TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
Regular Meeting Agenda
Wednesday, February 1, 2023 6:30 p.m.

MEETING LOCATION: **Brooklyn Middle School Auditorium, 119 Gorman Road, Brooklyn, CT**		
Click link below: **https://us06web.zoom.us/j/87925438541**	**or**	**Go to https://www.zoom.us/join** **Enter meeting ID: 879 2543 8541**
Dial: 1-646-558-8656 **Enter meeting number: 879 2543 8541, then press #, Press # again to enter meeting**		

I. **Call to Order**
II. **Roll Call**
III. **Seating of Alternates**
IV. **Adoption of Minutes:** Meeting January 17, 2023
V. **Public Commentary**
VI. **Unfinished Business:**
- a. **Reading of Legal Notices:**
- b. **Continued Public Hearings:** None.
- c. **New Public Hearings:**
  1. **SP 22-008:** Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso.
- d. **Other Unfinished Business**:
  1. **SP 22-008:** Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso.
  2. **SD 22-004:** One lot Resubdivision including 2 acres on Allen Hill Road/Wauregan Road (Map 31, Lot 97C), Applicant: Wayne Jolley/Lori Pike. ***Public Hearing 2/21/2023***
  3. **SP 22-007:** Special Permit for an Events Facility at 459 Wolf Den Road, Applicants: Nicole and Greg Fisher. ***Public Hearing 2/21/2023***
  4. **ZRC 22-009:** Multiple revisions to Section 4.F Mill Mixed Use Development Zone, Applicant: DMP Palmer Associates. ***Public Hearing 3/21/2023***

VII. **New Business:**
- a. **Applications:**
  1. **SPR 23-001:** Site Plan Review for a Home Business (Woodstock Rebuilding) at 249 Windham Road, RA Zone, Applicant: Kencyn Corporation/John Serrell.
  2. **ZRC 23-001:** Multiple revisions concerning exceptions to the setbacks including Secs. 2.B, 3.A.5.2., 3.B.5.2., 3.C.5.2., 4.B.4.2., 4.C.4.2., and 8.A.4.
- b. **Other New Business:** None.

VIII. **Reports of Officers and Committees:**
- a. Staff Reports
- b. Budget Update
- c. Correspondence
- d. Chairman's Report

IX. **Public Commentary**
X. **Adjourn**

Michelle Sigfridson, Chairman

TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
Regular Meeting
Tuesday, January 17, 2023 6:30 p.m.

3 WAYS TO ATTEND: IN-PERSON, ONLINE, AND BY PHONE

MEETING LOCATION: **Clifford B. Green Meeting Center, Suite 24, 69 South Main Street, Brooklyn, CT**		
Click link below: **https://us06web.zoom.us/j/84765564828**	**or**	**Go to https://www.zoom.us/join** **Enter meeting ID: 847 6556 4828**
Dial: 1-646-558-8656 **Enter meeting number: 847 6556 4828, then press #, Press # again to enter meeting**		

MINUTES

I. **Call to Order –** Michelle Sigfridson, Chair, called the meeting to order at 6:32 p.m.

II. **Roll Call** – M. Sigfridson, Carlene Kelleher, Allen Fitzgerald, Lisa Herring, S. Pember, J. Haefele; Gil Maiato; (all were present in person).
Sara Deshaies and Brian Simmons and were absent with notice. Karl Avanecean was absent.

Staff Present: Jana Roberson, Town Planner and Director of Community Development; Austin Tanner, First Selectman (both present in person).

Also Present in Person: Pete Parent, P.E. with CHA; Attorney Kathleen Cerrone, The Northeast Law Center; J.S. Perreault, Recording Secretary.
There were five additional people present in the audience.

Present via Zoom: Steve Townsend, Townsend Development; Debbie; Scott & Marie; Jim Doherty; Jackie; Lori Johnson; Amy Fleming; WINY Radio; Mary K; Bob; Norman Berman.

III. **Seating of Alternates** – No Alternates seated.

IV. **Adoption of Minutes:** Meeting January 4, 2023

Motion was made by C. Kelleher to approve the Minutes of the Regular Meeting of January 4, 2023, as presented.
Second by G. Maiato. No discussion.
Motion carried unanimously by voice vote (7-0-0).

V. **Public Commentary**

Scott Winslow, Herrick Road, stated that he was considering submitting an application for an Alternate Position. He asked about the philosophy of the PZC regarding zoning as he feels zoning regulations should be changed so that it benefits all of the Townspeople rather than sculpting or tailoring the regulations to only benefit a couple of people.
A. Tanner stated that you uphold the Regulations the way they are written and when there are changes, you do it to the best of your ability.
M. Sigfridson explained that everyone on the Commission wants to do something for the Town as a whole. Only a handful of people participated in the re-write of the Regulations.
L. Herring spoke of the difficulty and time spent in making decisions as those decisions change people's lives. She said that she makes her decisions based on what she feels is best for the Town.
A. Fitzgerald stated that he doesn't feel that any of the Commission Members do it for personal gain and, although they don't always agree, they all try to do what is best for the Town.
C. Kelleher explained that the Regulations are fluid and are never finished. She looks at what is before her and sees how it fits in. It is always a balancing act between what is best for the Town and what a person is allowed to do with their personal property.

VI. Unfinished Business:

a. **Reading of Legal Notices: None.**

b. **Continued Public Hearings:**

1. **ZRC 22-008:** Revisions to the Planned Commercial Zone to allow self-storage facilities as a Special Permit Use with specific standards, including Sec. 4.D.2.3.19 Permitted Uses in the PC Zone, and Section 6.T Standards for Self-Storage Facilities, Applicant: Townsend Development.

   Pete Parent, P.E. with CHA, represented the Applicant. Mr. Townsend was present via Zoom. Mr. Parent reviewed revisions which resulted from discussion at the previous meeting.

   - 6.T.2.1 – No change.
   - Added 6.T.2.2 – No Outdoor Storage shall be allowed.
   - Added 6.T.2.3 – Maximum allowable density for Self-Storage Facilities shall be 4,000 square feet of Gross Building Area per Acre of Lot Area, with no single building greater than 20,000 square feet.

   Mr. Parent stated that self-storage is a low-impact use that would be compatible with other allowed uses in the Zone. The revisions would reduce the visual affect.

   Mr. Parent displayed a conceptual plan to show the scale of what Mr, Townsend is proposing. He indicated the locations of existing, proposed and previously approved buildings.

   Steve Townsend's comments:

   - He feels that this mixed-use combination is a great use for this property.
   - Commercial development is not simply store-front retail and that he sees this type of development all across the country.
   - Route 6 will become vibrant if some of these alternative uses are allowed along the Route 6 Corridor.
   - Four sites, including this property, that would potentially impacted by this proposal.
   - Low impact with little or no traffic coming off the site, little or no safety issues, little or no noise, height of the building would be less than what is permitted in the Zone.
   - Would have a positive impact on the Grand List.
   - No direct impact on schools.
   - Would create more opportunities for others to develop.
   - Self-storage would be complimentary to the 19,000 sq. ft. retail center that he plans to do.
   - They are prepared to move on this as he has someone who is interested in doing the self-storage, if approved. They would get started in the spring when weather permits. They would be coming back to the PZC with detailed plans.

   QUESTIONS/COMMENTS FROM THE COMMISSION:

   - **J. Haefele** asked about hours of operation.
     Mr. Parent explained that hours of operation would be proposed as part of the special permit application process. He stated that there would be no need for 24-hour access and that standard business hours would be typical. Mr. Townsend stated same hours, until 9 p.m., like CVS.
     Ms. Roberson stated that suitability to the location would be addressed should this proceed to a special permit application.
   - **A. Fitzgerald** asked about whether more directive needs to be added to the proposal regarding a way to include retail space, as discussed at the last meeting, so that the Town doesn't get overwhelmed with storage facilities.
     Ms. Roberson stated that she had consulted with the Town Attorney and he feels that co-dependency of uses is probably not appropriate for Zoning Regulations.

- **L. Herring** spoke about her concerns regarding the difficulty in converting the building to another use in the case that self-storage does not work out.
  Mr. Townsend referred to the conceptual site plan and explained that the building could easily be converted to a retail center. He also explained that, for the 19,000 sq. ft. retail building, they do not do the inside until they have a tenant.

QUESTIONS/COMMENTS FROM THE PUBLIC:

- **Scott Winslow,** Herrick Road, asked if anyone had done a study on Cube Smart in North Windham and another in Chaplin to see what the percentage is of them being filled up, to determine the demand.
  G. Maiato and A. Fitzgerald stated that they had experienced that there is a need for storage in the area.
  M. Sigfridson explained that the goal, as a Commission, is not to do feasibility studies for the developers.

ADDITIONAL COMMENTS FROM THE COMMISSION:

- **M. Sigfridson** commented that self-storage facilities are not her favorite use, however, this would be meeting a need in this area and would have an immediate positive affect on the Grand List with very little need for services from the Town. She appreciates that it is proposed in such a way to limit storage units as far as the eye can see.
- **C. Kelleher** stated agreement with Ms. Sigfridson and asked Ms. Roberson about distances possibly being changed by the ZBA.
  Ms. Roberson explained that language could be added specifying that the distances cannot be changed by the ZBA.
  Ms. Kelleher stated that she would like the language to be added.
  M. Sigfridson agreed and mentioned concern for an applicant asking for a variance regarding the rear lot requirement.
  Ms. Roberson stated that that would be a huge change from the anticipated impact as it would open up the frontages.
- **J. Haefele** commented that, although his preference would be residential which had been denied in the past, this is a viable option that would not be a tremendous eyesore as it is internal storage and, in this case, combined with some retail space. He stated that he has concern that the retail space will end up sitting empty like much of the other retail space in Town, but Mr. Townsend has tenants lined up that may be interested. He stated agreement with the restriction regarding the ZBA.

  There was discussion regarding language to be added: Amendment to the proposal (#4): "No variance shall be issued to reduce or modify the entirety of the dimensional requirements."
  Mr. Parent and Mr. Townsend both stated that they have no objections to this language.

- **A. Fitzgerald** stated that he is in favor of the proposal as it would benefit the Town Grand List and would not disturb property values, as it had already been approved for commercial buildings. He stated that research a number of towns and no other town restricts self-storage facilities in the commercial zone.

Motion was made by C. Kelleher to close the public hearing for **ZRC 22-008:** Revisions to the Planned Commercial Zone to allow self-storage facilities as a Special Permit Use with specific standards, including Sec. 4.D.2.3.19 Permitted Uses in the PC Zone, and Section 6.T Standards for Self-Storage Facilities, Applicant: Townsend Development.
Second by G. Maiato. No discussion.
Motion carried unanimously by voice vote (7-0-0).

c. **New Public Hearings: None.**

d. **Other Unfinished Business**:

1. **ZRC 22-008:** Revisions to the Planned Commercial Zone to allow self-storage facilities as a Special Permit Use with specific standards, including Sec. 4.D.2.3.19 Permitted Uses in the PC Zone, and Section 6.T Standards for Self-Storage Facilities, Applicant: Townsend Development.

   There was discussion regarding whether the Town Attorney should review the additional language. Ms. Roberson explained that the Town Attorney had been consulted and had suggested a different scenario. Ms. Sigfridson commented that she feels comfortable moving ahead.

   There was discussion regarding the amendment to the proposal (#4): "No variance shall be issued to reduce or modify the entirety of the dimensional requirements of this Section."

Motion was made by L. Herring to approve the amended proposal to allow self-storage facilities as a Special Permit Use with specific standards, including Sec. 4.D.2.3.19 Permitted Uses in the PC Zone, and Section 6.T Standards for Self-Storage Facilities with the finding that the changes will aid in the protection of public health, safety, welfare, and property values and are consistent with the Plan of Conservation and Development and the intent of the Zoning Regulations.
The regulations shall become effective 15 days from the date of publication.
Second by G. Maiato.
Discussion: M. Sigfridson stated that the Commission had discussed their feelings during the public hearing.
Motion carried unanimously by voice vote (7-0-0).

Amendment to the proposal (#4): "No variance shall be issued to reduce or modify the entirety of the dimensional requirements of this Section."

2. **ZRC 22-007:** Revisions to the Residential-Agricultural Zone to allow Glamping as a Special Permit Use with specific standards, including Section 2.B Definitions, Section 3.C.2.4. Permitted Uses in the RA Zone, and Section 6.T Standards for Glamping.

   Ms. Sigfridson noted that the Applicant's Representative, Attorney Cerrone, was present.

   Ms. Roberson explained that, using the last submission from the Applicant (dated 11/29/2022), she had provided the draft language (dated 1/12/2023), which includes her track changes as per discussion from the last meeting, for review by the Commission. The draft language was displayed. She stated that grammatical corrections had been made.

   - Regarding Section 6.T.2.15, Ms. Roberson stated that the last six words, "including both lodging and event guests" should have been removed from the draft as the Commission had discussed, at the December 20th meeting, changing it to just lodging occupancy as there could be events that are not related to the glamping.

     Section 6.T.2.15 to read as follows: "Maximum lodging occupancy for the Glamp-ground shall be a total of 110 persons."

   - Ms. Roberson reviewed Section 6.T.2.5 and there was discussion. The Commission had previously discussed setting a maximum number of Glamping Units at 50. Ms. Roberson referred to, and read aloud, C. Kelleher's email dated 1/16/2023 (provided to Commission Members at this meeting as it was received after packets had been sent on 1/13/2023), in which she states that she feels there is a conflict with the maximum of 50 Glamping units and the density language, therefore, she suggests using the language from the original draft, as follows:

     "The maximum density of Glamp-grounds shall be one Glamping Unit per every two suitable acres. A suitable acre is defined by the Connecticut Department of

Public Health regulations for Family Campgrounds as dry land available for unit site development – dry land meaning land not designated as wetlands or watercourse. The density of one Glamping Site per acre shall not prevent Glamping Site or Glamping Units from being clustered together." Ms. Kelleher noted that this approach would increase the maximum units to 62(.5). Discussion continued.

The following language was decided upon for Section 6.T.2.5: "The maximum number of Glamping Units shall be one per every two suitable acres, not to exceed fifty (50) Glamping Units. A suitable acre is defined by the Connecticut Department of Public Health regulations for Family Campgrounds as dry land available for unit site development – dry land meaning land not designated as wetlands or watercourse."

- Ms. Roberson reviewed Section 6.T.2.9 to read as follows: "All Glamping Units shall be installed on raised permanent platforms no less than 6 inches off the ground."
- Ms. Roberson reviewed the definition for Glamping Unit, to read as follows: "A lodging structure to be occupied for transient and recreational lodging. Such structures may include, but are not limited to, safari tents, yurts and teepees. Such Glamping Units may not exceed 600 square feet and must be part of the Glamp-ground operation and located on approved Glamping Sites. Glamping Units, like hotels, are not included in the definition of a dwelling, as defined in these Regulations."
- There was more discussion regarding Section 6.T.2.15 and whether to increase the maximum occupancy from 110 as discussed at a previous meeting to 125 or 150 as suggested by Ms. Kelleher in her email (dated 1/16/2023).
  A. Tanner stated agreement with Ms. Kelleher.
  S. Pember disagreed as he feels that it would be easier to increase, if needed in the future, rather than to decrease.
  L. Herring stated that she understands both sides, but stated agreement with Mr. Pember. She is comfortable with 110.
  M. Sigfridson considered whether maybe it should be tied to the number of Units. Discussion continued.
  C. Kelleher feels that raising it by 15 people won't make a huge difference in impact to the neighborhood, but could make a difference in feasibility.
  S. Pember stated that you have to draw the line somewhere and that he prefers that the number be 100.
  Ms. Roberson stated that it started at 250 and suggested 150 (3 per unit).
  Ms. Sigfridson and Ms. Herring both stated that they do not feel it should be less than 110.
  Ms. Kelleher stated that if it is approved, it should be something that is workable or not approve it at all. If approved, she would like it to be successful.
  Ms. Sigfridson feels that it makes sense to tie the maximum the number guests to the number of units (maxim number of guests per unit). She suggested 2.5 guests per unit, total of 125 guests. She said that a smaller Glamp-ground would have fewer guests than a bigger Glamp-ground. She said that she is excited about this proposal as she feels it will be good for the Town. She stated that she agrees with Ms. Kelleher and that, if approved, it should give the Applicant a realistic shot at doing it in a way that won't ruin the lives of the neighbors. She said that she would be in favor to make whatever changes are necessary to see what this would look like in Town and, if it's with a cap of 110, so be it.

Ms. Roberson explained that if the Commission takes action to approve this Application, the Section number would be 6.U rather than 6.T because the previous Application (ZRC 22-008) was approved as Section 6.T.

J. Haefele stated that it needs to be put on the Record how this Application fits in with the POCD. He said it is not a clear fit. He said we're getting there, but Glamping is not in the POCD.
C. Kelleher stated that the POCD calls for supporting agriculture tourism.
M. Sigfridson stated that it has been discussed a lot that this Application doesn't directly conserve farmland and she said that she wouldn't try to argue that it does, but it certainly is supportive of tourism which she thinks that most people in Town are in favor of that type of business development because tourism brings money into Town, hopefully, without a huge requirement for Town services. Schools are not impacted which is a big part of the budget, although, there may be a consideration for emergency services.
L. Herring explained that she feels that it does sort of preserve open land with the way we set it up by changing the direction a little bit by not allowing things that can't be taken apart very easily (hard structures).
M. Sigfridson stated, although somewhat conjecture, people running a Glamp-ground would want to preserve scenic resources so that it will attract people to come there.
J. Haefele stated that a positive is that there is somebody who is interested in a site of almost 600 acres in the Town of Brooklyn whose first thought isn't development. He said that, eventually, it will get developed. This proposed development has some tie-in to agriculture, to reasonable things that are nice to keep alive in Town. He feels there is hope this way.

There were no further comments.

Motion was made by C. Kelleher to amend the proposal for **ZRC 22-007:** Revisions to the Residential-Agricultural Zone to allow Glamping as a Special Permit Use with specific standards, including Section 2.B Definitions, Section 3.C.2.4. Permitted Uses in the RA Zone, and Section 6.U Standards for Glamping.
Amend Section:

- 6.U.2.15 to read as follows: Maximum lodging occupancy for the Glamp-ground shall be a total of 125 persons."

Second by J. Haefele.
Discussion: G. Maiato asked for clarification. Increase from 110 persons to 125 persons.
Motion failed by voice vote (2-4-1). L. Herring, J. Haefele, G. Maiato and S. Pember were opposed.
A. Fitzgerald abstained.

Motion was made by C. Kelleher to approve the proposal to allow Glamping as a Special Permit Use in the RA Zone with specific standards, including revisions to Section 2.B-Definitions and Section 3.C.2.4.-Permitted Uses in the RA Zone and the addition of Section 6.U-Standards for Glamping to the Zoning Regulations with the finding that the changes will aid in the protection of public health, safety, welfare, and property values and are consistent with the Plan of Conservation and Development and the intent of the Zoning Regulations. The regulations shall become effective 15 days from the date of publication.
Second by L. Herring.
Discussion: M. Sigfridson clarified that the Motion was to approve a change that would allow Glamping as a special permit use.
A voice vote was taken, but it was unclear how Commission Members voted.
A. Fitzgerald requested a Roll Call Vote.
Roll Call Vote: L. Herring – yes; J. Haefele – yes; G. Maiato – no; M. Sigfridson – yes; C. Kelleher – yes; A. Fitzgerald – no; S. Pember – yes.
Motion carried (5-2-0).
There was discussion regarding those who voted opposed stating their reasons.
A. Fitzgerald was opposed for the following reasons: He doesn't feel that it would benefit the Town/Tax Roll; and he doesn't feel it would do anything for property values.
G. Maiato was opposed for the following reasons: He feels it would ruin the Quiet Corner; concerns for safety, traffic on the road, fire and EMS; if he lived on that road, he wouldn't want it.

3. **SP 22-007:** Special Permit for an Events Facility at 459 Wolf Den Road, Applicants: Nicole and Greg Fisher. ***Public Hearing 2/21/2023***

   Ms. Roberson explained that the location will need to be changed to the Middle School. There was discussion and Ms. Sigfridson agreed that the Brooklyn Middle School Auditorium would be the best place.

4. **SP 22-008:** Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso. ***Public Hearing 2/1/2023***

   This public hearing will take place at the Brooklyn Middle School Auditorium.

   Ms. Roberson provided copies of the Scope of Services for the Traffic Engineer (dated 1-9-2021) and she also provided copies of a proposal from the same Traffic Engineer (KWH Enterprise, LLC dated 1-15-2023) that the Commission had used before, who suggested charging hourly (amount not to exceed $6,000). Ms. Roberson stated that she shared this with the Applicant. Nicholas Mancuso (the Applicant's Attorney) strongly objected as he feels that the Applicant should not have to pay twice for the same work and does not think that it is appropriate for the Commission to take action on this. For the record, Ms. Roberson read aloud from Attorney Mancuso's e-mail.

   Ms. Roberson spoke about how the Traffic Report received is not the same Traffic Report. School was not in session when the Study was first done due to COVID-19. She said that she specifically requested that they collect traffic count data from while school is in session. She explained that the Commission is within its authority to request a third-party consultant to review that Report and she does not feel that the purpose of the third-party consultant is changed by this being a revision of a previously withdrawn application. The work involved is less. She referred to the Ordinance which specifies a 25-percent contingency.

   There was discussion:

   - Mr. Haefele would like to instruct the Traffic Engineer to give us a percentage increase.
   - Mr. Pember suggested that someone who has done the Study before would go back with that same Study in mind that they already did. So, he feels that a fresh set of eyes would be better to do a completely new Study with school in session. The cost is not our major concern.
   - Ms. Sigfridson reminded the Commission that the third-party Consultant would be reviewing the data provided by the Applicant.
   - Mr. Pember stated that he would like the Applicant to do a completely new Traffic Study with a new Engineer. Mr. Fitzgerald stated agreement with Mr. Pember. The two stated that they could not approve the Application based on the previous Traffic Study. Mr. Fitzgerald suggested that the Town Attorney be consulted.
   - Ms. Roberson stated that she had strongly suggested that they collect contemporary data and she read from the most recent Traffic Report submitted in December 2022, which states that data was collected from school afternoon peak hours on September 21, 2021. This, she said, indicates to her that they did not collect more contemporary data. The third-party Consultant would give their expert opinion to determine this. They may determine that the Applicant needs to collect more data. Discussion continued.
   - Mr. Pember stated that he is not biased one way or the other, but he knows, personally with kids in that school, that the data collected in September of 2021 is not going to be correct. He said that there is now double or more traffic than there was then. He offered to abstain, if necessary. Ms. Roberson stated that she does not think that it is grounds for abstention.
   - Ms. Sigfridson stated that the Commission needs to determine if we are okay with the Scope of Work.

Mr. Tanner suggested that the Scope of Work be more specific.
There was discussion regarding language to request specific data. Mr. Fitzgerald suggested that a site visit be requested during the times that people would be going to the School. He said that the traffic is the biggest problem with the Townspeople.

Ms. Roberson stated that she will revise the Scope of Work to include concerns about changes to the traffic pattern since September 2021, and to request a site visit during both drop off and pick up. Ms. Roberson referred to, and read from, the Ordinance and asked that a motion be made to accept the Scope of Services.

Motion was made by J. Haefele to amend the Scope of Services – Traffic Engineer regarding SP 22-008 to add #5 to request a site visit during drop off and pick up to address concerns about changes to the traffic pattern since September 2021.
Second by S. Pember. No discussion.
Motion carried unanimously by voice vote (7-0-0).

Motion was made by A. Fitzgerald to reschedule the public hearing for SP 22-008: Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso for the regular meeting of the Planning and Zoning Commission to be held on **February 1, 2023** at 6:30 p.m. at the Brooklyn Middle School Auditorium, 119 Gorman Road, Brooklyn, CT and via Zoom.
Second by C. Kelleher. No discussion.
Motion carried unanimously by voice vote (7-0-0).

5. **SD 22-004:** One lot Resubdivision including 2 acres on Allen Hill Road/Wauregan Road (Map 31, Lot 97C), Applicant: Wayne Jolley/Lori Pike. ***Public Hearing 2/21/2023***

   Ms. Roberson explained that the public hearing for this Application would also be at the Brooklyn Middle School.
   Mr. Fitzgerald asked if this item could be placed early on the agenda as it is pretty cut-and-dry. Ms. Roberson stated that she will do that.

Motion was made by J. Haefele to reschedule the public hearing for SD 22-004: One lot Resubdivision including 2 acres on Allen Hill Road/Wauregan Road (Map 31, Lot 97C), Applicant: Wayne Jolley/Lori Pike for the regular meeting of the Planning and Zoning Commission to be held on **February 21, 2023** at 6:30 p.m. at the Brooklyn Middle School Auditorium, 119 Gorman Road, Brooklyn, CT and viaZoom.
Second by A. Fitzgerald. No discussion.
Motion carried unanimously by voice vote (7-0-0).

6. **ZRC 22-009:** Multiple revisions to Section 4.F Mill Mixed Use Development Zone, Applicant: DMP Palmer Associates. ***Public Hearing to be Rescheduled***

Motion was made by A. Fitzgerald to reschedule the public hearing for ZRC 22-009: Multiple revisions to Section 4.F Mill Mixed Use Development Zone, Applicant: DMP Palmer Associates for the regular meeting of the Planning and Zoning Commission to be held on **March 21, 2023** at 6:30 p.m. at the Clifford B.Green Memorial Building, 69 South Main Street, Brooklyn, CT and via Zoom.
Second by S. Pember. No discussion.
Motion carried unanimously by voice vote (7-0-0).

VII. New Business:

a. **Applications:** None.
b. **Other New Business:** None.

VIII. Reports of Officers and Committees

There was discussion regarding two training opportunities for Commission Members as PZC and ZBA Members (now required to do four hours of training per year):

- CLEAR Training (included in packets to Commission Members) that is available virtually;

- Connecticut Land Use Law for Municipal Land Use Agencies, Boards, and Commissions (included in packets to Commission Members).

Ms. Roberson will forward links to Commission Members.

Ms. Roberson explained that some members of the public were not happy with how their comments were described in the minutes and that she had asked that, if they would like the Commission to modify the minutes, they provide the actual words they would like inserted.

- Maria Gandy-Winslow and Scott Winslow submitted a letter dated January 5, 2022 (included in packets to Commission Members).
- Ms. Roberson provided copies of the original text of the Minutes of the December 7, 2022 meeting and a copy with Track Changes inserted. Ms. Roberson asked that Commission Members read it as it was not included the in packets. Ms. Roberson explained that her understanding is that previous minutes may be amended, it is not a requirement. Any changes to previous minutes actually would be reflected in the minutes of this meeting, we do not go back and change the old minutes. She said that we had never gotten a request like this before.

There was discussion. Scott Winslow stated that Ms. Gandy-Winslow had read from her letter and only excerpts were included in the minutes. He said that he listened to the audio of the public hearing and everything that she read was on the Record. Mr. Winslow feels that although the recording of each meeting is available to the public, they will not listen to them, but that they would read the minutes. Ms. Gandy-Winslow's comments, in their entirety, as she read them aloud from her letter, which she also submitted to Staff at the public hearing on December 7, 2022, are part of the Record of that meeting. Ms. Roberson confirmed that those comments are part of the Record of the December 7th meeting. Additionally, Ms. Roberson confirmed that all written comments submitted to her were posted on the website and can be viewed under the December 20, 2022 Agenda, Appendix D (206 pages). Ms. Roberson explained that the entire Record of the Application is not posted on the website, but it is accessible to anyone who requests it. The letter from Mr. Winslow and Ms. Gandy-Winslow (dated January 5, 2023) will not be added to the Record.

Ms. Sigfridson stated that the Minutes of the January 17, 2023 Meeting will reflect that a letter was received from Maria Gandy-Winslow and Scott Winslow requesting that Maria's comments be clarified.

IX. Public Commentary

- **Debbie Cornman** asked for clarification regarding the Glamping Application that was approved at this meeting: She asked if it is correct that the Commission went from a maximum of 225 lodgers plus guests together to 110 lodgers and no limit on the non-lodgers.
  Ms. Sigfridson stated that it is correct.
  Ms. Kelleher stated that the Special Event Permit will deal with maximums
  Ms. Cornman stated that she is disappointed that a limit was not placed on the number of people that can be on the property. She asked if people will be able to come and visit with an unlimited number. She asked if lodgers would need to have an Even Permit to have a party.
  Mr. Pember stated that if it is more than 50 people beyond lodgers, they would have to get a Special Event Permit.
  Ms. Cornman asked if Mr. Haefele's suggestion for it to be reviewed every 24 months had been included.
  Ms. Sigfridson stated that it was not included.
  Ms. Cornman stated that, for transparency, it would be nice if people's letters were easier to access.
  There was discussion among the Commission Members regarding the 24-month review. It can be added under the Special Permit. Mr. Fitzgerald suggested that it could be every 12 months.
  Ms. Kelleher commented about enforcement procedures.
- **Jim Doherty** suggested looking into transcription software. He asked if the Enforcement Official works on weekends.
  Ms. Sigfridson stated that we have the audio recording and anyone, who wants to, can listen to it. The minutes are not supposed to be a transcript, but rather something that can be quickly

referred to. Ms. Sigfridson and Ms. Roberson stated that they are not aware of requirements of content for minutes in the Statutes. Mr. Fitzgerald read from "Robert's Rules of Order" that the duty of the recording clerk is to record what is done by the Assembly, not what is said by the Members.
Regarding the Enforcement Officer, Ms. Roberson explained that Ms. Washburn's hours could be flexible to address certain situations as they arise. Ms. Washburn is aware that things do happen outside of normal business hours.
Mr. Doherty asked who to call on weekends should an issue arise.
Mr. Tanner stated, "The buck stops here."
Ms. Sigfridson stated that the first call would be to the Zone Enforcement Officer, but if she is not at her desk, Ms. Sigfridson suggested leaving a message or sending an e-mail. The Selectman's contact information is available on the Town website as well. Law enforcement is an option if there are issues of safety or danger. The Resident Trooper is not on duty on the weekends. People can also take photos or recordings as Ms. Washburn does not have to personally witness a violation in order to do something about it.
Mr. Doherty stated that he is disappointed in the decision (he did not identify which) as he does not think it was in the best interest of the Town, specifically the neighbors.
Mr. Doherty commented regarding the other proposal by the School and a traffic study conducted on Bush Hill and Wolf Den.
Ms. Sigfridson and Ms. Roberson explained that a traffic study on Bush Hill Road had not been considered for the Zoning Regulation change. It was a different application.
Mr. Doherty stated that he hopes that it will be scrutinized on the special permit application because it is a significant piece of the equation.
Mr. Doherty stated that a question had been asked to consider the totality of the special permit for the wedding venue on Wolf Den Road. He feels that the Commission needs to look at the totality of everything.

- Maria Gandy-Winslow commented that Dr. Poland was always being introduced as the expert and she had verbally acknowledged what he had said. She said that she would like to have equal detail to what he received in his presentation, as an expert. She said that a financial liability report was never submitted and there are no reasons why this should be accepted.
- Scott Winslow stated that as far as the minutes are concerned, exceptions should be taken because he felt that the Attorney comments were more detailed. He said it was not factual.
  Mr. Tanner explained that there have been a lot of requests for the audio and they are looking into making the links available to click on for easy access.
- Mr. Fitzgerald asked about getting notifications regarding ZBA so that the PZC can address them.
  Anyone can sign up to have updates e-mailed to them.
  Ms. Roberson explained that all actions of the ZBA are on the ZEO Report which Members of the PZC receives.
  There was discussion. Ms. Roberson stated that the main thing is concerning setbacks. She had provided copies of draft changes, to make it clearer, at the December 20th meeting. She will fill out the form to make it a Zoning Regulation Change and will bring it to the February 1st meeting. It will be assigned ZRC 23-001.
  There was discussion regarding a special permit for a storage facility that has not been received yet. Ms. Roberson will look into it.

X. Adjourn

Motion was made by A. Fitzgerald to adjourn at 9:50 p.m.
Second by G. Maiato. No discussion.
Motion carried unanimously by voice vote (7-0-0).

Respectfully submitted,

J.S. Perreault
Recording Secretary

TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION
NOTICE OF PUBLIC HEARING

The Planning and Zoning Commission will hold a public hearing on February 1, 2023, at 6:30 p.m. via Zoom and in-person at the Brooklyn Middle School Auditorium, 119 Gorman Road Brooklyn, CT on the following:

SP 22-008: Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso.

Please publish January 18th and 25th

RECEIVED
DEC 06 2022
Received Date _____
By _____

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

Application #SP 22-008
Check # _____

APPLICATION FOR SPECIAL PERMIT

Name of Applicant Shane Pollock & Erin Mancuso Phone 860-668-3129
Mailing Address 104 Mucha Drive, Griswold, CT 06351 Phone _____

Name of Engineer/Surveyor Killingly Engineering Associates
Address 172 Westcott Road PO Box 433 Killingly CT 06241
Contact Person Richard Thorsett Phone 860-779-7369 Fax ---

Name of Attorney NICHOLAS MANCUSO
Address _____
Phone _____ Fax _____

Property location/address Louise Betty Drive
Map # 19 Lot# 14 Zone R-30 Total Acres 5.447 ac
Sewage Disposal: Private _____ Public ✓ Existing _____ Proposed ✓
Water: Private _____ Public ✓ Existing _____ Proposed ✓

Proposed Activity Multi Family Development (50 single family condominium units)

Compliance with Article 4, Site Plan Requirements

Is parcel located within 500 feet of an adjoining Town? No

The following shall accompany the application when required:

Fee $ _____ **State Fee ($60.00)** _____ 3 copies of plans ✓ Sanitary Report ✓
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn.

Applicant Shane J Pollock Erin F Mancuso Date 11/1/2022
Owner Shane J Pollock Erin F Mancuso Date 11/1/2022

*Note: All consulting fees shall be paid by the applicant

PLANNING AND ZONING COMMISSION

TOWN OF BROOKLYN

CONECTICUT

Received Date ___________

Action Date___________

Application #SPR___________

Check#___________

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant Shane Pollock & Evan Mancuso Phone [illegible]

Mailing Address [illegible] Phone ___________

Name of Owner Same Phone ___________

Mailing Address ___________ Phone ___________

Name of Engineer/Surveyor [illegible]

Address [illegible]

Contact Person [illegible] Phone [illegible] Fax ___________

Property location/address [illegible]

Map # [illegible] Lot # [illegible] Zone [illegible] Total Acres [illegible]

Proposed Activity [illegible]

Change of Use: Yes____ No ✓ If Yes, Previous Use ___________

Area of Proposed Structure(s) or Expansion ___________

Utilities - Septic: On Site____ Municipal ✓ Existing____ Proposed ✓

Water: Private____ Public ✓ Existing____ Proposed ✓

Compliance with Article 4, Site Plan Requirements

The following shall accompany the application when required:

Fee$__________ **State Fee ($60.00)** _____ 3 copies of plans ✓ Sanitary Report ✓

4.5.5 Application/ Report of Decision from the Inland Wetlands Commission

4.5.5 Applications filed with other Agencies

12.1 Erosion and Sediment Control Plans

See also Site Plan Review Worksheet

Variances obtained N/A Date___________

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectmen, Authorized Agents of the Planning and Zoning Commission or Board of Selectmen, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant [signatures] Shane J Pollock Evan Mancuso Date 11/7/2022

Owner: [signatures] Shane J Pollock Evan Mancuso Date 11/7/2022

* Note: Any consulting fees will be paid by the applicant

LIST OF AJACENT LAND OWNERS - INCLUDING ACROSS THE STREET as of 10/21/2022 NECCOG

Shane J. Pollock & Erin F. Mancuso
Louise Berry Drive
Brooklyn, CT

MAP/LOT	NAME
33/21	Town of Brooklyn PO Box 356 Brooklyn, CT 06234
24/148	Connecticut Baptist Homes Inc 292 Thorpe Ave Meriden, CT 06450
24/158	Brooklyn Property Management LLC 211 Wauregan Road Brooklyn, CT 06234
33/10A	Sally A. Wood 68 Franklin Drive Brooklyn, CT 06234
33/13	Cindy Scalzi & Greg Benoit 36 Franklin Drive Brooklyn, CT 06234
33/14	Mark S Benard 273 Main Street Hampton, CT 06247
33/15	Linda Assales 24 Franklin Drive Brooklyn, CT 06234
33/16	Stephanie A. Hynes & Brennan D. Hynes 20 Franklin Drive Brooklyn, CT 06234
33/17	Richard E Bain 12 Franklin Drive Brooklyn, CT 06234
33/20.3	William J Purcell Jr 179 German Road Brooklyn, CT 06234
33/20	David R Dumont 173 German Road Brooklyn, CT 06234
33/20.1	Curt R Hostman PO Box 351 Brooklyn, CT 06234

JOSEPH R. THEROUX
~ CERTIFIED FORESTER/ SOIL SCIENTIST ~
PHONE 860-428-7992 – FAX 860-376-6842
P.O. BOX 32, VOLUNTOWN, CT. 06384
FORESTRY SERVICES ~ ENVIRONMENTAL IMPACT ASSESSMENTS
WETLAND DELINEATIONS AND PERMITTING ~ E&S/SITE MONITORING
WETLAND FUNCTION AND VALUE ASSESSMENTS

5/10/2022

KILLINGLY ENGINEERING ASSOCIATES
P.O. BOX 421
DAYVILLE, CT. 06241

RE: TREE PLANTING RECOMMENDATIONS, POLLOCK PROPERTY, LOUISE BERRY DRIVE, BROOKLYN, CT.

DEAR MR. THIBEAULT,

AT YOUR REQUEST I HAVE INSPECTED THE ABOVE REFERENCED PROPERTY AND THE SITE PLAN DEPICTING THE PROPOSED DEVELOPMENT FOR THE PURPOSES OF MAKING RECOMMENDATIONS ON TREE SPECIES SUITABLE FOR THE SITE.

IN THE SOUTHERN PORTION OF THE PROPERTY WHERE IT WAS HEAVILY LOGGED AND THE OVERSTORY WAS REMOVED, IN AND ADJACENT TO THE WETLANDS, I WOULD RECOMMEND PLANTING WHITE PINE SEEDLINGS, (PINUS STROBUS). THESE SEEDLINGS SHOULD BE 3-YEAR-OLD STOCK, APPROX. 15 TO 18 INCHES IN HEIGHT.
FOR THIS REMAINING AREA THAT WAS HEAVILY LOGGED AND IS NOT BEING DEVELOPED, (+/- 1 ACRE), I WOULD RECOMMEND 250 TREES, AS THIS IS TYPICAL STOCKING PER ACRE FOR HEALTHY WHITE PINE STANDS.

REGARDING TREE SPECIES FOR SCREENING BETWEEN THE UNITS, I WOULD RECOMMEND GREEN GIANT ARBORVITAE, (THUJA PLICATA). THESE TREES ARE EVERGREEN, DEER RESISTANT, AND ARE ONE OF THE FASTEST GROWING PRIVACY TREES. THEY WILL GROW APPROX. 3 TO 5 FEET PER YEAR AND WILL REACH HEIGHTS OF 60 FEET. THEY THRIVE IN A WIDE RANGE OF SOILS AND LIKE FULL SUN.
THEY SHOULD BE PLANTED IN STAGGERED ROWS APPROX. 4 TO 6 FEET SPACING.

AS WITH ANY PLANTINGS, THE PINES AND ARBORVITAES SHOULD BE PLANTED IN SPRING OR FALL TO MINIMIZE MORTALITY AND SHOULD BE MONITORED FOR SURVIVAL THE FIRST YEAR.

IN CONCLUSION, IF YOU HAVE ANY QUESTIONS CONCERNING MY RECOMMENDATIONS, PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

Joseph R. Theroux

JOSEPH R. THEROUX
CERTIFIED SOIL SCIENTIST
MEMBER SSSSNE, NSCSS.

Killingly Engineering Associates
Civil Engineering & Surveying
P.O. Box 421 Dayville, CT 06241
Phone: 860-779-7299
Fax: 860-774-3703

Proposed 50-Unit Condominium Development
for Shane Pollock
Louise Berry Drive
Brooklyn, CT

Statement of Use

The referenced project will result in the construction of a 1,000' cul-de-sac road with access from Louise Berry Drive, installation of public water and sanitary sewer and the construction of 51 single-family condominiums that will be "for sale" units. The sanitary sewer design has been reviewed and approved by the Brooklyn WPCA and the waterline extension and installation is approved by CT Water. The plans have been submitted to the Brooklyn Fire Marshal for review and comment.

The total area of the property is 13.497 acres and approximately half of the property will require clearing to facilitate construction. The condominiums will be constructed in groups of 2-7 units and have been positioned a minimum of 40' apart in a manner that will alleviate the necessity for excessive cuts and fills for the project.
The Brooklyn Inland Wetlands Commission approved the application at their April 2021 meeting; no clearing is proposed in the wetlands and there will be slightly over 2 acres of disturbance within the regulated upland review area.

During construction, the transport of sediment will be controlled by means of silt fencing backed with double staked haybales between the disturbed areas and the wetlands. A proposed stormwater swale that is proposed for the final stabilized site will be utilized as a temporary sedimentation swale during construction and drainage will be conveyed to a temporary sediment trap which will ultimately be the stormwater basin for the project. Fill slopes have been designed to a controllable 3H:1V grade and will be stabilized with a biodegradable erosion control fabric over seeding.

The stormwater system has been designed in accordance with the Town of Brooklyn requirements for stormwater quality and infiltration, defined per the 2004 State of CT stormwater Quality Guidelines. The design encourages overland flow where possible to preserve the integrity of the wetlands on the site. For paved areas, stormwater will be collected in a series of catch basins and pipe and conveyed to a proposed stormwater basin which has been designed to limit peak flows for up to a 100-year design storm. The basin will be constructed with an underdrain to ensure that it empties completely within 24 hours of any storm event to maintain full design capacity. In addition, by emptying completely after storm events, the design will alleviate any potential habitat for mosquitos and other vector insects.

The roadway and stormwater system will be privately owned and maintained by the homeowner's association and will not be the responsibility of the Town of Brooklyn. It is anticipated that construction of the roadway and installation of utilities will commence in 2022 and will take 3-4 months to complete. Construction of residences will commence upon the completion of the road up to the binder course and will occur in a phased manner, likely beginning with the units at the roadway terminus and working back toward Louise Berry Drive to limit activity in the vicinity of residences where families may be residing.

Killingly Engineering Associates
Civil Engineering & Surveying
P.O. Box 421 Dayville, CT 06241
Phone: 860-779-7299
Fax: 860-774-3703

Proposed 50-Unit Condominium Development
for Shane Pollock
Louise Berry Drive
Brooklyn, CT

Sanitary Report

As required by the Town of Brooklyn Zoning Regulations, this project will be served by public sanitary sewer. Each unit will be individually served and conveyed to a collection system prior to discharge to an existing Town owned sanitary manhole. The plans have been reviewed and approved by the Town of Brooklyn Water Pollution Control Authority, Alan Carpenter, P.E., the WPCA's reviewing Engineer, and Syl Pauley, P.E. from the Northeast Connecticut Council of Governments.

PROPOSED MULTI-FAMILY CONDOMINIUM DEVELOPMENT

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

PREPARED FOR:

SHANE POLLOCK

TABLE OF ZONING REQUIREMENTS		
ZONE = R-30*		
	REQUIRED	PROVIDED
Lot Area	30,000 s.f.	13.497 Acres
Front Yard Setback	50'	53.4'
Side Yard Setback	30'	48'
Rear Yard Setback	50'	257'
Building Height	35' Max.	<35'
Lot Frontage	110'	243.74'
Building Separation	40' min	40'-115'
DENSITY: 1 unit per every 5,000 s.f. 13.497 ac = 587,929 s/f - 117 units max 50 units proposed		
PARKING: 2 spaces per unit required - 100 required		
1 garage space + 1 driveway space per unit for 48 units = 96 spaces		
1 garage space + 2 driveway spaces per accessible units = 6 spaces		
+ 36 additional spaces - 140 spaces total		

Multi-family development in accordance with Section 6.E. ZONE = RA

GENERAL NOTES:

1. Ownership of the stormwater basin and drainage system shall be the Homeowner's Association. The Town of Brooklyn will not assume responsibility as such.
2. There shall be no parking along the main access roadway or side drives. Appropriate signage shall be installed accordingly.
3. The only work allowed prior to installing the perimeter sediment controls shall be clearing vegetation. No grubbing shall be allowed until the perimeter sediment controls have been installed as per plan. Call (860) 779-3411, ext. 31, for an inspection of the perimeter sediment controls. The perimeter sediment controls must be approved in writing by the IWWC Agent or a Commission member prior to commencing any other work.
4. The temporary sediment basin and swale must be at least temporarily stabilized prior to discharging any stormwater into them. Call (860) 779-3411. ext. 31, for an inspection of the temporary sediment basin and swale. The temporary stabilization of the temporary sediment basin and swale must be approved in writing by the IWWC Agent or a Commission member prior to discharging any stormwater into them.
5. Detention basin side slopes and bottom shall be mowed annually by 6/30 and 10/1 for the life of the basin, in perpetuity.
6. The Homeowner's Association shall be responsible for maintenance of the stormwater basin and its outlets in perpetuity.
7. The construction of the temporary sediment basin and swale shall begin between April 14 and September 1 to allow for vegetation to become at east temporarily established in the basin prior to discharging stormwater into the temporary sediment basin and swale. The basin and swale should be substantially completed by September 1. Construction of the temporary sediment basin and swale shall not commence between September 2 and April 13 in accordance with the provisions od Section 11.1 of the Brooklyn IWWC Regulations.

LEGEND

●	IRON PIN TO BE SET
○	IRON PIN FOUND
O DH	DRILL HOLE FOUND
□ CB	CATCH BASIN
Ø	UTILITY POLE
○ SMH	SANITARY SEWER MANHOLE
Ω	HYDRANT
---100---	EXISTING CONTOURS
(100)	PROPOSED CONTOURS
-#-	INLAND WETLANDS FLAG
-BL-	BUILDING SETBACK LINE
-S-	EXISTING SANITARY SEWER LINE
-W-	EXISTING WATER LINE
	STONE WALL
	STONE WALL REMAINS
	SILT FENCE
	175' WATERCOURSE SETBACK
	125' UPLAND REVIEW

INDEX TO DRAWINGS

PREPARED BY:

REVISIONS	
DATE	DESCRIPTION
01/04/2021	TOWN & ENGINEERING REVIEW
01/27/2021	PER BMPCA REVIEW
02/10/2021	EASE. ADDED/ZONE/CT WATER COMMENTS
03/30/2021	TOWN & ENGINEERING REVIEW
04/20/2021	IWWC APPROVAL CONDITIONS
09/15/2021	TOWN ROAD FRONTAGE
10/15/2021	CONSULTANT REVIEW & COMMISSION
10/26/2021	PHASING PLANS / E&S
08/29/2022	IWWC APPLICATION RESUBMISSION

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

April 23, 2020

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

STATE OF CONNECTICUT · NORMAND THIBEAULT JR. · No. 22834 · LICENSED PROFESSIONAL ENGINEER

RECEIVED
DEC 06 2022
By

NORMAND THIBEAULT, JR., P.E. No. 22834 — 11/04/2022 DATE

APPROVED BY THE BROOKLYN PLANNING AND ZONING COMMISSION

FINAL APPROVAL DATE _____

CHAIRMAN _____ DATE: _____

EXPIRATION DATE: _____

Per Sec. 8.26c of the Connecticut General Statutes, as amended, approval automatically expires _____ if all public improvements required by this plan are not completed by that date.

ENDORSED BY THE BROOKLYN INLAND WETLANDS COMMISSION

_____
CHAIRMAN DATE

K:\20014\Drawings\01_20014 COVER SHEET.dwg Nov 03, 2022 - 3:42 PM

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 11°34'49" W	8.68'
L2	S 09°28'15" W	25.48'
L3	N 89°46'21" W	25.92'
L4	N 00°34'43" W	23.50'
L5	S 08°18'28" W	23.74'
L6	N 44°34'04" E	99.75'
L7	N 61°24'42" E	94.87'
L8	N 31°12'36" E	33.18'
L9	S 31°12'36" W	50.87'
L10	S 61°24'42" W	98.52'
L11	S 44°34'04" W	111.92'
L12	N 77°29'37" W	10.83'

n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

n/f
Town of Brooklyn
Map 33, Lot 21

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD (SEE NOTE #9)

LOUISE BERRY DRIVE

243.74' (ROAD FRONTAGE)

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

n/f
Curt R. Hostman
Map 33, Lot 20.1

n/f
David R. Dumont
Map 33, Lot 20

n/f
William J. Purcell, Jr.
Map 33, Lot 20.3

n/f
Richard E. Bein
Map 33, Lot 17

n/f
Stephanie A. Hynes & Brennan D. Hynes
Map 33, Lot 16

n/f
Linda Atsales
Map 33, Lot 15

n/f
Mark S. Benard
Map 33, Lot 14

n/f
Cindy Scalzi & Greg Benoit
Map 33, Lot 13

n/f
Sally A. Wood
Map 33, Lot 10A

AREA = 13.497 ACRES
(587,941 S.F.)

WETLANDS

WETLANDS

N 00°29'56" E 184.56'

N 01°38'01" E 41.19'

N 00°24'05" E 500.43'

S 76°32'07" E 332.00'

S 79°14'20" E 616.00'

S 11°36'51" W 132.15'

S 13°07'11" W 78.09'

S 09°28'18" W 58.34'

S 11°25'42" W 127.58'

S 11°57'36" W 74.68'

S 11°57'36" W 86.01'

N 89°46'09" W 106.33'

N 89°46'21" W 222.52'

N 89°56'57" W 262.34'

N 86°16'31" W 199.57'

S 86°16'31" E 20.11'

30.55'

31.50'

170.35'

130.15'

50 25 0 50
GRAPHIC SCALE IN FEET

NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20–300b–1 through 20–300b–20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
   - This survey conforms to a Class "A–2" horizontal accuracy.
   - Topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - Survey Type: Property Survey
   - Boundary Determination Category: Resurvey.
2. Zone = R–30.
3. Owner of record: Shane J. Pollock & Erin F. Mancuso
   101 Mackin Drive
   Griswold, CT 06351
   See Volume 659, Page 151
4. Parcel is shown as Lot 19 on Assessors Map 33.
5. North orientation is based on North American Datum of 1982 (NAD 82) and is taken from GPS observations.
6. Elevations shown are based on an North American Vertical Datum of 1988 (NAVD 88). Contours taken from actual field survey. Contour interval = 2'.
7. Parcel lies within Flood Hazard Zone 'C' (areas of minimal flooding) as shown on FIRM Map # 090164 Panel 0005A Effective Date: Jan. 3, 1985.
8. Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in 2019.
9. Town road limit was established by referencing the CDOT 2020 Town Roads Report, which designates the length of Louise Berry Drive to be .12 miles or 634' in length.

MAP REFERENCES:

1. "Plan of site for new school in the Town of Brooklyn, Conn. – Scale: 1" = 100' Date: June 9, 1952 – Prepared by: William W. Pike, Surveyor." On file in the Brooklyn land records.
2. "Layout of Franklin Drive in the Town of Brooklyn, Conn. – Scale: 1" = 100' – Date: Oct. 15, 1959 – Prepared by: William W. Pike, Surveyor." On File in the Brooklyn land records.
3. "Subdivision Plan – property of Kurt R. & Lampi E. Hostman – Gorman Road – Brooklyn, CT – Date: Aug. 1987 – Revised to: Jan. 21, 1988 – Scale: 1" = 40' Prepared by: Louis J. Soja, Jr." On file in the Brooklyn land records.
4. "Property Survey and inland wetland field location – Pierce Memorial Baptist Home Inc. – Route 169 – Brooklyn, Connecticut – Date: Mar. 6, 1989 – Revised to: 7/25/1989 – Scale: 1" = 50' – Sheet 6 of 6 – Prepared by: Halliwey & Herbert, Civil Engineers & Surveyors." On File in the Brooklyn Land Records.
5. "Easement Plan prepared for Town of Brooklyn – Brooklyn Elementary School & Brooklyn Junior High School – Route 205 (Wauregan Road) – Brooklyn, Connecticut Date: 4/5/1999 – Scale: 1" = 40' – Sheet 2 of 2. Prepared by: KWP Associates." On File in the Brooklyn land records.
6. "Easement Plan showing proposed easement on land of Eggs, Inc. prepared for Town of Brooklyn – Wauregan Road (Route #205) – Brooklyn, Connecticut – Date: 4/20/2001 – Scale: 1" = 50' – Sheet 1 of 1 – Prepared by KWP Associates. On file in the Brooklyn land records.
7. "Property survey showing portion of land of pierce Memorial Baptist Home, Inc. 44 Canterbury Road and Vina Lane – Brooklyn, Connecticut – Date: November 26, 2007 – Scale: 1" = 100' – Sheet 1 of 2 – Prepared by Dicesare Bentley." On file in the Brooklyn land records.
8. "Perimeter Survey prepared for Eggs Inc. – Gorman Road / Franklin Drive / Wauregan Road – Brooklyn, Connecticut – Date: Oct. 2014 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." On file in the Brooklyn land records.
9. "Boundary Line Agreement prepared for Brooklyn Center Complex, BLB, LLC and Vina Land, LLC – Wauregan Road & Vina Lane – Brooklyn, Connecticut – Date: December 11, 2019 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." Not on file.

DATE	DESCRIPTION
08/29/2022	IWWC APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- UTILITY POLE
- CATCH BASIN
- SANITARY MANHOLE
- EXISTING CONTOURS
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

I HAVE REVIEWED THE FLAGGED INLAND WETLANDS LOCATION SHOWN ON THIS PLAN AND THEY APPEAR TO BE SUBSTANTIALLY CORRECT.

Certified Soil Scientist — Date

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

GREG A. GLAUDE, L.S. — LIC. NO. 70191 — 11.04.2022 — DATE

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

STATE OF CONNECTICUT · GREG A. GLAUDE · No. 70191 · LICENSED LAND SURVEYOR

PROPERTY SURVEY

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE

BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 50'	DESIGN: NET
SHEET: 2 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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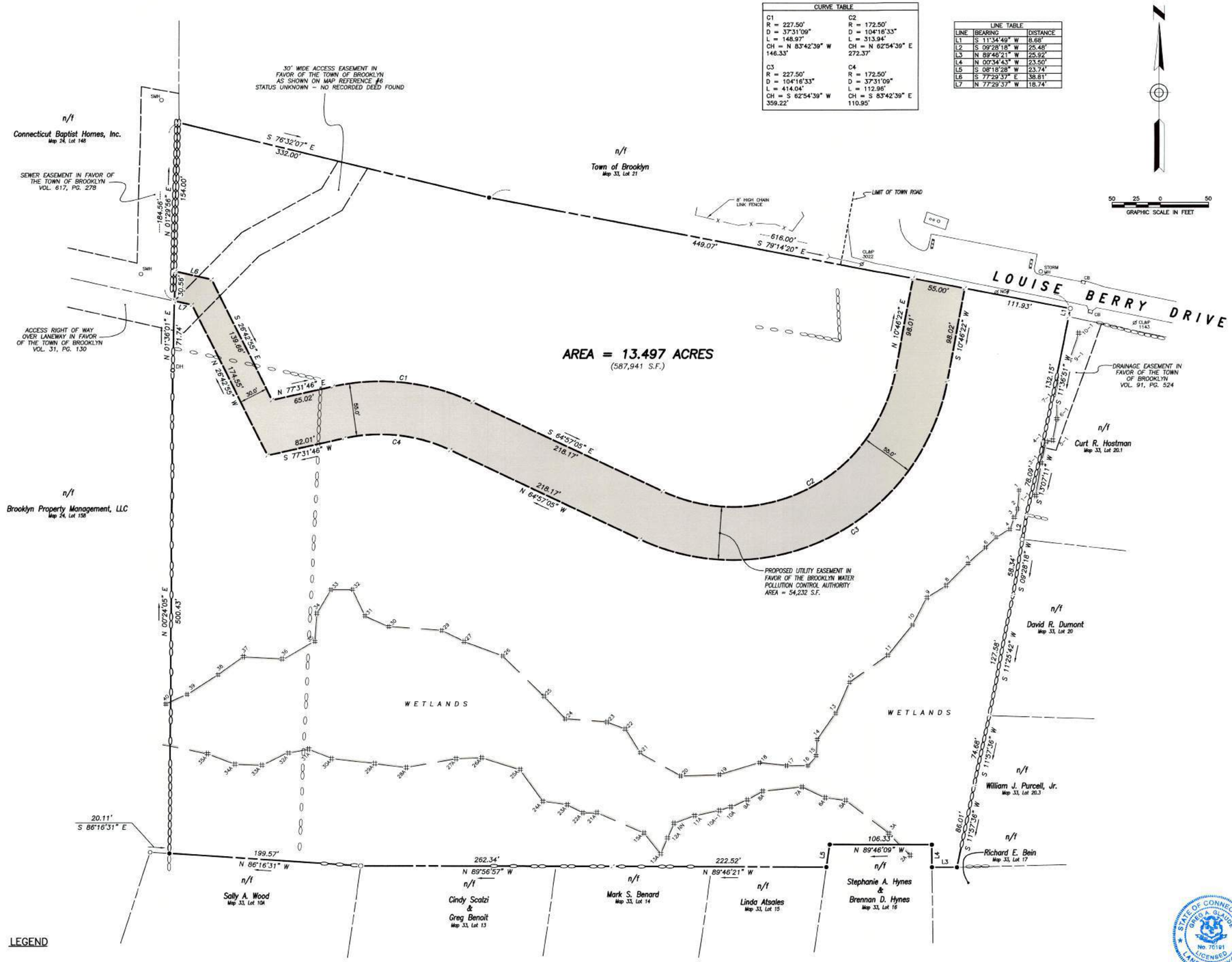
CURVE TABLE	
C1 R = 227.50' D = 37°31'09" L = 148.97' CH = N 83°42'39" W 146.33'	C2 R = 172.50' D = 104°16'33" L = 313.94' CH = N 62°54'39" E 272.37'
C3 R = 227.50' D = 104°16'33" L = 414.04' CH = S 62°54'39" W 359.22'	C4 R = 172.50' D = 37°31'09" L = 112.96' CH = S 83°42'39" E 110.95'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 11°34'49" W	8.68'
L2	S 09°28'18" W	25.48'
L3	N 89°46'21" W	25.92'
L4	N 09°34'43" W	23.50'
L5	S 08°18'28" W	23.74'
L6	S 77°29'37" E	38.81'
L7	N 77°29'37" W	18.74'



LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- UTILITY POLE
- CATCH BASIN
- SANITARY MANHOLE
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

NOTES:

1. This survey has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20–300b–1 through 20–300b–20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 26, 1996;
   - This survey conforms to a Class "A–2" horizontal accuracy.
   - Topographic features conform to a Class "T–2", "V–2" vertical accuracy.
   - Survey Type: Easement Map.
   - Boundary Determination Category: Resurvey.
2. Zone = R–30.
3. Owner of record: Shane j. Pollock & Erin F. Mancuso
   101 Mackin Drive
   Griswold CT 06351
   See Volume 659, Page 151
4. Parcel is shown as Lot 19 on Assessors Map 33.
5. North orientation is based on North American Datum of 1982 (NAD 82) and is taken from GPS observations.
6. Parcel lies within Flood Hazard Zone 'C' (areas of minimal flooding) as shown on FIRM Map # 090164 Panel 0005A Effective Date: Jan. 3, 1985.
7. Wetlands shown were delineated in the field by Joseph Theroux, Certified Soil Scientist, in 2019.

