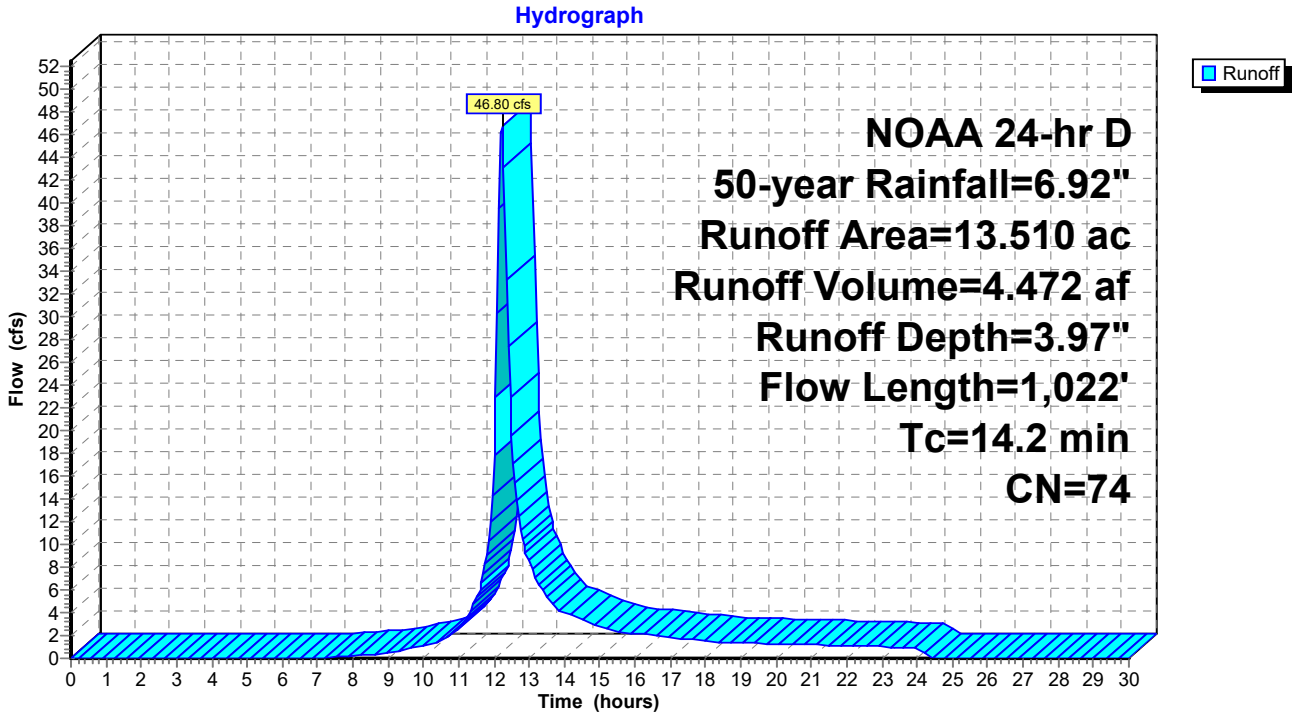
Runoff = 46.80 cfs @ 12.22 hrs, Volume= 4.472 af, Depth= 3.97"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
11.330	70	Woods, Good, HSG C
0.795	98	Paved parking, HSG C
1.385	89	Gravel roads, HSG C
13.510	74	Weighted Average
12.715		94.12% Pervious Area
0.795		5.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0950	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
1.8	539	0.1000	5.09		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	213	0.0470	4.40		**Shallow Concentrated Flow, Road** Paved Kv= 20.3 fps
0.5	170	0.1350	5.92		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.2	1,022	Total			

Subcatchment E1: To Wetlands



Summary for Subcatchment E1: To Wetlands

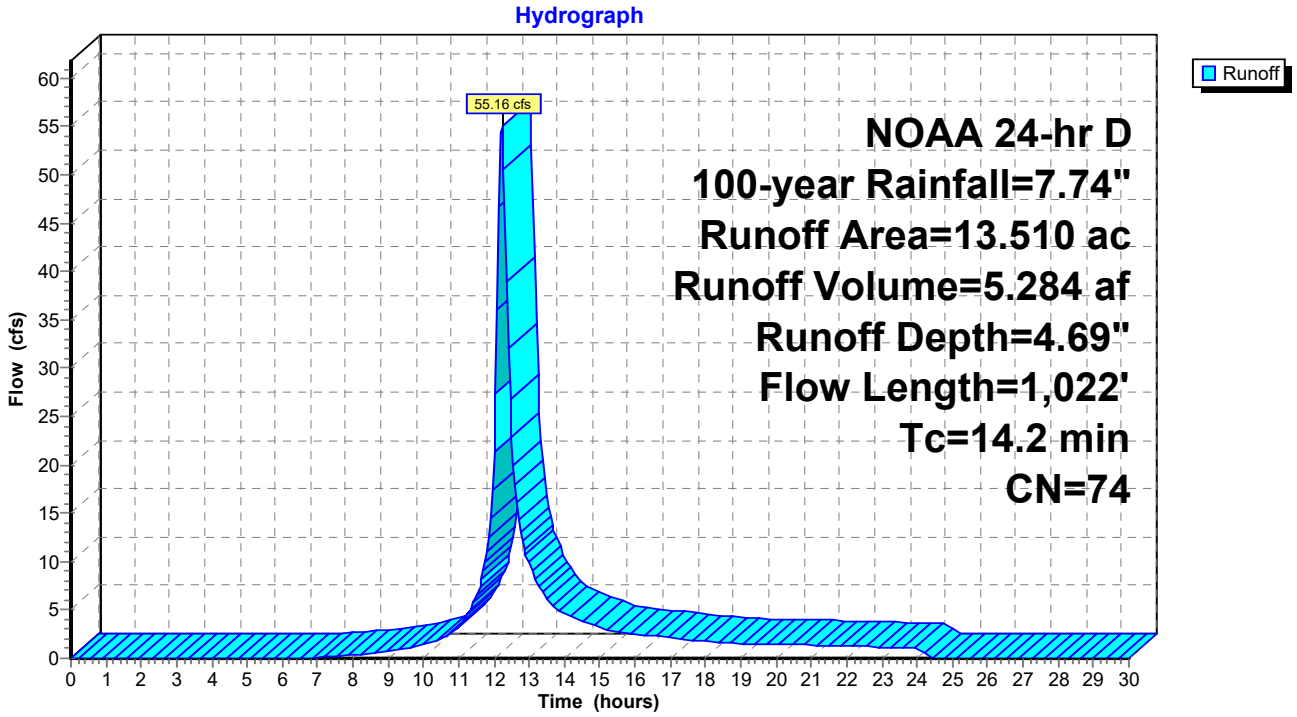
Runoff = 55.16 cfs @ 12.22 hrs, Volume= 5.284 af, Depth= 4.69"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
11.330	70	Woods, Good, HSG C
0.795	98	Paved parking, HSG C
1.385	89	Gravel roads, HSG C
13.510	74	Weighted Average
12.715		94.12% Pervious Area
0.795		5.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0950	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
1.8	539	0.1000	5.09		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	213	0.0470	4.40		**Shallow Concentrated Flow, Road** Paved Kv= 20.3 fps
0.5	170	0.1350	5.92		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
14.2	1,022	Total			

Subcatchment E1: To Wetlands



APPENDIX B

Proposed Watershed Data

47C - WOODBRIDGE FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

73C - CHARLTON-CHATFIELD COMPLEX
HYDROLOGIC SOIL GROUP: B

P1-3 - OFFSITE TO POND
AREA: 0.61 AC
CN: 82
TC: 5 MINS

P1-1 - DIRECT TO WETLANDS
AREA: 5.82 AC
CN: 78
TC: 11.6 MINS

P1-2 - TO DETENTION POND
AREA: 5.75 AC
CN: 82
TC: 12.5 MINS

84B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

P1-2A - TO FRENCH DRAIN
AREA: 1.33 AC
CN: 75
TC: 11.3 MINS

86D - PAXTON AND MONTAUK FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

COLBY DRIVE

COLONEL LEDYARD HIGHWAY

WALTER E. & LAURA MEIERHAP
MAP 68 BLOCK 530 LOT 690
BOOK 596 PAGE 188

N/F
ANDI CILI & VALERIJA MITA
MAP 68 BLOCK 530 LOT 678
BOOK 620 PAGE 264

N/F
VIOLET M. LEWIS TRUST
MAP 68 BLOCK 530 LOT 676
BOOK 633 PAGE 648

0 50' 100'
SCALE: 1" = 50'

Prepared by:

benesch

Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:

Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

PROJECT NO.: 0725 500010.00
SCALE: 1" = 50'
DATE: 12/20/2024

DRAWN BY: CLM
CHECKED BY: WGW

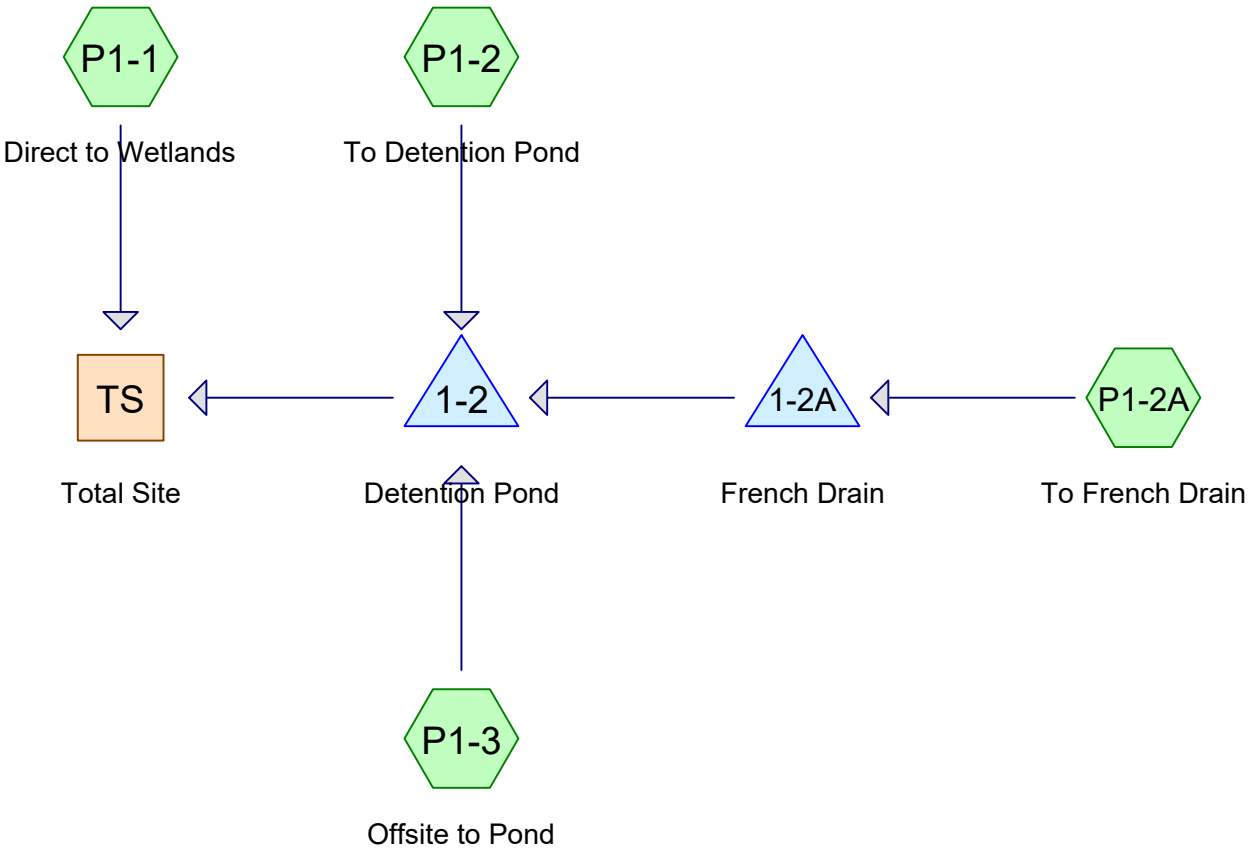
PROPOSED WATERSHED AREA MAP

DRAWING NO.:

PWAM

Proposed Watershed Cover Characteristics
Colby Drive Ledyard, CT
Project # 0725-500010.00

Watershed	Description	Total Area (AC)	Woods	Grass	Impervious	CN	Tc (min)
			C	C			
			Good	good			
			70	74	98		
P1-1	**Direct to Wetlands**	5.82	2.45	1.96	1.42	78	11.6
P1-2	**To Detention Pond**	5.75	1.55	2.06	2.13	82	12.5
P1-3	**Offsite to Pond**	0.61	0.31	0.05	0.25	82	5.0
P1-2A	**To French Drain**	1.33	1.23	0.04	0.06	71	11.3
TS	**Total Site**	13.51	5.55	4.10	3.86	79	



Subcat Reach Pond Link

Routing Diagram for 0725-500010.00 PWAM
Prepared by Alfred Benesch & Company, Printed 5/16/2025
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	NOAA 24-hr	D	Default	24.00	1	3.46	2
2	10-year	NOAA 24-hr	D	Default	24.00	1	5.11	2
3	25-year	NOAA 24-hr	D	Default	24.00	1	6.15	2
4	50-year	NOAA 24-hr	D	Default	24.00	1	6.92	2
5	100-year	NOAA 24-hr	D	Default	24.00	1	7.74	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.110	74	>75% Grass cover, Good, HSG C (P1-1, P1-2, P1-2A, P1-3)
3.860	98	Paved parking, HSG C (P1-1, P1-2, P1-2A, P1-3)
5.540	70	Woods, Good, HSG C (P1-1, P1-2, P1-2A, P1-3)
13.510	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
13.510	HSG C	P1-1, P1-2, P1-2A, P1-3
0.000	HSG D	
0.000	Other	
13.510		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	4.110	0.000	0.000	4.110	>75% Grass cover, Good	P1-1, P1-2, P1-2A, P1-3
0.000	0.000	3.860	0.000	0.000	3.860	Paved parking	P1-1, P1-2, P1-2A, P1-3
0.000	0.000	5.540	0.000	0.000	5.540	Woods, Good	P1-1, P1-2, P1-2A, P1-3
0.000	**0.000**	**13.510**	**0.000**	**0.000**	**13.510**	**TOTAL AREA**	

Summary for Subcatchment P1-1: Direct to Wetlands

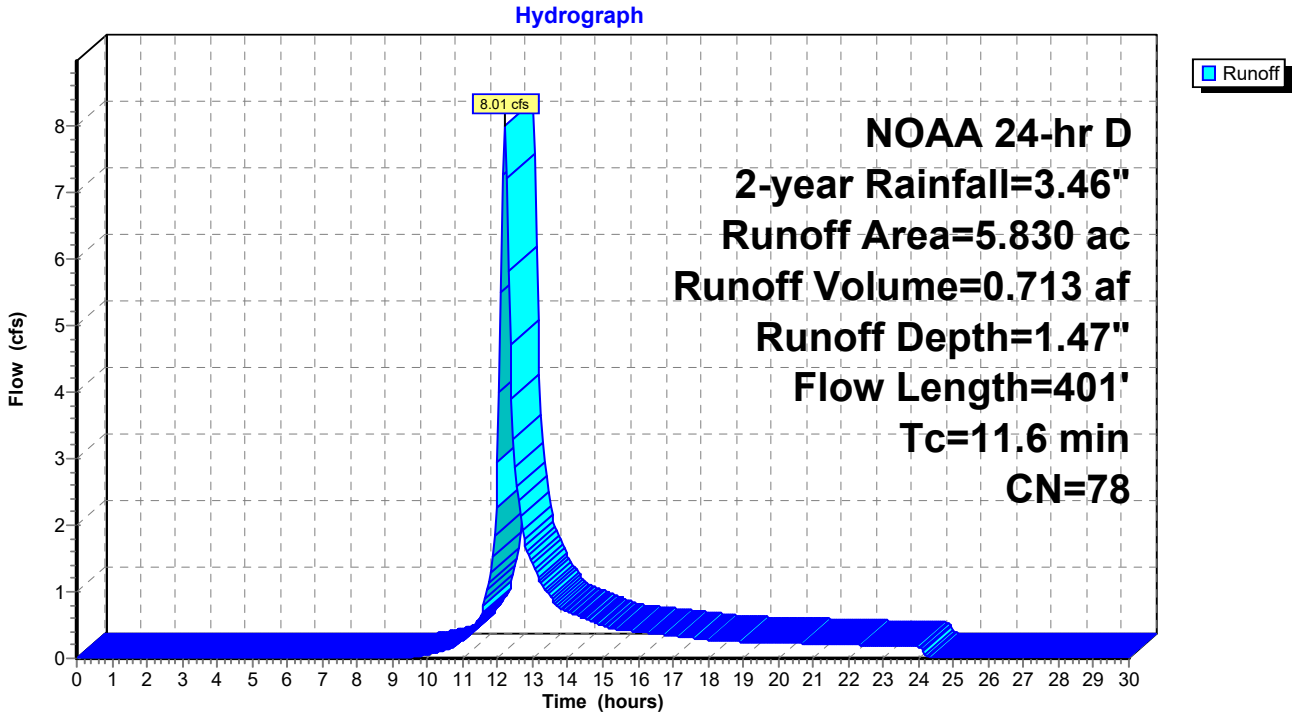
Runoff = 8.01 cfs @ 12.20 hrs, Volume= 0.713 af, Depth= 1.47"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
2.450	70	Woods, Good, HSG C
1.960	74	>75% Grass cover, Good, HSG C
1.420	98	Paved parking, HSG C
5.830	78	Weighted Average
4.410		75.64% Pervious Area
1.420		24.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1740	6.72		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.2030	7.25		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.5	166	0.1330	5.87		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
11.6	401	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

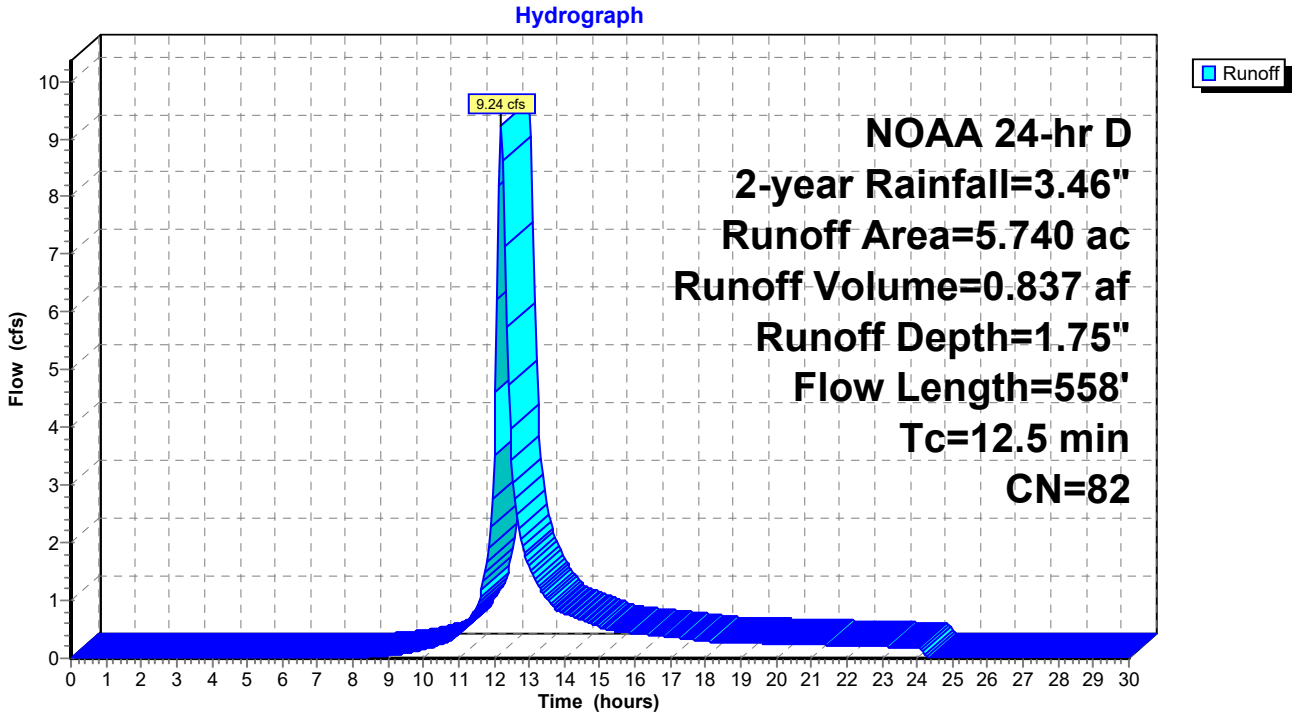
Runoff = 9.24 cfs @ 12.21 hrs, Volume= 0.837 af, Depth= 1.75"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
1.550	70	Woods, Good, HSG C
2.060	74	>75% Grass cover, Good, HSG C
2.130	98	Paved parking, HSG C
5.740	82	Weighted Average
3.610		62.89% Pervious Area
2.130		37.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.7	216	0.0930	4.91		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0310	3.57		**Shallow Concentrated Flow, Gravel** Paved Kv= 20.3 fps
0.1	20	0.1500	6.24		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.1	43	0.2300	7.72		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
12.5	558	Total			

Subcatchment P1-2: To Detention Pond



Summary for Subcatchment P1-2A: To French Drain

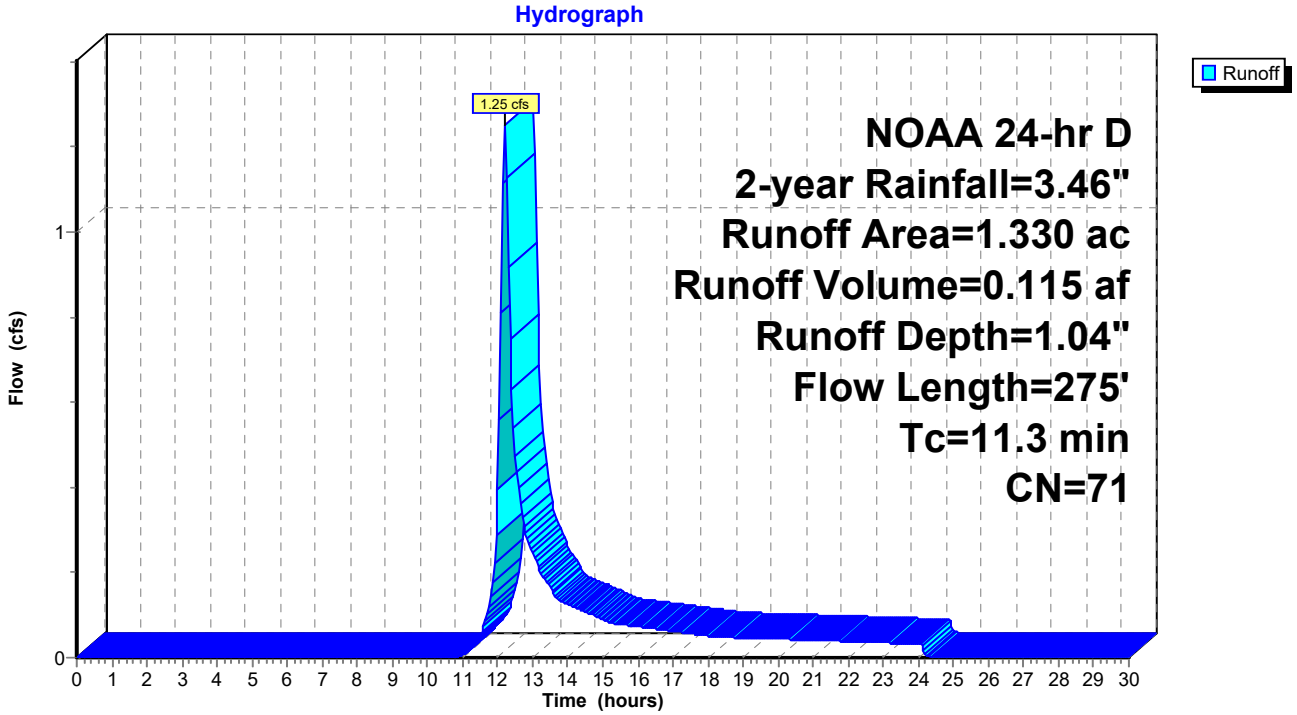
Runoff = 1.25 cfs @ 12.20 hrs, Volume= 0.115 af, Depth= 1.04"
Routed to Pond 1-2A : French Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
1.230	70	Woods, Good, HSG C
0.040	74	>75% Grass cover, Good, HSG C
0.060	98	Paved parking, HSG C
1.330	71	Weighted Average
1.270		95.49% Pervious Area
0.060		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.46"
0.5	175	0.1430	6.09		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
11.3	275	Total			

Subcatchment P1-2A: To French Drain



Summary for Subcatchment P1-3: Offsite to Pond

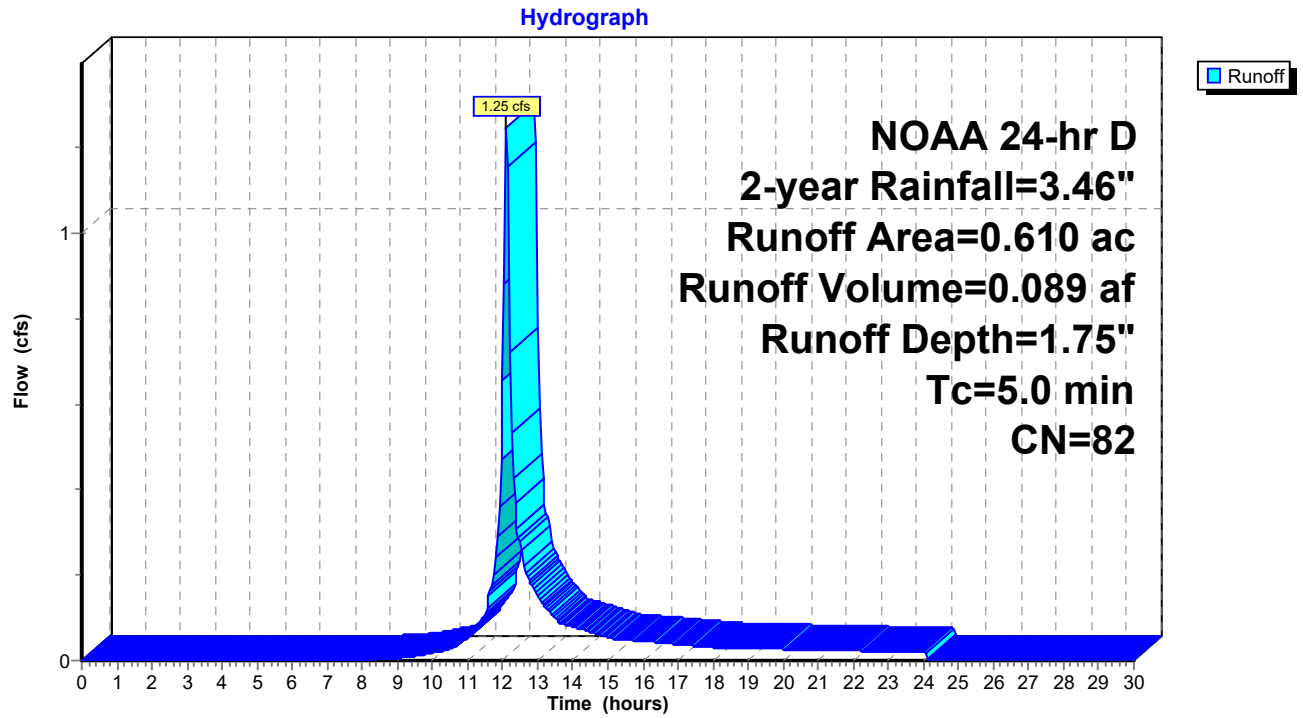
Runoff = 1.25 cfs @ 12.12 hrs, Volume= 0.089 af, Depth= 1.75"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
0.310	70	Woods, Good, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.250	98	Paved parking, HSG C
0.610	82	Weighted Average
0.360		59.02% Pervious Area
0.250		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min**

Subcatchment P1-3: Offsite to Pond

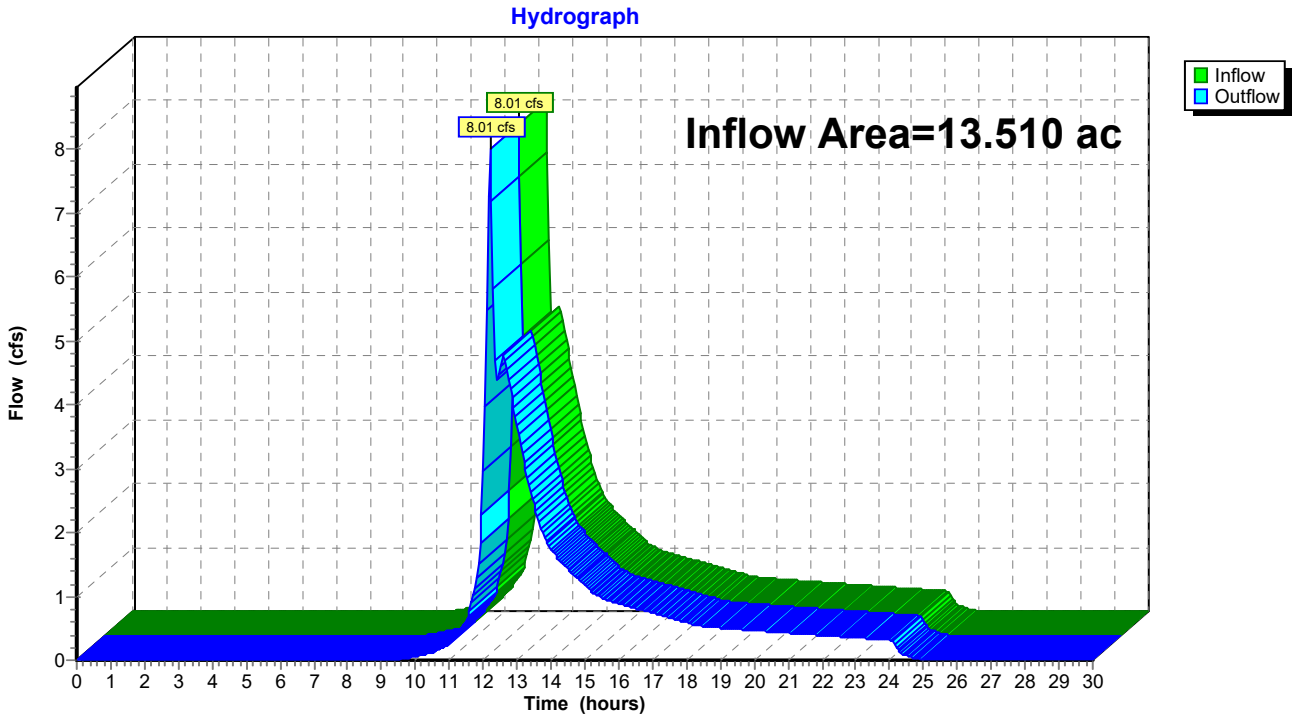


Summary for Reach TS: Total Site

Inflow Area = 13.510 ac, 28.57% Impervious, Inflow Depth = 1.11" for 2-year event
Inflow = 8.01 cfs @ 12.20 hrs, Volume= 1.247 af
Outflow = 8.01 cfs @ 12.20 hrs, Volume= 1.247 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 1-2: Detention Pond

Inflow Area = 7.680 ac, 31.77% Impervious, Inflow Depth = 1.58" for 2-year event
Inflow = 11.13 cfs @ 12.20 hrs, Volume= 1.008 af
Outflow = 2.70 cfs @ 12.72 hrs, Volume= 0.655 af, Atten= 76%, Lag= 31.1 min
Discarded = 0.09 cfs @ 12.72 hrs, Volume= 0.121 af
Primary = 2.62 cfs @ 12.72 hrs, Volume= 0.534 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 262.42' @ 12.72 hrs Surf.Area= 7,445 sf Storage= 19,757 cf

Plug-Flow detention time= 254.0 min calculated for 0.655 af (65% of inflow)
Center-of-Mass det. time= 141.1 min (989.8 - 848.7)

Volume	Invert	Avail.Storage	Storage Description
#1	258.50'	43,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

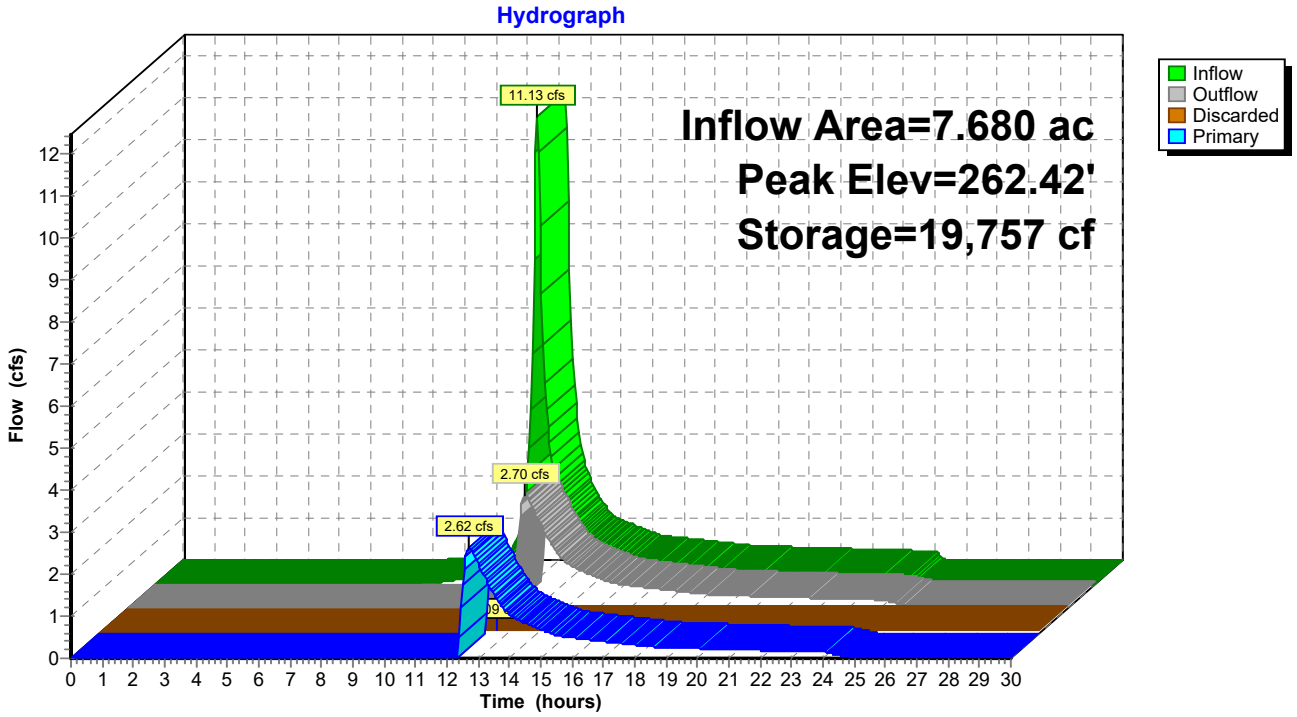
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.50	1,689	0	0
259.00	3,467	1,289	1,289
260.00	4,560	4,014	5,303
261.00	5,710	5,135	10,438
262.00	6,916	6,313	16,751
263.00	8,179	7,548	24,298
264.00	9,498	8,839	33,137
265.00	10,874	10,186	43,323

Device	Routing	Invert	Outlet Devices
#1	Primary	257.00'	**24.0" Round Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 257.00' / 254.47' S= 0.0342 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	262.00'	**36.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	**40.0" W x 33.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	258.50'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 257.00'

Discarded OutFlow Max=0.09 cfs @ 12.72 hrs HW=262.42' (Free Discharge)
└**4=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=2.60 cfs @ 12.72 hrs HW=262.42' (Free Discharge)
└**1=Culvert** (Passes 2.60 cfs of 28.05 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 2.60 cfs @ 2.08 fps)
  └**3=Grate** (Controls 0.00 cfs)

Pond 1-2: Detention Pond



Stage-Area-Storage for Pond 1-2: Detention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.50	1,689	0
258.60	2,045	187
258.70	2,400	409
258.80	2,756	667
258.90	3,111	960
259.00	3,467	1,289
259.10	3,576	1,641
259.20	3,686	2,004
259.30	3,795	2,378
259.40	3,904	2,763
259.50	4,014	3,159
259.60	4,123	3,566
259.70	4,232	3,984
259.80	4,341	4,412
259.90	4,451	4,852
260.00	4,560	5,303
260.10	4,675	5,764
260.20	4,790	6,237
260.30	4,905	6,722
260.40	5,020	7,218
260.50	5,135	7,726
260.60	5,250	8,246
260.70	5,365	8,776
260.80	5,480	9,319
260.90	5,595	9,872
261.00	5,710	10,438
261.10	5,831	11,015
261.20	5,951	11,604
261.30	6,072	12,205
261.40	6,192	12,818
261.50	6,313	13,443
261.60	6,434	14,081
261.70	6,554	14,730
261.80	6,675	15,391
261.90	6,795	16,065
262.00	6,916	16,751
262.10	7,042	17,448
262.20	7,169	18,159
262.30	7,295	18,882
262.40	7,421	19,618
262.50	7,548	20,366
262.60	7,674	21,127
262.70	7,800	21,901
262.80	7,926	22,687
262.90	8,053	23,486
263.00	8,179	24,298
263.10	8,311	25,122
263.20	8,443	25,960
263.30	8,575	26,811
263.40	8,707	27,675
263.50	8,839	28,552
263.60	8,970	29,443
263.70	9,102	30,346
263.80	9,234	31,263
263.90	9,366	32,193
264.00	9,498	33,137
264.10	9,636	34,093
264.20	9,773	35,064
264.30	9,911	36,048
264.40	10,048	37,046
264.50	10,186	38,058
264.60	10,324	39,083
264.70	10,461	40,122
264.80	10,599	41,175
264.90	10,736	42,242
265.00	**10,874**	**43,323**
265.10	10,874	43,323
265.20	10,874	43,323
265.30	10,874	43,323
265.40	10,874	43,323
265.50	10,874	43,323
265.60	10,874	43,323
265.70	10,874	43,323
265.80	10,874	43,323
265.90	10,874	43,323
266.00	10,874	43,323
266.10	10,874	43,323
266.20	10,874	43,323

Summary for Pond 1-2A: French Drain

Inflow Area = 1.330 ac, 4.51% Impervious, Inflow Depth = 1.04" for 2-year event
Inflow = 1.25 cfs @ 12.20 hrs, Volume= 0.115 af
Outflow = 1.23 cfs @ 12.22 hrs, Volume= 0.115 af, Atten= 2%, Lag= 1.2 min
Discarded = 0.02 cfs @ 12.22 hrs, Volume= 0.033 af
Primary = 1.21 cfs @ 12.22 hrs, Volume= 0.082 af
Routed to Pond 1-2 : Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 308.33' @ 12.22 hrs Surf.Area= 960 sf Storage= 510 cf

Plug-Flow detention time= 70.4 min calculated for 0.115 af (100% of inflow)
Center-of-Mass det. time= 70.4 min (955.6 - 885.2)

Volume	Invert	Avail.Storage	Storage Description
#1	307.00'	768 cf	**French Drain Storage (Prismatic)** Listed below (Recalc) 1,920 cf Overall x 40.0% Voids

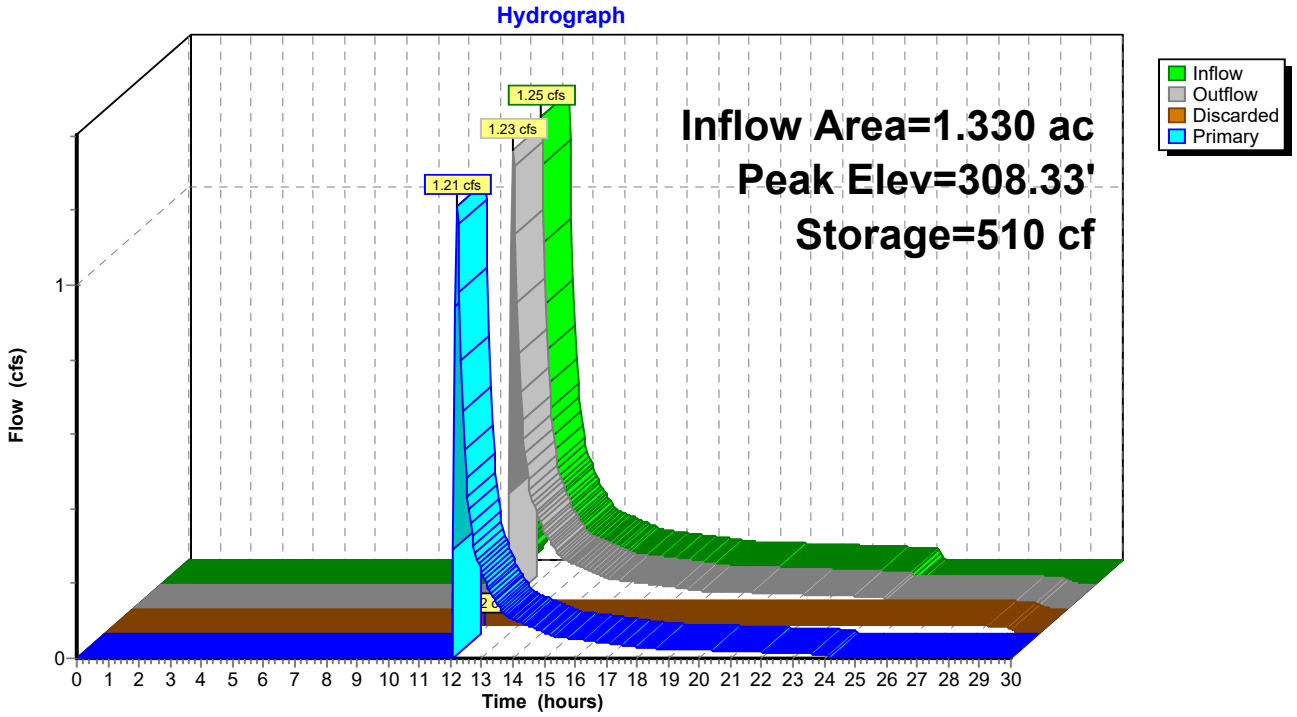
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
307.00	960	0	0
308.00	960	960	960
309.00	960	960	1,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**0.940 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 290.00'
#2	Primary	308.00'	**24.0" W x 36.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.22 hrs HW=308.32' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=1.17 cfs @ 12.22 hrs HW=308.32' (Free Discharge)
↑—**2=Grate** (Orifice Controls 1.17 cfs @ 1.82 fps)

Pond 1-2A: French Drain



Stage-Area-Storage for Pond 1-2A: French Drain

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
307.00	**960**	0
307.05	960	19
307.10	960	38
307.15	960	58
307.20	960	77
307.25	960	96
307.30	960	115
307.35	960	134
307.40	960	154
307.45	960	173
307.50	960	192
307.55	960	211
307.60	960	230
307.65	960	250
307.70	960	269
307.75	960	288
307.80	960	307
307.85	960	326
307.90	960	346
307.95	960	365
308.00	960	384
308.05	960	403
308.10	960	422
308.15	960	442
308.20	960	461
308.25	960	480
308.30	960	499
308.35	960	518
308.40	960	538
308.45	960	557
308.50	960	576
308.55	960	595
308.60	960	614
308.65	960	634
308.70	960	653
308.75	960	672
308.80	960	691
308.85	960	710
308.90	960	730
308.95	960	749
309.00	960	**768**
309.05	960	768
309.10	960	768
309.15	960	768
309.20	960	768
309.25	960	768
309.30	960	768
309.35	960	768
309.40	960	768
309.45	960	768
309.50	960	768
309.55	960	768
309.60	960	768
309.65	960	768
309.70	960	768
309.75	960	768
309.80	960	768
309.85	960	768
309.90	960	768
309.95	960	768
310.00	960	768
310.05	960	768
310.10	960	768
310.15	960	768
310.20	960	768
310.25	960	768
310.30	960	768
310.35	960	768
310.40	960	768
310.45	960	768
310.50	960	768
310.55	960	768
310.60	960	768
310.65	960	768
310.70	960	768
310.75	960	768
310.80	960	768
310.85	960	768
310.90	960	768
310.95	960	768
311.00	960	768

Summary for Subcatchment P1-1: Direct to Wetlands

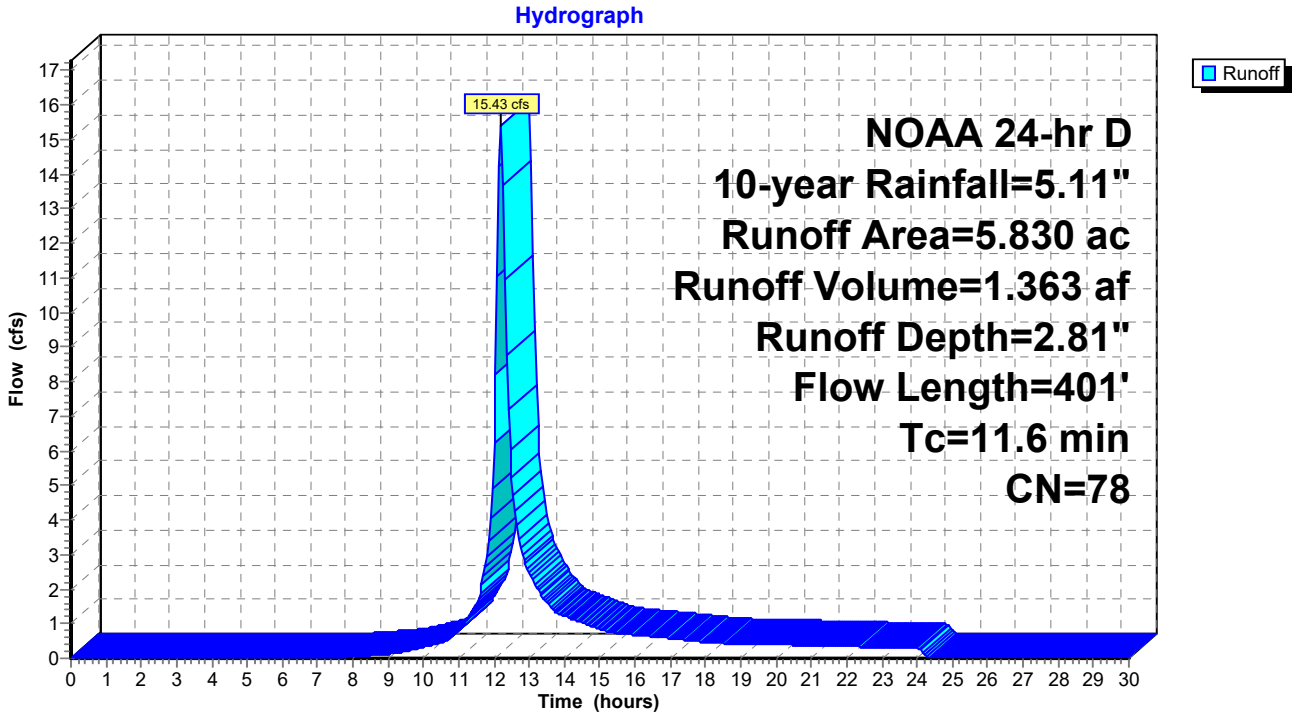
Runoff = 15.43 cfs @ 12.20 hrs, Volume= 1.363 af, Depth= 2.81"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
2.450	70	Woods, Good, HSG C
1.960	74	>75% Grass cover, Good, HSG C
1.420	98	Paved parking, HSG C
5.830	78	Weighted Average
4.410		75.64% Pervious Area
1.420		24.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1740	6.72		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.2030	7.25		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.5	166	0.1330	5.87		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
11.6	401	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

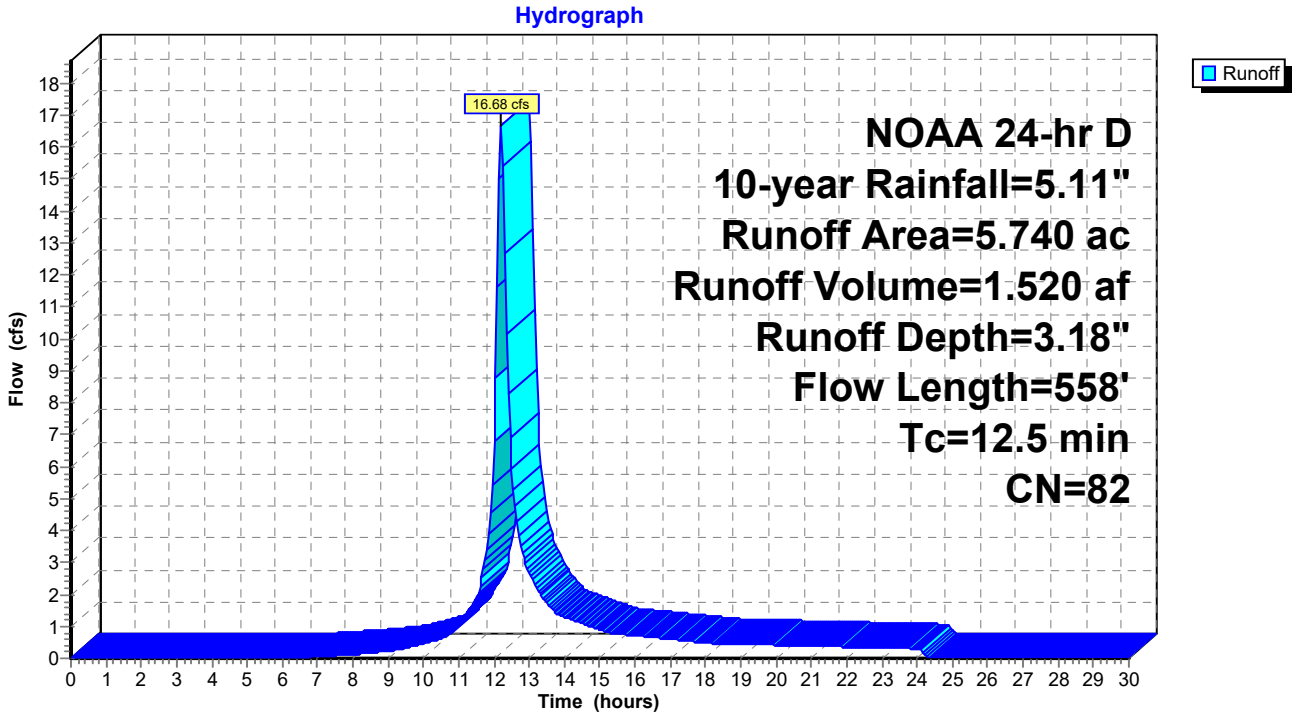
Runoff = 16.68 cfs @ 12.20 hrs, Volume= 1.520 af, Depth= 3.18"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
1.550	70	Woods, Good, HSG C
2.060	74	>75% Grass cover, Good, HSG C
2.130	98	Paved parking, HSG C
5.740	82	Weighted Average
3.610		62.89% Pervious Area
2.130		37.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.7	216	0.0930	4.91		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0310	3.57		**Shallow Concentrated Flow, Gravel** Paved Kv= 20.3 fps
0.1	20	0.1500	6.24		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.1	43	0.2300	7.72		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
12.5	558	Total			

Subcatchment P1-2: To Detention Pond



Summary for Subcatchment P1-2A: To French Drain

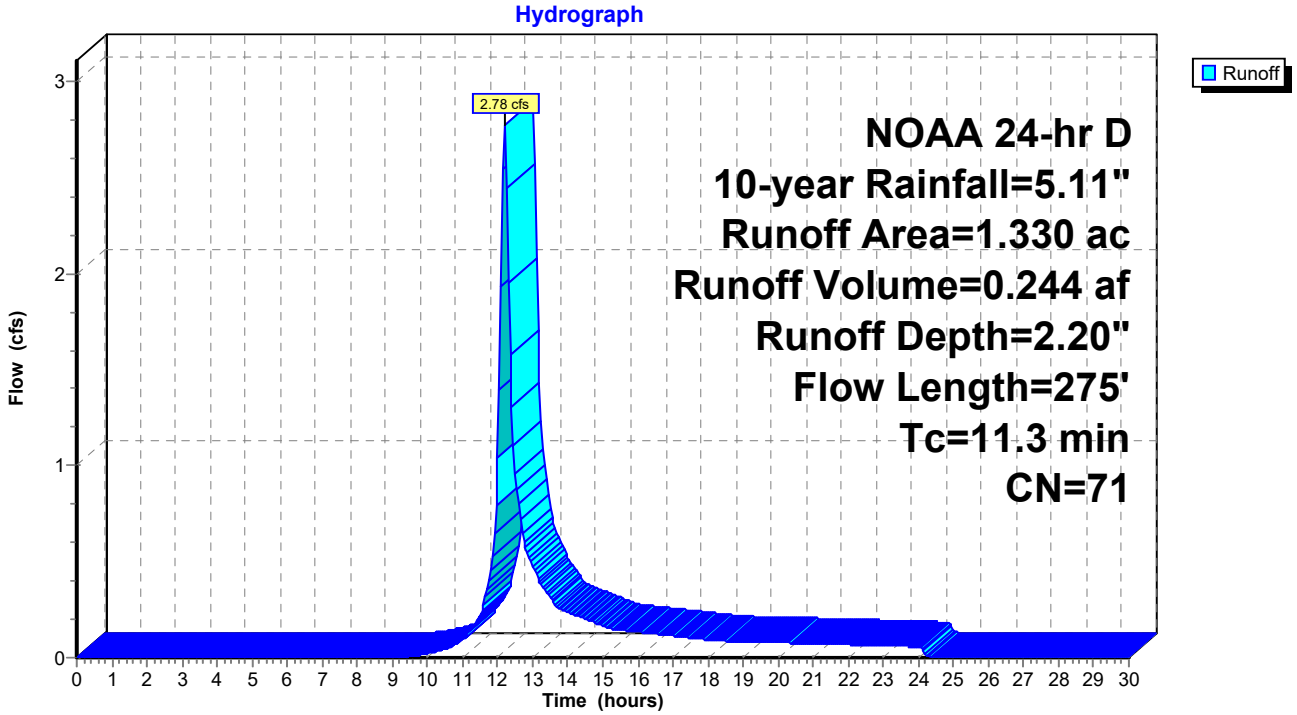
Runoff = 2.78 cfs @ 12.20 hrs, Volume= 0.244 af, Depth= 2.20"
Routed to Pond 1-2A : French Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
1.230	70	Woods, Good, HSG C
0.040	74	>75% Grass cover, Good, HSG C
0.060	98	Paved parking, HSG C
1.330	71	Weighted Average
1.270		95.49% Pervious Area
0.060		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.46"
0.5	175	0.1430	6.09		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
11.3	275	Total			

Subcatchment P1-2A: To French Drain



Summary for Subcatchment P1-3: Offsite to Pond

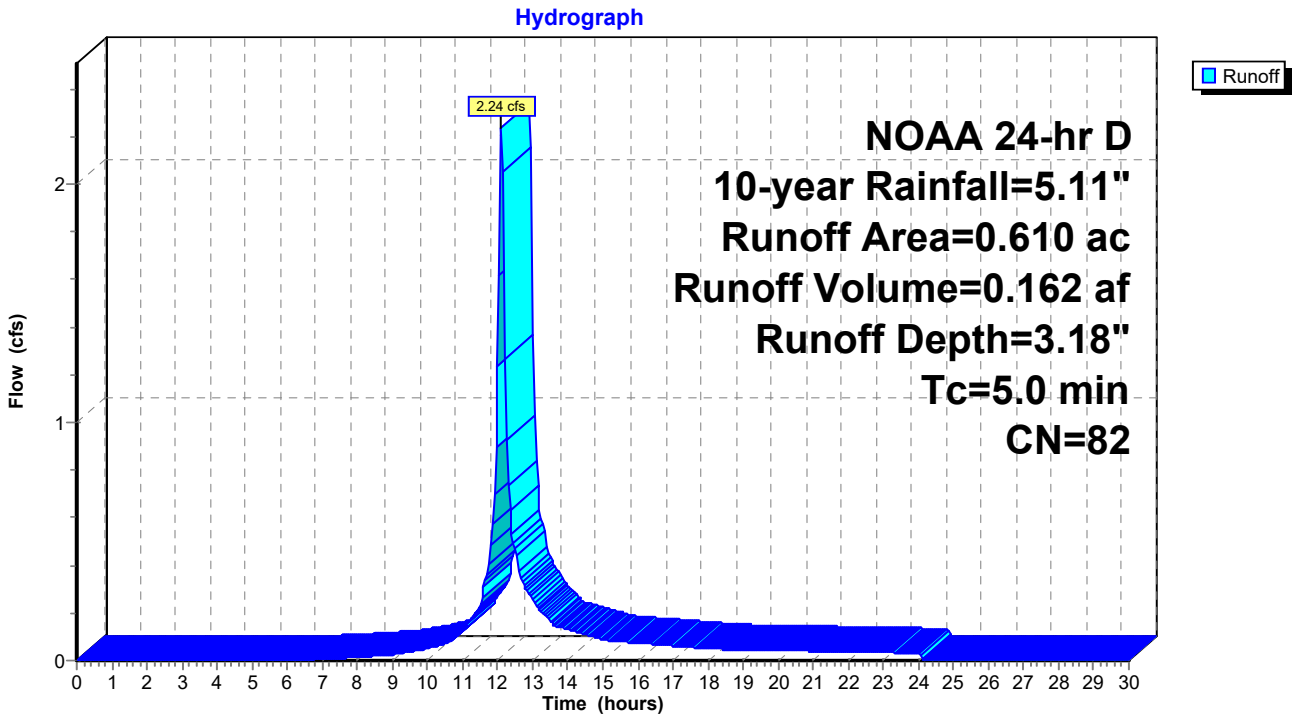
Runoff = 2.24 cfs @ 12.11 hrs, Volume= 0.162 af, Depth= 3.18"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
0.310	70	Woods, Good, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.250	98	Paved parking, HSG C
0.610	82	Weighted Average
0.360		59.02% Pervious Area
0.250		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min**

Subcatchment P1-3: Offsite to Pond

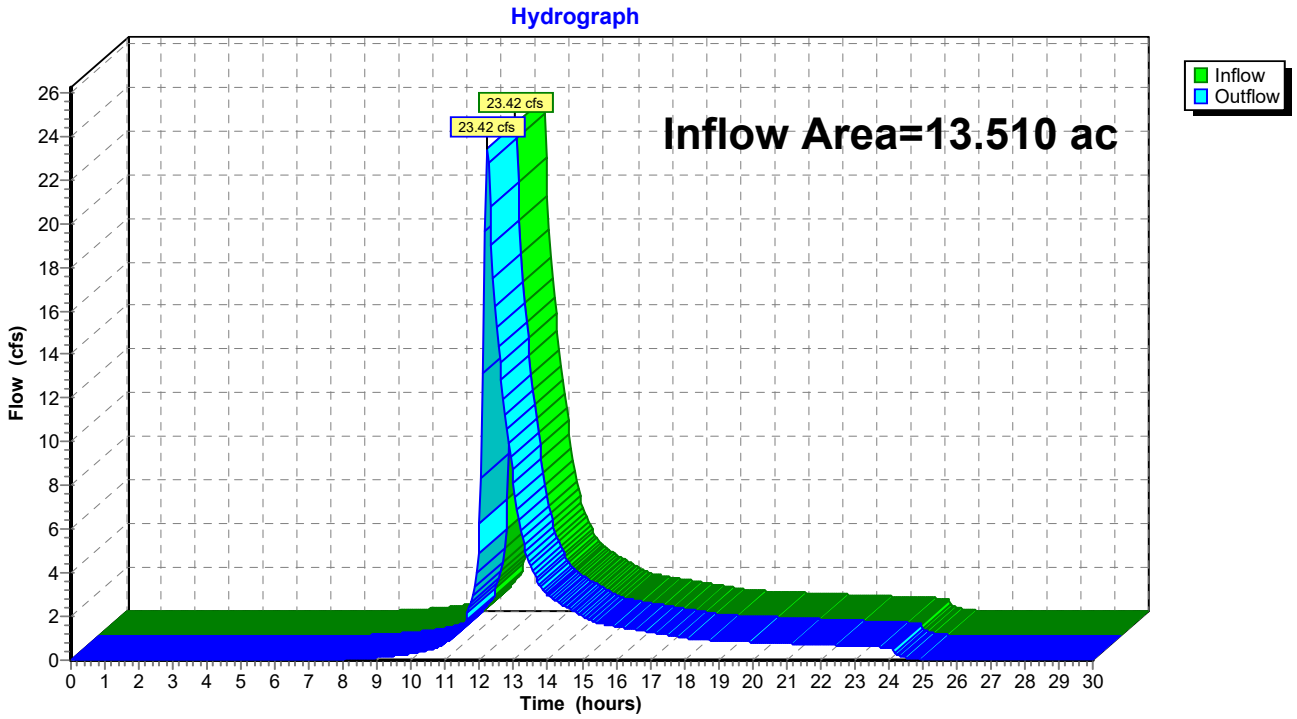


Summary for Reach TS: Total Site

Inflow Area = 13.510 ac, 28.57% Impervious, Inflow Depth = 2.46" for 10-year event
Inflow = 23.42 cfs @ 12.22 hrs, Volume= 2.768 af
Outflow = 23.42 cfs @ 12.22 hrs, Volume= 2.768 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 1-2: Detention Pond

Inflow Area = 7.680 ac, 31.77% Impervious, Inflow Depth = 2.95" for 10-year event
Inflow = 20.67 cfs @ 12.20 hrs, Volume= 1.890 af
Outflow = 10.42 cfs @ 12.40 hrs, Volume= 1.535 af, Atten= 50%, Lag= 12.2 min
Discarded = 0.11 cfs @ 12.40 hrs, Volume= 0.130 af
Primary = 10.31 cfs @ 12.40 hrs, Volume= 1.405 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 263.49' @ 12.40 hrs Surf.Area= 8,822 sf Storage= 28,443 cf

Plug-Flow detention time= 156.2 min calculated for 1.535 af (81% of inflow)
Center-of-Mass det. time= 76.5 min (907.9 - 831.4)

Volume	Invert	Avail.Storage	Storage Description
#1	258.50'	43,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

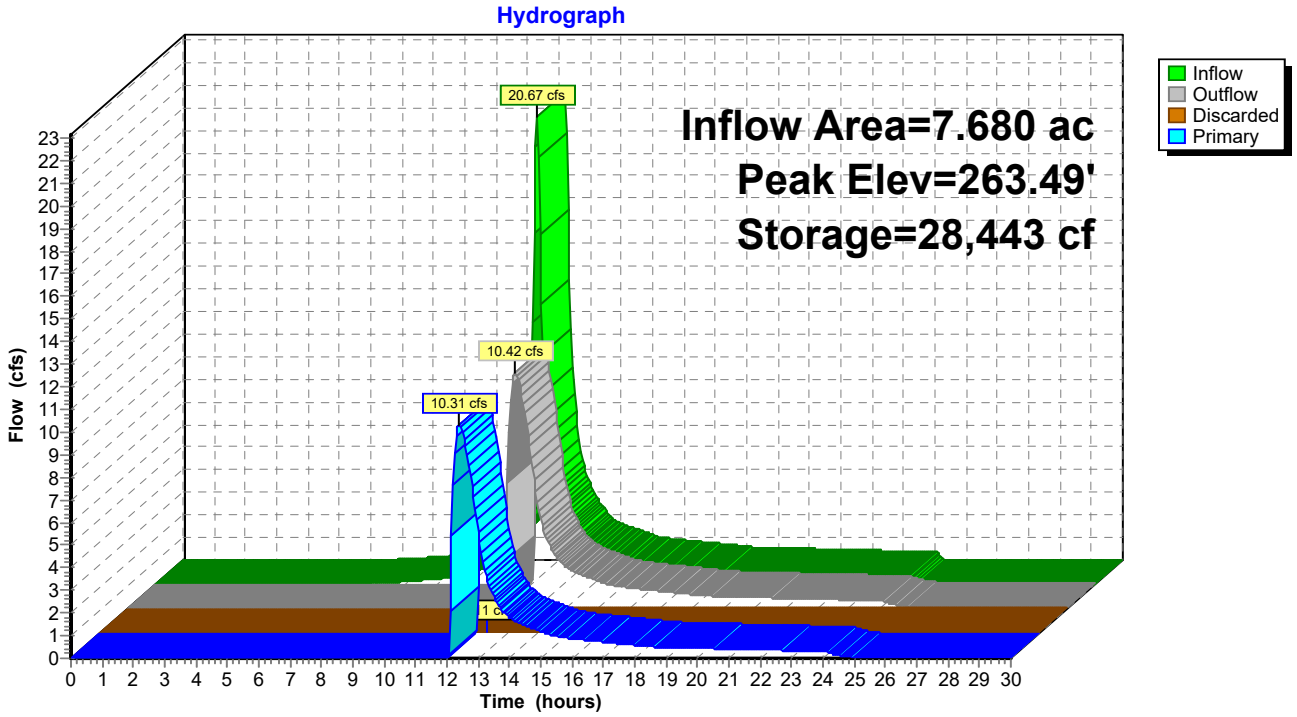
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.50	1,689	0	0
259.00	3,467	1,289	1,289
260.00	4,560	4,014	5,303
261.00	5,710	5,135	10,438
262.00	6,916	6,313	16,751
263.00	8,179	7,548	24,298
264.00	9,498	8,839	33,137
265.00	10,874	10,186	43,323

Device	Routing	Invert	Outlet Devices
#1	Primary	257.00'	**24.0" Round Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 257.00' / 254.47' S= 0.0342 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	262.00'	**36.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	**40.0" W x 33.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	258.50'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 257.00'

Discarded OutFlow Max=0.11 cfs @ 12.40 hrs HW=263.49' (Free Discharge)
└**4=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=10.31 cfs @ 12.40 hrs HW=263.49' (Free Discharge)
└**1=Culvert** (Passes 10.31 cfs of 31.27 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 10.31 cfs @ 5.15 fps)
  └**3=Grate** (Controls 0.00 cfs)

Pond 1-2: Detention Pond



Stage-Area-Storage for Pond 1-2: Detention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.50	1,689	0
258.60	2,045	187
258.70	2,400	409
258.80	2,756	667
258.90	3,111	960
259.00	3,467	1,289
259.10	3,576	1,641
259.20	3,686	2,004
259.30	3,795	2,378
259.40	3,904	2,763
259.50	4,014	3,159
259.60	4,123	3,566
259.70	4,232	3,984
259.80	4,341	4,412
259.90	4,451	4,852
260.00	4,560	5,303
260.10	4,675	5,764
260.20	4,790	6,237
260.30	4,905	6,722
260.40	5,020	7,218
260.50	5,135	7,726
260.60	5,250	8,246
260.70	5,365	8,776
260.80	5,480	9,319
260.90	5,595	9,872
261.00	5,710	10,438
261.10	5,831	11,015
261.20	5,951	11,604
261.30	6,072	12,205
261.40	6,192	12,818
261.50	6,313	13,443
261.60	6,434	14,081
261.70	6,554	14,730
261.80	6,675	15,391
261.90	6,795	16,065
262.00	6,916	16,751
262.10	7,042	17,448
262.20	7,169	18,159
262.30	7,295	18,882
262.40	7,421	19,618
262.50	7,548	20,366
262.60	7,674	21,127
262.70	7,800	21,901
262.80	7,926	22,687
262.90	8,053	23,486
263.00	8,179	24,298
263.10	8,311	25,122
263.20	8,443	25,960
263.30	8,575	26,811
263.40	8,707	27,675
263.50	8,839	28,552
263.60	8,970	29,443
263.70	9,102	30,346
263.80	9,234	31,263
263.90	9,366	32,193
264.00	9,498	33,137
264.10	9,636	34,093
264.20	9,773	35,064
264.30	9,911	36,048
264.40	10,048	37,046
264.50	10,186	38,058
264.60	10,324	39,083
264.70	10,461	40,122
264.80	10,599	41,175
264.90	10,736	42,242
265.00	**10,874**	**43,323**
265.10	10,874	43,323
265.20	10,874	43,323
265.30	10,874	43,323
265.40	10,874	43,323
265.50	10,874	43,323
265.60	10,874	43,323
265.70	10,874	43,323
265.80	10,874	43,323
265.90	10,874	43,323
266.00	10,874	43,323
266.10	10,874	43,323
266.20	10,874	43,323

Summary for Pond 1-2A: French Drain

Inflow Area = 1.330 ac, 4.51% Impervious, Inflow Depth = 2.20" for 10-year event
Inflow = 2.78 cfs @ 12.20 hrs, Volume= 0.244 af
Outflow = 2.75 cfs @ 12.21 hrs, Volume= 0.244 af, Atten= 1%, Lag= 0.9 min
Discarded = 0.02 cfs @ 12.21 hrs, Volume= 0.035 af
Primary = 2.73 cfs @ 12.21 hrs, Volume= 0.209 af
Routed to Pond 1-2 : Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 308.57' @ 12.21 hrs Surf.Area= 960 sf Storage= 601 cf

Plug-Flow detention time= 36.2 min calculated for 0.244 af (100% of inflow)
Center-of-Mass det. time= 36.2 min (896.4 - 860.2)

Volume	Invert	Avail.Storage	Storage Description
#1	307.00'	768 cf	**French Drain Storage (Prismatic)** Listed below (Recalc) 1,920 cf Overall x 40.0% Voids

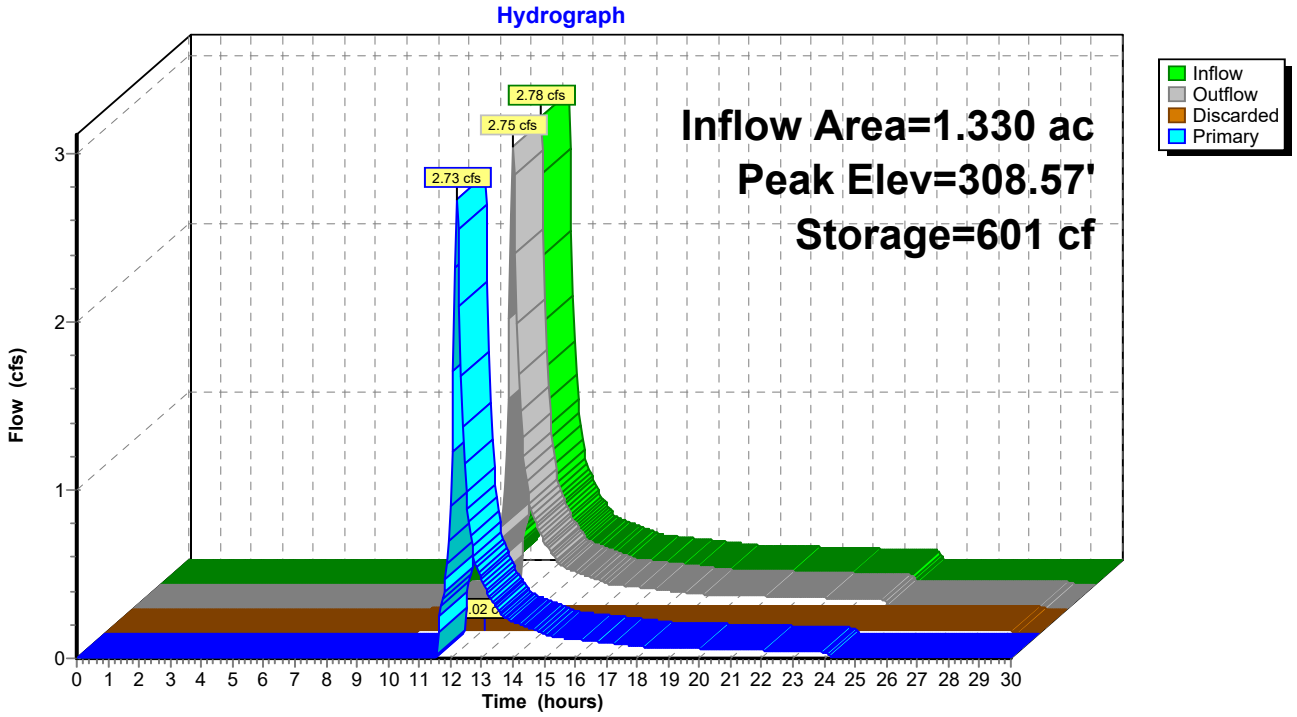
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
307.00	960	0	0
308.00	960	960	960
309.00	960	960	1,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**0.940 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 290.00'
#2	Primary	308.00'	**24.0" W x 36.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.21 hrs HW=308.56' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=2.68 cfs @ 12.21 hrs HW=308.56' (Free Discharge)
↑—**2=Grate** (Orifice Controls 2.68 cfs @ 2.40 fps)

Pond 1-2A: French Drain



Stage-Area-Storage for Pond 1-2A: French Drain

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
307.00	**960**	0
307.05	960	19
307.10	960	38
307.15	960	58
307.20	960	77
307.25	960	96
307.30	960	115
307.35	960	134
307.40	960	154
307.45	960	173
307.50	960	192
307.55	960	211
307.60	960	230
307.65	960	250
307.70	960	269
307.75	960	288
307.80	960	307
307.85	960	326
307.90	960	346
307.95	960	365
308.00	960	384
308.05	960	403
308.10	960	422
308.15	960	442
308.20	960	461
308.25	960	480
308.30	960	499
308.35	960	518
308.40	960	538
308.45	960	557
308.50	960	576
308.55	960	595
308.60	960	614
308.65	960	634
308.70	960	653
308.75	960	672
308.80	960	691
308.85	960	710
308.90	960	730
308.95	960	749
309.00	960	**768**
309.05	960	768
309.10	960	768
309.15	960	768
309.20	960	768
309.25	960	768
309.30	960	768
309.35	960	768
309.40	960	768
309.45	960	768
309.50	960	768
309.55	960	768
309.60	960	768
309.65	960	768
309.70	960	768
309.75	960	768
309.80	960	768
309.85	960	768
309.90	960	768
309.95	960	768
310.00	960	768
310.05	960	768
310.10	960	768
310.15	960	768
310.20	960	768
310.25	960	768
310.30	960	768
310.35	960	768
310.40	960	768
310.45	960	768
310.50	960	768
310.55	960	768
310.60	960	768
310.65	960	768
310.70	960	768
310.75	960	768
310.80	960	768
310.85	960	768
310.90	960	768
310.95	960	768
311.00	960	768

Summary for Subcatchment P1-1: Direct to Wetlands

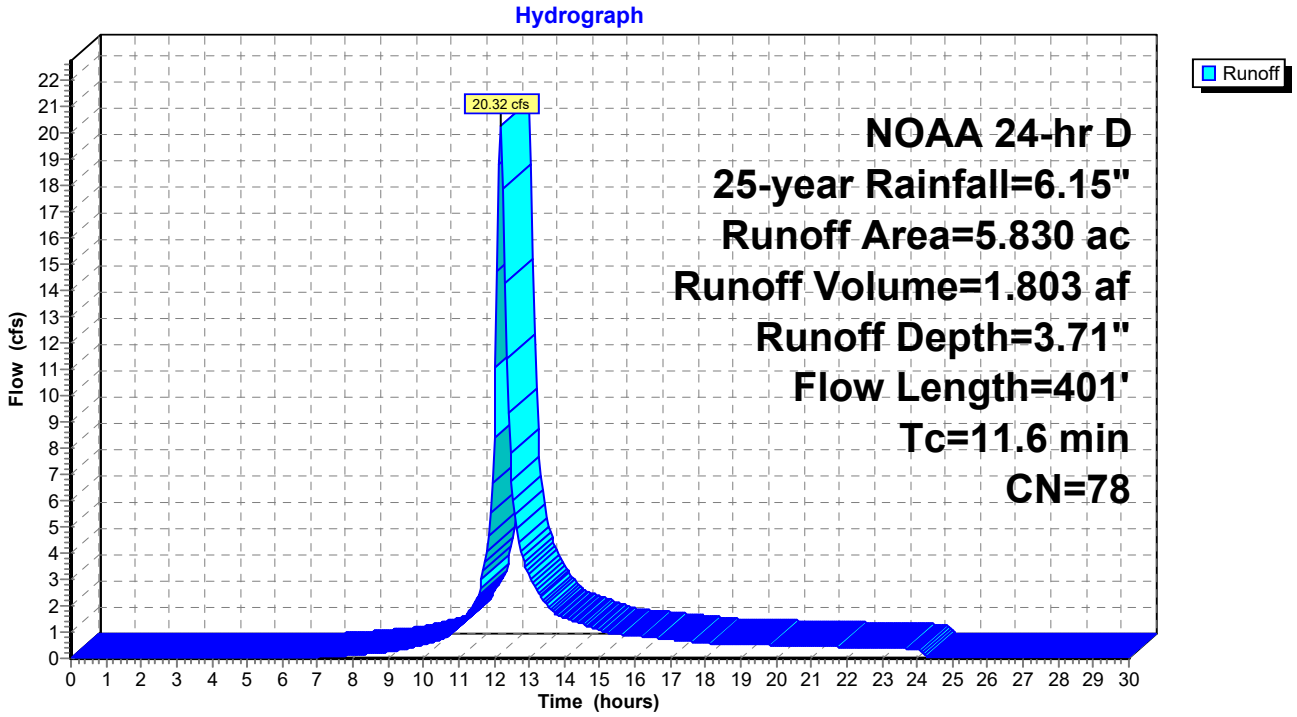
Runoff = 20.32 cfs @ 12.19 hrs, Volume= 1.803 af, Depth= 3.71"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
2.450	70	Woods, Good, HSG C
1.960	74	>75% Grass cover, Good, HSG C
1.420	98	Paved parking, HSG C
5.830	78	Weighted Average
4.410		75.64% Pervious Area
1.420		24.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1740	6.72		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.2030	7.25		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.5	166	0.1330	5.87		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
11.6	401	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

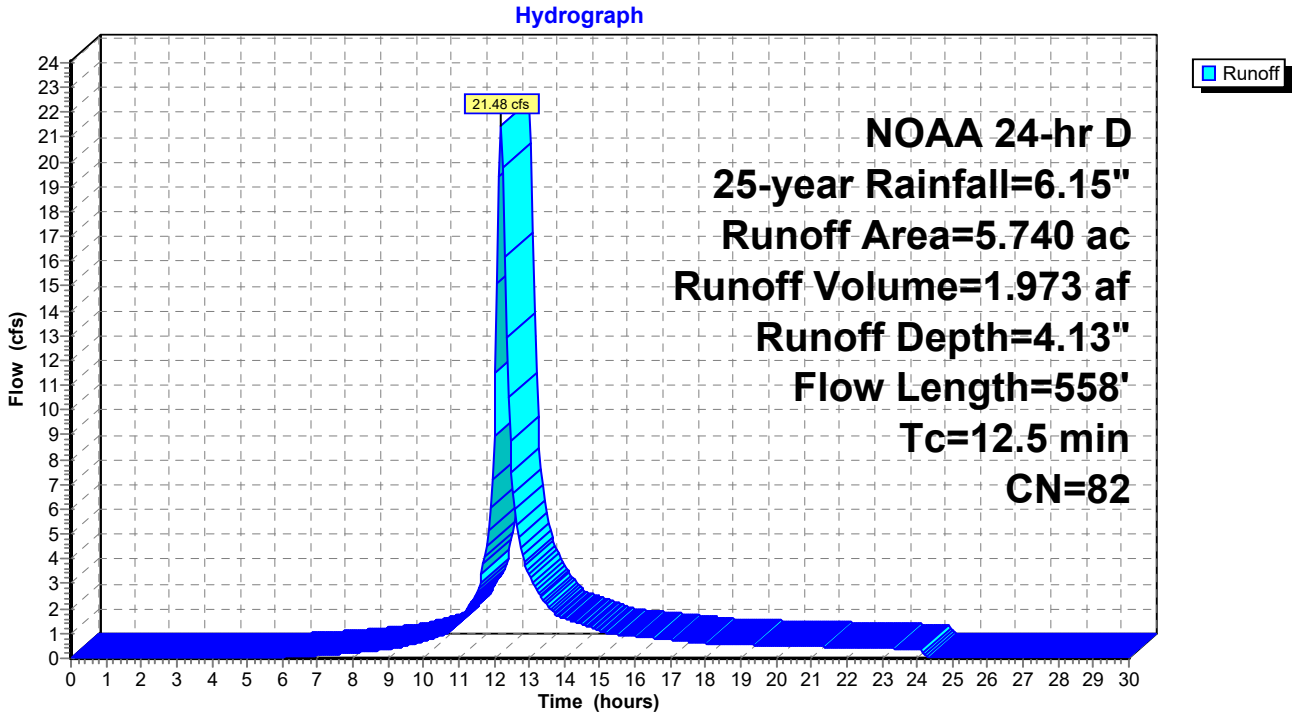
Runoff = 21.48 cfs @ 12.20 hrs, Volume= 1.973 af, Depth= 4.13"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
1.550	70	Woods, Good, HSG C
2.060	74	>75% Grass cover, Good, HSG C
2.130	98	Paved parking, HSG C
5.740	82	Weighted Average
3.610		62.89% Pervious Area
2.130		37.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.7	216	0.0930	4.91		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0310	3.57		**Shallow Concentrated Flow, Gravel** Paved Kv= 20.3 fps
0.1	20	0.1500	6.24		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.1	43	0.2300	7.72		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
12.5	558	Total			

Subcatchment P1-2: To Detention Pond



Summary for Subcatchment P1-2A: To French Drain

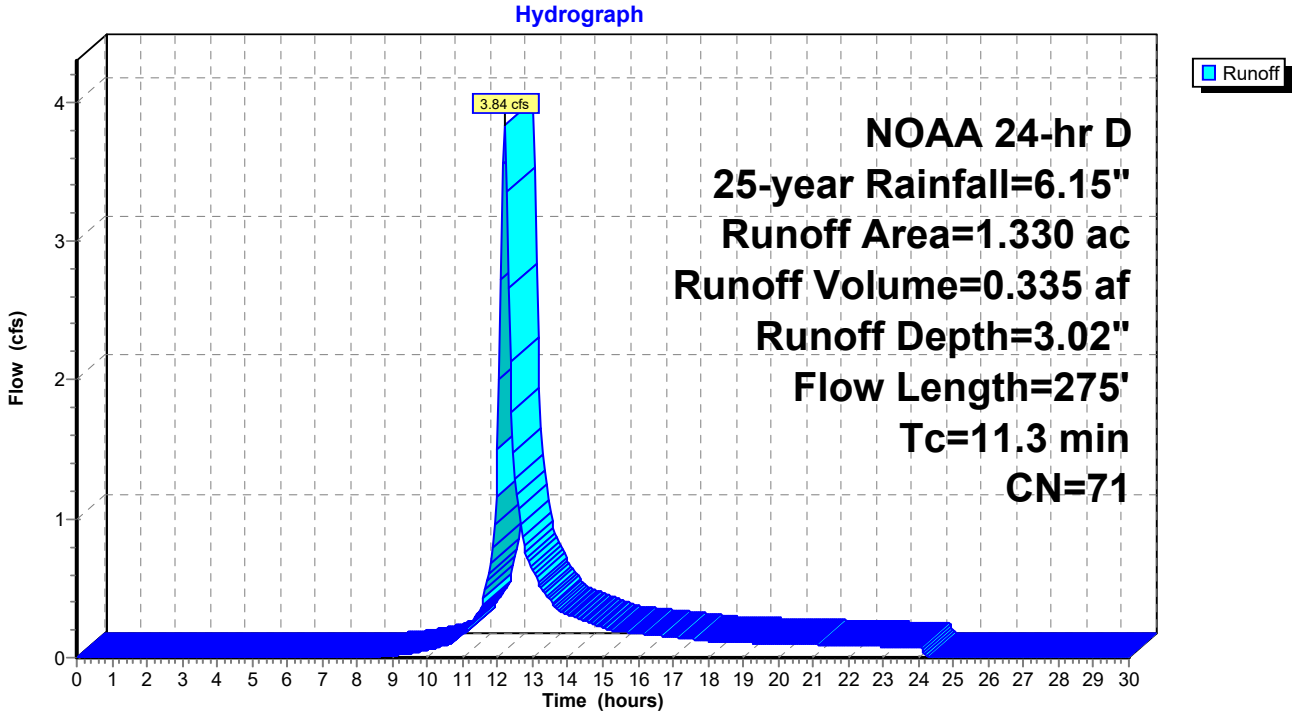
Runoff = 3.84 cfs @ 12.19 hrs, Volume= 0.335 af, Depth= 3.02"
Routed to Pond 1-2A : French Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
1.230	70	Woods, Good, HSG C
0.040	74	>75% Grass cover, Good, HSG C
0.060	98	Paved parking, HSG C
1.330	71	Weighted Average
1.270		95.49% Pervious Area
0.060		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.46"
0.5	175	0.1430	6.09		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
11.3	275	Total			

Subcatchment P1-2A: To French Drain



Summary for Subcatchment P1-3: Offsite to Pond

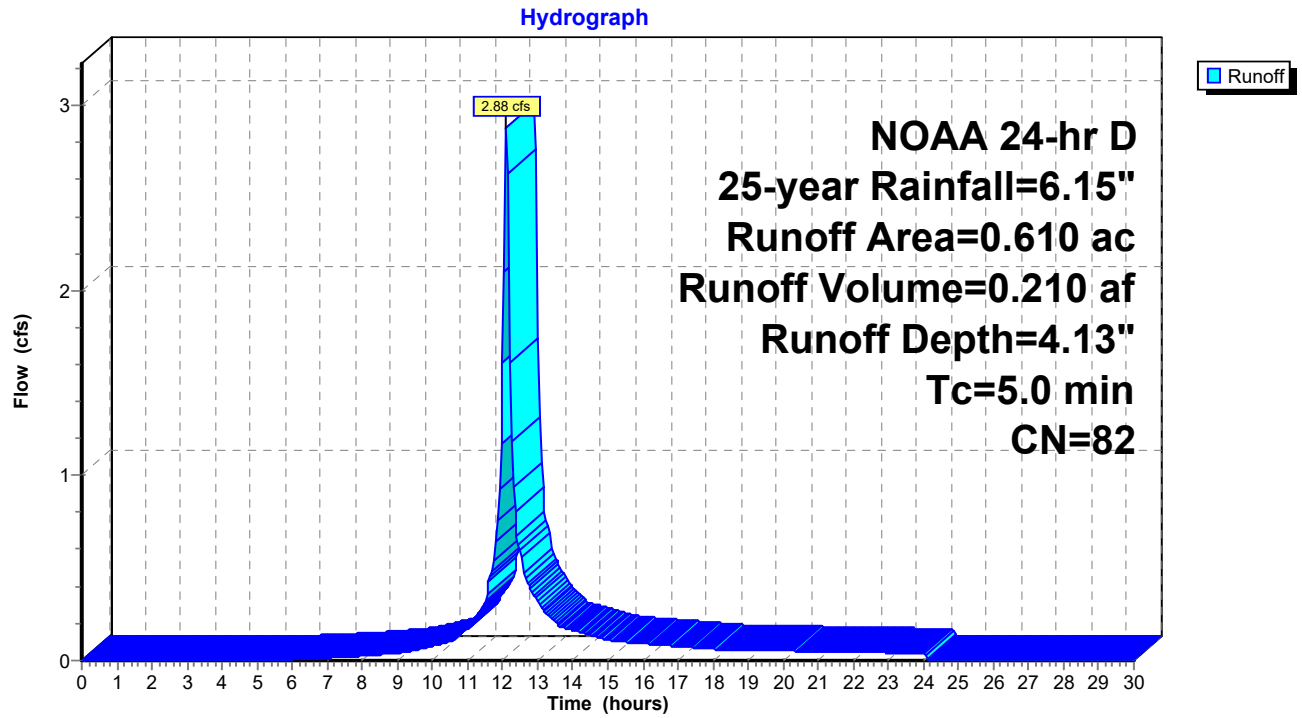
Runoff = 2.88 cfs @ 12.11 hrs, Volume= 0.210 af, Depth= 4.13"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
0.310	70	Woods, Good, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.250	98	Paved parking, HSG C
0.610	82	Weighted Average
0.360		59.02% Pervious Area
0.250		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min**

Subcatchment P1-3: Offsite to Pond

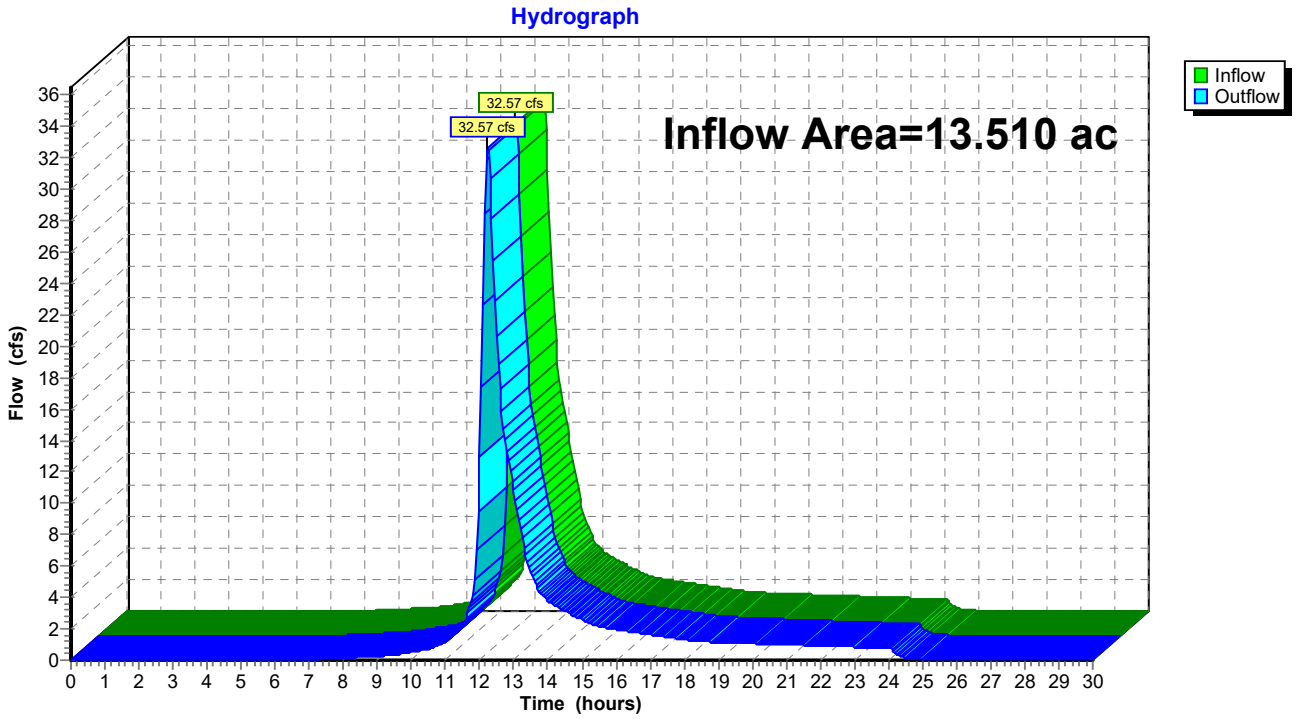


Summary for Reach TS: Total Site

Inflow Area = 13.510 ac, 28.57% Impervious, Inflow Depth = 3.37" for 25-year event
Inflow = 32.57 cfs @ 12.24 hrs, Volume= 3.793 af
Outflow = 32.57 cfs @ 12.24 hrs, Volume= 3.793 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 1-2: Detention Pond

Inflow Area = 7.680 ac, 31.77% Impervious, Inflow Depth = 3.88" for 25-year event
Inflow = 26.90 cfs @ 12.19 hrs, Volume= 2.481 af
Outflow = 16.90 cfs @ 12.34 hrs, Volume= 2.125 af, Atten= 37%, Lag= 9.0 min
Discarded = 0.12 cfs @ 12.34 hrs, Volume= 0.135 af
Primary = 16.78 cfs @ 12.34 hrs, Volume= 1.990 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 264.04' @ 12.34 hrs Surf.Area= 9,550 sf Storage= 33,495 cf

Plug-Flow detention time= 129.9 min calculated for 2.122 af (86% of inflow)
Center-of-Mass det. time= 64.5 min (888.2 - 823.7)

Volume	Invert	Avail.Storage	Storage Description
#1	258.50'	43,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

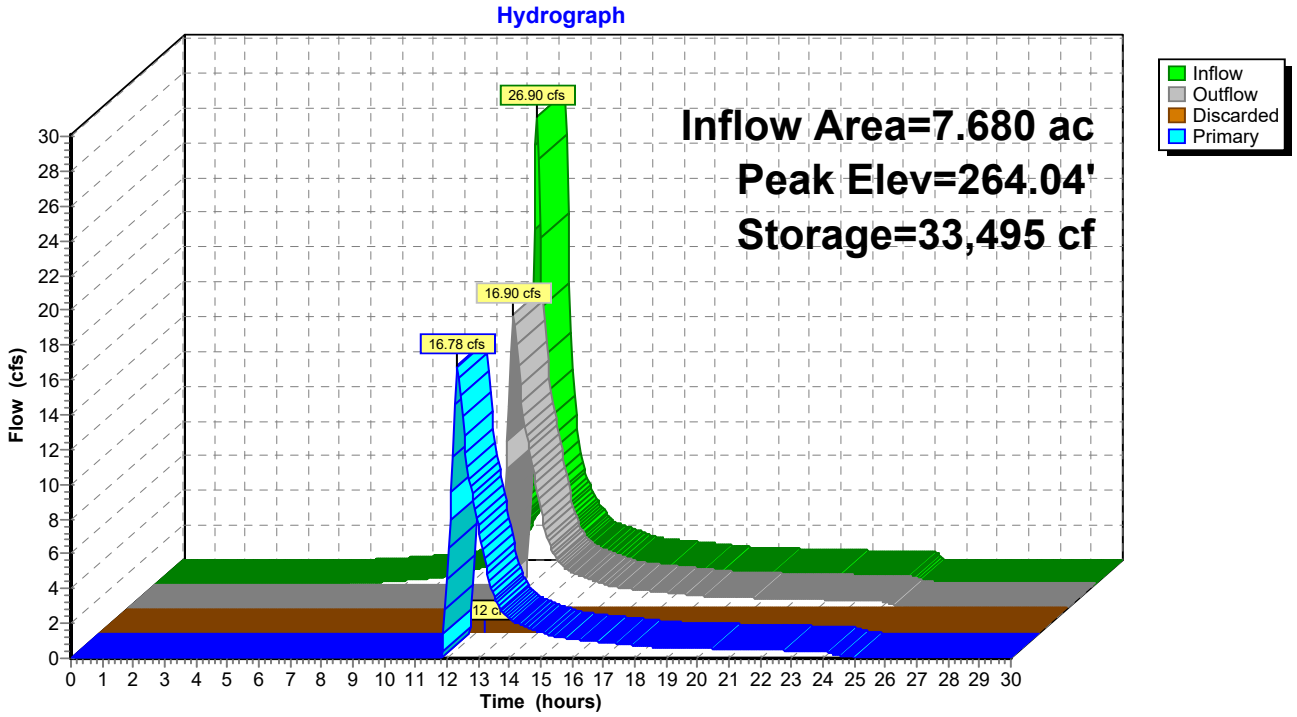
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.50	1,689	0	0
259.00	3,467	1,289	1,289
260.00	4,560	4,014	5,303
261.00	5,710	5,135	10,438
262.00	6,916	6,313	16,751
263.00	8,179	7,548	24,298
264.00	9,498	8,839	33,137
265.00	10,874	10,186	43,323

Device	Routing	Invert	Outlet Devices
#1	Primary	257.00'	**24.0" Round Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 257.00' / 254.47' S= 0.0342 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	262.00'	**36.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	**40.0" W x 33.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	258.50'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 257.00'

Discarded OutFlow Max=0.12 cfs @ 12.34 hrs HW=264.03' (Free Discharge)
└**4=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=16.72 cfs @ 12.34 hrs HW=264.03' (Free Discharge)
└**1=Culvert** (Passes 16.72 cfs of 32.79 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 12.54 cfs @ 6.27 fps)
  └**3=Grate** (Orifice Controls 4.18 cfs @ 2.35 fps)

Pond 1-2: Detention Pond



Stage-Area-Storage for Pond 1-2: Detention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.50	1,689	0
258.60	2,045	187
258.70	2,400	409
258.80	2,756	667
258.90	3,111	960
259.00	3,467	1,289
259.10	3,576	1,641
259.20	3,686	2,004
259.30	3,795	2,378
259.40	3,904	2,763
259.50	4,014	3,159
259.60	4,123	3,566
259.70	4,232	3,984
259.80	4,341	4,412
259.90	4,451	4,852
260.00	4,560	5,303
260.10	4,675	5,764
260.20	4,790	6,237
260.30	4,905	6,722
260.40	5,020	7,218
260.50	5,135	7,726
260.60	5,250	8,246
260.70	5,365	8,776
260.80	5,480	9,319
260.90	5,595	9,872
261.00	5,710	10,438
261.10	5,831	11,015
261.20	5,951	11,604
261.30	6,072	12,205
261.40	6,192	12,818
261.50	6,313	13,443
261.60	6,434	14,081
261.70	6,554	14,730
261.80	6,675	15,391
261.90	6,795	16,065
262.00	6,916	16,751
262.10	7,042	17,448
262.20	7,169	18,159
262.30	7,295	18,882
262.40	7,421	19,618
262.50	7,548	20,366
262.60	7,674	21,127
262.70	7,800	21,901
262.80	7,926	22,687
262.90	8,053	23,486
263.00	8,179	24,298
263.10	8,311	25,122
263.20	8,443	25,960
263.30	8,575	26,811
263.40	8,707	27,675
263.50	8,839	28,552
263.60	8,970	29,443
263.70	9,102	30,346
263.80	9,234	31,263
263.90	9,366	32,193
264.00	9,498	33,137
264.10	9,636	34,093
264.20	9,773	35,064
264.30	9,911	36,048
264.40	10,048	37,046
264.50	10,186	38,058
264.60	10,324	39,083
264.70	10,461	40,122
264.80	10,599	41,175
264.90	10,736	42,242
265.00	**10,874**	**43,323**
265.10	10,874	43,323
265.20	10,874	43,323
265.30	10,874	43,323
265.40	10,874	43,323
265.50	10,874	43,323
265.60	10,874	43,323
265.70	10,874	43,323
265.80	10,874	43,323
265.90	10,874	43,323
266.00	10,874	43,323
266.10	10,874	43,323
266.20	10,874	43,323

Summary for Pond 1-2A: French Drain

Inflow Area = 1.330 ac, 4.51% Impervious, Inflow Depth = 3.02" for 25-year event
Inflow = 3.84 cfs @ 12.19 hrs, Volume= 0.335 af
Outflow = 3.81 cfs @ 12.21 hrs, Volume= 0.335 af, Atten= 1%, Lag= 0.8 min
Discarded = 0.02 cfs @ 12.21 hrs, Volume= 0.037 af
Primary = 3.79 cfs @ 12.21 hrs, Volume= 0.298 af
Routed to Pond 1-2 : Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 308.70' @ 12.21 hrs Surf.Area= 960 sf Storage= 654 cf

Plug-Flow detention time= 27.9 min calculated for 0.335 af (100% of inflow)
Center-of-Mass det. time= 27.8 min (877.8 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1	307.00'	768 cf	**French Drain Storage (Prismatic)** Listed below (Recalc) 1,920 cf Overall x 40.0% Voids

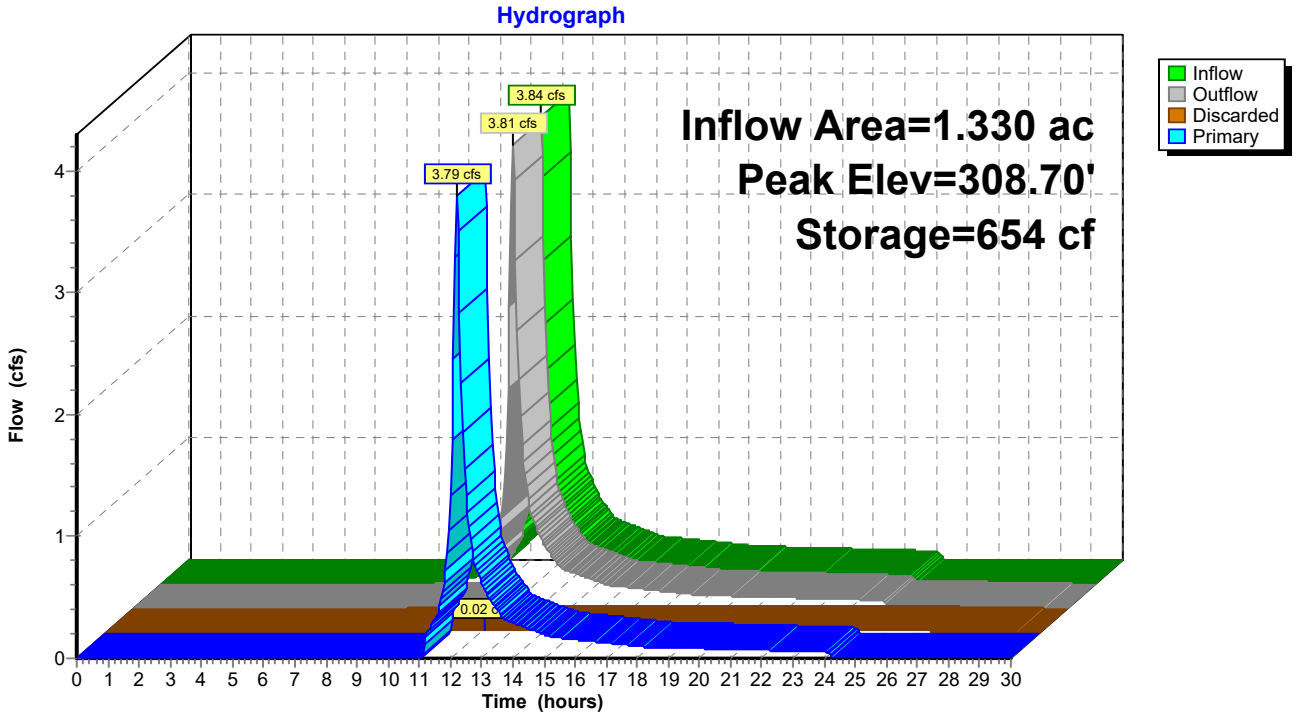
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
307.00	960	0	0
308.00	960	960	960
309.00	960	960	1,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**0.940 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 290.00'
#2	Primary	308.00'	**24.0" W x 36.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.21 hrs HW=308.70' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=3.74 cfs @ 12.21 hrs HW=308.70' (Free Discharge)
↑—**2=Grate** (Orifice Controls 3.74 cfs @ 2.68 fps)

Pond 1-2A: French Drain



Stage-Area-Storage for Pond 1-2A: French Drain

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
307.00	**960**	0
307.05	960	19
307.10	960	38
307.15	960	58
307.20	960	77
307.25	960	96
307.30	960	115
307.35	960	134
307.40	960	154
307.45	960	173
307.50	960	192
307.55	960	211
307.60	960	230
307.65	960	250
307.70	960	269
307.75	960	288
307.80	960	307
307.85	960	326
307.90	960	346
307.95	960	365
308.00	960	384
308.05	960	403
308.10	960	422
308.15	960	442
308.20	960	461
308.25	960	480
308.30	960	499
308.35	960	518
308.40	960	538
308.45	960	557
308.50	960	576
308.55	960	595
308.60	960	614
308.65	960	634
308.70	960	653
308.75	960	672
308.80	960	691
308.85	960	710
308.90	960	730
308.95	960	749
309.00	960	**768**
309.05	960	768
309.10	960	768
309.15	960	768
309.20	960	768
309.25	960	768
309.30	960	768
309.35	960	768
309.40	960	768
309.45	960	768
309.50	960	768
309.55	960	768
309.60	960	768
309.65	960	768
309.70	960	768
309.75	960	768
309.80	960	768
309.85	960	768
309.90	960	768
309.95	960	768
310.00	960	768
310.05	960	768
310.10	960	768
310.15	960	768
310.20	960	768
310.25	960	768
310.30	960	768
310.35	960	768
310.40	960	768
310.45	960	768
310.50	960	768
310.55	960	768
310.60	960	768
310.65	960	768
310.70	960	768
310.75	960	768
310.80	960	768
310.85	960	768
310.90	960	768
310.95	960	768
311.00	960	768

Summary for Subcatchment P1-1: Direct to Wetlands

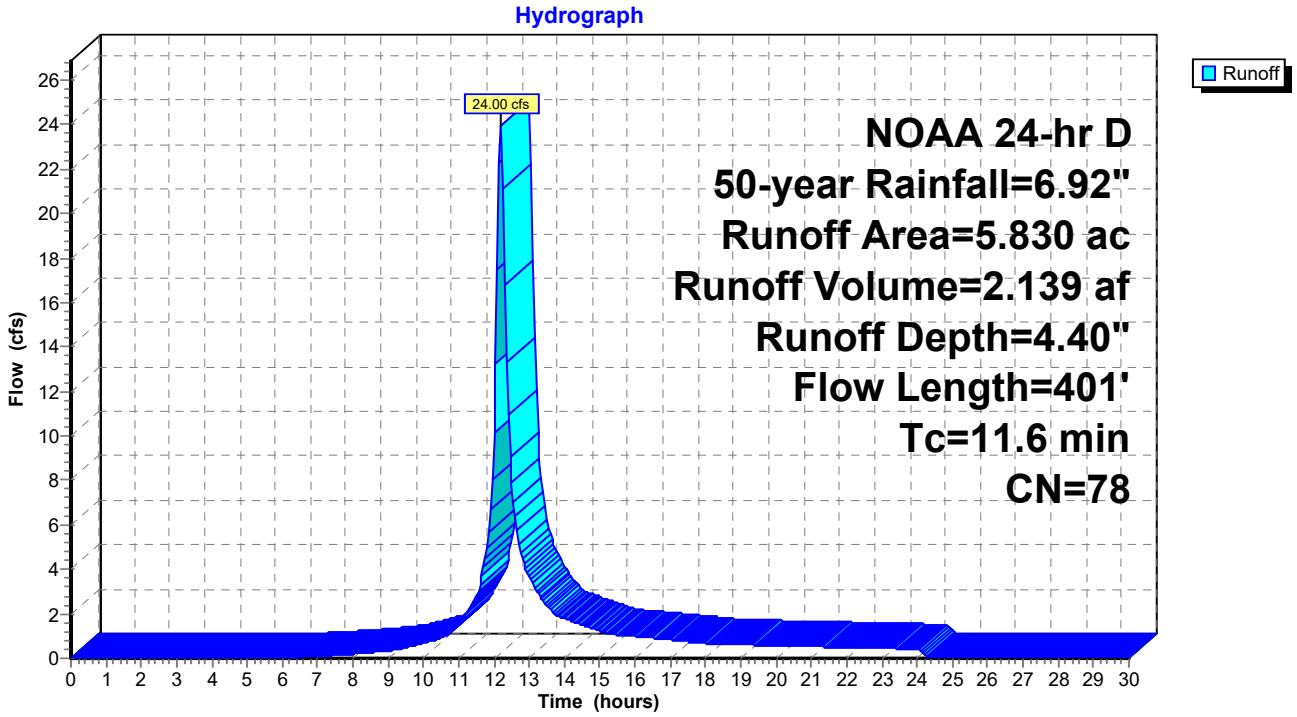
Runoff = 24.00 cfs @ 12.19 hrs, Volume= 2.139 af, Depth= 4.40"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
2.450	70	Woods, Good, HSG C
1.960	74	>75% Grass cover, Good, HSG C
1.420	98	Paved parking, HSG C
5.830	78	Weighted Average
4.410		75.64% Pervious Area
1.420		24.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1740	6.72		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.2030	7.25		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.5	166	0.1330	5.87		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
11.6	401	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

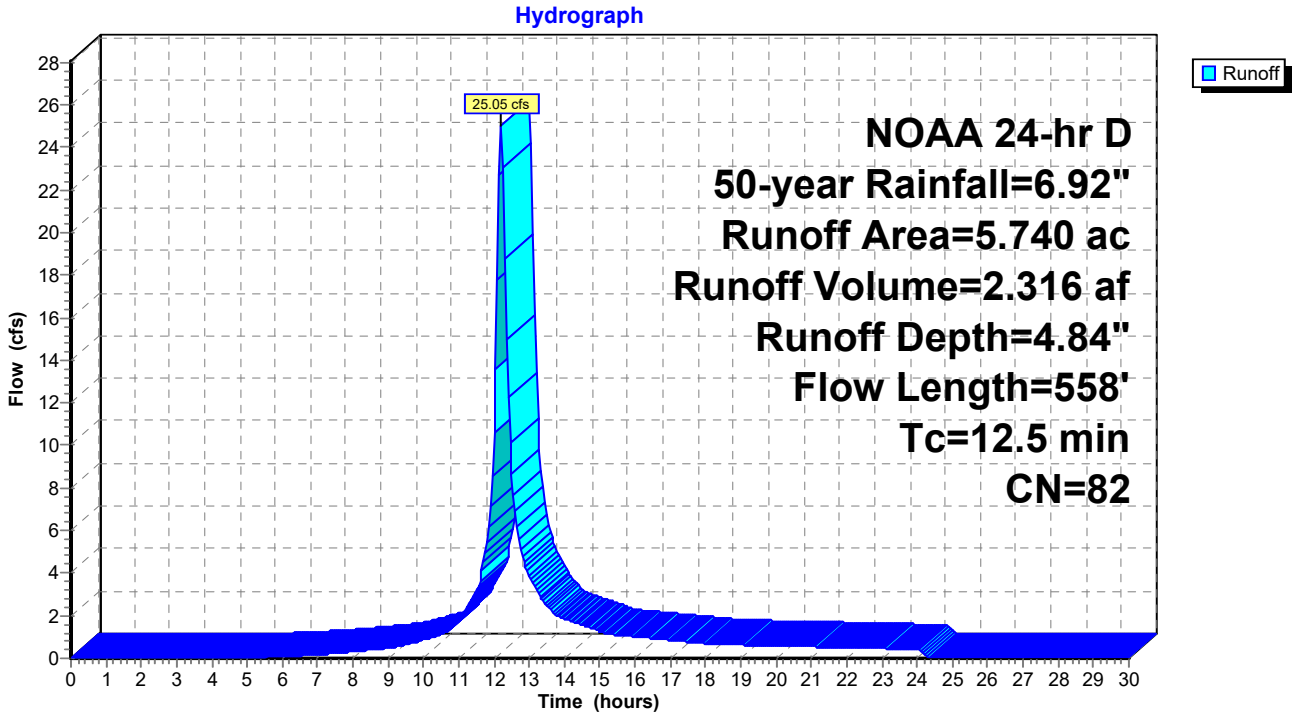
Runoff = 25.05 cfs @ 12.20 hrs, Volume= 2.316 af, Depth= 4.84"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
1.550	70	Woods, Good, HSG C
2.060	74	>75% Grass cover, Good, HSG C
2.130	98	Paved parking, HSG C
5.740	82	Weighted Average
3.610		62.89% Pervious Area
2.130		37.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.7	216	0.0930	4.91		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0310	3.57		**Shallow Concentrated Flow, Gravel** Paved Kv= 20.3 fps
0.1	20	0.1500	6.24		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.1	43	0.2300	7.72		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
12.5	558	Total			

Subcatchment P1-2: To Detention Pond



Summary for Subcatchment P1-2A: To French Drain

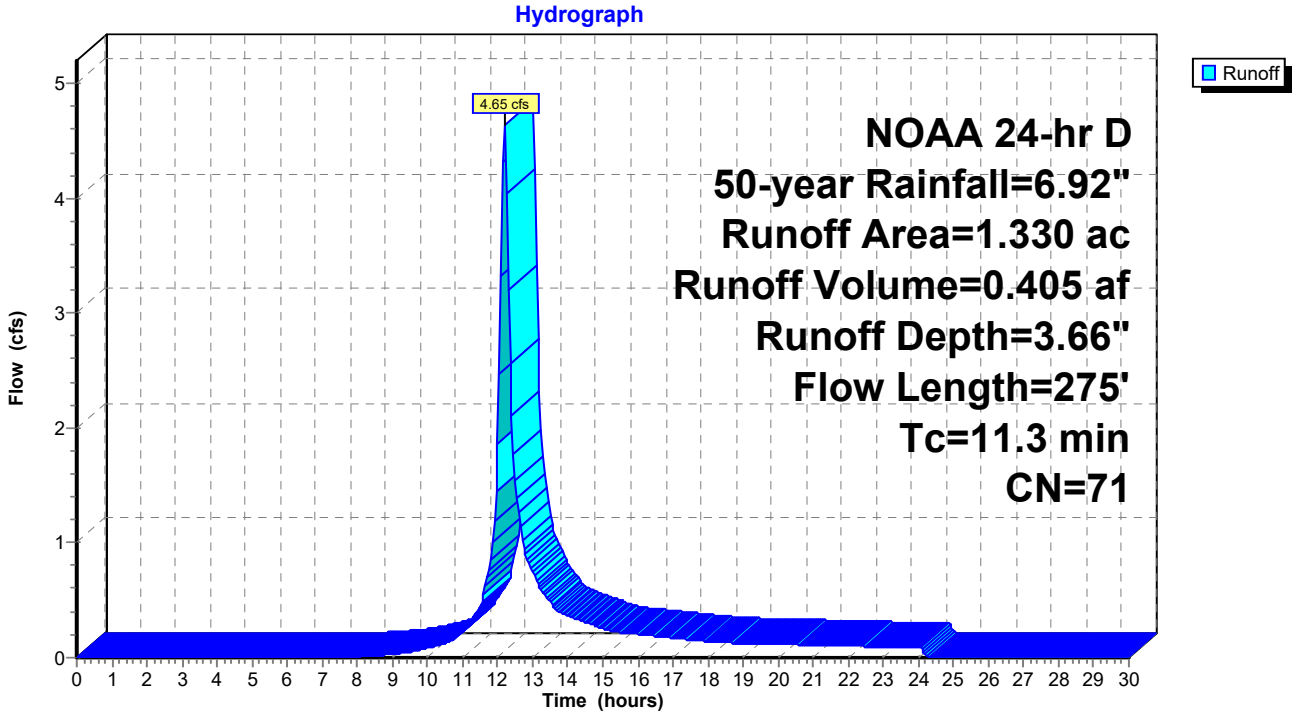
Runoff = 4.65 cfs @ 12.19 hrs, Volume= 0.405 af, Depth= 3.66"
Routed to Pond 1-2A : French Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
1.230	70	Woods, Good, HSG C
0.040	74	>75% Grass cover, Good, HSG C
0.060	98	Paved parking, HSG C
1.330	71	Weighted Average
1.270		95.49% Pervious Area
0.060		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.46"
0.5	175	0.1430	6.09		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
11.3	275	Total			

Subcatchment P1-2A: To French Drain



Summary for Subcatchment P1-3: Offsite to Pond

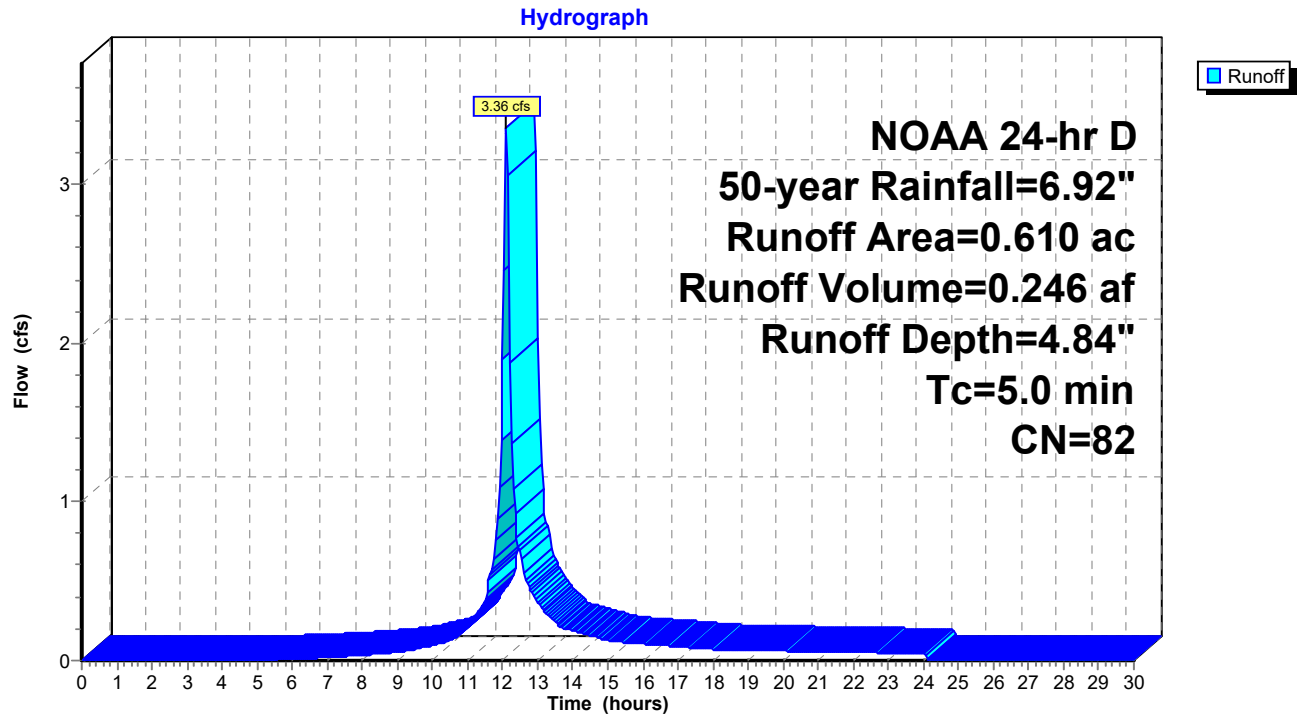
Runoff = 3.36 cfs @ 12.11 hrs, Volume= 0.246 af, Depth= 4.84"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
0.310	70	Woods, Good, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.250	98	Paved parking, HSG C
0.610	82	Weighted Average
0.360		59.02% Pervious Area
0.250		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min**

Subcatchment P1-3: Offsite to Pond

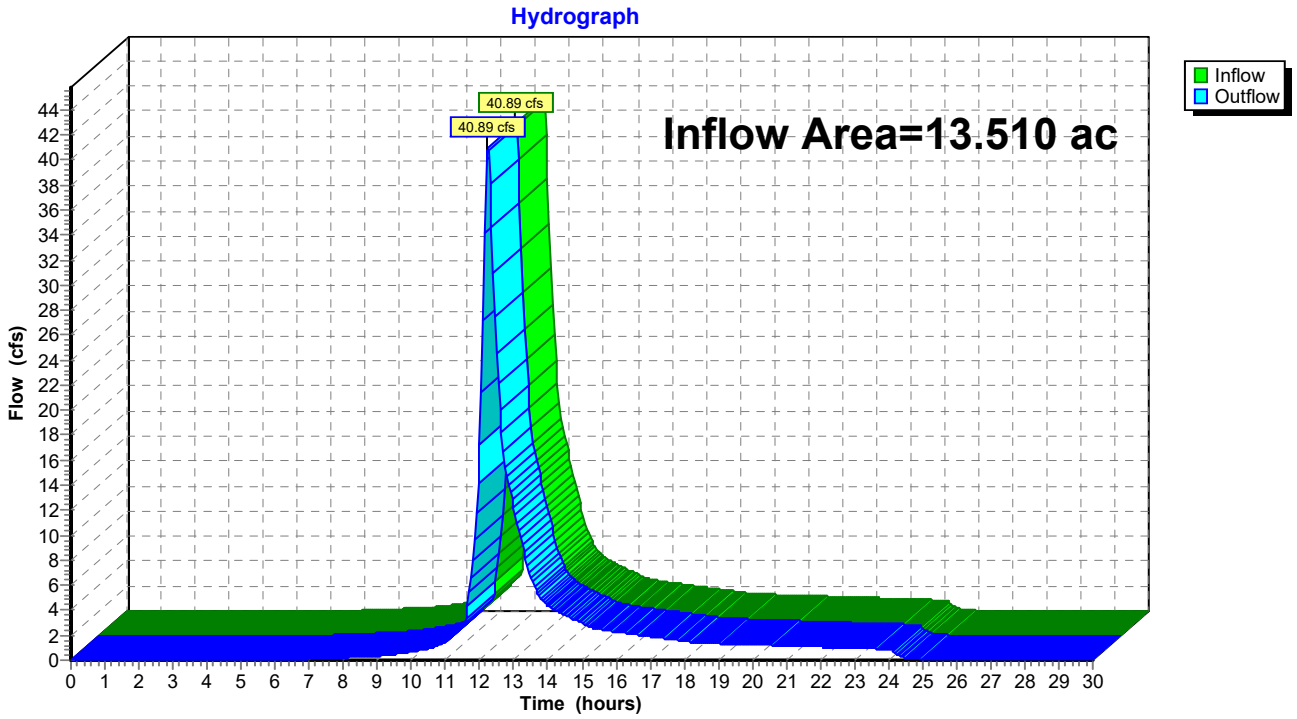


Summary for Reach TS: Total Site

Inflow Area = 13.510 ac, 28.57% Impervious, Inflow Depth = 4.06" for 50-year event
Inflow = 40.89 cfs @ 12.24 hrs, Volume= 4.572 af
Outflow = 40.89 cfs @ 12.24 hrs, Volume= 4.572 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 1-2: Detention Pond

Inflow Area = 7.680 ac, 31.77% Impervious, Inflow Depth = 4.58" for 50-year event
Inflow = 31.55 cfs @ 12.19 hrs, Volume= 2.929 af
Outflow = 21.64 cfs @ 12.32 hrs, Volume= 2.573 af, Atten= 31%, Lag= 7.6 min
Discarded = 0.13 cfs @ 12.32 hrs, Volume= 0.139 af
Primary = 21.51 cfs @ 12.32 hrs, Volume= 2.434 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 264.32' @ 12.32 hrs Surf.Area= 9,940 sf Storage= 36,255 cf

Plug-Flow detention time= 117.9 min calculated for 2.573 af (88% of inflow)
Center-of-Mass det. time= 58.8 min (877.8 - 818.9)

Volume	Invert	Avail.Storage	Storage Description
#1	258.50'	43,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

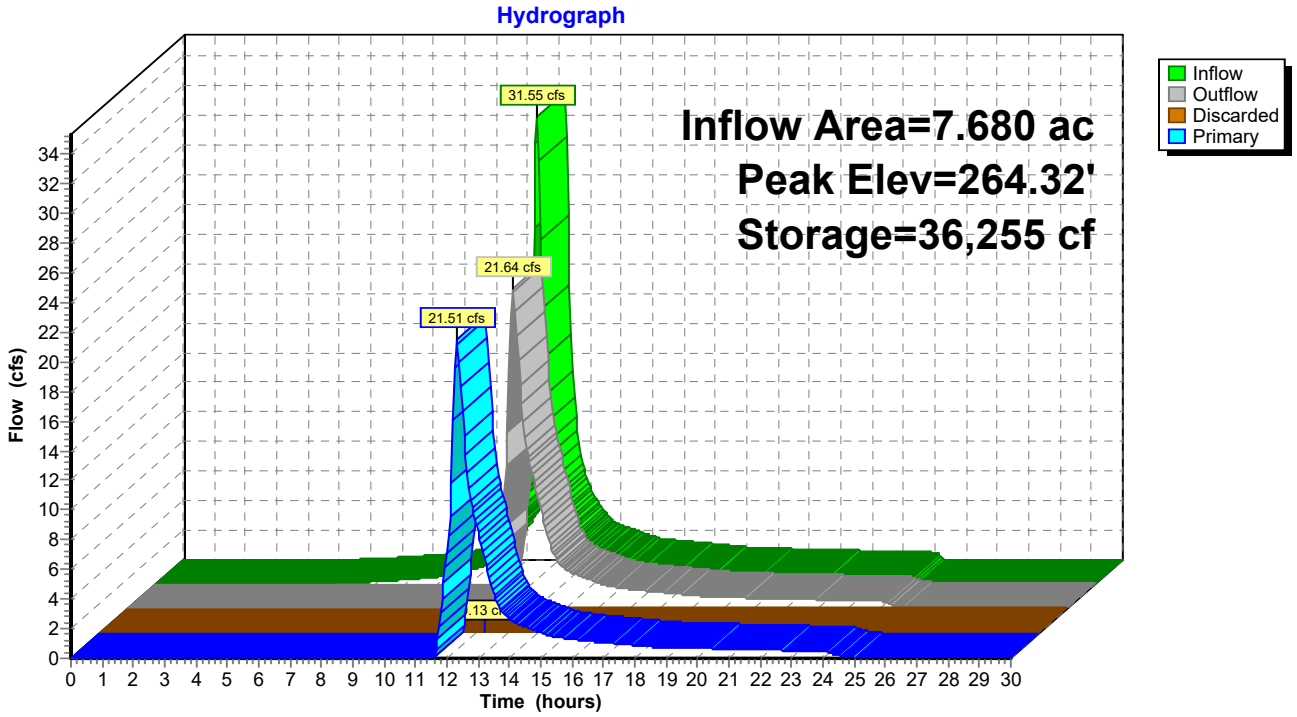
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.50	1,689	0	0
259.00	3,467	1,289	1,289
260.00	4,560	4,014	5,303
261.00	5,710	5,135	10,438
262.00	6,916	6,313	16,751
263.00	8,179	7,548	24,298
264.00	9,498	8,839	33,137
265.00	10,874	10,186	43,323

Device	Routing	Invert	Outlet Devices
#1	Primary	257.00'	**24.0" Round Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 257.00' / 254.47' S= 0.0342 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	262.00'	**36.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	**40.0" W x 33.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	258.50'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 257.00'

