KREBS & LANSING
CONSULTING ENGINEERS

164 Main Street, Suite 201
Colchester, VT 05446

P: (802) 878-0375 | greg.dixson@krebsandlansing.com

September 27, 2023

Bill Woodruff
Public Works Director
Town of Waterbury
28 North Main Street Suite 1
Waterbury, VT 05676

RE: Stormwater Analysis – 51 S. Main Apartments
51 South Main Street, Waterbury, Vermont

Dear Bill,

Downstreet Housing and Evernorth are collaborating on a proposed multi-story residential building at the above referenced address. The Project is currently in the process of applying for site plan approval to the Waterbury Development Review Board (DRB). During the Project's last meeting on September 6, 2023, the DRB requested that I supply the Department of Public Works with a report on the Project's effect on the Town's Municipal Stormwater System. Below is the analysis I performed to evaluate the Project's impact.

As discussed above, this Project will be located on an existing 0.80 acre parcel at 51 South Main Street, which is in the heart of Waterbury's Downtown district. Currently, the site is occupied by a public parking lot which is operated by the Town, please see our existing conditions plan for additional details. The existing impervious onsite consists of the parking lot and electrical/communication vaults. The total amount of impervious surface onsite is approximately 0.24 acres. Approximately 67% of the existing property drains towards the rear of the parcel where there is a small depression that outlets towards the northern property line and neighbors. The remaining 33% of the lot is split between draining towards South Main Street's municipal system or the rear of the lot, which outlets towards the southern property line and neighbors. This parcel is between South Main Street and Randall Street, therefore all stormwater from the property eventually infiltrates or drains to the municipal system.

Municipal infrastructure is built in urban areas to provide services for proposed projects to encourage dense development of those parcels. The Project is proposing dense development of this parcel and will increase the impervious surface onsite to a total of 0.59 acres or 74.0% of the parcel. The proposed impervious surface will be a combination of parking, sidewalks, concrete slabs, and the building itself. The Project's drainage was designed to minimize the runoff from the parcel to the neighboring properties and take advantage of the municipal stormwater connection along South Main Street. This was accomplished by grading the project inward and collecting the stormwater in multiple catch basins, which will eventually drain directly to the municipal stormwater system on South Main Street. The design resulted in directing the runoff to the municipal system from approximately 94% of the parcel's area, including all proposed impervious.

Further stormwater improvements were added to the design to reduce and detain the stormwater runoff from the proposed Project. The four proposed catch basins are designed with no base (open bottom), and all will have 4' deep sumps below the outlet pipe's invert. These basins should provide temporary stormwater storage and detention during small storm events. Also, the detained stormwater in the sumps will infiltrate through the open bottom after the rain events. Three of the catch basins have a 4' interior diameter to provide more volume for storage, detention, and infiltration. The only basin smaller, with a 3' interior dimension, is located in the front of the property and was designed to avoid other utility conflicts. The proposed design also includes shallowly sloped grassed depressions along the southern edge of the property. These areas were first designed for compensatory removal for the FEMA base flood calculations. However, they will double as a place for stormwater to slowly collect and infiltrate during storm events. They are also perfect places to direct snow and slowly allow those snow piles to melt.

The soils onsite are mapped by the USDA as Salmon Very Fine Sandy Loam. These soils have a hydrologic group designation B and have decent infiltration qualities. We do not expect quick infiltration from these soils which can typically be seen with a coarser sand but expect slower/consistent infiltration from this type of soil. To be conservative, the values outlined in the sections below take no planned infiltration opportunities into consideration. We feel this shows the Municipality the worst case scenario, and we expect the values in operation will be far lower than the numbers illustrated in this report.

The design outlined above resulted in slight increases in flow to the municipal system directly at the proposed outfalls from the Project. The bulk of the increase occurs because the design directs the entire parcel's stormwater runoff to the municipal system along South Main Street. However, the design also resulted in a large reduction in stormwater runoff or, in some cases, no stormwater runoff to the neighboring properties which surround the parcel. We also calculated the stormwater flow from the property without separating it to the outfalls. This shows the increase in stormwater directly related to the increase in impervious surface. We analyzed the water quality storm event (1" in 24-hours), the channel protection storm event (1-year, 24-hour), the overbank flood protection storm event (10-year, 24-hour), and the extreme flood protection storm event (100-year, 24-hour).

Increase in Flow to Municipal System at the Point of Interconnection along South Main Street:

- Water Quality Storm Event = 1.03 cfs
- Channel Protection Storm Event = 1.76 cfs.
- Overbank Flood Protection Storm Event = 3.27 cfs.
- Extreme Flood Protection Storm Event = 5.02 cfs.

Again, please note this is at the direct point of contact with the municipal system. This connection occurs at a location where the outfall pipe is 36" in diameter. This size pipe is likely more than capable of handling these small increases.

As discussed above, this parcel drains to the municipal system eventually. Below are the values for the increase in stormwater flow from the site due to the increase in impervious surface. This shows the increase from the site if watersheds were not altered to reduce runoff to neighboring property owners.

Increase in Flow from the Parcel as a whole:

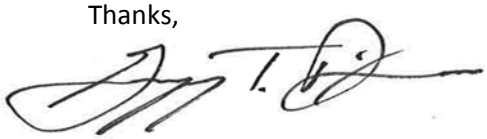
- Water Quality Storm Event = **0.97 cfs.**
- Channel Protection Storm Event = **1.15 cfs.**
- Overbank Flood Protection Storm Event = **1.71 cfs.**
- Extreme Flood Protection Storm Event = **1.79 cfs.**

Overall, the increase in impervious surface from the proposed Project would not result in an increase in runoff greater than 2 cfs in any of the storm events modeled. Also, all the values shown above do not consider the infiltration opportunities the design has offered onsite. All the stormwater from this site will inevitably enter the municipal system if it is not infiltrated. We feel the flow values for the entire Project better illustrate the increase in flow expected from the parcel.

In my opinion, the increases shown above should not have an adverse impact on the municipal stormwater system. It also directs all the stormwater from the parcel to the municipal system instead of across neighboring properties. Further, downtown municipal systems are designed to promote dense development like the kind proposed as part of this project.

Thank you for your time in reviewing this report. Please let me know if there is any additional information you need to review the project.

Thanks,



Greg Dixson, P.E.

CC: Neal Leitner – Town of Waterbury Planning Director
Waterbury Development Review Board

51 S. Main St. – DRB comment response

- **A streetscape view showing 3 buildings on either side of 51 S. Main with the proposed building placed in it.**
  This view is included in the updated documents. It gives a more complete picture as to how the building references the visual cues of the surrounding buildings and helps bring it to scale.
  View provided on A400

- **View from Main St. approaching 51 S. Main from the north and south.**
  These views are included in the updated documents and illustrate some of the design changes to the building with regard to fenestration and building heights.
  View provided on A400

- **View from the rear of the property.**
  This view is included in the updated documents.
  View provided on A400

- **Provide pre- and post-peak runoff and volume**
  Krebs and Lansing have prepared a Stormwater Report which outlines the pre and post development of the project site, the proposed stormwater system, and the calculated pre and post development peak runoff flows. The model was generated to be conservative and further details and information can be found in the report generated for Bill Woodruff.
  Stormwater Memo for Bill Woodruff
  Stormwater Flow Breakdown Chart
  State of Vermont Workbook used to generate HydroCAD Values
  Pre and Post Development WQv HydroCAD Report
  Pre and Post Development CPv HydroCAD Report
  Pre and Post Development QP10 HydroCAD Report
  Pre and Post Development QP100 HydroCAD Report

- **Provide compensatory storage calculations.**
  Compensatory removal calculations were shown on the plans originally submitted to the Town for the last meeting, they were shown on C-1.00 of the Civil Engineering Plan Set. Krebs and Lansing added more detail to that calculation to provide the Town and Board with further values for their review. These values and plans have also been supplied to Ned Swanberg, CFM Vermont Flood Hazard Mapping Coordinator Regional Floodplain Manager. Neal Leitner, Town of Waterbury, was included on those correspondence.
  See Civil Site Plan C-1.00

- **Change the 90-degree angle window on the NE corner on the 2nd floor**
  We have greatly diminished the size of the NE corner on the 2nd floor to make it feel more residential and reduce the amount of glazing on a prominent corner of the building. This reduction allowed us to include a second window on the north side of the building. This new window fits with the regular pattern of windows along that facade, enhancing the historic feel. We will also include a brick detail at the sill and head of the window to further reference historic brick patterns. All residential windows will be fitted with blinds provided by Downstreet.
  Window update can be seen on A200 & A400

- **Reduce the appearance of the 3rd floor wall by Stairwell A to reduce the appearance of an elevated "tower" on the 3rd floor.**
  The area referenced in this comment has been brought down by +/-2'-0". We agree that this change has positive affect on reducing the scale of the building. We have also provided a more defined cornice in that area to again reference, but not mimic, a historic building feature seen on other brick buildings in the historic downtown.
  Height update can be seen on A200 & A400
  Cornice detail added to A200

- **Provide color options for the siding**
  We have selected a second, lighter shade for the cementitious board siding. A sample of the product will be provided at the DRB meeting. We have added a horizontal detail along this sills of the windows on the north and south sides of the building. This helps to break up the mass of the building and scale it into distinct planes. During our community outreach session last week, people were favorable of these changes.
  Update color can be seen on A200 & A400