MAP REFERENCES:

1. "Plan of site for new school in the Town of Brooklyn, Conn. – Scale: 1" = 100' Date: June 9, 1952 – Prepared by: William W. Pike, Surveyor." On file in the Brooklyn land records.
2. "Layout of Franklin Drive in the Town of Brooklyn, Conn. – Scale: 1" = 100' – Date: Oct. 15, 1959 – Prepared by: William W. Pike, Surveyor." On File in the Brooklyn land records.
3. "Subdivision Plan – property of Kurt R. & Lempi E. Hostman – Gorman Road – Brooklyn, CT – Date: Aug. 1987 – Revised to: Jan. 21, 1988 – Scale: 1" = 40' Prepared by: Louis J. Soja, Jr." On file in the Brooklyn land records.
4. "Property Survey and inland wetland field location – Pierce Memorial Baptist Home Inc. – Route 169 – Brooklyn, Connecticut – Date: Mar. 6, 1989 – Revised to: 7/25/1989 – Scale: 1" = 50' – Sheet 6 of 6 – Prepared by: Hallisey & Herbert, Civil Engineers & Surveyors." On File in the Brooklyn Land Records.
5. "Easement Plan prepared for Town of Brooklyn – Brooklyn Elementary School & Brooklyn Junior High School – Route 205 (Wauregan Road) – Brooklyn, Connecticut Date: 4/5/1999 – Scale: 1" = 40' – Sheet 2 of 2. Prepared by: KWP Associates." On File in the Brooklyn land records.
6. "Easement Plan showing proposed easement on land of Eggs, Inc. prepared for Town of Brooklyn – Wauregan Road (Route #205) – Brooklyn, Connecticut – Date: 4/20/2001 – Scale: 1" = 50' – Sheet 1 of 1 – Prepared by KWP Associates. On file in the Brooklyn land records.
7. "Property survey showing portion of land of pierce Memorial Baptist Home, Inc. 44 Canterbury Road and Vina Lane – Brooklyn, Connecticut – Date: November 26, 2007 – Scale: 1" = 100' – Sheet 1 of 2 – Prepared by Dicesare Bentley." On file in the Brooklyn land records.
8. "Perimeter Survey prepared for Eggs Inc. – Gorman Road / Franklin Drive / Wauregan Road – Brooklyn, Connecticut – Date: Oct. 2014 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." On file in the Brooklyn land records.
9. "Boundary Line Agreement prepared for Brooklyn Center Complex, BLB, LLC and Vina Land, LLC – Wauregan Road & Vina Lane – Brooklyn, Connecticut – Date: December 11, 2019 – Scale: 1" = 125' – Sheet 1 of 1 – Prepared by Archer Surveying, LLC." Not on file.

DATE	REVISIONS
08/29/2022	IWWC APPLICATION RESUBMISSION
10/28/2021	PHASING / EAS
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

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

GREG A. GLAUDE, L.S. LIC. NO. 70191 DATE 11-04-2022

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SEAL AND SIGNATURE OF THE LAND SURVEYOR.

STATE OF CONNECTICUT · GREG A. GLAUDE · No. 70191 · LICENSED LAND SURVEYOR

EASEMENT MAP

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE

BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 50'	DESIGN: NET
SHEET: 3 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

EXISTING SANITARY SEWER LINE

NOTE: PRIOR TO CONSTRUCTION, TEST PITS SHALL BE EXCAVATED IN THE VICINITY OF THE WATER LINE AND SANITARY SEWER UNDER THE GUIDANCE OF THE BROOKLYN WPCA & CT WATER

SMH

EXISTING SMH
T/F = 236.9
F/L = 227.8

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN - NO RECORDED DEED FOUND

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

332.00'

EXISTING WATER LINE

28,000 S.F. RECREATION AREA

PROVIDE JUTE NETTING OR TURF REINFORCEMENT MAT

SILT FENCE BACKED WITH WOOD CHIP BERM STRAW WATTLES OR COMPOST FILTER SOCKS

PROPOSED MULCHED PLAYSCAPE AREA- 40'X60'

CRUSHED STONE WALKWAY

184.56'

71.74'

n/f
Town of Brooklyn
Map 33, Lot 21

8' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

PAINTED CROSSWALK

SITE ENTRANCE SIGN

EXISTING HYDRANT

EXISTING WATER LINE

STORM MH

616.00'

LOUISE BERRY DRIVE

VENTED DUMPSTERS

MAIL KIOSK

HYDRANT

NOTE: SEE SHEET 6 FOR EROSION AND SEDIMENTATION CONTROLS

GRAPHIC SCALE IN FEET
40 40 0 40

LEGEND
- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- CATCH BASIN
- UTILITY POLE
- SANITARY SEWER MANHOLE
- HYDRANT
- EXISTING CONTOURS
- PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- STONE WALL
- STONE WALL REMAINS
- 175' WATERCOURSE SETBACK
- 125' UPLAND REVIEW

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

BLOCK RETAINING WALL 1
TOP = 318.0
BOTTOM = 314.0

n/f
Curt R. Hostman
Map 33, Lot 20.1

GARAGE
GARAGE

ACCESSIBLE UNITS

BLOCK RETAINING WALL 2
TOP = 313.50
BOTTOM = 310.00

PROPOSED UTILITY EASEMENT IN FAVOR OF THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY

PROPOSED ROAD

BITUMINOUS CONCRETE CURBING

5' CONCRETE SIDEWALK

8" HDPE ROOF LEADER (TYP)

CONCRETE SIDEWALK

WOOD GUIDE RAIL

BITUMINOUS CONCRETE CURBING

FAVED APRON

GRAVEL MAINTENANCE ACCESS

FOREBAY

5' DEPTH FOREBAY
VOLUME BELOW OUTLET = MIN. 10% WQV

EXTENDED DETENTION SHALLOW WETLAND SYSTEM
MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET)
LOW MARSH WATER DEPTH <6"
HIGH MARSH WATER DEPTH 6"-18"

MICROPOOL - 3.5' IN DEPTH IN FRONT OF OUTLET STRUCTURE

ARC OF FIELD STONES TO FURTHER DISSIPATE OUTLET FLOWS, BASE WIDTH OF 4', CENTERLINE HEIGHT OF 1.5', PARABOLIC CROSS SECTION

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

100' OVERFLOW WEIR ELEV = 248.0

3' WIDE EARTH BERMS ACROSS BOTTOM OF BASIN TO INCREASE FLOW PATH AND ENHANCE POLLUTANT REMOVAL

PROVIDE TURF REINFORCEMENT MAT

125' HIGH WATERCOURSE

PROVIDE STRAW WATTLES OR COMPOST FILTER SOCKS WITH WIRE BACKED SILT FENCE

UNDISTURBED WOODED BUFFER

WET SWALE WITH SCATTERED FIELD STONES BOTTOM WIDTH 8' W/2:1 SIDE SLOPES, PLANT WITH WETLANDS SEED MIX AND PLACE 6"-8" DIAMETER FIELD STONES ON BOTTOM & SLOPE SIDES WITH 2"-3" GAPS BETWEEN STONES

30 L.F. - 18" HDPE @0.5%

20 L.F. MODIFIED RIPRAP

FES-1

FES-2

OUTLET STRUCTURE #1

8' WIDE BERM ELEV = 278.0

WETLANDS

AREA = 13.497 ACRES
(587,941 S.F.)

INV = 242.0

MODIFIED RIPRAP LEVEL SPREADER
BTTM = 241.00

10 L.F. - 15" HDPE @2.63%

ROOF DRAIN

PROPOSED CLEARING LIMITS

EXTENDED DETENTION SHALLOW WETLAND SYSTEM
MIN. 3:1 LENGTH TO WIDTH RATIO (INLET TO OUTLET)
LOW MARSH WATER DEPTH <6"
HIGH MARSH WATER DEPTH 6"-18"

WETLANDS

3' WIDE EARTH BERMS ACROSS BOTTOM OF BASIN TO INCREASE FLOW PATH AND ENHANCE POLLUTANT REMOVAL

6'x8' MODIFIED RIPRAP OVERFLOW WEIR & 6' WIDE MODIFIED RIPRAP SWALE, 5' BOTTOM WIDTH, 2:1 SIDE SLOPES

PROVIDE STRAW WATTLES OR COMPOST FILTER SOCKS WITH WIRE BACKED SILT FENCE

n/f
David R. Dumont
Map 33, Lot 20

n/f
William J. Purcell, Jr.
Map 33, Lot 20.3

n/f
Richard E. Bein
Map 33, Lot 17

199.57'

262.34'

222.52'

106.33'

86.01'

74.68'

127.58'

58.34'

132.15'

n/f
Sally A. Wood
Map 33, Lot 10A

n/f
Cindy Scalzi & Greg Benoit
Map 33, Lot 13

n/f
Mark S. Benard
Map 33, Lot 14

n/f
Linda Atsales
Map 33, Lot 15

n/f
Stephanie A. Hynes & Brennan D. Hynes
Map 33, Lot 16

DATE	DESCRIPTION
08/29/2022	IWWC APPLICATION RESUBMISSION
10/26/2021	PHASING / EA5
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09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

SITE PLAN
PREPARED FOR
SHANE POLLOCK
LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

STATE OF CONNECTICUT NORMAND R. THIBEAULT JR. No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E.
LIC. #PEN 0022834
11/04/2022
DATE

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 40'	DESIGN: NET
SHEET: 4 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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n/f
Connecticut Baptist Homes, Inc.
Map 24, Lot 148

n/f
Town of Brooklyn
Map 33, Lot 21

n/f
Brooklyn Property Management, LLC
Map 24, Lot 158

n/f
Curt R. Hostman
Map 33, Lot 20.1

n/f
David R. Dumont
Map 33, Lot 20

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #6 STATUS UNKNOWN – NO RECORDED DEED FOUND

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

LIMITS OF 28,000 S.F. RECREATION AREA

EXISTING SANITARY SEWER LINE

EXISTING SMH T/F = 236.9 F/L = 227.8

EXISTING WATER LINE

5' HIGH CHAIN LINK FENCE

LIMIT OF TOWN ROAD

PROPOSED SITE SIGN LOCATION

EXISTING HYDRANT

EXISTING WATER LINE

STORM MH

CL&P 3022

LOUISE BERRY DRIVE

332.00'

616.00'

184.58'

71.74'

500.43'

132.15'

127.58'

58.34'

NEW ENGLAND RESTORATION MIX

PROVIDE ARBORVITAE PRIVACY ROW

THIS AREA TO BE USED FOR TEMPORARY SOIL STOCKPILE DURING CONSTRUCTION SHALL BE RESTORED WITH NEW ENGLAND EROSION CONTROL MIX (SEE SHEET 14)

PROPOSED MULCHED PLAYSCAPE AREA

CRUSHED STONE WALKWAY

PROPOSED LIGHT

BITUMINOUS CONCRETE CURBING

LEATHERLEAF VIBURNUM

PAVED APRON

GRAVEL MAINTENANCE ACCESS

STORMWATER BASIN LOCATION

PROVIDE NEW ENGLAND WETLANDS SEED MIX FOR BASIN BOTTOM (SEE SHEET 6)

RETAINING WALL (TYP)

ADDITIONAL PARKING (TYP)

5' CONCRETE SIDEWALK

PROPOSED UTILITY EASEMENT IN FAVOR OF THE BROOKLYN WATER POLLUTION CONTROL AUTHORITY

LAWN

MAIL KIOSK

LIGHT

DUMPSTER

TAPER TO 24'

BLOCK RETAINING WALL (TIERED) (FENCE OR RAIL ON TOP OF WALL)

WOOD GUIDE RAIL

BITUMINOUS CONCRETE CURBING

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

PLANT WHITE PINE TREES AS NEEDED TO PROVIDE SUFFICIENT SCREENING TO ADJACENT PROPERTY

ACCESSIBLE UNITS

BLOCK RETAINING WALLS (TIERED)

PROPOSED LIGHT (TYP)

NEW ENGLAND RESTORATION MIX

UNDISTURBED WOODED BUFFER

NOTE: DEVELOPER SHALL SELECTIVELY REMOVE DEAD, DAMAGED AND INVASIVE VEGETATION FROM PROPOSED CLEARING LIMITS TO WETLANDS BOUNDARY

PROPOSED CLEARING LIMITS

MODIFIED RIPRAP LEVEL SPREADER

WETLANDS

STORMWATER BASIN LOCATION

NEW ENGLAND RESTORATION MIX

NEW ENGLAND RESTORATION MIX

NEW ENGLAND RESTORATION MIX

INKBERRY

PURPLE SAND CHERRY

12' (TYP)

24"

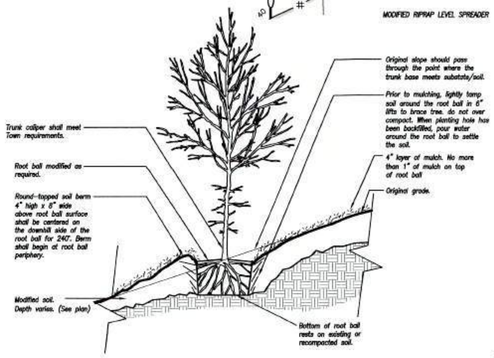
LOAM AND SEED ALL DISTURBED AREAS

TYPICAL UNIT LANDSCAPING DETAIL

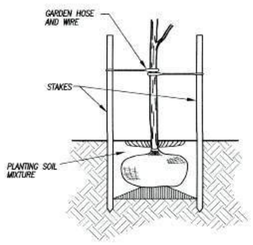
GRAPHIC SCALE IN FEET
40 40 0 40

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DH DRILL HOLE FOUND
- CB CATCH BASIN
- UTILITY POLE
- SMH SANITARY SEWER MANHOLE
- HYDRANT
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- STONE WALL
- STONE WALL REMAINS

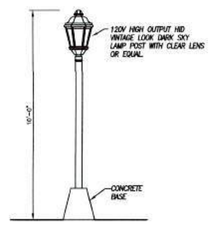


TREE ON SLOPE DETAIL
NOT TO SCALE

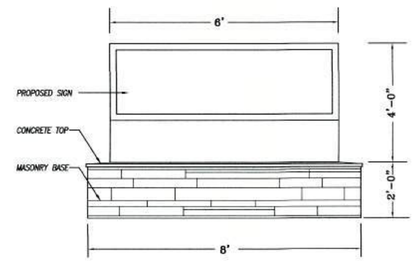


REFERENCE: GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL

PLANTING CROSS SECTION FOR TREES UNDER 20'
NOT TO SCALE



LIGHT POLE DETAIL
NOT TO SCALE
NOTE: BUILDING MOUNTED LIGHTING SHALL BE FULL CUTOFF FIXTURES



SITE SIGN DETAIL
NOT TO SCALE

LANDSCAPE SCHEDULE

BOTANICAL NAME	COMMON NAME	SIZE	NUMBER
Cornus kousa	Korean Flowering Dogwood Pink	2.5" cal.	10
Pyrus calleryna	Flowering Pear	2.5" cal.	23
Ilex glabra	Inkberry 'Shamrock'	1 gal.	102
Prunus x cistena	Purple Sand Cherry	1 gal.	51
Thuja occidentalis	Arborvitae "Emerald Green"	4' height	54
Viburnum rhytidophyllum	Leatherleaf Viburnum	4'	8

NOTE: Provide Cornus kousa at ends of drives and around cul-de-sac
Provide Pyrus calleryna for street trees

STATE OF CONNECTICUT NORMAND THIBEAULT, JR. NO. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E.
LIC #PEN 0022834
11/04/2022
DATE

DATE	DESCRIPTION
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09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

LAYOUT & LANDSCAPING PLAN
PREPARED FOR
SHANE POLLOCK
LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
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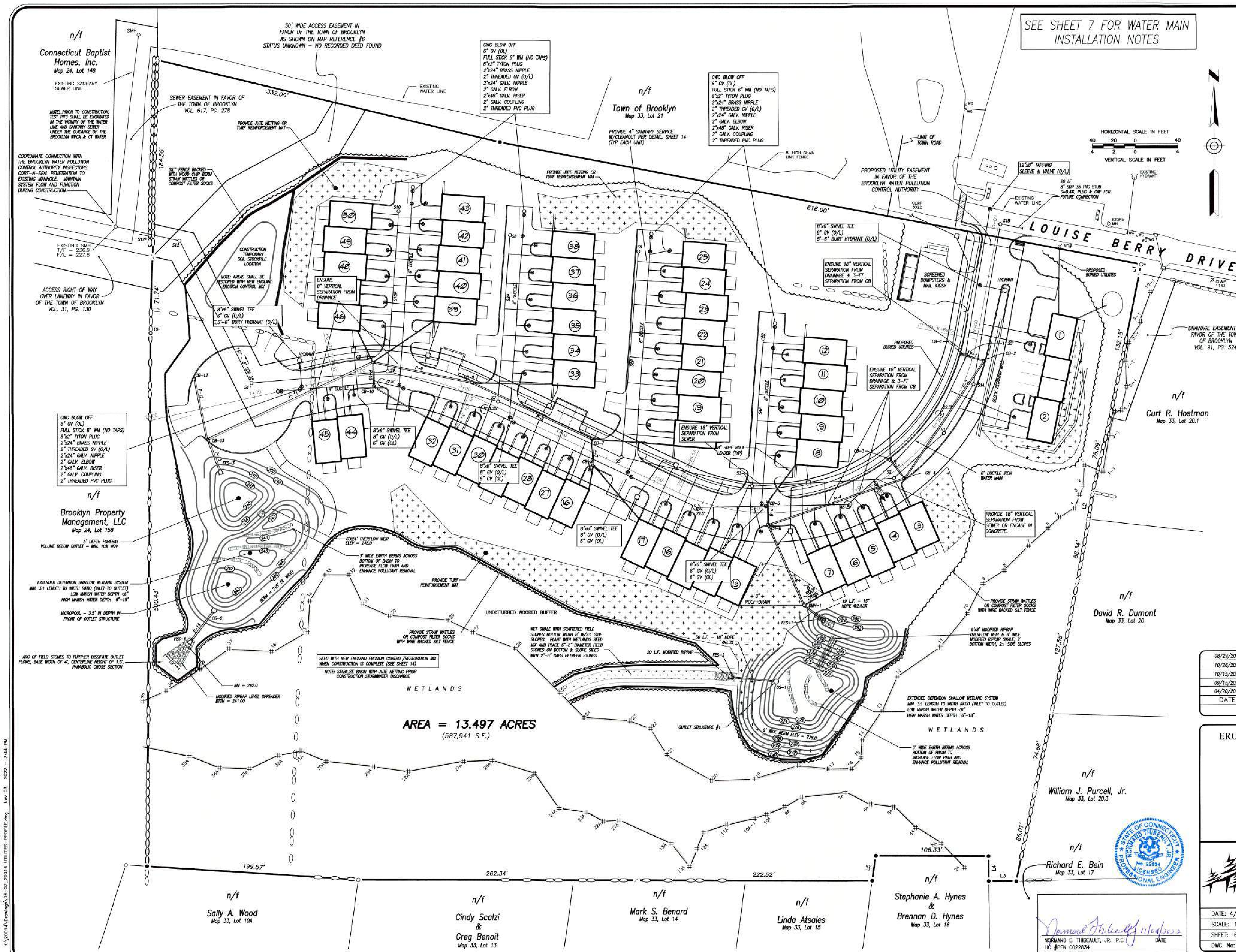

DRAINAGE GENERAL NOTES:

1. ALL DRAINAGE PIPE SHALL BE CORRUGATED HIGH DENDITY POLYETHYLENE (HDPE), SMOOTH INTERIOR AS MANUFACTURED BY ADVANCED DRAINAGE SOLUTIONS OR APPROVED EQUAL.
2. CATCH BASIN TOPS SHALL BE TYPE "C" UNLESS OTHERWISE NOTED.
3. ALL BASINS SHALL BE INSTALLED WITH 4' SUMPS.
4. PROVIDE 4' SUMP AND HOODED OUTLET AT TERMINATION CATCH BASIN PRIOR TO DISCHARGE INTO STORMWATER BASIN.

SANITARY SEWER GENERAL NOTES:

1. ALL SANITARY SEWER MAINS SHALL BE 8" SDR 35 PVC.
2. SANITARY SEWER LATERALS TO RESIDENCES SHALL BE 4" SDR 35 PVC. AND SHALL BE INSTALLED WITH A MINIMUM 42" OF COVER AND A SLOPE OF 2%.
3. LATERALS SHALL NOT BE INSTALLED DIRECTLY TO OR WITHIN 5' OF A SANITARY MANHOLE.
4. SANITARY SEWER SYSTEM CONSTRUCTION IS SUBJECT TO INSPECTION AND APPROVAL BY THE BROOKLYN WPCA. THE CONTRACTOR SHALL SCHEDULE A PRE CONSTRUCTION MEETING WITH THE BROOKLYN WPCA AND NOTIFY THE BROOKLYN WPCA A MINIMUM OF 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
5. AS-BUILT DRAWINGS SHALL BE SUBMITTED AND APPROVED PRIOR TO PROJECT ACCEPTANCE.

WATER MAIN & SERVICES:

1. ALL WATER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE IN ACCORDANCE WITH CT WATER REQUIREMENTS.
2. TAPS INTO EXISTING MAINS SHALL BE UNDER THE SUPERVISION OF CT WATER REPRESENTATIVES.
3. WATER SERVICE CONNECTIONS TO THE WATER MAIN SHALL BE PER CT WATER REQUIREMENTS. SERVICES FROM SHUT OFF VALVES TO RESIDENCES SHALL BE 1" HDPE.
4. HYDRANT REQUIREMENTS AND LOCATIONS SHALL BE DETERMINED BY THE TOWN OF BROOKLYN FIRE MARSHAL.

TOWN OF BROOKLYN WATER POLLUTION CONTROL AUTHORITY (BWPCA) NOTES:

1. PRIOR TO ANY WORK BEING CONDUCTED SANITARY SEWER, CONTRACTOR SHALL CONTACT ALAN CARPENTER, P.E., REPRESENTATIVE FOR THE BROOKLYN WPCA
PHONE: 860-208-3394 OR 508-659-7020
EMAIL AT ACARPENTER@CPHCORP.COM
2. THE MAIN TRUNK LINE THROUGH THE SITE BE DEDICATED TO THE BWPCA UNDER A 30 FOOT WIDE EASEMENT (15 FEET EACH SIDE OF THE LINE) FOR OWNERSHIP, CONTROL AND MAINTENANCE RESPONSIBILITY. THE PERMANENT EASEMENT OVER THE MAIN TRUNK LINE WILL NEED TO BE CREATED, APPROVED BY BWPCA AND RECORDED IN THE TOWN OF BROOKLYN LAND RECORDS PRIOR TO ANY CONNECTIONS TO THE SYSTEM.
3. THE EASTERN TERMINUS MANHOLE IN LOUISE BERRY DRIVE BE A MINIMUM OF 8 FEET DEEP FROM TOP OF FRAME TO INVERT AND AN 8 INCH SDR 35 STUB BE INSTALLED A MINIMUM OF 1 PIPE LENGTH (20 FEET) AT 0.4 FT/FT SLOPE AND CAPPED IN THE EAST FACING INVERT.
4. THE ENTIRE SYSTEM BE CONSTRUCTED/INSTALLED IN ACCORDANCE WITH THE TOWN OF BROOKLYN WPCA CONSTRUCTION STANDARDS BY THE DEVELOPER. THE SYSTEM TO BE INSPECTED BY BWPCA REPRESENTATIVES DURING CONSTRUCTION, TESTED BY THE DEVELOPER AND CERTIFIED BY HIS ENGINEER AND 'CLEARED FOR USE' BY BWPCA REPRESENTATIVES BEFORE THE SYSTEM CAN BE USED.
5. UNLESS PROVIDED WITH DOCUMENTED PROOF OF ANTICIPATED USAGE, THE BWPCA IS CALCULATING THE ANTICIPATED USAGE AT 22,950 GALLONS PER DAY. (51 UNITS X 450 GPD/PER UNIT).
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE SEWER SYSTEM, THE BWPCA REQUIRES A PRE-CONSTRUCTION MEETING BE SCHEDULED BY THE DEVELOPER, TO INCLUDE AT A MINIMUM, AN INVITE TO THE BWPCA 72 HOURS MINIMUM IN ADVANCE OF THE MEETING AND ATTENDANCE BY THE DEVELOPER, HIS ENGINEER, THE GENERAL CONTRACTOR AND UTILITY CONTRACTOR (IF DIFFERENT ENTITIES).
7. IT IS UNDERSTOOD THAT ALL COSTS RELATING TO THE CREATION OF THIS UTILITY EXTENSION, AND THE LEGAL CONTROL AND DOCUMENTATION OF IT SHALL BE BORNE ENTIRELY BY THE DEVELOPER.
8. IT IS EXPECTED THAT CONNECTION FEES PER UNIT, BE PAID PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND THE ONLY GUARANTEE OF SYSTEM CAPACITY AVAILABILITY IS RECEIPT OF THE CONNECTION FEES BY THE BWPCA.

GENERAL NOTES:

1. An as-built plan showing locations of all roadways, drainage and utilities shall be completed and filed with the town at the completion of the project infrastructure.
2. Ownership of the stormwater basin and drainage system shall be the Homeowner's Association. The Town of Brooklyn will not assume responsibility as such.
3. There shall be no parking along the main access roadway or side drives. Appropriate signage shall be installed accordingly.

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10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

EROSION CONTROL AND UTILITIES PLAN

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
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SHEET: 6 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

DRAINAGE PIPE SCHEDULE

LABEL	LENGTH	SLOPE	DIAMETER	MATERIAL
P1	20'	2.0%	12"	HDPE
P2	128.7'	9.75%	15"	HDPE
P3	20'	2.0%	12"	HDPE
P4	131.1'	9.35%	15"	HDPE
P5	20'	2.0%	12"	HDPE
P6	83'	4.2%	15"	HDPE
P7	23'	2.17%	15"	HDPE
P8	123.7'	2.96%	15"	HDPE
P9	91.2'	10.04%	15"	HDPE
P10	20'	1.0%	12"	HDPE
P11	172'	4.6%	18"	HDPE
P12	58'	1.1%	15"	HDPE
P13	36'	2.77%	18"	RCP
P14	80'	0.63%	15"	RCP

SANITARY STRUCTURE SCHEDULE

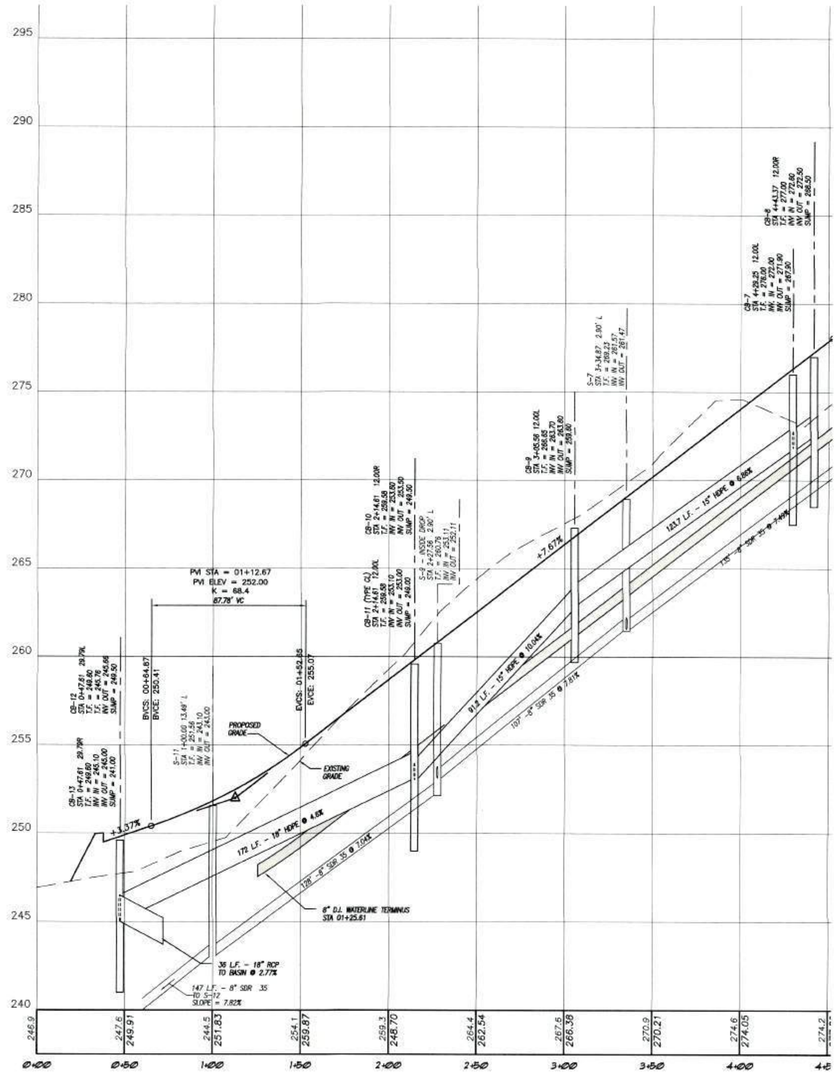
LABEL	T.F	F/Lout	F/Lin
S4	296.50	292.50	
S6	289.20	285.20	
S8	277.50	273.50	
S10	267.80	263.80	
S11	251.56	243.00	243.10
S12	240.00	231.40	

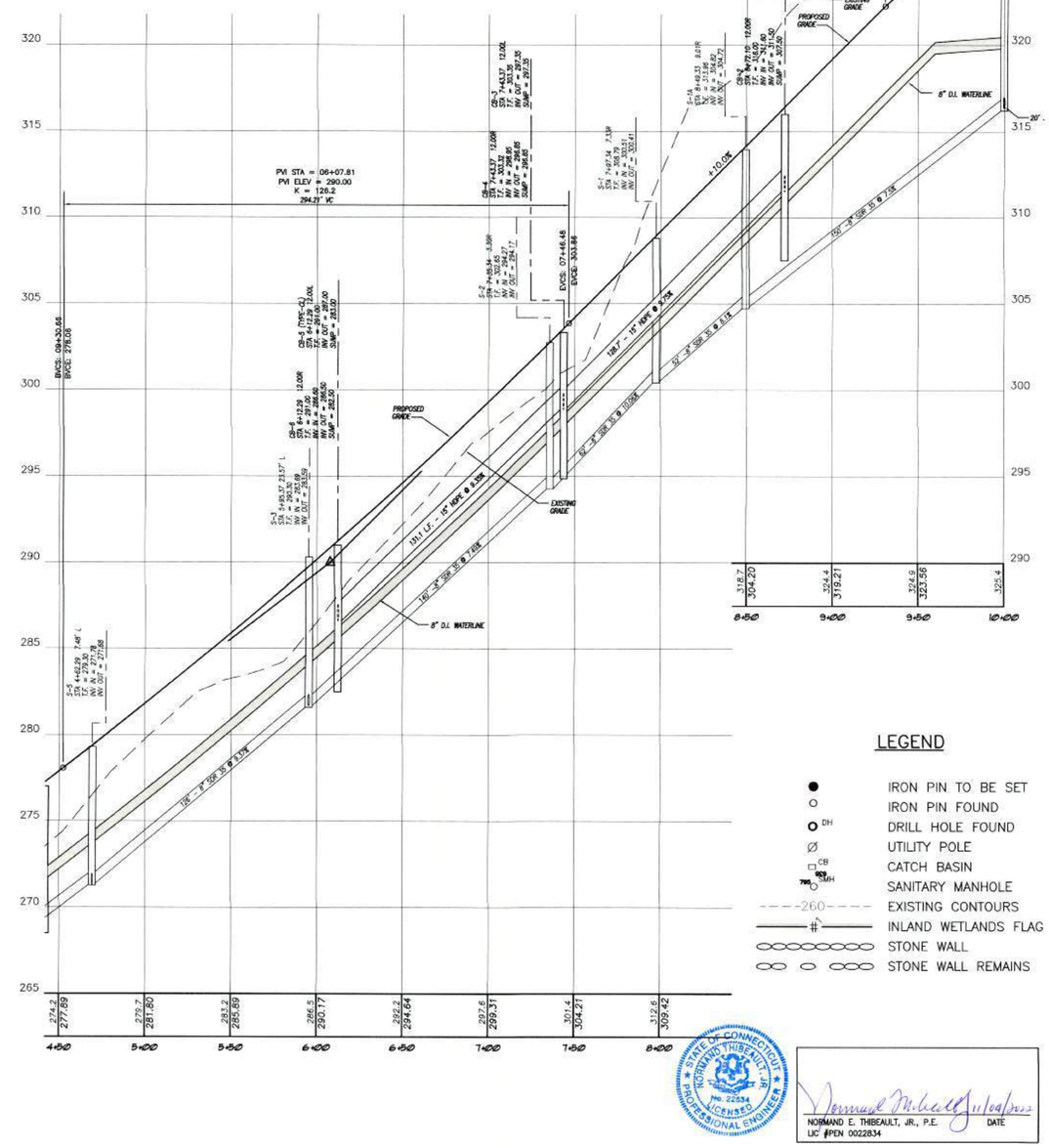
SANITARY PIPE SCHEDULE

LABEL	LENGTH	SLOPE
S4P	137'	5.68%
S6P	190'	6.42%
S8P	154'	7.06%
S10P	148'	5.07%
S12P	60'	6.00%

FLARED END SECTIONS

FES-1	INV = 283.0	15" HDPE
FES-2	INV = 169.50	15" HDPE
FES-3	INV = 244.00	18" RCP
FES-4	INV = 242.00	18" RCP





WATER MAIN INSTALLATION NOTES:

1. PROJECT MUST BE BUILT TO CONNECTICUT WATER COMPANY SPECIFICATIONS.
2. CLASS 52 DUCTILE IRON PIPE REQUIRED.
3. COPPER AND/OR DUCTILE IRON SERVICE LATERAL MATERIAL REQUIRED.
4. GATE VALVES OPEN LEFT.
5. FIRE HYDRANTS OPEN LEFT. HYDRANTS ARE 5.5' BURY DEPTH. CT WATER COMPANY WILL FURNISH MATERIALS INCLUDING TEE, VALVE, PIPE, HYDRANT AND ACCESSORIES. FIRE HYDRANTS TO BE INSTALLED WITH FACE OF HYDRANT 3-FEET OFF FACE OF CURB. HYDRANTS ARE NOT TO BE INSTALLED IN SIDEWALKS. WHERE 3-FEET CANNOT BE OBTAINED, INSTALL HYDRANT BEHIND SIDEWALK UNLESS OTHERWISE NOTED OR AS DIRECTED BY A CT WATER COMPANY PROJECT MANAGER. 10-FEET HORIZONTAL SEPARATION REQUIRED BETWEEN HYDRANTS, SEWER MANHOLES AND STORM DRAINS. ***FIRE HYDRANTS TO BE INSTALLED WITH FINISH GRADE AT THE BURY LINE CAST INTO THE LOWER BARREL. CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENTS OF WATER MAIN AND LATERAL ELEVATION TO ACHIEVE PROPER BURY DEPTH. ANY COSTS RELATED TO ADJUSTMENTS REQUIRED BY CT WATER COMPANY WILL BE THE RESPONSIBILITY OF THE INSTALLATION CONTRACTOR AND/OR APPLICANT OF RECORD.
6. ALL WATER MAIN PIPING AND APPURTENANCES MUST BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA ANSI-AWWA C105/A21.5-99(10). POLYETHYLENE ENCASEMENT SHALL BE V-BIO ENHANCED POLYETHYLENE ENCASEMENT ONLY AND CONSIST OF THREE CO-EXTRUDED LAYERS OF LINEAR LOW-DENSITY POLYETHYLENE (LLDPE) FILM THAT ARE FUSED INTO ONE.
7. MEGALUG RESTRAINTS REQUIRED ON ALL FITTINGS, BENDS, OFFSETS, TEES, GATE VALVES AND HYDRANTS.
8. FIELD LOK (U.S. PIPE) OR SURE STOP 350 (MCWANE) RESTRAINING GASKETS ARE REQUIRED 2 PIPE JOINTS BEFORE AND AFTER EACH FITTING AND ON THE LAST 3 PIPE LENGTHS ON DEAD ENDS.
9. THRUST BLOCKING IS REQUIRED ON ALL BENDS, TEES, OFFSETS, HYDRANTS AND DEAD ENDS.
10. ALL WATER MAINS SHALL BE INSTALLED TO A DEPTH OF 4-FEET OF COVER BASED ON THE ROADWAY GRADE, EXCEPT AS NOTED.
11. 3-FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND ANY OTHER UTILITY/UNDERGROUND STRUCTURE. 10-FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND SEWER/SEPTIC ("SEWER")*** SLEEVE REQUIRED WHERE WATER CROSSES SEWER IF WATER IS BELOW SEPTIC AND/OR WHEN 18" VERTICAL SEPARATION CANNOT BE ACHIEVED WHEN WATER IS ABOVE SEWER. 4-FEET MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER MAIN AND DRAINAGE WHEN AT LIKE ELEVATIONS.
12. WATER MAINS TO BE DEFLECTED UNDER ALL STORM DRAINS UNLESS OTHERWISE NOTED OR AS DIRECTED BY A CT WATER COMPANY PROJECT MANAGER. A VERTICAL CLEARANCE OF 18" TO BE MAINTAINED BETWEEN STORM DRAIN AND WATER MAINS. THE CONTRACTOR IS RESPONSIBLE FOR PROPER COMPACTION AROUND AND UNDER EXISTING DRAINAGE FACILITIES WHICH MAY INCLUDE REMOVAL AND RESETTING TO PROPER GRADE.
13. ANGLE OF BENDS TO BE FIELD DETERMINED.
14. MAXIMUM ALLOWABLE DEFLECTION PER FULL LENGTH PUSH-ON JOINT FOR 4" TO 12" IS FIVE (5) DEGREES AND THREE (3) DEGREES FOR 14" AND GREATER DUCTILE IRON PIPE.
15. EXISTING SERVICES TO SITE THAT WILL NO LONGER BE USED MUST BE TERMINATED AT THE WATER MAIN BY EXPOSING AND SHUTTING OFF THE CORPORATION VALVE. THE LINE MUST BE SEVERED IMMEDIATELY AFTER THE CORPORATION VALVE. SAID SERVICES MUST BE SHOWN ON PLANS.
16. WHERE A WATER SUPPLY WELL FOR ANY PURPOSE EXISTS OR IS APPROVED WITHIN THE LIMITS OF THIS PROJECT, ALL SERVICE LINES CONNECTED TO THE PUBLIC WATER SUPPLY REQUIRE A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER (RPD), AND MUST MEET THE REQUIREMENTS OF SEC.19A-209A OF THE CONNECTICUT GENERAL STATUTES ("CGS"), AND SEC. 19-13-B38A OF THE PUBLIC HEALTH CODE.
17. WHERE AN AIR RELIEF IS REQUIRED, CT WATER COMPANY WILL PERFORM TAP AND INSTALL WHILE THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR THE EXCAVATION AND RESTORATION UNLESS OTHERWISE NOTED. LABOR AND MATERIALS FOR THE INSTALLATION(S) WILL BE CHARGED TO THE PROJECT.
18. WHEN THE INSTALLATION OF UNDERGROUND INFRASTRUCTURE DEVIATES FROM THE CT WATER COMPANY APPROVED PLANS(S), THE APPLICANT, AT HIS/HER COST, WILL BE HELD LIABLE FOR THE RELOCATION OF INFRASTRUCTURE AS REQUIRED TO THE SATISFACTION OF THE CT WATER COMPANY. FAILURE TO CORRECT ANY DEVIATION DEEMED UNACCEPTABLE TO THE CT WATER COMPANY WILL RESULT IN LITIGATION.

HORIZONTAL SCALE IN FEET
40 20 0 40

VERTICAL SCALE IN FEET
4 2 0 4

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND (DH)
- UTILITY POLE
- CATCH BASIN (CB)
- SANITARY MANHOLE (SMH)
- EXISTING CONTOURS (260)
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

DATE	DESCRIPTION
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10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	WWC APPROVAL CONDITIONS

REVISIONS

ROAD PROFILE

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
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STATE OF CONNECTICUT NORMAND E. THIBEAULT JR. No. 22534 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC. #PEN 0022834

DATE: 4/23/2020	DRAWN: DNE
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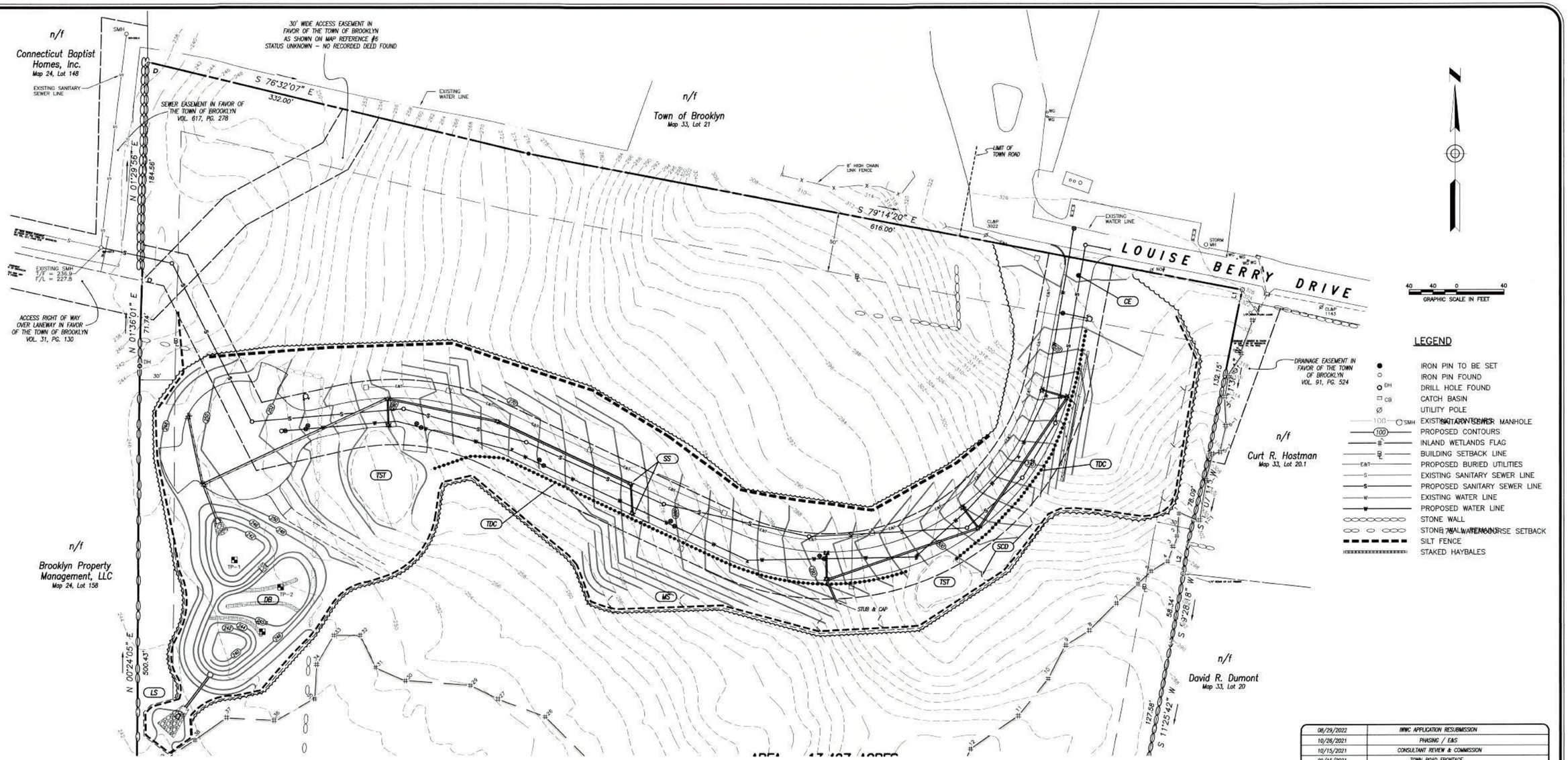

MEASURE	KEY	DESCRIPTION
Permanent Seeding	PS	Establishment of permanent stand of grass and/or legumes by seeding and mulching exposed soils with a seed mixture appropriate for long term stabilization. See Erosion Control Narrative for seed mix requirements.
Mulch for Seed	MS	Application of a mulch that will protect the soil surface on a temporary basis and promote the establishment of temporary or permanent seedings.
Construction Entrance	CE	A stone stabilized pad sometimes associated with a mud rack, automotive spray, or other measures located at points of vehicular ingress and egress on a construction site.
Geotextile Silt Fence	GSF	A temporary sediment barrier consisting of a geotextile fabric pulled taut and attached to supporting posts and entrenched.
Haybale Barrier	HB	A temporary sediment barrier consisting of a row of entrenched and anchored bales of hay or straw.
Silt Sock	SS	A cylindrical erosion control device used for slope interruption, perimeter control and inlet protection.
Stone Check Dam	SCD	A temporary or permanent stone dam placed across a drainageway.
Temporary Diversion Channel	TDC	A channel designed to convey flows on a short term basis and lined with an erosion resistant covering.
Temporary Sediment Trap	TST	A temporary ponding area with a stone outlet formed by excavation and/or constructing an earthen embankment.
Detention Basin	DB	An impoundment made by constructing a dam or an embankment (embankment detention basin) or by excavating a pit or dugout (excavated detention basin).
Level Spreader	LS	An outlet for diversions and other water conveyences consisting of an escavated depression with a broad stable point of discharge constrcuted at zero grade across a slope
Permanent Turf Reinforcement Mat	TRM	A manufactured mat composed of non-biodegradable polymer or synthetic fibers mechanically, structurally, or chemically bound to form a continuous matrix.

DATE	DESCRIPTION
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09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

PHASING PLAN - PHASE 1

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT NORMAND THIBEAULT JR No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

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DATE: 4/23/2020	DRAWN: DNE
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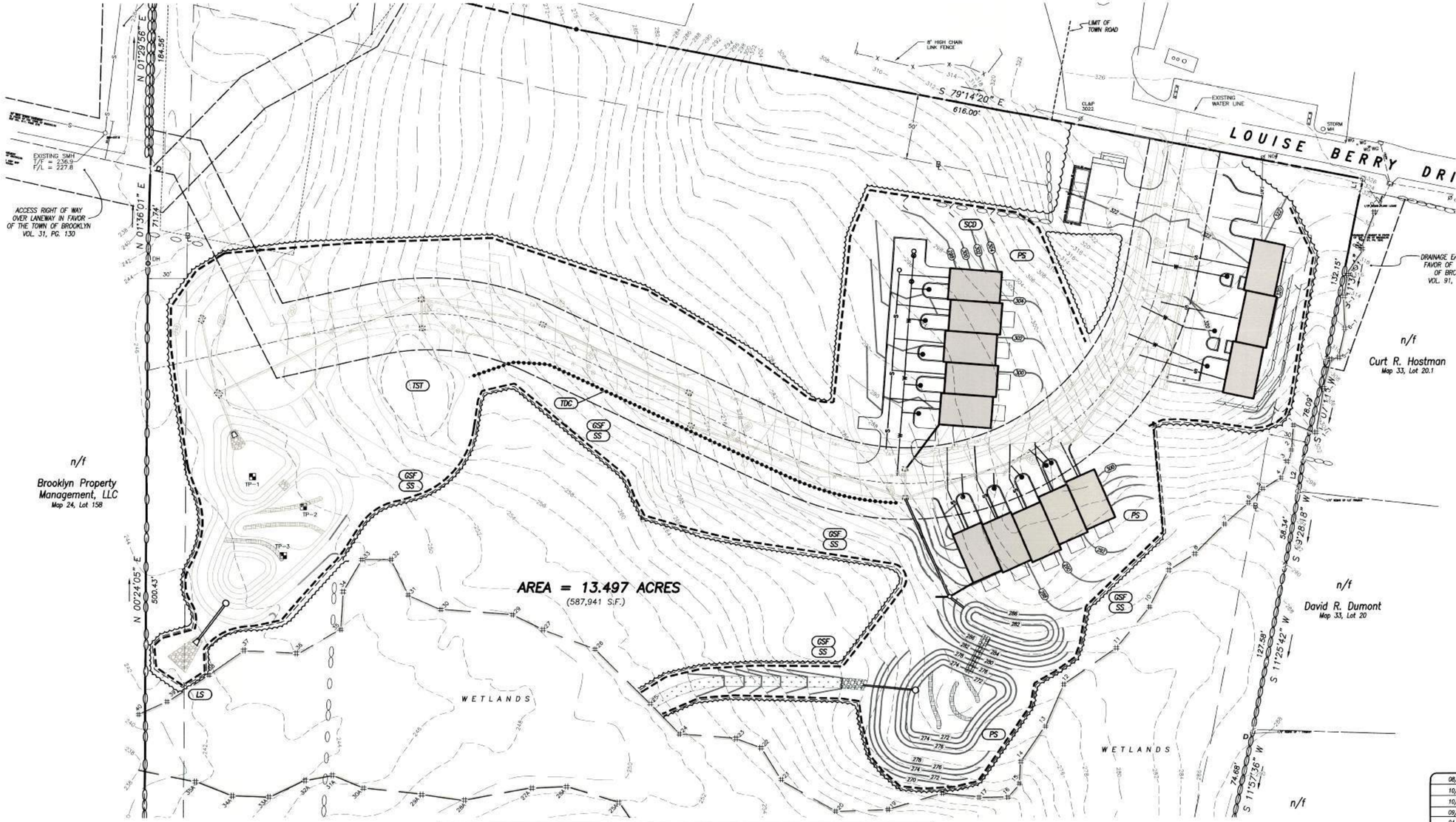

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- CATCH BASIN
- UTILITY POLE
- EXISTING CONTOURS
- EXISTING SANITARY MANHOLE
- PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- PROPOSED BURIED UTILITIES
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- STONE WALL
- STONE WALL REMOVED
- WATERCOURSE SETBACK
- SILT FENCE
- STAKED HAYBALES

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09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	NWC APPROVAL CONDITIONS

REVISIONS

PHASING PLAN - PHASE 2

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE

BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT NORMAND THIBEAULT, JR. No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE 11/04/2022

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SHEET: 9 OF 16	CHK BY: GG
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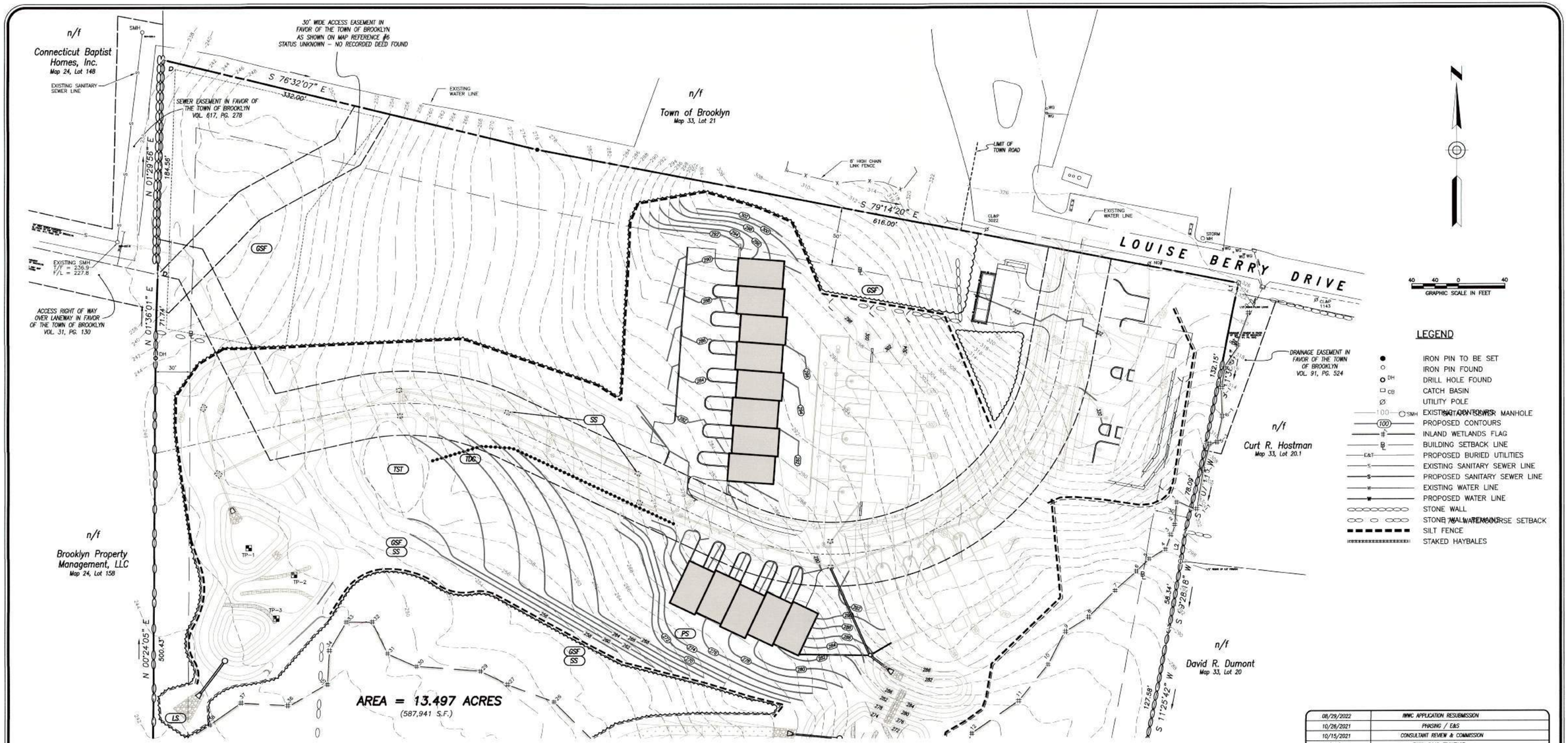

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09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

PHASING PLAN - PHASE 3

PREPARED FOR

SHANE POLLOCK

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STATE OF CONNECTICUT NORMAND THIBEAULT, JR. No. 22534 LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22534 DATE

DATE: 4/23/2020	DRAWN: DNE
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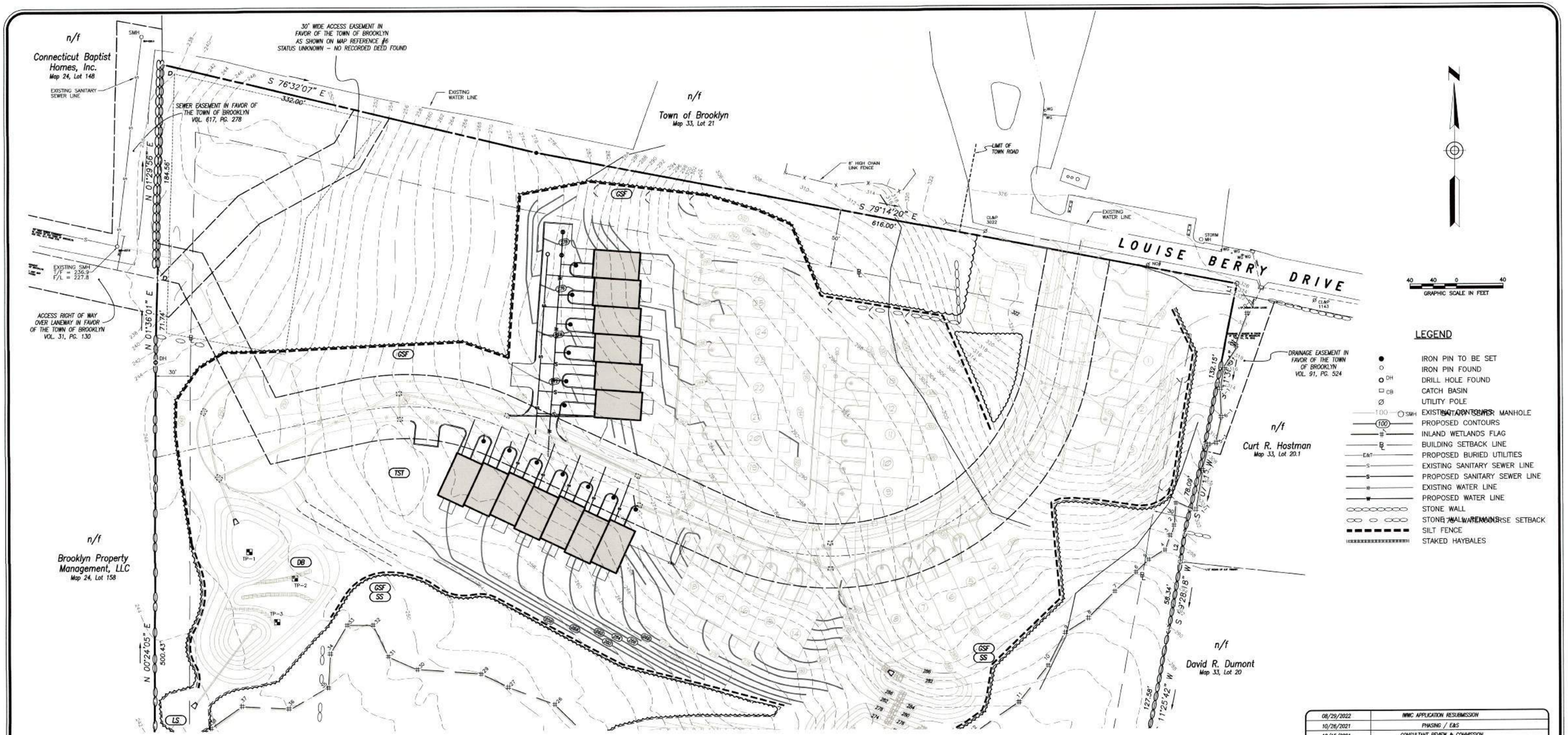

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04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

PHASING PLAN - PHASE 4

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

STATE OF CONNECTICUT · NORMAND THIBEAULT, JR. · No. 22834 · LICENSED PROFESSIONAL ENGINEER

NORMAND THIBEAULT, JR., P.E. No. 22834 DATE

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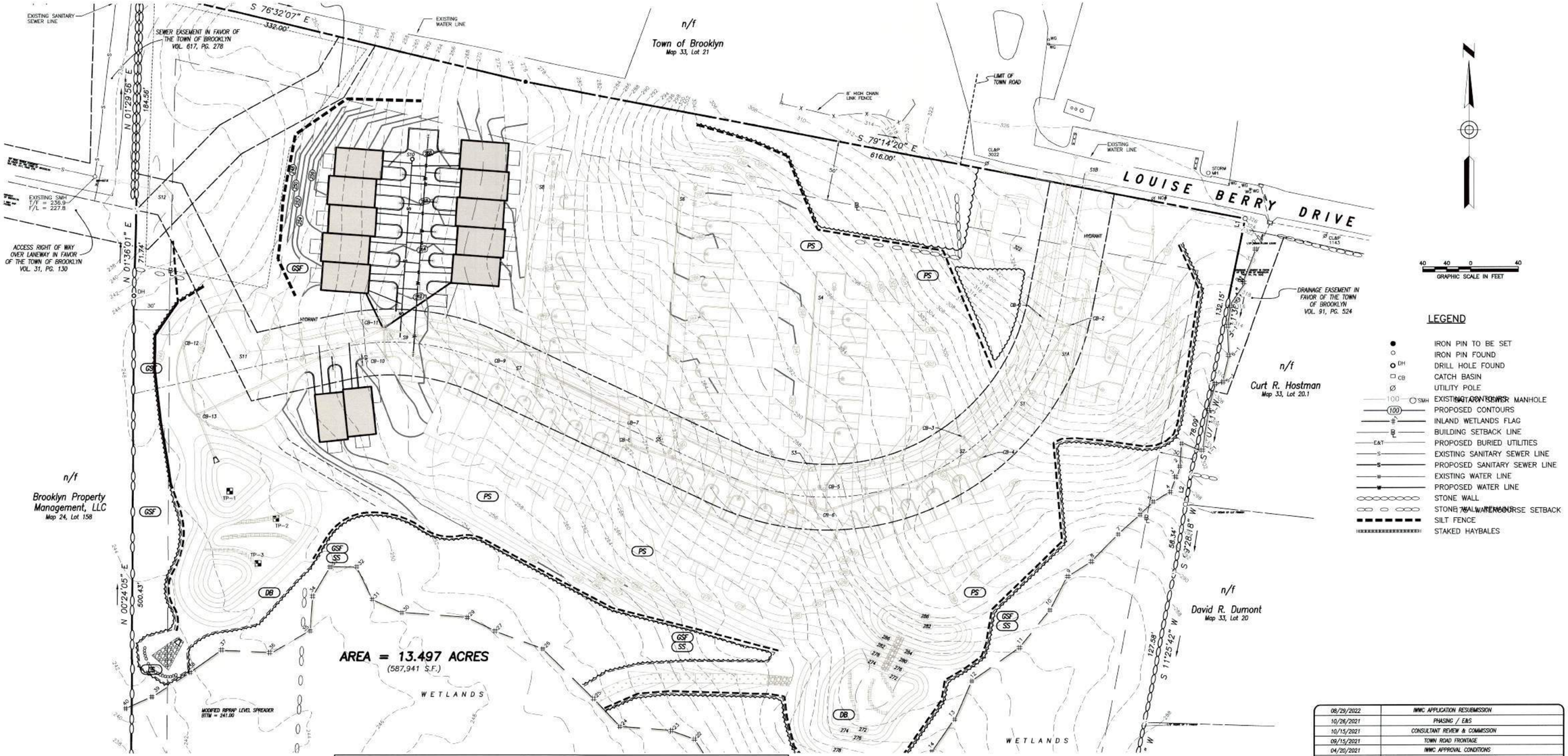

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DH DRILL HOLE FOUND
- CB CATCH BASIN
- UTILITY POLE
- SMH EXISTING SANITARY MANHOLE
- PROPOSED CONTOURS
- INLAND WETLANDS FLAG
- BUILDING SETBACK LINE
- E&T PROPOSED BURIED UTILITIES
- EXISTING SANITARY SEWER LINE
- PROPOSED SANITARY SEWER LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- STONE WALL
- STONE WALL W/ WATERCOURSE SETBACK
- SILT FENCE
- STAKED HAYBALES

MEASURE	KEY	DESCRIPTION
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04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

PHASING PLAN - PHASE 5

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
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NORMAND THIBEAULT, JR. No. 22834 LICENSED PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

NORMAND THIBEAULT, JR., P.E. No. 22834 — 11/04/2022 DATE

DATE: 4/23/2020	DRAWN: DNE
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SHEET: 12 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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EROSION AND SEDIMENT CONTROL PLAN:

REFERENCE IS MADE TO:

1. Connecticut Guidelines for Soil Erosion and Sediment Control 2002 (2002 Guidelines).
2. U.S.D.A. N.R.C.S. Web Soil Survey.