Discarded OutFlow Max=0.13 cfs @ 12.32 hrs HW=264.31' (Free Discharge)
└**4=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=21.29 cfs @ 12.32 hrs HW=264.31' (Free Discharge)
└**1=Culvert** (Passes 21.29 cfs of 33.52 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 13.52 cfs @ 6.76 fps)
  └**3=Grate** (Orifice Controls 7.77 cfs @ 2.89 fps)

Pond 1-2: Detention Pond



Stage-Area-Storage for Pond 1-2: Detention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.50	1,689	0
258.60	2,045	187
258.70	2,400	409
258.80	2,756	667
258.90	3,111	960
259.00	3,467	1,289
259.10	3,576	1,641
259.20	3,686	2,004
259.30	3,795	2,378
259.40	3,904	2,763
259.50	4,014	3,159
259.60	4,123	3,566
259.70	4,232	3,984
259.80	4,341	4,412
259.90	4,451	4,852
260.00	4,560	5,303
260.10	4,675	5,764
260.20	4,790	6,237
260.30	4,905	6,722
260.40	5,020	7,218
260.50	5,135	7,726
260.60	5,250	8,246
260.70	5,365	8,776
260.80	5,480	9,319
260.90	5,595	9,872
261.00	5,710	10,438
261.10	5,831	11,015
261.20	5,951	11,604
261.30	6,072	12,205
261.40	6,192	12,818
261.50	6,313	13,443
261.60	6,434	14,081
261.70	6,554	14,730
261.80	6,675	15,391
261.90	6,795	16,065
262.00	6,916	16,751
262.10	7,042	17,448
262.20	7,169	18,159
262.30	7,295	18,882
262.40	7,421	19,618
262.50	7,548	20,366
262.60	7,674	21,127
262.70	7,800	21,901
262.80	7,926	22,687
262.90	8,053	23,486
263.00	8,179	24,298
263.10	8,311	25,122
263.20	8,443	25,960
263.30	8,575	26,811
263.40	8,707	27,675
263.50	8,839	28,552
263.60	8,970	29,443
263.70	9,102	30,346
263.80	9,234	31,263
263.90	9,366	32,193
264.00	9,498	33,137
264.10	9,636	34,093
264.20	9,773	35,064
264.30	9,911	36,048
264.40	10,048	37,046
264.50	10,186	38,058
264.60	10,324	39,083
264.70	10,461	40,122
264.80	10,599	41,175
264.90	10,736	42,242
265.00	**10,874**	**43,323**
265.10	10,874	43,323
265.20	10,874	43,323
265.30	10,874	43,323
265.40	10,874	43,323
265.50	10,874	43,323
265.60	10,874	43,323
265.70	10,874	43,323
265.80	10,874	43,323
265.90	10,874	43,323
266.00	10,874	43,323
266.10	10,874	43,323
266.20	10,874	43,323

Summary for Pond 1-2A: French Drain

Inflow Area = 1.330 ac, 4.51% Impervious, Inflow Depth = 3.66" for 50-year event
Inflow = 4.65 cfs @ 12.19 hrs, Volume= 0.405 af
Outflow = 4.62 cfs @ 12.21 hrs, Volume= 0.405 af, Atten= 1%, Lag= 0.8 min
Discarded = 0.02 cfs @ 12.21 hrs, Volume= 0.038 af
Primary = 4.60 cfs @ 12.21 hrs, Volume= 0.367 af
Routed to Pond 1-2 : Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 308.80' @ 12.21 hrs Surf.Area= 960 sf Storage= 691 cf

Plug-Flow detention time= 23.9 min calculated for 0.405 af (100% of inflow)
Center-of-Mass det. time= 23.9 min (867.8 - 843.9)

Volume	Invert	Avail.Storage	Storage Description
#1	307.00'	768 cf	**French Drain Storage (Prismatic)** Listed below (Recalc) 1,920 cf Overall x 40.0% Voids

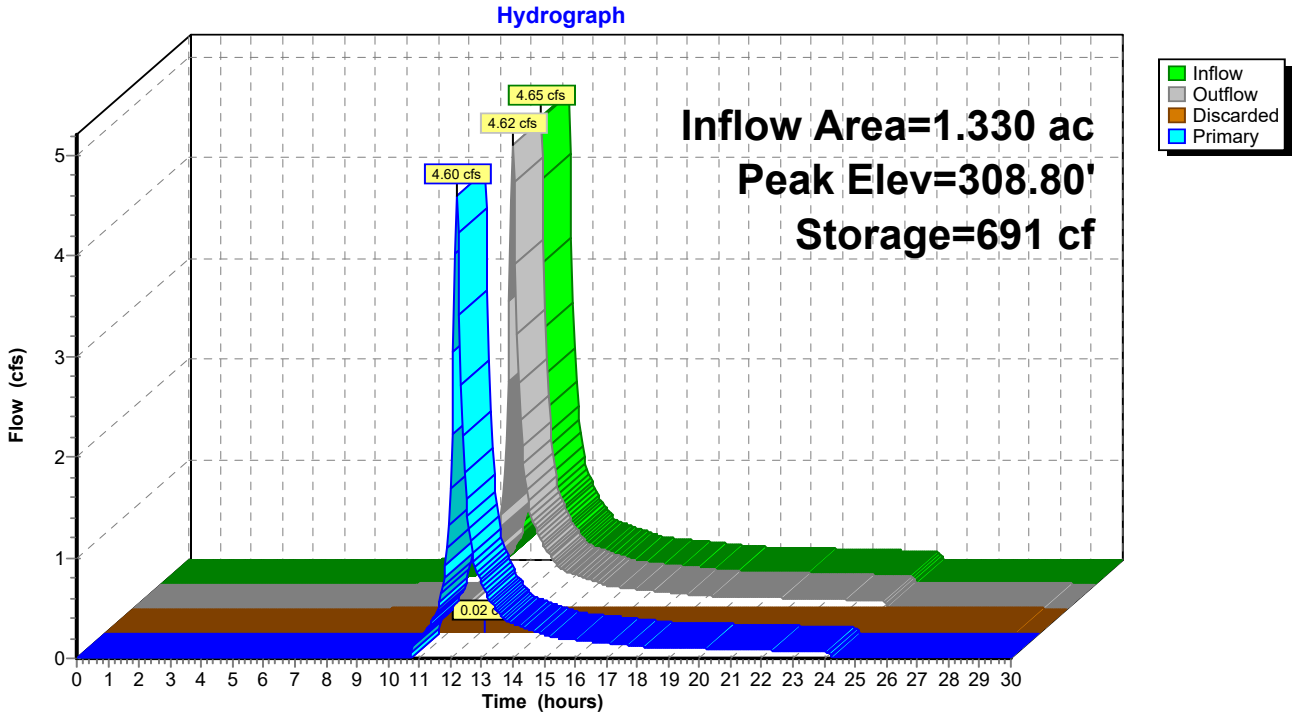
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
307.00	960	0	0
308.00	960	960	960
309.00	960	960	1,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**0.940 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 290.00'
#2	Primary	308.00'	**24.0" W x 36.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.21 hrs HW=308.80' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=4.55 cfs @ 12.21 hrs HW=308.80' (Free Discharge)
↑—**2=Grate** (Orifice Controls 4.55 cfs @ 2.86 fps)

Pond 1-2A: French Drain



Stage-Area-Storage for Pond 1-2A: French Drain

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
307.00	**960**	0
307.05	960	19
307.10	960	38
307.15	960	58
307.20	960	77
307.25	960	96
307.30	960	115
307.35	960	134
307.40	960	154
307.45	960	173
307.50	960	192
307.55	960	211
307.60	960	230
307.65	960	250
307.70	960	269
307.75	960	288
307.80	960	307
307.85	960	326
307.90	960	346
307.95	960	365
308.00	960	384
308.05	960	403
308.10	960	422
308.15	960	442
308.20	960	461
308.25	960	480
308.30	960	499
308.35	960	518
308.40	960	538
308.45	960	557
308.50	960	576
308.55	960	595
308.60	960	614
308.65	960	634
308.70	960	653
308.75	960	672
308.80	960	691
308.85	960	710
308.90	960	730
308.95	960	749
309.00	960	**768**
309.05	960	768
309.10	960	768
309.15	960	768
309.20	960	768
309.25	960	768
309.30	960	768
309.35	960	768
309.40	960	768
309.45	960	768
309.50	960	768
309.55	960	768
309.60	960	768
309.65	960	768
309.70	960	768
309.75	960	768
309.80	960	768
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309.90	960	768
309.95	960	768
310.00	960	768
310.05	960	768
310.10	960	768
310.15	960	768
310.20	960	768
310.25	960	768
310.30	960	768
310.35	960	768
310.40	960	768
310.45	960	768
310.50	960	768
310.55	960	768
310.60	960	768
310.65	960	768
310.70	960	768
310.75	960	768
310.80	960	768
310.85	960	768
310.90	960	768
310.95	960	768
311.00	960	768

Summary for Subcatchment P1-1: Direct to Wetlands

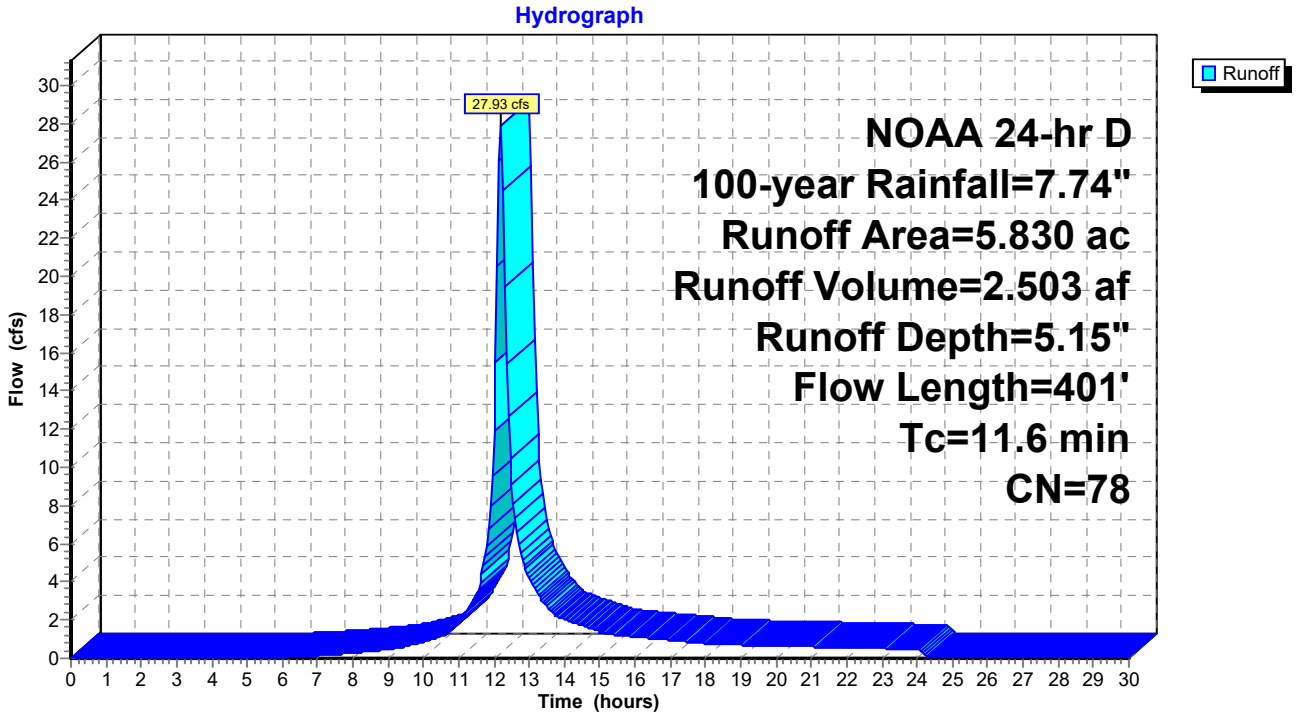
Runoff = 27.93 cfs @ 12.19 hrs, Volume= 2.503 af, Depth= 5.15"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
2.450	70	Woods, Good, HSG C
1.960	74	>75% Grass cover, Good, HSG C
1.420	98	Paved parking, HSG C
5.830	78	Weighted Average
4.410		75.64% Pervious Area
1.420		24.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1740	6.72		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.2030	7.25		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.5	166	0.1330	5.87		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
11.6	401	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

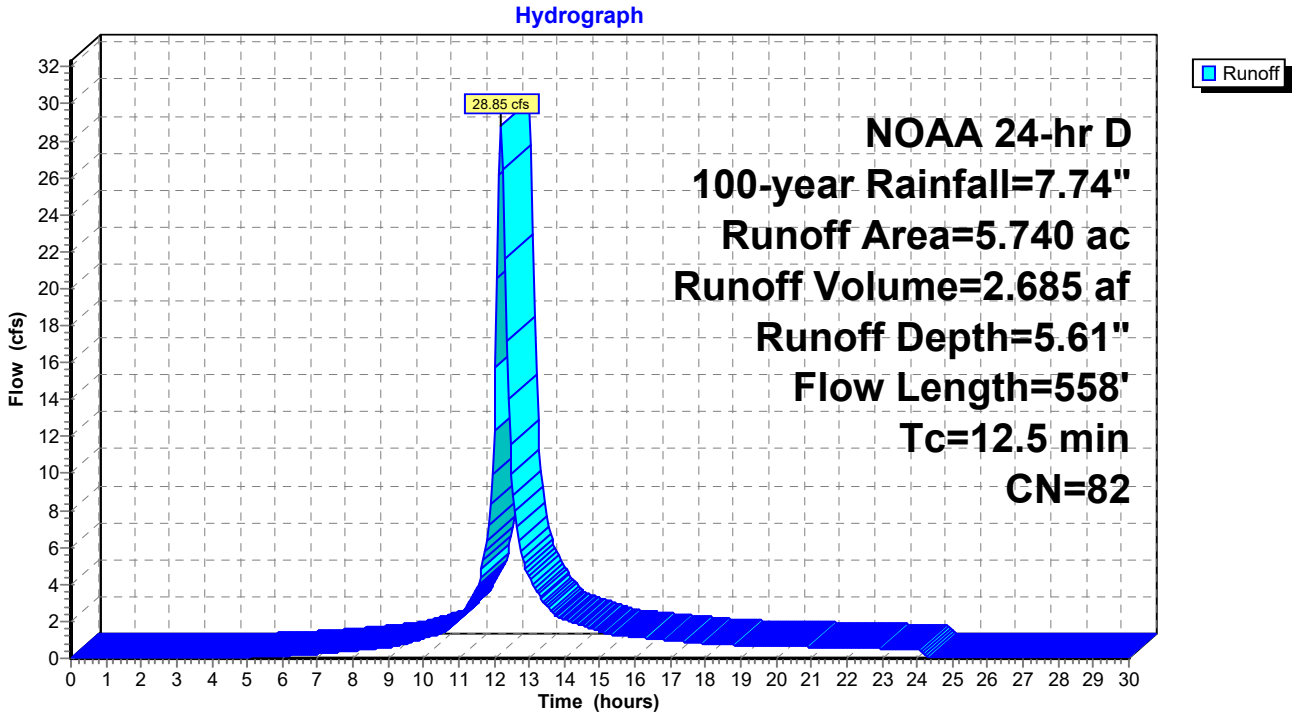
Runoff = 28.85 cfs @ 12.20 hrs, Volume= 2.685 af, Depth= 5.61"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
1.550	70	Woods, Good, HSG C
2.060	74	>75% Grass cover, Good, HSG C
2.130	98	Paved parking, HSG C
5.740	82	Weighted Average
3.610		62.89% Pervious Area
2.130		37.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.7	216	0.0930	4.91		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0310	3.57		**Shallow Concentrated Flow, Gravel** Paved Kv= 20.3 fps
0.1	20	0.1500	6.24		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.1	43	0.2300	7.72		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
12.5	558	Total			

Subcatchment P1-2: To Detention Pond



Summary for Subcatchment P1-2A: To French Drain

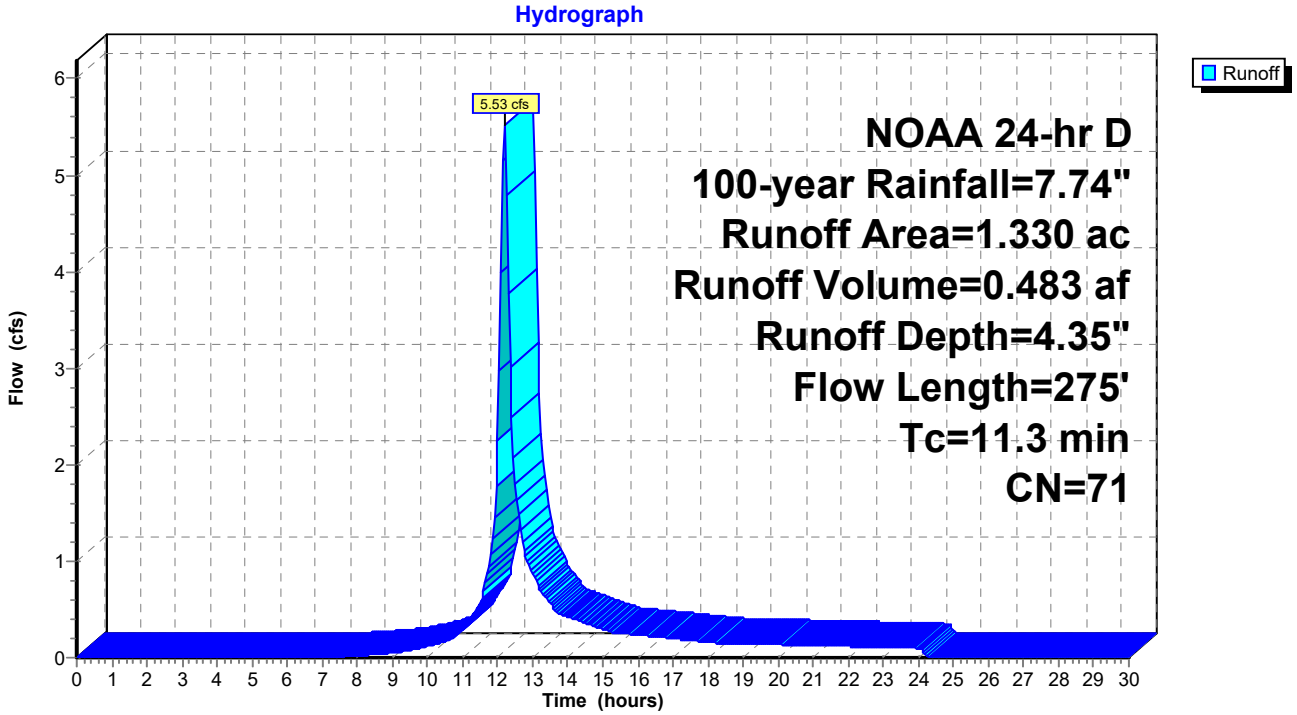
Runoff = 5.53 cfs @ 12.19 hrs, Volume= 0.483 af, Depth= 4.35"
Routed to Pond 1-2A : French Drain

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
1.230	70	Woods, Good, HSG C
0.040	74	>75% Grass cover, Good, HSG C
0.060	98	Paved parking, HSG C
1.330	71	Weighted Average
1.270		95.49% Pervious Area
0.060		4.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, AB** Woods: Light underbrush n= 0.400 P2= 3.46"
0.5	175	0.1430	6.09		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
11.3	275	Total			

Subcatchment P1-2A: To French Drain



Summary for Subcatchment P1-3: Offsite to Pond

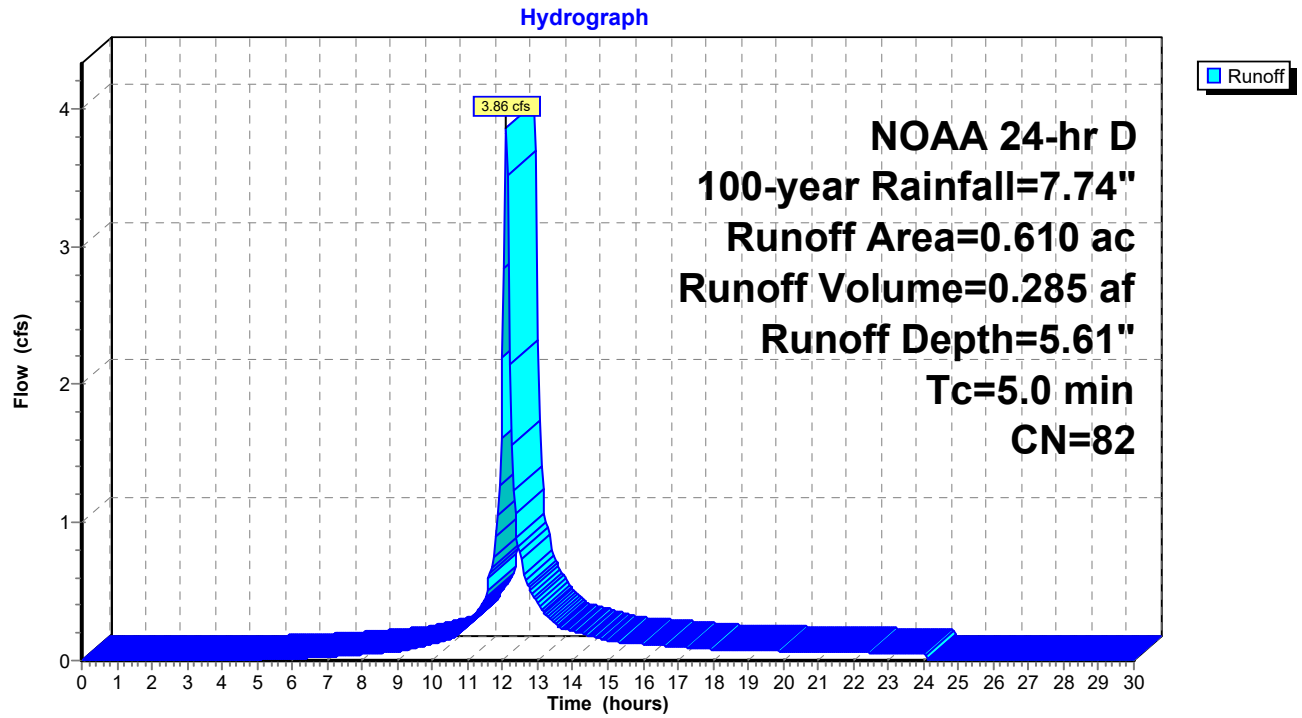
Runoff = 3.86 cfs @ 12.11 hrs, Volume= 0.285 af, Depth= 5.61"
Routed to Pond 1-2 : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
0.310	70	Woods, Good, HSG C
0.050	74	>75% Grass cover, Good, HSG C
0.250	98	Paved parking, HSG C
0.610	82	Weighted Average
0.360		59.02% Pervious Area
0.250		40.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Min**

Subcatchment P1-3: Offsite to Pond

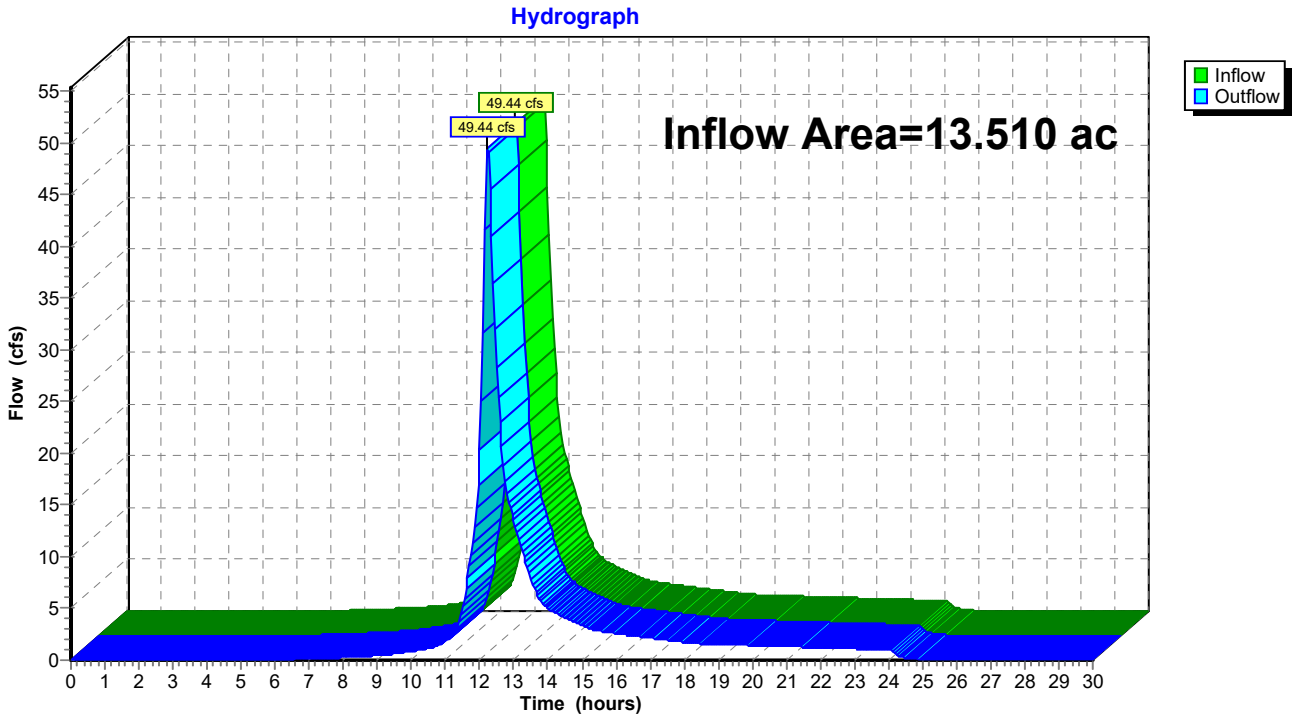


Summary for Reach TS: Total Site

Inflow Area = 13.510 ac, 28.57% Impervious, Inflow Depth = 4.81" for 100-year event
Inflow = 49.44 cfs @ 12.23 hrs, Volume= 5.417 af
Outflow = 49.44 cfs @ 12.23 hrs, Volume= 5.417 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 1-2: Detention Pond

Inflow Area = 7.680 ac, 31.77% Impervious, Inflow Depth = 5.33" for 100-year event
Inflow = 36.53 cfs @ 12.19 hrs, Volume= 3.414 af
Outflow = 26.35 cfs @ 12.31 hrs, Volume= 3.058 af, Atten= 28%, Lag= 7.0 min
Discarded = 0.14 cfs @ 12.31 hrs, Volume= 0.144 af
Primary = 26.22 cfs @ 12.31 hrs, Volume= 2.914 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 264.57' @ 12.31 hrs Surf.Area= 10,281 sf Storage= 38,764 cf

Plug-Flow detention time= 106.4 min calculated for 3.053 af (89% of inflow)
Center-of-Mass det. time= 54.5 min (869.1 - 814.5)

Volume	Invert	Avail.Storage	Storage Description
#1	258.50'	43,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

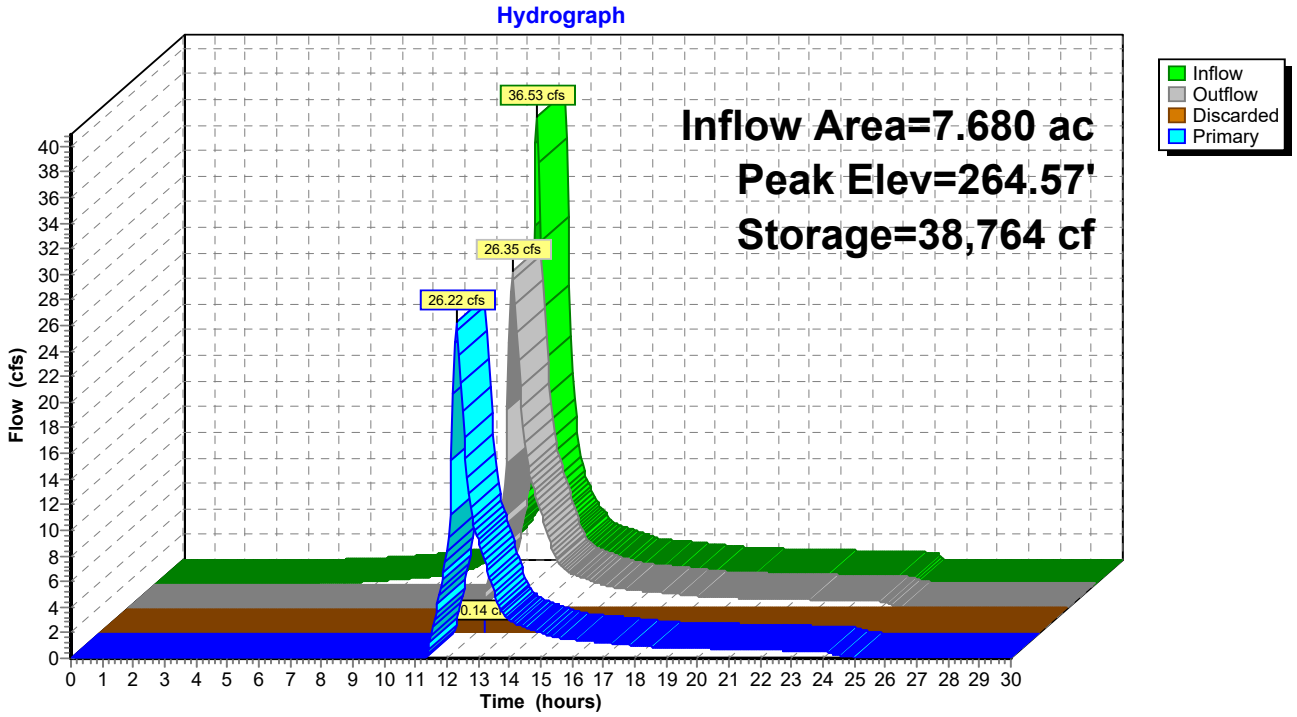
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
258.50	1,689	0	0
259.00	3,467	1,289	1,289
260.00	4,560	4,014	5,303
261.00	5,710	5,135	10,438
262.00	6,916	6,313	16,751
263.00	8,179	7,548	24,298
264.00	9,498	8,839	33,137
265.00	10,874	10,186	43,323

Device	Routing	Invert	Outlet Devices
#1	Primary	257.00'	**24.0" Round Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 257.00' / 254.47' S= 0.0342 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	262.00'	**36.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	263.50'	**40.0" W x 33.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	258.50'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 257.00'

Discarded OutFlow Max=0.14 cfs @ 12.31 hrs HW=264.56' (Free Discharge)
└**4=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=26.04 cfs @ 12.31 hrs HW=264.56' (Free Discharge)
└**1=Culvert** (Passes 26.04 cfs of 34.19 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 14.36 cfs @ 7.18 fps)
└**3=Grate** (Orifice Controls 11.68 cfs @ 3.31 fps)

Pond 1-2: Detention Pond



Stage-Area-Storage for Pond 1-2: Detention Pond

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
258.50	1,689	0
258.60	2,045	187
258.70	2,400	409
258.80	2,756	667
258.90	3,111	960
259.00	3,467	1,289
259.10	3,576	1,641
259.20	3,686	2,004
259.30	3,795	2,378
259.40	3,904	2,763
259.50	4,014	3,159
259.60	4,123	3,566
259.70	4,232	3,984
259.80	4,341	4,412
259.90	4,451	4,852
260.00	4,560	5,303
260.10	4,675	5,764
260.20	4,790	6,237
260.30	4,905	6,722
260.40	5,020	7,218
260.50	5,135	7,726
260.60	5,250	8,246
260.70	5,365	8,776
260.80	5,480	9,319
260.90	5,595	9,872
261.00	5,710	10,438
261.10	5,831	11,015
261.20	5,951	11,604
261.30	6,072	12,205
261.40	6,192	12,818
261.50	6,313	13,443
261.60	6,434	14,081
261.70	6,554	14,730
261.80	6,675	15,391
261.90	6,795	16,065
262.00	6,916	16,751
262.10	7,042	17,448
262.20	7,169	18,159
262.30	7,295	18,882
262.40	7,421	19,618
262.50	7,548	20,366
262.60	7,674	21,127
262.70	7,800	21,901
262.80	7,926	22,687
262.90	8,053	23,486
263.00	8,179	24,298
263.10	8,311	25,122
263.20	8,443	25,960
263.30	8,575	26,811
263.40	8,707	27,675
263.50	8,839	28,552
263.60	8,970	29,443
263.70	9,102	30,346
263.80	9,234	31,263
263.90	9,366	32,193
264.00	9,498	33,137
264.10	9,636	34,093
264.20	9,773	35,064
264.30	9,911	36,048
264.40	10,048	37,046
264.50	10,186	38,058
264.60	10,324	39,083
264.70	10,461	40,122
264.80	10,599	41,175
264.90	10,736	42,242
265.00	**10,874**	**43,323**
265.10	10,874	43,323
265.20	10,874	43,323
265.30	10,874	43,323
265.40	10,874	43,323
265.50	10,874	43,323
265.60	10,874	43,323
265.70	10,874	43,323
265.80	10,874	43,323
265.90	10,874	43,323
266.00	10,874	43,323
266.10	10,874	43,323
266.20	10,874	43,323

Summary for Pond 1-2A: French Drain

Inflow Area = 1.330 ac, 4.51% Impervious, Inflow Depth = 4.35" for 100-year event
Inflow = 5.53 cfs @ 12.19 hrs, Volume= 0.483 af
Outflow = 5.50 cfs @ 12.20 hrs, Volume= 0.483 af, Atten= 0%, Lag= 0.7 min
Discarded = 0.02 cfs @ 12.20 hrs, Volume= 0.039 af
Primary = 5.48 cfs @ 12.20 hrs, Volume= 0.444 af
Routed to Pond 1-2 : Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 308.90' @ 12.20 hrs Surf.Area= 960 sf Storage= 729 cf

Plug-Flow detention time= 20.4 min calculated for 0.482 af (100% of inflow)
Center-of-Mass det. time= 20.8 min (859.2 - 838.3)

Volume	Invert	Avail.Storage	Storage Description
#1	307.00'	768 cf	**French Drain Storage (Prismatic)** Listed below (Recalc) 1,920 cf Overall x 40.0% Voids

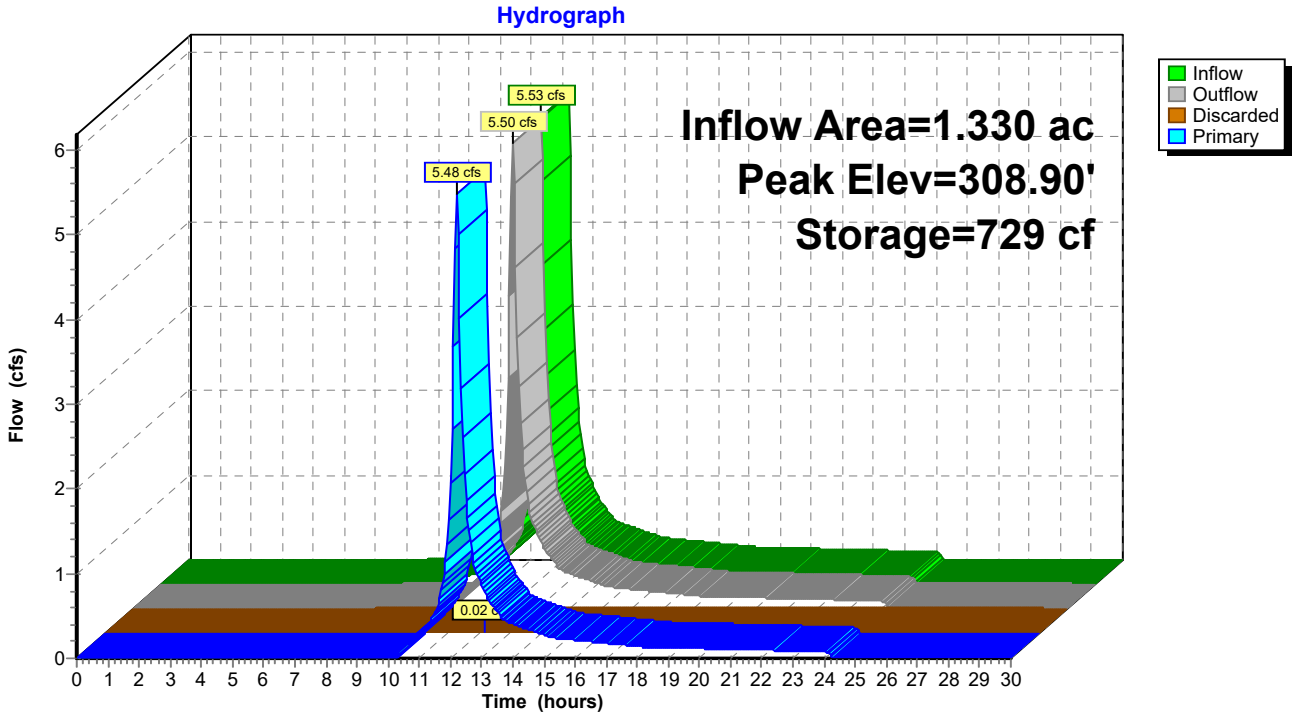
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
307.00	960	0	0
308.00	960	960	960
309.00	960	960	1,920

Device	Routing	Invert	Outlet Devices
#1	Discarded	307.00'	**0.940 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 290.00'
#2	Primary	308.00'	**24.0" W x 36.0" H Vert. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.20 hrs HW=308.90' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=5.44 cfs @ 12.20 hrs HW=308.90' (Free Discharge)
↑—**2=Grate** (Orifice Controls 5.44 cfs @ 3.04 fps)

Pond 1-2A: French Drain



Stage-Area-Storage for Pond 1-2A: French Drain

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
307.00	**960**	0
307.05	960	19
307.10	960	38
307.15	960	58
307.20	960	77
307.25	960	96
307.30	960	115
307.35	960	134
307.40	960	154
307.45	960	173
307.50	960	192
307.55	960	211
307.60	960	230
307.65	960	250
307.70	960	269
307.75	960	288
307.80	960	307
307.85	960	326
307.90	960	346
307.95	960	365
308.00	960	384
308.05	960	403
308.10	960	422
308.15	960	442
308.20	960	461
308.25	960	480
308.30	960	499
308.35	960	518
308.40	960	538
308.45	960	557
308.50	960	576
308.55	960	595
308.60	960	614
308.65	960	634
308.70	960	653
308.75	960	672
308.80	960	691
308.85	960	710
308.90	960	730
308.95	960	749
309.00	960	**768**
309.05	960	768
309.10	960	768
309.15	960	768
309.20	960	768
309.25	960	768
309.30	960	768
309.35	960	768
309.40	960	768
309.45	960	768
309.50	960	768
309.55	960	768
309.60	960	768
309.65	960	768
309.70	960	768
309.75	960	768
309.80	960	768
309.85	960	768
309.90	960	768
309.95	960	768
310.00	960	768
310.05	960	768
310.10	960	768
310.15	960	768
310.20	960	768
310.25	960	768
310.30	960	768
310.35	960	768
310.40	960	768
310.45	960	768
310.50	960	768
310.55	960	768
310.60	960	768
310.65	960	768
310.70	960	768
310.75	960	768
310.80	960	768
310.85	960	768
310.90	960	768
310.95	960	768
311.00	960	768

APPENDIX C

Hydraulic Analysis



Prepared by:

benesch

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860-633-8341

Prepared for:

Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

PROJECT NO.: **0725 500010.00**
SCALE: **1" = 50'**
DATE: **12/20/2024**

DRAWN BY: **CLM**
CHECKED BY: **WGW**

CATCHMENT AREA MAP

DRAWING NO.:

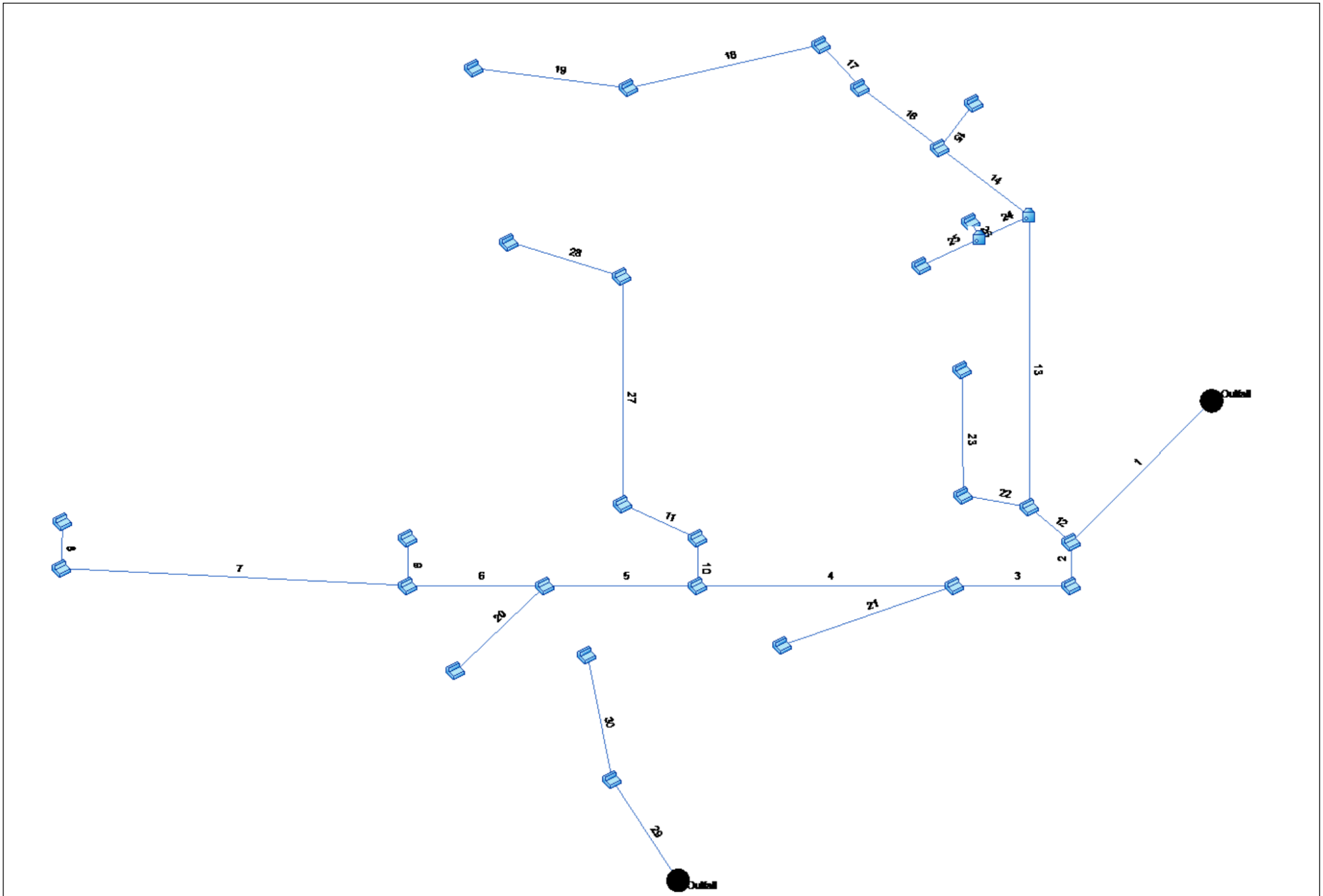
CAM

Job Number: 0725-500010.00

Drainage Areas

BASIN	TOTAL (SF)	TOTAL (AC)	IMPERV. (SF)	IMPERV. (AC)	PERVIOUS (SF)	PERVIOUS (AC)	C-Value	Tc (Min.)
CCB - 101	4,035	**0.09**	4035	0.09	0	0.00	**0.90**	5.00
CCB - 102	1,111	**0.03**	1111	0.03	0	0.00	**0.90**	5.00
CCB - 103	2,094	**0.05**	2,094	0.05	0	0.00	**0.90**	5.00
CCB - 104	1,253	**0.03**	1,253	0.03	0	0.00	**0.90**	5.00
CCB - 105	1,355	**0.03**	1,355	0.03	0	0.00	**0.90**	5.00
CCB - 106	2,628	**0.06**	2,628	0.06	0	0.00	**0.90**	5.00
CCB - 107	3,002	**0.07**	3,002	0.07	0	0.00	**0.90**	5.00
CCB - 108	10,460	**0.24**	10,419	0.24	41	0.00	**0.90**	5.00
CCB - 109	11,726	**0.27**	6,467	0.15	5,259	0.12	**0.63**	5.50
DCCB - 110	17,233	**0.40**	8,068	0.19	9,165	0.21	**0.58**	5.00
CCB - 111	10,262	**0.24**	6,738	0.15	3,524	0.08	**0.69**	5.00
DCCB - 112	16,342	**0.38**	3,461	0.08	12,881	0.30	**0.43**	12.00
CCB - 113	8,897	**0.20**	3583	0.08	5,314	0.12	**0.54**	11.40
AD-114	47,830	**1.10**	10736.6	0.25	37,094	0.85	**0.43**	12.50
AD-115	785	**0.02**	0	0.00	785	0.02	**0.30**	5.00
AD-116	14,833	**0.34**	1841.63	0.04	12,991	0.30	**0.37**	10.80
AD-117	5,697	**0.13**	0	0.00	5,697	0.13	**0.30**	5.00
CLCB-118	59,686	**1.37**	0	0.00	59,686	1.37	**0.30**	11.30
CCB -119	1,025	**0.02**	1025	0.02	0	0.00	**0.90**	12.30
AD-120	2,336	**0.05**	1240	0.03	1,096	0.03	**0.62**	5.00
AD-121	29,795	**0.68**	8320.76	0.19	21,474	0.49	**0.47**	6.40
AD-122	4,039	**0.09**	2210	0.05	1,829	0.04	**0.63**	5.00
AD-123	3,962	**0.09**	1640.6	0.04	2,322	0.05	**0.55**	5.00
AD-124	768	**0.02**	0	0.00	768	0.02	**0.30**	5.00
AD-125	3,300	**0.08**	422	0.01	2,878	0.07	**0.38**	5.00
AD-126	5,610	**0.13**	1026	0.02	4,584	0.11	**0.41**	5.00
CCB - 202	3,903	**0.09**	3,903	0.09	0	0.00	**0.90**	5.00
CCB - 203	911	**0.02**	911	0.02	0	0.00	**0.90**	5.00
DCCB - 204A	8,037	**0.18**	3,593	0.08	4,444	0.10	**0.57**	5.00
CCB - 205	6,041	**0.14**	2,055	0.05	3,986	0.09	**0.50**	5.00
CCB - 206	964	**0.02**	964	0.02	0	0.00	**0.90**	5.00
CCB - 207	763	**0.02**	763	0.02	0	0.00	**0.90**	5.00
CCB - 208A	4,187	**0.10**	2,336	0.05	1,851	0.04	**0.63**	5.00
CLCB - 209	1,699	**0.04**	1,699	0.04	0	0	**0.90**	5.00
CLCB - 210	845	**0.02**	845	0.02	0	0	**0.90**	5.00
AD-300	9,263	**0.21**	3223.17	0.07	6,040	0.14	**0.51**	5.00
AD-301	5,443	**0.12**	395.18	0.01	5,048	0.12	**0.34**	5.00

CAM - 100



Project File: storm - 100.stm	Number of lines: 30	Date: 5/16/2025

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	106.000	0.09	6.21	0.90	0.08	3.00	5.0	13.5	5.5	16.38	48.31	5.95	24	3.89	259.00	263.12	263.50	264.58	261.00	266.54	CCB - 101
2	1	23.000	0.03	1.77	0.90	0.03	1.04	5.0	13.4	5.5	5.73	11.38	4.17	18	1.00	263.17	263.40	264.58	264.32	266.54	266.95	CCB - 102
3	2	62.000	0.05	1.74	0.90	0.05	1.02	5.0	13.2	5.5	5.63	20.59	5.13	18	3.27	263.45	265.48	264.32	266.39	266.95	270.31	CCB - 103
4	3	137.000	0.03	1.61	0.90	0.03	0.94	5.0	12.9	5.6	5.27	27.18	8.38	18	5.71	266.81	274.63	267.26	275.51	270.31	280.41	CCB - 104
5	4	81.000	0.03	0.87	0.90	0.03	0.47	5.0	12.7	5.6	2.64	16.73	7.02	15	5.72	277.16	281.79	277.50	282.44	280.41	285.09	CCB - 105
6	5	73.000	0.06	0.71	0.90	0.05	0.39	5.0	12.4	5.7	2.22	20.52	3.83	15	8.60	281.84	288.12	282.44	288.71	285.09	291.62	CCB - 106
7	6	185.000	0.07	0.27	0.90	0.06	0.17	5.0	11.5	5.9	1.02	23.87	3.37	15	11.64	288.37	309.91	288.71	310.31	291.62	316.00	CCB - 107
8	7	25.000	0.20	0.20	0.54	0.11	0.11	11.4	11.4	6.0	0.65	18.03	3.96	15	6.64	310.11	311.77	310.31	312.08	316.00	316.00	CCB - 113
9	6	25.000	0.38	0.38	0.43	0.16	0.16	12.0	12.0	5.8	0.95	6.71	2.42	15	0.92	288.17	288.40	288.71	288.78	291.62	291.65	DCCB - 112
10	4	25.000	0.40	0.71	0.58	0.23	0.45	5.0	6.7	7.7	3.46	10.56	5.33	15	2.28	274.93	275.50	275.51	276.25	280.41	280.40	DCCB - 110
11	10	44.000	0.24	0.31	0.69	0.17	0.21	5.0	6.6	7.8	1.67	21.61	6.98	15	9.55	277.15	281.35	277.39	281.86	280.40	284.40	CCB - 111
12	1	29.000	0.24	4.35	0.90	0.22	1.87	5.0	13.3	5.5	10.30	19.00	9.00	15	7.38	263.54	265.68	264.58	266.87	266.54	268.98	CCB - 108
13	12	155.000	0.00	3.34	0.00	0.00	1.28	0.0	12.9	5.6	7.16	15.48	6.25	15	4.90	265.73	273.32	266.87	274.39	268.98	278.18	DMH - 114
14	13	60.000	0.27	3.23	0.63	0.17	1.22	5.5	12.8	5.6	6.90	7.00	6.37	15	1.00	274.85	275.45	275.86	276.50	278.18	281.56	CCB - 109
15	14	30.000	1.10	1.10	0.43	0.47	0.47	12.5	12.5	5.7	2.69	3.86	4.28	12	1.00	275.70	276.00	276.50	276.70	281.56	279.00	AD-114
16	14	53.000	0.02	1.86	0.30	0.01	0.58	5.0	12.6	5.7	3.30	10.99	4.96	12	8.11	275.70	280.00	276.50	280.78	281.56	286.00	AD - 115
17	16	31.000	0.34	1.84	0.37	0.13	0.58	10.8	12.5	5.7	3.27	13.51	9.59	12	12.26	283.00	286.80	283.34	287.57	286.00	293.00	AD - 116
18	17	105.000	0.13	1.50	0.30	0.04	0.45	5.0	12.1	5.8	2.60	7.72	4.25	12	4.00	286.80	291.00	287.57	291.69	293.00	294.00	AD - 117
19	18	83.000	1.37	1.37	0.30	0.41	0.41	11.8	11.8	5.9	2.41	12.70	4.26	12	10.84	291.00	300.00	291.69	300.66	294.00	308.00	CLCB - 118
20	5	66.000	0.13	0.13	0.41	0.05	0.05	5.0	5.0	8.8	0.47	10.52	2.23	12	7.44	282.09	287.00	282.44	287.28	285.09	290.00	AD-126
21	3	97.000	0.08	0.08	0.38	0.03	0.03	5.0	5.0	8.8	0.27	3.86	1.28	12	1.00	265.53	266.50	266.39	266.71	270.31	269.00	AD-125
22	12	36.000	0.68	0.77	0.47	0.32	0.38	6.4	6.4	7.9	2.97	6.33	4.41	12	2.69	265.98	266.95	266.87	267.69	268.98	270.00	AD-121

CAM - 100 | Number of lines: 30 | Run Date: 5/16/2025

NOTES:Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	22	67.000	0.09	0.09	0.63	0.06	0.06	5.0	5.0	8.8	0.50	8.16	1.73	12	4.48	267.00	270.00	267.69	270.29	270.00	273.00	AD-122
24	13	29.000	0.00	0.11	0.00	0.00	0.06	0.0	5.7	8.3	0.46	3.86	0.67	12	1.00	273.37	273.66	274.39	274.39	278.18	277.00	BLIND TIE
25	24	34.000	0.02	0.02	0.30	0.01	0.01	5.0	5.0	8.8	0.05	3.86	0.76	12	1.00	273.66	274.00	274.40	274.09	277.00	277.00	AD-124
26	24	10.000	0.09	0.09	0.55	0.05	0.05	5.0	5.0	8.8	0.43	3.86	1.60	12	1.00	273.66	273.76	274.40	274.03	277.00	277.50	AD-123
27	11	121.000	0.02	0.07	0.90	0.02	0.05	5.0	5.5	8.4	0.41	9.32	1.82	12	5.83	281.40	288.46	281.86	288.73	284.40	291.51	CCB-119
28	27	63.000	0.05	0.05	0.62	0.03	0.03	5.0	5.0	8.8	0.27	7.67	2.19	12	3.95	288.51	291.00	288.73	291.21	291.51	294.00	AD-120
29	End	64.000	0.21	0.33	0.51	0.11	0.15	5.0	5.6	8.3	1.23	3.86	3.41	12	1.00	270.81	271.45	271.28	271.92	271.81	274.50	AD-300
30	29	68.000	0.12	0.12	0.34	0.04	0.04	5.0	5.0	8.8	0.36	10.46	1.76	12	7.35	271.50	276.50	271.92	276.75	274.50	279.50	AD-301

CAM - 100 | Number of lines: 30 | Run Date: 5/16/2025

NOTES:Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period =Yrs. 25 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	CCB - 101	0.71	0.00	0.71	0.00	Comb	4.0	2.20	2.00	2.00	2.00	Sag	2.00	0.050	0.020	0.013	0.10	2.00	0.27	2.00	2.0	Off
2	CCB - 102	0.24	0.00	0.24	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.02	1.13	0.15	1.13	2.0	Off
3	CCB - 103	0.39	0.00	0.39	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.03	1.48	0.20	1.48	2.0	Off
4	CCB - 104	0.24	0.00	0.24	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.02	1.13	0.15	1.13	2.0	Off
5	CCB - 105	0.24	0.00	0.24	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.02	1.13	0.15	1.13	2.0	Off
6	CCB - 106	0.47	0.00	0.47	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.05	1.61	0.21	1.61	2.0	Off
7	CCB - 107	0.55	0.00	0.55	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.06	1.72	0.23	1.72	2.0	Off
8	CCB - 113	0.65	0.00	0.65	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.08	1.85	0.25	1.85	2.0	Off
9	DCCB - 112	0.95	0.00	0.95	0.00	Comb	4.0	5.83	12.13	5.83	2.08	Sag	2.00	0.050	0.020	0.013	0.07	1.80	0.24	1.80	2.0	Off
10	DCCB - 110	2.03	0.00	2.03	0.00	Comb	4.0	5.83	12.13	5.83	2.08	Sag	2.00	0.050	0.020	0.013	0.13	3.66	0.30	3.66	2.0	Off
11	CCB - 111	1.45	0.00	1.45	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.12	3.02	0.29	3.02	2.0	Off
12	CCB - 108	1.89	0.00	1.89	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.15	4.28	0.31	4.28	2.0	Off
13	MH - 114	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
14	CCB - 109	1.43	0.00	1.43	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.12	2.97	0.29	2.97	2.0	Off
15	AD - 114	2.69	0.00	2.69	0.00	Grate	0.0	0.00	6.28	3.18	2.00	Sag	2.00	0.050	0.020	0.013	0.30	11.99	0.30	11.99	0.0	Off
16	AD - 115	0.05	0.00	0.05	0.00	Grate	0.0	0.00	6.28	3.14	2.00	Sag	2.00	0.050	0.020	0.013	0.04	0.73	0.04	0.73	0.0	Off
17	AD - 116	0.77	0.00	0.77	0.00	Grate	0.0	0.00	6.28	3.14	2.00	Sag	2.00	0.050	0.020	0.013	0.16	4.96	0.16	4.96	0.0	Off
18	AD - 117	0.34	0.00	0.34	0.00	Grate	0.0	0.00	6.28	3.14	2.00	Sag	2.00	0.050	0.020	0.013	0.11	2.67	0.11	2.67	0.0	Off
19	CLCB - 118	2.41	0.00	2.41	0.00	Grate	0.0	0.00	3.74	1.70	2.20	Sag	2.00	0.050	0.020	0.013	0.31	12.69	0.31	12.69	0.0	Off
20	AD-126	0.47	0.00	0.47	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.04	1.55	0.21	1.55	2.0	5
21	AD-125	0.27	0.00	0.27	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	-0.02	1.09	0.15	1.09	2.0	3
22	AD-121	2.53	0.00	2.53	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.26	10.02	0.43	10.02	2.0	12
23	AD-122	0.50	0.00	0.50	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.04	1.58	0.21	1.58	2.0	22

CAM - 100 | Number of lines: 30 | Run Date: 5/16/2025

NOTES: Inlet N-Values = 0.016; Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

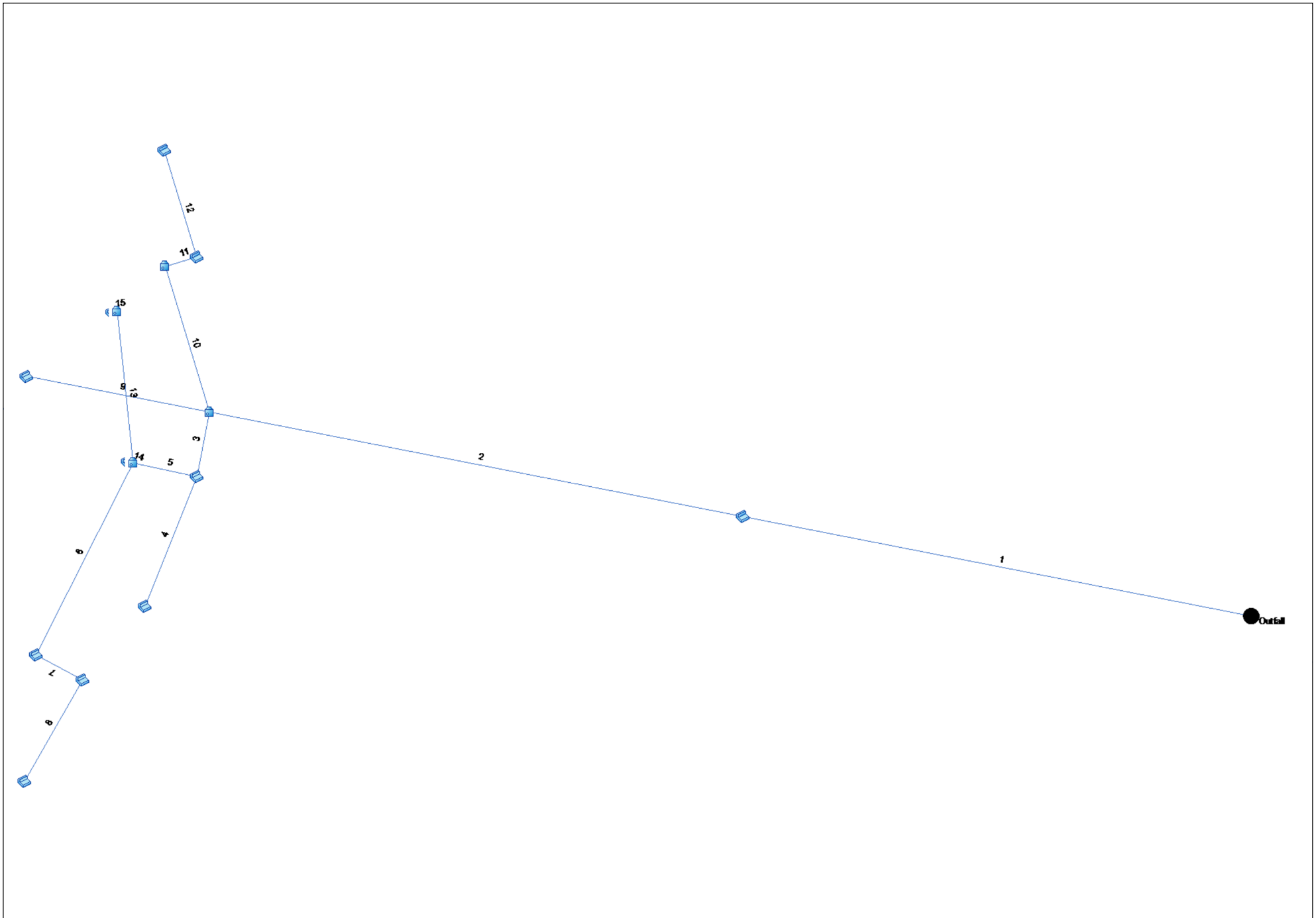
Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
24	BLIND TIE	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	13
25	AD-124	0.05	0.00	0.05	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	-0.12	0.37	0.05	0.37	2.0	24
26	AD-123	0.43	0.00	0.43	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.03	1.51	0.20	1.51	2.0	24
27	CCB-119	0.16	0.00	0.16	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.05	0.90	0.12	0.90	2.0	11
28	AD-120	0.27	0.00	0.27	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	-0.02	1.11	0.15	1.11	2.0	27
29	AD-300	0.94	0.00	0.94	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.10	2.12	0.27	2.12	2.0	Off
30	AD-301	0.36	0.00	0.36	0.00	Grate	0.0	0.00	2.25	1.50	1.50	Sag	2.00	0.050	0.020	0.013	0.01	1.33	0.18	1.33	2.0	29

CAM - 100 | Number of lines: 30 | Run Date: 5/16/2025

NOTES: Inlet N-Values = 0.016; Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: storm - 200.stm	Number of lines: 15	Date: 5/15/2025

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	206.000	0.00	0.91	0.00	0.00	0.59	0.0	6.4	7.9	21.44	67.73	8.61	24	7.64	207.00	222.74	208.35	224.40	209.00	228.70	EX-CLCB
2	1	216.000	0.00	0.91	0.00	0.00	0.59	0.0	6.2	8.0	21.52	77.70	14.43	24	10.06	224.49	246.21	225.21	247.87	228.70	258.47	DMH - 201
3	2	26.000	0.09	0.85	0.90	0.08	0.54	5.0	6.0	8.1	4.34	52.20	3.46	24	4.54	246.86	248.04	247.87	248.77	258.47	257.60	CCB - 202
4	3	55.000	0.02	0.02	0.90	0.02	0.02	5.0	5.0	8.8	0.16	12.55	2.67	15	3.22	254.35	256.12	254.45	256.27	257.60	259.37	CCB - 203
5	3	26.000	0.18	0.74	0.57	0.10	0.44	5.0	6.0	8.2	3.57	31.87	4.63	24	1.69	248.24	248.68	248.77	249.34	257.60	257.60	DMH - 204
6	5	85.000	0.14	0.18	0.50	0.07	0.11	5.0	5.6	8.4	0.89	23.62	3.72	21	1.89	249.28	250.89	249.51	251.23	257.60	261.32	CCB - 205
7	6	21.000	0.02	0.04	0.90	0.02	0.04	5.0	5.4	8.5	0.31	7.16	2.54	15	1.05	258.07	258.29	258.25	258.50	261.32	261.59	CCB - 206
8	7	46.000	0.02	0.02	0.90	0.02	0.02	5.0	5.0	8.8	0.16	15.88	1.75	15	5.15	258.34	260.71	258.50	260.86	261.59	263.96	CCB - 207
9	2	74.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	16.78	45.31	10.05	24	3.42	254.47	257.00	255.31	258.48	258.47	263.50	OCS - 1
10	2	60.000	0.00	0.06	0.00	0.00	0.05	0.0	5.6	8.4	0.45	83.33	4.66	24	11.57	248.51	255.45	248.62	255.68	258.47	260.50	DMH - 211
11	10	13.000	0.04	0.06	0.90	0.04	0.05	5.0	5.5	8.4	0.46	7.00	2.82	15	1.00	257.62	257.75	257.84	258.01	260.50	260.80	CLCB - 209
12	11	44.000	0.02	0.02	0.90	0.02	0.02	5.0	5.0	8.8	0.16	15.46	1.49	15	4.89	257.80	259.95	258.01	260.10	260.80	262.95	CLCB - 210
13	5	60.000	0.10	0.20	0.63	0.06	0.13	5.0	5.0	8.8	1.10	18.57	2.40	15	7.05	248.68	252.91	249.34	253.32	257.60	259.73	CCB - 208A
14	5	2.000	0.18	0.18	0.57	0.10	0.10	5.0	5.0	8.8	0.90	25.44	4.80	18	5.00	253.50	253.60	253.69	253.95	257.60	257.60	DCCB - 204A
15	13	2.000	0.10	0.10	0.63	0.06	0.06	5.0	5.0	8.8	0.55	15.64	4.27	15	5.00	256.20	256.30	256.36	256.59	259.73	259.72	CCB - 208A

Project File: storm - 200.stm

Number of lines: 15

Run Date: 5/15/2025

NOTES:Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period =Yrs. 25 ; c = cir e = ellip b = box

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	EX-CLCB	0.00	0.00	0.00	0.00	Grate	0.0	0.00	3.74	2.20	1.70	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
2	DMH - 201	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	1
3	CCB - 202	0.71	0.00	0.71	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.09	1.92	0.26	1.92	2.0	Off
4	CCB - 203	0.16	0.00	0.16	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.05	0.90	0.12	0.90	2.0	Off
5	DMH - 204	0.90	0.00	0.00	0.90	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
6	CCB - 205	0.61	0.00	0.61	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.07	1.81	0.24	1.81	2.0	Off
7	CCB - 206	0.16	0.00	0.16	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.05	0.90	0.12	0.90	2.0	Off
8	CCB - 207	0.16	0.00	0.16	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	-0.05	0.90	0.12	0.90	2.0	Off
9	OCS - 1	16.78*	0.00	16.78	0.00	Comb	4.0	4.00	5.94	2.70	2.20	Sag	2.00	0.050	0.020	0.013	0.71	32.68	0.88	32.68	2.0	Off
10	DMH - 211	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
11	CLCB - 209	0.32	0.00	0.32	0.00	Grate	0.0	0.00	4.59	2.70	1.70	Sag	2.00	0.050	0.020	0.013	-0.03	1.00	0.13	1.00	2.0	Off
12	CLCB - 210	0.16	0.00	0.16	0.00	Grate	0.0	0.00	4.59	2.70	1.70	Sag	2.00	0.050	0.020	0.013	-0.08	0.63	0.08	0.63	2.0	Off
13	CCB - 208A	0.55	0.00	0.00	0.55	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	Off
14	DCCB - 204A	0.90	0.00	0.90	0.00	Comb	4.0	5.83	12.13	5.83	2.08	Sag	2.00	0.050	0.020	0.013	0.07	1.74	0.23	1.74	2.0	5
15	CCB - 208A	0.55	0.00	0.55	0.00	Comb	4.0	5.83	12.13	5.83	2.08	Sag	2.00	0.050	0.020	0.013	0.01	1.31	0.17	1.31	2.0	13

Project File: storm - 200.stm | Number of lines: 15 | Run Date: 5/15/2025

NOTES: Inlet N-Values = 0.016; Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

APPENDIX D

Water Quality Volume

Water Quality Volume Computations
8, 9, 11 Colby Drive, Ledyard, CT
Project # 0725-500010.00

Designation	Description	Total Area (ac)	Total Impervious Area (ac)	Impervious Coverage, I (%)	Volumetric Runoff Coefficient (R)	WQV (ac-ft, apply 1.3")	Required WQV (cf)	Provided WQV (cf)
					R = 0.05 + 0.009*(I)	WQV = (1.3")*(R)*(A)/12		
1	Total Site	12.86	3.19	24.79	0.27	0.381	16,575	16,757
2	Flow to Pond	7.69	3.09	40.18	0.41	0.343	14,938	16,757

APPENDIX E

NOAA Rainfall Data

NOAA Atlas 14, Volume 10, Version 3
Location name: Ledyard, Connecticut, USA*
Latitude: 41.4421°, Longitude: -72.0096°
Elevation: 269 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.341 (0.264-0.437)	0.408 (0.315-0.523)	0.517 (0.399-0.665)	0.607 (0.466-0.783)	0.732 (0.545-0.975)	0.826 (0.602-1.12)	0.925 (0.656-1.28)	1.04 (0.697-1.45)	1.20 (0.776-1.72)	1.33 (0.842-1.94)
10-min	0.483 (0.374-0.619)	0.577 (0.447-0.741)	0.732 (0.565-0.942)	0.861 (0.660-1.11)	1.04 (0.772-1.38)	1.17 (0.854-1.58)	1.31 (0.930-1.82)	1.47 (0.987-2.06)	1.70 (1.10-2.43)	1.88 (1.19-2.74)
15-min	0.568 (0.440-0.728)	0.679 (0.526-0.872)	0.861 (0.664-1.11)	1.01 (0.777-1.31)	1.22 (0.908-1.62)	1.38 (1.00-1.86)	1.54 (1.09-2.14)	1.73 (1.16-2.42)	2.00 (1.29-2.86)	2.22 (1.40-3.23)
30-min	0.801 (0.621-1.03)	0.957 (0.741-1.23)	1.21 (0.936-1.56)	1.42 (1.09-1.84)	1.72 (1.28-2.28)	1.94 (1.41-2.62)	2.17 (1.54-3.01)	2.43 (1.63-3.40)	2.81 (1.82-4.03)	3.12 (1.97-4.54)
60-min	1.03 (0.801-1.33)	1.24 (0.956-1.58)	1.56 (1.21-2.01)	1.84 (1.41-2.37)	2.21 (1.65-2.95)	2.50 (1.82-3.37)	2.79 (1.98-3.88)	3.13 (2.10-4.39)	3.62 (2.34-5.19)	4.02 (2.54-5.85)
2-hr	1.36 (1.06-1.73)	1.62 (1.27-2.06)	2.05 (1.60-2.62)	2.41 (1.86-3.08)	2.90 (2.18-3.83)	3.27 (2.40-4.39)	3.66 (2.62-5.04)	4.10 (2.78-5.71)	4.75 (3.09-6.76)	5.28 (3.35-7.62)
3-hr	1.58 (1.24-1.99)	1.88 (1.48-2.38)	2.38 (1.86-3.02)	2.79 (2.17-3.56)	3.36 (2.53-4.42)	3.79 (2.80-5.05)	4.24 (3.04-5.81)	4.75 (3.22-6.57)	5.49 (3.58-7.78)	6.10 (3.89-8.78)
6-hr	2.00 (1.59-2.51)	2.38 (1.89-2.99)	3.00 (2.37-3.77)	3.52 (2.76-4.44)	4.23 (3.21-5.50)	4.76 (3.54-6.29)	5.32 (3.84-7.23)	5.96 (4.07-8.18)	6.89 (4.52-9.69)	7.65 (4.90-10.9)
12-hr	2.48 (1.98-3.08)	2.94 (2.34-3.65)	3.69 (2.94-4.60)	4.32 (3.41-5.40)	5.18 (3.96-6.69)	5.82 (4.36-7.64)	6.51 (4.73-8.78)	7.29 (5.00-9.93)	8.42 (5.56-11.8)	9.37 (6.03-13.3)
24-hr	2.90 (2.34-3.57)	3.46 (2.78-4.26)	4.36 (3.50-5.38)	5.11 (4.08-6.34)	6.15 (4.74-7.88)	6.92 (5.23-9.02)	7.74 (5.68-10.4)	8.70 (6.01-11.8)	10.1 (6.70-14.0)	11.3 (7.30-15.9)
2-day	3.24 (2.64-3.96)	3.90 (3.17-4.76)	4.97 (4.03-6.08)	5.86 (4.72-7.20)	7.09 (5.52-9.02)	8.00 (6.10-10.4)	8.98 (6.65-12.0)	10.1 (7.04-13.6)	11.9 (7.91-16.3)	13.3 (8.67-18.6)
3-day	3.52 (2.88-4.26)	4.22 (3.45-5.12)	5.38 (4.38-6.54)	6.34 (5.13-7.74)	7.66 (5.99-9.70)	8.64 (6.62-11.1)	9.70 (7.21-12.9)	10.9 (7.63-14.6)	12.8 (8.57-17.6)	14.4 (9.39-20.0)
4-day	3.77 (3.10-4.56)	4.51 (3.70-5.46)	5.72 (4.68-6.94)	6.73 (5.46-8.19)	8.11 (6.37-10.2)	9.14 (7.02-11.7)	10.2 (7.64-13.6)	11.6 (8.07-15.4)	13.5 (9.05-18.4)	15.2 (9.90-21.0)
7-day	4.49 (3.71-5.38)	5.30 (4.38-6.36)	6.62 (5.45-7.96)	7.72 (6.31-9.32)	9.22 (7.28-11.5)	10.4 (7.99-13.2)	11.6 (8.64-15.1)	12.9 (9.09-17.1)	15.0 (10.1-20.4)	16.7 (11.0-23.0)
10-day	5.20 (4.32-6.21)	6.05 (5.02-7.22)	7.43 (6.14-8.90)	8.58 (7.05-10.3)	10.2 (8.05-12.6)	11.3 (8.78-14.3)	12.6 (9.43-16.4)	14.0 (9.88-18.4)	16.1 (10.8-21.7)	17.8 (11.7-24.3)
20-day	7.39 (6.20-8.73)	8.29 (6.95-9.81)	9.78 (8.16-11.6)	11.0 (9.12-13.1)	12.7 (10.1-15.5)	14.0 (10.9-17.4)	15.3 (11.4-19.5)	16.7 (11.8-21.7)	18.5 (12.6-24.7)	19.9 (13.1-27.0)
30-day	9.20 (7.76-10.8)	10.2 (8.55-11.9)	11.7 (9.82-13.8)	13.0 (10.8-15.4)	14.8 (11.8-17.9)	16.1 (12.6-19.9)	17.5 (13.1-22.0)	18.8 (13.4-24.3)	20.4 (13.9-27.2)	21.6 (14.3-29.2)
45-day	11.4 (9.71-13.4)	12.5 (10.6-14.6)	14.1 (11.9-16.5)	15.5 (13.0-18.2)	17.4 (14.0-20.9)	18.9 (14.7-23.0)	20.3 (15.1-25.2)	21.5 (15.4-27.7)	23.0 (15.7-30.4)	23.9 (15.9-32.2)
60-day	13.3 (11.3-15.5)	14.4 (12.2-16.8)	16.1 (13.7-18.8)	17.6 (14.8-20.6)	19.6 (15.8-23.4)	21.2 (16.6-25.7)	22.6 (16.9-28.0)	23.9 (17.2-30.6)	25.3 (17.4-33.3)	26.1 (17.4-35.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

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NOAA Atlas 14, Volume 10, Version 3
Location name: Ledyard, Connecticut, USA*
Latitude: 41.4421°, Longitude: -72.0096°
Elevation: 269 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.09 (3.17-5.24)	4.90 (3.78-6.28)	6.20 (4.79-7.98)	7.28 (5.59-9.40)	8.78 (6.54-11.7)	9.91 (7.22-13.4)	11.1 (7.87-15.4)	12.4 (8.36-17.4)	14.4 (9.31-20.6)	16.0 (10.1-23.2)
10-min	2.90 (2.24-3.71)	3.46 (2.68-4.45)	4.39 (3.39-5.65)	5.17 (3.96-6.67)	6.23 (4.63-8.29)	7.03 (5.12-9.49)	7.86 (5.58-10.9)	8.81 (5.92-12.3)	10.2 (6.59-14.6)	11.3 (7.16-16.5)
15-min	2.27 (1.76-2.91)	2.72 (2.10-3.49)	3.44 (2.66-4.43)	4.05 (3.11-5.22)	4.88 (3.63-6.50)	5.51 (4.02-7.44)	6.17 (4.38-8.56)	6.91 (4.65-9.68)	7.98 (5.17-11.5)	8.87 (5.61-12.9)
30-min	1.60 (1.24-2.05)	1.91 (1.48-2.46)	2.43 (1.87-3.12)	2.85 (2.19-3.68)	3.43 (2.55-4.57)	3.87 (2.82-5.23)	4.33 (3.08-6.01)	4.86 (3.27-6.81)	5.61 (3.64-8.06)	6.24 (3.95-9.07)
60-min	1.03 (0.801-1.33)	1.24 (0.956-1.58)	1.56 (1.21-2.01)	1.84 (1.41-2.37)	2.21 (1.65-2.95)	2.50 (1.82-3.37)	2.79 (1.98-3.88)	3.13 (2.10-4.39)	3.62 (2.34-5.19)	4.02 (2.54-5.85)
2-hr	0.679 (0.531-0.863)	0.811 (0.633-1.03)	1.03 (0.798-1.31)	1.20 (0.932-1.54)	1.45 (1.09-1.92)	1.64 (1.20-2.19)	1.83 (1.31-2.52)	2.05 (1.39-2.85)	2.37 (1.54-3.38)	2.64 (1.68-3.81)
3-hr	0.525 (0.412-0.664)	0.626 (0.491-0.792)	0.792 (0.619-1.00)	0.930 (0.722-1.18)	1.12 (0.842-1.47)	1.26 (0.931-1.68)	1.41 (1.01-1.93)	1.58 (1.07-2.19)	1.83 (1.19-2.59)	2.03 (1.30-2.92)
6-hr	0.334 (0.265-0.419)	0.397 (0.314-0.498)	0.501 (0.395-0.630)	0.587 (0.460-0.741)	0.705 (0.535-0.919)	0.794 (0.590-1.05)	0.888 (0.641-1.21)	0.994 (0.679-1.37)	1.15 (0.754-1.62)	1.28 (0.818-1.82)
12-hr	0.205 (0.164-0.255)	0.243 (0.194-0.303)	0.306 (0.243-0.381)	0.358 (0.283-0.448)	0.429 (0.328-0.555)	0.483 (0.362-0.634)	0.539 (0.392-0.728)	0.604 (0.415-0.824)	0.699 (0.461-0.976)	0.777 (0.500-1.10)
24-hr	0.120 (0.097-0.148)	0.143 (0.115-0.177)	0.181 (0.145-0.224)	0.213 (0.169-0.264)	0.256 (0.197-0.328)	0.288 (0.217-0.375)	0.322 (0.236-0.432)	0.362 (0.250-0.490)	0.421 (0.279-0.584)	0.470 (0.304-0.661)
2-day	0.067 (0.054-0.082)	0.081 (0.066-0.099)	0.103 (0.083-0.126)	0.122 (0.098-0.149)	0.147 (0.114-0.187)	0.166 (0.127-0.215)	0.187 (0.138-0.249)	0.211 (0.146-0.283)	0.247 (0.164-0.340)	0.278 (0.180-0.388)
3-day	0.048 (0.039-0.059)	0.058 (0.047-0.071)	0.074 (0.060-0.090)	0.088 (0.071-0.107)	0.106 (0.083-0.134)	0.120 (0.091-0.154)	0.134 (0.100-0.178)	0.152 (0.105-0.203)	0.178 (0.119-0.243)	0.200 (0.130-0.278)
4-day	0.039 (0.032-0.047)	0.047 (0.038-0.056)	0.059 (0.048-0.072)	0.070 (0.056-0.085)	0.084 (0.066-0.106)	0.095 (0.073-0.122)	0.106 (0.079-0.141)	0.120 (0.084-0.160)	0.140 (0.094-0.192)	0.157 (0.103-0.218)
7-day	0.026 (0.022-0.032)	0.031 (0.026-0.037)	0.039 (0.032-0.047)	0.045 (0.037-0.055)	0.054 (0.043-0.068)	0.061 (0.047-0.078)	0.068 (0.051-0.090)	0.077 (0.054-0.101)	0.089 (0.060-0.121)	0.099 (0.065-0.137)
10-day	0.021 (0.018-0.025)	0.025 (0.020-0.030)	0.030 (0.025-0.037)	0.035 (0.029-0.042)	0.042 (0.033-0.052)	0.047 (0.036-0.059)	0.052 (0.039-0.068)	0.058 (0.041-0.076)	0.066 (0.045-0.090)	0.074 (0.048-0.101)
20-day	0.015 (0.012-0.018)	0.017 (0.014-0.020)	0.020 (0.016-0.024)	0.022 (0.019-0.027)	0.026 (0.021-0.032)	0.029 (0.022-0.036)	0.031 (0.023-0.040)	0.034 (0.024-0.045)	0.038 (0.026-0.051)	0.041 (0.027-0.056)
30-day	0.012 (0.010-0.015)	0.014 (0.011-0.016)	0.016 (0.013-0.019)	0.018 (0.015-0.021)	0.020 (0.016-0.024)	0.022 (0.017-0.027)	0.024 (0.018-0.030)	0.026 (0.018-0.033)	0.028 (0.019-0.037)	0.029 (0.019-0.040)
45-day	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.016)	0.016 (0.012-0.019)	0.017 (0.013-0.021)	0.018 (0.014-0.023)	0.019 (0.014-0.025)	0.021 (0.014-0.028)	0.022 (0.014-0.029)
60-day	0.009 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.014)	0.013 (0.010-0.016)	0.014 (0.011-0.017)	0.015 (0.011-0.019)	0.016 (0.011-0.021)	0.017 (0.012-0.023)	0.018 (0.012-0.024)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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APPENDIX F

NRCS Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut, Eastern Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


72° 0' 56" W
71° 59' 35" W
41° 26' 54" N
41° 26' 14" N
749400
749600
749800
750000
750200
750400
750600
750800
751000
751200
4592800
4592600
4592400
4592200
4592000
4591800
61C
29B
3
73C
61B
46B
214
75C
702A
62C
18
17
51B
103
84B
47C
85B
86D
45B
45A
62D
50B
27
117
Map Scale: 1:8,640 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 400 800 1600 2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	22.7	7.3%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	1.7	0.5%
18	Catden and Freetown soils, 0 to 2 percent slopes	1.9	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	0.3	0.1%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	0.1	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	14.5	4.6%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	31.3	10.0%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	40.0	12.8%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	0.1	0.0%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	34.3	11.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	2.9	0.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	0.1	0.0%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	0.1	0.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	19.4	6.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	49.8	15.9%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	9.0	2.9%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	14.1	4.5%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	23.0	7.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	14.0	4.5%
103	Rippowam fine sandy loam	11.8	3.8%
702A	Tisbury silt loam, 0 to 3 percent slopes	21.7	6.9%
Totals for Area of Interest		**312.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut, Eastern Part

3—Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2t2qt
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 40 percent
Leicester, extremely stony, and similar soils: 35 percent
Whitman, extremely stony, and similar soils: 17 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Leicester, Extremely Stony

Setting

Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bg - 7 to 18 inches: fine sandy loam
BC - 18 to 24 inches: fine sandy loam
C1 - 24 to 39 inches: gravelly fine sandy loam
C2 - 39 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B/D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Whitman, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: peat

A - 1 to 10 inches: fine sandy loam
Bg - 10 to 17 inches: gravelly fine sandy loam
Cdg - 17 to 61 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 7 to 38 inches to densic material
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs, swamps
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

17—Timakwa and Natchaug soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2qx
Elevation: 0 to 1,420 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Timakwa and similar soils: 45 percent
Natchaug and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Timakwa

Setting

Landform: Depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous and woody organic material over sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 37 inches: muck
2Cg1 - 37 to 47 inches: very gravelly loamy coarse sand
2Cg2 - 47 to 60 inches: gravelly loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 14.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Description of Natchaug

Setting

Landform: Depressions, depressions, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loamy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy till

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 31 inches: muck
2Cg1 - 31 to 39 inches: silt loam
2Cg2 - 39 to 79 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.01 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Minor Components

Whitman

Percent of map unit: 7 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Catden

Percent of map unit: 3 percent
Landform: Depressions, depressions, fens, depressions, kettles, marshes, bogs, swamps
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Maybid

Percent of map unit: 3 percent
Landform: Drainageways, terraces, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent

Landform: Drainageways, outwash deltas, depressions, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

18—Catden and Freetown soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2r2
Elevation: 0 to 1,390 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Catden and similar soils: 45 percent
Freetown and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Catden

Setting

Landform: Depressions, bogs, fens, depressions, depressions, kettles, marshes, swamps
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed herbaceous organic material and/or highly decomposed woody organic material

Typical profile

Oa1 - 0 to 2 inches: muck
Oa2 - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Description of Freetown

Setting

Landform: Depressions, marshes, depressions, bogs, swamps, kettles
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Natchaug

Percent of map unit: 7 percent
Landform: Depressions, depressions, depressions
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 6 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Base slope
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

Timakwa

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent
Landform: Depressions, drainageways, outwash deltas, outwash terraces
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam
Bw1 - 11 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
2C1 - 26 to 45 inches: loamy fine sand

2C2 - 45 to 55 inches: loamy fine sand
2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent
Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Walpole

Percent of map unit: 3 percent
Landform: Deltas, depressions, outwash terraces, depressions, outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Hinckley

Percent of map unit: 3 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

45A—Woodbridge fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w686
Elevation: 0 to 1,420 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam
Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton
Percent of map unit: 7 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury
Percent of map unit: 6 percent
Landform: Depressions, ground moraines, drainageways, drumlins, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton
Percent of map unit: 1 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony
Percent of map unit: 1 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t2ql
Elevation: 0 to 1,470 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge, fine sandy loam, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Fine Sandy Loam

Setting

Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam
Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton

Percent of map unit: 10 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 8 percent
Landform: Depressions, ground moraines, hills, drainageways

Landform position (two-dimensional): Toeslope, backslope, footslope
Landform position (three-dimensional): Base slope, head slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

46B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2t2qr
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodbridge, very stony, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, very stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 8 percent
Landform: Depressions, ground moraines, hills, drainageways, drumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

47C—Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w685
Elevation: 10 to 1,470 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Woodbridge, extremely stony, and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit

Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, extremely stony

Percent of map unit: 9 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 5 percent
Landform: Drumlins, depressions, hills, drainageways, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 2 percent
Landform: Hills, ground moraines

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony

Percent of map unit: 1 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

50B—Sutton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w69j
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sutton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sutton

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 5 inches: fine sandy loam
Bw1 - 5 to 17 inches: fine sandy loam
Bw2 - 17 to 25 inches: sandy loam
C1 - 25 to 39 inches: gravelly sandy loam
C2 - 39 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 12 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Charlton

Percent of map unit: 9 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Leicester

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Woodbridge

Percent of map unit: 5 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman

Percent of map unit: 1 percent
Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

51B—Sutton fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2xfff
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Sutton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sutton, Very Stony

Setting

Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: fine sandy loam
Bw1 - 7 to 19 inches: fine sandy loam
Bw2 - 19 to 27 inches: sandy loam
C1 - 27 to 41 inches: gravelly sandy loam
C2 - 41 to 62 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 12 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Charlton, very stony
Percent of map unit: 7 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony
Percent of map unit: 4 percent
Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Leicester, very stony
Percent of map unit: 3 percent
Landform: Depressions, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, very stony
Percent of map unit: 1 percent
Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

61B—Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 2w81v
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

61C—Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w820
Elevation: 0 to 1,540 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

62C—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2wks7
Elevation: 0 to 1,310 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 50 percent
Charlton, extremely stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Leicester, extremely stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

62D—Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w81r
Elevation: 0 to 1,640 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 55 percent
Charlton, extremely stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, nose slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Hollis, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

73C—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2w698
Elevation: 0 to 1,550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent
Chatfield, very stony, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Chatfield, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: No

Hollis, very stony
Percent of map unit: 5 percent
Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester, very stony
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

75C—Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9lqn
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition
Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile
Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam

Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Chatfield

Setting

Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Typical profile
R - 0 to 0 inches: bedrock

Properties and qualities
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Charlton
Percent of map unit: 7 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton, very stony
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Brimfield
Percent of map unit: 1 percent
Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed, red parent material
Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, sandy subsoil
Percent of map unit: 1 percent
Hydric soil rating: No

84B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t2qn
Elevation: 0 to 1,570 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 55 percent
Montauk and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk

Setting

Landform: Hills, drumlins
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

A - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 14 inches: fine sandy loam
Bw2 - 14 to 25 inches: sandy loam
2Cd1 - 25 to 39 inches: gravelly loamy coarse sand
2Cd2 - 39 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 38 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 24 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 5 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Footslope, backslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Toeslope, backslope, footslope

Landform position (three-dimensional): Base slope, head slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

85B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w679
Elevation: 0 to 1,530 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton, very stony, and similar soils: 55 percent
Montauk, very stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony
Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, very stony
Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony
Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, very stony
Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

86D—Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: 2w67c
Elevation: 0 to 1,400 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 55 percent
Montauk, extremely stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk, Extremely Stony

Setting

Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Charlton, extremely stony

Percent of map unit: 6 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, extremely stony

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

103—Rippowam fine sandy loam

Map Unit Setting

National map unit symbol: 9ljp
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rippowam and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rippowam

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Coarse-loamy alluvium

Typical profile

A - 0 to 5 inches: fine sandy loam
Bg1 - 5 to 12 inches: fine sandy loam
Cg2 - 12 to 19 inches: fine sandy loam
Cg3 - 19 to 24 inches: sandy loam
Cg4 - 24 to 27 inches: sandy loam
Cg5 - 27 to 31 inches: loamy sand
Cg6 - 31 to 65 inches: stratified very gravelly coarse sand to loamy fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 18 inches

Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F144AY014CT - Wet Sandy Low Floodplain
Hydric soil rating: Yes

Minor Components

Occum

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suncook

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lim

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Pootatuck

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Limerick

Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Saco

Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

702A—Tisbury silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2y07g
Elevation: 0 to 1,260 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tisbury and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tisbury

Setting

Landform: Outwash terraces, deltas, outwash plains, valley trains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite, schist, and/or gneiss

Typical profile

Ap - 0 to 8 inches: silt loam
Bw1 - 8 to 18 inches: silt loam
Bw2 - 18 to 26 inches: silt loam
2C - 26 to 65 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 36 inches to strongly contrasting textural stratification
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 16 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F144AY026CT - Moist Silty Outwash

Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Agawam

Percent of map unit: 5 percent
Landform: Kame terraces, outwash plains, outwash terraces, moraines, kames
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ninigret

Percent of map unit: 3 percent
Landform: Kames, outwash terraces, kame terraces, outwash plains, moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

Raypol

Percent of map unit: 2 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

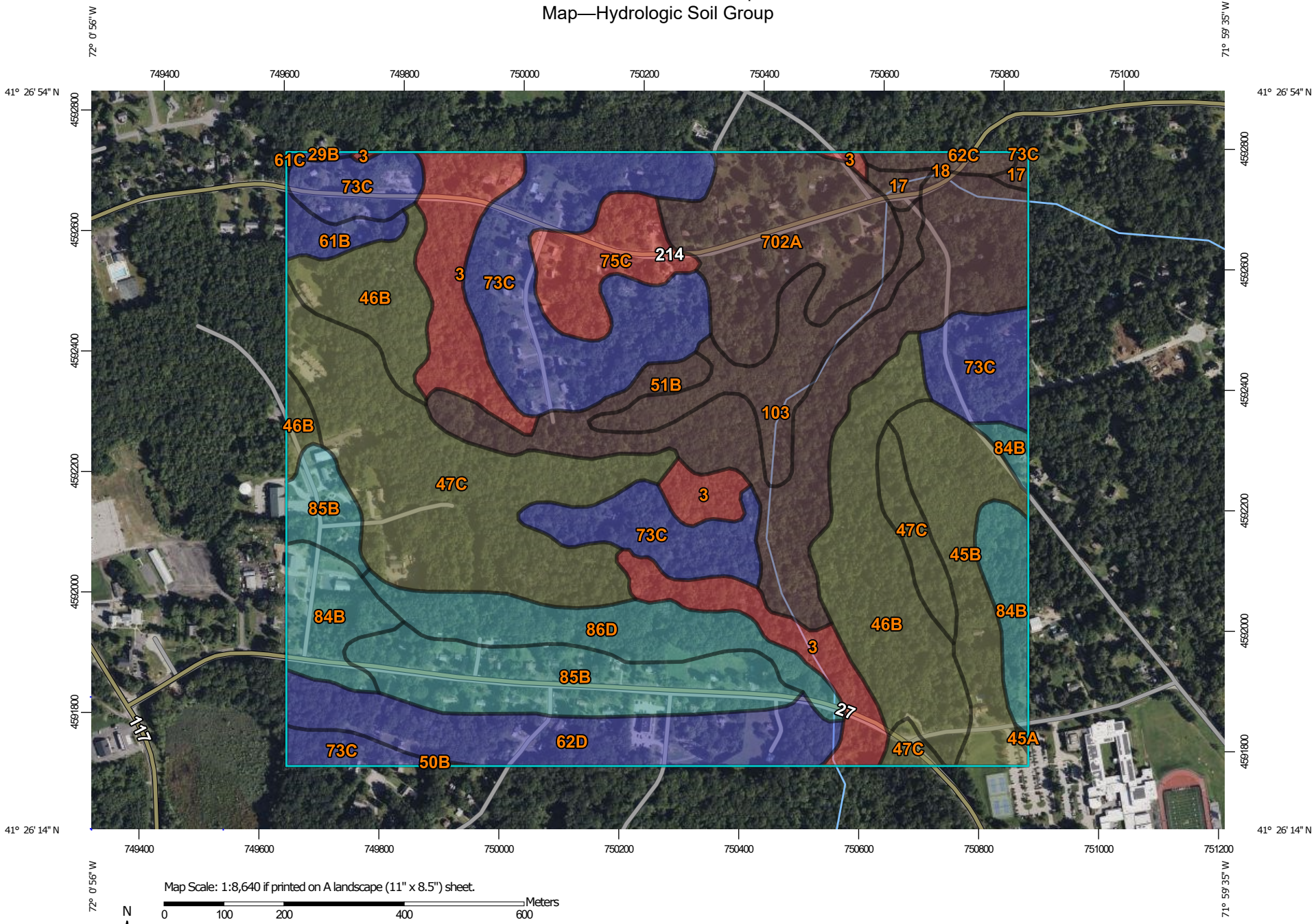
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	22.7	7.3%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	B/D	1.7	0.5%
18	Catden and Freetown soils, 0 to 2 percent slopes	B/D	1.9	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	0.3	0.1%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	C/D	0.1	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	14.5	4.6%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	31.3	10.0%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	40.0	12.8%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	B/D	0.1	0.0%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	B/D	34.3	11.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	2.9	0.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	0.1	0.0%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	0.1	0.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	19.4	6.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	49.8	15.9%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	9.0	2.9%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	14.1	4.5%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	C	23.0	7.3%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	14.0	4.5%
103	Rippowam fine sandy loam	B/D	11.8	3.8%
702A	Tisbury silt loam, 0 to 3 percent slopes	B/D	21.7	6.9%
Totals for Area of Interest			**312.8**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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APPENDIX G

Test Pits & Infiltration Results

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED SPOT ELEVATION (TW 123.45, BW 122.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SAN — SANITARY SEWER
- VENT — VENT LINE
- CLEANOUT
- W — WATER LINE / FIRE LINE
- W — WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- E — ELECTRIC / COMM. DUCT BANK
- GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

Legend

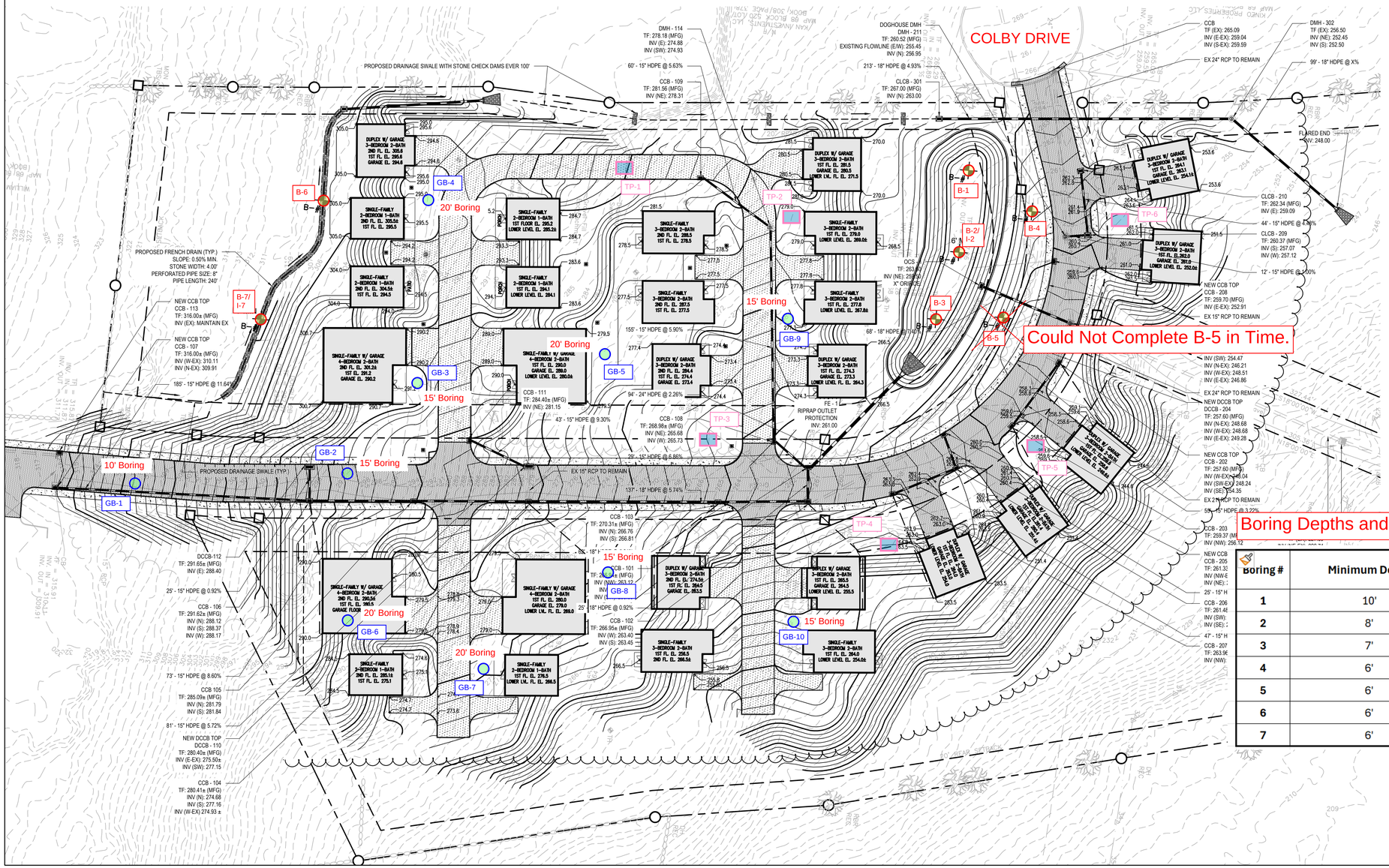
- Stormwater Boring
- Geotech Boring
- Geotech Test Pit

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM



Boring #	Minimum Depth	Approximate Depth of Infiltration Testing
1	10'	~~5-6'~~
2	8'	3-4'
3	7'	~~2-3'~~
4	6'	~~1-2'~~
5	6'	~~1-2'~~
6	6'	2-3'
7	6'	2-3'

Prepared by:
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Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

COLBY DRIVE LEDYARD, CT

DATE:	REVISION:

KEY PLAN

0 40' 80'
SCALE: 1" = 40'

PROJECT NO.: 0725 500010.00 DRAWN BY: GSL, NL
SCALE: AS SHOWN CHECKED BY: WGW

BORING LOCATION PLAN

DRAWING NO.:
G1.0

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

Test Boring Falling Head Test
Proposed Habitat for Humanity Development
Colby Drive
Ledyard, CT
File No. 0015-046.00

Test Location: I-2
Test Type: Falling Head
Date: 11/5/2024

Driller: J. Casson
Engineer: M. Fekieta
Weather: Sunny, 60s

Ground surface El.: 262.0 (ft.)
Top of Casing El.: 264.5 (ft.)
Bottom of Casing El.: 259.0 (ft.)

Total Casing Length: 5.5 (ft.)

Inside Casing Diameter: 4 (in.)

Hydraulic Conductivity (Kv) = π [D {Ln (h1/h2) }] / 11 (t2-t1)

Elapsed Time (min.)	t2 - t1 (min.)	DTW (in.)	h1 (in.)	h2 (in.)	ln(h1/h2)	Kv (in/min)	Kv (cm/sec)	Kv (in/hr)
4.0	4.0	0.5	66.5	66.0	0.0075	2.2E-03	9.1E-05	1.3E-01
8	4.0	1.3	66.0	65.3	0.0114	3.3E-03	1.4E-04	2.0E-01
12	4.0	2.0	65.3	64.5	0.0116	3.3E-03	1.4E-04	2.0E-01
24	12.0	4.0	64.5	62.5	0.0315	3.0E-03	1.3E-04	1.8E-01
36	12.0	6.0	62.5	60.5	0.0325	3.1E-03	1.3E-04	1.9E-01
58	22.0	10.0	60.5	56.5	0.0684	3.6E-03	1.5E-04	2.1E-01
100	42.0	17.0	56.5	49.5	0.1323	3.6E-03	1.5E-04	2.2E-01
144	44.0	23.0	49.5	43.5	0.1292	3.4E-03	1.4E-04	2.0E-01
171	27.0	27.3	43.5	39.3	0.1028	4.3E-03	1.8E-04	2.6E-01
214	43.0	33.0	39.3	33.5	0.1584	4.2E-03	1.8E-04	2.5E-01
245	31.0	36.5	33.5	30.0	0.1103	4.1E-03	1.7E-04	2.4E-01

Average	3.4E-03	1.5E-04	2.1E-01

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

Test Boring Falling Head Test
Proposed Habitat for Humanity Development
Colby Drive
Ledyard, CT
File No. 0015-046.00

Test Location: I-7
Test Type: Falling Head
Date: 11/5/2024

Driller: Jim Casson
Engineer: M. Fekieta
Weather: Sunny 60s

Ground surface El.: 311.0 (ft.)
Top of Casing El.: 313.4 (ft.)
Bottom of Casing El.: 307.9 (ft.)

Total Casing Length: 5.5 (ft.)

Inside Casing Diameter: 4 (in.)

Hydraulic Conductivity (Kv) = π [D {Ln (h1/h2) }] / 11 (t2-t1)

Elapsed Time (min.)	t2 - t1 (min.)	DTW (in.)	h1 (in.)	h2 (in.)	ln(h1/h2)	Kv (in/min)	Kv (cm/sec)	Kv (in/hr)
1.0	1.0	0.5	66.0	65.5	0.0076	8.7E-03	3.7E-04	5.2E-01
2	1.0	1.3	65.5	64.8	0.0115	1.3E-02	5.6E-04	7.9E-01
4	2.0	3.0	64.8	63.0	0.0274	1.6E-02	6.6E-04	9.4E-01
6	2.0	4.5	63.0	61.5	0.0241	1.4E-02	5.8E-04	8.3E-01
10	4.0	7.5	61.5	58.5	0.0500	1.4E-02	6.0E-04	8.6E-01
16	6.0	11.8	58.5	54.3	0.0754	1.4E-02	6.1E-04	8.6E-01
32	16.0	21.8	54.3	44.3	0.2037	1.5E-02	6.2E-04	8.7E-01
45	13.0	29.5	44.3	36.5	0.1925	1.7E-02	7.2E-04	1.0E+00
70	25.0	40.8	36.5	25.3	0.3685	1.7E-02	7.1E-04	1.0E+00
89	19.0	48.0	25.3	18.0	0.3385	2.0E-02	8.6E-04	1.2E+00
105	16.0	53.0	18.0	13.0	0.3254	2.3E-02	9.8E-04	1.4E+00

Average	1.6E-02	6.6E-04	9.4E-01

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-1
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	264.5'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	10/24/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	7	-	Moist Sample
11/5/24	-	10.5	254'+/-	End of Boring

DEPTH	Casing Blows (ft)	Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	15/24	0 to 2	1-2-4-4		Loose, gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace (-) Roots	6"+/- Topsoil
2								SUBSOIL
3		S-2	18/24	2 to 4	7-17-28-38		Dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	
4								
5								
6		S-3	20/24	5 to 7	14-32-17-20		Dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	TILL
7								
8		S-4	20/24	7 to 9	29-14-19-25		Dense, brown, fine to coarse SAND, little Silt, little fine to coarse Gravel, moist	
9								
10		S-5	18/18	9 to 10.5	17-29-50/6"		Very dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
11								
12							END OF EXPLORATION AT 10.5 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%
Over 50 - Very Dense	16 to 30 - Very Stiff	
	Over 30 - Hard	

SYMBOL KEY

1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 4.5 to 5.5 and 8.5 to 9.5 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-2
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	262'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	10/24/2024	Date End	10/24/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
10/24/24	-	5	257'+/-	Perched Water

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1								8"+/- Topsoil
2		S-1	0/12	1 to 2	7-10-50/0"		Very dense, No Recovery	SUBSOIL
3		S-2	24/24	2 to 4	4-14-20-18		Dense, brown to gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	
4								
5		S-3	16/24	4 to 6	8-30-46-50		Very dense, Top 6": orange-brown, fine SAND, some Silt, wet;	
6							Bottom 10": gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, dry	TILL
7		S-4	18/24	6 to 8	20-15-22-29		Dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel, moist	
8								
9							END OF EXPLORATION AT 8 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%
Over 50 - Very Dense	16 to 30 - Very Stiff	
	Over 30 - Hard	

SYMBOL KEY

1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 4 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-3
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	261'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1								9"+/- Topsoil
2		S-1	10/24	1 to 3	2-6-13-21		Medium dense, orange-brown, fine SAND, some Silt	SUBSOIL
3								
4		S-2	2/19	3 to 4.7	22-20-33-50/1"		Very dense, gray, fractured COBBLE fragments	
5								TILL
6		S-3	19/24	5 to 7	19-21-18-16		Dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
7								
8							END OF EXPLORATION AT 7 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 3 to 5 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-4
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	261'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)				
Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	20/24	0 to 2	2-6-5-5		Medium dense, orange-brown, fine SAND, some Silt	9"+/- Topsoil
2								SUBSOIL
3		S-2	20/24	2 to 4	7-13-19-43		Dense, brown to gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	10/15	4 to 5.3	43-39-50/3"		Very dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
6							END OF EXPLORATION AT 5.3 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-6
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	308'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	10/24	0 to 2	2-4-13-26		Medium dense, dark brown, fine SAND, some Silt	8"+/- Topsoil
2								SUBSOIL
3		S-2	18/24	2 to 4	6-11-16-18		Medium dense, gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	18/24	4 to 6	17-20-34-50		Very dense, light gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	
6								
7							END OF EXPLORATION AT 6 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 5 feet below grade.
4) Multiple auger refusals between 2 to 5 feet below grade on inferred boulders.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-7
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	310.5'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	14/24	0 to 2	2-4-3-4		Loose, brown, fine SAND, some Silt, trace (-) Roots	9"+/- Topsoil
2								SUBSOIL
3		S-2	16/24	2 to 4	8-12-16-23		Medium dense, gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	16/24	4 to 6	20-22-40-56		Very dense, light gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	
6								
7							END OF EXPLORATION AT 6 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 4 feet below grade.

APPENDIX H

Outlet Protection Sizing

ENGLISH OUTLET PROTECTION

Habitat for Humanity - Ledyard CT - 0725-500010.00

									RIPRAP APRON											SCOUR HOLE						QUANTITIES	
									CHANNEL			Table 11-12 Table 11-13			TYPE C APPRON												
System Outlet	Pipe Rise (in)	Pipe Span (in)	Design Year (yr)	Design Q (cfs)	Vel. (ft/s)	TW depth (ft)	Well Defined Channel (Y/N)	TW Cond.	Bottom Width (ft)	Side Slope H:1V	Riprap APRON TYPE	SCOUR HOLE? (Y/N)	La APRON LENGTH	*La Minimum (ft)*	S BED SLOPE	MAX. Shear str. (lb/ft^2)	RIPRAP TYPE	APRON WIDTH 1	APRON WIDTH 2	Type 1 or 2	$Rp^2(Q/Rp^{2.5})^{1.333}$ TW	Stone Size (ft)	Type	F (ft)	C (ft)	B (ft)	Area of Riprap (ft^2)	Volume of Riprap (CUY)
						(1)		(2)			(3)	(4)	(5)	(4)		(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(14)	(14)		
FE - 1	24	24	10	**16.39**	**5.95**	0	Yes	*	3	3:01	C	No	22.1	*12*	*	*	Standard	6.00	6.00	N/A	*	*	*	*	*	*	132.5	14.7
FE - 2	12	12	10	**0.00**	**0**	0	No	Min	*	*	A	No	1.0	*10*	*	*	Modified	3.00	10.00	N/A	*	*	*	*	*	*	65.0	2.4
FE - 3	12	12	10	**3.86**	**3.42**	0	No	Min	*	*	A	No	7.9	*10*	*	*	Modified	3.00	10.00	N/A	*	*	*	*	*	*	65.0	2.4
FE - 4/5	36	36	10	**21.44**	**8.61**	0	No	Min	*	*	A	No	15.7	*14*	*	*	Inter.	9.00	19.99	N/A	*	*	*	*	*	*	224.2	12.5

Color Legend:
User Input | Calculated

NOTES:
The following are refernces to the CTDOT Drainage Manual:

(1) For a "free outfall" condition use the normal depth of the pipe as an approximation.
(2) Min = TW<.5(Pipe Rise), Max=TW≥.5(Pipe Rise), * - Does not apply to a well defined channel
(3) Apron type from Section 11.13.5
(4) Scour Houle? : Table 11-12.1 or Table 11-13.1 (Use column (2) to determine which table to use.)
If the velocity in column "F" is > 14fps Then a Scour Hole is required.
(5) Computed La (11.31 or 11.32)
(6) Max. Shear Stress from equation (7.12)
(7) Riprap: Type C Table 7-4
Type A & B Table 11-11
(8)Width 1: Type A & B = 3(Pipe Rise)
Type C = Comps worksheet (W_3)
(9) Width 2: Type A = 3(Pipe Rise)+.7(La)
Type B = 3(Pipe Rise)+.4(La)
Type C = Width 1
(10) Scour Hole Type: Type 1: Depth = .5(Pipe Rise)
Type 2: Depth = Pipe Rise
(see Figure 11-15)
(11) Common part of equation for stone size (d_{50})
(see equations: 11.35 and 11.36)
(12) Stone size (d_{50})
(see equations: 11.35 and 11.36)
(13) Type of Riprap required based on the stone size in (11)
(see Chart on page 11.13-5)
(14) Scour Hole dimensions
(see Figure 11-15)

APPENDIX I

Grading & Drainage Plan

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR (123)
- PROPOSED INDEX CONTOUR (120)
- PROPOSED SPOT ELEVATION (TW 123.45, BW 122.45; 123.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

DRAINAGE AND UTILITIES LEGEND

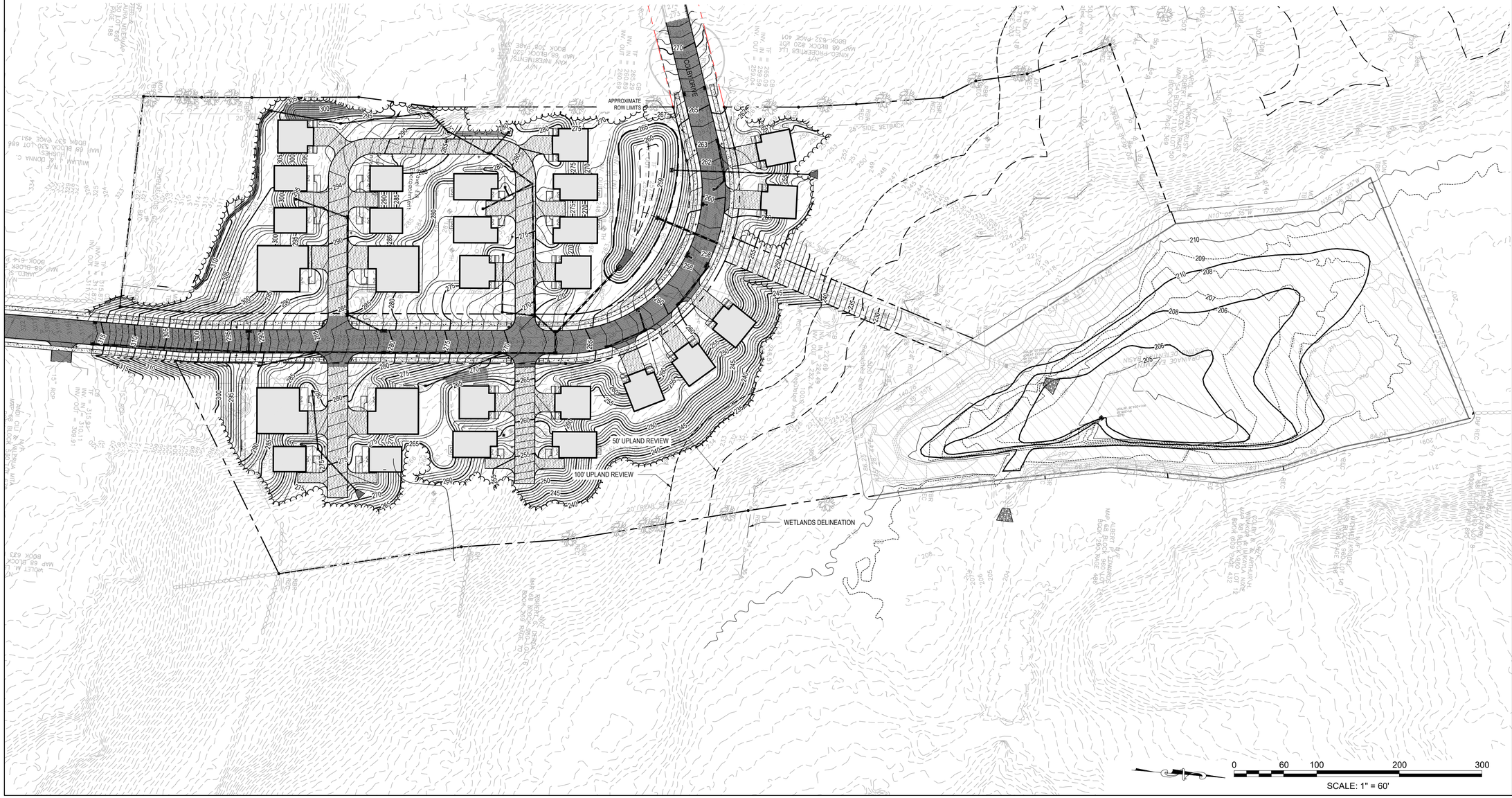
- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER (RL)
- SANITARY MANHOLE (S)
- SAN — SANITARY SEWER
- VENT — VENT LINE
- CLEANOUT (CO)
- W — WATER LINE / FIRE LINE
- W — WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- E — ELECTRIC / COMM. DUCT BANK
- GAS LINE
- GAS METER (G)
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM



Prepared by:
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Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

STATE OF CONNECTICUT · WILLIAM G. WALTER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL, TRS**
CHECKED BY: **WGW**

OVERALL GRADING & DRAINAGE PLAN

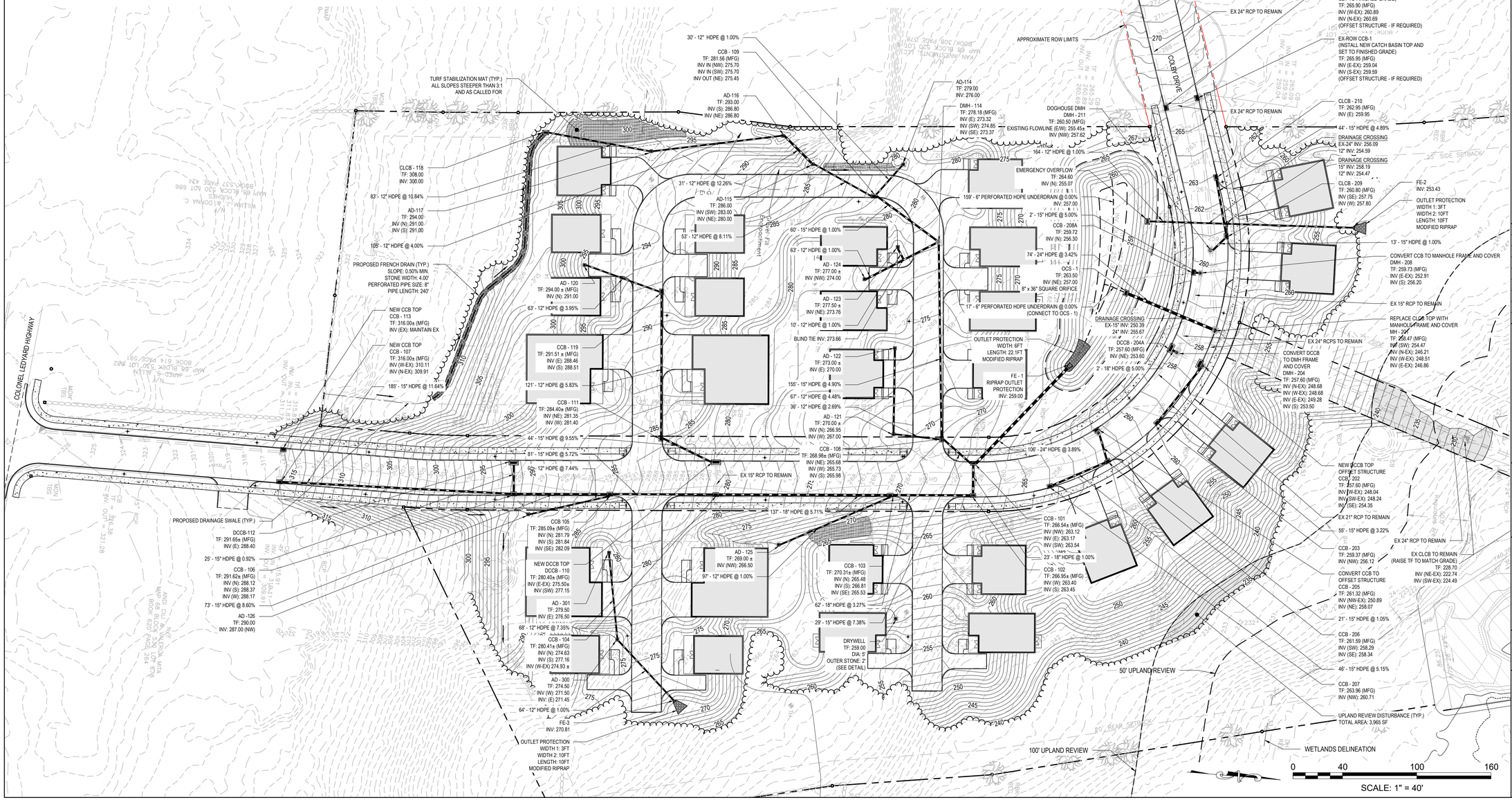
DRAWING NO.:
C3.0

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SAN — SANITARY SEWER
- VENT — VENT LINE
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- ELECTRIC / COMM. DUCT BANK
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- GAS METER
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- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

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Prepared for:

Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

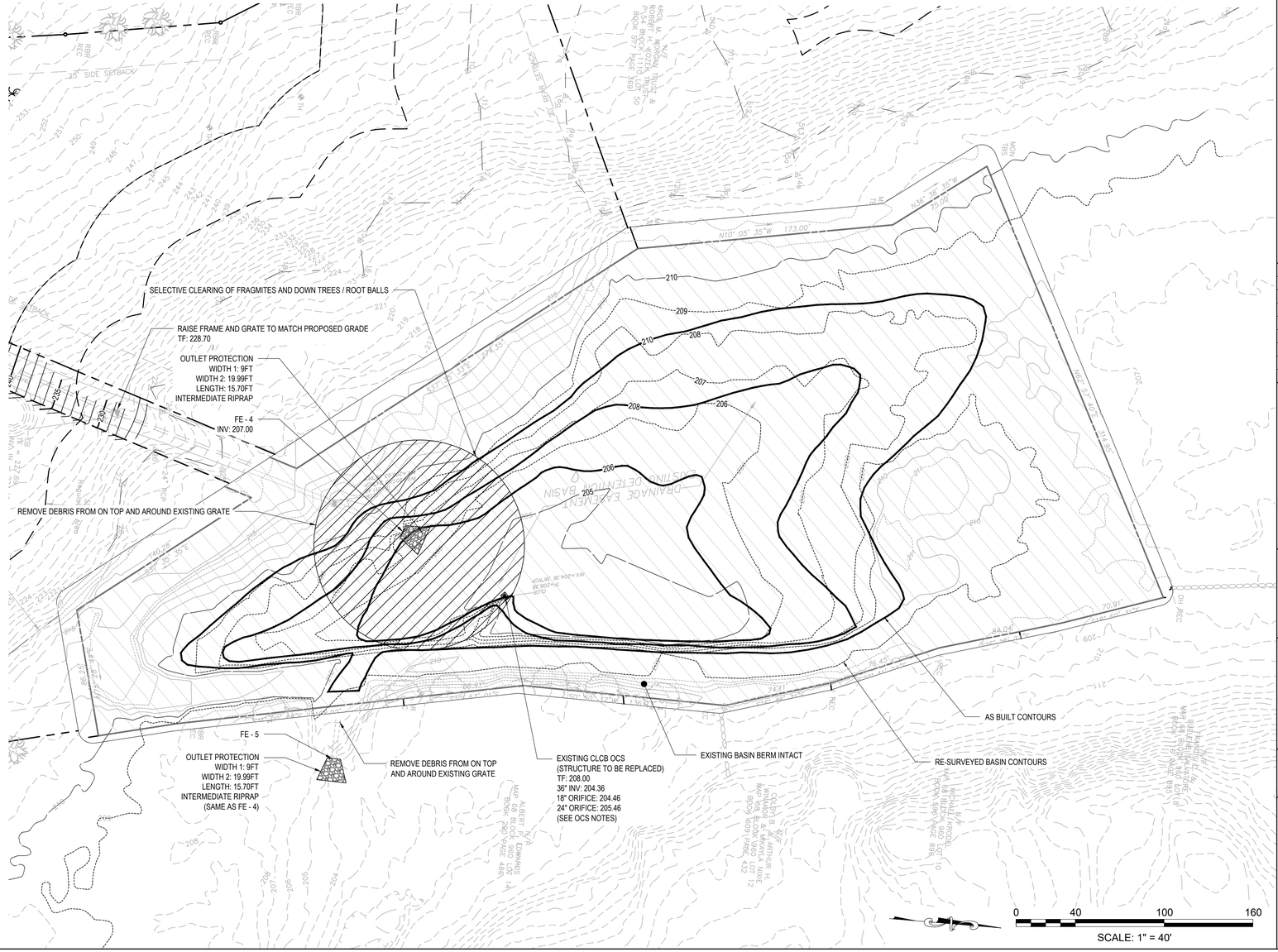
KEY PLAN

STATE OF CONNECTICUT — WILLIAM G. GUS — LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL, TRS**
CHECKED BY: **WGW**

DRAINAGE PLAN

DRAWING NO.:
C3.1



OCS NOTES

- PIPE IS IN ACCEPTABLE CONDITION.
- REPLACE EXISTING STRUCTURE AS CALLED FOR, SEE OCS DETAILS.

BASIN COMPARISON

BASIN PER AS-BUILT SURVEY DATED 12/05/2003

APPROXIMATE VOLUME: 125,465 CUBIC FEET

BASIN PER ADDITIONAL SURVEY PERFORMED OCTOBER 2024

APPROXIMATE VOLUME: 145,0303 CUBIC FEET

SEE HYDROCAD ANALYSIS

Prepared by:

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Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

STATE OF CONNECTICUT
WILLIAM G. WALTER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL
CHECKED BY: WGW

EXISTING BASIN REHABILITATION PLAN

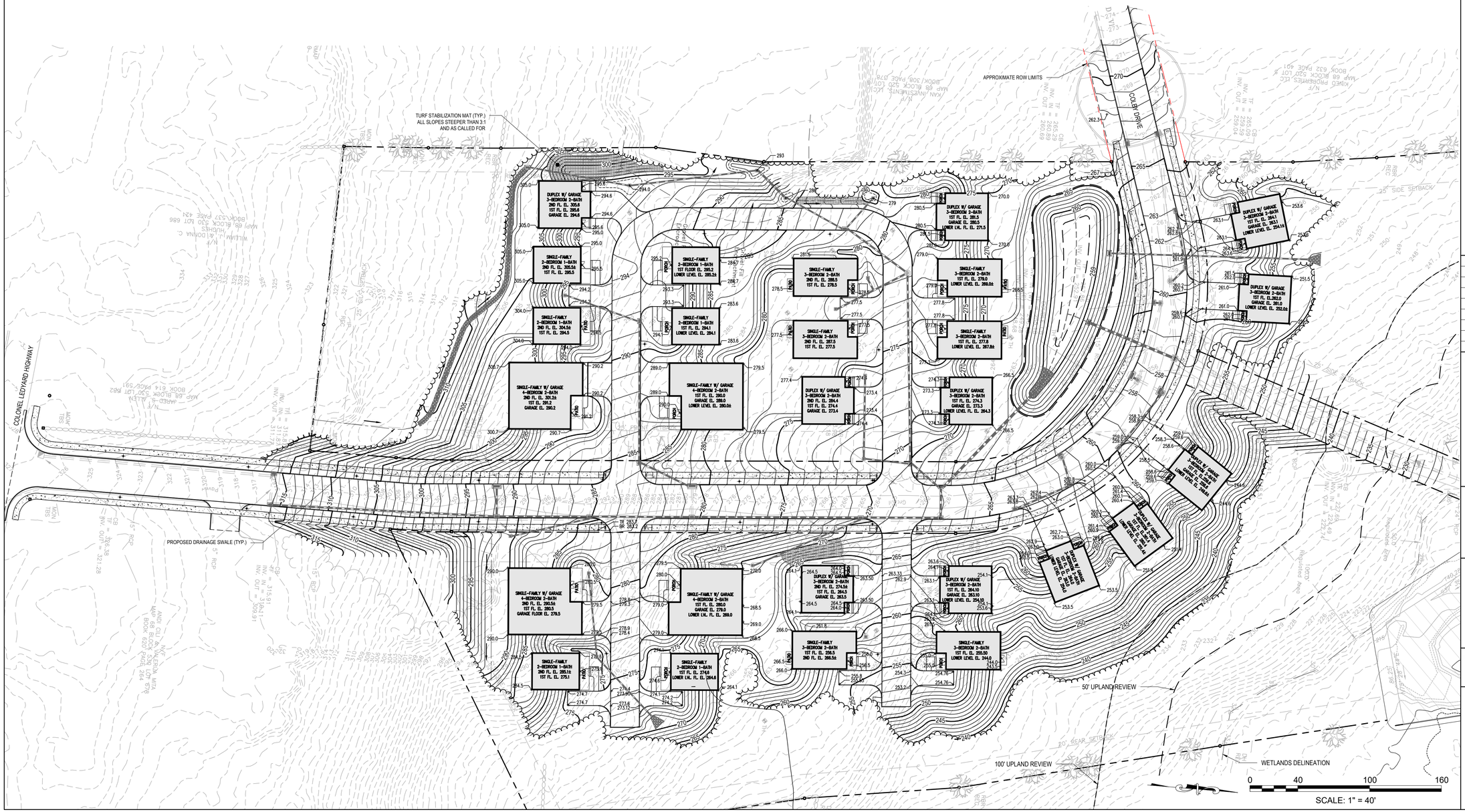
DRAWING NO.:
C3.2

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR (123)
- PROPOSED INDEX CONTOUR (120)
- PROPOSED SPOT ELEVATION (TW 123.45, BW 122.45; 123.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.