- **Relocate two crab apple trees by Main Street to elsewhere on the property, or give back to the town public works department.**
  A note has been added to the drawings to return the crabapple trees to the town. They are beautiful trees, but at this time, Downstreet does not use fruit bearing trees in their buildings due to maintenance concerns.
  Note added to L1.0

- **Place lights on a dimmer after 10pm**
  Exterior lighting for our parking lot will be placed on a dimmer after 10pm.
  Note added to A100

- **Provide correspondence with Green Mountain Power stating that they are willing to move the power vault.**
  An MOU with Green Mountain Power has been provided in updated documents.
  See attached

- **Utilize the existing 6" water stub on Main Street**
  We have reworked the waterline to use the existing 6" ductile iron water tap onto the property. We will run that line parallel to the building +/- 5' from the building and under the front porch of the building. It will then run down the sidewalk and into the building like it was shown on the plans in the last submission. Using this tap will allow the project to remove any major work within the middle of Main Street.
  See Civil Site Plans C-1.00 & C-1.01

- **Add a 3rd tree along the SE property line for screening.**
  A Redbud tree has been added along the southern property line for screening. We also fully intend to keep as much of the existing "cedar" screening as possible along the existing historic building, doing only selective trimming on our property where necessary. After meeting with neighbors on an individual basis we are doing our best to save or reintroduce trees in additional areas. We will be modifying 3 spaces on the western property line to make them compact car parking so we can save an existing tree at this location. We will also look at saving some of the existing trees near the service station. As well as adding two new trees for further screening and shading.
  See L2.0 & L2.1

Additional information from the Owner's conversations with abutting property owners:

The September 6th DRB meeting was a good indication that we needed to do a better job of reaching out and discussing the project with our neighbors at the abutting properties and the community. We were able to hold a meeting recently where we remained on site for 3 hours with plans and renderings of the updates. We had 16 people attend, including all neighbors whose homes are primary residences. We walked the site with several neighbors and heard concerns related to individual properties and the project as a whole. While we are not able to make every requested adjustment, we have modified our fencing, parking and landscaping strategy in an effort to better meet their needs.

We have provided a higher fence where more privacy was requested along the back edge of the property and removed the fence where there were concerns regarding access to sunlight and a garden. By the service station, we will relocate the existing fence along the property line and provide a heavily planted bed to discourage anyone from climbing the fence or cutting through the neighboring parking.

With regard to trees, we have modified a few parking spaces along the back edge of the property, allowing us to keep an existing tree to help with screening. We will do our best to keep several of the trees that shadow the Service Station, however, we will replant new trees to supplement what needs to be cutback during the utility install.

Additionally, we will be placing "no idling" signage in our parking lot and we will place our EV charging station along the north side parking in an effort to minimize emissions from cars parked close to those homes.

While the introduction of a 3-story building on this site is consistent with the Main St. streetscape, we understand it is a big change for the abutting properties. We plan to remain in touch with abutters throughout the construction process sending out updates to let them know what to expect. We also encourage them to reach out with any issues post construction.

Attachments:

GMP Memorandum of Understanding

Original DRB comment list.

Chris Balzano

Subject: FW: Quick Memo for project at 51 South Main St., Waterbury
Attachments: 51 S MAIN ST MOU.pdf

From: Jones, Jason <Jason.Jones@greenmountainpower.com>
Sent: Wednesday, September 20, 2023 11:38 AM
To: Kaziah Haviland <khaviland@downstreet.org>
Cc: Greg Dixson <greg.dixson@krebsandlansing.com>; Chris Balzano <CBalzano@gbarchitecture.com>; Ryan Baker-Dunn <rbaker-dunn@evernorthus.org>
Subject: RE: Quick Memo for project at 51 South Main St., Waterbury

Good Morning Kaziah,

Please find the attached Memorandum of Understanding. Let me know if this is along the lines of what you're looking for.
Thank you,

Jason Jones
Green Mountain Power
Distribution Designer
Office: 802-229-7929
Cell: 802-353-4599

Memorandum of Understanding

Between Green Mountain Power and Downstreet Housing & Community Development

The property Known as 51 South Main Steet, Waterbury, VT

The two parties agree completely to the following;

Green Mountain Power shall relocate existing vault T.771501 consistent with the most recent tariff filing provided the new location can be proven to not be in trespass with neighboring structures / properties and payment is made in full for the scope of work.

_____ Date 09.20.2023

Signature; on behalf of

Green Mountain Power

_____ Date_____

Signature; on behalf of

Chris Balzano

From: Neal Leitner <nleitner@waterburyvt.com>
Sent: Monday, September 11, 2023 12:22 PM
To: Chris Balzano
Subject: RE: 51 S. Main St.

Hi Chris,

Thanks for taking my call this morning. Here is the list of what the DRB requested in writing:

- A streetscape view showing 3 buildings on either side of 51 S. Main with the proposed building placed in it.
- View from Main St. approaching 51 S. Main from the north and south.
- View from the rear of the property.
- Provide pre- and post-peak runoff and volume
- Provide compensatory storage caluclations
- Change the 90-degree angle window on the NE corner on the 2nd floor
- Reduce the appearance of the 3rd floor wall by Stairwell A to reduce the appearance of an elevated "tower" on the 3rd floor.
- Provide color options for the siding
- Relocate two crab apple trees by Main Street to elsewhere on the property, or give back to the town public works department.
- Place lights on a dimmer after 10pm
- Provide correspondence with Green Mountain Power stating that they are willing to move the power vault.
- Utilize the existing 6" water stub on Main Street
- Add a 3rd tree along the SE property line for screening.

Thank you,

Neal Leitner
Assistant Zoning Administrator
Town of Waterbury
28 N. Main St., Suite 1
Waterbury, VT 05676
(802) 244-1018
As of 7/12/21, our municipal offices are open to the public. My office hours are generally Mon. – Fri., 8:30 – 4:30pm or by appointment. Please email or phone me with questions or to set up an appointment.

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

ZONING / DRB 09/27/2023

(NOT FOR CONSTRUCTION)

CONCEPTUAL MAIN ST. VIEW

SHEET LIST

DESIGN TEAM

gbArchitecture
85 Granite Shed Lane
Montpelier, VT 05602

Contact: Chris Balzano, AIA
Phone: (802) 229-1664
Email: cbalzano@gbarchitecture.com

Krebs & Lansing Consulting Engineers, Inc.
164 Main Street
Colchester, Vermont 05446

Contact: Greg Dixson, P.E.
Phone: (802) 878-0375
Email: greg.dixson@krebsandlansing.com

Park Architecture
3 School House Lane, Suite #1
Etna NH 03750

Contact: Paul Simon
Kate Osgood
Phone: (603) 643-3400
Email: parkarchitecture@gmail.com
kosgood@parkarchitecture.com

Owner / Applicant:
March House Apartments Limited Partnership
22 Keith Avenue, Suite 100 Barre, VT 05641

Downstreet Housing & Community Development
22 Keith Avenue, Suite 100
Barre, VT 05641

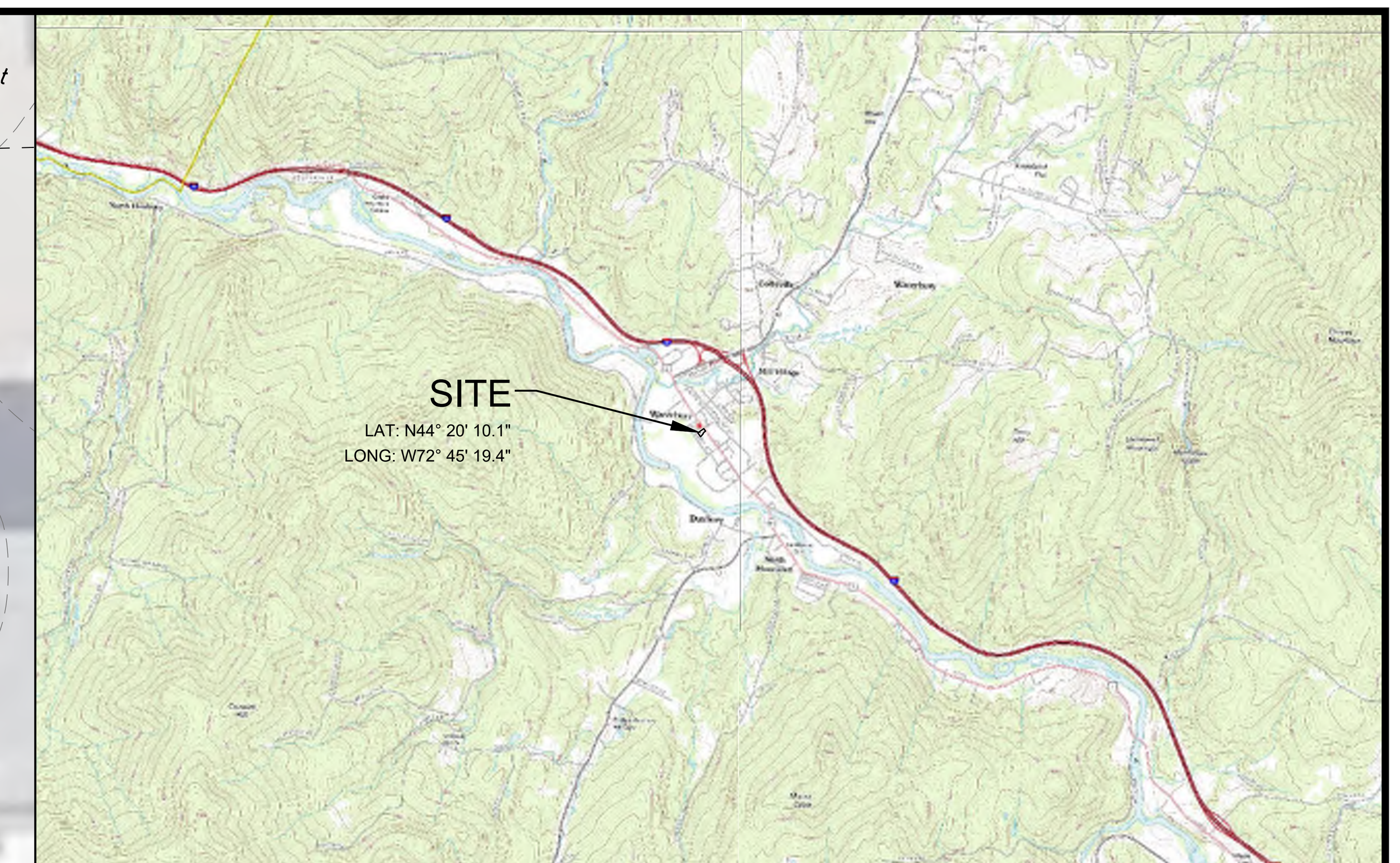
Contact: Kaziah Haviland
Nicola Anderson
Phone: (802) 476-4493
Email: khaviland@downstreet.org
nanderson@downstreet.org