The project will require registration under the "GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES" with the CTDEEP. 60 days prior to any activity on site, the developer or his representative shall submit the registration to the CTDEEP. The Town of Brooklyn shall be given a copy of the registration approval.

DEVELOPMENT CONTROL PLAN:

1. Development of the site will be performed by the Contractor, who will be responsible for the installation and maintenance of erosion and sediment control measures required throughout construction.
2. The sedimentation control mechanisms shall remain in place from start of construction until permanent vegetation has been established. The representative for the Town of Brooklyn will be notified when sediment and erosion control structures are initially in place. Any additional soil & erosion control measures requested by the Town or its agent, shall be installed immediately. Once the proposed development, seeding and planting have been completed, the representative shall again be notified to inspect the site. The control measures will not be removed until this inspection is complete.
3. All stripping is to be confined to the immediate construction area. Topsoil shall be stockpiled so that slopes do not exceed 2 to 1. A hay bale sediment barrier is to surround each stockpile and a temporary vegetative cover shall be provided.
4. Dust control will be accomplished by spraying with water. The application of calcium chloride is not permitted adjacent to wetland resource areas or within 100' of these areas.
5. The proposed planting schedule is to be adhered to during the planting of disturbed areas throughout the proposed construction site.
6. Final stabilization of the site is to follow the procedures outlined in "Permanent Vegetative Cover". If necessary a temporary vegetative cover is to be provided until a permanent cover can be applied.

SILT FENCE INSTALLATION AND MAINTENANCE:

1. Dig a 6" deep trench on the uphill side of the barrier location.
2. Position the posts on the downhill side of the barrier and drive the posts 1.5 feet into the ground.
3. Lay the bottom 6" of the fabric in the trench to prevent undermining and backfill.
4. Inspect and repair barrier after heavy rainfall.
5. Inspections will be made at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater to determine maintenance needs.
6. Sediment deposits are to be removed when they reach a height of 1 foot behind the barrier or half the height of the barrier and are to be deposited in an area which is not regulated by the inland wetlands commission.
7. Replace or repair the fence within 24 hours of observed failure. Failure of the fence has occurred when sediment fails to be retained by the fence because:
   - the fence has been overtopped, undercut or bypassed by runoff water,
   - the fence has been moved out of position (knocked over), or
   - the geotextile has decomposed or been damaged.

HAY BALE INSTALLATION AND MAINTENANCE:

1. Bales shall be placed as shown on the plans with the ends of the bales tightly abutting each other.
2. Each bale shall be securely anchored with at least 2 stakes and gaps between bales shall be wedged with straw to prevent water from passing between the bales.
3. Inspect bales at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater to determine maintenance needs.
4. Remove sediment behind the bales when it reaches half the height of the bale and deposit in an area which is not regulated by the inland Wetlands Commission.
5. Replace or repair the barrier within 24 hours of observed failure. Failure of the barrier has occurred when sediment fails to be retained by the barrier because:
   - the barrier has been overtopped, undercut or bypassed by runoff water,
   - the barrier has been moved out of position, or
   - the hay bales have deteriorated or been damaged.

TEMPORARY VEGETATIVE COVER:

SEED SELECTION

Grass species shall be appropriate for the season and site conditions. Appropriate species are outlined in Figure TS-2 in the 2002 Guidelines.

TIMING CONSIDERATIONS

Seed with a temporary seed mixture 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.

SITE PREPARATION

Install needed erosion control measures such as diversions, grade stabilization structures, sediment basins and grassed waterways.

Grade according to plans and allow for the use of appropriate equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.

SEEDBED PREPARATION

Loosen the soil to a depth of 3-4 inches with a slightly roughened surface. If the area has been recently loosened or disturbed, no further roughening is required. Soil preparation can be accomplished by tracking with a bulldozer, discing, harrowing, raking or dragging with a section of chain link fence. Avoid excessive compaction of the surface by equipment traveling back and forth over the surface. If the slope is tracked, the cleat marks shall be perpendicular to the anticipated direction of the flow of surface water.

If soil testing is not practical or feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 300 pounds per acre or 7.5 pounds per 1,000 square feet of 10-10-10 or equivalent. Additionally, lime may be applied using rates given in Figure TS-1 in the 2002 Guidelines.

SEEDING

Apply seed uniformly by hand cyclone seeder, drill, cultipacker type seeder or hydroseeder at a minimum rate for the selected species. Increase seeding rates by 10% when hydroseeding.

MULCHING

Temporary seedings made during optimum seeding dates shall be mulched according to the recommendations in the 2002 Guidelines. When seeding outside of the recommended dates, increase the application of mulch to provide 95%-100% coverage.

MAINTENANCE

Inspect seeded area at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for seed and mulch movement and rill erosion.

Where seed has moved or where soil erosion has occurred, determine the cause of the failure. Repair eroded areas and install additional controls if required to prevent reoccurrence of erosion.

Continue inspections until the grasses are firmly established. Grasses shall not be considered established until a ground cover is achieved which is mature enough to control soil erosion and to survive severe weather conditions (approximately 80% vegetative cover).

PERMANENT VEGETATIVE COVER:

Refer to Permanent Seeding Measure in the 2002 Guidelines for specific applications and details related to the installation and maintenance of a permanent vegetative cover. In general, the following sequence of operations shall apply:

1. Topsoil will be replaced once the excavation and grading has been completed. Topsoil will be spread at a minimum compacted depth of 4".
2. Once the topsoil has been spread, all stones 2" or larger in any dimension will be removed as well as debris.
3. Apply agricultural ground limestone at a rate of 2 tons per acre or 100 lbs. per 1000 s.f. Apply 10-10-10 fertilizer or equivalent at a rate of 300 lbs. per acre or 7.5 lbs. per 1000 s.f. Work lime and fertilizer into the soil to a depth of 4".
4. Inspect seedbed before seeding. If traffic has compacted the soil, refill compacted areas.
5. Apply the chosen grass seed mix. The recommended seeding dates are: April 1 to June 15 & August 15 - October 1.
6. Following seeding, firm seedbed with a roller. Mulch immediately following seeding. If a permanent vegetative stand cannot be established by September 30, apply a temporary cover on the topsoil such as netting, mat or organic mulch.

DEVELOPMENT SCHEDULE/SEQUENCE OF OPERATIONS:

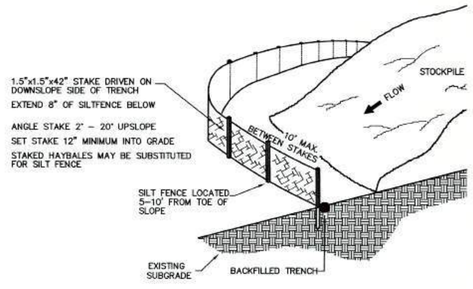
1. Flag the limits of disturbance and schedule pre-construction meeting with Town of Brooklyn wetlands Agent.
2. The only work that shall be permitted prior to installation of perimeter erosion controls shall be clearing of vegetation. No grubbing shall be conducted until the perimeter erosion and sediment controls have been installed per the plan and inspected by the Town of Brooklyn Agent. Written approval for installation of the erosion and sedimentation controls shall be obtained from the Town of Brooklyn IWWC Agent prior to commencing with any other work.
3. Contact utility companies for scheduling installation of utilities and connections
4. Install the anti-tracking construction entrance.
5. Cut trees within the defined clearing limits and remove the cut wood.
6. Install perimeter erosion and sedimentation controls in accordance with the site development plan.
7. Chip brush and slash, stockpile chips for use on site or remove off site.
8. Box out driveway and stockpile topsoil in locations shown on the plans. Install erosion controls around stockpile and apply temporary seeding.
9. Contact utility companies (CT Water and the Brooklyn WPCA) to coordinate water main and sanitary sewer connections. Install water and sanitary sewer lines beginning from the lowest elevation.
10. Excavate stormwater basin to be utilized as a temporary sedimentation basin during construction. Install drainage structures and pipe and provide inlet protection at catch basins.
11. Install and compact processed gravel for roadway base.
12. Remove tree stumps and dispose of at an approved disposal site. Alternatively, stumps may be chipped in place. No stumps shall be buried on site.
13. Strip and stockpile topsoil that is within the footprint of the site. Surround stockpile with silt fence or staked haybales, and apply temporary seeding in accordance with recommended mixtures. Divert runoff around the perimeter of the stockpile.
14. Make all required cuts and fills. Establish the subgrade for the driveway as required and install additional erosion controls as necessary and as shown on the plans.
15. Inspect perimeter erosion and sedimentation controls weekly and after rain events in excess of 0.5". Repair any damaged controls and provide additional erosion control devices as necessary to address areas of concentrated runoff that may develop as a result of the construction activities. The contractor shall review discharge conditions with the design engineer or the Town of Brooklyn prior to installing additional erosion controls. Apply water as necessary for dust control.
16. Install utilities to in the locations shown on the plans.
17. Prepare sub-base for roadway for final grading.
18. Excavate for building footings, stockpile soil and pour footings & slab. Begin phased building construction.
19. Place topsoil where required and install any proposed landscaping upon completion of each building.
20. Install first course of pavement to each building as they are completed and required landscaping.
21. When the remainder of the site work is near completion, sweep all paved areas for the final course of paving. Inspect erosion controls and remove any accumulated sediment.
22. Install final course of pavement upon the completion of the final structure.
23. Fine grade, rake, seed and mulch to within 2' of the pavement.
24. Remove and dispose of all silt fence and hay bales after the site has been stabilized to the satisfaction of the Town of Brooklyn.

RESPONSIBLE PARTY FOR E&S MAINTENANCE:

Shane Pollock
101 Mackin Drive
Griswold, CT 06351
(860) 888-3129

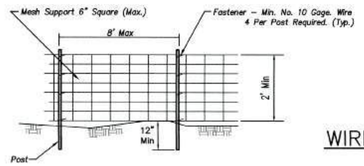
CONSTRUCTION NOTES/GENERAL PROVISIONS

1. The locations of existing utilities are based upon visible field observations, record mapping and interviews with the property owner and abutting property owners. They are is shown for informational purposes only. Contractor shall coordinate exploratory test hole excavation with the Engineer if necessary to verify and/or determine actual locations of some utilities & structures. It is the responsibility of the contractor to verify the location and elevation of all utilities. Contact "CALL BEFORE YOU DIG" at 1-800-922-4455, and obtain all applicable permits, prior to any excavation around utilities.
2. All existing site features not scheduled to remain shall be removed and disposed of in a proper manner, by the contractor.
3. All Materials and methods of construction shall conform to "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 818", and supplements thereto.
4. The Contractor shall obtain copies of all regulatory agency permits from the Owner prior to any site disturbance.
5. Unless otherwise noted on the plans, the contractor shall use the geometry provided on the construction plans. Benchmark information shall be provided to the contractor by the Owner or the Owner's surveyor. Any discrepancies between field measurements and construction plan information shall be brought to the attention of the Engineer or Surveyor immediately.
6. The Contractor shall not revise elevations or locations of items shown on the plans without written consent of the project Engineer or Surveyor.
7. The Contractor shall protect benchmarks, property corners, and other survey monuments from damage or displacement. If a marker needs to be removed, it shall be referenced by a licensed land surveyor and replaced as necessary by the same.
8. The Contractor shall be responsible for preparing and compacting base for proposed pavement. Owner shall provide general fill to establish subgrade - contractor shall spread and compact. Contractor shall provide, spread and compact required processed aggregate
9. The entire project site shall be thoroughly cleaned at the completion of the work. Clean all installed paved areas, accumulated silt and sediment shall be removed from the stormwater system, silt fence removed and disposed of, excess construction materials removed, plus all adjacent areas affected by the construction activities as directed by the Owner or the jurisdictional Agency. Any material removed from the site shall be relocated to an approved off-site disposal area.
10. Upon completion of construction, accumulated sediment and other deleterious materials shall be thoroughly removed catch basins, manholes, pipes and swales and disposed of off site. Additionally, the stormwater detention basin bottom and structures shall be cleaned and restored to "like new" condition.



SILT FENCE @ TOE OF SLOPE APPLICATION

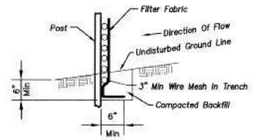
NOT TO SCALE



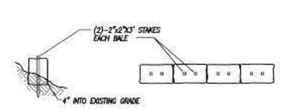
NOTES:
1. Wires of mesh support shall be min. gage no. 12.
2. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
3. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 50 for woven.
4. Fence posts shall be either wood post with a minimum cross-sectional area of 3.0 sq. in. or a standard steel post.

WIRE BACKED SILT FENCE

ELEVATION

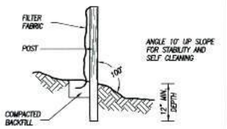


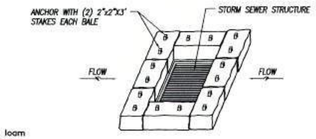
FABRIC ANCHOR DETAIL



HAYBALE BARRIER

NOT TO SCALE





HAYBALE INSTALLATION AT CATCH BASIN

NOT TO SCALE

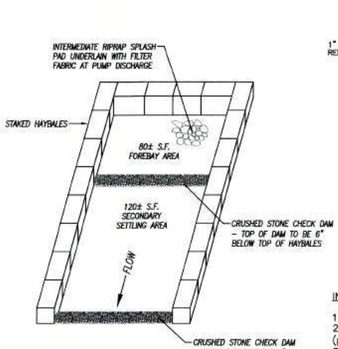
DEEP TEST HOLE EVALUATION - November 25, 2020
Normand Thibeault, Jr., P.E., Killingly Engineering Associates

TEST PIT	DEPTH	PROFILE
1	0"- 10"	Topsoil
	10"- 18"	Orange-brown fine sandy loam
	18"- 44"	Gray fine silty sand w/rocks
	44"- 72"	Gray rocky gravel - compact
	Ledge	N/A
	GWT	N/A
	Mottling	44"
2	0"- 9"	Topsoil
	9"- 21"	Orange-brown fine sandy loam
	21"- 41"	Gray fine silty sand/rocks
	41"- 74"	Gray rocky sandy gravel - compact
	Ledge	N/A
	GWT	N/A
	Mottling	41"
3	0"- 10"	Topsoil
	10"- 24"	Orange-brown fine sandy loam
	24"- 41"	Gray fine silty sand/rocks
	41"- 71"	Hardpan
	Ledge	N/A
	GWT	N/A
	Mottling	41"

PERCOLATION TEST RESULT - November 27, 2020
Killingly Engineering Associates - Normand Thibeault, P.E.

Depth = 24" Rate = 6.7 min./in.

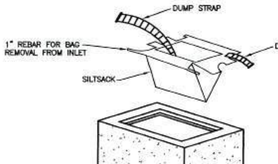
Time	Reading
1:30	4.5"
1:35	7.5"
1:40	11"
1:45	12.5"
1:50	14"
2:00	15.5"
2:05	16.75"
2:10	17.5"
2:15	18.25"
2:20	19"



PUMPING OUTLET BASIN

NOT TO SCALE

NOTES:
1.) TO BE USED IN THE EVENT THAT DEWATERING IS REQUIRED
2.) LOCATE BASINS OUTSIDE OF WETLANDS UPLAND REVIEW AREAS

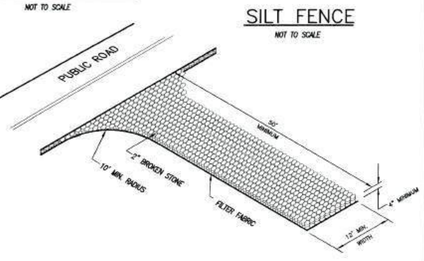


INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE

INSTALLATION & MAINTENANCE

1. Install as directed by manufacturer.
2. Inspect the catch basin sediment device at least once a week (preferably twice) and after rainfall events of 0.5" or greater.
3. Remove sediment when the siltsack is 1/2 full. Sediment shall be deposited in an area which is not regulated by the Inland Wetlands Commission.
4. Replace or repair within 24-hours of observed failure. Failure may include:
   -Overtopping, or bypassed by runoff water.
   -The geotextile has decomposed or has been damaged.



SILT FENCE

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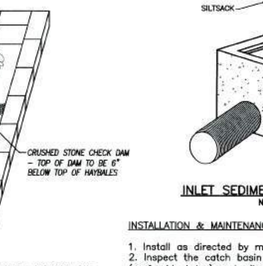
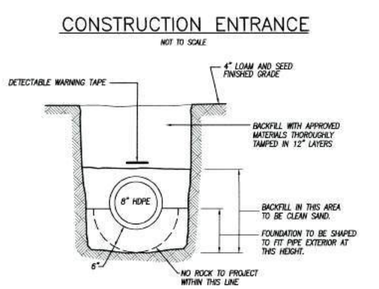


BAG DETAIL

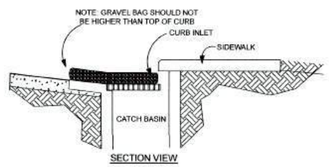


CONSTRUCTION ENTRANCE

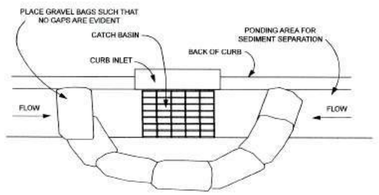
NOT TO SCALE

ROOF LEADER PIPE IN TRENCH DETAIL

NOT TO SCALE
NOTE: MINIMUM SLOPE OF ROOF LEADERS SHALL BE 2%



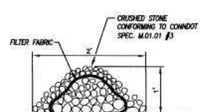
SECTION VIEW



PLAN VIEW

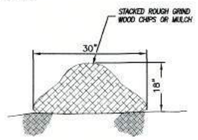
STANDARD GRAVEL BAG CURB INLET PROTECTION

NOTES:
1. PLACE GRAVEL BAG BARRIER ON GENTLY SLOPING STREET, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNNOFF.
2. USE SAND BAGS OF WOVEN GEOTEXTILE FABRIC (NOT BURLAP) AND FILL WITH ⅔ INCH (OR SMALLER) GRAVEL. BAGS MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.
4. WHEN INSTALLING CURB INLET PROTECTION DEVICES, NEVER BLOCK THE CURB INLET.



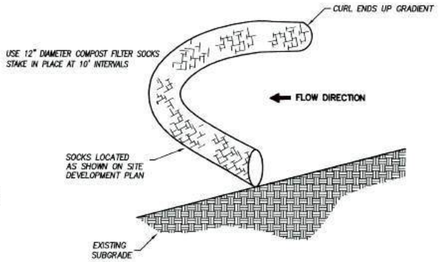
STONE CHECK DAM

NOT TO SCALE



WOOD CHIP BERM

NOT TO SCALE



COMPOST FILTER SOCK APPLICATION

NOT TO SCALE

NOTES:
- MAY BE USED AS A STRUCTURAL BACKING FOR SILT FENCE.
- WHEN USED SINGLY, REMOVE SEDIMENT WHEN HALF THE HEIGHT OF THE SOCK HAS BEEN REACHED
- PROVIDE SOCK AS MANUFACTURED BY "FILTREXX" OR ENGINEER APPROVED EQUAL.

STATE OF CONNECTICUT - NORMAND E. THIBEAULT JR. - No. 22834 - LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

DATE	DESCRIPTION
08/29/2022	IWWC APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

DETAIL SHEET

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 13 OF 16	CHK BY: GC
DWG. No: CLIENT FILE	JOB No: 20014

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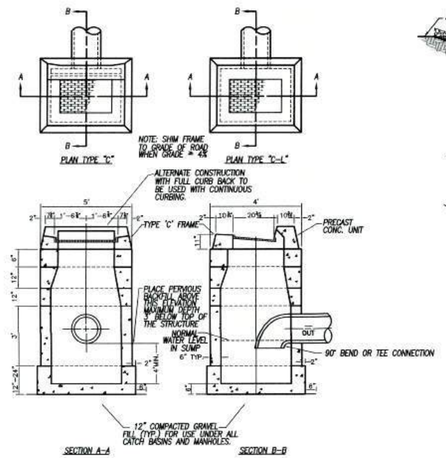
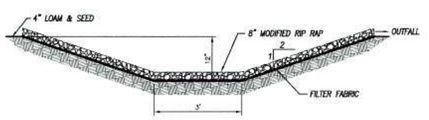


HOODED CATCH BASIN DETAIL

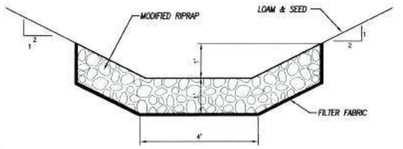
NOT TO SCALE

NOTES:
- TO BE INSTALLED AT FINAL CATCH BASIN WITH OUTLET TO STORMWATER BASIN.
- A CATCH BASIN HOOD MAY BE SUBSTITUTED WITH THE PRE-APPROVAL OF THE TOWN ENGINEER



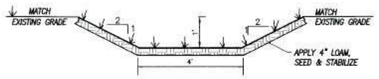
SECTION THROUGH LEVEL SPREADER

NOT TO SCALE



MODIFIED RIPRAP SWALE

NOT TO SCALE



GRASS LINED SWALE

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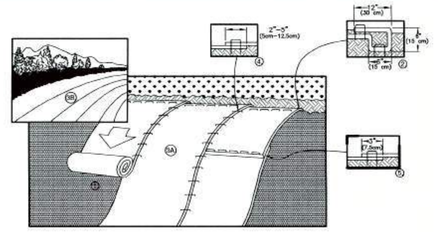
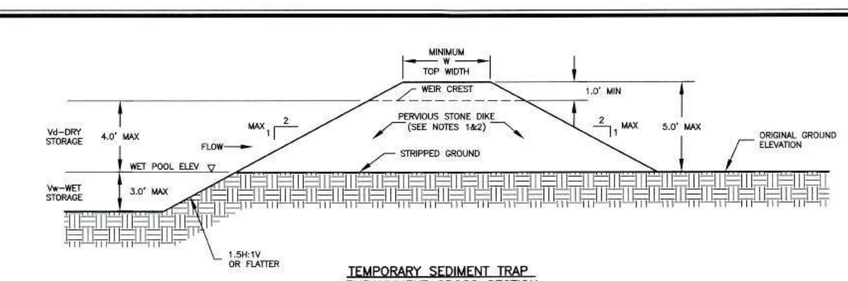


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6"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

NOTES:
1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
2. TURF REINFORCEMENT MAT SHALL BE NORTH AMERICAN GREEN BIOMAT SC-150BN OR APPROVED BIODEGRADABLE EQUIVALENT.

TURF REINFORCEMENT MAT INSTALLATION

NOT TO SCALE



TOP WIDTH VS. HEIGHT

H = HEIGHT OF EMBANKMENT
W= TOP WIDTH OF EMBANKMENT

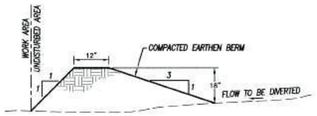
H(ft)	W(ft)
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

TEMPORARY SEDIMENT TRAP EMBANKMENT CROSS SECTION

NOT TO SCALE

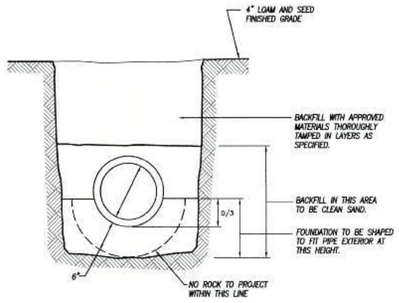
NOTES:

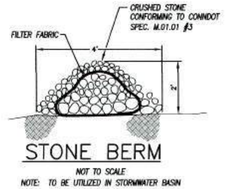
1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL AND EROSION CONTROL, SECTIONS 5-11-25 THRU 5-11-29.
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF MODIFIED RIPRAP (CTDOT M.12.02) WITH #3 STONE ON FACE (CTDOT M.01.01).
3. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAPS MAY BE CONSTRUCTED OF ENGINEER APPROVED BACKFILL COMPACTED IN 9" LAYERS. USE ONLY MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, ROCKS OVER 6" IN DIAMETER OR OTHER UNSUITABLE MATERIALS.
4. IF, IN THE JUDGEMENT OF THE ENGINEER, MATERIALS FROM ON-SITE EXCAVATION ACTIVITIES ARE NOT SUITABLE FOR CONSTRUCTION OF SEDIMENT TRAP EMBANKMENTS, MATERIALS SHALL BE IMPORTED TO THE SITE.
5. EARTHEN EMBANKMENTS SHALL BE STABILIZED WITH TEMPORARY SEEDING, PERMENANT SEEDING OR STONE SLOPE PROTECTION IMMEDIATELY AFTER INSTALLATION.
6. TEMPORARY SEDIMENT TRAP(S) SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS OF THE END OF A STORM OF 0.5 INCHES OF RAINFALL OR GREATER. REMOVE ACCUMULATED SEDIMENT WHEN ONE HALF OF THE MINIMUM WET STORAGE VOLUME HAS BEEN FILLED. DISPOSE OF REMOVED SEDIMENT IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.



TEMPORARY DIVERSION

NOT TO SCALE





STONE BERM

NOT TO SCALE
NOTE: TO BE UTILIZED IN STORMWATER BASIN

STORM DRAIN PIPE IN TRENCH DETAIL

NOT TO SCALE

SEED MIX REQUIREMENTS:

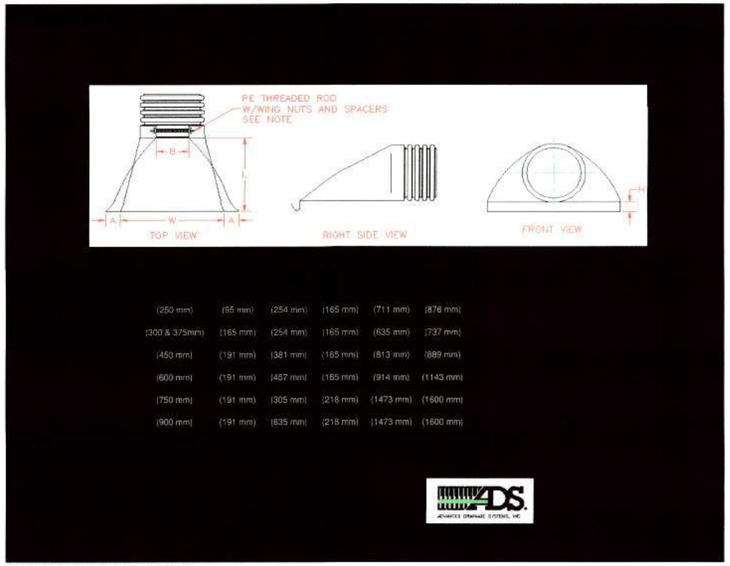
AREA	SPECIES	SEEDING RATE (lbs/acre)
Mowed & maintained banks	Creeping Red Fescue (Pennlawn, Wintergreen)	20
	Bird's-foot Trefoil (Empire, Viking) with innoculant	8
	Tall Fescue (Kentucky 31)	20
	TOTAL	48
Unmowed banks & slopes	Tall Fescue (Kentucky 31)	20
	Flatpea (Lathco) with inoculant	30
	TOTAL	50
Diversions & channels	Creeping Red Fescue (Pennlawn, Wintergreen)	20
	Redtop (Sreeker, Common)	2
	Tall Fescue (Kentucky 31)	20
	TOTAL	42
Lawns & high maintenance areas	Turf type Tall Fescue	TOTAL 150

***Alternative seed mixes may be used. Alternative seed mix selections shall be in accordance with Figures PS-2 and PS-3 in the 2002 Guidelines for Soil Erosion and Sediment Control or as specified by and coordinated with the landscape designer.

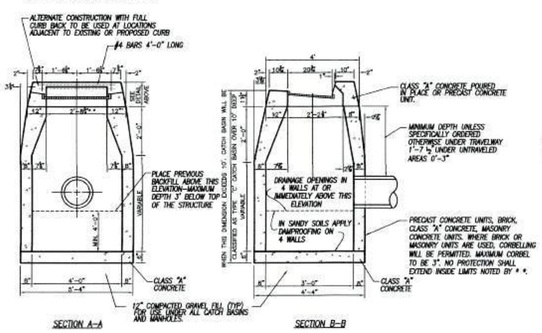
New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites

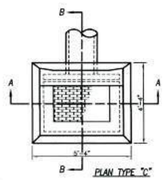
The New England Erosion Control/Restoration Mix for Detention Basins and Moist Sites contains a selection of native grasses and wildflowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. It is an appropriate seed mix for ecologically sensitive restorations that require stabilization as well as long-term establishment of native vegetation. This mix is particularly appropriate for detention basins that do not hold standing water for extended periods. Many of the plants in this mix can tolerate infrequent inundation, but not constant flooding. The mix may be applied by hand, by mechanical spreader, or by hydro-seeder. After sowing, lightly rake, roll or cultipack to insure good seed to soil contact. Best results are obtained with a Spring or late Summer seeding. Late Fall and Winter dormant seeding requires an increase in the application rate. A light mulching of clean, weed-free straw is recommended.

SPECIES: Riverbank Wild Rye (Elymus riparius), Creeping Red Fescue (Festuca rubra), Little Bluestem (Schizachyrium scoparium), Big Bluestem (Andropogon gerardii), Switch Grass (Panicum virgatum), Upland Bentgrass (Agrostis perennans), Nodding Bur Marigold (Bidens cernua), Hollow-Stem Joe Pye Weed (Eupatorium fistulosum/Eutrochium fistulosum), New England Aster (Aster novae-angliae), Boneset (Eupatorium perfoliatum), Blue Vervain (Verbena hastata), Soft Rush (Juncus effusus), Wool Grass (Scirpus cyperinus).</P>



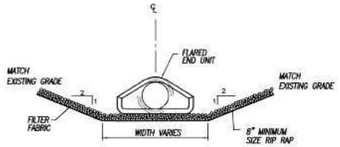
NOTE: WHEN CATCH BASIN IS SET IN CONCRETE PAVEMENT THE 1/2" SLOPE ON THE TOP SURFACE SHALL BE CHANGED TO MATCH ADJOINING PAVEMENT.





TYPE 'C' CATCH BASIN DETAIL

NOT TO SCALE

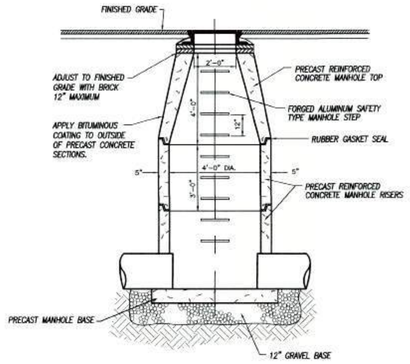


SECTION

PLAN

RIP RAP OUTFALL

NOT TO SCALE



TYPICAL MANHOLE CROSS SECTION

NOT TO SCALE

08/29/2022	NRWC APPLICATION RESUBMISSION
10/28/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	NRWC APPROVAL CONDITIONS
DATE	DESCRIPTION
REVISIONS	

DETAIL SHEET 2

PREPARED FOR

SHANE POLLOCK

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STATE OF CONNECTICUT · NORMAND THIBEAULT JR · No. 22834 · LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. — LIC #PEN 0022834 — DATE 11/04/2022

DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 14 OF 16	CHK BY: GG
DWG. No: CLIENT FILE	JOB No: 20014

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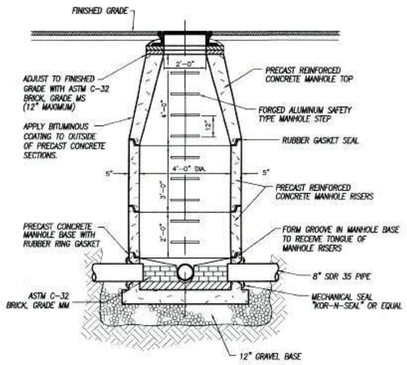

TYPICAL SANITARY MANHOLE CROSS SECTION

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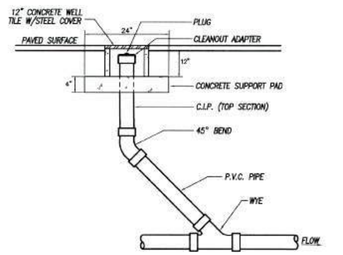

SANITARY CLEANOUT DETAIL

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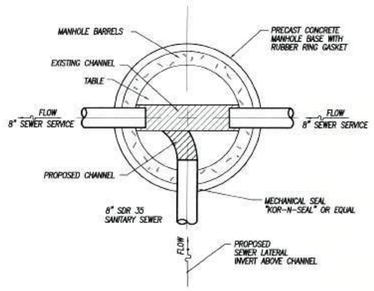

SEWER CONNECTION AT MANHOLE

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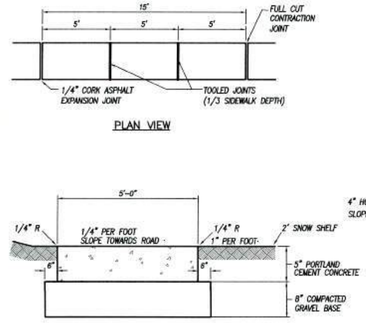

CONCRETE SIDEWALK DETAIL

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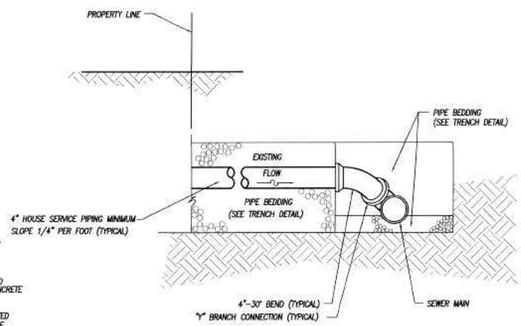

SEWER CONNECTION DETAIL

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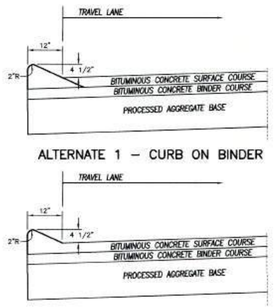
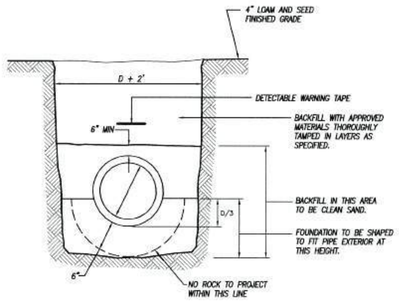


ALTERNATE 1 – CURB ON BINDER

ALTERNATE 2 – MONOLITHIC CONSTRUCTION

CAPE COD CURBING

NOT TO SCALE



SANITARY SEWER PIPE IN TRENCH DETAIL

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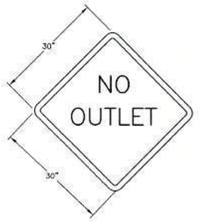
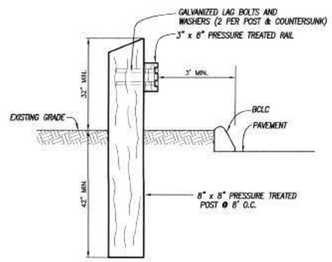


NO OUTLET SIGN DETAIL

NOT TO SCALE

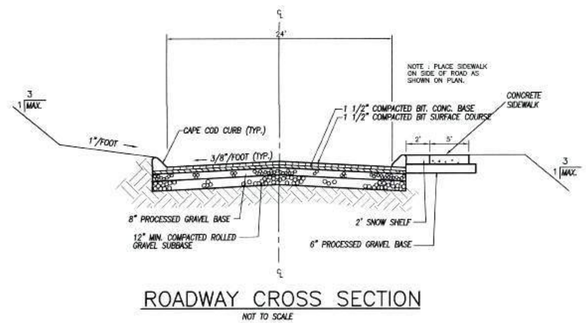
CTDOT W14-2 (41-4605)
SETON #44851



WOOD GUIDE RAIL

NOT TO SCALE

1. WOOD POST COMPONENTS SHALL BE SPRUCE OR HEMLOCK, GRADE #2 PRIME OR BETTER.
2. POST SHALL BE CERTIFIED 0.6 CCF PRESERVATIVE RETENTION RATE, AWPA CATEGORY UC4C
3. PRESERVATIVE SHALL BE WATER BASED AN CONSIST OF COPPER AZOLE TYPE B OR C



ROADWAY CROSS SECTION

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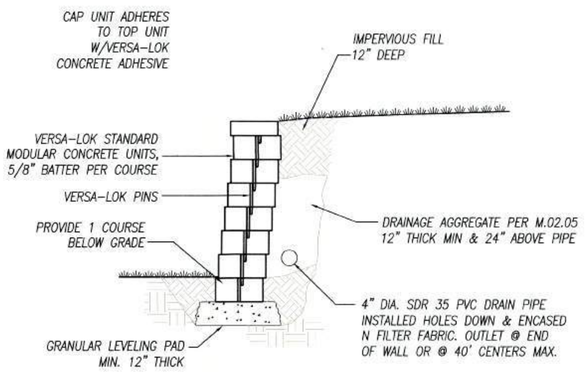
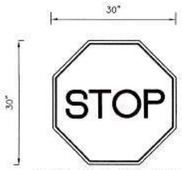


TYPICAL SECTION–UNREINFORCED RETAINING WALL

VERSA-LOK OR APPROVED EQUAL



CTDOT R1-1 (31-0552)

STOP SIGN

NOT TO SCALE

31-5505

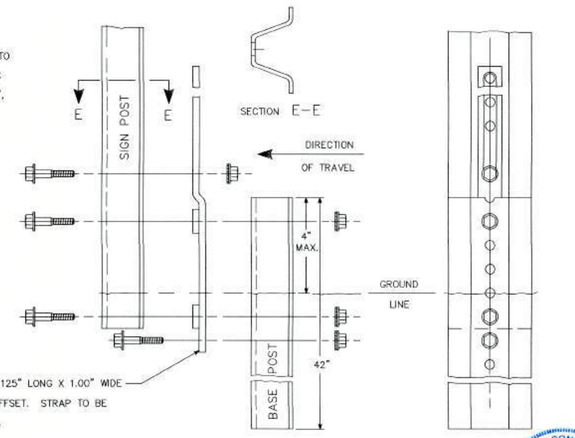
SPEED LIMIT SIGN DETAIL

NOT TO SCALE

BOLTS – HEX HEAD,INTEGRAL FLANGE CONFORMING TO ASTM A354. –18 UNC X 1.75", GRADE BC FOR 3.00 LBS./FT. POSTS –18 UNC X 2.0", GRADE BD FOR 4.00 LB./FT. POSTS.

NUTS –18 UNC HEX HEAD, INTEGRAL FLANGE CONFORMING TO ASTM A563, GRADE DH.

LOCKWASHERS – HEAVY DUTY EXTERNAL TYPE.



BREAKAWAY TYPE I INSTALLATION – FOR 3 & 4 LB. POSTS

DATE	DESCRIPTION
08/29/2022	IWWC APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	IWWC APPROVAL CONDITIONS

REVISIONS

DETAIL SHEET 3

PREPARED FOR

SHANE POLLOCK

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DATE: 4/23/2020	DRAWN: DNE
SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 15 OF 16	CHK BY: GG
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NORMAND E. THIBEAULT, JR., P.E. — LIC/ #PEN 0022834 — DATE 11/04/2022

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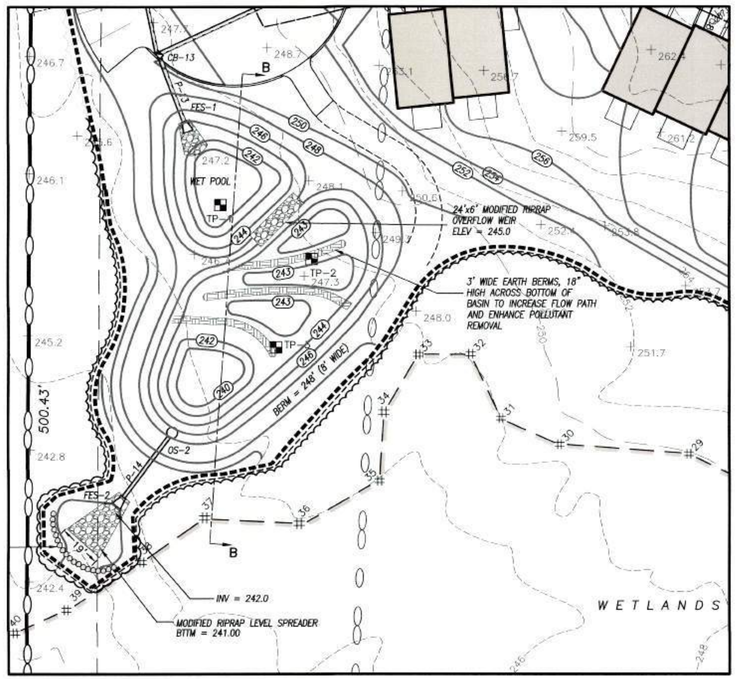
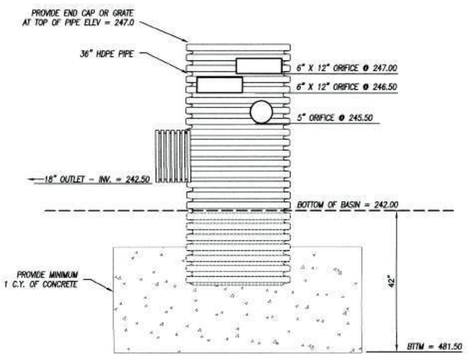


STORMWATER BASIN 2 DETAIL

SCALE: 1"=30'



OUTLET STRUCTURE 2 DETAIL

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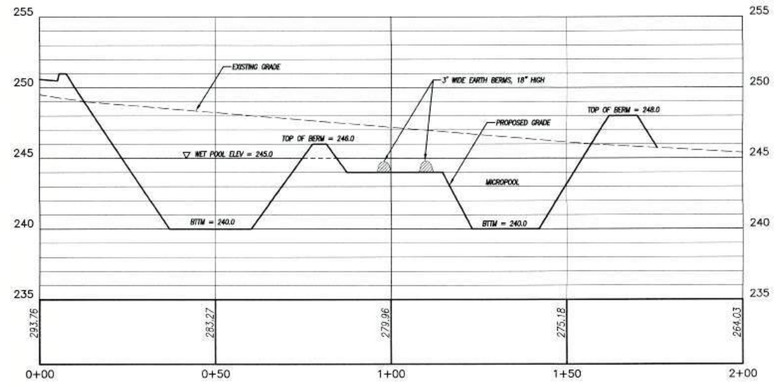


STORMWATER BASIN 2 CROSS SECTION B-B

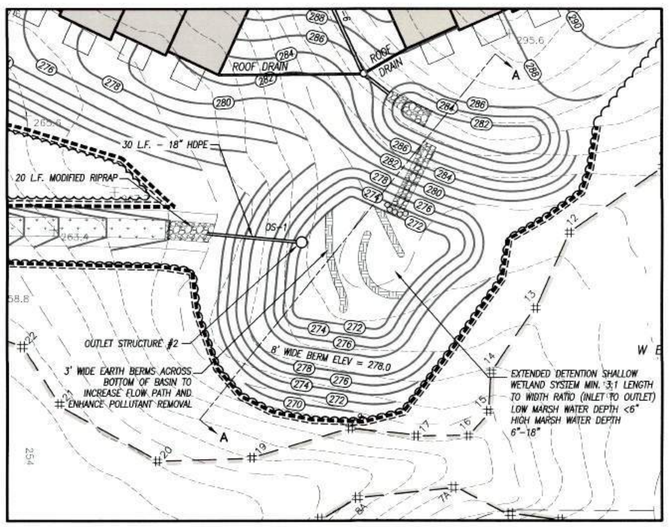
HORIZONTAL SCALE IN FEET

20 10 0 20

5 2.5 0 5

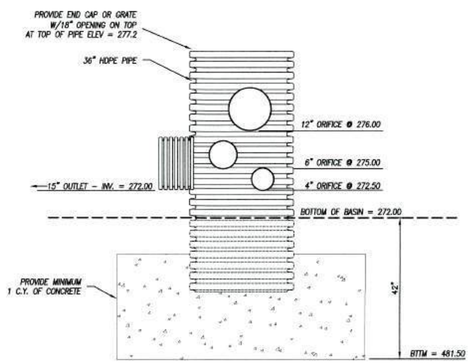
VERTICAL SCALE IN FEET

NOTE: THE CONDOMINIUM ASSOCIATION SHALL BE RESPOSIBLE FOR THE MAINTENANCE OF THE ENTIRE STORMWATER SYSTEM



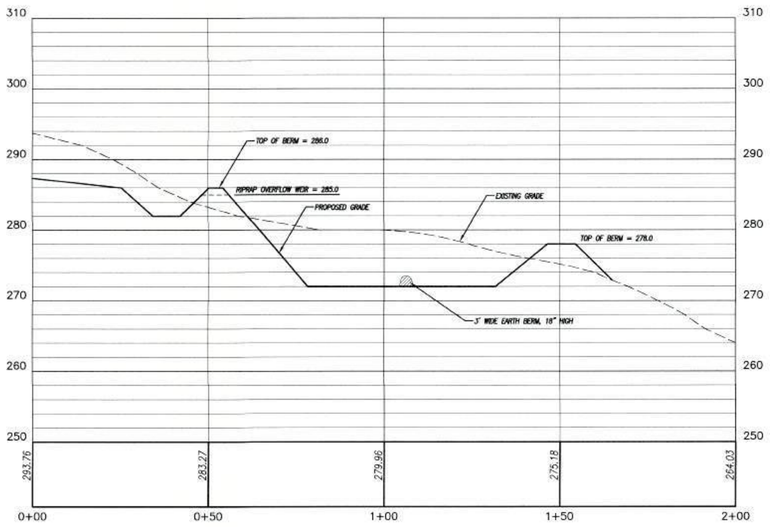
STORMWATER BASIN 1 DETAIL

SCALE: 1"=30'



OUTLET STRUCTURE 1 DETAIL

NOT TO SCALE



STORMWATER BASIN 1 CROSS SECTION A-A

HORIZONTAL SCALE IN FEET

20 10 0 20

5 2.5 0 5

VERTICAL SCALE IN FEET

STATE OF CONNECTICUT NORMAND E. THIBEAULT, JR. No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. DATE

LIC # PEN 0022834

DATE	DESCRIPTION
08/29/2022	NWC APPLICATION RESUBMISSION
10/26/2021	PHASING / E&S
10/15/2021	CONSULTANT REVIEW & COMMISSION
09/15/2021	TOWN ROAD FRONTAGE
04/20/2021	NWC APPROVAL CONDITIONS

REVISIONS

DETAIL SHEET 4

PREPARED FOR

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LOUISE BERRY DRIVE

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SCALE: NOT TO SCALE	DESIGN: NET
SHEET: 16 OF 16	CHK BY: GG
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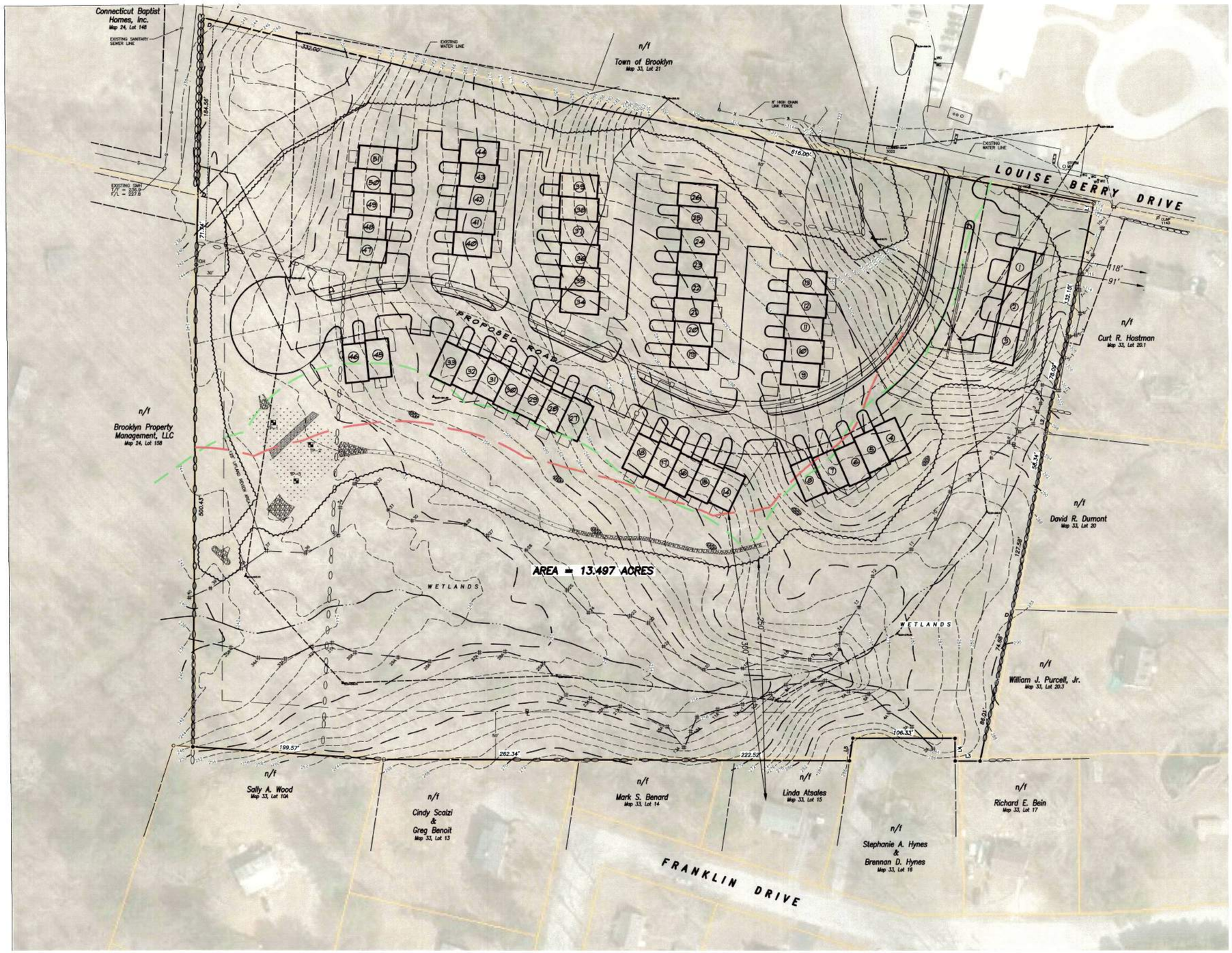

DATE	DESCRIPTION

REVISIONS

SITE PROXIMITY PLAN

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
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DATE: 10/12/2020	DRAWN: NET
SCALE: 1" = 50'	DESIGN: NET
SHEET: 1 OF 1	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 20014

STATE OF CONNECTICUT NORMAND E. THIBEAULT, JR. No. 22834 LICENSED PROFESSIONAL ENGINEER

NORMAND E. THIBEAULT, JR., P.E. LIC. #PEN 0022834 — DATE 11/04/2022

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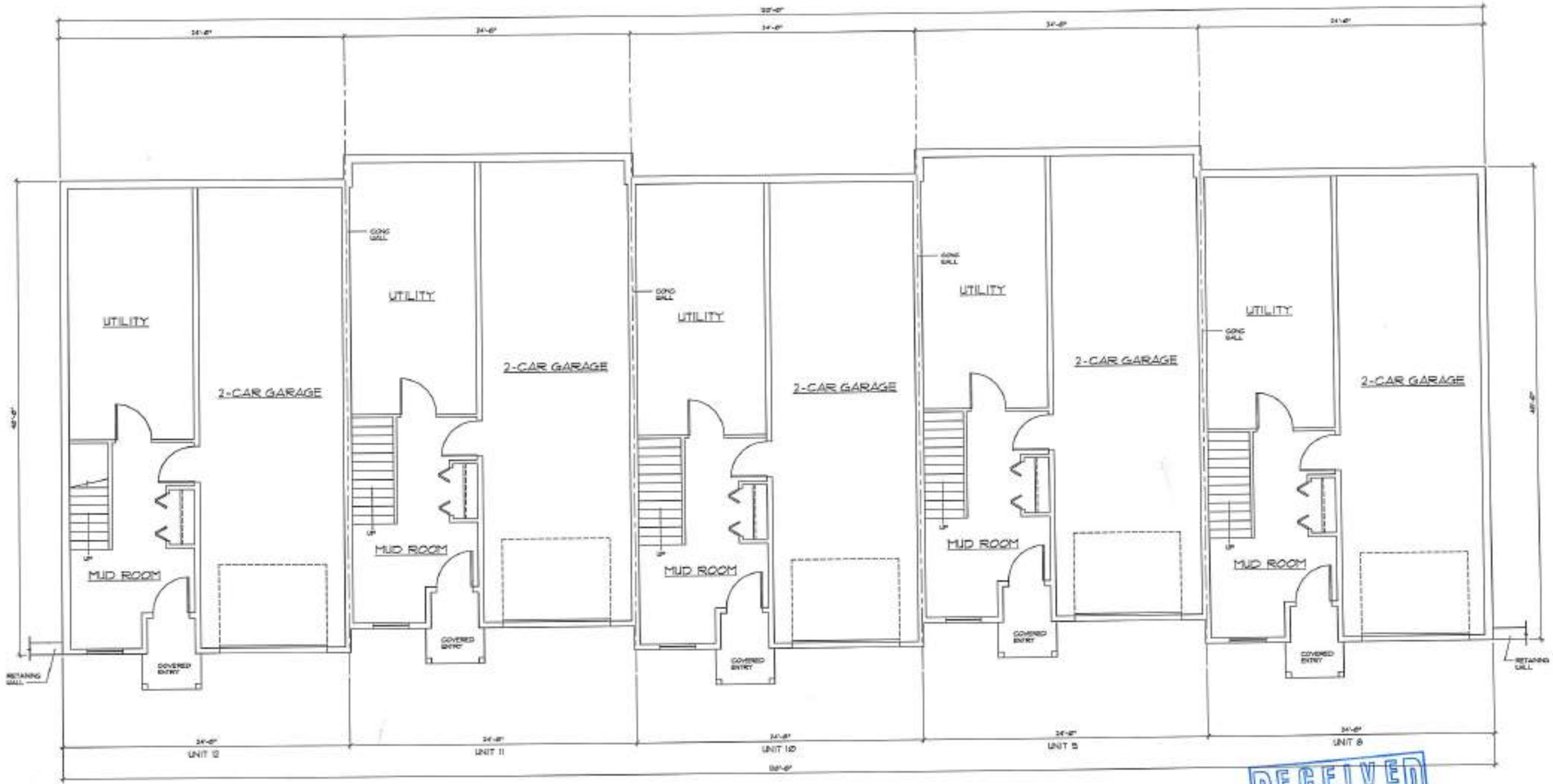
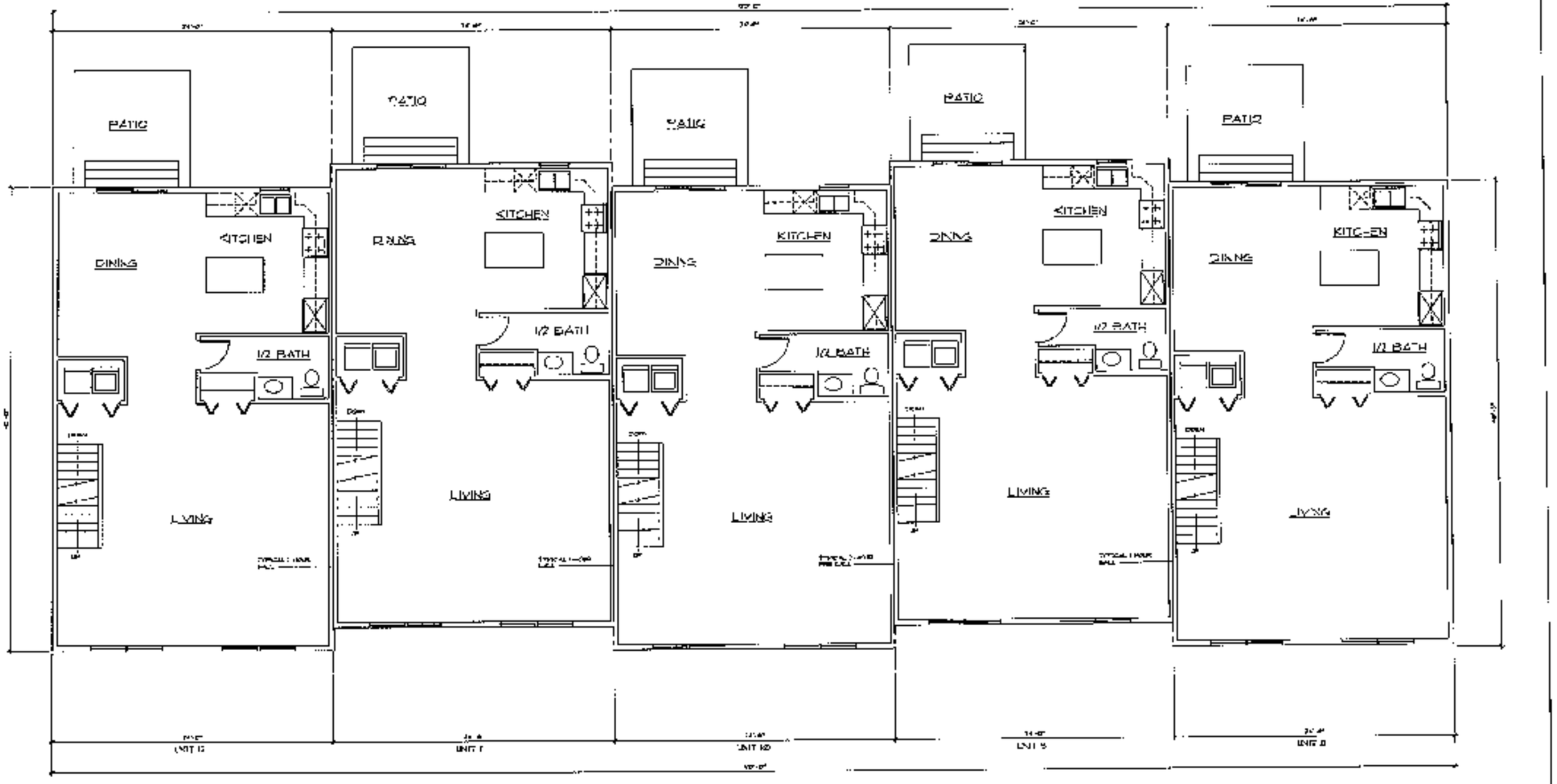