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HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

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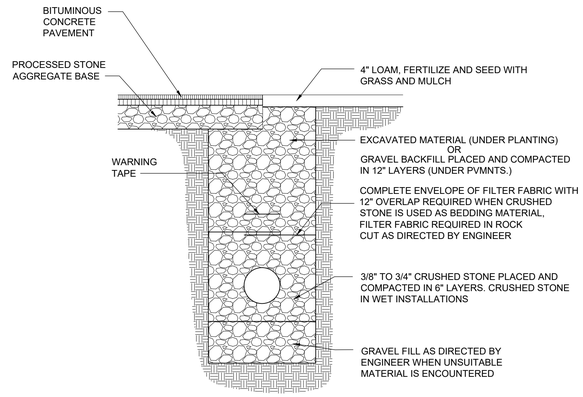
KEY PLAN

STATE OF CONNECTICUT WILLIAM G. WALLACE 27 LICENSED PROFESSIONAL ENGINEER

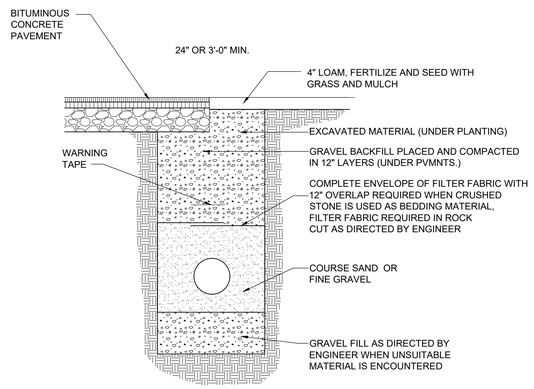
PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL, TRS
CHECKED BY: WGW

GRADING PLAN

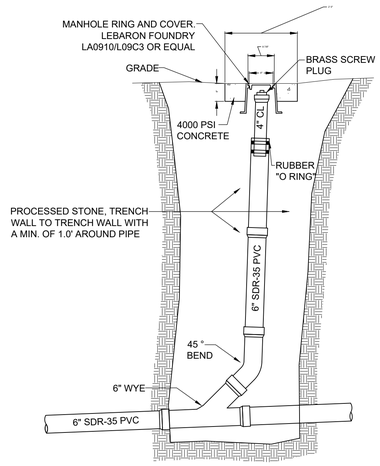
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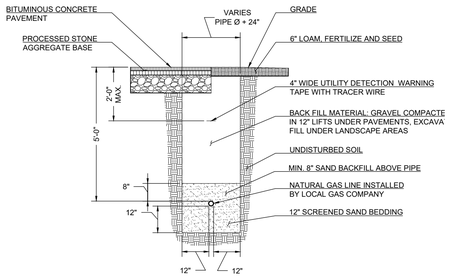
SANITARY TRENCH
SCALE: NONE



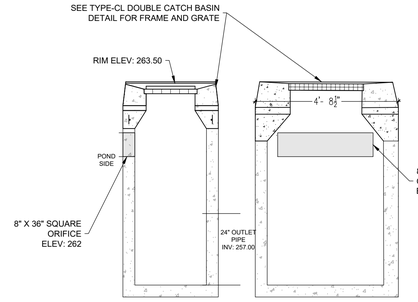
WATER TRENCH
SCALE: NONE



CLEANOUT TO GRADE
SCALE: NONE



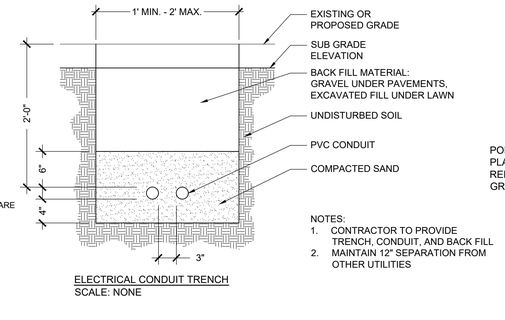
NATRUAL GAS TRENCH
SCALE: NONE



NOTES:

1. MIN. 4000 PSI PRECAST CONCRETE COMPONENTS ARE TO BE USED AS THE BASIS FOR THE OUTLET CONTROL STRUCTURE.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

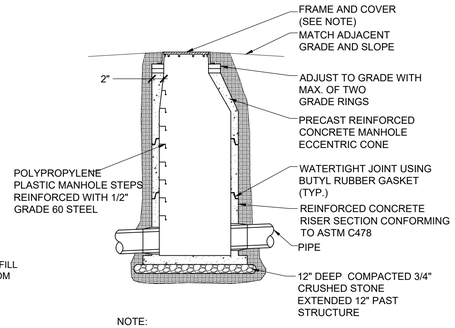
OUTLET CONTROL STRUCTURE (OCS-1)
SCALE: NONE



ELECTRICAL CONDUIT TRENCH
SCALE: NONE

NOTES:

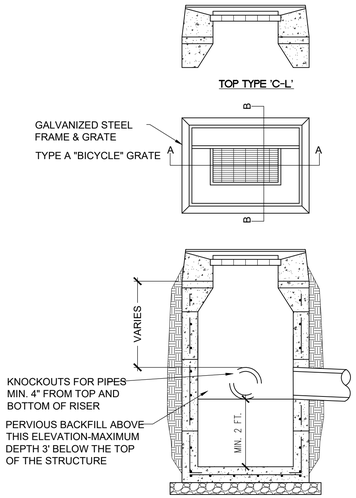
1. CONTRACTOR TO PROVIDE TRENCH, CONDUIT, AND BACK FILL
2. MAINTAIN 12" SEPARATION FROM OTHER UTILITIES

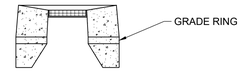


NOTE:

1. SOLID AND GRATE COVERS TO BE 24" DIAMETER GRAY IRON AS MANUFACTURED BY GENERAL FOUNDARIES INC, SOLID COVERS TO CONTAIN THE WORD 'DRAIN'.

STORM MANHOLE
SCALE: NONE





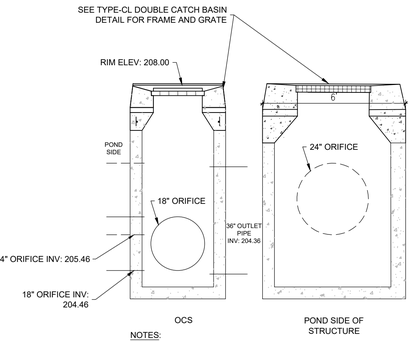
NOTES:

1. DESIGN LOADING AASHTO H-20-44
2. PRE-CAST CONCRETE, 4,000 PSI MIN IN PAVEMENT AREAS
3. THE NORMAL CROSS SLOPE OF THE GUTTER SHALL BE VARIED TO MATCH THE CROSS SLOPE OF THE GRATE.
4. THE TOP OF THE SUMP UNIT SHALL BE A MINIMUM OF 6" BELOW THE LOWEST INVERT. MINIMUM SUMP DEPTH SHALL BE 4 FEET.
5. IN PRE-CAST RISER SECTIONS,THE KNOCKOUTS OR OPENINGS AROUND THE PIPES SHALL BE MORTARED TO 6".
6. CURBED STRUCTURE TOPS TO MATCH ADJACENT CURB TYPE SHOWN ON PLANS.

NOTE:

1. ALL CATCH BASIN SUMPS TO BE A MINIMUM OF 2 FT DEEP UNLESS NOTED ON SHEET SERIES C3.0 DRAINAGE PLAN
2. CATCH BASINS IN LAWN AREAS TO BE COLLARLESS WITH NO EXPOSED CONCRETE. MOUNT NEENAH INLET GRATE MODEL 3349-A DIRECTLY TO CONCRETE CORBEL TOP. FILL CONCRETE SURROUND WITH TOPSOIL AND LAWN.

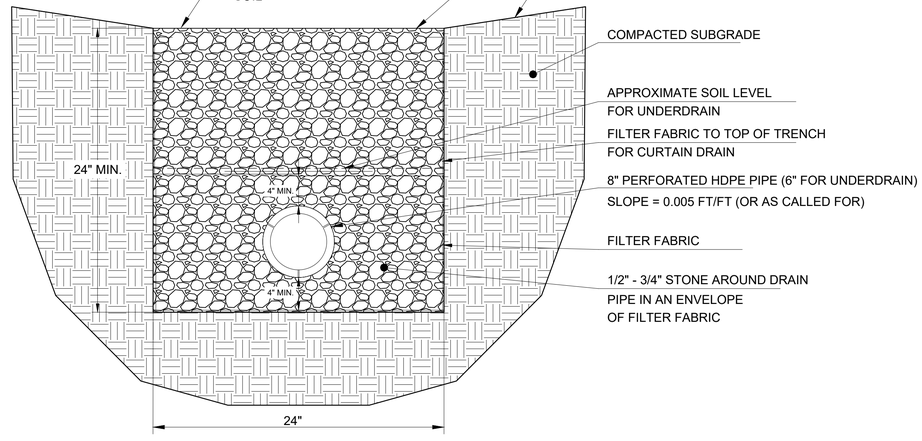
CATCH BASIN
SCALE: NONE



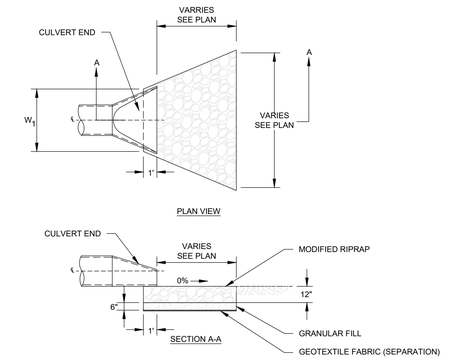
NOTES:

1. MIN. 4000 PSI PRECAST CONCRETE COMPONENTS ARE TO BE USED AS THE BASIS FOR THE OUTLET CONTROL STRUCTURE.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

OUTLET CONTROL STRUCTURE (OCS AT EXISTING BASIN)
SCALE: NONE



FENCH DRAIN / UNDERDRAIN
SCALE: NONE



RIPRAP OUTLET PROTECTION
SCALE: NONE

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Prepared for:
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HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

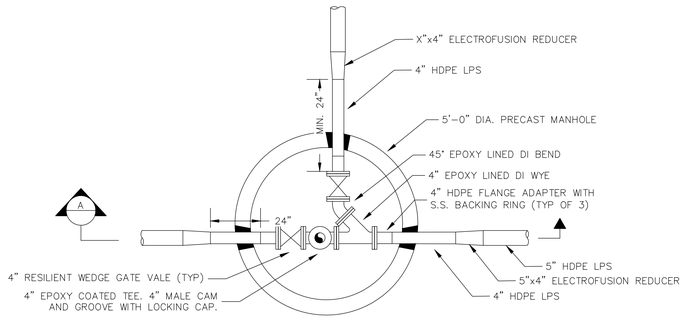
KEY PLAN

STATE OF CONNECTICUT · WILLIAM G. WARNER · LICENSED PROFESSIONAL ENGINEER

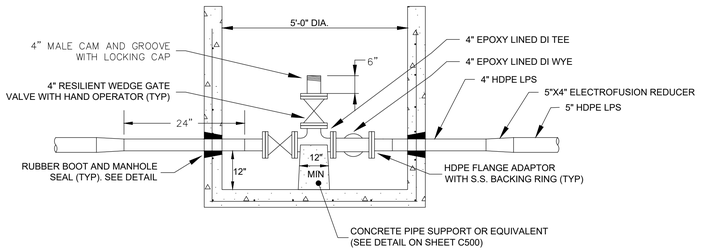
PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

SITE DETAILS

DRAWING NO.:
C6.0



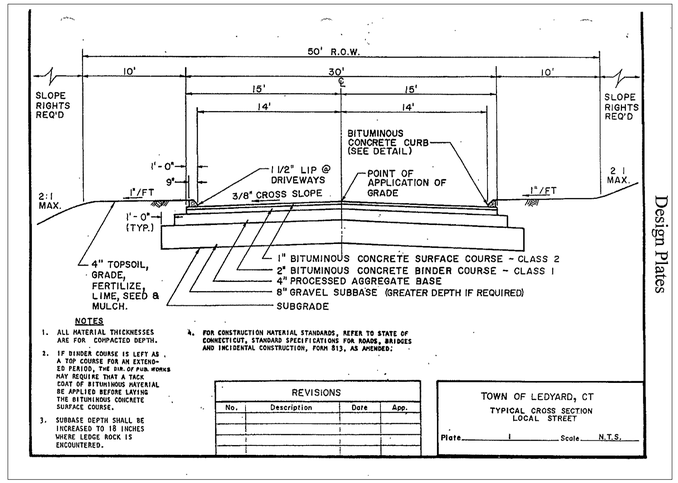
PLAN
N.T.S.



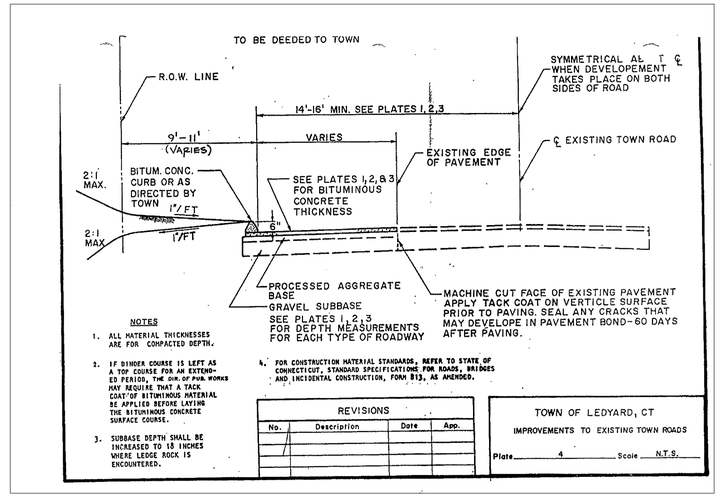
NOTE: ALL MANHOLE MATERIALS TO BE AS SHOWN ON TYPICAL PRECAST MANHOLE DETAIL.

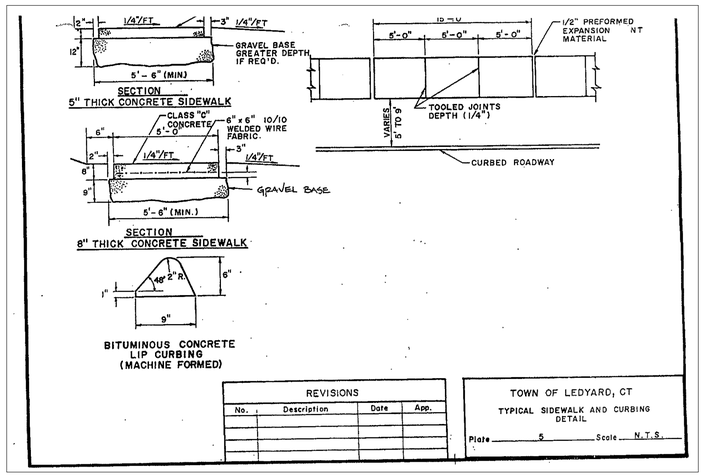
SECTION A
N.T.S.

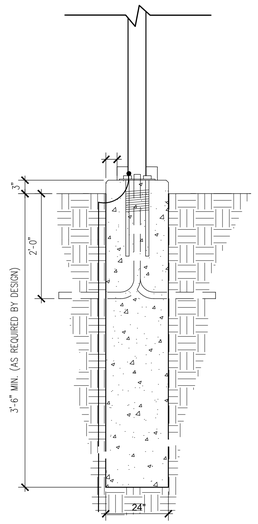
LOW PRESSURE SEWER JUNCTION MANHOLE
N.T.S.



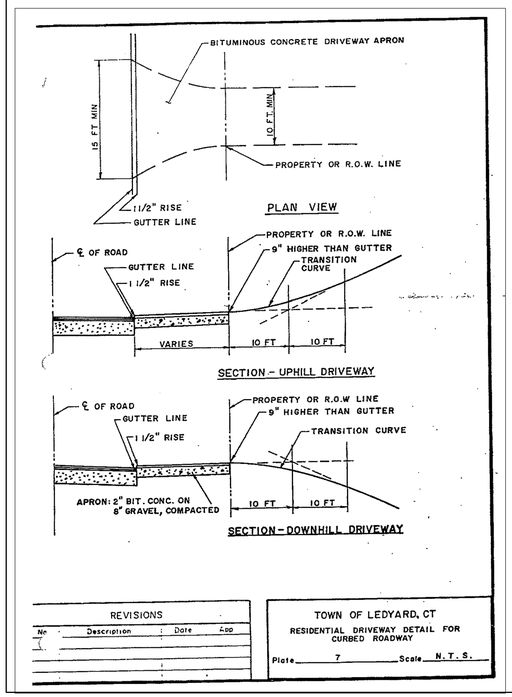
Design Plates

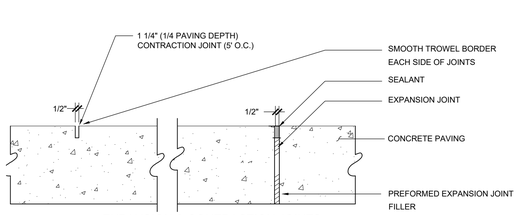




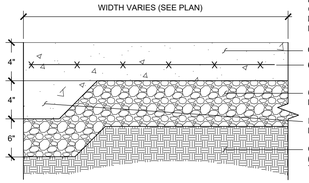


PEDESTRIAN LIGHT POLE CONCRETE BASE (12' HT.)
3/4" = 1'-0"



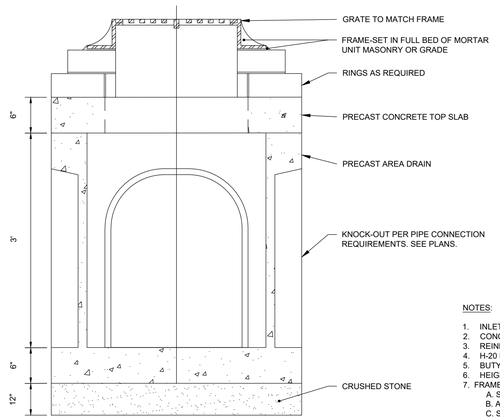


EXPANSION & CONTRACTION JOINTS



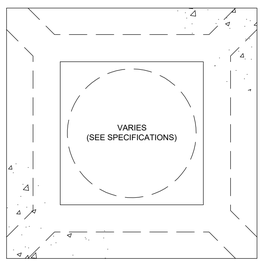
NOTE: PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 25 FEET.

CONCRETE WALK
SCALE: NONE



ELEVATION

CONCRETE ARE DRAIN
SCALE: NONE



PLAN VIEW (TOP SLAB)

NOTES:

1. INLET SHALL BE 30"x30" CONCRETE AREA DRAIN, AS MANUFACTURED BY ARROW CONCRETE, OR ENGINEER APPROVED EQUAL.
2. CONCRETE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS.
3. REINFORCING STEEL - ASTM 615 AND A82 OR A185 SPECIFICATIONS.
4. H-20 DESIGN LOADING PER AASHTO HS-20-44.
5. BUTYL RUBBER JOINT SEALANT - ASTM C990-91.
6. HEIGHT OF DRAIN BOX SHALL BE 3' (MODEL #ADBKO3) UNLESS DEPTH OF INVERT PIPE OUT REQUIRES THE USE OF 4' DRAIN BOX (MODEL #ADBKO4).
7. FRAME AND GRATE PAIR SHALL BE ONE OF THE FOLLOWING:
   A. STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2570 OR ENGINEER APPROVED EQUAL.
   B. ADA STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2569 OR ENGINEER APPROVED EQUAL.
   C. STANDARD BEEHIVE GRATE SHALL BE NEENAH INLET FRAME/BEEHIVE GRATE R-2564 OR ENGINEER APPROVED EQUAL.
8. WHERE NOT USED, THE KNOCKOUTS OF EACH AREA DRAIN SHALL BE FILLED WITH BLOCK / BRICK / MORTAR TO MAINTAIN STRUCTURAL INTEGRITY.

- SEE DRAWINGS FOR SPECIFIC LOCATIONS OF TYPE SELECTED.

Prepared by:
benesch
Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

COLBY DRIVE — LEDYARD, CT

DATE:	REVISION:

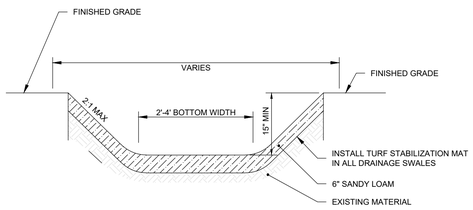
KEY PLAN

STATE OF CONNECTICUT · WILLIAM G. WALKER · 0027 · LICENSED PROFESSIONAL ENGINEER

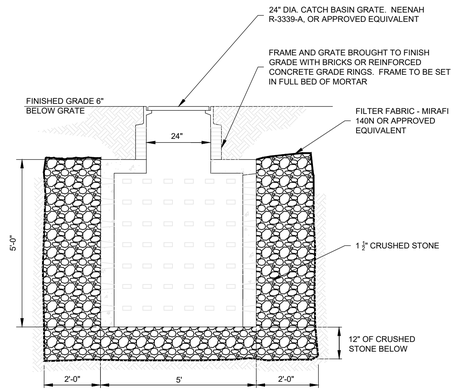
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SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

SITE DETAILS

DRAWING NO.:
C6.1



DRAINAGE SWALE
SCALE: NONE



DRYWELL
SCALE: NONE

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860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

KEY PLAN

STATE OF CONNECTICUT · WILLIAM G. WALTER · 30141 · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL**
CHECKED BY: **WGW**

SITE DETAILS

DRAWING NO.:
C6.2

HABITAT FOR HUMANITY
MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT
PER C.G.S §8-30g

LOTS 8,9 &11 COLBY DRIVE
LEDYARD, CONNECTICUT

SUBMITTED FOR: PLANNING & ZONING APPLICATION
MAY 19, 2025

OWNER (PREPARED FOR)

Habitat for Humanity®
of Eastern Connecticut

CONSULTANTS (PREPARED BY)

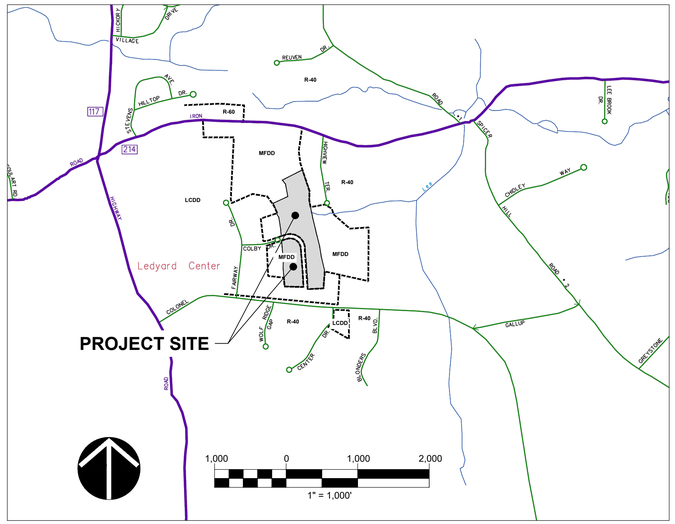
benesch

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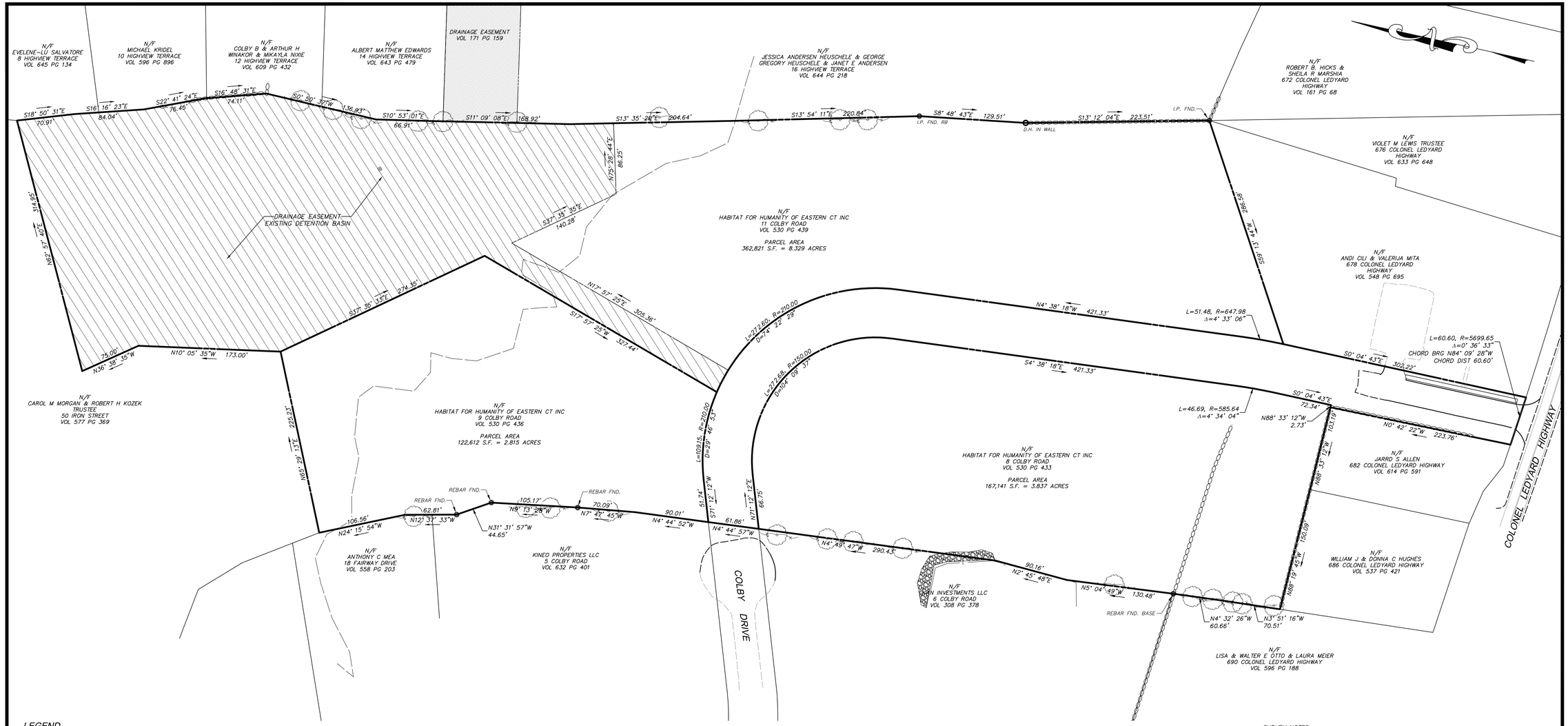
LIST OF DRAWINGS

-------	TITLE SHEET
SV.01	BOUNDARY SURVEY
SV.02	TOPOGRAPHIC SURVEY
SV.03	TOPOGRAPHIC SURVEY
C1.0	SITE PREPARATION & EROSION CONTROL PLAN
C1.1	EROSION & SEDIMENTATION CONTROL DETAILS
C1.2	EROSION & SEDIMENTATION CONTROL DETAILS
C2.0	SITE PLAN
C3.0	OVERALL GRADING & DRAINAGE PLAN
C3.1	DRAINAGE PLAN
C3.2	EXISTING BASIN REHABILITATION PLAN
C3.3	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	PLANTING PLAN
C5.1	PLANTING DETAILS & SCHEDULE
C6.0	SITE DETAILS
C6.1	SITE DETAILS
C6.2	SITE DETAILS

LOCUS



FOR PERMITTING PURPOSES ONLY
NOT FOR CONSTRUCTION



LEGEND

UTILITY SERVICES (UNDERGROUND OR OVERHEAD)

E	ELECTRIC SERVICE
G	GAS PIPES
SAN	SANITARY SEWER PIPES
	STORM WATER PIPES (LESS THAN 12")
	STORM WATER PIPES (12" OR LARGER)
STM	STEAM PIPES (SUPPLY & COND.)
T	TELEPHONE SERVICE
W	WATER PIPES
COM	COMMUNICATION/FIBER OPTIC SERVICE
FP	FIRE PROTECTION PIPES
UG	UNKNOWN UTILITY SERVICE
OH	OVERHEAD WIRES

PROPERTY/BOUNDARY LINES

	PROPERTY/BOUNDARY LINES (CLASS A-2)
	PROPERTY/BOUNDARY LINES (CLASS D)
	EASEMENT LINES

FEATURE LINES

	CURBED ROADWAY
	EDGE OF PAVED ROAD/DRIVE
	BUILDING ROOFLINE (AERIAL PHOTOS)
	RETAINING WALL
	STOCKADE FENCE
	CHAIN LINK/WIRE FENCE
	TREE/VEGATATION LINE
	STONE WALL
	SURFACE WATER (WATERCOURSE)
	WETLANDS LIMIT
UNDGR UNDGR	EDGE OF LANDSCAPING
	INTERMEDIATE CONTOUR
	INDEX CONTOUR

SYMBOL LEGEND

CATCH BASIN
ROUND DRAIN
SQUARE DRAIN
STORM DRAIN MANHOLE
ELECTRIC MANHOLE
SANITARY MANHOLE
STEAM MANHOLE
TELEPHONE MANHOLE
WATER MANHOLE
MANHOLE (OF UNKNOWN TYPE)
HAND HOLE (SQ. / REC.)
WATER VALVE
G.V. GAS VALVE
HYDRANT
COMBO STANDPIPE
GUY WIRE
SIGN (SINGLE POST)
SIGN (DOUBLE POST)
BORING (AS DRILLED)
BORING (AS STAKED)
× 427.3 SPOT ELEVATION
WETLANDS FLAG
PROPERTY MONUMENT
UTILITY MONUMENT (SET AS 2' OFFSET)
IRON PIPE OR REBAR FOUND
IRRIGATION CONTROL BOX
EMERGENCY PHONE
TRAFFIC CONTROLLER CABINET
UTILITY POLE
UTILITY POLE W/ LIGHT
STREET LIGHT
LIGHT POST
BOLLARD LIGHT
BOULDER / ROCK
CONIFER SHRUB
DECIDUOUS SHRUB
DECIDUOUS TREE (SAPLING)
DECIDUOUS TREE
CONIFER TREE

ABBREVIATIONS

A/C	AIR CONDITIONER
AT&T	AMERICAN TELEPHONE & TELEGRAPH COMPANY
BIT.	BITUMINOUS
BLK.	BLACK
CB	CATCH BASIN
COM	COMMUNICATION
CON.	CONIFER
CONC.	CONCRETE
CNG	CONNECTICUT NATURAL GAS
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CL&P	CONNECTICUT LIGHT & POWER COMPANY
CP	CONTROL POINT
DEC.	DECIDUOUS
DMH	DRAINAGE MANHOLE
E	EAST OR ELECTRIC
EL.	ELECTRIC
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
F.L.	FLOW LINE
FND.	FOUND
GRAN.	GRANITE
GSTC	GRANITE STONE CURB
HELCO	HARTFORD ELECTRIC COMPANY
HYD.	HYDRANT
H.H.	HAND HOLE
L.P.	LIGHT POLE
MH	MANHOLE
M	METER
M.W.	MONITOR WELL
N	NORTH
NAD	NORTH AMERICAN DATUM
NAVD	NATIONAL AMERICAN VERTICAL DATUM
NE.	NORTHEAST
N/F	NOW OR FORMERLY
NW	NORTHWEST
PVC.	POLYVINYL CHLORIDE
P.I.V.	POST INDICATOR VALVE
RET.	RETAINING
RCP	REINFORCED CONCRETE PIPE
R.L.	RAIN LEADER
S	SOUTH OR SUPPLY
SE.	SOUTHEAST
SW	SOUTHWEST
SAN.	SANITARY
SMH	SANITARY MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SQ.	SQUARE
STM	STEAM
TMH	TELEPHONE MANHOLE
TEL.	TELEPHONE
T.F.	TOP OF FRAME
UNK.	UNKNOWN
W	WATER OR WEST
W.G.	WATER GATE

MAP REFERENCES

1. SUBDIVISION PLAN PREPARED FOR KONOVER INVESTMENTS CORPORATION & REALCOM, LLC COLBY DRIVE & IRON STREET LEDYARD, CT BOUNDARY PLAN DATE 2/1/05 SHEET NO. 2REVISED 3/23/05, 4/26/05, & 6/08/05 SCALE 1"=80' BY CLA ENGINEER, INC
2. BOUNDARY SURVEY AND DETAIL LOT LAYOUTMAP GRAY FARMS SUBDIVISION SECTION V COLONEL LEDYARD HIGHWAY & GALLUP HILL ROAD LEDYARD, CONNECTICUT PROPERTY OF & PREPARED FOR FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP SCALE 1"=100' SHEET 2 OF 7 NOVEMBER 15, 1989 REV MARCH 28, 1990 REV. DEC1, 1990 BY J. RORBERT PFANNER & ASSOCIATES
3. TOPOGRAPHIC MAP COMMERICAL SUBDIVISION PREPARED FOR J. AND I. ENTERPRISES LEDYARD, CONN DATE 5-1686 SCALE 1"=40' SHEET 3 OF 5 REVISED 5-20-85 REV 6-10-85 BY MEGSON & HEAGLE
4. SUBDIVISION PLAN SECTION II COMMERICAL RESUBDIVISION PREPARED FOR J. AND I. ENTERPRISES LEDYARD CONN. DATE 9-20-86 SCALE 1"=40' SHEET 4 OF 12 AND 5 OF 12 REV 1-7-86 REV 6-17-87 BY MEGSON & HEAGLE
5. LOT LAYOUT GRAY FARMS RESUBDIVISION SECTION III PROPERTY OF GEORGE GOLDMAN ASSOCIATES DEVELOPER GEORGE GOLDMAN ASSSOCIATES IRON STREET (CONN ROUTE #214 7 SPICER HILL ROAD LEDYARD CONNECTICUT SCALE 1"=100 JANUARY 1976 BY DICESARE-BENTLEY

SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1 THRU 20-300B-20 AND THE "MINIMUM STANDARDS OF ACCURACY, CONTENT & CERTIFICATION FOR SURVEYS AND MAPS, AS AMENDED OCTOBER 26, 2018.
   1.1. THE TYPE OF SURVEY IS A PROPERTY/BOUNDARY SURVEY.
   1.2. THE BOUNDARY DETERMINATION CATEGORY IS DEPENDENENT RESURVEY.
   1.3. THE ACCURACIES ARE AS FOLLOWS:

HORIZONTAL CONTROL	CLASS "A-2"
VERTICAL CONTROL	CLASS "V-2"
BOUNDARY	CLASS "A-2"

2. THE COORDINATES AND ELEVATIONS DEPICTED ON THE PLAN REPRESENT THE NAD '83 AND THE NAVD '88 DATUMS. COORDINATES WERE ESTABLISHED ON THE SITE BASED UPON GPS OBSERVATIONS TAKEN ON AUGUST 2024 USING TRIMBLE QNSS RTK R10 RECEIVERS AND SOLUTIONS PROVIDED THROUGH THE KEYNET NETWORK.
3. UNDERGROUND UTILITIES (IF DEPICTED) HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND ALFRED BENESCH & COMPANY DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCES OF WHICH ARE UNKNOWN TO ALFRED BENESCH & COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION. CALL "CALL BEFORE YOU DIG" 1-800-922-4455.
4. THE SUBJECT PROPERTY'S CURRENT DEED CAN BE FOUND IN VOLUME 530 PAGE 433-439 THE TOWN OF LEDARD LAND RECORDS.
5. THE PROPERTY IS LOCATED IN THE "XXXXX" ZONE PER TOWN.
6. A PORTION OF THE PROPERTY LIES WITHIN THE "SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – ZONE 'A' – NO BASE ELEVATION DETERMINED AND "OTHER AREAS" ZONE X AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOODPLAIN. PER THE FEMA FLOOD INSURANCE RATE MAP NEW LONDON COUNTY, CONNECTICUT (ALL JURISDICTIONS) PANEL 359 OF 554 MAP NUMBER: 09011C0359G EFFECTIVE DATE: JULY 18, 2011

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

5/16/2025

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS		
No.	DATE	DESCRIPTION

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 60'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE 60 0 30 60

Prepared By:

benesch
Alfred Benesch & Company
200 Glastonbury Boulevard Suite 201
Glastonbury, Connecticut 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

BOUNDARY SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY ROAD
LEDYARD CONNECTICUT

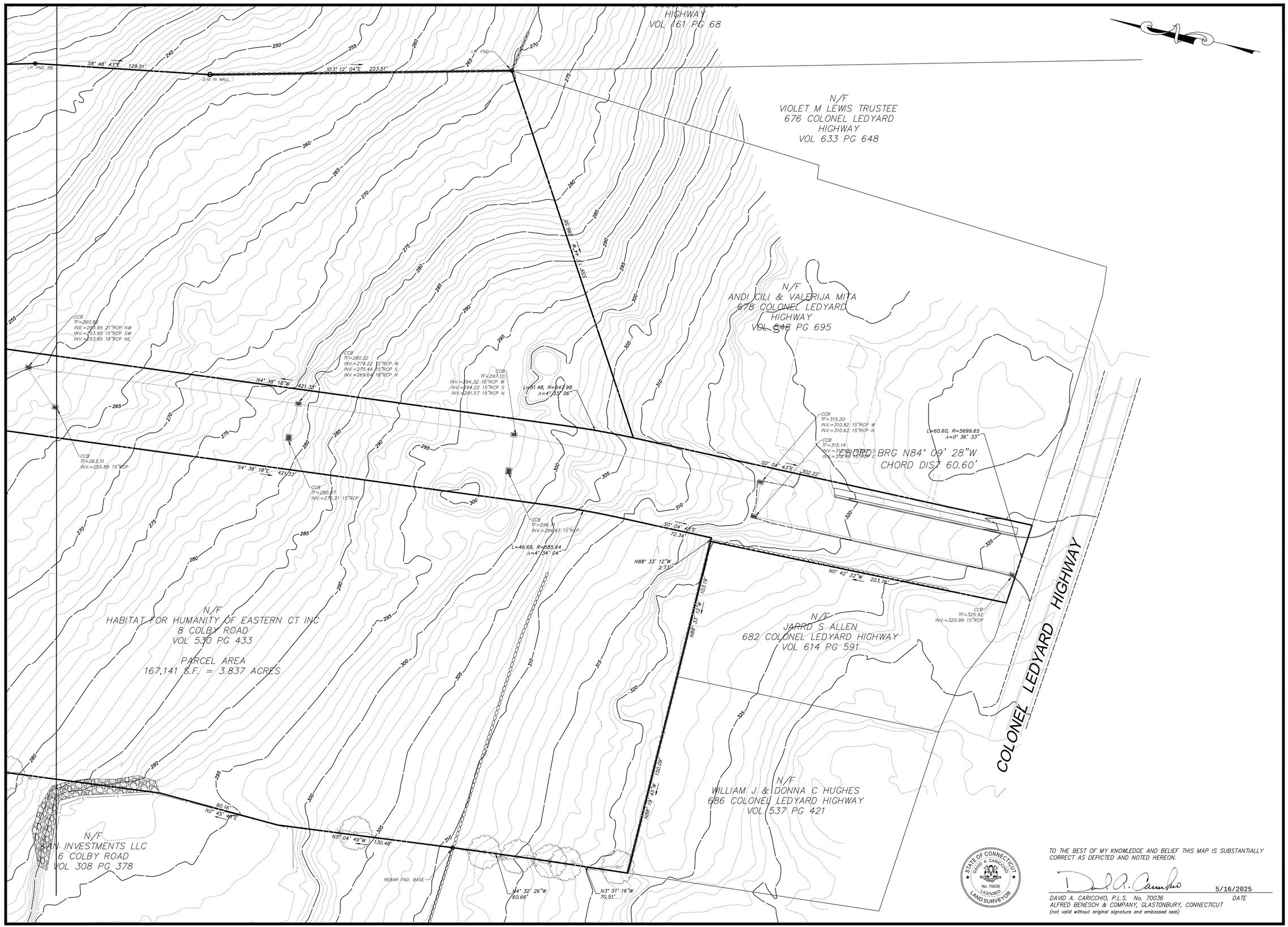
PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.01

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TWISTVIEW:
VIEWPOINT:
LAYER MANAGER NAME:
PLOT TABLE: STB

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Date of Plot May 16, 2025 - 1:33 PM



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PAPER SPACE LAYOUT NAME:	
TWIST VIEW:	
VIEW NAME:	
LAYER MANAGER NAME:	
PLOT TABLE: STB	

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

5/16/2025

DAVID A. CARICCHIO, P.L.S. No. 70036 DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

REVISIONS		
No.	DATE	DESCRIPTION

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

30 15 0 30
GRAPHIC SCALE

Prepared By:

benesch

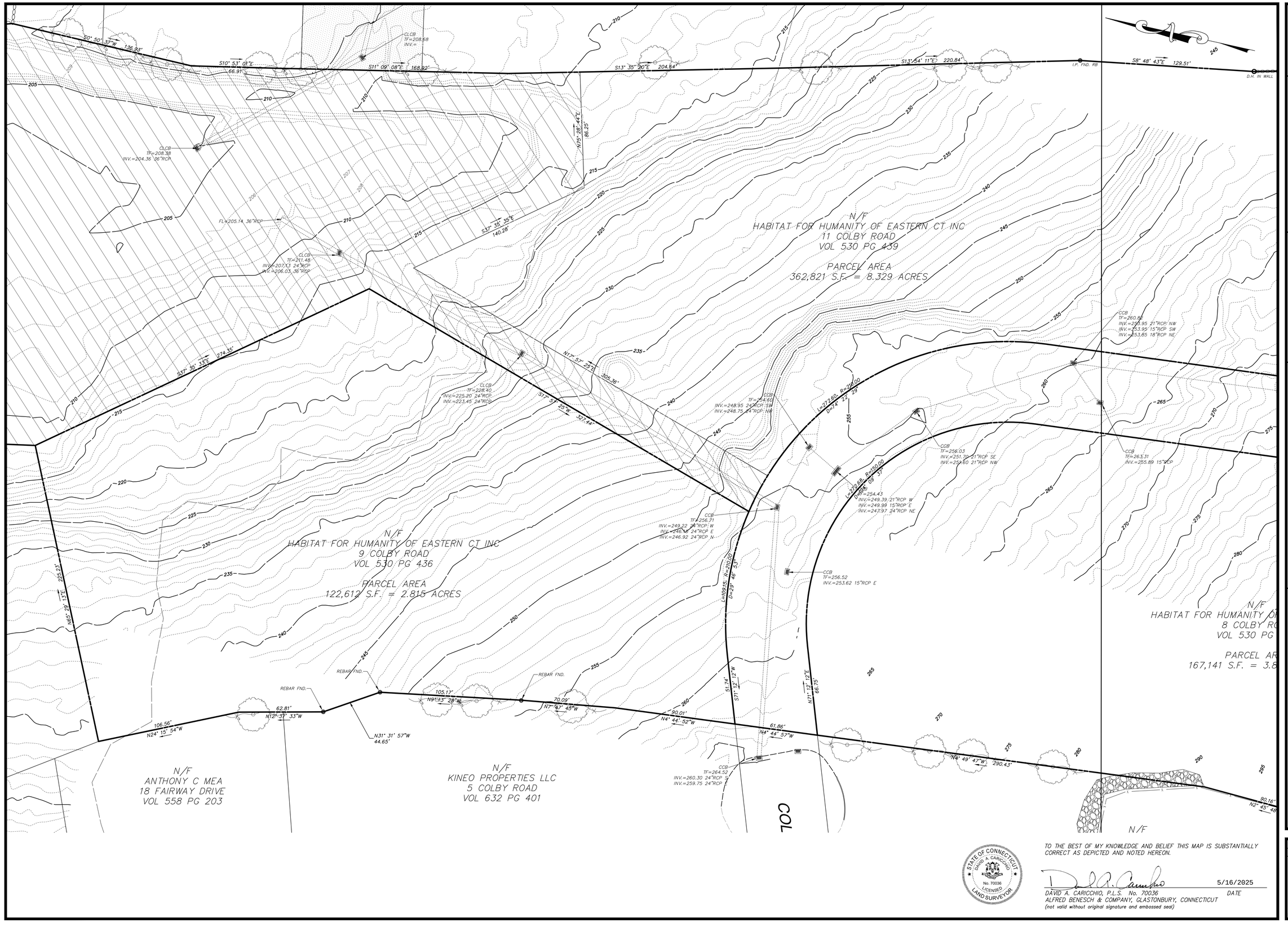
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TOPOGRAPHIC SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY ROAD
LEDYARD CONNECTICUT

PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.02

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Date of Plot: May 16, 2025 - 1:37 PM



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PAPER SPACE LAYOUT NAME:	
TWIST VIEW:	
VIEW NAME:	
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PLOT TABLE: .STB	

No.	DATE	REVISIONS DESCRIPTION

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:

SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

30 15 0 30
GRAPHIC SCALE

benesch

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Glastonbury, CT 06033
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www.benesch.com

TOPOGRAPHIC SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY ROAD
LEDYARD CONNECTICUT

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

STATE OF CONNECTICUT
DAVID A. CARICCHIO
No. 70036
LICENSED
LAND SURVEYOR

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

5/16/2025

PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.03

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Date of Plot May 16, 2025 - 1:38 PM

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. PROTECT ALL IMPROVEMENTS NOT INCLUDED WITHIN THE LIMITS OF WORK. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
4. DURING DEMOLITION, PROTECT ALL ADJACENT CURBING, SIDEWALKS, RAMPS, ABOVE-GRADE AND BELOW-GRADE UTILITIES, DRAINAGE STRUCTURES, LIGHT BASES, AND OTHER IMPROVEMENTS POTENTIALLY AFFECTED BY THE WORK. CLEARLY DELINEATE THE LIMITS OF WORK AND MARK, BARRICADE, OR OTHERWISE IDENTIFY THOSE IMPROVEMENTS THAT ARE TO BE PROTECTED AND/OR AVOIDED. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
5. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
6. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
7. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
8. PROVIDE PAVEMENT SAWCUT AT THE EDGE OF EACH PAVEMENT REMOVAL AREA TO ESTABLISH A CLEAN EDGE WHERE NEW WORK WILL MEET EXISTING PAVEMENT. SAWCUT SHALL BE A MINIMUM OF 12 INCHES FROM EDGE OF PAVEMENT REMOVAL.
9. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.

EROSION AND SEDIMENT CONTROL NOTES:

1. THIS PLAN IS FOR EROSION AND SEDIMENTATION (E&S) CONTROL ONLY. SEE OTHER PLANS FOR THE SCOPE OF CONSTRUCTION WORK.
2. THE MEASURES SPECIFIED HEREON ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. ALL EROSION CONTROLS SHALL BE INSTALLED PRIOR TO ANY SITE WORK. CONTROLS SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. EXCAVATED MATERIAL SHOULD NOT BE DISPOSED OF IN THE WETLAND AREA. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER OR THE ENGINEER.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN HEREON SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2024 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR HAY BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER.
13. SILT SACKS TO BE INSTALLED IN ALL PROPOSED CATCH BASINS ONCE CONSTRUCTED.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

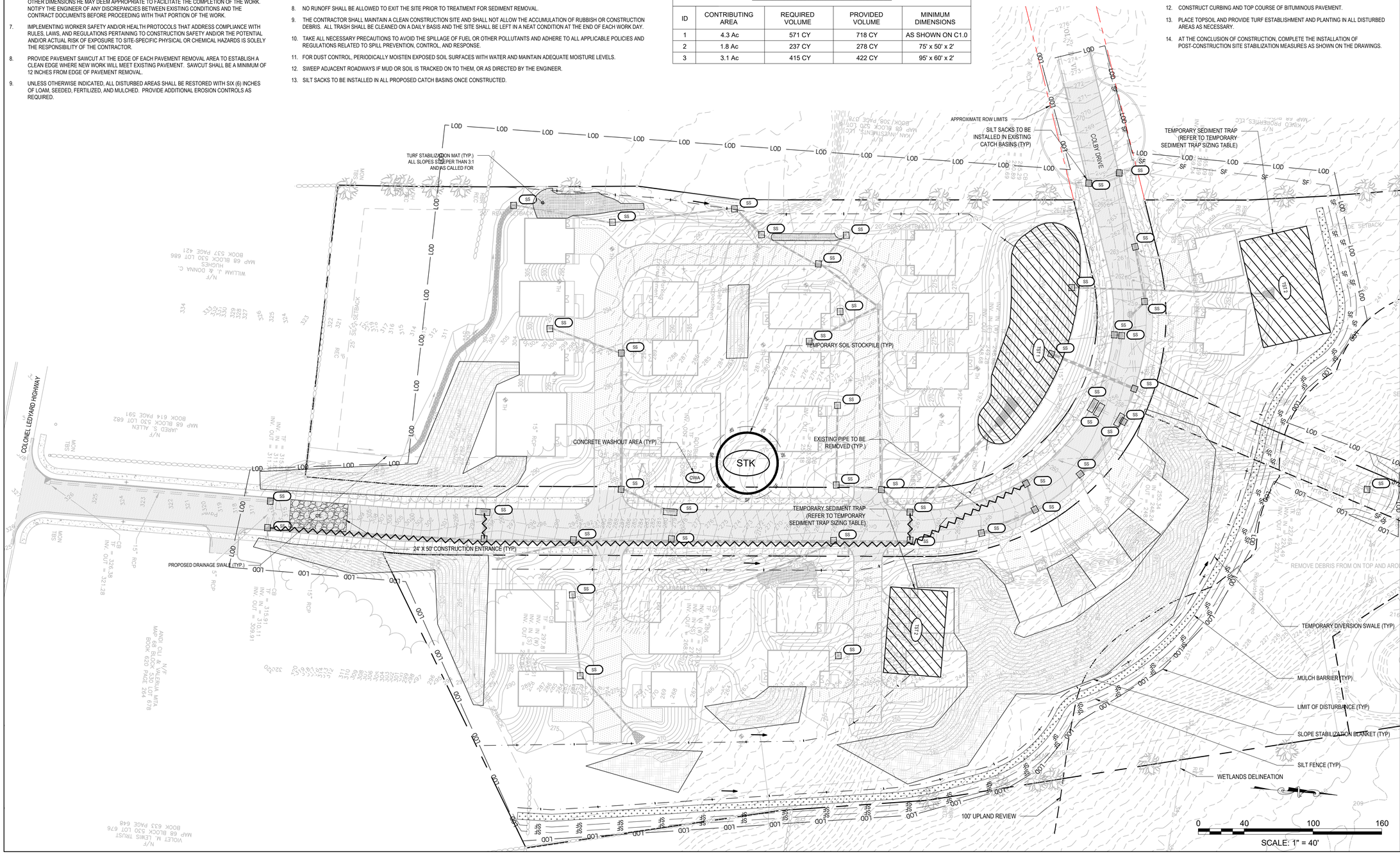
E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
HAY BALES/SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED. REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY
TEMPORARY SEDIMENT TRAP	CHECK AND REPAIR OUTLET (SNAKE IF NECESSARY), CLEAN WHEN HALF FULL OF SEDIMENT (DEWATER IF NECESSARY), RESTORE TRAP TO ORIGINAL DIMENSIONS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALE	REPAIR DAMAGED AREA WITHIN 24 HOURS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY

TEMPORARY SEDIMENT TRAP SIZING TABLE

ID	CONTRIBUTING AREA	REQUIRED VOLUME	PROVIDED VOLUME	MINIMUM DIMENSIONS
1	4.3 Ac	571 CY	718 CY	AS SHOWN ON C1.0
2	1.8 Ac	237 CY	278 CY	75' x 50' x 2'
3	3.1 Ac	415 CY	422 CY	95' x 60' x 2'

SUGGESTED CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER, ZONING ENFORCEMENT OFFICER, AND THE BUILDING OFFICIAL, PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE CATCH BASIN FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. REMOVE EXISTING PAVING AND CURBING.
5. DEMOLISH EXISTING BUILDING AND REMOVE EXISTING UTILITIES.
6. PERFORM BULK EARTHWORK OPERATIONS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATION.
8. CONSTRUCT UTILITIES.
9. BOX OUT PARKING LOT WITH IMPORTED BASE MATERIALS.
10. CONSTRUCT BOTTOM COURSE OF BITUMINOUS PAVEMENT.
11. CONSTRUCT LANDSCAPING AND OTHER SITE AMENITIES.
12. CONSTRUCT CURBING AND TOP COURSE OF BITUMINOUS PAVEMENT.
13. PLACE TOPSOIL AND PROVIDE TURF ESTABLISHMENT AND PLANTING IN ALL DISTURBED AREAS AS NECESSARY.
14. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.



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HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:

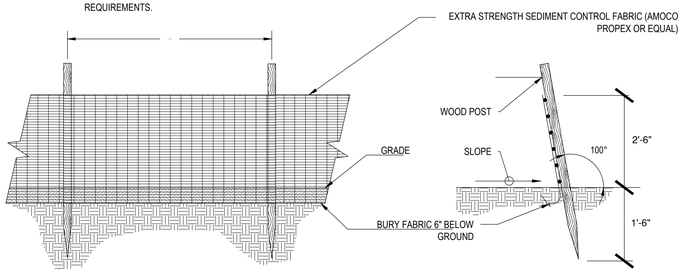
STATE OF CONNECTICUT · WILLIAM G. WALTER · 30 · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: 1" = 40'
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

EROSION & SEDIMENTATION CONTROL PLAN

DRAWING NO.:
C1.0

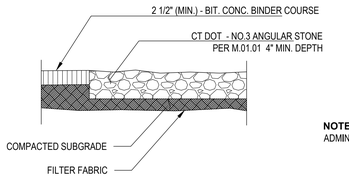
***NOTE:** POST SPACING AND EMBEDMENT VARIES BASED ON THE FABRIC MANUFACTURER'S REQUIREMENTS.



ELEVATION SECTION

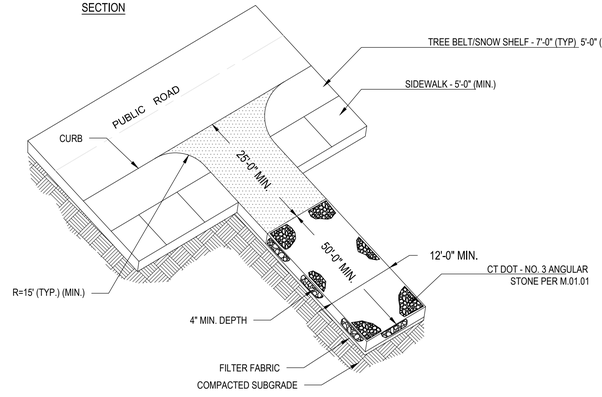
SILT FENCE BARRIER (SF)

N.T.S.



NOTE: LOCATION TO BE DETERMINED IN THE FIELD BY THE CONSTRUCTION ADMINISTRATOR

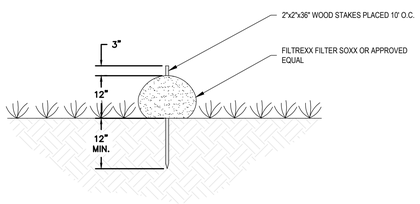
SECTION



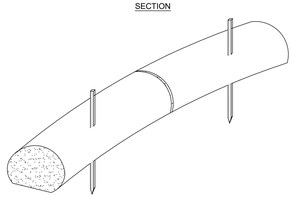
PLAN

CONSTRUCTION ENTRANCE (CE)

N.T.S.

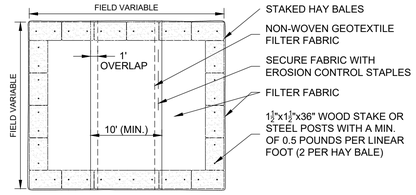


SECTION

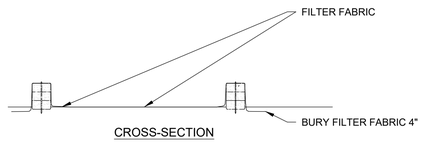


FILTER SOCK

N.T.S.



PLAN VIEW



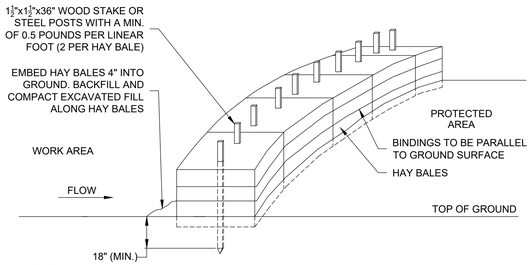
CROSS-SECTION

NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

TEMPORARY CONCRETE WASHOUT AREA (CWA)

N.T.S.

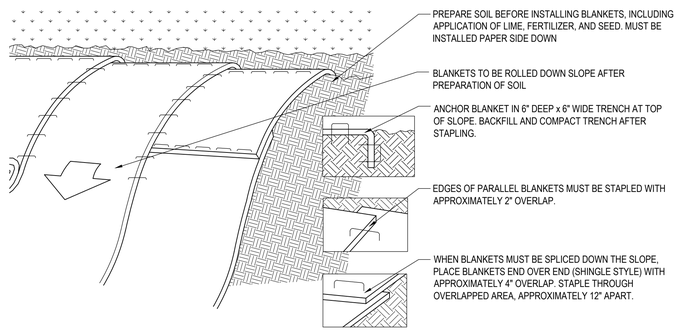


NOTES:

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

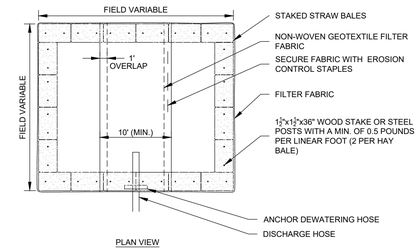
HAY BALE BARRIER (HB)

N.T.S.

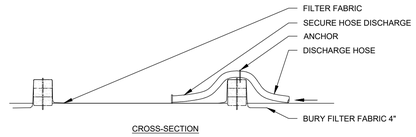


SLOPE STABILIZATION USING EROSION CONTROL BLANKET (ECB)

N.T.S.



PLAN VIEW



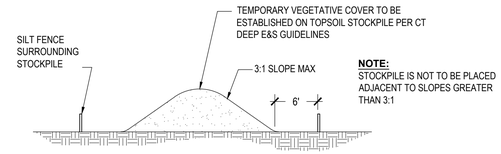
CROSS-SECTION

GENERAL NOTES

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. THE BASIN TO BE SIZED ACCORDING TO: CUBIC FEET OF STORAGE = PUMP DISCHARGE RATE(gpm) x 16.
3. SIZE SHOWN ON PLANS SHALL BE ADJUSTED AS REQUIRED FOR THE ACTUAL PUMPING RATE.

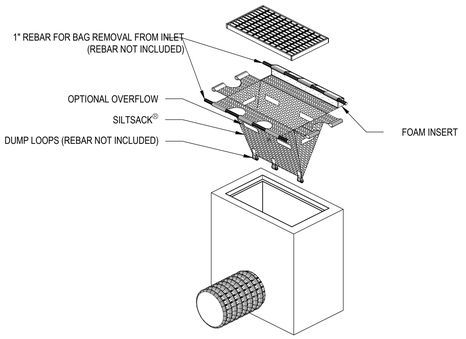
DEWATERING STRAW BALE BASIN

SCALE: NONE



TEMPORARY STOCKPILE (STK)

N.T.S.



'SILTSACK' SEDIMENT CONTROL DEVICE, TERRAFIX GEOSYNTHETICS INC. TORONTO, ONTARIO, CA WWW.TERRAFIXGEO.COM

SILT SACK DETAIL (SS)

N.T.S.

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COLBY DRIVE

LEDYARD, CT

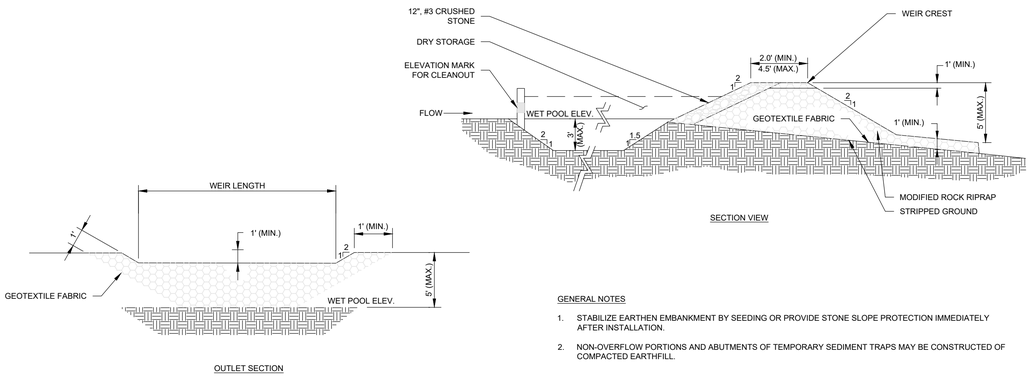
DATE:	REVISION:

STATE OF CONNECTICUT · WILLIAM G. WALTER · 30 · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **CLM**
CHECKED BY: **WGW**

EROSION & SEDIMENTATION CONTROL DETAILS

DRAWING NO.:
C1.1

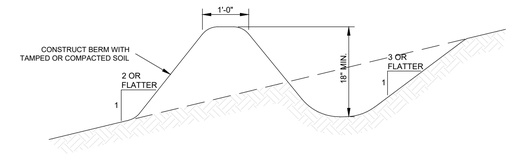


GENERAL NOTES

1. STABILIZE EARTHEN EMBANKMENT BY SEEDING OR PROVIDE STONE SLOPE PROTECTION IMMEDIATELY AFTER INSTALLATION.
2. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OF COMPACTED EARTHFILL.

TEMPORARY SEDIMENT TRAP

SCALE: NONE

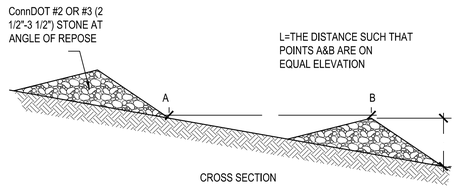


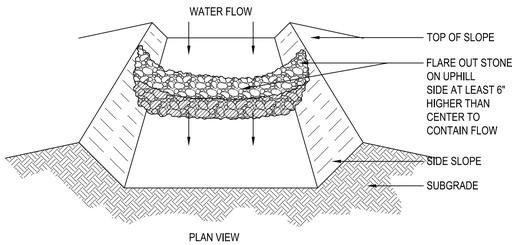
GENERAL NOTES

1. INSTALL TEMPORARY DIVERSION SWALES TO CHANNEL WATER FROM DISTURBED AREAS TO THE TEMPORARY SEDIMENT BASIN. ADJUST SWALE LOCATIONS AS NECESSARY PER CHANGING SITE CONDITIONS.
2. CONTRIBUTING DRAINAGE AREA MUST NOT EXCEED ONE ACRE.

TEMPORARY DIVERSION SWALE

SCALE: NONE





TEMPORARY STONE CHECK DAM

Scale: NTS

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HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:

STATE OF CONNECTICUT · WILLIAM G. WALTER · 30 LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00** DRAWN BY: **CLM**
SCALE: **AS SHOWN** CHECKED BY: **WGW**
DATE: **12/20/2024**

EROSION & SEDIMENTATION CONTROL DETAILS

DRAWING NO.:
C1.2

LEDYARD ZONING REGULATIONS (ZONE - MFDD)				
REQUIREMENT	MINIMUM	LOT 8	LOT 9	LOT 11
FRONT LOTS				
MINIMUM LOT AREA (SF)	20,000	167,270	396,396	122,839
MINIMUM LOT FRONTAGE (LF)	150	880	745	160
MINIMUM LOT FRONTAGE FOR LOTS ON A CUL-DE-SAC (MINIMUM LOT WIDTH STILL APPLIES) (LF)	50	-	-	-
MINIMUM SIDEWALK WIDTH (FT)	5	-	-	-
INTERIOR LOTS				
MINIMUM LOT AREA (SF)	30,000	167,270	396,396	122,839
MINIMUM LOT FRONTAGE (LF)	30	-	-	-
FRONT AND INTERIOR LOTS				
MINIMUM LOT WIDTH (LF)	150	>150		
MINIMUM FRONT YARD SETBACK (LF)	25	>25	>25	>25
MINIMUM SIDE YARD SETBACK (LF)	25	>25	>25	>25
MINIMUM REAR YARD SETBACK (LF)	20	>20	>20	>20
MAXIMUM LOT COVERAGE (% AREA)	60	26.7%	8.60%	3.6%
MAXIMUM BUILDING HEIGHT: PRINCIPAL STRUCTURE (FT)	50	<50	<50	<50

LAYOUT NOTES

1. NEW PAVEMENT TO MEET LINE & GRADE OF EXISTING PAVEMENTS.
2. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED.
3. FIELD ADJUSTMENTS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE AND APPROPRIATE MUNICIPAL OFFICIALS PRIOR TO CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE VERTICAL AND HORIZONTAL POSITION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

MATERIALS NOTES

1. MATERIALS AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH CT DOT FORM 818.
2. ALL LOCATIONS WHERE EXISTING CURBING, BITUMINOUS CONCRETE ROADWAY OR CONCRETE ROADWAY OR CONCRETE SIDEWALK ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO PROVIDE A CLEAN, SMOOTH EDGE. TACK COAT EXPOSED EDGES OF EXISTING CONCRETE PRIOR TO PLACEMENT OF NEW BITUMINOUS CONCRETE PAVEMENT.
3. MANUFACTURED ITEMS SHALL BE INSTALLED, CONNECTED AND CLEANED ACCORDING TO THE MANUFACTURERS DIRECTIONS.
4. EXPANSION AND SCORE JOINTS FOR NEW CONCRETE WALKS SHALL BLEND TO MATCH EXISTING PATTERNS. CONTRACTOR TO ARRANGE TIMELY ON-SITE CONFERENCES WITH LANDSCAPE ARCHITECT TO APPROVE LAYOUT OF JOINT PATTERNS.
5. PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING, STOP LIGHTS, FIRE HYDRANTS AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20 FEET.
6. ALL DAMAGED OR BROKEN SECTIONS OF EXISTING STREET SIDEWALK AND CURBING WITHIN THE TOWN / CITY RIGHT OF WAY SHALL BE REPLACED.



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

STATE OF CONNECTICUT
WILLIAM G. WALTER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: 1"=60'
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

SITE PLAN

DRAWING NO.:
C2.0

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR (123)
- PROPOSED INDEX CONTOUR (120)
- PROPOSED SPOT ELEVATION (TW 123.45, BW 122.45; 123.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

DRAINAGE AND UTILITIES LEGEND

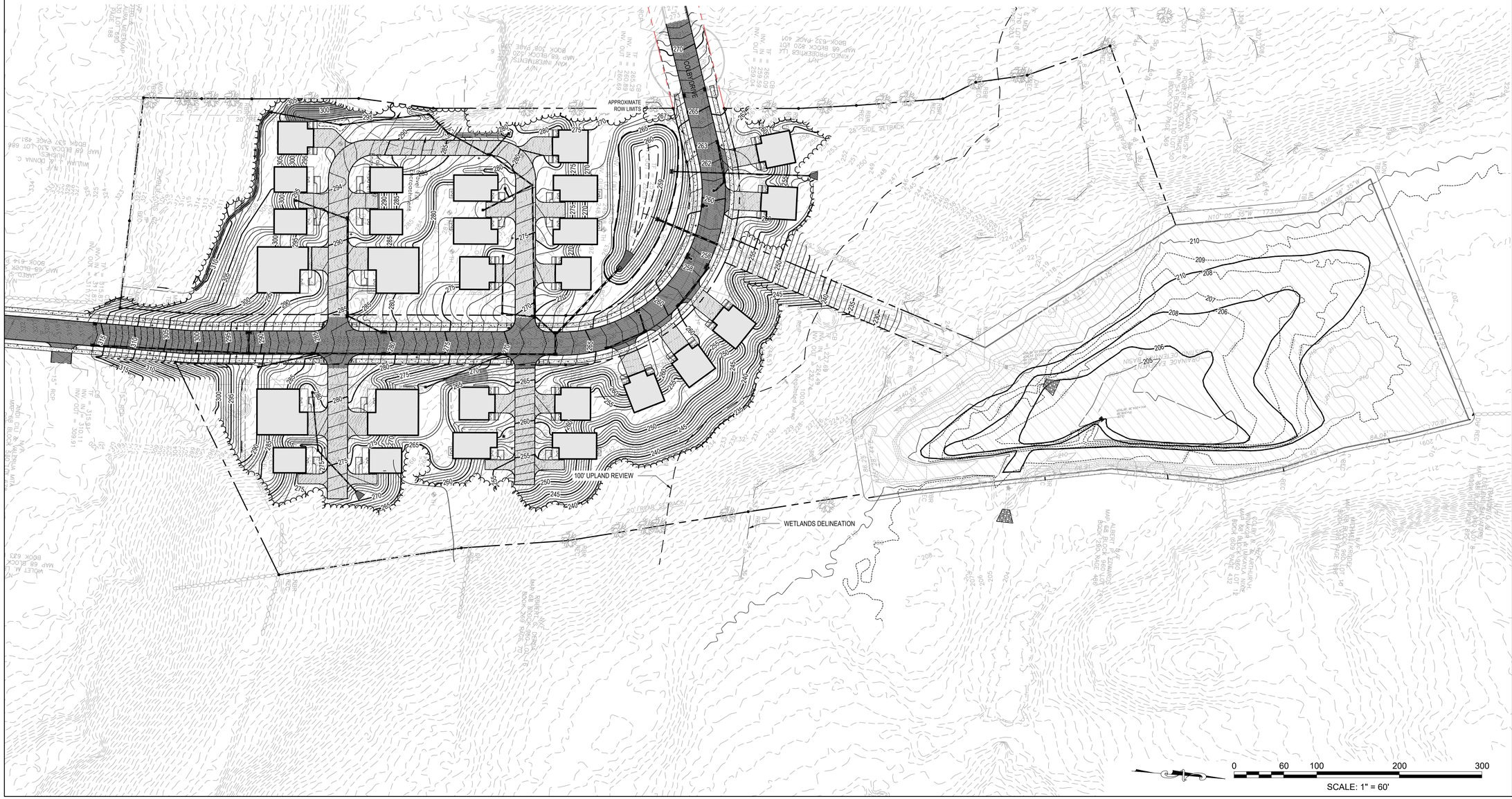
- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SANITARY SEWER (SAN)
- VENT LINE (VENT)
- CLEANOUT
- WATER LINE / FIRE LINE (W)
- WATER LINE DOMESTIC (W)
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- ELECTRIC / COMM. DUCT BANK (E)
- GAS LINE
- GAS METER (G)
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM



Prepared by:
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Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:

STATE OF CONNECTICUT · WILLIAM G. WALTER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL, TRS
CHECKED BY: WGW

OVERALL GRADING & DRAINAGE PLAN

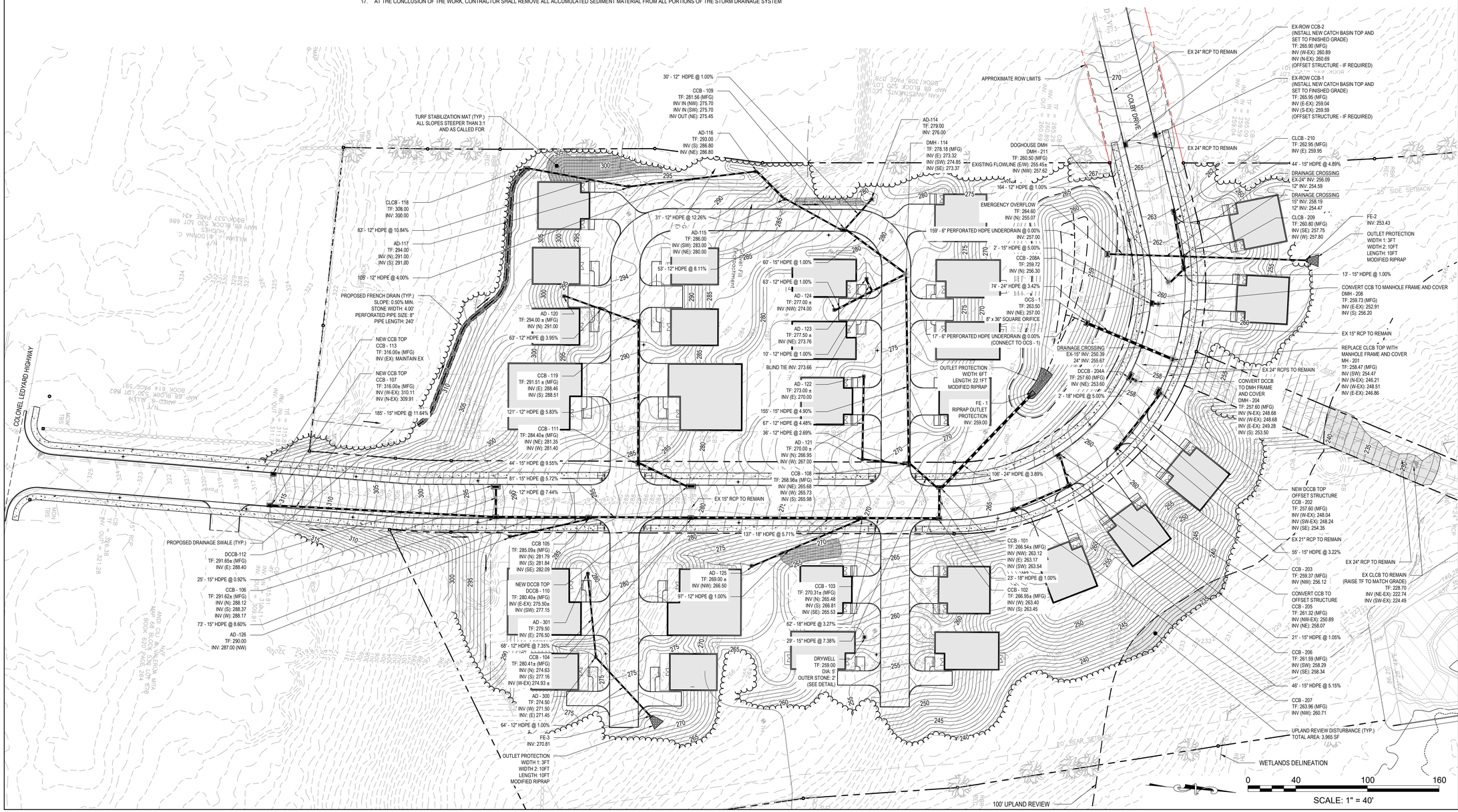
DRAWING NO.: **C3.0**

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SAN — SANITARY SEWER
- VENT — VENT LINE
- CLEANOUT
- W — WATER LINE / FIRE LINE
- W — WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- E — ELECTRIC / COMM. DUCT BANK
- G — GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

DRAINAGE NOTES

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LEDYARD, CT

COLBY DRIVE

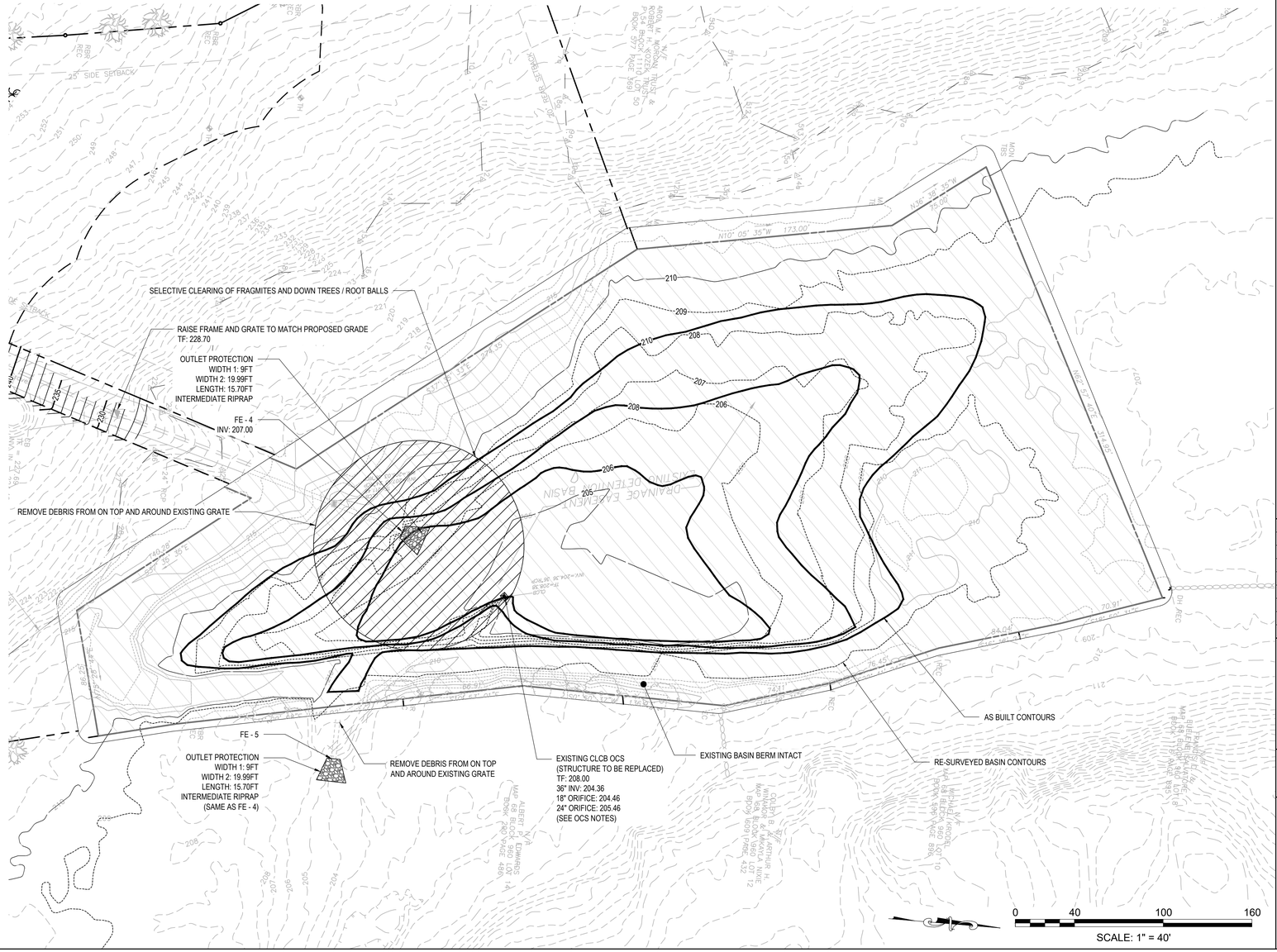
DATE:	REVISION:

STATE OF CONNECTICUT — WILLIAM G. WALTER — LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL, TRS**
CHECKED BY: **WGW**

DRAINAGE PLAN

DRAWING NO.:
C3.1



OCS NOTES

- PIPE IS IN ACCEPTABLE CONDITION.
- REPLACE EXISTING STRUCTURE AS CALLED FOR, SEE OCS DETAILS.

BASIN COMPARISON

BASIN PER AS-BUILT SURVEY DATED 12/05/2003

APPROXIMATE VOLUME: 125,465 CUBIC FEET

BASIN PER ADDITIONAL SURVEY PERFORMED OCTOBER 2024

APPROXIMATE VOLUME: 145,0303 CUBIC FEET

SEE HYDROCAD ANALYSIS

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PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024

DRAWN BY: GSL
CHECKED BY: WGW

EXISTING BASIN REHABILITATION PLAN

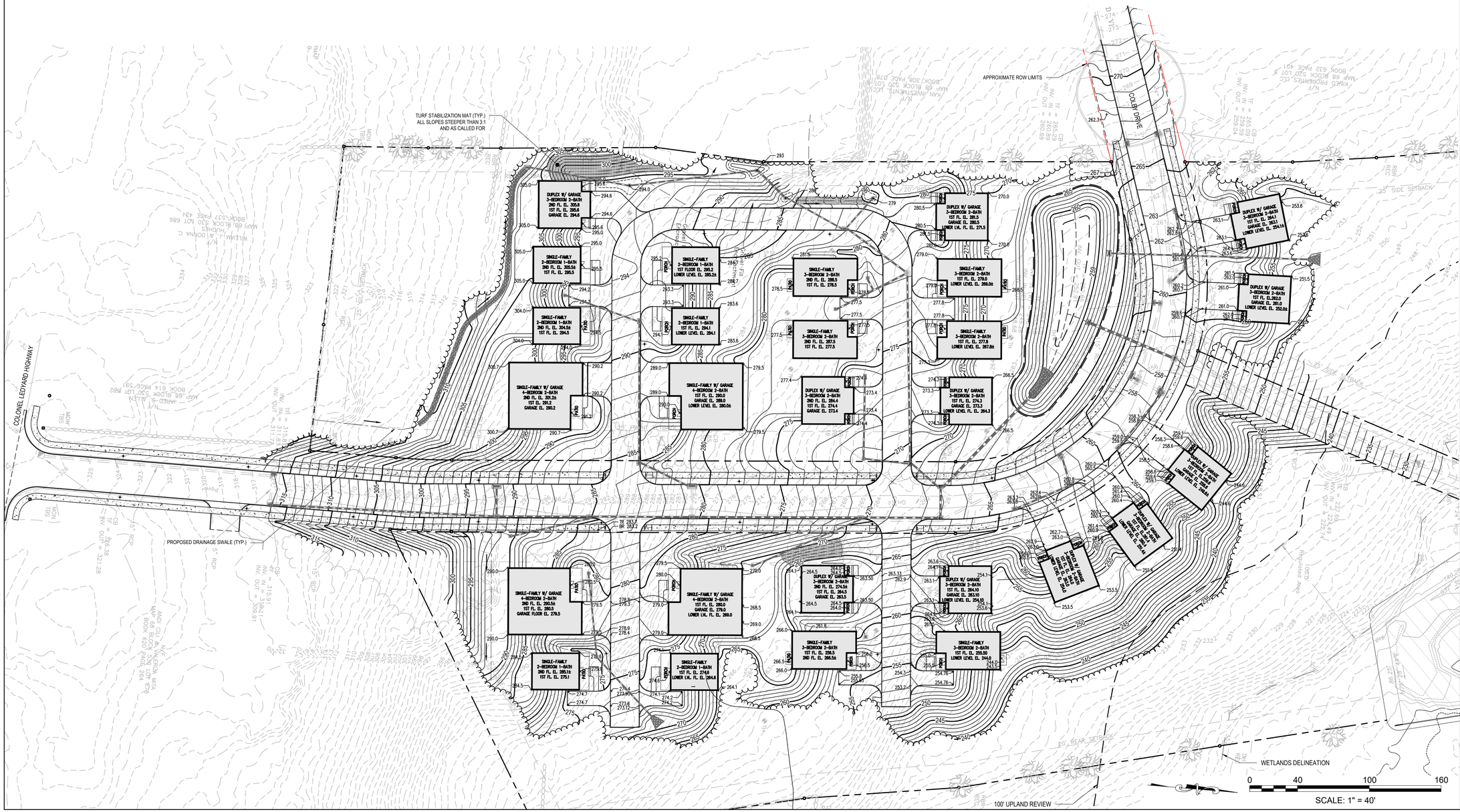
DRAWING NO.:
C3.2

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- TW 123.45 / BW 122.45 — PROPOSED SPOT ELEVATION
- 123.45 (ME) — MATCH EXISTING SPOT ELEVATION
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- B-# — SOIL BORING LOCATION

ACCESSIBILITY NOTES

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3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

STATE OF CONNECTICUT — WILLIAM G. WALKER — LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00 — DRAWN BY: GSL, TRS
SCALE: AS SHOWN — CHECKED BY: WGW
DATE: 12/20/2024

GRADING PLAN

DRAWING NO.: C3.3

UTILITY NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER 72 HOURS PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.

2. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.

3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.

4. WATER SERVICE

- ALL BUILDING SEWER LATERALS SHALL BE 6" DIAMETER AND ALL PIPE ACCEPTING FLOW FROM MORE THAN ONE (1) LATERAL SHALL BE 8" DIAMETER.
- ALL WATER SERVICE WORK TO COMPLY WITH CWC STANDARDS AND SPECIFICATIONS.
- ALL WATER MAINS ARE TO BE 8" D.I. WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
- ALL DOMESTIC WATER SERVICES ARE TO BE 2" COPPER WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
- ALL FIRE SERVICES ARE TO BE 6" D.I. WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
- ALL WATER SERVICES ARE TO BE A MIN. 10 FT FROM ANY SANITARY SERVICE (UNLESS SHELVED IN THE SAME TRENCH) AND A MINIMUM OF 18" OF VERTICAL CLEARANCE FROM ANY OTHER UTILITY LINE.
- LOCATION OF WATER SERVICES AT THE BUILDING TO BE COORDINATED WITH MECHANICAL DRAWINGS.
- ALTHOUGH NOT SHOWN ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

5. TELECOMMUNICATIONS

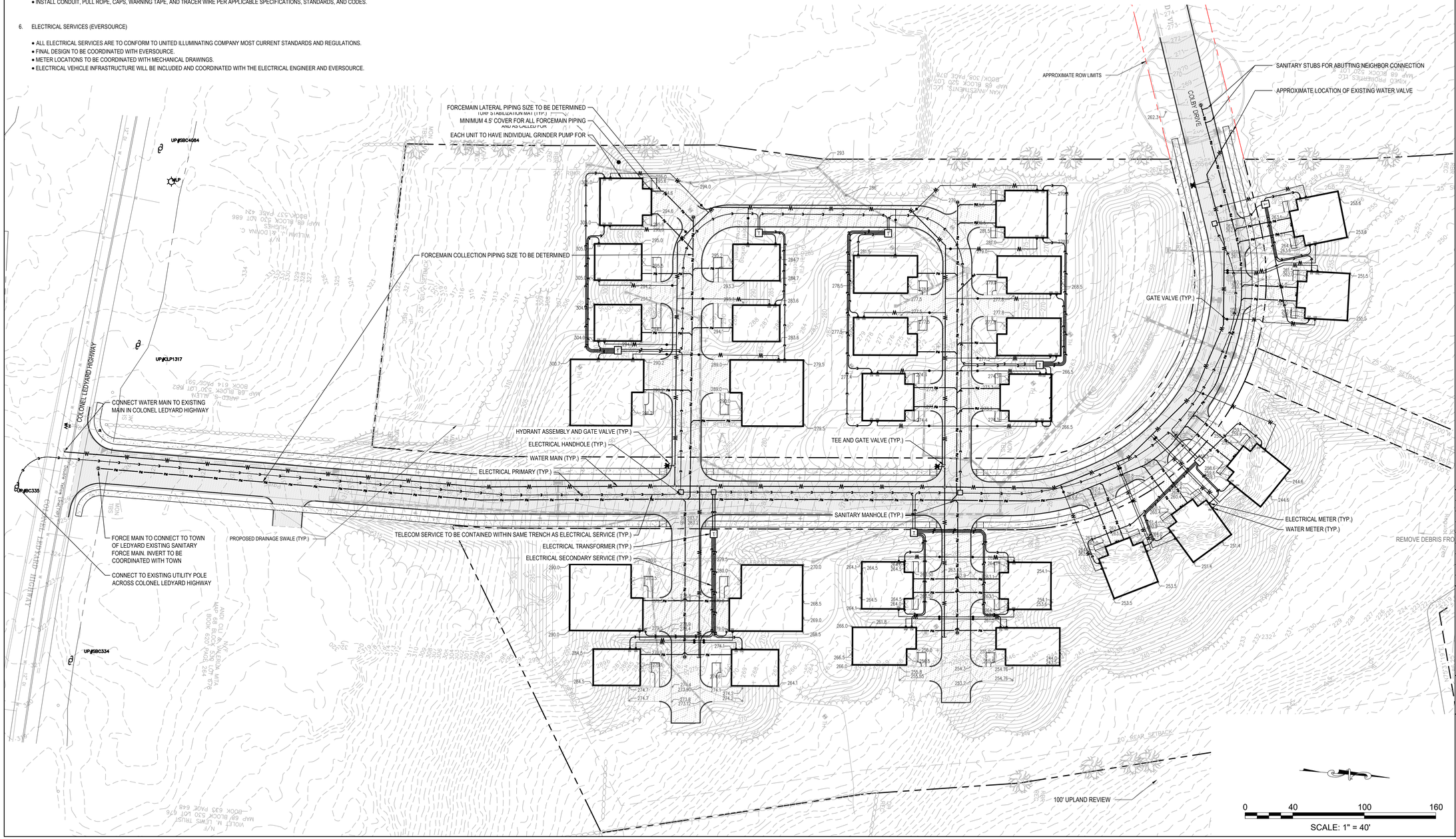
- TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
- FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
- SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
- ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL TELECOMMUNICATIONS PROVIDER.
- INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.

6. ELECTRICAL SERVICES (EVERSOURCE)

- ALL ELECTRICAL SERVICES ARE TO CONFORM TO UNITED ILLUMINATING COMPANY MOST CURRENT STANDARDS AND REGULATIONS.
- FINAL DESIGN TO BE COORDINATED WITH EVERSOURCE.
- METER LOCATIONS TO BE COORDINATED WITH MECHANICAL DRAWINGS.
- ELECTRICAL VEHICLE INFRASTRUCTURE WILL BE INCLUDED AND COORDINATED WITH THE ELECTRICAL ENGINEER AND EVERSOURCE.

UTILITY LEGEND

W W	WATER PIPE
FP	FIRE PROTECTION LATERAL
GV	GATE VALVE
	WATER 'TEE' CONNECTION
S S	SANITARY LATERAL
FM	SANITARY LATERAL
	SANITARY CLEANOUT
	SANITARY MANHOLE
E E	ELECTRICAL CONDUIT
T	TRANSFORMER



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LEDYARD, CT

COLBY DRIVE

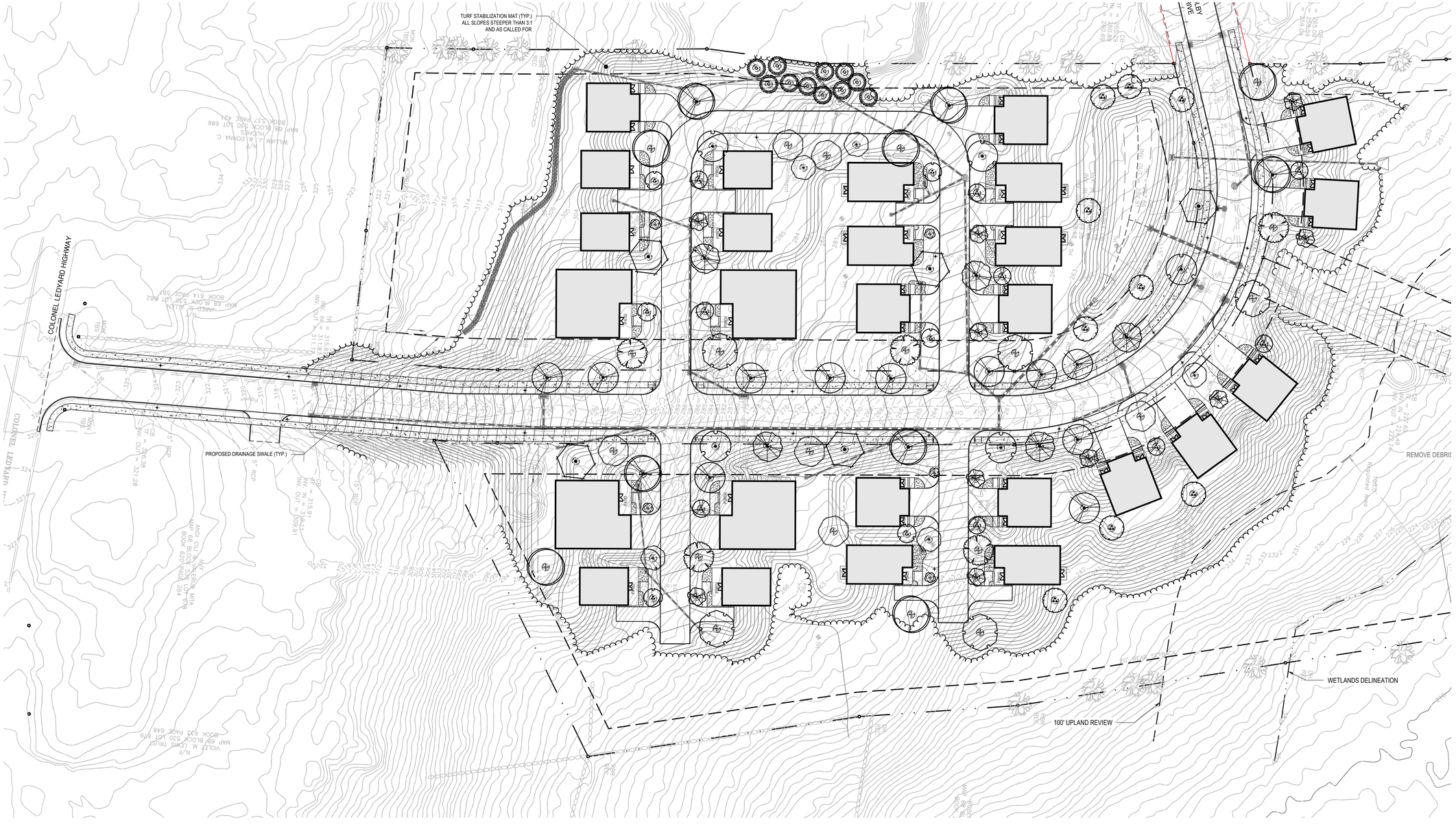
DATE:	REVISION:

STATE OF CONNECTICUT · WILLIAM G. WALTER · 30 · LICENSED · PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00** DRAWN BY: **CLM**
SCALE: **1"=40'** CHECKED BY: **WGW**
DATE: **12/20/2024**

UTILITY PLAN

DRAWING NO.:
C4.0



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:

STATE OF CONNECTICUT
WILLIAM G. WALKER
LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024

DRAWN BY: TRS
CHECKED BY: RCD

PLANTING PLAN

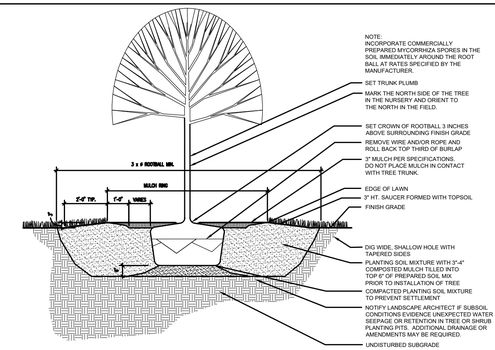
DRAWING NO.:
C5.0

PLANT SELECTION SCHEDULE

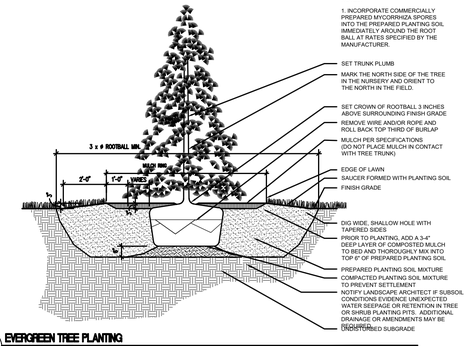
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
DECIDUOUS TREES					
	AO	ACER RUBRUM `OCTOBER GLORY` / OCTOBER GLORY RED MAPLE	B & B	2.5-3" CAL.	
	ASFF	ACER SACCHARUM `FALL FIESTA` / FALL FIESTA SUGAR MAPLE	B & B	2.5-3" CAL.	14-16` HT.
	AHB	AESCULUS HIPPOCASTANUM 'BAUMANNII' / BAUMANN HORSE CHESTNUT	B & B	2.5-3" CAL.	12-16` HT.
	BNH	BETULA NIGRA `HERITAGE` / HERITAGE RIVER BIRCH	B & B	MULTI-TRUNK	8-10` HT.
	GTH	GLEDITSIA TRIACANTHOS INERMIS `HALKA` / HALKA THORNLESS HONEY LOCUST	B & B	2.5-3" CAL.	12-16` HT.
	LSR	LIQUIDAMBAR STYRACIFLUA `ROTUNDILOBA` TM / ROUND-LOBED SWEET GUM	B & B	2.5-3" CAL.	14-16` HT.
	LA	LIRIODENDRON TULIPIFERA 'SNOW BIRD' / SNOW BIRD TULIP TREE	B & B	3.0"-3.5" CAL	14-16` HT.
	QP	QUERCUS PALUSTRIS / PIN OAK	B & B	2.5-3" CAL.	
	QR	QUERCUS RUBRA / NORTHERN RED OAK	B & B	6-7" CAL.	20` MIN.
	TR	TILIA AMERICANA 'REDMOND' / REDMOND AMERICAN LINDEN	B & B	2.5-3" CAL.	12-16` HT.
	UAP	ULMUS AMERICANA `PRINCETON` / PRINCETON AMERICAN ELM	B & B	2.5-3" CAL.	
EVERGREEN TREES					
	ACC	ABIES CONCOLOR `CANDICANS` / CANDICANS WHITE FIR	B & B	CONIFER	12-14` HT.
	CL	CUPRESSUS X LEYLANDII / LEYLAND CYPRESS	B & B	CONIFER	8-10` HT.
	PA	PICEA ABIES / NORWAY SPRUCE	B & B	CONIFER	8-10` HT.
	PFV	PINUS FLEXILIS `VANDERWOLF`S PYRAMID` / VANDERWOLF`S PYRAMID PINE	B & B	CONIFER	12-14` HT.
ORNAMENTAL TREES					
	AGA	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY	B & B	MULTI-TRUNK	12-14` HT.
	BW	BETULA POPULIFOLIA 'WHITESPIRE SR.' / WHITESPIRE SENIOR GRAY BIRCH	B & B	2"-2.5" CAL.	12-14` HT.
	CC2	CERCIS CANADENSIS / EASTERN REDBUD	B & B	MULTI-TRUNK	8-10` HT.
	CRRG	CORNUS X RUTGERSENSIS `RUTGAN` / STELLAR PINK DOGWOOD	B & B	4-4.5" CAL.	10-12` HT.
SYMBOL	*CODE*	*BOTANICAL / COMMON NAME*	*SIZE*	*HEIGHT*	*SPREAD*
GRASSES					
	PVH	PANICUM VIRGATUM `HEAVY METAL` / BLUE SWITCH GRASS	#3 CONT.	2-3` HT.	15-18" SPR.
DECIDUOUS SHRUBS					
	CAE	CORNUS ALBA `ELEGANTISSIMA` / VARIEGATED REDTWIG DOGWOOD	#5 CONT.	24-30" HT.	24-30" SPR.
	CSB	CORNUS SERICEA `BAILEYI` / BAILEYI RED TWIG DOGWOOD	#7 CONT.	3-4` HT.	36-42" SPR.
	HV	HAMAMELIS VERNALIS / SPRING BLOOMING WITCHHAZEL	#7 CONT.	36-42" HT.	36-42" SPR.
	HMT	HYDRANGEA MACROPHYLLA 'PIIHM-I' TM / TWIST-N-SHOUT ENDLESS SUMMER HYDRANGEA	#5 CONT.	30-36" HT.	30-36" SP.
	HL	HYDRANGEA PANICULATA `LITTLE QUICK FIRE` / LITTLE QUICK FIRE HYDRANGEA	#5 CONT.	18-24" HT.	18-24" SPR.
	HF3	HYDRANGEA QUERCIFOLIA 'FLEMYGEA' / SNOW QUEEN OAKLEAF HYDRANGEA	5 GAL		
	HKA	HYPERICUM KALMIANUM `AMES` / AMES ST. JOHNS WORT	#3 CONT.	15-18" HT.	15-18" SPR.
	IVRS	ILEX VERTICILLATA `RED SPRITE` / RED SPRITE WINTERBERRY	#3 CONT.	18-24" HT.	18-24" SPR.
	IVSG	ILEX VERTICILLATA `SOUTHERN GENTLEMAN` / SOUTHERN GENTLEMAN WINTERBERRY	B & B	4-5` HT.	36-42" SPR.
	IVWR	ILEX VERTICILLATA `WINTER RED` / WINTER RED WINTERBERRY	B & B	4-5` HT.	36-42" SPR.
	IVHG	ITEA VIRGINICA `HENRY`S GARNET` / HENRY`S GARNET SWEETSPIRE	#5 CONT.	18-24" HT.	24-30" SP.
	MP	MYRICA PENSYLVANICA / NORTHERN BAYBERRY	#5 CONT.	30-36" HT.	30-36" SP.
	POLD	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / LITTLE DEVIL DWARF NINEBARK	#3 CONT.	30-36" HT.	30-36" SP.
EVERGREEN SHRUBS					
	JT2	JUNIPERUS COMMUNIS 'SMNJCB' / TORTUGA® COMMON JUNIPER	#3 CONT.	8-12" HT.	18-24" SPR.
	KLS	KALMIA LATIFOLIA `SARAH` / SARAH MOUNTAIN LAUREL	#5 CONT.	30-36" HT.	30-36" SPR.
	LF	LEUCOTHOE FONTANESIANA / DROOPING LEUCOTHOE	#5 CONT.	15-18" HT.	18-24" SPR.
	RM	RHODODENDRON MAXIMUM / ROSEBAY RHODODENDRON	#7 CONT.	2-4` HT.	2-3` SPR.
	RR	RHODODENDRON MAXIMUM 'ROSEUM' / PINK ROSEBAY RHODODENDRON	7 GAL	2-4` HT.	2-3` SPR.
	TN2	THUJA OCCIDENTALIS 'AMERICAN PILLAR' / AMERICAN PILLAR ARBORVITAE	7 GAL	30-36" HT.	30-36" SP.
	TG2	THUJA OCCIDENTALIS 'GOLDEN GLOBE' / GOLDEN GLOBE ARBORVITAE	#3 CONT.	24-30" HT.	24-30" SPR.
	TOLG	THUJA OCCIDENTALIS 'LITTLE GIANT' / LITTLE GIANT ARBORVITAE	#3 CONT.	2-3` HT.	2-3` SPR.
	TI2	THUJA OCCIDENTALIS 'SMTOYB' / POLAR GOLD® ARBORVITAE	7 GAL	30-36" HT.	30-36" SP.

TOPSOIL, SEEDING & PLANTING NOTES

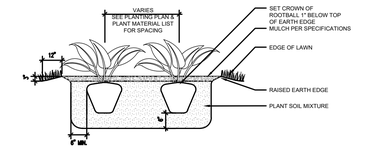
1. BLEND PROPOSED GRADES INTO EXISTING GRADES SMOOTHLY AND NEATLY. ALL SAWCUTS SHALL BE STRAIGHT AND CLEAN.
2. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES INCLUDING AREAS OUTSIDE OF THE CONTRACT LIMIT LINE, BUT WHICH ARE NOT COVERED BY OTHER SITE IMPROVEMENTS.
3. ALL PLANTING MATERIAL TO BE NURSERY GROWN STOCK SUBJECT TO APPLICABLE A.A.N. STANDARDS.
4. THE CONTRACTOR SHALL SUPPLY ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT LIST. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT LIST AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER NUMBER SHALL APPLY.
5. PRECISE LOCATION OF ITEMS NOT DIMENSIONED ON THE PLAN ARE TO BE FIELD STAKED BY THE CONTRACTOR AND SHALL BE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE PREVIOUS NOTE.
6. ALL SHRUB AND TREE PITS SHALL BE MULCHED TO A DEPTH OF 3" WITH SHREDDED PINE BARK MULCH UNLESS INDICATED OTHERWISE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGED VEGETATION AND SHALL REPLACE OR REPAIR ANY DAMAGE, AT HIS OWN EXPENSE.
8. ALL SHRUB AND GROUND COVER PLANTING AREAS SHALL HAVE CONTINUOUS BEDS OF AMENDED PLANTING SOIL TO A MINIMUM DEPTH OF 18 INCHES. SEE PLANTING PLANS FOR BED EXTENTS AND DETAILS FOR AREAS OF ADDITIONAL REQUIRED DEPTH.
9. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES IN THE FIELD. WHERE PLANT MATERIAL MAY INTERFERE WITH UTILITIES, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT TO COORDINATE THEIR INSTALLATION.
10. PLANTINGS INSTALLED IN THE DRY SUMMER MONTHS AND/OR LAWN SEEDED OUT OF SPRING OR FALL PERIODS, IF ALLOWED BY OWNER, WILL REQUIRE AGGRESSIVE IRRIGATION PROGRAMS AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
11. SUBSTITUTIONS PERMITTED ONLY UPON WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
12. WHERE A SIZE RANGE IS GIVEN IN THE PLANT SCHEDULE, AT LEAST 50% OF THE PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
13. CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.
14. CONTRACTOR TO MAINTAIN ALL PLANT MATERIAL UNTIL 60 DAYS AFTER FINAL ACCEPTANCE UNLESS NOTED OTHERWISE IN SPECS.



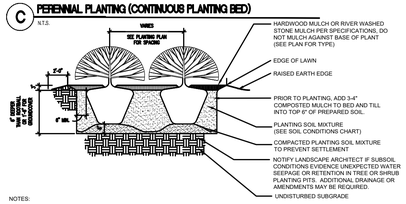
A DECIDUOUS TREE PLANTING
1/2" = 1'-0"



B EVERGREEN TREE PLANTING
NOT TO SCALE

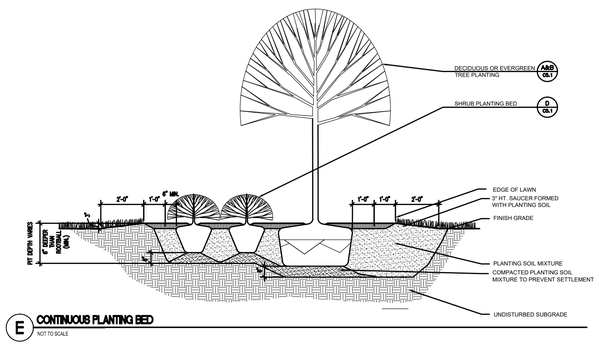


C PERENNIAL PLANTING (CONTINUOUS PLANTING BED)
N.T.S.



NOTES:
1. FOR CONTAINER GROWN SHRUBS, GENTLY PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF CONTAINER.
2. FOR B&B SHRUBS, FOLD BURLAP FROM TOP OF ROOT BALL DOWN TO GROUND.
3. INCORPORATE COMMERCIALLY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOT BALL AT RATES SPECIFIED BY THE MANUFACTURER.
4. CONFIRM THAT WATER DRAINS OUT OF THE SOIL DURING THE DESIGN PHASE. DESIGN ALTERNATIVE DRAINAGE SYSTEMS, AS REQUIRED.

D SHRUB PLANTING BED
N.T.S.



E CONTINUOUS PLANTING BED
NOT TO SCALE

Prepared by:

benesch

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860-633-8341

Prepared for:

Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

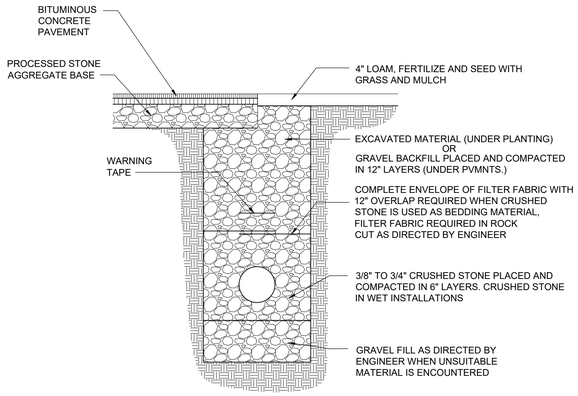
DATE:	REVISION:

STATE OF CONNECTICUT · WILLIAM G. WALKER · LICENSED PROFESSIONAL ENGINEER

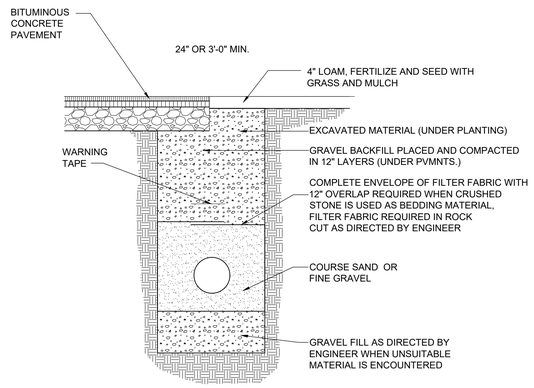
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SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: TRS
CHECKED BY: RCD

PLANTING DETAILS & SCHEDULE

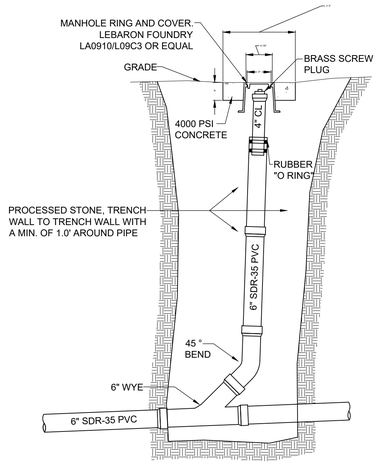
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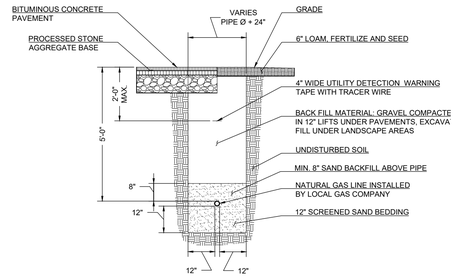
SANITARY TRENCH
SCALE: NONE



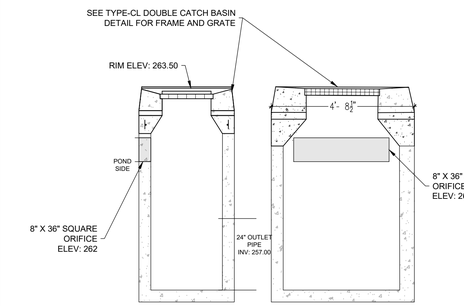
WATER TRENCH
SCALE: NONE



CLEANOUT TO GRADE
SCALE: NONE



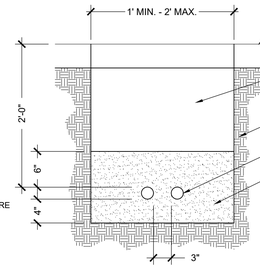
NATRUAL GAS TRENCH
SCALE: NONE



NOTES:

1. MIN. 4000 PSI PRECAST CONCRETE COMPONENTS ARE TO BE USED AS THE BASIS FOR THE OUTLET CONTROL STRUCTURE.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

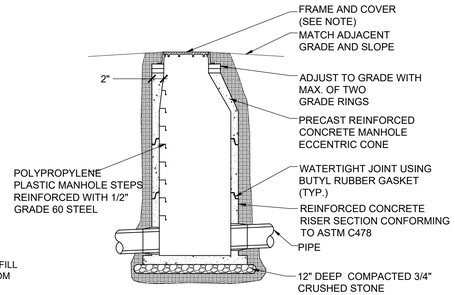
OUTLET CONTROL STRUCTURE (OCS-1)
SCALE: NONE



ELECTRICAL CONDUIT TRENCH
SCALE: NONE

NOTES:

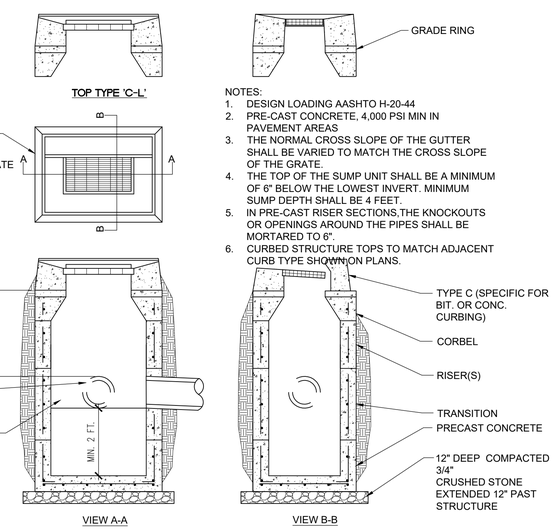
1. CONTRACTOR TO PROVIDE TRENCH, CONDUIT, AND BACK FILL
2. MAINTAIN 12" SEPARATION FROM OTHER UTILITIES



NOTE:

1. SOLID AND GRATE COVERS TO BE 24" DIAMETER GRAY IRON AS MANUFACTURED BY GENERAL FOUNDARIES INC, SOLID COVERS TO CONTAIN THE WORD 'DRAIN'.

STORM MANHOLE
SCALE: NONE



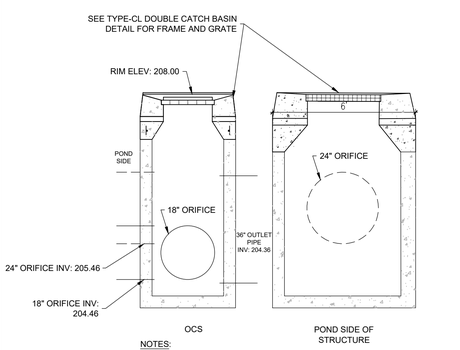
NOTES:

1. DESIGN LOADING AASHTO H-20-44
2. PRE-CAST CONCRETE, 4,000 PSI MIN IN PAVEMENT AREAS
3. THE NORMAL CROSS SLOPE OF THE GUTTER SHALL BE VARIED TO MATCH THE CROSS SLOPE OF THE GRATE.
4. THE TOP OF THE SUMP UNIT SHALL BE A MINIMUM OF 6" BELOW THE LOWEST INVERT. MINIMUM SUMP DEPTH SHALL BE 4 FEET.
5. IN PRE-CAST RISER SECTIONS,THE KNOCKOUTS OR OPENINGS AROUND THE PIPES SHALL BE MORTARED TO 6".
6. CURBED STRUCTURE TOPS TO MATCH ADJACENT CURB TYPE SHOWN ON PLANS.

NOTE:

1. ALL CATCH BASIN SUMPS TO BE A MINIMUM OF 2 FT DEEP UNLESS NOTED ON SHEET SERIES C3.0 DRAINAGE PLAN
2. CATCH BASINS IN LAWN AREAS TO BE COLLARLESS WITH NO EXPOSED CONCRETE. MOUNT NEENAH INLET GRATE MODEL 3349-A DIRECTLY TO CONCRETE CORBEL TOP. FILL CONCRETE SURROUND WITH TOPSOIL AND LAWN.

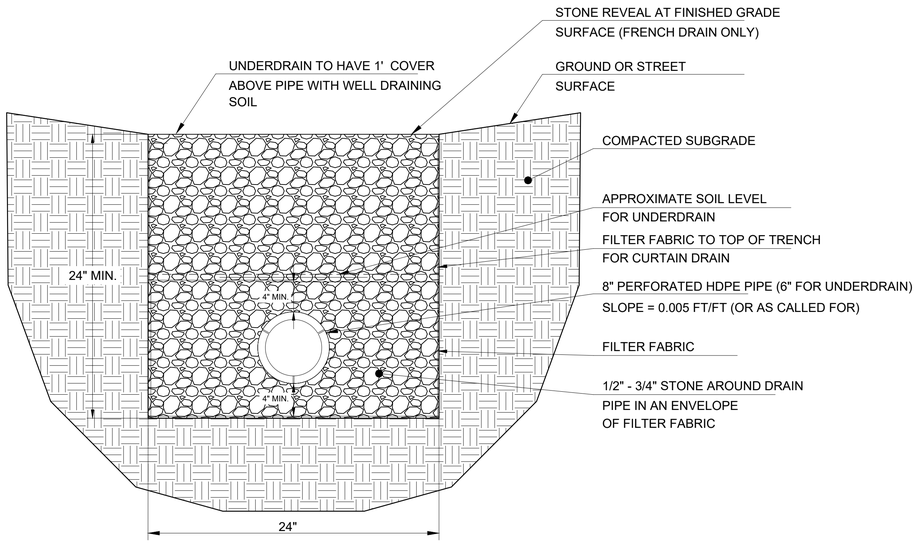
CATCH BASIN
SCALE: NONE



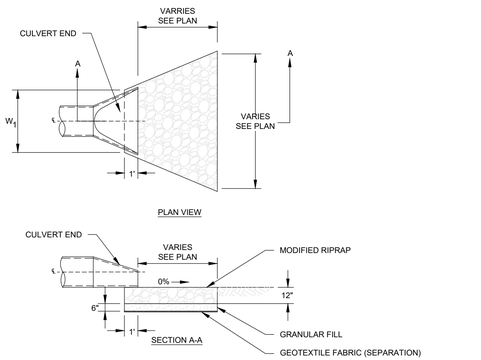
NOTES:

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2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

OUTLET CONTROL STRUCTURE (OCS AT EXISTING BASIN)
SCALE: NONE



FENCH DRAIN / UNDERDRAIN
SCALE: NONE



RIPRAP OUTLET PROTECTION
SCALE: NONE

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Prepared for:
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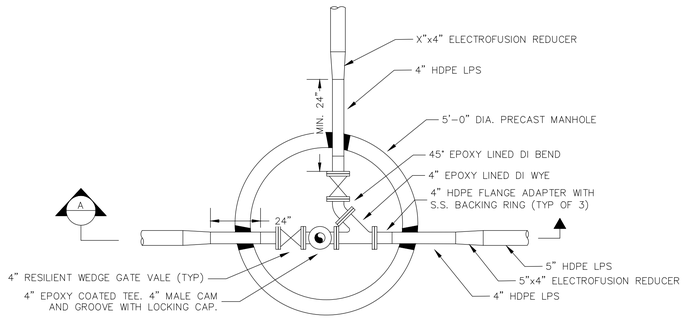
DATE:	REVISION:

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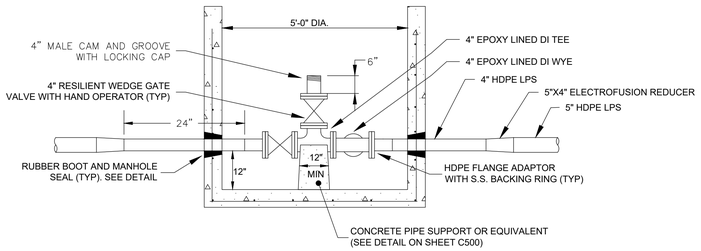
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SCALE: AS SHOWN CHECKED BY: WGW
DATE: 12/20/2024

SITE DETAILS

DRAWING NO.:
C6.0



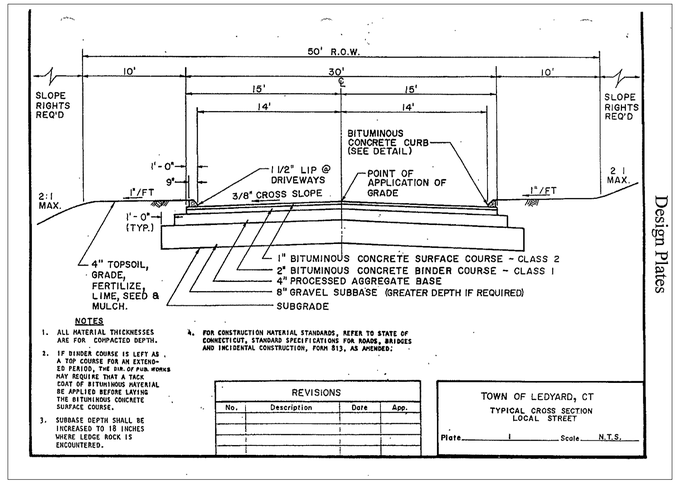
PLAN
N.T.S.



NOTE: ALL MANHOLE MATERIALS TO BE AS SHOWN ON TYPICAL PRECAST MANHOLE DETAIL.

SECTION A
N.T.S.

LOW PRESSURE SEWER JUNCTION MANHOLE
N.T.S.



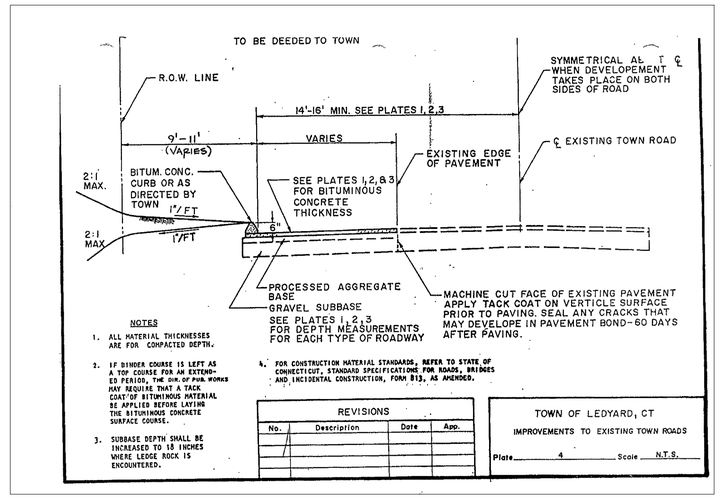
NOTES

1. ALL MATERIAL THICKNESSES ARE FOR COMPACTED DEPTH.
2. IF BINDER COURSE IS LEFT AS A TOP COURSE FOR AN EXTENDED PERIOD, THE DIR. OF PUB. WORKS MAY REQUIRE THAT A TACK COAT OF BITUMINOUS MATERIAL BE APPLIED BEFORE LAYING THE BITUMINOUS CONCRETE SURFACE COURSE.
3. SUBBASE DEPTH SHALL BE INCREASED TO 18 INCHES WHERE LEDGE ROCK IS ENCOUNTERED.
4. FOR CONSTRUCTION MATERIAL STANDARDS, REFER TO STATE OF CONNECTICUT, STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 813, AS AMENDED.

REVISIONS			
No.	Description	Date	App.

TOWN OF LEDYARD, CT
TYPICAL CROSS SECTION LOCAL STREET
Plate 1 Scale N.T.S.

Design Plates

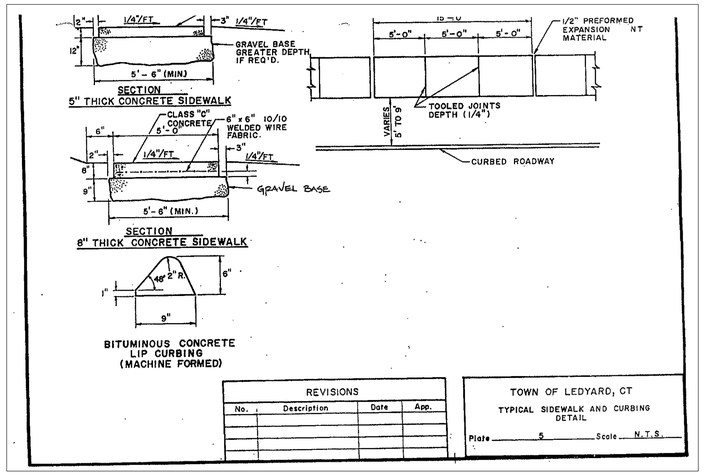


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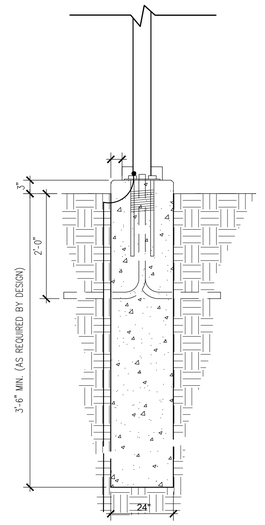
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No.	Description	Date	App.

TOWN OF LEDYARD, CT
IMPROVEMENTS TO EXISTING TOWN ROADS
Plate 4 Scale N.T.S.



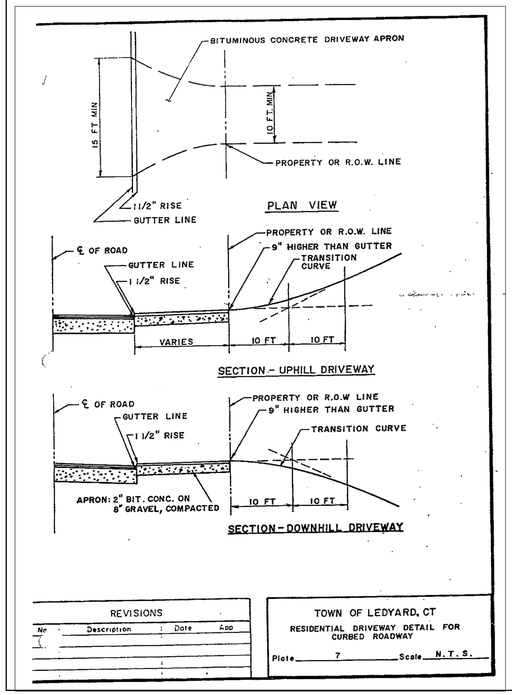
REVISIONS			
No.	Description	Date	App.