Evernorth
100 Bank Street, Suite 400
Burlington, VT 05401.

Contact: Ben Sturtz
Ryan Baker-Dunn
Phone: (802) 863-8424
Email: bsturtz@evernorthus.org
rbaker-dunn@evernorthus.org

DOWNSTREET Housing & Community Development
evernorth Investing in communities. Building possibilities.
gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664

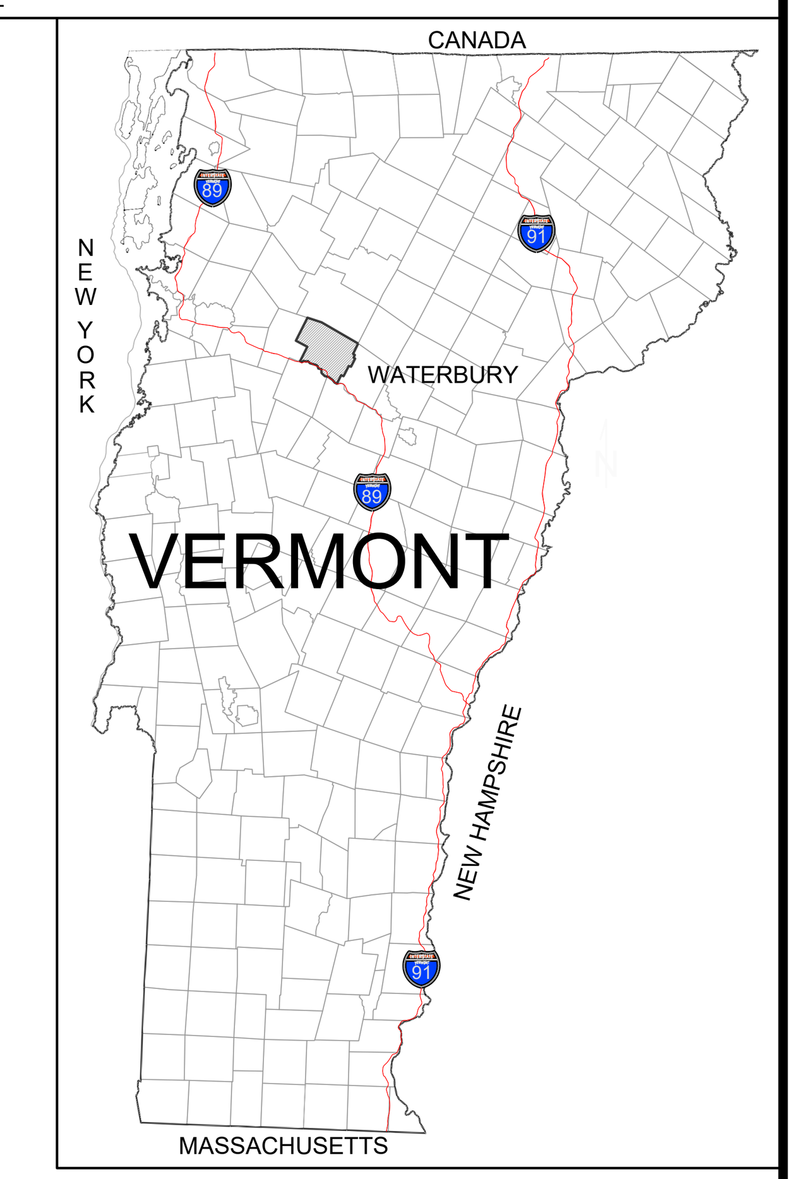
www.gbArchitecture.com



LOCATION MAP
SCALE: 1" = 1 MILE

LEGEND

- IRON PIPE / CONCRETE MONUNMENT FOUND
- EXISTING TREELINE
- EXISTING GRADE CONTOUR LINES (5 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE PROPERTY LINES
- EXISTING WOODEN FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING SEWER LINE/MANHOLE
- EXISTING STORM LINE/MANHOLE/BASIN
- EXISTING OVERHEAD ELECTRIC LINE/POWER POLE
- EXISTING UNDERGROUND POWER
- EXISTING WATER LINE/HYDRANT/VALVE/SHUTOFF
- EXISTING UNDERGROUND COMMUNICATIONS
- MAPPED FEMA BFE
- FEMA BFE BASED ON TOPOGRAPHIC SURVEY OF PROPERTY.



NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 VERMONT STATE PLANE 4400 (US SURVEY FEET). ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED 2013 STATE OF VERMONT LiDAR AND FIELD SURVEY BY KREBS AND LANSING IN THE SUMMER OF 2023. KREBS AND LANSING SURVEYED ONLY AREA AROUND THE PROPOSED PROJECT.
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROJECT PROPERTY IS SHOWN BASED ON A SURVEY BY GRENIER ENGINEERING P.C. TITLED "SURVEY OF VILLAGE OF WATERBURY 51 SOUTH MAIN FORMER TOWN OFFICES" DATED NOVEMBER 2015 AND MONUMENTATION FOUND IN THE AREA SURVEYED FOR THE PROPOSED WORK. ALL OTHER PROPERTY LINES SHOWN ON THIS PLAN ARE FROM TAX MAP INFORMATION PROVIDED BY THE TOWN. PROPERTY LINES HAVE BEEN ADJUSTED BASE ON MONUMENTATION FOUND IN THE FIELD AND EVIDENCE IN AERIAL PHOTOGRAPHY.

CALCULATIONS:

EXISTING CONDITIONS:
- PROPERTY AREA = ±34,650 S.F. (0.80 ACRES)
- BUILDING COVERAGE: 0 S.F. (0 ACRES) (0%)
- OVERALL IMPERVIOUS: ±10,500 S.F. (0.24 ACRES) (30.3%)

FEMA FLOOD CALCULATION:

BASED ON THE EXISTING GRADES SURVEYED BY KREBS AND LANSING, THE SURVEY'S DETAILS ARE ABOVE. THE FEMA FLOOD ELEVATION OF 425'. THE VOLUME OF FLOOD INUNDATION ON THE EXISTING SITE:

- ± 1,135 CUBIC YARDS (±30,650 CUBIC FEET)

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING
CONSULTING ENGINEERS

164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

0' 10' 20' 40' 60'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 20')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