LOWER LEVEL

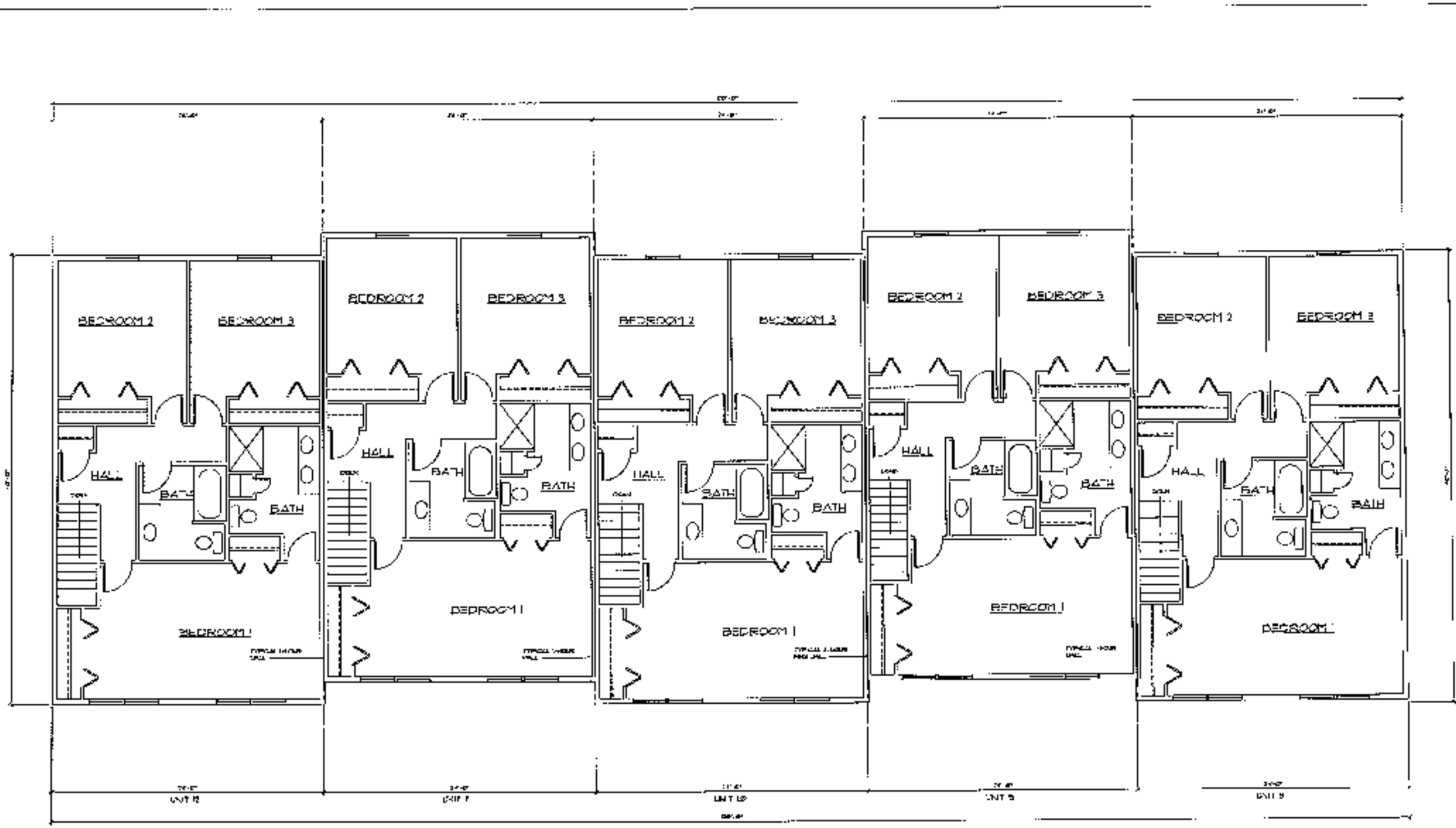
RECEIVED
DEC 06 2022
By

USE GROUP: R-2 CONSTRUCTION TYPE: 5-B UNPROTECTED	NTH DESIGN, LLC BROOKLYN, CONNECTICUT 1-860-450-6443	UNITS 8-12 FOR SHANE POLLOCK LOUISE BERRY DRIVE, BROOKLYN, CONNECTICUT LOWER LEVEL FLOOR PLAN	SCALE: 1/4"=1'-0" DATE: 1-26-22 JOB NO: 21000 SHEET NUMBER: A-1



MAIN LEVEL

USE GROUP: R-2 CONSTRUCTION TYPE: 5-B, UNPROTECTED	NTH DESIGN LLC BROOKLYN, CONNECTICUT 1-860-450-6140	UNITS 6-10 FOR SHANE POLLOCK LOUISE BERRY DRIVE, BROOKLYN, CONNECTICUT MAIN LEVEL FLOOR PLAN	SCALE: 1/4"=1'-0" DATE: 7-20-22 JOB NO: 20068 SHEET NUMBER: A-2



UPPER LEVEL

USE GROUP: R-2	NTH DESIGN LLC BROOKLYN, CONNECTICUT 1 860 450-9443	DATA SHEET FOR: SHANE POLLOCK LOUISE DERBY DRIVE, BROOKLYN, CONNECTICUT	SCALE: 1/4"=1'-0"
CONSTRUCTION TYPE: 5-B UNPROTECTED		UPPER LEVEL FLOOR PLAN	DATE: 7-26-22
			JOB NO: 21006
			SHEET NUMBER: A-3

FRONT ELEVATION

USE GROUP:
R-2

CONSTRUCTION TYPE:
5-B UNPROTECTED

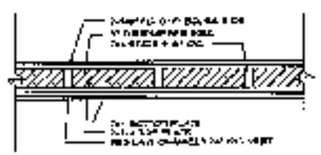
NTH DESIGN, LLC
BROOKLYN, CONNECTICUT
1-860-450-6443

UNITS 5-7 FOR
SHANE POLLOCK
LOUISE BENOIT DRIVE, BROOKLYN, CONNECTICUT

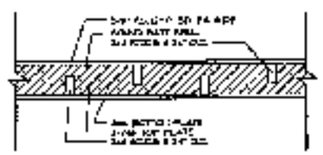
FRONT ELEVATION

SCALE: 1/4"=1'-0"
DATE: 7-28-22
JOB NO: 2000
SHEET NUMBER:
A-4

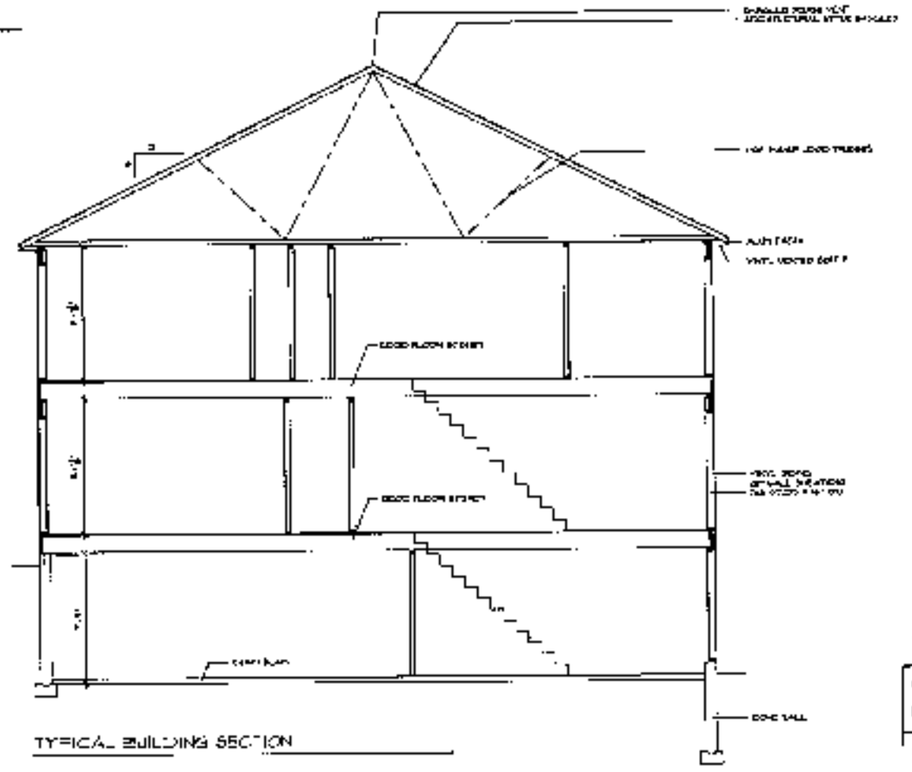
REAR ELEVATION



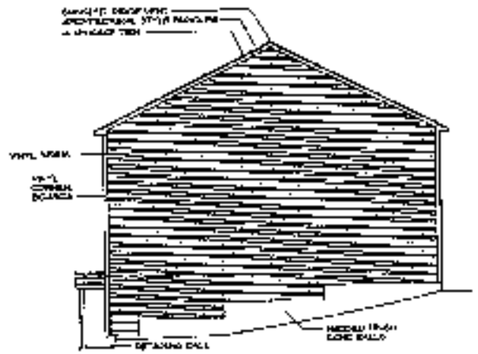
TYPICAL 2 HR FIRE WALL DETAIL



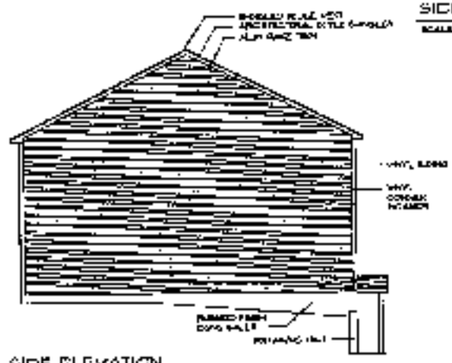
TYPICAL 1 HR PARTY WALL DETAIL



TYPICAL BUILDING SECTION



SIDE ELEVATION



SIDE ELEVATION

USE GROUP:
R-3

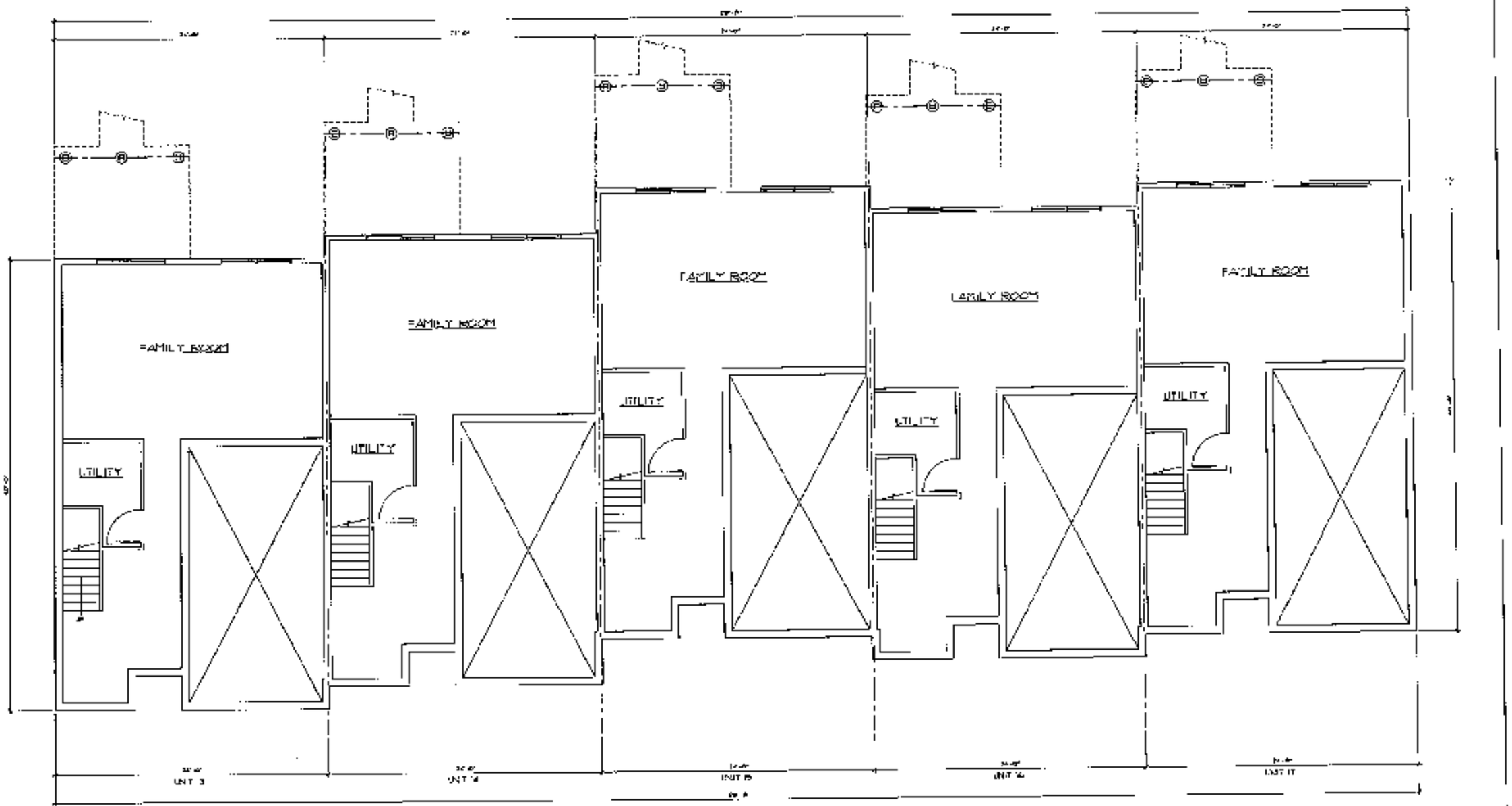
CONSTRUCTION TYPE:
5-B UNPROTECTED

NTH DESIGN, LLC
BROOKLYN CONNECTICUT
1-860-450-8449

UNITS A-D FOR
SHANE POLLOCK
LOT 68 BERRY DRIVE, BROOKLYN, CONNECTICUT

BUILDING SECTION / TYPICAL SIDE & REAR ELEVATIONS

SCALE: 1/4"=1'-0"
DATE: 3-23-22
JOB NO: 21826
SHEET NUMBER:
A-5



LOWER LEVEL

USE GROUP: R-2

CONSTRUCTION TYPE: 5-B UNPROTECTED

NTH DESIGN, LLC
BROOKLYN, CONNECTICUT
1-860-450-6442

UNITS 13-17 TOPE
SHANE POLLOCK
LOUISE AVERY DRIVE, BROOKLYN, CONNECTICUT

LOWER LEVEL FLOOR PLAN

SCALE: 1/4"=1'-0"
DATE: 7-16-19
JOB NO: 21602
SHEET NUMBER
A-6

DECK
DINING
KITCHEN
1/2 BATH
1-CAR GARAGE
MUD ROOM
UNIT 9
UNIT 14
UNIT 15
UNIT 16
UNIT 17

MAIN LEVEL

USE GROUP: R-2

CONSTRUCTION TYPE: 5-B UNPROTECTED

NTH DESIGN, LLC
BROOKLYN, CONNECTICUT
1-860-450-6643

UNITS 15-17 FOR
SHANE POLLOCK
1 OLIVER BERRET DRIVE, BROOKLYN, CONNECTICUT

MAIN LEVEL FLOOR PLAN

SCALE: 1/4"=1'-0"
DATE: 7-26-22
JOB NO: 22003
SHEET NUMBER: A 7

BEDROOM 2

BEDROOM 3

BEDROOM 1

HALL

BATH

BAT-

UNIT 13

UNIT 14

UNIT 15

UNIT 16

UNIT 17

UPPER LEVEL

USE GROUP: R-2	NTH DESIGN LLC BROOKLYN, CONNECTICUT 1 860 480-8443	UNITS 13-17 FOR: SHANE POLLOCK 1 COURSE BRIDGE DRIVE BROOKLYN, CONNECTICUT	SCALE: 1/4"=1'-0"
CONSTRUCTION TYPE: 5-B UNPROTECTED		UPPER LEVEL FLOOR PLAN	DATE: 7-29-22
			JOB NO: 21088
			SHEET NUMBER: A-8

FRONT ELEVATION

USE GROUP
R-2

CONSTRUCTION TYPE
5-HR UNPROTECTED

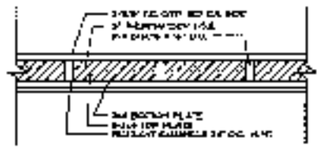
NTH DESIGN, LLC
BROOKLYN, CONNECTICUT
1-860 450 6443

VNTS 13-17 FOR
SHANE POLLOCK
LOUISE BERRY DRIVE, BROOKLYN, CONNECTICUT

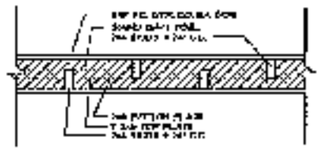
FRONT ELEVATION

SCALE: 1/4"=1'-0"
DATE: 1-26-22
JOB NO. 2533S
SHEET NUMBER
A-9

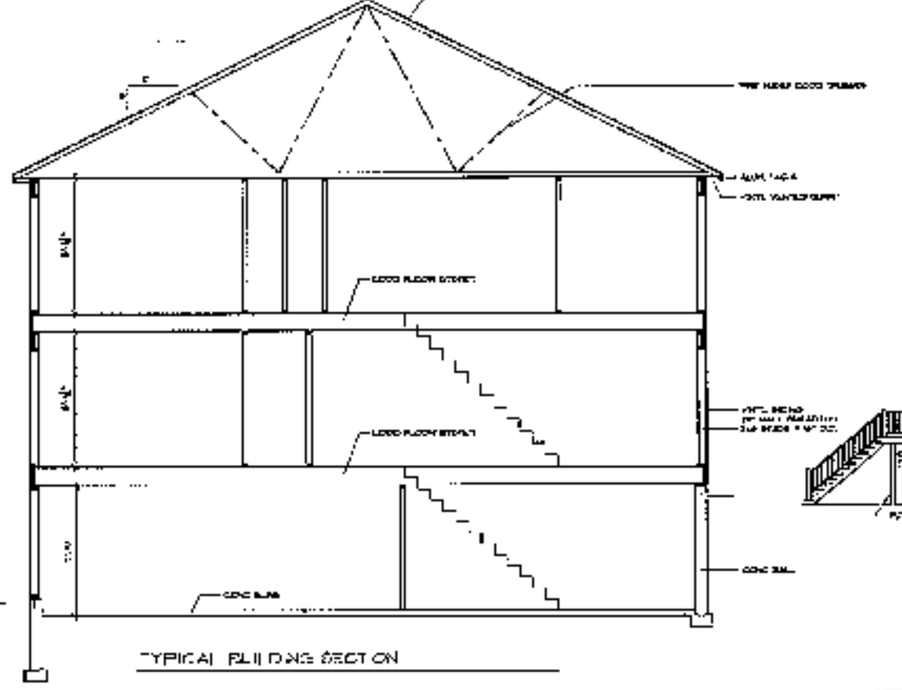
REAR ELEVATION



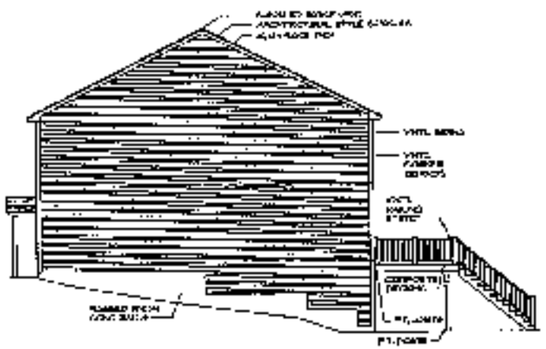
TYPICAL 2 HR FIRE WALL DETAIL



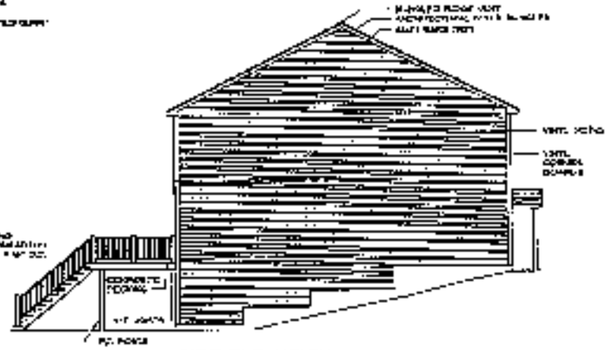
TYPICAL 1 HR PARTY WALL DETAIL



TYPICAL BUILDING SECTION



SIDE ELEVATION



SIDE ELEVATION

USE GROUP: R-2

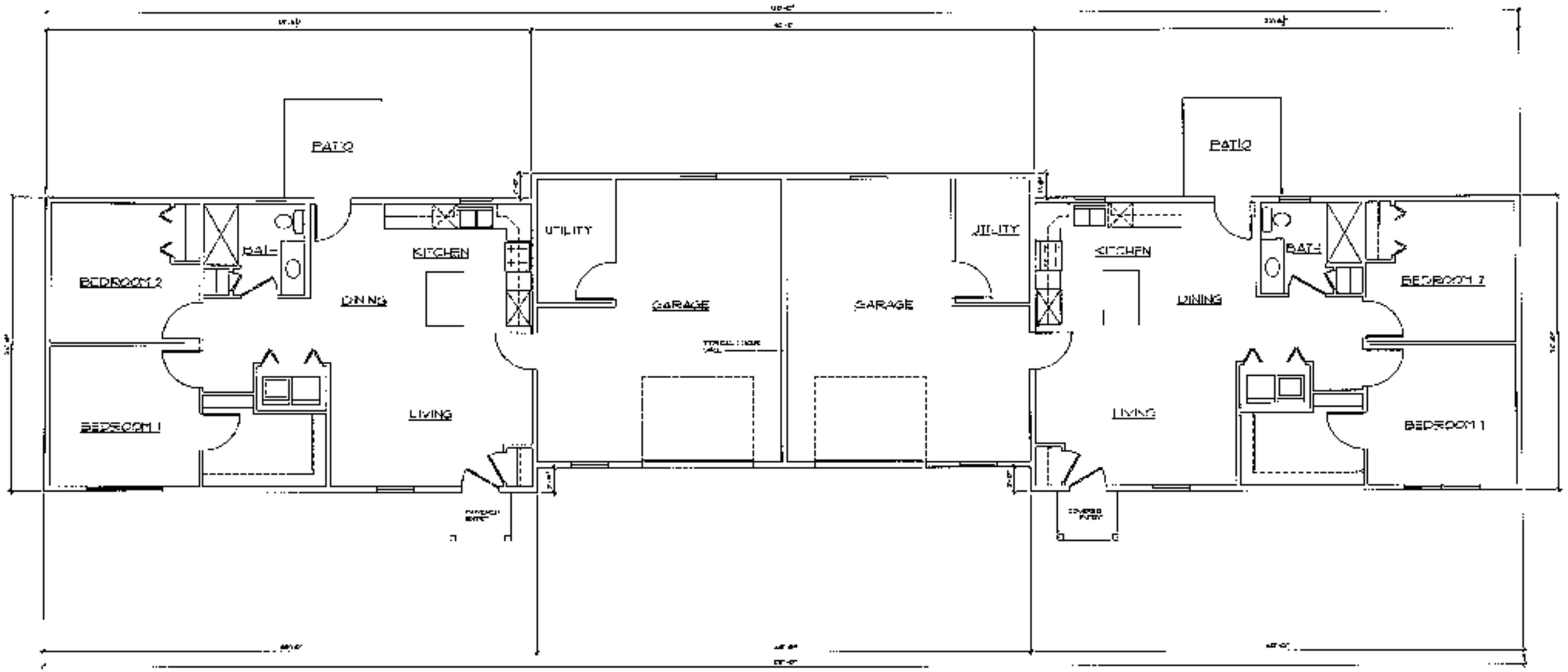
CONSTRUCTION TYPE: 5-B UNPROTECTED

NTH DESIGN, LLC
BROOKLYN, CONNECTICUT
1-860-450-6443

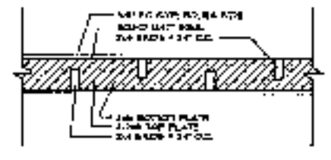
UNITS 11 FOR
SHANE POLLOCK
LOUISE STREET DRIVE, BROOKLYN, CONNECTICUT

BUILDING SECTION, TYPICAL SIDE & REAR ELEVATIONS

SCALE: 1/4"=1'-0"
DATE: 7-20-22
JOB NO: [illegible]
SHEET NUMBER: A-10



MAIN LEVEL



TYPICAL FIRE PARTY WALL DETAIL

USE GROUP: R-3

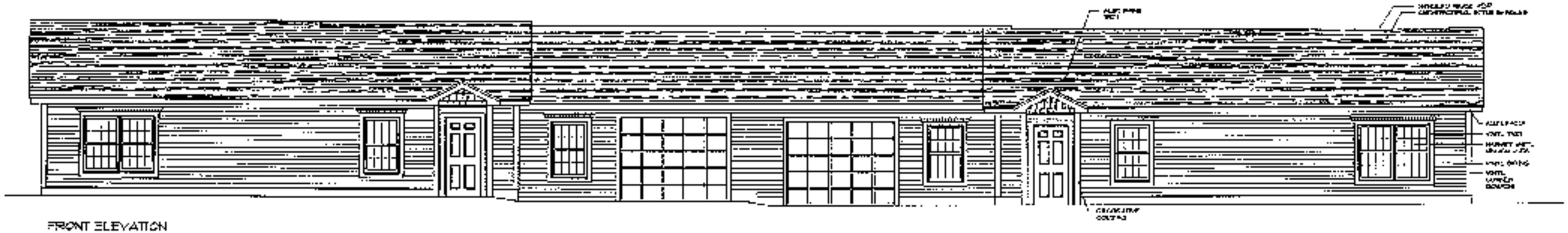
CONSTRUCTION TYPE: 5-B UNPROTECTED

NTH DESIGN LLC
BROOKLYN, CONNECTICUT
1-860-430-8440

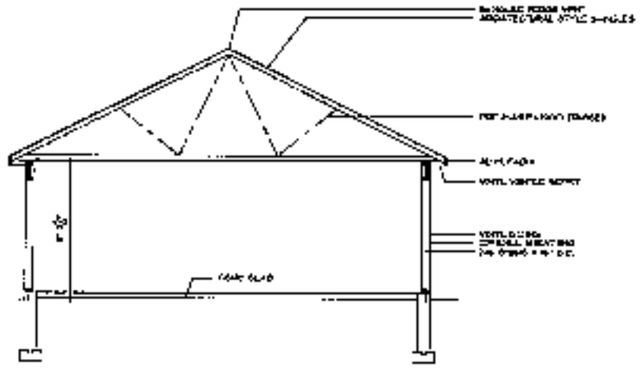
UNITS 1-3 FOR
SHANE POLLOCK
LOUISE BERRY DRIVE, BROOKLYN, CONNECTICUT

MAIN LEVEL FLOOR PLAN

SCALE: 1/4"=1'-0"
DATE: 7-20-22
JOB NO. 21020
SHEET NUMBER
A-11

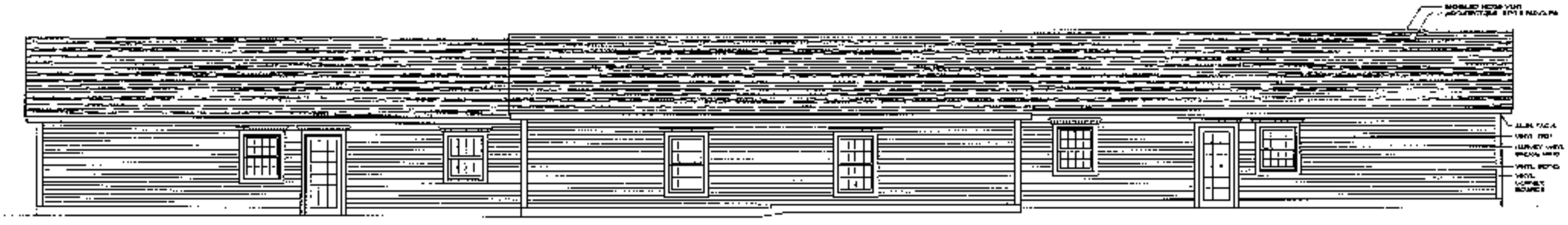


FRONT ELEVATION



TYPICAL BUILDING SECTION

TYPICAL SIDE ELEVATION



REAR ELEVATION

USE GROUP: R-3 CONSTRUCTION TYPE: 5-B (UNPROTECTED)	NTH ASSOC., LLC BROOKLYN, CONNECTICUT 1-860-428-6445	UNITS PREPARED FOR: SHANE POLLOCK LOCUST GROVE DRIVE, BROOKLYN, CONNECTICUT BUILDING SECTION, EXTERIOR ELEVATIONS	SCALE: 1/4"=1'-0" DATE: 7-28-11 JOB NO: 91999 SHEET NUMBER: A-12

Hesketh

Civil & Traffic Engineers • Surveyors • Planners • Landscape Architects

F. A. Hesketh
& Associates, Inc.

November 30, 2022

Mr. Shane Pollock
101 Mackin Drive
Griswold, CT 06351

RE: Proposed Residential Development
Louise Berry Drive
Brooklyn, Connecticut
Our File # 21154

Dear Mr. Pollock:

Pursuant to your request our office has prepared this report to document our findings related to the potential traffic impact of a proposed 50-unit residential development located on Louise Berry Drive in the Town of Brooklyn, Connecticut. The site location is presented in Figure 1 with respect to the surrounding roadway network. This report presents our findings.

Site Plan

The site plan, prepared by Killingly Engineering Associates and dated April 23, 2020 and revised through August 29, 2022, shows 50 residential units with a total of 136 parking spaces. Access to the site is proposed from Louise Berry Drive at a point approximately 550 feet west of Gorman Road. The site access drive extends south into the site and then turns to the west extending a distance of approximately 900 feet, terminating in a cul-de-sac.

Description of Area

The site proposed for development is located on Louise Berry Drive. Louise Berry Drive is a local roadway that originates at an unsignalized intersection with Gorman Road and extends in a westerly direction approximately 600 feet, where it terminates in a parking lot for the Louise Berry elementary School. The roadway provides 22 feet of pavement with a single travel lane in each direction. The Louise Berry Drive approach to Gorman Road operates under stop-sign control.

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Gorman Road is a local roadway that originates at a T-intersection with Prince Hill Road and extends in a southerly direction past Louise Berry Drive and then continuing to its terminus at an unsignalized intersection with Route 205 and Baily Woods Road. The west approach of Prince Hill Road operates under stop-sign control. Gorman Road typically provides approximately 24 feet of pavement with a single travel lane in each direction separated by a double yellow centerline. The posted speed limit is 25 miles per hour. Land use in the area is primarily residential. The Town of Brooklyn Elementary and Middle Schools are located on the roadway.

Current Traffic Volumes

The Connecticut DOT maintains a traffic volume count program on all state highways and some local roadways. Included within the DOT database is a count conducted on Gorman Road located south of Prince Hill Road. The count was conducted during September 2019 and indicates Gorman Road carries an average daily traffic volume (ADT) of 2,000 vehicles with peak hour volumes of 345 vehicles during the a.m. peak hour (8:00 a.m.) and 309 vehicles during the p.m. peak hour (3:00 p.m.). The ConnDOT counts are presented in Table 1.

Manual turning movement counts were conducted during the morning and afternoon school peak hours on Tuesday September 21, 2021. Counts were not conducted during the afternoon commuter peak hour. To represent the afternoon commuter peak hours we have used the ConnDOT counts for Gorman Road and ITE trip generation data for the school for Louis Berry Drive. The ConnDOT Counts and turning movement counts are presented in Figure 2R-1 for the morning and afternoon school peak hours as well as for the afternoon commuter peak hour.

In addition to the ConnDOT counts described above, our office has reviewed the files of OSTA and the Town of Brooklyn to determine if there have been any recent approvals or submissions that may have an impact on traffic volumes in the vicinity. It is our understanding that there are no such developments. Figure 2A presents the background traffic volumes for the morning and afternoon school peak hours as well as the afternoon commuter peak hour.

Site Generated Traffic

The proposal is to consist of a total of 50 residential units. To determine the trip generation for the proposed site, the Institute of Transportation Engineers (ITE) *Trip Generation* Report was

consulted. *Trip Generation* presents trip generation estimates for many land uses based on counts conducted at existing facilities throughout the country. Included within the ITE database are several land uses that could be applicable to the proposed development. There are several land uses that could be applicable to the proposed development. Among them are: Land Use Code (LUC): 210 – Single Family Detached Housing; LUC 215 – Single Family Attached Housing; and LUC 220 – Multifamily Housing (Low rise). The report presents data based on the number of units. Trip generation was run for 50 units. Single Family Attached Housing seems most appropriate for the proposed development. Single Family Detached Housing returns the highest trip generation. However, based on comments received from KHW Engineering related to the previous application, we have presented the trip generation for Multifamily Housing (Low Rise). Based on this methodology, the proposed 50-unit development has a trip generation potential of 396 trips daily with a morning peak hour volume of 38 trips, an afternoon school peak hour volume of 21 trips, and an afternoon commuter peak hour volume of 42 trips. The results are presented in Table 2R-1.

Table 2R-1 also presents the trip generation observed for the existing elementary and middle schools for the morning and afternoon school peak hours. This volume is the observed volume on Louise Berry Drive only, and those staff and/or parents that utilized that roadway. The table also presents the ITE Trip generation for the elementary school and middle school based on the square footage and the number of students. The Town of Brooklyn Board of Education website indicates that the town has approximately 1,000 students. No information on how many students attend each of the schools. It is reasonable to assume that each school has 500 students. The ITE Trip generation based on square footage, appears very high for the morning peak hour. The afternoon peak hour numbers appeared more reasonable. The trip generation based on the number of students appears to be more consistent with the observed volumes during a recent site counts. These volumes were used for the afternoon commuter peak hour volumes for Louis Berry Drive in Figure 2R-1.

The site generated traffic was then applied to the existing roadway network with a directional distribution of 70% oriented to and from the north along Gorman Road and 30% oriented to and from the south along Gorman Road. 100% of the site generated traffic will enter the site via a left-hand turn from Louise Berry Drive, and 100% will exit the site drive via right-hand turn. The

directional distribution is presented in Figure 3. Based on the directional distribution, the site generated traffic volumes for the morning peak hour are presented in Figure 4-R1. By adding these volumes to the background traffic volumes from Figure 2A, the combined traffic volumes, upon completion of the development, can be represented. The volumes present the combined traffic volumes as presented in Figure 5R-1.

Intersection Capacity

To determine the impact of the site generated traffic on the existing roadway network, capacity analyses were conducted for the background and combined traffic volume conditions for the morning, mid-day and afternoon peak hours. The computer program *SYNCHRO*, which is based on the methodology in the Highway Capacity Manual, was utilized for this purpose. The general method determines how much of the capacity available for each movement is being utilized. This is converted into a delay for each movement, and the delay is rated on a level of service (LOS) scale from A to F, with A being the best level of service with low delays and F being the poorest level of service with high delays. An analysis was completed for the unsignalized intersections of Gorman Road at Louise Berry Drive and for the proposed site driveway at Louise Berry Drive. The level of service results are summarized in Table 3R-1.

Gorman Road at Louise Berry Drive/Private - This is an existing un-signalized intersection with Gorman Road oriented in the north/south direction, Louise Berry Drive approaches from the west, and a private drive approaches from the east. Each approach provides a single lane. Louise Berry Drive and the private drive operate under stop-sign control. The analysis indicates that the northbound and southbound approaches operate at a LOS A during all peak hours under the background traffic volume conditions. The eastbound approach operates at a LOS C during peak hours. The westbound approach operates at a LOS B during the morning and afternoon peak hours and at a LOS A during the mid-day peak. With the introduction of the site generated traffic, the northbound and southbound approaches will continue to operate at a LOS A. The eastbound approach will operate at a LOS C during the morning and mid-day peak and at a LOS D during the afternoon peak hour. The westbound approach will operate at a LOS C during the morning peak hour, at a LOS A during the mid-day peak hour and at a LOS B during the afternoon peak hour. A peak hour factor of 0.25 was used for the Louise Berry Drive approach based on observations made during the morning peak hour count. This indicates that

most traffic on that approach occurred during a single 15 - minute period. The calculated LOS describes that peak 15 - minute period. The intersection LOS during the remaining 45 minutes would be likely be a LOS A for all approaches.

Louise Berry Drive at Site Driveway - This is a proposed un-signalized "T" intersection with Louise Berry Drive oriented in the east/west direction. The proposed site driveway approaches from the south. All approaches provide a single lane approach. The proposed site driveway will operate under stop sign control. An analysis indicates that all eastbound and westbound approaches will operate at a LOS A during peak hours. The site driveway approach will operate at a LOS B during the morning and mid day peak hour and at a LOS A during the afternoon peak hour. Again, this condition would last for only 15 minutes, with the remaining 45 minutes operating at a LOS A.

Site Driveway Location and Design

The proposed site driveway is located on Louise Berry Drive, approximately 550 feet west of Gorman Road. The proposed driveway will provide 26 feet of pavement with a single 13 foot lane for both entering and exiting traffic. The driveway approach will operate under stop sign control. We recommend a 12" white stop bar and stop sign be installed on the site driveway. The available intersection sight distance, with some clearing of vegetation across the subject parcel, extends to the intersection of Gorman Road looking to the right and to the end of the roadway looking to the left. The available sight distance meets the current ConnDOT criteria for an approach speed more than 45 miles per hour. Louise Berry Drive is assumed to posted at 25 mph.

The site driveway is located opposite from an existing 12 space parking area for the Louise Berry Elementary School. The spaces are used by staff during school hours.

School Operations

Observations of the school traffic patterns were made during the morning peak hour count. Louise Berry Drive is used by staff and some parents for both entering and exiting traffic. Staff begin arriving at about 8:15 A.M. A significant proportion of parents enter the school grounds from one of the school's northerly driveways from Gorman Road. These parents proceed

behind the school and queue along the east side of the parking lot behind the school. Parents begin to line up starting at about 9:00. Students are not allowed to exit their vehicles until 9:15 A.M. and the drop off period is completed by 9:30 A.M. Once a student has been dropped off, the parent exits the parking lot to Louise Berry Drive and then to Gorman Road. School buses do not use Louise Berry Drive. Although we did not review operations during the afternoon school peak period, we assume that the operation works in the same manner.

Since most people begin work by 9:00 a.m. and work until 4:00 P.M., at a minimum, and the peak period of school activity on Louise Berry Drive does not begin until 9:15 A.M. and likely ends by 4:00 P.M., the peak hours of the proposed residential development should not occur during the peak periods of the elementary school.

Accident Experience

The University of Connecticut gathers and compiles traffic accident data for all state highways and some major local roadways. A list of accidents occurring in the area from October 1, 2019 through October 1, 2022 includes the most recent 3 years of available data. In the appendix are the UConn tables relating the accidents to various conditions including date, time, roadway and weather conditions, collision types, and other variables as well as a short description of each accident.

Accident records were obtained for the entirety of Gorman Road. In total, four (4) accidents involving a total of eight (8) vehicles, occurred in the defined area over the past 3 years. Of those accidents, there were three rear end accidents and one fixed object accident. All accidents were listed as property damage only. There were no reported fatalities.

Conclusion

Based on the available traffic volume data, the projected site generated traffic volumes and the analysis as outlined in this report, it is our professional opinion that the traffic volumes associated with the proposed 30-unit residential development can readily be accommodated by the existing roadway network. The proposed site driveway is properly located with respect to adjacent intersections and with respect to available sight distances and are properly designed to

accommodate the anticipated driveway volumes. It is our opinion that the proposed development will not result in a detrimental impact to the health, safety and welfare of the general public.

We appreciate the opportunity to provide this analysis to you. We will be available to offer testimony in support of your application before local planning agencies upon your request. If you require additional information regarding this application, please do not hesitate to contact our office.

Very truly yours,
F. A. Hesketh & Associates, Inc.

Scott F. Hesketh, P.E.
Manager of Transportation Engineering

cc: Mr. Norm Thibault, Killingly Engineering

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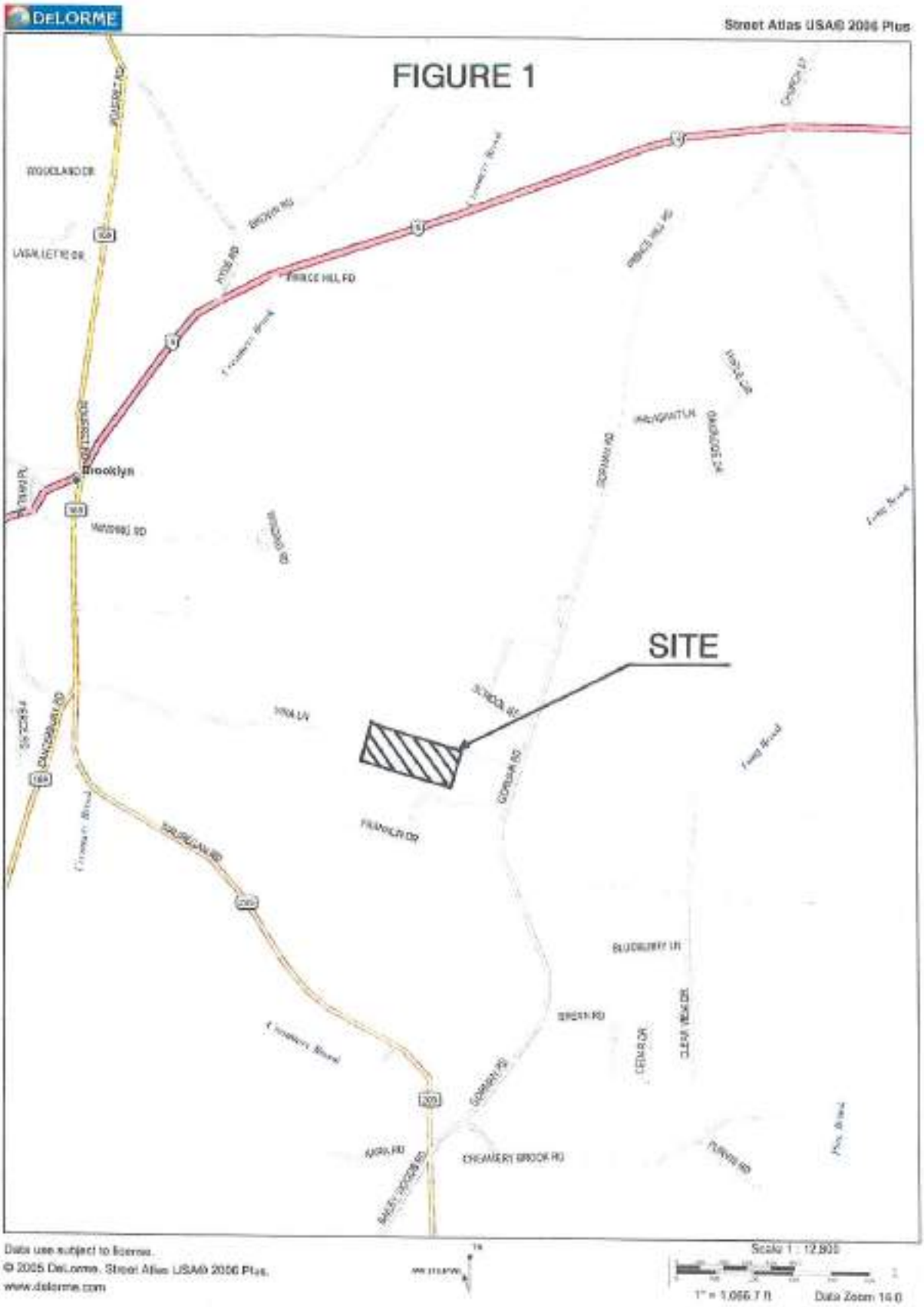
DeLORME
Street Atlas USA® 2006 Plus
FIGURE 1
Brooklyn
SITE
PRINCE HILL RD
CHAMBERY BROOK RD
Data use subject to license.
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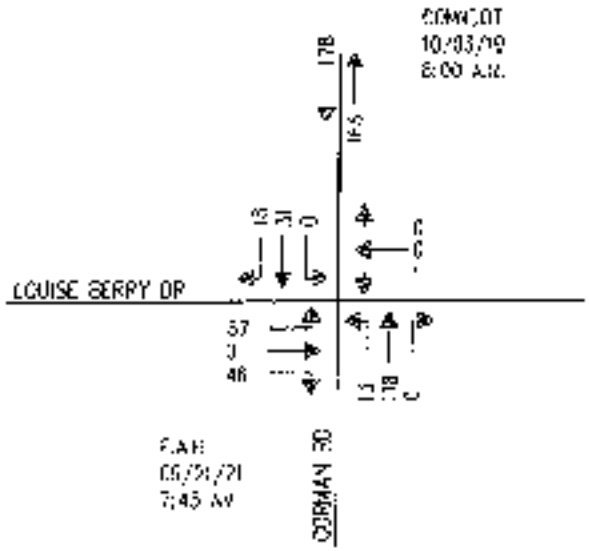
www.delorme.com
Scale 1 : 12,800
1" = 1,066.7 ft
Data Zoom 14.0

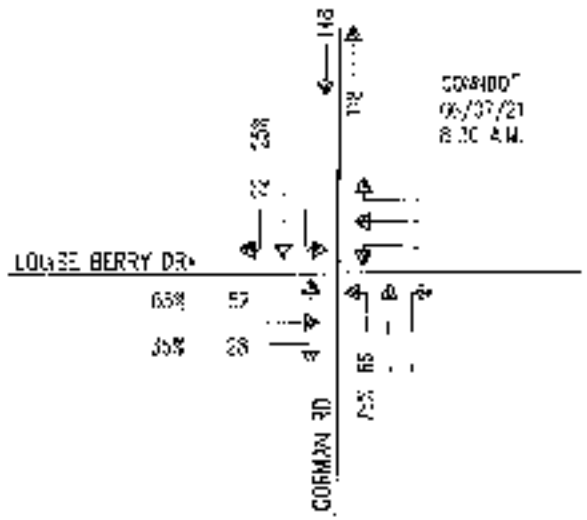
TABLE 1
ConnDOT TRAFFIC VOLUMES
Georgia Road south of Prince Hill Road
STATION NO. 058

	27-Sep-19 Friday			28-Sep-19 Saturday			29-Sep-19 Sunday			30-Sep-19 Monday			1-Oct-19 Tuesday			2-Oct-19 Wednesday			3-Oct-19 Thursday		
	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00				7	10	17	4	10	14	2	5	7	4	4	8	3	4	7	5	5	10
1:00				2	1	3	1	5	6	0	0	0	0	1	1	1	0	1	0	2	2
2:00				0	2	2	2	3	5	0	0	0	0	0	0	0	0	0	1	1	
3:00				0	3	3	2	2	4	2	0	2	2	1	3	2	1	3	2	0	2
4:00				0	0	0	1	1	2	6	1	7	1	2	3	4	1	5	6	1	7
5:00				4	3	7	5	1	6	25	8	33	13	8	21	18	6	24	14	6	20
6:00				13	7	20	18	5	23	37	34	71	23	22	45	40	31	71	22	53	75
7:00				41	17	47	27	15	41	81	75	156	98	54	152	95	47	142	67	75	142
8:00				53	38	91	48	29	77	156	169	325	169	170	339	167	163	330	158	136	294
9:00				57	44	101	56	38	94	44	31	75	43	44	87	42	45	87	25	41	66
10:00	4	4	8	80	40	120	74	35	109	51	24	75	38	37	75	39	32	71	5	3	8
11:00	52	61	111	73	53	126	65	61	126	44	53	97	70	53	123	50	49	99			
12:00	55	60	115	81	49	140	60	78	140	56	52	108	61	58	115	63	50	113			
1:00	47	53	100	71	73	144	53	67	117	46	45	95	45	58	104	24	50	79			
2:00	57	120	177	81	83	165	61	54	118	95	58	153	55	132	187	48	96	144			
3:00	153	120	264	57	54	128	47	71	118	180	109	265	173	136	309	142	175	324			
4:00	112	97	209	45	79	114	77	57	134	118	148	266	126	124	250	112	175	287			
5:00	75	99	174	42	56	101	49	56	105	127	89	216	156	112	272	93	84	187			
6:00	76	83	155	36	55	92	64	44	88	55	62	117	47	76	120	60	63	135			
7:00	32	53	85	28	37	65	23	40	53	36	38	74	28	56	83	31	45	70			
8:00	27	33	60	35	40	75	43	34	57	13	25	45	8	31	39	15	26	44			
9:00	14	24	41	15	27	32	16	18	32	11	21	37	11	28	36	10	21	31			
10:00	16	16	34	13	13	26	4	16	18	5	8	13	8	10	19	9	13	25			
11:00	9	12	20	6	9	15	4	8	12	7	6	12	3	14	17	7	5	7			
	783	540	1323	857	843	1700	763	694	1457	1151	1137	2288	1169	1204	2373	1051	1112	2163	330	354	684

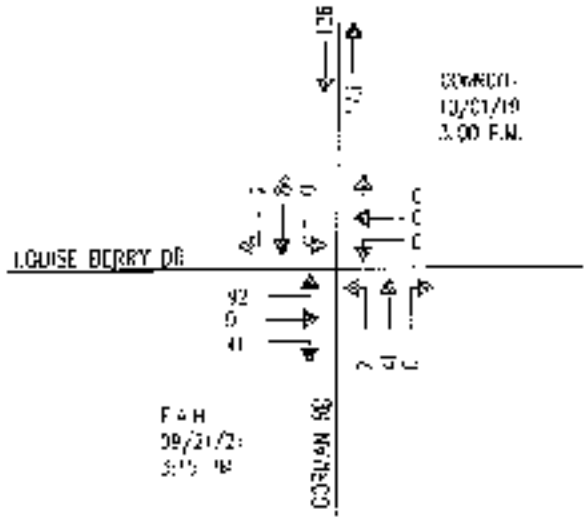
2019 ADT = 2,000 for station 058 in Brooklyn



A.M. PEAK HOUR



P.M. PEAK HOUR



SCHOOL PM PEAK HOUR

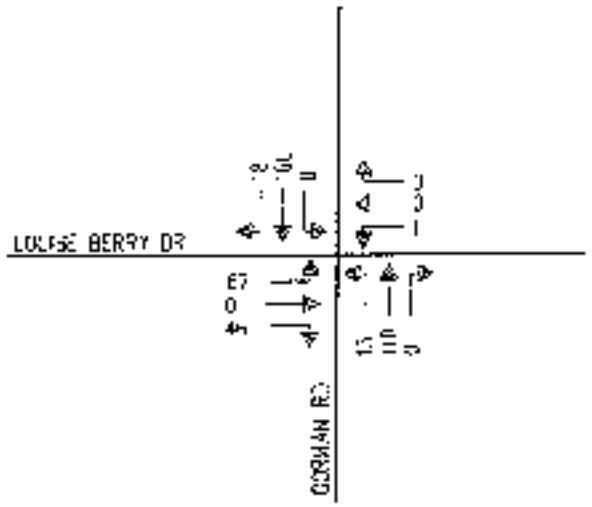
* VOLUMES TAKEN FROM IT TRIP GENERATION PROJECTIONS FOR THE PM PEAK HOUR OF ADJACENT STREET TRAFFIC VOLUMES REPRESENT 75% OF THE SUM OF THE ELEMENTARY PLUS MIDDLE SCHOOL TRAFFIC

FIGURE 25-1 — 5-28-2021

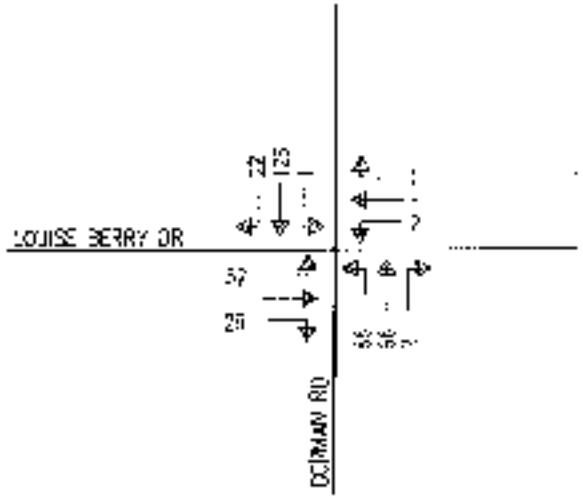
OBSERVED TRAFFIC VOLUMES
AM, SCHOOL & PM PEAK HOURS
PROPOSED RESIDENTIAL DEVELOPMENT
LOUISE BERRY DRIVE
BROOKLYN, CT

F. A. Hesketh & Associates, Inc.
TRAFFIC PLANNING ENGINEERING DESIGN

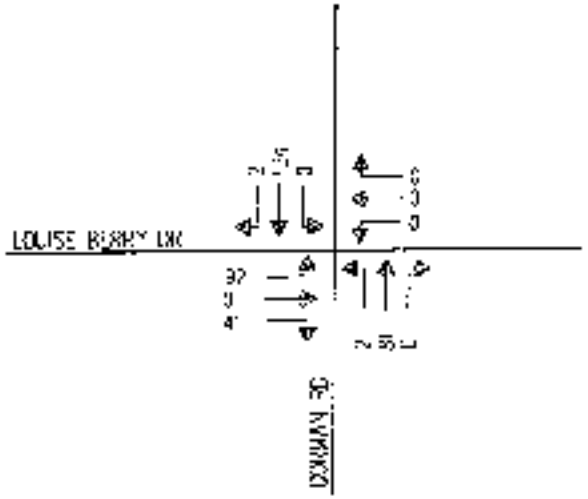
NOT TO SCALE



A.M. PEAK HOUR



P.M. PEAK HOUR



SCHOOL PM PEAK HOUR

FIGURE 7A

BACKGROUND TRAFFIC VOLUMES
AM, SCHOOL & PM PEAK HOURS
PROPOSED RESIDENTIAL
DEVELOPMENT
LOUISE BERRY DRIVE
BROOKLYN, CT

F. A. Hesketh & Associates, Inc.
TRAFFIC PLANNING ENGINEERING GROUP

NOT TO SCALE

Table 2R-1
Trip Generation
Proposed Residential Development
Louise Berry Drive - Brooklyn, CT

Land Use	Size	ADT	A.M. Peak Hour			School PM Peak Hour			P.M. Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Single Family Detached	50 units*	533	10	40	50	13	13	26	33	19	52
Single Family Attached	30 units*	360	7	17	24	7	7	14	16	12	28
Multi Family Housing Low Rise	50 units*	396	9	29	38	10	11	21	26	16	42
School Complex											
	Observed#		31	113	144	4	133	137	-	-	-
	Based on ITE Data										
Elementary School	87,100 s.f.	1,700	334	273	607	121	154	275	53	66	119
	500 Students	945	181	154	335	76	94	170	41	44	85
Middle School	88,100 s.f.	1,775	325	267	592	132	161	293	54	51	105
	500 Students	1,236	199	158	350	80	95	175	42	43	85

* - School PM Peak hour volumes assumed to be 50% of the PM Peak hour volume with a 50/50 split

- Observed volumes are those observed on Louis Berry Drive during the AM andPM school peak hours

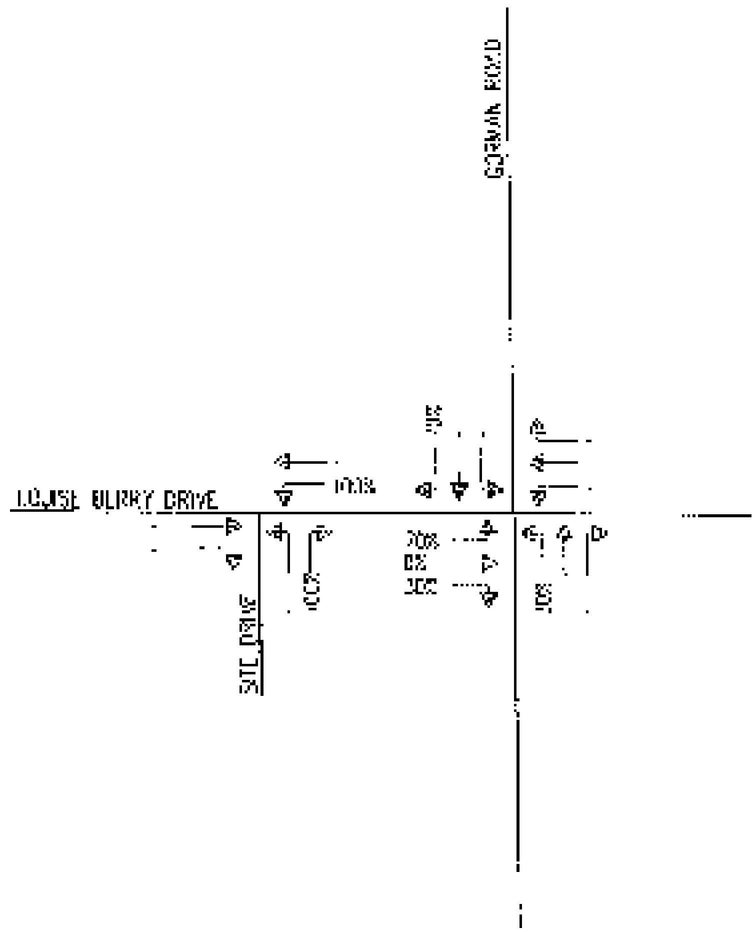


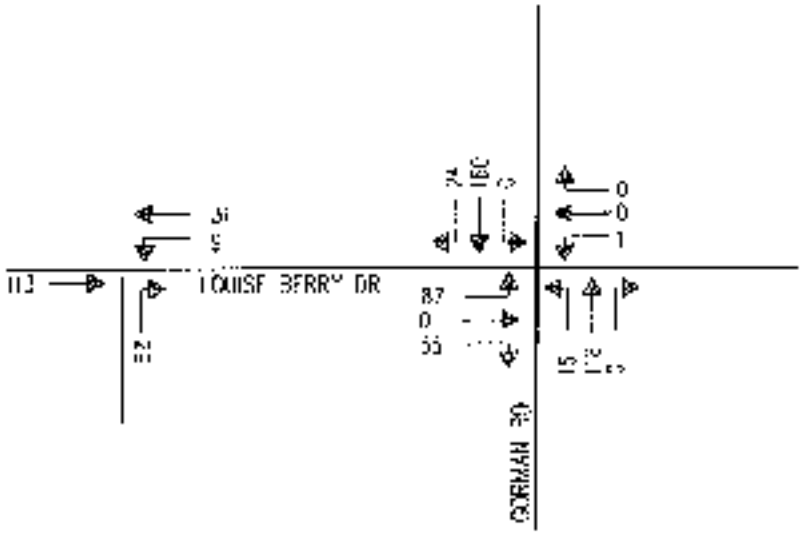
FIGURE 5

DIRECTIONAL DISTRIBUTION OF SITE GENERATED TRAFFIC PROPOSED RESIDENTIAL DEVELOPMENT LOUISE BERRY DRIVE BROOKLYN, CT

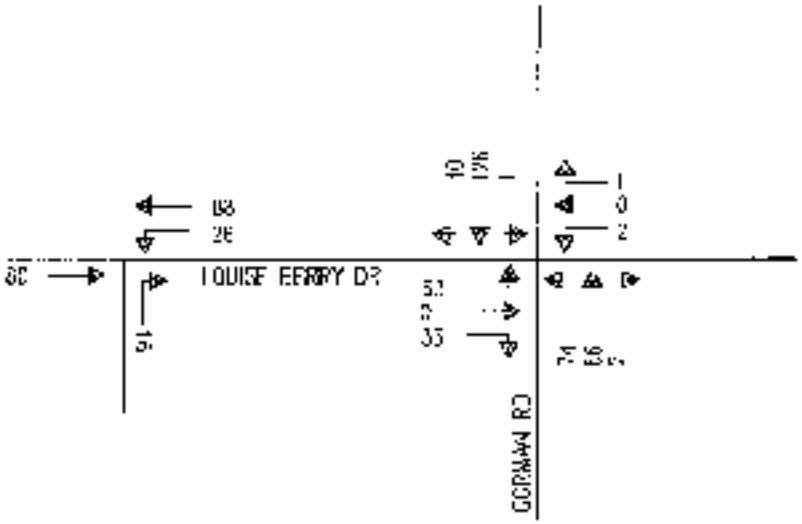
F. A. Hesketh & Associates, Inc.