TOWN OF LEDYARD, CT
TYPICAL SIDEWALK AND CURBING DETAIL
Plate 5 Scale N.T.S.



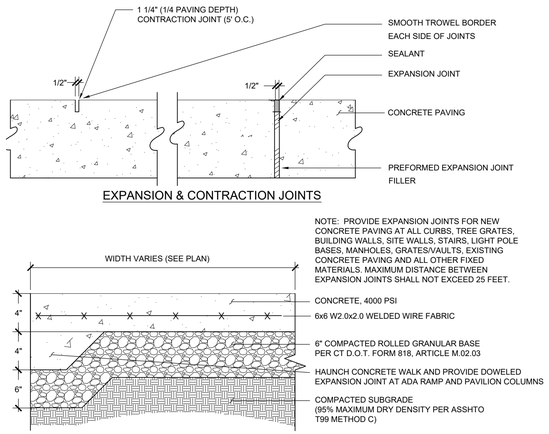
NOTE:
FACTORY SANDBLASTED FINISH TO 6" BELOW FINISHED GRADE

PEDESTRIAN LIGHT POLE CONCRETE BASE (12' HT.)
3/4" = 1'-0"



REVISIONS			
No.	Description	Date	App.

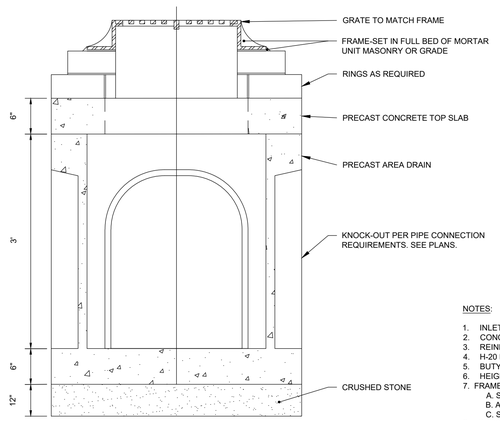
TOWN OF LEDYARD, CT
RESIDENTIAL DRIVEWAY DETAIL FOR CURBED ROADWAY
Plate 7 Scale N. T. S.



EXPANSION & CONTRACTION JOINTS

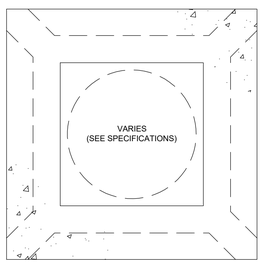
NOTE: PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 25 FEET.

CONCRETE WALK
SCALE: NONE



ELEVATION

CONCRETE ARE DRAIN
SCALE: NONE



PLAN VIEW (TOP SLAB)

NOTES:

1. INLET SHALL BE 30"x30" CONCRETE AREA DRAIN, AS MANUFACTURED BY ARROW CONCRETE, OR ENGINEER APPROVED EQUAL.
2. CONCRETE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS.
3. REINFORCING STEEL - ASTM 615 AND A82 OR A185 SPECIFICATIONS.
4. H-20 DESIGN LOADING PER AASHTO HS-20-44.
5. BUTYL RUBBER JOINT SEALANT - ASTM C990-91.
6. HEIGHT OF DRAIN BOX SHALL BE 3' (MODEL #ADBKO3) UNLESS DEPTH OF INVERT PIPE OUT REQUIRES THE USE OF 4' DRAIN BOX (MODEL #ADBKO4).
7. FRAME AND GRATE PAIR SHALL BE ONE OF THE FOLLOWING:
   A. STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2570 OR ENGINEER APPROVED EQUAL.
   B. ADA STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2569 OR ENGINEER APPROVED EQUAL.
   C. STANDARD BEEHIVE GRATE SHALL BE NEENAH INLET FRAME/BEEHIVE GRATE R-2564 OR ENGINEER APPROVED EQUAL.
8. WHERE NOT USED, THE KNOCKOUTS OF EACH AREA DRAIN SHALL BE FILLED WITH BLOCK / BRICK / MORTAR TO MAINTAIN STRUCTURAL INTEGRITY.

- SEE DRAWINGS FOR SPECIFIC LOCATIONS OF TYPE SELECTED.

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COLBY DRIVE

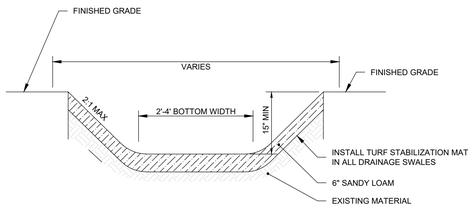
DATE:	REVISION:

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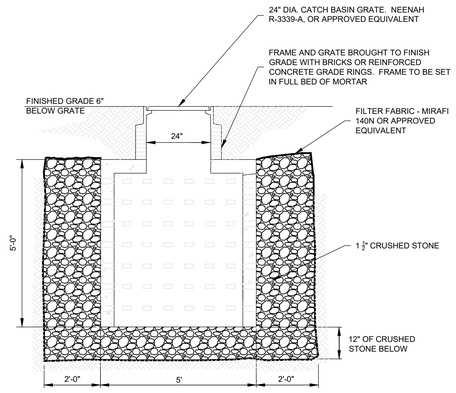
PROJECT NO.: **0725 500010.00** DRAWN BY: **CLM**
SCALE: **AS SHOWN** CHECKED BY: **WGW**
DATE: **12/20/2024**

SITE DETAILS

DRAWING NO.:
C6.1



DRAINAGE SWALE
SCALE: NONE



DRYWELL
SCALE: NONE

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COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:

STATE OF CONNECTICUT
WILLIAM G. WALTER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL
CHECKED BY: WGW

SITE DETAILS

DRAWING NO.:
C6.2

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P 860-633-8341
F 860-633-1068

May 27, 2025

Inland Wetland & Watercourse Commission and Planning & Zoning Commission
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

RE: **Development Narrative**
Residential Development – Habitat for Humanity
Colby Drive, Ledyard, CT

Dear Commission Members:

Attached please find the application and associated plan set for the above proposed multi-family development. Following is a development narrative that provides detail additional to the application and plans. The applicationis being submitted as a multi-family residential affordable housing development under CGS 8-30g.

The property is situated at 8, 9 and 11 Colby Drive (Zone – MFDD). It consists of approximately 16 acres of wooded lot with a roadway base that was constructed over 15 years ago. The roadway base was placed as a precursor to a road that would connect Colby Drive to Colonel Ledyard Highway. The site generally slopes south to north, with the low spot being a wetlands area located on the southeastern portion of the site.

The property has been the subject of several applications, and approvals, over the last 40 years. When Colby Drive was initially developed, it included stormwater infrastructure (catch basins, piping) that captured and conveyed stormwater from Colby Drive to the low spot on our site. At that time, the wetlands area was designed to be utilized for stormwater management. The pipe discharge from Colby occurred at the low elevation of the wetlands and an earthen berm was constructed on the southern property line, thereby forming a natural detention basin. A concrete outlet control structure was placed, with an RCP outlet pipe that ran under the berm and discharged onto the neighbor's property immediately to the south. A drainage easement was established across the neighbor's property.

<u>Lot Layout and Density</u>

The proposed development is situated on the northern portion of the site and the proposed road closely follows the previously constructed roadway base. The lot layout includes 27 buildings (38 dwelling units), of varying sizes, consisting of single and multi-family residential structures. The project meets the bulk and dimensional requirements of the regulations.

For the lots situated entirely in a zone, the bulk/dimensional requirements for that zone have been applied. For the purposes of determining the bulk/dimensional requirements of the lots situated in both zones, the requirements of Zone AA have been applied, as those requirements are more restrictive.

Utilities

Public water is available in both Colby Drive and Colonel Ledyard Highway; water service will be provided via a new main connecting to the existing facilities in each road. The water provider has indicated there is sufficient capacity in the existing mains to service the project.

Sewer is available in Colonel Ledyard Highway, in the form of a force main. The Water Pollution Control Authority has indicated we can connect to their force main and they have sufficient capacity to service the project. On-site sewer infrastructure will incorporate a low-flow force main and each unit will have its own grinder pump.

Electric and telecommunication facilities are available to the project, and will be utilized.

Stormwater

We have worked closely with the Town Engineer on the design of the stormwater management system. Due to previous approvals, as well as the construction of the existing stormwater basin, we are able to take credit for a portion of the site "existing conditions" to include a paved road and several buildings/associated driveways. However, in an effort to be conservative, we have assumed that our "existing conditions" include woods and a gravel drive.

We have designed a stormwater management system within the development footprint that includes an infiltration trench and a detention basin. We have performed on-site infiltration testing that has informed the rates we are utilizing for design. Our design considers the discharge evaluation point to the pipe outlet into the existing stormwater management area. We are treating the water for water quality, per the 2024 DEEP Stormwater Quality Manual requirements. Also, we are reducing the discharge from the developed portion of the site to the existing stormwater management area at the southern end of the site for all of the required design storm peak flows.

In addition, we are performing the following maintenance measures within the existing stormwater management area:

- Placing rip rap outlet protection at the end of the existing discharge pipe into the stormwater management area and the discharge pipe from the stormwater management area to the neighbor's easement.
- Selectively clearing phragmites and downed trees/root balls within the area adjacent the existing pipe outlet into the basin. The removal of these items will help restore the basins volume/capacity to its original level.
- Replacing the concrete outlet control structure in the existing stormwater management area. The existing structure is spalling and some of the concrete blocks are separating.

Wetlands

A CT-registered soil scientist has walked the site and delineated the limits of wetlands, as shown on the plans. The entirety of the southern portion of the site is wetlands, and this is the location of the existing stormwater management area. There are approximately 4.9 acres of wetlands on site, all located in the northern portion of the site. We are disturbing approximately 0.27 ac of upland review area. Additionally, we are temporarily disturbing approximately 0.36 acres of wetlands as part of the selective clearing and stormwater management maintenance. This disturbance, however, will enhance the functionality of the existing wetlands by removing invasives and by downed trees/root balls that are taking up volume from the previously designed and constructed stormwater basin.

Traffic

Based on the ITE Trip Generation Manual, 10th edition, the development is Land Use 220: Multifamily Housing (Low-Rise). The following table indicates weekday and weekend total trips and peak hour trips, anticipated by xx dwelling units.

Average Vehicle Trips per Dwelling Unit

Time Period	Average Rate	Anticipated Trips
Weekday – Total Trips	7.32	278
Weekday – AM Peak Hour Trips	0.56	21
Weekday – PM Peak Hour Trips	0.67	25
Saturday – Total Trips	8.14	309
Saturday – Peak Hour Trips	0.70	27
Sunday – Total Trips	6.28	239
Sunday – Peak Hour Trips	0.67	25

It can be seen from the above table that the maximum number of anticipated peak hour trips is 27, which is an insignificant volume. This averages out to approximately one (1) additional trip per 4.4 minutes. Therefore, no traffic mitigation is proposed.

We look forward to working with the Commission to ensure a successful project that meets required town regulations.

Sincerely,



Will Walter, PE
Alfred Benesch & Company

Alfred Benesch & Company
120 Hebron Avenue, Floor 2
Glastonbury, CT 06033
www.benesch.com
P 860-633-8341
F 860-633-1068

May 19, 2025

Inland Wetland & Watercourse Commission and Planning & Zoning Commission
Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

RE: **Permission to Access Site**
Residential Development – Habitat for Humanity
Colby Drive, Ledyard, CT

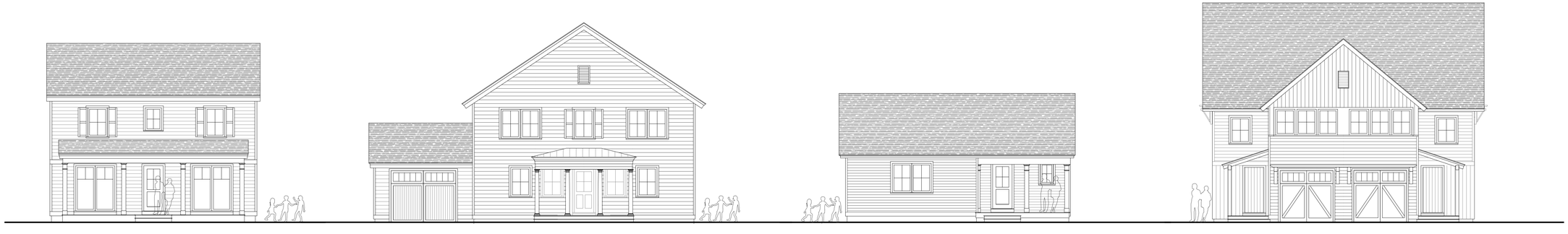
Dear Commission Members:

Please let this letter serve as permission from the owner (signed below), that you may conduct a site walk of the property.

Sincerely,

Will Walter, PE, LEED AP
Alfred Benesch & Company

Norm Eccleston
Habitat for Humanity



COLBY DRIVE
LEDYARD, CONNECTICUT

NEW CONSTRUCTION

DESIGN DEVELOPMENT PROGRESS SET ~ MAY 26, 2025

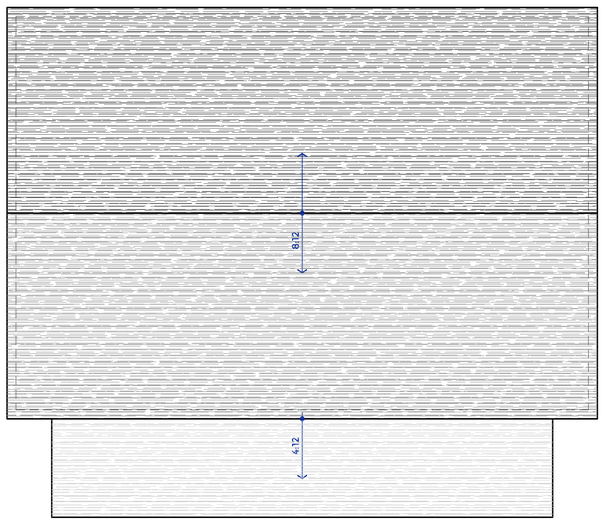
BUILDER / CLIENT:
HABITAT FOR HUMANITY OF
EASTERN CONNECTICUT
(HFHECT)
377 BROAD ST,
NEW LONDON, CT

TAMA
ARCHITECTURE PC
26 Lyme St. Fl. 1 Old Lyme, CT 06371
860 . 222 . 2658

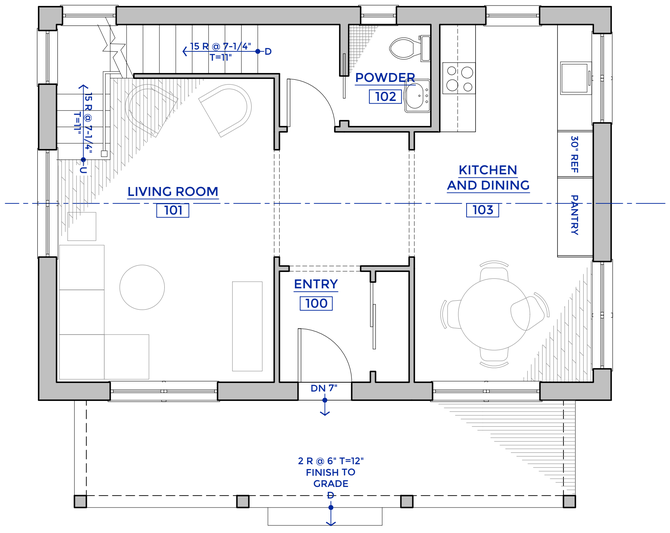
CIVIL ENGINEER:
ALFRED BENESCH &
COMPANY
120 HEBRON AVE.,
2ND FLOOR
GLASTONBURY, CT

DRAWING LIST:

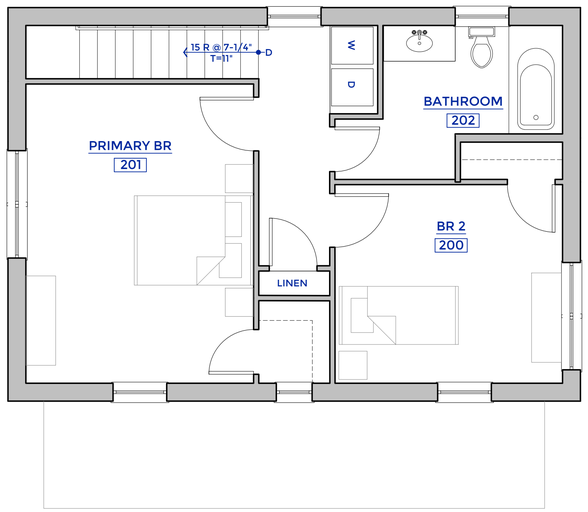
A0.0	COVER SHEET
A0.1	GENERAL NOTES
SV.01	TOPOGRAPHIC & BOUNDARY SURVEY
C0.0	GENERAL INFORMATION - LEGENDS
C0.1	GENERAL INFORMATION - NOTES
C1.0	SITE PREPARATION & EROSION CONTROL PLAN
C1.1	EROSION CONTROL DETAILS
C1.2	EROSION CONTROL DETAILS
C1.3	EROSION CONTROL NOTES
C2.0	SITE PLAN
C2.1	PLAN & PROFILE
C3.0	GRADING & DRAINAGE PLAN
C4.0	UTILITY PLAN
C4.1	PHOTOMETRIC PLAN
C5.0	SITE DETAILS
C5.1	SITE DETAILS
C6.0	LANDSCAPE PLAN
C6.1	PLANTING DETAILS
1-A1.0	TYPE 1 PLANS
1-A2.0	TYPE 1 ELEVATIONS
2-A1.0	TYPE 2 PLANS
2-A2.0	TYPE 2 ELEVATIONS
3-A3.0	TYPE 3 PLANS
3-A2.0	TYPE 3 ELEVATIONS
3-A2.1	TYPE 3 ELEVATIONS
4-A1.0	TYPE 4 PLANS
4-A2.0	TYPE 4 ELEVATIONS



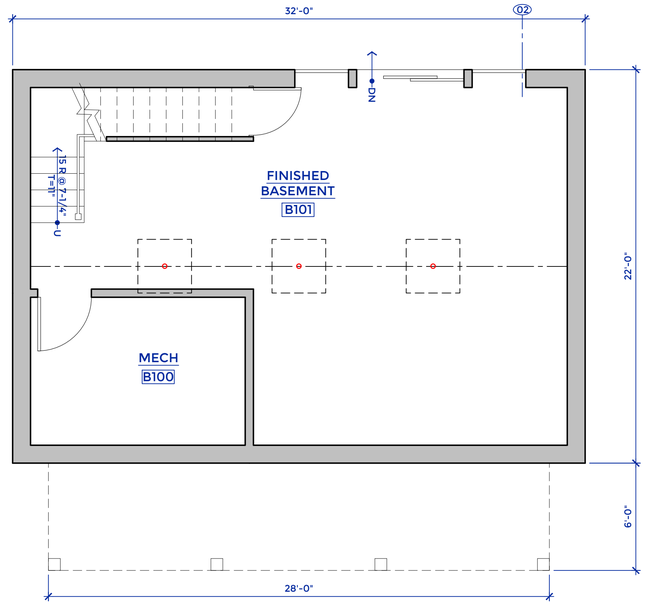
D1 ROOF PLAN
1/4"=1'-0"



D6 FIRST FLOOR PLAN
1/4"=1'-0"



H1 SECOND FLOOR PLAN
1/4"=1'-0"



H6 BASEMENT PLAN
1/4"=1'-0"

N

TAMA
ARCHITECTURE PC
26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
E2 ENGINEERS
488 MONTAUK AVE.,
NEW LONDON, CT
2342 MAIN ST.,
CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

COLBY DRIVE
HHFECT~
Ledyard,
Connecticut

TYPE 1 PLANS

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PROJECT #:	2314
DRAWN BY:	CSY, AB, EC
CHECKED BY:	CSY
DATE:	5/26/2025
SCALE:	1/4"=1'-0"
SHEET:	

1-A1.0



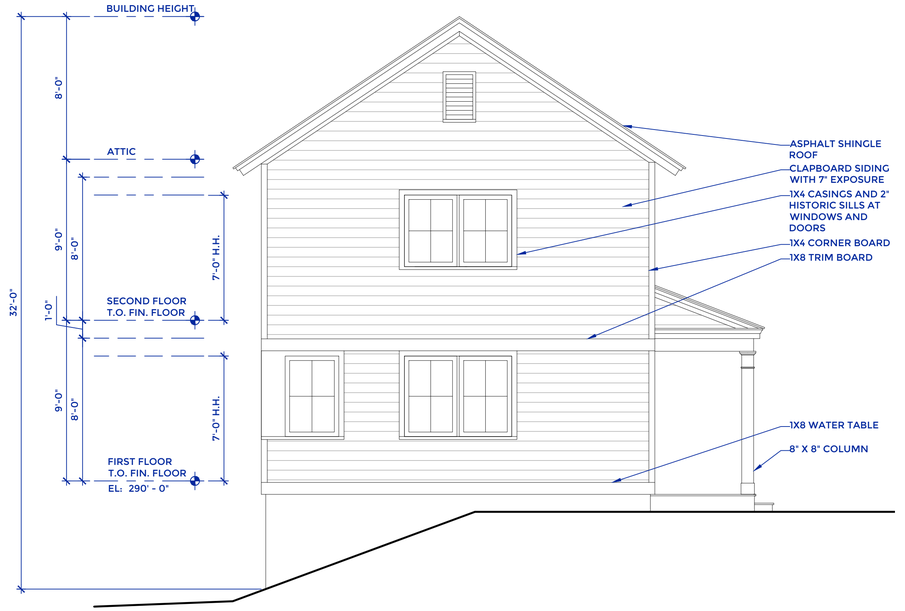
D1 EAST ELEVATION
1/4"=1'-0"



D6 SOUTH ELEVATION
1/4"=1'-0"



H1 NORTH ELEVATION
1/4"=1'-0"



H6 WEST ELEVATION
1/4"=1'-0"

TAMA
ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
E2 ENGINEERS
488 MONTAUK AVE.,
NEW LONDON, CT
2342 MAIN ST.,
CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

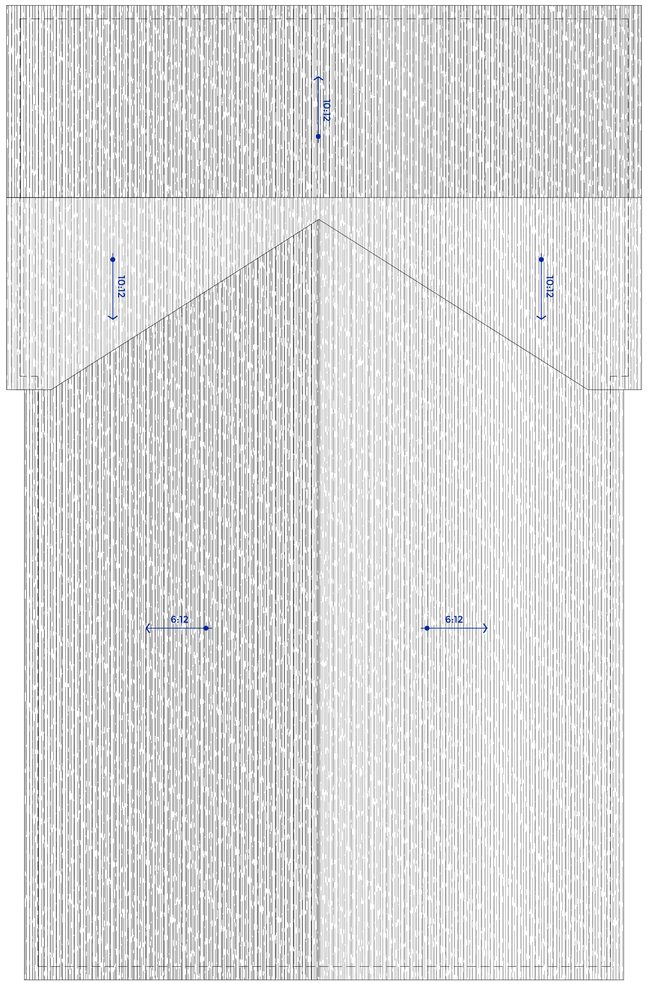
COLBY DRIVE
HHFECT~
Ledyard,
Connecticut

TYPE 1 ELEVATIONS

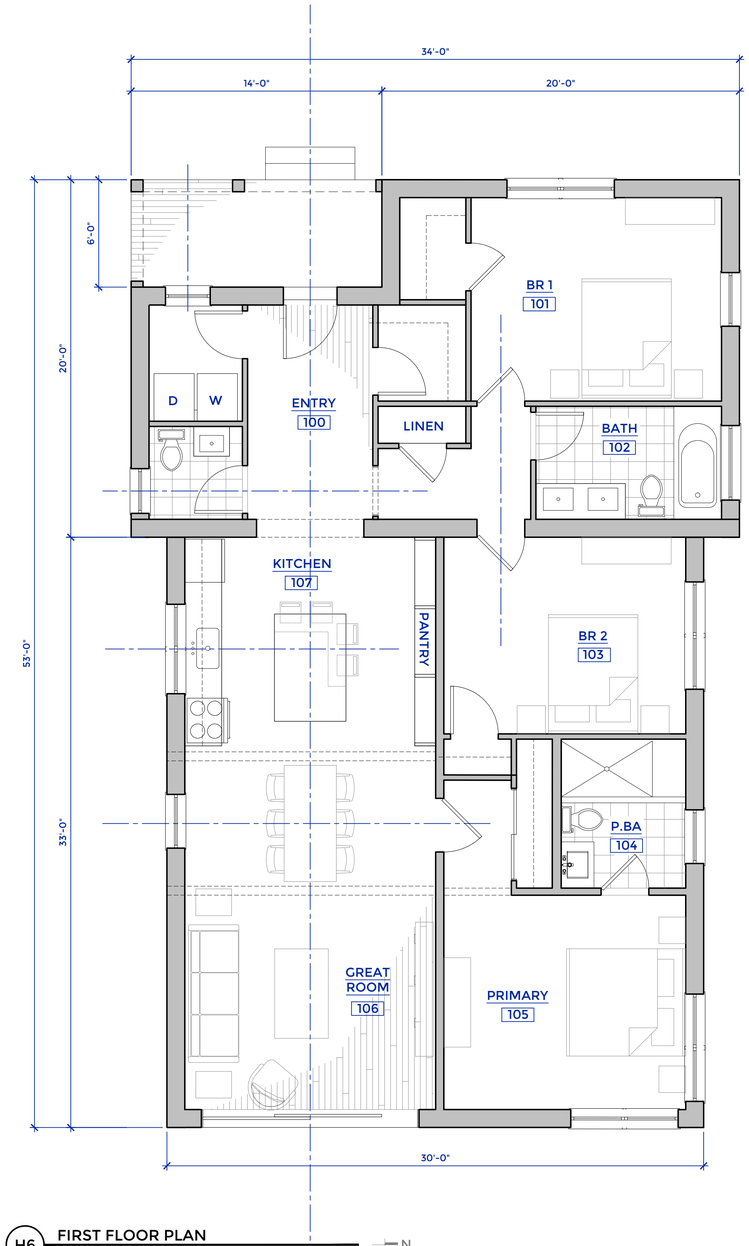
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CHECKED BY:	CSY
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SCALE:	1/4"=1'-0"
SHEET:	

1-A2.0



H1 ROOF PLAN
1/4"=1'-0"



H6 FIRST FLOOR PLAN
1/4"=1'-0"

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ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
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NEW LONDON, CT
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CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

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PROGRESS SET

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TYPE 2 PLANS

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SHEET:	2-A1.0



B1 SOUTH ELEVATION
1/4"=1'-0"



D5 WEST ELEVATION
1/4"=1'-0"



G1 NORTH ELEVATION
1/4"=1'-0"



G5 EAST ELEVATION
1/4"=1'-0"

TAMA
ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

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GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

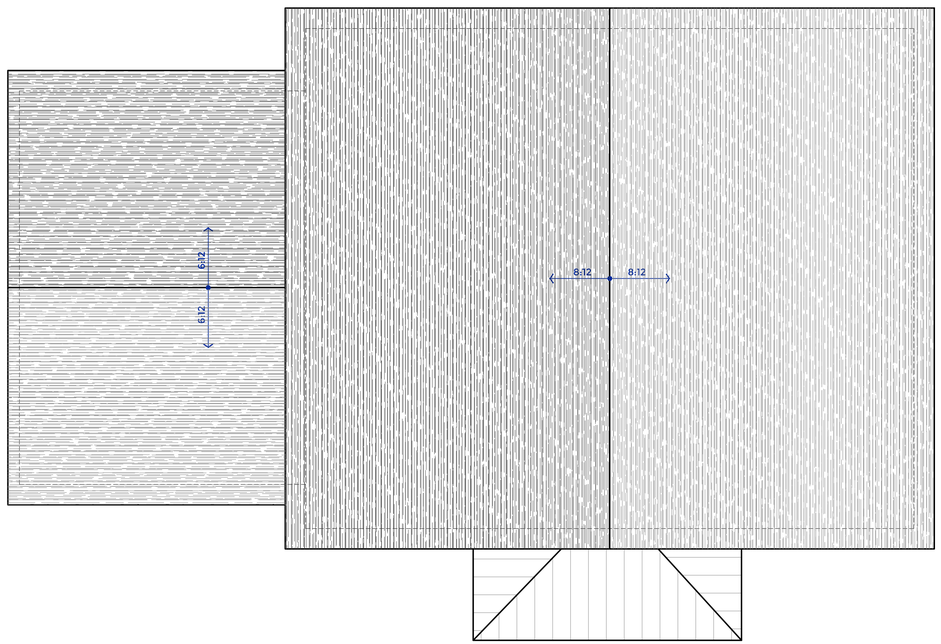
COLBY DRIVE
HHFECT~
Ledyard,
Connecticut

TYPE 2 ELEVATIONS

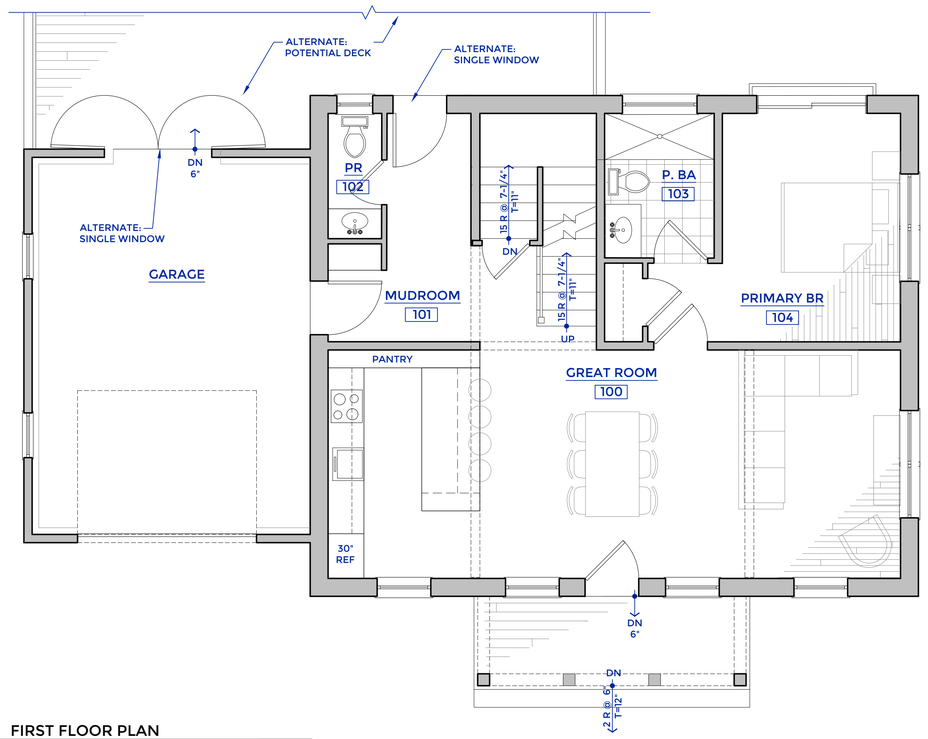
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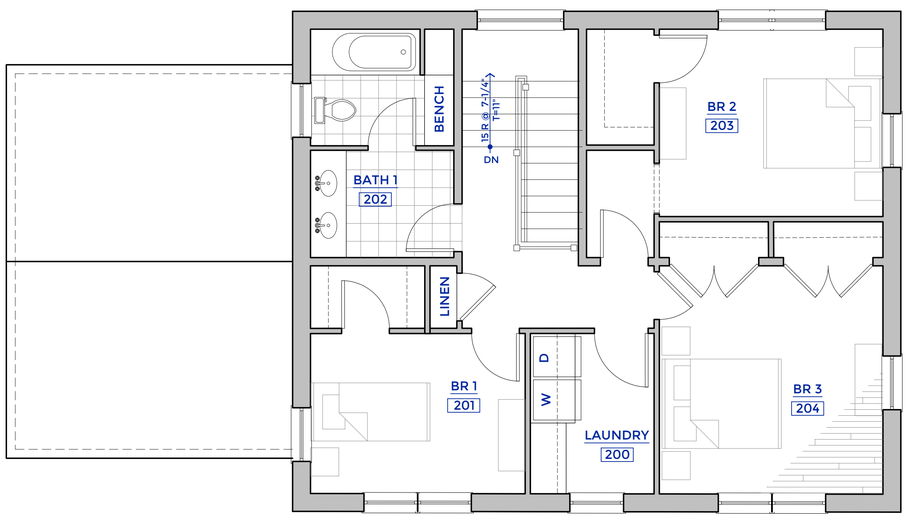
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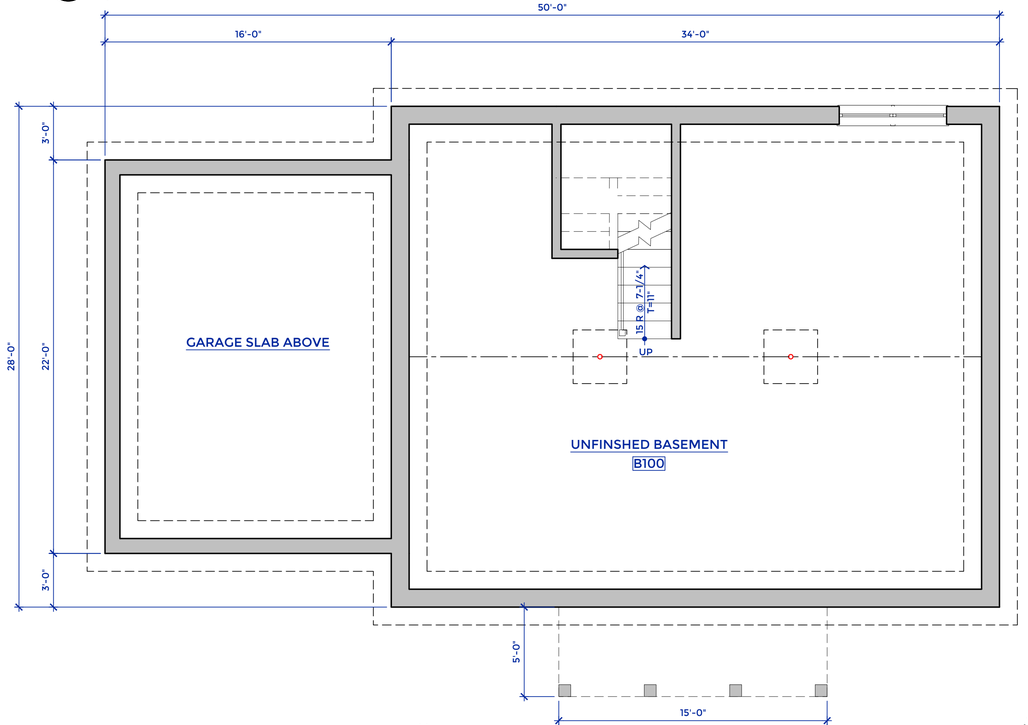
D1 ROOF PLAN
1/4"=1'-0"



D6 FIRST FLOOR PLAN
1/4"=1'-0"



H1 SECOND FLOOR PLAN
1/4"=1'-0"



H6 BASEMENT PLAN
1/4"=1'-0"

N

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ARCHITECTURE PC
26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

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CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

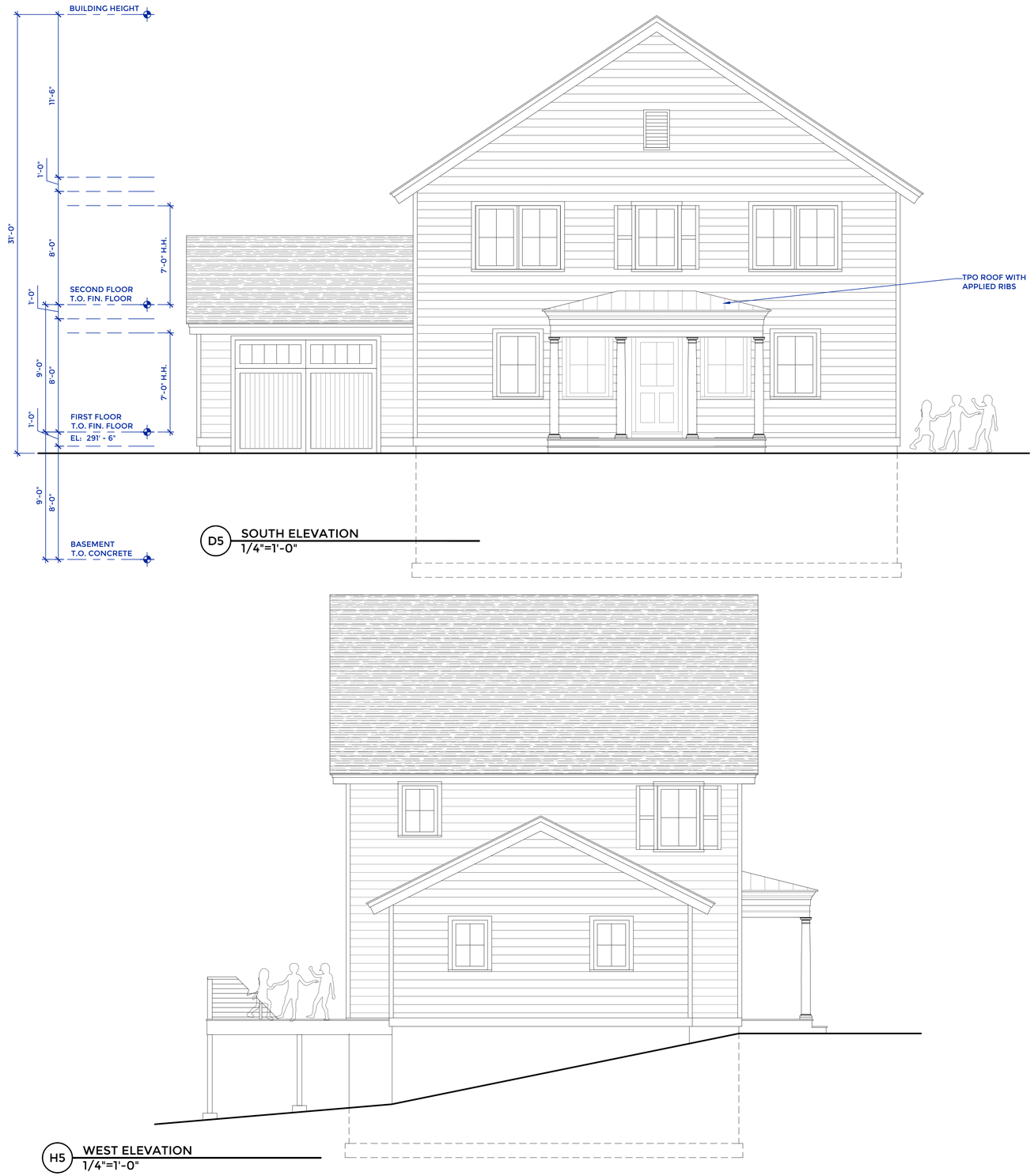
COLBY DRIVE
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TYPE 3 PLANS

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SHEET:	

3-A1.0



D5 SOUTH ELEVATION
1/4"=1'-0"

H5 WEST ELEVATION
1/4"=1'-0"

TAMA
ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
E2 ENGINEERS
488 MONTAUK AVE.,
NEW LONDON, CT
2342 MAIN ST.,
CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

COLBY DRIVE
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Ledyard,
Connecticut

TYPE 3 DRAWINGS

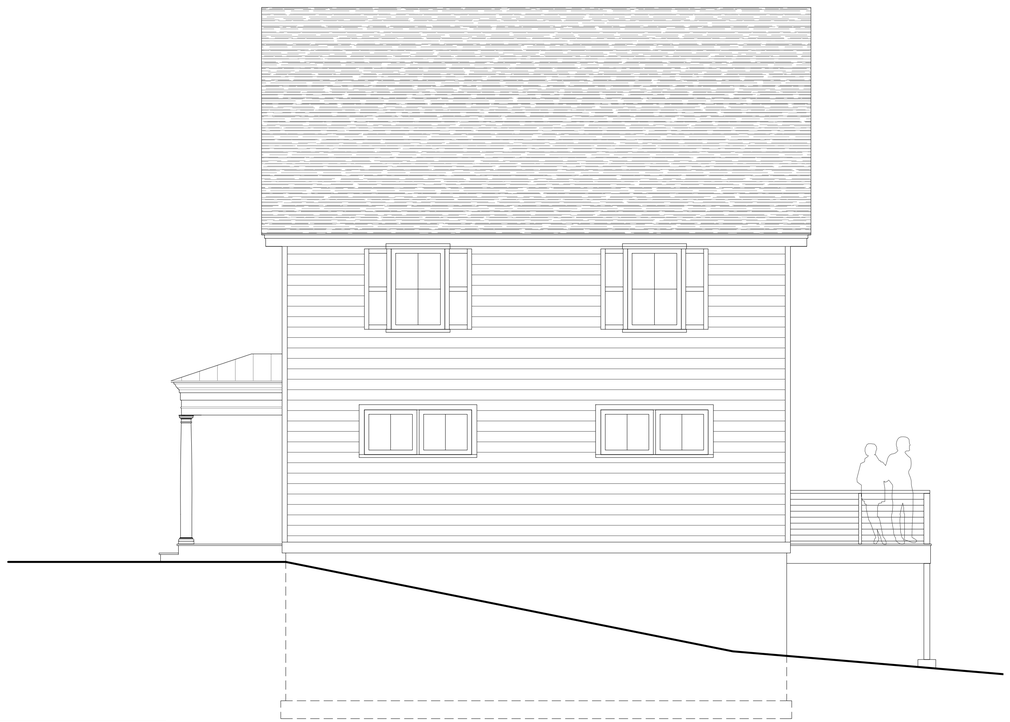
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3-A2.0



D5 NORTH ELEVATION
1/8"=1'-0"



H5 EAST ELEVATION
1/8"=1'-0"

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ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
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REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

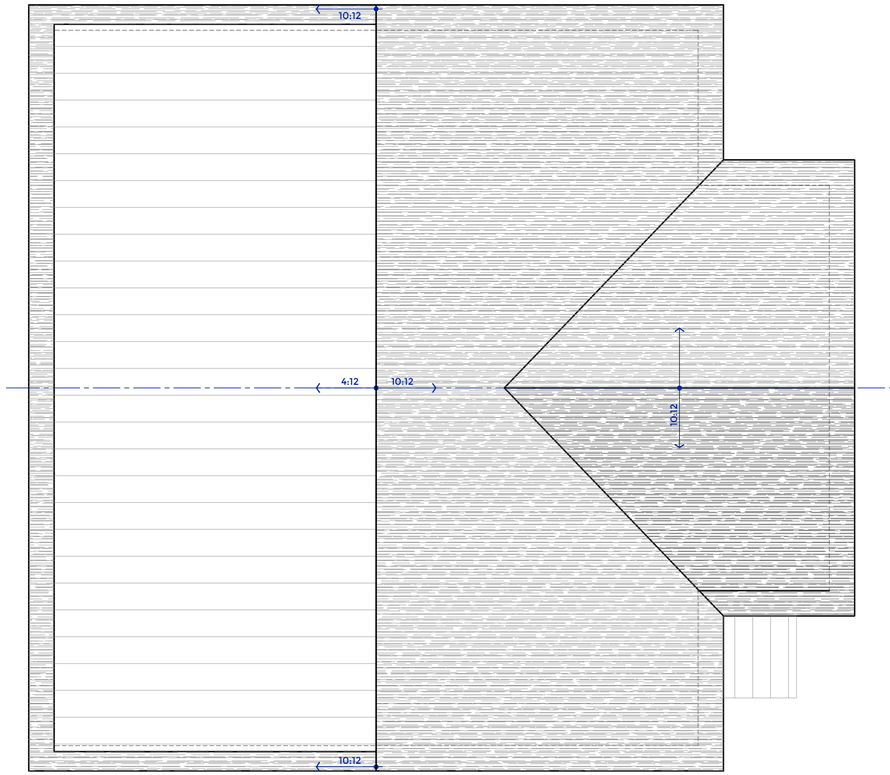
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Ledyard,
Connecticut

TYPE 3 DRAWINGS

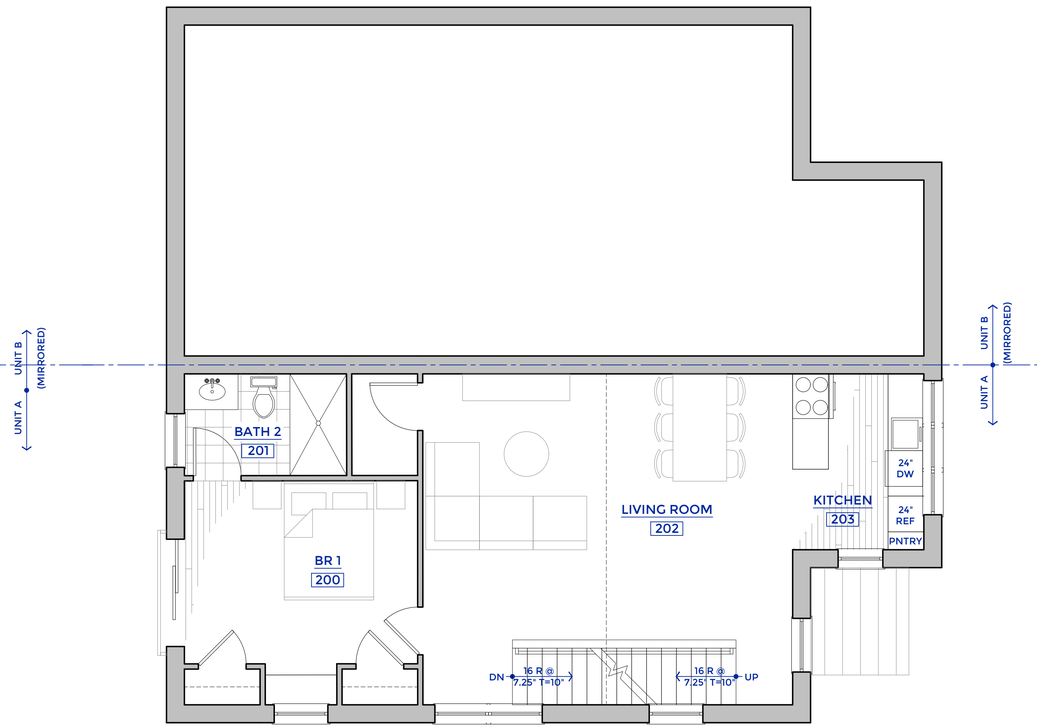
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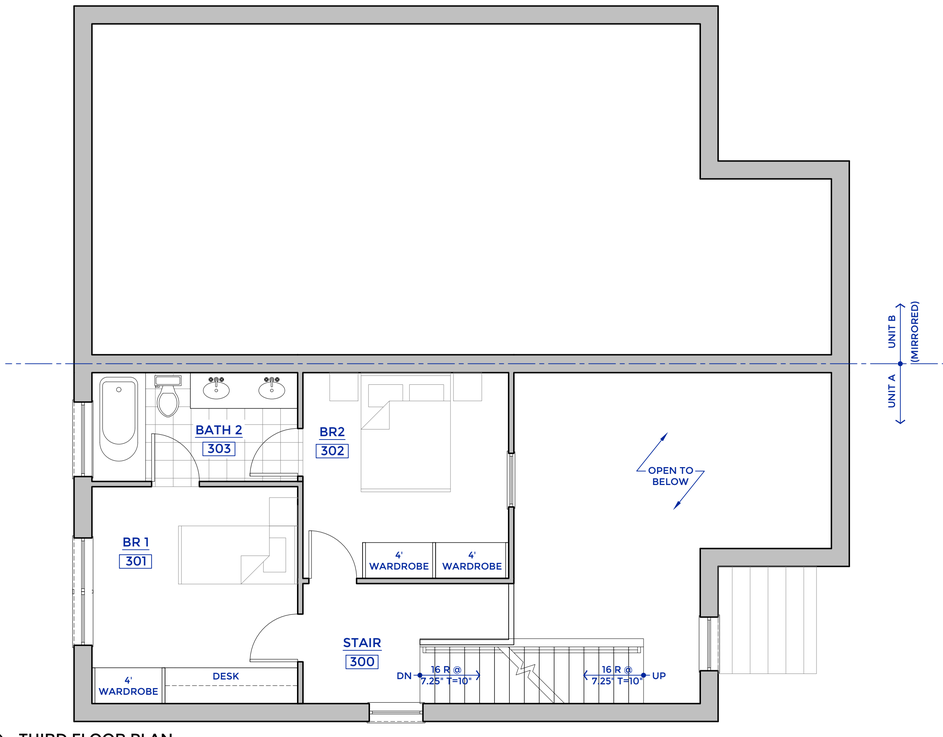
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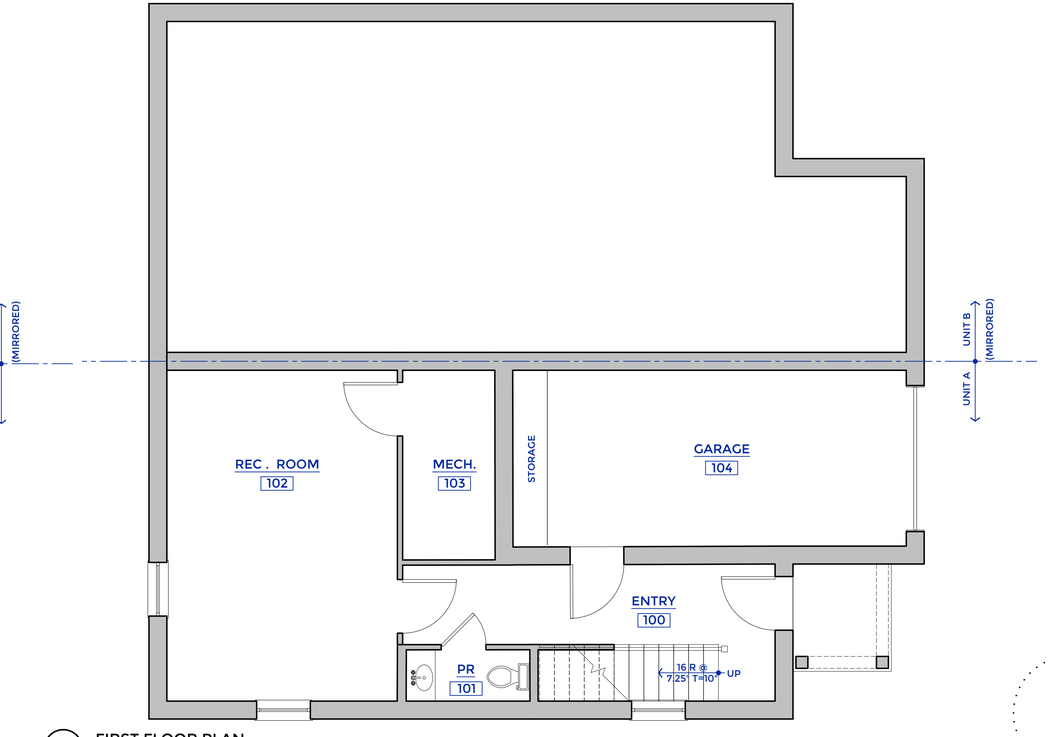
D1 ROOF PLAN
1/4"=1'-0"



D6 SECOND FLOOR PLAN
1/4"=1'-0"



H1 THIRD FLOOR PLAN
1/4"=1'-0"



H6 FIRST FLOOR PLAN
1/4"=1'-0"
N

TAMA
ARCHITECTURE PC
26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

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STRUCTURAL ENGINEER:
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2342 MAIN ST.,
CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

COLBY DRIVE
HHFECT
Ledyard,
Connecticut

TYPE 4 PLANS

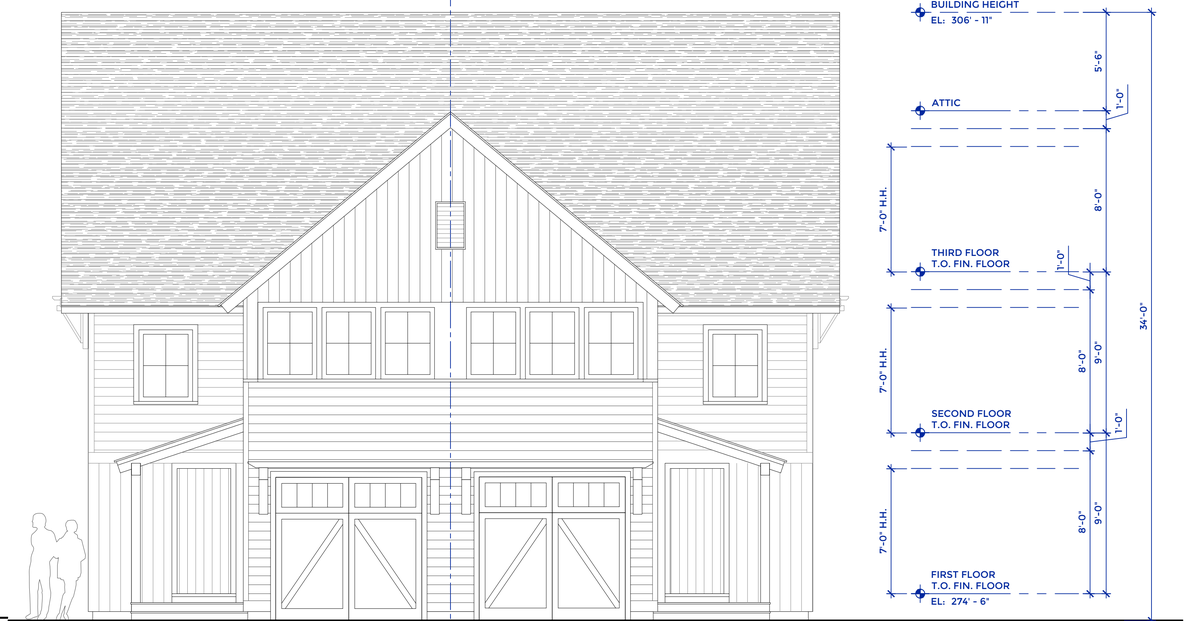
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PROJECT #:	2314
DRAWN BY:	CSY, AB, EC
CHECKED BY:	CSY
DATE:	5/26/2025
SCALE:	1/4"=1'-0"
SHEET:	

4-A1.0



H1 EAST ELEVATION (WEST SIMILAR)
1/4"=1'-0"



D1 NORTH ELEVATION
1/4"=1'-0"



D6 SOUTH ELEVATION
1/4"=1'-0"

TAMA
ARCHITECTURE PC

26 Lyme St. FL 1 Old Lyme, CT 06371
860 . 222 . 2658

CONSULTANTS:

STRUCTURAL ENGINEER:
E2 ENGINEERS
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NEW LONDON, CT
2342 MAIN ST.,
CONCORD, MA

CIVIL ENGINEER:
ALFRED BENESCH & COMPANY
120 HEBRON AVE., 2ND FLOOR
GLASTONBURY, CT

REVISIONS:

DESIGN DEVELOPMENT
PROGRESS SET

COLBY DRIVE
HHFECT~
Ledyard,
Connecticut

TYPE 4 ELEVATIONS

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CHECKED BY:	CSY
DATE:	5/26/2025
SCALE:	1/4"=1'-0"
SHEET:	

4-A2.0

LETTER OF TRANSMITTAL

Town of Ledyard Land Use Department

741 Colonel Ledyard Highway, Ledyard, CT 06339
Telephone: (860) 464-3215
Email: planner@ledyardct.org

DATE: May 29, 2025

TO:				
	☐ Town Engineer	☐ Groton Public Utilities	☒ Building Dept.	☒ Assessor
	☐ Town Attorney	☐ SCWA	☒ Fire Marshal	☐ Police
	☒ Ledge Light Health	☐ Mayor	☐ DOT	☐ CAM
	☒ WPCA	☒ Public Works	☐ DEEP	☐ Other

Project Name: PZ#25-4SITE
Project Location: 8, 9 & 11 Colby Drive, Ledyard

The following items have been transmitted:
☒ Application Plans and/or Supporting Documents via Hand Delivered
☐ Regulations
☐ Other

Description
Please review & comment on application.

Transmitted as checked below. Please submit comments on or before:

☐ For approval ☐ For your use ☐ As requested ☒ **For your review and comment**

Note: Please return comments to planner@ledyardct.org.

Remarks: If you are unable to submit written comments on or before June 12, 2025, please contact me by phone at the Planning Department at (860) 464-3215. Thank you.

Signed: *Liz Burdick*
Elizabeth Burdick, Director of Land Use & Planning

Reviewing Agency:
Review Date:

Reviewed By:

Project Name:
Project Location:

Comments:

Electronic Signature: _____

From:	Sarah Lufler
To:	"Walter, William"; Elizabeth Burdick
Cc:	Levesque, Nancy; Norm Eccleston
Subject:	RE: Public Water Supply Watershed
Date:	Wednesday, June 11, 2025 5:12:37 PM
Attachments:	image001.png image002.png FINAL affordability plan 6-11-25.pdf

Good afternoon,

Please find attached the final affordability plan for Colby Drive. As always, please let me know if you have any questions.

Thank you,

Sarah H. Lufler
Executive Director
Habitat for Humanity of Eastern Connecticut, Inc.
Location: 92 Eugene O'Neill Dr. New London, CT 06320
Mailing: 377 Broad Street, New London, CT 06320
p: (860) 442-7890 x205
w: www.habitatect.org

Facebook **Instagram** **YouTube**

From: Walter, William <WWalter@benesch.com>
Sent: Wednesday, June 11, 2025 9:16 AM
To: Elizabeth Burdick <planner@ledyardct.org>
Cc: Sarah Lufler <executive@habitatect.org>; Levesque, Nancy <NLevesque@benesch.com>
Subject: RE: Public Water Supply Watershed

CYBERSECURITY WARNING: This email is sent from OUTSIDE of Habitat for Humanity of Eastern Connecticut. DO NOT click on links, open attachments,send passwords, send money or share confidential information unless you know the sender.

Hi Liz – see the attached. Unless I've got the wrong map it looks like we are outside the limits of the watershed.

Thanks,

Will Walter, PE
Civil/Site Group Manager | Senior Associate

wwalter@benesch.com
direct: 860-494-4359 **mobile:** 860-818-1399 **office:** 860-633-8341

benesch

INSIGHTS from our EXPERTS READ MORE

From: Elizabeth Burdick <planner@ledyardct.org>
Sent: Wednesday, June 11, 2025 6:40 AM
To: Walter, William <WWalter@benesch.com>
Cc: Sarah Lufler <executive@habitatect.org>
Subject: Public Water Supply Watershed

Hello All, Hannah tells me that the HFH sites are located in a public water supply watershed. Need to confirm. Groton? If in the Pub Water Supply Watershed, the project needs to be referred to DPH? Let me know what you find out. Thanks.

Liz Burdick, Director of Land Use & Planning
Town of Ledyard
741 Colonel Ledyard Highway, Ledyard, CT 06339
Telephone: (860) 464-3215
Email: planner@ledyardct.org

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AFFORDABILITY PLAN FOR LOTS 8, 9 AND 11 COLBY DRIVE DEVELOPMENT OF COLBY VILLAGE OF HABITAT FOR HUMANITY OF EASTERN CONNECTICUT, INC.

JUNE, 2025

Submitted by Habitat for Humanity of Eastern Connecticut, Inc.

to the

Ledyard Planning and Zoning Commission

PREPARED BY:

Heller, Heller & McCoy
736 Norwich-New London Turnpike
Uncasville, Connecticut 06382

DEFINITIONS:

"Community" - means the 38 unit common interest community styled Colby Village of Habitat for Humanity of Eastern Connecticut, Inc. located on Lots 8, 9 and 11 Colby Drive in the Town of Ledyard, County of New London and State of Connecticut, which common interest community will be comprised of six (6) single-family two-bedroom dwelling units, six (6) single-family three-bedroom dwelling units, four (4) single-family four-bedroom dwelling units and twenty-two (22) three-bedroom dwelling units located in eleven (11) two-unit buildings, all situated on three (3) certain tracts or parcels of land located on the easterly, northerly, southerly and westerly sides of a proposed extension of Colby Drive, all as depicted on plans entitled "Habitat For Humanity Multi-Family Residential Affordable Housing Development Per C.G.S §8-30g Lots 8, 9 & 11 Colby Drive Ledyard, Connecticut Submitted For: Planning & Zoning Application May 19, 2025 Containing Eighteen (18) Sheets" prepared by Alfred Benesch & Company (the "Plan"); which units, together with the Allocated Interests appurtenant thereto are more particularly identified, described and defined in the "Declaration of Colby Village" by Habitat for Humanity of Eastern Connecticut, Inc. dated as of _____, 2025 and filed for record in Volume ___, Page ___ of the Ledyard Land Records. The residential development of Colby Village was approved by the Ledyard Planning and Zoning Commission on _____, 2025.

"Affordable Unit" - means a home within the Community that is subject to long-term price restrictions as set forth in this plan and within the Community that will be constructed to the minimum specifications set forth in **Schedule C** of this Plan. Affordable Units are to be sold.

"Market Rate Home" – there are no Market Rate Homes in Colby Village.

"Affordable Home Unit" - means a common interest community unit within Colby Village created pursuant to the terms and provisions of the Declaration of Colby Village, a Planned Community, by Habitat for Humanity of Eastern Connecticut, Inc. dated as of _____, 2025 and filed for record in Volume ___, Page ___ of the Ledyard Land Records.

"Developer" - means Habitat for Humanity of Eastern Connecticut, Inc., a Connecticut non-stock, non-profit corporation with an office and principal place of business at 377 Broad Street in the City and County of New London, State of Connecticut with a mailing address of 377 Broad Street, New London, Connecticut 06320, or its successors and assigns.

"Owner" - means the individual or individuals who possess fee simple title to a common interest community Unit in the Community, together with its Allocated Interests.

I. **Homes Designated for Affordable Housing**.

One Hundred (100%) percent, or thirty-eight (38), of the Units in the Community will be designated as affordable housing, as defined by Connecticut General Statutes §8-30g. The specific Affordable Units designated as Affordable Housing Units are identified in **Schedule B** of this Plan.

II. **Forty (40) Year Period**.

The Affordable Units shall be designated as affordable for forty (40) years. This affordability period shall be calculated separately for each Affordable Unit, and the period shall begin on the date of conveyance of such Affordable Unit from the Developer or its successors or assigns to an eligible owner, as hereinafter defined.

III. **Pro-Rata Construction**.

The Affordable Units shall be offered as construction proceeds. It is the Developer's intent that all Units in the Community will be sold as Affordable Units with seven (7) of such Units being eligible for purchase by persons and families whose annual income does not exceed fifty (50%) percent of Median Income as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies; nine (9) Units to persons and families whose annual income does not exceed sixty (60%) percent of Median Income as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies; and twenty-two (22) of which Units to persons and families whose annual income does not exceed eighty (80%) percent of Median Income as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies. The Developer anticipates a build out and absorption period of four years, based upon its experience with other projects within the Ledyard market.

IV. **Nature of Construction of Affordable Units and Market-Rate Homes.**

Within the Community, the Developer shall offer Affordable Units only, each of which shall be built in compliance with the minimum specifications, which include square footage, exterior finishes, interior materials, and amenities, set forth in Schedule C of this Plan. Colby Village contains four (4) separate and distinct models of Units; i.e. single-family two-bedroom Units, single-family three-bedroom Units, single-family four-bedroom Units and twenty-two (22) three-bedroom Units contained in eleven (11) two-family buildings within the Planned Community. The actual model, size and floor plan of each Unit in each of the four (4) categories enumerated above shall be comparable in size, quality, and appearance to each other.

V. **Entity Responsible for Administration and Compliance.**

This Plan will be administered by Habitat for Humanity of Eastern Connecticut, Inc., or its designees, successors and assigns ("Administrator"). The Administrator shall submit a status report to the Town of Ledyard Zoning Enforcement Officer (the "ZEO") on compliance with this Plan annually no later than January 31. The Developer or its successors or assigns may appoint a qualified third party to serve as Administrator. Notice of a vacancy in the position of Administrator and of the appointment of a new or successor Administrator shall be reported to the ZEO within five business days of their occurrence. Failure to have a qualified Administrator in place for a period of more than thirty (30) successive days shall be considered a violation of the terms of this Plan and of the Site Plan Approval for Colby Village and shall entitle the Town of Ledyard to obtain any and all appropriate legal or equitable remedies necessary to obtain a qualified Administrator for the Community, to recover any damages it incurs on account of the vacancy in the position, and also including all remedies provided by Connecticut General

Statutes §8-12. The Developer and/or the Owners of the Units comprising the Community, individually and/or jointly and severally shall be responsible for securing and paying all fees, costs and/or other expenses associated with and charged by an Administrator, and for any damages resulting to any person or entity, including the Town of Ledyard, or any of its officers, employees or representatives, on account of the failure to have an Administrator in place at any time or for any violation of the Plan, including violations of this Article V. All obligations and liabilities of the Developer shall terminate once the Developer has sold each Unit within the Community. The Town of Ledyard may seek remedies hereunder against the Developer and/or any one or more of the Unit Owners. The Town of Ledyard shall be entitled to attorney's fees and costs associated with any action it takes to enforce the terms of this Article V. The requirements of this Article V shall be recited in the deed to each Unit in the Community and shall be incorporated therein and made a part thereof. Notwithstanding any of the above, the Developer will be responsible for all advertising and marketing requirements for initial sales under this Plan.

VI. **Notice of Initial Sale of Affordable Common Interest Community Units**.

Except as provided in Section X hereof, the Developer shall provide notice of the availability of each Affordable Common Interest Community Unit for sale (the "Notice of Initial Sale"). Such notices shall be provided in accordance with the Affirmative Fair Housing Marketing Plan as outlined in Section VIII. The Developer shall also provide such notice to the ZEO. Such notice shall include a description of the available Affordable Unit(s), the eligibility criteria for potential purchasers, the Maximum Sale Price (as hereinafter defined), and the availability of application forms and additional information. All such notices shall comply with the Federal Fair Housing Act, 42 U.S.C. §§3601 et seq. and the Connecticut Fair Housing Act, Connecticut General Statutes §§46a - 64b, 64c (together, the "Fair Housing Acts").

VII. **Purchaser Eligibility**.

Not less than eighteen (18%) percent (seven (7) of the common interest community Units for Sale) of Units for sale in Colby Village shall be sold to persons or families whose income is less than or equal to fifty (50%) percent of the area or statewide median income, whichever is less. Not less than twenty-three (23%) percent (nine (9) of the common interest community Units for Sale) of Units for sale in Colby Village shall be sold to persons or families whose income is less than or equal to sixty (60%) percent of the area or statewide median income, whichever is less. Not less than fifty-nine (59%) percent of the common interest community Units for sale (22 Units for sale) shall be sold to persons or families whose income is less than or equal to eighty (80%) percent of the area or statewide median income, whichever is less. The area and statewide median income shall be as determined by the Department of Housing and Urban Development ("HUD"). Purchasers shall be permitted to make down payments that exceed twenty (20%) percent of the purchase price; however, for the purpose of calculating the Maximum Sales Price, a twenty percent (20%) down payment shall be used. The allocation of Affordable Units shall be made in accordance with the following matrix, with Unit numbers being those delineated on a plan entitled "Habitat For Humanity Multi-Family Residential Affordable Housing Development Per C.G.S. §8-30g, Lots 8, 9 & 11 Colby Drive Ledyard, CT Project No.: 0725 500010.00 Drawn By: CLM Scale: 1" = 60' Checked By: WGW

Date: 12/20/2024 Site Plan Drawing No.: C2.0" prepared by Alfred Benesch & Company.

	2 Bedroom Single-Family Unit Nos.	3 Bedroom Single-Family Unit Nos.	3 Bedroom Two-Family Building Unit Nos.	4 Bedroom Single-Family Unit Nos.
40 – 50% Area Median Income	18, 32, 33, 35		1, 11, 25	
51 – 60% Area Median Income	20		2, 4, 8, 14, 21, 22, 28, 38	
61 – 80% Area Median Income	36	13, 16, 23, 24, 29, 30	3, 5, 6, 7, 9, 10, 12, 15, 26, 27, 37	17, 19, 31, 34

VIII. **Affirmative Fair Housing Marketing Plan.**

The sale of Affordable Units in the Community shall be publicized, using State regulations for affirmative fair housing marketing programs as guidelines. The purpose of such efforts shall be to apprise residents of municipalities of relatively high concentrations of minority populations of the availability of such units. The Administrator shall have responsibility for compliance with this section. Notices of initial availability of units shall be provided, at a minimum, by advertising at least two times in a newspaper of general circulation in such identified municipalities. The Administrator shall also provide such notices to the ZEO and Town of Ledyard Housing Authority. Such notices shall include a description of the available Affordable Unit(s), the eligibility criteria for potential purchasers, the Maximum Sale Price (as hereinafter defined), and the availability of application forms and additional information.

Using the above-referenced State regulations as guidelines, dissemination of information about available affordable and market-rate units shall include:

A. Analyzing census, Connecticut Department of Economic and Community Development town profiles, and other data to identify racial and ethnic groups least likely to apply based on representation in Ledyard's population, including Asian Pacific, Black, Hispanic, and Native American populations.

B. Announcements/advertisements in publications and other media that will reach minority populations, including newspapers, such as and radio stations serving the Norwich-New London Statistical Area and Regional Planning Area, and advertisements or flyers likely to be viewed on public transportation or public highway areas.

C. Announcements to social service agencies and other community contacts serving low-income minority families (such as churches, civil rights organizations, the housing authority, and other housing authorities in towns represented in Norwich-New London Statistical Area and Regional Planning Agency, legal services organizations, etc.).

D. Assistance to minority applicants in processing applications.

E. Marketing efforts in geographic area of high minority concentrations within the housing market area and metropolitan statistical area.

F. Beginning affirmative marketing efforts prior to general marketing of units, and repeating again during initial marketing and at 50 percent completion.

All notices shall comply with the Fair Housing Acts.

IX. **Application Process**.

A family or household seeking to purchase one of the Affordable Units ("Applicant") must complete an application to determine eligibility. The application form and process shall comply with the Fair Housing Act.

A. Application Form.

The application form shall be provided by the Administrator and shall include an income pre-certification eligibility form and an income certification form. In general, income for purposes of determining an Applicant's qualification shall include the Applicant family's total anticipated income from all sources for the twelve (12) month period following the date the application is submitted ("Application Date"). If the Applicant's financial disclosures indicate that the Applicant may experience a significant change in the Applicant's future income during the twelve (12) month period, the Administrator shall not consider this change unless there is a reasonable assurance that the change will in fact occur. The Applicant's income needs not be re-verified after the time of initial purchase. In determining what is and is not to be included in the definition of family annual income, the Administrator shall use the criteria set forth by HUD and listed on **Schedule D** of this Plan.

B. Applicant Interview.

The Administrator shall interview an Applicant upon submission of the completed application. Specifically, the Administrator shall, during the interview, undertake the following:

1. Review with the Applicant all the information provided on the application.

2. Explain to the Applicant the requirements for eligibility, verification procedures, and the penalties for supplying false information.

3. Verify that all sources of family income and family assets have been listed in the application. The term "family" shall be as defined by the Connecticut Agency Regulations, Connecticut General Statutes §8-37ee-1, as amended.

4. Request the Applicant to sign the necessary release forms to be used in verifying income. Inform the Applicant of what verification and documentation must be provided before the application is deemed complete.

5. Inform the Applicant that a certified decision as to eligibility cannot be made until all items on the application have been verified.

6. Review with the Applicant the process and restrictions regarding re- sale.

C. Verification of Applicant's Income.

Where it is evident from the income certification form provided by the Applicant that the Applicant is not eligible, additional verification procedures shall not be necessary. However, if the Applicant appears to be eligible, the Administrator shall issue a pre-certification letter. The letter shall indicate to the Applicant and the Administrator that the Applicant is income eligible, subject to the verification of the information provided in the Application. The letter will notify the Applicant that he/she will have thirty (30) days to submit all required documentation.

If applicable, the Applicant shall provide the documentation listed on **Schedule E** of this Plan, to the Administrator. This list is not exclusive, and the Administrator may require any other verification or documentation, as the Administrator deems necessary.

X. Prioritization of Applicants for Initial Occupancy.

If, after publication of the Notice of Initial Sale as described in Section VI hereof, the number of qualified Applicants exceeds the number of Affordable Units, then the Administrator shall establish a list of Applicants, selected by a random lottery of all eligible Applicants, for the initial sales of Affordable Units. The initial sales of Affordable Units will be offered according to the Applicant's lottery ranking. Following the initial sales of the Affordable Units, if the number of qualified Applicants exceeds the number of available Affordable Units, the Administrator shall establish a priority list of applicants based on a "first come, first served" basis, subject to the applicant's income pre-certification eligibility and the preferences as established in this Section X. The Affordable Units will then be offered according to the applicant's numerical listing. In the event the Community is built in phases, the same procedure shall be held for each phase.

XI. Maximum Monthly Housing Payment Eligibility.

Calculation of eligibility for occupancy in an Affordable Unit, so as to satisfy Connecticut General Statutes §8-30g, shall require the proposed occupant to meet three criteria: (1) maximum household income, adjusted for unit/family size; (2) a maximum purchase price

for the unit that does not exceed the maximum sale price for an Affordable Unit as calculated under Connecticut General Statutes §8-30g and corresponding regulations; and (3) a maximum monthly housing payment that is less than the amount calculated under Connecticut General Statutes §8-30g, as follows:

XII. **Maximum Initial Sale Price.**

Calculation of the maximum initial sale price ("Maximum Initial Sale Price") for an Affordable Unit, so as to satisfy Connecticut General Statutes §8-30g, shall utilize the lesser of the area median income data or the statewide median income as published by HUD as in effect on the day a purchase and sale agreement is accepted by the owner of the Affordable Unit ("Owner"). The Maximum Initial Sale Price shall be calculated as follows (using the Greater Norwich-New London, Connecticut Statistical Area median income level of $113,700.00):

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Example of Calculation of Sales Price for a 2 bedroom single family home for a family earning less than 50% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 2.0 bedrooms (3 persons) by calculating 90% of item 1:	$102,330.00
3. Calculate 50% of item 2:	$51,165.00
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$15,349.50
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,279.13
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($322.00[1]), utilities ($265.00) and insurance ($102.00)	$689.00
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$590.13
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[2]) to determine mortgage amount:	$101,124.00
9. Assume 20% down payment:	$25,281.00
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$126,405.00

[1] Based on Mill Rate of 35.21 and taxes on a 60% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.
[2] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 2 bedroom single family home for a family earning 51% - 60% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 2.0 bedrooms (3 persons) by calculating 90% of item 1:	$102,330.00
3. Calculate 60% of item 2:	$61,398.00
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$18,419.40
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,534.95
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($387.16[3]), utilities ($265.00) and insurance ($102.00)	$754.16
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$780.79
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[4]) to determine mortgage amount:	$133,795.00
9. Assume 20% down payment:	$33,448.75
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$167,243.75

[3] Based on Mill Rate of 35.21 and taxes on a 60% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.
[4] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 2 bedroom single family home for a family earning between 60% and 80% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 2.0 bedrooms (3 persons) by calculating 90% of item 1:	$102,330.00
3. Calculate 80% of item 2:	$81,864.00
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$24,559.20
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$2,040.60
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($582.00[5]), utilities ($265.00) and insurance ($144.00)	$991.00
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,049.60
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[6]) to determine mortgage amount:	$179,858.00
9. Assume 20% down payment:	$44,964.50
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$224,822.50

[5] Based on Mill Rate of 35.21 and taxes on a 80% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.
[6] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom single family home for a family earning less than 50% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 persons) by calculating 104% of item 1:	$118,248.00
3. Calculate 50% of item 2:	$59,124.00
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$17,737.20
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,478.10
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($322.64[7]), utilities ($265.00) and insurance ($102.00)	$689.64
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$788.46
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[8]) to determine mortgage amount:	$135,109.00
9. Assume 20% down payment:	$33,777.25
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$168,886.25

[7] Based on Mill Rate of 35.21 and taxes on a 60% home in an affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.
[8] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom single family home for a family earning 51% - 60% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 persons) by calculating 104% of item 1:	$118,248.00
3. Calculate 60% of item 2:	$70,948.80
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$21,284.64
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,773.72
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($387.16[9]), utilities ($265.00) and insurance ($102.00)	$754.16
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,019.56
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[10]) to determine mortgage amount:	$174,710.00
9. Assume 20% down payment:	$43,677.50
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$218,387.50

[9] Based on Mill Rate of 35.21 and taxes on a 60% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.

[10] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom single family home for a family earning 60% - 80% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 persons) by calculating 104% of item 1:	$118,248.00
3. Calculate 80% of item 2:	$94,598.40
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$28,379.52
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$2,364.96
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($581.66[11]), utilities ($265.00) and insurance ($102.00)	$948.66
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,416.30
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[12]) to determine mortgage amount:	$242,695.00
9. Assume 20% down payment:	$60,673.75
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$303,368.75

[11] Based on Mill Rate of 35.21 and taxes on a 60-80% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024.
[12] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom home in a two-family dwelling for a family earning less than 50% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 persons) by calculating 104% of item 1:	$118,248.00
3. Calculate 50% of item 2:	$59,124.00
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$17,737.20
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,478.10
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($295.00[13]), utilities ($265.00) and insurance ($102.00)	$662.00
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$816.10
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[14]) to determine mortgage amount:	$139,845.00
9. Assume 20% down payment:	$34,961.25
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$174,806.25

[13] Based on Mill Rate of 35.21 and taxes on a home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024 (adjusted for duplex).
[14] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom home in a two-family dwelling for a family earning between 51 and 60% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 bedrooms) by calculating 104% of item 1:	$118,248.00
3. Calculate 60% of item 2:	$70,948.80
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$21,284.64
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$1,773.72
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($324.50[15]), utilities ($265.00) and insurance ($102.00)	$691.50
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,082.22
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[16]) to determine mortgage amount:	$185,448.00
9. Assume 20% down payment:	$46,362.00
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$231,810.00

[15] Based on Mill Rate of 35.21 and taxes on a 60% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024 (adjusted for duplex).
[16] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 3 bedroom home in a two-family dwelling for a family earning between 61% and 80% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 3.0 bedrooms (4.5 persons) by calculating 104% of item 1:	$118,248.00
3. Calculate 80% of item 2:	$94,598.40
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$28,379.52
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$2,364.96
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($582.00[17]), utilities ($265.00) and insurance ($120.00)	$967.00
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,397.96
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[18]) to determine mortgage amount:	$239,552.00
9. Assume 20% down payment:	$59,888.00
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$299,440.00

[17] Based on Mill Rate of 35.21 and taxes on an 80% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024 (adjusted for duplex).
[18] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

Example of Calculation of Sales Price for a 4 bedroom single family home for a family earning between 61% and 80% of Median Income:	**Sample computations based on FY 2025 data.**
1. Determine lower of area or statewide median Income for a family of four (4)	$113,700.00
2. Determine the adjusted income for a household of 4.0 bedrooms (6 persons) by calculating 116% of item 1:	$131,892.00
3. Calculate 80% of item 2:	$105,513.60
4. Calculate 30% of item 3 representing the maximum portion of a family's income that may be used for housing:	$31,654.08
5. Divide item 4 by twelve (12) to determine the maximum monthly outlay:	$2,637.84
6. Determine by reasonable estimate monthly expenses, including real estate taxes and common charges ($635.00[19]), utilities ($285.00) and insurance ($130.00)	$1,050.00
7. Subtract item 6 from item 5 to determine the amount available for mortgage principal and interest:	$1,587.84
8. Apply item 7 to a reasonable mortgage term (such as 30 years) at a reasonably available interest rate (5.75% rate for the sample calculation[20]) to determine mortgage amount:	$272,090.00
9. Assume 20% down payment:	$68,022.50
10. Add items 8 and 9 to determine MAXIMUM SALE PRICE:	$340,112.50

[19] Based on Mill Rate of 35.21 and taxes on a 60%- 80% home in the affordable housing project at Flat Brook Court, Ledyard, Connecticut on the Grand List of October 1, 2024 (adjusted).
[20] Based on current Charter Oak Federal Credit Union conforming 5/1 year adjustable rate mortgage as of May 30, 2025.

A. **Principal Residence.**

Affordable Units that are sold shall be occupied only as an Owner's principal residence. Subleasing of Affordable Units by the Owner shall be prohibited.

B. **Requirement to Maintain Condition.**

All Owners are required to maintain their homes. The Owner shall not destroy, damage or impair the home, allow the home to deteriorate, or commit waste on the home. When an Affordable Unit is offered for re-sale, the Administrator may cause the home to be inspected.

C. **Resale of an Affordable Unit.**

An Owner may sell his or her Affordable Unit at any time, provided that the Owner complies with the restrictions concerning the sale of homes as set forth in this Plan and in the occupancy restrictions set forth in Schedule F (the "Deed Restrictions"). If the Owner wishes to sell, the Owner shall notify the Administrator in writing. The Owner shall pay the Administrator a reasonable fee to cover the cost of administering the sale. The Administrator shall then work with the Owner to calculate a Maximum Price, as set forth in this Section XII. The Administrator shall publish notice of the availability of the home in the same manner as was followed for the initial sale, as set forth in Section VI above. The Administrator shall bring any purchase offers received to the attention of the Owner.

The Owner may hire a real estate broker or otherwise individually solicit offers, independent of the Administrator's action, from potential purchasers. The Owner shall inform any potential purchaser of the affordability restrictions before any purchase and sale agreement is executed by furnishing the potential purchaser with a copy of this Plan. The purchase and sale agreement shall contain a provision to the effect that the sale is contingent upon a determination by the Administrator that the potential purchaser meets the eligibility criteria set forth in this Plan. Once the Owner and potential purchaser execute the purchase and sale agreement, the potential purchaser shall immediately notify the Administrator in writing. The Administrator shall have ten (10) days from such notice to determine the eligibility of the potential purchaser in accordance with the application process set forth in Section IX above. The Administrator shall notify the Owner and the potential purchaser of its determination of eligibility in writing within said ten (10) day period. If the Administrator determines that the potential purchaser is not eligible, the purchase and sale agreement shall be void, and the Owner may solicit other potential purchasers. If the Administrator determines that the potential purchaser is eligible, the Administrator shall provide the potential purchaser and the Owner with a signed certification, executed in recordable form, to the effect that the sale of the particular Home has complied with the provisions of this Plan. The Owner shall bear the cost of recording the certification.

D. **Enforcement.**

A violation of this Plan or the Deed Restrictions shall not result in a forfeiture of title,

but the Ledyard Planning and Zoning Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including § 8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect the property and to examine the books and records of the Administrator to determine compliance of Affordable Units with the affordable housing regulations.

E. **Occupancy Restrictions.**

The Occupancy Restrictions contained in Schedule F shall be included in each deed of an Affordable Unit during the forty (40) year period in which the affordability program is in place to provide notice of the affordability restrictions and to bind future purchasers. No Affordable Unit shall be sold to any purchaser during the forty (40) year period in which the affordability program is in place unless all lenders providing mortgage financing to such purchaser shall subordinate their mortgage to the terms of the occupancy restrictions contained in Schedule F and agree that any foreclosure of such mortgage will not terminate the sale and resale price restrictions.

F. **Common Interest Community Restrictions.**

All Affordable Units in the Community are subject to the Declaration of Colby Village made pursuant to the provisions of Connecticut General Statutes §47-200 et. seq. The Colby Village Community is a "Planned Community" as defined in the Connecticut Common Interest Ownership Act, Connecticut General Statutes §47-200 et. seq. All land within the Community is a Common Element within the Community. Limited Common Element Areas are defined on portions of the land for the exclusive use and enjoyment of Owners appurtenant to each Unit in the Community. Pursuant to the Declaration of Colby Village, each Unit Owner within the Community is responsible for its pro rata share of the cost of maintenance of the Common Elements, adjusted based upon affordability criteria for Affordable Homes, and is further subject to the other terms and conditions of the planned community Declaration. With respect to each two-family building within the Common Interest Community, the Owners of the Units comprising each such building are jointly liable for the maintenance and upkeep of the building which, pursuant to the planned community Declaration, will be a Limited Common Element appurtenant to the two (2) units which comprise the building. The Common Interest Community Declaration will be filed for record in the Ledyard, Connecticut Land Records contemporaneously with the filing of this Affordability Plan.

G. **Binding Effect.**

This Plan shall be binding on the successors and assigns of the Developer.

Executed at New London, Connecticut this ___ day of _____, 2025.

Signed, Sealed and Delivered
in the Presence of:

HABITAT FOR HUMANITY OF EASTERN CONNECTICUT, INC.

_____ By:_____(L.S.)
Sarah Lufler, its Executive Director

_____

STATE OF CONNECTICUT)
) ss: New London
COUNTY OF NEW LONDON)

On this the ___ day of _____, 2025, before me, the undersigned officer, personally appeared Sarah Lufler, who acknowledged herself to be the Executive Director of Habitat for Humanity of Eastern Connecticut, Inc., a non-stock, non-profit corporation, hereunto duly authorized, signer and sealer of the foregoing instrument and acknowledged the execution of the foregoing instrument to be her free act and deed, as Executive Director aforesaid, and the free act and deed of Habitat for Humanity of Eastern Connecticut, Inc.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

_____
Notary Public
My Commission Expires: _____

SCHEDULE A
PROPERTY DESCRIPTION OF COLBY VILLAGE, LEDYARD, CONNECTICUT

Three (3) certain tracts or parcels of land situated at the easterly end of and easterly of Colby Drive in the Town of Ledyard, County of New London and State of Connecticut, which premises is more particularly bounded and described as follows:

FIRST TRACT

A certain tract or parcel of land, together with the improvements thereon, situated at the easterly terminus of existing Colby Drive in the Town of Ledyard, County of New London and State of Connecticut and being more particularly shown and designated as "N/F Habitat for Humanity of Eastern CT Inc 8 Colby Road Vol 530 Pg 433 Parcel Area 167,141 S.F. = 3.837 Acres" on a certain map or plan entitled "Boundary Survey Prepared For Habitat for Humanity of Eastern CT, Inc Colby Road Ledyard Connecticut Scale: Horz.: 1" =60' Vert.: Survey Datum: Horz.: NAD 1983 Vert.: NAVD 1988 Proj. No.: 0725-500010 Date: Sept 2024 SV.01 Prepared By: Alfred Benesch & Company 200 Glastonbury Boulevard – Suite 201 Glastonbury, Connecticut 06033 Phone (860) 633-8341, Fax: (860) 633-1068 www.benesch.com" which premises is more particularly bounded and described as follows:

Beginning at the northwesterly corner of the herein described premises at the northeasterly corner of land now or formerly of KAN Investments LLC as shown on the above referenced plan, said point of commencement further being located at the southwesterly corner of a future extension of Colby Drive; thence running North 71°12'12" East for a distance of 66.75 feet to a point of curvature; thence running along the arc of a curve to the right with a radius of 150.00 feet, a central angle of 104°09'37" for a distance of 272.68 feet to a point; thence running South 04°38'18" East for a distance of 421.33 feet to a point of curvature; thence running along the arc of a curve to the right with a radius of 585.64 feet, a central angle of 04°34'04" for a distance of 46.69 feet to a point; thence running South 00°04'43" East for a distance of 72.34 feet to a point, the last five (5) courses being bounded by a future extension of Colby Drive; thence running North 88°33'12" West for a distance of 2.73 feet along a stone wall bounded southerly by a future extension of Colby Drive to a point; thence running North 88°33'12" West for a distance of 103.19 feet along a stone wall bounded southerly by land now or formerly of Jarrd S. Allen as shown on the above referenced plan to a point; thence running North 88°19'45" West for a distance of 150.09 feet along a stone wall bounded southerly by land now or formerly of William J. Hughes and Donna C. Hughes as shown on the above referenced plan to the end of said stone wall; thence running North 03°51'16" West for a distance of 70.51 feet along remains of fence to a point; thence running North 04°32'26" West for a distance of 60.66 feet along remains of fence to a rebar found, the last two (2) courses being bounded westerly by land now or formerly of Lisa and Walter E. Otto and Laura Meier as shown on the above referenced plan; thence running North 05°04'49" West for a distance of 130.48 feet along remains of wire fence bounded westerly by said Otto and Meier land to a point; thence running North 02°45'48" East for a distance of 90.16 feet along remains of wire fence to a point; thence running North 04°49'47" West for a distance of 290.43 feet along remains of wire fence to the point and place of beginning, the last two (2) courses being bounded westerly by land now or formerly of KAN Investments LLC as shown on the above referenced plan.

Reference is hereby made to a deed from Colby View, LLC to Habitat for Humanity of Eastern Connecticut, Inc. dated October 12, 2017 and recorded in Volume 560, Page 433 of the Ledyard Land Records.

SECOND TRACT

A certain tract or parcel of land, together with the improvements thereon, if any, situated on the northerly side of a future extension of Colby Drive in the Town of Ledyard, County of New London and State of Connecticut and being more particularly shown and designated as "N/F Habitat for Humanity of Eastern CT Inc 9 Colby Road Vol 530 Pg 436 Parcel Area 122,612 S.F. = 2.815 Acres" on a certain map or plan entitled "Boundary Survey Prepared For Habitat for Humanity of Eastern CT, Inc Colby Road Ledyard Connecticut Scale: Horz.: 1" =60' Vert.: Survey Datum: Horz.: NAD 1983 Vert.: NAVD 1988 Proj. No.: 0725-500010 Date: Sept 2024 SV.01 Prepared By: Alfred Benesch & Company 200 Glastonbury Boulevard – Suite 201 Glastonbury, Connecticut 06033 Phone (860) 633-8341, Fax: (860) 633-1068 www.benesch.com" which premises is more particularly bounded and described as follows:

Beginning at a point at the southwesterly corner of the herein described tract and the southeasterly corner of land now or formerly of Kineo Properties LLC as shown on the above referenced plan, said point of commencement further being located at the northwesterly corner of a future extension of Colby Drive; thence running North 04°44'52" West for a distance of 90.01 feet to an angle point; thence running North 07°47'45" West for a distance of 70.09 feet along remains of fence to a rebar found; thence running North 09°13'28" West for a distance of 105.17 feet along remains of fence to a rebar found; thence running North 31°31'57" West for a distance of 44.65 feet to a rebar found, the last four (4) courses being bounded generally westerly by land now or formerly of Kineo Properties LLC as shown on the above referenced plan; thence running North 12°37'33" West for a distance of 62.81 feet along remains of fence bounded southwesterly in part by land now or formerly of Kineo Properties LLC and in part by land now or formerly of Anthony C. Mea, each as shown on the above referenced plan, to a point; thence running North 24°15'54" West for a distance of 106.56 feet bounded southwesterly by said Mea land to a property corner; thence running North 65°29'13" East for a distance of 225.23 feet bounded northwesterly by land now or formerly of Carol M. Morgan and Robert H. Kozek, Trustee as shown on the above referenced plan to a property corner; thence running South 37°35'33" East for a distance of 274.35 feet to a property corner; thence running South 17°57'25" West for a distance of 327.44 feet to a point in the northerly line of a future extension of Colby Drive, the last two (2) courses being bounded northeasterly and southeasterly by the Third Tract hereinafter described; thence running along the arc of a curve to the left with a radius of 109.15 feet, a central angle of 29°46'53" for a distance of 210.00 feet to a point; thence running South 71°12'12" West for a distance of 51.74 feet to the point and place of beginning, the last two (2) courses being bounded generally southerly by a future extension of Colby Drive.

Reference is hereby made to a deed from Colby Heights, LLC to Habitat for Humanity of Eastern Connecticut, Inc. dated October 13, 2017 and recorded in Volume 560, Page 436 of the Ledyard Land Records.

THIRD TRACT

A certain tract or parcel of land, together with the improvements thereon, situated on the northeasterly and easterly sides of a future extension of Colby Drive in the Town of Ledyard, County of New London and State of Connecticut and being more particularly shown and designated as "N/F Habitat for Humanity of Eastern CT Inc 11 Colby Road Vol 530 Pg 439 Parcel Area 362,821 S.F. = 8.329 Acres" on a certain map or plan entitled "Boundary Survey Prepared For Habitat for Humanity of Eastern CT, Inc Colby Road Ledyard Connecticut Scale: Horz.: 1" =60' Vert.: Survey Datum: Horz.: NAD 1983 Vert.: NAVD 1988 Proj. No.: 0725-500010 Date: Sept 2024 SV.01 Prepared By: Alfred Benesch & Company 200 Glastonbury Boulevard – Suite 201 Glastonbury, Connecticut 06033 Phone (860) 633-8341, Fax: (860) 633-1068 www.benesch.com" which premises is more particularly bounded and described as follows:

Beginning at a point in the northeasterly line of a future extension of Colby Drive as shown on the above referenced plan at a southwesterly corner of the herein described tract and the southeasterly corner of the Second Tract hereinbefore described; thence running North 17°57'25" East for a distance of 327.44 feet to a point; thence running North 37°35'33" West for a distance of 274.35 feet to a point, the last two (2) courses being bounded northwesterly and southwesterly by the Second Tract hereinbefore described; thence running North 10°05'35" West for a distance of 173.00 feet to a point; thence running North 36°38'35" West for a distance of 75.00 feet to a property corner; thence running North 62°57'40" East for a distance of 314.95 feet to a property corner, the last three (3) courses being bounded by land now or formerly of Carol M. Morgan and Robert H. Kozek, Trustee, as shown on the above referenced plan; thence running South 18°50'31" East for a distance of 70.91 feet bounded northeasterly by land now or formerly of Evelene-Lu Salvatore as shown on the above referenced plan to an angle point; thence running South 16°16'23" East for a distance of 84.04 feet bounded northeasterly in part by said Salvatore land and in part by land now or formerly of Michael Kridel, each as shown on the above referenced plan, to an angle point; thence running South 22°41'24" East for a distance of 76.45 feet in part along a stone wall bounded northeasterly by said Kridel land to a point; thence running South 16°48'31" East for a distance of 74.11 feet along a stone wall bounded northeasterly in part by said Kridel land and in part by land now or formerly of Colby B. and Arthur H. Winakor and Mikayla Nixie as shown on the above referenced plan to a point; thence running South 00°50'37" West for a distance of 136.93 feet along remains of fence bounded southeasterly in part by said Winakor and Nixie land and in part by land now or formerly of Albert Matthew Edwards as shown on the above referenced plan to an angle point; thence running South 10°53'01" East for a distance of 66.91 feet along remains of fence bounded northeasterly by said Edwards land to a point; thence running South 11°09'08" East for a distance of 168.92 feet to a point; thence running South 13°35'20" East for a distance of 204.64 feet to a point; thence running South 13°54'11" East for a distance of 220.84 feet along remains of fence to an iron pin found; thence running South 08°48'43" East for a distance of 129.51 feet to a drill hole in the end of a stone wall; thence running South 13°12'04" East for a distance of 223.51 feet along a stone wall to an iron pin found at an angle in said stone wall, the last five (5) courses being bounded by land now or formerly of Jessica Andersen Heuschele and George Gregory Heuschele and Janet E. Andersen as shown on the

above referenced plan; thence running South 59°13’44” West for a distance of 286.58 feet bounded southeasterly by land now or formerly of Andi Cili and Valerija Mita as shown on the above referenced plan to a point in the easterly line of a future extension of Colby Drive; thence running along the arc of a curve to the left with a radius of 647.98 feet, a central angle of 04°33’06” for a distance of 51.48 feet to a point; thence running North 04°38’18” West for a distance of 421.33 feet to a point of curvature; thence running along the arc of a curve to the left with a radius of 210.00 feet, a central angle of 74°22’29” for a distance of 272.60 feet to the point and place of beginning, the last three (3) courses being bounded by said future extension of Colby Drive as shown on the above referenced plan.

Reference is hereby made to a deed from Colby Terrace, LLC to Habitat for Humanity of Eastern Connecticut, Inc. dated October 13, 2017 and recorded in Volume 560, Page 439 of the Ledyard Land Records.

SCHEDULE B

IDENTIFICATION OF AFFORDABLE UNITS

All Units in Colby Village are Affordable Homes.

Units 1, 11, 18, 25, 32, 33 and 35 shall be at the 40 – 50% area median income level.

Units 2, 4, 8, 14, 20, 21, 22, 28 and 38 shall be at the 51 - 60% area median income level.

Units 3, 5, 6, 7, 9, 10, 12, 13, 15, 16, 17, 19, 23, 24, 26, 27, 29, 30, 31, 34, 36 and 37 shall be at the 61 – 80% area median income level.

Total: 38 Units

Notwithstanding the matrix contained in Section VII of the Affordability Plan, such Units may be shifted or exchanged among the purchaser eligibility categories as long as they remain interspersed, as is reasonably possible given existing occupied homes at the time of conversion, and not concentrated in particular areas of the site.

SCHEDULE C
MINIMUM SPECIFICATIONS FOR AFFORDABLE HOMES

Foundation
8” poured concrete walls, 4” poured concrete floors
Bituminous waterproof coating on foundation walls below grade Steps/railings per code

Carpentry
2x6 pressure treated wood sills and sealer concrete 2x4 16” on center interior wall framing
2x6 16” on center exterior wall framing 1/2” sheathing on exterior walls Douglas fir floor joists
1/2” sheathing on roof 2x10 wood basement stairs with handrails Main Staircase: poplar riser with oak tread, traditional
Typar or equivalent building wrap on exterior walls. Pressure treated wood deck: 1Ox12 or concrete patio
Oak hardwood flooring (one room) 3/8” tile
3/4” under rugs

Interior Trim Accessories
White pine trim around door, window and baseboard White vinyl coated wire shelf systems
All accessories, such as mirrors, medicine cabinets, etc. are included in cabinet allowance.

Cabinets, Vanities and Counter Tops
$8,000 allowance (included countertops and accessories, such as knobs) Martin Cabinets

Siding
Vinyl
Front Shutters Aluminum wrap trim
Aluminum gutters and downspouts

Roofing
1/2” sheathing roof sheathing
Woodline architectural shingles (weathered wood) Soffit and ridge vents
Aluminum flashing and aluminum drip cap

Insulation-Fiberglass
R-38 in ceiling
R-21 in walls
R-11 in basement

Doors
Exterior doors insulated metal 6 panel Masonite

Windows
Double hung Thermopane windows with grills/screens or equivalent Casement in kitchen

Drywall
1/2” drywall interior 1/2” drywall ceilings

Flooring
Allowance: $18 .00 square yard, to include padding and installation. Vinyl or tile in all bathrooms

Porch
Pressure Treated front porch/steps/deck or concrete patio and concrete front step

Heating/Hot Water
gas hot water boiler or Electric Heat

Utilities
Public water, septic, electric, telephone and cable

Landscaping
Rough grade and seed, one time only
Concrete walk (From front door to driveway) and (rear slider pad) Crushed stone driveway

Other Costs
If required by lender, treatment of ground against wood destroying insects to be paid by buyer.
Costs of all extras to be paid by buyer in advance

Allowance Summary

Cabinets, counter tops, accessories	$8,000.00
Lighting	$1,100.00
Flooring, included padding and installation	$18.00 sq. yard

SCHEDULE D
DEFINITIONS AND ELEMENTS OF ANNUAL FAMILY INCOME

1. Annual income shall be calculated with reference to 24 C.F.R. §5.609, and includes, but is not limited to, the following:

    a. The full amount, before any payroll deductions, of wages and salaries, overtime pay, commissions, fees, tips, bonuses and other compensation for personal services;

    b. The net income from operations of a business or profession, before any capital expenditures but including any allowance for depreciation expense;

    c. Interest, dividends, and other net income of any kind from real or personal property;

    d. The full amount of periodic payments received from social security, annuities, insurance policies, retirement funds, pensions, disability or death benefits, or other similar types of periodic payments;

    e. Payments in lieu of earnings, such as unemployment and disability compensation, worker's compensation, and severance pay;

    f. Welfare assistance. If the welfare assistance payments include an amount specifically designated for shelter and utilities that is subject to adjustment by the welfare assistance agency in accordance with the actual cost of shelter and utilities, the amount of welfare assistance to be included as income consists of the following:

        (1) The amount of the allowance exclusive of the amounts designated for shelter or utilities, plus

        (2) The maximum amount that the welfare assistance agency could in fact allow the family for shelter and utilities;

    g. Periodic and determinable allowances, such as alimony and child support payments, and regular contributions or gifts received from persons not residing with the Applicant (e.g. periodic gifts from family members, churches, or other sponsored group, even if the gifts are designated as rental or other assistance);

    h. All regular pay, special pay and allowances of a member of the armed forces;

    i. Any assets not earning a verifiable income shall have an imputed interest income using a current average annual savings interest rate.

2. Excluded from the definition of family annual income are the following:

a. Income from employment of children under the age of 18;

b. Payments received for the care of foster children;

c. Lump-sum additions to family assets, such as inheritances, insurance payments, capital gains and settlement for personal or property losses;

d. Amounts received that are specifically for, or in reimbursement of, the cost of medical expense for any family member;

e. Amounts of educational scholarships paid directly to the student or to the educational institution, and amounts paid by the government to a veteran in connection with education costs;

f. Amounts received under training programs funded by HUD;

g. Food stamps; and

h. Temporary, nonrecurring or sporadic income (including gifts that are not regular or periodic).

3. Net family assets for purposes of imputing annual income include the following:

a. Cash held in savings and checking accounts, safety deposit boxes, etc.;

b. The current market value of a trust for which any household member has an interest;

c. The current market value, less any outstanding loan balances of any rental property or other capital investment;

d. The current market value of all stocks, bonds, treasury bills, certificates of deposit and money market funds;

e. The current value of any individual retirement, 401K or Keogh account;

f. The cash value of a retirement or pension fund which the family member can withdraw without terminating employment or retiring;

g. Any lump-sum receipts not otherwise included in income (i.e., inheritances, capital gains, one-time lottery winnings, and settlement on insurance claims);

h. The current market value of any personal property held for investment (i.e., gems, jewelry, coin collections); and

i. Assets disposed of within two (2) years before the Application Date, but only to the extent consideration received was less than the fair market value of the asset at the time it was sold.

4. Net family assets do not include the following:

a. Necessary personal property (clothing, furniture, cars, etc.);

b. Vehicles equipped for handicapped individuals;

c. Life insurance policies;

d. Assets which are part of an active business, not including rental properties; and

e. Assets that are not accessible to the Applicant and provide no income to the Applicant.

SCHEDULE E
DOCUMENTATION OF INCOME

The following documents shall be provided, where applicable, to the Administrator to determine income eligibility:

1. Employment Income.

   Verification forms must request the employer to specify the frequency of pay, the effective date of the last pay increase, and the probability and effective date of any increase during the next twelve (12) months. Acceptable forms of verification (of which at least one must be included in the Applicant file) include:

   a. An employment verification form completed by the employer.

   b. Check stubs or earnings statement showing Applicant's gross pay per pay period and frequency of pay.

   c. W-2 forms if the Applicant has had the same job for at least two years and pay increases can be accurately projected.

   d. Notarized statements, affidavits or income tax returns signed by the Applicant describing self-employment and amount of income, or income from tips and other gratuities.

2. Social Security, Pensions, Supplementary Security Income, Disability Income.

   a. Benefit verification form completed by agency providing the benefits.

   b. Award or benefit notification letters prepared and signed by the authorizing agency. (Since checks or bank deposit slips show only net amounts remaining after deducting SSI or Medicare, they may be used only when award letter cannot be obtained.)

   c. If a local Social Security Administration ("SSA") office refuses to provide written verification, the Administrator should meet with the SSA office supervisor. If the supervisor refuses to complete the verification forms in a timely manner, the Administrator may accept a check or automatic deposit slip as interim verification of Social Security or SSI benefits as long as any Medicare or state health insurance withholdings are included in the annual income.

3. Unemployment Compensation.

   a. Verification form completed by the unemployment compensation agency.

   b. Records from unemployment office stating payment dates and amounts.

4 . Government Assistance.

a. All Government Assistance Programs. Agency's written statements as to type and amount of assistance Applicant is now receiving, and any changes in assistance expected during the next twelve (12) months.

b. Additional Information for "As-paid" Programs: Agency's written schedule or statement that describes how the "as-paid" system works, the maximum amount the Applicant may receive for shelter and utilities and, if applicable, any factors used to ratably reduce the Applicant's grant.

5. Alimony or Child Support Payments.

a. Copy of a separation or settlement agreement or a divorce decree stating amount and type of support and payment schedules.

b. A letter from the person paying the support.

c. Copy of latest check. The date, amount, and number of the check must be documented.

d. Applicant's notarized statement or affidavit of amount received or that support payments are not being received and the likelihood of support payments being received in the future.

6. Net Income from a Business.

The following documents show income for the prior years. The Administrator must consult with Applicant and use this data to estimate income for the next twelve (12) months.

a. IRS Tax Return, Form 1040, including any:

(1) Schedule C (Small Business).

(2) Schedule E (Rental Property Income).

(3) Schedule F (Farm Income).

b. An accountant's calculation of depreciation expense, computed using straight-line depreciation rules. (Required when accelerated depreciation was used on the tax return or financial statement.)

c. Audited or unaudited financial statement(s) of the business.

d. A copy of a recent loan application listing income derived from the business during the previous twelve (12) months.

e. Applicant's notarized statement or affidavit as to net income realized from the business during previous years.

7. Recurring Gifts.

a. Notarized statement or affidavit signed by the person providing the assistance. Must give the purpose, dates and value of gifts.

b. Applicant's notarized statement or affidavit that provides the information above.

8. Scholarships, Grants, and Veterans Administration Benefits for Education.

a. Benefactor's written confirmation of amount of assistance, and educational institution's written confirmation of expected cost of the student's tuition, fees, books and equipment for the next twelve (12) months. To the extent the amount of assistance received is less than or equal to actual educational costs, the assistance payments will be excluded from the Applicant's gross income. Any excess will be included in income.

b. Copies of latest benefit checks, if benefits are paid directly to student. Copies of canceled checks or receipts for tuition, fees, books, and equipment, if such income and expenses are not expected to change for the next twelve (12) months.

c. Lease and receipts or bills for rent and utility costs paid by students living away from home.

9. Family Assets Currently Held.

For non-liquid assets, collect enough information to determine the current cash value (i.e., the net amount the Applicant would receive if the asset were converted to cash).

a. Verification forms, letters, or documents from a financial institution, broker, etc.

b. Passbooks, checking account statements, certificates of deposit, bonds, or financial statements completed by a financial institution or broker.

c. Quotes from a stock broker or realty agent as to net amount Applicant would receive if Applicant liquidated securities or real estate.

d. Real estate tax statements if tax authority uses approximate market value.

e. Copies of closing documents showing the selling price, the distribution of the sales proceeds and the net amount to the borrower.

f. Appraisals of personal property held as an investment.

g. Applicant's notarized statements or signed affidavits describing assets or verifying the amount of cash held at the Applicant's home or in safe deposit boxes.

10. Assets Disposed of for Less Than Fair Market Value ("FMV") During Two Years Preceding Application Date.

a. Applicant's certification as to whether it has disposed of assets for less than FMV during the two (2) years preceding the Application Date.

b. If the Applicant states that it did dispose of assets for less than FMV, then a written statement by the Applicant must include the following:

(1) A list of all assets disposed of for less than FMV;

(2) The date Applicant disposed of the assets;

(3) The amount the Applicant received; and

(4) The market value to the asset(s) at the time of disposition.

11. Savings Account Interest Income and Dividends.

a. Account statements, passbooks, certificates of deposit, etc., if they show enough information and are signed by the financial institution.

b. Broker's quarterly statements showing value of stocks or bonds and the earnings credited the Applicant.

c. If an IRS Form 1099 is accepted from the financial institution for prior year earnings, the Administrator must adjust the information to project earnings expected for the next twelve (12) months.

12. Rental Income from Property Owned by Applicant.

The following, adjusted for changes expected during the next twelve (12) months, may be used:

a. IRS Form 1040 with Schedule E (Rental Income).

b. Copies of latest rent checks, leases, or utility bills.

c. Documentation of Applicant's income and expenses in renting the property (tax

statements, insurance premiums, receipts for reasonable maintenance and utilities, bank statements or amortization schedule showing monthly interest expense).

d. Lessee's written statement identifying monthly payments due the Applicant and Applicant's affidavit as to net income realized.

13. Full-Time Student Status.

a. Written verification from the registrar's office or appropriate school official.

b. School records indicating enrollment for sufficient number of credits to be considered a full-time student by the school.

SCHEDULE F
DEED RESTRICTIONS

TO BE INSERTED IN ALL DEEDS CONVEYING PLANNED COMMUNITY UNITS IN COLBY VILLAGE:

As a Community which is approved pursuant to Connecticut General Statutes §8-30g, the individual units which have been approved by the Ledyard Planning and Zoning Commission have been allowed to vary from the size and bulk requirements contained in the Zoning Regulations of the Town of Ledyard. For the purposes of the site development of Colby Village, as approved by the Ledyard Planning and Zoning Commission on _____, 2025, dwelling units in a mix of two-bedroom single family homes, three-bedroom single family homes, three-bedroom dwelling units in a two-family building and four-bedroom single family homes are permitted on the three (3) tracts of land described in Schedule A to this Affordability Plan and as is depicted on the site plan prepared for Colby Village by Alfred Benesch & Company. The approval granted by the Ledyard Planning and Zoning Commission approves multi-family development on three (3) parcels of land, treated for purposes of the development of Colby Village, as a singular project in the common interest form of ownership. The following uses shall be permitted on this Lot: All uses permitted as of right or by special permit in accordance with the procedures and criteria set forth in the Zoning Regulations of the Town of Ledyard for the Multi-Family Development District ("MFDD"). These limitations shall run with the land and shall not expire when the affordability provisions of the subdivision have lapsed.

TO BE INSERTED IN ALL AFFORDABLE UNIT DEEDS IN COLBY VILLAGE:

The language below shall be inserted in each deed for an Affordable Home unit for the duration of the forty (40) year sale price restriction period:

The property conveyed hereby is an "affordable housing" home subject to the requirements of Connecticut General Statutes Section 8-30g. Said property is subject to the following restrictions (the "Restrictions"):

TO BE INSERTED IN A DEED FOR A FIFTY PERCENT HOME:

1. This dwelling unit is an affordable housing dwelling unit within a set aside development as defined in Section 8-30g of the Connecticut General Statutes and in accordance with the applicable regulations for state agencies that were in effect upon the date of the original application for the initial local approval, May ___, 2025, and is therefore subject to a limitation, at the date of purchase, on the maximum annual income of the household that may purchase the unit, and is subject to a limitation on the maximum sale or resale price. These limitations shall be strictly enforced, and may be enforced by the person identified in the Affordability Plan as responsible for the administration of these limitations and/or the zoning enforcement authority of the Town of Ledyard. For the duration of this covenant or restriction, this dwelling unit may be sold only to persons and families whose annual income does not exceed FIFTY (50%) PERCENT of 'median

income' as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies, applicable to this unit as specified in an Affordability Plan as on file with the Town of Ledyard. In addition, this unit may be sold or resold only at a price equal to or less than the price determined using the formula stated in Section 8-30g-8(A), or the formula stated in Section 8-30g-8(B), as applicable, of the Regulations of Connecticut State Agencies.

TO BE INSERTED IN A DEED FOR A FIFTY-ONE – SIXTY PERCENT HOME:

1. This dwelling unit is an affordable housing dwelling unit within a set aside development as defined in Section 8-30g of the Connecticut General Statutes and in accordance with the applicable regulations for state agencies that were in effect upon the date of the original application for the initial local approval, May ___, 2025, and is therefore subject to a limitation, at the date of purchase, on the maximum annual income of the household that may purchase the unit, and is subject to a limitation on the maximum sale or resale price. These limitations shall be strictly enforced, and may be enforced by the person identified in the Affordability Plan as responsible for the administration of these limitations and/or the zoning enforcement authority of the Town of Ledyard. For the duration of this covenant or restriction, this dwelling unit may be sold only to persons and families whose annual income does not exceed SIXTY (60%) PERCENT of 'median income' as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies, applicable to this unit as specified in an Affordability Plan as on file with the Town of Ledyard. In addition, this unit may be sold or resold only at a price equal to or less than the price determined using the formula stated in Section 8-30g-8(A), or the formula stated in Section 8-30g-8(B), as applicable, of the Regulations of Connecticut State Agencies.

TO BE INSERTED IN A DEED FOR A SIXTY-ONE – EIGHTY PERCENT UNIT:

1. This dwelling unit is an affordable housing dwelling unit within a set aside development as defined in Section 8-30g of the Connecticut General Statutes and in accordance with the applicable regulations for state agencies that were in effect upon the date of the original application for the initial local approval, May ___, 2025, and is therefore subject to a limitation, at the date of purchase, on the maximum annual income of the household that may purchase the unit, and is subject to a limitation on the maximum sale or resale price. These limitations shall be strictly enforced, and may be enforced by the person identified in the Affordability Plan as responsible for the administration of these limitations and/or the zoning enforcement authority of the Town of Ledyard. For the duration of this covenant or restriction, this dwelling unit may be sold only to persons and families whose annual income does not exceed EIGHTY (80%) PERCENT of 'median income' as defined in subsection 8-30g-1(10) of the Regulations of Connecticut State Agencies, applicable to this unit as specified in an Affordability Plan as on file with the Town of Ledyard. In addition, this unit may be sold or resold only at a price equal to or less than the price determined using the formula stated in Section 8-30g-8(A), or the formula stated in Section 8-30g-8(B), as applicable, of the Regulations of Connecticut State Agencies.

TO BE INSERTED IN ALL AFFORDABLE UNIT DEEDS:

2. In the event said Owner desires to make said property available for sale, said Owner shall notify the Administrator in writing. The Owner shall pay the Administrator a fee to cover the cost of administering the sale. The Administrator shall then provide notice of the availability of said property for purchase. Such notice shall be provided, at a minimum, by advertising at least two times in newspapers of general circulation in the Town of Ledyard. The Owner shall bear the cost of such advertisement. The Administrator shall also provide such notice to the Ledyard Planning and Zoning Commission and the Town of Ledyard Zoning Enforcement Officer. Such notice shall include a description of said property, the eligibility criteria for potential purchasers, the Maximum Sale Price and the availability of application forms and additional information. All such notices shall comply with the Federal Fair Housing Act, 42 U.S.C. 3601 et seq. and the Connecticut Fair Housing Act, Connecticut General Statutes §§46a-64b, 64c. Said Owner may hire a real estate broker or otherwise individually solicit offers, independent of the Administrator's action, from potential purchasers. Said Owner shall inform any potential purchaser of the affordability restrictions before any purchase and sale agreement is executed by furnishing the potential purchaser with a copy of the Affordability Plan. The purchase and sale agreement shall contain a provision to the effect that the sale is contingent upon a determination by the Administrator that the potential purchaser meets the eligibility criteria set forth in the Affordability Plan. Once the purchase and sale agreement is executed by said Owner and the potential purchaser, the potential purchaser shall immediately notify the Administrator in writing. The Administrator shall have thirty (30) days from such notice to determine the eligibility of the potential purchaser in accordance with the application process set forth in the Affordability Plan. The Administrator shall notify said Owner and the potential purchaser of its determination of eligibility in writing within said thirty (30) day period. If the Administrator determines that the potential purchaser is not eligible, the purchase and sale agreement shall be void, and said Owner may solicit other potential purchasers. If the Administrator determines that the potential purchaser is eligible, the Administrator shall provide the potential purchaser and said Owner with a signed certification, executed in recordable form, to the effect that the sale of the particular Affordable Housing dwelling has complied with the provisions of the Affordability Plan. The Owner shall bear the cost of recording said certification.

3. Said Owner shall occupy said property as said Owner's principal residence and shall not lease said property.

4. Said Owner shall maintain said property. Said Owner shall not destroy, damage or impair said property, allow said property to deteriorate, or commit waste on said property. When said property is offered for re-sale, the Administrator may cause said property to be inspected.

5. A subdivision for this Community was approved by agencies of the Town of Ledyard based in part on the condition that a defined percentage of the homes in the Community

would be preserved as Affordable Units. The Restrictions are required by law to be strictly enforced.

6. A violation of the Restrictions shall not result in a forfeiture of title, but the Ledyard Planning and Zoning Commission or its designated agent shall otherwise retain all enforcement powers granted by the Connecticut General Statutes, including Section 8-12, which powers include, but are not limited to, the authority, at any reasonable time, to inspect said property and to examine the books and records of the Administrator to determine compliance of said property with the affordable housing regulations, and all terms of the Affordability Plan, including without limitation, Article V.

FD# 16

Anna Wynn

From: Elizabeth Burdick
Sent: Monday, July 7, 2025 12:38 PM
To: Anna Wynn
Subject: Table HFH Site Plan Application

Follow Up Flag: Follow up
Flag Status: Flagged

RECEIVED
JUL 07 2025
Land Use Department

7/7/25 Good afternoon, Anna, As you know, I am on vacation this week. That being said, I request the PZC table the site plan application for Habitat for Humanity to the 8/14/25 regular meeting of the Commissioner to allow time for me and the Town Engineer to submit our final staff reports. I have spoken to HFH Executive Director, Sarah Luther and she has no objection. Thank you.
Sincerely,
Liz Burdick, Director
Ledyard Land Use & Planning
Sent via iPhone

WATER AND SEWER MAIN EXTENSION AGREEMENT

This Agreement, entered by and between **THE TOWN OF LEDYARD**, a municipal corporation, acting through its Water Pollution Control Authority, and **HABITAT for Humanity of Eastern Connecticut, Inc.**, hereinafter called the "Owner," whose mailing address for the purpose of carrying out the terms of this Agreement is 377 Broad Street, New London, Connecticut 06320.

AGREEMENT DETAILS

The Owner has a legitimate need to have its properties located at lots 8, 9, & 11 Colby Drive in Ledyard serviced by public water and sewer and has requested the Town of Ledyard Water Pollution Control Authority to provide such services.

The Town of Ledyard, acting through its Water Pollution Control Authority provides a public water supply and sewer service to portions of the Town of Ledyard, including properties in the vicinity of Colby Drive and will reserve a nominal rate of sewer capacity of 11,600 gallons/day for up to 5 years after which if the Owner does not complete the development, said rate capacity of 11,600 gallons/day at the discretion of the Water Pollution Control Authority may be reallocated to other developments.

The Town of Ledyard is going to provide the requested services if there is no appreciable cost to the Town of Ledyard and agrees to process a nominal sewer rate of 11,600 gallons/day.

The parties agree as follows:

1. The Owner, or its agents, in accordance with current policies, procedures and standards adopted by the Town of Ledyard Water Pollution Control Authority and/or its consulting agent, the City of Groton acting through its Department of Public Utilities governing the installation of water mains at customer request on public streets, or streets to be developed as public streets, will install, including all trenching, backfilling and materials, approximately 2700 feet of eight (8) inch Class 52 Ductile Iron water main and necessary appurtenances as specified on a plan entitled "Habitat for Humanity Residential Development Lots 8, 9, & 11 – Utility plan 4.0 Colby Drive, Ledyard, Connecticut Scale: 1" = 40' Horiz., August 2024, Alfred Benesch & Company, 120 Hebron Avenue, 2nd Floor, Glastonbury, Connecticut 06033 (860) 633-8341".

2. The Owner, or its agents, in accordance with current policies, procedures and standards adopted by the Town of Ledyard Water Pollution Control Authority and/or its consulting agent, Weston & Sampson, and specifications from document "Habitat for Humanity Tie In" governing the installation of sewer mains at customer request on public streets to be developed as public streets, will install, including all trenching, backfilling and materials, approximately 2700 feet of four (4) inch HDPE low pressure sewer line and necessary appurtenances to be located in, as more fully delineated on a plan entitled "Habitat for Humanity residential Development Lots 8, 9, & 11 – Utility plan 4.0 Colby Drive Ledyard, Connecticut Scale: 1" = 40' Horiz. August 2024, Alfred Benesch & Company 120 Hebron Avenue, 2nd Floor Glastonbury, Connecticut 06033 (860) 633 8341".

3. The Owner agrees to install, at its sole cost and expense, and in accordance with all rules, regulations, ordinances and specifications adopted by the Town of Ledyard, acting through its Water Pollution Control Authority, in accordance with the plan referenced in Paragraphs 1 and 2 hereof, the water and sewer mains described therein and all appurtenances required in connection therewith by the applicable rules and regulations of the Town of Ledyard Water Pollution Control Authority, including any additional regulations promulgated by its consultant, the City of Groton acting through its Department of Public Utilities for water, the consultant Weston &Sampson for sewer and adopted by the Town of Ledyard Water Pollution Control Authority, including the cost of supervision of testing and sanitizing the installed facilities.

4. In addition, the Owner agrees to pay the full and actual cost incurred by the Town of Ledyard Water Pollution Control Authority for the following:

   a. The connection of the water main described in Paragraph 1 hereof to the existing water main in Colonel Ledyard Highway.

   b. Construction inspection fees incurred by the Town of Ledyard Water Pollution Control Authority.

   c. Testing of the water main and appurtenant facilities.

   d. Interconnection of the individual lots known as 8, 9 and 11 Colby Drive to the existing water main.

   e. The connection of the sewer main described in Paragraph 2 hereof to the existing sewer main in Colonel Ledyard Highway; and

   f. Any leak test requirements for the new sewer line installation.

5. In advance of construction and in accordance with a written proposal, the Owner agrees to pay to the Town of Ledyard the anticipated cost to be incurred by the Town of Ledyard, acting through its Water Pollution Control Authority, for the work to be conducted by the Town of Ledyard as provided in Paragraph 4 of this Agreement. Any funds collected which are more than actual costs shall be refunded to the Owner.

6. The Town of Ledyard agrees to pay the full and actual cost of the following:

   a. The review of the customer's request to determine the relationship to system requirements, size of facilities to be built, and procedures to be followed.

7. Title to all water and sewer mains installed under the terms of this Agreement shall vest in the Town of Ledyard which shall assume full responsibility for the maintenance thereof. A benefit assessment is basically a reimbursement to the original developer for constructing and installing a utility at their cost that future developers wish to connect to the said utility. The benefit will follow state statute section 7-249, "Assessment of benefits" and other town ordinances.

No benefit assessment, or any special connection or end connection charge shall be applied to or assessed against any building lot developed by the Owner which connects to the water and sewer main.

8. All reimbursement to the Owner shall be made to the address contained in this Agreement. It shall be the responsibility of the Owner to advise the Town of Ledyard of any changes in address. Should any reimbursement mailed to the Owner be returned for lack of sufficient address, the Town of Ledyard shall be relieved of any further obligation to reimburse the Owner.

9. Should title to the Owner's property be transferred to any other person, firm or agency, reimbursements shall continue to be made to the Owner as defined in and under the terms of this Agreement.

10. Nothing contained herein shall obligate the Town of Ledyard to make payments to the Owner from its own funds in the event any assessment or charge is found to be illegal, excessive or uncollectible for any reason.

11. In consideration of the commitment by the Town of Ledyard, acting through its Water Pollution Control Authority, to provide water and sewer service to the Owner, the Owner waives any objections, known or unknown, to the regularity or authority for this Agreement.

12. This agreement may be modified or terminated at any time with the agreement of both parties

Dated at Ledyard, Connecticut, this 21 day of December 2024.

TOWN OF LEDYARD WATER POLLUTION

CONTROL AUTHORITY

By _____ (P.E.)
Edmond Lynch, Its Chairman

Sarah H. Lufler, Executive Director
Habitat for Humanity of Easter Connecticut, Inc.