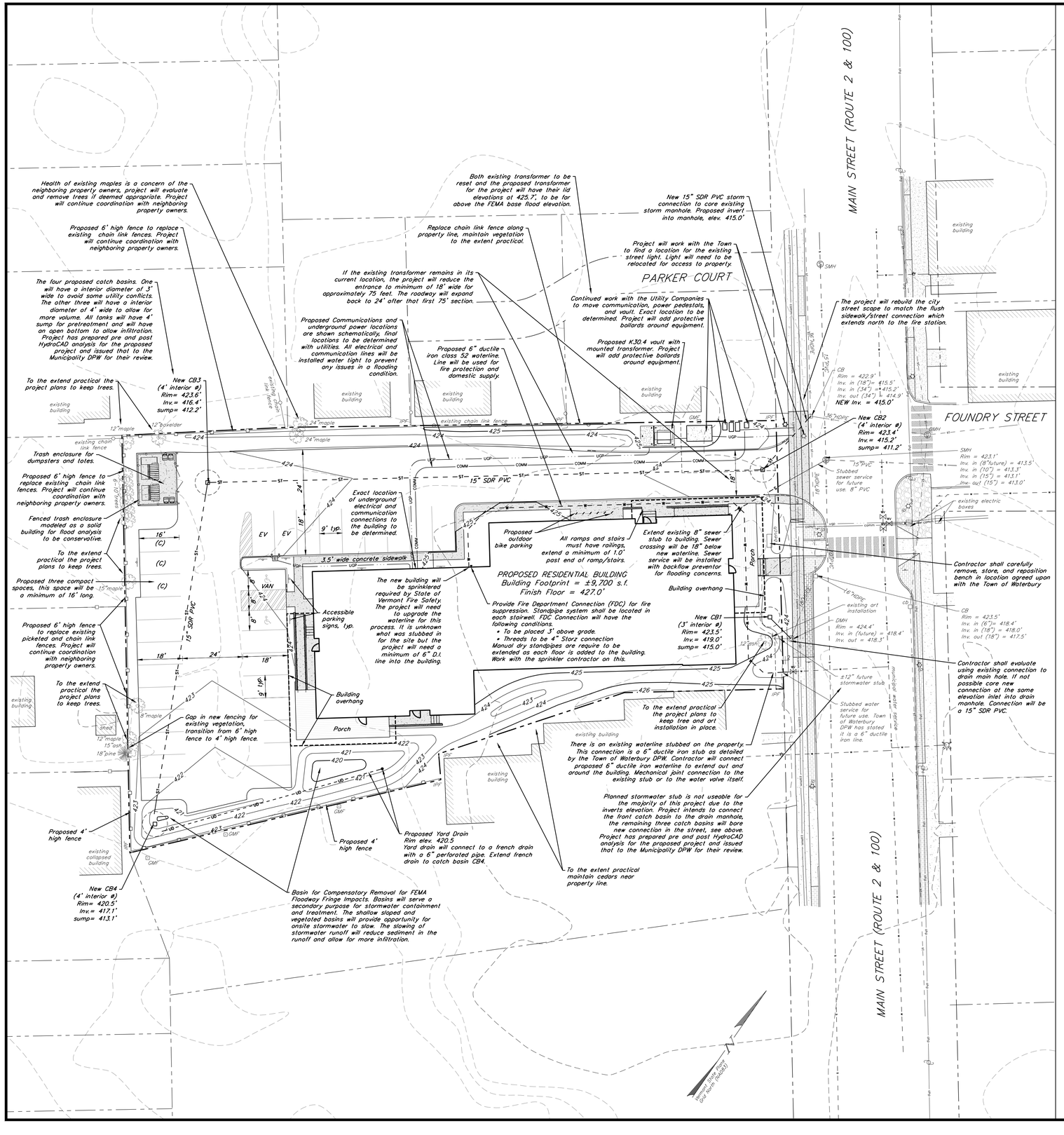
REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

OVERALL EXISTING
CONDITIONS PLAN

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: 1" = 20'
DRAWING NO.: C-0.00 REV. NO.:

DWG NAME: Israel-Wastewater-Base.dwg



LEGEND

- IRON PIPE / CONCRETE MONUMENT FOUND
- EXISTING TREELINE
- EXISTING GRADE CONTOUR LINES (5 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE PROPERTY LINES
- EXISTING WOODEN FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING SEWER LINE/MANHOLE
- EXISTING STORM LINE/MANHOLE/BASIN
- EXISTING OVERHEAD ELECTRIC LINE/POWER POLE
- EXISTING UNDERGROUND POWER
- EXISTING WATER LINE/HYDRANT/VALVE/SHUTOFF
- EXISTING UNDERGROUND COMMUNICATIONS
- MAPPED FEMA BFE
- PROPOSED SEWER LINE/MANHOLE
- PROPOSED SEWER LINE/MANHOLE/BASIN
- PROPOSED UNDERDRAIN/ FRENCH DRAIN/YARD DRAIN
- PROPOSED WATER LINE/HYDRANT/VALVE/SHUTOFF
- PROPOSED GRADE CONTOUR LINES (5 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (1 FOOT INTERVALS)

CALCULATIONS:

EXISTING CONDITIONS:
- PROPERTY AREA = ±34,650 S.F. (±0.80 ACRES)
- BUILDING COVERAGE: 0 S.F. (±0 ACRES) (0%)
- OVERALL IMPERVIOUS: ±10,500 S.F. (±0.24 ACRES) (30.3%)

PROPOSED CONDITIONS:
- PROPERTY AREA = ±34,650 S.F. (±0.80 ACRES)
- BUILDING COVERAGE: ±9,700 S.F. (±0.22 ACRES) (0%)
- OVERALL IMPERVIOUS: ±25,650 S.F. (±0.59 ACRES) (74.0%)
- TOTAL INCREASED IMPERVIOUS: ±15,200 S.F. (±0.35 ACRES)

WATER AND WASTEWATER DESIGN FLOW

EXISTING WATER/WASTEWATER DESIGN FLOW:
- PROPERTY IS CURRENTLY A PARKING LOT WITH NO WATER OR WASTEWATER FLOWS
- 0 GPD

PROPOSED UNIT COUNTS:
- 21 SINGLE BEDROOM/STUDIO APARTMENT DWELLING UNITS (DU)
- 5 DOUBLE BEDROOM APARTMENT DWELLING UNITS (DU)
- OFFICE SPACE FOR APARTMENT STAFF - ASSUME 5 EMPLOYEES

PROPOSED WASTEWATER DESIGN FLOW:
- 21 SINGLE BEDROOM/STUDIO DU *140 GPD/DU = 2,940
- 5 DOUBLE BEDROOM DU * 210 GPD/DU = 1,050 GPD
- 5 EMPLOYEES * 15 GPD/EMPLOYEE = 75 GPD
- TOTAL PROJECT WASTEWATER FLOWS = 4,065 GPD

EXISTING WATER DESIGN FLOW:
- 21 SINGLE BEDROOM/STUDIO DU *140 GPD/DU = 2,940
- 5 DOUBLE BEDROOM DU * 280 GPD/DU = 1,400 GPD
- 5 EMPLOYEES * 15 GPD/EMPLOYEE = 75 GPD
- TOTAL PROJECT WATER FLOWS = 4,415 GPD

PROPOSED APARTMENT PROJECT WILL RESULT IN AN INCREASE OF 4,065 GPD FOR WASTEWATER FLOWS AND 4,415 GPD FOR WATER FLOWS FROM THE PREVIOUS USE.

PROJECT TRAFFIC

ALL VALUES CALCULATED BELOW WERE GENERATED USING VALUES PUBLISHED BY THE "INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) TRIP GENERATION MANUAL, 10TH EDITION". VALUES ARE LISTED AS VEHICLE TRIP ENDS (VTE) BASED ON SPECIFIC USES IN THE MANUEL. MANUEL USES REVIEWED IN ANALYSIS ARE RESIDENTIAL PLANNED UNIT DEVELOPMENT BASE ON NUMBER OF UNITS (MANUAL #270) AND GENERAL OFFICE BUILDING BASE ON PER EMPLOYEE (MANUAL #710). BELOW IS THE EVALUATION, WE ROUNDED UP ON ALL VALUES.

EXISTING ANALYSIS:TRAFFIC VALUES:
- THE EXISTING PROJECT USE IS A MUNICIPAL PARKING LOT, THE ADJACENT USES ARE WHAT OCCUPY THE PARKING LOT. THEREFORE, THE EXISTING USE DOES NOT GENERATE TRAFFIC VALUES.

PROPOSED TRAFFIC VALUES:
- 26 UNITS WITHIN DEVELOPMENT AND 5 EMPLOYEES
- WEEKDAY AVERAGE VTE = (26 UNITS * 7.38 VTE/UNIT) + (5 EMP. * 3.28 VTE/EMP.) = 209 VTE
- WEEKDAY AM PEAK HOUR VTE = (26 UNITS * 0.58 VTE/UNIT) + (5 EMP. * 0.47 VTE/EMP.) = 19 VTE
- WEEKDAY PM PEAK HOUR VTE = (26 UNITS * 0.72 VTE/UNIT) + (5 EMP. * 0.45 VTE/EMP.) = 22 VTE

PROPOSED TRAFFIC INCREASES
- WEEKDAY AVERAGE VTE = 209 VTE
- WEEKDAY AM PEAK HOUR VTE = 19 VTE
- WEEKDAY PM PEAK HOUR VTE = 22 VTE

THERE WILL CLEARLY BE AN EFFECT ON TRAFFIC WITH THE INCREASE IN DWELLING UNITS ON THE PROJECT SITE. THIS IS A BUSY SECTION OF ROADWAY, HOWEVER THIS SMALL INCREASE TO TRAFFIC DOES NOT OUTWEIGH THE POSITIVE AFFECT OF ADDITIONAL HOUSING THE PROJECT PROVIDES.

THE PROJECT ALSO FEELS THERE ARE MANY TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES THIS PARCEL HAS THE OPPORTUNITY TO TAKE ADVANTAGE OF. THE PROJECT IS CENTRALLY LOCATED WITHIN WATERBURY CENTER. THIS PROVIDES SHORT COMMUTES TO WORK AND LEISURE ACTIVITIES WITHIN THE TOWN. THIS ALLOWS THE TENANTS OF THE PROPOSED PROJECT SHORT BIKE/WALK TO MANY ESSENTIAL SERVICES.

FURTHER THE PROJECT REVIEWED HISTORICAL TRAFFIC DATA PROVIDED BY VTRANS. FOR THIS STRETCH OF ROADWAY THERE HAVE BEEN NUMEROUS TRAFFIC COUNTS AND EVALUATIONS FOR ANNUAL AVERAGE DAILY TRAFFIC (AADT). WE FOUND AADT DATA FROM 2018 FOR THIS AREA WHICH HAD A VALUE OF 8,300 AADT. FROM THE CALCULATION ABOVE THIS PROJECT WILL RESULT IN 209 WEEKDAY VTEs THIS WOULD ONLY INCREASE THE AADT BY 2.52%.

NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 VERMONT STATE PLANE 4400 (US SURVEY FEET), ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED 2013 STATE OF VERMONT LIDAR AND FIELD SURVEY BY KREBS AND LANSING IN THE SUMMER OF 2023. KREBS AND LANSING SURVEYED ONLY AREA AROUND THE PROPOSED PROJECT.
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROJECT PROPERTY IS SHOWN BASED ON A SURVEY BY GRENIER ENGINEERING P.C. TITLED "SURVEY OF VILLAGE OF WATERBURY 51 SOUTH MAIN FORMER TOWN OFFICES" DATED NOVEMBER 2015 AND MONUMENTATION FOUND IN THE AREA SURVEYED FOR THE PROPOSED WORK. ALL OTHER PROPERTY LINES SHOWN ON THIS PLAN ARE FROM TAX MAP INFORMATION PROVIDED BY THE TOWN. PROPERTY LINES HAVE BEEN ADJUSTED BASE ON MONUMENTATION FOUND IN THE FIELD AND EVIDENCE IN AERIAL PHOTOGRAPHY.

FEMA FLOOD CALCULATION:

BASED ON THE EXISTING GRADES SURVEYED BY KREBS AND LANSING, THE SURVEY'S DETAILS ARE ABOVE. THE FEMA FLOOD ELEVATION OF 425'. THE VOLUME OF FLOOD INUNDATION ON THE EXISTING SITE:

- ± 1,135 CUBIC YARDS (±30,650 CUBIC FEET)

THE PROJECT WILL PROPOSE FILL WITHIN THE FEMA BFE FLOODPLAIN FRINGE. THIS FILL IS FOR INSTALLATION OF THE BUILDING. THE PROJECT DESIGNED THE ELEVATIONS FOR THE ROADWAY, SIDEWALKS, PARKING, STORMWATER MANAGEMENT, AND PROVIDED ADDITIONAL BASINS TO MITIGATE THE INCREASED FILL WITHIN THE FEMA BFE. THE WORK WAS TO GENERATE A COMPENSATORY REMOVAL ONSITE TO COUNTER BALANCE THE FILL FROM THE BUILDING. THE DESIGN SHOWN ON THESE PLANS WILL RESULT IN A POST DEVELOPMENT FLOOD INUNDATION VOLUME ON THE SITE:

- ± 1,145 CUBIC YARDS (±30,910 CUBIC FEET)

ALL EXCAVATED MATERIAL FOR THE PROJECT WILL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN APPROVED LOCATION. THE REMOVED MATERIAL WILL RESULT IN THE GRADES DETAILED IN THIS PLAN SET AND WHICH GENERATED THE CALCULATION ABOVE. COMPENSATORY REMOVAL ONSITE SHOULD COUNTER THE FILL WHICH IS BEING PLACED. THE PROJECT SHOULD HAVE NO UNDUE ADVERSE IMPACT ON THE FEMA BFE IN THE AREA.

SECONDARY EVALUATION:
ALL PROJECT FILL ON PROJECT WITHIN THE FEMA BASE FLOOD ELEVATION (BFE). ASSUMES NO SPACE UNDER THE PORCHES AND ASSUMES THE FENCED DUMPSTER AREA TO BE SOLID BUILDING.TOTAL FILL IN FEMA BFE IS:

- ±147 CUBIC YARDS (±3,970 CUBIC FEET)

PROPOSED PROJECT LOWERED THE REAR PARKING LOT AND REMOVED ADDITIONAL MATERIAL ALONG THE SOUTHEASTERN PROPERTY LINE. COMPENSATORY REMOVAL FROM THE PROJECT SITE IS:

- ±157 CUBIC YARDS (±4,230 CUBIC FEET)

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 Colchester, Vermont 05446
P: (802) 878-0375 www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :
Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:
Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

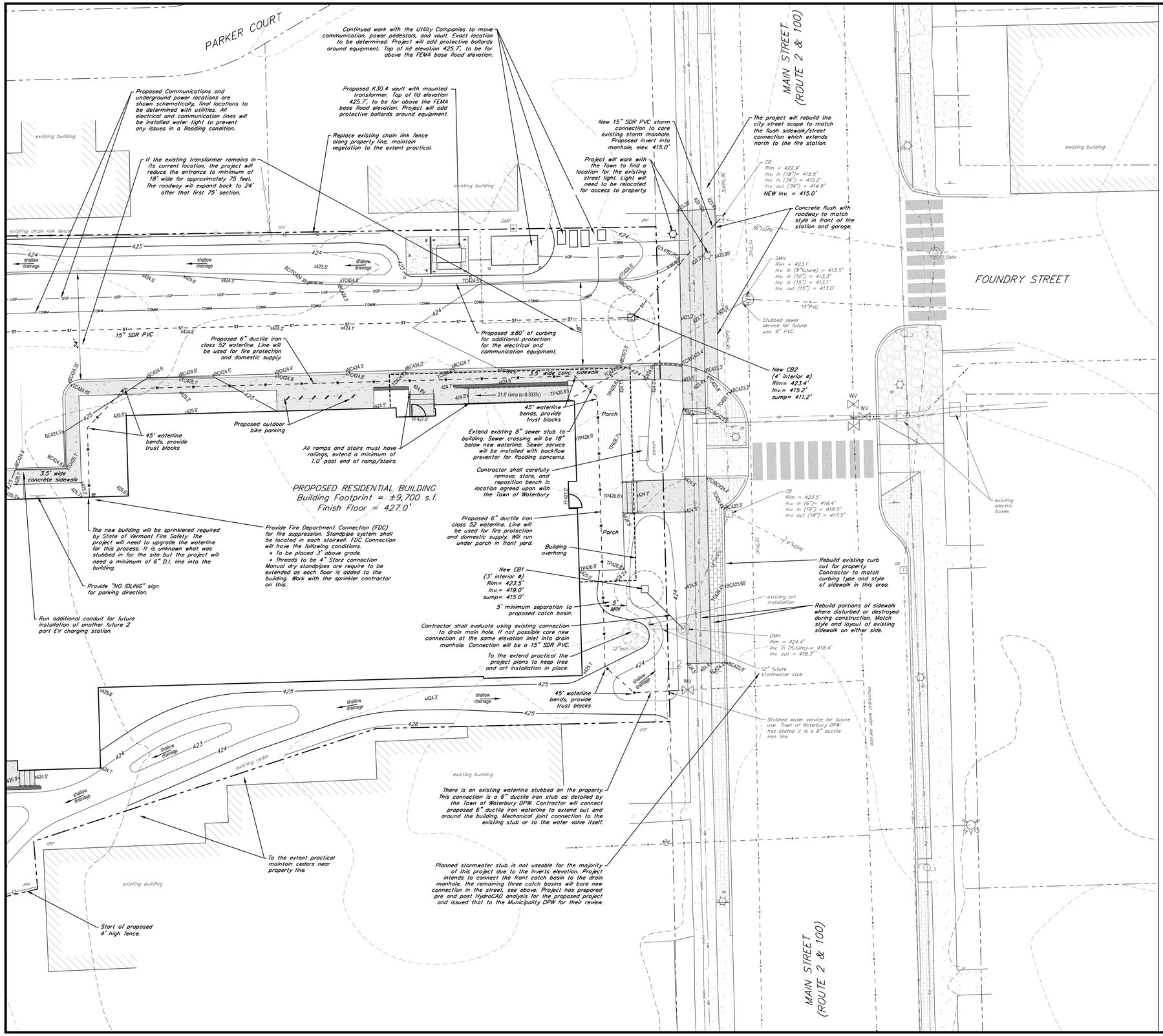
0' 10' 20' 40' 60'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 20')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates to WW Flow & Traffic Calcs	08/31/23
2.	Updates for DRB Comments	09/27/23

DRAWING TITLE:
PROPOSED SITE PLAN

DATE ISSUED: 08/23/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: 1" = 20'
DRAWING NO.: C-1.00 REV. NO.: 2

DWG NAME: Israel-Wastewater-Base.dwg



LEGEND

- IRON PIPE / CONCRETE MONUNMENT FOUND
- EXISTING TREELINE
- EXISTING GRADE CONTOUR LINES (5 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE PROPERTY LINES
- EXISTING WOODEN FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING SEWER LINE/MANHOLE
- EXISTING STORM LINE/MANHOLE/BASIN
- EXISTING OVERHEAD ELECTRIC LINE/POWER POLE
- EXISTING UNDERGROUND POWER
- EXISTING WATER LINE/HYDRANT/VALVE/SHUTOFF
- EXISTING UNDERGROUND COMMUNICATIONS
- MAPPED FEMA BFE
- PROPOSED SEWER LINE/MANHOLE
- PROPOSED SEWER LINE/MANHOLE/BASIN
- PROPOSED UNDERDRAIN/ FRENCH DRAIN/YARD DRAIN
- PROPOSED WATER LINE/HYDRANT/VALVE/SHUTOFF
- PROPOSED GRADE CONTOUR LINES (5 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (1 FOOT INTERVALS)

NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 VERMONT STATE PLANE 4400 (US SURVEY FEET). ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED 2013 STATE OF VERMONT LIDAR AND FIELD SURVEY BY KREBS AND LANSING IN THE SUMMER OF 2023. KREBS AND LANSING SURVEYED ONLY AREA AROUND THE PROPOSED PROJECT.
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROJECT PROPERTY IS SHOWN BASED ON A SURVEY BY GRENIER ENGINEERING P.C. TITLED "SURVEY OF VILLAGE OF WATERBURY 51 SOUTH MAIN FORMER TOWN OFFICES" DATED NOVEMBER 2015 AND MONUMENTATION FOUND IN THE AREA SURVEYED FOR THE PROPOSED WORK. ALL OTHER PROPERTY LINES SHOWN ON THIS PLAN ARE FROM TAX MAP INFORMATION PROVIDED BY THE TOWN. PROPERTY LINES HAVE BEEN ADJUSTED BASE ON MONUMENTATION FOUND IN THE FIELD AND EVIDENCE IN AERIAL PHOTOGRAPHY.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