TRAFFIC
PLANNING
ENGINEERING
DESIGN

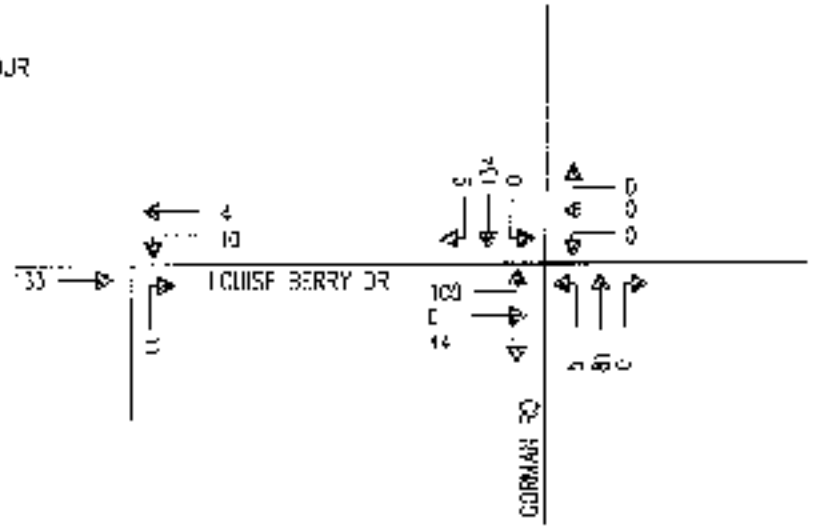
NOT TO SCALE



A.M. PEAK HOUR



P.M. PEAK HOUR



SCHOOL PM PEAK HOUR

FIGURE 53-1

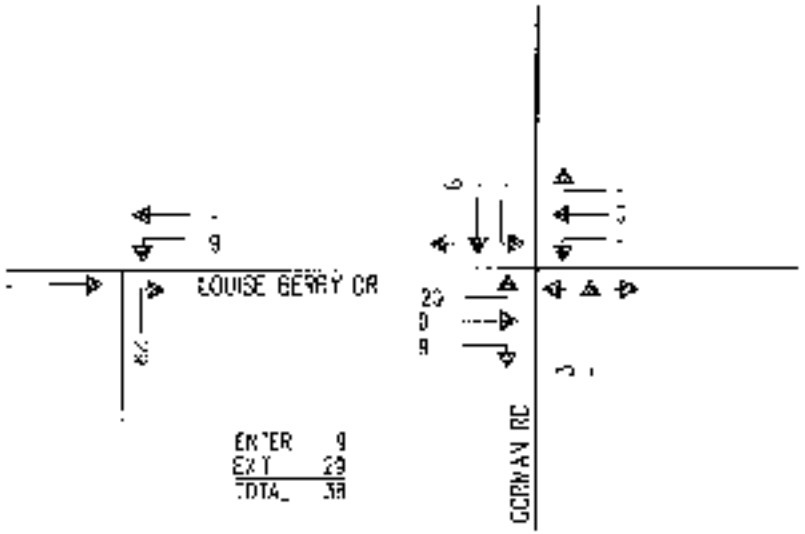
COMBINED TRAFFIC VOLUMES
AM, SCHOOL & PM PEAK HOURS
PROPOSED RESIDENTIAL DEVELOPMENT
LOUISE BERRY DRIVE
BROOKS, VA.

12-28-2022

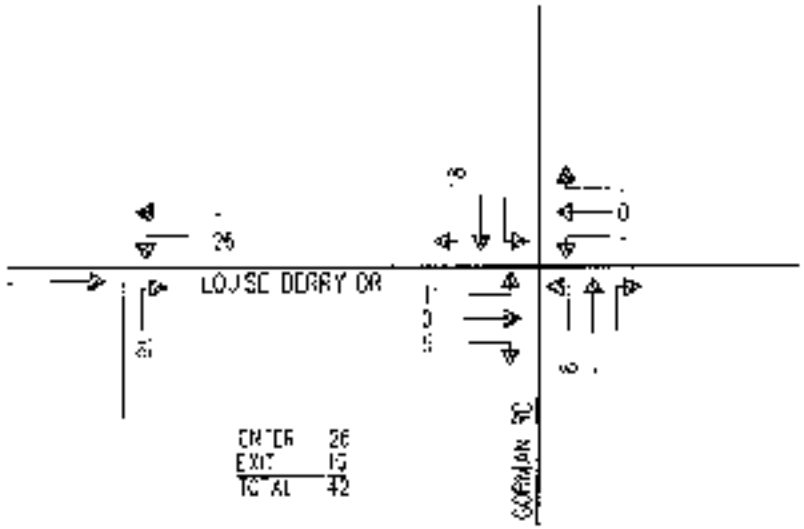
F. A. Hesketh & Associates, Inc.

FAH TRAFFIC PLANNING ENGINEERING DESIGN

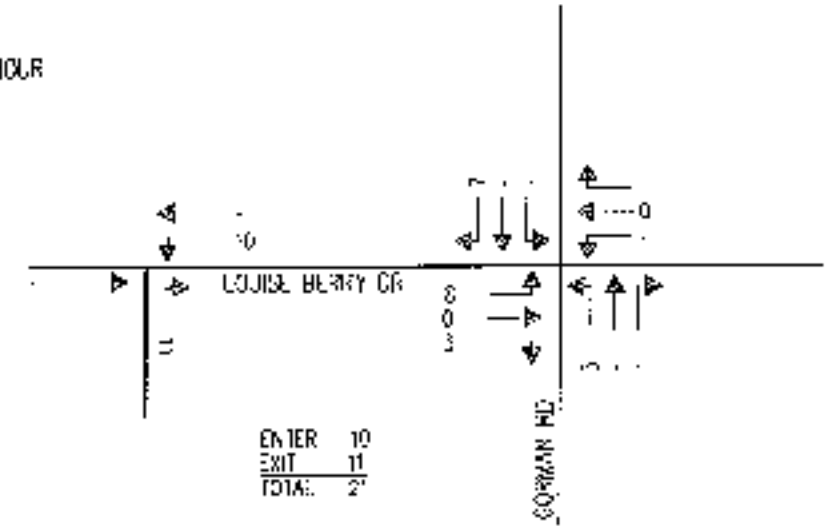
NOT TO SCALE



AM PEAK HOUR



P.M. PEAK HOUR



SCHOOL PM PEAK HOUR

FIGURE AR-1 11-28-2022

SITE GENERATED TRAFFIC
AM, SCHOOL & PM PEAK HOURS
PROPOSED RESIDENTIAL
DEVELOPMENT
LOUISE BERRY DRIVE
BROOKLYN, CT

F. A. Hesketh & Associates, Inc.
TRAFFIC PLANNING ENGINEERING DESIGN

NOT TO SCALE

Table 3R-1

Level of Service Summary

Proposed Residential Development

Louise Berry Drive - Brooklyn, CT

	A.M. Peak Hour								Mid-Day School Peak Hour								P.M. Peak Hour							
	Background Traffic				Combined Traffic				Background Traffic				Combined Traffic				Background Traffic				Combined Traffic			
Time Period	LOS	delay	v/c	Queue	LOS	delay	v/c	Queue	LOS	delay	v/c	Queue	LOS	delay	v/c	Queue	LOS	delay	v/c	Queue	LOS	delay	v/c	Queue
German Road at Louise Berry Drive/ Private Drive																								
EB	C	16.2	0.47	33	C	20.1	0.51	37	C	15.9	0.50	39	C	17.1	0.53	84	C	16.2	0.38	15	D	25.4	0.70	128
WB	B	14.9	0.01	1	C	15.8	0.01	1	A	0.0	0.00	0	A	0.0	0.00	0	B	13.1	0.03	2	B	13.8	0.01	1
NB	A	0.9	0.01	1	A	1.1	0.02	1	A	0.2	0.00	0	A	0.5	0.01	0	A	4.2	0.08	6	A	4.4	0.07	6
SB	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0	A	0.0	0.00	0	A	0.1	0.00	0	A	0.0	0.00	0
Louise Berry Drive at Site Drive																								
EB	-	-	-	-	A	8.8	0.17	0					A	0.0	0.09	0					A	0.0	0.05	0
WB	-	-	-	-	A	7.3	0.01	1					A	5.5	0.01	1					A	1.8	0.02	1
NB	-	-	-	-	B	10.0	0.05	4					B	9.0	0.01	1					A	8.8	0.02	1

APPENDIX

ConnDOT Traffic Counts

Status: OK [North] [Combined] [South] [Class] [Speed]

BROL-058 - Combined - n/s

[03]-Gorman Road - 1.48 mi South of Prince Hill Road

Field	Value
Town	Brooklyn
Station	58
Location	41.76275,-71.95.508
Posted Speed Limit	30 MPH
2016-Major Collector 5	2010-Urban
Start Report	27-Sep-2019 11:00AM
End Report	03-Oct-2019 10:00AM

24-Hour Count	2003 * G4(0.84) = 1947.8
Day 1	1707 * G4(1.03) = 3850.1
Day 2	1432 * G4(1.20) = 5375.9
Day 3	2288 * G4(0.96) = 7574.9
Day 4	2393 * G4(0.95) = 9808.3
Day 5	2183 * G4(0.95) = 11922.1
Unbounded AADT	11922.1 / 6 = 1987.0
2019 Fri 27-Sep -this report-	2000
2016 Wed 25-May	2300
2010 Wed 05-May	2300

	27-Sep Fri	28-Sep Sat	29-Sep Sun	30-Sep Mon	01-Oct Tue	02-Oct Wed	03-Oct Thu
12:00am		17	14	7	6	2	10
01:00am		7	6	0	1	1	2
02:00am		2	5	1	0	0	1
03:00am		1	4	2	3	3	2
04:00am		0	2	7	7	5	1
05:00am		7	8	13	27	23	23
06:00am		20	23	75	65	70	75
07:00am		57	41	156	165	165	142
08:00am		61	70	323	336	308	344
09:00am		132	91	72	77	97	65
10:00am	x	126	109	75	75	71	x
11:00am	111	166	120	87	120	99	
12:00pm	155	145	140	106	119	114	
01:00pm	106	144	117	65	104	77	
02:00pm	177	144	119	153	167	137	
03:00pm	309	126	118	295	309	258	
04:00pm	209	113	114	266	260	240	
05:00pm	169	101	101	216	202	184	
06:00pm	150	92	99	131	120	121	
07:00pm	65	65	63	76	93	79	
08:00pm	65	65	57	45	35	36	
09:00pm	51	35	32	30	35	37	
10:00pm	34	24	14	13	18	27	
11:00pm	22	15	12	12	17	7	
Totals	1570	1707	1432	2368	2253	2153	694

Status: OK | North | Combined | South | Class | Speed

BROL-058 - North

1371-Gorman Road - 1.46 mi South of Colliver Hill Road

Town.............................Brooklyn
Station 58
Location......... 41.79275,-71.931906
Posted Speed Limit.................30 MPH
2015-Major Collector 5........ 2015-Urban
Start Report........ 27-Sep-2019 11:00AM
End Report........ 03-Oct-2019 10:00AM

24-Hour Count..... 1033 * G4(0.88) = 905.0
Day 1............ 869 * G4(1.03) = 1941.7
Day 2............ 740 * G4(1.20) = 2729.9
Day 3............ 1151 * G4(0.56) = 3894.9
Day 4............ 1159 * G4(0.53) = 4933.9
Day 5............ 1081 * G4(0.85) = 5962.9
Unrounded AADT........ 5962.9 / 6 = 992.0
UA 2019 Fri 27-Sep (this report)....2200
OK 2016 Wed 25-May 2300
REV 2016 Wed 25-May 2300

	27-Sep Fri	28-Sep Sat	29-Sep Sun	30-Sep Mon	01-Oct Tue	02-Oct Wed	03-Oct Thu
12:00am		[illegible]	4	3	4	7	6
01:00am		2	1	0	0	[illegible]	0
02:00am		0	2	0	0	1	0
03:00am		1	3	2	1	[illegible]	2
04:00am		3	1	6	5	4	6
05:00am		4	5	25	19	15	10
06:00am		13	19	52	45	49	52
07:00am		40	27	63	51	79	67
08:00am		56	44	155	166	167	108
09:00am		52	59	44	46	60	45
10:00am	8	80	74	37	33	39	8
11:00am	50	75	59	40	61	50	
12:00pm	86	81	69	56	57	61	
01:00pm	77	71	55	62	48	34	
02:00pm	87	71	61	56	61	43	
03:00pm	183	57	67	166	122	143	
04:00pm	132	45	57	118	136	115	
05:00pm	76	45	55	117	103	92	
06:00pm	65	49	46	59	47	67	
07:00pm	32	29	23	34	24	31	
08:00pm	27	23	24	13	[illegible]	15	
09:00pm	14	10	16	9	11	10	
10:00pm	18	12	4	5	5	9	
11:00pm	8	5	[illegible]	6	3	7	
Totals	760	907	940	1151	1159	1081	365

Stations: 58 North Combined South Class Speed

BROL-058 - South

[37]-Gorman Road - 1.46 mi South of Prince Hill Road

```
Town.................................Brooklyn
Station................................55
Location.............. 41.7322%, 71 84190%
Posted Speed Limit................ 30 MPH
2015-Major Collector ...........2015-Urban
Start Report..........27-Sep-2019 11:00AM
End Report...........03-Oct-2019 10:00AM

24 Hour Count.... 1010 * 64(0.84) = 899.2
Day 1 .......... 542 * 24(1.03) = 1758..
Day 2. ........ - 742 - 64(1.20) = 2596..
Day 3.......... - 1137 * 64(0.89) = 1745.0
Day 4. ........ - 1234 * 64(0.90) = 39.2.2
Day 5. ........ - 1102 * 64(0.35) = 3908.2
UnRounded AADT...... 5959.2 / 5 = 993.7
 OK   2019 Fri 27-Sep this report-...2320
 OK   2016 Wed 25-May ..............2320
 REV  2016 Wed 25-May ..............2300
```

	27-Sep Fri	28-Sep Sat	29-Sep Sun	30-Sep Mon	01-Oct Tue	02-Oct Wed	03-Oct Thu
12:00am		[illegible]	[illegible]	9	9	6	1
01:00am		5	5	0	1	0	2
02:00am		2	2	0	0	0	1
03:00am		7	2	0	0	1	0
04:00am		0	1	1	2	1	1
05:00am		3	3	8	8	5	4
06:00am		7	5	23	20	21	23
07:00am		17	11	75	44	81	75
08:00am		35	26	100	115	161	129
09:00am		41	38	31	44	45	43
10:00am	5	42	30	38	92	57	8
11:00am	61	91	61	57	55	49	
12:00pm	65	64	70	55	52	57	
01:00pm	53	73	47	45	59	28	
02:00pm	111	82	58	98	108	64	
03:00pm	176	59	71	99	138	127	
04:00pm	97	65	57	146	124	123	
05:00pm	93	54	52	99	113	57	
06:00pm	92	55	53	72	74	65	
07:00pm	63	27	40	41	55	42	
08:00pm	53	40	34	26	31	27	
09:00pm	37	35	16	27	23	21	
10:00pm	16	12	10	6	10	12	
11:00pm	12	9	8	5	14	5	
Totals	542	844	742	1137	1234	1102	329

Manual Turning Movement Counts

F.A. Hesketh & Associates, Inc.
3 Creamery Brook
East Granby, CT 06026
Phone: (860) 653 - 8002

Gorman Road at
Louise Berry Drive & Residential Drive
Brooklyn, CT 06234
Job No.21154

File Name : AM Count 09 21 2021
Site Code : 00000000
Start Date : 9/21/2021
Page No : 1

Groups Printed- Unstilled

Start Time	Gorman Road From North				Residential Drive From East				Gorman Road From South				Louise Berry Dr From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:30 AM	3	3	0	6	0	0	1	1	0	11	4	15	2	0	1	3	25
07:15 AM	2	4	0	6	1	0	0	1	0	11	1	12	5	0	4	9	28
07:00 AM	2	2	0	7	0	0	0	0	0	13	3	16	1	0	2	3	26
07:45 AM	6	6	0	10	0	0	0	0	0	18	4	22	1	0	9	10	42
Total	13	14	0	29	1	0	1	2	0	53	12	65	9	0	16	25	121
08:30 AM	7	5	0	12	0	0	1	1	0	38	5	36	2	0	1	3	52
08:15 AM	6	11	0	17	0	0	0	0	0	44	3	47	12	0	19	31	95
08:30 AM	0	10	0	10	0	0	0	0	0	26	0	26	21	0	35	56	106
08:45 AM	0	7	0	7	0	0	0	0	0	8	0	8	0	0	3	3	18
Total	13	33	0	46	0	0	1	1	0	106	8	116	35	0	58	93	256
Grand Total	26	47	0	75	1	0	2	3	0	159	21	180	54	0	77	131	389
Approch %	37.3	62.7	0.0		33.3	0.0	66.7		0.0	88.3	11.7		41.2	0.0	58.8		
Total %	7.2	12.1	0.0	19.3	0.3	0.0	0.5	0.8	0.0	40.9	5.4	46.3	13.9	0.0	19.8	33.7	

Start Time	Gorman Road From North				Residential Drive From East				Gorman Road From South				Louise Berry Dr From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:45 AM																
Volume	19	31	0	48	0	0	1	1	0	118	12	130	46	0	67	113	291
Percent	38.7	63.3	0.0		0.0	0.0	100.0		0.0	90.1	9.9		40.7	0.0	59.3		
08:30 Volume	9	10	0	19	0	0	0	0	0	26	0	26	21	0	35	56	101
Peak Factor																	0.720
High Int.	08:45 AM				08:00 AM				08:15 AM				08:30 AM				
Volume	6	11	0	17	0	0	1	1	0	44	3	47	31	0	38	69	
Peak Factor				0.721				0.250				0.697				0.409	

Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1

By Approach	07:45 AM				07:00 AM				07:45 AM				07:45 AM			
Volume	19	31	0	49	1	0	1	2	0	118	12	130	46	0	67	113
Percent	38.7	63.3	0.0		50.0	0.0	50.0		0.0	90.1	9.9		40.7	0.0	59.3	
High Int.	08:15 AM				07:00 AM				08:15 AM				08:30 AM			
Volume	6	11	0	17	0	0	1	1	0	44	3	47	31	0	38	69
Peak Factor				0.721				0.500				0.697				0.409

F.A. Hesketh & Associates, Inc
3 Creamery Brook
East Granby, CT 06026
Phone: (860) 653 - 8000

Gorman Road at
Louise Berry Drive & Residential Drive
Brooklyn, CT 06234
Job No.21154

File Name : PM Count 09.21.2021
Site Code : 00000000
Start Date : 9/21/2021
Page No : 1

Groups Printed- Unshifted

Start Time	Gorman Road From North				Residential Drive From East				Gorman Road From South				Louise Berry Drive From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
02:30 PM	2	18	0	20	1	0	0	1	0	15	0	15	0	0	1	1	37
02:45 PM	0	10	0	10	0	0	0	0	0	24	1	25	1	0	1	2	37
Total	2	28	0	30	1	0	0	1	0	39	1	40	1	0	2	3	74
03:00 PM	1	8	0	9	0	0	0	0	0	16	0	16	2	0	6	8	33
03:15 PM	1	31	0	32	0	0	0	0	0	15	2	17	21	0	64	85	134
03:30 PM	0	15	0	15	0	0	0	0	0	3	0	3	15	0	22	37	55
03:45 PM	0	22	0	22	0	0	0	0	0	10	0	10	2	0	3	5	37
Total	2	76	0	78	0	0	0	0	0	44	2	46	40	0	95	135	259
04:00 PM	1	12	0	13	0	0	0	0	0	13	0	13	3	0	3	6	32
04:15 PM	0	14	0	14	1	0	0	1	1	6	0	7	4	0	6	10	32
Grand Total	5	128	0	133	2	0	0	2	1	102	3	106	48	0	106	154	395
Approach %	3.8	96.2	0.0		100.0	0.0	0.0		0.9	96.2	2.8		31.2	0.0	68.8		
Total %	1.3	32.4	0.0	33.7	0.5	0.0	0.0	0.5	0.3	25.8	0.8	26.8	12.2	0.0	26.8	39.0	

Start Time	Louise Berry Drive From North				Residential Drive From East				Gorman Road From South				Louise Berry Drive From West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour From 02:30 PM to 04:15 PM - Peak 1 of 1																	
Intersection	03:15 PM																
Volume	2	89	0	55	0	0	0	0	0	41	2	43	41	0	87	133	264
Percent	2.3	97.7	0.0		0.0	0.0	0.0		0.0	95.3	4.7		30.8	0.0	69.2		
03:15	1	31	0	32	0	0	0	0	0	15	2	17	21	0	64	55	131
Peak Factor																	0.403
High Int.	03:15 PM				2:15:00 PM				03:15 PM				03:15 PM				
Volume	1	31	0	32	0	0	0	0	0	15	2	17	21	0	64	85	
Peak Factor				0.609								0.632				0.391	

Peak Hour From 02:30 PM to 04:15 PM - Peak 1 of 1

By Approach																
	03:15 PM				02:30 PM				02:30 PM				03:00 PM			
Volume	2	89	0	86	1	0	0	1	0	73	3	73	49	0	85	133
Percent	2.3	97.7	0.0		100.0	0.0	0.0		0.0	95.8	4.1		28.6	0.0	70.4	
High Int.	03:15 PM				02:30 PM				02:45 PM				03:15 PM			
Volume	1	31	0	32	1	0	0	1	0	24	1	25	21	0	64	55
Peak Factor				0.688				0.250				0.730				0.397

Brooklyn School Drop Off / Pick Up

Procedures

Brooklyn Middle School Drop Off and Pick Up

BMS Drop Off/Pick Up Map Key	
Buses	Buses will drop off and pick up students at the elementary entrance loop. Middle school students will follow the sidewalk to the Maroon entrances listed on the map for their grade level. This is where they will enter the building in the morning and exit the building in the afternoon.
Morning Drop Off	
Middle School ONLY Drop Off	Cars will enter on the right hand side of the middle school entrance and follow traffic pattern (see map) When dropping off only a middle school student, you will drop off at the side of the gymnasium and exit out the main entrance to the middle school
Elementary and Middle Drop Off	Follow the same traffic flow as listed for Middle School only, go around the loop a second time to follow the driveway to the elementary school
Afternoon Pick Up	
[illegible]	[illegible]
Middle School ONLY Pick Up	Following the same traffic pattern. Park in designated spots in the gymnasium parking lot and along the field.
Elementary and Middle Pick Up	Proceed to the back parking lot following the traffic pattern pull into the center parking area.


Bus
Drop
Off
Bus
Entrance
ONLY
7th
8th
6th
5th
8th
7th
6th
5th
Parent Drop Off
Entrance Only

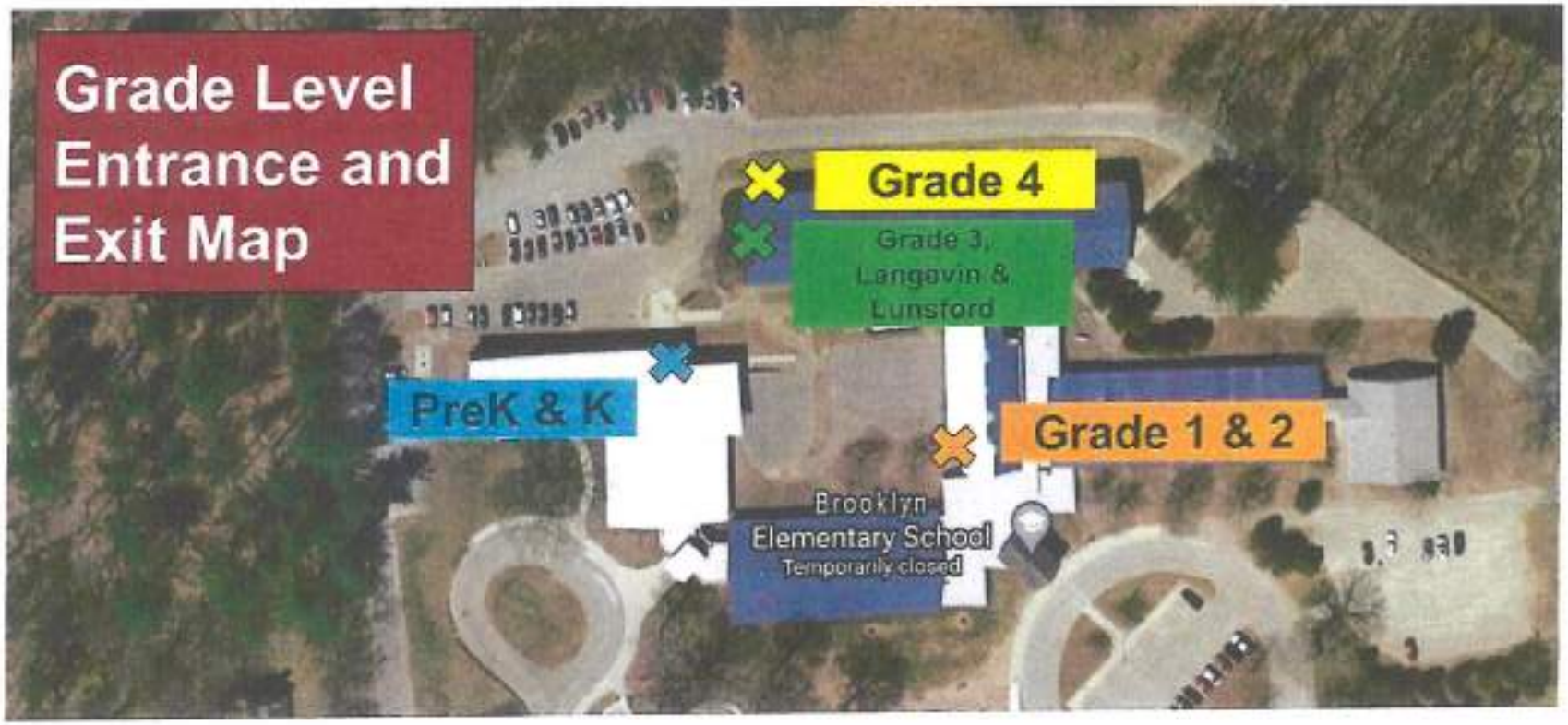

Morning Drop Off Map
Parents will loop around and exit if they are dropping middle school students only off
If you need to drop off an elementary student as well, you will need to follow the loop and proceed to the elementary following the driveway behind
Brooklyn Middle School


Dismissal Map
Parking for pick up for Middle School Students with Elementary Siblings
Student Exit Building from Cafeteria that have elementary siblings
Parking for pick up of Middle School ONLY Families
8th
Middle School only students exit from labeled doors
7th
6th
Brooklyn Middle School
5th

Brooklyn Elementary School Drop Off and Pick Up Procedures

BES Drop Off/Pick Up Map Key	
Buses	Buses will drop off and pick up students at the elementary entrance loop. Students will be escorted into and out of the building when their busses arrive. Students will have assigned seating that will be determined by the bus run. Siblings will be placed in seats together.
Morning Drop Off	
Drop Off	Cars will enter on the right hand side of the middle school entrance and follow traffic pattern (see map) around to the back of the elementary school. Once around the back of the building, please stay to the left of the road.
Grade PreK, K, 1, 2 & 3	Similar to last year, continue to stay to the left of the road and follow the traffic pattern to the left of the back parking lot, alongside the building. Once you are directed, please have children exit the vehicle on the driver side of the vehicle. Remain in the line until the vehicle in front of you exits. **This area is a no passing zone.**
Grade 4 ONLY Drop off	Grade 4 students may be dropped off at the back of the elementary school where they will walk to the back entrance of the building. Please have children exit the vehicle on the driver side of the vehicle. Once a child has safely left the vehicle, grade 4 families may merge right and exit the parent drop off line.
Afternoon Pick Up	
[illegible]	[illegible]
Pick Up	Cars will enter on the right hand side of the middle school entrance and follow traffic pattern (see map) around to the back of the elementary school. Once around the back of the building, please stay to the left of the road.
Grade PreK, K, 1, 2, & 3	Similar to last year, continue to stay to the left of the road and follow the traffic pattern to the back parking lot, alongside the building. Children will enter the vehicle on the driver side of the vehicle. Remain in the line until the vehicle in front of you exits. This area is a **no passing zone.**
Grade 4 ONLY Drop off	Grade 4 students may be picked up at the back of the elementary school where they will walk to the vehicles. Once a child has safely entered the vehicle, grade 4 families may merge right and exit the parent drop off line.


Gr 4 may exit here
Drop off and Pick-up Traffic Flow
Brooklyn Elementary School
Temporarily closed


Grade Level Entrance and Exit Map
Grade 4
Grade 3, Langevin & Lunsford
PreK & K
Grade 1 & 2
Brooklyn Elementary School
Temporarily closed

ITE Trip Generation

Residential Uses

ITE TripGen Web-based App

Help | Sign Out

Graph Look Up

DATA SOURCE
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE
220

LAND USE GROUP
(200-299) Residential

LAND USE
220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY
Not Close to Rail Transit

SETTING/LOCATION
General Urban/Suburban

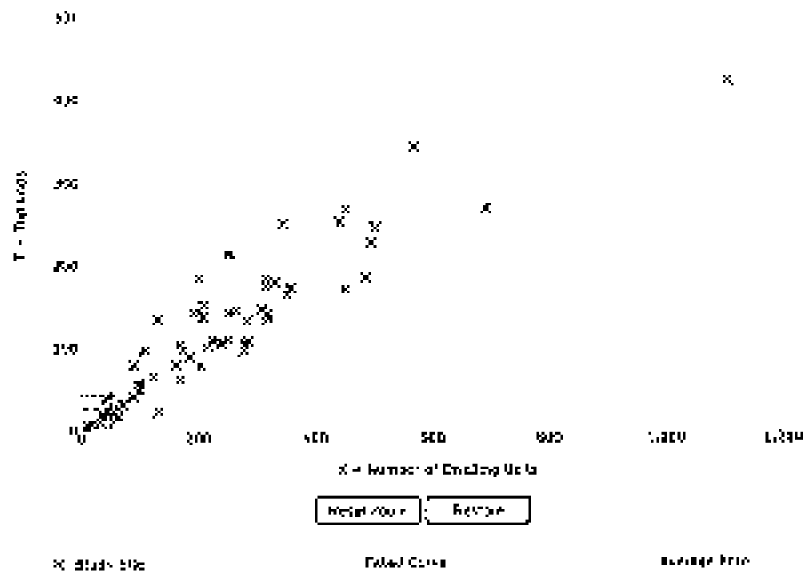
INDEPENDENT VARIABLE
Dwelling Units

TIME PERIOD
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE
Vehicle

ENTER IND VALUE TO CALCULATE TRIPS
50 Calculate

Data Plot and Equation



[illegible]

DATA STATISTICS

Land Use:
[illegible]

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
[illegible]

Setting/Location
General Urban/Suburban

Trip Type
Vehicle

Number of Studies
[illegible]

Avg. Num. of Dwelling Units
[illegible]

Average Rate
[illegible]

Range of Rates
[illegible]

Standard Deviation
[illegible]

Fitted Curve Equation
[illegible]

R^2
[illegible]

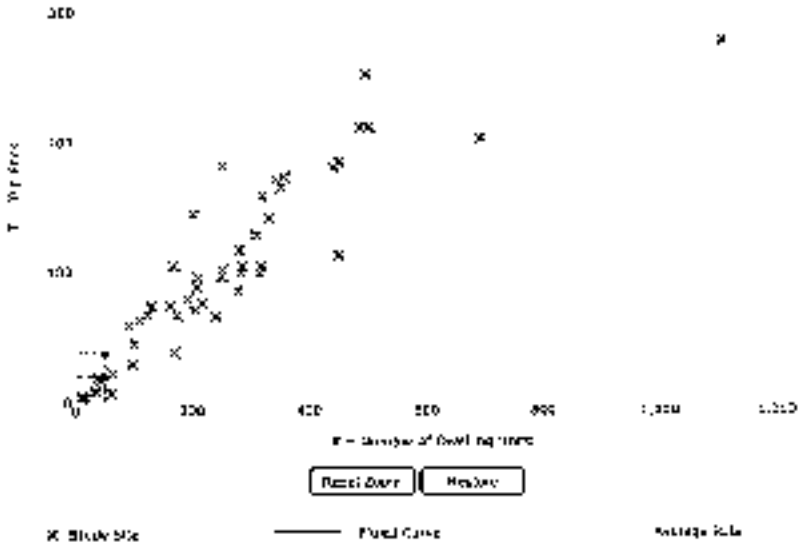
Directional Distribution
[illegible]

Calculated Trip Ends
[illegible]

ITEDigiGen Web-based App

Graph Look Up

Data Plot and Equation



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Graph Look Up

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
220

LAND USE GROUP:
(200-299) Residential

LAND USE:
220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE:
Dwelling Units

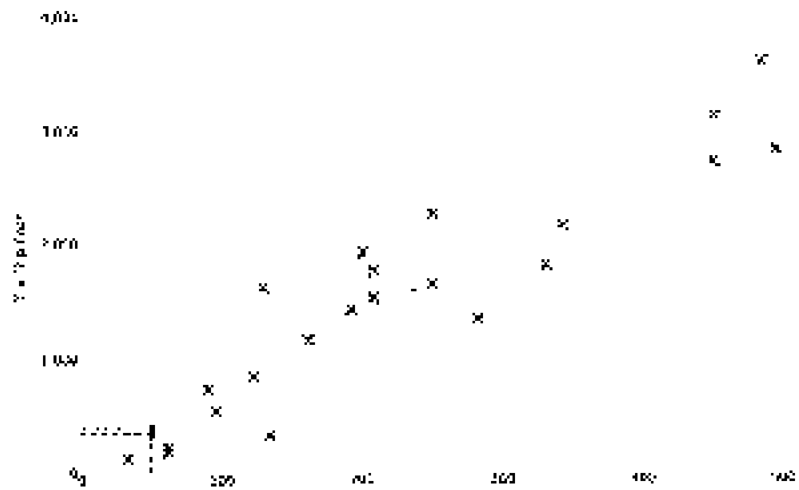
TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER X VALUE TO CALCULATE (Calc):
55

Calculate

Data Plot and Equation



Reset Zoom | Rotate

Use mouse wheel to zoom in/out
Hover the mouse pointer on data points to view X and T values

Data Statistics

Land Use:
[illegible]

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
[illegible]

Avg. Num. of Dwelling Units:
[illegible]

Average Rate:
[illegible]

Range of Rates:
[illegible]

Standard Deviation:
[illegible]

Fitted Curve Equation:
[illegible]

R^2:
[illegible]

Directional Distribution:
[illegible]

Calculated Trip Ends:
[illegible]

ITE TripGen Web-based App

Graph Look Up

Data Source:
Trip Generation Manual, 11th Ed

Search by Land Use Code:
215

Land Use Group:
(200-299) Residential

Land Use:
215 - Single-Family Attached Housing

Land Use Subcategory:
All Sites

Setting/Location:
General Urban/Suburban

Independent Variable:
Dwelling Units

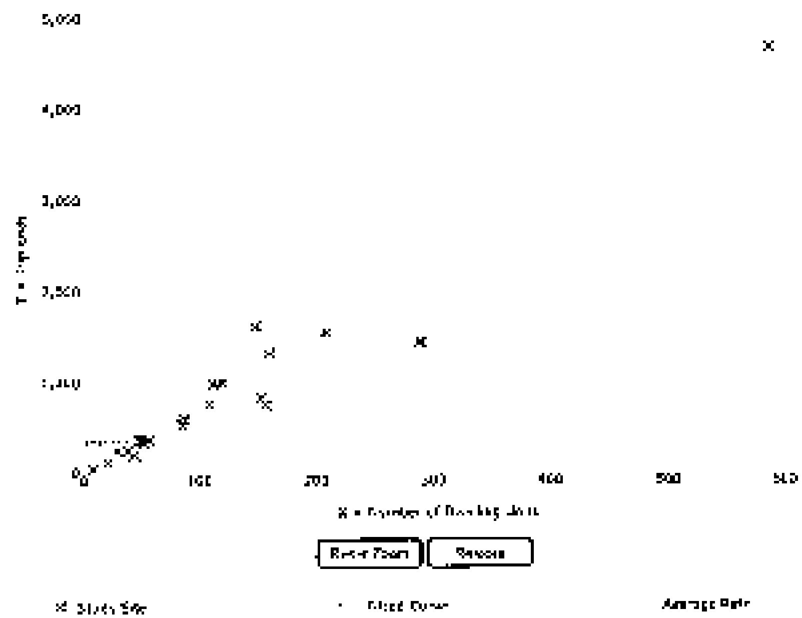
Time Period:
Weekday

Trip Type:
Vehicle

Enter X value to calculate trips:
50

Calculate

Data Plot and Equation



[illegible]

Data Statistics

Land Use:
Single-Family Attached Housing (215)
[illegible]

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
[illegible]

Avg. Num. of Dwelling Units:
[illegible]

Average Rate:
[illegible]

Range of Rates:
[illegible]

Standard Deviation:
[illegible]

Fitted Curve Equation:
[illegible]

R^2
[illegible]

Directional Distribution:
[illegible]

Calculated Trip Ends:
Average Rate: [illegible]
Fitted Curve: [illegible]

ITE TripGen Web-based App

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Graph Look Up

DATA SOURCE
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE
215

LAND USE GROUP
(200-299) Residential

LAND USE
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY
All Sites

SETTING/LOCATION
General Urban/Suburban

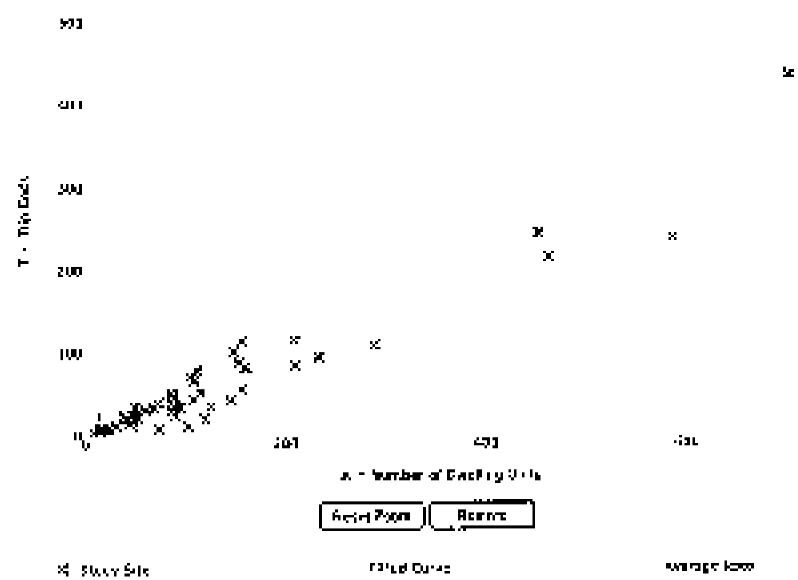
INDEPENDENT VARIABLE
Dwelling Units

TIME PERIOD
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE
Vehicle

ENTER IN VALUE TO CALCULATE TRIPS
50 [Calculate]

Data Plot and Equation



Drag the mouse to zoom in or Zoom Out
Hover the mouse pointer over data points to view X and T values

DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
[illegible]

Avg. Num. of Dwelling Units:
[illegible]

Average Rate:
[illegible]

Range of Rates:
[illegible]

Standard Deviation:
[illegible]

Fitted Curve Equation:
[illegible]

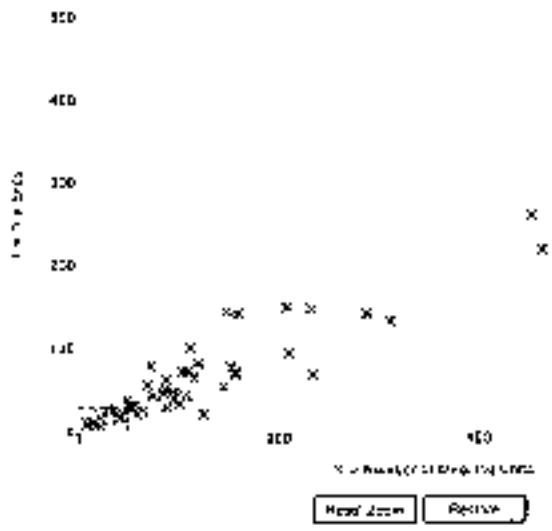
R^2
[illegible]

Directional Distribution:
[illegible]

Calculated Trip Ends:
[illegible]
[illegible]

Graph Look Up

Data Plot and Equation



X Study Site

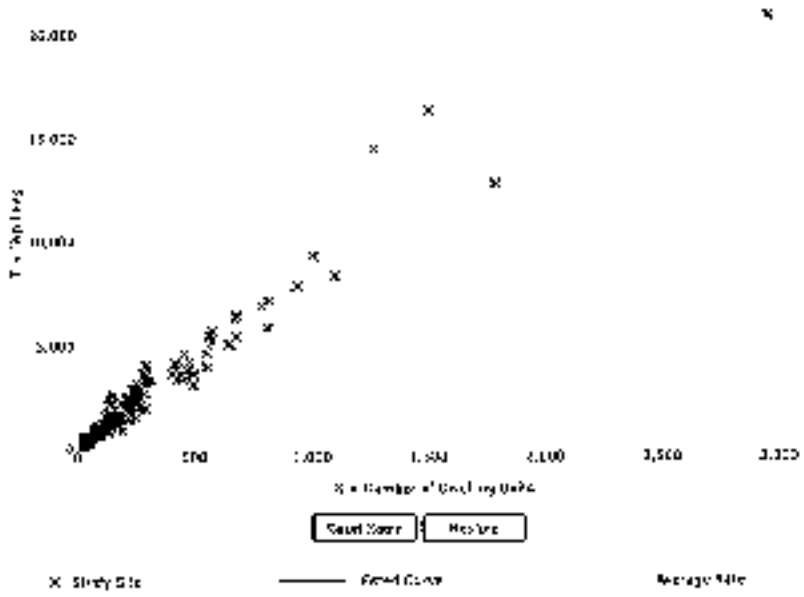
Fitted Curve

Average Rate

ITE TripGen Web-based App

Graph Look Up

Data Plot and Equation



DATA STATISTICS

Land Use:

Independent Variable:
Dwelling Units

Time Period:

Setting/Location:

Trip Type:

Number of Studies:

Avg. Num. of Dwelling Units:

Average Rate:

Range of Rates:

Standard Deviation:

Fitted Curve Equation:

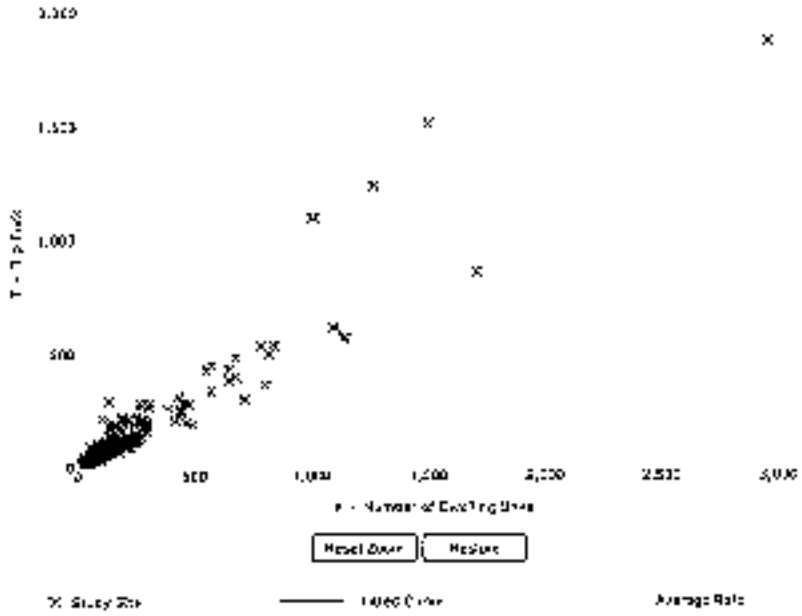
R²:
0.85

Directional Distribution:

Calculated Trip Ends:

Graph Look Up

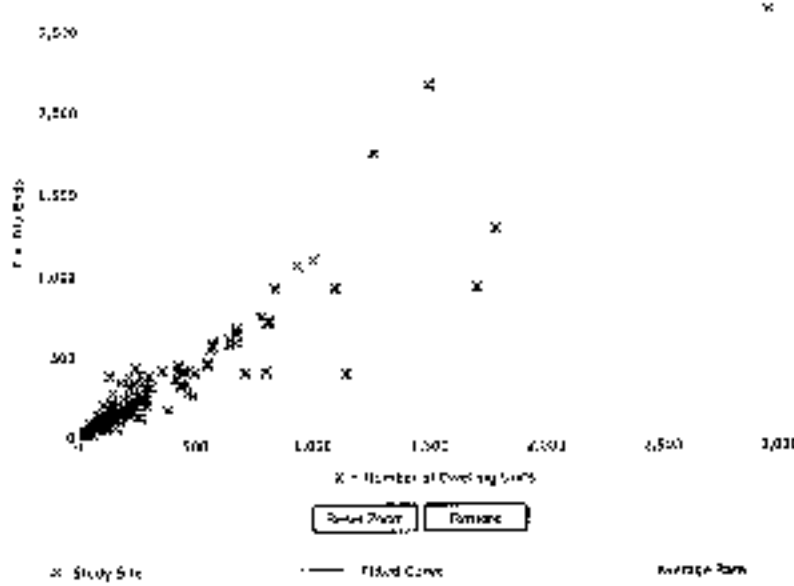
Graph Plot and Equation



Data Statistics

Graph Look Up

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

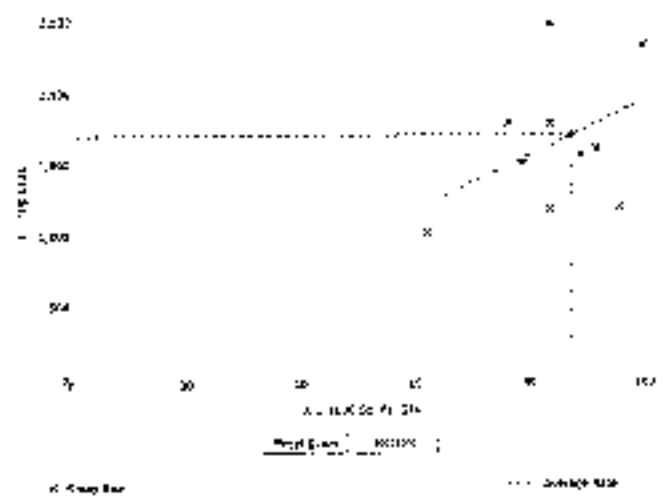
ITE *Trip Generation* Worksheets

Middle School / Elementary School

Based on Square Footage

Graph Look Up

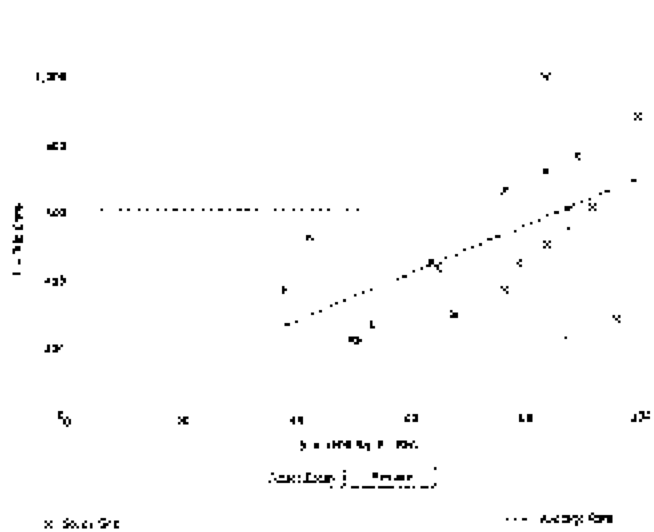
Data Plot and Equation



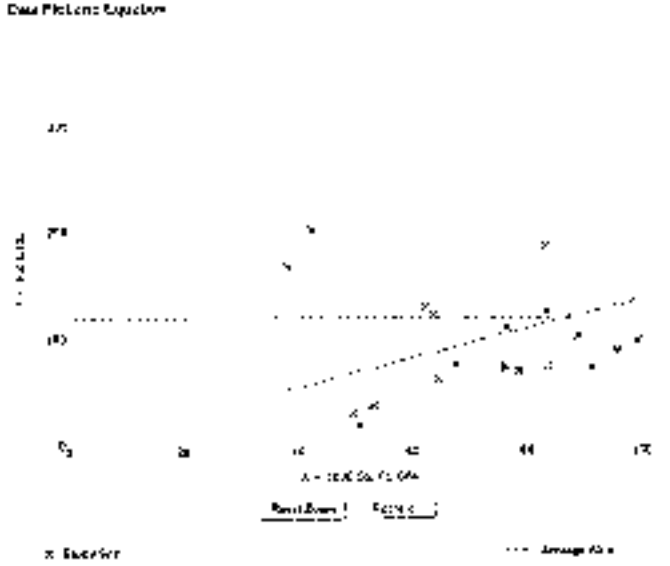
Predictions

Graph Look Up

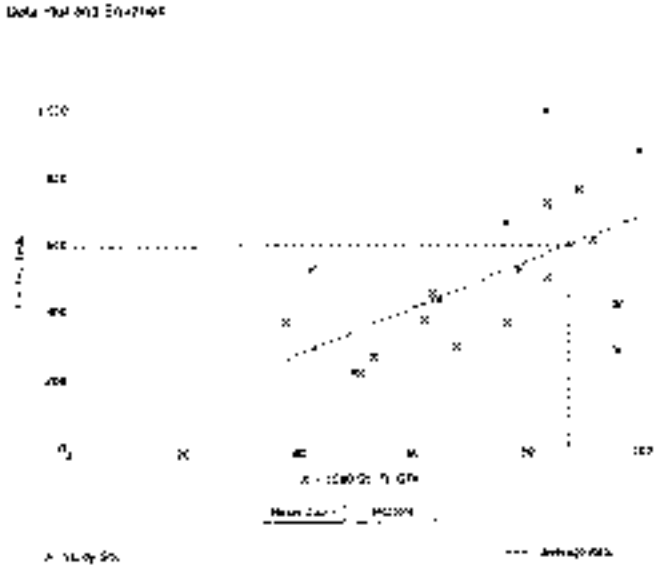
Data Plot and Equation



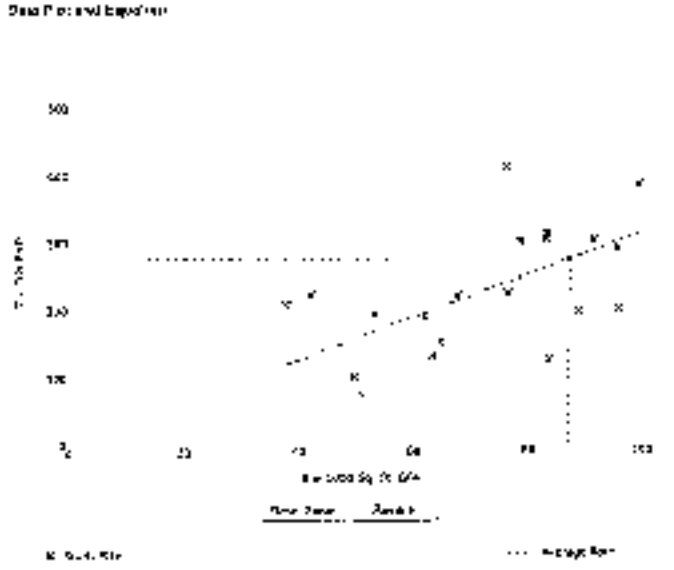
Graph Lock Up



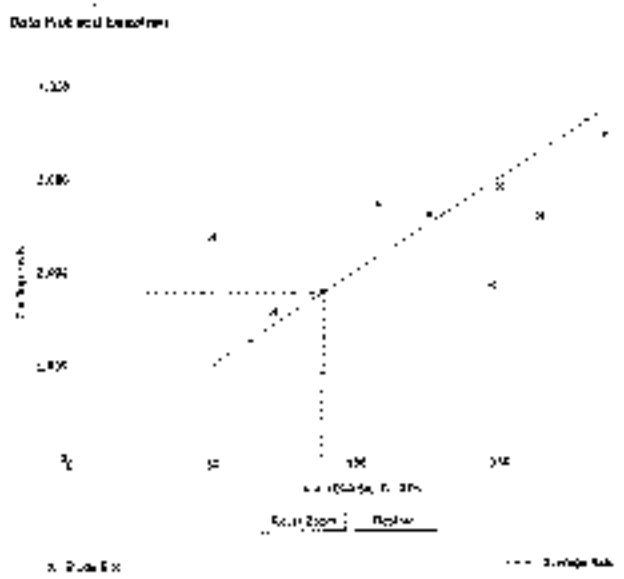
Graph Look Up



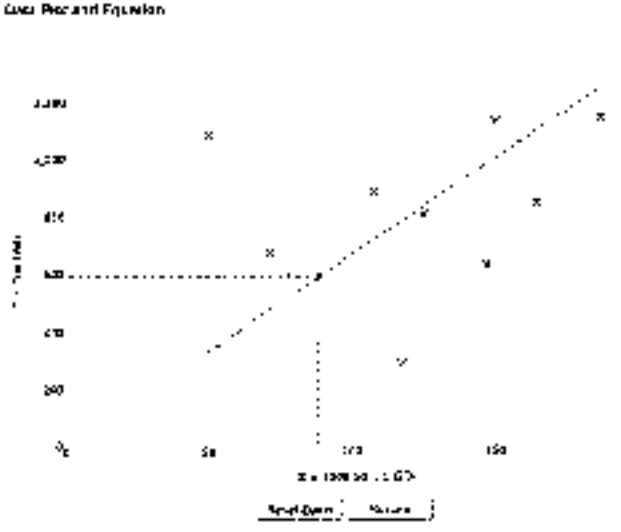
Graph Look Up



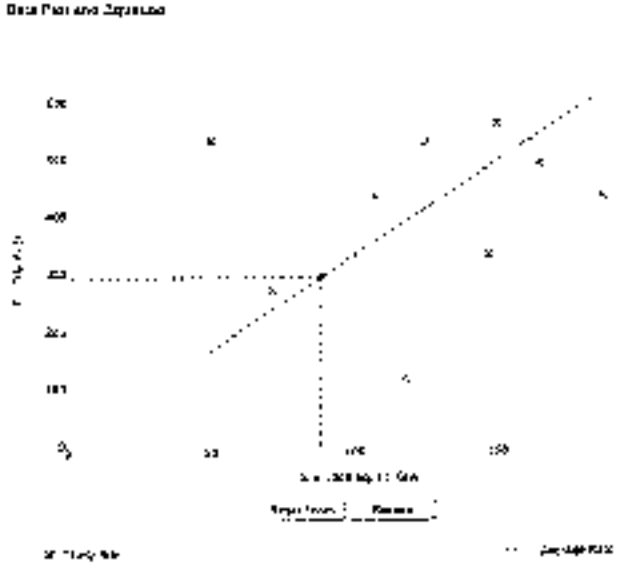
Graph Look Up



Graph Look Up

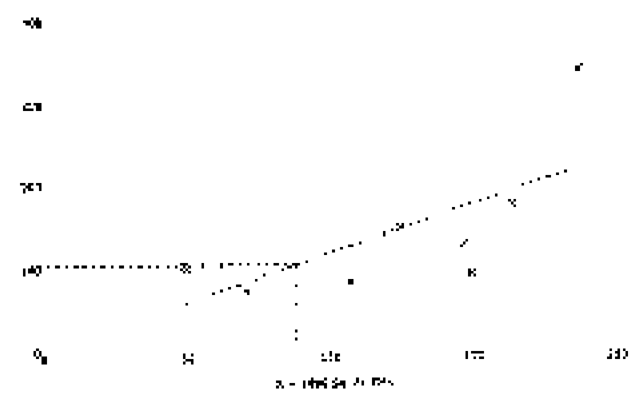


Graph Look Up



Graph Look Up

Data Plot and Equation



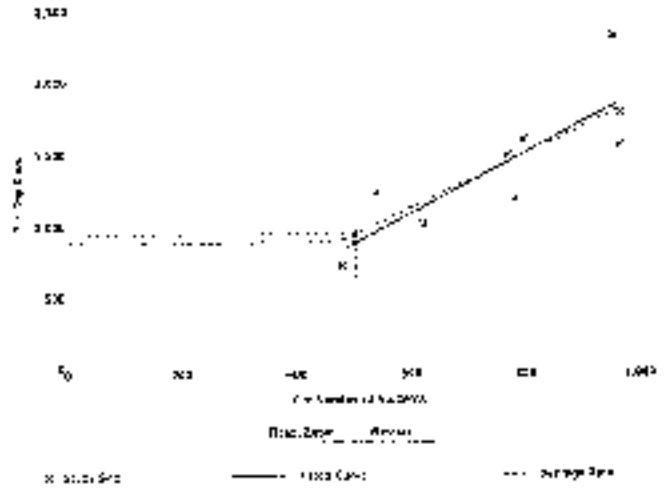
ITE *Trip Generation* Worksheets

Middle School / Elementary School

Based on Students

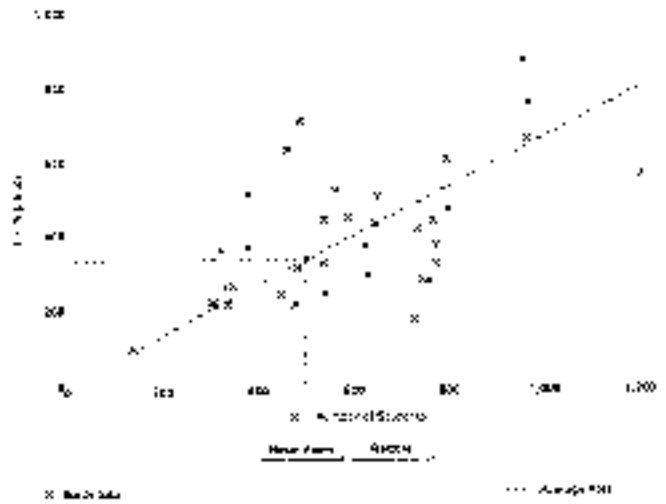
Graph Look Up

Data Plot and Equation

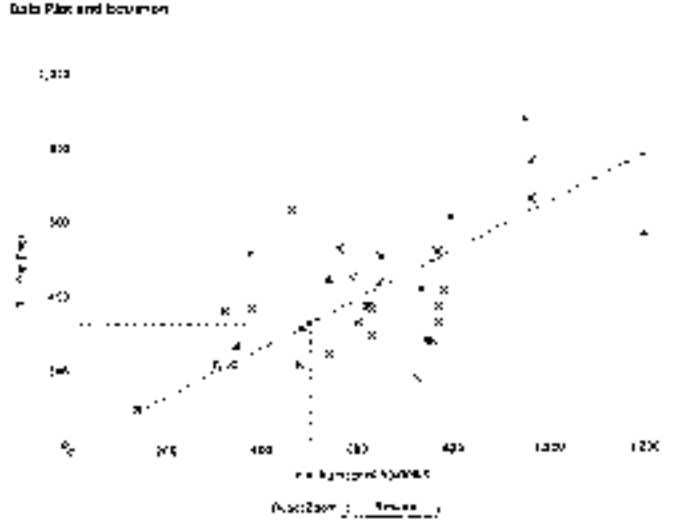


Graph Look Up

Data Plot and Equation

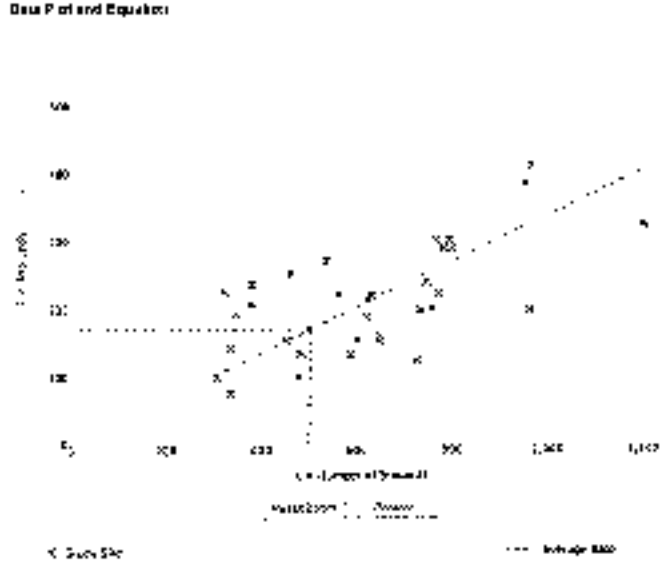


Graph Look Up

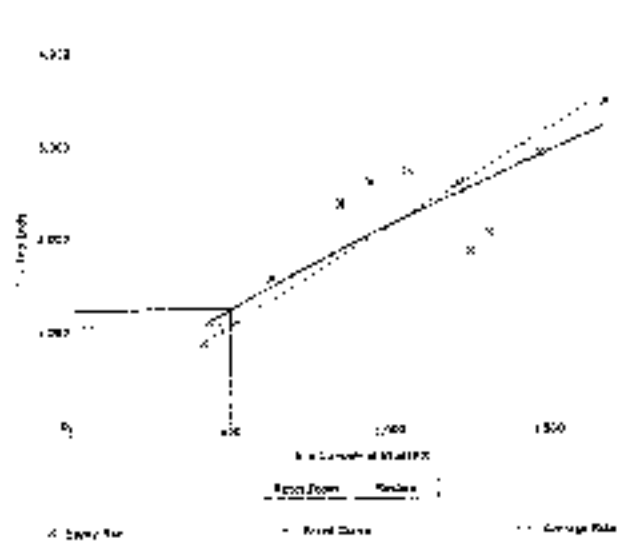


Graph Look Up

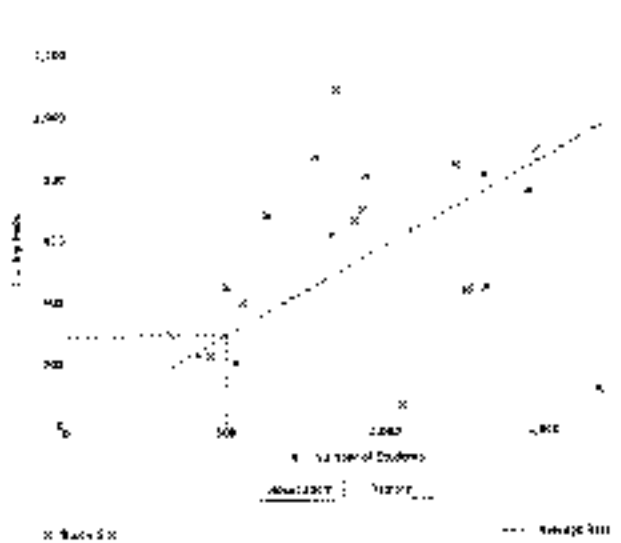
Data Plot and Equation



Graph Look Up

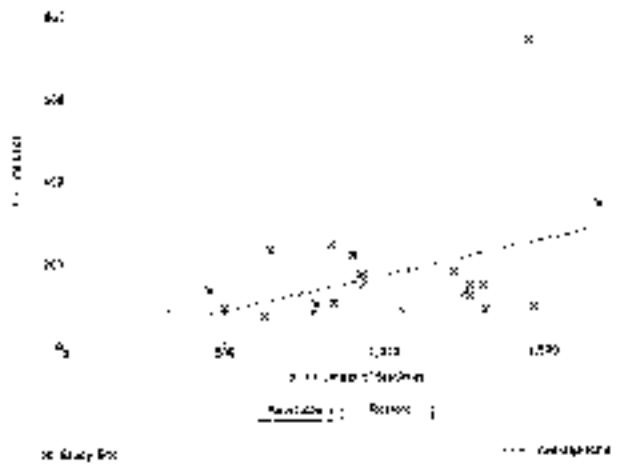


Graph Look Up

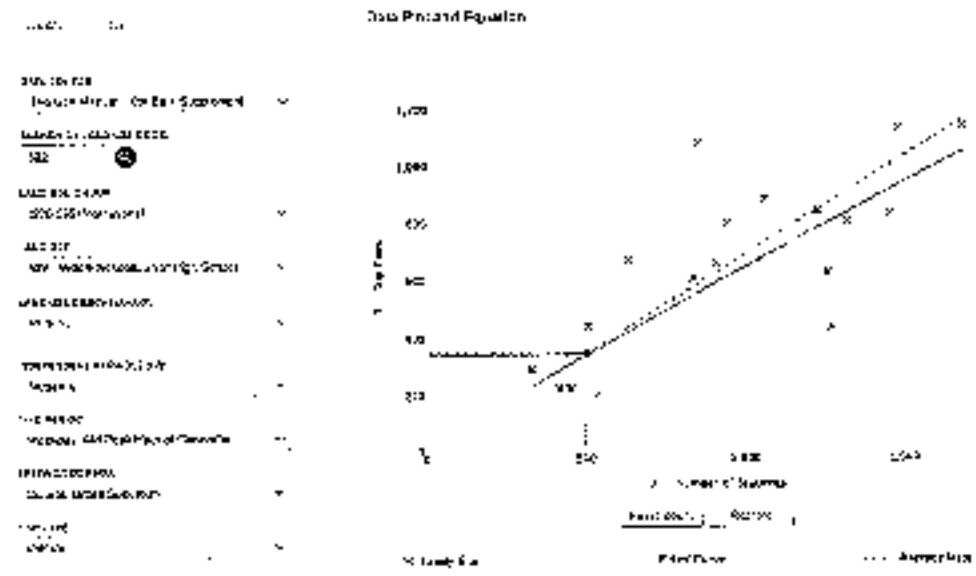


Graph Look Up

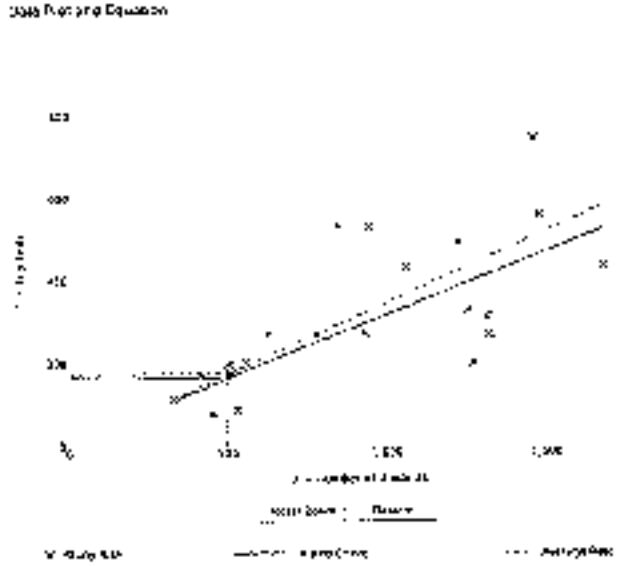
Data Plot and Equation



Graph Look Up



Graph Look Up



SYNCHRO Capacity Analysis Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	87	0	55	1	0	0	16	118	0	0	160	24
Future Volume (Veh/h)	87	0	55	1	0	0	16	118	0	0	160	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.40	0.40	0.40	0.25	0.25	0.25	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	218	0	138	4	0	0	23	169	0	0	229	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	461	461	246	599	478	169	263			169		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	461	461	246	599	478	169	263			169		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	83	99	100	100	98			100		
cM capacity (veh/h)	504	489	793	337	478	875	1301			1409		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	356	4	192	263
Volume Left	218	4	23	0
Volume Right	138	0	0	34
cSH	587	337	1301	1409
Volume to Capacity	0.61	0.01	0.02	0.00
Queue Length 95th (ft)	101	1	1	0
Control Delay (s)	20.1	15.8	1.1	0.0
Lane LOS	C	C	A	
Approach Delay (s)	20.1	15.8	1.1	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	33.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	113	0	9	31	0	29
Future Volume (Veh/h)	113	0	9	31	0	29
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.40	0.40	0.40	0.40	0.75	0.75
Hourly flow rate (vph)	282	0	22	78	0	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			282		404	282
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			282		404	282
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	95
cM capacity (veh/h)			1280		592	757

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	282	100	39
Volume Left	0	22	0
Volume Right	0	0	39
cSH	1700	1280	757
Volume to Capacity	0.17	0.02	0.05
Queue Length 95th (ft)	0	1	4
Control Delay (s)	0.0	1.8	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	10.0
Approach LOS			B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	100	0	44	0	0	0	5	81	0	0	134	9
Future Volume (Veh/h)	100	0	44	0	0	0	5	81	0	0	134	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.40	0.40	0.40	0.25	0.25	0.25	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	250	0	110	0	0	0	8	125	0	0	206	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	354	354	213	464	361	125	220			125		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	354	354	213	464	361	125	220			125		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	100	87	100	100	100	99			100		
cM capacity (veh/h)	598	568	827	439	563	926	1349			1462		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	360	0	133	220
Volume Left	250	0	8	0
Volume Right	110	0	0	14
cSH	654	1700	1349	1462
Volume to Capacity	0.55	0.00	0.01	0.00
Queue Length 95th (ft)	84	0	0	0
Control Delay (s)	17.1	0.0	0.5	0.0
Lane LOS	C	A	A	
Approach Delay (s)	17.1	0.0	0.5	0.0
Approach LOS	C	A		

Intersection Summary				
Average Delay	8.7			
Intersection Capacity Utilization	23.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	133	0	10	4	0	11
Future Volume (Veh/h)	133	0	10	4	0	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	145	0	11	4	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			145		171	145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			145		171	145
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			1437		813	902

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	145	15	12
Volume Left	0	11	0
Volume Right	0	0	12
cSH	1700	1437	902
Volume to Capacity	0.09	0.01	0.01
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	5.5	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	5.5	9.0
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	63	0	33	2	0	1	74	66	2	1	126	40
Future Volume (Veh/h)	63	0	33	2	0	1	74	66	2	1	126	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.92	0.92	0.92	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	252	0	132	2	0	1	99	88	3	1	168	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	485	486	194	616	510	90	221			91		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	485	486	194	616	510	90	221			91		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	46	100	84	99	100	100	93			100		
cM capacity (veh/h)	464	446	847	321	432	968	1348			1504		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	384	3	190	222
Volume Left	252	2	99	1
Volume Right	132	1	3	53
cSH	549	413	1348	1504
Volume to Capacity	0.70	0.01	0.07	0.00
Queue Length 95th (ft)	138	1	6	0
Control Delay (s)	25.4	13.8	4.4	0.0
Lane LOS	D	B	A	A
Approach Delay (s)	25.4	13.8	4.4	0.0
Approach LOS	D	B		

Intersection Summary			
Average Delay	13.3		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	80	0	26	88	0	16
Future Volume (Veh/h)	80	0	26	88	0	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	87	0	28	96	0	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			87		239	87
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			87		239	87
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	98
cM capacity (veh/h)			1509		735	971

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	87	124	17
Volume Left	0	28	0
Volume Right	0	0	17
cSH	1700	1509	971
Volume to Capacity	0.05	0.02	0.02
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	1.8	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	1.8	8.8
Approach LOS			A

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

UCONN Crash Data

Town of Brooklyn
Gorman Road Accident data
October 1, 2019 through October 1, 2022

CrashId	Date	Day of Week	Time	Crash Severity	No of Veh	Milemarker	Landmark Description	Distance
633951	1/2/2020	Thursday	8:45 AM	Prop Damage Only	3	0.98	Brooklyn Elem Schoo	50
752928	10/30/2020	Friday	5:00 PM	Prop Damage Only	1	1.48	Prince Hill Rd	115
854867	9/6/2021	Monday	3:53 PM	Prop Damage Only	2	0.73	SCHOOL ST	
941996	5/27/2022	Friday	6:27 PM	Prop Damage Only	2	0.95	School St	1

CrashId	Distance	Unit	Direction	First Harmful Event	Manner of Crash	Weather Cond	Light Condition	Road Surface
633951	50	Feet	N	Other Vehicle	Front to rear	Clear	Daylight	Dry
752928	115	Feet	S	Guardrail Face	Not Applicable	Snow	Daylight	Wet
854867				Other Vehicle	Front to rear	Clear	Daylight	Dry
941996	1	Tenths	N	Other Vehicle	Front to rear	Clear	Dusk	Dry

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 11°34'49" E	8.68'
L2	N 09°28'18" E	25.48'
L3	S 89°46'21" E	25.92'
L4	N 00°34'43" W	23.50'
L5	N 08°18'28" E	23.74'

50 25 0 50
GRAPHIC SCALE IN FEET

n/f
Pierce Baptist Home, Inc.
Map 19, Block 24, Lot 148

30' WIDE ACCESS EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN AS SHOWN ON MAP REFERENCE #?? STATUS UNKNOWN – NO RECORDED DEED FOUND

n/f
Town of Brooklyn
Map 19, Block 33, Lot 21

SEWER EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 617, PG. 278

ACCESS RIGHT OF WAY OVER LANEWAY IN FAVOR OF THE TOWN OF BROOKLYN VOL. 31, PG. 130

N 01°29'56" E 184.56'

N 01°36'01" E 171.74'

S 76°32'07" E 332.00'

8' HIGH CHAIN LINK FENCE

S 79°14'20" E 616.00'

LOUISE BERRY DRIVE

CL&P 3022

CL&P 1143

STORM MH

CB

DH

SMH

3S
3.633 ACRES

2S
7.387 ACRES

1S
2.477 ACRES

1R
1R¹

2R
WETLANDS

WETLANDS

564' @ 12.5%

600' @ 12.4%

270' @ 11.1%

Tc

DRAINAGE EASEMENT IN FAVOR OF THE TOWN OF BROOKLYN VOL. 91, PG. 524

S 11°36'51" W 132.75'

S 13°07'11" W 78.09'

S 09°28'18" W 58.34'

S 11°25'42" W 127.58'

S 11°57'36" W 74.68'

S 11°57'36" W 86.01'

N 89°46'09" W 106.33'

N 89°46'21" W 222.52'

N 89°56'57" W 262.34'

N 86°16'31" W 199.57'

S 86°16'31" E 20.11'

N 00°24'05" E 500.43'

n/f
Curt R. Hostman
Map 19, Block 33, Lot 20.1

n/f
Curt R. Hostman
Map 19, Block 33, Lot 20

n/f
William J. Purcell, Jr.
Map 19, Block 33, Lot 20.3

n/f
Carl R. Baker
&
Darlene A. Baker
Map 19, Block 24, Lot 158

n/f
Sally A. Wood
Map 19, Block 33, Lot 10A

n/f
Sean P. Mahan
Map 19, Block 33, Lot 13

n/f
Mark S. Benard
Map 19, Block 33, Lot 14

n/f
Linda Atsales
Map 19, Block 33, Lot 15

n/f
Stephanie A. Hynes
&
Brennan D. Hynes
Map 19, Block 33, Lot 16

n/f
Richard E. Bein
Map 19, Block 33, Lot 17

LEGEND

- IRON PIN TO BE SET
- IRON PIN FOUND
- DRILL HOLE FOUND
- UTILITY POLE
- CATCH BASIN
- SANITARY MANHOLE
- EXISTING CONTOURS
- INLAND WETLANDS FLAG
- STONE WALL
- STONE WALL REMAINS

08/24/2020	PER TOWN REVIEW
DATE	DESCRIPTION
REVISIONS	

EXISTING DRAINAGE AREAS

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: NET
SCALE: 1" = 50'	DESIGN: NET
SHEET: 1 OF 2	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 20014

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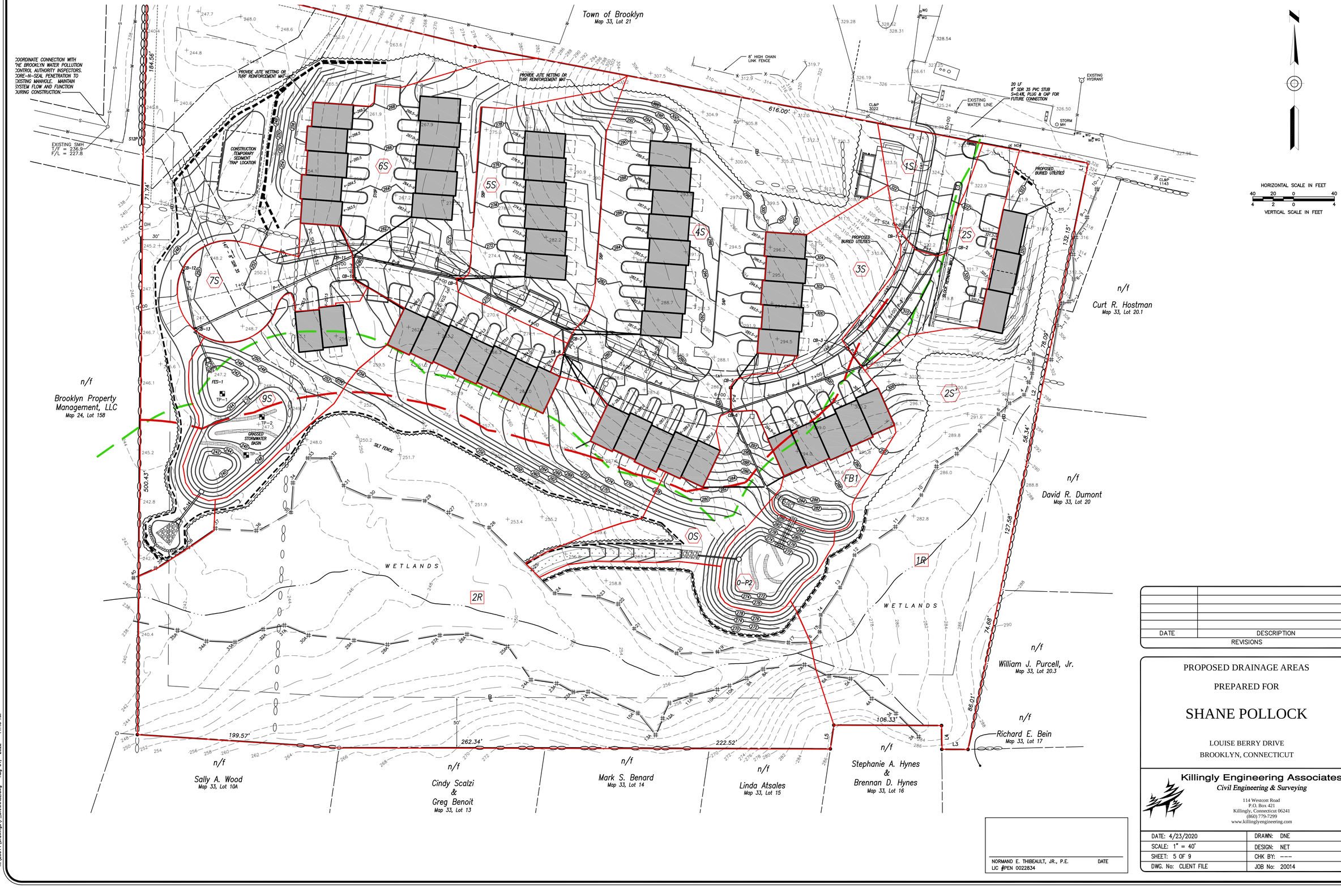

DATE	DESCRIPTION
REVISIONS	

PROPOSED DRAINAGE AREAS

PREPARED FOR

SHANE POLLOCK

LOUISE BERRY DRIVE
BROOKLYN, CONNECTICUT

Killingly Engineering Associates
Civil Engineering & Surveying
114 Westcott Road
P.O. Box 421
Killingly, Connecticut 06241
(860) 779-7299
www.killinglyengineering.com

DATE: 4/23/2020	DRAWN: DNE
SCALE: 1" = 40'	DESIGN: NET
SHEET: 5 OF 9	CHK BY: ---
DWG. No: CLIENT FILE	JOB No: 20014

NORMAND E. THIBEAULT, JR., P.E. DATE
LIC #PEN 0022834

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DRAINAGE REPORT

Prepared for

PROPOSED MULTI-FAMILY DEVELOPMENT
LOUISE BERRY DRIVE
BROOKLYN, CT

July 2022

Prepared for

Shane Pollock

Prepared by

Killingly Engineering Associates
Civil Engineering & Surveying

Normand Thibeault Jr., P.E.
CT License #22834

Introduction

Shane Pollock & Erin F Mancuso have submitted a proposal to the Tow of Brooklyn to construct a 50-unit condominium development with access from Louise Berry Drive in Brooklyn. The project will require construction of a 1000-foot-long paved private roadway with a cul-de-sac turnaround and public water and sanitary sewer. The original design for the property consisted of 100 units. The current design results in the creation of impervious surfaces consisting of pavement and roof but is a significant reduction then the original design. The current stormwater management design has been prepared in response to and in conjunction with Steven Trinkaus, P.E., a drainage consultant retained by the Town of Brooklyn to review the project.

Summary

According to the USDA-NRCS Soil Survey, the area of disturbance consists of Canton and Charlton fine sandy loams and the wetlands consist of Ridgebury, Leicester and Whitman soils. A walk of the property and wetlands delineation by Joseph Theroux verify that these descriptions are accurate. These soils are associated with hydrologic soil group B & D. The site sheet flows primarily to the south to a linear wetlands system before flowing to the west and ultimately off site. To the greatest degree possible, the existing drainage patterns will be preserved.

The bulk of the drainage from developed areas will be directed to two (2) separate stormwater basins with forebays. The first basin is centrally located on the site and will collect drainage from approximately 400ô of the proposed roadway and three (3) of the building rooftops. This basin will discharge to a wet swale prior to flowing to the wetlands. The discharge from this basin ultimately flows to the on-site wetlands at approximately the midpoint of the wetlands system which addresses previous concerns of recharge to the wetlands. The second basin and forebay collects drainage from the remainder of the roadway and buildings and discharges at the terminus of the on-site wetlands.

The calculations utilized HydroCAD® Stormwater Modeling System, a computer model, to analyze pre-and post-development drainage conditions, and to aid in the design of the stormwater detention system. The model used the Soil Conservation Service TR-20 method with a Type III 24-hour rainfall to calculate the runoff. The 2 through 100-year frequency storms were analyzed to evaluate peak runoff for conditions with grassed and stone dust parking. Table 1 summarizes our findings; all peaks have been rounded to the nearest 0.1.

Table 1. Grassed Parking vs. Stone Dust Parking Peak Runoff Rates

Design Storm	Depth (in)	Existing Peak	Proposed Peak	Difference
2-Year	3.37	3.7 CFS	3.6 CFS	-0.1 CFS
5-Year	4.28	8.6 CFS	8.3 CFS	-0.3 CFS
10-Year	5.04	13.5 CFS	13.2 CFS	-0.3 CFS
25-Year	6.08	20.7 CFS	19.6 CFS	-1.1 CFS
50-Year	6.85	26.5 CFS	25.7 CFS	-0.8 CFS
100-Year	7.68	33.5 CFS	33.1 CFS	-0.4 CFS

As seen by the computations, there are slight decreases in runoff rates for all design storms. It is important to note that for post-construction conditions, we have conservatively modeled the post construction soils as hydrologic soil group ñCò.

In addition to addressing pre- and post-construction peak runoff rates from the property to the wetlands and adjacent property, the design considers stormwater treatment and water quality for the project. Wherever possible, overland sheet flow is encouraged, catch basins will be constructed with sediment sumps, the final catch basin prior to discharge to the terminus stormwater basin will be fitted with a hooded outlet and the stormwater basins account for water quality volume (WQV).

Per Chapter 7 of the Connecticut DEEP Stormwater Quality Manual

Section 7.4.1 Water Quality Volume

Basin 1 Water Quality Volume (WQV)

WQV = (1ò)(R)(A)/12

R = 0.05 + 0.009(I) I = % Impervious = 32.67%

R = 0.05 + 0.009(32.67) = 0.344

A = 1.383 acres

WQV = (1ò) (0.344) (1.383) / 12 = 0.04 ac-ft = 1,728 c.f.

3,023 c.f. provided to elevation 285.0

Basin 2 Water Quality Volume

WQV = (1ò)(R)(A)/12

R = 0.05 + 0.009(I) I = % Impervious = 43.44%

R = 0.05 + 0.009(43.44) = 0.391

A = 4.169 acres

WQV = (1ò) (0.91) (4.169) / 12 = 0.317 ac-ft = 13,771 c.f.

9,375 c.f. provided in forebay & 5,230 to elevation 285.5 in main basin = 14,605 c.f.

Section 7.4.2 Water Quality Flow

This section is utilized for treatment mechanisms such as grasses swales or proprietary treatment devices. Although the project calls for a wet swale from the first stormwater basin, the swale will not convey runoff directly from impervious surfaces.

Section 7.5.1 Groundwater Recharge Volume

Per review of the project drainage by Mr. Trinkaus, it was determined that groundwater recharge volume was not an appropriate application for the site. The Water Quality Volume and Channel protection volume (first 1.5ò of rain) have been accounted for based upon consultation with Mr. Trinkaus.

Section 7.5.2 Runoff Capture Volume (RCV)

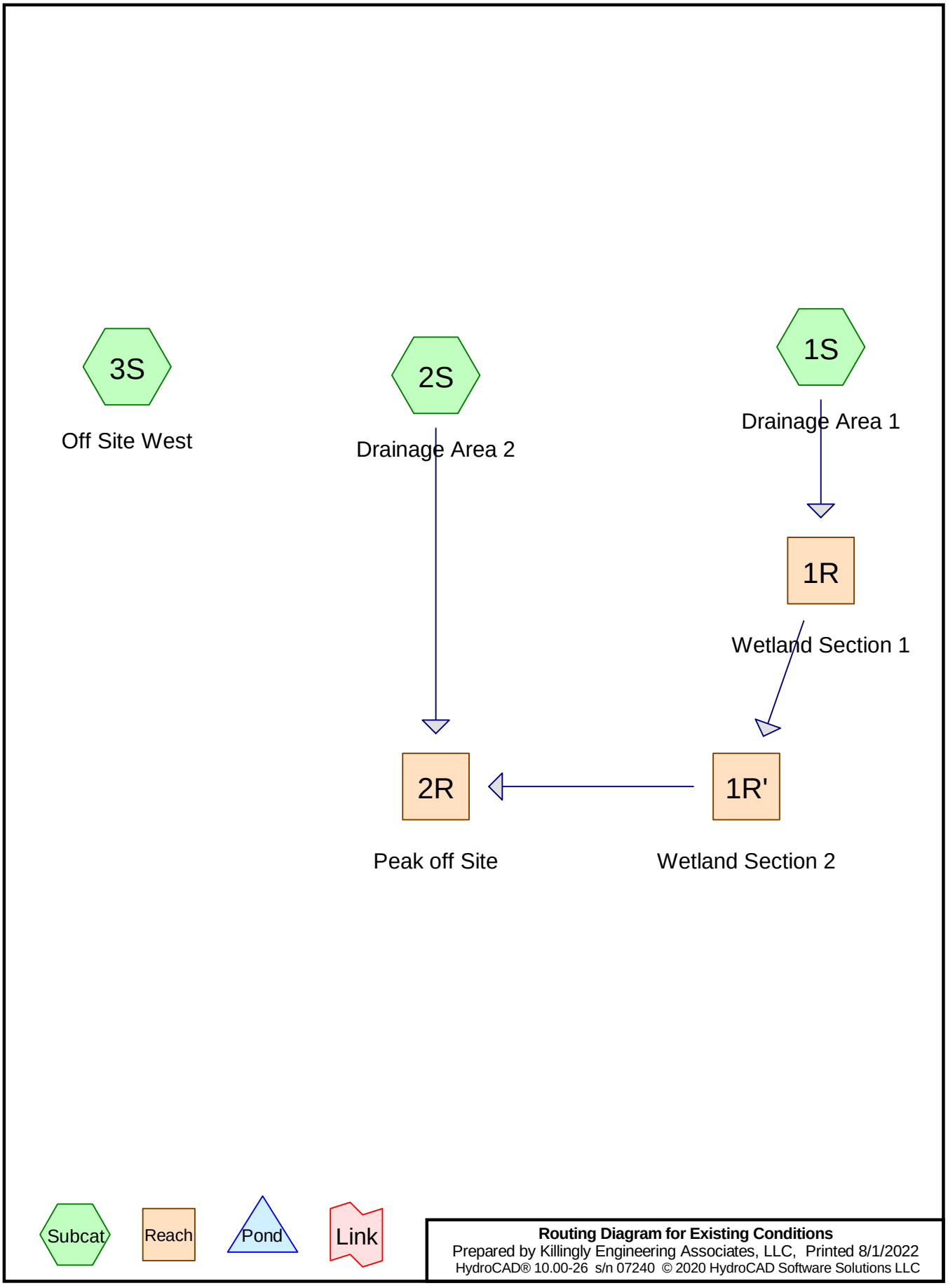
Not utilized for this application. This method is typically utilized to capture ñcleanò runoff from surfaces such as rooftops and infiltrate it into the soil.

Section 7.6 Peak Flow Control

We have demonstrated that peak flows from the development will be slightly reduced for all design storms.

HYDROCAD CALCULATIONS

EXISTING CONDITIONS



Routing Diagram for Existing Conditions
Prepared by Killingly Engineering Associates, LLC, Printed 8/1/2022
HydroCAD® 10.00-26 s/n 07240 © 2020 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.99 cfs @ 12.10 hrs, Volume= 0.157 af, Depth> 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.94 cfs @ 12.18 hrs, Volume= 0.301 af, Depth> 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 3.36 cfs @ 12.12 hrs, Volume= 0.254 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

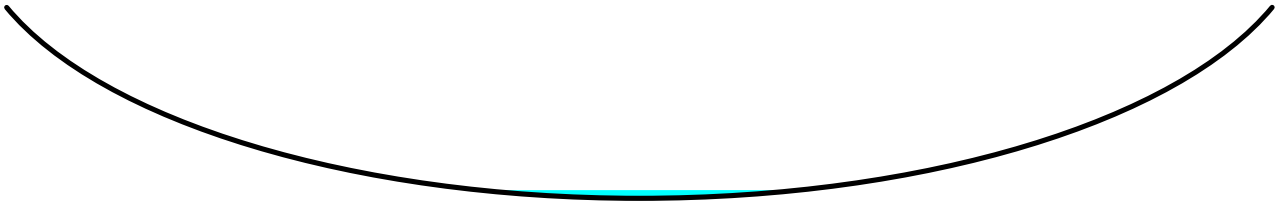
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.99 cfs @ 12.10 hrs, Volume= 0.157 af
Outflow = 1.75 cfs @ 12.21 hrs, Volume= 0.156 af, Atten= 12%, Lag= 6.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.15 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.58 fps, Avg. Travel Time= 6.9 min

Peak Storage= 371 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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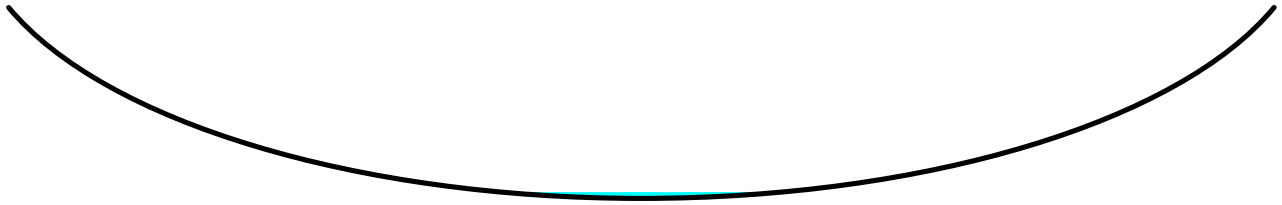
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 0.57" for 2-year event
Inflow = 1.75 cfs @ 12.21 hrs, Volume= 0.156 af
Outflow = 1.72 cfs @ 12.22 hrs, Volume= 0.156 af, Atten= 2%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.19 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.70 fps, Avg. Travel Time= 0.9 min

Peak Storage= 49 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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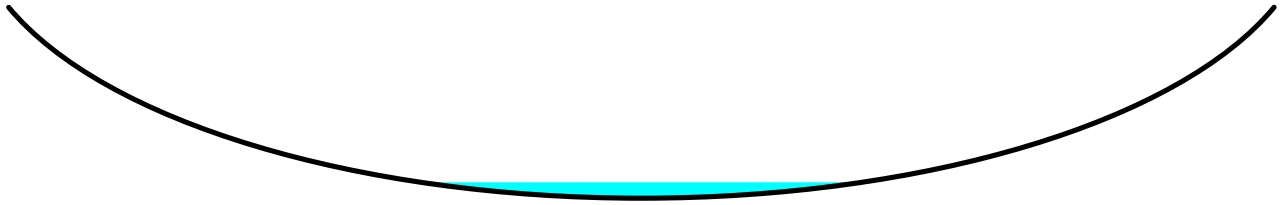
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 0.51" for 2-year event
Inflow = 4.60 cfs @ 12.21 hrs, Volume= 0.457 af
Outflow = 3.74 cfs @ 12.47 hrs, Volume= 0.449 af, Atten= 19%, Lag= 15.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.35 fps, Min. Travel Time= 7.9 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 14.5 min

Peak Storage= 1,783 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 4.00 cfs @ 12.09 hrs, Volume= 0.283 af, Depth> 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 6.60 cfs @ 12.16 hrs, Volume= 0.561 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 5.82 cfs @ 12.12 hrs, Volume= 0.421 af, Depth> 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.28"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

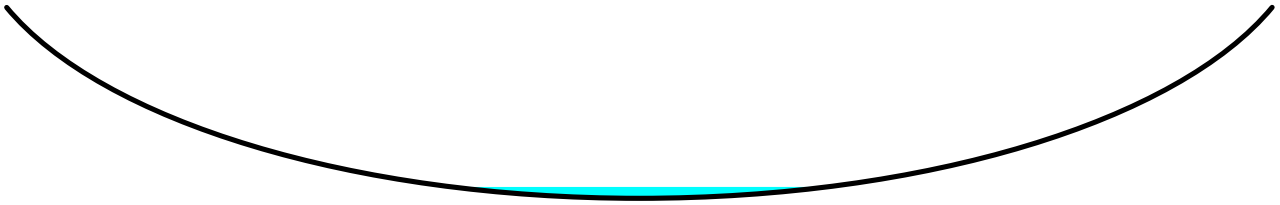
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.03" for 5-year event
Inflow = 4.00 cfs @ 12.09 hrs, Volume= 0.283 af
Outflow = 3.64 cfs @ 12.18 hrs, Volume= 0.281 af, Atten= 9%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.42 fps, Min. Travel Time= 2.8 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 6.0 min

Peak Storage= 616 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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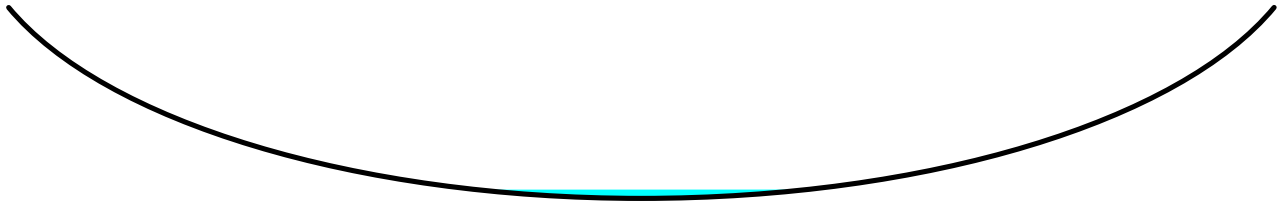
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.02" for 5-year event
Inflow = 3.64 cfs @ 12.18 hrs, Volume= 0.281 af
Outflow = 3.61 cfs @ 12.19 hrs, Volume= 0.281 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.46 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 0.8 min

Peak Storage= 82 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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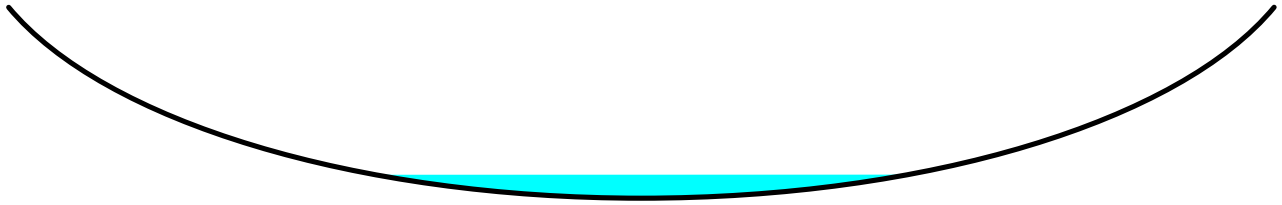
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 0.94" for 5-year event
Inflow = 10.14 cfs @ 12.17 hrs, Volume= 0.842 af
Outflow = 8.63 cfs @ 12.36 hrs, Volume= 0.832 af, Atten= 15%, Lag= 11.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 12.6 min

Peak Storage= 3,183 cf @ 12.26 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 5.91 cfs @ 12.09 hrs, Volume= 0.404 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 10.12 cfs @ 12.16 hrs, Volume= 0.816 af, Depth> 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 8.07 cfs @ 12.12 hrs, Volume= 0.576 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

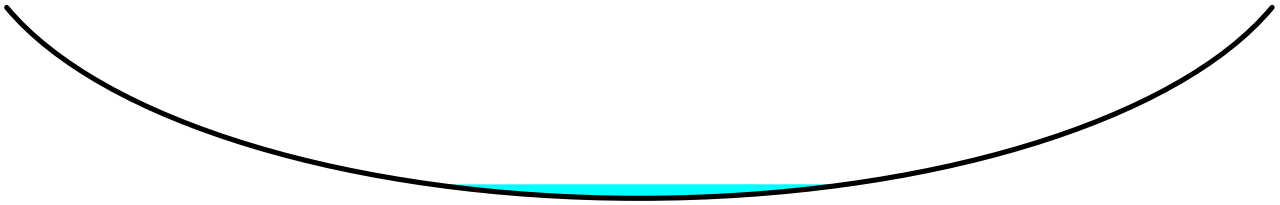
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-year event
Inflow = 5.91 cfs @ 12.09 hrs, Volume= 0.404 af
Outflow = 5.50 cfs @ 12.16 hrs, Volume= 0.403 af, Atten= 7%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.62 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 5.6 min

Peak Storage= 825 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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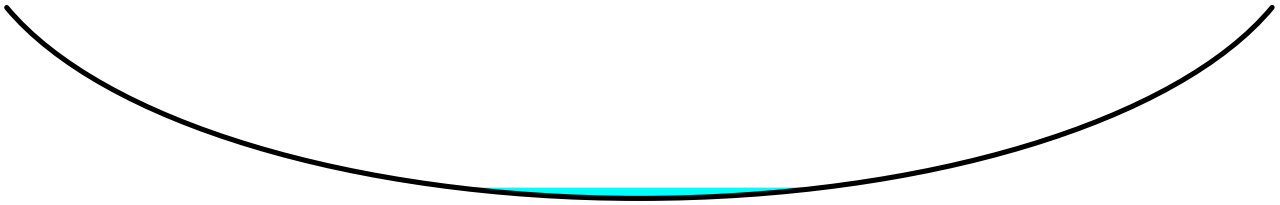
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 1.46" for 10-year event
Inflow = 5.50 cfs @ 12.16 hrs, Volume= 0.403 af
Outflow = 5.41 cfs @ 12.17 hrs, Volume= 0.402 af, Atten= 2%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.31 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.28 fps, Avg. Travel Time= 0.7 min

Peak Storage= 108 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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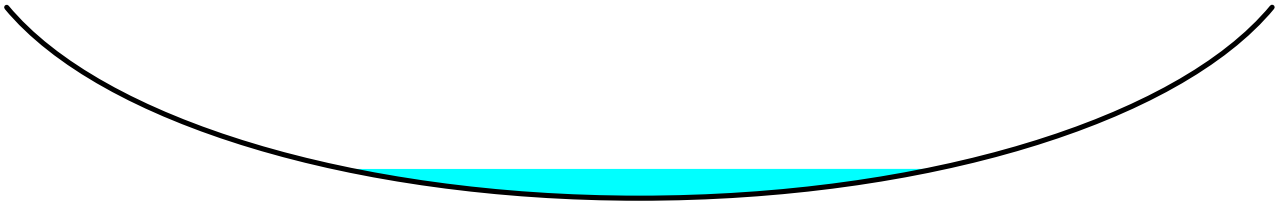
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 1.37" for 10-year event
Inflow = 15.48 cfs @ 12.16 hrs, Volume= 1.218 af
Outflow = 13.48 cfs @ 12.32 hrs, Volume= 1.206 af, Atten= 13%, Lag= 9.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.99 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.91 fps, Avg. Travel Time= 11.7 min

Peak Storage= 4,333 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.31'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 8.79 cfs @ 12.09 hrs, Volume= 0.589 af, Depth> 2.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 15.46 cfs @ 12.15 hrs, Volume= 1.207 af, Depth> 1.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 11.36 cfs @ 12.11 hrs, Volume= 0.804 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.08"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

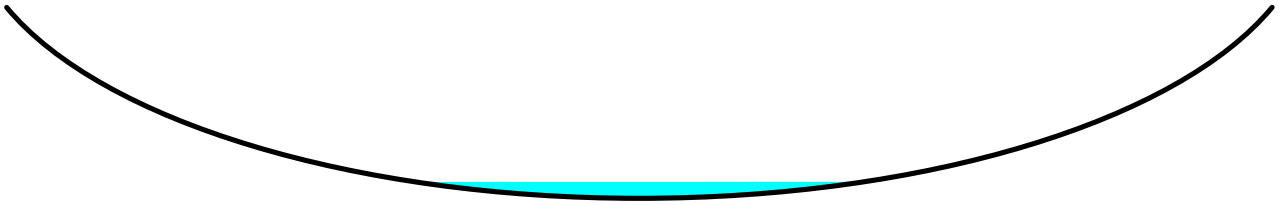
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.13" for 25-year event
Inflow = 8.79 cfs @ 12.09 hrs, Volume= 0.589 af
Outflow = 8.21 cfs @ 12.15 hrs, Volume= 0.586 af, Atten= 7%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 5.2 min

Peak Storage= 1,097 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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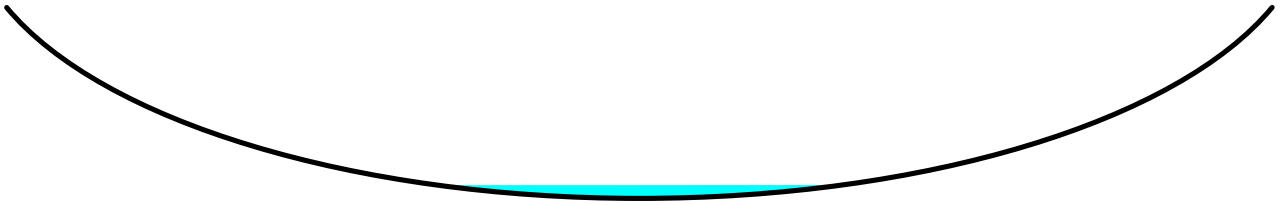
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.12" for 25-year event
Inflow = 8.21 cfs @ 12.15 hrs, Volume= 0.586 af
Outflow = 8.10 cfs @ 12.16 hrs, Volume= 0.586 af, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.28 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.54 fps, Avg. Travel Time= 0.7 min

Peak Storage= 143 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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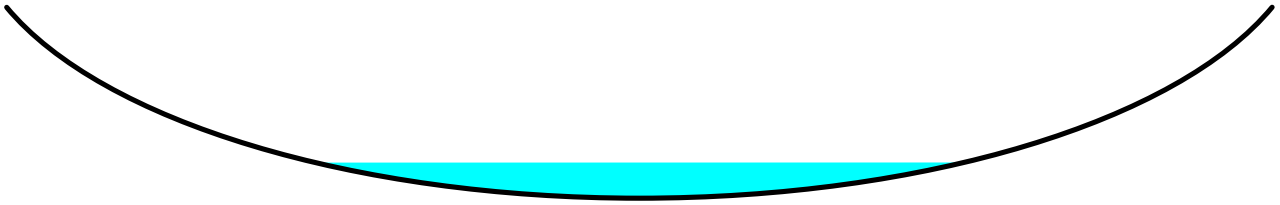
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 2.01" for 25-year event
Inflow = 23.54 cfs @ 12.16 hrs, Volume= 1.793 af
Outflow = 20.73 cfs @ 12.29 hrs, Volume= 1.778 af, Atten= 12%, Lag= 8.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.29 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.98 fps, Avg. Travel Time= 10.9 min

Peak Storage= 5,921 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.38'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 11.06 cfs @ 12.09 hrs, Volume= 0.736 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 19.71 cfs @ 12.15 hrs, Volume= 1.521 af, Depth> 2.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 13.89 cfs @ 12.11 hrs, Volume= 0.983 af, Depth> 3.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

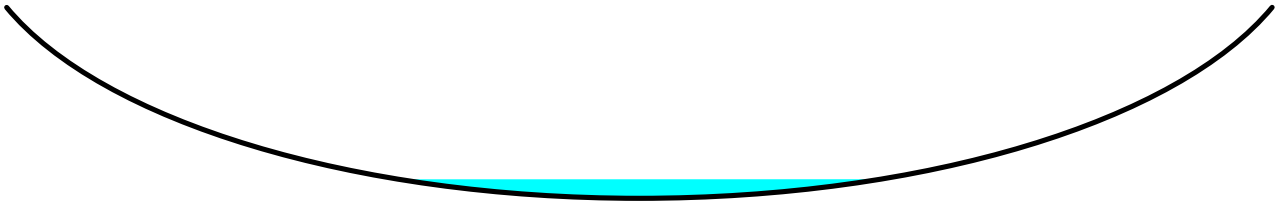
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.66" for 50-year event
Inflow = 11.06 cfs @ 12.09 hrs, Volume= 0.736 af
Outflow = 10.33 cfs @ 12.15 hrs, Volume= 0.733 af, Atten= 7%, Lag= 3.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 5.0 min

Peak Storage= 1,293 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.20'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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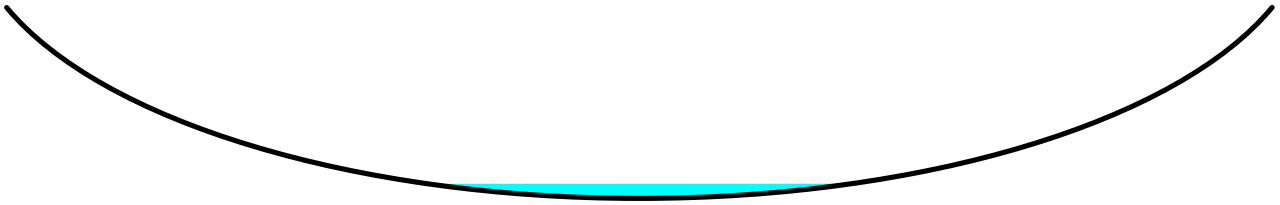
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 2.65" for 50-year event
Inflow = 10.33 cfs @ 12.15 hrs, Volume= 0.733 af
Outflow = 10.23 cfs @ 12.16 hrs, Volume= 0.733 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.91 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.7 min

Peak Storage= 168 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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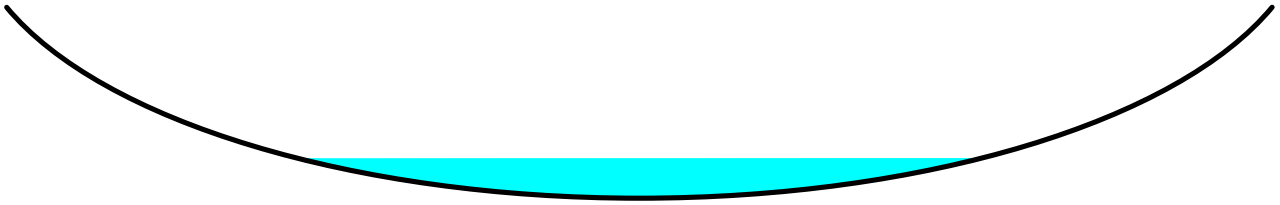
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 2.53" for 50-year event
Inflow = 29.92 cfs @ 12.15 hrs, Volume= 2.254 af
Outflow = 26.53 cfs @ 12.28 hrs, Volume= 2.236 af, Atten= 11%, Lag= 7.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 4.3 min
Avg. Velocity = 1.03 fps, Avg. Travel Time= 10.4 min

Peak Storage= 7,045 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 13.60 cfs @ 12.08 hrs, Volume= 0.902 af, Depth> 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
0.930	73	Woods, Fair, HSG C
2.384	60	Woods, Fair, HSG B
3.314	64	Weighted Average
3.314		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.2	270	0.1110	0.86		**Lag/CN Method, Tc 1**

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 24.50 cfs @ 12.15 hrs, Volume= 1.878 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
1.418	73	Woods, Fair, HSG C
5.969	60	Woods, Fair, HSG B
7.387	62	Weighted Average
7.387		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	600	0.1240	1.01		**Lag/CN Method, Tc-2**

Summary for Subcatchment 3S: Off Site West

Runoff = 16.68 cfs @ 12.11 hrs, Volume= 1.182 af, Depth> 3.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.68"

Area (ac)	CN	Description
3.633	70	Woods, Good, HSG C
3.633		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	564	0.1250	1.24		**Lag/CN Method, Tc-3**

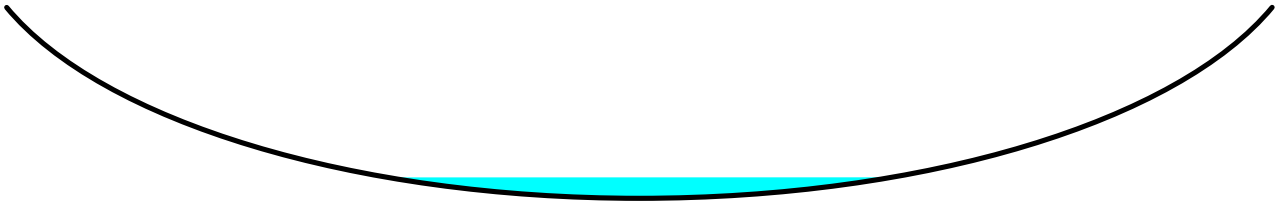
Summary for Reach 1R: Wetland Section 1

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 3.27" for 100-year event
Inflow = 13.60 cfs @ 12.08 hrs, Volume= 0.902 af
Outflow = 12.70 cfs @ 12.14 hrs, Volume= 0.899 af, Atten= 7%, Lag= 3.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.12 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.84 fps, Avg. Travel Time= 4.8 min

Peak Storage= 1,497 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 2.00' Flow Area= 173.3 sf, Capacity= 1,610.63 cfs

130.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 240.0' Slope= 0.0667 '/'
Inlet Invert= 296.00', Outlet Invert= 280.00'



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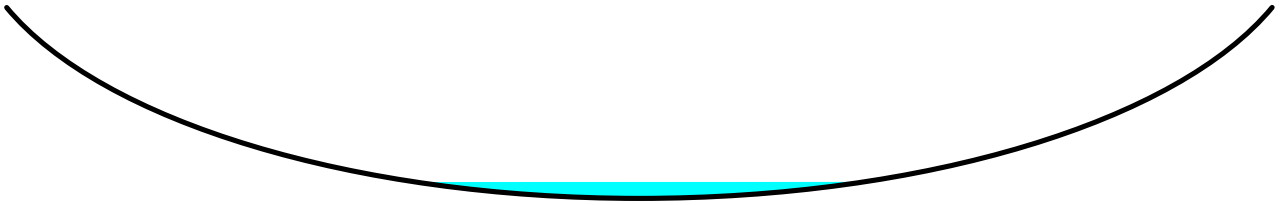
Summary for Reach 1R': Wetland Section 2

Inflow Area = 3.314 ac, 0.00% Impervious, Inflow Depth > 3.26" for 100-year event
Inflow = 12.70 cfs @ 12.14 hrs, Volume= 0.899 af
Outflow = 12.60 cfs @ 12.15 hrs, Volume= 0.899 af, Atten= 1%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.50 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.85 fps, Avg. Travel Time= 0.6 min

Peak Storage= 194 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 2.00' Flow Area= 53.3 sf, Capacity= 2,590.64 cfs

40.00' x 2.00' deep Parabolic Channel, n= 0.013 Asphalt, smooth
Length= 145.0' Slope= 0.1241 '/'
Inlet Invert= 280.00', Outlet Invert= 262.00'



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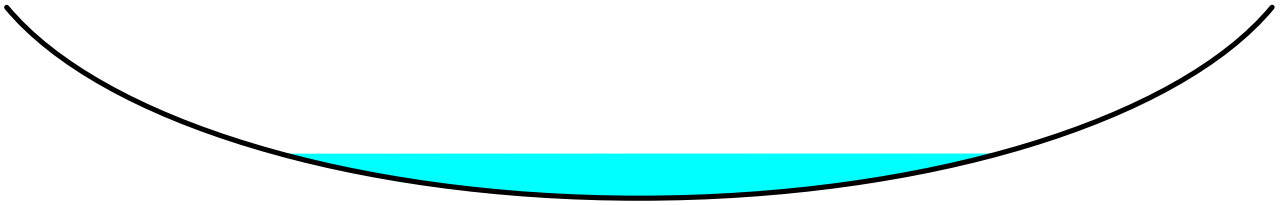
Summary for Reach 2R: Peak off Site

Inflow Area = 10.701 ac, 0.00% Impervious, Inflow Depth > 3.11" for 100-year event
Inflow = 37.10 cfs @ 12.15 hrs, Volume= 2.777 af
Outflow = 33.47 cfs @ 12.27 hrs, Volume= 2.758 af, Atten= 10%, Lag= 7.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.65 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.08 fps, Avg. Travel Time= 9.9 min

Peak Storage= 8,223 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.47'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 789.38 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 640.0' Slope= 0.0375 '/'
Inlet Invert= 262.00', Outlet Invert= 238.00'



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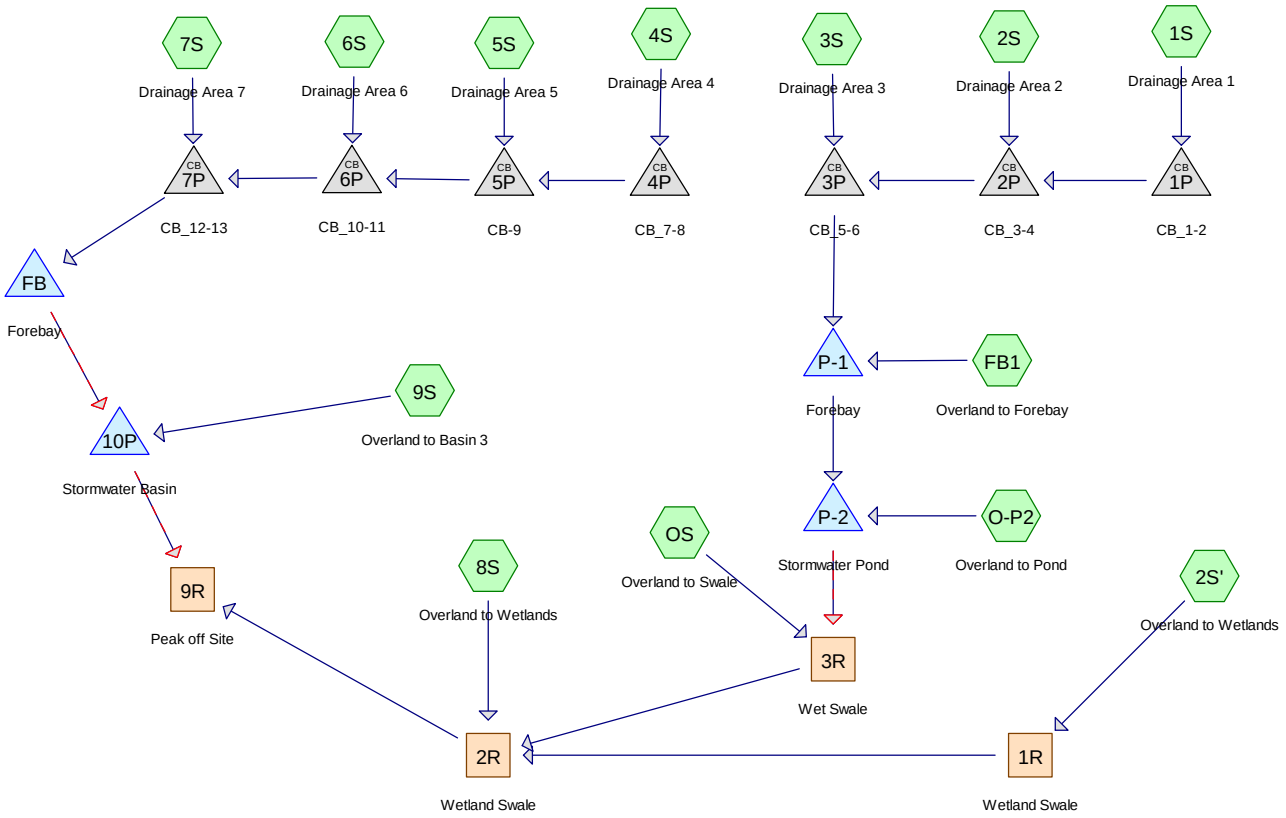
PROPOSED CONDITIONS