By _____

TOWN OF LEDYARD

Department of Land Use and Planning

Elizabeth J. Burdick, Director

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3215, Fax: (860) 464-0098

Email: planner@ledyardct.org

MEMORANDUM FOR THE RECORD

APPLICATION PZ#25-4SITE

REGULAR/SPECIAL MEETING – THURSDAY, AUGUST 14, 2025

Prepared by Liz Burdick, Director of Land Use & Planning on 07/21/25

Property Address(es): 8 Colby Drive (Parcel ID: 68/520/8), 9 Colby Drive (Parcel ID: 68/520/9), 11 Colby Drive (Parcel ID: 68/520/11), Colby Drive (Parcel ID: 68/530/680) and 16 Highview Terrace (Parcel ID: 68/960/16) (easement only).
Application: PZ#25-4SITE
Applicant(s): Norm Eccleston, Habitat for Humanity
Applicant Address(es): 377 Broad Street, New London, CT 06320
Property Owner(s): Same as Applicant.
Owner Address(es): Same as Applicant.
Attorney: N/A.
Land Surveyor: David A. Caricchio, P.LS., Alfred Benesh & Company
Engineer: William G. Walter, P.E., Alfred Benesh & Company
Lot Size: Total 16.23 +/- acres)(707,022.36SF +/-) as follows: 8 Colby Drive – 3.837-acres (167,141SF), 9 Colby Drive – 2.815-acres (122,612SF), 11 Colby Drive – 8.329-acres (362,821SF), Colby Drive Parcel ID: 68/530/680) – 1.25-acres +/- (54,450+/-).
Lot Frontage: Lots will have frontage on future Town Road Colby Drive
Zoning District: Multi-Family Development District (MFDD).
Wetlands/Watercourses: Yes.
Flood Hazard Zone: Yes. Per survey sheet SV.01, "A portion of the property lies within the "Special Flood hazard Areas (SHAs) subject to inundation by the 1% annual chance Flood – "Zone A" – no base elevation determined and "Other Areas" Zone X areas determined to be outside of the 0.2% annual chance of floodplain per the FEMA Flood Insurance Rate Map New London County, CT (All Jurisdictions) Panel 359 of 554 Map Number 09011C0359G, Effective Date: July 18, 2011."
CAM Zone: No.
Utilities: Public Water & Sewer proposed to service the proposed development.
Public Water Supply Watershed: No.
Proposed Public Improvements: Yes. Completion of (town road) Colby Drive and associated drainage improvements.
Legal: Submitted to Land Use Department on 5/20/25. Date of Receipt 6/12/25. Tabled to the 7/10/25 meeting. Tabled to the 8/14/25 meeting. DRD 8/16/25.

EXISTING CONDITIONS: Vacant land and commenced, but unfinished infrastructure, (Colby Drive).

PROPOSAL: Construction of 27 multi-family structures for 38 dwelling units as follows: (eleven (11) duplex units with 3 bedrooms/2.5 baths each with garages - total of 22 dwelling units; six (6) 2-bedroom/1.5bath single-family dwelling units without garages; six (6) 3-bedroom/2.5 bath single-family dwelling units without garages; four (4) 4-bedroom/2.5 bath single-family dwelling units with garages).

TOWN ENGINEER: Referred 05/29/25. Comments pending.
FIRE MARSHAL: Referred 05/29/25. Comments pending.
BUILDING DEPT.: Referred 05/29/25. Comments pending.
ASSESSOR: Referred 05/29/25. Comments pending.
LLHD: Referred 05/29/25. Comments pending.
STCT DPH: N/A.
WPCA: Please provide letter from Ledyard WPCA regarding provision of water & sewer for the development.
SCWA: N/A.
IWWC: The Ledyard IWWC, at its 7/1/25 regular meeting approved regulated activities associated with the project.
BOND: SESC Bond & Road Bond estimates pending.

LAND USE DIRECTOR COMMENTS: Please be advised of the following comments with regard to my review of the application, supporting documents and a plan set entitled "Habitat for Humanity, Multi-Family Residential Affordable Housing Development Per C.G.S. §8-30g, Lots 8,9 & 11 Colby Drive, Ledyard, CT, Prepared for Habitat for Humanity, Prepared by Alfred Benesch & Company, Dated May 19, 2025":

C.G.S. §8-30 Review:

The application is being submitted as a multi-family residential affordable housing development under C.G.S. §8-30g. Chapter18 (Affordable Housing) (copy attached) of "What's Legally Required?" authored by Attorney Michael A. Ziska states, in part, "*The real power of the AHAA [Affordable Housing Appeals Act] arises from two key points,: (1)the Act changes the burden of proof on an appeal from the denial of the application, or from an approval with conditions that would have a substantially adverse impact on the viability of the proposed development; and (2) it greatly restricts the criteria under which a commission may lawfully deny or condition approval of an application.*" Further, it states, in relevant part, "*The AHAA … eliminates the deferential review standard. Whenever an applicant files an appeal under the AHAA, the commission, not the applicant, has the burden to prove (a) that the decision and the reasons given for the decision are supported by sufficient evidence in the record; (b) that the decision is necessary to protect substantial public interests in health, safety, or other matters that the commission may legally consider; (c) that those interests clearly outweigh the need for affordable housing; and (d) that those interests cannot be protected by reasonable changes to the affordable housing development" and "the criteria listed in the preceding paragraph are the only reasons will support a denial or an approval with financially burdensome conditions. The fact that a proposed development does not comply with the applicable zoning or subdivision regulations, including minimum lot size, setback or similar dimensional standards is not, in and of itself, a sufficient basis to deny or severely condition and affordable housing application. Likewise the failure of an applicant to conform to municipal ordinances will not be sufficient basis for denial unless that failure would meet the criteria listed in the preceding paragraph*." Also, its states, in part, "*Essentially, to deny an affordable housing application, there*

must be evidence in the record from a qualified expert or other source that the proposed development would pose an unavoidable safety or environmental hazard or other serious consequence."

Affordability Plan:

The Applicant submitted a document entitled, "Affordability Plan for Lots 8, 9 & 11 Colby Drive, Development of Colby Village of Habitat for Humanity of Eastern Connecticut, Inc., June 2025, Submitted by Habitat for Humanity of Eastern Connecticut, Inc. to the Ledyard Planning and Zoning Commission, Prepared by Heller, Heller & McCoy, 736 Norwich-New London Turnpike, Uncasville, CT 06382 [hereinafter AHP]."

The proposed 38 single-family dwelling units will all be designated as affordable housing. Seven (7) of the units will be sold to persons or families whose income does not exceed 50% of Median Income as described in C.G.S. 8-30g; nine (9) of the units will be sold to persons or families whose income does not exceed 60% of Median Income as described in C.G.S. 8-30g; and 22 of the units will be sold to persons or families whose income does not exceed 80% of Median Income as described in C.G.S. 8-30g. Details have been provided in the 40-page AHP identified as File Document #9.

At the top of page 5 of the AHP, there is a chart stating which of the homes shown on the plan will be for those persons or families at 40-50% AMI, 51-60%AMI or 61-80% AMI.

General Comments:
The application is for proposed construction of 27 multi-family structures for 38 dwelling units as follows: (eleven (11) duplex units with 3 bedrooms/2.5 baths each with garages - total of 22 dwelling units; six (6) 2-bedroom/1.5bath single-family dwelling units without garages; six (6) 3-bedroom/2.5 bath single-family dwelling units without garages; four (4) 4-bedroom/2.5 bath single-family dwelling units with garages).

Of the units stated above, each lot is proposed to contain the following number of dwelling units: 8 Colby Drive – 18 single-family dwelling units; 9 Colby Drive - 4 single-family dwelling units; and 11 Colby Drive – 16 single-family dwelling units.

The parcel known as Colby Drive (Parcel ID: 68/530/680) will be improved as an extension of Town Road Colby Drive. The site will be serviced by future public water and sewer connections. A "Water and Sewer Main Extension Agreement between the Town of Ledyard and Habitat for Humanity of Eastern, CT Inc., dated 12/21/24 has been submitted for the record as File Document #11.

Application/Plan Review Comments:
1. Application form shall be revised to include addresses Colby Drive (Parcel ID: 68/530/680) and 16 Highview Terrace (Parcel ID: 68/960/16) (easement only).
2. Applicant needs to submit copies of deed(s) for all properties for this application.
3. For discussion purposes, a phasing plan may be important for purposes of certificates of zoning compliance for certificates of occupancy for individual homes.
4. Appendix B – Site Plan Checklist needs to be submitted and each item checked off or noted as n/a.

5. Provide copy of drainage easement from 11 Colby over 16 Highview Terrace.
6. Revise plan set to add a sheet showing the homes that correspond to the 41-50%, 51-60% & 61-80 AMI chart at the top of page 5 of the AHP.

Development Narrative:
1. Lot Layout and Density paragraph 1 should be revised to state "duplex" v. multi-family.
2. Lot Layout and Density paragraph 2 states "Zone AA" and referenced two zones. Note that the projects properties are all located in the MFDD zone and this should be clarified/revised.

Stormwater Management Plan and Public Improvements:
1. Town Engineer Comments Pending.
2. SESC Bond and Public Improvement Bond estimates shall be submitted for review and approval of Town Engineer.

Sheet 1(Cover Sheet):
1. Revise Cover Sheet title (and title blocks on all sheets) to state "8, 9 & 11 Colby Drive (Parcel IDs: 68/520/8, 9 & 11),
Colby Drive (Parcel ID: 68/530/680), and 16 Highview Terrace (Parcel ID: 68/960/16) (Easement area only)."
2. Add to Cover Sheet only, approval blocks for PZC & IWWC, Plan Expiration Date and show the words "Erosion & Sediment Control Plan Approved by:" with space for the date and signature of the Chairman/Vice-Chairman of the Planning & Zoning Commission or its Agent.

Survey Sheets SV.01-SV.03:
1. Note 4 – Applicant shall provide deeds referenced in notes.
2. Note 5 – Revise to note properties are located in the MFDD (Multi-Family Development District) zoning district.
3. Revise plan to show subject and adjacent properties at Colby *DRIVE* (v. Road).
4. Revise plan to identify the parcel that will be the future extension of Colby Drive as "Colby Drive (Parcel ID: 68/530/680)" and add N/F Habitat for Humanity of Eastern CT Inc., vol/pg, and parcel area in acres & SF.
5. Revise plan to show pipe/drainage easement area location on 16 Highview Terrace.

Sheets C-1.0, 1.1, 1.2 – ESC Plan:
1. Town Engineer to review and comment.
2. Sheet C1.0 - Site Preparation Note 6 - Add "Any changes shall be approved by the Town Engineer and/or Director of Land Use."
3. E & S Control Notes:
a. Note 12: Add "or by Town of Ledyard staff."
b. Add Note 14: All SESC controls shall be properly installed and inspected by Town of Ledyard staff prior to the start of any work and shall be maintained in place in good working order until such time as the site is permanently stabilized with vegetative or other cover to the satisfaction of Town staff.
4. Suggested Construction Sequence - Note 1: Add "Town Engineer & Director of Land Use & Planning" as pre-construction meeting attendees.

Site plan Sheet C2.0:
1. Add Note to Zoning Compliance Table that sidewalks will be constructed within the Town right of way in accordance with Town of Ledyard Road Ordinances.

2. Revise Zoning Compliance Table to show actual proposed lot frontages & widths (v. >150) for lots 9 & 11 and revise to show addresses (i.e., 8 Colby v. Lot 8).
3. ZR Section 7.4 (Residential Driveways) internal private roadways to access individual driveways for dwelling units must comply with the Town's standards for road construction.
4. Sightline distances should be provided from internal private roadway to proposed Town Road.
5. Individual driveways – revise plan to show individual spaces and advise if parking will be allowed along the internal private roadway.
6. Add note regarding maintenance of internal private roadway and individual driveways.
7. Revise plan to show stop signs and stop bars at intersections of internal private roadways and future Colby Drive and add location and sign detail stating, "Private Roadway."
8. Revise plan to show area for community mailboxes (contact USPS for more info).
9. Add note "No accessory apartment shall be approved in this development as an accessory to a duplex residential or multi-family residential use."
10. Advise how the existing business (Salty Heifer) and single family residence located at 678 Colonel Ledyard Highway will be accessed during road construction.

Overall Grading & Drainage Plan – Sheet C3.0:
1. Add note 18 – Any changes to the approved plan require review & approval by the Town Engineer and/or Director of Land Use & Planning.

Drainage Plan – Sheet C3.1:
2. Add note 18 – Any changes to the approved plan require review & approval by the Town Engineer and/or Director of Land Use & Planning.

Existing Basin Rehabilitation Plan – Sheet C3.2: Town Engineer to review/comment.

Grading Plan – Sheet C3.3: Town Engineer to review/comment.

Utility Plan – Sheet C4.0: Town Engineer and/or WPCA to review/comment.

Planting Plan and Planting Details & Schedule – Sheets C5.0 & 5.1:
1. C5.0 Northern Red Oak shown to be planted at the north curve of the proposed street should be replaced with another street tree that does not have a history of heaving sidewalks with its roots. Also, the Redmond American Linden two trees away should be replaced with another street tree that does not have a history of clogging pipes with its roots. Further, multiple trees are being shown as being planted in areas of steep slopes that may not be stable to support trees. Clarify/revise as needed.
2. C5.1 – Plant Selection Schedule. Remove plantings not proposed in planting plan.

Site Details – Sheets 6.0, 6.1, 6.2: Town Engineer to review/comment.

ZR Section 9: Site Development Standards:

1. 9.2.A & B Sustainable Development – Add note to plan regarding compliance with these sections.

2. 9.2.C – Performance standards – address in writing.

3. 9.2.D – Infrastructure and utilities: Add note: All utilities shall be located underground.

4. 9.3.C.F – Add note to Landscaping Plan "All landscaping shown on the approved site plan shall be completed before issuance of a Certificate of Zoning Compliance prior for Certificate of Zoning Compliance unless the landowner provides surety in a form and amount satisfactory to the Commission, assuring completion within a specific time, not to exceed one year. Such surety shall be forfeited if the work shall not have been completed within such time limit."

5. 9.4 Parking Requirements – Revise plan to show internal and individual driveway surfaces as paved and provide detail.

6. 9.9.3.A-F – Address in writing.

7. 9.10 – Lighting – revise plan to show any lighting locations and details for internal private roadways.

Proposed staff condition of approval to date:

1. Applicant shall file Common Interest Community documents for the development on the Land Records in the Office of the Ledyard Town Clerk at the time of the filing of the AHP and any approved site plan.

Staff Recommendation: Reserved.

Please contact me at the Planning Dept. at Town Hall at (860) 464-7455 with any questions. Thank you.

From:	Walter, William
To:	Steve Masalin
Cc:	Elizabeth Burdick; Sarah Lufler; Norm Eccleston; Levesque, Nancy
Subject:	HFH Colby Drive
Date:	Thursday, July 31, 2025 10:31:16 AM
Attachments:	Benesch_Logo_2014_145x30_dfe25476-e59f-4644-a6de-bb3dd548761d.png Icon-Grayscale-12x20px_b18b1879-54cb-4986-bfba-11b2d006e42a.png LinkedIn_Logo_Grayscale_19x22px_e6251872-0da0-4be0-8a8a-103ce063fc48.png beneschinsights_first_b379b0a3-300d-4813-9bb9-be625bd3f9dc.png

Good Morning Steve – last week I indicated that we would be getting you an updated grading/drainage plan and stormwater report middle of this week for your review. As we went back and double check everything we realized that there has been recent work done in the Ledyard ROW. We are sending our surveyors down to pick up this work for a couple reasons:

- We don't want HFH to rip up and replace anything the town has recently constructed.
- We want to make sure the vertical grades are spot on as we are designing the connection to Ledyard at 10% and if there is a bust we don't want to have to redesign anything during construction or hold up construction in any way.
- These grades will have a ripple effect with all the drainage so we need to make sure we are very thorough to make your review as easy as possible with hopefully no conflicts in TF/Inverts/Etc between the drainage model and the plans.
- We need to pick up a couple of deeds on Colby that are going to be affected by the work in that cul de sac.

Since we need a little more time to do this, we are also concurrently addressing Liz's comments in the plan set. We are hoping to get updated plans and report by 8/8 or possibly the following week. If this does not provide enough time for your review prior to the next meeting we can discuss pushing it back a month, but Liz, please weigh in.

Thanks,

Will Walter, PE
Civil/Site Group Manager | Senior Associate

wwalter@benesch.com
direct: 860-494-4359 **mobile:** 860-818-1399 **office:** 860-633-8341

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INSIGHTS from our EXPERTS READ MORE

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From: Sarah Lufler
To: Elizabeth Burdick
Cc: Norm Eccleston; Walter, William
Subject: PZ #25-4-SITE
Date: Tuesday, August 12, 2025 3:59:07 PM

Good afternoon,

Please table our application PZ #25-4SITE to the 9/11/2025 regular meeting of the PZC to allow additional time for plan revisions. Habitat for Humanity of Eastern CT grants the PZC a 26-day extension of time to 9/11/2025 to make a decision on the application.

In health,

Sarah H. Lufler
Executive Director
Habitat for Humanity of Eastern Connecticut, Inc.
Location: 92 Eugene O'Neill Dr. New London, CT 06320
Mailing: 377 Broad Street, New London, CT 06320
p: (860) 442-7890 x205
w: www.habitatect.org

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September 3, 2025

Town of Ledyard
Department of Land Use and Planning
Attn: Elizabeth Burdick, Director
741 Colonel Ledyard Highway
Ledyard, CT 06339

RE: **Application PZ25-4SITE, Habitat for Humanity of Eastern CT, Colby Drive**

Dear Ms. Burdick:

Below is our response to the Memorandum for the Record for Application PZ#25-4Site regarding the Habitat for Humanity of Eastern CT site plan application located on Colby Drive in Ledyard, CT. Our response immediately follows each of the items and is reproduced in *italics font*.

Application/Plan Review Comments:

1. Application form shall be revised to include addresses Colby Drive (Parcel ID: 68/530/680) and 16 Highview Terrace (Parcel ID: 68/960/16) (easement only).

   Benesch Response: The application has been revised to include the roadbed parcel, 16 Highview Terrace as well as 5 & 6 Colby Drive easement areas. 5&6 Colby Drive were added for the removal of the cul de sac and temporary easement associated with it.

2. Applicant needs to submit copies of deed(s) for all properties for this application.

   Benesch Response: Deeds are included in the revised submittal package.

3. For discussion purposes, a phasing plan may be important for purposes of certificates of zoning compliance for certificates of occupancy for individual homes.

   Benesch Response: Phasing notes have been added to the site plan indicating the order in which the units will be constructed. Notes regarding infrastructure construction and landscaping are included.

4. Appendix B – Site Plan Checklist needs to be submitted and each item checked off or noted as n/a.

   Benesch Response: Site Plan Checklist has been included in the revised submittal package.

5. Provide copy of drainage easement from 11 Colby over 16 Highview Terrace.

   Benesch Response: A copy of the drainage easement is included with the deeds. The survey has been update to include the drainage easement as well as the temporary cul de sac easement.

6. Revise plan set to add a sheet showing the homes that correspond to the 41-50%, 51-60% & 61-80 AMI chart at the top of page 5 of the AHP.

Benesch Response: A table has been added to the Site Plan. Unit numbers are also indicated on the Site Plan and a note added that unit number do not correspond to addresses which are to be assigned by the Assessor's office.

Development Narrative:

1. Lot Layout and Density paragraph 1 should be revised to state "duplex" v. multi-family.
   Response: by others.
2. Lot Layout and Density paragraph 2 states "Zone AA" and referenced two zones. Note that the projects properties are all located in the MFDD zone and this should be clarified/revised.

Response: by others.

Stormwater Management Plan and Public Improvements:

1. Town Engineer Comments Pending.

   Benesch Response: Updated plans to be reviewed are part of this submittal package.

2. SESC Bond and Public Improvement Bond estimates shall be submitted for review and approval of Town Engineer.

   Benesch Response: Bond estimates shall be submitted for review prior to the Planning & Zoning meeting.

Sheet 1(Cover Sheet):

1. Revise Cover Sheet title (and title blocks on all sheets) to state "8, 9 & 11 Colby Drive (Parcel IDs: 68/520/8, 9 & 11),Colby Drive (Parcel ID: 68/530/680), and 16 Highview Terrace (Parcel ID: 68/960/16) (Easement area only)."

   Benesch Response: Cover sheet updated to add all included parcels.

2. Add to Cover Sheet only, approval blocks for PZC & IWWC, Plan Expiration Date and show the words "Erosion & Sediment Control Plan Approved by:" with space for the date and signature of the Chairman/Vice-Chairman of the Planning & Zoning Commission or its Agent.

   Benesch Response: Signature blocks have been added to the Cover Sheet.

Survey Sheets SV.01-SV.03:

1. Note 4 – Applicant shall provide deeds referenced in notes.

   Benesch Response: Deeds are provided as part of this submittal package.

2. Note 5 – Revise to note properties are located in the MFDD (Multi-Family Development District) zoning district.

   Benesch Response: Note revised.

3. Revise plan to show subject and adjacent properties at Colby *DRIVE* (v. Road).

   Benesch Response: "Road" revised to "Drive" on all parcels.

4. Revise plan to identify the parcel that will be the future extension of Colby Drive as "Colby Drive (Parcel ID: 68/530/680)" and add N/F Habitat for Humanity of Eastern CT Inc., vol/pg, and parcel area in acres & SF.

Benesch Response: Roadbed parcel identified.

5. Revise plan to show pipe/drainage easement area location on 16 Highview Terrace.

Benesch Response: Plan revised to indicate drainage easement on 16 Highview Terrace and temporary cul de sac easement on 5 & 6 Colby Drive.

Sheets C-1.0, 1.1, 1.2 – ESC Plan:

1. Town Engineer to review and comment.

Benesch Response: Updated plans to be reviewed are part of this submittal package.

2. Sheet C1.0 - Site Preparation Note 6 - Add "Any changes shall be approved by the Town Engineer and/or Director of Land Use."

Benesch Response: Note added.

3. E & S Control Notes:
   a. Note 12: Add "or by Town of Ledyard staff."
   b. Add Note 14: All SESC controls shall be properly installed and inspected by Town of Ledyard staff prior to the start of any work and shall be maintained in place in good working order until such time as the site is permanently stabilized with vegetative or other cover to the satisfaction of Town staff.

Benesch Response: Notes added.

4. Suggested Construction Sequence - Note 1: Add "Town Engineer & Director of Land Use & Planning" as pre-construction meeting attendees.

Benesch Response: Notes added.

Site plan Sheet C2.0:

1. Add Note to Zoning Compliance Table that sidewalks will be constructed within the Town right of way in accordance with Town of Ledyard Road Ordinances.

Benesch Response: Notes added.

2. Revise Zoning Compliance Table to show actual proposed lot frontages & widths (v. >150) for lots 9 & 11 and revise to show addresses (i.e., 8 Colby v. Lot 8).

Benesch Response: Table revised.

3. ZR Section 7.4 (Residential Driveways) internal private roadways to access individual driveways for dwelling units must comply with the Town's standards for road construction.

Benesch Response: The residential driveways and internal driveways meet the standard for residential single and two-family dwelling units.

4. Sightline distances should be provided from internal private roadway to proposed Town Road.

Benesch Response: Sightline distances shall be provided under separate cover.

5. Individual driveways – revise plan to show individual spaces and advise if parking will be allowed along the internal private roadway.

   Benesch Response: Driveways are indicated for each unit. Garages are now noted on the plans. Parking within internal driveways is not to be permitted – a note has been added.

6. Add note regarding maintenance of internal private roadway and individual driveways.

   Benesch Response: Note added.

7. Revise plan to show stop signs and stop bars at intersections of internal private roadways and future Colby Drive and add location and sign detail stating, "Private Roadway."

   Benesch Response: Stop signs and bars added and signs for Private Drive.

8. Revise plan to show area for community mailboxes (contact USPS for more info).

   Benesch Response: Area designated for community mailboxes – final location and type to be coordinated with USPS..

9. Add note "No accessory apartment shall be approved in this development as an accessory to a duplex residential or multi-family residential use."

   Benesch Response: Notes added.

10. Advise how the existing business (Salty Heifer) and single family residence located at 678 Colonel Ledyard Highway will be accessed during road construction.

    Benesch Response: The contractor/owner will coordinate with the Salty Heifer to schedule any disruptions regarding the driveway usage. If the current hours of the restaurant stay the same, then utility work and paving across the driveway may be scheduled on Tuesdays when the restaurant is closed. For paving, the area in front of the driveway would be a mill/pave rather than a full roadway reconstruction, so the disturbance would be less.

Overall Grading & Drainage Plan – Sheet C3.0:

1. Add note 18 – Any changes to the approved plan require review & approval by the Town Engineer and/or Director of Land Use & Planning.

   Benesch Response: Notes added.

Drainage Plan – Sheet C3.1:

2. Add note 18 – Any changes to the approved plan require review & approval by the Town Engineer and/or Director of Land Use & Planning.

   Benesch Response: Notes added.

Existing Basin Rehabilitation Plan – Sheet C3.2: Town Engineer to review/comment.

Grading Plan – Sheet C3.3: Town Engineer to review/comment.

Utility Plan – Sheet C4.0: Town Engineer and/or WPCA to review/comment.

Benesch Response: Updated plans to be reviewed are part of this submittal package.

Planting Plan and Planting Details & Schedule – Sheets C5.0 & 5.1:

1. C5.0 Northern Red Oak shown to be planted at the north curve of the proposed street should be replaced with another street tree that does not have a history of heaving sidewalks with its roots. Also, the Redmond American Linden two trees away should be replaced with another street tree that does not have a history of clogging pipes with its roots. Further, multiple trees are being shown as being planted in areas of steep slopes that may not be stable to support trees. Clarify/revise as needed.

   Benesch Response: Tree locations and types have been updated.

2. C5.1 – Plant Selection Schedule. Remove plantings not proposed in planting plan.

   Benesch Response: Planting schedule has been updated.

Site Details – Sheets 6.0, 6.1, 6.2: Town Engineer to review/comment. ZR Section 9: Site Development Standards:

1. 9.2.A & B Sustainable Development – Add note to plan regarding compliance with these sections.

   Benesch Response: Notes added.

2. 9.2.C – Performance standards – address in writing.

   Benesch Response: Notes added.

3. 9.2.D – Infrastructure and utilities: Add note: All utilities shall be located underground.

   Benesch Response: Notes added.

4. 9.3.C.F – Add note to Landscaping Plan "All landscaping shown on the approved site plan shall be completed before issuance of a Certificate of Zoning Compliance prior for Certificate of Zoning Compliance unless the landowner provides surety in a form and amount satisfactory to the Commission, assuring completion within a specific time, not to exceed one year. Such surety shall be forfeited if the work shall not have been completed within such time limit."

   Benesch Response: Notes added.

5. 9.4 Parking Requirements – Revise plan to show internal and individual driveway surfaces as paved and provide detail.

   Benesch Response: Note and detail added.

6. 9.9.3.A-F – Address in writing.

   Benesch Response: Notes added.

7. 9.10 – Lighting – revise plan to show any lighting locations and details for internal private roadways.

Benesch Response: Lighting Plan updated.

Proposed staff condition of approval to date:

Applicant shall file Common Interest Community documents for the development on the Land Records in the Office of the Ledyard Town Clerk at the time of the filing of the AHP and any approved site plan.

Benesch Response: Common Interest Community documents to be filed by owner/attorney.

If you should have any questions or require additional information, please do not hesitate to contact our office.

Respectfully Submitted,
Benesch

Nancy Levesque

Nancy Levesque, PE
Technical Manager

Stormwater Management Report

Habitat For Humanity Residential Development

8, 9, and 11 Colby Drive, Ledyard CT

Prepared For:

Town of Ledyard
741 Colonel Ledyard Highway
Ledyard, CT 06339

Prepared By:

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Issued:

December 2024
Revised March 2025
Revised September 2025

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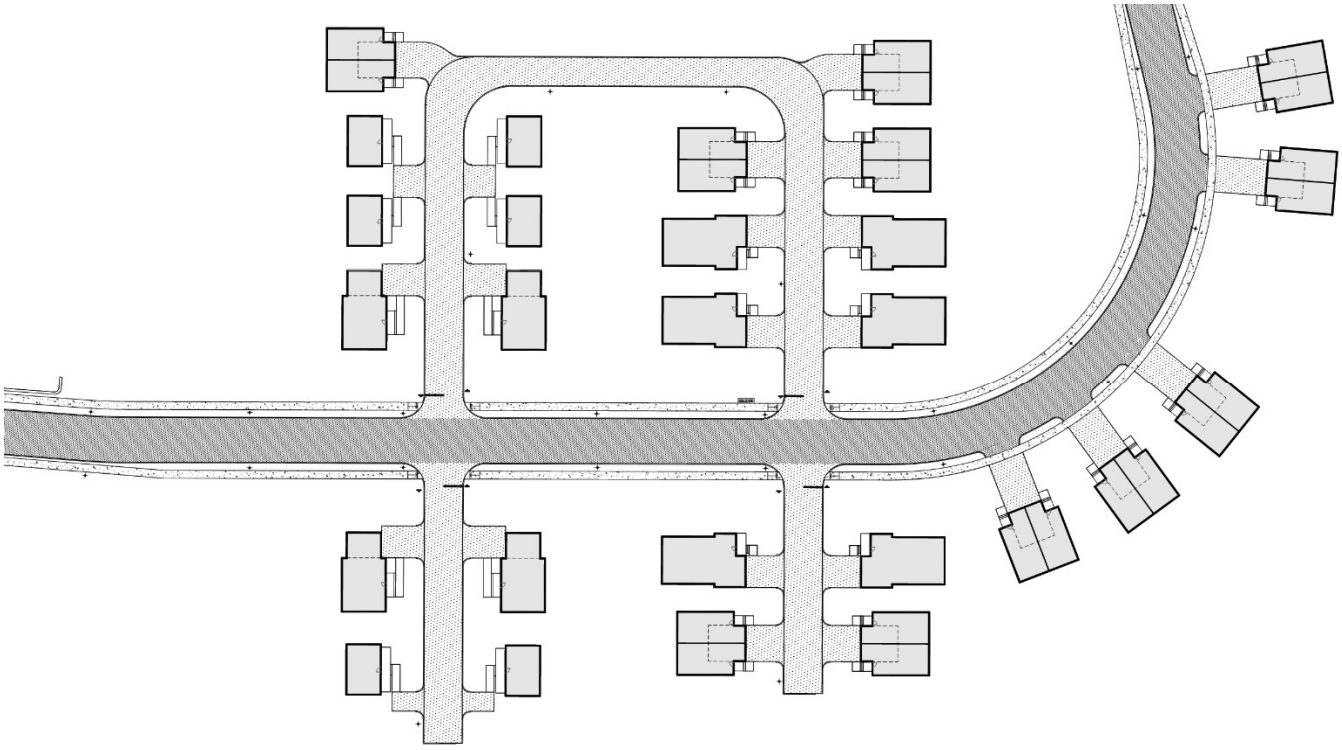
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PROPOSED RESIDENTIAL DEVELOPMENT

(Schematic Layout)

8, 9, and 11 Colby Drive

Ledyard, CT 06339

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1 INTRODUCTION

1.1 General Information

The subject parcels addressed 8, 9, and 11 Colby Drive, Ledyard, CT consist of approximately 15.71 acres and are located at the end of Colby drive, where it curves and extends down to Colonel Ledyard Highway. It is situated in the MFDD (Multi Family Development District) Zone and the subject parcels are denoted as and owned by:

- 8 Colby Drive – Book 560 / Page 433 G - Habitat for Humanity of Eastern CT Inc.
- 9 Colby Drive – Book 560 / Page 436 G - Habitat for Humanity of Eastern CT Inc.
- 11 Colby Drive – Book 560 / Page 436 G - Habitat for Humanity of Eastern CT Inc.
- Colby Drive Roadbed – Book 560 / Page 442 – Habitat for Humanity of Eastern CT Inc.

The project proposes the development of the existing parcels along with a full roadway construction to town standards. The proposed development will consist of twenty-seven (27) housing structures and the following site features:

- New Bituminous Pavement and Curbing
- New Concrete Walks
- Utilities and Storm Drainage system. (including detention)
- Revised Site Landscaping
- Single and Multi-Family Residential Buildings

The existing site is comprised of approximately 15.7 acres that is predominately wooded. This site has been the subject of multiple, various, applications over the past 40 – 50 years, all of which included the completion of a town road extending from the Colby Drive cul-de-sac through the site and connecting to Colonel Ledyard Highway. The natural low spot of the site is the northwestern portion, which is comprised of a large wetlands system. Based on discussions with town staff, it is our understanding that this wetlands system was utilized to provide stormwater management in the 1980s through the following construction:

- Construction of an earthen berm along the northern boundary line created a defined volume.
- A concrete outlet control structure, with a large RCP outlet pipe was placed to regulate flow out of the pond.
- The RCP pipe discharges to the property to the north (16 Highview Terrace). A stream has formed at this outlet pipe, and it runs south to north through the property. It appears a drainage easement was designed as part of a previous plan set, but the easement may have never been formalized and filed on the town land records.

This stormwater management system was designed to manage flow from the Colby Drive cul-de-sac development, as well as a previously approved development for the subject property (8, 9 and 11 Colby

Drive, and the Colby Drive Roadbed). The flows from the subject property were assumed to be generated by a 28' wide paved road extension (between the cul-de-sac and Colonel Ledyard Highway) and several commercial buildings. Therefore, the increased flows that truly need to be accounted for, for the proposed development, would only be the increased imperviousness from the previously approved commercial development and the proposed multi-family residential development.

However, the detention basin was never formally accepted by the Town. Therefore, in coordination with the Town staff, the proposed stormwater management has been designed with the following assumptions:

- The "existing" conditions consist of the current conditions (selectively cleared ROW and gravel drive) and NOT a 28' wide paved roadway with several commercial buildings. This resulted in the existing peak flows, as generated by the hydrologic model, being significantly lower than could perhaps take credit for. This forced us to design the proposed conditions to a much higher level of detention than would've otherwise been required.
- The Basin was surveyed and the topography was compared to the design plan from the 1990's. The comparison indicates the elevations and shape of the detention basin under current conditions is substantially in conformance with the original design in the 1980s. The Basin and structures were inspected and the facilities appear to be functioning as intended. We are providing several maintenance items in Section 2.3 of the report, which are to be expected after approximately 50 years, but the facility appears to be working as designed. Also, we have no knowledge of any complaints of flooding directly downstream of this basin.
- A new stormwater management system upgradient of the new paved road extension has been designed to manage and regulate all increased flows associated with the proposed development. This methodology has been designed to be very conservative, specifically to provide the Town with a level of comfort that the entirety of stormwater management will treat and regulate peak stormwater flow beyond that required by the applicable regulations. The proposed design assumes that the discharge point of our development is the existing detention basin on the northern portion of the property. peak flows are reducing from our site, to this basin, under proposed conditions for all the required design storms.

The proposed development includes an additional detention/infiltration basin and French drain to meet the 2024 CT DEEP Stormwater Quality Manual requirements for water quality and provide zero increase in runoff rate. Previously installed structures and pipes will be used if feasible after inspection and verification of suitability,

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Site Location Map

The project was designed utilizing the Town of Ledyard Zoning Regulations, the 2002 Connecticut Department of Transportation (ConnDOT) Drainage Manual, the latest Connecticut Guidelines for Soil Erosion and Sediment Control, and the latest Connecticut Department of Energy and Environmental Protection (CT DEEP) Water Quality Manual.

1.2 Project Summary

This project proposes to:

- Construct a new roadway for the town of Ledyard
- Construct multiple private driveways
- Construct multiple housing units
- Provide adequate site drainage and water quality.
- Provide ADA accessibility
- Construct utility connections to the buildings and site.

The project will disturb approximately 9.20 acres between the subject parcels and the ROW.

1.3 Existing Site Conditions

1.3.1 Topography

The project site slopes generally from south to north, with flow being directed to wetlands/existing detention basin northeast of the site. The proposed extension of Colby Drive is located within the previously approved right-of-way in approximately the same location. A portion of the drainage was previously constructed and will be inspected and reused to the extent possible. Elevations (NAVD 88) range from approximately 318 ft at the southern property border to 218 located at the northeaster property corner.

1.3.2 Soils

NRCS soils mapping indicates 4 soil types located within the project limits; defined as:

- 47C – Woodbridge Fine Sandy Loam – Hydrologic Soil Group C
- 84B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C
- 85B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C
- 86B – Paxton Montauk Fine Sandy Loam – Hydrologic Soil Group C

Exploratory borings and test pits were completed onsite on October 24, 2024 and November 5, 2024 supervised by Down to Earth Consulting LLC. Groundwater was found to be 5-10.5 ft below the existing grade at ±257 and ±254 (NAVD 88). Infiltration testing was performed using the Falling Head Test. And revealed the pond location can infiltrate at a rate of 0.21in/hr, and a rate of 0.94in/hr at the location of the proposed French Drain.

The locations of Boring and Infiltration tests and results are included in Appendix G.

1.3.3 On-site and Adjacent Waterbody Information

There are wetlands adjacent to this project site. All flow from this site under existing conditions, both sheet flow and concentrated pipe flow, discharges to wetlands. This site is not located within an aquifer protection area, per Ledyard, CT Map (June 2024)

1.3.4 Additional Site Considerations

- The existing stormwater management area has some organic overgrowth (phragmites, and down trees/root balls, etc.).
- The existing RCP discharge pipe into and out of the pond is not equipped with rip rap outlet control.
- The detention pond outlet control is comprised of a concrete block structure with a metal grate on the side (to prevent clogging of the low-flow orifice) and on top (to prevent clogging of the overflow spillway). Although the structure is structurally sound, the metal contains rust and the block mortar is slightly deteriorating in some locations.
- The site is currently undeveloped, except for the roughed in roadway, detention basin and catch basins which were installed for the previously approved roadway.
- A majority of existing soils have limiting exfiltration characteristics.
- The site is not located within a Natural Diversity Database Area, per Ledyard, CT Map, (June 2024)

2 HYDROLOGY

2.1 Methodology

The analysis to determine peak flows generated from the site was prepared using TR-55 procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs. HydroCAD software was utilized to perform hydrologic computations. Rainfall Frequency Estimates for precipitation frequency, based on National Oceanic and Atmospheric Administration (NOAA) data from Colby Drive, Ledyard, CT, were utilized to generate the flows. The following 24-hour, precipitation estimates were utilized:

2-Year	3.46 inches
10-Year	5.11 inches
25-Year	6.15 inches
50-Year	6.92 inches
100-Year	7.74 inches

Design Storm Type: NOAA, 24-hour Type D

Project Type: New Construction

2.2 Existing Conditions

2.2.1 Watershed Boundaries and Design Points.

Drainage from the existing site is contained within one (1) watershed for analysis.

- **Watershed E1 (To Wetlands):** This watershed consists of the entirety of the existing site. There is a previously graded, but unconstructed roadway designed directly through the middle of the site. The roadway was analyzed as constructed, along with the water which comes down the hill from outside the property onto the site. The majority of the existing site is a heavily wooded area, with some impervious cover. All flow from this watershed discharges through the existing detention pond to the wetlands or directly to the wetlands located northeast of the project site.

  Existing Watershed Data (Existing Cover Characteristics, Existing Watershed Area Map, and Hydrologic Computations) have been included in Appendix A.

2.3 Proposed Conditions

2.3.1 Watershed Boundaries and Design Points

This project proposes to provide stormwater management in the form of a detention pond. Peak flow reduction is achieved using an outlet control structure to control stormwater discharge from the pond. The elevation of the bottom orifice and pond size have been calculated to meet the water quality requirement for the entire site. Drainage from the proposed site consists of two (2) subwatersheds for analysis.

- **Watershed 1:** This watershed has been further divided into subwatersheds for further analysis
  - **Watershed P1-1 (Direct to Wetlands):** This watershed consists of the area along the Eastern and northern borders on the downslope of the roadway, including a portion of the roadway, and a minor section of the slope from the pond. There is impervious cover from thirteen (13) Single and multi-family residential buildings, two (2) private drives and a portion of the proposed Colby Drive extension. There is proposed grass around all areas in this watershed which have been designed to be disturbed and regraded.
  - **Watershed P1-2 (To Detention Pond):** The majority of Colby Drive is within this watershed. Along with Colby Drive, there is a proposed private drive loop, fourteen (14)

proposed residential buildings and, pavement from offsite which sheet flows downhill from the west, to make up the proposed impervious cover of this watershed. The proposed detention pond and all disturbed areas around the proposed residential buildings make up the grass cover for this watershed. There is woodland offsite to the west and south which remains undisturbed and remains the same condition as existing.

Proposed Watershed Data (Proposed Cover Characteristics, Proposed Watershed Area Map, and Hydrologic Computations) have been included in Appendix B.

2.3.2 Existing Detention Basin Renovations

Based upon our site walk, following are the proposed renovations to the existing stormwater detention basin:

- Selectively remove the phragmite stand, as well as downed trees, stump and associated root balls in the area adjacent the pond inlet pipe.
- Place rip rap outlet control at the end of the existing RCP discharging into and out of the detention pond. The rip rap has been sized per ConnDOT criteria and the computations are shown in Appendix H.
- Remove the rust off the outlet control structure metal grates and remove the moss off the concrete block portion of the structure.
- Parge the interior portion of the concrete block structure to address the slight deterioration of existing mortar.

2.4 Compliance with Performance Criteria

2.4.1 Compliance with Local Criteria

This project has been designed per the Town of Ledyard's Stormwater Management Regulations.

2.4.2 Compliance with Connecticut Stormwater Quality Manual

2.4.2.1 Standard 1 – Runoff Volume Reduction

The method of analysis for this stormwater management system is providing site specific peak runoff volume reduction for the 2, 10, 25, 50, or 100-year Type NOAA, 24-hr Type D storm.

Low impact development practices have been implemented throughout this stormwater management design utilizing a series of treatment practices to remove temporarily suspended solids from the discharge location. Under existing conditions there are multiple catch basins and double catch basins,

none of which receive significant flow as they have been set to the proposed elevation of the previously approved roadway and grading has only been performed to subgrade.

For the proposed detention pond, infiltration testing revealed an infiltration rate of 0.21in/hr. For the proposed French drain, infiltration testing revealed an infiltration rate of 0.94 in/hr. The French Drain has been modeled as a narrow but long infiltration basin to accommodate offsite flow.

Water quality volume calculations are provided in Appendix D.

Peak Flow Comparison

Peak flows at the off-site analysis point are as follows:

Proposed Watershed Hydrologic Characteristics Colby Drive Ledyard, CT Project # 0725-500010.00			
Comparison of Existing to Proposed Peak Flow Rate			
Watershed	**Storm Event (NOAA Type D)**	**Existing Flow (cfs)**	**Proposed Flow (cfs)**
To Wetlands	**2-year**	14.98	7.83
	10-year	30.78	25.98
	25-year	41.66	41.15
	50-year	49.91	45.72
	100-year	58.82	50.73

Conclusion, total site peak flows will be reduced under proposed conditions for all design storms.

2.4.2.2 Standard 2 – Stormwater Runoff Quantity Control

See Peak Flow Comparison above.

3 HYDRAULICS

The intent of the hydraulic analysis is to ensure that proposed on-site drainage facilities are designed to accommodate and safely convey runoff produced up to and including the 25-year storm event.

3.1 Compliance with Performance Criteria

The site has been designed with a series of structural drainage facilities, including twenty-two (22) catch basins, four (4) double catch basins, eight (8) concrete area drains, one (1) dry well, one (1) French Drain, two (2) manholes, one (1) detention pond, four (4) flared end structures, one (1) outlet control structure and one (1) emergency overflow. This drainage system has been designed to remove stormwater from driving surfaces and divert it to the proposed detention pond, or directly to the wetlands.

3.1.1 Compliance with Local Criteria

The proposed storm sewer system has been designed in compliance with Town of Ledyard Drainage Regulations.

3.1.2 Compliance with State Criteria

The proposed storm sewer system has been designed in compliance with the State of Connecticut's drainage regulations per the 2002 ConnDOT Drainage Manual. (as amended)

Computations for the hydraulic analysis can be viewed in Appendix C.

4 WATER QUALITY

4.1 Methodology

The project has been designed to address both short-term and long-term stormwater quality. Short term (during construction) water quality has been provided in the form of erosion control measures and long-term (post construction) water quality has been provided through the use of primary and secondary treatment practices. Erosion control has been designed per the latest Connecticut Erosion Control Guidelines and long-term stormwater quality has been designed per the latest CT DEEP Stormwater Quality Manual.

4.2 Compliance with Performance Criteria

4.2.1 Compliance with Local Criteria

The proposed stormwater management system is designed to provide water quality volume for the entirety of the proposed development and treat the 1.3" storm as required by the 2024 CT DEEP Stormwater Quality Manual.

4.2.2 Compliance with Connecticut Stormwater Quality Manual

4.2.2.1 Standard 1 – Pollutant Reduction

Long Term Stormwater Quality

The project was designed with guidance from the latest Connecticut Stormwater Quality Manual.

The site was designed to divert all surface stormwater to the proposed detention basin, where floatables, debris and other pollutants will be filtered out of the water prior to discharge to the onsite wetlands. The detention pond is designed to provide 100% of the required water quality volume.

Computations for Water Quality can be viewed in Appendix D.

5 SOIL EROSION AND SEDIMENT CONTROL

5.1 Methodology

The proposed soil erosion and sediment controls have been designed in accordance with local regulations, the Connecticut Guidelines for Soil Erosion and Sediment Control, and the requirements of the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, as applicable. The proposed design considers the specific site characteristics of the site and anticipated construction activities. See the plan set for location and design of proposed short term soil erosion and sediment control measures to be used throughout construction.

Short Term Erosion Control

The proposed erosion and sedimentation controls consider the specific characteristics of the site and the anticipated construction activities. They have been designed in accordance with the latest CT DEEP Guidelines for Soil Erosion and Sediment Control.

Construction Entrances

Construction entrances will be utilized to remove sediment from construction vehicle tires and prevent it from being tracked onto adjoining paved roadway areas.

Erosion Control Barriers

Prior to any construction activity, hay bales, silt fence, or combination hay bale/silt fence barriers will be placed at the downgradient limits of construction and adjacent to the wetlands. Throughout construction, additional barriers will be installed as necessary at the toe of slopes equal to or in excess of 15 feet. These barriers will be inspected once every seven calendar days

and within 24 hours after every rainfall generating a discharge and replaced as necessary. Collected silt will be removed when one-half the barrier height is reached.

Temporary Seeding

Temporary Seeding will be utilized on portions where the phasing and sequencing require an initial disturbance followed by an extended period of inactivity that is greater than 30 days but less than 1 year. Temporary seeding will be conducted within 7 days after the suspension of grading work in disturbed areas where the suspension of work is expected to be more than 30 days but less than 1 year.

Soil Stabilization- Mulches

Structural (non-living) soil stabilization will be utilized to protect the soil surface on a temporary basis without the intention of promoting plant growth. When grading of the disturbed area will be suspended for a period of 30 or more consecutive days, but less than 5 months, disturbed areas will be stabilized within 7 days of the suspension of grading through the use of mulch, non-bituminous tackifiers, erosion control netting, or other approved materials appropriate for use as a temporary soil protector. For surfaces that are not to be reworked within 5 months but will be reworked within 1 year, use temporary seeding, seeding-type mulch (hay, straw, or cellulose fiber) or when slopes are less than 3:1, wood chips, bark chips or shredded bark.

Temporary Filter Inserts

Temporary Filter Inserts will be placed in each existing catch basin and yard drains prior to the start of construction, and in each new catch basin or yard drain during construction. These devices will be removed upon final site stabilization. Filter inserts will be inspected once every seven (7) calendar days and within 24 hours after every rainfall generating a discharge. Replacement of the inserts will be as often as necessary to maintain function of the drainage structure and prevent excessive ponding due to clogged fabric. Ripped or otherwise damaged inserts will be replaced immediately.

Stockpile Management

The topsoil stockpiles which will be idle for at least 30 days will be stabilized with temporary seed and mulch no later than 7 days from the last use. Small stockpiles may be covered with impervious tarps or erosion control matting in lieu of seeding and mulching.

A geotextile silt fence or hay bale barrier will be installed around the stockpile area approximately 10 feet from the proposed toe of the slope.

6 OPERATION AND MAINTENANCE

6.1 Inspection Frequency and Criteria

Maintenance and operation will be provided as follows.

During Construction

- **Dust Control:** Moisten disturbed soil areas with water periodically, or use a non-asphaltic soil tacifier to minimize dust.
- **Temporary Soil Protection:** Inspect seeded areas weekly and within 24 hours after a storm generating a discharge.
- **Catch Basin Filter Inserts:** Inspect the fabric at least once a week and within 24 hours after the end of a storm generating a discharge. Check the fabric for structural soundness (i.e. tears), proper anchoring/alignment within the grate and ability to drain runoff (i.e. percent of clogging by sediment). Remove the sediment every week, or sooner if ponding is excessive. Each time the sediment is removed, replace the section of fabric removed with a new section. Do not remove the sediment and reuse the same section of fabric.
- **Hay Bale/ Silt Fence Barrier:** Inspect the barrier at least once a week and within 24 hours after the end of a storm generating a discharge. For dewatering operations, inspect frequently before, during and after pumping operations. Remove the sediment deposits when the depth reaches one half the barrier's height. Repair or replace a barrier within 24 hours of observed failure. Maintain the barrier until the contributing disturbed area is stabilized.
- **Construction Entrance/Exit Pad:** Maintain the pad in a condition that will prevent tracking and washing of sediment onto paved surfaces. Place additional clean gravel on top of gravel that has become silted, or remove the silted gravel and replace the gravel to the depth removed with clean gravel, as conditions warrant. Remove immediately all sediment spilled, dropped, washed or tracked onto paved surfaces. Roads adjacent to the construction site shall be cleaned at the end of each day by hand sweeping or sweeper truck.
- **Existing Catch Basins and Sumps:** Inspect the filter baskets as specified above. After final removal of the filter baskets at the end of construction, clean the sump of all silt and debris.
- **New Catch Basins and Sumps:** As new catch basins are constructed, a sediment trap shall be installed in the unit and a sediment barrier installed around the grate. Inspect the

trap and barrier weekly and within 24 hours after a storm generating a discharge. After stabilization of the drainage area entering the catch basin, remove the trap and barrier and clean the basin sump of all silt and debris.

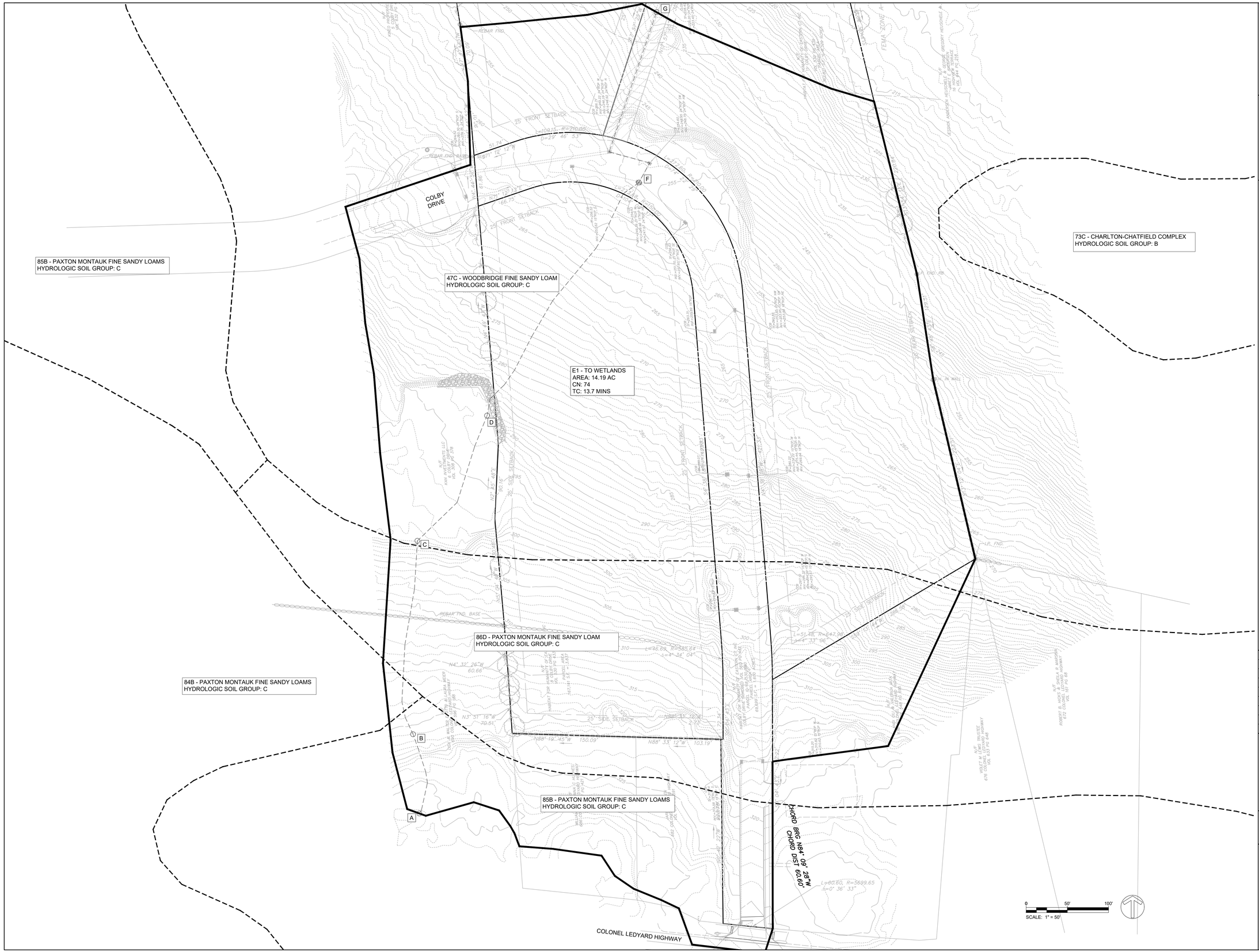
- **Temporary Stockpiles:** Inspect temporary stockpiles at the end of each workday to ensure that tarps are in place and secured. Temporary stockpiles that are expected to be inactive for more than 30 days should be temporarily seeded (see above).

After Construction

- **Driveway Sweeping:** At least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.
- **Catch Basins and Sumps:** Maintenance includes removal of trash from the grate and the sump, as well as sediment from the sump. They shall be inspected semi-annually and cleaned when the sump is one half full of sediment. One of the inspections shall be after the snow and ice removal season is over, and prior to the spring rainfall events. If the sumps is filled more than half-filled with sediment at the semi-annual inspections, they shall be inspected quarterly.
- **Landscaped Areas:** Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.
- **Detention Pond:** Inspect several times during the first few months to ensure that grass cover is established. Inspect the basin semi-annually and after major rain events for the first year, then annually after the first year. Trash should be removed as accumulated. Sediment building up should be removed when it's depth is greater than four (4) inches. Grass should be reseeded if the side slope or bottom exhibit erosion. Grass should be mowed once per month (depending on species) and should be cut to leave at least two (2) inches of height. Mowing should not occur when the ground is soft, to avoid rutting.
- **French Drain:** Inspect for sediment and debris build up on top of stone trench annually, if degradation of function is noticed and overflow flow is not contained within the drain, inspect pipe manually using a snake or camera equipment.

APPENDIX A

Existing Watershed Data



Prepared by:

benesch

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200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:

Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: 0725 500010.00
SCALE: 1" = 50'
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

EXISTING WATERSHED AREA MAP

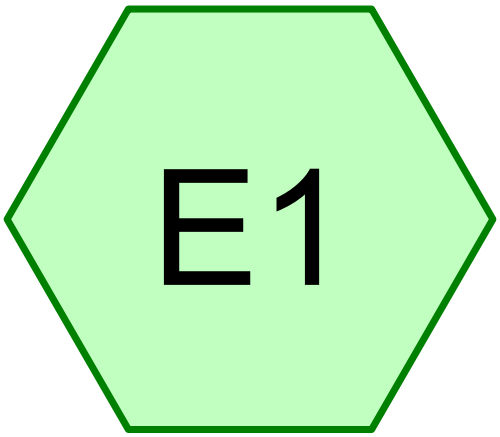
DRAWING NO.:

EWAM

Existing Watershed Cover Characteristics
Colby Drive Ledyard, CT
Project # 0725-500010.00

Watershed	Description	Total Area (AC)	Woods	Gravel	Impervious	CN	Tc (min)
			C	C			
			Good	W - ROW			
			70	89	98		
E1	**To Wetlands**	14.19	11.81	1.55	0.83	74	13.7

* 1.38 acres of gravel accounts for previously approved impervious surface discharge into existing detention basin



To Wetlands

Subcat Reach Pond Link

Routing Diagram for 0725-500010.00 EWAM
Prepared by Alfred Benesch & Company, Printed 8/29/2025
HydroCAD® 10.20-6a s/n 06318 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	NOAA10 24-hr	D	Default	24.00	1	3.46	2
2	10-year	NOAA 24-hr	D	Default	24.00	1	5.11	2
3	25-year	NOAA 24-hr	D	Default	24.00	1	6.15	2
4	50-year	NOAA 24-hr	D	Default	24.00	1	6.92	2
5	100-year	NOAA 24-hr	D	Default	24.00	1	7.74	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.550	89	Gravel roads, HSG C (E1)
0.830	98	Paved parking, HSG C (E1)
11.810	70	Woods, Good, HSG C (E1)
14.190	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
14.190	HSG C	E1
0.000	HSG D	
0.000	Other	
14.190		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	1.550	0.000	0.000	1.550	Gravel roads	E1
0.000	0.000	0.830	0.000	0.000	0.830	Paved parking	E1
0.000	0.000	11.810	0.000	0.000	11.810	Woods, Good	E1
0.000	**0.000**	**14.190**	**0.000**	**0.000**	**14.190**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	E1	0.00	0.00	257.0	0.0730	0.011	0.0	24.0	0.0	

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To Wetlands Runoff Area=14.190 ac 5.85% Impervious Runoff Depth=1.21"
Flow Length=1,118' Tc=13.7 min CN=74 Runoff=14.98 cfs 1.434 af

Total Runoff Area = 14.190 ac Runoff Volume = 1.434 af Average Runoff Depth = 1.21"
94.15% Pervious = 13.360 ac 5.85% Impervious = 0.830 ac

Summary for Subcatchment E1: To Wetlands

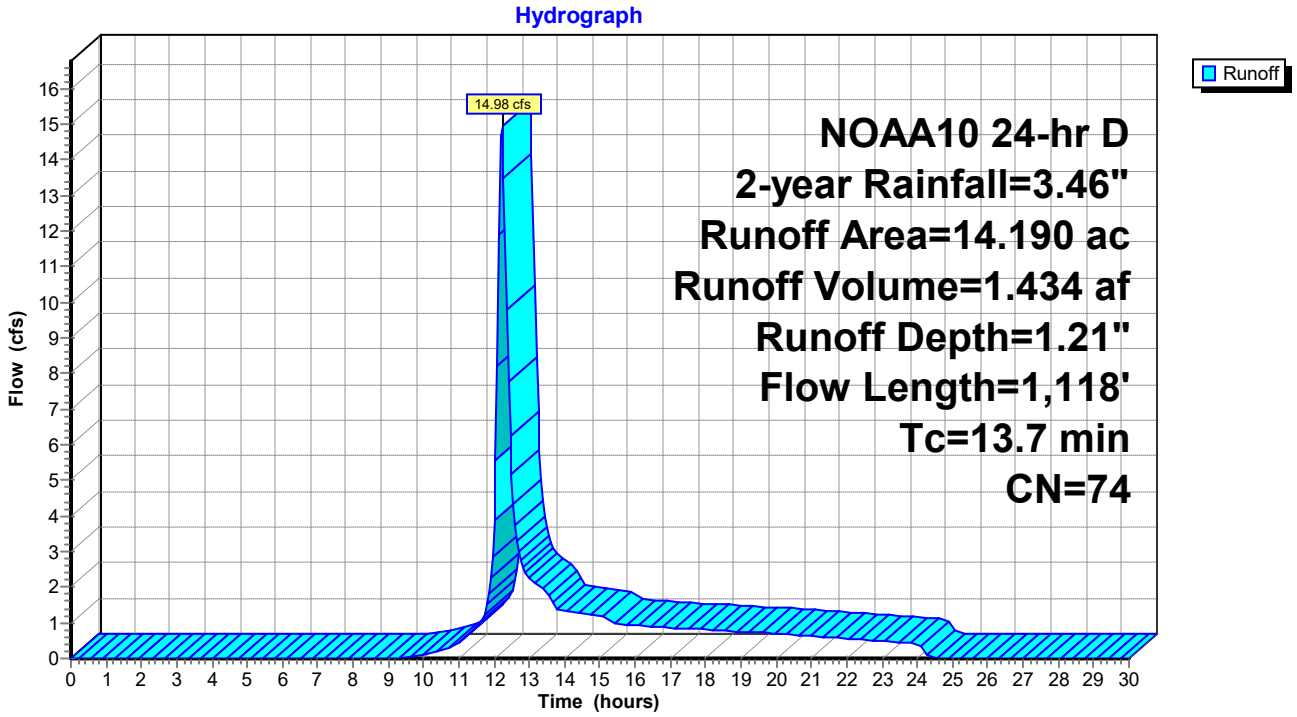
Runoff = 14.98 cfs @ 12.22 hrs, Volume= 1.434 af, Depth= 1.21"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA10 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
11.810	70	Woods, Good, HSG C
0.830	98	Paved parking, HSG C
1.550	89	Gravel roads, HSG C
14.190	74	Weighted Average
13.360		94.15% Pervious Area
0.830		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
1.1	343	0.1100	5.34		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	257	0.0730	22.99	72.24	**Pipe Channel, pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.7	1,118	Total			

Subcatchment E1: To Wetlands



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To Wetlands Runoff Area=14.190 ac 5.85% Impervious Runoff Depth=2.45"
Flow Length=1,118' Tc=13.7 min CN=74 Runoff=30.78 cfs 2.900 af

Total Runoff Area = 14.190 ac Runoff Volume = 2.900 af Average Runoff Depth = 2.45"
94.15% Pervious = 13.360 ac 5.85% Impervious = 0.830 ac

Summary for Subcatchment E1: To Wetlands

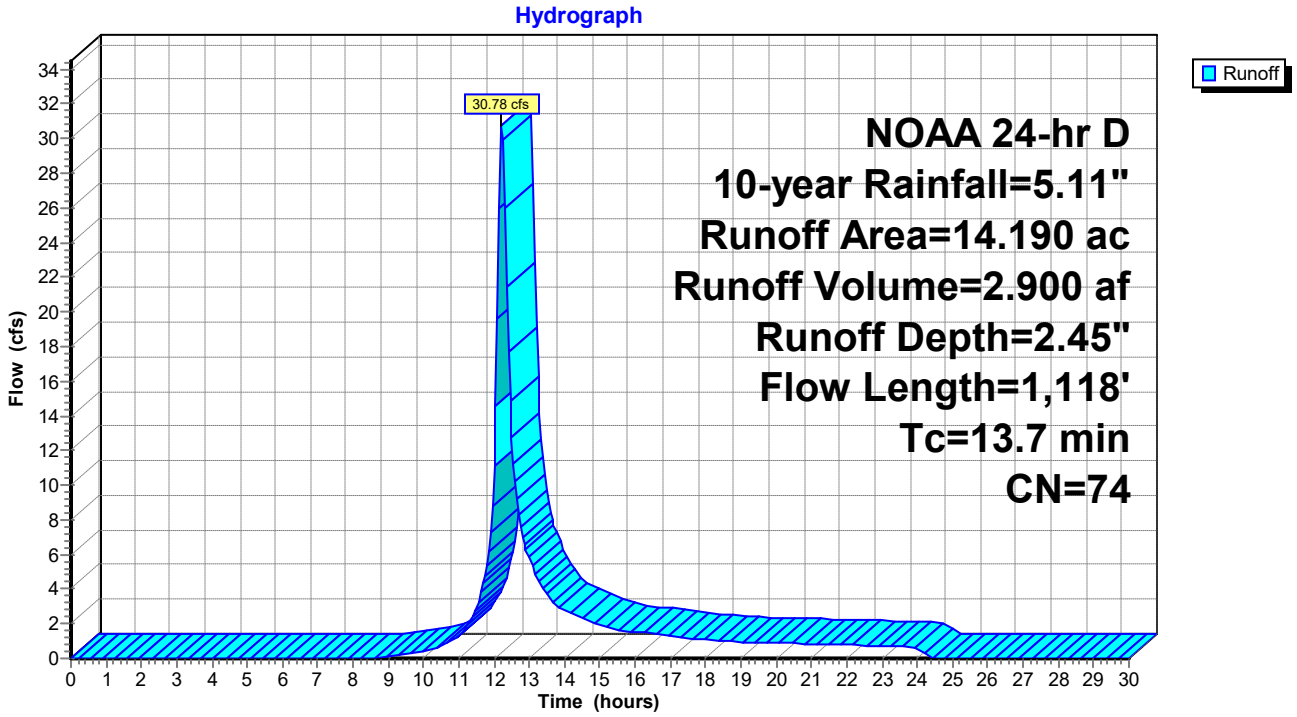
Runoff = 30.78 cfs @ 12.22 hrs, Volume= 2.900 af, Depth= 2.45"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
11.810	70	Woods, Good, HSG C
0.830	98	Paved parking, HSG C
1.550	89	Gravel roads, HSG C
14.190	74	Weighted Average
13.360		94.15% Pervious Area
0.830		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
1.1	343	0.1100	5.34		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	257	0.0730	22.99	72.24	**Pipe Channel, pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.7	1,118	Total			

Subcatchment E1: To Wetlands



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To Wetlands Runoff Area=14.190 ac 5.85% Impervious Runoff Depth=3.31"
Flow Length=1,118' Tc=13.7 min CN=74 Runoff=41.66 cfs 3.916 af

Total Runoff Area = 14.190 ac Runoff Volume = 3.916 af Average Runoff Depth = 3.31"
94.15% Pervious = 13.360 ac 5.85% Impervious = 0.830 ac

Summary for Subcatchment E1: To Wetlands

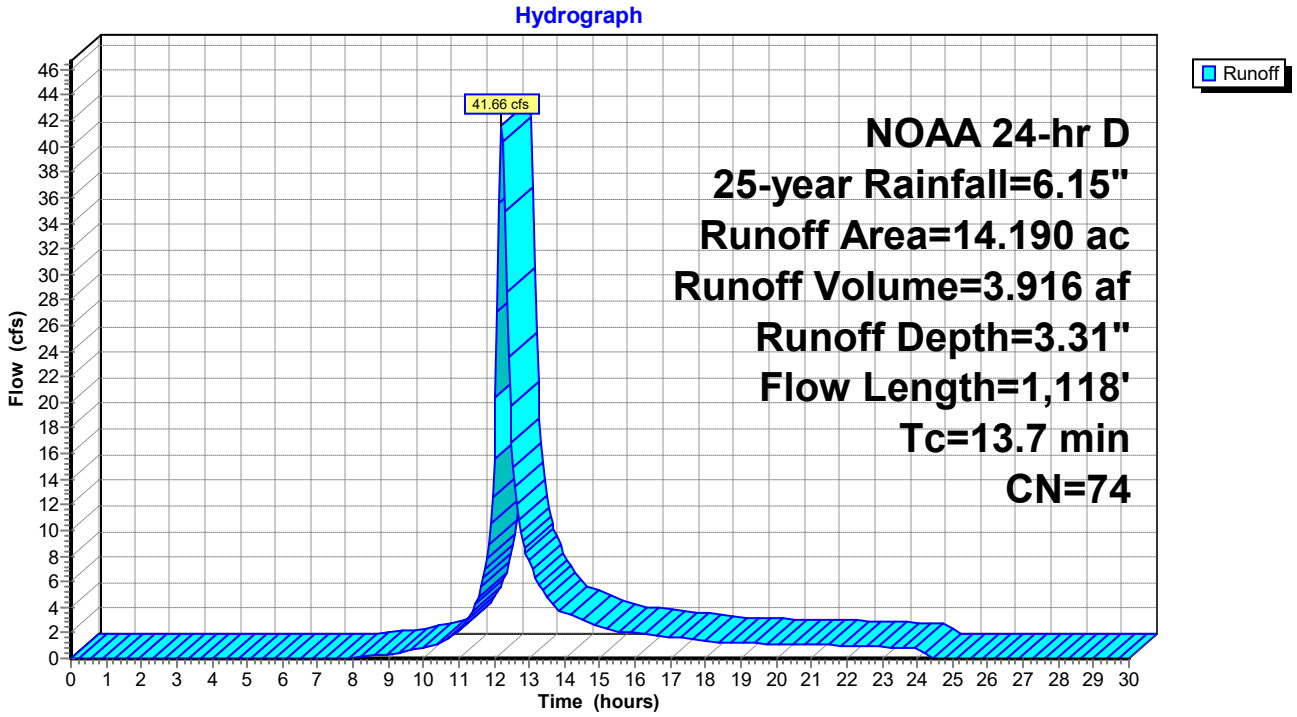
Runoff = 41.66 cfs @ 12.22 hrs, Volume= 3.916 af, Depth= 3.31"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
11.810	70	Woods, Good, HSG C
0.830	98	Paved parking, HSG C
1.550	89	Gravel roads, HSG C
14.190	74	Weighted Average
13.360		94.15% Pervious Area
0.830		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
1.1	343	0.1100	5.34		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	257	0.0730	22.99	72.24	**Pipe Channel, pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.7	1,118	Total			

Subcatchment E1: To Wetlands



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To Wetlands Runoff Area=14.190 ac 5.85% Impervious Runoff Depth=3.97"
Flow Length=1,118' Tc=13.7 min CN=74 Runoff=49.91 cfs 4.697 af

Total Runoff Area = 14.190 ac Runoff Volume = 4.697 af Average Runoff Depth = 3.97"
94.15% Pervious = 13.360 ac 5.85% Impervious = 0.830 ac

Summary for Subcatchment E1: To Wetlands

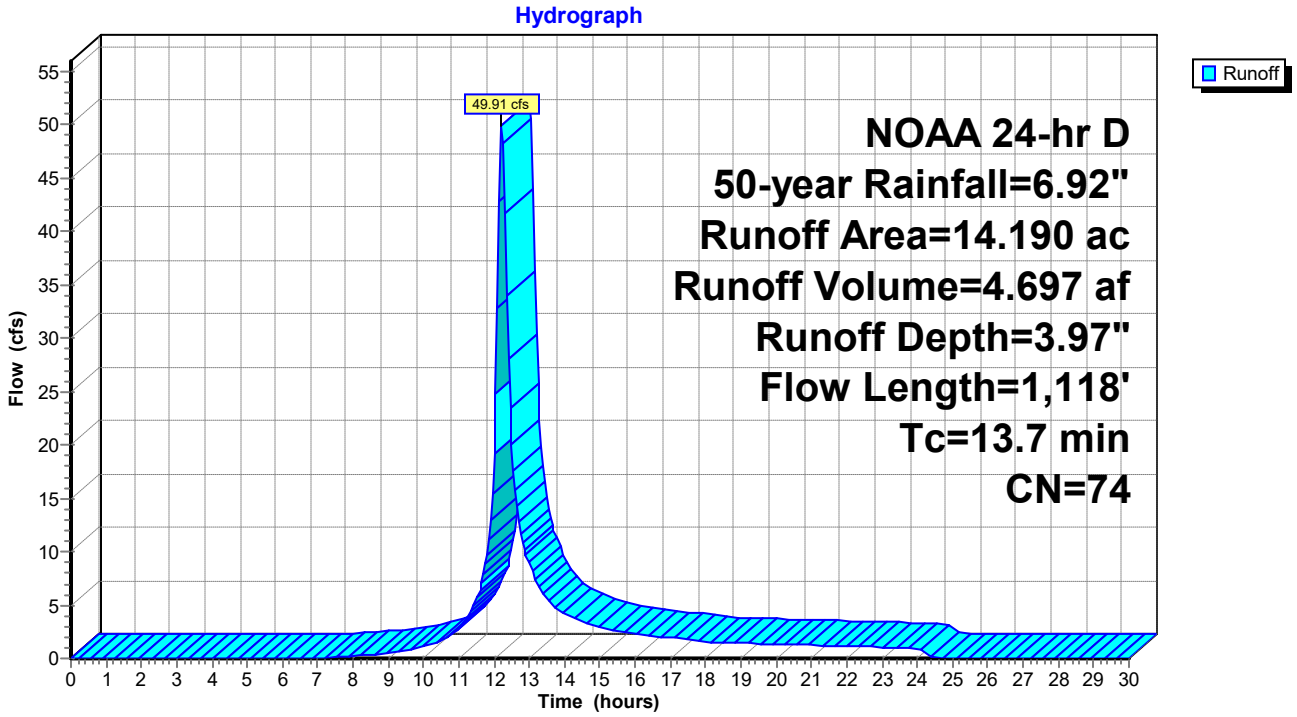
Runoff = 49.91 cfs @ 12.22 hrs, Volume= 4.697 af, Depth= 3.97"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
11.810	70	Woods, Good, HSG C
0.830	98	Paved parking, HSG C
1.550	89	Gravel roads, HSG C
14.190	74	Weighted Average
13.360		94.15% Pervious Area
0.830		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
1.1	343	0.1100	5.34		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	257	0.0730	22.99	72.24	**Pipe Channel, pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.7	1,118	Total			

Subcatchment E1: To Wetlands



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: To Wetlands Runoff Area=14.190 ac 5.85% Impervious Runoff Depth=4.69"
Flow Length=1,118' Tc=13.7 min CN=74 Runoff=58.82 cfs 5.550 af

Total Runoff Area = 14.190 ac Runoff Volume = 5.550 af Average Runoff Depth = 4.69"
94.15% Pervious = 13.360 ac 5.85% Impervious = 0.830 ac

Summary for Subcatchment E1: To Wetlands

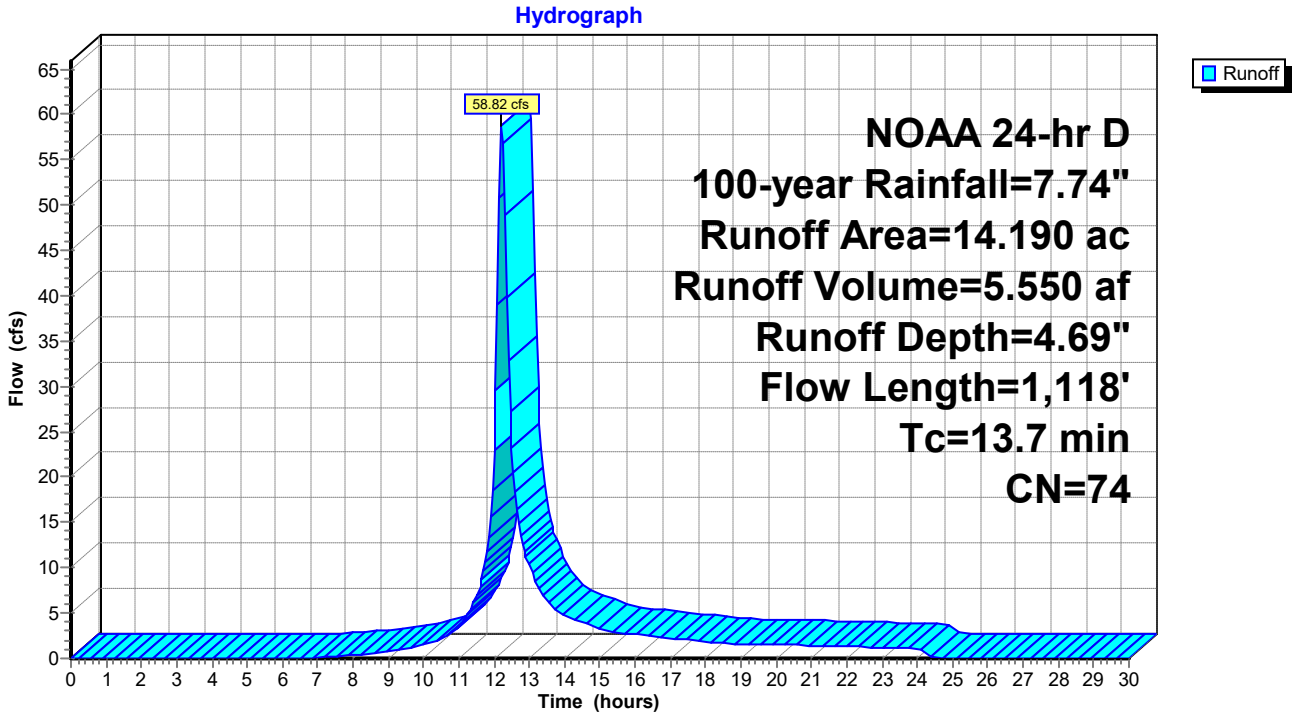
Runoff = 58.82 cfs @ 12.22 hrs, Volume= 5.550 af, Depth= 4.69"
Routed to nonexistent node TS

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
11.810	70	Woods, Good, HSG C
0.830	98	Paved parking, HSG C
1.550	89	Gravel roads, HSG C
14.190	74	Weighted Average
13.360		94.15% Pervious Area
0.830		5.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
1.1	343	0.1100	5.34		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	257	0.0730	22.99	72.24	**Pipe Channel, pipe** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.7	1,118	Total			

Subcatchment E1: To Wetlands



APPENDIX B

Proposed Watershed Data

47C - WOODBRIDGE FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

73C - CHARLTON-CHATFIELD COMPLEX
HYDROLOGIC SOIL GROUP: B

84B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

86D - PAXTON AND MONTAUK FINE SANDY LOAM
HYDROLOGIC SOIL GROUP: C

85B - PAXTON MONTAUK FINE SANDY LOAMS
HYDROLOGIC SOIL GROUP: C

P1-2 - TO DETENTION POND
AREA: 8.15 AC
CN: 80
TC: 13.3 MINS

P1-1 - DIRECT TO WETLANDS
AREA: 6.04 AC
CN: 77
TC: 12.1 MINS

COLBY DRIVE

SCALE: 1" = 50'

Prepared by:

benesch

Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:

Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: 0725 500010.00
SCALE: 1" = 50'
DATE: 12/20/2024

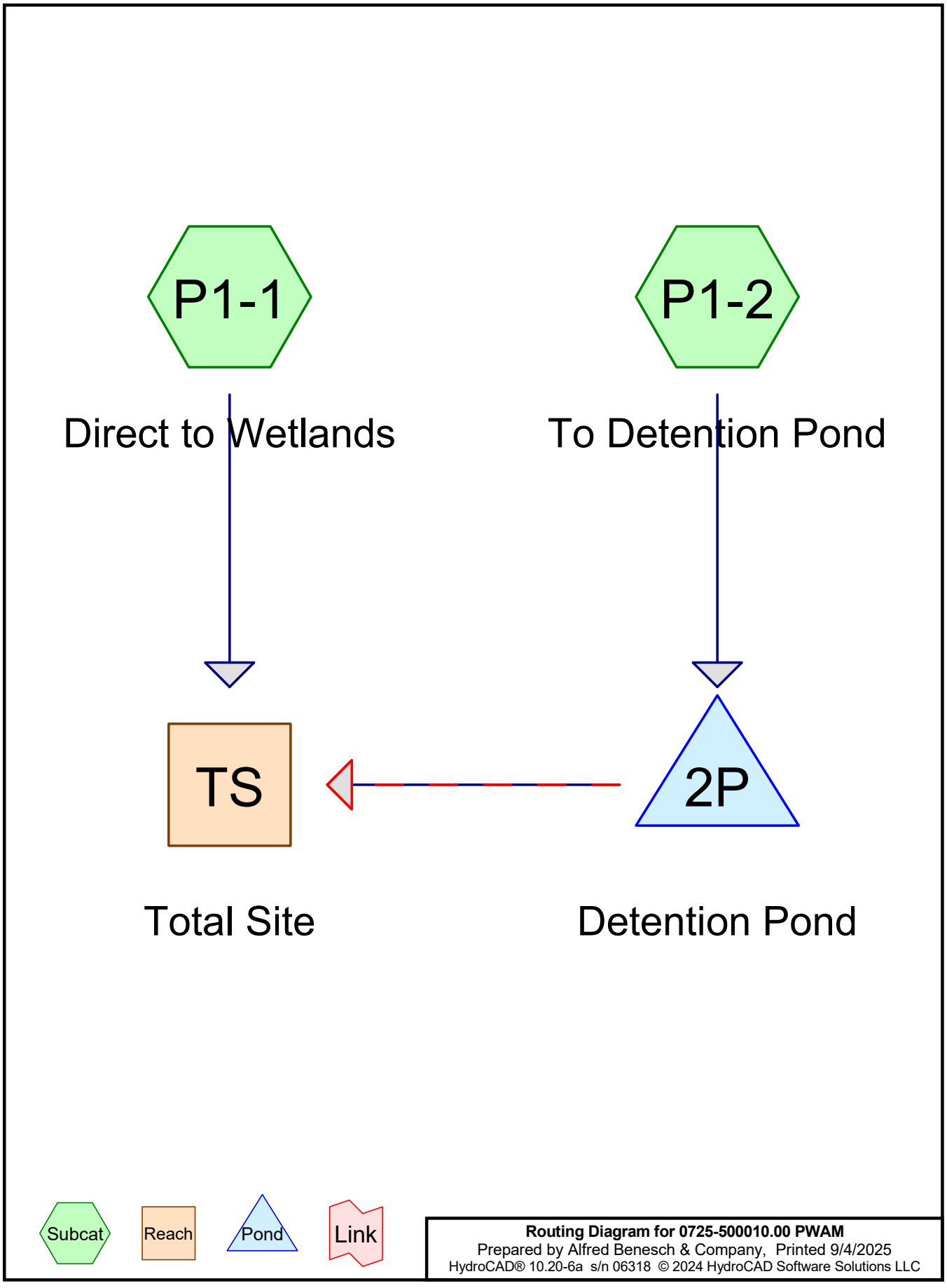
DRAWN BY: CLM
CHECKED BY: WGW

PROPOSED WATERSHED AREA MAP

DRAWING NO.:
PWAM

Proposed Watershed Cover Characteristics
Colby Drive Ledyard, CT
Project # 0725-500010.00

Watershed	Description	Total Area (AC)	Woods	Grass	Impervious	CN	Tc (min)
			C	C			
			Good	good			
			70	74	98		
P1-1	**Direct to Wetlands**	6.04	2.68	2.15	1.22	77	12.1
P1-2	**To Detention Pond**	8.15	3.24	2.49	2.42	80	13.3
TS	**Total Site**	14.19	5.92	4.64	3.63	79	



Routing Diagram for 0725-500010.00 PWAM
Prepared by Alfred Benesch & Company, Printed 9/4/2025
HydroCAD® 10.20-6a s/n 06318 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	NOAA 24-hr	D	Default	24.00	1	3.46	2
2	10-year	NOAA 24-hr	D	Default	24.00	1	5.11	2
3	25-year	NOAA 24-hr	D	Default	24.00	1	6.15	2
4	50-year	NOAA 24-hr	D	Default	24.00	1	6.92	2
5	100-year	NOAA 24-hr	D	Default	24.00	1	7.74	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.640	74	>75% Grass cover, Good, HSG C (P1-1, P1-2)
3.640	98	Paved parking, HSG C (P1-1, P1-2)
5.920	70	Woods, Good, HSG C (P1-1, P1-2)
14.200	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
14.200	HSG C	P1-1, P1-2
0.000	HSG D	
0.000	Other	
14.200		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	4.640	0.000	0.000	4.640	>75% Grass cover, Good	P1-1, P1-2
0.000	0.000	3.640	0.000	0.000	3.640	Paved parking	P1-1, P1-2
0.000	0.000	5.920	0.000	0.000	5.920	Woods, Good	P1-1, P1-2
0.000	**0.000**	**14.200**	**0.000**	**0.000**	**14.200**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	P1-2	0.00	0.00	250.0	0.0600	0.011	0.0	15.0	0.0	
2	P1-2	0.00	0.00	106.0	0.0058	0.011	0.0	24.0	0.0	
3	2P	254.60	252.50	74.0	0.0284	0.011	0.0	24.0	0.0	

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1-1: Direct to Wetlands Runoff Area=6.050 ac 20.17% Impervious Runoff Depth=1.40"
Flow Length=409' Tc=12.1 min CN=77 Runoff=7.83 cfs 0.706 af

Subcatchment P1-2: To Detention Pond Runoff Area=8.150 ac 29.69% Impervious Runoff Depth=1.60"
Flow Length=966' Tc=13.3 min CN=80 Runoff=11.70 cfs 1.090 af

Reach TS: Total Site Inflow=7.83 cfs 1.301 af
Outflow=7.83 cfs 1.301 af

Pond 2P: Detention Pond Peak Elev=256.91' Storage=22,022 cf Inflow=11.70 cfs 1.090 af
Discarded=0.05 cfs 0.070 af Primary=2.51 cfs 0.595 af Secondary=0.00 cfs 0.000 af Outflow=2.56 cfs 0.664 af

Total Runoff Area = 14.200 ac Runoff Volume = 1.796 af Average Runoff Depth = 1.52"
74.37% Pervious = 10.560 ac 25.63% Impervious = 3.640 ac

Summary for Subcatchment P1-1: Direct to Wetlands

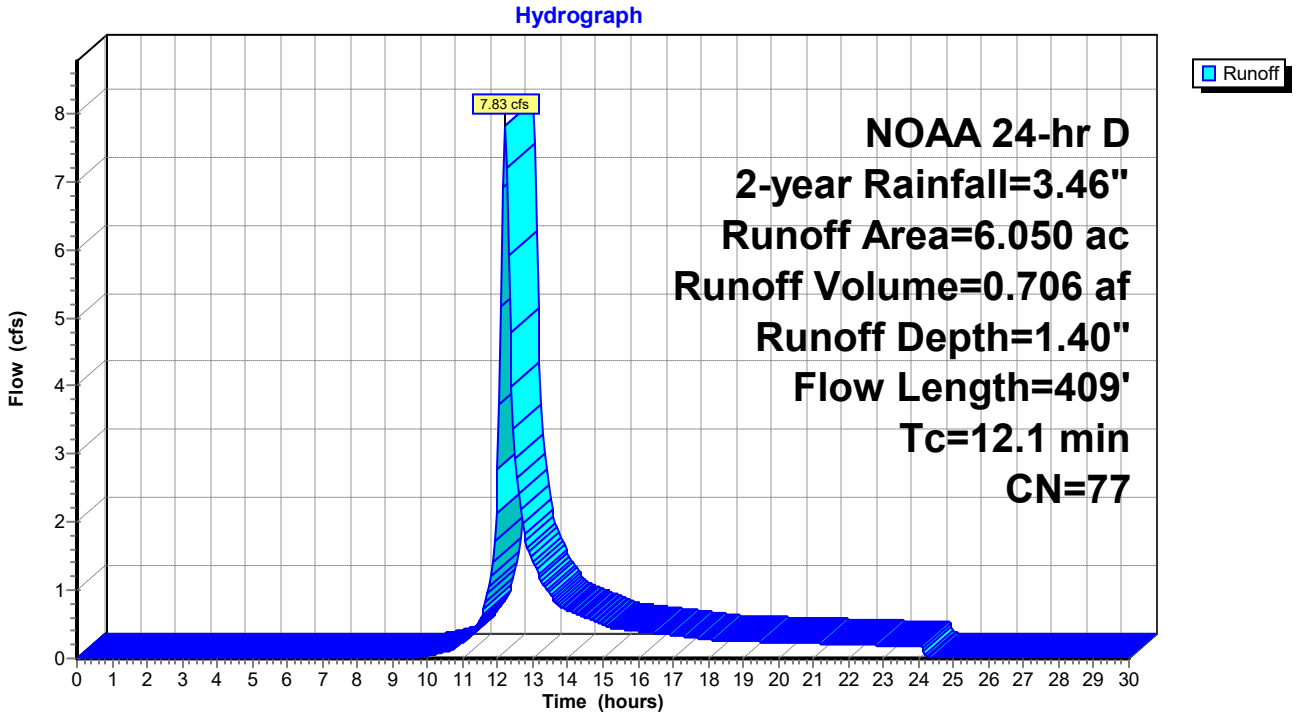
Runoff = 7.83 cfs @ 12.20 hrs, Volume= 0.706 af, Depth= 1.40"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
2.680	70	Woods, Good, HSG C
2.150	74	>75% Grass cover, Good, HSG C
1.220	98	Paved parking, HSG C
6.050	77	Weighted Average
4.830		79.83% Pervious Area
1.220		20.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0900	0.15		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1520	6.28		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.1900	7.02		**Shallow Concentrated Flow, woods** Unpaved Kv= 16.1 fps
0.5	174	0.1290	5.78		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
12.1	409	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

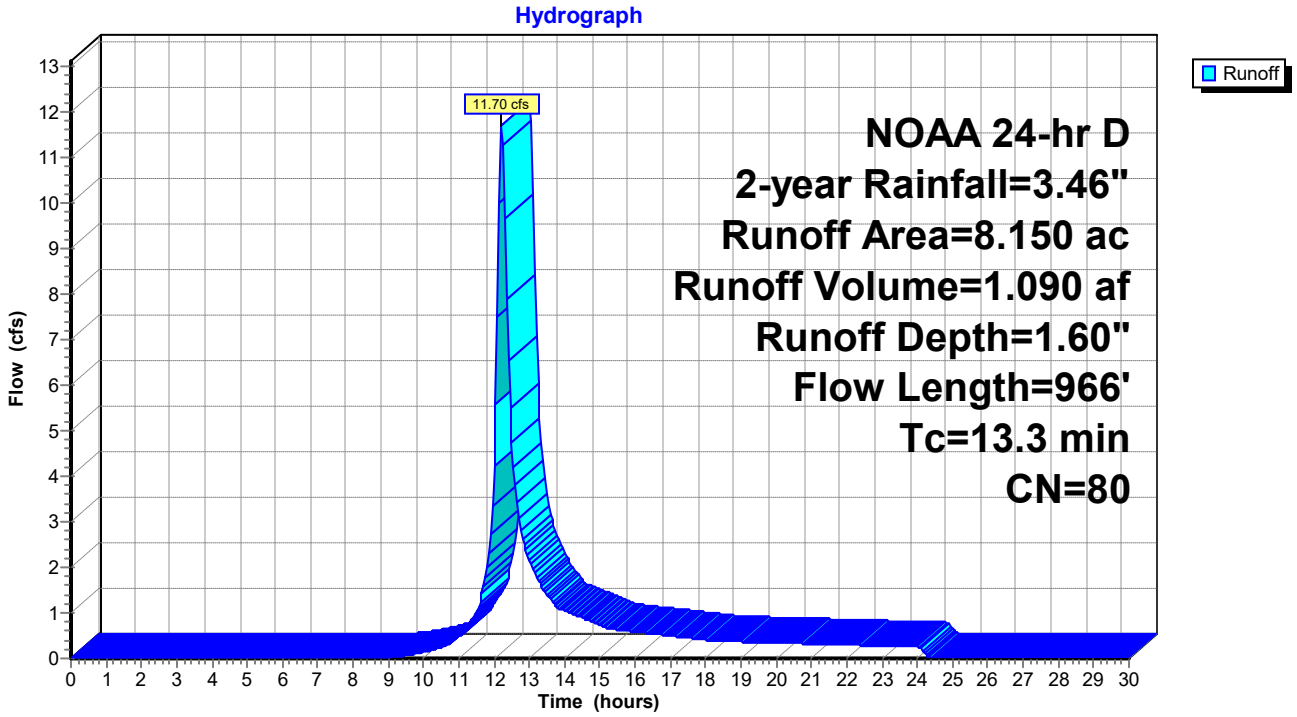
Runoff = 11.70 cfs @ 12.22 hrs, Volume= 1.090 af, Depth= 1.60"
Routed to Pond 2P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-year Rainfall=3.46"

Area (ac)	CN	Description
3.240	70	Woods, Good, HSG C
2.490	74	>75% Grass cover, Good, HSG C
2.420	98	Paved parking, HSG C
8.150	80	Weighted Average
5.730		70.31% Pervious Area
2.420		29.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
0.1	48	0.2520	8.08		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	44	0.0400	3.22		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.3	250	0.0600	15.24	18.70	**Pipe Channel, pipe to detention pond** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
0.3	106	0.0058	6.48	20.36	**Pipe Channel, pipe to detention pond** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.3	966	Total			

Subcatchment P1-2: To Detention Pond



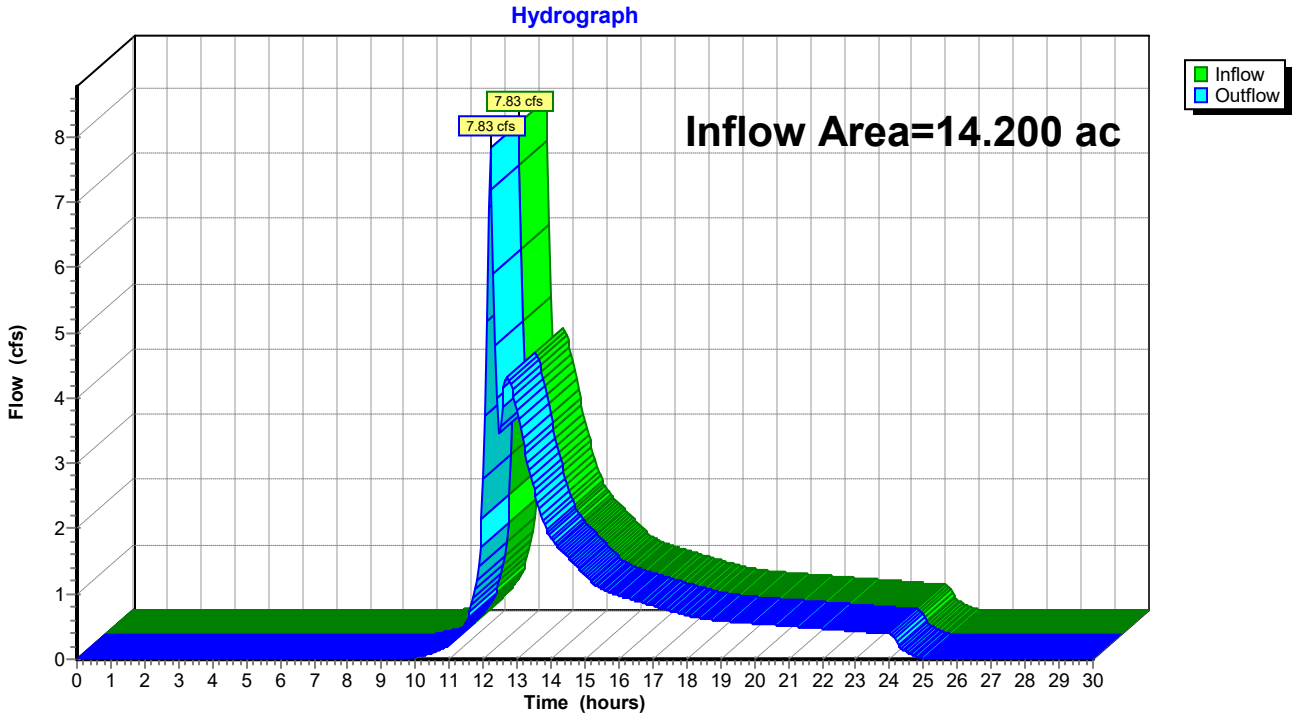
Summary for Reach TS: Total Site

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.200 ac, 25.63% Impervious, Inflow Depth = 1.10" for 2-year event
Inflow = 7.83 cfs @ 12.20 hrs, Volume= 1.301 af
Outflow = 7.83 cfs @ 12.20 hrs, Volume= 1.301 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 2P: Detention Pond

Inflow Area = 8.150 ac, 29.69% Impervious, Inflow Depth = 1.60" for 2-year event
Inflow = 11.70 cfs @ 12.22 hrs, Volume= 1.090 af
Outflow = 2.56 cfs @ 12.83 hrs, Volume= 0.664 af, Atten= 78%, Lag= 36.6 min
Discarded = 0.05 cfs @ 12.83 hrs, Volume= 0.070 af
Primary = 2.51 cfs @ 12.83 hrs, Volume= 0.595 af
Routed to Reach TS : Total Site
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 256.91' @ 12.83 hrs Surf.Area= 6,899 sf Storage= 22,022 cf

Plug-Flow detention time= 257.8 min calculated for 0.664 af (61% of inflow)
Center-of-Mass det. time= 136.6 min (993.0 - 856.4)

Volume	Invert	Avail.Storage	Storage Description
#1	250.00'	49,076 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.00	624	0	0
251.00	1,125	875	875
252.00	1,687	1,406	2,281
253.00	2,459	2,073	4,354
254.00	3,344	2,902	7,255
255.00	4,361	3,853	11,108
256.00	5,885	5,123	16,231
257.00	7,004	6,445	22,675
258.00	8,170	7,587	30,262
259.00	9,393	8,782	39,044
260.00	10,672	10,033	49,076

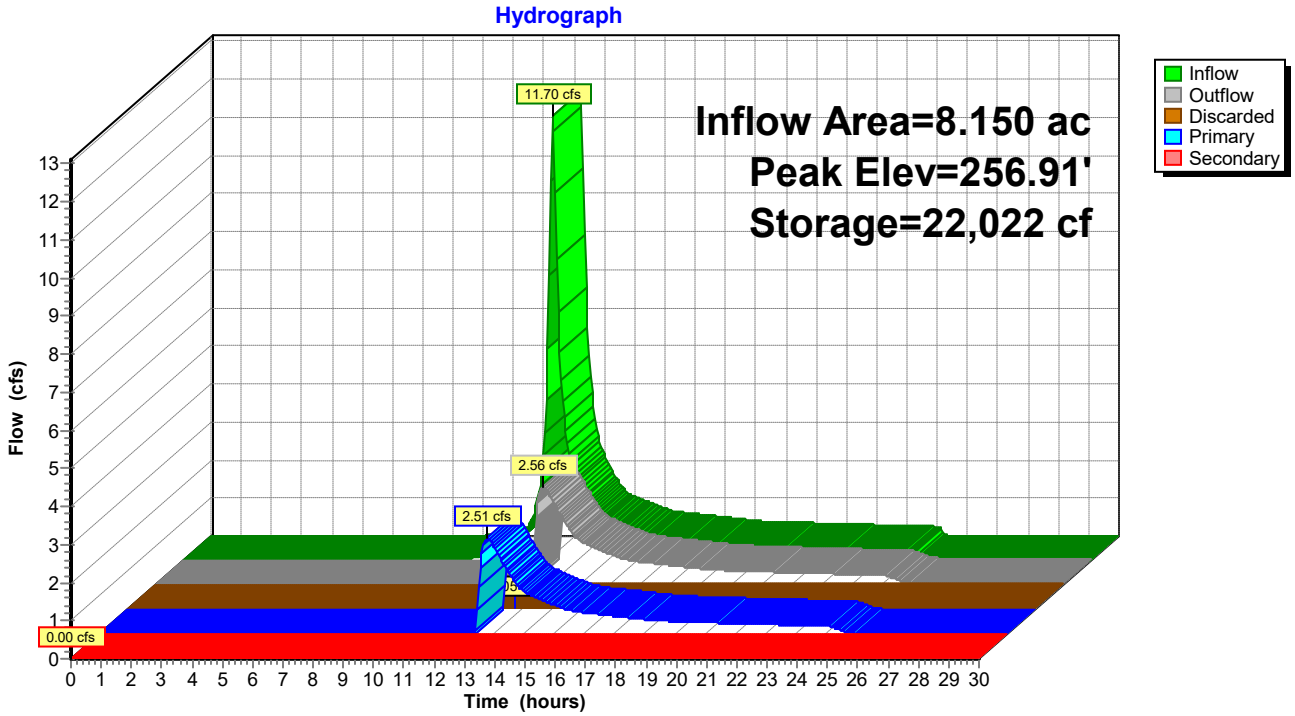
Device	Routing	Invert	Outlet Devices
#1	Primary	254.60'	**24.0" Round 74' - 24" HDPE @ 2.84% Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 254.60' / 252.50' S= 0.0284 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	256.50'	**36.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	257.60'	**40.0" x 33.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	250.00'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.00'
#5	Secondary	259.09'	**20.8" W x 32.8" H Vert. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.05 cfs @ 12.83 hrs HW=256.91' (Free Discharge)
└**4=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=2.49 cfs @ 12.83 hrs HW=256.91' (Free Discharge)
└**1=74' - 24" HDPE @ 2.84% Culvert** (Passes 2.49 cfs of 15.25 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 2.49 cfs @ 2.04 fps)
  └**3=Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=250.00' (Free Discharge)
└**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 2P: Detention Pond



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1-1: Direct to Wetlands Runoff Area=6.050 ac 20.17% Impervious Runoff Depth=2.72"
Flow Length=409' Tc=12.1 min CN=77 Runoff=15.36 cfs 1.369 af

Subcatchment P1-2: To Detention Pond Runoff Area=8.150 ac 29.69% Impervious Runoff Depth=2.99"
Flow Length=966' Tc=13.3 min CN=80 Runoff=21.83 cfs 2.030 af

Reach TS: Total Site Inflow=25.98 cfs 2.898 af
Outflow=25.98 cfs 2.898 af

Pond 2P: Detention Pond Peak Elev=257.82' Storage=28,794 cf Inflow=21.83 cfs 2.030 af
Discarded=0.06 cfs 0.074 af Primary=15.40 cfs 1.530 af Secondary=0.00 cfs 0.000 af Outflow=15.46 cfs 1.603 af

Total Runoff Area = 14.200 ac Runoff Volume = 3.399 af Average Runoff Depth = 2.87"
74.37% Pervious = 10.560 ac 25.63% Impervious = 3.640 ac

Summary for Subcatchment P1-1: Direct to Wetlands

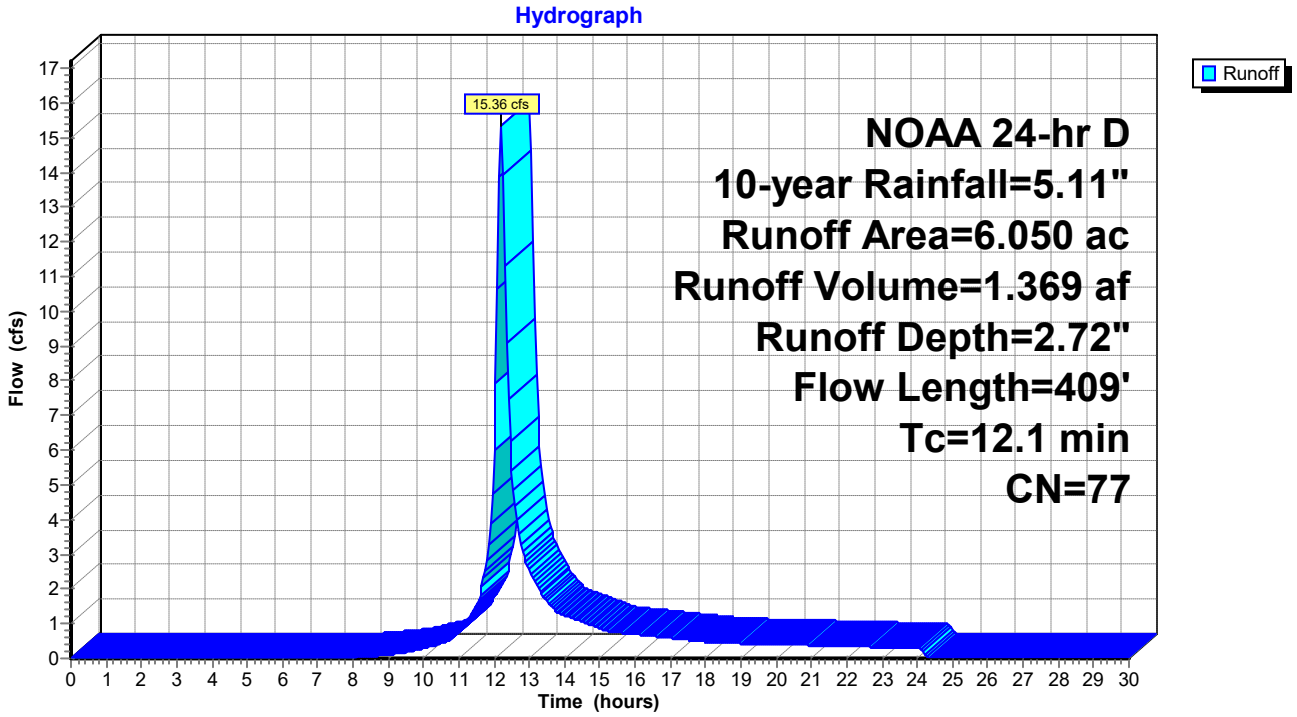
Runoff = 15.36 cfs @ 12.20 hrs, Volume= 1.369 af, Depth= 2.72"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
2.680	70	Woods, Good, HSG C
2.150	74	>75% Grass cover, Good, HSG C
1.220	98	Paved parking, HSG C
6.050	77	Weighted Average
4.830		79.83% Pervious Area
1.220		20.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0900	0.15		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1520	6.28		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.1900	7.02		**Shallow Concentrated Flow, woods** Unpaved Kv= 16.1 fps
0.5	174	0.1290	5.78		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
12.1	409	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

[47] Hint: Peak is 117% of capacity of segment #6
[47] Hint: Peak is 107% of capacity of segment #7

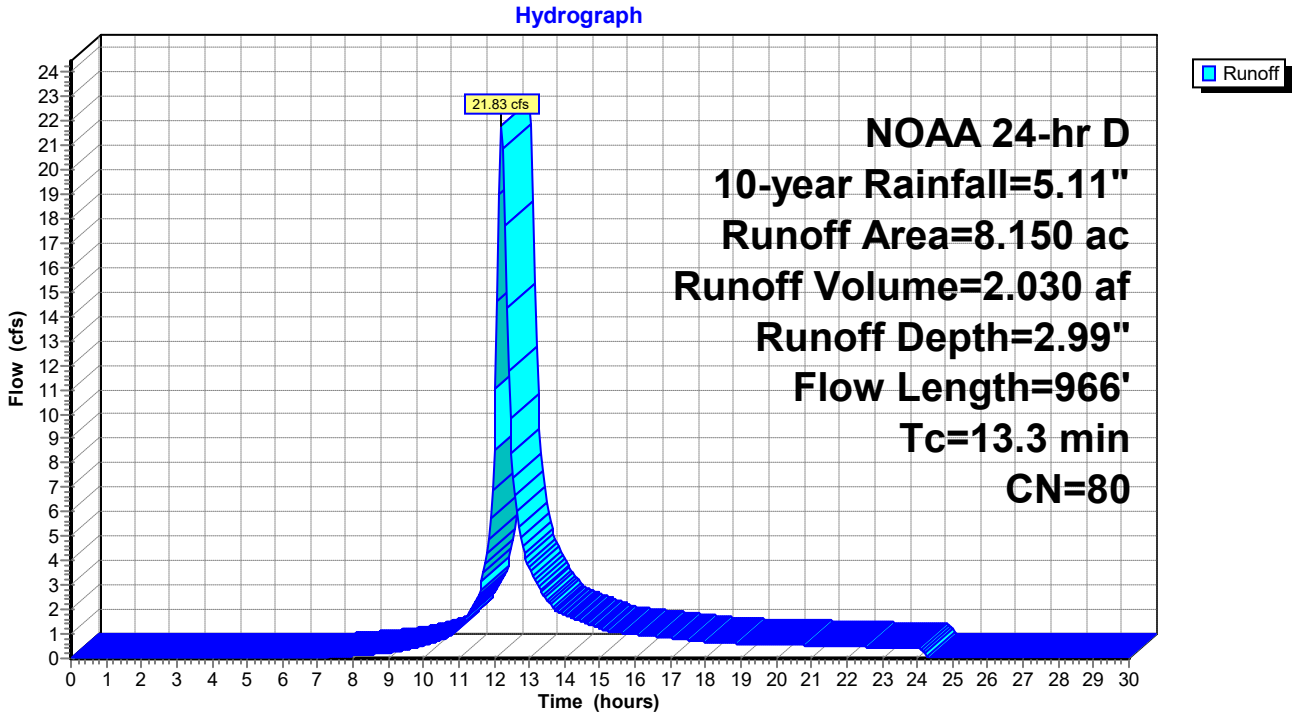
Runoff = 21.83 cfs @ 12.21 hrs, Volume= 2.030 af, Depth= 2.99"
Routed to Pond 2P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-year Rainfall=5.11"

Area (ac)	CN	Description
3.240	70	Woods, Good, HSG C
2.490	74	>75% Grass cover, Good, HSG C
2.420	98	Paved parking, HSG C
8.150	80	Weighted Average
5.730		70.31% Pervious Area
2.420		29.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
0.1	48	0.2520	8.08		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	44	0.0400	3.22		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.3	250	0.0600	15.24	18.70	**Pipe Channel, pipe to detention pond** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
0.3	106	0.0058	6.48	20.36	**Pipe Channel, pipe to detention pond** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.3	966	Total			

Subcatchment P1-2: To Detention Pond



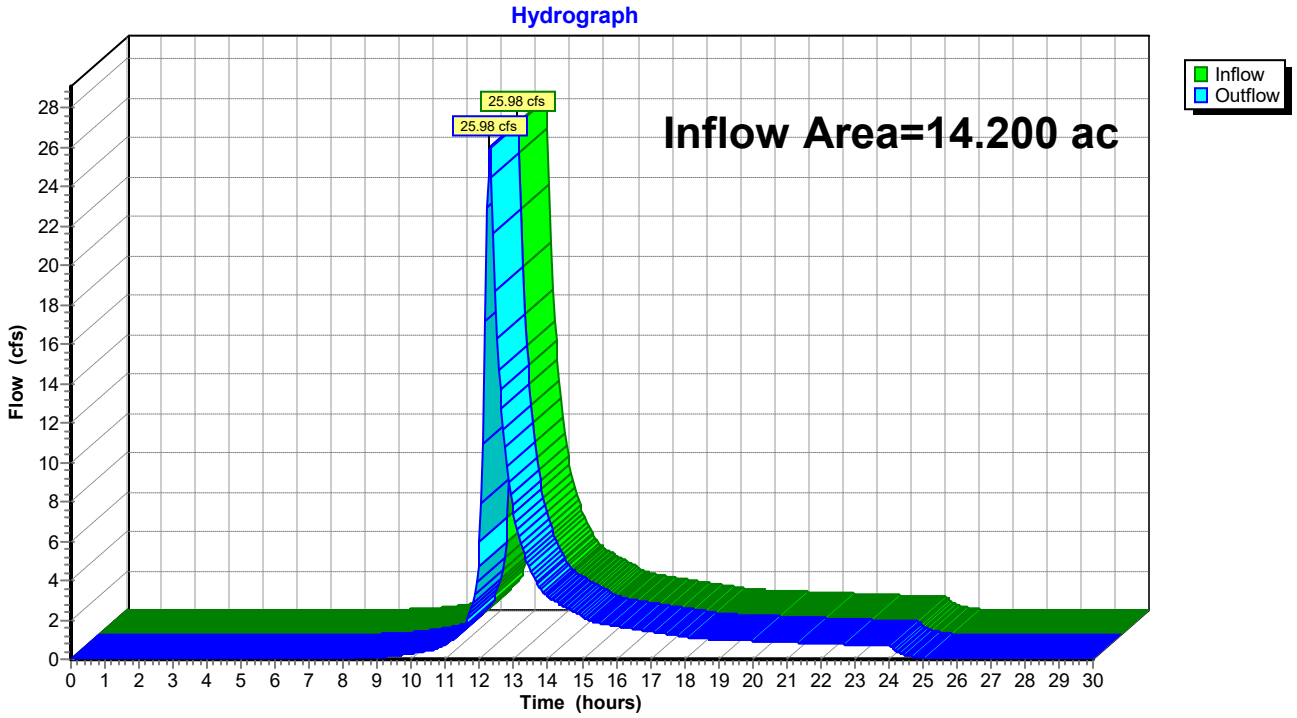
Summary for Reach TS: Total Site

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.200 ac, 25.63% Impervious, Inflow Depth = 2.45" for 10-year event
Inflow = 25.98 cfs @ 12.30 hrs, Volume= 2.898 af
Outflow = 25.98 cfs @ 12.30 hrs, Volume= 2.898 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 2P: Detention Pond

Inflow Area = 8.150 ac, 29.69% Impervious, Inflow Depth = 2.99" for 10-year event
Inflow = 21.83 cfs @ 12.21 hrs, Volume= 2.030 af
Outflow = 15.46 cfs @ 12.34 hrs, Volume= 1.603 af, Atten= 29%, Lag= 7.8 min
Discarded = 0.06 cfs @ 12.34 hrs, Volume= 0.074 af
Primary = 15.40 cfs @ 12.34 hrs, Volume= 1.530 af
Routed to Reach TS : Total Site
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 257.82' @ 12.34 hrs Surf.Area= 7,958 sf Storage= 28,794 cf

Plug-Flow detention time= 157.0 min calculated for 1.603 af (79% of inflow)
Center-of-Mass det. time= 70.7 min (907.2 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1	250.00'	49,076 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.00	624	0	0
251.00	1,125	875	875
252.00	1,687	1,406	2,281
253.00	2,459	2,073	4,354
254.00	3,344	2,902	7,255
255.00	4,361	3,853	11,108
256.00	5,885	5,123	16,231
257.00	7,004	6,445	22,675
258.00	8,170	7,587	30,262
259.00	9,393	8,782	39,044
260.00	10,672	10,033	49,076

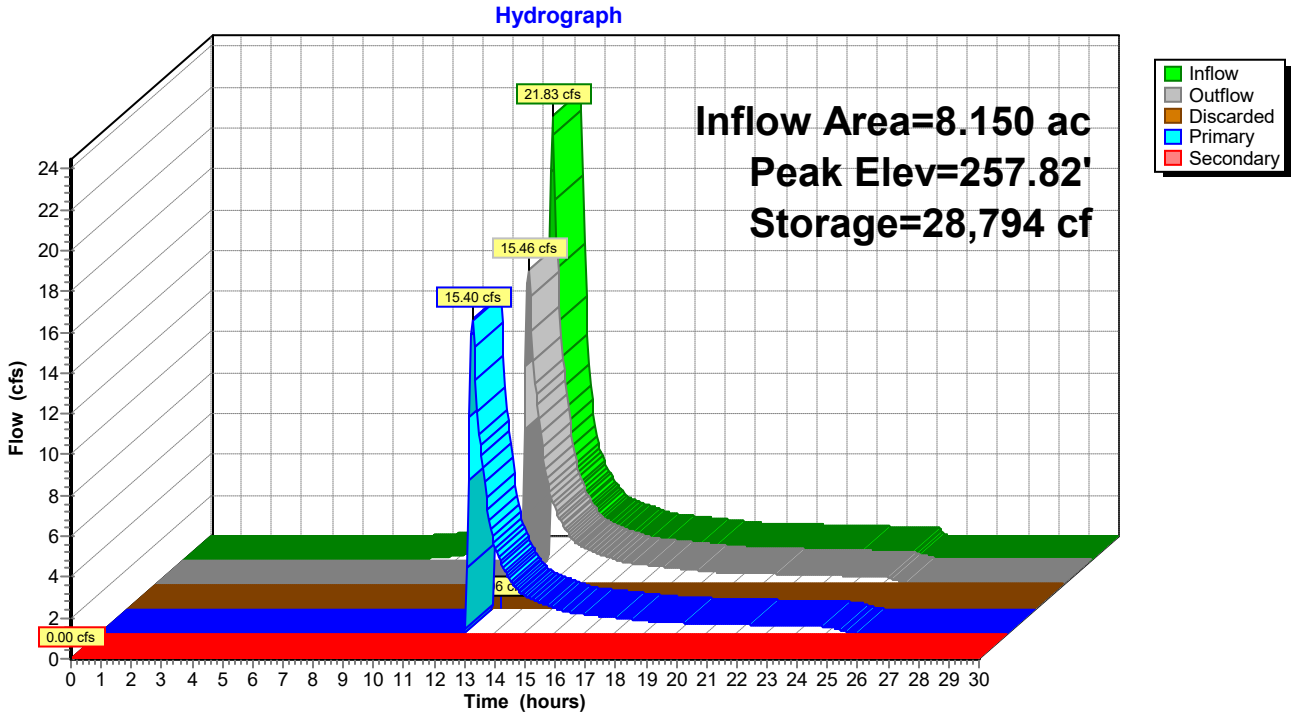
Device	Routing	Invert	Outlet Devices
#1	Primary	254.60'	**24.0" Round 74' - 24" HDPE @ 2.84% Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 254.60' / 252.50' S= 0.0284 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	256.50'	**36.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	257.60'	**40.0" x 33.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	250.00'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.00'
#5	Secondary	259.09'	**20.8" W x 32.8" H Vert. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 12.34 hrs HW=257.81' (Free Discharge)
└**4=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=15.24 cfs @ 12.34 hrs HW=257.81' (Free Discharge)
└**1=74' - 24" HDPE @ 2.84% Culvert** (Passes 15.24 cfs of 19.86 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 11.30 cfs @ 4.52 fps)
  └**3=Grate** (Weir Controls 3.95 cfs @ 1.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=250.00' (Free Discharge)
└**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 2P: Detention Pond



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1-1: Direct to Wetlands Runoff Area=6.050 ac 20.17% Impervious Runoff Depth=3.61"
Flow Length=409' Tc=12.1 min CN=77 Runoff=20.37 cfs 1.820 af

Subcatchment P1-2: To Detention Pond Runoff Area=8.150 ac 29.69% Impervious Runoff Depth=3.92"
Flow Length=966' Tc=13.3 min CN=80 Runoff=28.44 cfs 2.660 af

Reach TS: Total Site Inflow=41.15 cfs 3.977 af
Outflow=41.15 cfs 3.977 af

Pond 2P: Detention Pond Peak Elev=258.19' Storage=31,873 cf Inflow=28.44 cfs 2.660 af
Discarded=0.06 cfs 0.077 af Primary=21.50 cfs 2.157 af Secondary=0.00 cfs 0.000 af Outflow=21.56 cfs 2.233 af

Total Runoff Area = 14.200 ac Runoff Volume = 4.480 af Average Runoff Depth = 3.79"
74.37% Pervious = 10.560 ac 25.63% Impervious = 3.640 ac

Summary for Subcatchment P1-1: Direct to Wetlands

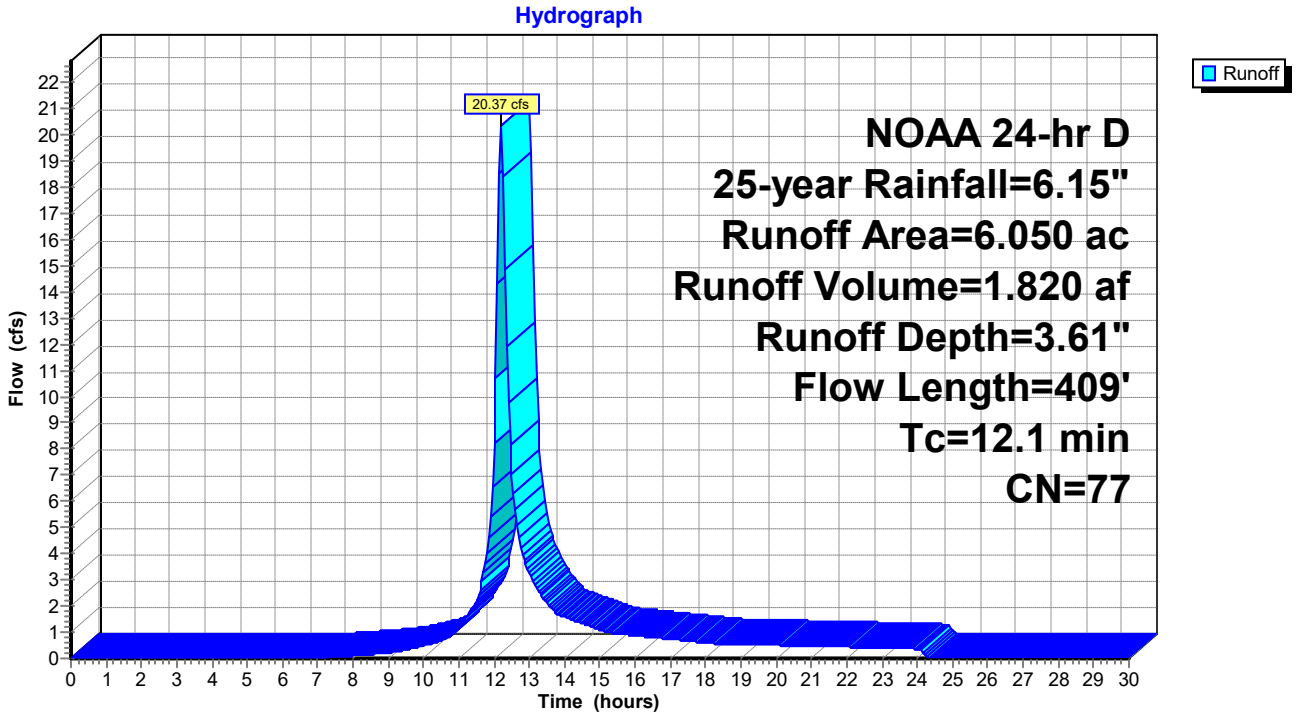
Runoff = 20.37 cfs @ 12.20 hrs, Volume= 1.820 af, Depth= 3.61"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
2.680	70	Woods, Good, HSG C
2.150	74	>75% Grass cover, Good, HSG C
1.220	98	Paved parking, HSG C
6.050	77	Weighted Average
4.830		79.83% Pervious Area
1.220		20.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0900	0.15		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1520	6.28		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.1900	7.02		**Shallow Concentrated Flow, woods** Unpaved Kv= 16.1 fps
0.5	174	0.1290	5.78		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
12.1	409	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

[47] Hint: Peak is 152% of capacity of segment #6
[47] Hint: Peak is 140% of capacity of segment #7

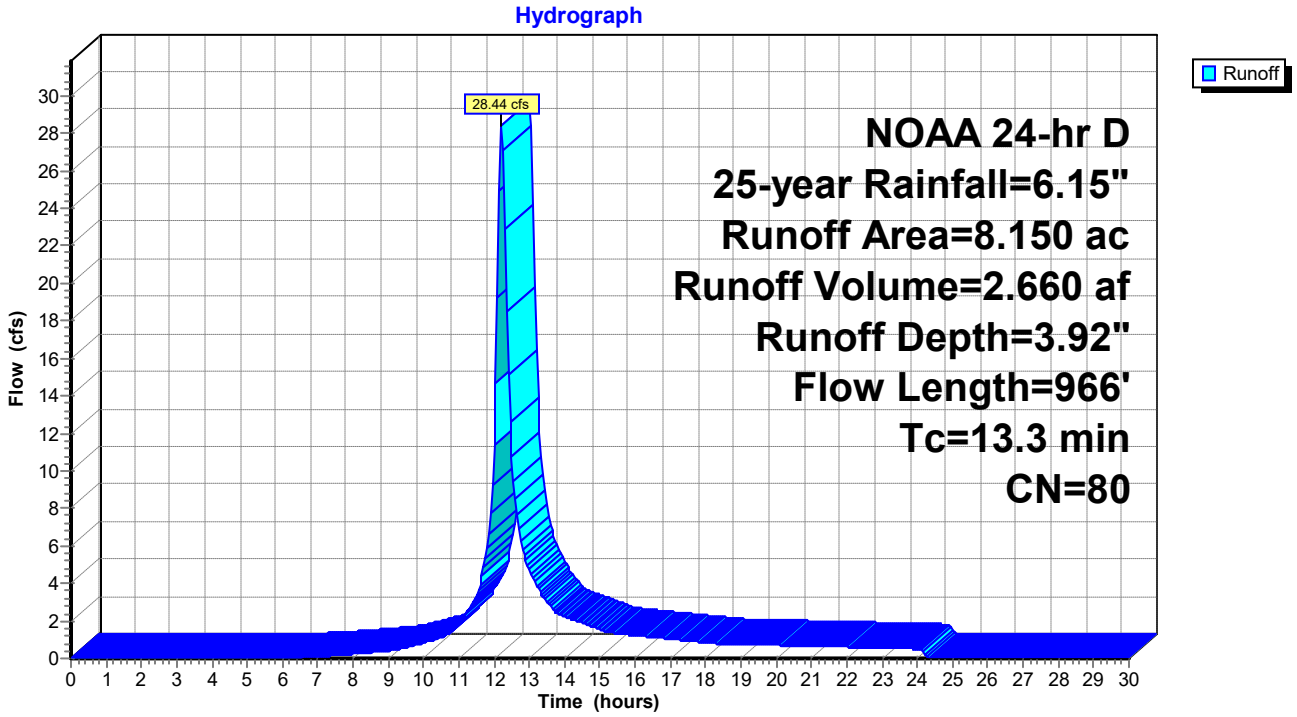
Runoff = 28.44 cfs @ 12.21 hrs, Volume= 2.660 af, Depth= 3.92"
Routed to Pond 2P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 25-year Rainfall=6.15"

Area (ac)	CN	Description
3.240	70	Woods, Good, HSG C
2.490	74	>75% Grass cover, Good, HSG C
2.420	98	Paved parking, HSG C
8.150	80	Weighted Average
5.730		70.31% Pervious Area
2.420		29.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
0.1	48	0.2520	8.08		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	44	0.0400	3.22		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.3	250	0.0600	15.24	18.70	**Pipe Channel, pipe to detention pond** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
0.3	106	0.0058	6.48	20.36	**Pipe Channel, pipe to detention pond** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.3	966	Total			