0' 5' 10' 20' 30'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 10')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

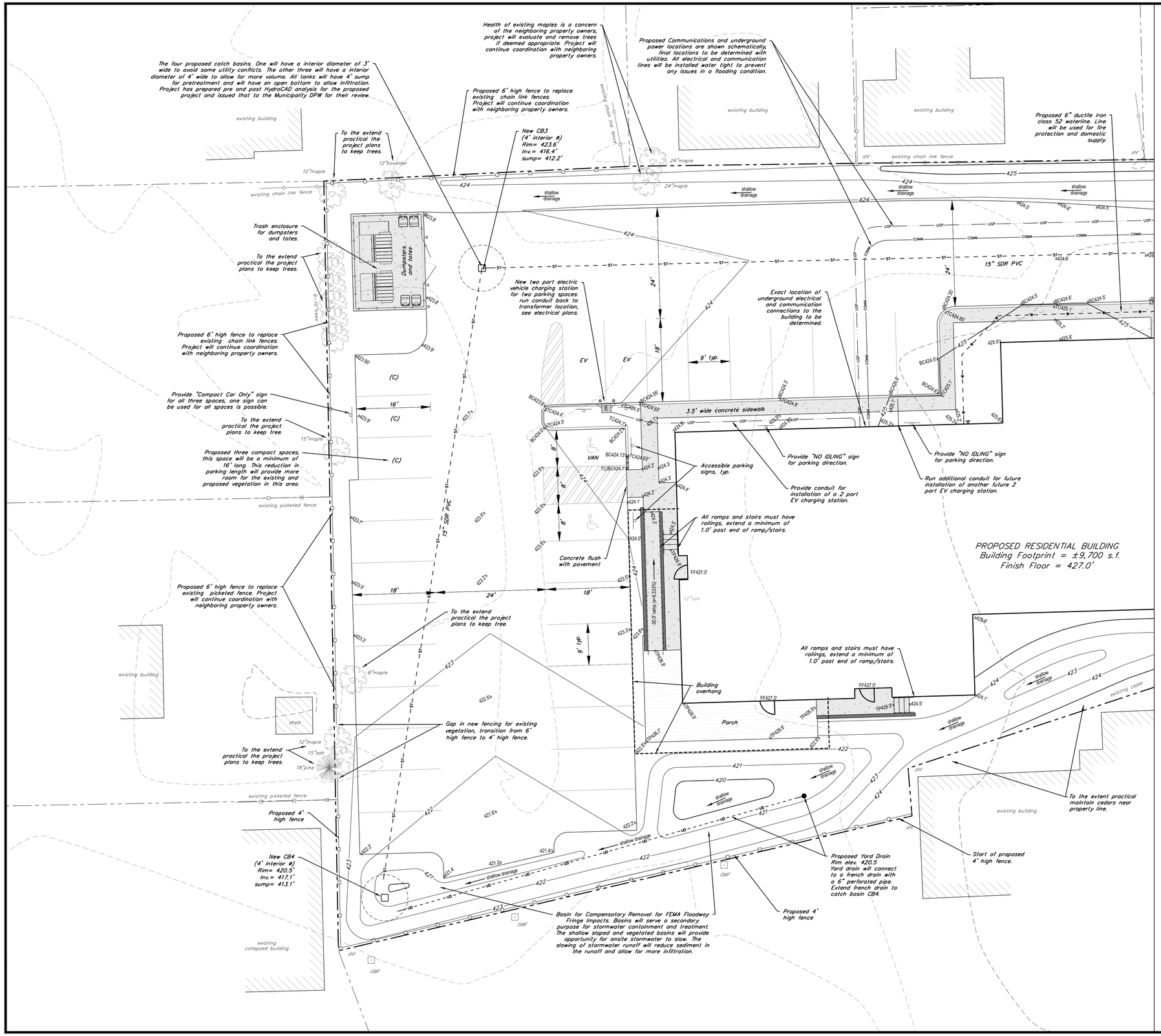
REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates for DRB Comments	09/27/23

DRAWING TITLE:

PROPOSED SITE PLAN DETAIL FRONT OF BUILDING

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: 1" = 10'
DRAWING NO.: C-1.01 REV. NO.: 1

DWG NAME: Israel-Wastewater-Base.dwg



LEGEND

- IRON PIPE / CONCRETE MONUNMENT FOUND
- EXISTING TREELINE
- EXISTING GRADE CONTOUR LINES (5 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE PROPERTY LINES
- EXISTING WOODEN FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING SEWER LINE/MANHOLE
- EXISTING STORM LINE/MANHOLE/BASIN
- EXISTING OVERHEAD ELECTRIC LINE/POWER POLE
- EXISTING UNDERGROUND POWER
- EXISTING WATER LINE/HYDRANT/VALVE/SHUTOFF
- EXISTING UNDERGROUND COMMUNICATIONS
- MAPPED FEMA BFE
- PROPOSED SEWER LINE/MANHOLE
- PROPOSED SEWER LINE/MANHOLE/BASIN
- PROPOSED UNDERDRAIN/ FRENCH DRAIN/YARD DRAIN
- PROPOSED WATER LINE/HYDRANT/VALVE/SHUTOFF
- PROPOSED GRADE CONTOUR LINES (5 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (1 FOOT INTERVALS)

NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 VERMONT STATE PLANE 4400 (US SURVEY FEET). ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED 2013 STATE OF VERMONT LiDAR AND FIELD SURVEY BY KREBS AND LANSING IN THE SUMMER OF 2023. KREBS AND LANSING SURVEYED ONLY AREA AROUND THE PROPOSED PROJECT.
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROJECT PROPERTY IS SHOWN BASED ON A SURVEY BY GRENIER ENGINEERING P.C. TITLED "SURVEY OF VILLAGE OF WATERBURY 51 SOUTH MAIN FORMER TOWN OFFICES" DATED NOVEMBER 2015 AND MONUMENTATION FOUND IN THE AREA SURVEYED FOR THE PROPOSED WORK. ALL OTHER PROPERTY LINES SHOWN ON THIS PLAN ARE FROM TAX MAP INFORMATION PROVIDED BY THE TOWN. PROPERTY LINES HAVE BEEN ADJUSTED BASE ON MONUMENTATION FOUND IN THE FIELD AND EVIDENCE IN AERIAL PHOTOGRAPHY.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :
Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:
Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

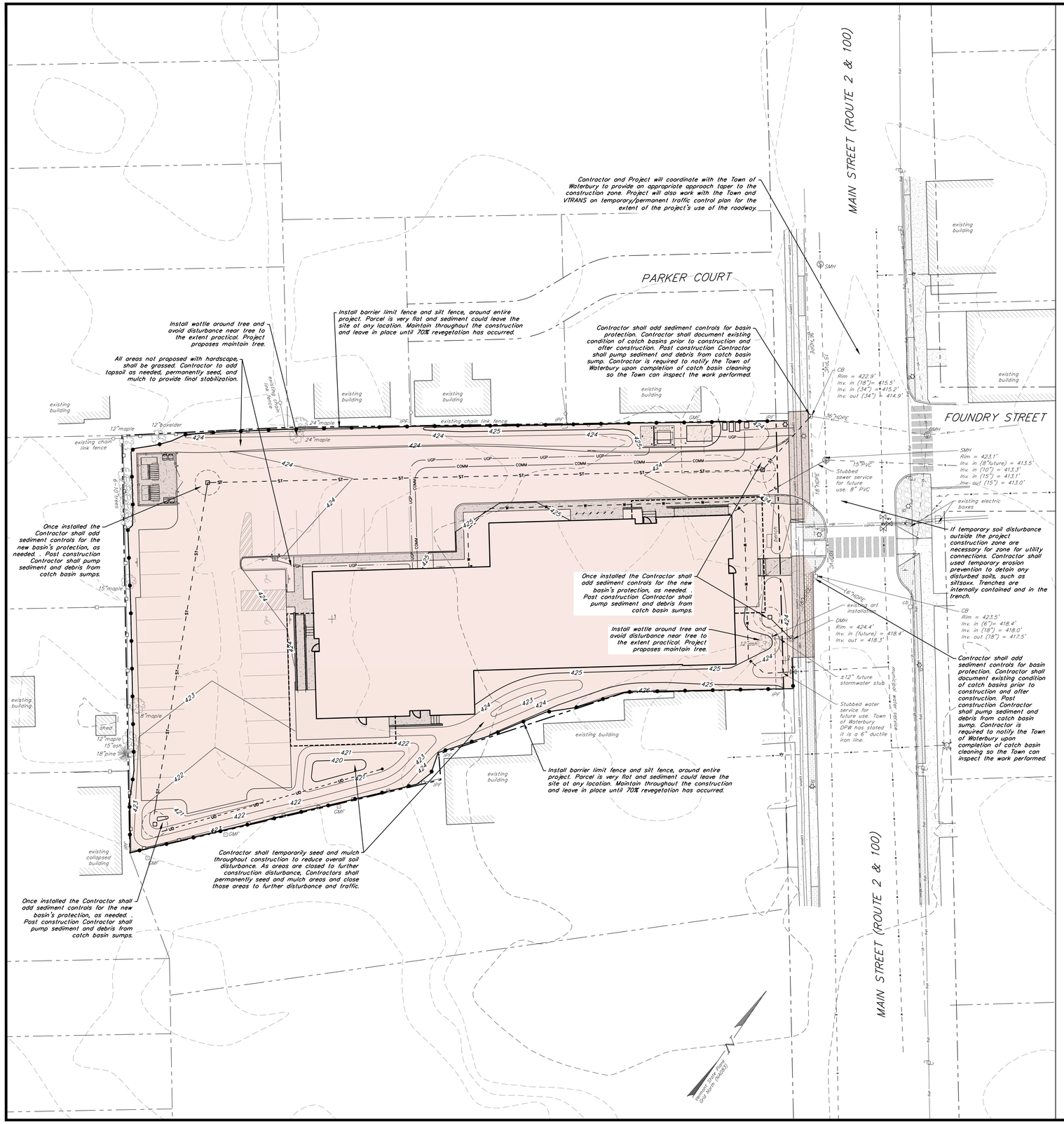
0' 5' 10' 20' 30'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 10')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates for DRB Comments	09/27/23