Subcat Reach Pond Link

Routing Diagram for Proposed Conditions
Prepared by Killingly Engineering Associates, LLC, Printed 8/1/2022
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Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af, Depth> 1.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 0.82 cfs @ 12.02 hrs, Volume= 0.049 af, Depth> 1.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 1.31 cfs @ 12.19 hrs, Volume= 0.117 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 1.10 cfs @ 12.09 hrs, Volume= 0.074 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 1.62 cfs @ 12.02 hrs, Volume= 0.098 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 2.52 cfs @ 12.05 hrs, Volume= 0.154 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.07 cfs @ 12.02 hrs, Volume= 0.071 af, Depth> 2.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 2.69 cfs @ 12.22 hrs, Volume= 0.255 af, Depth> 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 0.88 cfs @ 12.05 hrs, Volume= 0.054 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.19 cfs @ 12.05 hrs, Volume= 0.012 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.25 cfs @ 12.03 hrs, Volume= 0.016 af, Depth> 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.44 cfs @ 12.05 hrs, Volume= 0.028 af, Depth> 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.37"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

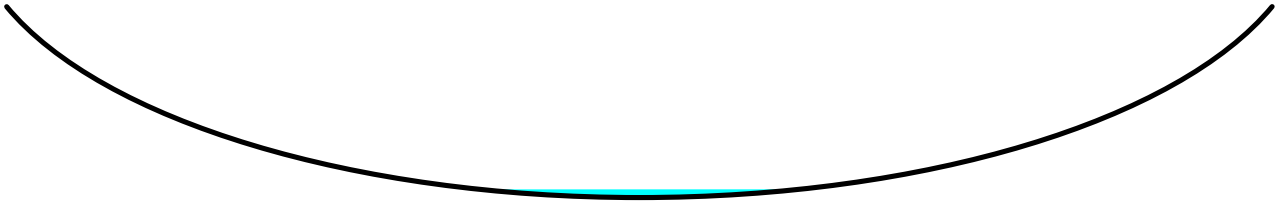
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 0.79" for 2-year event
Inflow = 1.31 cfs @ 12.19 hrs, Volume= 0.117 af
Outflow = 1.23 cfs @ 12.31 hrs, Volume= 0.116 af, Atten= 6%, Lag= 7.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.25 fps, Min. Travel Time= 3.9 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 7.8 min

Peak Storage= 288 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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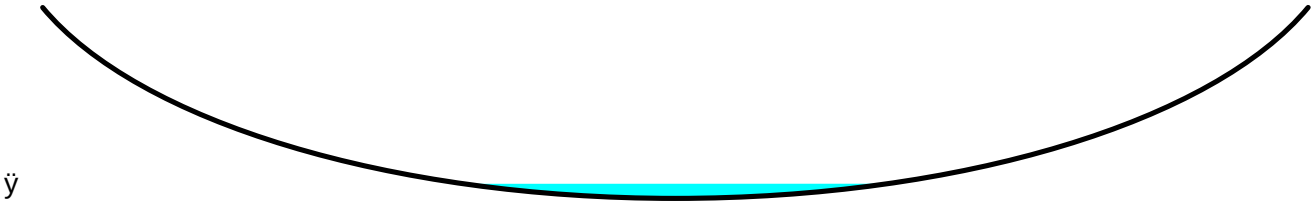
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 0.74" for 2-year event
Inflow = 3.97 cfs @ 12.26 hrs, Volume= 0.471 af
Outflow = 3.48 cfs @ 12.51 hrs, Volume= 0.463 af, Atten= 12%, Lag= 15.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.43 fps, Min. Travel Time= 8.3 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 15.4 min

Peak Storage= 1,738 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.15'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 0.69" for 2-year event
Inflow = 0.44 cfs @ 12.05 hrs, Volume= 0.100 af
Outflow = 0.40 cfs @ 12.11 hrs, Volume= 0.100 af, Atten= 9%, Lag= 3.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.32 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 3.3 min

Peak Storage= 52 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 0.81" for 2-year event
Inflow = 3.62 cfs @ 12.53 hrs, Volume= 0.800 af
Outflow = 3.62 cfs @ 12.53 hrs, Volume= 0.800 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 1.85" for 2-year event
Inflow = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af
Outflow = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min
Primary = 0.40 cfs @ 12.13 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.79' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.39 cfs @ 12.13 hrs HW=311.79' (Free Discharge)
1=Culvert (Inlet Controls 0.39 cfs @ 1.83 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 1.90" for 2-year event
Inflow = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af
Outflow = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.03 hrs, Volume= 0.080 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.34' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.03 cfs @ 12.03 hrs HW=299.33' (Free Discharge)
1=Culvert (Inlet Controls 1.03 cfs @ 2.36 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 1.72" for 2-year event
Inflow = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af
Outflow = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 12.07 hrs, Volume= 0.153 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.21' @ 12.07 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.01 cfs @ 12.07 hrs HW=287.20' (Free Discharge)
1=Culvert (Inlet Controls 2.01 cfs @ 2.85 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 1.70" for 2-year event
Inflow = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af
Outflow = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min
Primary = 3.76 cfs @ 12.04 hrs, Volume= 0.227 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.53' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.62 cfs @ 12.04 hrs HW=273.51' (Free Discharge)
1=Culvert (Inlet Controls 3.62 cfs @ 3.42 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 1.75" for 2-year event
Inflow = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af
Outflow = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af, Atten= 0%, Lag= 0.0 min
Primary = 5.34 cfs @ 12.03 hrs, Volume= 0.325 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 265.03' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.13 cfs @ 12.03 hrs HW=264.98' (Free Discharge)
1=Culvert (Inlet Controls 5.13 cfs @ 4.18 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 1.73" for 2-year event
Inflow = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af
Outflow = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af, Atten= 0%, Lag= 0.0 min
Primary = 7.80 cfs @ 12.04 hrs, Volume= 0.479 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 254.59' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=7.57 cfs @ 12.04 hrs HW=254.54' (Free Discharge)
1=Culvert (Inlet Controls 7.57 cfs @ 4.28 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 1.82" for 2-year event
Inflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af
Outflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min
Primary = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.82' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=8.51 cfs @ 12.04 hrs HW=246.75' (Free Discharge)
1=Culvert (Inlet Controls 8.51 cfs @ 4.82 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 1.63" for 2-year event
Inflow = 6.84 cfs @ 12.12 hrs, Volume= 0.567 af
Outflow = 0.87 cfs @ 14.66 hrs, Volume= 0.338 af, Atten= 87%, Lag= 152.4 min
Primary = 0.87 cfs @ 14.66 hrs, Volume= 0.338 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.58' @ 14.66 hrs Surf.Area= 7,085 sf Storage= 13,937 cf

Plug-Flow detention time= 211.6 min calculated for 0.336 af (59% of inflow)

Center-of-Mass det. time= 134.2 min (960.7 - 826.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 14.66 hrs HW=246.58' (Free Discharge)
└─**1=Culvert** (Passes 0.85 cfs of 15.54 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.61 cfs @ 4.51 fps)
  ├─**3=Orifice/Grate** (Weir Controls 0.24 cfs @ 0.95 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 1.82" for 2-year event
Inflow = 8.81 cfs @ 12.04 hrs, Volume= 0.550 af
Outflow = 6.25 cfs @ 12.12 hrs, Volume= 0.514 af, Atten= 29%, Lag= 4.8 min
Primary = 1.38 cfs @ 12.12 hrs, Volume= 0.437 af
Secondary = 4.87 cfs @ 12.12 hrs, Volume= 0.076 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.17' @ 12.12 hrs Surf.Area= 2,432 sf Storage= 7,234 cf

Plug-Flow detention time= 71.0 min calculated for 0.514 af (93% of inflow)
Center-of-Mass det. time= 47.3 min (828.3 - 781.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.37 cfs @ 12.12 hrs HW=246.14' (Free Discharge)
1=Culvert (Barrel Controls 1.37 cfs @ 7.00 fps)

Secondary OutFlow Max=4.22 cfs @ 12.12 hrs HW=246.14' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 4.22 cfs @ 0.88 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 1.65" for 2-year event
Inflow = 2.25 cfs @ 12.06 hrs, Volume= 0.165 af
Outflow = 1.09 cfs @ 12.31 hrs, Volume= 0.095 af, Atten= 52%, Lag= 14.9 min
Primary = 1.09 cfs @ 12.31 hrs, Volume= 0.095 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.15' @ 12.31 hrs Surf.Area= 1,601 sf Storage= 3,253 cf

Plug-Flow detention time= 147.0 min calculated for 0.095 af (58% of inflow)
Center-of-Mass det. time= 68.7 min (859.5 - 790.8)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=1.06 cfs @ 12.31 hrs HW=285.14' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.06 cfs @ 0.92 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 0.96" for 2-year event
Inflow = 1.18 cfs @ 12.31 hrs, Volume= 0.111 af
Outflow = 0.17 cfs @ 14.14 hrs, Volume= 0.073 af, Atten= 85%, Lag= 110.1 min
Primary = 0.17 cfs @ 14.14 hrs, Volume= 0.073 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.84' @ 14.14 hrs Surf.Area= 2,761 sf Storage= 2,156 cf

Plug-Flow detention time= 172.5 min calculated for 0.073 af (65% of inflow)
Center-of-Mass det. time= 93.2 min (946.0 - 852.9)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 14.14 hrs HW=272.84' (Free Discharge)
└**1=Culvert** (Passes 0.17 cfs of 2.80 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.17 cfs @ 2.00 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.14 cfs @ 12.02 hrs, Volume= 0.069 af, Depth> 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 2.31 cfs @ 12.18 hrs, Volume= 0.195 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 1.60 cfs @ 12.09 hrs, Volume= 0.108 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 2.26 cfs @ 12.02 hrs, Volume= 0.139 af, Depth> 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 3.58 cfs @ 12.05 hrs, Volume= 0.221 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.36 cfs @ 12.02 hrs, Volume= 0.091 af, Depth> 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 4.84 cfs @ 12.21 hrs, Volume= 0.431 af, Depth> 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 1.37 cfs @ 12.04 hrs, Volume= 0.083 af, Depth> 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.31 cfs @ 12.04 hrs, Volume= 0.019 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.41 cfs @ 12.03 hrs, Volume= 0.025 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.73 cfs @ 12.04 hrs, Volume= 0.044 af, Depth> 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-year Rainfall=4.27"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

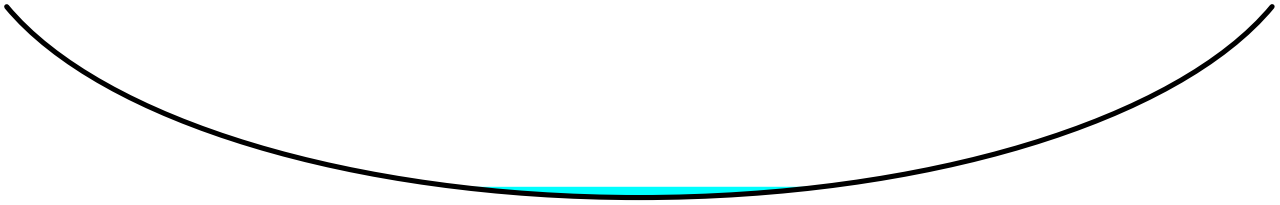
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 1.32" for 5-year event
Inflow = 2.31 cfs @ 12.18 hrs, Volume= 0.195 af
Outflow = 2.20 cfs @ 12.28 hrs, Volume= 0.194 af, Atten= 5%, Lag= 5.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.48 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 6.9 min

Peak Storage= 430 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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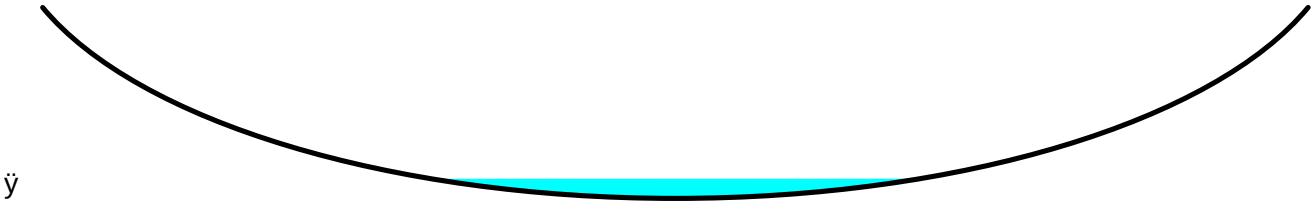
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 1.29" for 5-year event
Inflow = 7.26 cfs @ 12.24 hrs, Volume= 0.822 af
Outflow = 6.57 cfs @ 12.45 hrs, Volume= 0.811 af, Atten= 10%, Lag= 12.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.74 fps, Min. Travel Time= 6.8 min
Avg. Velocity = 0.86 fps, Avg. Travel Time= 13.8 min

Peak Storage= 2,700 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 1.36" for 5-year event
Inflow = 0.73 cfs @ 12.04 hrs, Volume= 0.197 af
Outflow = 0.67 cfs @ 12.09 hrs, Volume= 0.196 af, Atten= 9%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.63 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.01 fps, Avg. Travel Time= 2.7 min

Peak Storage= 72 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 1.41" for 5-year event
Inflow = 8.20 cfs @ 12.47 hrs, Volume= 1.386 af
Outflow = 8.20 cfs @ 12.47 hrs, Volume= 1.386 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 2.62" for 5-year event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af
Outflow = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min
Primary = 0.56 cfs @ 12.13 hrs, Volume= 0.043 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.85' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.55 cfs @ 12.13 hrs HW=311.84' (Free Discharge)
1=Culvert (Inlet Controls 0.55 cfs @ 2.00 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 2.68" for 5-year event
Inflow = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af
Outflow = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min
Primary = 1.47 cfs @ 12.03 hrs, Volume= 0.112 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.43' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.43 cfs @ 12.03 hrs HW=299.43' (Free Discharge)
1=Culvert (Inlet Controls 1.43 cfs @ 2.59 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 2.46" for 5-year event
Inflow = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af
Outflow = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min
Primary = 2.94 cfs @ 12.07 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.38' @ 12.07 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.87 cfs @ 12.07 hrs HW=287.37' (Free Discharge)
1=Culvert (Inlet Controls 2.87 cfs @ 3.17 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 2.45" for 5-year event
Inflow = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af
Outflow = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min
Primary = 5.34 cfs @ 12.04 hrs, Volume= 0.326 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.94' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.14 cfs @ 12.04 hrs HW=273.88' (Free Discharge)
1=Culvert (Inlet Controls 5.14 cfs @ 4.19 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 2.50" for 5-year event
Inflow = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af
Outflow = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min
Primary = 7.56 cfs @ 12.03 hrs, Volume= 0.465 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 265.84' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.25 cfs @ 12.03 hrs HW=265.73' (Free Discharge)
1=Culvert (Inlet Controls 7.25 cfs @ 5.91 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 2.48" for 5-year event
Inflow = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af
Outflow = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af, Atten= 0%, Lag= 0.0 min
Primary = 11.07 cfs @ 12.04 hrs, Volume= 0.686 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 255.43' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=10.71 cfs @ 12.04 hrs HW=255.33' (Free Discharge)
1=Culvert (Inlet Controls 10.71 cfs @ 6.06 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 2.58" for 5-year event
Inflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af
Outflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af, Atten= 0%, Lag= 0.0 min
Primary = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.85' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=11.92 cfs @ 12.04 hrs HW=247.71' (Free Discharge)
1=Culvert (Inlet Controls 11.92 cfs @ 6.75 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 2.37" for 5-year event
Inflow = 15.79 cfs @ 12.06 hrs, Volume= 0.823 af
Outflow = 1.79 cfs @ 12.61 hrs, Volume= 0.575 af, Atten= 89%, Lag= 32.9 min
Primary = 1.79 cfs @ 12.61 hrs, Volume= 0.575 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.75' @ 12.61 hrs Surf.Area= 7,523 sf Storage= 15,132 cf

Plug-Flow detention time= 161.9 min calculated for 0.575 af (70% of inflow)

Center-of-Mass det. time= 94.4 min (908.0 - 813.6)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.87 cfs @ 12.61 hrs HW=246.75' (Free Discharge)
└─**1=Culvert** (Passes 1.87 cfs of 15.91 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.67 cfs @ 4.91 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.20 cfs @ 2.39 fps)
  └─**4=Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 2.58" for 5-year event
Inflow = 12.36 cfs @ 12.04 hrs, Volume= 0.778 af
Outflow = 14.44 cfs @ 12.06 hrs, Volume= 0.740 af, Atten= 0%, Lag= 1.2 min
Primary = 1.41 cfs @ 12.06 hrs, Volume= 0.547 af
Secondary = 13.03 cfs @ 12.06 hrs, Volume= 0.193 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.29' @ 12.06 hrs Surf.Area= 2,475 sf Storage= 7,510 cf

Plug-Flow detention time= 59.6 min calculated for 0.737 af (95% of inflow)
Center-of-Mass det. time= 41.4 min (815.3 - 773.9)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.40 cfs @ 12.06 hrs HW=246.27' (Free Discharge)
1=Culvert (Barrel Controls 1.40 cfs @ 7.14 fps)

Secondary OutFlow Max=11.95 cfs @ 12.06 hrs HW=246.27' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 11.95 cfs @ 1.27 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 2.37" for 5-year event
Inflow = 3.24 cfs @ 12.06 hrs, Volume= 0.238 af
Outflow = 3.01 cfs @ 12.12 hrs, Volume= 0.168 af, Atten= 7%, Lag= 3.7 min
Primary = 3.01 cfs @ 12.12 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.29' @ 12.12 hrs Surf.Area= 1,636 sf Storage= 3,483 cf

Plug-Flow detention time= 112.0 min calculated for 0.168 af (71% of inflow)
Center-of-Mass det. time= 46.0 min (828.6 - 782.6)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.78 cfs @ 12.12 hrs HW=285.27' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.78 cfs @ 1.28 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 1.68" for 5-year event
Inflow = 3.24 cfs @ 12.12 hrs, Volume= 0.193 af
Outflow = 0.35 cfs @ 13.15 hrs, Volume= 0.152 af, Atten= 89%, Lag= 61.6 min
Primary = 0.35 cfs @ 13.15 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.37' @ 13.15 hrs Surf.Area= 3,007 sf Storage= 3,696 cf

Plug-Flow detention time= 147.4 min calculated for 0.152 af (79% of inflow)
Center-of-Mass det. time= 92.3 min (917.5 - 825.2)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.35 cfs @ 13.15 hrs HW=273.37' (Free Discharge)
├**1=Culvert** (Passes 0.35 cfs of 5.97 cfs potential flow)
│ └**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 4.05 fps)
│ └**3=Orifice/Grate** (Controls 0.00 cfs)
├**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.41 cfs @ 12.01 hrs, Volume= 0.086 af, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 3.23 cfs @ 12.18 hrs, Volume= 0.268 af, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 2.03 cfs @ 12.09 hrs, Volume= 0.137 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 2.80 cfs @ 12.02 hrs, Volume= 0.173 af, Depth> 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 4.49 cfs @ 12.05 hrs, Volume= 0.280 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.61 cfs @ 12.02 hrs, Volume= 0.109 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 6.84 cfs @ 12.21 hrs, Volume= 0.596 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 1.81 cfs @ 12.04 hrs, Volume= 0.109 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.41 cfs @ 12.04 hrs, Volume= 0.025 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.54 cfs @ 12.03 hrs, Volume= 0.033 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 0.99 cfs @ 12.04 hrs, Volume= 0.060 af, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.02"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

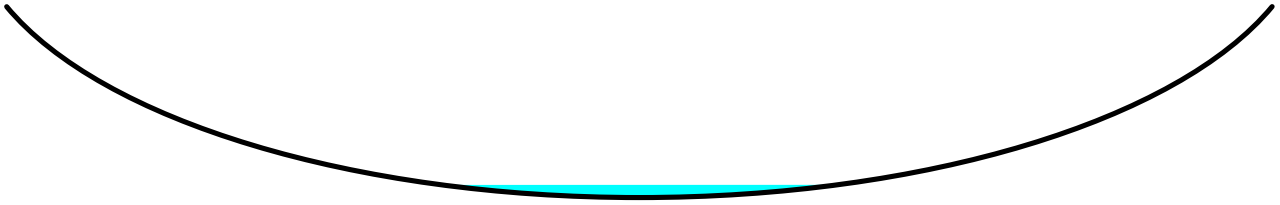
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 1.81" for 10-year event
Inflow = 3.23 cfs @ 12.18 hrs, Volume= 0.268 af
Outflow = 3.13 cfs @ 12.27 hrs, Volume= 0.267 af, Atten= 3%, Lag= 5.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.65 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.74 fps, Avg. Travel Time= 6.5 min

Peak Storage= 549 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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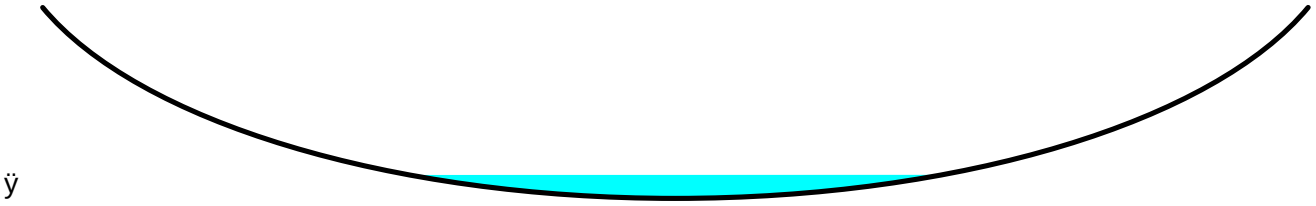
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 1.79" for 10-year event
Inflow = 10.48 cfs @ 12.23 hrs, Volume= 1.143 af
Outflow = 9.64 cfs @ 12.41 hrs, Volume= 1.129 af, Atten= 8%, Lag= 10.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.96 fps, Min. Travel Time= 6.1 min
Avg. Velocity = 0.93 fps, Avg. Travel Time= 12.8 min

Peak Storage= 3,512 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 1.94" for 10-year event
Inflow = 1.00 cfs @ 12.05 hrs, Volume= 0.280 af
Outflow = 0.95 cfs @ 12.10 hrs, Volume= 0.279 af, Atten= 5%, Lag= 3.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.85 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 2.5 min

Peak Storage= 88 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 1.94" for 10-year event
Inflow = 13.19 cfs @ 12.42 hrs, Volume= 1.911 af
Outflow = 13.19 cfs @ 12.42 hrs, Volume= 1.911 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 3.28" for 10-year event
Inflow = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af
Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.13 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.89' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.68 cfs @ 12.13 hrs HW=311.89' (Free Discharge)
1=Culvert (Inlet Controls 0.68 cfs @ 2.12 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 3.34" for 10-year event
Inflow = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af
Outflow = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 12.03 hrs, Volume= 0.140 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.51' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.77 cfs @ 12.03 hrs HW=299.50' (Free Discharge)
1=Culvert (Inlet Controls 1.77 cfs @ 2.75 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 3.11" for 10-year event
Inflow = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af
Outflow = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af, Atten= 0%, Lag= 0.0 min
Primary = 3.69 cfs @ 12.06 hrs, Volume= 0.277 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.52' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.60 cfs @ 12.06 hrs HW=287.50' (Free Discharge)
1=Culvert (Inlet Controls 3.60 cfs @ 3.41 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 3.09" for 10-year event
Inflow = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af
Outflow = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af, Atten= 0%, Lag= 0.0 min
Primary = 6.69 cfs @ 12.03 hrs, Volume= 0.412 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.40' @ 12.04 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.42 cfs @ 12.03 hrs HW=274.31' (Free Discharge)
1=Culvert (Inlet Controls 6.42 cfs @ 5.23 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 3.15" for 10-year event
Inflow = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af
Outflow = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af, Atten= 0%, Lag= 0.0 min
Primary = 9.44 cfs @ 12.03 hrs, Volume= 0.586 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.74' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.04 cfs @ 12.03 hrs HW=266.57' (Free Discharge)
1=Culvert (Inlet Controls 9.04 cfs @ 7.37 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 3.13" for 10-year event
Inflow = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af
Outflow = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af, Atten= 0%, Lag= 0.0 min
Primary = 13.82 cfs @ 12.04 hrs, Volume= 0.865 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 256.37' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=13.36 cfs @ 12.04 hrs HW=256.22' (Free Discharge)
1=Culvert (Inlet Controls 13.36 cfs @ 7.56 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 3.23" for 10-year event
Inflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af
Outflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af, Atten= 0%, Lag= 0.0 min
Primary = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 248.98' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=14.79 cfs @ 12.04 hrs HW=248.77' (Free Discharge)
1=Culvert (Inlet Controls 14.79 cfs @ 8.37 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 3.00" for 10-year event
Inflow = 16.88 cfs @ 12.04 hrs, Volume= 1.044 af
Outflow = 3.60 cfs @ 12.46 hrs, Volume= 0.782 af, Atten= 79%, Lag= 24.9 min
Primary = 3.60 cfs @ 12.46 hrs, Volume= 0.782 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.19' @ 12.46 hrs Surf.Area= 8,701 sf Storage= 18,704 cf

Plug-Flow detention time= 137.7 min calculated for 0.782 af (75% of inflow)

Center-of-Mass det. time= 76.3 min (882.1 - 805.8)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.58 cfs @ 12.46 hrs HW=247.19' (Free Discharge)
└─**1=Culvert** (Passes 3.58 cfs of 16.88 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.80 cfs @ 5.85 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.99 cfs @ 3.99 fps)
  └─**4=Orifice/Grate** (Weir Controls 0.79 cfs @ 1.41 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 3.23" for 10-year event
Inflow = 15.35 cfs @ 12.04 hrs, Volume= 0.974 af
Outflow = 15.07 cfs @ 12.04 hrs, Volume= 0.935 af, Atten= 2%, Lag= 0.4 min
Primary = 1.41 cfs @ 12.04 hrs, Volume= 0.634 af
Secondary = 13.66 cfs @ 12.04 hrs, Volume= 0.301 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.29' @ 12.04 hrs Surf.Area= 2,478 sf Storage= 7,527 cf

Plug-Flow detention time= 53.9 min calculated for 0.935 af (96% of inflow)
Center-of-Mass det. time= 38.3 min (807.4 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.41 cfs @ 12.04 hrs HW=246.29' (Free Discharge)
1=Culvert (Barrel Controls 1.41 cfs @ 7.16 fps)

Secondary OutFlow Max=13.34 cfs @ 12.04 hrs HW=246.29' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 13.34 cfs @ 1.32 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 3.01" for 10-year event
Inflow = 4.08 cfs @ 12.06 hrs, Volume= 0.302 af
Outflow = 3.93 cfs @ 12.09 hrs, Volume= 0.232 af, Atten= 4%, Lag= 1.9 min
Primary = 3.93 cfs @ 12.09 hrs, Volume= 0.232 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.34' @ 12.09 hrs Surf.Area= 1,648 sf Storage= 3,564 cf

Plug-Flow detention time= 96.6 min calculated for 0.232 af (77% of inflow)
Center-of-Mass det. time= 38.8 min (816.0 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=3.88 cfs @ 12.09 hrs HW=285.33' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.88 cfs @ 1.45 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 2.30" for 10-year event
Inflow = 4.31 cfs @ 12.08 hrs, Volume= 0.265 af
Outflow = 0.47 cfs @ 13.03 hrs, Volume= 0.220 af, Atten= 89%, Lag= 56.9 min
Primary = 0.47 cfs @ 13.03 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.94' @ 13.03 hrs Surf.Area= 3,266 sf Storage= 5,462 cf

Plug-Flow detention time= 154.8 min calculated for 0.219 af (83% of inflow)
Center-of-Mass det. time= 108.2 min (921.7 - 813.5)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 13.03 hrs HW=273.94' (Free Discharge)
└**1=Culvert** (Passes 0.47 cfs of 8.18 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.43 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af, Depth> 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 1.77 cfs @ 12.01 hrs, Volume= 0.110 af, Depth> 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 4.62 cfs @ 12.17 hrs, Volume= 0.377 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 2.62 cfs @ 12.09 hrs, Volume= 0.179 af, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 3.55 cfs @ 12.02 hrs, Volume= 0.222 af, Depth> 4.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 5.74 cfs @ 12.05 hrs, Volume= 0.362 af, Depth> 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 1.95 cfs @ 12.02 hrs, Volume= 0.132 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 9.79 cfs @ 12.20 hrs, Volume= 0.843 af, Depth> 2.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 2.42 cfs @ 12.04 hrs, Volume= 0.147 af, Depth> 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.56 cfs @ 12.04 hrs, Volume= 0.034 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.74 cfs @ 12.02 hrs, Volume= 0.045 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.37 cfs @ 12.04 hrs, Volume= 0.082 af, Depth> 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.05"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

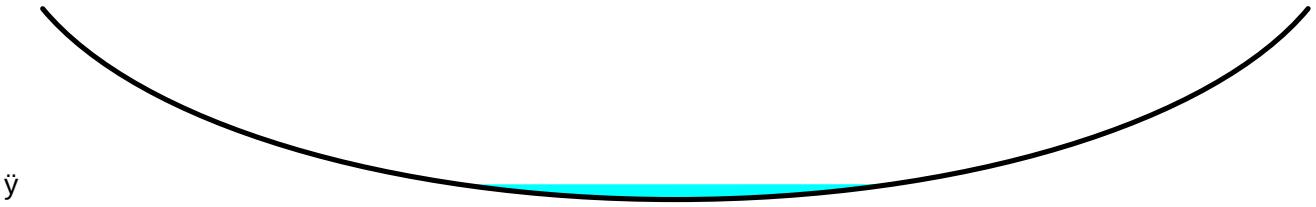
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 2.54" for 25-year event
Inflow = 4.62 cfs @ 12.17 hrs, Volume= 0.377 af
Outflow = 4.45 cfs @ 12.26 hrs, Volume= 0.375 af, Atten= 4%, Lag= 4.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.84 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 6.1 min

Peak Storage= 704 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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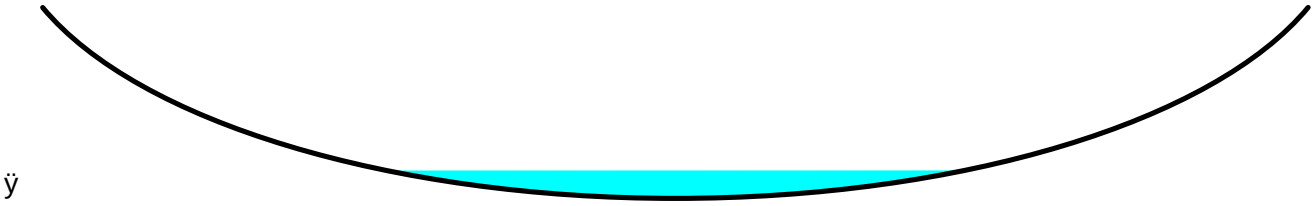
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 2.52" for 25-year event
Inflow = 15.08 cfs @ 12.22 hrs, Volume= 1.607 af
Outflow = 13.91 cfs @ 12.38 hrs, Volume= 1.590 af, Atten= 8%, Lag= 9.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.19 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 11.9 min

Peak Storage= 4,546 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 2.70" for 25-year event
Inflow = 1.66 cfs @ 12.05 hrs, Volume= 0.390 af
Outflow = 1.54 cfs @ 12.09 hrs, Volume= 0.389 af, Atten= 7%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.26 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 2.3 min

Peak Storage= 120 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 2.71" for 25-year event
Inflow = 19.55 cfs @ 12.38 hrs, Volume= 2.667 af
Outflow = 19.55 cfs @ 12.38 hrs, Volume= 2.667 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 4.20" for 25-year event
Inflow = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af
Outflow = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min
Primary = 0.89 cfs @ 12.13 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.94' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.87 cfs @ 12.13 hrs HW=311.94' (Free Discharge)
1=Culvert (Inlet Controls 0.87 cfs @ 2.26 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 4.27" for 25-year event
Inflow = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af
Outflow = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min
Primary = 2.29 cfs @ 12.03 hrs, Volume= 0.179 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.60' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.24 cfs @ 12.03 hrs HW=299.59' (Free Discharge)
1=Culvert (Inlet Controls 2.24 cfs @ 2.94 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 4.02" for 25-year event
Inflow = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af
Outflow = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af, Atten= 0%, Lag= 0.0 min
Primary = 4.72 cfs @ 12.06 hrs, Volume= 0.358 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 287.76' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.62 cfs @ 12.06 hrs HW=287.73' (Free Discharge)
1=Culvert (Inlet Controls 4.62 cfs @ 3.78 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 4.00" for 25-year event
Inflow = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af
Outflow = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af, Atten= 0%, Lag= 0.0 min
Primary = 8.55 cfs @ 12.03 hrs, Volume= 0.533 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.20' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=8.20 cfs @ 12.03 hrs HW=275.05' (Free Discharge)
1=Culvert (Inlet Controls 8.20 cfs @ 6.68 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 4.06" for 25-year event
Inflow = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af
Outflow = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af, Atten= 0%, Lag= 0.0 min
Primary = 12.02 cfs @ 12.03 hrs, Volume= 0.756 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 268.31' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=11.51 cfs @ 12.03 hrs HW=268.02' (Free Discharge)
1=Culvert (Inlet Controls 11.51 cfs @ 9.38 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 4.04" for 25-year event
Inflow = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af
Outflow = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af, Atten= 0%, Lag= 0.0 min
Primary = 17.63 cfs @ 12.04 hrs, Volume= 1.118 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 258.02' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=17.02 cfs @ 12.04 hrs HW=257.75' (Free Discharge)
1=Culvert (Inlet Controls 17.02 cfs @ 9.63 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.14" for 25-year event
Inflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af
Outflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af, Atten= 0%, Lag= 0.0 min
Primary = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.95' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=18.76 cfs @ 12.04 hrs HW=250.61' (Free Discharge)
1=Culvert (Inlet Controls 18.76 cfs @ 10.62 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 3.90" for 25-year event
Inflow = 21.90 cfs @ 12.04 hrs, Volume= 1.356 af
Outflow = 5.64 cfs @ 12.40 hrs, Volume= 1.077 af, Atten= 74%, Lag= 21.1 min
Primary = 5.64 cfs @ 12.40 hrs, Volume= 1.077 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 247.72' @ 12.40 hrs Surf.Area= 10,130 sf Storage= 23,735 cf

Plug-Flow detention time= 117.6 min calculated for 1.073 af (79% of inflow)

Center-of-Mass det. time= 63.1 min (860.8 - 797.7)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.64 cfs @ 12.40 hrs HW=247.72' (Free Discharge)
└─**1=Culvert** (Passes 5.64 cfs of 17.99 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.93 cfs @ 6.83 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 2.66 cfs @ 5.32 fps)
  └─**4=Orifice/Grate** (Orifice Controls 2.04 cfs @ 4.09 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.14" for 25-year event
Inflow = 19.48 cfs @ 12.04 hrs, Volume= 1.250 af
Outflow = 19.48 cfs @ 12.05 hrs, Volume= 1.209 af, Atten= 0%, Lag= 0.6 min
Primary = 1.42 cfs @ 12.05 hrs, Volume= 0.747 af
Secondary = 18.06 cfs @ 12.05 hrs, Volume= 0.462 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.35' @ 12.05 hrs Surf.Area= 2,499 sf Storage= 7,667 cf

Plug-Flow detention time= 48.3 min calculated for 1.205 af (96% of inflow)
Center-of-Mass det. time= 35.4 min (799.2 - 763.7)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.42 cfs @ 12.05 hrs HW=246.35' (Free Discharge)
1=Culvert (Barrel Controls 1.42 cfs @ 7.23 fps)

Secondary OutFlow Max=17.72 cfs @ 12.05 hrs HW=246.35' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 17.72 cfs @ 1.47 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 3.90" for 25-year event
Inflow = 5.26 cfs @ 12.06 hrs, Volume= 0.392 af
Outflow = 5.08 cfs @ 12.09 hrs, Volume= 0.322 af, Atten= 3%, Lag= 1.7 min
Primary = 5.08 cfs @ 12.09 hrs, Volume= 0.322 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.40' @ 12.09 hrs Surf.Area= 1,663 sf Storage= 3,663 cf

Plug-Flow detention time= 83.1 min calculated for 0.321 af (82% of inflow)
Center-of-Mass det. time= 34.0 min (805.3 - 771.3)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=4.99 cfs @ 12.09 hrs HW=285.39' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 4.99 cfs @ 1.59 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 3.18" for 25-year event
Inflow = 5.67 cfs @ 12.07 hrs, Volume= 0.366 af
Outflow = 0.60 cfs @ 13.01 hrs, Volume= 0.308 af, Atten= 89%, Lag= 56.3 min
Primary = 0.60 cfs @ 13.01 hrs, Volume= 0.308 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.72' @ 13.01 hrs Surf.Area= 3,630 sf Storage= 8,164 cf

Plug-Flow detention time= 171.8 min calculated for 0.308 af (84% of inflow)
Center-of-Mass det. time= 127.0 min (930.3 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 13.01 hrs HW=274.72' (Free Discharge)
└**1=Culvert** (Passes 0.60 cfs of 10.54 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.60 cfs @ 6.90 fps)
└**3=Orifice/Grate** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.05 cfs @ 12.01 hrs, Volume= 0.129 af, Depth> 5.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 5.73 cfs @ 12.17 hrs, Volume= 0.466 af, Depth> 3.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 3.08 cfs @ 12.09 hrs, Volume= 0.213 af, Depth> 4.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 4.13 cfs @ 12.02 hrs, Volume= 0.261 af, Depth> 4.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 6.71 cfs @ 12.05 hrs, Volume= 0.427 af, Depth> 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 2.21 cfs @ 12.02 hrs, Volume= 0.150 af, Depth> 6.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 12.20 cfs @ 12.20 hrs, Volume= 1.047 af, Depth> 3.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 2.91 cfs @ 12.04 hrs, Volume= 0.177 af, Depth> 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.68 cfs @ 12.04 hrs, Volume= 0.041 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 0.90 cfs @ 12.02 hrs, Volume= 0.054 af, Depth> 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.67 cfs @ 12.04 hrs, Volume= 0.101 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-year Rainfall=6.85"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

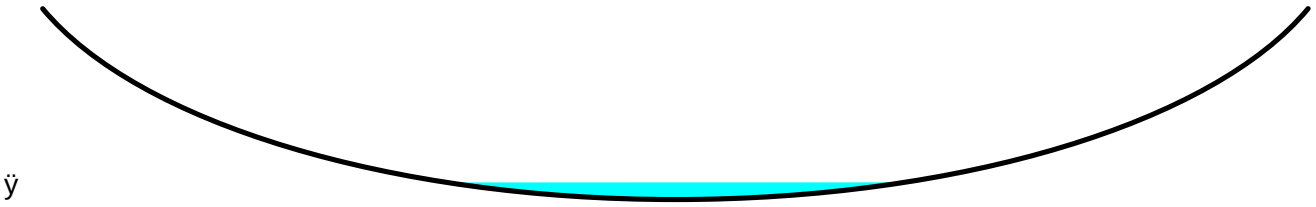
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 3.14" for 50-year event
Inflow = 5.73 cfs @ 12.17 hrs, Volume= 0.466 af
Outflow = 5.51 cfs @ 12.25 hrs, Volume= 0.464 af, Atten= 4%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.97 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 5.9 min

Peak Storage= 818 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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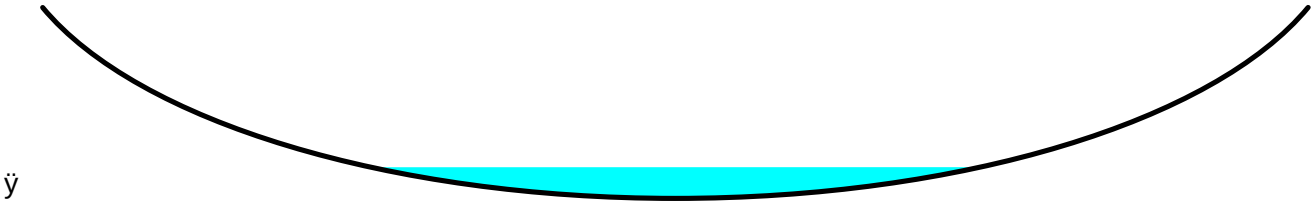
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 3.11" for 50-year event
Inflow = 18.76 cfs @ 12.22 hrs, Volume= 1.983 af
Outflow = 17.45 cfs @ 12.36 hrs, Volume= 1.963 af, Atten= 7%, Lag= 8.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.34 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 11.4 min

Peak Storage= 5,315 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 3.28" for 50-year event
Inflow = 2.07 cfs @ 12.04 hrs, Volume= 0.473 af
Outflow = 1.95 cfs @ 12.07 hrs, Volume= 0.472 af, Atten= 6%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 2.2 min

Peak Storage= 137 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.10'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.33" for 50-year event
Inflow = 25.74 cfs @ 12.35 hrs, Volume= 3.275 af
Outflow = 25.74 cfs @ 12.35 hrs, Volume= 3.275 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 4.93" for 50-year event
Inflow = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af
Outflow = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Primary = 1.03 cfs @ 12.13 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 311.98' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.01 cfs @ 12.13 hrs HW=311.98' (Free Discharge)
1=Culvert (Inlet Controls 1.01 cfs @ 2.35 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 5.00" for 50-year event
Inflow = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af
Outflow = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af, Atten= 0%, Lag= 0.0 min
Primary = 2.66 cfs @ 12.03 hrs, Volume= 0.209 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.67' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.60 cfs @ 12.03 hrs HW=299.66' (Free Discharge)
1=Culvert (Inlet Controls 2.60 cfs @ 3.07 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 4.73" for 50-year event
Inflow = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af
Outflow = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af, Atten= 0%, Lag= 0.0 min
Primary = 5.52 cfs @ 12.06 hrs, Volume= 0.422 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 288.00' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=5.40 cfs @ 12.06 hrs HW=287.96' (Free Discharge)
1=Culvert (Inlet Controls 5.40 cfs @ 4.40 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 4.72" for 50-year event
Inflow = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af
Outflow = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af, Atten= 0%, Lag= 0.0 min
Primary = 9.99 cfs @ 12.03 hrs, Volume= 0.629 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.95' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.58 cfs @ 12.03 hrs HW=275.75' (Free Discharge)
1=Culvert (Inlet Controls 9.58 cfs @ 7.81 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 4.78" for 50-year event
Inflow = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af
Outflow = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af, Atten= 0%, Lag= 0.0 min
Primary = 14.03 cfs @ 12.03 hrs, Volume= 0.890 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 269.79' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=13.43 cfs @ 12.03 hrs HW=269.39' (Free Discharge)
1=Culvert (Inlet Controls 13.43 cfs @ 10.95 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 4.76" for 50-year event
Inflow = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af
Outflow = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af, Atten= 0%, Lag= 0.0 min
Primary = 20.59 cfs @ 12.04 hrs, Volume= 1.317 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 259.57' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=19.86 cfs @ 12.04 hrs HW=259.20' (Free Discharge)
1=Culvert (Inlet Controls 19.86 cfs @ 11.24 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.86" for 50-year event
Inflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af
Outflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af, Atten= 0%, Lag= 0.0 min
Primary = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 252.80' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=21.84 cfs @ 12.04 hrs HW=252.34' (Free Discharge)
1=Culvert (Inlet Controls 21.84 cfs @ 12.36 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 4.61" for 50-year event
Inflow = 25.65 cfs @ 12.04 hrs, Volume= 1.602 af
Outflow = 10.69 cfs @ 12.23 hrs, Volume= 1.313 af, Atten= 58%, Lag= 11.4 min
Primary = 10.69 cfs @ 12.23 hrs, Volume= 1.313 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 250.43' @ 12.24 hrs Surf.Area= 10,874 sf Storage= 26,654 cf

Plug-Flow detention time= 108.1 min calculated for 1.308 af (82% of inflow)

Center-of-Mass det. time= 57.4 min (849.8 - 792.5)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.33 cfs @ 12.23 hrs HW=250.20' (Free Discharge)
└─**1=Culvert** (Passes 10.33 cfs of 22.43 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.39 cfs @ 10.21 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 4.63 cfs @ 9.26 fps)
  └─**4=Orifice/Grate** (Orifice Controls 4.31 cfs @ 8.62 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 4.86" for 50-year event
Inflow = 22.69 cfs @ 12.04 hrs, Volume= 1.467 af
Outflow = 22.74 cfs @ 12.04 hrs, Volume= 1.425 af, Atten= 0%, Lag= 0.6 min
Primary = 1.43 cfs @ 12.04 hrs, Volume= 0.826 af
Secondary = 21.31 cfs @ 12.04 hrs, Volume= 0.599 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.39' @ 12.04 hrs Surf.Area= 2,514 sf Storage= 7,760 cf

Plug-Flow detention time= 45.3 min calculated for 1.425 af (97% of inflow)
Center-of-Mass det. time= 33.6 min (793.8 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.43 cfs @ 12.04 hrs HW=246.38' (Free Discharge)
1=Culvert (Barrel Controls 1.43 cfs @ 7.26 fps)

Secondary OutFlow Max=20.83 cfs @ 12.04 hrs HW=246.38' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 20.83 cfs @ 1.56 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 4.61" for 50-year event
Inflow = 6.17 cfs @ 12.06 hrs, Volume= 0.463 af
Outflow = 5.98 cfs @ 12.09 hrs, Volume= 0.393 af, Atten= 3%, Lag= 1.6 min
Primary = 5.98 cfs @ 12.09 hrs, Volume= 0.393 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.44' @ 12.09 hrs Surf.Area= 1,673 sf Storage= 3,733 cf

Plug-Flow detention time= 76.0 min calculated for 0.392 af (85% of inflow)
Center-of-Mass det. time= 32.0 min (799.4 - 767.5)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=5.86 cfs @ 12.09 hrs HW=285.43' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.86 cfs @ 1.69 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 3.88" for 50-year event
Inflow = 6.71 cfs @ 12.07 hrs, Volume= 0.447 af
Outflow = 0.84 cfs @ 12.83 hrs, Volume= 0.372 af, Atten= 87%, Lag= 45.5 min
Primary = 0.84 cfs @ 12.83 hrs, Volume= 0.372 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.25' @ 12.83 hrs Surf.Area= 3,875 sf Storage= 10,142 cf

Plug-Flow detention time= 176.6 min calculated for 0.372 af (83% of inflow)
Center-of-Mass det. time= 130.8 min (928.3 - 797.6)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 12.83 hrs HW=275.25' (Free Discharge)
└**1=Culvert** (Passes 0.84 cfs of 11.86 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.67 cfs @ 7.73 fps)
└**3=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.69 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 1S: Drainage Area 1

Runoff = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af, Depth> 5.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
4,120	98	Paved parking, HSG B
4,450	74	>75% Grass cover, Good, HSG C
8,570	86	Weighted Average
4,450		51.93% Pervious Area
4,120		48.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	111	0.0710	0.20		**Sheet Flow, Tc-1** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 2S: Drainage Area 2

Runoff = 2.33 cfs @ 12.01 hrs, Volume= 0.147 af, Depth> 5.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
	6,287	74	>75% Grass cover, Good, HSG C
*	7,033	98	Roof/pavement
	13,320	87	Weighted Average
	6,287		47.20% Pervious Area
	7,033		52.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	125	0.0100	2.03		**Shallow Concentrated Flow, Tc-2** Paved Kv= 20.3 fps

Summary for Subcatchment 2S': Overland to Wetlands

Runoff = 6.85 cfs @ 12.17 hrs, Volume= 0.558 af, Depth> 3.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
38,320	73	Woods, Fair, HSG C
21,500	55	Woods, Good, HSG B
2,724	98	Roofs, HSG B
15,044	74	>75% Grass cover, Good, HSG C
77,588	69	Weighted Average
74,864		96.49% Pervious Area
2,724		3.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.2	200	0.1100	0.27		**Sheet Flow, Tc-2s** Grass: Dense n= 0.240 P2= 3.37"

Summary for Subcatchment 3S: Drainage Area 3

Runoff = 3.54 cfs @ 12.09 hrs, Volume= 0.246 af, Depth> 5.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	8,529	98	Paved parking/roof
	16,209	74	>75% Grass cover, Good, HSG C
	24,738	82	Weighted Average
	16,209		65.52% Pervious Area
	8,529		34.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	105	0.1100	0.35		**Sheet Flow, Tc-4a** Grass: Short n= 0.150 P2= 3.37"
0.7	160	0.0310	3.57		**Shallow Concentrated Flow, Tc-4b** Paved Kv= 20.3 fps
5.7	265	Total			

Summary for Subcatchment 4S: Drainage Area 4

Runoff = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af, Depth> 5.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	30,200	98	Paved parking & roof HSG A
	20,000	74	>75% Grass cover, Good, HSG C
	19,500	73	Woods, Fair, HSG C
	69,700	84	Weighted Average
	39,500		56.67% Pervious Area
	30,200		43.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	130	0.0100	1.13		**Sheet Flow, Tc-3** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 5S: Drainage Area 5

Runoff = 4.70 cfs @ 12.02 hrs, Volume= 0.299 af, Depth> 5.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	13,450	98	Paved surfaces & roof
	14,147	74	>75% Grass cover, Good, HSG C
	27,597	86	Weighted Average
	14,147		51.26% Pervious Area
	13,450		48.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	180	0.0500	2.29		**Sheet Flow, Tc-5** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 6S: Drainage Area 6

Runoff = 7.67 cfs @ 12.05 hrs, Volume= 0.492 af, Depth> 5.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	21,025	98	Pavement/Roofs, HSG B
	22,990	74	>75% Grass cover, Good, HSG C
	3,300	60	Woods, Fair, HSG B
	47,315	84	Weighted Average
	26,290		55.56% Pervious Area
	21,025		44.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	180	0.0500	0.95		**Lag/CN Method, Tc-6**

Summary for Subcatchment 7S: Drainage Area 7

Runoff = 2.47 cfs @ 12.02 hrs, Volume= 0.168 af, Depth> 6.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

	Area (sf)	CN	Description
*	12,295	98	Roof & Pavement
*	716	74	>75% Grass cover, Good, HSG B/D
	13,011	97	Weighted Average
	716		5.50% Pervious Area
	12,295		94.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	175	0.0580	2.42		**Sheet Flow, Tc-7** Smooth surfaces n= 0.011 P2= 3.37"

Summary for Subcatchment 8S: Overland to Wetlands

Runoff = 14.65 cfs @ 12.20 hrs, Volume= 1.256 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
24,323	74	>75% Grass cover, Good, HSG C
61,975	77	Woods, Good, HSG D
93,653	60	Woods, Fair, HSG B
179,951	68	Weighted Average
179,951		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.1	152	0.1240	0.18		**Sheet Flow, Tc-8** Woods: Light underbrush n= 0.400 P2= 3.37"

Summary for Subcatchment 9S: Overland to Basin 3

Runoff = 3.40 cfs @ 12.04 hrs, Volume= 0.208 af, Depth> 4.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
22,063	74	>75% Grass cover, Good, HSG C
1,920	98	Roofs, HSG C
23,983	76	Weighted Average
22,063		91.99% Pervious Area
1,920		8.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	145	0.1100	1.05		**Lag/CN Method, Tc-9**

Summary for Subcatchment FB1: Overland to Forebay

Runoff = 0.79 cfs @ 12.04 hrs, Volume= 0.048 af, Depth> 4.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
5,861	74	>75% Grass cover, Good, HSG C
5,861		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	98	0.0800	0.78		**Lag/CN Method, Tc-FB-1**

Summary for Subcatchment O-P2: Overland to Pond

Runoff = 1.05 cfs @ 12.02 hrs, Volume= 0.064 af, Depth> 4.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
7,761	74	>75% Grass cover, Good, HSG C
7,761		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	30	0.0330	0.40		**Lag/CN Method, Tc-P2**

Summary for Subcatchment OS: Overland to Swale

Runoff = 1.97 cfs @ 12.04 hrs, Volume= 0.120 af, Depth> 4.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=7.64"

Area (sf)	CN	Description
1,650	60	Woods, Fair, HSG B
13,622	74	>75% Grass cover, Good, HSG C
15,272	72	Weighted Average
15,272		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry, Tc-OS**

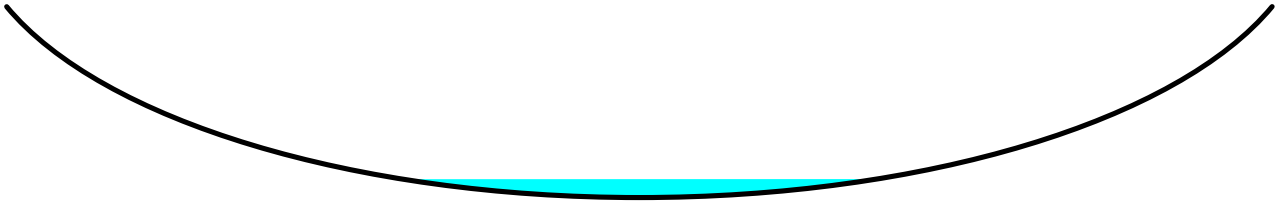
Summary for Reach 1R: Wetland Swale

Inflow Area = 1.781 ac, 3.51% Impervious, Inflow Depth > 3.76" for 100-year event
Inflow = 6.85 cfs @ 12.17 hrs, Volume= 0.558 af
Outflow = 6.60 cfs @ 12.25 hrs, Volume= 0.556 af, Atten= 4%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.09 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.85 fps, Avg. Travel Time= 5.7 min

Peak Storage= 928 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.19'
Bank-Full Depth= 2.00' Flow Area= 106.7 sf, Capacity= 1,056.58 cfs

80.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 290.0' Slope= 0.0759 '/'
Inlet Invert= 294.00', Outlet Invert= 272.00'



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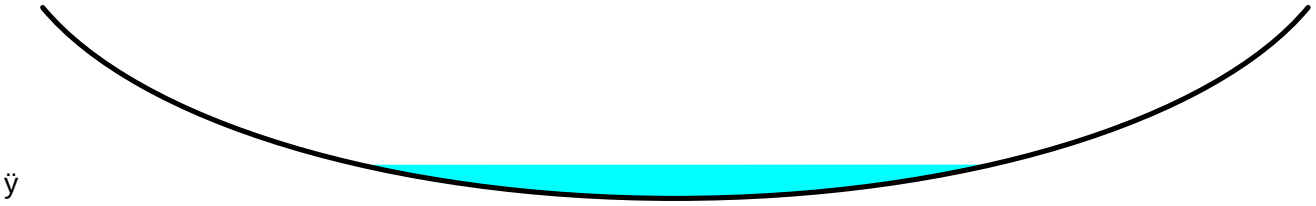
Summary for Reach 2R: Wetland Swale

Inflow Area = 7.646 ac, 6.73% Impervious, Inflow Depth > 3.72" for 100-year event
Inflow = 22.50 cfs @ 12.21 hrs, Volume= 2.373 af
Outflow = 21.02 cfs @ 12.35 hrs, Volume= 2.351 af, Atten= 7%, Lag= 8.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.49 fps, Min. Travel Time= 4.8 min
Avg. Velocity = 1.07 fps, Avg. Travel Time= 11.1 min

Peak Storage= 6,069 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 2.00' Flow Area= 113.3 sf, Capacity= 890.78 cfs

85.00' x 2.00' deep Parabolic Channel, n= 0.050 Scattered brush, heavy weeds
Length= 712.0' Slope= 0.0478 '/'
Inlet Invert= 272.00', Outlet Invert= 238.00'



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Summary for Reach 3R: Wet Swale

Inflow Area = 1.734 ac, 26.06% Impervious, Inflow Depth > 3.90" for 100-year event
Inflow = 2.45 cfs @ 12.04 hrs, Volume= 0.563 af
Outflow = 2.32 cfs @ 12.07 hrs, Volume= 0.561 af, Atten= 5%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.64 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 2.1 min

Peak Storage= 153 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 10.0 sf, Capacity= 99.84 cfs

8.00' x 1.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides
Side Slope Z-value= 2.0 '/' Top Width= 12.00'
Length= 165.0' Slope= 0.0970 '/'
Inlet Invert= 270.00', Outlet Invert= 254.00'

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Summary for Reach 9R: Peak off Site

Inflow Area = 11.815 ac, 19.68% Impervious, Inflow Depth > 3.96" for 100-year event
Inflow = 33.08 cfs @ 12.11 hrs, Volume= 3.901 af
Outflow = 33.08 cfs @ 12.11 hrs, Volume= 3.901 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Pond 1P: CB_1-2

Inflow Area = 0.197 ac, 48.07% Impervious, Inflow Depth > 5.65" for 100-year event
Inflow = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af
Outflow = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 12.13 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 312.02' @ 12.13 hrs
Flood Elev= 316.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	311.50'	**15.0" Round Culvert** L= 128.7' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 311.50' / 298.95' S= 0.0975 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.15 cfs @ 12.13 hrs HW=312.01' (Free Discharge)
1=Culvert (Inlet Controls 1.15 cfs @ 2.43 fps)

Summary for Pond 2P: CB_3-4

Inflow Area = 0.503 ac, 50.95% Impervious, Inflow Depth > 5.72" for 100-year event
Inflow = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af
Outflow = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min
Primary = 3.02 cfs @ 12.03 hrs, Volume= 0.240 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 299.74' @ 12.03 hrs
Flood Elev= 303.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	298.85'	**15.0" Round Culvert** L= 131.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 298.85' / 286.60' S= 0.0934 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.95 cfs @ 12.03 hrs HW=299.73' (Free Discharge)
1=Culvert (Inlet Controls 2.95 cfs @ 3.19 fps)

Summary for Pond 3P: CB_5-6

Inflow Area = 1.070 ac, 42.21% Impervious, Inflow Depth > 5.45" for 100-year event
Inflow = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af
Outflow = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af, Atten= 0%, Lag= 0.0 min
Primary = 6.32 cfs @ 12.06 hrs, Volume= 0.486 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 288.26' @ 12.06 hrs
Flood Elev= 291.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**15.0" Round Culvert** L= 81.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 286.50' / 285.70' S= 0.0099 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.18 cfs @ 12.06 hrs HW=288.22' (Free Discharge)
1=Culvert (Inlet Controls 6.18 cfs @ 5.04 fps)

Summary for Pond 4P: CB_7-8

Inflow Area = 1.600 ac, 43.33% Impervious, Inflow Depth > 5.43" for 100-year event
Inflow = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af
Outflow = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af, Atten= 0%, Lag= 0.0 min
Primary = 11.41 cfs @ 12.03 hrs, Volume= 0.725 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 276.82' @ 12.03 hrs
Flood Elev= 277.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	272.50'	**15.0" Round Culvert** L= 128.2' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 272.50' / 263.70' S= 0.0686 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=10.94 cfs @ 12.03 hrs HW=276.55' (Free Discharge)
1=Culvert (Inlet Controls 10.94 cfs @ 8.91 fps)