Subcatchment P1-2: To Detention Pond



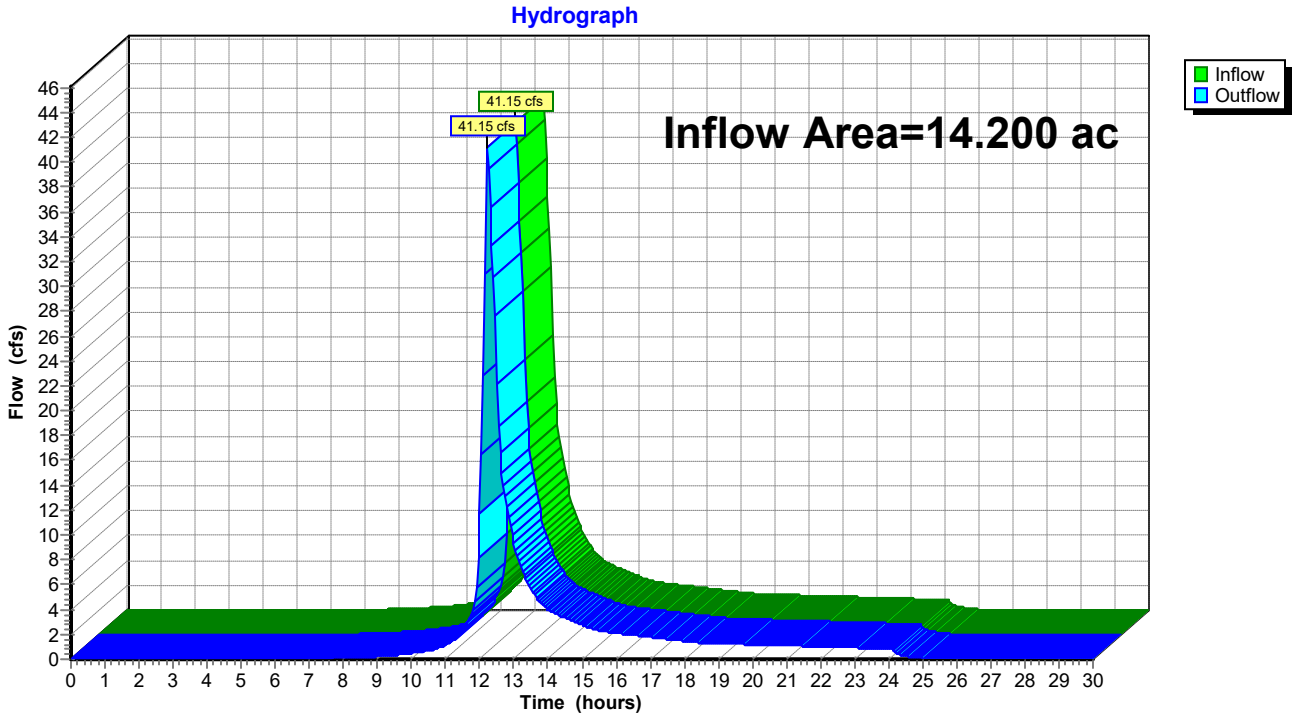
Summary for Reach TS: Total Site

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.200 ac, 25.63% Impervious, Inflow Depth = 3.36" for 25-year event
Inflow = 41.15 cfs @ 12.22 hrs, Volume= 3.977 af
Outflow = 41.15 cfs @ 12.22 hrs, Volume= 3.977 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 2P: Detention Pond

Inflow Area = 8.150 ac, 29.69% Impervious, Inflow Depth = 3.92" for 25-year event
Inflow = 28.44 cfs @ 12.21 hrs, Volume= 2.660 af
Outflow = 21.56 cfs @ 12.32 hrs, Volume= 2.233 af, Atten= 24%, Lag= 6.3 min
Discarded = 0.06 cfs @ 12.32 hrs, Volume= 0.077 af
Primary = 21.50 cfs @ 12.32 hrs, Volume= 2.157 af
Routed to Reach TS : Total Site
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 258.19' @ 12.32 hrs Surf.Area= 8,408 sf Storage= 31,873 cf

Plug-Flow detention time= 130.6 min calculated for 2.233 af (84% of inflow)
Center-of-Mass det. time= 58.3 min (886.3 - 828.0)

Volume	Invert	Avail.Storage	Storage Description
#1	250.00'	49,076 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.00	624	0	0
251.00	1,125	875	875
252.00	1,687	1,406	2,281
253.00	2,459	2,073	4,354
254.00	3,344	2,902	7,255
255.00	4,361	3,853	11,108
256.00	5,885	5,123	16,231
257.00	7,004	6,445	22,675
258.00	8,170	7,587	30,262
259.00	9,393	8,782	39,044
260.00	10,672	10,033	49,076

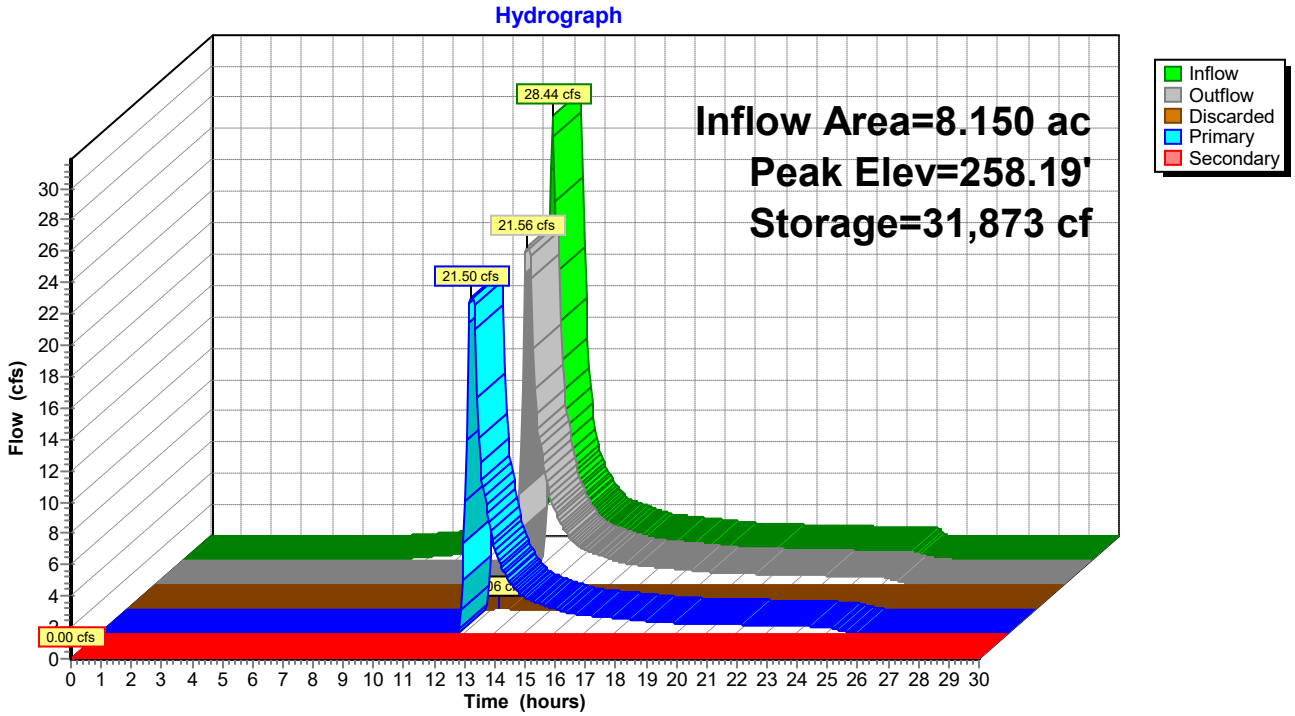
Device	Routing	Invert	Outlet Devices
#1	Primary	254.60'	**24.0" Round 74' - 24" HDPE @ 2.84% Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 254.60' / 252.50' S= 0.0284 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	256.50'	**36.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	257.60'	**40.0" x 33.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	250.00'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.00'
#5	Secondary	259.09'	**20.8" W x 32.8" H Vert. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.06 cfs @ 12.32 hrs HW=258.18' (Free Discharge)
└**4=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=21.46 cfs @ 12.32 hrs HW=258.18' (Free Discharge)
└**1=74' - 24" HDPE @ 2.84% Culvert** (Inlet Controls 21.46 cfs @ 6.83 fps)
└**2=Orifice/Grate** (Passes < 13.49 cfs potential flow)
└**3=Grate** (Passes < 17.76 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=250.00' (Free Discharge)
└**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 2P: Detention Pond



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1-1: Direct to Wetlands Runoff Area=6.050 ac 20.17% Impervious Runoff Depth=4.29"
Flow Length=409' Tc=12.1 min CN=77 Runoff=24.13 cfs 2.165 af

Subcatchment P1-2: To Detention Pond Runoff Area=8.150 ac 29.69% Impervious Runoff Depth=4.62"
Flow Length=966' Tc=13.3 min CN=80 Runoff=33.38 cfs 3.138 af

Reach TS: Total Site Inflow=45.72 cfs 4.797 af
Outflow=45.72 cfs 4.797 af

Pond 2P: Detention Pond Peak Elev=258.57' Storage=35,115 cf Inflow=33.38 cfs 3.138 af
Discarded=0.07 cfs 0.079 af Primary=23.00 cfs 2.632 af Secondary=0.00 cfs 0.000 af Outflow=23.07 cfs 2.711 af

Total Runoff Area = 14.200 ac Runoff Volume = 5.303 af Average Runoff Depth = 4.48"
74.37% Pervious = 10.560 ac 25.63% Impervious = 3.640 ac

Summary for Subcatchment P1-1: Direct to Wetlands

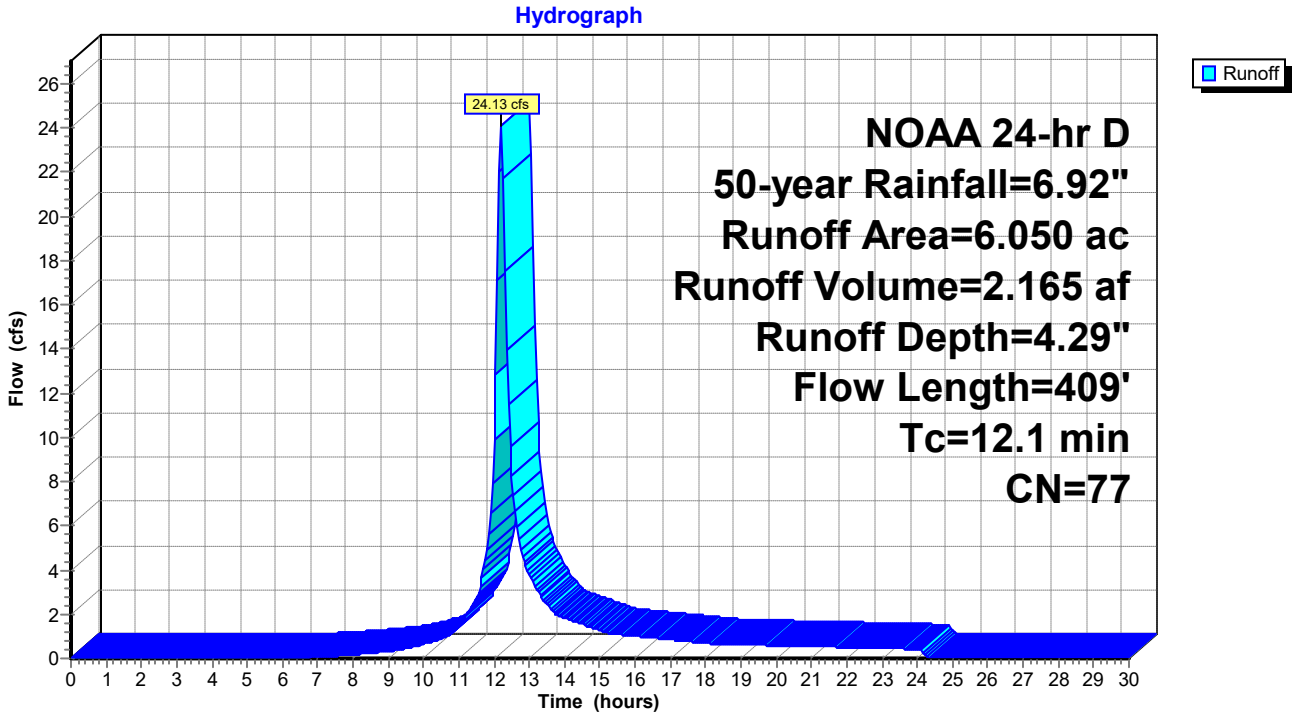
Runoff = 24.13 cfs @ 12.20 hrs, Volume= 2.165 af, Depth= 4.29"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
2.680	70	Woods, Good, HSG C
2.150	74	>75% Grass cover, Good, HSG C
1.220	98	Paved parking, HSG C
6.050	77	Weighted Average
4.830		79.83% Pervious Area
1.220		20.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0900	0.15		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1520	6.28		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.1900	7.02		**Shallow Concentrated Flow, woods** Unpaved Kv= 16.1 fps
0.5	174	0.1290	5.78		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
12.1	409	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

[47] Hint: Peak is 178% of capacity of segment #6
[47] Hint: Peak is 164% of capacity of segment #7

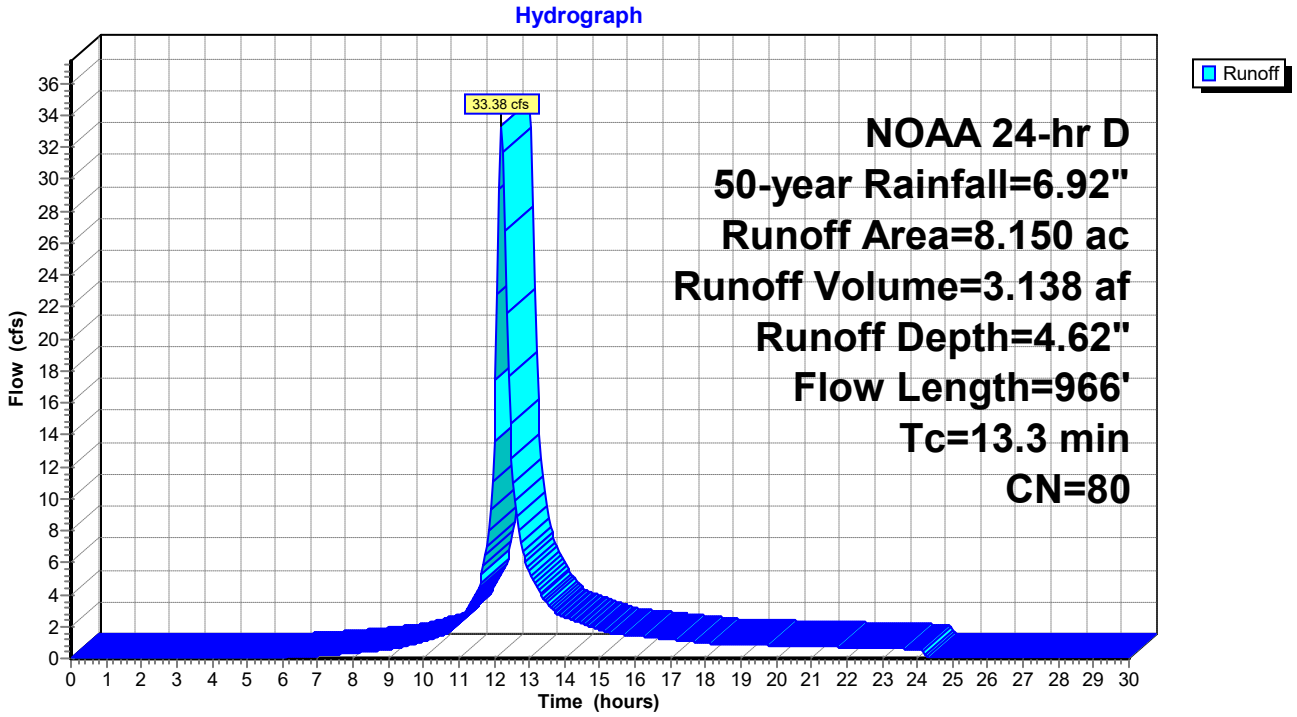
Runoff = 33.38 cfs @ 12.21 hrs, Volume= 3.138 af, Depth= 4.62"
Routed to Pond 2P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 50-year Rainfall=6.92"

Area (ac)	CN	Description
3.240	70	Woods, Good, HSG C
2.490	74	>75% Grass cover, Good, HSG C
2.420	98	Paved parking, HSG C
8.150	80	Weighted Average
5.730		70.31% Pervious Area
2.420		29.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
0.1	48	0.2520	8.08		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	44	0.0400	3.22		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.3	250	0.0600	15.24	18.70	**Pipe Channel, pipe to detention pond** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
0.3	106	0.0058	6.48	20.36	**Pipe Channel, pipe to detention pond** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.3	966	Total			

Subcatchment P1-2: To Detention Pond



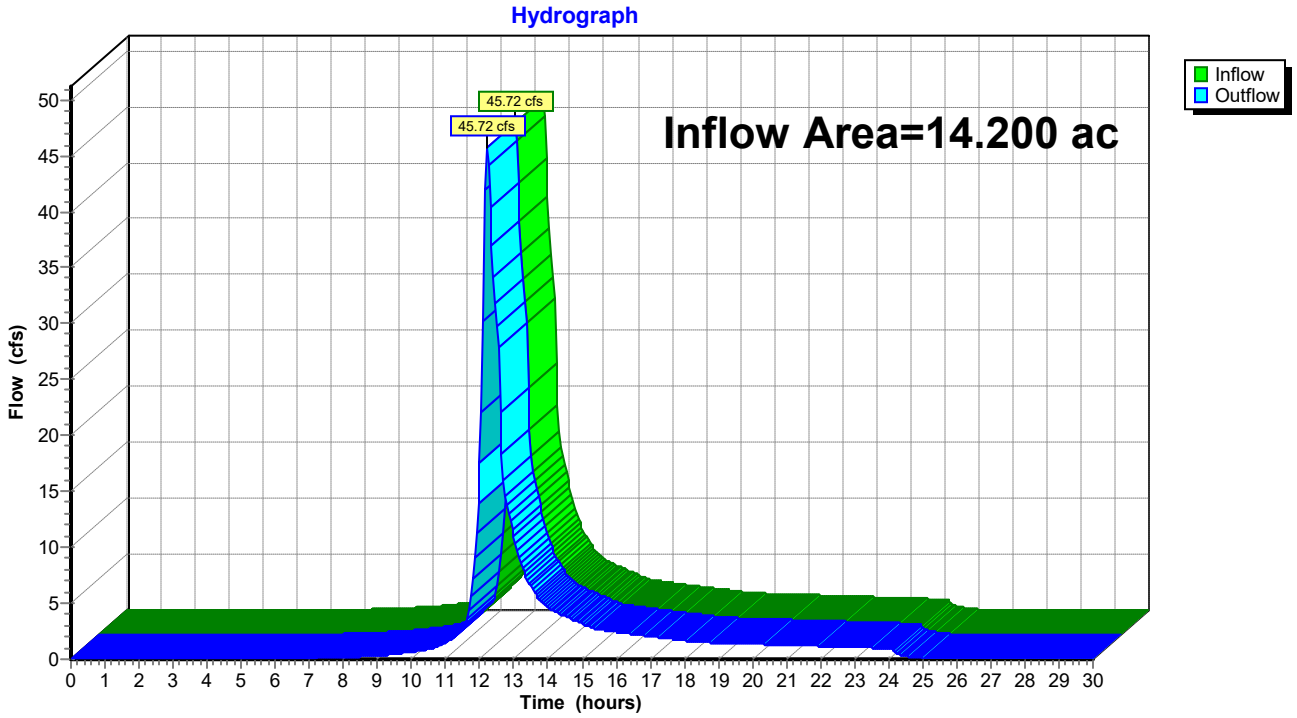
Summary for Reach TS: Total Site

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.200 ac, 25.63% Impervious, Inflow Depth = 4.05" for 50-year event
Inflow = 45.72 cfs @ 12.21 hrs, Volume= 4.797 af
Outflow = 45.72 cfs @ 12.21 hrs, Volume= 4.797 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 2P: Detention Pond

Inflow Area = 8.150 ac, 29.69% Impervious, Inflow Depth = 4.62" for 50-year event
Inflow = 33.38 cfs @ 12.21 hrs, Volume= 3.138 af
Outflow = 23.07 cfs @ 12.34 hrs, Volume= 2.711 af, Atten= 31%, Lag= 7.6 min
Discarded = 0.07 cfs @ 12.34 hrs, Volume= 0.079 af
Primary = 23.00 cfs @ 12.34 hrs, Volume= 2.632 af
Routed to Reach TS : Total Site
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 258.57' @ 12.34 hrs Surf.Area= 8,867 sf Storage= 35,115 cf

Plug-Flow detention time= 116.8 min calculated for 2.707 af (86% of inflow)
Center-of-Mass det. time= 53.4 min (876.1 - 822.8)

Volume	Invert	Avail.Storage	Storage Description
#1	250.00'	49,076 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.00	624	0	0
251.00	1,125	875	875
252.00	1,687	1,406	2,281
253.00	2,459	2,073	4,354
254.00	3,344	2,902	7,255
255.00	4,361	3,853	11,108
256.00	5,885	5,123	16,231
257.00	7,004	6,445	22,675
258.00	8,170	7,587	30,262
259.00	9,393	8,782	39,044
260.00	10,672	10,033	49,076

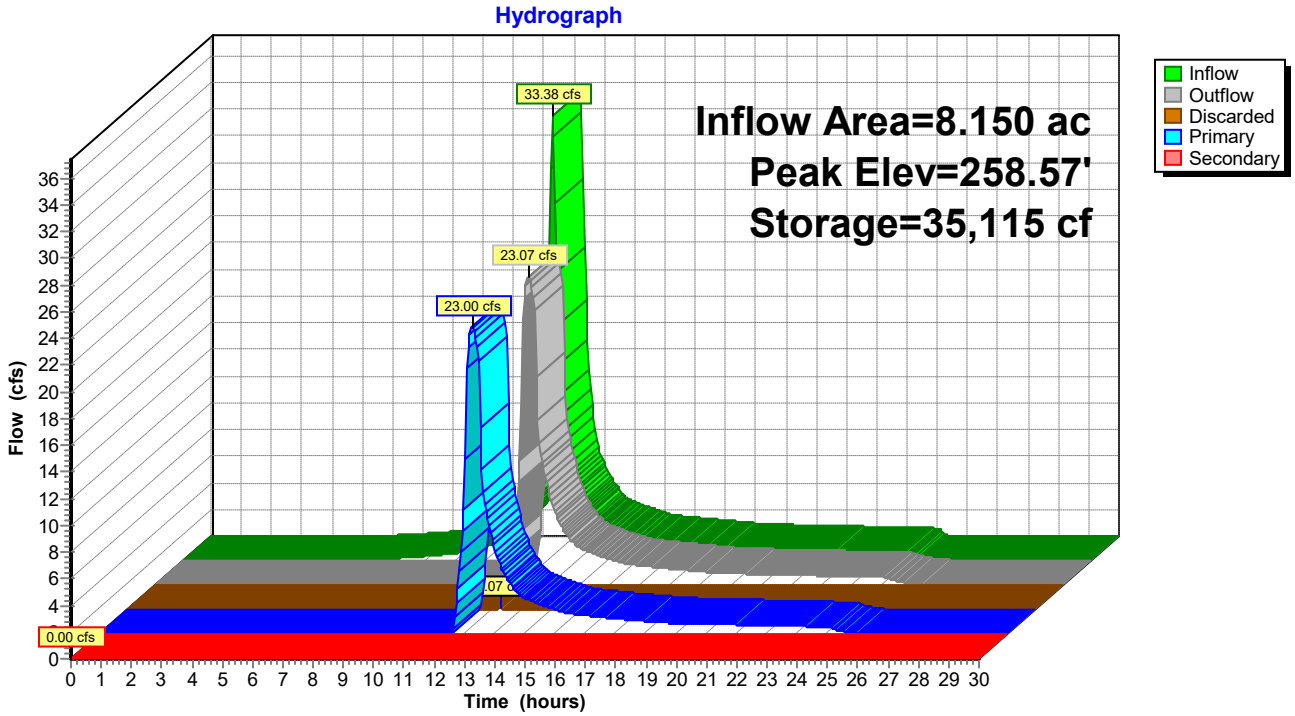
Device	Routing	Invert	Outlet Devices
#1	Primary	254.60'	**24.0" Round 74' - 24" HDPE @ 2.84% Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 254.60' / 252.50' S= 0.0284 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	256.50'	**36.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	257.60'	**40.0" x 33.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	250.00'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.00'
#5	Secondary	259.09'	**20.8" W x 32.8" H Vert. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.34 hrs HW=258.56' (Free Discharge)
└**4=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=22.97 cfs @ 12.34 hrs HW=258.56' (Free Discharge)
└**1=74' - 24" HDPE @ 2.84% Culvert** (Inlet Controls 22.97 cfs @ 7.31 fps)
  └**2=Orifice/Grate** (Passes < 15.40 cfs potential flow)
  └**3=Grate** (Passes < 37.51 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=250.00' (Free Discharge)
└**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 2P: Detention Pond



Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment P1-1: Direct to Wetlands Runoff Area=6.050 ac 20.17% Impervious Runoff Depth=5.04"
Flow Length=409' Tc=12.1 min CN=77 Runoff=28.17 cfs 2.539 af

Subcatchment P1-2: To Detention Pond Runoff Area=8.150 ac 29.69% Impervious Runoff Depth=5.38"
Flow Length=966' Tc=13.3 min CN=80 Runoff=38.65 cfs 3.655 af

Reach TS: Total Site Inflow=50.73 cfs 5.686 af
Outflow=50.73 cfs 5.686 af

Pond 2P: Detention Pond Peak Elev=258.99' Storage=38,927 cf Inflow=38.65 cfs 3.655 af
Discarded=0.07 cfs 0.081 af Primary=24.57 cfs 3.147 af Secondary=0.00 cfs 0.000 af Outflow=24.64 cfs 3.228 af

Total Runoff Area = 14.200 ac Runoff Volume = 6.194 af Average Runoff Depth = 5.23"
74.37% Pervious = 10.560 ac 25.63% Impervious = 3.640 ac

Summary for Subcatchment P1-1: Direct to Wetlands

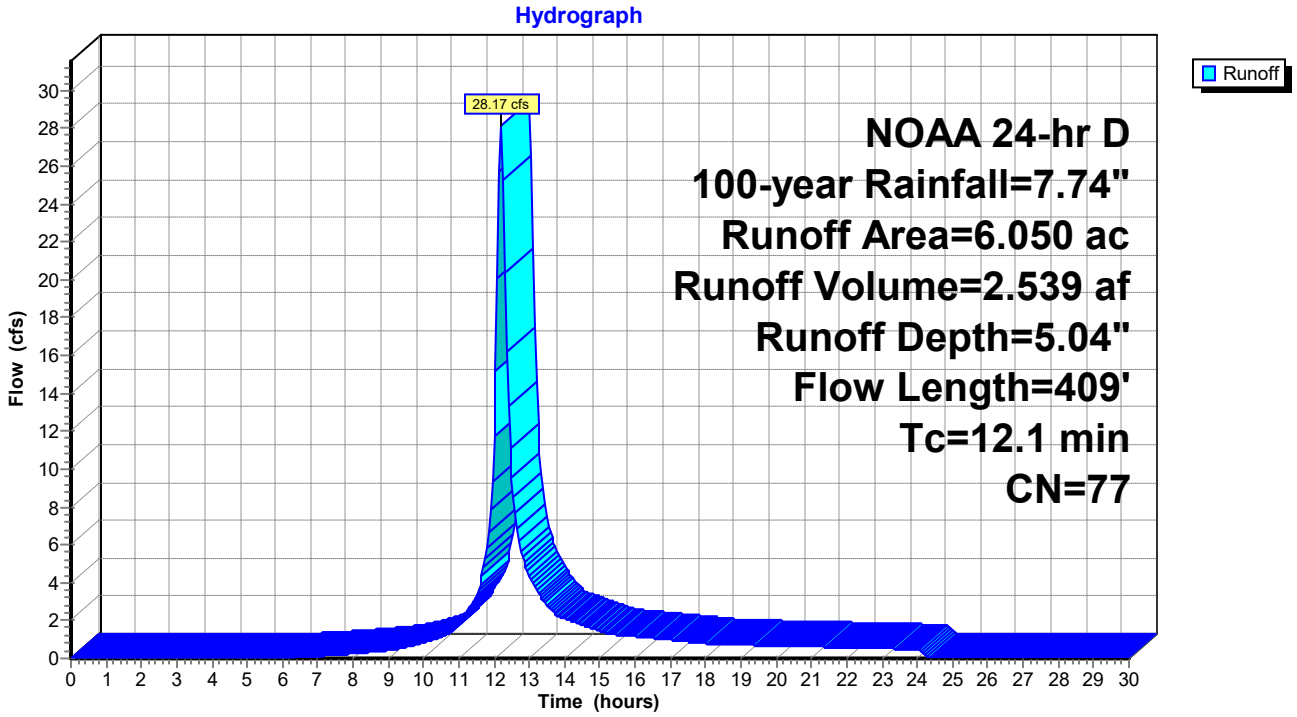
Runoff = 28.17 cfs @ 12.20 hrs, Volume= 2.539 af, Depth= 5.04"
Routed to Reach TS : Total Site

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
2.680	70	Woods, Good, HSG C
2.150	74	>75% Grass cover, Good, HSG C
1.220	98	Paved parking, HSG C
6.050	77	Weighted Average
4.830		79.83% Pervious Area
1.220		20.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0900	0.15		**Sheet Flow, woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.1	46	0.1520	6.28		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	89	0.1900	7.02		**Shallow Concentrated Flow, woods** Unpaved Kv= 16.1 fps
0.5	174	0.1290	5.78		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
12.1	409	Total			

Subcatchment P1-1: Direct to Wetlands



Summary for Subcatchment P1-2: To Detention Pond

[47] Hint: Peak is 207% of capacity of segment #6
[47] Hint: Peak is 190% of capacity of segment #7

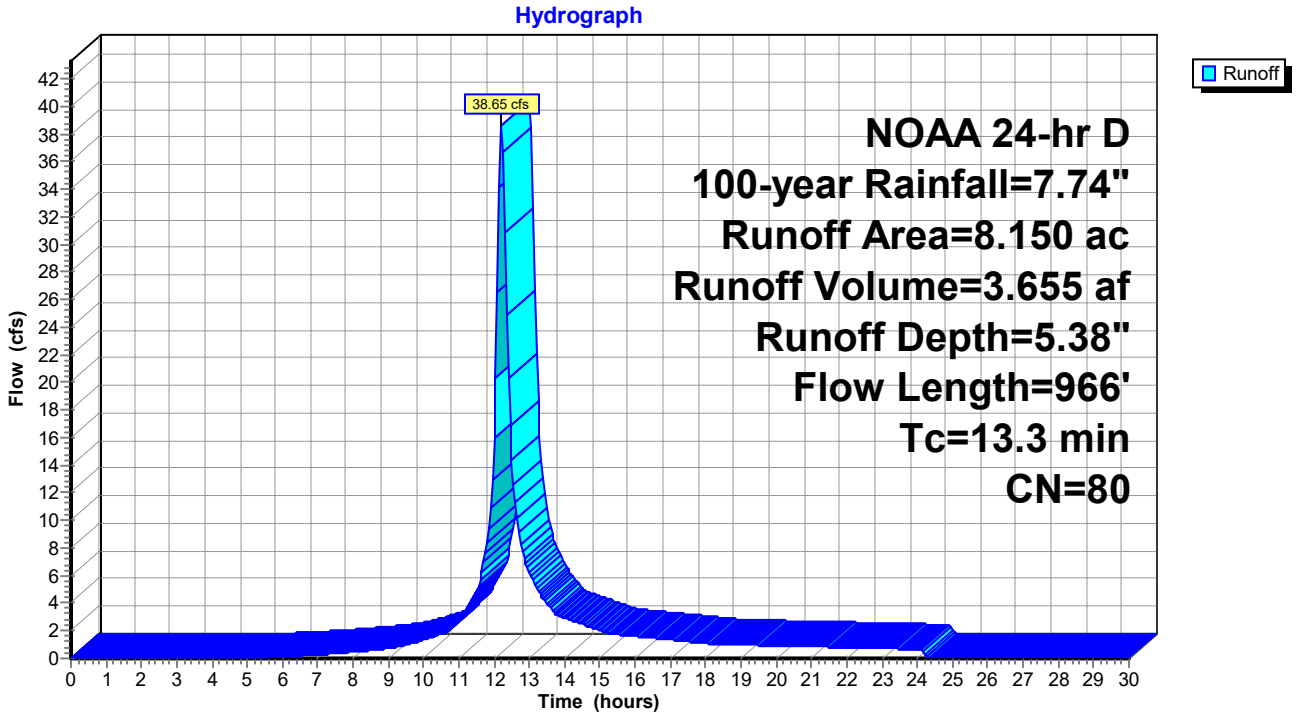
Runoff = 38.65 cfs @ 12.21 hrs, Volume= 3.655 af, Depth= 5.38"
Routed to Pond 2P : Detention Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-year Rainfall=7.74"

Area (ac)	CN	Description
3.240	70	Woods, Good, HSG C
2.490	74	>75% Grass cover, Good, HSG C
2.420	98	Paved parking, HSG C
8.150	80	Weighted Average
5.730		70.31% Pervious Area
2.420		29.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.1000	0.15		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.46"
0.8	239	0.0920	4.88		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.8	179	0.0330	3.69		**Shallow Concentrated Flow, Impervious** Paved Kv= 20.3 fps
0.1	48	0.2520	8.08		**Shallow Concentrated Flow, Woods** Unpaved Kv= 16.1 fps
0.2	44	0.0400	3.22		**Shallow Concentrated Flow, Grass** Unpaved Kv= 16.1 fps
0.3	250	0.0600	15.24	18.70	**Pipe Channel, pipe to detention pond** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
0.3	106	0.0058	6.48	20.36	**Pipe Channel, pipe to detention pond** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
13.3	966	Total			

Subcatchment P1-2: To Detention Pond



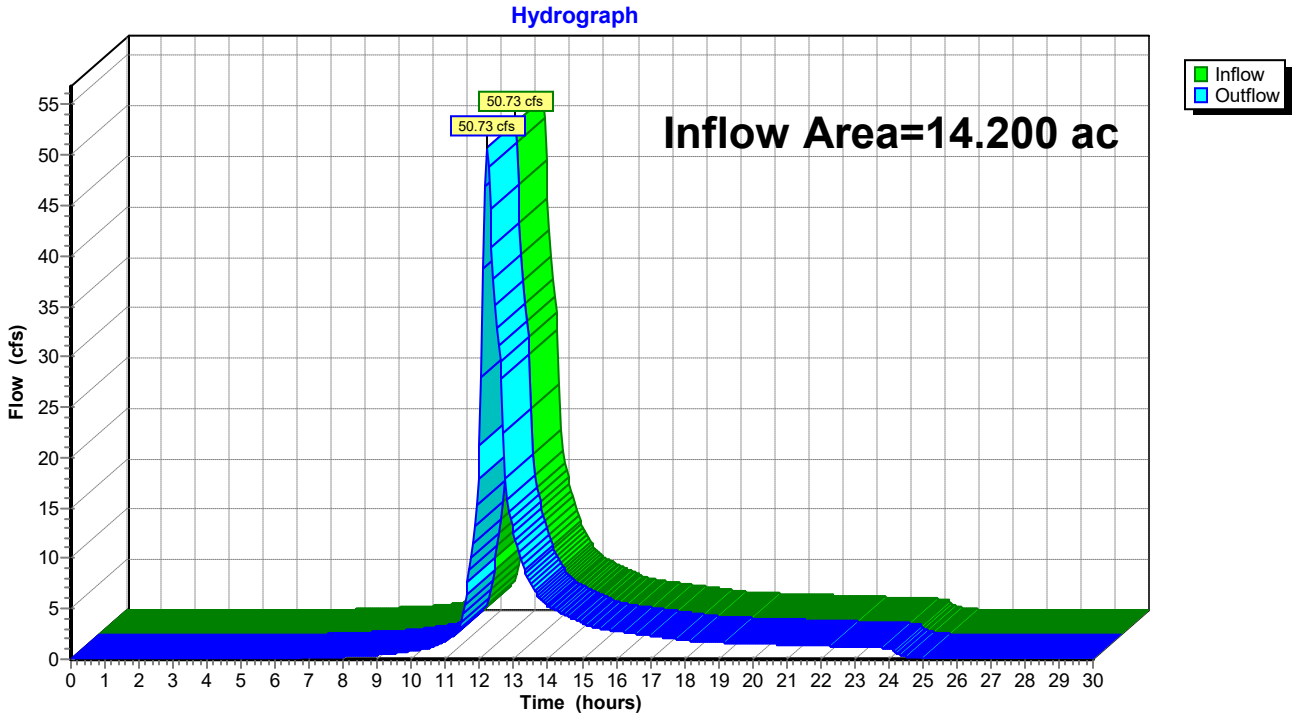
Summary for Reach TS: Total Site

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 14.200 ac, 25.63% Impervious, Inflow Depth = 4.81" for 100-year event
Inflow = 50.73 cfs @ 12.21 hrs, Volume= 5.686 af
Outflow = 50.73 cfs @ 12.21 hrs, Volume= 5.686 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Reach TS: Total Site



Summary for Pond 2P: Detention Pond

Inflow Area = 8.150 ac, 29.69% Impervious, Inflow Depth = 5.38" for 100-year event
Inflow = 38.65 cfs @ 12.21 hrs, Volume= 3.655 af
Outflow = 24.64 cfs @ 12.36 hrs, Volume= 3.228 af, Atten= 36%, Lag= 8.8 min
Discarded = 0.07 cfs @ 12.36 hrs, Volume= 0.081 af
Primary = 24.57 cfs @ 12.36 hrs, Volume= 3.147 af
Routed to Reach TS : Total Site
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach TS : Total Site

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 258.99' @ 12.36 hrs Surf.Area= 9,378 sf Storage= 38,927 cf

Plug-Flow detention time= 106.7 min calculated for 3.222 af (88% of inflow)
Center-of-Mass det. time= 49.9 min (867.9 - 818.0)

Volume	Invert	Avail.Storage	Storage Description
#1	250.00'	49,076 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
250.00	624	0	0
251.00	1,125	875	875
252.00	1,687	1,406	2,281
253.00	2,459	2,073	4,354
254.00	3,344	2,902	7,255
255.00	4,361	3,853	11,108
256.00	5,885	5,123	16,231
257.00	7,004	6,445	22,675
258.00	8,170	7,587	30,262
259.00	9,393	8,782	39,044
260.00	10,672	10,033	49,076

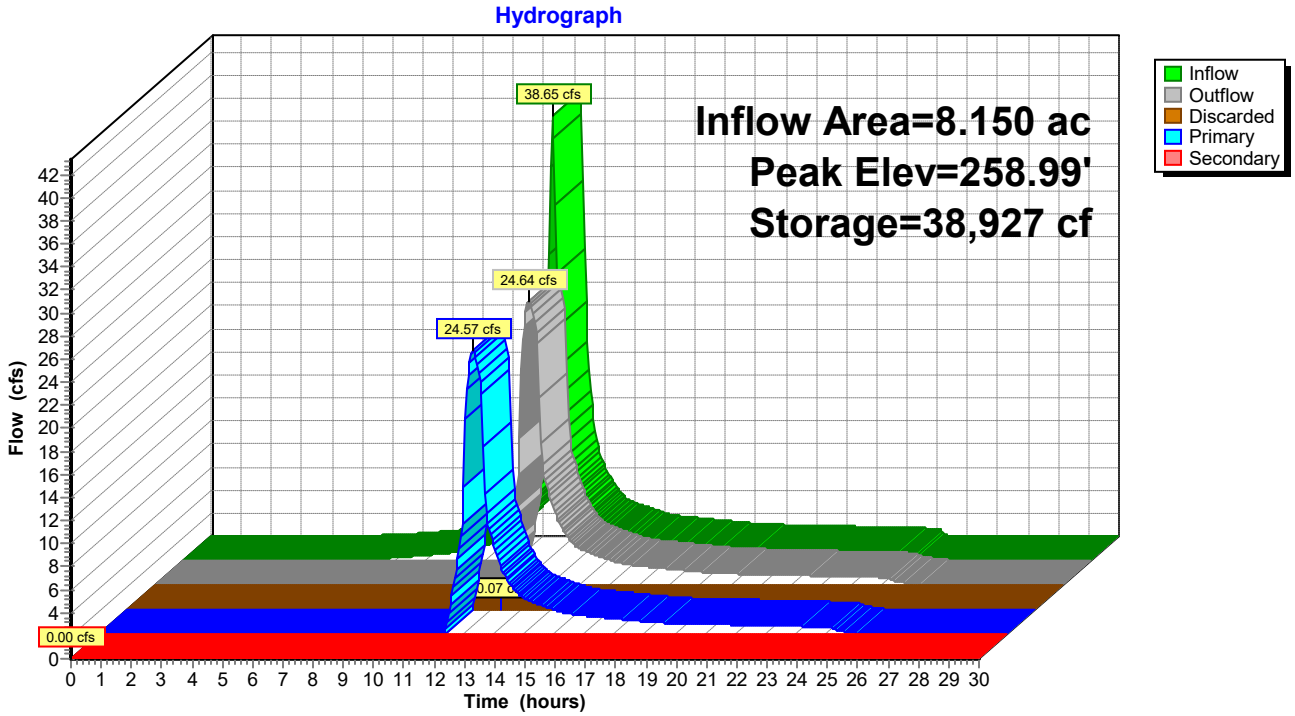
Device	Routing	Invert	Outlet Devices
#1	Primary	254.60'	**24.0" Round 74' - 24" HDPE @ 2.84% Culvert** L= 74.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 254.60' / 252.50' S= 0.0284 '/' Cc= 0.900 n= 0.011 Concrete pipe, straight & clean, Flow Area= 3.14 sf
#2	Device 1	256.50'	**36.0" W x 10.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	257.60'	**40.0" x 33.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	250.00'	**0.210 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 245.00'
#5	Secondary	259.09'	**20.8" W x 32.8" H Vert. Emergency Overflow** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.07 cfs @ 12.36 hrs HW=258.98' (Free Discharge)
└**4=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=24.54 cfs @ 12.36 hrs HW=258.98' (Free Discharge)
└**1=74' - 24" HDPE @ 2.84% Culvert** (Inlet Controls 24.54 cfs @ 7.81 fps)
  └**2=Orifice/Grate** (Passes < 17.27 cfs potential flow)
  └**3=Grate** (Passes < 51.88 cfs potential flow)

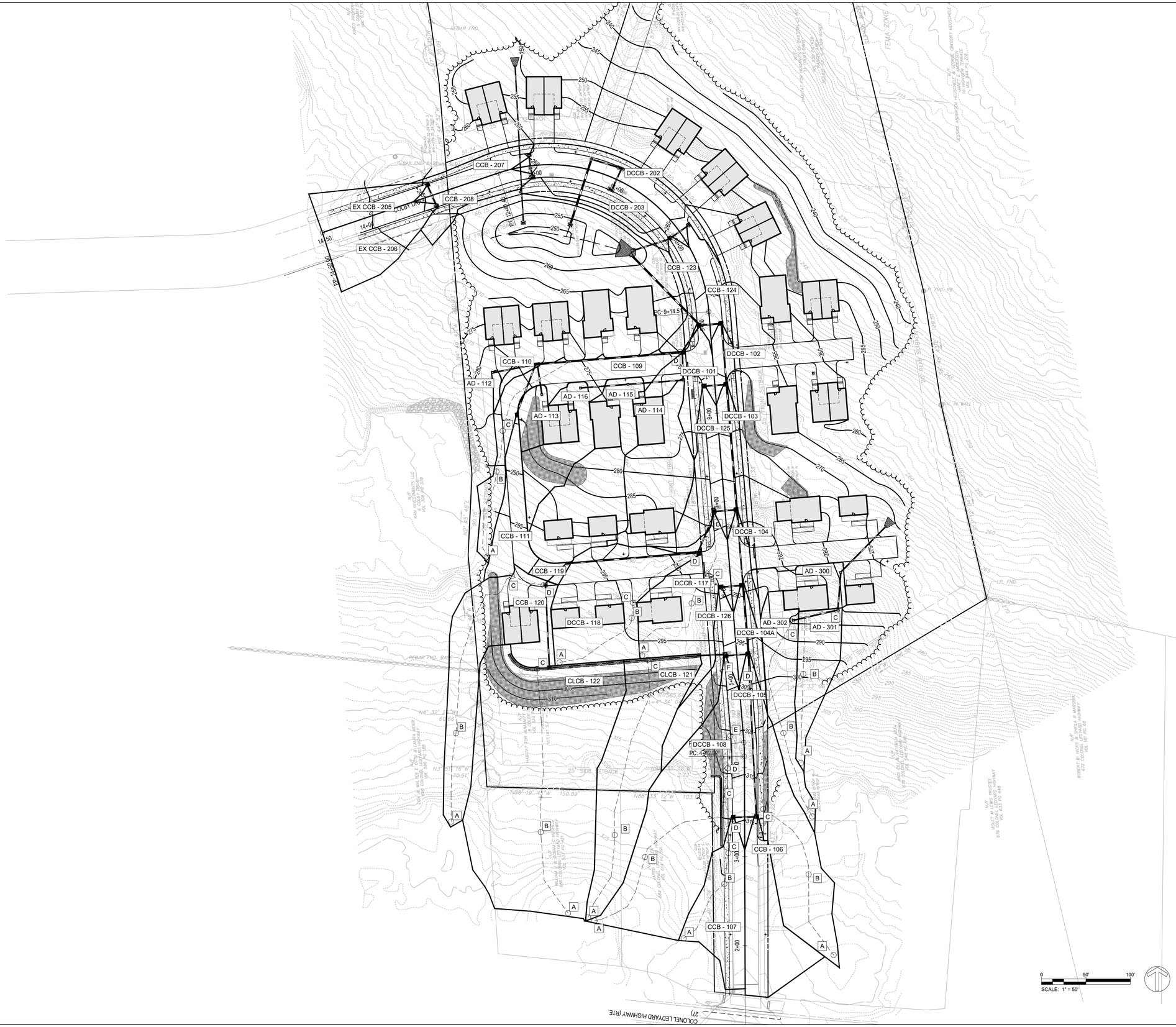
Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=250.00' (Free Discharge)
└**5=Emergency Overflow** (Controls 0.00 cfs)

Pond 2P: Detention Pond



APPENDIX C

Hydraulic Analysis



Prepared by:

benesch

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Glastonbury, Connecticut 06033
860-633-8341

Prepared for:

Habitat for Humanity®
of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: 0725 500010.00
SCALE: 1" = 50'
DATE: 12/20/2024

DRAWN BY: CLM
CHECKED BY: WGW

CATCHMENT AREA MAP

DRAWING NO.:

CAM

Drainage Analysis for Proposed Conditions
Ledyard Housing Development
Ledyard, CT

Job Number: 0725-500010.00

Drainage Areas

BASIN	TOTAL (SF)	TOTAL (AC)	IMPERV. (SF)	IMPERV. (AC)	PERVIOUS (SF)	PERVIOUS (AC)	C-Value	Tc (Min.)
DCCB-101	5,163	**0.12**	2571	0.06	2,592	0.06	**0.60**	**5.0**
DCCB-102	1,743	**0.04**	1592	0.04	151	0.00	**0.85**	**5.0**
DCCB-103	3,501	**0.08**	2,874	0.07	627	0.01	**0.79**	**5.0**
DCCB-104	2,276	**0.05**	1,786	0.04	490	0.01	**0.77**	**5.0**
DCCB-104A	2,328	**0.05**	1,538	0.04	790	0.02	**0.70**	**5.0**
DCCB-105	15,343	**0.35**	3,498	0.08	11,845	0.27	**0.44**	**15.1**
CCB-106	8,566	**0.20**	3,946	0.09	4,620	0.11	**0.58**	**5.0**
CCB-107	7,731	**0.18**	3,332	0.08	4,398	0.10	**0.56**	**8.8**
DCCB-108	23,427	**0.54**	3,430	0.08	19,996	0.46	**0.39**	**13.0**
CCB-109	8,811	**0.20**	6,121	0.14	2,690	0.06	**0.72**	**13.3**
CCB-110	491	**0.01**	491	0.01	0	0.00	**0.90**	**5.0**
CCB-111	4,897	**0.11**	3,042	0.07	1,855	0.04	**0.67**	**5.0**
AD-112	315	**0.01**	0	0.00	315	0.01	**0.30**	**5.0**
AD-113	3,560	**0.08**	1754.06	0.04	1,805	0.04	**0.60**	**5.0**
AD-114	10,063	**0.23**	3019.5	0.07	7,044	0.16	**0.48**	**5.0**
AD-115	13,616	**0.31**	3979.81	0.09	9,636	0.22	**0.48**	**5.0**
AD-116	5,167	**0.12**	0	0.00	5,167	0.12	**0.30**	**5.0**
DCCB-117	10,815	**0.25**	4189.04	0.10	6,626	0.15	**0.53**	**6.4**
DCCB-118	13,632	**0.31**	6424.95	0.15	7,207	0.17	**0.58**	**7.6**
CCB-119	798	**0.02**	798	0.02	0	0.00	**0.90**	**5.0**
CCB-120	15,689	**0.36**	2860.33	0.07	12,828	0.29	**0.41**	**11.0**
CLCB-121	16,351	**0.38**	0	0.00	16,351	0.38	**0.30**	**11.9**
CLCB-122	41,176	**0.95**	0	0.00	41,176	0.95	**0.30**	**11.8**
CCB-123	3,276	**0.08**	2107.39	0.05	1,168	0.03	**0.69**	**5.0**
CCB-124	2,658	**0.06**	2291.92	0.05	366	0.01	**0.82**	**5.0**
DCCB-125	6,289	**0.14**	3301.43	0.08	2,987	0.07	**0.61**	**5.0**
DCCB-126	4,825	**0.11**	1588.98	0.04	3,236	0.07	**0.50**	**5.0**
DCCB - 202	5,375	**0.12**	4,682	0.11	693	0.02	**0.82**	**5.0**
DCCB - 203	7,026	**0.16**	3,823	0.09	3,203	0.07	**0.63**	**5.0**
EX CCB - 205	3,933	**0.09**	2,319	0.05	1,614	0.04	**0.65**	**5.0**
EX CCB-206	6,668	**0.15**	2,380	0.05	4,288	0.10	**0.51**	**5.0**
CCB - 207	2,795	**0.06**	2,518	0.06	277	0.01	**0.84**	**5.0**
CCB-208	3,412	**0.08**	2,183	0.05	1,229	0.03	**0.68**	**5.0**
AD-300	4,439	**0.10**	2013	0.05	2,426	0.06	**0.57**	**5.0**
AD-301	5,695	**0.13**	0	0.00	5,695	0.13	**0.30**	**9.4**

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	106.000	0.12	5.31	0.60	0.07	2.48	5.0	19.8	4.5	11.04	59.26	4.59	24	5.85	256.00	262.20	259.22	263.39	258.00	266.69	DCCB - 101
2	1	23.000	0.04	4.12	0.85	0.03	1.82	5.0	16.5	5.0	9.09	11.38	6.66	18	1.00	262.80	263.03	263.81	264.19	266.69	266.63	DCCB - 102
3	2	64.000	0.08	4.08	0.79	0.06	1.79	5.0	16.3	5.0	8.99	27.28	6.42	18	5.75	263.13	266.81	264.19	267.97	266.63	270.41	DCCB - 103
4	3	137.000	0.05	3.86	0.77	0.04	1.64	5.0	15.8	5.1	8.39	34.03	6.11	18	8.95	266.91	279.17	267.97	280.29	270.41	283.02	DCCB - 104
5	4	81.000	0.05	1.81	0.70	0.04	0.79	5.0	15.4	5.2	4.07	19.98	6.61	15	8.16	279.77	286.38	280.29	287.20	283.02	289.88	DCCB - 104A
6	5	73.000	0.35	1.65	0.44	0.15	0.70	15.1	15.1	5.2	3.64	11.05	5.69	12	8.21	286.48	292.47	287.20	293.28	289.88	296.09	DCCB - 105
7	6	179.000	0.20	0.38	0.58	0.12	0.22	5.0	9.4	6.8	1.47	22.05	3.58	15	9.93	292.84	310.62	293.28	311.10	296.09	314.37	CCB - 106
8	7	22.000	0.18	0.18	0.56	0.10	0.10	8.8	8.8	7.0	0.71	19.27	3.10	15	7.59	310.82	312.49	311.10	312.82	314.37	314.37	CCB - 107
9	6	23.000	0.54	0.92	0.39	0.21	0.32	13.0	13.0	5.7	1.85	7.00	3.10	15	1.00	292.57	292.80	293.28	293.34	296.09	296.04	DCCB - 108
10	1	32.000	0.20	1.07	0.72	0.14	0.58	13.3	19.6	4.5	2.60	19.55	7.56	15	7.81	263.44	265.94	263.75	266.59	266.69	269.29	CCB - 109
11	10	159.000	0.01	0.21	0.90	0.01	0.14	5.0	17.0	4.9	0.68	16.64	2.02	15	5.66	266.04	275.04	266.59	275.36	269.29	278.41	CCB - 110
12	11	59.000	0.11	0.11	0.67	0.07	0.07	5.0	5.0	9.1	0.67	19.74	3.95	15	7.97	275.16	279.86	275.36	280.18	278.41	284.11	CCB - 111
13	11	48.000	0.01	0.01	0.90	0.01	0.01	5.0	5.0	9.1	0.08	18.45	1.09	15	6.96	275.16	278.50	275.36	278.61	278.41	281.75	AD - 112
14	11	31.000	0.08	0.08	0.60	0.05	0.05	5.0	5.0	9.1	0.44	7.00	2.68	15	1.00	275.14	275.45	275.36	275.71	278.41	278.70	AD - 113
15	10	28.000	0.23	0.66	0.48	0.11	0.30	5.0	8.9	7.0	2.06	14.54	3.88	15	4.32	266.04	267.25	266.59	267.82	269.29	270.60	AD - 114
16	15	60.000	0.31	0.43	0.48	0.15	0.18	5.0	8.2	7.3	1.35	15.27	3.24	15	4.77	267.35	270.21	267.82	270.67	270.60	273.56	AD - 115
17	16	51.000	0.12	0.12	0.30	0.04	0.04	5.0	5.0	9.1	0.33	17.36	1.68	15	6.16	270.31	273.45	270.67	273.67	273.56	276.70	AD - 116
18	4	23.000	0.36	2.00	0.52	0.19	0.82	6.4	14.5	5.4	4.39	7.00	4.88	15	1.00	279.42	279.65	280.29	280.50	283.02	283.00	DCCB - 117
19	18	45.000	0.31	1.64	0.58	0.18	0.63	7.6	14.2	5.4	3.42	23.25	4.47	15	11.04	279.75	284.72	280.50	285.47	283.00	288.07	DCCB - 118
20	19	143.000	0.02	1.33	0.90	0.02	0.45	5.0	13.1	5.7	2.56	16.99	4.02	15	5.90	284.82	293.25	285.47	293.89	288.07	296.60	CCB - 119
21	20	32.000	0.36	1.31	0.41	0.15	0.43	11.0	12.9	5.7	2.48	8.57	4.45	15	1.50	293.35	293.83	293.89	294.46	296.60	297.18	CCB - 120
22	9	26.000	0.38	0.38	0.30	0.11	0.11	11.9	11.9	6.0	0.68	7.00	2.24	15	1.00	292.90	293.16	293.34	293.48	296.04	296.59	CLCB - 121

Project File: storm - 100.stm | Number of lines: 24 | Run Date: 9/3/2025

NOTES:Intensity = 44.54 / (Inlet time + 3.90) ^ 0.73; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	21	90.000	0.95	0.95	0.30	0.29	0.29	11.8	11.8	6.0	1.72	7.07	3.51	15	1.02	293.93	294.85	294.46	295.37	297.18	297.90	CCB - 122
24	3	20.000	0.14	0.14	0.61	0.09	0.09	5.0	5.0	9.1	0.78	7.00	1.80	15	1.00	267.02	267.22	267.97	267.56	270.41	270.47	DCCB - 125

Project File: storm - 100.stm | Number of lines: 24 | Run Date: 9/3/2025

NOTES:Intensity = 44.54 / (Inlet time + 3.90) ^ 0.73; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	217.000	0.00	0.66	0.00	0.00	0.44	0.0	13.0	5.7	17.23	77.52	6.85	24	10.01	224.49	246.21	225.98	247.70	228.70	257.85	MH-201
2	1	28.000	0.12	0.28	0.82	0.10	0.20	5.0	5.5	8.7	1.74	24.50	3.86	24	1.00	253.40	253.68	253.76	254.14	257.85	257.25	DCCB - 202
3	2	22.000	0.16	0.16	0.63	0.10	0.10	5.0	5.0	9.1	0.92	7.00	3.06	15	1.00	253.78	254.00	254.14	254.38	257.25	257.25	DCCB-203
4	1	69.000	0.00	0.38	0.00	0.00	0.24	0.0	11.2	6.2	1.49	58.92	5.52	24	5.78	249.22	253.21	249.44	253.63	257.85	260.14	MH - 204
5	4	113.000	0.09	0.24	0.65	0.06	0.14	5.0	6.3	8.3	1.11	58.95	2.59	24	5.79	253.21	259.75	253.63	260.11	260.14	265.95	EX CCB - 205
6	5	43.000	0.15	0.15	0.51	0.08	0.08	5.0	5.0	9.1	0.70	6.66	3.12	15	0.91	260.30	260.69	260.57	261.02	265.95	265.90	EX CCB - 206
7	4	10.000	0.06	0.06	0.84	0.05	0.05	5.0	5.0	9.1	0.46	0.00	2.83	15	1.00	256.55	256.65	256.77	256.91	260.14	259.90	CCB - 207
8	4	7.000	0.08	0.08	0.68	0.05	0.05	5.0	5.0	9.1	0.49	0.00	2.89	15	1.00	256.56	256.63	256.79	256.90	260.14	259.88	CCB - 208
9	1	74.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	14.72	0.00	9.62	24	3.42	254.47	257.00	255.25	258.38	257.85	257.90	OCS - 1

Project File: storm - 200.stm

Number of lines: 9

Run Date: 9/4/2025

NOTES:Intensity = 44.54 / (Inlet time + 3.90) ^ 0.73; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	69.000	0.10	0.39	0.57	0.06	0.14	5.0	16.1	5.0	0.71	16.09	2.75	15	5.29	272.50	276.15	272.83	276.48	273.75	279.50	AD-300
2	1	40.000	0.13	0.29	0.30	0.04	0.09	9.4	14.5	5.2	0.46	7.82	2.69	15	1.25	276.25	276.75	276.48	277.01	279.50	280.10	AD-301
3	2	49.000	0.16	0.16	0.30	0.05	0.05	11.1	11.1	6.1	0.29	0.00	2.63	15	9.39	276.85	281.45	277.01	281.66	280.10	284.70	AD-302

Project File: storm - 300.stm

Number of lines: 3

Run Date: 8/29/2025

NOTES:Intensity = 38.62 / (Inlet time + 3.60) ^ 0.69; Return period =Yrs. 25 ; c = cir e = ellip b = box

APPENDIX D

Water Quality Volume

Water Quality Volume Computations 8, 9, 11 Colby Drive, Ledyard, CT Project # 0725-500010.00								
Designation	Description	Total Area (ac)	Total Impervious Area (ac)	Impervious Coverage, I (%)	Volumetric Runoff Coefficient (R) R = 0.05 + 0.009*(I)	WQV (ac-ft, apply 1.3") WQV = (1.3")*(R)*(A)/12	Required WQV (cf)	Provided WQV (cf)
1	Total Site	14.19	3.63	25.59	0.28	0.431	18,774	19,888
2	Flow to Pond	8.15	2.42	29.65	0.32	0.280	12,183	19,888

APPENDIX E

NOAA Rainfall Data

NOAA Atlas 14, Volume 10, Version 3
Location name: Ledyard, Connecticut, USA*
Latitude: 41.4421°, Longitude: -72.0096°
Elevation: 269 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.341 (0.264-0.437)	0.408 (0.315-0.523)	0.517 (0.399-0.665)	0.607 (0.466-0.783)	0.732 (0.545-0.975)	0.826 (0.602-1.12)	0.925 (0.656-1.28)	1.04 (0.697-1.45)	1.20 (0.776-1.72)	1.33 (0.842-1.94)
10-min	0.483 (0.374-0.619)	0.577 (0.447-0.741)	0.732 (0.565-0.942)	0.861 (0.660-1.11)	1.04 (0.772-1.38)	1.17 (0.854-1.58)	1.31 (0.930-1.82)	1.47 (0.987-2.06)	1.70 (1.10-2.43)	1.88 (1.19-2.74)
15-min	0.568 (0.440-0.728)	0.679 (0.526-0.872)	0.861 (0.664-1.11)	1.01 (0.777-1.31)	1.22 (0.908-1.62)	1.38 (1.00-1.86)	1.54 (1.09-2.14)	1.73 (1.16-2.42)	2.00 (1.29-2.86)	2.22 (1.40-3.23)
30-min	0.801 (0.621-1.03)	0.957 (0.741-1.23)	1.21 (0.936-1.56)	1.42 (1.09-1.84)	1.72 (1.28-2.28)	1.94 (1.41-2.62)	2.17 (1.54-3.01)	2.43 (1.63-3.40)	2.81 (1.82-4.03)	3.12 (1.97-4.54)
60-min	1.03 (0.801-1.33)	1.24 (0.956-1.58)	1.56 (1.21-2.01)	1.84 (1.41-2.37)	2.21 (1.65-2.95)	2.50 (1.82-3.37)	2.79 (1.98-3.88)	3.13 (2.10-4.39)	3.62 (2.34-5.19)	4.02 (2.54-5.85)
2-hr	1.36 (1.06-1.73)	1.62 (1.27-2.06)	2.05 (1.60-2.62)	2.41 (1.86-3.08)	2.90 (2.18-3.83)	3.27 (2.40-4.39)	3.66 (2.62-5.04)	4.10 (2.78-5.71)	4.75 (3.09-6.76)	5.28 (3.35-7.62)
3-hr	1.58 (1.24-1.99)	1.88 (1.48-2.38)	2.38 (1.86-3.02)	2.79 (2.17-3.56)	3.36 (2.53-4.42)	3.79 (2.80-5.05)	4.24 (3.04-5.81)	4.75 (3.22-6.57)	5.49 (3.58-7.78)	6.10 (3.89-8.78)
6-hr	2.00 (1.59-2.51)	2.38 (1.89-2.99)	3.00 (2.37-3.77)	3.52 (2.76-4.44)	4.23 (3.21-5.50)	4.76 (3.54-6.29)	5.32 (3.84-7.23)	5.96 (4.07-8.18)	6.89 (4.52-9.69)	7.65 (4.90-10.9)
12-hr	2.48 (1.98-3.08)	2.94 (2.34-3.65)	3.69 (2.94-4.60)	4.32 (3.41-5.40)	5.18 (3.96-6.69)	5.82 (4.36-7.64)	6.51 (4.73-8.78)	7.29 (5.00-9.93)	8.42 (5.56-11.8)	9.37 (6.03-13.3)
24-hr	2.90 (2.34-3.57)	3.46 (2.78-4.26)	4.36 (3.50-5.38)	5.11 (4.08-6.34)	6.15 (4.74-7.88)	6.92 (5.23-9.02)	7.74 (5.68-10.4)	8.70 (6.01-11.8)	10.1 (6.70-14.0)	11.3 (7.30-15.9)
2-day	3.24 (2.64-3.96)	3.90 (3.17-4.76)	4.97 (4.03-6.08)	5.86 (4.72-7.20)	7.09 (5.52-9.02)	8.00 (6.10-10.4)	8.98 (6.65-12.0)	10.1 (7.04-13.6)	11.9 (7.91-16.3)	13.3 (8.67-18.6)
3-day	3.52 (2.88-4.26)	4.22 (3.45-5.12)	5.38 (4.38-6.54)	6.34 (5.13-7.74)	7.66 (5.99-9.70)	8.64 (6.62-11.1)	9.70 (7.21-12.9)	10.9 (7.63-14.6)	12.8 (8.57-17.6)	14.4 (9.39-20.0)
4-day	3.77 (3.10-4.56)	4.51 (3.70-5.46)	5.72 (4.68-6.94)	6.73 (5.46-8.19)	8.11 (6.37-10.2)	9.14 (7.02-11.7)	10.2 (7.64-13.6)	11.6 (8.07-15.4)	13.5 (9.05-18.4)	15.2 (9.90-21.0)
7-day	4.49 (3.71-5.38)	5.30 (4.38-6.36)	6.62 (5.45-7.96)	7.72 (6.31-9.32)	9.22 (7.28-11.5)	10.4 (7.99-13.2)	11.6 (8.64-15.1)	12.9 (9.09-17.1)	15.0 (10.1-20.4)	16.7 (11.0-23.0)
10-day	5.20 (4.32-6.21)	6.05 (5.02-7.22)	7.43 (6.14-8.90)	8.58 (7.05-10.3)	10.2 (8.05-12.6)	11.3 (8.78-14.3)	12.6 (9.43-16.4)	14.0 (9.88-18.4)	16.1 (10.8-21.7)	17.8 (11.7-24.3)
20-day	7.39 (6.20-8.73)	8.29 (6.95-9.81)	9.78 (8.16-11.6)	11.0 (9.12-13.1)	12.7 (10.1-15.5)	14.0 (10.9-17.4)	15.3 (11.4-19.5)	16.7 (11.8-21.7)	18.5 (12.6-24.7)	19.9 (13.1-27.0)
30-day	9.20 (7.76-10.8)	10.2 (8.55-11.9)	11.7 (9.82-13.8)	13.0 (10.8-15.4)	14.8 (11.8-17.9)	16.1 (12.6-19.9)	17.5 (13.1-22.0)	18.8 (13.4-24.3)	20.4 (13.9-27.2)	21.6 (14.3-29.2)
45-day	11.4 (9.71-13.4)	12.5 (10.6-14.6)	14.1 (11.9-16.5)	15.5 (13.0-18.2)	17.4 (14.0-20.9)	18.9 (14.7-23.0)	20.3 (15.1-25.2)	21.5 (15.4-27.7)	23.0 (15.7-30.4)	23.9 (15.9-32.2)
60-day	13.3 (11.3-15.5)	14.4 (12.2-16.8)	16.1 (13.7-18.8)	17.6 (14.8-20.6)	19.6 (15.8-23.4)	21.2 (16.6-25.7)	22.6 (16.9-28.0)	23.9 (17.2-30.6)	25.3 (17.4-33.3)	26.1 (17.4-35.0)

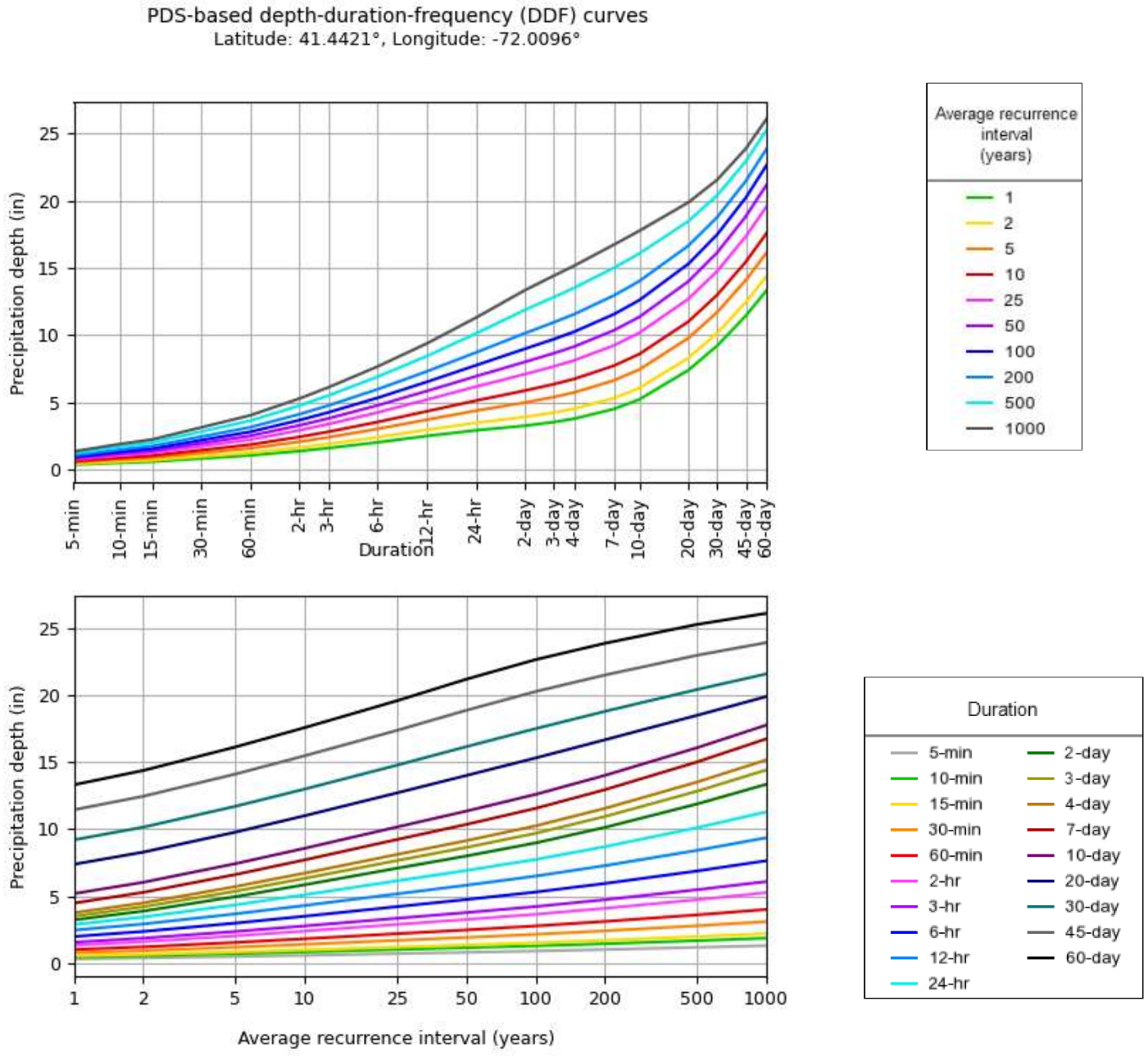
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



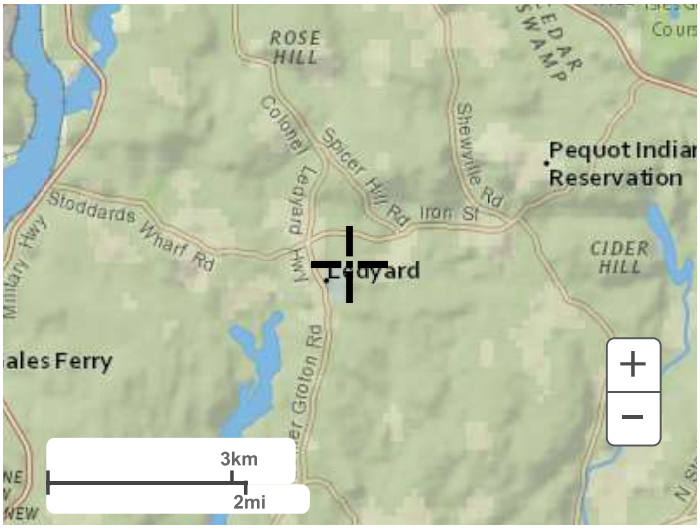
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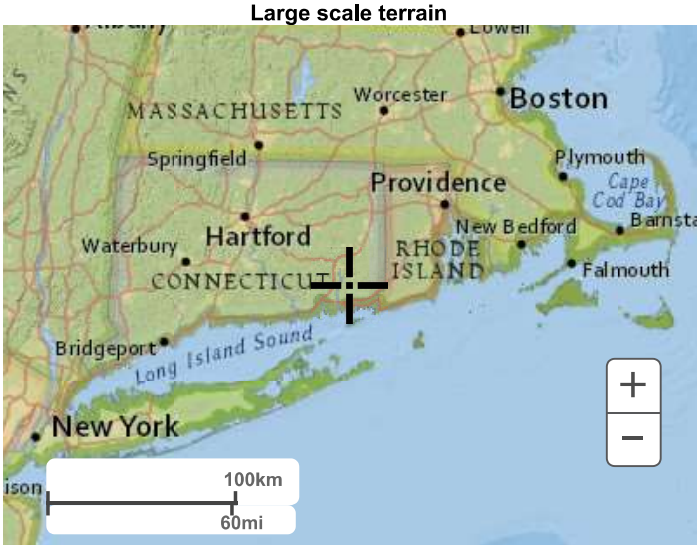
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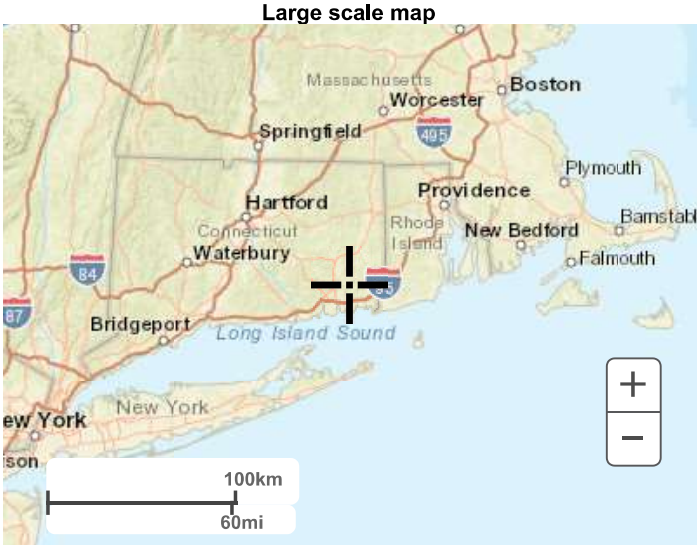
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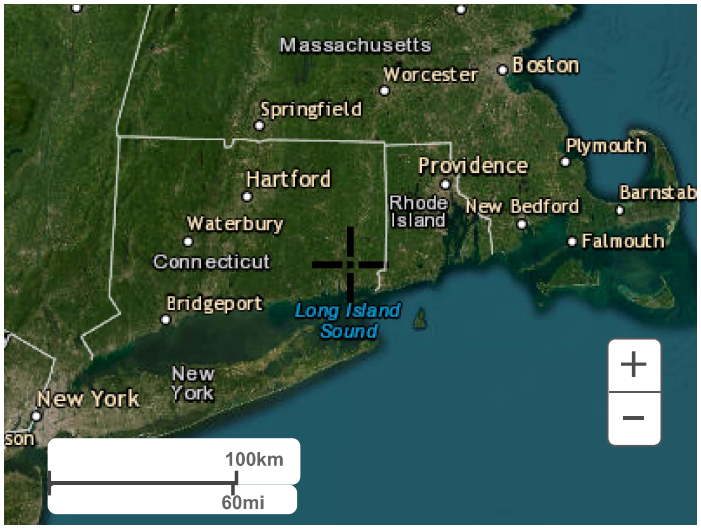
Large scale terrain



Large scale map



Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
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Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

NOAA Atlas 14, Volume 10, Version 3
Location name: Ledyard, Connecticut, USA*
Latitude: 41.4421°, Longitude: -72.0096°
Elevation: 269 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.09 (3.17-5.24)	4.90 (3.78-6.28)	6.20 (4.79-7.98)	7.28 (5.59-9.40)	8.78 (6.54-11.7)	9.91 (7.22-13.4)	11.1 (7.87-15.4)	12.4 (8.36-17.4)	14.4 (9.31-20.6)	16.0 (10.1-23.2)
10-min	2.90 (2.24-3.71)	3.46 (2.68-4.45)	4.39 (3.39-5.65)	5.17 (3.96-6.67)	6.23 (4.63-8.29)	7.03 (5.12-9.49)	7.86 (5.58-10.9)	8.81 (5.92-12.3)	10.2 (6.59-14.6)	11.3 (7.16-16.5)
15-min	2.27 (1.76-2.91)	2.72 (2.10-3.49)	3.44 (2.66-4.43)	4.05 (3.11-5.22)	4.88 (3.63-6.50)	5.51 (4.02-7.44)	6.17 (4.38-8.56)	6.91 (4.65-9.68)	7.98 (5.17-11.5)	8.87 (5.61-12.9)
30-min	1.60 (1.24-2.05)	1.91 (1.48-2.46)	2.43 (1.87-3.12)	2.85 (2.19-3.68)	3.43 (2.55-4.57)	3.87 (2.82-5.23)	4.33 (3.08-6.01)	4.86 (3.27-6.81)	5.61 (3.64-8.06)	6.24 (3.95-9.07)
60-min	1.03 (0.801-1.33)	1.24 (0.956-1.58)	1.56 (1.21-2.01)	1.84 (1.41-2.37)	2.21 (1.65-2.95)	2.50 (1.82-3.37)	2.79 (1.98-3.88)	3.13 (2.10-4.39)	3.62 (2.34-5.19)	4.02 (2.54-5.85)
2-hr	0.679 (0.531-0.863)	0.811 (0.633-1.03)	1.03 (0.798-1.31)	1.20 (0.932-1.54)	1.45 (1.09-1.92)	1.64 (1.20-2.19)	1.83 (1.31-2.52)	2.05 (1.39-2.85)	2.37 (1.54-3.38)	2.64 (1.68-3.81)
3-hr	0.525 (0.412-0.664)	0.626 (0.491-0.792)	0.792 (0.619-1.00)	0.930 (0.722-1.18)	1.12 (0.842-1.47)	1.26 (0.931-1.68)	1.41 (1.01-1.93)	1.58 (1.07-2.19)	1.83 (1.19-2.59)	2.03 (1.30-2.92)
6-hr	0.334 (0.265-0.419)	0.397 (0.314-0.498)	0.501 (0.395-0.630)	0.587 (0.460-0.741)	0.705 (0.535-0.919)	0.794 (0.590-1.05)	0.888 (0.641-1.21)	0.994 (0.679-1.37)	1.15 (0.754-1.62)	1.28 (0.818-1.82)
12-hr	0.205 (0.164-0.255)	0.243 (0.194-0.303)	0.306 (0.243-0.381)	0.358 (0.283-0.448)	0.429 (0.328-0.555)	0.483 (0.362-0.634)	0.539 (0.392-0.728)	0.604 (0.415-0.824)	0.699 (0.461-0.976)	0.777 (0.500-1.10)
24-hr	0.120 (0.097-0.148)	0.143 (0.115-0.177)	0.181 (0.145-0.224)	0.213 (0.169-0.264)	0.256 (0.197-0.328)	0.288 (0.217-0.375)	0.322 (0.236-0.432)	0.362 (0.250-0.490)	0.421 (0.279-0.584)	0.470 (0.304-0.661)
2-day	0.067 (0.054-0.082)	0.081 (0.066-0.099)	0.103 (0.083-0.126)	0.122 (0.098-0.149)	0.147 (0.114-0.187)	0.166 (0.127-0.215)	0.187 (0.138-0.249)	0.211 (0.146-0.283)	0.247 (0.164-0.340)	0.278 (0.180-0.388)
3-day	0.048 (0.039-0.059)	0.058 (0.047-0.071)	0.074 (0.060-0.090)	0.088 (0.071-0.107)	0.106 (0.083-0.134)	0.120 (0.091-0.154)	0.134 (0.100-0.178)	0.152 (0.105-0.203)	0.178 (0.119-0.243)	0.200 (0.130-0.278)
4-day	0.039 (0.032-0.047)	0.047 (0.038-0.056)	0.059 (0.048-0.072)	0.070 (0.056-0.085)	0.084 (0.066-0.106)	0.095 (0.073-0.122)	0.106 (0.079-0.141)	0.120 (0.084-0.160)	0.140 (0.094-0.192)	0.157 (0.103-0.218)
7-day	0.026 (0.022-0.032)	0.031 (0.026-0.037)	0.039 (0.032-0.047)	0.045 (0.037-0.055)	0.054 (0.043-0.068)	0.061 (0.047-0.078)	0.068 (0.051-0.090)	0.077 (0.054-0.101)	0.089 (0.060-0.121)	0.099 (0.065-0.137)
10-day	0.021 (0.018-0.025)	0.025 (0.020-0.030)	0.030 (0.025-0.037)	0.035 (0.029-0.042)	0.042 (0.033-0.052)	0.047 (0.036-0.059)	0.052 (0.039-0.068)	0.058 (0.041-0.076)	0.066 (0.045-0.090)	0.074 (0.048-0.101)
20-day	0.015 (0.012-0.018)	0.017 (0.014-0.020)	0.020 (0.016-0.024)	0.022 (0.019-0.027)	0.026 (0.021-0.032)	0.029 (0.022-0.036)	0.031 (0.023-0.040)	0.034 (0.024-0.045)	0.038 (0.026-0.051)	0.041 (0.027-0.056)
30-day	0.012 (0.010-0.015)	0.014 (0.011-0.016)	0.016 (0.013-0.019)	0.018 (0.015-0.021)	0.020 (0.016-0.024)	0.022 (0.017-0.027)	0.024 (0.018-0.030)	0.026 (0.018-0.033)	0.028 (0.019-0.037)	0.029 (0.019-0.040)
45-day	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.013 (0.011-0.015)	0.014 (0.012-0.016)	0.016 (0.012-0.019)	0.017 (0.013-0.021)	0.018 (0.014-0.023)	0.019 (0.014-0.025)	0.021 (0.014-0.028)	0.022 (0.014-0.029)
60-day	0.009 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.014)	0.013 (0.010-0.016)	0.014 (0.011-0.017)	0.015 (0.011-0.019)	0.016 (0.011-0.021)	0.017 (0.012-0.023)	0.018 (0.012-0.024)

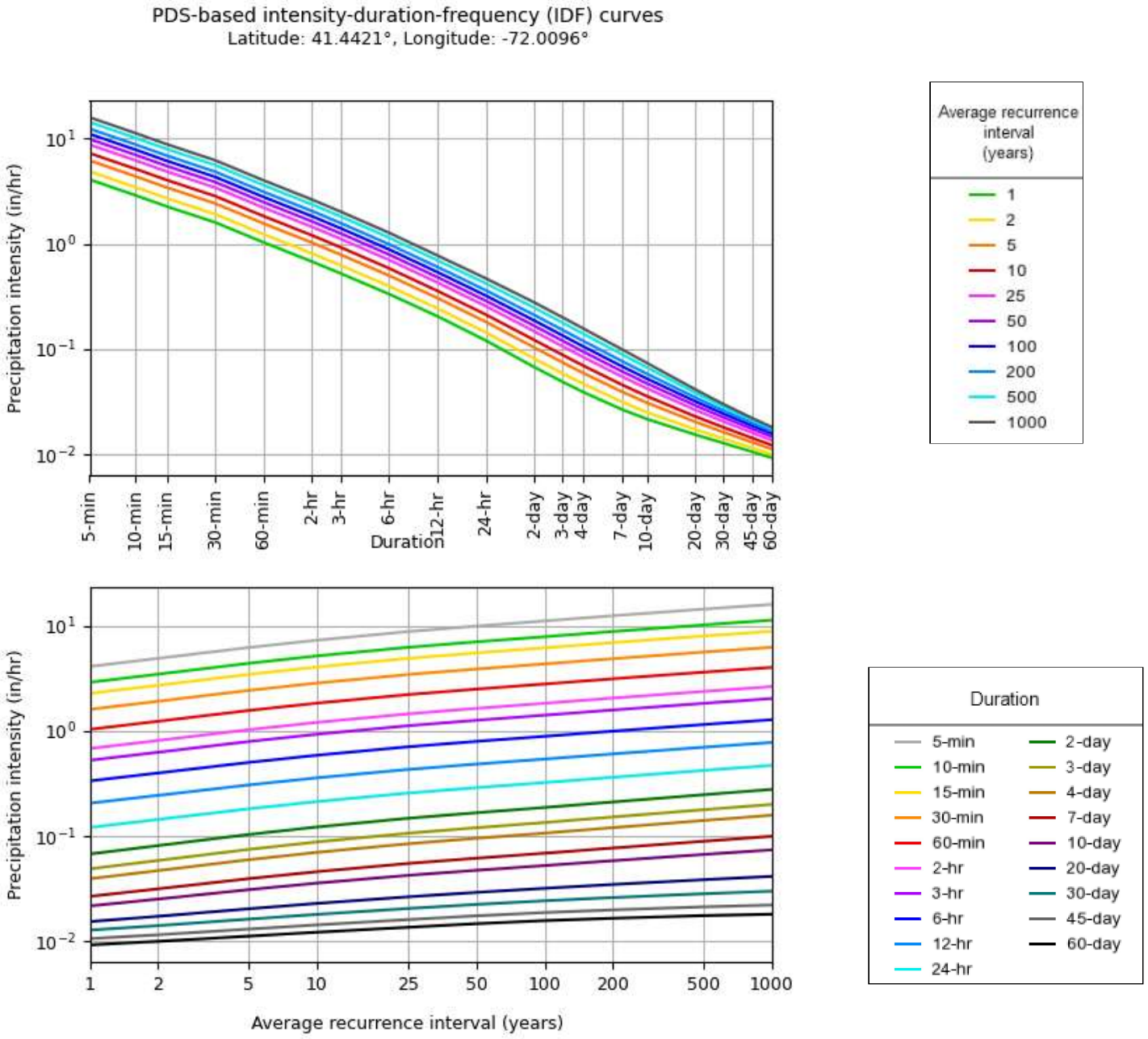
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



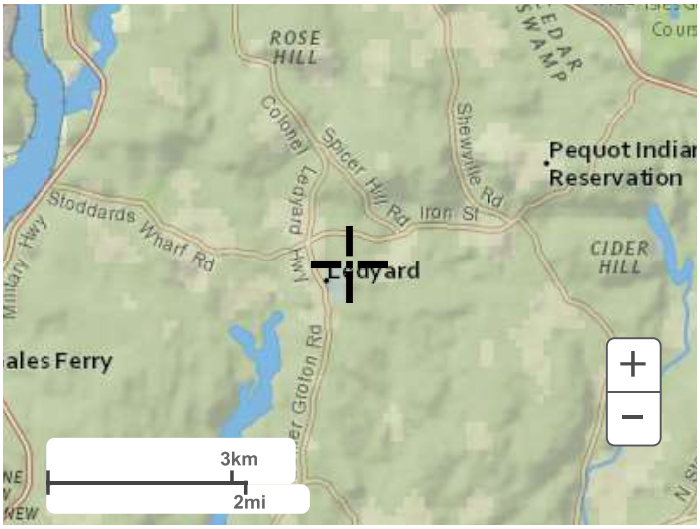
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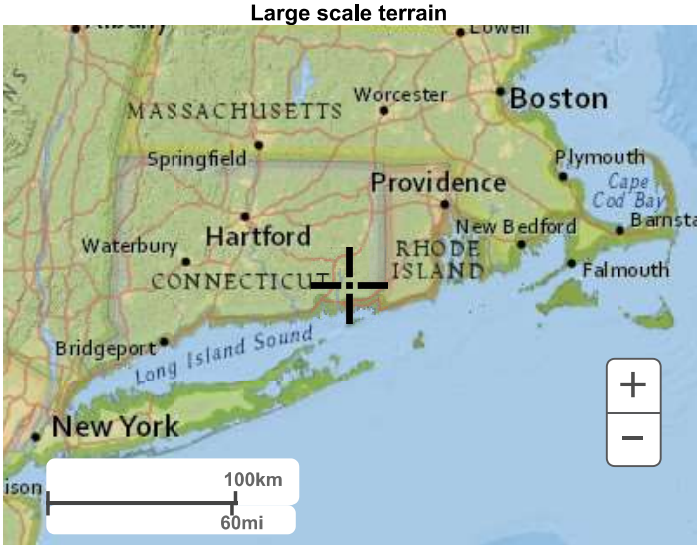
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Maps & aerials

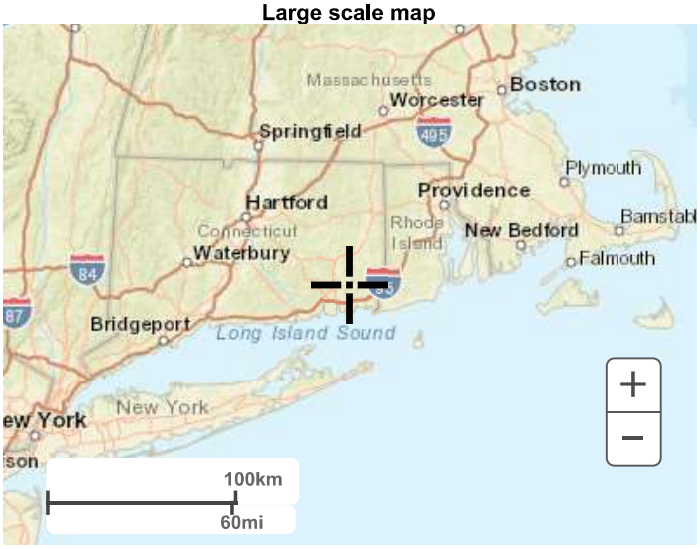
Small scale terrain



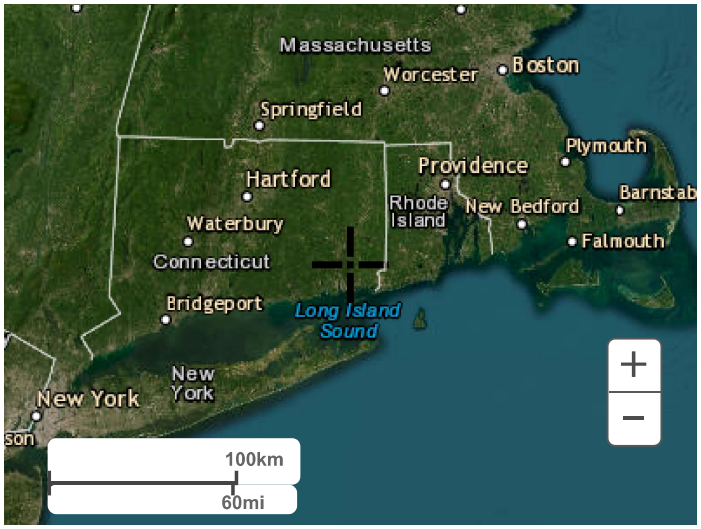
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX F

NRCS Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut, Eastern Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


72° 0' 56" W
71° 59' 35" W
41° 26' 54" N
41° 26' 14" N
749400
749600
749800
750000
750200
750400
750600
750800
751000
751200
4592800
4592600
4592400
4592200
4592000
4591800
61C
29B
3
73C
61B
46B
3
73C
214
75C
702A
62C
73C
18
17
17
3
51B
103
73C
46B
84B
47C
3
85B
73C
47C
45B
84B
86D
46B
3
85B
27
117
73C
50B
62D
47C
45A
Map Scale: 1:8,640 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 400 800 1600 2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	22.7	7.3%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	1.7	0.5%
18	Catden and Freetown soils, 0 to 2 percent slopes	1.9	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	0.3	0.1%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	0.1	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	14.5	4.6%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	31.3	10.0%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	40.0	12.8%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	0.1	0.0%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	34.3	11.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	2.9	0.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	0.1	0.0%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	0.1	0.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	19.4	6.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	49.8	15.9%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	9.0	2.9%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	14.1	4.5%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	23.0	7.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	14.0	4.5%
103	Rippowam fine sandy loam	11.8	3.8%
702A	Tisbury silt loam, 0 to 3 percent slopes	21.7	6.9%
Totals for Area of Interest		**312.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut, Eastern Part

3—Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2t2qt
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 40 percent
Leicester, extremely stony, and similar soils: 35 percent
Whitman, extremely stony, and similar soils: 17 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Leicester, Extremely Stony

Setting

Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bg - 7 to 18 inches: fine sandy loam
BC - 18 to 24 inches: fine sandy loam
C1 - 24 to 39 inches: gravelly fine sandy loam
C2 - 39 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B/D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Description of Whitman, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: peat

A - 1 to 10 inches: fine sandy loam
Bg - 10 to 17 inches: gravelly fine sandy loam
Cdg - 17 to 61 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 7 to 38 inches to densic material
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY009CT - Wet Till Depressions
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs, swamps
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

17—Timakwa and Natchaug soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2qx
Elevation: 0 to 1,420 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Timakwa and similar soils: 45 percent
Natchaug and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Timakwa

Setting

Landform: Depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous and woody organic material over sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 37 inches: muck
2Cg1 - 37 to 47 inches: very gravelly loamy coarse sand
2Cg2 - 47 to 60 inches: gravelly loamy very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 14.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Description of Natchaug

Setting

Landform: Depressions, depressions, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loamy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy till

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 31 inches: muck
2Cg1 - 31 to 39 inches: silt loam
2Cg2 - 39 to 79 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.01 to 14.17 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 17.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Minor Components

Whitman

Percent of map unit: 7 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Catden

Percent of map unit: 3 percent
Landform: Depressions, depressions, fens, depressions, kettles, marshes, bogs, swamps
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Maybid

Percent of map unit: 3 percent
Landform: Drainageways, terraces, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent

Landform: Drainageways, outwash deltas, depressions, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Linear, concave
Hydric soil rating: Yes

18—Catden and Freetown soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t2r2
Elevation: 0 to 1,390 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Catden and similar soils: 45 percent
Freetown and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Catden

Setting

Landform: Depressions, bogs, fens, depressions, depressions, kettles, marshes, swamps
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed herbaceous organic material and/or highly decomposed woody organic material

Typical profile

Oa1 - 0 to 2 inches: muck
Oa2 - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY042NY - Semi-Rich Organic Wetlands
Hydric soil rating: Yes

Description of Freetown

Setting

Landform: Depressions, marshes, depressions, bogs, swamps, kettles
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 26.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F144AY043MA - Acidic Organic Wetlands
Hydric soil rating: Yes

Minor Components

Natchaug

Percent of map unit: 7 percent
Landform: Depressions, depressions, depressions
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 6 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Base slope
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

Timakwa

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent
Landform: Depressions, drainageways, outwash deltas, outwash terraces
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Hydric soil rating: Yes

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam
Bw1 - 11 to 16 inches: fine sandy loam
Bw2 - 16 to 26 inches: fine sandy loam
2C1 - 26 to 45 inches: loamy fine sand

2C2 - 45 to 55 inches: loamy fine sand
2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent
Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Walpole

Percent of map unit: 3 percent
Landform: Deltas, depressions, outwash terraces, depressions, outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Hinckley

Percent of map unit: 3 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

45A—Woodbridge fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w686
Elevation: 0 to 1,420 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam
Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton
Percent of map unit: 7 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury
Percent of map unit: 6 percent
Landform: Depressions, ground moraines, drainageways, drumlins, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton
Percent of map unit: 1 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony
Percent of map unit: 1 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t2ql
Elevation: 0 to 1,470 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Woodbridge, fine sandy loam, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Fine Sandy Loam

Setting

Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 18 inches: fine sandy loam
Bw2 - 18 to 30 inches: fine sandy loam
Cd - 30 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton

Percent of map unit: 10 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 8 percent
Landform: Depressions, ground moraines, hills, drainageways

Landform position (two-dimensional): Toeslope, backslope, footslope
Landform position (three-dimensional): Base slope, head slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

46B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2t2qr
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodbridge, very stony, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Very Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, very stony

Percent of map unit: 10 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 8 percent
Landform: Depressions, ground moraines, hills, drainageways, drumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

47C—Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w685
Elevation: 10 to 1,470 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Woodbridge, extremely stony, and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit

Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, extremely stony

Percent of map unit: 9 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 5 percent
Landform: Drumlins, depressions, hills, drainageways, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 2 percent
Landform: Hills, ground moraines

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman, extremely stony

Percent of map unit: 1 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

50B—Sutton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w69j
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sutton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sutton

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 5 inches: fine sandy loam
Bw1 - 5 to 17 inches: fine sandy loam
Bw2 - 17 to 25 inches: sandy loam
C1 - 25 to 39 inches: gravelly sandy loam
C2 - 39 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 12 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Charlton

Percent of map unit: 9 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Leicester

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Woodbridge

Percent of map unit: 5 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Whitman

Percent of map unit: 1 percent
Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

51B—Sutton fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2xfff
Elevation: 0 to 1,410 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Sutton, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sutton, Very Stony

Setting

Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 7 inches: fine sandy loam
Bw1 - 7 to 19 inches: fine sandy loam
Bw2 - 19 to 27 inches: sandy loam
C1 - 27 to 41 inches: gravelly sandy loam
C2 - 41 to 62 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 12 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Charlton, very stony
Percent of map unit: 7 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony
Percent of map unit: 4 percent
Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Leicester, very stony
Percent of map unit: 3 percent
Landform: Depressions, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, very stony
Percent of map unit: 1 percent
Landform: Drumlins, ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

61B—Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony

Map Unit Setting
National map unit symbol: 2w81v
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

61C—Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w820
Elevation: 0 to 1,540 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton, very stony, and similar soils: 50 percent
Charlton, very stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Very Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Very Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Chatfield, very stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

62C—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2wks7
Elevation: 0 to 1,310 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 50 percent
Charlton, extremely stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Leicester, extremely stony

Percent of map unit: 5 percent
Landform: Hills, drainageways, depressions, ground moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

62D—Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w81r
Elevation: 0 to 1,640 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 55 percent
Charlton, extremely stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, nose slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chatfield, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Hollis, extremely stony

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex

Hydric soil rating: No

73C—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2w698
Elevation: 0 to 1,550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent
Chatfield, very stony, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Chatfield, Very Stony

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 2 inches: fine sandy loam
Bw - 2 to 30 inches: gravelly fine sandy loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 41 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: No

Hollis, very stony
Percent of map unit: 5 percent
Landform: Hills, ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester, very stony
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

75C—Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9lqn
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition
Hollis and similar soils: 35 percent
Chatfield and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting
Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile
Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam

Bw1 - 6 to 9 inches: channery fine sandy loam
Bw2 - 9 to 15 inches: gravelly fine sandy loam
2R - 15 to 80 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Chatfield

Setting

Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material
A - 1 to 6 inches: gravelly fine sandy loam
Bw1 - 6 to 15 inches: gravelly fine sandy loam
Bw2 - 15 to 29 inches: gravelly fine sandy loam
2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 15 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 0 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Charlton

Percent of map unit: 7 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sutton, very stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Leicester

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Brimfield

Percent of map unit: 1 percent
Landform: Ridges, hills
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed, red parent material

Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed, sandy subsoil

Percent of map unit: 1 percent
Hydric soil rating: No

84B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t2qn
Elevation: 0 to 1,570 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 55 percent
Montauk and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Nose slope, side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk

Setting

Landform: Hills, drumlins
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

A - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 14 inches: fine sandy loam
Bw2 - 14 to 25 inches: sandy loam
2Cd1 - 25 to 39 inches: gravelly loamy coarse sand
2Cd2 - 39 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 38 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 24 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 5 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Footslope, backslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Toeslope, backslope, footslope

Landform position (three-dimensional): Base slope, head slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

85B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w679
Elevation: 0 to 1,530 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton, very stony, and similar soils: 55 percent
Montauk, very stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge, very stony
Percent of map unit: 8 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, very stony
Percent of map unit: 3 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony
Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, very stony
Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

86D—Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: 2w67c
Elevation: 0 to 1,400 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 55 percent
Montauk, extremely stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk, Extremely Stony

Setting

Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Surface area covered with cobbles, stones or boulders: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Charlton, extremely stony

Percent of map unit: 6 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 3 percent
Landform: Drumlins, depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, extremely stony

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

103—Rippowam fine sandy loam

Map Unit Setting

National map unit symbol: 9ljp
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rippowam and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rippowam

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Coarse-loamy alluvium

Typical profile

A - 0 to 5 inches: fine sandy loam
Bg1 - 5 to 12 inches: fine sandy loam
Cg2 - 12 to 19 inches: fine sandy loam
Cg3 - 19 to 24 inches: sandy loam
Cg4 - 24 to 27 inches: sandy loam
Cg5 - 27 to 31 inches: loamy sand
Cg6 - 31 to 65 inches: stratified very gravelly coarse sand to loamy fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 18 inches

Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F144AY014CT - Wet Sandy Low Floodplain
Hydric soil rating: Yes

Minor Components

Occum

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Suncook

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lim

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Pootatuck

Percent of map unit: 3 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Limerick

Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Saco

Percent of map unit: 2 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

702A—Tisbury silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2y07g
Elevation: 0 to 1,260 feet
Mean annual precipitation: 43 to 54 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tisbury and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tisbury

Setting

Landform: Outwash terraces, deltas, outwash plains, valley trains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite, schist, and/or gneiss

Typical profile

Ap - 0 to 8 inches: silt loam
Bw1 - 8 to 18 inches: silt loam
Bw2 - 18 to 26 inches: silt loam
2C - 26 to 65 inches: extremely gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 24 to 36 inches to strongly contrasting textural stratification
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 16 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F144AY026CT - Moist Silty Outwash

Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Agawam

Percent of map unit: 5 percent
Landform: Kame terraces, outwash plains, outwash terraces, moraines, kames
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Ninigret

Percent of map unit: 3 percent
Landform: Kames, outwash terraces, kame terraces, outwash plains, moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

Raypol

Percent of map unit: 2 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

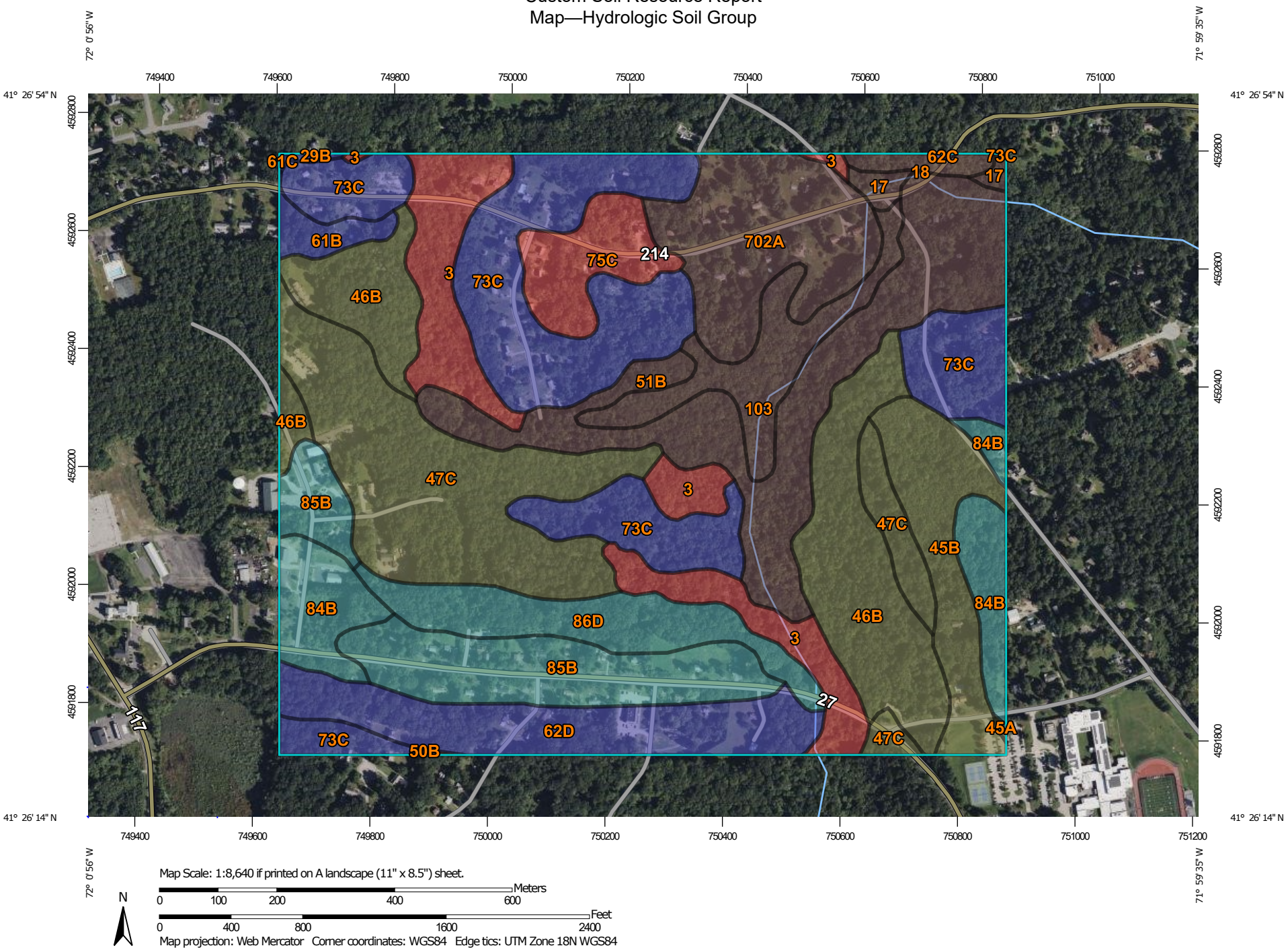
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	22.7	7.3%
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	B/D	1.7	0.5%
18	Catden and Freetown soils, 0 to 2 percent slopes	B/D	1.9	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	0.3	0.1%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	C/D	0.1	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	14.5	4.6%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	31.3	10.0%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	40.0	12.8%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	B/D	0.1	0.0%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	B/D	34.3	11.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	2.9	0.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	0.1	0.0%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	0.1	0.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	19.4	6.2%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	49.8	15.9%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	9.0	2.9%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	14.1	4.5%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	C	23.0	7.3%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	14.0	4.5%
103	Rippowam fine sandy loam	B/D	11.8	3.8%
702A	Tisbury silt loam, 0 to 3 percent slopes	B/D	21.7	6.9%
Totals for Area of Interest			**312.8**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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APPENDIX G

Test Pits & Infiltration Results

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED SPOT ELEVATION (TW 123.45 / BW 122.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SAN — SANITARY SEWER
- VENT — VENT LINE
- CLEANOUT
- W — WATER LINE / FIRE LINE
- W — WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- E — ELECTRIC / COMM. DUCT BANK
- GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

Legend

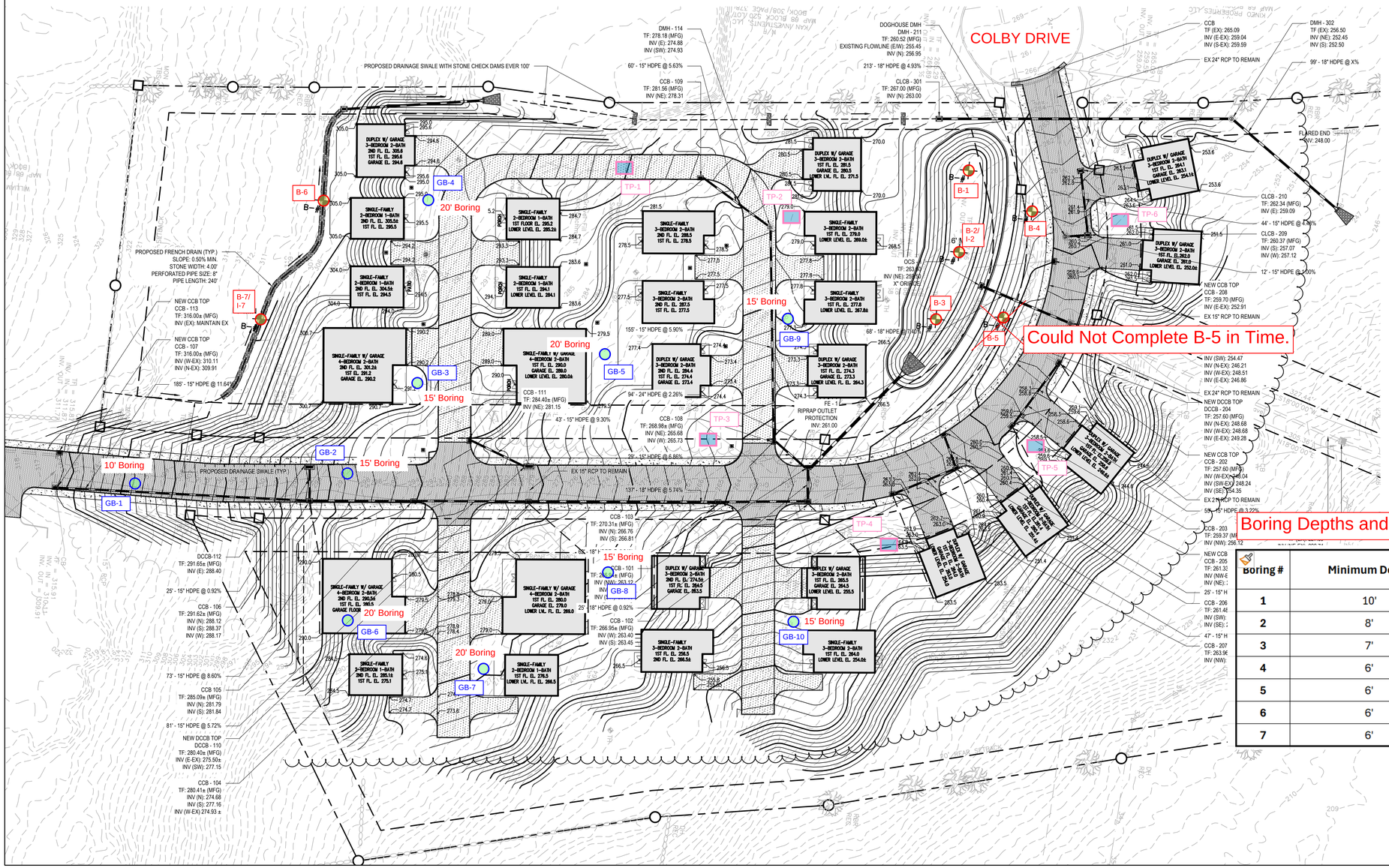
- Stormwater Boring
- Geotech Boring
- Geotech Test Pit

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM



Boring #	Minimum Depth	Approximate Depth of Infiltration Testing
1	10'	~~5-6'~~
2	8'	3-4'
3	7'	~~2-3'~~
4	6'	~~1-2'~~
5	6'	~~1-2'~~
6	6'	2-3'
7	6'	2-3'

Prepared by:
benesch
Alfred Benesch & Company
120 Hebron Avenue, 2nd Floor
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY RESIDENTIAL DEVELOPMENT LOTS 8, 9 & 11

COLBY DRIVE LEDYARD, CT

DATE:	REVISION:

KEY PLAN

0 40' 80'
SCALE: 1" = 40'

PROJECT NO.: 0725 500010.00 DRAWN BY: GSL, NL
SCALE: AS SHOWN CHECKED BY: WGW

BORING LOCATION PLAN

DRAWING NO.:
G1.0

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

Test Boring Falling Head Test
Proposed Habitat for Humanity Development
Colby Drive
Ledyard, CT
File No. 0015-046.00

Test Location: I-2
Test Type: Falling Head
Date: 11/5/2024

Driller: J. Casson
Engineer: M. Fekieta
Weather: Sunny, 60s

Ground surface El.: 262.0 (ft.)
Top of Casing El.: 264.5 (ft.)
Bottom of Casing El.: 259.0 (ft.)

Total Casing Length: 5.5 (ft.)

Inside Casing Diameter: 4 (in.)

Hydraulic Conductivity (Kv) = π [D {Ln (h1/h2) }] / 11 (t2-t1)

Elapsed Time (min.)	t2 - t1 (min.)	DTW (in.)	h1 (in.)	h2 (in.)	ln(h1/h2)	Kv (in/min)	Kv (cm/sec)	Kv (in/hr)
4.0	4.0	0.5	66.5	66.0	0.0075	2.2E-03	9.1E-05	1.3E-01
8	4.0	1.3	66.0	65.3	0.0114	3.3E-03	1.4E-04	2.0E-01
12	4.0	2.0	65.3	64.5	0.0116	3.3E-03	1.4E-04	2.0E-01
24	12.0	4.0	64.5	62.5	0.0315	3.0E-03	1.3E-04	1.8E-01
36	12.0	6.0	62.5	60.5	0.0325	3.1E-03	1.3E-04	1.9E-01
58	22.0	10.0	60.5	56.5	0.0684	3.6E-03	1.5E-04	2.1E-01
100	42.0	17.0	56.5	49.5	0.1323	3.6E-03	1.5E-04	2.2E-01
144	44.0	23.0	49.5	43.5	0.1292	3.4E-03	1.4E-04	2.0E-01
171	27.0	27.3	43.5	39.3	0.1028	4.3E-03	1.8E-04	2.6E-01
214	43.0	33.0	39.3	33.5	0.1584	4.2E-03	1.8E-04	2.5E-01
245	31.0	36.5	33.5	30.0	0.1103	4.1E-03	1.7E-04	2.4E-01

Average	3.4E-03	1.5E-04	2.1E-01

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

Test Boring Falling Head Test
Proposed Habitat for Humanity Development
Colby Drive
Ledyard, CT
File No. 0015-046.00

Test Location: I-7
Test Type: Falling Head
Date: 11/5/2024

Driller: Jim Casson
Engineer: M. Fekieta
Weather: Sunny 60s

Ground surface El.: 311.0 (ft.)
Top of Casing El.: 313.4 (ft.)
Bottom of Casing El.: 307.9 (ft.)

Total Casing Length: 5.5 (ft.)

Inside Casing Diameter: 4 (in.)

Hydraulic Conductivity (Kv) = π [D {Ln (h1/h2) }] / 11 (t2-t1)

Elapsed Time (min.)	t2 - t1 (min.)	DTW (in.)	h1 (in.)	h2 (in.)	ln(h1/h2)	Kv (in/min)	Kv (cm/sec)	Kv (in/hr)
1.0	1.0	0.5	66.0	65.5	0.0076	8.7E-03	3.7E-04	5.2E-01
2	1.0	1.3	65.5	64.8	0.0115	1.3E-02	5.6E-04	7.9E-01
4	2.0	3.0	64.8	63.0	0.0274	1.6E-02	6.6E-04	9.4E-01
6	2.0	4.5	63.0	61.5	0.0241	1.4E-02	5.8E-04	8.3E-01
10	4.0	7.5	61.5	58.5	0.0500	1.4E-02	6.0E-04	8.6E-01
16	6.0	11.8	58.5	54.3	0.0754	1.4E-02	6.1E-04	8.6E-01
32	16.0	21.8	54.3	44.3	0.2037	1.5E-02	6.2E-04	8.7E-01
45	13.0	29.5	44.3	36.5	0.1925	1.7E-02	7.2E-04	1.0E+00
70	25.0	40.8	36.5	25.3	0.3685	1.7E-02	7.1E-04	1.0E+00
89	19.0	48.0	25.3	18.0	0.3385	2.0E-02	8.6E-04	1.2E+00
105	16.0	53.0	18.0	13.0	0.3254	2.3E-02	9.8E-04	1.4E+00

Average	1.6E-02	6.6E-04	9.4E-01

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-1
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	264.5'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	10/24/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	7	-	Moist Sample
11/5/24	-	10.5	254'+/-	End of Boring

DEPTH	Casing Blows (ft)	Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	15/24	0 to 2	1-2-4-4		Loose, gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace (-) Roots	6"+/- Topsoil
2								SUBSOIL
3		S-2	18/24	2 to 4	7-17-28-38		Dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	
4								
5								
6		S-3	20/24	5 to 7	14-32-17-20		Dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	TILL
7								
8		S-4	20/24	7 to 9	29-14-19-25		Dense, brown, fine to coarse SAND, little Silt, little fine to coarse Gravel, moist	
9								
10		S-5	18/18	9 to 10.5	17-29-50/6"		Very dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
11								
12							END OF EXPLORATION AT 10.5 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%
Over 50 - Very Dense	16 to 30 - Very Stiff	
	Over 30 - Hard	

SYMBOL KEY

1. S denotes split-barrel sampler.
2. ST denotes 3-inch O.D. undisturbed sample.
3. UO denotes 3-inch Osterberg undisturbed sample.
4. PEN denotes penetration length of sampler.
5. REC denotes recovered length of sample.
6. SPT denotes Standard Penetration Test.
7. WH denotes weight of hammer
8. WR denotes weight of rods
9. PP denotes Pocket Penetrometer.
10. FVST denotes field vane shear test.
11. RQD denotes Rock Quality Designation.
12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 4.5 to 5.5 and 8.5 to 9.5 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-2
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	262'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	10/24/2024	Date End	10/24/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
10/24/24	-	5	257'+/-	Perched Water

DEPTH	Casing Blows (ft)	Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1								8"+/- Topsoil
2		S-1	0/12	1 to 2	7-10-50/0"		Very dense, No Recovery	SUBSOIL
3		S-2	24/24	2 to 4	4-14-20-18		Dense, brown to gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel	
4								
5		S-3	16/24	4 to 6	8-30-46-50		Very dense, Top 6": orange-brown, fine SAND, some Silt, wet;	
6							Bottom 10": gray-brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, dry	TILL
7		S-4	18/24	6 to 8	20-15-22-29		Dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel, moist	
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9							END OF EXPLORATION AT 8 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%
Over 50 - Very Dense	16 to 30 - Very Stiff	
	Over 30 - Hard	

SYMBOL KEY

1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 4 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-3
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	261'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1								9"+/- Topsoil
2		S-1	10/24	1 to 3	2-6-13-21		Medium dense, orange-brown, fine SAND, some Silt	SUBSOIL
3								
4		S-2	2/19	3 to 4.7	22-20-33-50/1"		Very dense, gray, fractured COBBLE fragments	
5								TILL
6		S-3	19/24	5 to 7	19-21-18-16		Dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
7								
8							END OF EXPLORATION AT 7 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 3 to 5 feet below grade.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-4
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	261'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	20/24	0 to 2	2-6-5-5		Medium dense, orange-brown, fine SAND, some Silt	9"+/- Topsoil
2								SUBSOIL
3		S-2	20/24	2 to 4	7-13-19-43		Dense, brown to gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	10/15	4 to 5.3	43-39-50/3"		Very dense, gray, fine to coarse SAND, some Silt, little fine to coarse Gravel	
6							END OF EXPLORATION AT 5.3 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-6
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	308'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	10/24	0 to 2	2-4-13-26		Medium dense, dark brown, fine SAND, some Silt	8"+/- Topsoil
2								SUBSOIL
3		S-2	18/24	2 to 4	6-11-16-18		Medium dense, gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	18/24	4 to 6	17-20-34-50		Very dense, light gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	
6								
7							END OF EXPLORATION AT 6 FEET BELOW GROUND SURFACE	
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SPT N-Values	SPT N-Values	Proportions
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%
Over 50 - Very Dense	16 to 30 - Very Stiff	
	Over 30 - Hard	

SYMBOL KEY

1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 5 feet below grade.
4) Multiple auger refusals between 2 to 5 feet below grade on inferred boulders.

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

PROJECT
PROPOSED HABITAT FOR HUMANITY DEVELOPMENT
COLBY DRIVE
LEDYARD, CONNECTICUT

BORING NO. B-7
SHEET 1 of 1
FILE NO. 0015-046.00
CHKD. BY TJO

Boring Co.	General Borings, Inc.	Boring Location	See Boring Location Plan		
Driller	Jim Casson	Ground Surface El.	310.5'+/-	Datum	Not Available
Logged By	Mateusz Fekieta	Date Start	11/5/2024	Date End	11/5/2024

Hammer Type:	Automatic Hammer
Sampler Size:	1-3/8" I.D. Split Spoon
Type Drill Rig:	Truck Mounted Diedrich D-50
Drilling Method:	3.25-inch I.D. Hollow-Stem Augers

Groundwater Readings (from ground surface)

Date	Time	Depth (ft)	Elev.	Stabilization Time
11/5/24	-	-	-	Not Encountered

DEPTH	Casing Blows (ft)	SAMPLE INFORMATION Type & No.	REC/PEN (inches)	DEPTH (feet)	BLOWS PER 6 INCHES	Core Time (min./ft)	SAMPLE DESCRIPTION	STRATA
1		S-1	14/24	0 to 2	2-4-3-4		Loose, brown, fine SAND, some Silt, trace (-) Roots	9"+/- Topsoil
2								SUBSOIL
3		S-2	16/24	2 to 4	8-12-16-23		Medium dense, gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	TILL
4								
5		S-3	16/24	4 to 6	20-22-40-56		Very dense, light gray, fine to coarse SAND, little fine to coarse Gravel, little Silt	
6								
7							END OF EXPLORATION AT 6 FEET BELOW GROUND SURFACE	
8								
9								
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SPT N-Values	SPT N-Values	Proportions	SYMBOL KEY	
0 to 4 - Very Loose	0 to 2 - Very Soft	Trace = 0 to 10%	1. S denotes split-barrel sampler.	7. WH denotes weight of hammer
5 to 10 - Loose	3 to 4 - Soft	Little = 10 to 20%	2. ST denotes 3-inch O.D. undisturbed sample.	8. WR denotes weight of rods
11 to 30 - Medium Dense	5 to 8 - Medium Stiff	Some = 20 to 35%	3. UO denotes 3-inch Osterberg undisturbed sample.	9. PP denotes Pocket Penetrometer.
31 to 50 - Dense	9 to 15 - Stiff	And = 35 to 50%	4. PEN denotes penetration length of sampler.	10. FVST denotes field vane shear test.
Over 50 - Very Dense	16 to 30 - Very Stiff		5. REC denotes recovered length of sample.	11. RQD denotes Rock Quality Designation.
	Over 30 - Hard		6. SPT denotes Standard Penetration Test.	12. C denotes core run number.

FIELD NOTES: 1) Stratification lines represent approximate boundaries between soil types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations may occur due to other factors.
3) Cobbles and/or boulders were inferred based on observed auger chatter from about 0 to 4 feet below grade.

APPENDIX H

Outlet Protection Sizing

ENGLISH OUTLET PROTECTION

Habitat for Humanity - Ledyard CT - 0725-500010.00

									RIPRAP APRON										SCOUR HOLE						QUANTITIES	
									CHANNEL			Table 11-12 Table 11-13			TYPE C APRON											
System Outlet	Pipe Rise (in)	Pipe Span (in)	Design Year (yr)	Design Q (cfs)	Vel. (ft/s)	TW depth (ft)	Well Defined Channel (Y/N)	TW Cond.	Bottom Width (ft)	Side Slope H:1V	Riprap APRON TYPE	SCOUR HOLE? (Y/N)	La APRON LENGTH	*La Minimum (ft)*	S BED SLOPE	MAX. Shear str. (lb/ft^2)	RIPRAP TYPE	APRON WIDTH 1	APRON WIDTH 2	Type 1 or 2	$Rp^2(Q/Rp^{2.5})^{1.333}$ TW	Stone Size (ft)	Type	F (ft)	C (ft)	B (ft)	Area of Riprap (ft^2)	Volume of Riprap (CUY)
						(1)		(2)			(3)	(4)	(5)	(4)		(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(14)	(14)		
FE - 1-1/1-2	24	24	25	**10.76**	**3.43**	0	No	Min	3	3:01	A	No	13.7	*12*	*	*	Modified	6.00	15.57	N/A	*	*	*	*	*	*	147.4	5.5
FE - 2	12	12	25	**0.00**	**0**	0	No	Min	*	*	A	No	1.0	*10*	*	*	Modified	3.00	10.00	N/A	*	*	*	*	*	*	65.0	2.4
FE - 3	15	15	25	**0.71**	**2.75**	0	No	Min	*	*	A	No	4.5	*10*	*	*	Modified	3.75	10.75	N/A	*	*	*	*	*	*	65.0	2.4
FE - 4/5	36	36	25	**21.44**	**8.61**	0	No	Min	*	*	A	No	15.7	*14*	*	*	Inter.	9.00	19.99	N/A	*	*	*	*	*	*	224.2	12.5

Color Legend:
User Input | Calculated

NOTES:
The following are refernces to the CTDOT Drainage Manual:

(1) For a "free outfall" condition use the normal depth of the pipe as an approximation.
(2) Min = TW<.5(Pipe Rise), Max=TW≥.5(Pipe Rise), * - Does not apply to a well defined channel
(3) Apron type from Section 11.13.5
(4) Scour Houle? : Table 11-12.1 or Table 11-13.1 (Use column (2) to determine which table to use.)
If the velocity in column "F" is > 14fps Then a Scour Hole is required.
(5) Computed La (11.31 or 11.32)
(6) Max. Shear Stress from equation (7.12)
(7) Riprap: Type C Table 7-4
Type A & B Table 11-11
(8)Width 1: Type A & B = 3(Pipe Rise)
Type C = Comps worksheet (W_3)
(9) Width 2: Type A = 3(Pipe Rise)+.7(La)
Type B = 3(Pipe Rise)+.4(La)
Type C = Width 1
(10) Scour Hole Type: Type 1: Depth = .5(Pipe Rise)
Type 2: Depth = Pipe Rise
(see Figure 11-15)
(11) Common part of equation for stone size (d_{50})
(see equations: 11.35 and 11.36)
(12) Stone size (d_{50})
(see equations: 11.35 and 11.36)
(13) Type of Riprap required based on the stone size in (11)
(see Chart on page 11.13-5)
(14) Scour Hole dimensions
(see Figure 11-15)

APPENDIX I

Grading & Drainage Plan

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED SPOT ELEVATION (TW 123.45 / BW 122.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

DRAINAGE AND UTILITIES LEGEND

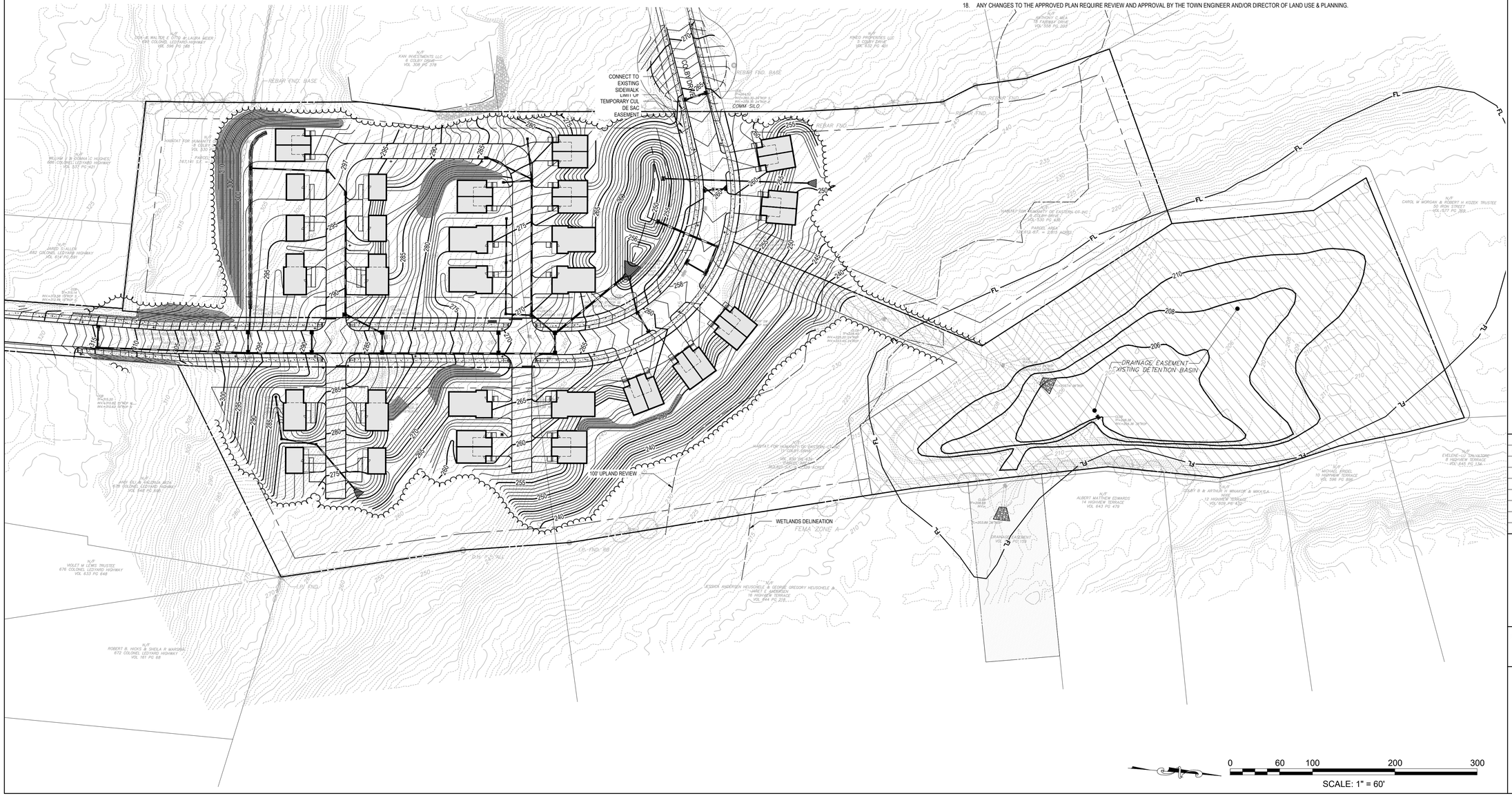
- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SANITARY SEWER
- VENT LINE
- CLEANOUT
- WATER LINE / FIRE LINE
- WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- ELECTRIC / COMM. DUCT BANK
- GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM.
18. ANY CHANGES TO THE APPROVED PLAN REQUIRE REVIEW AND APPROVAL BY THE TOWN ENGINEER AND/OR DIRECTOR OF LAND USE & PLANNING.