DRAWING TITLE:
PROPOSED SITE PLAN DETAIL REAR OF BUILDING

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: 1" = 10'
DRAWING NO.: C-1.02 REV. NO.: 1

DWG NAME: Target-Wastewater-Base.dwg



LEGEND

- IRON PIPE / CONCRETE MONUNMENT FOUND
- EXISTING TREELINE
- EXISTING GRADE CONTOUR LINES (5 FOOT INTERVALS)
- EXISTING GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE PROPERTY LINES
- EXISTING WOODEN FENCE
- EXISTING CHAIN LINK FENCE
- EXISTING SEWER LINE/MANHOLE
- EXISTING STORM LINE/MANHOLE/BASIN
- EXISTING OVERHEAD ELECTRIC LINE/POWER POLE
- EXISTING UNDERGROUND POWER
- EXISTING WATER LINE/HYDRANT/VALVE/SHUTOFF
- EXISTING UNDERGROUND COMMUNICATIONS
- MAPPED FEMA BFE
- PROPOSED SEWER LINE/MANHOLE
- PROPOSED SEWER LINE/MANHOLE/BASIN
- PROPOSED UNDERDRAIN/ FRENCH DRAIN/YARD DRAIN
- PROPOSED WATER LINE/HYDRANT/VALVE/SHUTOFF
- PROPOSED GRADE CONTOUR LINES (5 FOOT INTERVALS)
- PROPOSED GRADE CONTOUR LINES (1 FOOT INTERVALS)
- APPROXIMATE LIMITS OF DISTURBANCE (LOD)
- PROPOSED EROSION PREVENTION AND SEDIMENT CONTROL SILT FENCE PERIMETER CONTROLS AND CONSTRUCTION LIMIT BARRIER FENCE

NOTES:

1. ASPECTS OF PLAN ARE APPROXIMATE AND DERIVED FROM AERIAL PHOTOGRAPHY.
2. THE HORIZONTAL COORDINATE SYSTEM IS BASED ON NAD83 VERMONT STATE PLANE 4400 (US SURVEY FEET). ELEVATIONS ARE BASED ON THE NAVD88 (US SURVEY FEET).
3. EXISTING GROUND CONTOUR ELEVATIONS ARE BASED 2013 STATE OF VERMONT LIDAR AND FIELD SURVEY BY KREBS AND LANSING IN THE SUMMER OF 2023. KREBS AND LANSING SURVEYED ONLY AREA AROUND THE PROPOSED PROJECT.
4. UTILITIES ARE NOT WARRANTED TO BE COMPLETE OR ACCURATE, CONTRACTOR SHALL CONTACT DIG SAFE BEFORE BEGINNING ANY EXCAVATION.
5. THIS IS IN NO WAY A BOUNDARY SURVEY. PROJECT PROPERTY IS SHOWN BASED ON A SURVEY BY GRENIER ENGINEERING P.C. TITLED "SURVEY OF VILLAGE OF WATERBURY 51 SOUTH MAIN FORMER TOWN OFFICES" DATED NOVEMBER 2015 AND MONUMENTATION FOUND IN THE AREA SURVEYED FOR THE PROPOSED WORK. ALL OTHER PROPERTY LINES SHOWN ON THIS PLAN ARE FROM TAX MAP INFORMATION PROVIDED BY THE TOWN. PROPERTY LINES HAVE BEEN ADJUSTED BASE ON MONUMENTATION FOUND IN THE FIELD AND EVIDENCE IN AERIAL PHOTOGRAPHY.

DISTURBED SOILS CALCULATION

PROPOSED DISTURBED SOIL

- DISTURBANCES FOR CONSTRUCTION PROPOSED DIRECT EXCAVATION WORK. SHOWN IN LIGHT BROWN ON PLAN = ±35,500 S.F. (0.82 ACRES)

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

0' 10' 20' 40' 60'
0" 1" 2" 3"
STANDARD GRAPHIC SCALE (1" = 20')
VALID WHEN PLOTTED ON 24" BY 36" MEDIA

REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates for DRB Comments	09/27/23

DRAWING TITLE:

PROPOSED
EROSION PREVENTION AND
SEDIMENT CONTROL

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: 1" = 20'
DRAWING NO.: C-1.03 REV. NO.: 1