Summary for Pond 5P: CB-9

Inflow Area = 2.234 ac, 44.86% Impervious, Inflow Depth > 5.50" for 100-year event
Inflow = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af
Outflow = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af, Atten= 0%, Lag= 0.0 min
Primary = 16.01 cfs @ 12.03 hrs, Volume= 1.024 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 271.47' @ 12.03 hrs
Flood Elev= 267.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	263.60'	**15.0" Round Culvert** L= 100.6' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 263.60' / 253.10' S= 0.1044 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=15.33 cfs @ 12.03 hrs HW=270.95' (Free Discharge)
1=Culvert (Inlet Controls 15.33 cfs @ 12.49 fps)

Summary for Pond 6P: CB_10-11

Inflow Area = 3.320 ac, 44.72% Impervious, Inflow Depth > 5.48" for 100-year event
Inflow = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af
Outflow = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af, Atten= 0%, Lag= 0.0 min
Primary = 23.50 cfs @ 12.04 hrs, Volume= 1.515 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 261.33' @ 12.04 hrs
Flood Elev= 259.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	253.00'	**18.0" Round Culvert** L= 172.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 253.00' / 245.10' S= 0.0459 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=22.67 cfs @ 12.04 hrs HW=260.85' (Free Discharge)
1=Culvert (Inlet Controls 22.67 cfs @ 12.83 fps)

Summary for Pond 7P: CB_12-13

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 5.58" for 100-year event
Inflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af
Outflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af, Atten= 0%, Lag= 0.0 min
Primary = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 254.90' @ 12.04 hrs
Flood Elev= 249.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 36.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.00' S= 0.0278 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=24.87 cfs @ 12.03 hrs HW=254.30' (Free Discharge)
1=Culvert (Inlet Controls 24.87 cfs @ 14.08 fps)

Summary for Pond 10P: Stormwater Basin

Inflow Area = 4.169 ac, 43.44% Impervious, Inflow Depth > 5.32" for 100-year event
Inflow = 29.32 cfs @ 12.04 hrs, Volume= 1.848 af
Outflow = 24.44 cfs @ 12.11 hrs, Volume= 1.549 af, Atten= 17%, Lag= 3.7 min
Primary = 24.44 cfs @ 12.11 hrs, Volume= 1.549 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 266.37' @ 12.10 hrs Surf.Area= 10,874 sf Storage= 26,654 cf

Plug-Flow detention time= 99.2 min calculated for 1.549 af (84% of inflow)

Center-of-Mass det. time= 51.1 min (839.1 - 788.0)

Volume	Invert	Avail.Storage	Storage Description
#1	240.00'	26,654 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
240.00	508	0	0
242.00	892	1,400	1,400
244.00	1,386	2,278	3,678
245.00	2,520	1,953	5,631
245.50	5,230	1,938	7,569
246.00	5,523	2,688	10,257
248.00	10,874	16,397	26,654

Device	Routing	Invert	Outlet Devices
#1	Primary	242.50'	**18.0" Round Culvert** L= 32.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 242.50' / 242.00' S= 0.0156 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	245.50'	**5.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	246.50'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	247.00'	**6.0" x 12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=23.31 cfs @ 12.11 hrs HW=264.78' (Free Discharge)
└─**1=Culvert** (Passes 23.31 cfs of 39.48 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.87 cfs @ 21.03 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 10.29 cfs @ 20.59 fps)
  └─**4=Orifice/Grate** (Orifice Controls 10.15 cfs @ 20.30 fps)

Summary for Pond FB: Forebay

Inflow Area = 3.619 ac, 48.83% Impervious, Inflow Depth > 5.58" for 100-year event
Inflow = 25.85 cfs @ 12.03 hrs, Volume= 1.683 af
Outflow = 25.92 cfs @ 12.04 hrs, Volume= 1.640 af, Atten= 0%, Lag= 0.5 min
Primary = 1.43 cfs @ 12.04 hrs, Volume= 0.898 af
Secondary = 24.49 cfs @ 12.04 hrs, Volume= 0.741 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 246.42' @ 12.04 hrs Surf.Area= 2,527 sf Storage= 7,847 cf

Plug-Flow detention time= 42.6 min calculated for 1.634 af (97% of inflow)
Center-of-Mass det. time= 32.0 min (789.3 - 757.3)

Volume	Invert	Avail.Storage	Storage Description
#1	242.00'	9,375 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
242.00	1,096	0	0
244.00	1,678	2,774	2,774
246.00	2,365	4,043	6,817
247.00	2,750	2,558	9,375

Device	Routing	Invert	Outlet Devices
#1	Primary	243.00'	**6.0" Round Culvert** L= 36.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 243.00' / 242.50' S= 0.0139 '/' Cc= 0.900 n= 0.012, Flow Area= 0.20 sf
#2	Secondary	246.00'	**35.0' long x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=1.43 cfs @ 12.04 hrs HW=246.41' (Free Discharge)
1=Culvert (Barrel Controls 1.43 cfs @ 7.30 fps)

Secondary OutFlow Max=23.88 cfs @ 12.04 hrs HW=246.42' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 23.88 cfs @ 1.64 fps)

Summary for Pond P-1: Forebay

Inflow Area = 1.205 ac, 37.50% Impervious, Inflow Depth > 5.32" for 100-year event
Inflow = 7.08 cfs @ 12.06 hrs, Volume= 0.534 af
Outflow = 6.87 cfs @ 12.08 hrs, Volume= 0.464 af, Atten= 3%, Lag= 1.4 min
Primary = 6.87 cfs @ 12.08 hrs, Volume= 0.464 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.48' @ 12.08 hrs Surf.Area= 1,683 sf Storage= 3,798 cf

Plug-Flow detention time= 71.1 min calculated for 0.464 af (87% of inflow)
Center-of-Mass det. time= 30.3 min (794.6 - 764.3)

Volume	Invert	Avail.Storage	Storage Description
#1	282.00'	4,711 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
282.00	545	0	0
284.00	1,130	1,675	1,675
285.00	1,565	1,348	3,023
286.00	1,812	1,689	4,711

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**8.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64
2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=6.73 cfs @ 12.08 hrs HW=285.47' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.73 cfs @ 1.78 fps)

Summary for Pond P-2: Stormwater Pond

Inflow Area = 1.383 ac, 32.67% Impervious, Inflow Depth > 4.58" for 100-year event
Inflow = 7.75 cfs @ 12.07 hrs, Volume= 0.528 af
Outflow = 1.31 cfs @ 12.62 hrs, Volume= 0.443 af, Atten= 83%, Lag= 32.8 min
Primary = 1.31 cfs @ 12.62 hrs, Volume= 0.443 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 275.63' @ 12.62 hrs Surf.Area= 4,054 sf Storage= 11,672 cf

Plug-Flow detention time= 163.8 min calculated for 0.443 af (84% of inflow)
Center-of-Mass det. time= 119.5 min (912.4 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	272.00'	22,675 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
272.00	2,375	0	0
274.00	3,295	5,670	5,670
276.00	4,225	7,520	13,190
278.00	5,260	9,485	22,675

Device	Routing	Invert	Outlet Devices
#1	Primary	272.00'	**18.0" Round Culvert** L= 30.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 272.00' / 270.00' S= 0.0667 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Device 1	272.50'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Device 1	275.00'	**6.0" Vert. Orifice/Grate** C= 0.600
#4	Primary	276.00'	**12.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#5	Primary	277.00'	**18.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.31 cfs @ 12.62 hrs HW=275.63' (Free Discharge)
└**1=Culvert** (Passes 1.31 cfs of 12.75 cfs potential flow)
└**2=Orifice/Grate** (Orifice Controls 0.72 cfs @ 8.29 fps)
└**3=Orifice/Grate** (Orifice Controls 0.58 cfs @ 2.98 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)
└**5=Orifice/Grate** (Controls 0.00 cfs)

SUPPORTING DOCUMENTATION

NOAA Point Precipitation Estimates
Web Soil Survey

NOAA Atlas 14, Volume 10, Version 3
Location name: Brooklyn, Connecticut, USA*
Latitude: 41.7827°, Longitude: -71.9363°
Elevation: 329.49 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sarah 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	0.337 (0.256-0.442)	0.400 (0.304-0.525)	0.503 (0.381-0.662)	0.587 (0.443-0.777)	0.704 (0.515-0.935)	0.793 (0.569-1.11)	0.884 (0.616-1.27)	0.982 (0.658-1.45)	1.12 (0.723-1.70)	1.23 (0.775-1.89)
10-min	0.477 (0.363-0.626)	0.566 (0.430-0.743)	0.711 (0.538-0.937)	0.831 (0.627-1.10)	0.997 (0.730-1.37)	1.12 (0.807-1.57)	1.25 (0.870-1.80)	1.39 (0.932-2.05)	1.58 (1.02-2.40)	1.74 (1.10-2.68)
15-min	0.562 (0.427-0.737)	0.666 (0.506-0.875)	0.836 (0.634-1.10)	0.978 (0.738-1.30)	1.17 (0.859-1.61)	1.32 (0.949-1.84)	1.47 (1.03-2.12)	1.64 (1.10-2.41)	1.86 (1.21-2.83)	2.04 (1.29-3.15)
30-min	0.775 (0.590-1.02)	0.919 (0.699-1.21)	1.16 (0.875-1.52)	1.35 (1.02-1.79)	1.62 (1.19-2.22)	1.82 (1.31-2.54)	2.03 (1.42-2.92)	2.26 (1.51-3.33)	2.57 (1.66-3.90)	2.82 (1.78-4.35)
60-min	0.988 (0.752-1.30)	1.17 (0.891-1.54)	1.47 (1.12-1.94)	1.72 (1.30-2.28)	2.07 (1.51-2.82)	2.33 (1.67-3.25)	2.59 (1.81-3.73)	2.88 (1.93-4.24)	3.28 (2.12-4.97)	3.59 (2.28-5.55)
2-hr	1.26 (0.936-1.65)	1.50 (1.15-1.96)	1.89 (1.44-2.47)	2.21 (1.67-2.91)	2.65 (1.95-3.62)	2.98 (2.15-4.15)	3.32 (2.35-4.78)	3.72 (2.49-5.44)	4.28 (2.76-6.45)	4.74 (3.01-7.28)
3-hr	1.46 (1.12-1.90)	1.73 (1.33-2.26)	2.18 (1.66-2.85)	2.55 (1.93-3.35)	3.06 (2.26-4.17)	3.44 (2.50-4.78)	3.84 (2.72-5.52)	4.31 (2.90-6.29)	4.99 (3.24-7.45)	5.55 (3.53-8.45)
6-hr	1.87 (1.44-2.42)	2.22 (1.70-2.88)	2.79 (2.13-3.63)	3.26 (2.49-4.26)	3.91 (2.90-5.32)	4.40 (3.21-6.10)	4.92 (3.51-7.05)	5.53 (3.73-8.02)	6.43 (4.19-9.60)	7.19 (4.58-10.9)
12-hr	2.36 (1.82-3.05)	2.81 (2.17-3.63)	3.53 (2.72-4.58)	4.14 (3.17-5.36)	4.97 (3.70-6.72)	5.59 (4.09-7.71)	6.25 (4.47-8.91)	7.03 (4.76-10.1)	8.17 (5.34-12.1)	9.14 (5.85-13.8)
24-hr	2.92 (2.19-3.72)	3.37 (2.61-4.34)	4.28 (3.30-5.52)	5.03 (3.87-6.52)	6.06 (4.54-8.16)	6.84 (5.03-9.38)	7.66 (5.50-10.9)	8.62 (5.86-12.4)	10.1 (6.59-14.8)	11.3 (7.22-16.9)
2-day	3.17 (2.47-4.06)	3.84 (2.99-4.92)	4.92 (3.82-6.33)	5.83 (4.50-7.52)	7.07 (5.31-9.48)	7.99 (5.90-10.9)	8.98 (6.48-12.7)	10.2 (6.92-14.5)	11.9 (7.83-17.4)	13.4 (8.62-19.9)
3-day	3.44 (2.68-4.39)	4.16 (3.25-5.32)	5.35 (4.16-6.85)	6.33 (4.90-8.14)	7.68 (5.79-10.3)	8.69 (6.44-11.8)	9.77 (7.06-13.8)	11.1 (7.55-15.7)	13.0 (8.56-19.0)	14.7 (9.49-21.8)
4-day	3.67 (2.88-4.68)	4.45 (3.47-5.67)	5.71 (4.45-7.30)	6.75 (5.23-8.67)	8.19 (6.16-10.9)	9.25 (6.87-12.6)	10.4 (7.56-14.7)	11.8 (8.06-16.7)	13.9 (9.17-20.2)	15.7 (10.1-23.2)
7-day	4.34	5.21	6.63	7.81	9.43	10.6	11.9	13.5	15.9	18.0

	(3.41-5.52)	(4.09-6.62)	(5.19-8.45)	(6.08-9.99)	(7.15-12.5)	(7.92-14.4)	(8.70-16.7)	(9.26-19.0)	(10.5-23.0)	(11.6-26.4)
10-day	**5.02** (3.95-6.38)	**5.95** (4.68-7.54)	**7.46** (5.84-9.48)	**8.71** (6.79-11.1)	**10.4** (7.92-13.8)	**11.7** (8.74-15.8)	**13.1** (9.54-18.3)	**14.7** (10.1-20.7)	**17.2** (11.4-24.8)	**19.3** (12.5-28.3)
20-day	**7.17** (5.67-9.05)	**8.16** (6.45-10.3)	**9.78** (7.70-12.4)	**11.1** (8.71-14.1)	**13.0** (9.85-17.0)	**14.4** (10.7-19.1)	**15.8** (11.4-21.6)	**17.4** (12.0-24.2)	**19.6** (13.0-28.0)	**21.3** (13.9-31.0)
30-day	**8.99** (7.12-11.3)	**10.0** (7.92-12.6)	**11.7** (9.20-14.7)	**13.0** (10.2-16.5)	**14.9** (11.3-19.4)	**16.4** (12.3-21.6)	**17.8** (12.8-24.1)	**19.3** (13.4-26.8)	**21.2** (14.2-30.2)	**22.6** (14.7-32.8)
45-day	**11.2** (8.93-14.1)	**12.3** (9.74-15.4)	**14.0** (11.1-17.6)	**15.4** (12.1-19.5)	**17.3** (13.2-22.4)	**18.9** (14.0-24.7)	**20.3** (14.6-27.1)	**21.7** (15.1-29.3)	**23.3** (15.6-33.0)	**24.3** (15.9-35.1)
60-day	**13.1** (10.4-16.4)	**14.2** (11.3-17.8)	**15.9** (12.6-20.0)	**17.4** (13.7-21.9)	**19.4** (14.7-24.9)	**21.0** (15.6-27.3)	**22.4** (16.1-29.8)	**23.7** (16.5-32.6)	**25.1** (16.9-35.5)	**26.0** (17.0-37.4)

[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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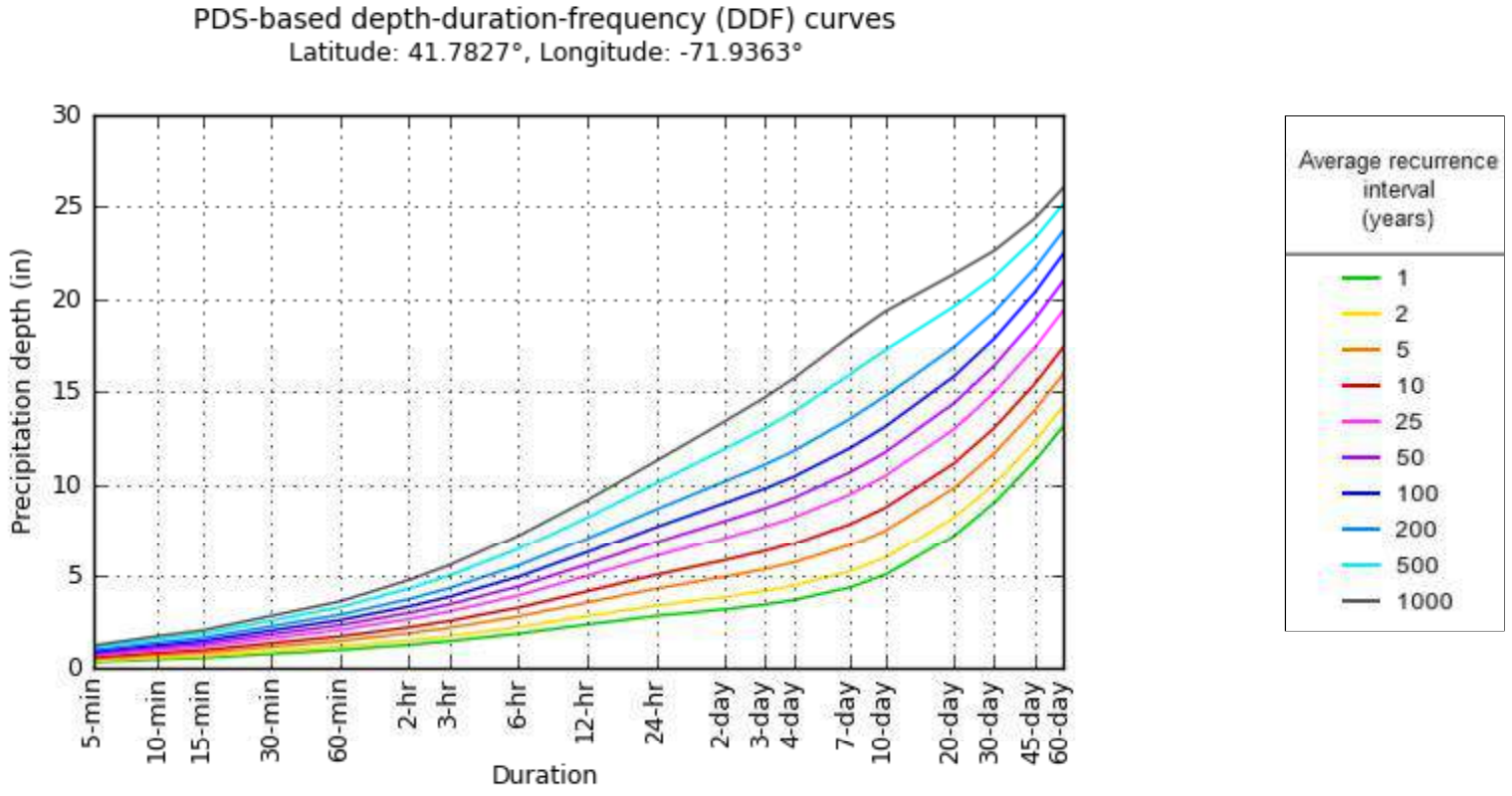
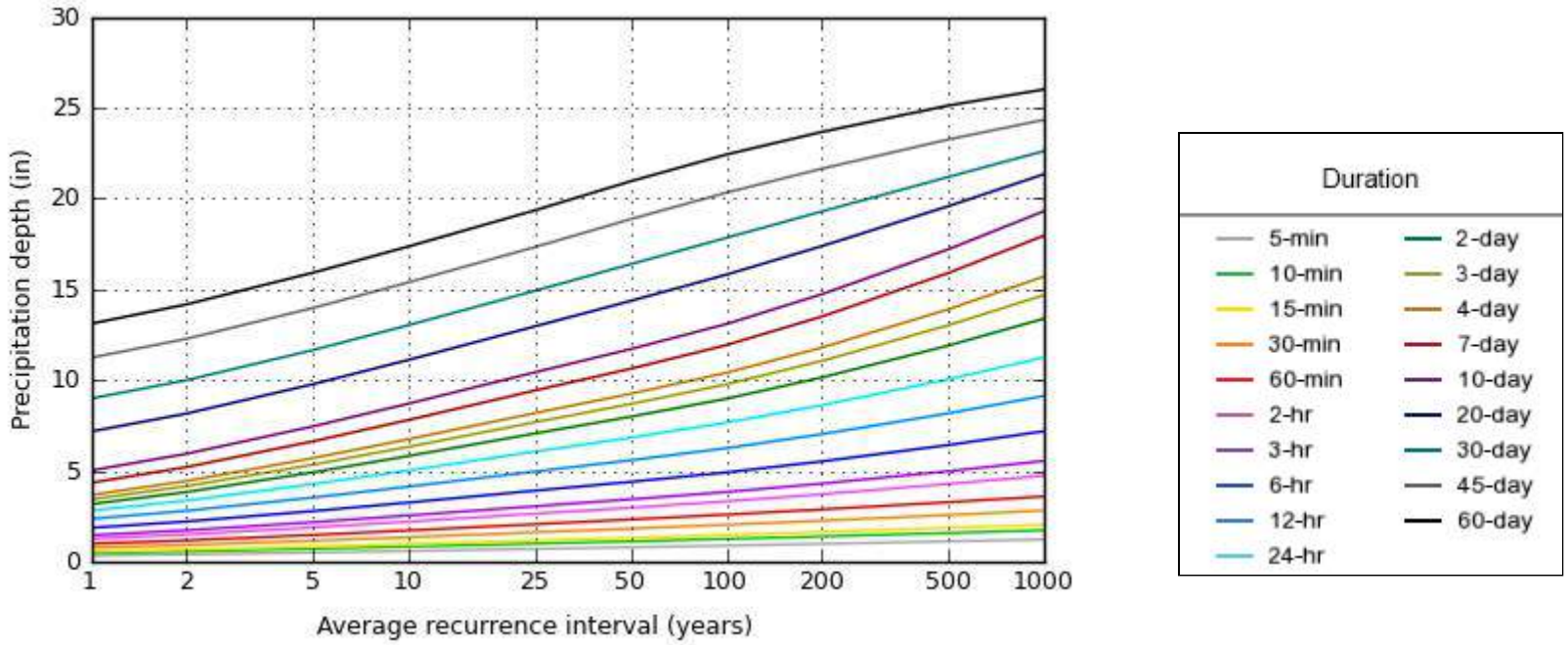
PF graphical





NOAA Atlas 14, Volume 10, Version 3 Created (GMT): Tue Dec 8 14:02:09 2020

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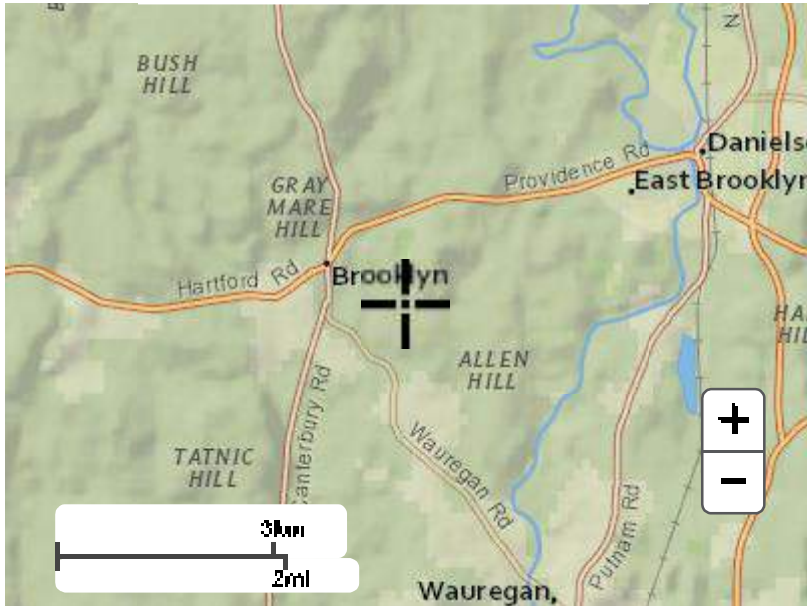
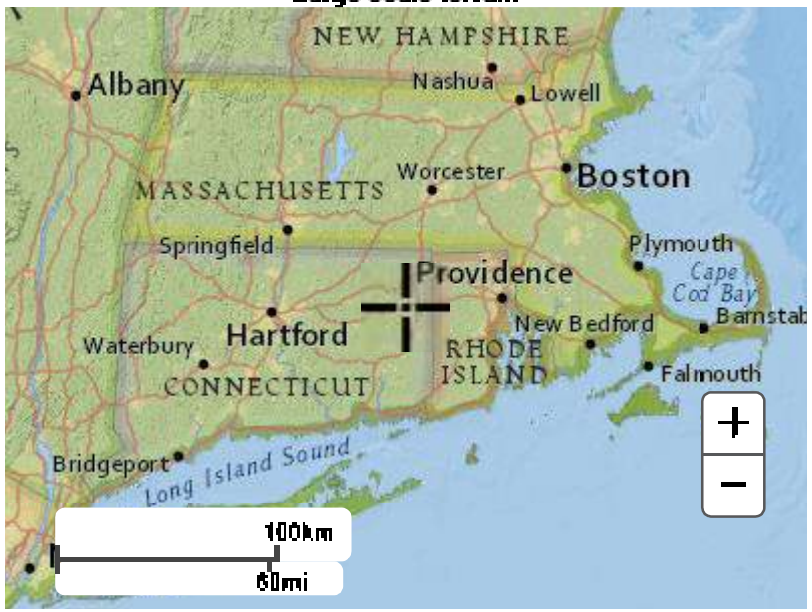
Maps & aerials

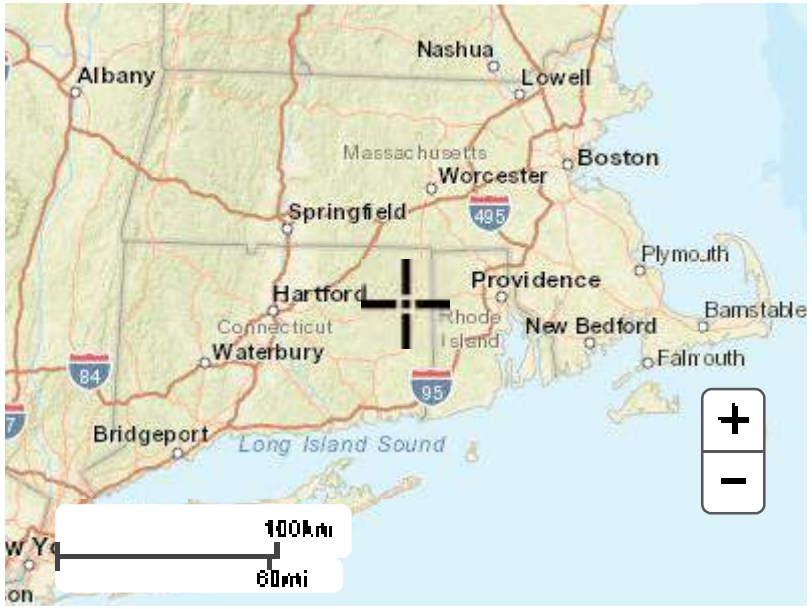
Small scale terrain



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

Hydrologic Soil Group—State of Connecticut
(Louise Berry Drive)

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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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
Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Apr 14, 2011—Aug 27, 2016

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.

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	3.1	27.8%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	0.4%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	4.7	42.9%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	2.9	25.9%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	0.1	0.7%
721B	Ninigret fine sandy loam, 3 to 8 percent slopes	C	0.2	2.2%
Totals for Area of Interest			11.0	100.0%

Description

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.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

DRAINAGE AREA PLANS

RECEIVED
JAN 19 2023
BY

PLANNING AND ZONING COMMISSION
TOWN OF BROOKLYN
CONECTICUT

Received Date 1/19/23
Action Date _____

Application #SPR 23-001
Check# 1031

APPLICATION FOR SITE PLAN REVIEW

Name of Applicant Kencyn Corporation DBA Woodstock Rebuilding Rebuilding Phone 860-990-5797
Mailing Address 249 Windham RD Brooklyn CT 06234 Phone _____

Name of Owner John Serrell Phone 860 9905797
Mailing Address 249 Windham RD Brooklyn CT Phone _____

Name of Engineer/Surveyor _____
Address _____
Contact Person _____ Phone _____ Fax _____

Property location/address 299 WINDHAM RD.
Map # 8 Lot # 6-1 Zone RA Total Acres 2.8 AC.

Proposed Activity See attached documents applying for Sec 6.A.3

Change of Use: Yes ___ No ___ If Yes, Previous Use _____
Area of Proposed Structure(s) or Expansion _____

Utilities - Septic: On Site _____ Municipal _____ Existing _____ Proposed _____
Water: Private _____ Public _____ Existing _____ Proposed _____

Compliance with Article 4. Site Plan Requirements

The following shall accompany the application when required:

Fee$ _____ **State Fee ($60.00)** _____ 3 copies of plans _____ Sanitary Report _____
4.5.5 Application/ Report of Decision from the Inland Wetlands Commission
4.5.5 Applications filed with other Agencies
12.1 Erosion and Sediment Control Plans
See also Site Plan Review Worksheet

Variances obtained _____ Date _____

The owner and applicant hereby grant the Brooklyn Planning and Zoning Commission, the Board of Selectman, Authorized Agents of the Planning and Zoning Commission or Board of Selectman, permission to enter the property to which the application is requested for the purpose of inspection and enforcement of the Zoning regulations and the Subdivision regulations of the Town of Brooklyn

Applicant: Kencyn Corporation DBA Woodstock Rebuilding Date 1/19/23
Owner: John Serrell Date 1/19/23

• Note: Any consulting fees will be paid by the applicant

Woodstock Rebuilding@gmail.com
JRS4ex@Yahoo.com

Kencyn Corportation DBA Woodstock Rebuilding is one of only a handful of remaining rotating electric rebuilders left in Connecticut. There are currently fewer than 400 independent rebuilders remaining nationwide. John Serrell is the President and owner of Kencyn Corportation DBA Woodstock Rebuilding.

On a busy day we may have 4-5 customers. Some days we don't have any. So traffic is very low. Our driveway can support parking for up to 3 customers. We have an area for customers to turn around if needed at the beginning of the driveway so no one has to back out into traffic while leaving. Our hours of operation have been 9am-3pm during winter and 8am-4pm during spring and summer.

Our day to day operations do not produce excessive noises. Our process doesn't produce any fumes or scents. We don't process anything with oils, hazardous substances or materials. We take shop safety very seriously. I have included a letter from a past neighbor from Union CT, our previous location as a home based business for 12 years with no complaints or disruptions to the surrounding area.

Our customers remove the part that needs repair and bring it to us. We NEVER under any circumstances work on any vehicles/equipment of any kind on premise. If possible we exchange their part for an existing unit in our vast inventory. We then rebuild the "core" given by the customer and place it back into our inventory. This revolving system helps us to ensure our customers get their vehicles or equipment back up and running asap. If we don't have the customers part in stock they leave it with us and come back to pick it up once its completed. We also use a drop off/ pickup box that allows customers to leave parts or pickup in the event I'm not home.

We've been "green" since before it was cool. By rebuilding parts you reduce waste, encourage recycling and support local labor and business. We purchase as many American made components as possible. Many of our suppliers are based in New England.

Woodstock Rebuilding was established in 1998 by Ken Braithwaite who had over 50 years of experience in this industry. We have been a home based business since the beginning starting off in Woodstock and later moving to Union CT. John Serrell, the current owner, purchased the business on November 1st 2020 after apprenticing for several years. John is an ASE and dealer certified technician with almost 20 years of experience in the automotive industry. After Kens passing our shop downsized from a three person operation to a one person operation. We have no plans to expand beyond this scope. We have a solid reputation that has spread over 20 plus years to the Tri-state area, we pride ourselves on our commitment to quality.

Anything built with an engine in the last 100 years likely has a starter motor, alternator or generator. We service many industries from Farming, Logging, Construction, Excavation, Industrial, Municipal, including town garages and fire departments. We have been working with the town of Brooklyn for many years, as well as many of the surrounding towns. We also provide our essential services to many agencies within the state of Connecticut including DOT and DEEP. We work with DIY individuals and classic car owners.

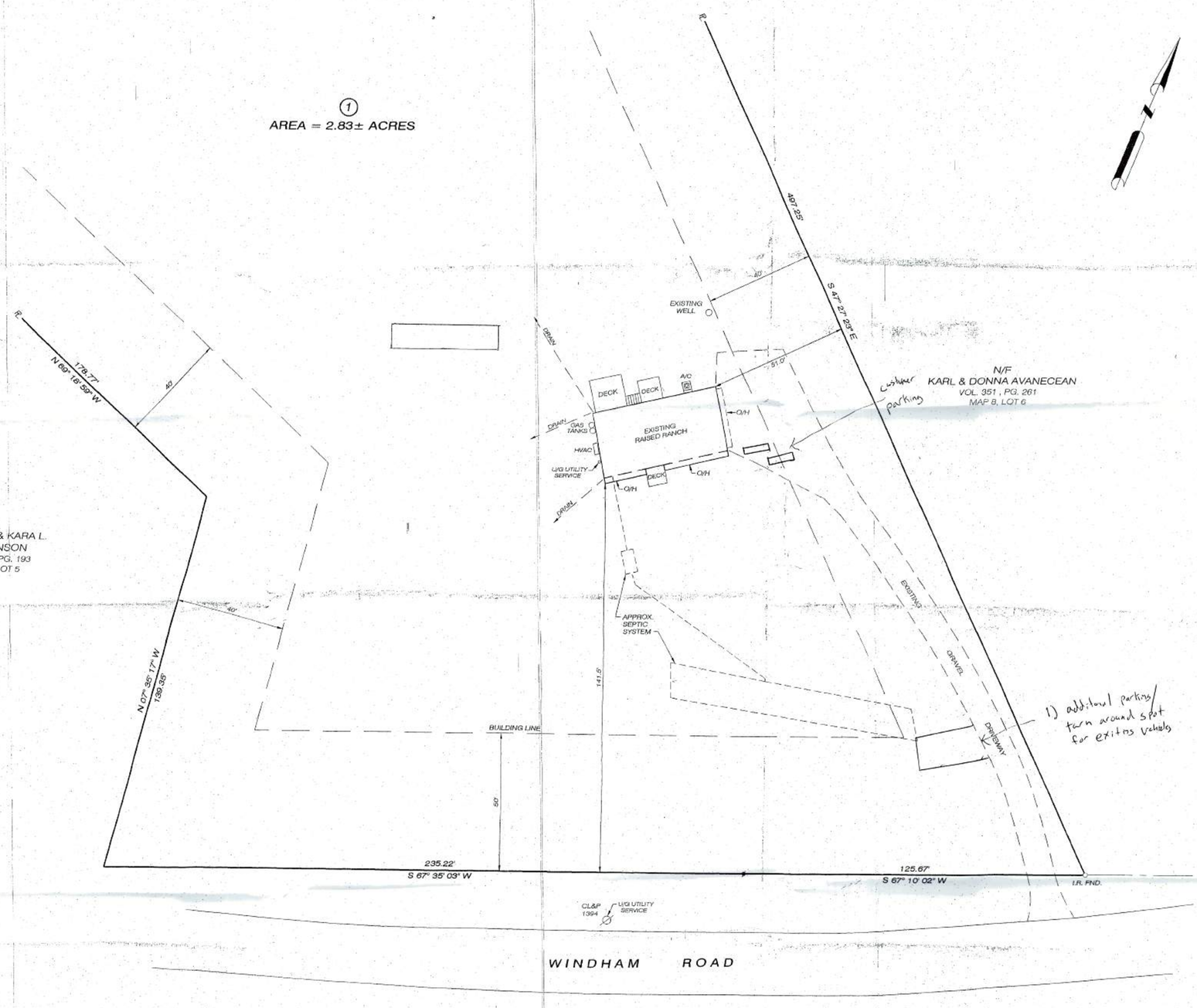
Many of the parts that we rebuild cannot be sourced from the local parts stores. Often times rebuilding is the only option. Many of our local farmers may only have one tractor, so when it's down the whole farm stops, the cows can't get fed etc. The supply chain shortages we've all seen over the last two years has further shown the need for our services. Rebuilding is an essential industry and many within our community rely on us.

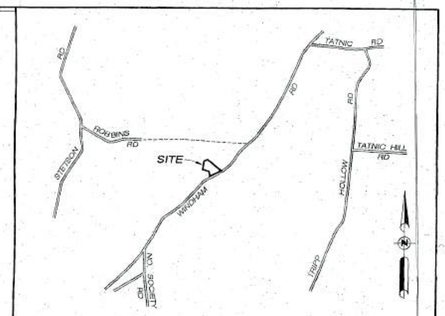
In our work shop we have a workbench with two vises, a 1962 Logan metal lathe, drill press, alternator test bench and a variety of hand tools to perform our work.

We donate our services to many local organizations and non-profits. We believe firmly in giving back to the community. We have worked with the Boys scout camp rebuilding many parts for the equipment they rely on. Previously we've donated our services to 4H programs and sponsored many local car shows that also work to support local organizations and charitable groups.

Part of my proposed site plan is to include a modified steel storage structure on the property as a temporary structure for the purpose of securely storing my additional parts and inventory, as well as some of my personal possessions. This structure will not be visible from Windham road or to any passerby's. I'm open to including landscaping to also ensure the structure isn't visible to any neighboring homes. It's proposed location is shown on the site map.

My plan is to put locally sourced wood siding on the structure to give it a country appearance and fit in properly with the surroundings. The exterior will look identical to the many barns and outbuildings around our town. The reason for needing to use such a structure is due to the weight of the objects being stored. There is no other temporary structure available that can securely and properly meet my needs. Pouring a concrete slab and building a permanent structure in the same proposed location is not currently within my family or my businesses means.





LOCATION MAP 1" = 2000'

NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300b-1 THRU 20-300b-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. IT IS A GENERAL LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS "C" . THE PURPOSE OF THIS MAP AND SURVEY IS TO DEPICT THE LOCATION OF IMPROVEMENTS ON THE SUBJECT PROPERTY.
2. SUBJECT PARCEL IS SHOWN AS MAP 8 , LOT 6-1 OF THE BROOKLYN ASSESSOR'S RECORDS.
3. ZONE: RA
4. REFERENCE DEED: VOL. 646 , PG. 195
5. REFERENCE MAP: "SUBDIVISION PLAN 'WINDHAM WOODS' PREPARED FOR KAROL & DONNA AVANECEAN - 239 WINDHAM ROAD, BROOKLYN, CONNECTICUT - DATE: 09/04 - SCALE: 1"=40 FT. - SHEET 1 OF 3 - MESSIER & ASSOCIATES, INC. - REVISED 10-11-11"
6. APPROXIMATE SEPTIC SYSTEM LOCATION IS BASED ON AS-BUILT INFORMATION ON FILE WITH THE NORTHEAST DISTRICT DEPARTMENT OF HEALTH.

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

PAUL A. TERWILLIGER, L.S. NO. 70155 — DATE 08/10/2021

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE EMBOSSED SEAL OF THE LAND SURVEYOR WHOSE SIGNATURE APPEARS HEREON.

RECEIVED
JAN 19 2023
By

GENERAL LOCATION SURVEY

AS-BUILT MAP
PREPARED FOR
JOSEPH A. TATRO
AND
BERNARD WATROUS, JR.

249 WINDHAM ROAD
BROOKLYN, CONNECTICUT

DATE: MARCH 2021
SCALE: 1" = 20'
0 10' 20' 40' 60'

JOB NO: 20032 | F.B. NO: 225 | DRAWN BY: P.A.T. | MAP NO:

SURVEYING • MAPPING • PLOT PLANS
LAND RECORD RESEARCH • TOPOGRAPHY • SUBDIVISION
63 SNAKE MEADOW RD
KILLINGLY, CT 06239
860 774 6230

SHEET NO: 1 OF 1
REVISED:

249 Windham RD site plan

Mail body: Print

Mail body:

NO plan to add windows or additional doors

Added wood cladding

December 20, 2022

Town of Brooklyn

Re: Woodstock Rebuilding

Dear Sir or Madam:

We are writing at the request of John Serrell, who is hoping to relocate his business, Woodstock Rebuilding, to his home in Brooklyn.

For twelve years Woodstock Rebuilding was located right next door to us in Union, Connecticut. Rindge Road is a rural, quiet street, and we have lived here for thirty-eight years. In the time the business was our neighbor we saw a minimal increase in traffic. Because John does not work on vehicles, only a few components, there was no impact on the peace, quiet and tranquiliy of the area. It had no bearing on our quality of life.

Sincerely,

Douglas Friedrich

Jacquelyn Friedrich

Jacquelyn Friedrich
37 Rindge Road
Union, CT 06076

RECEIVED
JAN 23 2023
By

TOWN OF BROOKLYN
PLANNING AND ZONING COMMISSION

REQUEST FOR CHANGE
IN
ZONING REGULATIONS

Date 1/26/23 Check # _____ Application #ZRC 23-001

Application Fee: $250 _____ State Fee: $60 _____ Publication Fee: $600 _____

Public Hearing Date Commission Action Effective Date

Name of Applicant PLANNING + ZONING COMMISSION Phone _____

Mailing Address _____

REQUEST TO AMEND ARTICLE(S) _____ SECTION(S) 2.B - DEFINITIONS
3.A.5.2,
3.B.5.2,
3.C.5.2,

If more than one Article is requested please attach separate sheet for each one

PARAGRAPH TO CHANGE _____ OF THE ZONING REGULATIONS
4.B.4.2,
4.C.4.2,
8.A.4

REQUEST TO CHANGE:

REASON FOR REQUEST:

Note: A petition may be filed at the Hearing by 20% or more of the area lots included in such a change within 500 ft of the property under Section 16.5 of the Zoning Regulations

ZRC 23-001 – 1/24/2023

Changes are highlighted/Additions in **CAPS AND BOLD**/ Deletions ~~struckthrough~~

Section 2.B – Definitions

1) Explanation: The purpose of this change is to clarify existing language concerning setbacks and exceptions thereto that has been subject to differing interpretations and confusion. The definition of structure is proposed to be revised. The existing definition of building is provided for reference only.

STRUCTURE - Anything constructed or erected, including a building, which has a permanent location on the ground, or anything attached to something having a permanent location on the ground, but excluding fences, flagpoles, ornamental walls under five (5) feet, mailboxes, and patios. Satellite dishes, antenna towers, emergency generators, **DECKS,** swimming pools, and solar energy systems are considered to be structures and shall comply with **SETBACKS AND OTHER** dimensional requirements, **AS EXCEPTED**.

BUILDING - A structure, whether temporary or permanent, having a roof supported by columns or walls used or intended for the shelter, housing, or enclosure of any person, animal, process, equipment, goods, tangible personal property or other materials.

Sections 3.A.5.2, 3.B.5.2, 3.C.5.2, 4.B.4.2, 4.C.4.2

2) Explanation: The proposal is to clarify that non-building structures must be comply with the same setbacks as principal structures.

AREA AND DIMENSIONAL STANDARDS

LOT STANDARDS

1.	Minimum Lot area	**10,000 SF**
2.	Minimum Lot frontage	**75 feet**

SETBACK STANDARDS

		Principal Buildings AND STRUCTURES	**Accessory Buildings**
1.	Minimum Front Yard Setback	**35 feet**	**35 feet**
2.	Minimum Side Yard Setback	**15 feet**	**Half the height of the accessory building or 10 feet, whichever is greater**
3.	Minimum Rear Yard Setback	**15 feet**	**Half the height of the accessory building or 10 feet, whichever is greater**

BUILDING STANDARDS

1.	Maximum Building Height	**35 feet**

POSSIBLE EXCEPTIONS

See Section 8.A for possible exceptions to these dimensional requirements.

ZRC 23-001 – 1/24/2023

Changes are highlighted/Additions in **CAPS AND BOLD**/ Deletions ~~struckthrough~~

Section 8.A.4 – Exceptions to Setback Requirements

3) Explanation: The setback exception for accessory buildings is extended to include sideyards and a new exception for above-ground swimming pools is introduced.

8.A.4 EXCEPTIONS TO SETBACK REQUIREMENTS

1. Eaves, pilasters, columns, belt-courses, sills, cornices, or similar architectural features may project up to one foot into a required yard setback.
2. Steps, terraces, fences, walls, fence/wall combinations, and similar structures less than six (6) feet in height may be erected in required setbacks.
3. Propane tanks, generators, condensers, and similar mechanical equipment may be located within a required side yard setback provided such equipment is located closer to the principal structure on the subject property than to the principal structure on any abutting property and, if such equipment is located six (6) feet or less from a property line, then such equipment shall be visually shielded from abutting property.
4. Entry stairs and access ramps for the handicapped may extend into any required yard setback provided the extent of encroachment is minimized while still allowing for a reasonable accommodation to meet the needs of the resident(s).
5. Sheds, garages, and similar accessory buildings may be located ~~up to~~ ten (10) feet from a property line provided they are located in a rear **OR SIDE** yard. Otherwise, an accessory building shall comply with ~~standard~~ setbacks.
6. **ABOVE-GROUND SWIMMING POOLS THAT CAN BE FULLY DISASSEMBLED MAY BE LOCATED TEN (10) FEET FROM A PROPERTY LINE PROVIDED THEY ARE LOCATED IN A REAR OR A SIDE YARD. OTHERWISE, AN ABOVE-GROUND SWIMMING POOL SHALL COMPLY WITH SETBACKS. WHEN ASSOCIATED WITH AN ABOVE-GROUND POOL THAT CAN BE FULLY DISASSEMBLED, THIS EXCEPTION SHALL EXTEND TO THE FOLLOWING ANCILLARY STRUCTURES: DECKS NOT TO EXCEED 200 SQUARE FEET, STAIRS, PREFABICATED LADDERS, POOL PUMPS, AND OTHER SWIMMING POOL EQUIPMENT. STRUCTURES NOT ASSOCIATED WITH AN ABOVE-GROUND POOL THAT CAN BE FULLY DISASSEMBLED SHALL NOT BE ELIGIBLE FOR THIS EXCEPTION.**

Margaret's Report 1/31/2023

Zoning Permits issued:

88 Tatnic Hill Road – Donald Brian Kiley. New 40' x 50' detached garage on a concrete foundation with frost wall.

23 Pomfret Road – Claude Soffel. Restoration of the house and garage visible from the road in the Village Center Zone.

Final Certificates of Zoning Compliance issued:

490 Wolf Den Road - Kristine Erickson. New single-family dwelling with front porch and attached garage.

225 Gorman Road – Austin George. New single-family dwelling with front porch, rear and side deck, attached garage and attached carport

Home Office Permits Issued:

613 Wolf Den Road – Todd Francis. Mr. Francis conducts telephone and internet business for Duffy's Dumpsters from his home.

Sign Permits issued:

Town of Brooklyn

Revenue Report

From Date: 7/1/2022 To Date: 1/31/2023

Fiscal Year: 2022-2023

☐ Subtotal by Collapse Mask ☐ Include pre encumbrance ☐ Print accounts with zero balance ☑ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.00.0000.42203	Planning & Zoning Fees	($7,000.00)	($6,873.00)	($6,873.00)	($127.00)	$0.00	($127.00)	1.81%
Grand Total:		($7,000.00)	($6,873.00)	($6,873.00)	($127.00)	$0.00	($127.00)	1.81%

End of Report

Town of Brooklyn

P&Z Budget FY23

From Date: 7/1/2022 To Date: 1/31/2023

Fiscal Year: 2022-2023

☐ Subtotal by Collapse Mask ☐ Include pre encumbrance ☑ Print accounts with zero balance ☑ Filter Encumbrance Detail by Date Range

☐ Exclude Inactive Accounts with zero balance

Account Number	Description	GL Budget	Range To Date	YTD	Balance	Encumbrance	Budget Balance	% Bud
1005.41.4153.51620	Planning & Zoning-Wages PT	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.51900	Planning & Zoning-Wages-Rec. S	$4,200.00	$2,275.00	$2,275.00	$1,925.00	$1,925.00	$0.00	0.00%
1005.41.4153.53020	Planning & Zoning-Legal Servic	$10,000.00	$1,108.25	$1,108.25	$8,891.75	$0.00	$8,891.75	88.92%
1005.41.4153.53200	Planning & Zoning-Professional	$110.00	$0.00	$0.00	$110.00	$0.00	$110.00	100.00%
1005.41.4153.53220	Planning & Zoning-In Service T	$500.00	$0.00	$0.00	$500.00	$0.00	$500.00	100.00%
1005.41.4153.53400	Planning & Zoning-Other Profes	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55400	Planning & Zoning-Advertising	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55500	Planning & Zoning-Printing & P	$1,000.00	$0.00	$0.00	$1,000.00	$0.00	$1,000.00	100.00%
1005.41.4153.55800	Planning & Zoning-Transportati	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.56900	Planning & Zoning-Other Suppli	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
1005.41.4153.56950	Planning & Zoning-State Marsha	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	0.00%
	Grand Total:	$17,810.00	$3,383.25	$3,383.25	$14,426.75	$1,925.00	$12,501.75	70.20%

End of Report

- Please seat alternates as necessary.

SP 22-008: Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso.

- Tonight is the opening of the public hearing. You may leave the public hearing open until March 1, 2023 with no extensions.
- To hire a third-party consultant, you must take action on the estimate of costs. There is one proposal based on the modified scope of work.
- Regional Engineer has submitted a report.
- I will compile my concerns in a separate report.

Third Party Consultants Approval

In accordance with the Town Ordinance 20-1.3.b.3., the Planning and Zoning Commission (also known as the Land Use Agency) approves the following estimate of costs for supplemental consulting services determined to be necessary on January 4, 2023 for SP 22-008: Special Permit Application for Multi-Family Development (50 Condominium units) on south side of Louise Berry Drive (Assessor's Map 33, Lot 19), 13.5 acres, R-30 Zone, Applicant: Shane Pollack and Erin Mancuso.

Traffic Engineer - KWH Enterprises, LLC - $155/hour, not to exceed $6,000

SD 22-004: One lot Resubdivision including 2 acres on Allen Hill Road/Wauregan Road (Map 31, Lot 97C), Applicant: Wayne Jolley/Lori Pike.

Public Hearing 2/21/2023

SP 22-007: Special Permit for an Events Facility at 459 Wolf Den Road, Applicants: Nicole and Greg Fisher.

Public Hearing 2/21/2023

- This proposal is for an existing facility that was originally constructed for personal use.
- A traffic study and a drainage study was submitted with the application. You may wish to consider the need for third party consultants.
- Consider if you want to do a site walk.
- The public hearing was rescheduled for 2/21/23. I have reserved the school auditorium for this.

ZRC 22-009: Multiple revisions to Section 4.F Mill Mixed Use Development Zone, Applicant: DMP Palmer Associates.

Public Hearing 3/21/2023

SPR 23-001: Site Plan Review for a Home Business (Woodstock Rebuilding) at 249 Windham Road, RA Zone, Applicant: Kencyn Corporation/John Serrell.

- This is a proposal for a Home Business in the RA Zone. The main purpose of the Home Business Zoning Regulation is to allow business as an accessory use to a residence while maintaining the residential character of the neighborhood. The applicant is proposing to use a modified shipping container for storage.

Sample Motion

Move to approve the Site Plan Review Application **SPR 23-001**: Site Plan Review for a Home Business (Woodstock Rebuilding) at 249 Windham Road, RA Zone, Applicant: Kencyn Corporation/John Serrell. in accordance with all final documents and testimony submitted with the application with the finding that the proposal complies with Sec. 9.C Site Plan Objectives and Sec. 6.A.3. Home Business Standards of the Brooklyn Zoning Regulations with the following conditions:

a. _____
_____.

b. _____
_____.

ZRC 23-001: Multiple revisions concerning exceptions to the setbacks including Secs. 2.B, 3.A.5.2., 3.B.5.2., 3.C.5.2., 4.B.4.2., 4.C.4.2., and 8.A.4.

Sample Motion

Move to schedule a public hearing for **ZRC 23-001: Multiple revisions concerning exceptions to the setbacks including Secs. 2.B, 3.A.5.2., 3.B.5.2., 3.C.5.2., 4.B.4.2., 4.C.4.2., and 8.A.4.,** for the regular meeting of the Planning and Zoning Commission to be held on **March 1, 2023** at 6:30 p.m. at the Clifford B. Green Memorial Building, 69 South Main Street, Brooklyn, CT and via Zoom.

1-19-2021

SCOPE OF SERVICES – TRAFFIC ENGINEER

The Town of Brooklyn Planning and Zoning Commission ("PZC") located in Windham County, Connecticut, is seeking proposals from qualified professional engineer with advanced knowledge of traffic analysis to assist with the review of a Special Permit application for multi-family development (50 condominium units) on 13.5 acres on the south side of Louise Berry Drive, Assessor's Map 33, Lot 19 (the "subject property").

The PZC welcomes proposals demonstrating the qualifications and expertise to undertake the review in accordance with the requirements of the Town of Brooklyn Zoning Regulations, dated October 26, 2022, the Chapter 124-Zoning of the CT General Statutes, and the services outlined herein.

The selected consultant shall have extensive and specific understanding, technical knowledge, and experience with traffic generation and impacts. The interested consultants shall demonstrate extensive experience in reviewing site plans and preparing reports for municipalities for proposed multi-family developments regarding potential adverse impacts to local roads.

The proposal shall outline a brief methodology proposed for the completion of the work contemplated by the scope of services and shall clearly outline any need to access the application parcel and any requirement to perform any physical work on the subject property. Access to the property shall only be permitted with a representative of the applicant present.

The proposal shall identify any information which the PZC is expected to provide to the consultant.

The proposal shall include a lump sum fee for the completion of the scope of services described herein and shall further include an hourly fee schedule for any additional services which may be required.

The proposal shall include a statement that the consultant has not previously provided traffic engineering services on behalf of Killingly Engineering Associates or Square One Building Associates.

1-19-2021

SCOPE OF SERVICES TO BE PROVIDED

1. Review the application and supporting materials to identify potential adverse impacts to Town of Brooklyn roads and residences due to traffic created by the proposal.

2. One site visit to Louise Berry Drive during school pick-up and drop-off to address concerns about changes in traffic pattern since September, 2021.

3. If adverse impacts are identified, recommend plan revisions that would mitigate adverse impacts to Town of Brooklyn roads and residences.

4. Attend at least one Planning and Zoning Commission meeting (in-person or virtual).

5. The review and a summary report must be completed and provided to the PZC and the applicant no later than February 21, 2023.

KWH Enterprise, LLC
277 Reservoir Avenue, Suite 1101
Meriden, CT 06451
Phone: (203) 807-5482
Cell: (203) 606-3525
kermit.hua@kwhenterprise.com

January 15, 2023

Jana Butts Roberson, AICP
Director of Community Development/Town Planner
Town of Brooklyn
PO Box 356
Brooklyn, CT 06234
("CLIENT")

Reference: Traffic review of proposed multi-family condominium development on Louise Berry Drive, Brooklyn, Connecticut

Dear Ms. Roberson:

KWH Enterprise, LLC ("KWH") is pleased to submit this scope and fee proposal for the referenced site ("PROJECT") in Brooklyn, Connecticut.

KWH has not previously provided traffic engineering services on behalf of Killingly Engineering Associates or Square One Building Associates.

I. Scope of Services ("SERVICES"):

1. Review the application and supporting materials to identify potential adverse impacts to Town of Brooklyn roads and residences due to traffic created by the proposal.

2. If adverse impacts are identified, recommend plan revisions that would mitigate adverse impacts to Town of Brooklyn roads and residences.

3. Attend at least one Planning and Zoning Commission meeting (in-person or virtual).

4. The review and a summary report must be completed and provided to the PZC and the applicant no later than February 21, 2023.

II. Fees:

The fee for the above-noted traffic engineering services is as follows:

$155 per hour and direct expenses for mileage. The not-to-exceed amount for this agreement is $6,000.

Payments are due to KWH in 30 days from invoice date.

This agreement is subject to the attached Professional Services Terms and Conditions.

Reference: Traffic review of proposed multi-family condominium development on Louise Berry Drive, Brooklyn, Connecticut

I appreciate this opportunity to submit the scope and fee proposal and look forward to working with you. Should you have any questions or need additional information, please feel free to contact me.

Sincerely,

KWH Enterprise, LLC

Kermit Hua, PE, PTOE
Principal
kermit.hua@kwhenterprise.com
Cell: (203) 606-3525

ACCEPTED BY:

_____ _____
Signature Name (Please print)

_____ _____
Agency/Company ("CLIENT") (Please print) Title (Please print)

_____
Date (Please print)

Attachment
Professional Services Terms and Conditions

PROFESSIONAL SERVICES TERMS AND CONDITIONS

The following Terms and Conditions are attached to and form part of the Proposal for Professional Services to be performed by KWH Enterprise, LLC (hereinafter called "KWH") and together, when the CLIENT authorizes KWH to proceed with the services, constitute the AGREEMENT.

DESCRIPTION OF WORK: KWH shall render the services described in the Proposal (hereinafter called the "SERVICES") to the CLIENT.

TERMS AND CONDITIONS: No terms, conditions, understandings, or agreements purporting to modify or vary these Terms and Conditions shall be binding unless hereafter made in writing and signed by the CLIENT and KWH. In the event of any conflict between the Proposal and these Terms and Conditions, these Terms and Conditions shall take precedence. This AGREEMENT supercedes all previous agreements, arrangements or understandings between the parties whether written or oral in connection with or incidental to the PROJECT.

COMPENSATION: Payments are due to KWH in 30 days from invoice date. Failure to make any payment when due is a material breach of this AGREEMENT and will entitle KWH, at its option, to suspend or terminate this AGREEMENT and the provision of the SERVICES. Interest will accrue on accounts overdue by 30 days at the lesser of 1.5 percent per month (18 percent per annum) or the maximum legal rate of interest.

TERMINATION: Either party may terminate the AGREEMENT without cause upon thirty (30) day notice in writing. If either party breaches the AGREEMENT and fails to remedy such breach within seven (7) days of notice to do so by the non-defaulting party, the non-defaulting party may immediately terminate the Agreement. Non-payment by the CLIENT of KWH's invoices within 30 days of KWH rendering same is agreed to constitute a material breach and, upon written notice as prescribed above, the duties, obligations and responsibilities of KWH are terminated. On termination by either party, the CLIENT shall forthwith pay KWH all fees and charges for the SERVICES provided to the effective date of termination.

PROFESSIONAL RESPONSIBILITY: In performing the SERVICES, KWH will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices normally provided in the performance of the SERVICES at the time and the location in which the SERVICES were performed.

LIMITATION OF LIABILITY: The CLIENT releases KWH from any liability and agrees to defend, indemnify and hold KWH harmless from any and all claims, damages, losses, and/or expenses, direct and indirect, or consequential damages, including but not limited to attorney's fees and charges and court and arbitration costs, arising out of, or claimed to arise out of, the performance of the SERVICES, excepting liability arising from the sole negligence of KWH. It is further agreed that the total amount of all claims the CLIENT may have against KWH under these Terms and Conditions, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the lesser of professional fees paid to KWH for the SERVICES or five hundred thousand dollars ($500,000). No claim may be brought against KWH more than two (2) years after the cause of action arose. As the CLIENT's sole and exclusive remedy under these Terms and Conditions any claim, demand or suit shall be directed and/or asserted only against KWH and not against any of KWH's employees, officers or directors.

DOCUMENTS: All of the documents prepared by or on behalf KWH in connection with the PROJECT are instruments of service for the execution of the PROJECT. KWH retains the property and copyright in these documents, whether the PROJECT is executed or not. These documents may not be used for any other purpose without the prior written consent of KWH. In the event KWH's documents are subsequently reused or modified in any material respect without the prior consent of KWH, the CLIENT agrees to defend, hold harmless and indemnify KWH from any claims advanced on account of said reuse or modification.

DISPUTE RESOLUTION: If requested in writing by either the CLIENT or KWH, the CLIENT and KWH shall attempt to resolve any dispute between them arising out of or in connection with this AGREEMENT by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, if mutually agreed, the dispute shall be referred to arbitration pursuant to laws of the jurisdiction in which the majority of the SERVICES are performed or elsewhere by mutual agreement.

ASSIGNMENT: The CLIENT and KWH shall not, without the prior written consent of the other party, assign the benefit or in any way transfer the obligations under these Terms and Conditions or any part hereof.

SEVERABILITY: If any term, condition or covenant of the AGREEMENT is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions of the AGREEMENT shall be binding on the CLIENT and KWH.