Prepared by:
benesch
Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL, TRS
CHECKED BY: WGW

OVERALL GRADING & DRAINAGE PLAN

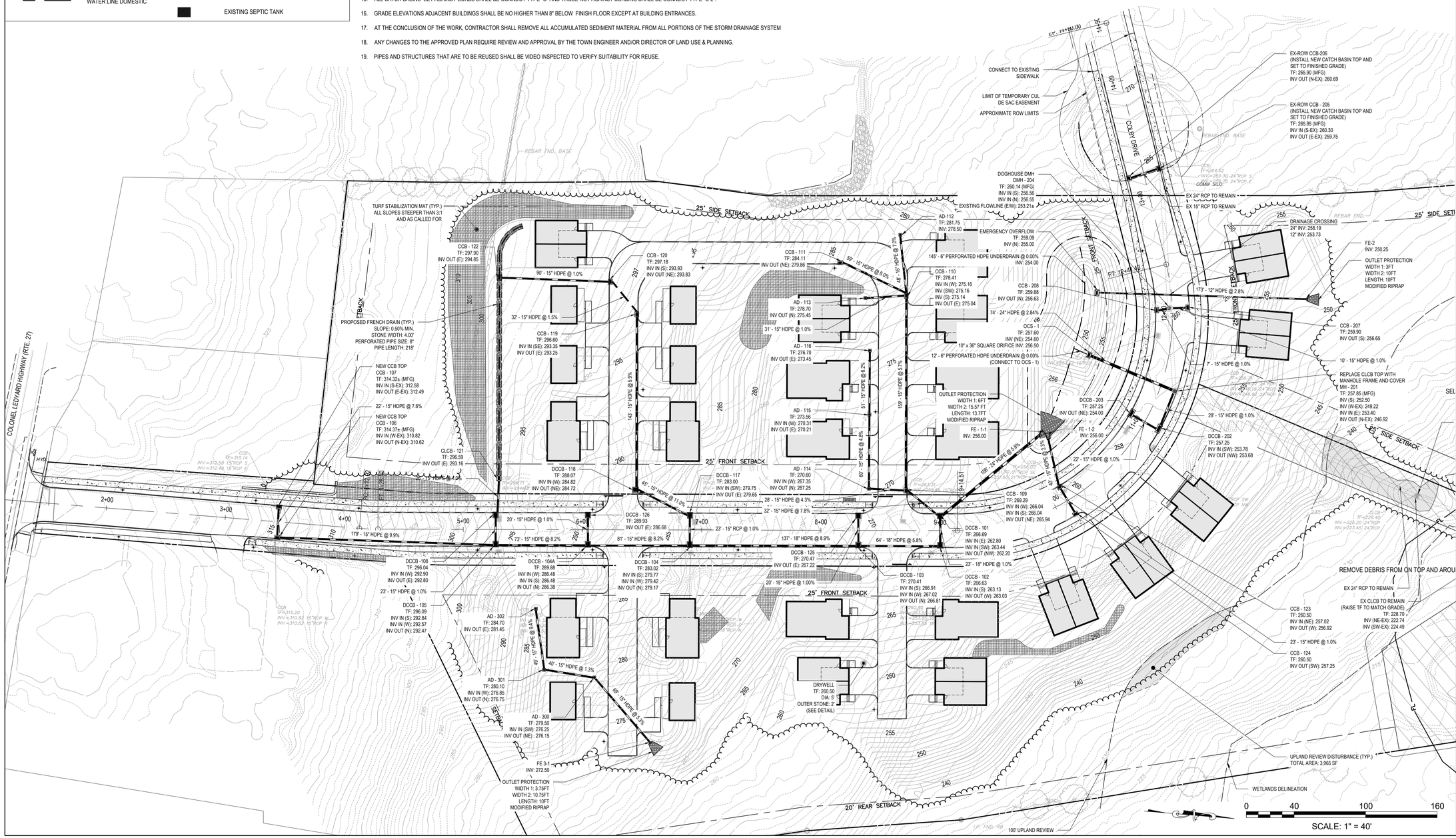
DRAWING NO.:
C3.0

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SANITARY SEWER
- VENT LINE
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- GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

DRAINAGE NOTES

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6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
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15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM
18. ANY CHANGES TO THE APPROVED PLAN REQUIRE REVIEW AND APPROVAL BY THE TOWN ENGINEER AND/OR DIRECTOR OF LAND USE & PLANNING.
19. PIPES AND STRUCTURES THAT ARE TO BE REUSED SHALL BE VIDEO INSPECTED TO VERIFY SUITABILITY FOR REUSE.



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HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

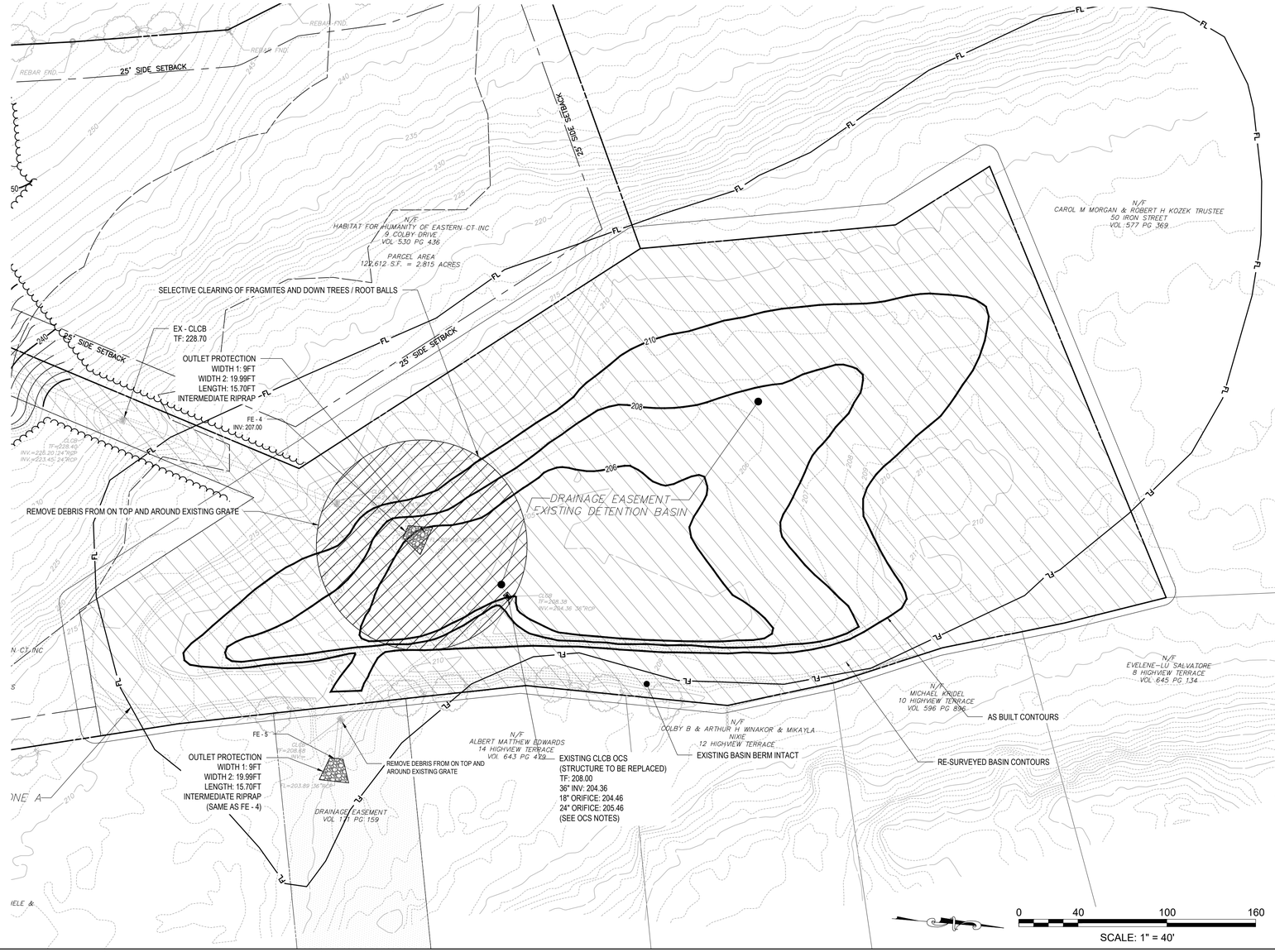
COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL, TRS
CHECKED BY: WGW

DRAINAGE PLAN

DRAWING NO.:
C3.1



OCS NOTES

- PIPE IS IN ACCEPTABLE CONDITION.
- REPLACE EXISTING STRUCTURE AS CALLED FOR, SEE OCS DETAILS.

BASIN COMPARISON

BASIN PER AS-BUILT SURVEY DATED 12/05/2003

APPROXIMATE VOLUME: 125,465 CUBIC FEET

BASIN PER ADDITIONAL SURVEY PERFORMED OCTOBER 2024

APPROXIMATE VOLUME: 145,0303 CUBIC FEET

SEE HYDROCAD ANALYSIS

Prepared by:

benesch

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HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL**
CHECKED BY: **WGW**

EXISTING BASIN REHABILITATION PLAN

DRAWING NO.:
C3.2

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR (123)
- PROPOSED INDEX CONTOUR (120)
- PROPOSED SPOT ELEVATION (TW 123.45 / BW 122.45; 123.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B–#)

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.



Prepared by:

benesch

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860-633-8341

Prepared for:

Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

PROJECT NO.: **0725 500010.00**
SCALE: **AS NOTED**
DATE: **12/20/2024**
DRAWN BY: **GSL, TRS**
CHECKED BY: **WGW**

GRADING PLAN

DRAWING NO.: **C3.3**

INSTR # 2024001181 VOL 644 PG 218
RECORDED 05/28/2024 02:08:27 PM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
TOWN CONVEYANCE TAX $1,767.50
STATE CONVEYANCE TAX $5,302.50

Return To:
Jessica Andersen Heuschele,
George Gregory Heuschele
and Janet W. Andersen
13 Pinelock Drive
Gales Ferry, CT 06335

EXECUTOR DEED

Kathleen Standish, Executor of the Estate of Robert C. Derda

To All People to Whom These Presents Shall Come, Greetings:

KNOW YE, THAT I, **Kathleen Standish, duly appointed Executor under the WILL for the Estate of Robert C. Derda**, late of Colchester, CT, by virtue and in exercise of the power and authority vested in me as Executor as aforesaid in and by **ARTICLE VIII, PARAGRAPH C** of said WILL, and of every other power and authority to me hereunto enabling me to sell and convey certain real estate of said deceased known as **16 Highview Terrace, Ledyard, CT 06339 and 17 Highview Terrace, Ledyard, CT 06339**, and in consideration of the sum of Seven Hundred Seven Thousand And No/100 Dollars ($707,000.00) received to the Estate's full satisfaction of **Jessica Andersen Heuschele and George Gregory Heuschele**, of the Town of Gales Ferry, County of New London and State of Connecticut, **and Janet W. Andersen,** of the Town of Mystic, County of New London and State of Connecticut, do hereby grant, bargain, sell and confirm unto the said **Jessica Andersen Heuschele, George Gregory Heuschele and Janet W. Andersen, as Joint Tenants with Full Rights of Survivorship**, all such right, title, interest, claim and demand which the said deceased had at the time of his/her death, which said estate now has or which I have as such Executor, with **EXECUTOR COVENANTS**:

See Schedule A attached hereto and made a part hereof.

Said premises are subject to the following encumbrances:
1. Any and all provisions of any ordinance, municipal regulation, public or private law.
2. Any assessments or pending assessments for which a lien or liens have not as yet been filed.
3. Any provisions, if applicable, of any inland/wetlands or coastal wetland statutes, ordinances, rules and regulations.

As partial consideration for this conveyance, the herein Grantees agree to assume and pay all real estate taxes and other municipal charges hereafter coming due on the within described premises.

TO HAVE AND TO HOLD the above granted and bargained premises with the appurtenances thereof, unto the said Grantees, their heirs and assigns forever, to their own proper use and behoof. And I, the said Executor, do hereby covenant with the Grantees, their heirs and assigns, that I have full power and authority as Executor aforesaid to grant and convey the above described premises in manner and form as aforesaid do further covenant to **WARRANT AND DEFEND** the same to the said Grantees, their heirs and assigns, against the claims of any person whomsoever claiming by, from or under us as **Executor for Estate of Robert C. Derda**, as aforesaid

IN WITNESS WHEREOF, I have hereunto set my hands and seals this May 24, 2024.

Signed, Sealed and Delivered in the Presence of:

Witness: Nicholas R. Scola

Witness:

Estate of Robert C. Derda

BY: Kathleen Standish Executor
Kathleen Standish, Executor

State of Connecticut
County of New London ss. Mystic

On this the May 24, 2024, before me appeared Kathleen Standish who acknowledged herself to be the Executor of Estate of Robert C. Derda, and that she, as such Executor, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the Estate by herself as Executor.

In witness whereof I hereunto set my hand.

Nicholas R. Scola, Notary Public
My Commission expires: 08/31/2026

NICHOLAS R. SCOLA NOTARY PUBLIC CONNECTICUT

SCHEDULE "A"

Two certain tracts of land in the Town of Ledyard, county of New London, and State of Connecticut, as shown on a plan entitled: "Boundary Survey and Detailed Lot Layout Map Gray Farms Subdivision Section V Colonel Ledyard Highway & Gallup Hill Road Ledyard, Connecticut Property of & Prepared for Flintlock Associates Limited Partnership Scale: 1" = 100' Sheet 2 of 7 November 15, 1989 Rev. March 28, 1990 Rev. Dec. 1, 1990" which plan is on file as Map 1660 in the office of the Ledyard Town Clerk, more particularly bounded and described as follows:

Parcel One a/k/a 17 Highview Terrace

Commencing at a point at the southerly end of Highview Terrace; and thence running S 10° 30' 42" E 71.80 feet, in part along land now or formerly of Condon and in part along land now or formerly of the Town of Ledyard, to an iron pipe; and thence running N 79° 29' 18" E 829.27 feet along land now or formerly of the Town of Ledyard to an iron pin; and thence running S 23° 36' 16" E 706.45 feet along land now or formerly of the Town of Ledyard to a drill hole; and thence running S 08° 09' 26" E 315.37 feet along a stone wall and said land now or formerly of the Town of Ledyard, to a drill hole; and thence running S 08° 38' 27" E 125.19 feet along a stone wall and said land now or formerly of the Town of Ledyard, to a drill hole; and thence running S 06° 51' 45" E 155.19 feet along a stone wall and said land now or formerly of the Town of Ledyard, to a drill hole; and thence running S 10° 03' 38" E 57.08 feet along a stonewall and land now or formerly of Santoro to a drill hole at a wall corner; and thence running N 77° 11' 00" W 101.32 feet along a stone wall and land now or formerly of Champlin to an iron pipe; and thence running S 76° 32' 26" W 138.85 feet along a stone wall and said Champlin land to a drill hole; and thence running N 77° 31' 41" W 96.72 feet along a stonewall and land now or formerly of Holmes, to a drill hole; and thence running N 76° 18' 41" W 140.43 feet along a stone wall and said Holmes land to a drill hole; and thence running N 77° 35' 57" W 283.85 feet along a stone wall and, in part along said Holmes land and, in part, along land now or formerly of Gordon to a merestone at a wall corner; and thence running N 01° 05' 47" E 527.31 feet along a stone wall and along land now or formerly of Flintlock Associates Limited Partnership to a drill hole; and thence running N 00° 37' 34" E 225.29 feet along a stone wall and said Flintlock Associates land to a drill hole; and thence running S 89° 50' 11" W 241.71 feet along a stone wall and said Flintlock Associates land to a drill hole; and thence running N 51° 07' 15" W 306.49 feet along said Flintlock Associates land to an iron pin; and thence running N 10° 30' 42" W 90.57 feet along said Flintlock Associates land to the southerly end of Highview Terrace; and thence running northeasterly along the arc of a circle having a radius of 60 feet and along the southerly end of Highview Terrace 25.00 feet to the place of beginning.

Parcel Two a/k/a 16 Highview Terrace

Commencing at an iron pin at the southerly end of Highview Terrace and thence running S 10° 30' 42" E 90.57 feet along other land now or formerly of Flintlock Associates Limited Partnership to an iron pin; and thence running S 51° 07' 15" E 306.49 feet along said Flintlock Associates land to a drill hole; and thence running N 89° 50' 11" E 241.71 feet along a stone wall and said Flintlock Associates land to a drill hole; and thence running S 00° 37' 34" W 225.29 feet along a stone wall and said Flintlock Associates land to a drill hole; and thence running S 01° 05' 47" W 527.31 feet along a stone wall and said Flintlock Associates land to a merestone at a wall corner; and thence running N 76° 12' 55" W 288.59 feet along a stone wall and along land now or formerly of Gordon, land now or formerly of Elliott, and land now or formerly of Cavanaugh, in part along each, to a drill hole; and thence running N 77° 34' 29" W 243.15 feet along a stone wall and along land now or formerly of Cavanaugh and land now or formerly of Holdridge, in part along each, to a drill hole; and thence running N 78° 58' 32" W 96.14 feet along a stone wall and said Holdridge land to an iron pipe at a wall corner; and thence running N 12° 55' 07 " W 62.67 feet along a stone wall and land now or formerly of H.L.M. Development Inc. to a drill hole; and thence running N 13° 18' 44" W 160.85 feet along land of the last named property owner to a drill hole at a wall corner; and thence running N 08° 49' 55" W 129.63 feet along land of said last named property owner to an iron pin; and thence running N 14° 03' 29" W 208.53 feet along land of said last named property owner to an iron pipe; and thence running N 11° 57' 40" W 12.24 feet along land of said last named property owner to a drill hole; and thence running N 09° 52' 55" W 84.75 feet along land of said last named property owner to a drill hole; and thence running N 16° 18' 12" W 120.26 feet along land of said last named property owner to an iron pin; and thence running N 10° 17' 09" W 73.37 feet along land of said last named property owner to an iron pipe; and thence running N 11° 41' 24" W 80.14 feet along land of said last named property owner to an iron pin; and thence running N 79° 29' 15" E 262.87 feet along land now or formerly of Pyle to an iron pin in the westerly line of Highview Terrace; and thence running southerly, southeasterly, and easterly along Highview Terrace and along the arc of a circle having a radius of 60.00 feet a distance of 108.80 feet to the place of beginning.

DRAINAGE EASEMENT

KNOWN ALL MEN BY THESE PRESENTS:

That FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP, of the Town of Ledyard, County of New London and State of Connecticut, for the consideration of One Dollar and other valuable considerations received to its full satisfaction of J. and I. ENTERPRISES, of the Town of Ledyard in the County of New London and State of Connecticut, does hereby give and grant unto the said J. and I. ENTERPRISES, its successors and assigns forever, a full and perpetual ninety foot (90') wide drainage easement over, under and across a certain piece or parcel of land of FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP situated in the Town of Ledyard, County of New London and State of Connecticut, being more particularly described as follows:

> Beginning at a point which is the northwest corner herein described drainage easement at a point in the easterly line of land now or formerly of Edward L. Lorenz at the southwest corner of land now or formerly of W. David and Sherri L. Parker (which is Lot 14 Gray Farms Subdivision-Section III);
>
> Thence N 79° 27' 00" E along the southerly line of said Lot 14 222.18 feet to a point;
>
> Thence S 10° 33' 00" E - 90.00 feet to a point;
>
> Thence S 79° 27' 00" W - 220.00 feet to a point on the easterly line of land now or formerly of said Lorenz;
>
> Thence N 10° 18' 42" W along land of Lorenz 9.76 feet to an iron pin;
>
> Thence N 12° 08' 04" W continuing along land now or formerly of Lorenz 80.27 feet to the point and place of beginning.
>
> Said drainage easement is shown as "Proposed Drainage Easement" on a subdivision plan entitled "Section II - Commercial Resubdivision-Prepared for J. AND I. ENTERPRISES-Ledyard, Conn. - Megson & Heagle - Civil Engineers & Land Surveyors - Glastonbury, Conn. - Date 9-20-86, Rev. 2-11-87, Rev. 6-17-87 - Scale 1" = 40' - Map No. 143-85-1 Sheet 8 of 12.

The grantors give to the said J. AND I. ENTERPRISES, its successors and assigns forever, the right to enter upon the said lands of the grantors subject to said easement by its partners, officers, agents, servants and employees for the purposes of drainage and of constructing, installing, building, maintaining, cleaning, repairing, reconstructing and inspecting at all reasonable time drainage facilities, pipes, and catch basins,

J.M. LUBIN
ATTORNEY-AT-LAW
1600 ROUTE 12
GALES FERRY, CT.
JURIS NO. 027163

with appurtenances thereto.

Any expenses in connection with such use shall be borne by J. AND I. ENTERPRISES, its successors and assigns. If at any future time the use of said easement is terminated by the grantee, its successors or assigns then said grantee, successors or assigns shall bear the cost of restoring the premises to the condition that it was prior to the development and installation of said drainage facilities.

By acceptance of this easement, the Grantee hereunder, its successors and assigns hereby agrees to indemnify and hold harmless the Grantor, its successors and assigns from any and all claims, losses or damages that may arise from the use of the easement or construction related thereto. the Grantee further agrees that any work performed on the easement area shall be performed by workers covered with Workman's Compensation insurance and liability insurance, certificates of which shall be provided to the Grantor prior to any work.

TO HAVE AND TO HOLD the premises for the aforesaid purposes unto the said J. AND I. ENTERPRISES, its successors and assigns forever.

IN WITNESS WHEREOF we have hereunto set our hands and seals at New London, Connecticut, this 30th day of July 1987.

IN PRESENCE OF

Michael D. Shapiro

Patricia A. Stratos

FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP

JOHN C. ELLIS

STATE OF CONNECTICUT

ss: New London July 30, 1987

COUNTY OF NEW LONDON

Personally appeared John C. Ellis signer and sealer of the foregoing Instrument and acknowledged the same to be his free act and deed before me,

Michael D. Shapiro
Commissioner of Superior Court

M. LUBIN
TORNEY-AT-LAW
1600 ROUTE 12
ALES FERRY, CT
URIS NO. 027163

RECEIVED FOR RECORD AT LEDYARD, CT.
ON 8-13-87 AT 9:27 A.M.
ATTEST: PATRICIA KARNS, TOWN CLERK

INSTR # 2017002782
VOL 560 PG 436
RECORDED 10/19/2017 10:04:17 AM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
NO CONVEYANCE TAX

After recording, please return to:
Habitat for Humanity ECT
377 Broad St
New London, CT 06320

QUITCLAIM DEED

COLBY HEIGHTS, LLC, a Connecticut limited liability company with an office located at c/o The Simon Konover Company, 342 North Main Street, Suite 200, West Hartford, Connecticut 06117 ("**Grantor**") for **NO CONSIDERATION**, grants to **HABITAT FOR HUMANITY OF EASTERN CONNECTICUT, INC.**, a Connecticut non-stock corporation with limited liability company with an office located at 377 Broad Street, New London, Connecticut ("**Grantee**") with **QUITCLAIM COVENANTS**, all that certain real property known as **No. 9 Colby Drive, Ledyard, Connecticut**, and being more particularly bounded and described on **Schedule A** attached hereto and made a part hereof (the "Property").

Signed this 13 day of October, 2017.

Witnessed by:

Marilyn S. Derouin
Name: Marilyn S. Derouin

G. K
Name: Gregory Konover

COLBY HEIGHTS, LLC
BY: SK RESIDENTIAL CORPORATION,
ITS MANAGER

By: _____
James Wakim
Its Executive Vice President

STATE OF CONNECTICUT)
) ss. West Hartford October 13, 2017
COUNTY OF Hartford)

The foregoing instrument was acknowledged before me this 13th day of October, 2017, by SK RESIDENTIAL CORPORATION AND JAMES WAKIM, ITS EXECUTIVE VICE PRESIDENT, who acknowledged that SK RESIDENTIAL CORPORATION is the Manager of COLBY HEIGHTS, LLC, acting for and on behalf of Colby Heights, LLC, and that JAMES WAKIM, EXECUTIVE VICE PRESIDENT OF SK RESIDENTIAL CORPORATION, being authorized to do so, executed the foregoing instrument as his free act and deed, and the free act and deed of Colby Heights, LLC for the purposes therein contained, by signing the name of Colby Heights, LLC, and by signing SK RESIDENTIAL CORPORATION, as Manager.

In witness whereof, I hereunto set my hand.

Marilyn S. Derouin
Marilyn S. Derouin
~~Commissioner of the Superior Court~~
Notary Public

MARILYN S. DEROUIN
NOTARY PUBLIC
MY COMMISSION EXPIRES DEC. 31, 2018

4VL5092-191435

SCHEDULE A

9 Colby Drive, Ledyard, Connecticut

A certain parcel of land with all buildings and improvements therein situated on the northerly side of Colby Drive, in the Town of Ledyard, County of New London and State of Connecticut said parcel is shown as 9 Colby Drive on a plan entitled" Subdivision Plan Prepared for Konover Investments Corporation & Realcom, LLC Colby Drive & Iron Street Ledyard, Ct. Boundary Plan Date: 2/1/05 Sheet 2 last revision: Final Conditions of Approval 3 6/08/05"

More particularly bounded and described as follows;

Beginning at a point in the northerly line of Colby Drive and a point in the easterly line of land now or formerly of J & I Enterprises;

Thence running N04°-42'-17"W, 90.03 feet along the easterly line of said J & I Enterprises to a point marked by a rebar;

Thence running N07°-45'-10"W, 70.06 feet along the easterly line of said J & I Enterprises to a point marked by a rebar;

Thence running N09°-10'-53"W, 105.17 feet along the easterly line of said J & I Enterprises to a point marked by a rebar;

Thence running N31°-29'-22"W, 44.65 feet along the easterly line of said J & I Enterprises to a point marker by a rebar;

Thence running N12°-34'-58"W, 62.81 feet along the easterly line of said J & I Enterprises to a point marked by a drill hole;

Thence running N24°-13'-19"W, 106.56 feet along the easterly line of said J & I Enterprises to a point marking the northwesterly corner of the herein described parcel and the southwesterly corner of 50 Iron Street as shown on the aforementioned plan;

Thence running N65°-31'-48"E, 225.23 feet along the southerly line of said 50 Iron Street to a point in the westerly line of 11 Colby Drive as shown on the aforementioned plan;

Thence running S37°-33'-00"E, 274.75 feet along the westerly line of said 11 Colby Drive to an angle point;

Thence running S18°-00'-00"W, 327.44 feet along the westerly line of said 11 Colby Drive to a point marking the southeasterly corner of the herein described parcel and a point in the northerly line of Colby Drive;

Thence running along a curve to the left having a radius of 210.00 feet and a length of 109.15 feet with a chord bearing of S86°-08'-14"W and a chord length of 107.93 feet to a point of tangency;

Thence running S71°-14'-48"W, 51.74 feet along the northerly line of Colby Drive to the point and place of beginning.

Said Parcel containing 112,610 square feet or 2.82 acres.

The premises will be conveyed to and accepted by the Grantees subject to:

1. Zoning and building regulations, if any, and all provisions of any ordinance, governmental regulation or public or private law affecting said premises, provided there are no violations thereof at the time of closing.

2. Any state of facts which an accurate survey of the premises might disclose.

3. Any and all assessments which may on or after the date hereof be levied against or become a lien on said premises for any municipal improvements hereafter made.

4. The second half of taxes to the Town of Ledyard on the October 1, 2016 Assessment List and all subsequent years thereafter, which the Grantee hereby assumes and agrees to pay.

5. Declaration of Restrictions and Covenants Regarding Sale, Transfer or Development of Subdivision Lots in favor of the Town of Ledyard Planning and Zoning Commission dated June 3, 2014 and recorded June 11, 2014 in Volume 523 at Page 864 of the Ledyard Land Records.

6. Easements and notes shown on the aforementioned map.

INSTR # 2017002783
VOL 560 PG 439
RECORDED 10/19/2017 10:04:17 AM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
NO CONVEYANCE TAX

After recording, please return to:
Habitat For Humanity ECT
377 Broad St
New London, CT 06320

QUITCLAIM DEED

COLBY TERRACE, LLC, a Connecticut limited liability company with an office located at c/o The Simon Konover Company, 342 North Main Street, Suite 200, West Hartford, Connecticut 06117 ("**Grantor**") for **NO CONSIDERATION**, grants to **HABITAT FOR HUMANITY OF EASTERN CONNECTICUT, INC.**, a Connecticut non-stock corporation with limited liability company with an office located at 377 Broad Street, New London, Connecticut ("**Grantee**") with **QUITCLAIM COVENANTS**, all that certain real property known as **No. 11 Colby Drive, Ledyard, Connecticut**, and being more particularly bounded and described on **Schedule A** attached hereto and made a part hereof (the "Property").

Signed this 13 day of October, 2017.

Witnessed by:

COLBY TERRACE, LLC
BY: SIMON KONOVER DEVELOPMENT CORPORATION, ITS MANAGER

Marilyn S. Derouin
Name: Marilyn S. Derouin

By: _____
James Wakim
Its Executive Vice President

G. K.
Name: Gregory Konover

STATE OF CONNECTICUT)
) ss. West Hartford October 13, 2017
COUNTY OF Hartford)

The foregoing instrument was acknowledged before me this 13th day of October, 2017, by SIMON KONOVER DEVELOPMENT CORPORATION AND JAMES WAKIM, ITS EXECUTIVE VICE PRESIDENT, who acknowledged that SIMON KONOVER DEVELOPMENT CORPORATION is the Manager of COLBY TERRACE, LLC, acting for and on behalf of Colby Terrace, LLC, and that JAMES WAKIM, AS EXECUTIVE VICE PRESIDENT OF SIMON KONOVER DEVELOPMENT CORPORATION, being authorized to do so, executed the foregoing instrument as his free act and deed, and the free act and deed of Colby Terrace, LLC for the purposes therein contained, by signing the name of Colby Terrace, LLC, and by signing SIMON KONOVER DEVEOPMENT CORPORATION as Manager.

In witness whereof, I hereunto set my hand.

Marilyn S. Derouin
Marilyn S. Derouin
~~Commissioner of the Superior Court~~
Notary Public

MARILYN S. DEROUIN
NOTARY PUBLIC
MY COMMISSION EXPIRES DEC. 31, 2018

4VL5096-191435

SCHEDULE A

11 Colby Drive, Ledyard, Connecticut

A certain parcel of land with all buildings and improvements therein situated on the easterly side of Colby Drive, in the Town of Ledyard, County of New London and State of Connecticut said parcel is shown as 11 Colby Drive on a plan entitled "Boundary Line Adjustment Plan On Property of HLM Developments, Inc. A.K.A. H.L.M. Developments, Inc. Colby Drive and Colonel Ledyard Highway Ledyard, Connecticut Scale: 1" = 100' Date: March 1, 2006 Job No. 05-157" and recorded as Map #2458 on the Town of Ledyard Land Records.

More particularly bounded and described as follows;

Beginning at a point in the easterly line of Colby Drive at the southwesterly corner of the herein described parcel and the northwesterly corner of land now or formerly of HLM Developments, Inc. also known as 678 Colonel Ledyard Highway;

Thence running N00°-02'-08"W, 61.58 feet along the easterly line of Colby Drive to a point of curvature;

Thence running along a curve to the left having a radius of 646.78 feet and a length of 51.47 feet and chord bearing of N02°-18'-55"W and a chord length of 51.47 feet to a point of tangency;

Thence continuing along the easterly line of Colby Drive N04°-35'-43"W, 421.33 feet to a point of curvature;

Thence running along a curve to the left having a radius of 210.00 feet and a length of 272.61 feet with a chord bearing of N41°-47'-01"W and a chord length of 253.86 feet to a point of tangency and a point marking the southeasterly corner of 9 Colby Drive as shown on the aforementioned plan;

Thence running N18°-00'00"E, 327.44 feet along the easterly line of said 9 Colby Drive to an angle point;

Thence running N37°-33'-00"W, 274.34 feet along the easterly line of said 9 Colby Drive to the northeasterly corner of 9 Colby Drive and a corner of 50 Iron Street as shown on the aforementioned plan;

Thence running N10°-03'-00"W, 173.00 feet along 50 Iron Street to an angle point;

Thence running N36°-36'-00"W, 75.00 feet along 50 Iron Street to an angle point;

Thence running N63°-00'15"E, 314.95 feet along the southerly line of said 50 Iron Street to a point in the centerline of a stone wall marking the southeasterly corner of said 50 Iron Street and a point in the westerly line of land now of formerly of Francis D. and Euelene Salvatore;

Thence running S18°-47'-56"E, 70.91 feet along the center line of a stone wall to a drill hole;

Thence running S16°-13'-48"E, 84.04 feet along the center line of said wall to a drill hole;

Thence running S22°-38'-49"E, 76.45 feet along the center line of said wall to a drill hole;

Thence running S16°-45'-55"E, 74.11 feet along the center line of said wall to a drill hole at the corner of said wall:

Thence running S00°-53'-12"W, 136.93 feet to a point;

Thence running S10°-50'-26"E, 66.91 feet to a rebar;

Thence running S11°-06'-32", 168.92 feet to a rebar;

Thence running S13°-32'-45E, 204.64 feet to a drill hole;

Thence running S13°-51'-36"E, 220.84 feet to a rebar;

Thence running S08°-46'-08"E, 129.51 feet to a drill hole at the corner of a stone wall;

Thence running S13°-09'-29"E, 223.51 feet along the center line of said stone wall to a rebar at an intersection of stone walls;

The last eleven courses bounding on the east in part by lands now or formerly of Francis D. and Euelene Salvatore, Michael W. Peckham and Wendi L. Crocker, Sean M. and Rebecca K. Page, Albert P. Edwards and Robert C. Derda;

Thence running S04°-52'-34"W, 226.26 feet along the westerly line of lands now or formerly of Edward F. and Violet M. Lewis;

Thence running S85°36'37"E, 227.74 feet along the northerly line of HLM Developments, Inc. to the point and place of beginning.

Said parcel containing 396,169 square feet or 9.09 acres.

The premises will be conveyed to and accepted by the Grantees subject to:

1. Zoning and building regulations, if any, and all provisions of any ordinance, governmental regulation or public or private law affecting said premises, provided there are no violations thereof at the time of closing.

2. Any state of facts which an accurate survey of the premises might disclose.

3. Any and all assessments which may on or after the date hereof be levied against or become a lien on said premises for any municipal improvements hereafter made.

4. The second half of taxes to the Town of Ledyard on the October 1, 2016 Assessment List and all subsequent years thereafter, which the Grantee hereby assumes and agrees to pay.

5. Declaration of Restrictions and Covenants Regarding Sale, Transfer or Development of Subdivision Lots in favor of the Town of Ledyard Planning and Zoning Commission dated June 3, 2014 and recorded June 11, 2014 in Volume 523 at Page 864 of the Ledyard Land Records.

6. Drainage easement area and notes shown on the aforementioned map.

INSTR # 2017002784
VOL 560 PG 442
RECORDED 10/19/2017 10:04:17 AM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
NO CONVEYANCE TAX

After recording, please return to:
Hab. Dat For Humanity ECT
377 Broad St
New London, CT 06320

QUITCLAIM DEED

COLBY VIEW, LLC, a Connecticut limited liability company with an office located at c/o The Simon Konover Company, 342 North Main Street, Suite 200, West Hartford, Connecticut 06117 ("**Grantor**") for **NO CONSIDERATION**, grants to **HABITAT FOR HUMANITY OF EASTERN CONNECTICUT, INC.**, a Connecticut non-stock corporation with limited liability company with an office located at 377 Broad Street, New London, Connecticut ("**Grantee**") with **QUITCLAIM COVENANTS**, all that certain real property known as **Colby Drive Roadbed, Ledyard, Connecticut**, and being more particularly bounded and described on **Schedule A** attached hereto and made a part hereof (the "Property").

Signed this 12th day of October, 2017.

Witnessed by:

COLBY VIEW, LLC

Name: William R. Sweeney

By: _____
Peter J. Guille, Jr.
Its Manager, Duly Authorized

Name: Joyce P. McCandless

STATE OF CONNECTICUT)
) ss. New London October 12, 2017
COUNTY OF NEW LONDON)

The foregoing instrument was acknowledged before me this 12th day of October, 2017, by PETER J. GUILLE, JR., who acknowledged himself to be Manager of COLBY VIEW, LLC, acting for and on behalf of Colby View, LLC, and that he as Manager, being authorized to do so, executed the foregoing instrument as his free act and deed, and the free act and deed of Colby View, LLC for the purposes therein contained, by signing the name of Colby View, LLC, and by signing his name as Manager.

In witness whereof, I hereunto set my hand.

_____
William R. Sweeney
Commissioner of the Superior Court

SCHEDULE A

Colby Drive Roadbed, Ledyard, Connecticut

A certain parcel of land situated on the northerly side of Colonel Ledyard Highway, in the Town of Ledyard, County of New London and State of Connecticut said parcel is shown as Colby Drive on a plan entitled "Subdivision Plan Prepared for Konover Investments Corporation & Realcom, LLC Colby Drive & Iron Street Ledyard, Ct. Boundary Plan Date: 2/1/05 Sheet 2 last revision: Final Conditions of Approval 3 6/8/05" and recorded as Map #2363 on the Town of Ledyard Land Records.

More particularly bounded and described as follows:

Beginning at a point in the northerly line of Colonel Ledyard Highway at the southwesterly corner of the herein described parcel and the southeasterly corner of land now or formerly of Howard G. and Elizabeth M. Kaminske;

Thence running N00°-39'-47"W, 223.76 feet along the easterly line of said Kaminske land to a point marking the southeasterly corner of 8 Colby Drive as shown on the abovementioned plan;

Thence running S88°-30'-37"E, 2.64 feet to a point;

Thence running N00°-02'-08"W, 72.34 feet along 8 Colby Drive to a point of curvature;

Thence running along a curve to the left having a radius of 586.78 feet and a length of 46.70 feet with a chord bearing of N02°-18'-55"W and a chord length of 46.68 feet to a point of tangency;

Thence running N04°-35'-43"W, 421.33 feet along the easterly line of 8 Colby Drive to a point of curvature;

Thence running along a curve to the left having a radius of 150.00 feet and a length of 272.69 feet with a chord bearing of N56°-40'-28"W and a chord length of 236.66 feet to a point of tangency;

Thence running S71°-14'-48"W, 66.75 feet along the northerly line of 8 Colby drive to a point marking the northwesterly corner of said 8 Colby Drive;

Thence running N04°-42'-17"W, 61.86 feet to a point marking the southwesterly corner of 9 Colby Drive as shown on the aforementioned plan;

Thence running N71°-14'-48"E, 51.74 feet along the southerly line of said 9 Colby Drive to a point of tangency;

Thence running along a curve to the right having a radius of 210.00 feet and a length of 381.76 feet with a chord bearing of N56°-40'-28"W and a chord length of 331.32 feet to a point of tangency;

Thence running S04°-35'-43"E, 421.33 feet along the westerly line of 11 Colby Drive to a point of curvature;

Thence running along the westerly line of 11 Colby Drive and a curve to the right having a radius of 646.78 feet and a length of 51.47 feet with a chord bearing of S02°-18'-55"E and a chord length of 51.46 feet to a point of tangency;

Thence running S00°-02'-08"E, 302.22 feet along the westerly line of land now or formerly of HLM Developments, Inc. and Perry K. Lorenz;

Thence running along a curve to the left having a radius of 5699.65 feet and a length of 60.60 feet with a chord bearing of N84°-09'-32"W and a cord length of 60.60 feet to the point and place of beginning.

Said parcel containing 69,700 square feet or 1.60 acres, more or less.

The premises will be conveyed to and accepted by the Grantees subject to:

1. Zoning and building regulations, if any, and all provisions of any ordinance, governmental regulation or public or private law affecting said premises, provided there are no violations thereof at the time of closing.

2. Any state of facts which an accurate survey of the premises might disclose.

3. Any and all assessments which may on or after the date hereof be levied against or become a lien on said premises for any municipal improvements hereafter made.

4. The second half of taxes to the Town of Ledyard on the October 1, 2016 Assessment List and all subsequent years thereafter, which the Grantee hereby assumes and agrees to pay.

5. Declaration of Restrictions and Covenants Regarding Sale, Transfer or Development of Subdivision Lots in favor of the Town of Ledyard Planning and Zoning Commission dated June 3, 2014 and recorded June 11, 2014 in Volume 523 at Page 864 of the Ledyard Land Records.

6. Notes and easements shown on the aforementioned map.

INSTR # 2023000890 VOL 632 PG 401
RECORDED 04/25/2023 12:43:31 PM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
TOWN CONVEYANCE TAX $162.50
STATE CONVEYANCE TAX $487.50

Return to: Kineo Properties
P.O. Box 246
West Mystic CT 06388

WARRANTY DEED

To all People to Whom these Presents shall Come, Greeting:

Know Ye, that I, **WINSTON A. COMRIE** , of the Town of Ledyard, County of New London and State of Connecticut (hereinafter referred to as the "Grantor"), **for the consideration of SIXTY FIVE THOUSAND DOLLARS (U.S. $65,000.00) received to my full satisfaction of KINEO PROPERTIES, LLC.**, a Connecticut Corporation having a mailing address of PO box 246, West Mystic, Connecticut 06388 (hereinafter referred to as the "Grantee"), **do give, grant, bargain, sell and confirm unto the said Grantee, and unto such Grantee's successors and assigns forever**, the following described premises:

Property Address:
5 Colby Drive
Ledyard, Connecticut 06339

A certain tract or parcel of land, together with the buildings and improvements thereon, if any, situated on the northerly side of Colby Drive in the Town of Ledyard, County of New London and State of Connecticut, known as 5 Colby Drive, and being shown as Lot 5 on a certain map or plan entitled, "Subdivision Plan Section II Commercial Resubdivision Prepared for J. & I. Enterprises Ledyard Conn. Megson & Heagle Civil Engineers & Land Surveyors Glastonbury, Conn. Date: 920-86 Rev. thru 6/17/87, Scale: 1" = 40' Map No. 143-85-1 Sheet 4 of 12", which plan is on file in the Ledyard Land Records as Map #1326 to which reference is made for a more particular description.

Said premises conveyed subject to easements as of record appear. Grantee herein agrees to assume taxes and assessments hereinafter coming due.

To Have and to Hold the above granted and bargained premises with the appurtenances thereof unto the said Grantee and unto such grantee's successors and assigns forever, to them and their own proper use and behoof.

And also, the said Grantor, does for herself, her successors and assigns covenant with the said Grantee and with such Grantee's successors and assigns, that at and until the ensealing of these presents, it is well seized of the premises as a good, indefeasible estate in fee simple and it has good right to bargain and sell the same in manner and form as is above written; and that the same is free from all encumbrances whatsoever except as hereinbefore mentioned.

And Furthermore, the said Grantor, by these presents binds herself and her successors and assigns forever to **WARRANT AND DEFEND** the above granted and bargained premises to it the said Grantee and to such Grantee's successors and assigns, against all claims and demands whatsoever, except as hereinbefore mentioned.

In Witness Whereof, I have hereunto set my hand and seal this 21st day of April 2023.

Signed, sealed and delivered
in the presence of:

Peter W. Hoops, Witness

Haley Dyer Witness

Winston A. Comrie
WINSTON A. COMRIE

State of Connecticut)
) ss: Groton
County of New London)

On this the 21st day of April 2023, before me, the undersigned officer, personally appeared WINSTON A. COMRIE , known to me (or satisfactorily proven) to be the person(s) who executed the foregoing instrument and who acknowledged that he executed same as and for his free act and deed.

Peter W. Hoops
Commissioner of the Superior Court

WARRANTY DEED - STATUTORY FORM

KNOW YE THAT **J & I ENTERPRISES**, a Connecticut General Partnership, acting herein by Harry L. Morgan and Floyd E. Chesbro, general partners, with it's principal place of business located in the Town of Ledyard, County of New London and State of Connecticut, for consideration of **FIFTY THOUSAND AND NO/100 DOLLARS, ($50,000.00),**

Grant to **KAN INVESTMENTS, LLC** a Connecticut Limited Liability Company with it's principal place of business located in the Town of Ledyard, County of New London and State of Connecticut,

with **WARRANTY COVENANTS,**

A certain tract or parcel of land with the buildings and improvements thereon, known as **6 Colby Drive** more particularly described in Schedule A attached hereto and incorporated herein by reference.

IN WITNESS WHEREOF, Grantor has hereunto set its hand and seal this 23rd day of January in the year of our Lord 2001.

Signed, Sealed and Delivered
in the Presence of:

Harold M. Lubin

Susan D. Millovitch

J & I ENTERPRISES

By: Harry L. Morgan (L.S.)
Harry L. Morgan, General Partner

By: Floyd E. Chesbro (L.S.)
Floyd E. Chesbro, General Partner

State of Connecticut)
) ss: Montville
County of New London)

On this the 23rd day of January, 2001, before me, the undersigned officer personally appeared Harry L. Morgan, and Floyd E. Chesbro, General Partners of J & I Enterprises, a Connecticut General Partnership and that they as such partners being authorized so to do, executed the foregoing instrument for the purposes therein contained, in the capacity set forth therein.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Harold M. Lubin
Commissioner of the Superior Court

Latest Address of the Grantee:

4 Colby Drive
Ledyard, CT 06339

$ 55.00 Conveyance Tax Received
Elaine A. Henschel
Asst. Town Clerk, Ledyard, CT

STATE
$ 250.00 Conveyance Tax Received
Elaine A. Henschel
Asst. Town Clerk, Ledyard, CT

SCHEDULE "A"

A certain tract or parcel of land, together with the buildings and improvements thereon, if any, situated on the southerly side of the cul-de-sac located at the northeasterly end of Colby Drive in the Town of Ledyard, County of New London and State of Connecticut, known as 6 Colby Drive, and being shown as Lot 6 on a certain map or plan entitled "Subdivision Plan Section II Commercial Resubdivision Prepared for J. and I. Enterprises Ledyard Conn. Megson & Heagle Civil Engineers & Land Surveyors Glastonbury, Conn. Date: 9-20-86 Rev. 1-7-86 Correct Dimensions Rev 6-17-87 Drainage Easement & Water R.O.W. Scale: 1" = 40' Map No. 143-85-1 Sheet 4 of 12" which plan is on file in the Ledyard Land Records and being more particularly bounded and described as follows:

Beginning at a monument to be set in the southeasterly street line of the cul-de-sac located at the northeasterly end of Colby Drive at the northwesterly corner of the herein described tract and on the dividing line between the herein described tract and Lot 4 as shown on the above-referenced plan; thence running S 4° 47' 14" E for a distance of 464.30 feet to a monument to be set, bounded southwesterly by said Lot 4; thence running S 84° 50' 41" E for a distance of 104.49 feet to an iron rod, bounded southwesterly by land now or formerly of Marion W. & Maureen M. Lebuis as shown on the above-referenced plan; thence running N 5° 09' 07" W for a distance of 130.95 feet to an iron rod; thence running N 2° 48' 23" E for for a distance of 90.15 feet to a stump; thence running N 4° 47' 14" W for a distance of 290.44 feet to a monument to be set, the last three courses being bounded by land now or formerly of Edward L. Lorenz as shown on the above-referenced plan; thence running along the southeasterly streetline of Colby Drive S 71° 20' 40" W for a distance of 2.41 feet to a point; thence running along the southerly streetline of the cul-de-sac located at the northeasterly end of Colby Drive along the arc of a curve to the right having a radius of 60.00 feet, a central angle of 108° 11' 23" for a distance of 113.30 feet to a point; thence continuing along the southerly streetline of said cul-de-sac along the arc of a curve to the left having a radius of 30.00 feet, a central angle of 40° 35' 48" for a distance of 21.26 feet to the monument set at the point and place of beginning.

Said premises is conveyed together with a right of way for all purposes over Colby Drive until such time as said Colby Drive is conveyed to the Town of Ledyard as a town road.

Said premises is conveyed subject to easements, restrictions and agreements as of record appear, building and building line restrictions, any and all provisions of municipal ordinances including planning, zoning and inland wetland regulations of the Town of Ledyard, public or private law and taxes to the Town of Ledyard, Connecticut on the List of October 1, 1999 list and hereafter coming due.

Reference is hereby made to a warranty deed from Dorothy Crary Clark, Charlotte Crawford Geer, Andrew David Avery and Vivian Stanton Williams to J & I Enterprises dated April 11, 1985 and recorded at Volume 142, Page 815 of Ledyard Land Records.

RECEIVED FOR RECORD 01.23.01 AT
2:00 P.M. Peter G. Kallan
ATTEST: PETER G. KALLAN, TOWN CLERK

BOUNDARY SURVEY AND DETAILED LOT LAYOUT MAP
GRAY FARMS SUBDIVISION
SECTION V
COLONEL LEDYARD HIGHWAY
&
GALLUP HILL ROAD
LEDYARD, CONNECTICUT

PROPERTY OF & PREPARED FOR
FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP

100 0 50 100 200 400

SCALE: 1" = 100'
SHEET 2 OF 7
NOVEMBER 15, 1989
REV. MARCH 28, 1990
REV. DEC. 1, 1990

J. ROBERT PFANNER & ASSOCIATES P.C.
SURVEYING & ENGINEERING
37 GRAND STREET EAST LYME , CONNECTICUT

EROSION AND SEDIMENT CONTROL PLAN CERTIFIED BY VOTE OF THE LEDYARD PLANNING CONNISSION ON 5/17/90

CHAIRMAN _____ DATE 12-15-90

APPROVED BY THE LEDYARD PLANNING COMMISSION AS TO COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND. ALL IMPROVEMENTS SHALL BE COMPLETED BY 12-15-95

CHAIRMAN _____ DATE 12-5-90

LOT NUMBERS ASSIGNED BY THE ASSESSOR.

ASSESSOR Anna M. Reinera DATE December 5, 1990

IWWC APPLICATION NO. 34-89e
✓ APPROVED, March 20, 1990 DATE
_____ NO PERMIT NECESSARY (NOT WITHIN A REGULATED AREA).
_____ NOT APPLICABLE AT THIS TIME (WITHIN A REGULATED AREA; NO REGULATED ACTIVITY PROPOSED AT THIS TIME).
ZONING AND WETLANDS OFFICER December 13, 1990 DATE

NOTE

LOTS 16 & 17 SUBJECT TO A DRIVEWAY EASEMENT IN COMMON TO PASS AND REPASS AS SHOWN ON SHEETS 3 & 4.

N/F TOWN OF LEDYARD

N/F HAROLD & JUDITH OBERG

N/F DANA McINTOSH

S84°42'23"W 205.52'

I. PIPE REC.

N40°12'48"W 148.00'

50' R.O.W.

S73°34'30"W 226.26'

STEEL PLUG REC. IN BOULDER

N40°12'48"W 50.00'

N/F FLINTLOCK ASSOC. (COMMUNITY WELL)

Δ = 101°24'36"
R = 125.00
T = 152.75
L = 221.24

N51°37'22"W 268.23'

S17°29'07"E 614.15'

N/F TOWN OF LEDYARD

N/F TOWN OF LEDYARD

N22°30'00" E80°00'00"

N26°27'51"W 386.66'

S38°08'14"W 131.66' D.H. REC.

S34°44'45"W 128.14' D.H. REC.

51.00' S34°54'47"W

GRID NORTH

L. PIN TO BE SET

2'±

I. PIPE REC.

DETAIL 'A'
SCALE 1"=10'

N24°48'30"W 236.08'

D.H. REC.

N23°33'38"W 170.58'

D.H. REC.

N24°25'34"W 156.42'

D.H. REC.

N19°50'45"W 108.90'

N18°18'11"W 222.65'

N/F MARIA SANTO

548.63'

147.65'

181.26'

S79°32'56"W

30' TYP.

217.72'

N22°00'00" E80°55'00"

N19°39'30"W 90.56' PIPE REC.

N10°24'51"W 138.91'

328.87'

1046.47'

IRON PIN SET ON IR. (TYP)

72.64' N06°08'24"W

LOT 640
OPEN SPACE
COLONEL LEDYARD HIGHWAY
1,171,426.55 S.F.
26.89 Ac.

TO BE CONVEYED TO THE TOWN OF LEDYARD

LOT 7
GALLUP HILL ROAD
718,768.64 S.F.
16.50 Ac.

N/F RITA WILTSEY CONDON

Δ = 103°53'42"
R = 60.00
T = 76.65
L = 108.80

HIGH VIEW TERRACE

N/F W. DAVID & DIANE L. PYLE

262.87'

S79°29'15"W 220.18'

S11°14'12"E 80.74'

73.37' S10°17'09"E

I. PIPE REC.

PIN

120.28'

S16°18'12"E

94.79'

S09°52'55"E

D.H. REC. IN BOULDER

12.24' S11°57'40"E

I. PIPE REC.

208.53'

S14°03'29"E

PIN REC.

129.83'

S08°49'55"E

D.H. REC.

160.85'

S13°16'44"E

N/F H.L.M. DEVELOPMENT INC.

829.27'

S79°29'18"W

71.80 N10°30'42"W

Δ = 23°52'24"
R = 60.00
T = 12.68
L = 25.00

90.57' N10°30'42"W

N51°07'15"W 306.49'

EXISTING DRAINAGE EASEMENT

133.81' S 78°34'10" E

140.69'

130.00'

6.88'

295.57'

DRAINAGE EASEMENT AS PER MAP REFERENCE #1 TO BE EXTENDED EASTERLY TO LAND OF TOWN OF LEDYARD (EASEMENT TO BE DEEDED TO THE TOWN OF LEDYARD)

S89°50'11"W 241.71'

N00°37'34"E 223.29'

16' TYP.

LOT 17
HIGHVIEW TERRACE
797,946.37 S.F.
18.32 Ac.

LOT 16
HIGHVIEW TERRACE
584,540.83 S.F.
13.42 Ac.

N22°00'00" E80°00'00"

N23°36'16"W 706.45'

N08°09'26"W 157.00'

N08°36'27"W 315.37' 158.37'

N08°57'45"W 125.19' 156.19'

N09°05'47"E 57.37'

N/F ELIZABETH P. HOLMES

N/F BRIAN S. & ELINORE GORDON

N/F EDWARD C. ELLIOTT

N/F BRAIN J. CAVANAUGH

N/F RAY & HELEN HOLDRIDGE

62.67' S12°55'07"E

30' TYP.

96.14' S78°58'32"E

243.15' S77°34'29"E

197.83' S76°12'55"E

374.61

90.76' I. PIPE REC.

283.85' S77°35'57"E

140.43' S76°18'41"E

96.72' S77°31'41"E

138.85' S76°32'26"E

101.32' S77°11'00"E

I. PIPE REC.

D.H. REC.

57.08' N10°03'38"W

159.74' S81°41'31"E

79.20' S81°39'06"E

236.50' S39°21'25"E

N/F RUSSELL & NANCY CHAMPLIN

N/F RICHARD & LINDA SANTORO

N/F FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP

16' TYP.

205.39' S21°12'09"E

123.48'

88.11' N11°29'55"W

100.00' S65°54'57"W

157.09' S72°05'16"E

101.08' S56°03'02"E

148.79'

249.84'

208.00' N75°48'06"E

208.00' S09°09'03"E

N/F FRANK & ROSEMARY SERAGO

37.31' N84°31'57"E

75'

140.33' N82°56'44"E

73.58'

94.95' N80°50'37"E

166.35'

GALLUP HILL ROAD

COLONEL LEDYARD HIGHWAY

N/F NICK & NANCY KORMYLO

N/F DREW & LOUDA WESCHE

124.22' S81°05'49"W 208.87'

S80°51'23"W 189.27'

87.19' S83°20'46"W

N16°49'03"W 145.82'

N16°32'43"W 124.22'

I. PIPE REC.

N16°37'34"W 120.01'

74.09' S14°59'10"E

I. PIPE REC.

D.H. REC. 119.50'

N82°09'37"E 150.03'

I. PIPE REC.

N82°08'27"E

151.85'

N81°03'40"E

I. PIPE REC.

N/F BEVERLY RESERVOIR

N/F RAFAEL & CAROL FIGUEROA

N07°42'12"W 206.63'

I. PIPE REC.

D.H. REC.

LEGEND

- ● I. PIPE REC. — IRON PIPE RECOVERED
- ● I. PIN REC. — IRON PIN RECOVERED
- ⊡ M.S. REC. — MERESTONE RECOVERED
- ⊡ C.H.D. — CONNECTICUT HIGHWAY MONUMENT RECOVERED
- ● D.H. REC. — DRILL HOLE RECOVERED
- ○ — IRON PIN TO BE SET
- ◉ — DRILL HOLE TO BE SET
- ⊡ — MONUMENT TO BE SET

STATE OF CONNECTICUT J. ROBERT PFANNER REGISTERED PROFESSIONAL ENGINEER NO. 9442

I HEREBY CERTIFY THAT THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A/2 SURVEY AS DEFINED IN THE CODE OF PRACTICE FOR STANDARDS OF ACCURACY OF SURVEYS AND MAPS, ADOPTED DECEMBER 10,1975 AS AMENDED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.

ROBERT PFANNER P.E. L.S. NO.9442

89004-2

RECEIVED FOR RECORD AT LEDYARD, CT
1990 DEC 19 PM 3:27
TOWN CLERK

1660

603

SHEET 5

MARK MATCH

N 72° 09' 00" E 389.82'

50,721 S.F. 1.164 ACRES (13)

98.77'

TOWN OF LEDYARD

N 9° 38' 30" W 98.00'

53,972 S.F 1.239 ACRES (11)

49,842 S.F. 1.144 ACRES (9)

N 83° 39' 00" W 420.80'

(7)

N 21° 41' 30" W 120.74'

FAIRWAY DRIVE

S 21° 41' 30" E 88.72'

41,068 S.F. 0.943 ACRES (14)

N 73° 35' 40" E 124.93'

5

20' DRAINAGE EASEMENT

124.90'

45,839 S.F. 1.052 ACRES (3)

48,340 S.F. 1.109 ACRES (TOT) (5)

S 18° 21' 15" E 30.14'

S 31° 38' 44" E 44.65'

S 9° 09' 46" E 104.97' (105.51' LOREN HWY)

S 8° 16' 14" E 89.52'

S 4° 42' 22" E 151.86' (TOT)

90.04'

N/F EDWARD LORENZ

S 18° 00' 00" E 323.50'

EASEMENT

SERVICE R.O.W.

30'

N 18° 00' 00" W 323.67'

DETENTION POND AREA

N 71° 20' 40" E 210.00' Δ=28° 18' 15" L=103.74' T=52.95'

N 71° 20' 40" E 56.26'

DRAINAGE

179.43' S 80° 51' 40" W

POSSIBLE FUTURE 15" WATER

TEMPORARY CUL-DE-SAC

N 71° 20' 40" E 143.53' (TOT) 206.84'

S 71° 20' 40" W 191.94' 117.43' (TOT.) 115.02'

DRIVE

COLBY

S 88° 22' 00" W 219.91'

N 88° 22' 00" E 219.91'

Δ=17° 01' 20" R=330.00' T=49.39' L=98.06'

Δ=17° 01' 20" R=270.00' T=40.41' L=80.22'

Δ=84° 37' 14" R=20.00' T=27.31' L=29.54'

Δ=84° 37' 14" R=20.00' T=27.31'

Δ=19° 40' 06" T=27.91'

Δ=17° 21' 19" Δ=21° 21' 30"

R=60.00' Δ=108° 11' 23" L=113.30'

S 4° 42' 22" E 169.07'

S 4° 42' 14" E 230.44'

S 4° 42' 14" E 464.57' (TOT.)

464.30'

S 2° 48' 23" W 59.35'

S 5° 09' 07" E 130.35'

STUMP

1 ROD

L

LEDYARD

N 6° 21' 00" E 40.00'

S 6° 21' 00" W 45.00'

R=1400.00' Δ=1° 32' 10" T=18.76' L=37.52'

Δ=4° 26' 14" R=1386.00' T=53.86' L=107.29'

80' R.R.

END EXISTING ROAD

40.00'

330.00' S 83° 39' 00" E

10' 10'

20' DRAINAGE EASEMENT

N 1° 39' 52" E 246.10'

10' 10'

44,636 S.F. 1.025 ACRES (2)

(10)

(8)

(6)

(4)

53,668 S.F 1.232 ACRES

53,656 S.F 1.232 ACRES (TOT)

N/F MARION W. & MAUREEN M. LEBUIS

N 84° 50' 41" W 248.00' (TOT.) 104.79'

143.51'

APPROVED BY THE LEDYARD PLANNING COMMISSION

Chairman or Secretary — Date 8/13/87

APPROVED IWWC Chairman — Date

NOT APPLICABLE (Not within a regulated area)

IWWC Enforcement Officer — Date

NOT APPLICABLE AT THIS TIME (Within a regulated area; no regulated activity proposed at this time)

James Rowley 6/23/87

IWWC Enforcement Officer — Date

APPROVED BY THE DIRECTOR OF PUBLIC WORKS, TOWN OF LEDYARD, FOR PUBLIC WAY LAYOUT

Director — Date 7/21/87

TOTAL AREA: 19.62 Ac.

ZONE: LCDD

NUMBER OF LOTS = 14

Rec'd 8/14/87 at 1:00PM

Attest Patricia Riley

Town Clerk

SUBDIVISION PLAN

SECTION II

COMMERCIAL RESUBDIVISION

PREPARED FOR

J. and I. ENTERPRISES

LEDYARD CONN.

REV. 6-11-87 DRAINAGE EASEMENT | UNITED R-Due
REV. 1-15-87 CHANGES IN LOTS

MEGSON & HEAGLE
CIVIL ENGINEERS & LAND SURVEYORS
GLASTONBURY, CONN.

DATE 9-20-86 | SCALE 1" = 40' | MAP NO. 143-85-1

SHEET 4 OF 12 #13276

I hereby certify that this map and survey were prepared in accordance with the standards of a Class A-2 survey as defined in the Code of Practice for Standards of Accuracy of Surveys and Maps, adopted December 10, 1975 and amended by the Connecticut Association of Land Surveyors inc.

STATE OF CONNECTICUT JOHN L. HEAGLE No. 9836 LICENSED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT No. 12058 LAND SURVEYOR

604

HABITAT FOR HUMANITY
MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT
PER C.G.S §8-30g

LOTS 8, 9 & 11 COLBY DRIVE AND COLBY DRIVE ROADBED
EASEMENTS ON 5 & 6 COLBY DRIVE AND 16 HIGHVIEW TERRACE
LEDYARD, CONNECTICUT

SUBMITTED FOR: PLANNING & ZONING APPLICATION

MAY 19, 2025
REVISED AUGUST 27, 2025

OWNER (PREPARED FOR)

Habitat for Humanity®
of Eastern Connecticut

CONSULTANTS (PREPARED BY)

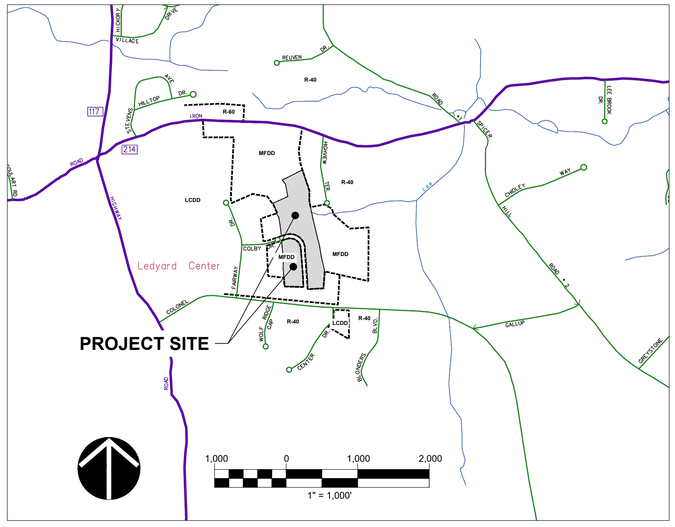
benesch

Alfred Benesch & Company
200 Glastonbury Boulevard, Suite 201
Glastonbury, Connecticut 06033
860-633-8341

LIST OF DRAWINGS

-------	TITLE SHEET
SV.01	BOUNDARY SURVEY
SV.02	TOPOGRAPHIC SURVEY
SV.03	TOPOGRAPHIC SURVEY
C1.0	SITE PREPARATION & EROSION CONTROL PLAN
C1.1	EROSION & SEDIMENTATION CONTROL DETAILS
C1.2	EROSION & SEDIMENTATION CONTROL DETAILS
C2.0	SITE PLAN
C3.0	OVERALL GRADING & DRAINAGE PLAN
C3.1	DRAINAGE PLAN
C3.2	EXISTING BASIN REHABILITATION PLAN
C3.3	GRADING PLAN
C4.0	UTILITY PLAN
C5.0	PLANTING PLAN
C5.1	PLANTING DETAILS & SCHEDULE
C6.0	SITE DETAILS
C6.1	SITE DETAILS
C6.2	SITE DETAILS

LOCUS



PARCEL ID'S:
LOT 8 (68-520-8)
LOT 9 (68-520-9)
LOT 11 (68-520-11)
COLBY DRIVE (68-530-680)
EASEMENT ONLY:
16 HIGHVIEW TERRACE (68-960-16)
5 COLBY DRIVE (68-520-5)
6 COLBY DRIVE (68-520-6)

FOR PERMITTING PURPOSES ONLY
NOT FOR CONSTRUCTION

LEDYARD PLANNING & ZONING APPROVAL
APPLICATION PZ#25-4

APPROVAL DATE: _____ DATE

EXPIRATION DATE: _____ DATE

PLANNING & ZONING CHAIRMAN _____ DATE

EROSION & SEDIMENT CONTROL PLAN APPROVED BY:

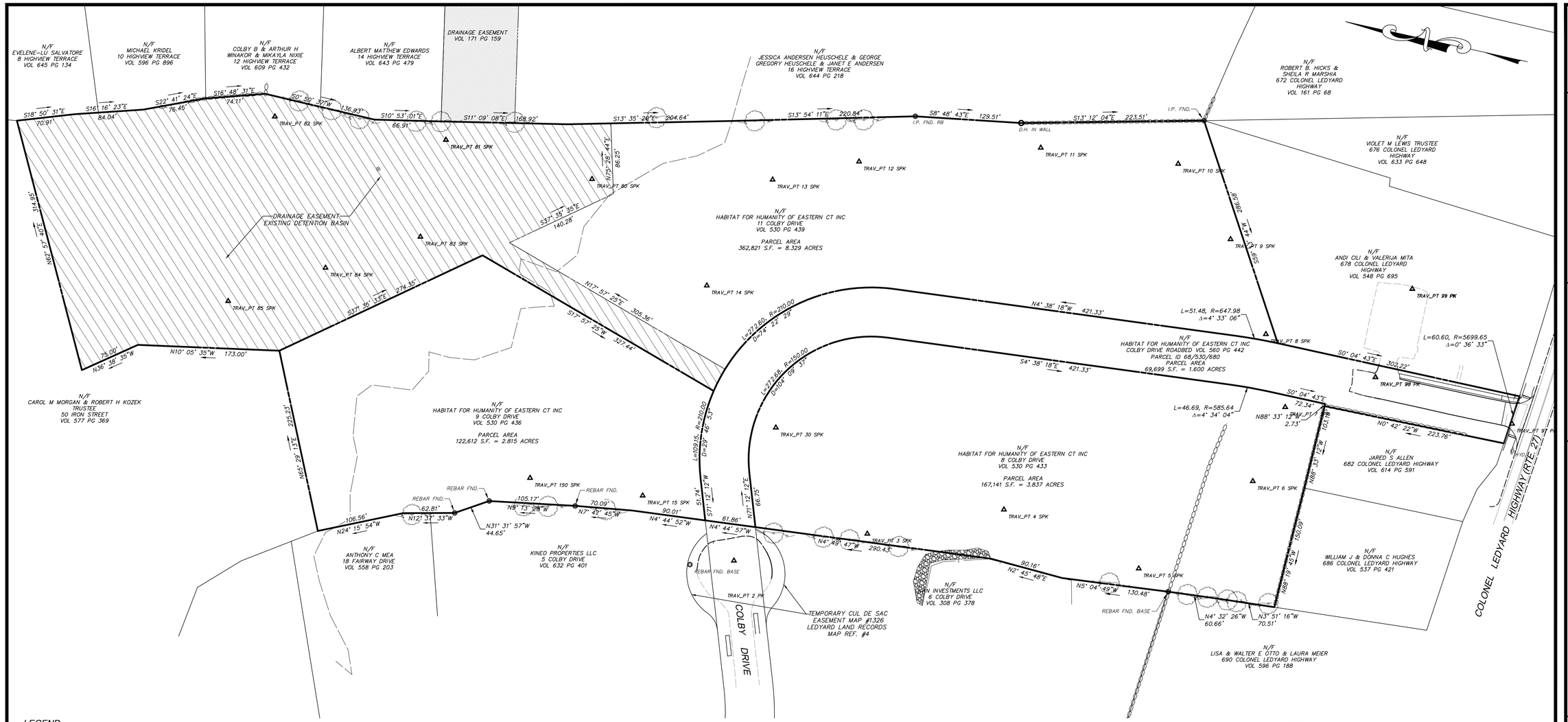
CHAIRMAN/VICE CHAIRMAN OF THE PLANNING & ZONING COMMISSION OR ITS AGENT _____ DATE

LEDYARD INLAND WETLANDS AND WATERCOURSES COMMISSION APPROVAL
APPLICATION IWWC#25-11

APPROVAL DATE: JULY 1, 2025 DATE

EXPIRATION DATE: JULY 1, 2030 DATE

INLAND WETLANDS AND WATERCOURSES CHAIRMAN _____ DATE



LEGEND

UTILITY SERVICES (UNDERGROUND OR OVERHEAD)

E	ELECTRIC SERVICE
G	GAS PIPES
SAN	SANITARY SEWER PIPES
	STORM WATER PIPES (LESS THAN 12")
	STORM WATER PIPES (12" OR LARGER)
STM	STEAM PIPES (SUPPLY & COND.)
T	TELEPHONE SERVICE
W	WATER PIPES
COM	COMMUNICATION/FIBER OPTIC SERVICE
FP	FIRE PROTECTION PIPES
UG	UNKNOWN UTILITY SERVICE
OH	OVERHEAD WIRES

PROPERTY/BOUNDARY LINES

	PROPERTY/BOUNDARY LINES (CLASS A-2)
	PROPERTY/BOUNDARY LINES (CLASS D)
	EASEMENT LINES

FEATURE LINES

	CURBED ROADWAY
	EDGE OF PAVED ROAD/DRIVE
	BUILDING ROOFLINE (AERIAL PHOTOS)
	RETAINING WALL
	STOCKADE FENCE
	CHAIN LINK/WIRE FENCE
	TREE/VEGATATION LINE
	STONE WALL
	SURFACE WATER (WATERCOURSE)
	WETLANDS LIMIT
	EDGE OF LANDSCAPING
	INTERMEDIATE CONTOUR
	INDEX CONTOUR

SYMBOL LEGEND

	CATCH BASIN
	ROUND DRAIN
	SQUARE DRAIN
	STORM DRAIN MANHOLE
E	ELECTRIC MANHOLE
S	SANITARY MANHOLE
S	STEAM MANHOLE
T	TELEPHONE MANHOLE
W	WATER MANHOLE
	MANHOLE (OF UNKNOWN TYPE)
	HAND HOLE (SQ. / REC.)
⊲W.G.	WATER VALVE
⊲ G.G.	GAS VALVE
	HYDRANT
	COMBO STANDPIPE
	GUY WIRE
	SIGN (SINGLE POST)
	SIGN (DOUBLE POST)
	BORING (AS DRILLED)
	BORING (AS STAKED)
× 427.3	SPOT ELEVATION
× WF-1	WETLANDS FLAG
	PROPERTY MONUMENT
	UTILITY MONUMENT (SET AS 2' OFFSET)
	IRON PIPE OR REBAR FOUND
	IRRIGATION CONTROL BOX
	EMERGENCY PHONE
	TRAFFIC CONTROLLER CABINET
	UTILITY POLE
	UTILITY POLE W/ LIGHT
	STREET LIGHT
	LIGHT POST
	BOLLARD LIGHT
	BOULDER / ROCK
	CONIFER SHRUB
	DECIDUOUS SHRUB
	DECIDUOUS TREE (SAPLING)
	DECIDUOUS TREE
	CONIFER TREE

ABBREVIATIONS

A/C.	AIR CONDITIONER
AT&T	AMERICAN TELEPHONE & TELEGRAPH COMPANY
BIT.	BITUMINOUS
BLK.	BLACK
CB	CATCH BASIN
COM	COMMUNICATION
CON.	CONIFER
CONC.	CONCRETE
CNG	CONNECTICUT NATURAL GAS
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CL&P	CONNECTICUT LIGHT & POWER COMPANY
CP	CONTROL POINT
DEC.	DECIDUOUS
DMH	DRAINAGE MANHOLE
E	EAST OR ELECTRIC
EL.	ELECTRIC
ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
F.L.	FLOW LINE
FND.	FOUND
GRAN.	GRANITE
GSTC	GRANITE STONE CURB
HELCO	HARTFORD ELECTRIC COMPANY
HYD.	HYDRANT
H.H.	HAND HOLE
L.P.	LIGHT POLE
MH	MANHOLE
M	METER
M.W.	MONITOR WELL
N	NORTH
NAD	NORTH AMERICAN DATUM
NAVD	NATIONAL AMERICAN VERTICAL DATUM
NE	NORTHEAST
N/F	NOW OR FORMERLY
NW	NORTHWEST
PVC	POLYVINYL CHLORIDE
P.I.V.	POST INDICATOR VALVE
RET.	RETAINING
RCP	REINFORCED CONCRETE PIPE
R.L.	RAIN LEADER
S	SOUTH OR SUPPLY
SE	SOUTHEAST
SW	SOUTHWEST
SAN.	SANITARY
SMH	SANITARY MANHOLE
SNET	SOUTHERN NEW ENGLAND TELEPHONE
SQ.	SQUARE
STM	STEAM
TMH	TELEPHONE MANHOLE
TEL.	TELEPHONE
T.F.	TOP OF FRAME
UNK.	UNKNOWN
W	WATER OR WEST
W.G.	WATER GATE

MAP REFERENCES

1. SUBDIVISION PLAN PREPARED FOR KONOVER INVESTMENTS CORPORATION & REALCOM, LLC COLBY DRIVE & IRON STREET LEDYARD, CT BOUNDARY PLAN DATE 2/1/05 SHEET NO. 2REVISED 3/23/05, 4/26/05, & 6/08/05 SCALE 1"=80' BY CLA ENGINEER, INC
2. BOUNDARY SURVEY AND DETAIL LOT LAYOUT MAP GRAY FARMS SUBDIVISION SECTION V COLONEL LEDYARD HIGHWAY & GALLUP HILL ROAD LEDYARD, CONNECTICUT PROPERTY OF & PREPARED FOR FLINTLOCK ASSOCIATES LIMITED PARTNERSHIP SCALE 1"=100' SHEET 2 OF 7 NOVEMBER 15, 1989 REV MARCH 28, 1990 REV. DEC1, 1990 BY J. RORBERT PFANNEER & ASSOCIATES
3. TOPOGRAPHIC MAP COMMERCIAL SUBDIVISION PREPARED FOR J. AND I. ENTERPRISES LEDYARD, CONN DATE 5-1686 SCALE 1"=40' SHEET 3 OF 5 REVISED 5-20-85 REV 6-10-85 BY MEGSON & HEAGLE
4. SUBDIVISION PLAN SECTION II COMMERCIAL RESUBDIVISION PREPARED FOR J. AND I. ENTERPRISES LEDYARD CONN. DATE 9-20-86 SCALE 1"=40' SHEET 4 OF 12 AND 5 OF 12 REV 1-7-86 REV 6-17-87 BY MEGSON & HEAGLE
5. LOT LAYOUT GRAY FARMS RESUBDIVISION SECTION III PROPERTY OF GEORGE GOLDMAN ASSOCIATES DEVELOPER GEORGE GOLDMAN ASSSOCIATES IRON STREET (CONN ROUTE #214 7 SPICER HILL ROAD LEDYARD CONNECTICUT SCALE 1"=100 JANUARY 1976 BY DICESARE-BENTLEY

SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300B-1 THRU 20-300B-20 AND THE "MINIMUM STANDARDS OF ACCURACY, CONTENT & CERTIFICATION FOR SURVEYS AND MAPS, AS AMENDED OCTOBER 26, 2018.
   1.1. THE TYPE OF SURVEY IS A PROPERTY/BOUNDARY SURVEY.
   1.2. THE BOUNDARY DETERMINATION CATEGORY IS DEPENDENENT RESURVEY.
   1.3. THE ACCURACIES ARE AS FOLLOWS:

HORIZONTAL CONTROL	CLASS "A-2"
VERTICAL CONTROL	CLASS "V-2"
BOUNDARY	CLASS "A-2"

2. THE COORDINATES AND ELEVATIONS DEPICTED ON THE PLAN REPRESENT THE NAD '83 AND THE NAVD '88 DATUMS. COORDINATES WERE ESTABLISHED ON THE SITE BASED UPON GPS OBSERVATIONS TAKEN ON AUGUST 2024 USING TRIMBLE GNSS RTK R10 RECEIVERS AND SOLUTIONS PROVIDED THROUGH THE KEYNET NETWORK.
3. UNDERGROUND UTILITIES (IF DEPICTED) HAVE BEEN COMPILED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. THIS INFORMATION IS TO BE CONSIDERED APPROXIMATE AND ALFRED BENESCH & COMPANY DOES NOT TAKE RESPONSIBILITY FOR SUBSEQUENT ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THIS PLAN AS A RESULT. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCES OF WHICH ARE UNKNOWN TO ALFRED BENESCH & COMPANY. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION. CALL "CALL BEFORE YOU DIG" 1-800-922-4455.
4. THE SUBJECT PROPERTY'S CURRENT DEED CAN BE FOUND IN VOLUME 530 PAGE 433-439 THE TOWN OF LEDYARD LAND RECORDS.
5. THE PROPERTY IS LOCATED IN THE "MFDD" ZONE PER TOWN.
6. A PORTION OF THE PROPERTY LIES WITHIN THE "SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – ZONE 'A' – NO BASE ELEVATION DETERMINED AND "OTHER AREAS" ZONE X AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOODPLAIN. PER THE FEMA FLOOD INSURANCE RATE MAP NEW LONDON COUNTY, CONNECTICUT (ALL JURISDICTIONS) PANEL 359 OF 554 MAP NUMBER: 09011C0359G EFFECTIVE DATE: JULY 18, 2011

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

9/4/2025

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS			
No.	DATE	DESCRIPTION	
1	9/2/2025	PER TOWN STAFF COMMENTS	

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 60'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE
60 30 0 60

Prepared By:

benesch

Alfred Benesch & Company
200 Glastonbury Boulevard Suite 201
Glastonbury, CT 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

BOUNDARY SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY DRIVE
LEDYARD CONNECTICUT

PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.01

PAPER SPACE LAYOUT NAME:
TWIST VIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: .STB

File Location/Name - Y:\Connecticut\07XX-508\0725-500010.00_JFH_Ledyard_Multi_Fa\Survey\ACAD\0725-500010 SURVEY.dwg
Date of Plot: September 02, 2025 - 9:11 AM

N/F
HIGHWAY
VOL 161 PG 68

I.P. FND. RB

S8° 48' 43"E 129.51'

O.R. IN WALL

S13° 12' 04"E 223.51'

I.P. FND.

TRAV_PT 11 SPK

TRAV_PT 10 SPK

N/F
VIOLET M LEWIS TRUSTEE
676 COLONEL LEDYARD
HIGHWAY
VOL 633 PG 648

S8° 39' 56"E 14.47'

TRAV_PT 9 SPK

N/F
ANDI CILI & VALERIJA MITA
678 COLONEL LEDYARD
HIGHWAY
VOL 548 PG 695

TRAV_PT 99 PK

CCB
TF=260.62
INV.=255.95 21"RCP NW
INV.=253.95 15"RCP SW
INV.=253.65 18"RCP NE

CCB
TF=260.22
INV.=274.22 15"RCP W
INV.=275.44 15"RCP S
INV.=269.64 18"RCP N

CCB
TF=297.10
INV.=294.32 15"RCP W
INV.=294.22 15"RCP S
INV.=291.57 15"RCP N

L=51.48, R=647.98
Δ=4° 33' 06"

N4° 38' 18"W 421.38'

CCB
TF=315.20
INV.=310.82 15"RCP W
INV.=310.62 15"RCP N

CCB
TF=315.14
INV.=312.58 15"RCP S
INV.=312.49 15"RCP E

L=60.60, R=5699.65
Δ=0° 36' 33"

CCB
TF=263.31
INV.=255.89 15"RCP

S4° 38' 18"E 421.33'

N/F
HABITAT FOR HUMANITY OF EASTERN CT INC
COLBY DRIVE ROADBED VOL 560 PG 442
PARCEL ID 68/530/680
PARCEL AREA
69,699 S.F. = 1.600 ACRES

S0° 04' 43"E 302.22'

TRAV_PT 98 PK

CCB
TF=280.07
INV.=276.21 15"RCP

CCB
TF=298.71
INV.=294.43 15"RCP

L=46.69, R=585.64
Δ=4° 34' 04"

S0° 04' 43"E 72.34'

TRAV_PT 7 SPK

N88° 33' 12"W 2.73'

N0° 42' 22"W 223.76'

TRAV_PT 97 PK

N/F
HABITAT FOR HUMANITY OF EASTERN CT INC
8 COLBY DRIVE
VOL 530 PG 433

PARCEL AREA
167,141 S.F. = 3.837 ACRES

N88° 33' 12"W 103.19'

CCB
TF=325.92
INV.=320.99 15"RCP

I.P. FND.

N/F
JARED S ALLEN
682 COLONEL LEDYARD HIGHWAY
VOL 614 PG 591

TRAV_PT 6 SPK

TRAV_PT 4 SPK

N88° 19' 45"W 150.69'

N/F
WILLIAM J. & DONNA C HUGHES
686 COLONEL LEDYARD HIGHWAY
VOL 537 PG 421

N2° 45' 14"E 90.16'

N/F
N.N. INVESTMENTS LLC
6 COLBY DRIVE
VOL 308 PG 378

TRAV_PT 5 SPK

N57° 04' 49"W 130.48'

REBAR FND. BASE

N4° 32' 26"W 60.66'

N3° 51' 16"W 70.51'

COLONEL LEDYARD HIGHWAY (RTE. 27)

STATE OF CONNECTICUT
DAVID A. CARICCHIO
No. 70036
LICENSED
LAND SURVEYOR

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

9/4/2025

DAVID A. CARICCHIO, P.L.S. No. 70036 DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS			
No.	DATE	DESCRIPTION	
1	9/2/2025	PER TOWN STAFF COMMENTS	

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:
SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

GRAPHIC SCALE
30 15 0 30

benesch

Prepared By:

Alfred Benesch & Company
200 Glastonbury Boulevard Suite 201
Glastonbury, CT 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

TOPOGRAPHIC SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY DRIVE
LEDYARD CONNECTICUT

PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.02

PAPER SPACE LAYOUT NAME:
TWISTVIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: STB

File Location/Name - Y:\Connecticut\07XX-508\0725-500010\00_HFH_Ledyard_Multi_Fa\Survey\ACAD\0725-500010 SURVEY.dwg
Date of Plot: September 02, 2025 - 9:12 AM

N/F
HABITAT FOR HUMANITY OF EASTERN CT INC
11 COLBY DRIVE
VOL 530 PG 439

PARCEL AREA
362,821 S.F. = 8.329 ACRES

N/F
HABITAT FOR HUMANITY OF EASTERN CT INC
9 COLBY DRIVE
VOL 530 PG 436

PARCEL AREA
122,612 S.F. = 2.815 ACRES

N/F
ANTHONY C MEA
18 FAIRWAY DRIVE
VOL 558 PG 203

N/F
KINEO PROPERTIES LLC
5 COLBY DRIVE
VOL 632 PG 401

N/F
HABITAT FOR HUMANITY OF
8 COLBY DR
VOL 530 PG

PARCEL AR
167,141 S.F. = 3.8

N/F

TRAV_PT 82 SPK
TRAV_PT 81 SPK
TRAV_PT 80 SPK
TRAV_PT 12 SPK
TRAV_PT 13 SPK
TRAV_PT 14 SPK
TRAV_PT 84 SPK
TRAV_PT 83 SPK
TRAV_PT 150 SPK
TRAV_PT 15 SPK
TRAV_PT 30 SPK
TRAV_PT 4 SPK
TRAV_PT 3 SPK
I.P. FND. RB
D.H. IN WALL
REBAR FND.
REBAR FND. BASE

S50° 50' 37"W 136.93'
S10° 53' 01"E 66.91'
S11° 09' 08"E 168.92'
S13° 35' 20"E 204.64'
S13° 54' 11"E 220.84'
S8° 46' 43"E 129.51'
N75° 28' 44"E 86.25'
S37° 35' 35"E 140.28'
S37° 35' 35"E 274.35'
N17° 57' 25"E 305.36'
S17° 57' 25"W 327.44'
N65° 29' 13"E 256.23'
N24° 15' 54"W 106.56'
N12° 37' 33"W 62.81'
N3° 31' 57"W 44.65'
N9° 13' 28"W 105.17'
N7° 47' 48"W 70.09'
N4° 44' 52"W 90.01'
N4° 44' 57"W 61.86'
N4° 49' 47"W 290.43'
N2° 45' 46"W 90.16'
S71° 12' 12"E 51.74'
S71° 12' 12"E 66.75'

L=272.60, R=2140.00, D=7° 17' 22"
L=270.68, R=1450.00, D=10° 41' 09"
L=489.15, R=210.00, D=29° 48' 53"

CLCB TF=208.68 INV.=
CLCB TF=208.38 INV.=204.36' 36"RCP
FL=205.14' 36"RCP
CLCB TF=211.48 INV.=206.03' 36"RCP
CLCB TF=228.40 INV.=225.20' 24"RCP INV.=223.45' 24"RCP
CCB TF=254.60 INV.=248.95' 24"RCP SW INV.=248.75' 24"RCP NW
CCB TF=260.83 INV.=254.95' 21"RCP NW INV.=253.95' 15"RCP SW INV.=253.85' 18"RCP NE
CCB TF=256.03 INV.=251.70' 21"RCP SE INV.=250.60' 21"RCP NW
CCB TF=263.31 INV.=255.89' 15"RCP
CCB TF=254.43 INV.=249.39' 21"RCP W INV.=249.99' 15"RCP E INV.=247.97' 24"RCP NE
CCB TF=256.71 INV.=249.22' 24"RCP W INV.=246.42' 24"RCP E INV.=246.92' 24"RCP N
CCB TF=256.52 INV.=252.62' 15"RCP E
CCB TF=264.52 INV.=260.30' 24"RCP E INV.=259.75' 24"RCP E

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS DEPICTED AND NOTED HEREON.

STATE OF CONNECTICUT · DAVID A. CARICCHIO · No. 70036 · LICENSED LAND SURVEYOR

9/4/2025

DAVID A. CARICCHIO, P.L.S. No. 70036 — DATE
ALFRED BENESCH & COMPANY, GLASTONBURY, CONNECTICUT
(not valid without original signature and embossed seal)

REVISIONS			
No.	DATE	DESCRIPTION	
1	9/2/2025	PER TOWN STAFF COMMENTS	

SURVEY BOOK: 06-
SURVEYOR: PC
DRAWN: DAC
CHECKED: RS
APPROVED: WW

SCALE: HORZ.: 1" = 30'
VERT.:

SURVEY DATUM: HORZ.: NAD 1983
VERT.: NAVD 1988

30 15 0 30
GRAPHIC SCALE

benesch

Prepared By:

Alfred Benesch & Company
200 Glastonbury Boulevard Suite 201
Glastonbury, Connecticut 06033
Phone (860) 633-8341, Fax: (860) 633-1068
www.benesch.com

TOPOGRAPHIC SURVEY
PREPARED FOR
HABITAT FOR HUMANITY
OF EASTERN CT, INC
COLBY DRIVE
LEDYARD CONNECTICUT

PROJ. No.: 0725-500010
DATE: SEPT 2024

SV.03

PAPER SPACE LAYOUT NAME:
TWISTVIEW:
VIEW NAME:
LAYER MANAGER NAME:
PLOT TABLE: STB

File Location/Name - Y:\Connecticut\07XX-50\0725-500010\00_HFH_Ledyard_Multi_Fa\Survey\ACAD\0725-500010 SURVEY.dwg
Date of Plot: September 02, 2025 - 9:15 AM

SITE PREPARATION NOTES:

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT, WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. PROTECT ALL IMPROVEMENTS NOT INCLUDED WITHIN THE LIMITS OF WORK. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
4. DURING DEMOLITION, PROTECT ALL ADJACENT CURBING, SIDEWALKS, RAMPS, ABOVE-GRADE AND BELOW-GRADE UTILITIES, DRAINAGE STRUCTURES, LIGHT BASES, AND OTHER IMPROVEMENTS POTENTIALLY AFFECTED BY THE WORK. CLEARLY DELINEATE THE LIMITS OF WORK AND MARK, BARRICADE, OR OTHERWISE IDENTIFY THOSE IMPROVEMENTS THAT ARE TO BE PROTECTED AND/OR AVOIDED. ANY IMPROVEMENT WHICH IS DAMAGED SHALL BE REPAIRED OR REPLACED IN-KIND TO THE OWNER'S SATISFACTION.
5. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
6. THE DIMENSIONS DEPICTED ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS INDICATED ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK. ANY CHANGES SHALL BE APPROVED BY THE TOWN ENGINEER AND/OR DIRECTOR OF LAND USE.
7. IMPLEMENTING WORKER SAFETY AND/OR HEALTH PROTOCOLS THAT ADDRESS COMPLIANCE WITH RULES, LAWS, AND REGULATIONS PERTAINING TO CONSTRUCTION SAFETY AND/OR THE POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC PHYSICAL OR CHEMICAL HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
8. PROVIDE PAVEMENT SAWCUT AT THE EDGE OF EACH PAVEMENT REMOVAL AREA TO ESTABLISH A CLEAN EDGE WHERE NEW WORK WILL MEET EXISTING PAVEMENT. SAWCUT SHALL BE A MINIMUM OF 12 INCHES FROM EDGE OF PAVEMENT REMOVAL.
9. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.

EROSION AND SEDIMENT CONTROL NOTES:

1. THIS PLAN IS FOR EROSION AND SEDIMENTATION (E&S) CONTROL ONLY. SEE OTHER PLANS FOR THE SCOPE OF CONSTRUCTION WORK.
2. THE MEASURES SPECIFIED HEREON ARE THE MINIMUM REQUIREMENTS FOR E&S CONTROL AND ARE SHOWN IN GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL E&S CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS. ALL EROSION CONTROLS SHALL BE INSTALLED PRIOR TO ANY SITE WORK. CONTROLS SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. EXCAVATED MATERIAL SHOULD NOT BE DISPOSED OF IN THE WETLAND AREA. PROVIDE ADDITIONAL E&S MEASURES AS REQUIRED TO CONTROL EROSION AND SILTATION THROUGHOUT THE DURATION OF THE CONSTRUCTION AS CONDITIONS DICTATE AND/OR AS DIRECTED BY THE OWNER OR THE ENGINEER.
3. MONITOR AND INSPECT ALL E&S MEASURES IN AN ONGOING MANNER THROUGHOUT THE WORK AND TAKE CORRECTIVE MEASURES, AS REQUIRED, TO MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO ANY RESOURCE AREAS.
4. ANY EROSION AND SEDIMENTATION MEASURE IMPLEMENTED BEYOND THAT SHOWN HEREON SHALL CONFORM TO APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT'S 2024 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL."
5. ANY STOCKPILED MATERIAL SHALL BE SUBJECT TO EROSION CONTROL MEASURES THAT INCLUDE A MINIMUM OF SILT FENCE OR HAY BALE BARRIER. COVER STOCKPILES IF SIGNIFICANT RAINFALL IS PREDICTED.
6. PROVIDE TEMPORARY SEEDING WITH MULCH ON ALL EXPOSED SOIL AREAS WHERE WORK WILL BE SUSPENDED FOR LONGER THAN 30 DAYS. APPLY SEED AND MULCH WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK. WHEN SEEDING IS NOT POSSIBLE DUE TO SEASONAL WEATHER CONDITIONS OR OTHER FACTORS, PROVIDE TEMPORARY STRUCTURAL SOIL PROTECTION SUCH AS MULCH, WOODCHIPS, EROSION CONTROL MATTING, OR COMPOST.
7. ALL TEMPORARY SLOPES IN EXCESS OF 3 (HORIZONTAL) TO 1 (VERTICAL) SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR APPROVED EQUIVALENT.
8. NO RUNOFF SHALL BE ALLOWED TO EXIT THE SITE PRIOR TO TREATMENT FOR SEDIMENT REMOVAL.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS. ALL TRASH SHALL BE CLEANED ON A DAILY BASIS AND THE SITE SHALL BE LEFT IN A NEAT CONDITION AT THE END OF EACH WORK DAY.
10. TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS AND ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION, CONTROL, AND RESPONSE.
11. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER AND MAINTAIN ADEQUATE MOISTURE LEVELS.
12. SWEEP ADJACENT ROADWAYS IF MUD OR SOIL IS TRACKED ON TO THEM, OR AS DIRECTED BY THE ENGINEER OR BY TOWN OF LEDYARD STAFF.
13. SILT SACKS TO BE INSTALLED IN ALL PROPOSED CATCH BASINS ONCE CONSTRUCTED.
14. ALL SESC CONTROLS SHALL BE PROPERLY INSTALLED, INSPECTED BY TOWN OF LEDYARD STAFF PRIOR TO THE START OF ANY WORK AND SHALL BE MAINTAINED IN PLACE IN GOOD WORKING ORDER UNTIL SUCH TIME AS THE SITE IS PERMANENTLY STABILIZED WITH VEGETATIVE OR OTHER COVER TO THE SATISFACTION OF TOWN STAFF.

TEMPORARY E&S MEASURES MAINTENANCE SCHEDULE

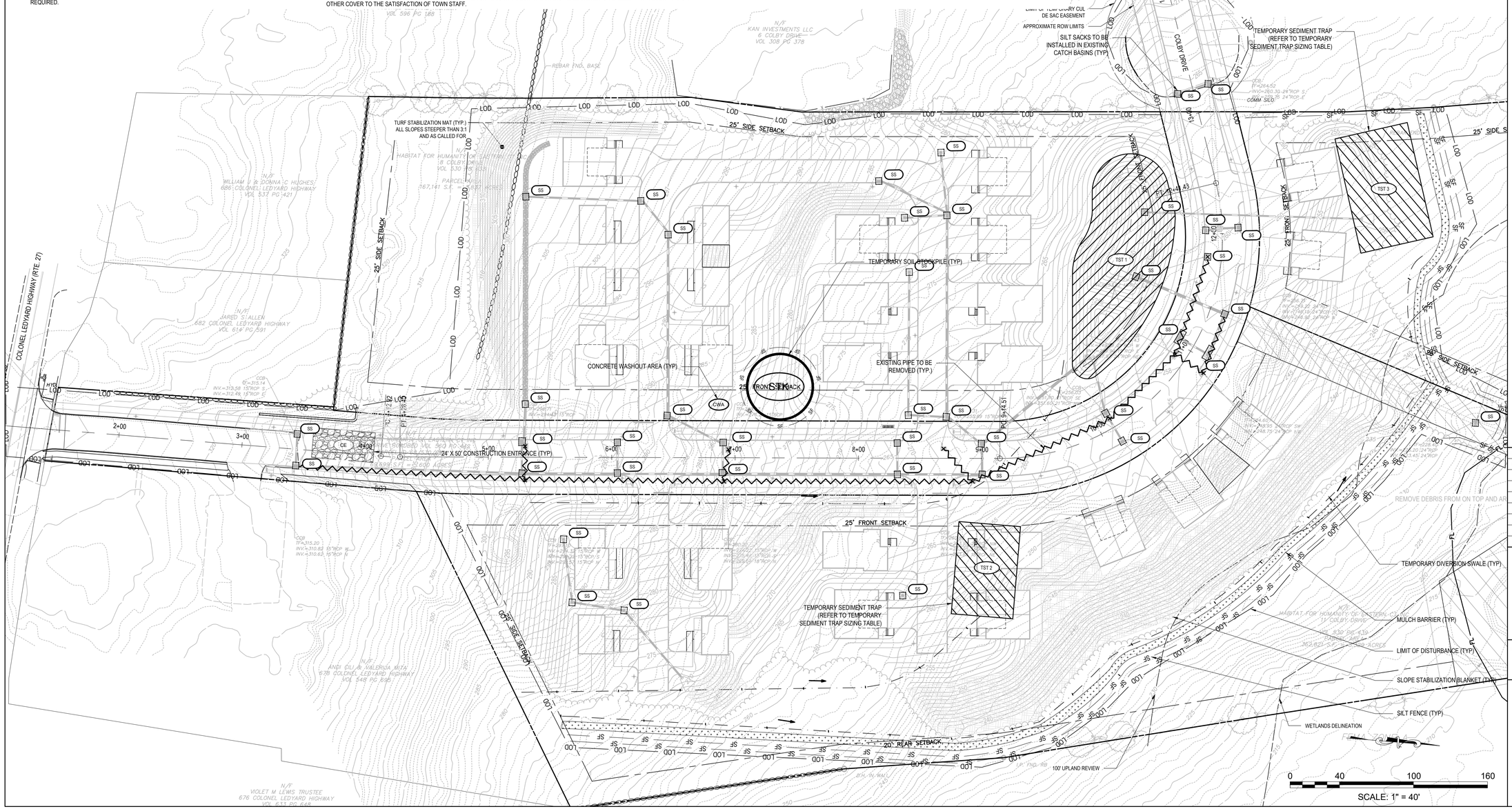
E&S MEASURE	MAINTENANCE MEASURES	SCHEDULE
FILTER INSERTS IN DRAINAGE SYSTEM	CLEAN CATCH BASIN GRATE, REMOVE SEDIMENT/DEBRIS FROM FILTER INSERTS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
HAY BALES/SILT FENCE BARRIER	REPAIR/REPLACE WHEN FAILURE OBSERVED. REMOVE SILT WHEN ACCUMULATION REACHES APPROX. HALF HEIGHT OF BARRIER	WEEKLY & WITHIN 24 HOURS AFTER A STORM GENERATING A DISCHARGE
CONSTRUCTION ENTRANCE	SWEEP PAVED ROADWAY ADJACENT TO SITE ENTRANCE AS NECESSARY, REFRESH STONE AS NECESSARY, REMOVE SILTED GRAVEL	WEEKLY
MOISTEN EXPOSED SOILS	PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS AND KEEP TRAVELWAYS DAMP	DAILY
TEMPORARY SEDIMENT TRAP	CHECK AND REPAIR OUTLET (SNAKE IF NECESSARY), CLEAN WHEN HALF FULL OF SEDIMENT (DEWATER IF NECESSARY), RESTORE TRAP TO ORIGINAL DIMENSIONS	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE
TEMPORARY DIVERSION SWALE	REPAIR DAMAGED AREA WITHIN 24 HOURS OF OBSERVED FAILURE	WEEKLY & WITHIN 24 HOURS AFTER STORM GENERATING A DISCHARGE. INSPECT DAILY WHEN CONSTRUCTION ACTIVITIES ARE IN CLOSE PROXIMITY

TEMPORARY SEDIMENT TRAP SIZING TABLE

ID	CONTRIBUTING AREA	REQUIRED VOLUME	PROVIDED VOLUME	MINIMUM DIMENSIONS
1	4.3 Ac	571 CY	718 CY	AS SHOWN ON C1.0
2	1.8 Ac	237 CY	278 CY	75' x 50' x 2'
3	3.1 Ac	415 CY	422 CY	95' x 60' x 2'

SUGGESTED CONSTRUCTION SEQUENCE:

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER, TOWN ENGINEER, DIRECTOR OF LAND USE, WETLANDS ENFORCEMENT OFFICER, ZONING ENFORCEMENT OFFICER, AND THE BUILDING OFFICIAL, PRIOR TO ANY CONSTRUCTION ACTIVITY.
2. INSTALL CONSTRUCTION ENTRANCE(S) AND PLACE CATCH BASIN FILTER INSERTS IN EXISTING CATCH BASINS.
3. INSTALL PERIMETER E&S CONTROLS AND REQUEST PRE-CONSTRUCTION INSPECTION FROM THE ENGINEER.
4. REMOVE EXISTING PAVING AND CURBING.
5. DEMOLISH EXISTING BUILDING AND REMOVE EXISTING UTILITIES.
6. PERFORM BULK EARTHWORK OPERATIONS.
7. BEGIN CONSTRUCTION OF BUILDING FOUNDATION.
8. CONSTRUCT UTILITIES.
9. BOX OUT PARKING LOT WITH IMPORTED BASE MATERIALS.
10. CONSTRUCT BOTTOM COURSE OF BITUMINOUS PAVEMENT.
11. CONSTRUCT LANDSCAPING AND OTHER SITE AMENITIES.
12. CONSTRUCT CURBING AND TOP COURSE OF BITUMINOUS PAVEMENT.
13. PLACE TOPSOIL AND PROVIDE TURF ESTABLISHMENT AND PLANTING IN ALL DISTURBED AREAS AS NECESSARY.
14. AT THE CONCLUSION OF CONSTRUCTION, COMPLETE THE INSTALLATION OF POST-CONSTRUCTION SITE STABILIZATION MEASURES AS SHOWN ON THE DRAWINGS.
15. REFER TO SHEET C2.0 FOR UNIT PHASING.



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Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE — LEDYARD, CT

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

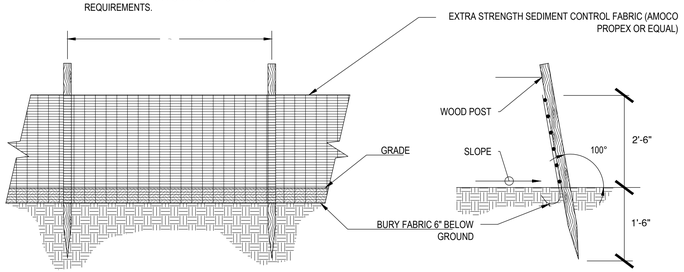
STATE OF CONNECTICUT — WILLIAM G. WALKER — LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00 — DRAWN BY: CLM
SCALE: 1" = 40' — CHECKED BY: WGW
DATE: 12/20/2024

EROSION & SEDIMENTATION CONTROL PLAN

DRAWING NO.: **C1.0**

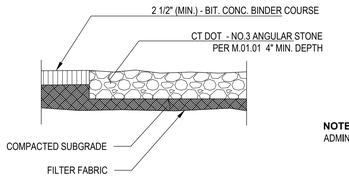
***NOTE:** POST SPACING AND EMBEDMENT VARIES BASED ON THE FABRIC MANUFACTURER'S REQUIREMENTS.



ELEVATION SECTION

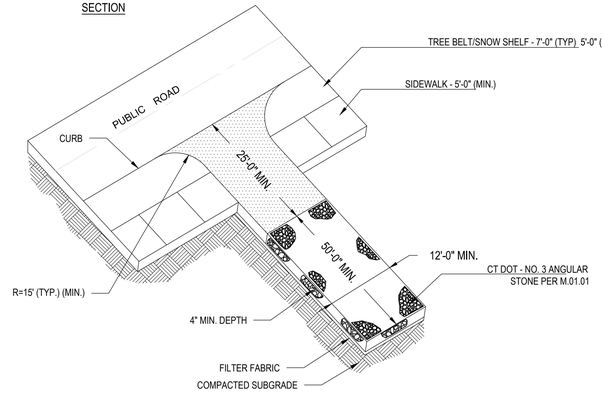
SILT FENCE BARRIER (SF)

N.T.S.



NOTE: LOCATION TO BE DETERMINED IN THE FIELD BY THE CONSTRUCTION ADMINISTRATOR

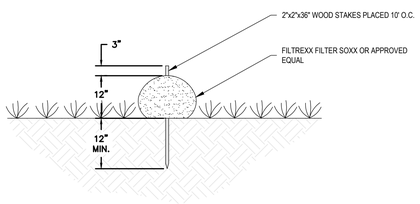
SECTION



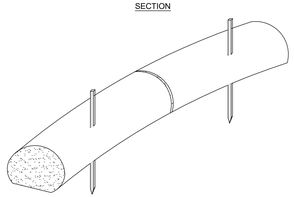
PLAN

CONSTRUCTION ENTRANCE (CE)

N.T.S.

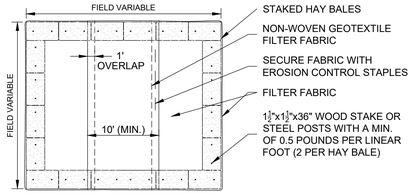


SECTION

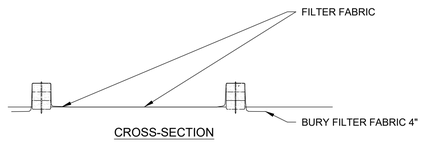


FILTER SOCK

N.T.S.



PLAN VIEW



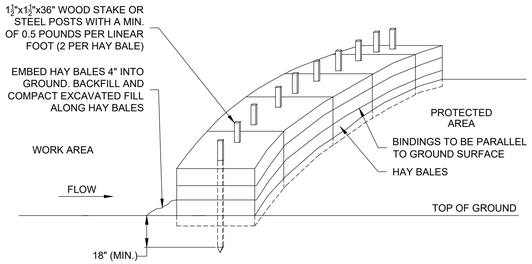
CROSS-SECTION

NOTES:

1. CONSTRUCT WASHOUT AREA LARGE ENOUGH TO ENSURE MATERIALS WILL BE CONTAINED WHERE WASTE CONCRETE CAN SOLIDIFY IN PLACE AND EXCESS WATER CAN SAFELY EVAPORATE.
2. WASHOUT AREA SHALL BE LARGE ENOUGH TO RETAIN ALL LIQUID AND WASTE CONCRETE MATERIALS FROM WASHOUT OPERATION.
3. WEEKLY INSPECTIONS OF WASHOUT AREAS SHALL BE CONDUCTED TO ASSESS THE HOLDING CAPACITY AND FUNCTIONALITY OF THE WASHOUT AREA.

TEMPORARY CONCRETE WASHOUT AREA (CWA)

N.T.S.

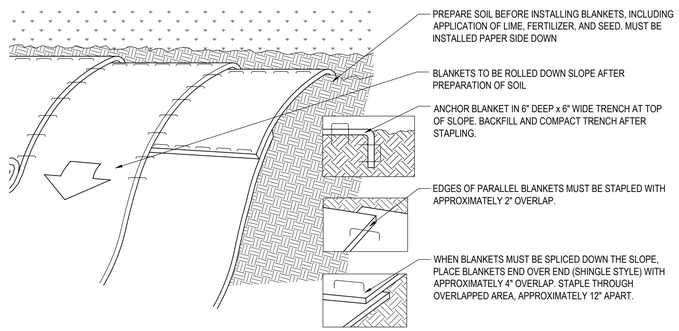


NOTES:

1. HAY BALES SHALL BE MADE OF HAY OR STRAW WITH 40 POUND MIN. WEIGHT AND 120 POUND MAX. WEIGHT HELD TOGETHER BY TWINE OR WIRE.
2. PLACE HAY BALES ON CONTOUR AND WING THE LAST HAY BALES UP SLOPE SO THAT THE TOP OF THE LAST SEVERAL HAY BALES ARE HIGHER THAN THE LINE OF HAY BALES.
3. DRIVE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THEM TOGETHER.
4. PUT ONE HAY BALE PERPENDICULAR ALONG HAY BALE BARRIER EACH 100 FEET.

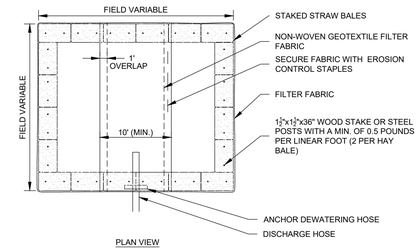
HAY BALE BARRIER (HB)

N.T.S.

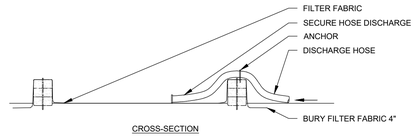


SLOPE STABILIZATION USING EROSION CONTROL BLANKET (ECB)

N.T.S.



PLAN VIEW



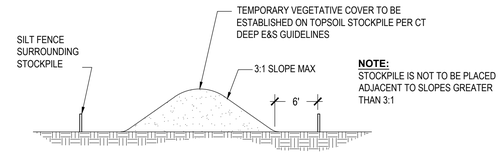
CROSS-SECTION

GENERAL NOTES

1. NUMBER OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. THE BASIN TO BE SIZED ACCORDING TO: CUBIC FEET OF STORAGE = PUMP DISCHARGE RATE(gpm) x 16.
3. SIZE SHOWN ON PLANS SHALL BE ADJUSTED AS REQUIRED FOR THE ACTUAL PUMPING RATE.

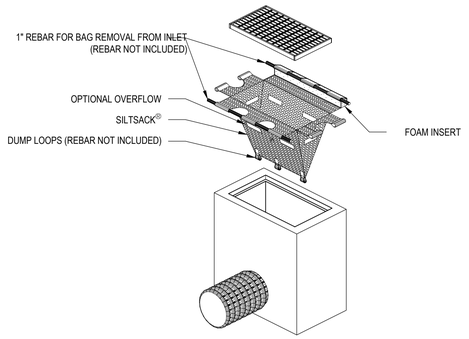
DEWATERING STRAW BALE BASIN

SCALE: NONE



TEMPORARY STOCKPILE (STK)

N.T.S.



'SILTSACK' SEDIMENT CONTROL DEVICE, TERRAFIX GEOSYNTHETICS INC. TORONTO, ONTARIO, CA WWW.TERRAFIXGEO.COM

SILT SACK DETAIL (SS)

N.T.S.

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COLBY DRIVE

LEDYARD, CT

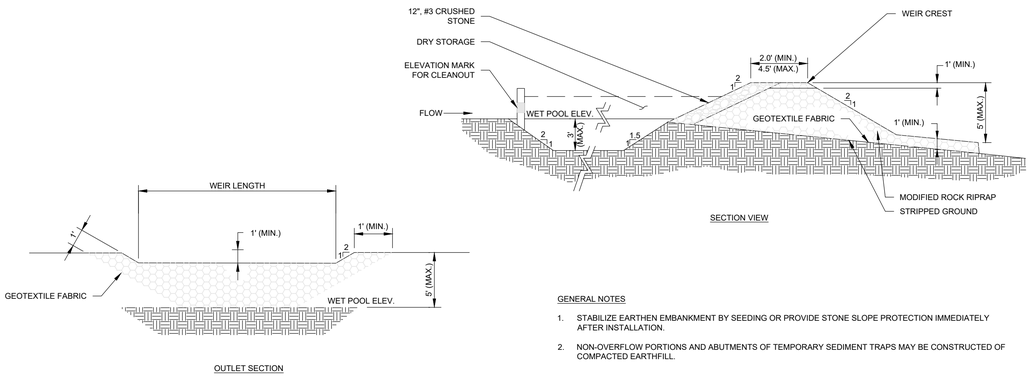
DATE:	REVISION:
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STATE OF CONNECTICUT · WILLIAM G. WALKER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00** DRAWN BY: **CLM**
SCALE: **AS SHOWN** CHECKED BY: **WGW**
DATE: **12/20/2024**

EROSION & SEDIMENTATION CONTROL DETAILS

DRAWING NO.:
C1.1

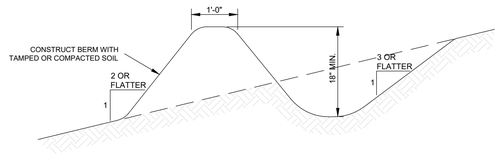


GENERAL NOTES

1. STABILIZE EARTHEN EMBANKMENT BY SEEDING OR PROVIDE STONE SLOPE PROTECTION IMMEDIATELY AFTER INSTALLATION.
2. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OF COMPACTED EARTHFILL.

TEMPORARY SEDIMENT TRAP

SCALE: NONE

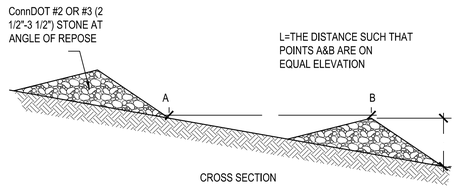


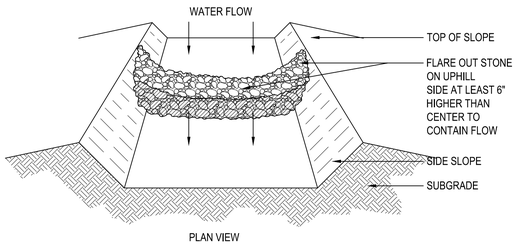
GENERAL NOTES

1. INSTALL TEMPORARY DIVERSION SWALES TO CHANNEL WATER FROM DISTURBED AREAS TO THE TEMPORARY SEDIMENT BASIN. ADJUST SWALE LOCATIONS AS NECESSARY PER CHANGING SITE CONDITIONS.
2. CONTRIBUTING DRAINAGE AREA MUST NOT EXCEED ONE ACRE.

TEMPORARY DIVERSION SWALE

SCALE: NONE





TEMPORARY STONE CHECK DAM

Scale: NTS

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Prepared for:

Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE *LEDYARD, CT*

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT · WILLIAM G. WALKER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00 DRAWN BY: CLM
SCALE: AS SHOWN CHECKED BY: WGW
DATE: 12/20/2024

EROSION & SEDIMENTATION CONTROL DETAILS

DRAWING NO.:
C1.2

LEDYARD ZONING REGULATIONS (ZONE - MFDD)				
REQUIREMENT	MINIMUM	LOT 8	LOT 9	LOT 11
FRONT LOTS				
MINIMUM LOT AREA (SF)	20,000	167,270	396,396	122,839
MINIMUM LOT FRONTAGE (LF)	150	880	745	160
MINIMUM SIDEWALK WIDTH (FT)	5	5	5	5
FRONT AND INTERIOR LOTS				
MINIMUM LOT WIDTH (LF)	150	792.3'	119.5'	703.6'
MINIMUM FRONT YARD SETBACK (LF)	25	>25	>25	>25
MINIMUM SIDE YARD SETBACK (LF)	25	>25	>25	>25
MINIMUM REAR YARD SETBACK (LF)	20	>20	>20	>20
MAXIMUM LOT COVERAGE (% AREA)	60	26.7%	8.60%	3.6%
MAXIMUM BUILDING HEIGHT: PRINCIPAL STRUCTURE (FT)	50	<50	<50	<50

LAYOUT NOTES

1. NEW PAVEMENT TO MEET LINE & GRADE OF EXISTING PAVEMENTS.
2. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED.
3. FIELD ADJUSTMENTS MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE AND APPROPRIATE MUNICIPAL OFFICIALS PRIOR TO CONSTRUCTION.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE VERTICAL AND HORIZONTAL POSITION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
5. SIDEWALKS ARE TO BE CONSTRUCTED WITHIN THE TOWN RIGHT OF WAY IN ACCORDANCE WITH TOWN OF LEDYARD ROAD ORDINANCES.

CONSTRUCTION PHASING

1. INSTALL DRAINAGE, UTILITIES AND ROADWAY INFRASTRUCTURE. CONSTRUCT SIDEWALKS WHEN UNITS WITHIN PHASE ARE COMPLETE.
2. CONSTRUCT UNITS 1-6. COMPLETE UTILITY CONNECTIONS.
3. CONSTRUCT DRIVE AND UNITS 7-12. COMPLETE UTILITY CONNECTIONS.
4. CONSTRUCT DRIVE AND UNITS 13-18. COMPLETE UTILITY CONNECTIONS.
4. CONSTRUCT DRIVE AND UNITS 13-18. COMPLETE UTILITY CONNECTIONS.
5. CONSTRUCT DRIVE AND UNITS 13-18. COMPLETE UTILITY CONNECTIONS.
6. CONSTRUCT UNITS 19-20, 31-32, 34-35 AND REMAINING INTERNAL LOOP DRIVEWAY. COMPLETE UTILITY CONNECTIONS.
7. CONSTRUCT UNITS 27-29, 33, 36-38. COMPLETE UTILITY CONNECTIONS.
8. CONSTRUCT UNITS 21-26, 30. COMPLETE UTILITY CONNECTIONS.
9. COMPLETE LANDSCAPING AND REMOVE EROSION CONTROLS.

MATERIALS NOTES

1. MATERIALS AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH CT DOT FORM 819.
2. ALL LOCATIONS WHERE EXISTING CURBING, BITUMINOUS CONCRETE ROADWAY OR CONCRETE ROADWAY OR CONCRETE SIDEWALK ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO PROVIDE A CLEAN, SMOOTH EDGE. TACK COAT EXPOSED EDGES OF EXISTING CONCRETE PRIOR TO PLACEMENT OF NEW BITUMINOUS CONCRETE PAVEMENT.
3. MANUFACTURED ITEMS SHALL BE INSTALLED, CONNECTED AND CLEANED ACCORDING TO THE MANUFACTURERS DIRECTIONS.
4. EXPANSION AND SCORE JOINTS FOR NEW CONCRETE WALKS SHALL BLEND TO MATCH EXISTING PATTERNS. CONTRACTOR TO ARRANGE TIMELY ON-SITE CONFERENCES WITH LANDSCAPE ARCHITECT TO APPROVE LAYOUT OF JOINT PATTERNS.
5. PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING, STOP LIGHTS, FIRE HYDRANTS AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20 FEET.
6. ALL DAMAGED OR BROKEN SECTIONS OF EXISTING STREET SIDEWALK AND CURBING WITHIN THE STATE/TOWN RIGHT OF WAY SHALL BE REPLACED.
7. INDIVIDUAL AND INTERIOR DRIVEWAYS SHALL BE PAVED WITH BITUMINOUS ASPHALT.

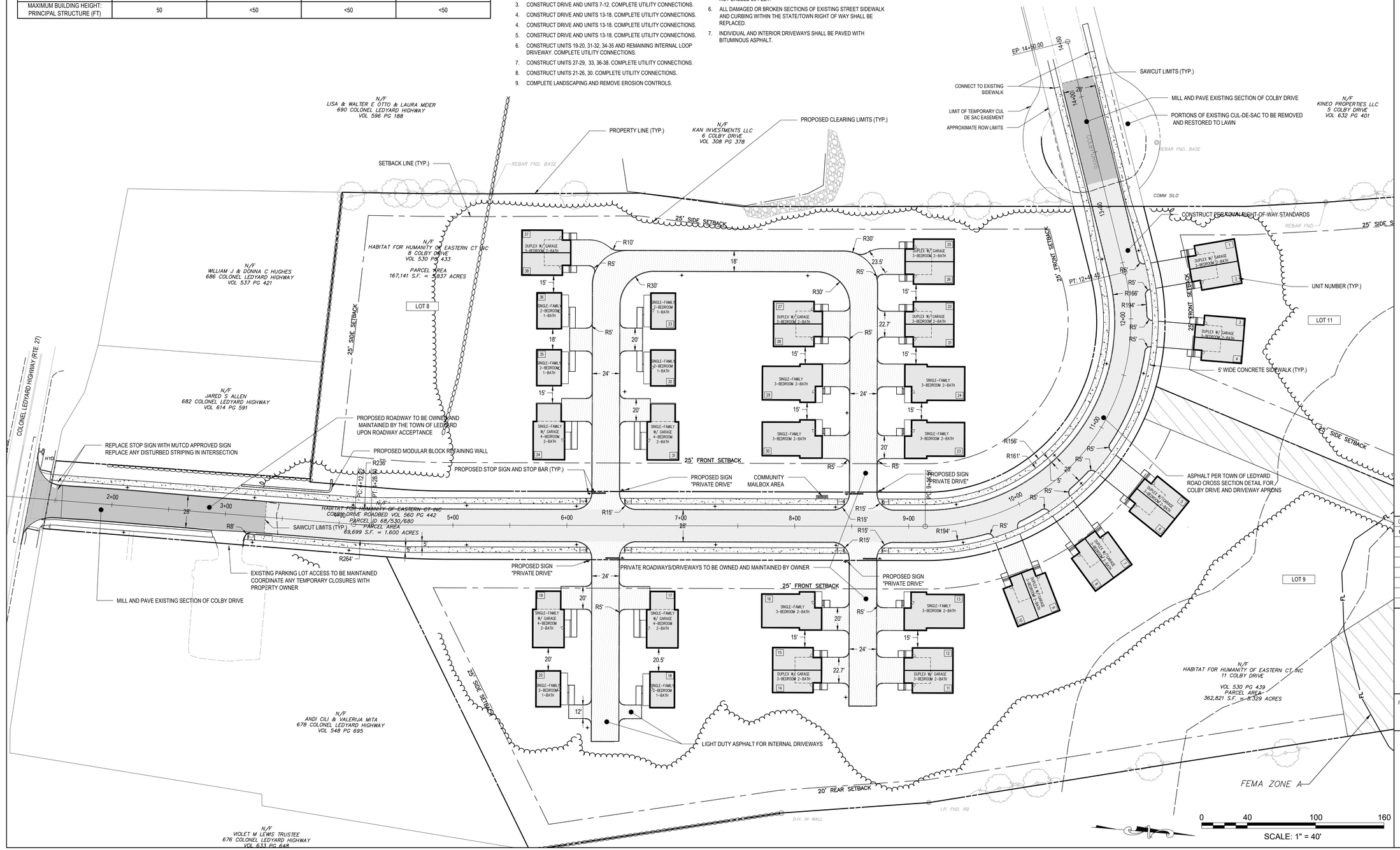
GENERAL NOTES

1. TO THE EXTENT FEASIBLE ENERGY EFFICIENT DESIGN HAS BEEN IMPLEMENTED IN ACCORDANCE WITH SECTION 9.2 OF THE LEDYARD ZOINING REGULATIONS.
2. LOW IMPACT DEVELOPMENT AND DESIGN TECHNIQUES HAVE BEEN INCORPORATED INTO PLANS.
3. THE CONTRACTOR SHALL ADHERE TO THE PERFORMANCE STANDARDS OF THE TOWN OF LEDYARD IN ACCORDANCE WITH SECTION 9.2.C OF THE ZONING REGULATIONS.
4. NO ACCESSORY APARTMENT SHALL BE APPROVED IN THIS DEVELOPMENT AS AN ACCESSORY TO A DUPLEX RESIDENTIAL OR MULTI-FAMILY RESIDENTIAL USE.
5. PRIVATE ROADWAYS AND DRIVEWAYS ARE TO BE MAINTAINED BY THE PROPERTY OWNER. SIDEWALKS SHALL BE MAINTAINED IN ACCORDANCE WITH THE TOWN OF LEDYARD SIDEWALK ORDINANCE.
6. PARKING WILL NOT BE PERMITTED ALONG THE INTERNAL DRIVEWAYS.

AFFORDABLE UNIT IDENTIFICATION CHART

AFFORDABLE UNIT IDENTIFICATION CHART				
	2 Bedroom Single Family Unit Nos.	3 Bedroom Single Family Unit Nos.	3 Bedroom Two-Family Unit Nos.	4 Bedroom Single Family Unit Nos.
40-50% Area Median Income	18, 32, 33, 35 *		1, 11, 25	
51-60% Area Median Income	20		2, 4, 8, 14, 21, 22, 28, 38	
61-80% Area Median Income	36	13, 16, 23, 24, 29, 30	3, 5, 6, 7, 9, 10, 12, 15, 26, 27, 37	17, 19, 31, 34

* UNIT NUMBERS IDENTIFIED ON THIS PLAN DO NOT CORRESPOND TO ADDRESSES. ADDRESSES SHALL BE ASSIGNED BY THE TOWN OF LEDYARD ASSESSOR'S OFFICE.



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COLBY DRIVE

LEDYARD, CT

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT · WILLIAM G. WALTER · 24474 · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00 DRAWN BY: CLM
SCALE: 1"=60' CHECKED BY: WGW
DATE: 12/20/2024

SITE PLAN

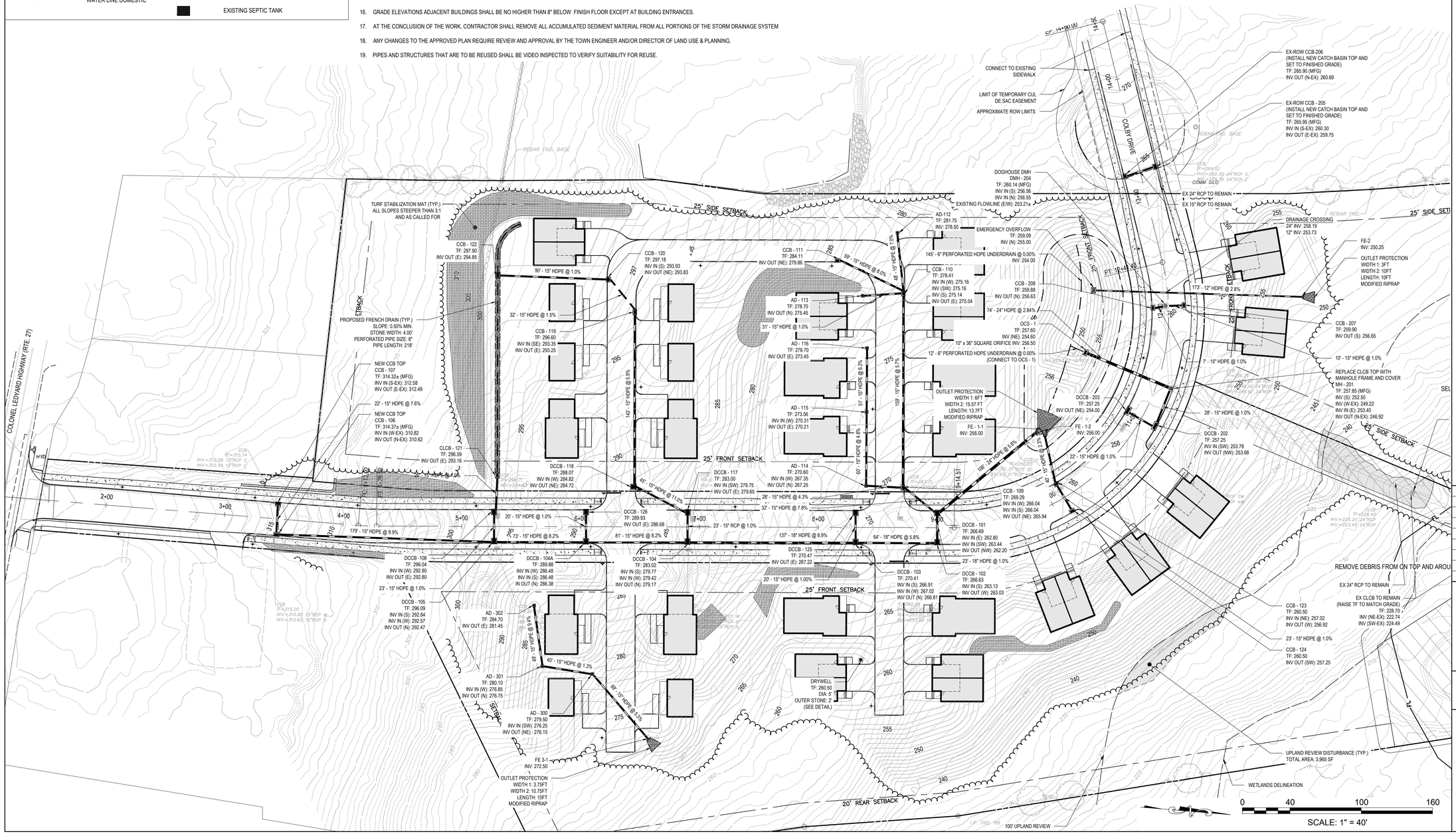
DRAWING NO.: C2.0

DRAINAGE AND UTILITIES LEGEND

- STORM DRAINAGE PIPE
- CATCH BASIN
- DRAINAGE MANHOLE
- AREA/YARD DRAIN
- TREATMENT UNIT
- ROOF LEADER
- SANITARY MANHOLE
- SANITARY SEWER
- VENT LINE
- CLEANOUT
- WATER LINE / FIRE LINE
- WATER LINE DOMESTIC
- WATER GATE VALVE
- WATER TAPPING SLEEVE
- WATER METER
- ELECTRIC / COMM. DUCT BANK
- ELECTRIC / COMM. DUCT BANK
- GAS LINE
- GAS METER
- CO_2 SUPPLY
- COMMUNICATION CONDUITS
- EXISTING DRINKING WATER WELL
- EXISTING LEACHING FIELD
- EXISTING SEPTIC TANK

DRAINAGE NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.
2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFICATION OF THE LOCATION AND NATURE OF ALL SUBSURFACE UTILITIES AT THE PROJECT WHICH MAY BE AFFECTED BY THE WORK. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION, AND INVERTS AS REQUIRED.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
4. THE LOCATIONS OF EXISTING SITE FEATURES AS SHOWN HAVE BEEN OBTAINED FROM MAPS, SURVEYS, FIELD INSPECTIONS, AND OTHER AVAILABLE INFORMATION. THEY MUST BE CONSIDERED APPROXIMATE BOTH TO LOCATION, SIZE, AND AS-BUILT CONDITION AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL FIELD CONDITIONS.
5. THE DIMENSIONS SHOWN ON THE PLANS, INCLUDING THE INTENDED DIMENSIONS OF THE WORK, MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASUREMENTS TO VERIFY ALL DIMENSIONS SHOWN ON THE DRAWINGS AS WELL AS OTHER DIMENSIONS HE MAY DEEM APPROPRIATE TO FACILITATE THE COMPLETION OF THE WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
6. UNLESS OTHERWISE INDICATED, ALL DISTURBED AREAS SHALL BE RESTORED WITH SIX (6) INCHES OF LOAM, SEEDED, FERTILIZED, AND MULCHED. PROVIDE ADDITIONAL EROSION CONTROLS AS REQUIRED.
7. COMPLY WITH CONNECTICUT BUILDING CODE FOR ALL SITE CONSTRUCTION, INCLUDING HANDICAPPED ACCESSIBILITY.
8. THE CROSS-SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:50H (2.00%). UNLESS OTHERWISE INDICATED, THE MAXIMUM RUNNING SLOPE OF ALL SIDEWALKS AND WALKWAYS SHALL BE LESS THAN 1V:20H (5%). VERIFY GRADES AND SLOPES PRIOR TO CONCRETE PLACEMENT. REPORT DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. ENGAGE A CONNECTICUT-LICENSED LAND SURVEYOR TO PERFORM LAND-SURVEYING SERVICES REQUIRED, INCLUDING, BUT NOT LIMITED TO VERIFICATION AND LAYOUT OF BASELINES, PROPOSED IMPROVEMENTS, DIMENSIONS AND ELEVATIONS. REPORT DISCREPANCIES TO THE ENGINEER.
11. PROPOSED GRADES INDICATE DESIGN INTENT. VERIFY ELEVATIONS AND MAKE ADJUSTMENTS TO MEET FIELD CONDITIONS. DO NOT PROCEED WITH ANY ADJUSTMENT OR FIELD MODIFICATION UNTIL APPROVED BY THE ENGINEER.
12. GRADE TRANSITION BETWEEN TOPOGRAPHIC LINES AND SPOT GRADES SHALL BE UNIFORM UNLESS OTHERWISE INDICATED.
13. MAXIMUM LANDSCAPE SLOPES SHALL BE 3(H):1(V) UNLESS OTHERWISE INDICATED.
14. ALL DRAINAGE PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), UNLESS OTHERWISE INDICATED. SEE SPECIFICATIONS. ALL PROPOSED DRAINAGE PIPE UNDER ROADWAY WITH LESS THAN TWO (2) FEET OF COVER SHALL BE CLASS V RCP.
15. ALL CATCH BASINS SET AGAINST CURBS SHALL BE CONNDOT TYPE "C" AND THOSE NOT AGAINST CURBING SHALL BE CONNDOT TYPE "C-L".
16. GRADE ELEVATIONS ADJACENT BUILDINGS SHALL BE NO HIGHER THAN 8" BELOW FINISH FLOOR EXCEPT AT BUILDING ENTRANCES.
17. AT THE CONCLUSION OF THE WORK, CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT MATERIAL FROM ALL PORTIONS OF THE STORM DRAINAGE SYSTEM
18. ANY CHANGES TO THE APPROVED PLAN REQUIRE REVIEW AND APPROVAL BY THE TOWN ENGINEER AND/OR DIRECTOR OF LAND USE & PLANNING.
19. PIPES AND STRUCTURES THAT ARE TO BE REUSED SHALL BE VIDEO INSPECTED TO VERIFY SUITABILITY FOR REUSE.



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HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

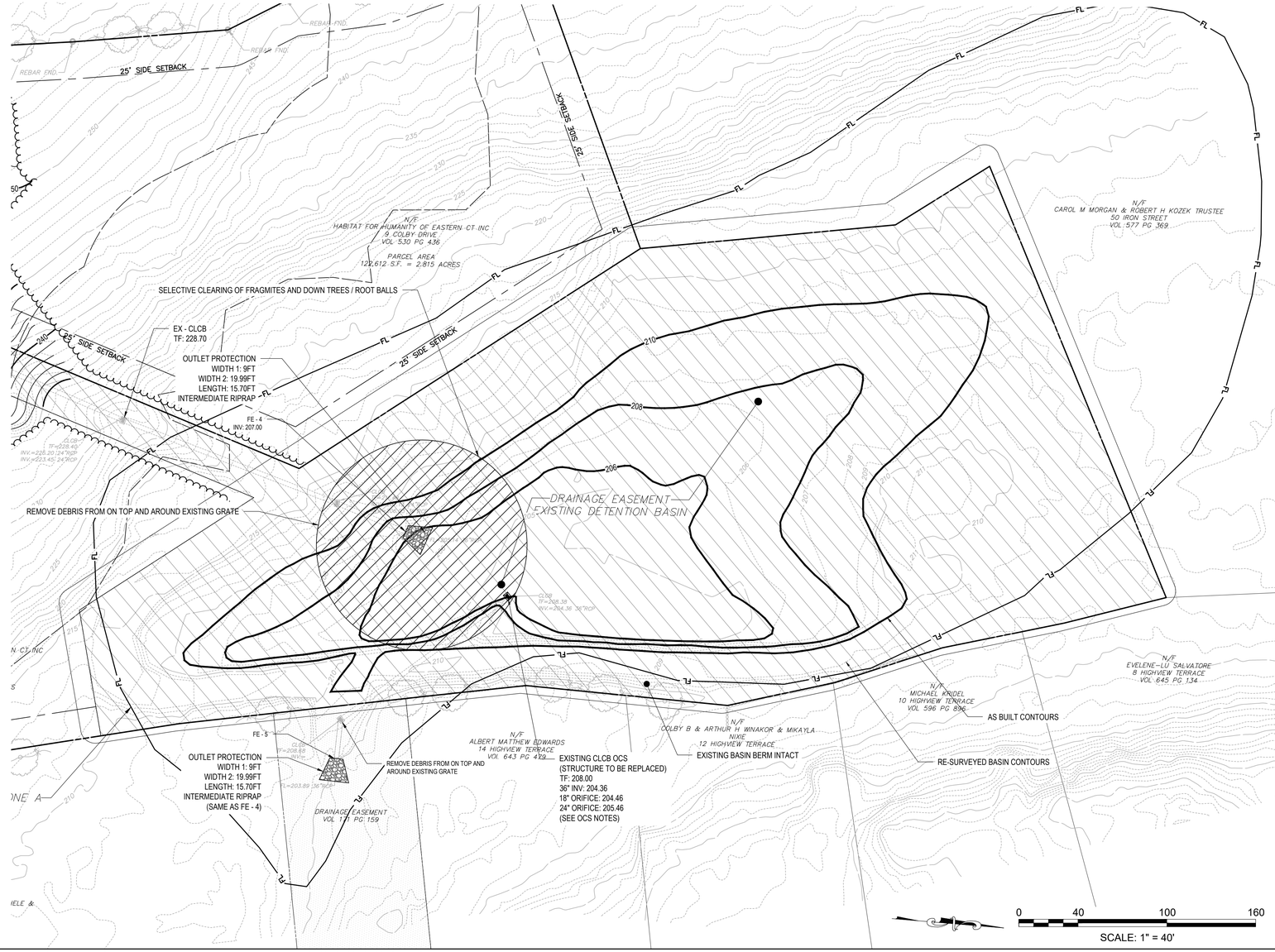
DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT WILLIAM G. WALTER LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL, TRS
CHECKED BY: WGW

DRAINAGE PLAN

DRAWING NO.: C3.1



OCS NOTES

- PIPE IS IN ACCEPTABLE CONDITION.
- REPLACE EXISTING STRUCTURE AS CALLED FOR, SEE OCS DETAILS.

BASIN COMPARISON

BASIN PER AS-BUILT SURVEY DATED 12/05/2003

APPROXIMATE VOLUME: 125,465 CUBIC FEET

BASIN PER ADDITIONAL SURVEY PERFORMED OCTOBER 2024

APPROXIMATE VOLUME: 145,0303 CUBIC FEET

SEE HYDROCAD ANALYSIS

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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT
WILLIAM G. WALTER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00**
SCALE: **AS SHOWN**
DATE: **12/20/2024**
DRAWN BY: **GSL**
CHECKED BY: **WGW**

EXISTING BASIN REHABILITATION PLAN

DRAWING NO.:
C3.2

GRADING LEGEND

- DIRECTION OF SURFACE DRAINAGE FLOW
- PROPOSED INTERMEDIATE CONTOUR (123)
- PROPOSED INDEX CONTOUR (120)
- PROPOSED SPOT ELEVATION (TW 123.45 / BW 122.45)
- MATCH EXISTING SPOT ELEVATION (123.45 (ME))
- FLUSH CONDITION
- ACCESSIBLE ROUTE
- SOIL BORING LOCATION (B-#)

ACCESSIBILITY NOTES

1. SLOPES ALONG THE ACCESSIBLE ROUTE SHALL BE LESS THAN 1:20 (5%) AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN ¼ INCH.
2. LANDINGS SHALL NOT HAVE A SLOPE GREATER THAN 1:50 (2%) IN ANY DIRECTION.
3. SLOPES WITHIN THE ACCESSIBLE PARKING SPACE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION.



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT · WILLIAM G. WALKER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: **0725 500010.00** DRAWN BY: **GSL, TRS**
SCALE: **AS NOTED** CHECKED BY: **WGW**
DATE: **12/20/2024**

GRADING PLAN

DRAWING NO.: **C3.3**

UTILITY NOTES

1. CONTRACTOR SHALL NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) AND VERIFY UTILITY MARK-OUT WITH THE OWNER 72 HOURS PRIOR TO THE INITIATION OF ANY SITE DISTURBANCE.

2. THE LOCATIONS OF EXISTING UTILITIES AS DEPICTED ON THE PLANS MAY VARY FROM ACTUAL EXISTING CONDITIONS IN THE FIELD. COORDINATE WITH RESPECTIVE UTILITY OWNERS AND PERFORM VERIFICATION OF TYPE, LOCATION AND INVERTS AS REQUIRED. VERIFY ALL TIE-IN POINTS, ROUTING, CONFLICTS, CROSSINGS, AND BUILDING CONNECTION POINTS TO FACILITATE THE COMPLETION OF THE WORK.

3. PERFORM EXPLORATORY EXCAVATIONS AS REQUIRED TO VERIFY THE AS-BUILT LOCATION OF EXISTING SUBSURFACE UTILITIES WHERE CROSSINGS OR OTHER POTENTIAL CONFLICTS ARE PRESENT.

4. WATER & SEWER SERVICE

   - ALL BUILDING SEWER LATERALS SHALL BE 6" DIAMETER AND ALL PIPE ACCEPTING FLOW FROM MORE THAN ONE (1) LATERAL SHALL BE 8" DIAMETER FOR GRAVITY SEWER. ANY FORCE MAINS/LATERALS TO BE DETERMINED.
   - ALL WATER SERVICE WORK TO COMPLY WITH CWC STANDARDS AND SPECIFICATIONS.
   - ALL WATER MAINS ARE TO BE 8" D.I. WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
   - ALL DOMESTIC WATER SERVICES ARE TO BE 2" COPPER WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
   - ALL FIRE SERVICES ARE TO BE 6" D.I. WITH 4.5 FT OF COVER UNLESS OTHERWISE NOTED.
   - ALL WATER SERVICES ARE TO BE A MIN. 10 FT FROM ANY SANITARY SERVICE (UNLESS SHELVED IN THE SAME TRENCH) AND A MINIMUM OF 18" OF VERTICAL CLEARANCE FROM ANY OTHER UTILITY LINE.
   - LOCATION OF WATER SERVICES AT THE BUILDING TO BE COORDINATED WITH MECHANICAL DRAWINGS.
   - ALTHOUGH NOT DEPICTED ON THE DRAWINGS, PROVIDE FOR THE INSTALLATION OF ALL JOINTS, COUPLINGS, RESTRAINTS, BENDS, ANGLES, AND OTHER APPURTENANCES TO ACHIEVE A COMPLETE, FUNCTIONAL WATER SUPPLY SYSTEM.

5. TELECOMMUNICATIONS

   - TRACER WIRE REQUIRED FOR TELECOMMUNICATIONS AND ELECTRIC ONLY. PROVIDE APPROPRIATE WIRE ACCESS POINTS.
   - FOR TELECOMMUNICATIONS AND ELECTRIC, WARNING TAPE SHALL BE INSTALLED 12-INCHES BELOW GRADE.
   - SEAL ALL CONDUIT ENDS WITH BLANK DUCT PLUGS. SECURE PULL ROPE TO DUCT PLUG.
   - ALL WORK ASSOCIATED WITH TELECOMMUNICATIONS SHALL CONFORM TO THE STANDARDS OF THE LOCAL TELECOMMUNICATIONS PROVIDER.
   - INSTALL CONDUIT, PULL ROPE, CAPS, WARNING TAPE, AND TRACER WIRE PER APPLICABLE SPECIFICATIONS, STANDARDS, AND CODES.

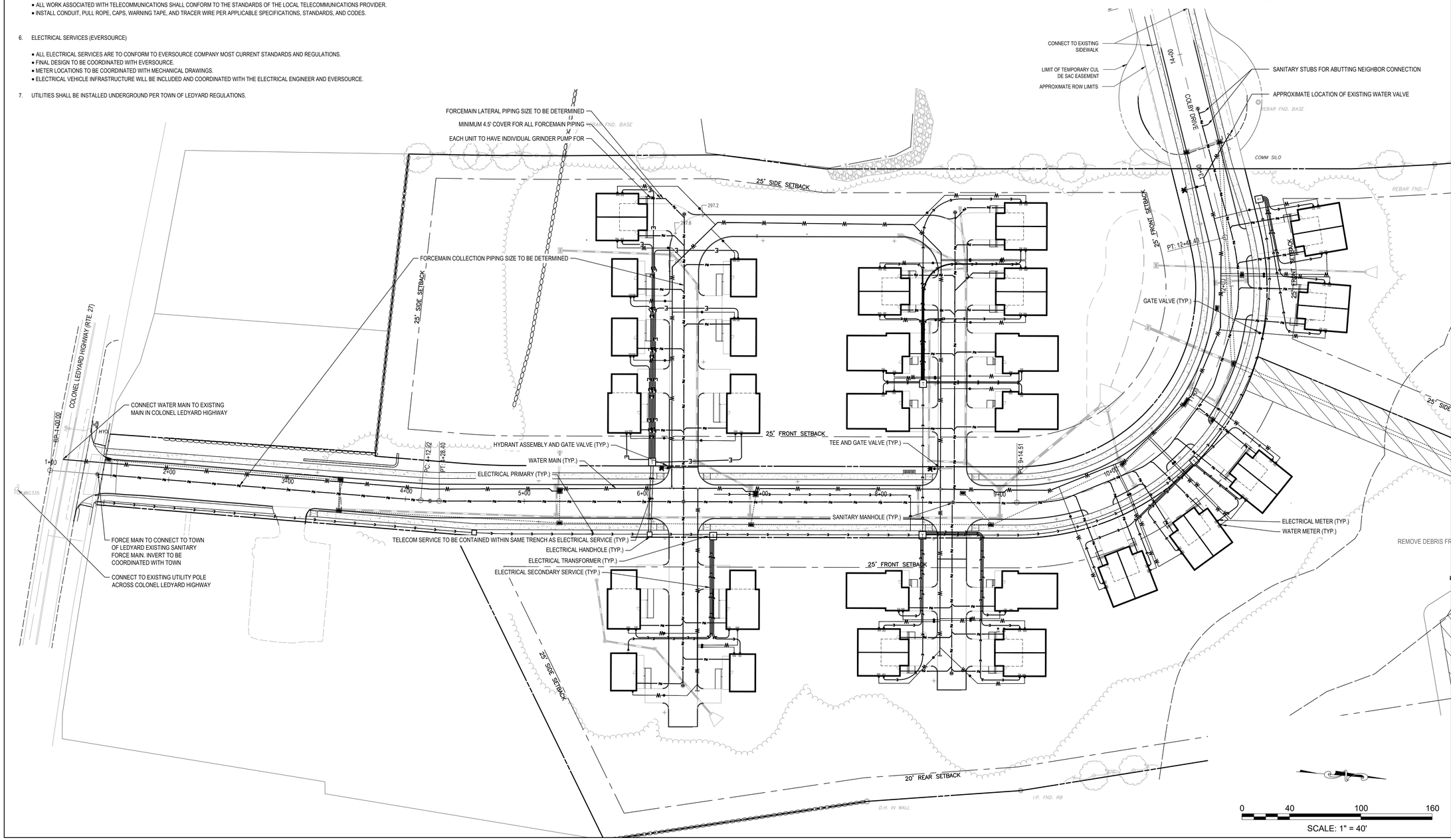
6. ELECTRICAL SERVICES (EVERSOURCE)

   - ALL ELECTRICAL SERVICES ARE TO CONFORM TO EVERSOURCE COMPANY MOST CURRENT STANDARDS AND REGULATIONS.
   - FINAL DESIGN TO BE COORDINATED WITH EVERSOURCE.
   - METER LOCATIONS TO BE COORDINATED WITH MECHANICAL DRAWINGS.
   - ELECTRICAL VEHICLE INFRASTRUCTURE WILL BE INCLUDED AND COORDINATED WITH THE ELECTRICAL ENGINEER AND EVERSOURCE.

7. UTILITIES SHALL BE INSTALLED UNDERGROUND PER TOWN OF LEDYARD REGULATIONS.

UTILITY LEGEND

- W — W — WATER PIPE
- FP — FP — FIRE PROTECTION LATERAL
- GV — GATE VALVE
- WATER 'TEE' CONNECTION
- S — S — SANITARY LATERAL
- FM — FM — SANITARY LATERAL
- SANITARY CLEANOUT
- SANITARY MANHOLE
- E — E — ELECTRICAL CONDUIT
- T — TRANSFORMER



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT · WILLIAM G. WALTER · LICENSED PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: 1"=40'
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

UTILITY PLAN

DRAWING NO.:
C4.0



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LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT
WILLIAM G. WALTER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: TRS
CHECKED BY: RCD

PLANTING PLAN

DRAWING NO.:
C5.0

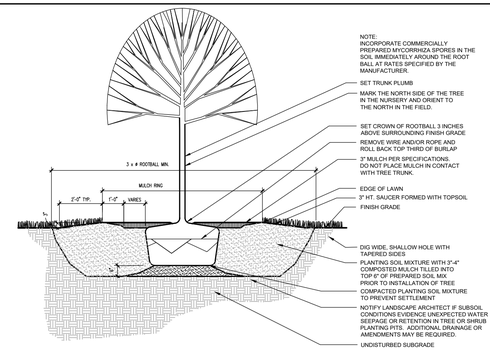
PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE	QTY
DECIDUOUS TREES						
	AO	ACER RUBRUM `OCTOBER GLORY` / OCTOBER GLORY RED MAPLE	B & B	2.5-3" CAL.		12
	ASFF	ACER SACCHARUM `FALL FIESTA` / FALL FIESTA SUGAR MAPLE	B & B	2.5-3" CAL.	14-16` HT.	7
	AHB	AESCULUS HIPPOCASTANUM 'BAUMANNII' / BAUMANN HORSE CHESTNUT	B & B	2.5-3" CAL.	12-16` HT.	6
	BNH	BETULA NIGRA `HERITAGE` / HERITAGE RIVER BIRCH	B & B	MULTI-TRUNK	8-10` HT.	10
	GBPS	GINKGO BILOBA `PRINCETON SENTRY` / PRINCETON SENTRY MAIDENHAIR TREE	B & B	2.5-3" CAL.		6
	GTH	GLEDITSIA TRIACANTHOS INERMIS `HALKA` / HALKA THORNLESS HONEY LOCUST	B & B	2.5-3" CAL.	12-16` HT.	11
	LSR	LIQUIDAMBAR STYRACIFLUA `ROTUNDILOBA` TM / ROUND-LOBED SWEET GUM	B & B	2.5-3" CAL.	14-16` HT.	6
	LA	LIRIODENDRON TULIPIFERA 'SNOW BIRD' / SNOW BIRD TULIP TREE	B & B	3.0"-3.5" CAL	14-16` HT.	6
	QP	QUERCUS PALUSTRIS / PIN OAK	B & B	2.5-3" CAL.		6
	UAP	ULMUS AMERICANA `PRINCETON` / PRINCETON AMERICAN ELM	B & B	2.5-3" CAL.		6
EVERGREEN TREES						
	ACC	ABIES CONCOLOR `CANDICANS` / CANDICANS WHITE FIR	B & B	CONIFER	12-14` HT.	1
	CL	CUPRESSUS X LEYLANDII / LEYLAND CYPRESS	B & B	CONIFER	8-10` HT.	1
	PFV	PINUS FLEXILIS `VANDERWOLF`S PYRAMID` / VANDERWOLF`S PYRAMID PINE	B & B	CONIFER	12-14` HT.	12
ORNAMENTAL TREES						
	AGA	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY	B & B	MULTI-TRUNK	12-14` HT.	7
	BW	BETULA POPULIFOLIA 'WHITESPIRE SR.' / WHITESPIRE SENIOR GRAY BIRCH	B & B	2"-2.5" CAL.	12-14` HT.	11
	CC2	CERCIS CANADENSIS / EASTERN REDBUD	B & B	MULTI-TRUNK	8-10` HT.	6
	CRRG	CORNUS X RUTGERSENSIS `RUTGAN` / STELLAR PINK DOGWOOD	B & B	4-4.5" CAL.	10-12` HT.	10
SYMBOL	*CODE*	*BOTANICAL / COMMON NAME*	*SIZE*	*HEIGHT*	*SPREAD*	*QTY*
GRASSES						
	PVH	PANICUM VIRGATUM `HEAVY METAL` / BLUE SWITCH GRASS	#3 CONT.	2-3` HT.	15-18" SPR.	1
DECIDUOUS SHRUBS						
	CAE	CORNUS ALBA `ELEGANTISSIMA` / VARIEGATED REDTWIG DOGWOOD	#5 CONT.	24-30" HT.	24-30" SPR.	1
	CSB	CORNUS SERICEA `BAILEYI` / BAILEYI RED TWIG DOGWOOD	#7 CONT.	3-4` HT.	36-42" SPR.	1
	HV	HAMAMELIS VERNALIS / SPRING BLOOMING WITCHHAZEL	#7 CONT.	36-42" HT.	36-42" SPR.	1
	HMT	HYDRANGEA MACROPHYLLA 'PIIHM-I' TM / TWIST-N-SHOUT ENDLESS SUMMER HYDRANGEA	#5 CONT.	30-36" HT.	30-36" SP.	1
	HL	HYDRANGEA PANICULATA `LITTLE QUICK FIRE` / LITTLE QUICK FIRE HYDRANGEA	#5 CONT.	18-24" HT.	18-24" SPR.	1
	HF3	HYDRANGEA QUERCIFOLIA 'FLEMYGEA' / SNOW QUEEN OAKLEAF HYDRANGEA	5 GAL			1
	HKA	HYPERICUM KALMIANUM `AMES` / AMES ST. JOHNS WORT	#3 CONT.	15-18" HT.	15-18" SPR.	1
	IVRS	ILEX VERTICILLATA `RED SPRITE` / RED SPRITE WINTERBERRY	#3 CONT.	18-24" HT.	18-24" SPR.	1
	IVSG	ILEX VERTICILLATA `SOUTHERN GENTLEMAN` / SOUTHERN GENTLEMAN WINTERBERRY	B & B	4-5` HT.	36-42" SPR.	1
	IVWR	ILEX VERTICILLATA `WINTER RED` / WINTER RED WINTERBERRY	B & B	4-5` HT.	36-42" SPR.	1
	IVHG	ITEA VIRGINICA `HENRY`S GARNET` / HENRY`S GARNET SWEETSPIRE	#5 CONT.	18-24" HT.	24-30" SP.	1
	MP	MYRICA PENSYLVANICA / NORTHERN BAYBERRY	#5 CONT.	30-36" HT.	30-36" SP.	1
	POLD	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / LITTLE DEVIL DWARF NINEBARK	#3 CONT.	30-36" HT.	30-36" SP.	1
EVERGREEN SHRUBS						
	JT2	JUNIPERUS COMMUNIS 'SMNJCB' / TORTUGA® COMMON JUNIPER	#3 CONT.	8-12" HT.	18-24" SPR.	1
	KLS	KALMIA LATIFOLIA `SARAH` / SARAH MOUNTAIN LAUREL	#5 CONT.	30-36" HT.	30-36" SPR.	1
	LF	LEUCOTHOE FONTANESIANA / DROOPING LEUCOTHOE	#5 CONT.	15-18" HT.	18-24" SPR.	1
	RM	RHODODENDRON MAXIMUM / ROSEBAY RHODODENDRON	#7 CONT.	2-4` HT.	2-3` SPR.	1
	RR	RHODODENDRON MAXIMUM 'ROSEUM' / PINK ROSEBAY RHODODENDRON	7 GAL	2-4` HT.	2-3` SPR.	1
	TN2	THUJA OCCIDENTALIS 'AMERICAN PILLAR' / AMERICAN PILLAR ARBORVITAE	7 GAL	30-36" HT.	30-36" SP.	1
	TG2	THUJA OCCIDENTALIS 'GOLDEN GLOBE' / GOLDEN GLOBE ARBORVITAE	#3 CONT.	24-30" HT.	24-30" SPR.	1
	TOLG	THUJA OCCIDENTALIS 'LITTLE GIANT' / LITTLE GIANT ARBORVITAE	#3 CONT.	2-3` HT.	2-3` SPR.	1
	TI2	THUJA OCCIDENTALIS 'SMTOYB' / POLAR GOLD® ARBORVITAE	7 GAL	30-36" HT.	30-36" SP.	1

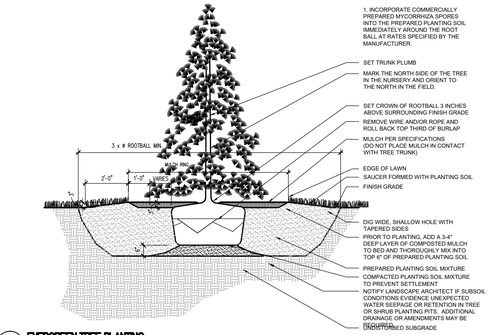
TOPSOIL, SEEDING & PLANTING NOTES

1. BLEND PROPOSED GRADES INTO EXISTING GRADES SMOOTHLY AND NEATLY. ALL SAWCUTS SHALL BE STRAIGHT AND CLEAN.
2. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES INCLUDING AREAS OUTSIDE OF THE CONTRACT LIMIT LINE, BUT WHICH ARE NOT COVERED BY OTHER SITE IMPROVEMENTS.
3. ALL PLANTING MATERIAL TO BE NURSERY GROWN STOCK SUBJECT TO APPLICABLE A.A.N. STANDARDS.
4. THE CONTRACTOR SHALL SUPPLY ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT LIST. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT LIST AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER NUMBER SHALL APPLY.
5. PRECISE LOCATION OF ITEMS NOT DIMENSIONED ON THE PLAN ARE TO BE FIELD STAKED BY THE CONTRACTOR AND SHALL BE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE PREVIOUS NOTE.
6. ALL SHRUB AND TREE PITS SHALL BE MULCHED TO A DEPTH OF 3" WITH SHREDDED PINE BARK MULCH UNLESS INDICATED OTHERWISE.
7. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGED VEGETATION AND SHALL REPLACE OR REPAIR ANY DAMAGE, AT HIS OWN EXPENSE.
8. ALL SHRUB AND GROUND COVER PLANTING AREAS SHALL HAVE CONTINUOUS BEDS OF AMENDED PLANTING SOIL TO A MINIMUM DEPTH OF 18 INCHES. SEE PLANTING PLANS FOR BED EXTENTS AND DETAILS FOR AREAS OF ADDITIONAL REQUIRED DEPTH.
9. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES IN THE FIELD. WHERE PLANT MATERIAL MAY INTERFERE WITH UTILITIES, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT TO COORDINATE THEIR INSTALLATION.
10. PLANTINGS INSTALLED IN THE DRY SUMMER MONTHS AND/OR LAWN SEEDED OUT OF SPRING OR FALL PERIODS, IF ALLOWED BY OWNER, WILL REQUIRE AGGRESSIVE IRRIGATION PROGRAMS AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
11. SUBSTITUTIONS PERMITTED ONLY UPON WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
12. WHERE A SIZE RANGE IS GIVEN IN THE PLANT SCHEDULE, AT LEAST 50% OF THE PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
13. CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.
14. CONTRACTOR TO MAINTAIN ALL PLANT MATERIAL UNTIL 60 DAYS AFTER FINAL ACCEPTANCE UNLESS NOTED OTHERWISE IN SPECS.
15. ALL LANDSCAPING PROPOSED ON THE APPROVED SITE PLAN SHALL BE COMPLETED BEFORE ISSUANCE OF A CERTIFICATE OF ZONING COMPLIANCE UNLESS THE LANDOWNER PROVIDES SURETY IN A FORM AND AMOUNT SATISFACTORY TO THE COMMISSION, ASSURING COMPLETION WITHIN A SPECIFIC TIME, NOT TO EXCEED ONE YEAR. SUCH SURETY SHALL BE FORFEITED IF THE WORK IS NOT COMPLETED WITHIN SUCH TIME LIMIT.

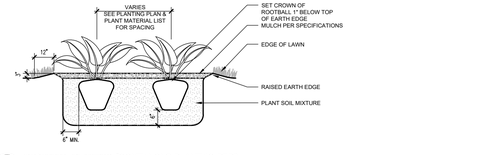
	PLANT CATEGORY
	SEED MIXES
LAWN SEED MIX	LAWN SEED MIX 30.0% Festuca rubra (Creeping Red Fescue) 25.0% Poa pratensis, 'Kelly' (Kentucky Bluegrass, 'Kelly') 25.0% Poa pratensis, 'Baron' (Kentucky Bluegrass, 'Baron') 10.0% Lolium multiflorum (Annual Ryegrass) 10.0% Lolium perenne, 'Confetti III' (Perennial Ryegrass, 'Confetti III' (turf type)) Seeding Rate: 100-200 lb per acre, or 3-5 lb per 1,000 sq ft
NO MOW SEED MIX	NO MOW SEED MIX - FOR USE ON SLOPES 3:1 AND GREATER 50.0% Festuca brevipila, 'Gladiator' (Hard Fescue, 'Gladiator') 30.0% Festuca ovina (Sheep Fescue) 15.0% Festuca rubra ssp. commutata (Chewings Fescue) 5.0% Schizachyrium scoparium (Little Bluestem, Fort Indiantown Gap-PA Ecotype)
DETENTION BASIN SEED MIX	DETENTION BASIN SEED MIX - FOR USE IN DETENTION AREAS 20.0% Panicum clandestinum, Tioga (Deertongue, Tioga) 20.0% Puccinellia distans, Fults (Alkaligrass, Fults) 18.0% Elymus virginicus (Virginia Wildrye, Madison-NY Ecotype) 15.0% Agrostis stolonifera, 'Penncross' (Creeping Bentgrass, 'Penncross') 15.0% Poa palustris (Fowl Bluegrass) 10.0% Carex vulpinoidea (Fox Sedge, PA Ecotype) 1.0% Carex scoparia (Blunt Broom Sedge, PA Ecotype) 1.0% Juncus effusus (Soft Rush) Seeding Rate: 20-40 lbs per acre, or 0.5-1 lb/1,000 sq ft with a cover crop. For a cover crop use one of the following: Grain rye (September 1st to April 30th; 30 lbs/acre) Japanese millet (May 1st to August 31st; 10 lbs/acre) Barnyard grass (May 1st to August 31st; 10 lbs/acre)



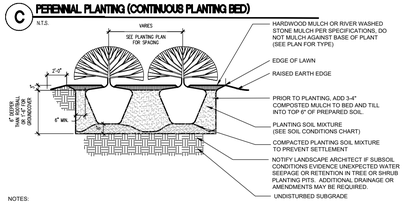
A DECIDUOUS TREE PLANTING
1/2" = 1'-0"



B EVERGREEN TREE PLANTING
NOT TO SCALE

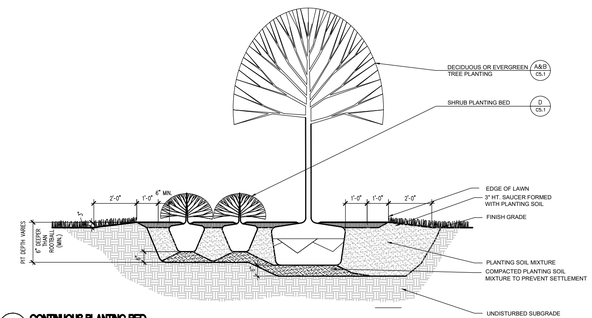


C PERENNIAL PLANTING (CONTINUOUS PLANTING BED)
N.T.S.



NOTES:
1. FOR CONTAINER GROWN SHRUBS, GENTLY PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF CONTAINER.
2. FOR B&B SHRUBS, FOLD BURLAP FROM TOP OF ROOT BALL DOWN TO GROUND.
3. INCORPORATE COMMERCIALLY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOT BALL AT RATES SPECIFIED BY THE MANUFACTURER.
4. PLANT HIGH SO THAT WATER DRAINS OUT OF THE SOIL DURING THE DESIGN PHASE, DESIGN ALTERNATIVE DRAINAGE SYSTEMS, AS REQUIRED.

D SHRUB PLANTING BED
N.T.S.



E CONTINUOUS PLANTING BED
NOT TO SCALE

Prepared by:
benesch
Alfred Benesch & Company
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Glastonbury, Connecticut 06033
860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

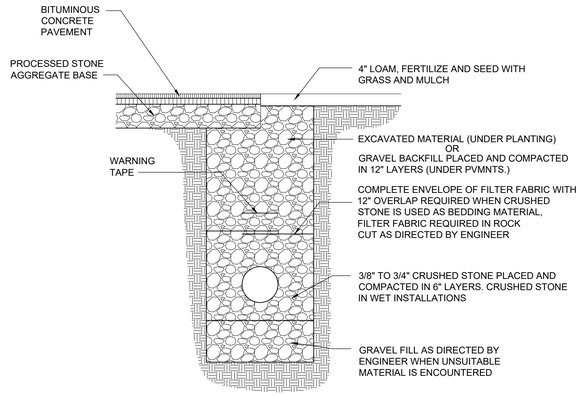
DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT · WILLIAM G. WALKER · LICENSED PROFESSIONAL ENGINEER

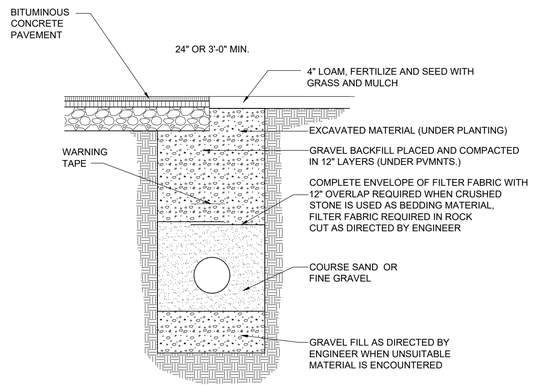
PROJECT NO.: **0725 500010.00** DRAWN BY: **TRS**
SCALE: **AS SHOWN** CHECKED BY: **RCD**
DATE: **12/20/2024**

PLANTING DETAILS & SCHEDULE

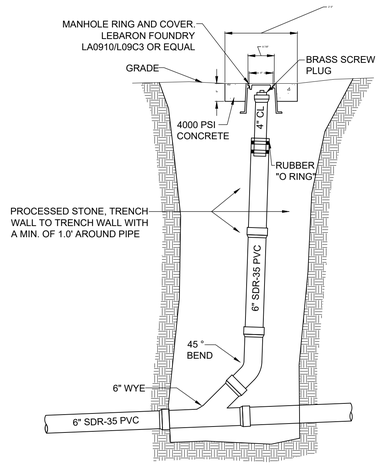
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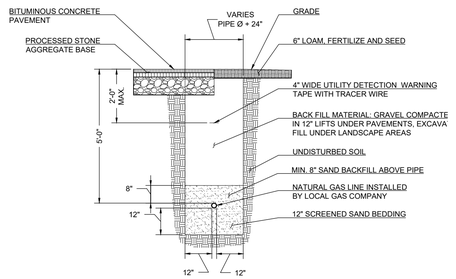
SANITARY TRENCH
SCALE: NONE



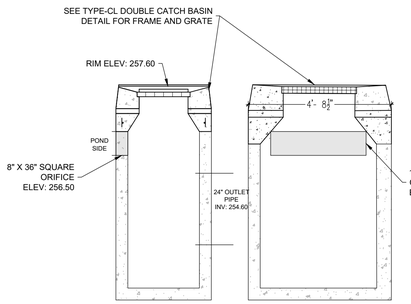
WATER TRENCH
SCALE: NONE



CLEANOUT TO GRADE
SCALE: NONE



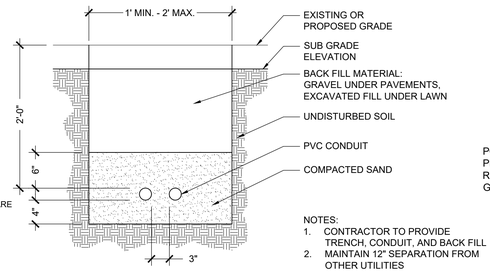
NATRUAL GAS TRENCH
SCALE: NONE



NOTES:

1. MIN. 4000 PSI PRECAST CONCRETE COMPONENTS ARE TO BE USED AS THE BASIS FOR THE OUTLET CONTROL STRUCTURE.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

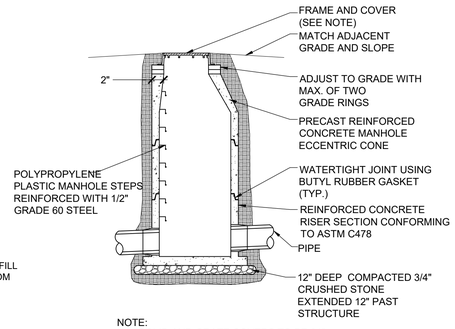
OUTLET CONTROL STRUCTURE (OCS-1)
SCALE: NONE



NOTES:

1. CONTRACTOR TO PROVIDE TRENCH, CONDUIT, AND BACK FILL
2. MAINTAIN 12" SEPARATION FROM OTHER UTILITIES

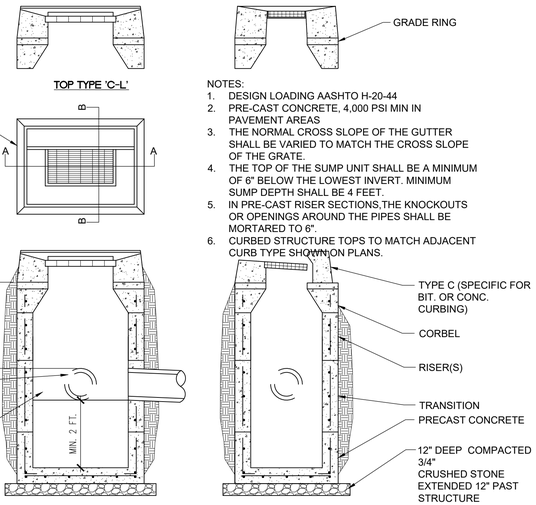
ELECTRICAL CONDUIT TRENCH
SCALE: NONE



NOTE:

1. SOLID AND GRATE COVERS TO BE 24" DIAMETER GRAY IRON AS MANUFACTURED BY GENERAL FOUNDARIES INC, SOLID COVERS TO CONTAIN THE WORD 'DRAIN'.

STORM MANHOLE
SCALE: NONE



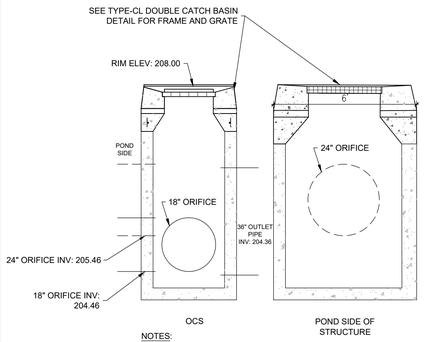
NOTES:

1. DESIGN LOADING AASHTO H-20-44
2. PRE-CAST CONCRETE, 4,000 PSI MIN IN PAVEMENT AREAS
3. THE NORMAL CROSS SLOPE OF THE GUTTER SHALL BE VARIED TO MATCH THE CROSS SLOPE OF THE GRATE.
4. THE TOP OF THE SUMP UNIT SHALL BE A MINIMUM OF 6" BELOW THE LOWEST INVERT. MINIMUM SUMP DEPTH SHALL BE 4 FEET.
5. IN PRE-CAST RISER SECTIONS,THE KNOCKOUTS OR OPENINGS AROUND THE PIPES SHALL BE MORTARED TO 6".
6. CURBED STRUCTURE TOPS TO MATCH ADJACENT CURB TYPE SHOWN ON PLANS.

NOTE:

1. ALL CATCH BASIN SUMPS TO BE A MINIMUM OF 2 FT DEEP UNLESS NOTED ON SHEET SERIES C3.0 DRAINAGE PLAN
2. CATCH BASINS IN LAWN AREAS TO BE COLLARLESS WITH NO EXPOSED CONCRETE. MOUNT NEENAH INLET GRATE MODEL 3349-A DIRECTLY TO CONCRETE CORBEL TOP. FILL CONCRETE SURROUND WITH TOPSOIL AND LAWN.

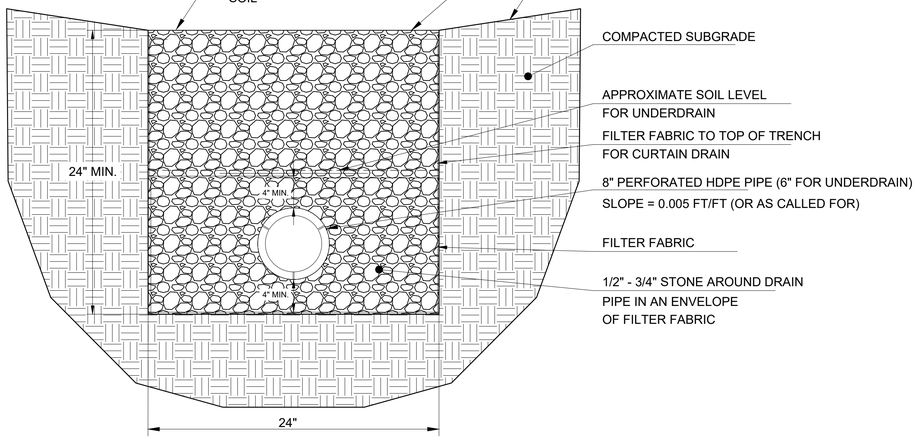
CATCH BASIN
SCALE: NONE



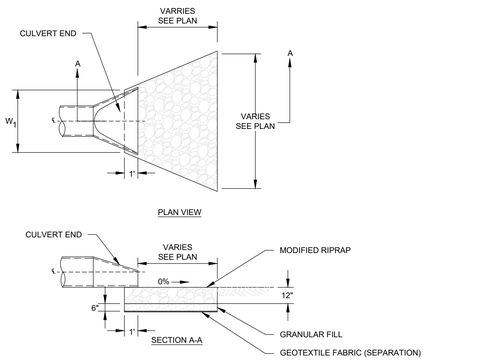
NOTES:

1. MIN. 4000 PSI PRECAST CONCRETE COMPONENTS ARE TO BE USED AS THE BASIS FOR THE OUTLET CONTROL STRUCTURE.
2. CONTRACTOR TO PROVIDE SHOP DRAWING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING STRUCTURE

OUTLET CONTROL STRUCTURE (OCS AT EXISTING BASIN)
SCALE: NONE



FENCH DRAIN / UNDERDRAIN
SCALE: NONE



RIPRAP OUTLET PROTECTION
SCALE: NONE

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860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

COLBY DRIVE

LEDYARD, CT

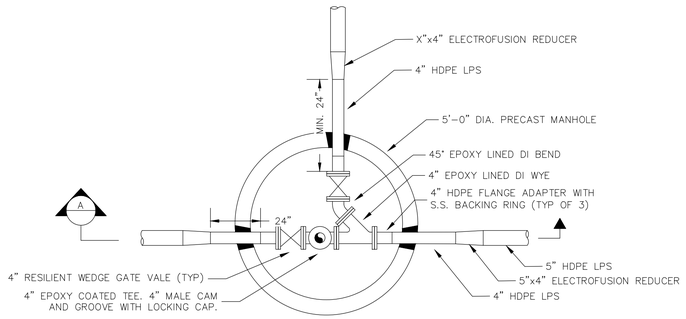
DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT WILLIAM G. WATER JR. LICENSED PROFESSIONAL ENGINEER

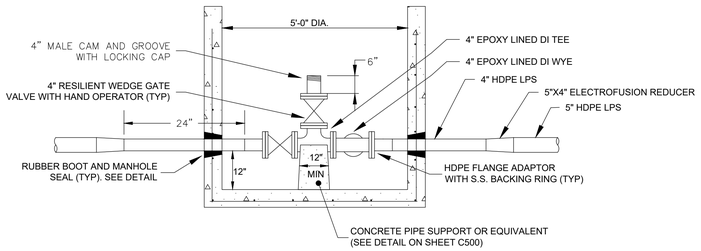
PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

SITE DETAILS

DRAWING NO.:
C6.0



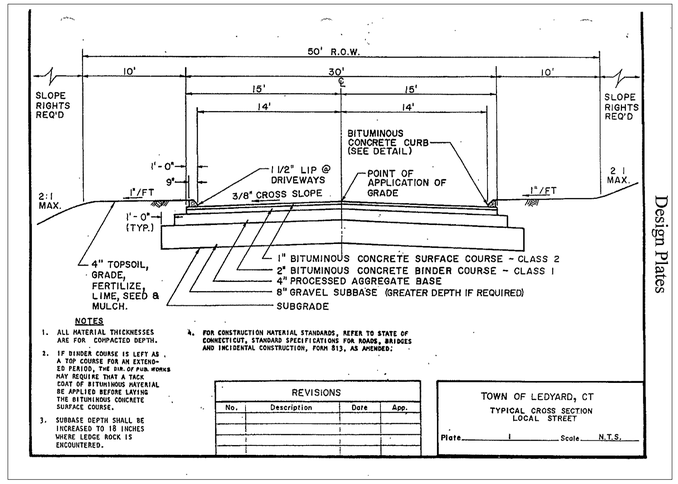
PLAN
N.T.S.



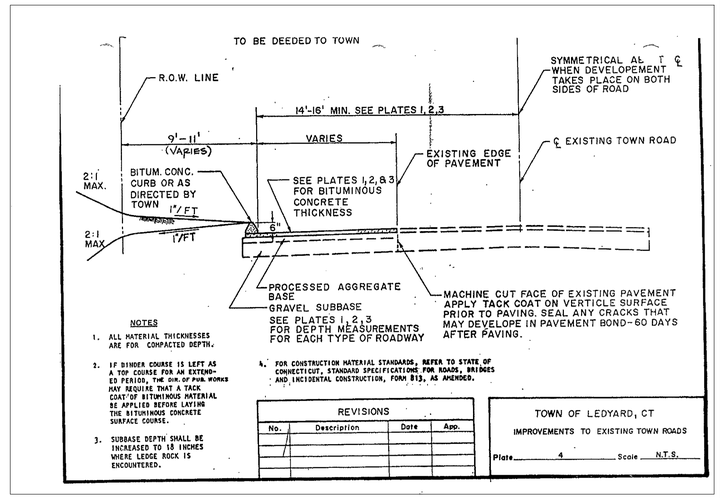
NOTE: ALL MANHOLE MATERIALS TO BE AS SHOWN ON TYPICAL PRECAST MANHOLE DETAIL.

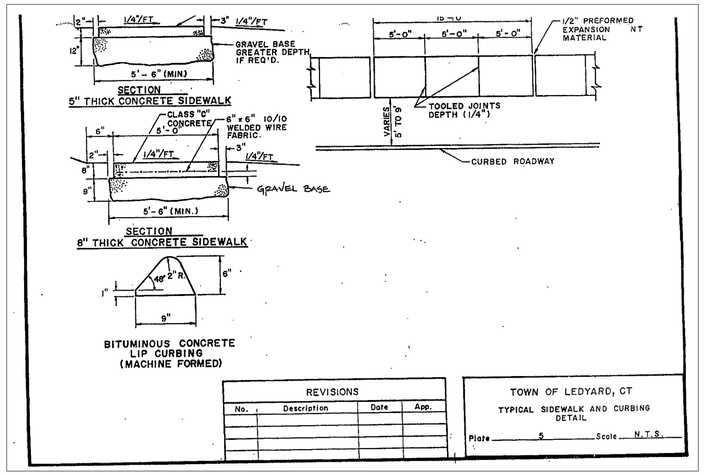
SECTION A
N.T.S.

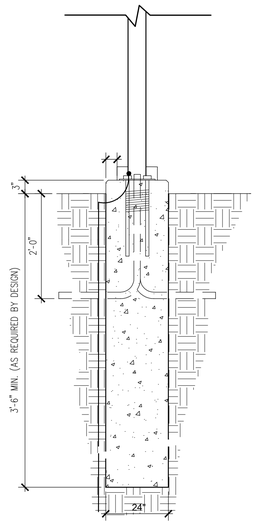
LOW PRESSURE SEWER JUNCTION MANHOLE
N.T.S.



Design Plates



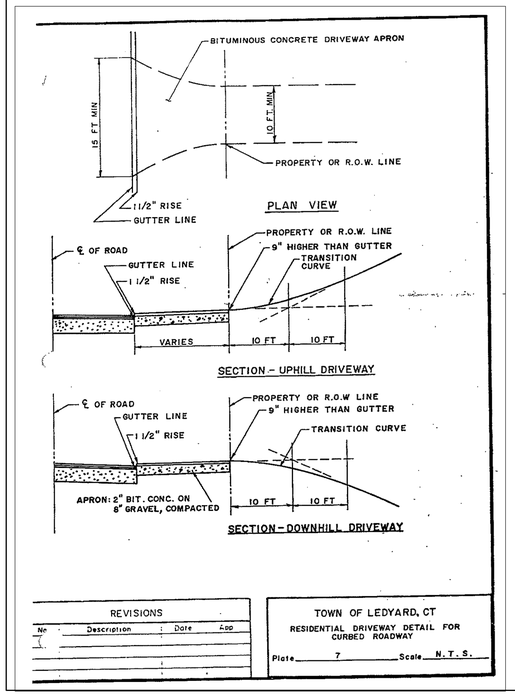


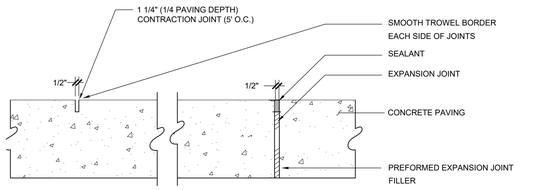


LIGHT POLE (COLOR AS INDICATED ON METAL FINISH SCHEDULE)
2" MIN. FROM CORNER OF BASE COVER
GROUNDING REQUIREMENTS (SEE ELECTRICAL DWGS.)
BASE COVER (COLOR TO MATCH POLE)
1" CHAMFER
FINISHED GRADE
9 TURNS OF #9 GALVANIZED WIRE
ANCHOR BOLTS AND SPACING PER MANUFACTURERS DIRECTIONS
CONDUIT (SEE ELECTRICAL DWGS.)
GROUNDING ROD (SEE ELECTRICAL DWGS.)
ROUND REINFORCED CONCRETE FOOTING AS REQUIRED BY DELEGATED DESIGN REQUIREMENTS
COMPACTED SUBGRADE

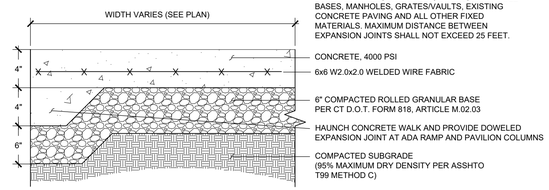
NOTE:
FACTORY SANDBLASTED FINISH TO 6" BELOW FINISHED GRADE

PEDESTRIAN LIGHT POLE CONCRETE BASE (12' HT.)
3/4" = 1'-0"



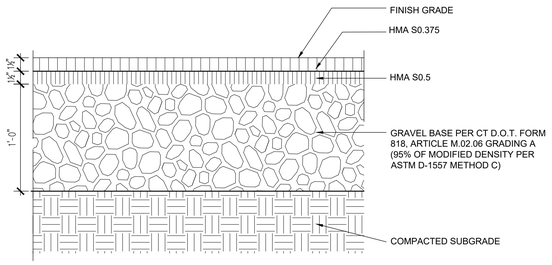


EXPANSION & CONTRACTION JOINTS



NOTE: PROVIDE EXPANSION JOINTS FOR NEW CONCRETE PAVING AT ALL CURBS, TREE GRATES, BUILDING WALLS, SITE WALLS, STAIRS, LIGHT POLE BASES, MANHOLES, GRATES/VAULTS, EXISTING CONCRETE PAVING AND ALL OTHER FIXED MATERIALS. MAXIMUM DISTANCE BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 25 FEET.

CONCRETE WALK
SCALE: NONE



LIGHT DUTY BITUMINOUS CONCRETE PAVEMENT
SCALE: 1 1/2" - 1'-0"

Prepared by:

benesch

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860-633-8341

Prepared for:

Habitat for Humanity® of Eastern Connecticut

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LEDYARD, CT

COLBY DRIVE

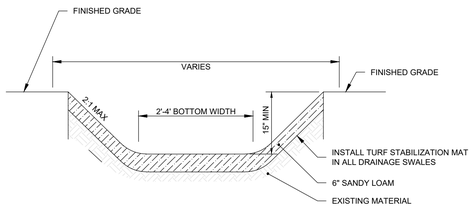
DATE:	REVISION:
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STATE OF CONNECTICUT
WILLIAM G. WALKER
LICENSED PROFESSIONAL ENGINEER

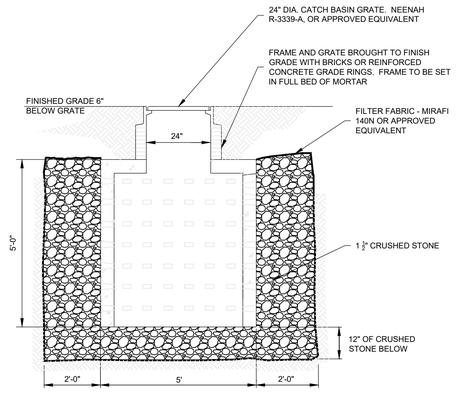
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SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: CLM
CHECKED BY: WGW

SITE DETAILS

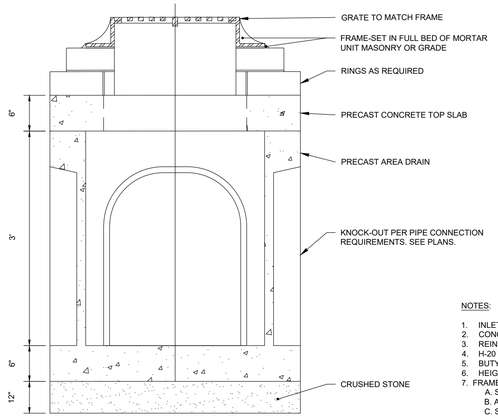
DRAWING NO.:
C6.1



DRAINAGE SWALE
SCALE: NONE



DRYWELL
SCALE: NONE



ELEVATION



PLAN VIEW (TOP SLAB)

NOTES:

1. INLET SHALL BE 30"x30" CONCRETE AREA DRAIN, AS MANUFACTURED BY ARROW CONCRETE, OR ENGINEER APPROVED EQUAL.
2. CONCRETE STRENGTH SHALL BE 4,000 PSI AT 28 DAYS.
3. REINFORCING STEEL - ASTM 615 AND A82 OR A185 SPECIFICATIONS.
4. H-20 DESIGN LOADING PER AASHTO HS-20-44.
5. BUTYL RUBBER JOINT SEALANT - ASTM C990-91.
6. HEIGHT OF DRAIN BOX SHALL BE 3' (MODEL #ADBKO3) UNLESS DEPTH OF INVERT PIPE OUT REQUIRES THE USE OF 4' DRAIN BOX (MODEL #ADBKO4).
7. FRAME AND GRATE PAIR SHALL BE ONE OF THE FOLLOWING:
   A. STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2570 OR ENGINEER APPROVED EQUAL.
   B. ADA STANDARD GRATE SHALL BE NEENAH INLET FRAME/GRATE R-2569 OR ENGINEER APPROVED EQUAL.
   C. STANDARD BEEHIVE GRATE SHALL BE NEENAH INLET FRAME/BEEHIVE GRATE R-2564 OR ENGINEER APPROVED EQUAL.
8. WHERE NOT USED, THE KNOCKOUTS OF EACH AREA DRAIN SHALL BE FILLED WITH BLOCK / BRICK / MORTAR TO MAINTAIN STRUCTURAL INTEGRITY.

- SEE DRAWINGS FOR SPECIFIC LOCATIONS OF TYPE SELECTED.

CONCRETE AREA DRAIN/ YARD DRAIN
SCALE: NONE

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860-633-8341

Prepared for:
Habitat for Humanity® of Eastern Connecticut

HABITAT FOR HUMANITY MULTI-FAMILY RESIDENTIAL AFFORDABLE HOUSING DEVELOPMENT PER C.G.S. §8-30g, LOTS 8, 9 & 11

LEDYARD, CT

COLBY DRIVE

DATE:	REVISION:
09/02/2025	PER CITY STAFF COMMENTS

STATE OF CONNECTICUT
WILLIAM G. WALKER
LICENSED
PROFESSIONAL ENGINEER

PROJECT NO.: 0725 500010.00
SCALE: AS SHOWN
DATE: 12/20/2024
DRAWN BY: GSL
CHECKED BY: WGW

SITE DETAILS

DRAWING NO.:
C6.2

TOWN OF LEDYARD

APPLICATION FOR
PLANNING & ZONING COMMISSION REVIEW

Application Number PZ#25-4SITE **Submission Date** 5/20/25 **Official Receipt Date** 6/12/25

FEE: $360 **DATE PAID** 5/20/25 **RECEIPT #** 575060

==========

Applicant/Agent Norm Eccleston, Habitat for Humanity

(Please Print Legibly)

Signature: Norm Eccleston

Address: 377 Broad Street, New London, CT 06320 **Telephone** 860-232-0762

E-Mail Address: constructionservices@habitatect.org

Owner Name (if different): Habitat for Humanity

Address of Owner: 377 Broad Street, New London, CT 06320 **Telephone** 860-232-0762

Location of Work (Street Address) Lots 8, 9, & 11 Colby Drive, Colby Dr. ext., Easement areas 5,6 Colby Dr & 16 Highview Terr

Tax Assessor's Map. 68 **Block** 520 **Lot** 8, 9, 11 **Zone** MFDD

530 680

Is this property within 500 feet of another municipality? Y ○ N ◉ **CAM Zone** Y ○ N ◉

Existing Use Undeveloped, heavily wooded **CAM Exempt** Y ◉ N ○

☐ **Special Permit** ☑ **Site Plan Review** ☐ **Regulation Change** ☐ **Zone Map Change**

☐ **CAM Review** ☐ **Other:**

Details:

Construction of a multi-family residential affordable housing development per C.G.S. §8-30g for 16 single-family dwellings and 11 duplex dwellings and associated site improvements, including the extension of Colby Drive.

As part of this application work is proposed within easement areas on 16 Highview Terrace (68-960-16) for drainage, 5 Colby Drive (68-520-5) and 6 Colby Drive (68-520-6) for removal and restoration of the cul de sac.

Approved by _____ **Date** _____

Denied by _____ **Date** _____

APPENDIX B: SITE PLAN REQUIRED STANDARD ELEMENTS (SITE PLAN CHECK SHEET)

Standard Elements of the Site Plan. As indicated in Chapter 11 of the Zoning Regulations, the following information is usually required with any application for Site Plan approval. However, the Commission may approve or modify and approve a Site Plan application that does not include all such information if it finds that such information is not needed to assure that the proposed use or uses will comply with the substantive provisions of these Regulations. The Commission may also require additional information if necessary to determine compliance.

All Applications for a Special Permit must be accompanied by a Site Plan Application. See also Supplemental Regulations for additional required elements. *These standards elements do not apply to Single-family and Duplex Dwelling applications (see Check Sheet in Appendix C) or for basic Zoning Permits for Accessory Structures and Uses See Appendix D for required elements of a Plot Plan.)*

For modifications to Site Plans produced prior to 1996, additional boundary information shall be required.

The Site Plan is only one element of an application. See additional submission requirements for Site Plan (§11.2), Special Permit Applications (§11.3), and Procedural Requirements in §11.6

B-1 General Information

The following information shall be provided on a 24 x 36 inch plan, with scale of 1" = 40'. Applicant shall submit three (3) full size plans. Eight (8) additional copies of the Site Plan shall be provided on an 11 x 17 (reduced copy) plan.

A. Property and applicant information:

1. address of the property and Map/Block/Lot;
2. name and address of owner of record; and
3. name of and address of the applicant.

B. A zoning compliance chart or table that indicates the dimensional, use, and other relevant standards such as parking and loading requirements for the property in the Zone and how the proposed structure and uses will comply with the requirements.

C. An approval block on the Site Plan for Commission Chairman or Secretary, date of approval, and date of expiration. (Required only for Site Plans requiring Commission approval, including Site Plans submitted as part of Special Permit applications.)

D. Names and addresses of current owners of property within 100 feet of the parcel as shown in the Assessor's records, including properties across from any street/road, right of way, river, and/or municipal boundary, and properties sharing a driveway with the subject property.

E. Zone of site and of all property within 500 feet.

F. North arrow (if other than North American Datum (NAD) 83 the applicant shall state why and provide standard for alternative), scale, name(s) of person(s) preparing plan, date of drawing, and any revision dates with description of revisions (revision dates shall appear on each plan sheet that has been revised and shall include a description of the revisions).

B-2 Parcel Information – Boundary, Topography, Wetlands and Watercourses, Soils, etc.

A. Property boundaries (Class A-2 with dimensions, angles, and area of the parcel and/or parcels subject to the application).

B. Existing and proposed street and lot lines and the dimensions of applicable setbacks.

C. Existing and proposed contour lines. For all areas of the parcel within 100 feet of any proposed work (including construction, excavation, filling, grading, and clearing of vegetation), the contour interval shall be no greater than two (2) feet (T-2 or T-3 accuracy). Topography taken from USGS Quadrangle interpolation shall not be acceptable for such areas, but may be used for other portions of the site. The Commission may require the applicant to submit design drawing(s), including cross sections and elevation, of all proposed activity. Additional spot elevations may be required where necessary to indicate drainage patterns.

D. Any existing or proposed easements and deed restrictions affecting the property including Utility Easements, Right's of way, Conservation and/or Open Space areas including any areas/easements required by the Inland Wetlands Commission.

B-3 Soils Data, Wetlands and Waterbodies, CAM, FEMA and Watersheds

A. Identification of surface and groundwater resources on and around the site, including any public or private domestic users of such waters; the depth to groundwater and description of adjacent soils, and an evaluation of the impact of the proposal on existing and potential surface and ground drinking water supplies. The Commission may require additional information necessary to ensure protection of water resources and may require that the report be prepared by a hydrogeologist or other qualified professional.

NA **B.** Where appropriate, the mean high-water line, the flood hazard boundaries, and the channel encroachment line should also be shown.

C. If an inland wetlands and watercourses permit is required, an application to the wetlands agency shall be made prior to, or on the same day, as submission of the application for the Zoning Permit.

D. Areas within 100 year flood hazard areas as delineated by the Federal Emergency Management Agency (FEMA) and as shown on the most recently amended maps prepared by FEMA must be shown with a note saying "Limits of Flood Hazard Zone are approximate and are scaled from the Federal Flood Hazard maps." When a lot does not include land within the 100-year flood hazard area, the map shall include the following notation: "This lot does not include land areas within the Federal Emergency Management Agency's 100-year flood hazard area."

NA **E.** Any boundaries of any sub-regional watersheds that lie within the site, as shown on maps available from the Natural Resources Center of the Department of Energy and Environmental Protection including the boundaries of Groton Utility Watershed Areas.

F. All soil types per "Soil Survey of New London County, Connecticut." Provide signature block for the soil scientist certifying that all wetlands and watercourses have been delineated or that there are none on the property shall be placed on the plans.

NA **G.** Demarcation line showing CAM boundary.

B-4 Site Features; Structures and Uses; Site and Building Detail

A. A brief written description of the proposed use or uses and the type of work proposed.

B. Locations and specifications of all existing and proposed structures and uses including, but not limited to, buildings, stone walls, fences, sidewalks, driveways, decks, overhangs, staircases, parking and loading areas, exterior storage areas, recreational amenities (i.e. pools, tennis court, gazebos, firepits etc.), dumpsters, signs, abutting streets, utility structures, fuel tanks and hydrants.

C. Existing and proposed buildings and structures shall detail the number and type of rooms including the total number of bathrooms.

NA **D.** Identification of any chemicals or potential contaminants to be used, stored or produced on site or discharged on or off the site, and a detailed description of methods and procedures by which any chemicals or potential contaminants on site will be stored, used, applied, discharged, and disposed.

E. Renderings of any proposed building, specifying siding materials, should be provided; front, side, and rear elevations shall be shown.

F. Any stonewalls, monuments, and other structures having historical significance.

NA **G.** Any archaeological sites including but not limited to those known to the State Archaeologist's Office. The Commission may require the Applicant to submit a report from the State Archaeologist's Office.

H. Any historic buildings and sites listed on the National Register of Historic Places.

I. All wooded areas, specimen trees (exceeding 30 inches diameter at breast height (dbh), five feet above the ground), rock outcroppings (greater than 200 square feet surface area) and any unique and fragile natural features.

NA **J.** The general location of any endangered special and/or species of special concern per DEEP NDDB Map.

B-5 Access and Parking

A. Location, arrangement and dimensions of automobile parking spaces, aisles, vehicular drives, fire lanes, entrances, exits and ramps.

B. Sight line information at proposed driveway cut(s), and statement that plans have either been submitted to DOT for review or that DOT review is not required.

NA **C.** Location, arrangements and dimensions of loading and unloading areas.

D. Location and dimensions of pedestrian walkways, entrances, and exits.

E. Surface treatment and detail of all driveways/Accessways, parking areas and loading areas.

B-6 Utilities and Drainage

A. Locations and descriptions of water supply wells or other public water connection, septic system or connection to public sewer line.

1. Fire Protection: The applicant shall identify the source of water for fire protection.

NA **B.** Location of proposed subsurface sewage disposal systems and reserve fields, showing distances to adjacent land, distances from all wells within 75 feet (on or off the tract) together with percolation and test pit data.

C. Locations of existing and proposed drainage facilities on the site and those off-site that may be affected by the proposed activity, as well as any points of collected drainage discharges (i.e., discharges other than natural sheet flow) onto or off the site.

B7 Other

A. Any other information deemed necessary by the Commission to determine compliance with these Regulations. The Commission may require evaluation reports by Commission-approved independent professionals and other experts, including and not limited to: civil or traffic engineers, hydrologists, soil scientists, and/or geologists.

File #: 25-2202 **Agenda Date:** 9/11/2025 **Agenda #:** C.

LAND USE APPLICATION

Subject/Application:
PZ#25-5SITE - 750 (aka "748") Colonel Ledyard Highway (Parcel ID: 67-530-750), Ledyard, CT - Property Owner, Dominick Ceravolo - Applicant, Ryan Forrestt, Ryan's Reliable Services, LLC for site plan approval for commercial businesses. (Submitted to Land Use Dept. 7/09/25, Date of Receipt 7/10/25, tabled to 8/14/25, tabled to 9/11/25, DRD 9/12/25).

Background:
(type text here)

Land Use Director/Town Planner:
(type text here)

FD#1

RECEIVED
JUL 09 2025
Land Use Department

TOWN OF LEDYARD

APPLICATION FOR PLANNING & ZONING COMMISSION REVIEW

PZ#25-5SITE

Application Number _____ Submission Date 7-9-25 Official Receipt Date 8/14/25

FEE: N/A - WAIVED DATE PAID N/A - WAIVED RECEIPT # N/A

==========

Applicant/Agent Ryan's Reliable Services LLC
(Please Print Legibly)

Signature: [signature]

Address: 748 Ct - 117 ledyard Telephone 860.501.2744

E-Mail Address: RForrest45@Gmail.com

Owner Name (if different): _____

Address of Owner: _____ Telephone ___ - ___ - ____

Location of Work (Street Address) _____

Tax Assessor's Map. _____ Block _____ Lot _____ Zone _____

Is this property within 500 feet of another municipality? Y N CAM Zone Y N

Existing Use _____ CAM Exempt Y N

___ Special Permit ✓ Site Plan Review ___ Regulation Change ___ Zone Map Change

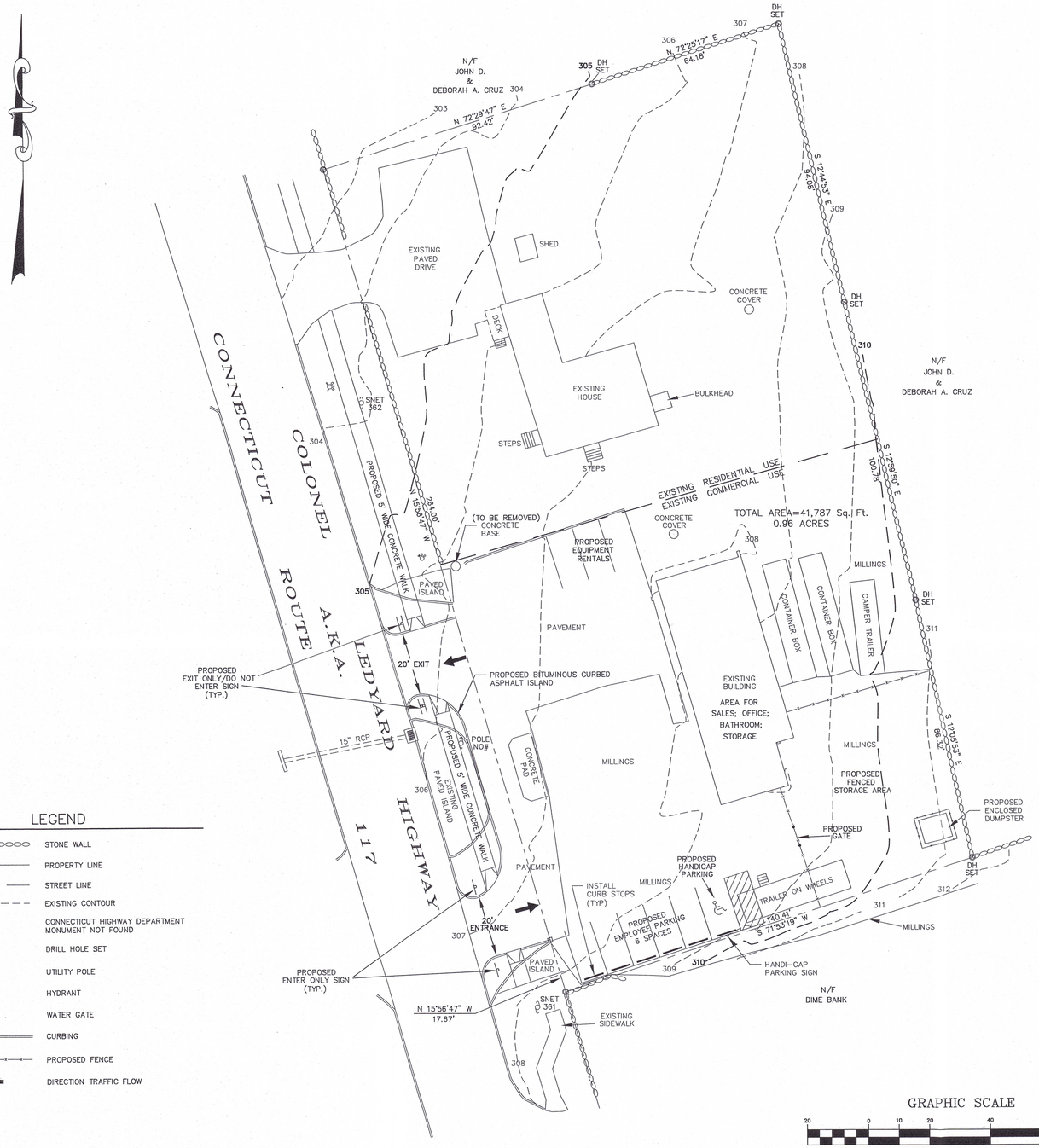
___ CAM Review ___ Other: _____

Details: Please make Sure we have a chair at the next Zoning Meeting.

Approved by _____ Date _____

Denied by _____ Date _____

628



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- CONNECTICUT HIGHWAY DEPARTMENT MONUMENT NOT FOUND
- DH SET — DRILL HOLE SET
- UTILITY POLE
- HYDRANT
- WATER GATE
- CURBING
- PROPOSED FENCE
- DIRECTION TRAFFIC FLOW

THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF THE PROFESSIONAL OPINION BY THE LAND SURVEYOR WHICH IS BASED ON HIS OR HER BEST KNOWLEDGE, INFORMATION AND BELIEF. AS SUCH IT CONSTITUTES NEITHER GUARANTEE OR WARRANTY.

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED

© THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR. THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN.
JOB#25-005.DWG FBK#340

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND.

ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE

_____ CHAIRMAN OR SECRETARY

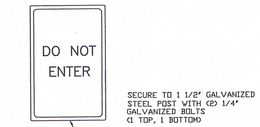
_____ DATE

GRAPHIC SCALE

20 0 10 20 40 80

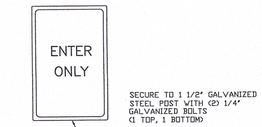
(IN FEET)
1 inch = 20 ft.

DIETER & GARDNER
LAND SURVEYORS • PLANNERS
1641 ROUTE 12
P.O. BOX 335
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



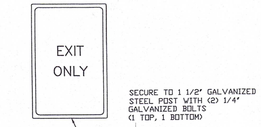
ENTER ONLY SIGN

NOT TO SCALE



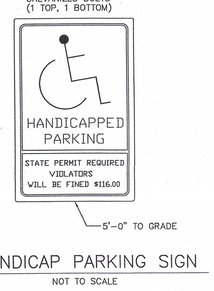
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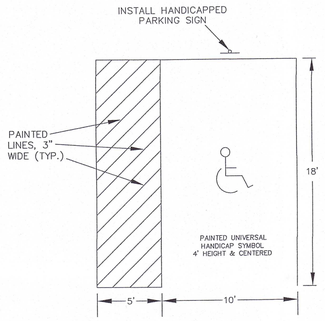
EXIT ONLY SIGN

NOT TO SCALE



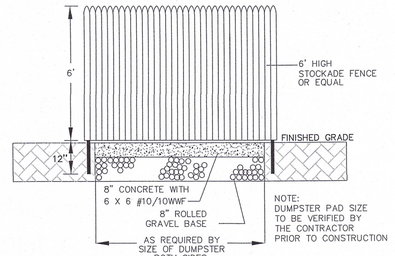
HANDICAP PARKING SIGN

NOT TO SCALE



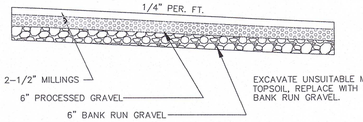
HANDICAP PARKING SPACE DETAIL

NOT TO SCALE



CONCRETE DUMPSTER PAD WITH STOCKADE FENCE

NOT TO SCALE



DRIVEWAY/PARKING AREA CROSS-SECTION

NOT TO SCALE

GENERAL NOTES:

1. MAP REFERENCES:
   A) CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF LEDYARD COLONEL LEDYARD HIGHWAY FROM THE ALLYN PROPERTY WESTERLY AND NORTHERLY ABOUT 6,500 FEET SCALE 1"=40' DATE 4-30-42 NUMBER 71-11 SHEET NO. 3 OF 3 SECTION NO. 2
   B) LEDYARD ASSESSORS MAP 67.
2. SIGNAGE TO BE IN ACCORDANCE WITH ZONING REGULATIONS.
3. ZONING DISTRICT – LCDD LEDYARD CENTER DESIGN DISTRICT.
4. SITE IS WITHIN THE BILLING AVERY DIVERSION DAM WATERSHED/GROTON UTILITIES WATESHED.
5. SIDEWALK/REVISED ENTRANCES TAKEN FROM PLAN PREPARED FOR THE TOWN OF LEDYARD. CONSTRUCTION DATE FOR WORK TO BE PERFORMED BY THE TOWN IS NOT DETERMINED.
6. STORAGE BIN SIZE/COVERAGE TO BE DETERMINED.
7. REMOVE FREE STANDING SIGN.
8. ONE WAY ENTRANCE (SOUTH) AND ONE WAY EXIT (NORTH).
9. SIGN WILL BE PLACED ON BUILDING, SEPARATE APPLICATION WILL BE SUBMITTED.
10. PROPOSED 5' WIDE CONCRETE WALK TO BE INSTALLED BY OTHERS.
11. ENTRANCE AND EXIT TO COMMERCIAL SITE TO BE RECONSTRUCTED BY OTHERS.

PLAN PREPARED FOR
RYAN'S RELIABLE SERVICES LLC
PROPERTY OF
DOMINICK CERAVOLO
750 COLONEL LEDYARD HIGHWAY
A.K.A.
CONNECTICUT ROUTE 117
LEDYARD, CONNECTICUT

SCALE: 1"=20'

JULY 2025

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Land Use Department

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES-"MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT", ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT SURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY T-2. TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: JULY 1, 2025

FD#2

FD#3

INSTR # 2017001125
VOL 555 PG 78
RECORDED 05/08/2017 10:33:10 AM
PATRICIA A. RILEY
TOWN CLERK LEDYARD CT
TOWN CONVEYANCE TAX $625.00
STATE CONVEYANCE TAX $3,125.00

630

Dominick Ceravolo
1348 Baldwin Hill Rd
Gales Ferry, CT 06333

Return To:

RECEIVED
JUL 22 2025
Land Use Department

STATUTORY FORM WARRANTY DEED

LOUIS ROSE of 16 Center Drive, Ledyard, CT 06339 (**"Grantor"**) for TWO HUNDRED FIFTY THOUSAND AND 00/100 ($250,000.00) DOLLARS, consideration paid, grant to ***DOMINICK CERAVOLO*** of 1348 Baldwin Hill Road, Ledyard, CT 06339 (**"Grantee"**), **with WARRANTY COVENANTS**, all that certain piece or parcel of land with the buildings and improvements located thereon, located in the Town of Ledyard, County of New London, and State of Connecticut, known as ***750 Colonel Ledyard Highway, Ledyard, Connecticut,*** and being more particularly described in Schedule A, attached hereto and made a part hereof.

Said premises are conveyed subject to and together with easements, rights of way, restrictions, and agreements as of record may appear, building and building line restrictions and any and all provisions of any municipal ordinance including planning, zoning and inland wetland regulations, public or private law, taxes or municipal assessments and charges hereinafter becoming due and such state of facts as an accurate, closed ground survey or personal inspection may disclose, provided the same does not render title to the premises unmarketable.

Signed this 5th day of May, 2017.

Witnessed by:

Michael W. Sheehan

Louis Rose

Peter W. Hoop

STATE OF CONNECTICUT)
) ss: Groton
COUNTY OF NEW LONDON)

On this the 5th day of May, 2017, before me, the undersigned officer, personally appeared, Louis Rose, known to me (or satisfactorily proven) to be the signer and sealer of the within instrument and acknowledged the same to be his free act and deed.

Michael W. Sheehan
Commissioner of Superior Court

SCHEDULE A

A certain tract of land with the buildings thereon in the Town of Ledyard, at Ledyard Center, County of New London and State of Connecticut described and bounded as follows: Commencing at the Southwesterly corner, on the Easterly line of the Colonel Ledyard highway, at a corner in the wall, adjoining land now or formerly of Estella M. Marlin; thence in an Easterly direction along a stone wall and land now or formerly of Estella M. Marlin one hundred thirty-nine (139) feet more or less, to a wall corner; thence in a Northerly direction along a wall and land now or formerly of Frank Cruz, two-hundred eighty-one (281) feet, more or less, to a corner in the wall; thence in a westerly direction along a wall and land now or formerly of Frank Cruz, one hundred fifty-four (154) feet, more or less, to the wall on the Easterly line of Colonel Ledyard Highway; thence Southerly along the wall on the Easterly line of Colonel Ledyard Highway two hundred eighty-two (282) feet, more or less, back to the point of beginning.

This property is known as 750 Colonel Ledyard Highway, Ledyard, Connecticut. Reference is made to the property described in Volume 309 Page 793 of the Ledyard Land Records.

Property Location 750 COLONEL LEDYARD HWY | Map ID 67/ 530/ 750/ / | Bldg Name | State Use 0334
Vision ID 2257 | Account # 134680 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 2 | Print Date 12/19/2024 3:25:40 P

CURRENT OWNER

CERAVOLO DOMINICK

1348 BALDWIN HILL RD

LEDYARD CT 06339

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	5 Private Well	1 Paved	4 Bus. District
	6 Private Septic		

SUPPLEMENTAL DATA

Alt Prcl ID	67-530-750	Solar Pane	
Sub-div		Generator	
Dev.Lot		Forest	
Survey#		Farm	
Elderly		MPT SB	
Census	07011		
GIS ID	2257	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
RES LAND	1-1	66,500	46,550
DWELLING	1-3	107,400	75,180
COM LAND	2-1	67,400	47,180
COM BLDG	2-2	61,400	42,980
COM OUTBL	2-5	4,900	3,430
	Total	307,600	215,320

6072

LEDYARD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
CERAVOLO DOMINICK	0555	0078	05-08-2017	U	I	250,000	25
ROSE LOUIS	0309	0793	03-19-2001	U	I	0	
ROSE LOUIS	0309	0551	03-08-2001	U	V	0	
ROSE ANTONE + LOUIS	0309	0549	03-08-2001	U	I	0	
ROSE ANTONE + ISABELLE	00015	0552	04-06-1957			0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2023	1-1	46,550	2022	1-1	46,550	2021	1-1	46,550
	1-3	75,180		1-3	75,180		1-3	75,180
	2-1	47,180		2-1	47,180		2-1	47,180
	2-2	42,980		2-2	42,980		2-2	42,980
	Total	215,320		Total	215,320		Total	215,320

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
2750				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	167,300
Appraised Xf (B) Value (Bldg)	1,500
Appraised Ob (B) Value (Bldg)	4,900
Appraised Land Value (Bldg)	133,900
Special Land Value	0
Total Appraised Parcel Value	307,600
Valuation Method	C
Total Appraised Parcel Value	307,600

NOTES

FORMER SERVICE STATION

PUMPS REMOVED ECO=MKT/RESALE

VACANT 10/20

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
11-17-2000	NS			00	Measur+Listed
11-17-2000	NS			00	Measur+Listed
09-19-1991	CM			02	Measur+2Visit
09-19-1991	CM			02	Measur+2Visit

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment		Adj Unit P	Land Value
1	0334	GAS ST SRV	LCD		0.460	AC	95,380.00	1.01000	0	1.00	2750	1.500	COM SITE/USE		1.0000	144,500.7	66,500
1	0334	GAS ST SRV	LCD		0.050	AC	12,500.00	1.00000	0	1.00	2750	1.500	EXCS		1.0000	18,750	900
		Total Card Land Units			1	AC	Parcel Total Land Area	1								Total Land Value	67,400

Property Location 750 COLONEL LEDYARD HWY | Map ID 67/ 530/ 750/ / | Bldg Name | State Use 0334
Vision ID 2257 | Account # 134680 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 2 | Print Date 12/19/2024 3:25:40 P

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	25	Service Shop
Model	95	Serv Station
Grade	03	Average
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	15	Concr/Cinder
Exterior Wall 2		
Roof Structure	01	Flat
Roof Cover	04	Tar & Gravel
Interior Wall 1	01	Minim/Masonry
Interior Wall 2		
Interior Floor 1	03	Concr-Finished
Interior Floor 2		
Heating Fuel	02	Oil
Heating Type	03	Hot Air-no Duc
AC Type	01	None
Bldg Use	0334	GAS ST SRV
Total Rooms		
Total Bedrms	00	
Total Baths	0	
Heat/AC	00	NONE
Frame Type	03	MASONRY
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	04	CEIL & MIN WL
Rooms/Prtns	02	AVERAGE
Wall Height	12.00	
% Comn Wall	0.00	
1st Floor Use:	0334	

CONSTRUCTION DETAIL (CONTINUED)

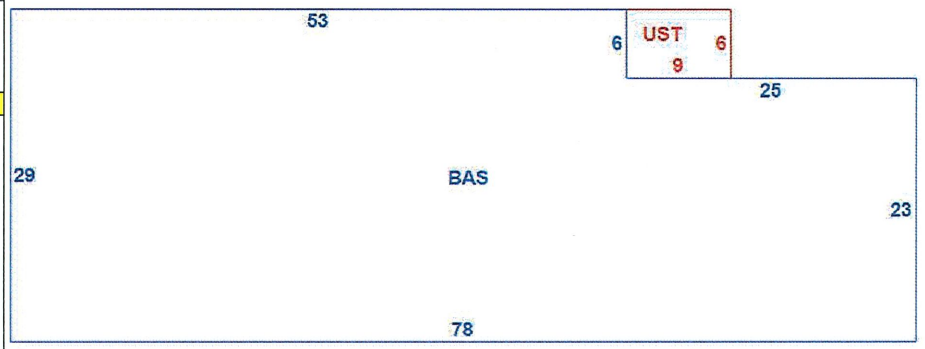
Element	Cd	Description

MIXED USE

Code	Description	Percentage
0334	GAS ST SRV	100
		0
		0

COST / MARKET VALUATION

Building Value New	115,912
Adjusted Base Rate	54.19
Year Built	1961
Effective Year Built	1978
Depreciation Code	F
Remodel Rating	
Year Remodeled	
Depreciation %	42
Functional Obsol	5
External Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	53
RCNLD	61,400
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	





OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
PAV1	Paving-Asphal	L	2,000	2.00	1992		50		0.00	2,000
SHD1	Shed	L	64	12.00	1992		70		0.00	500
LT1	Lights in w/PL	L	2	1000.00	1992		50		0.00	1,000
LT2	w/Double Light	L	2	1350.00	1992		50		0.00	1,400

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	Main Floor	2,112	2,112	2,112	54.19	114,449
UST	Unfinished Utility/storage	0	54	27	27.10	1,463
	Ttl Gross Liv / Lease Area	2,112	2,166	2,139		115,912

Property Location 750 COLONEL LEDYARD HWY | Map ID 67/ 530/ 750/ / | Bldg Name | State Use 0334
Vision ID 2257 | Account # 134680 | Bldg # 2 | Sec # 1 of 1 | Card # 2 of 2 | Print Date 12/19/2024 3:25:40 P

CURRENT OWNER

CERAVOLO DOMINICK

1348 BALDWIN HILL RD

LEDYARD CT 06339

TOPO	UTILITIES	STRT / ROAD	LOCATION
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Sub-div		Generator	
Dev.Lot		Forest	
Survey#		Farm	
Elderly		MPT SB	
Census	07011		
GIS ID	2257	Assoc Pid#	

CURRENT ASSESSMENT

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6072

LEDYARD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
CERAVOLO DOMINICK	0555	0078	05-08-2017	U	I	250,000	25
ROSE LOUIS	0309	0793	03-19-2001	U	I	0	
ROSE LOUIS	0309	0551	03-08-2001	U	V	0	
ROSE ANTONE + LOUIS	0309	0549	03-08-2001	U	I	0	
ROSE ANTONE + ISABELLE	00015	0552	04-06-1957			0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2023	1-1	46,550	2022	1-1	46,550	2021	1-1	46,550
	1-3	75,180		1-3	75,180		1-3	75,180
	2-1	47,180		2-1	47,180		2-1	47,180
	2-2	42,980		2-2	42,980		2-2	42,980
	Total	215,320		Total	215,320		Total	215,320

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
2750				

NOTES

RED FDN=CONC IA

I + E -A

LOOKS LIKE MULTI-TENANCY GL2005

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	167,300
Appraised Xf (B) Value (Bldg)	1,500
Appraised Ob (B) Value (Bldg)	4,900
Appraised Land Value (Bldg)	133,900
Special Land Value	0
Total Appraised Parcel Value	307,600
Valuation Method	C
Total Appraised Parcel Value	307,600

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
10-02-2020	GM			15	Reval Review

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment	Adj Unit P	Land Value
2	0101	Single Fam	LCD		0.460	AC	95,380.00	1.01000	0	1.00	2750	1.500	RES SITE	1.0000	144,500.7	66,500
				Total Card Land Units	0	AC	Parcel Total Land Area	1						Total Land Value		66,500

Property Location 750 COLONEL LEDYARD HWY | Map ID 67/ 530/ 750/ / | Bldg Name | State Use 0334
Vision ID 2257 | Account # 134680 | Bldg # 2 | Sec # 1 of 1 | Card # 2 of 2 | Print Date 12/19/2024 3:25:40 P

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	01	Ranch
Model	01	Residential
Grade:	03	Average
Stories:	1	1 Story
Occupancy	1	
Exterior Wall 1	14	Wood Shingle
Exterior Wall 2		
Roof Structure:	03	Gable/Hip
Roof Cover	03	Asphalt Shingl
Interior Wall 1	05	Drywall/Sheet
Interior Wall 2		
Interior Flr 1	14	Carpet
Interior Flr 2		
Heat Fuel	02	Oil
Heat Type:	05	Hot Water
AC Type:	01	None
Total Bedrooms	03	3 Bedrooms
Total Bthrms:	1	
Total Half Baths	0	
Total Xtra Fixtrs		
Total Rooms:	6	6 Rooms
Bath Style:	02	Average
Kitchen Style:	02	Modern

CONSTRUCTION DETAIL (CONTINUED)

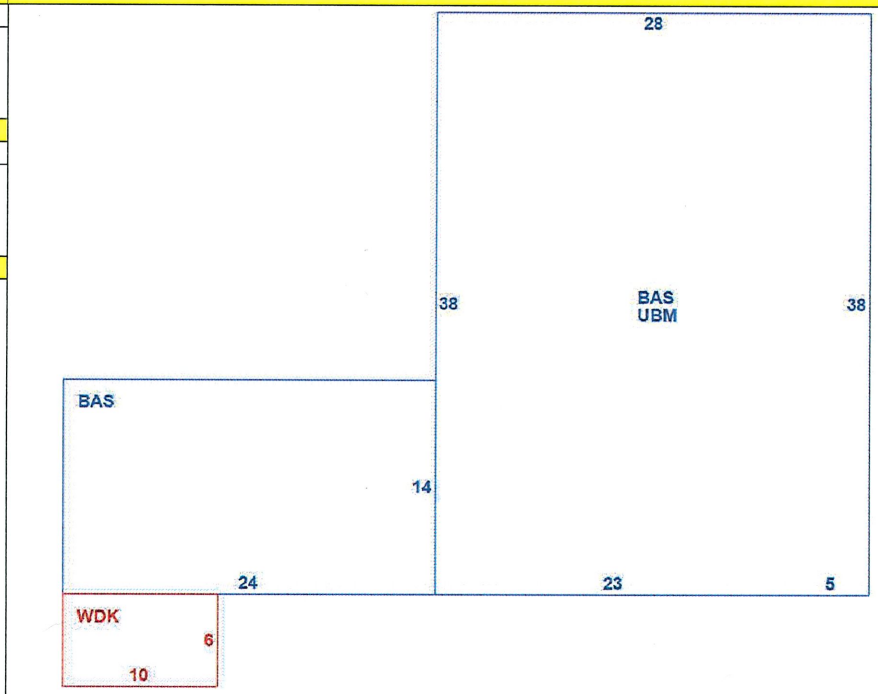
Element	Cd	Description

MIXED USE

Code	Description	Percentage
0101	Single Fam	100
		0
		0

COST / MARKET VALUATION

Building Value New	155,664
Adjusted Base Rate	93.06
Year Built	1952
Effective Year Built	1988
Depreciation Code	F
Remodel Rating	
Year Remodeled	
Depreciation %	32
Functional Obsol	0
External Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	68
RCNLD	105,900
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	





OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
FPL1	1ST Fireplace	B	1	2200.00	1991		68		0.00	1,500

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	Main Floor	1,400	1,400	1,400	93.06	130,284
UBM	Unfinished Basement	0	1,064	213	18.63	19,822
WDK	Wood Deck	0	60	6	9.31	558
	Ttl Gross Liv / Lease Area	1,400	2,524	1,619		150,664

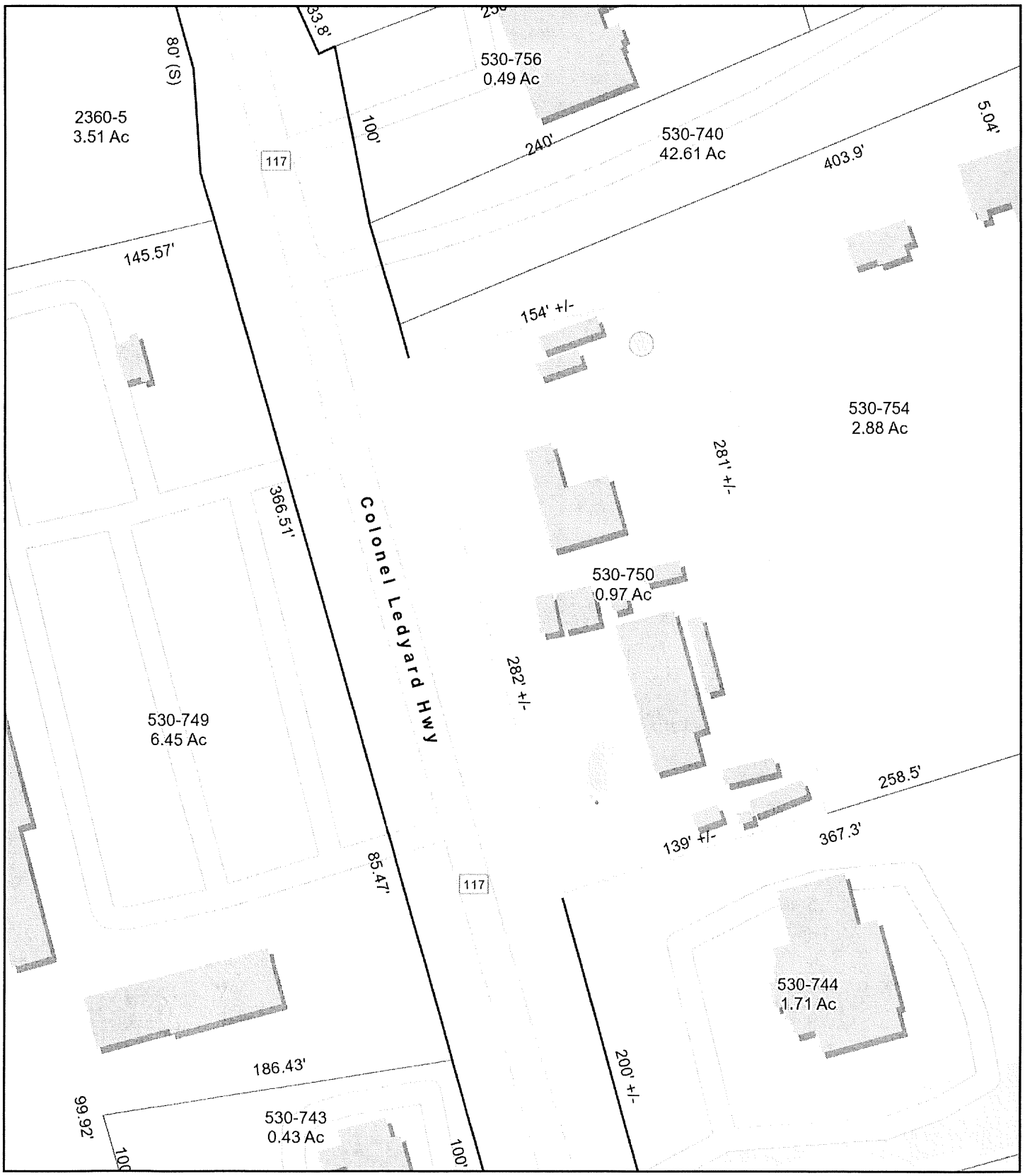
Ledyard, CT

1 inch = 71 Feet

0 71 142 213

July 22, 2025

CAI Technologies
Precision Mapping. Geospatial Solutions.
www.cai-tech.com



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

LETTER OF TRANSMITTAL

Town of Ledyard Land Use Department

741 Colonel Ledyard Highway, Ledyard, CT 06339
Telephone: (860) 464-3215
Email: planner@ledyardct.org

DATE: July 22, 2025

TO:				
	☒ Town Engineer	☐ Groton Public Utilities	☒ Building Dept.	☐ Assessor
	☐ Town Attorney	☐ SCWA	☒ Fire Marshal	☐ Police
	☒ Ledge Light Health	☐ Mayor	☐ DOT	☐ CAM
	☒ WPCA	☒ Public Works	☐ DEEP	☐ Other

Project Name: PZ#25-5SITE
Project Location: 750 Colonel Ledyard Highway

The following items have been transmitted:
☒ Application Plans and/or Supporting Documents via Hand Delivered
☐ Regulations
☐ Other

Description
Please review & comment on application.

Transmitted as checked below. Please submit comments on or before:

☐ For approval ☐ For your use ☐ As requested ☒ **For your review and comment**

Note: Please return comments to planner@ledyardct.org.

Remarks: If you are unable to submit written comments on or before August 7, 2025, please contact me by phone at the Planning Department at (860) 464-3215 as the application is scheduled for a PZC review on August 14, 2025. Thank you.

Signed: *Liz Burdick*
Elizabeth Burdick, Director of Land Use & Planning

Reviewing Agency:
Review Date:
Reviewed By:

Project Name:
Project Location:

Comments:

Electronic Signature: _____

FD#5

639

Anna Wynn

From:	Anna Wynn
Sent:	Tuesday, July 22, 2025 8:53 AM
To:	rforrestt5@gmail.com
Subject:	Letter to Access Site
Attachments:	FD# PZ#25-5SITE PermissionToAccessSite&Apply Rec072225.pdf

RECEIVED
AUG 04 2025
Land Use Department

Good Morning Mr. Forrestt,

I gave you a call this morning regarding the Letter to Access Site we requested for your application. I have prepared a draft for you to help you along in the process. You may print the attached copy or pick up a hard copy from the office, whichever is easier. If you and Mr. Ceravolo could please both sign and return to us that would be greatly appreciated. Please reach out with any questions or concerns and we will assist!

FD #6

640

Elizabeth Burdick

RECEIVED
AUG 04 2025
Land Use Department

From: ryan forrestt <rforrestt5@gmail.com>
Sent: Monday, August 4, 2025 4:12 PM
To: Elizabeth Burdick
Subject: Re: 750 Colonel Ledyard Highway: Application Narraitve

Categories: COMPLETED

Okay will do thanks

On Mon, Aug 4, 2025, 3:52 PM Elizabeth Burdick <planner@ledyardct.org> wrote:

8/4/25 Good afternoon, Mr. Forrestt, I am drafting my staff report for your application #25-5SITE. At this time, your (2nd) application is incomplete. Land Use Assistant Anna Wynn, on two occasions has requested further information.

On 7/22/25, she sent you a form to be signed by both you and the property owner Dominick Ceravolo (FD#5 – copy attached) regarding permission to apply and access to the site, but to date you have not returned these required sign documents to this office.

On 7/28/25, she sent you the below email requesting a detailed narrative of the businesses that you are proposing at the property, but to date, even though you responded you would, you have not returned that document to this office.

Also, notwithstanding the aforementioned missing documents, the site plan submitted by Peter Gardner, LS received on 7/9/25 does not depict any *proposed* businesses. It only shows existing site conditions. Your previous application submitted earlier this year that was denied without prejudice was for a landscaping business and a roadside assistance & light towing business. A site plan showing exactly how you will be using the site, including, but not limited to parking and storage areas for both businesses, refuse management (dumpsters locations) and any other requirements of the Ledyard Zoning Regulations that may be applicable to your proposed businesses. Mr. Gardner can assist you in preparing an accurate site plan, but you will need to contact him to do so.

If you are still proposing the roadside assistance & light towing business, please advise if CT DMV approvals are required for that use.

Your application has been added to the 8/14/25 regular meeting of the Planning & Zoning Commission for review. I will need all requested documents on or before this Thursday, 8/7/25 to allow adequate time to review and prepare my report.

Thank you for your immediate attention to this matter and I look forward to hearing from you.

Liz Burdick, Director of Land Use & Planning

Town of Ledyard

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3215

Email: planner@ledyardct.org

From: Anna Wynn <land.use.asst@ledyardct.org>
Sent: Monday, August 4, 2025 3:00 PM
To: Elizabeth Burdick <planner@ledyardct.org>
Subject: FW: 750 Colonel Ledyard Highway: Application Narraitve

---

From: ryan forrestt <rforrestt5@gmail.com>
Sent: Monday, July 28, 2025 2:36 PM
To: Anna Wynn <land.use.asst@ledyardct.org>
Subject: Re: 750 Colonel Ledyard Highway: Application Narraitve

Will do, thank you.

On Mon, Jul 28, 2025, 11:04 AM Anna Wynn <land.use.asst@ledyardct.org> wrote:

> Good Morning Mr. Forrestt,

Currently your application for 750 Colonel Ledyard Highway, application number PZ#25-5SITE, is incomplete. Before your application is received at the Planning & Zoning Commission on August 14, 2025 you must provide a detailed narrative of the proposed businesses at the property. In your narrative, please state the business name, explain what the business is, what operations will occur, what will be stored at the site etc. It may be easier to create a narrative document for each business. Our office will need this no later than end of day Wednesday July 30, 2025. Please reach out with any additional questions or comments. If you need further clarification on these directions, please stop by the Land Use Office and we will assist you as much as possible, thank you!

Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

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TOWN OF LEDYARD

Department of Land Use and Planning

Elizabeth J. Burdick, Director

741 Colonel Ledyard Highway, Ledyard, CT 06339

Telephone: (860) 464-3215, Fax: (860) 464-0098

Email: planner@ledyardct.org

MEMORANDUM FOR THE RECORD
APPLICATION PZ#25-5SITE
REGULAR MEETING – THURSDAY, August 14, 2025

Prepared by Liz Burdick, Director of Land Use & Planning on 08/14/25

Property Address(es): 750 (aka "748") Colonel Ledyard Highway, (Parcel ID: 67-530-750), Ledyard, CT
Application: **PZ#25-5SITE** – Site Plan Approval Application
Applicant(s): Ryan's Reliable Services LLC (Per Application Form)
Applicant Address(es): 748 Ct-117, Ledyard (Per Application Form)
Property Owner(s): Incomplete (Per Application Form)
Dominick Ceravolo (Property Owner per Ledyard Assessor)
Owner Address(es): Incomplete (Per Application Form)
1348 Baldwin Hill Road, Ledyard, CT 06339 (Owner Address per Ledyard Assessor)
Attorney: N/A.
Land Surveyor: Peter Gardner, L.S., Dieter & Gardner
Engineer: N/A.
Lot Size: Not shown on plan. 1-acre (Gas ST SRV) & .46-acres (Single Fam) per Ledyard Assessor records.
Lot Frontage: 281.67+/- on State Road Colonel Ledyard Highway (CT Rte. 117).
Zoning District: Ledyard Center Development District (LCDD).
Wetlands/Watercourses: No.
Flood Hazard Zone: No.
CAM Zone: No.
Utilities: Public Water & individual on-site septic system.
Public Water Supply Watershed: Yes per plan note #5. No referral to City of Groton was provided by the applicant.
Proposed Public Improvements: Proposed concrete walks. Construction by property owner/applicant tbd. STCT approval required.
Legal: (Submitted to the Land Use Dept. on 7/09/25, Official Date of Receipt 7/10/25, DRD 9/12/25).

EXISTING CONDITIONS: Existing commercial building for auto repairs.

PROPOSAL: Unknown at this time.

TOWN ENGINEER: Referred on 7/22/25, Comments pending.
ZONING OFFICIAL: Ongoing Enforcement Action pending.
FIRE MARSHAL: Referred on 7/22/25, Comments pending.

BUILDING DEPT.: Referred on 7/22/25, Comments pending.
LLHD: Referred on 7/22/25, Comments pending.
STCT DPH: N/A.
WPCA: Referred on 7/22/25, Comments pending.
SCWA: N/A.
IWWC: N/A.
BOND: A SESC bond estimate shall be submitted for review and approval of the Town Engineer.

LAND USE DIRECTOR COMMENTS: Please be advised of the following comments with regard to my review of the application, supporting documents and a plan entitled "Plan Prepared for Ryan's Reliable Services, LLC, Property of Dominick Ceravolo, 750 Colonel Ledyard Highway, A.K.A. CT Route 17, Ledyard, CT, Prepared by Dieter & Gardner, Dated July 2025":

Application Form:

1. Application form incomplete as submitted by Applicant. Letter from property owner permitting application and permission to enter property for inspection not submitted by applicant as requested by staff.

Plan Review Comments:

1. Plan is inaccurate & incomplete. The current plan dated July 2025 represents existing conditions, but not the proposed use, which proposed use is unknown at this time.

General Comments:

1. Town staff cannot properly review and comment on the proposal due to incomplete and/or inaccurate information submitted by the Applicant. Applicant shall provide a narrative of the proposed uses at the site and a site plan that reflects the proposed use of the site, including the existing commercial structure.
2. There is an ongoing enforcement action regarding the utilization of the site by the Applicant without the benefit of required approvals. A hearing will be held on August 11, 2025. The Applicant and Property Owner should immediately comply with the 4/2/25 Notice of Violation.

Staff Recommendation: Table the application to the 9/11/2025 regular meeting to provide the Applicant time to submit required documentation and plans.

Please contact me at the Planning Dept. at Town Hall at (860) 464-7455 with any questions. Thank you.

Anna Wynn

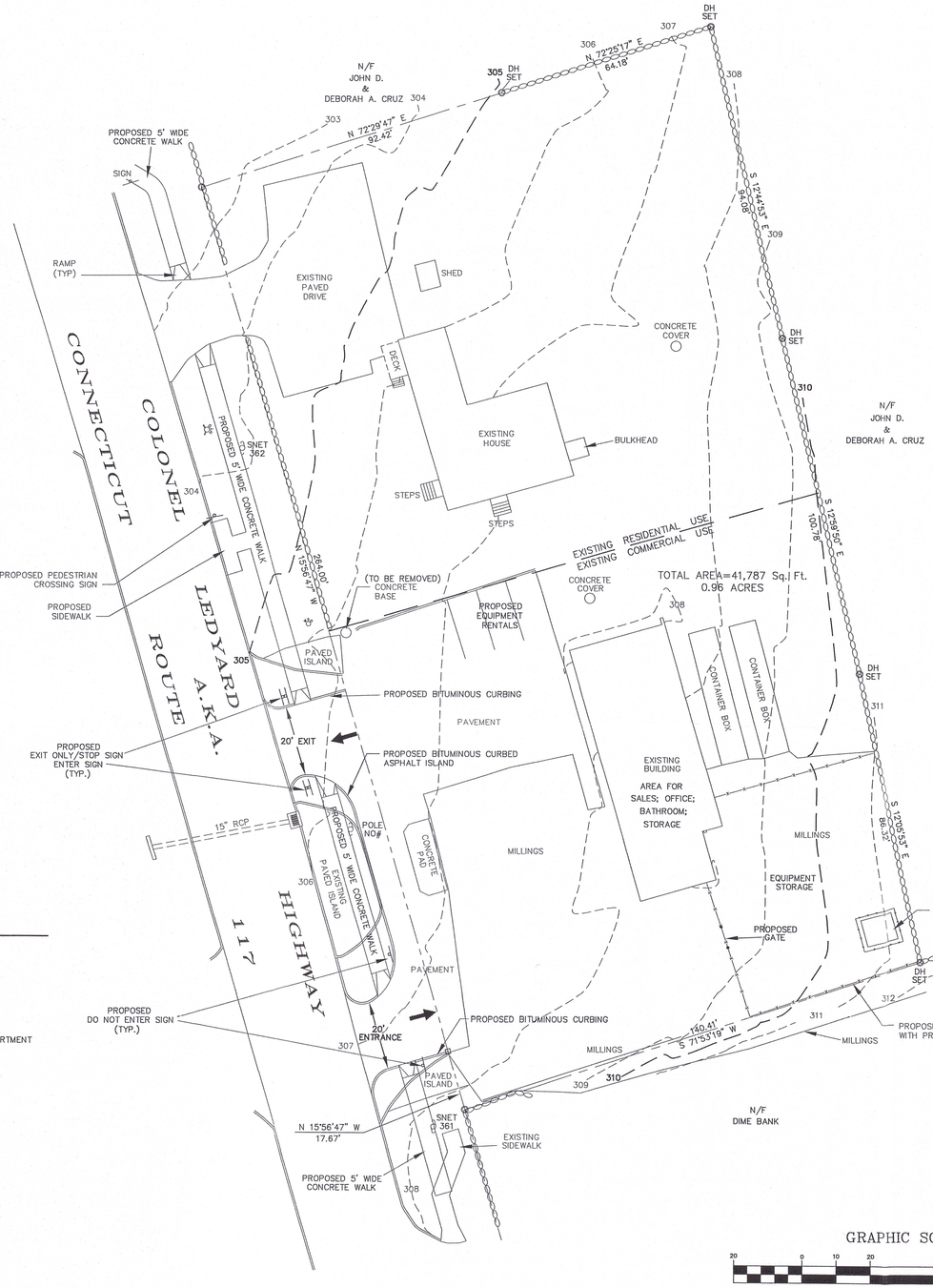
From: Elizabeth Burdick
Sent: Thursday, August 7, 2025 12:18 PM
To: Peter Gardner
Cc: Anna Wynn
Subject: RE: 750 Colonel Ledyard Hwy

8/7/25 Peter, Your request on behalf of Ryan Forrestt to table his application #25-5SITE for proposed businesses at 750 Colonel Ledyard Highway has been received and marked for the record. Thank you.

Liz Burdick, Director of Land Use & Planning
Town of Ledyard
741 Colonel Ledyard Highway, Ledyard, CT 06339
Telephone: (860) 464-3215
Email: planner@ledyardct.org

From: Peter Gardner <dieter.gardner@yahoo.com>
Sent: Thursday, August 7, 2025 11:13 AM
To: Elizabeth Burdick <planner@ledyardct.org>
Subject: 750 Colonel Ledyard Hwy

Please continue application to the September so that we can co-ordinate with the applicant revision to his original proposal. Thank You



LEGEND

- STONE WALL
- PROPERTY LINE
- STREET LINE
- EXISTING CONTOUR
- CONNECTICUT HIGHWAY DEPARTMENT MONUMENT NOT FOUND
- DH SET — DRILL HOLE SET
- UTILITY POLE
- HYDRANT
- WATER GATE
- CURBING
- PROPOSED FENCE
- DIRECTION TRAFFIC FLOW
- CATCH BASIN

THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF THE PROFESSIONAL OPINION BY THE LAND SURVEYOR WHICH IS BASED ON HIS OR HER BEST KNOWLEDGE, INFORMATION AND BELIEF. AS SUCH IT CONSTITUTES NEITHER GUARANTEE OR WARRANTY.

NOTE: BOUNDARY LINES OF ADJOINING PROPERTIES ARE SHOWN FOR GENERAL INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE CONSTRUED AS BEING ACCURATELY LOCATED OR DEPICTED.

THE STONE WALLS AND/OR FENCES SHOWN AS BOUNDARIES MAY HAVE IRREGULARITIES OF COURSE BETWEEN PRINCIPAL POINTS OF COURSE INDICATED

© THIS DRAWING IS THE PROPERTY OF THE LAND SURVEYOR. THIS PLAN AND REPRODUCTIONS, ADDITIONS OR REVISIONS OF THIS PLAN ARE NOT VALID WITHOUT THE EMBOSSED SEAL AND SIGNATURE OF THE LAND SURVEYOR WHO PREPARED THIS PLAN.
JOB#25-005.DWG FBK#340

APPROVED BY THE LEDYARD PLANNING AND ZONING COMMISSION AS TO THE COMPLIANCE WITH THE REGULATIONS GOVERNING THE SUBDIVISION OF LAND.

ALL IMPROVEMENTS SHALL BE COMPLETED BY _____ DATE

_____ CHAIRMAN OR SECRETARY

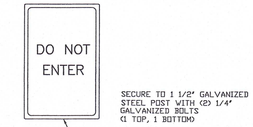
_____ DATE

GRAPHIC SCALE

20 0 10 20 40 80

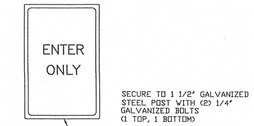
(IN FEET)
1 inch = 20 ft.

DIETER & GARDNER
LAND SURVEYORS • PLANNERS
1641 ROUTE 12
P.O. BOX 335
GALES FERRY, CT. 06335
(860) 464-7455
EMAIL: DIETER.GARDNER@YAHOO.COM



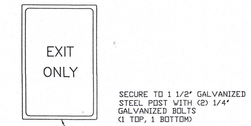
ENTER ONLY SIGN

NOT TO SCALE



ENTER ONLY SIGN

NOT TO SCALE



EXIT ONLY SIGN

NOT TO SCALE



STOP SIGN

NOT TO SCALE

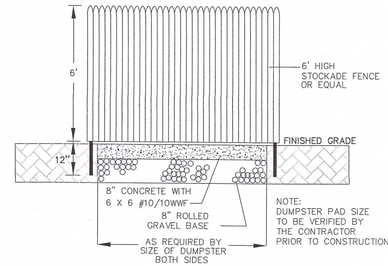
SECURE TO 1 1/2" GALVANIZED STEEL POST WITH (2) 1/4" GALVANIZED BOLTS (1 TOP, 1 BOTTOM)

NOTE:
SIGN TO BE INSTALLED IN ACCORDANCE WITH STATE OF CONNECTICUT D.O.T. STANDARDS

GENERAL NOTES:

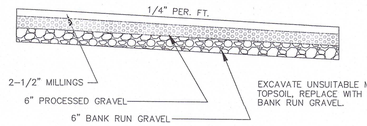
1. MAP REFERENCES:
   A) CONNECTICUT STATE HIGHWAY DEPARTMENT RIGHT OF WAY MAP TOWN OF LEDYARD COLONEL LEDYARD HIGHWAY FROM THE ALLYN PROPERTY WESTERLY AND NORTHERLY ABOUT 6,500 FEET SCALE 1"=40' DATE 4-30-42 NUMBER 71-11 SHEET NO. 3 OF 3 SECTION NO. 2
   B) LEDYARD ASSESSORS MAP 67.
2. SIGNAGE TO BE IN ACCORDANCE WITH ZONING REGULATIONS.
3. ZONING DISTRICT – LCDD LEDYARD CENTER DESIGN DISTRICT.
4. SITE IS WITHIN THE BILLING AVERY DIVERSION DAM WATERSHED/GROTON UTILITIES WATERSHED.
5. SIDEWALK/REVISED ENTRANCES TAKEN FROM PLAN PREPARED FOR THE TOWN OF LEDYARD. CONSTRUCTION DATE FOR WORK TO BE PERFORMED BY THE TOWN IS NOT DETERMINED.
6. REMOVE FREE STANDING SIGN.
7. ONE WAY ENTRANCE (SOUTH) AND ONE WAY EXIT (NORTH).
8. SIGN WILL BE PLACED ON BUILDING, SEPARATE APPLICATION WILL BE SUBMITTED.
9. PROPOSED 5' WIDE CONCRETE WALK TO BE INSTALLED BY THE TOWN OF LEDYARD.
10. IMPROVEMENTS WITHIN STATE RIGHT OF WAY WILL BE COMPLETED BY THE TOWN OF LEDYARD, AS SHOWN ON PLAN PREPARED SHOWING SIDEWALK IMPROVEMENTS FOR THE TOWN OF LEDYARD
11. PROPOSED USE: EQUIPMENT RENTAL AND REPAIR.
12. PROPERTY IS TO BE CONNECTED TO PUBLIC WATER.

RECEIVED
AUG 26 2025
Land Use Department



CONCRETE DUMPSTER PAD WITH STOCKADE FENCE

NOT TO SCALE



DRIVEWAY/PARKING AREA CROSS-SECTION

NOT TO SCALE

PLAN PREPARED FOR
RYAN'S RELIABLE SERVICES LLC
PROPERTY OF
DOMINICK CERAVOLO
750 COLONEL LEDYARD HIGHWAY
A.K.A.
CONNECTICUT ROUTE 117
LEDYARD, CONNECTICUT
SCALE: 1"=20'
JULY 2025
REVISED: AUGUST 25, 2025

THIS MAP AND SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THROUGH 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES-"MINIMUM STANDARDS OF ACCURACY, CONTENT AND CERTIFICATION FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT", ADOPTED EFFECTIVE JUNE 21, 1996, REVISED OCTOBER 26, 2018. IT IS A BOUNDARY SURVEY BASED ON A DEPENDENT SURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY T-2.
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

TITLE: LAND SURVEYOR CT No. 14208

DATE: JULY 1, 2025

FD#9

File #: 25-2028 **Agenda Date:** 9/11/2025 **Agenda #:** D.

LAND USE APPLICATION

Subject/Application:
Discussion & Decision: PZ#25-2ZRA- Applicant/Agent: Eric Treaster for Proposed Zoning Regulations Text Amendments for the Development of multifamily dwellings. (Submitted 3/12/25, Date of Receipt 3/13/25, PH must open within 65 days by 5/16/25. PH orig. set for 5/8/25, Opening of PH postponed to 6/12/25 with 27-day ext. granted., PH opened 6/12/25PH Cont. to 6/26/25, PH cont. 7/10/25, PH cont. to 7/31/25 with 16-day ext. granted, PH must close by 7/31/25, PH Closed 7/31/25, Tabled to 8/14/25 & 9/11/25, DRD 10/4/25).

Background:
(type text here)

Land Use Director/Town Planner:
(type text here)

TOWN OF LEDYARD

741 Colonel Ledyard Highway
Ledyard, CT 06339-1511

File #: 25-2456 **Agenda Date:** 9/11/2025 **Agenda #:** A.

C.G.S. 8-24 REFERRAL

Subject:
C.G.S. 8-24 Referral - 19 Avery Hill Rd Ext. (Parcel ID: 50/130/19), Ledyard, CT - Transfer of Town-Owned Open Space property (Glacial Park) to Avalonia Land Conservancy to be combined with property at 173 & 175 Stoddards Wharf Road owned by DDJJM, LLC also to be transferred to Avalonia Land Conservancy.

Background:
(type text here)

Department Comment/Recommendation:
(type text here)

File #: 25-2446 **Agenda Date:** 9/11/2025 **Agenda #:** B.

REFERRAL

Subject:
C.G.S. 8-24 Referral - 13 Applewood Drive (Parcel ID: 99-530-13), Ledyard, CT - Transfer of Town-Owned Open Space property to Avalonia Land Conservancy to be combined with the Avalonia Pike Marshall Preserve at 104 Gallup Hill Road (Parcel ID: 85-810-104), Ledyard, CT.

Background:
(type text here)

Department Comment/Recommendation:
(type text here)

File #: 25-2443 **Agenda Date:** 9/11/2025 **Agenda #:** A.

MINUTES

Minutes:
PZC Regular Meeting Minutes of August 14, 2025

File #: 25-2444 **Agenda Date:** 9/11/2025 **Agenda #:** A.

REPORT

Staff/Committee Report:
ZEO Staff Report of September 11, 2025

File #: 25-2445 **Agenda Date:** 9/11/2025 **Agenda #:** B.

REPORT

Staff/Committee Report:
Planner's Report of September 11, 2025