DWG NAME: Israel-Wastewater-Base.dwg

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DISTURBED AREAS BACK TO ORIGINAL CONDITION, INCLUDING BUT NOT LIMITED TO CURBING, SIDEWALKS, ROAD, PARKING AREAS, LANDSCAPING, SITE LIGHTING, ELECTRICAL, AND ETC. ALL ASPHALT SHALL BE SAW-CUT PRIOR TO PAVING.
2. THE METHODS AND MATERIALS OF CONSTRUCTION SHALL CONFORM TO THE LATEST STANDARDS OF THE STATE OF VERMONT AND TOWN OF WATERBURY, ALL WORK SHALL BE IN CONFORMANCE WITH ALL PERMITS AND APPROVALS ISSUED FOR THE PROJECT. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DIRECTED BY ENGINEER. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND COMPLETED IN THE TIME SPECIFIED BY OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND MATERIALS SHOWN AND REQUIRED TO MAKE THE JOB COMPLETE. THESE DRAWINGS DO NOT SHOW EVERY FITTING OR APPURTENANCE. MATERIALS SHALL BE AS SPECIFIED ON THE DRAWINGS. MANUFACTURER'S PRODUCT SPECIFICATIONS SHALL BE SUBMITTED FOR ALL MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. THE LOCATION AND SIZE OF EXISTING UNDERGROUND UTILITIES IS NOT WARRANTED TO BE EXACT OR COMPLETE. THE CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES AND SHALL CONTACT THE AFFECTED UTILITY COMPANY, THE ENGINEER AND THE MUNICIPALITY PRIOR TO MAKING ANY HOOK UPS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXISTING UTILITIES AND THEIR UNINTERRUPTED SERVICES. ALL OFF-SITE BACKFILL, SHEETING, SHORING, DEWATERING, CLEARING AND GRUBBING, EROSION CONTROL, DUST CONTROL, TRAFFIC CONTROL, GRADING, AND ALL INCIDENTALS SHALL BE INCLUDED AS PART OF THE REQUIRED WORK.
5. THE CONTRACTOR SHALL VERIFY ALL TEMPORARY BENCH MARKS BEFORE USE.
6. THE WORKMEN AND PUBLIC SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE GUARDED BY THE USE OF ADEQUATE BARRICADES OR FLAGMEN. ALL BARRICADES LEFT IN POSITION OVERNIGHT ARE TO BE PROPERLY LIGHTED. KEROSENE POTS ARE NOT ACCEPTABLE. WHEN WORK NARROWS THE USABLE PAVEMENT, FLAGMEN SHALL BE EMPLOYED TO AID THE FLOW OF TRAFFIC SO THAT THERE WILL BE NO UNDUE DELAYS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE SAFETY OF ALL WORKMEN, THE GENERAL PUBLIC AND ALL DAMAGES TO PROPERTY OCCURRING FROM OR UPON THE WORK OCCASIONED BY NEGLIGENCE OR OTHERWISE GROWING OUT OF A FAILURE ON THE PART OF THE CONTRACTOR TO PROTECT PERSONS OR PROPERTY FROM HAZARDS OF OPEN TRENCHES, MATERIALS, OR EQUIPMENT AT ANY TIME OF THE DAY OR NIGHT WITHIN THE WORKING AREA. ALL WORK SHALL BE IN CONFORMANCE TO OSHA REGULATIONS, TITLE 19, PARTS 1926.651 AND 1926.652, AND APPLICABLE TO VOSHA REGULATIONS.
7. THE CONTRACTOR SHALL VERIFY ALL UTILITY INTERSECTIONS AND CONTACT ENGINEER AND OWNER WITH CONFLICTS.
8. THE CONTRACTOR SHALL CALL, DIG SAFE PRIOR TO ANY EXCAVATION.
9. THE CONTRACTOR SHALL COORDINATE FINAL LOCATION AND INVERTS FOR WATER, SEWER, AND STORM BUILDING CONNECTIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, AND MECHANICAL ENGINEER.
10. ALL STUMPS, ROCK, AND OTHER NON-APPROVED TRENCH BACKFILL MATERIAL DISCOVERED DURING CONSTRUCTION IS THE EXCLUSIVE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF IN A STATE APPROVED DISPOSAL LOCATION. ALL EXISTING SOILS REUSED FOR FILL SHALL CONFORM TO ALL APPLICABLE SECTIONS OF VTRANS SPECIFICATIONS SECTION 203-EXCAVATION & EMBANKMENTS. CONTRACTOR SHALL REVIEW SOIL INVESTIGATION REPORT AND SOILS LOGS PRIOR TO BID. ANY SOIL REUSED AS FILL UNDER ROADS AND APPLICABLE CONCRETE SIDEWALKS SHALL PASS A SUBGRADE PROOF ROLL WITH A LOADED TANDEM. FILL SOILS THAT DO NOT PASS A SUBGRADE PROOF ROLL SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
11. ALL PASSING SIEVE, PROCTOR, AND COMPACTION TESTING EXPENSES SHALL BE PAID BY THE CONTRACTOR. TESTING COORDINATION, ALL OTHER REQUIRED TESTING, AND EXPENSES FOR FAILED TESTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
12. THE CONTRACTOR SHALL CONTACT THE GREEN MOUNTAIN POWER (GMP) PRIOR TO ANY WORK IN THE VICINITY OF THE EXISTING ELECTRIC CONDUITS.
13. THIS PROJECT WILL NOT REQUIRE COVERAGE UNDER AN STATE OF VERMONT GENERAL CONSTRUCTION STORMWATER DISCHARGE PERMIT. THE CONTRACTOR WILL FOLLOW THE RULES, REGULATIONS, AND DIRECTION OUTLINED IN THE STATE OF VERMONT "LOW RISK HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" FROM FEBRUARY 2020.THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, MAINTAINING AND REMOVING ALL EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THE PLANS OR DETAILS AND, TO THE MAXIMUM EXTENT PRACTICAL, TO MINIMIZE POTENTIAL CONTAMINATION OF STORMWATER RUNOFF FROM THE CONSTRUCTION ACTIVITIES.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL "AS-BUILT" MEASUREMENT AND DRAFTING REQUIREMENTS AS OUTLINED ON THE DETAIL SHEETS. ALL TRENCH EXCAVATIONS SHALL REMAIN OPEN UNTIL ALL AS-BUILT SURVEY SHOTS HAVE BEEN TAKEN. PROGRESS RECORD DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AS INDICATED IN THE RECORD DRAWING SPECIFICATIONS.
15. SEE EROSION PREVENTION AND SEDIMENT CONTROL AND LOGISTICS PLANS FOR LOCATIONS OF STAGING / STORAGE AREAS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIGNAGE AND CONSTRUCTION BARRIER/SAFETY FENCING NECESSARY FOR PROVIDING SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH OR AROUND THE SITE DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE THIS WITH THE TOWN OF WATERBURY AND THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
17. DEFINITION OF "PRECONSTRUCTION EXCAVATION" FOR THESE CONTRACT DOCUMENTS SHALL BE: THE SITE CONTRACTOR SHALL EXPOSE UTILITIES AND OBTAIN ALL NECESSARY INFORMATION, INCLUDING BUT NOT LIMITED TO, INVERT ELEVATION, SIZE, DEPTH, PIPE TYPE, JOINT LOCATION, ETC. CONTRACTOR SHALL TRANSIT SURVEY THE LOCATION AND ELEVATIONS OF THE UTILITY. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH SKETCHES INDICATING HORIZONTAL AND VERTICAL INFORMATION OF PIPE OR CONDUIT TYPE AND SIZE, CROSS-SECTION INFORMATION, CONCRETE ENCASEMENT INFORMATION (TOP AND BOTTOM ELEVATIONS, WIDTH, ETC.), JOINT LOCATION, ETC. OF EACH REQUIRED EXISTING UNDERGROUND UTILITY. ACCURACY OF HORIZONTAL LOCATION IS WITHIN 1 FOOT, AND ACCURACY OF VERTICAL ELEVATION IS WITHIN 0.02 FT. (1/4"). COORDINATE ALL EXCAVATION WITH CITY, OWNER, AND ENGINEER. PRECONSTRUCTION EXCAVATIONS SHALL OCCUR PRIOR TO ORDERING STRUCTURES AND PRIOR TO UTILITY CONSTRUCTION TO FACILITATE REDESIGN AND/OR DESIGN CONFIRMATION.
18. THE LOCATION OF THE PRECONSTRUCTION EXCAVATION SYMBOLS DOES NOT NECESSARILY INDICATE THE LOCATION OF THE BURIED UTILITY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIND AND EXPOSE THE UTILITY.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF IMPORTING AND PLACING TOPSOIL AND/OR COMPOST NECESSARY TO COMPLETE THE PROJECT. CONTRACTOR SHALL TEST TOPSOIL FOR APPROVAL BY THE OWNER AND ENGINEER.

10. ALL SEWER AND STORM PIPES SHALL BE PVC SDR 35 UNLESS OTHERWISE NOTED. ALL NEW SANITARY AND STORM PIPES SHALL BE LAID WITH A LASER TO ELEVATION AND SLOPE AS SHOWN ON THE PLANS.
11. CORE AND BOOT ALL EXISTING STRUCTURES UNLESS OTHERWISE NOTED.
12. ALL NEW CATCH BASINS AND SANITARY SEWER MANHOLE MUST HAVE ONE 6" PRECAST CONCRETE GRADE RING.
13. ALL WATERLINE PIPE SHALL BE DUCTILE IRON CLASS 52 OR C900 PVC. ALL BENDS AND FITTINGS SHALL HAVE POURED IN PLACE THRUST BLOCKS, MIXED ONSITE CONCRETE IS NOT ALLOWED.
14. TEMPORARY GROUNDWATER, STORMWATER, AND SEWER BY-PASS PUMPING AND/OR DIVERSION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY PUMPS AND EQUIPMENT TO PERFORM THE WORK. OVERNIGHT PUMPING IS NOT ALLOWED.
15. ALL SIDEWALKS SHALL HAVE 2% MAXIMUM CROSS SLOPE. ALL RAMPS AND STAIRS SHALL HAVE A LANDING AT THE BOTTOM WITH A MAXIMUM SLOPE OF 2% FOR 5 FEET.
16. CONTRACTOR TO PIN CONCRETE SIDEWALK/SLABS TO ALL CONTACT POINTS WITH STAIRS, BUILDING, BIKE SLAB, RETAINING WALLS, ETC.
17. CONTRACTOR SHALL MAINTAIN FULL OCCUPANCY AND FIRE DEPARTMENT ACCESS TO ALL SURROUNDING BUILDINGS. COORDINATE ALL TEMPORARY ACCESS WITH THE MUNICIPALITY.
18. REMOVAL OF ALL EROSION CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR.
19. AT THE END OF THE PROJECT, CLEAN THE SUMPS OF ALL NEW AND EXISTING CATCH BASINS AND STORM MANHOLES WITHIN THE PROJECT LIMITS.
20. ELECTRICAL AND LIGHTING ARE SHOWN FOR ILLUSTRATIVE/COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR DESIGN.
21. SEE LANDSCAPE AND/OR STRUCTURAL PLANS FOR ALL RETAINING WALLS, UTILITY PADS, STAIRS, AND EXTERIOR CONCRETE AT DOORS.
22. REFER TO PLUMBING, MECHANICAL AND/OR FIRE PROTECTION PLANS FOR WATER, SEWER AND STORM DESIGN WITHIN FIVE FEET OF THE BUILDING.

EPSC GENERAL NOTES:

1. EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) PRACTICES SHALL BE IMPLEMENTED IN ALL AREAS WHERE THERE IS AN INCREASED RISK OF EROSION, AND WHERE THERE IS POTENTIAL FOR DISCHARGE OF STORMWATER RUNOFF (EITHER DIRECT OR INDIRECT) TO A WATER BODY.
2. EPSC MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN A GIVEN DRAINAGE AREA WITH THE EXCEPTION OF LAND DISTURBANCE THAT MAY RESULT FROM ACCESSING THE AREA(S) WITH EQUIPMENT IN WHICH EPSC MEASURES ARE TO BE INSTALLED. THIS EXCEPTION INCLUDES LAND DISTURBANCE THAT MAY RESULT FROM ACCESS OF EQUIPMENT THAT IS NEEDED FOR:EXPLORATION AND/OR EPSC MEASURE INSTALLATION PHASES OF THE PROJECT. TEMPORARY SEDIMENT BASINS, TEMPORARY SEDIMENT TRAPS, PERIMETER DIKES, TEMPORARY SEDIMENT BARRIERS, AND OTHER TEMPORARY MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE WITH THE EXCEPTION OF THOSE ACTIVITIES STATED ABOVE. EARTH DISTURBANCE INCLUDES STUMPING AND GRUBBING OF CLEARED AREAS.
3. EPSC MEASURES SHALL BE INSTALLED PURSUANT TO THE EPSC PLAN, THE 2020 STATE OF VERMONT LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL, THE 2020 VERMONT EROSION PREVENTION AND SEDIMENT CONTROL STANDARDS AND SPECIFICATIONS, AND/OR ANY OTHER RELEVANT PROJECT PERMITS.
4. ALL PROPOSED CHANGES SHALL BE APPROVED BY THE ON-SITE PLAN COORDINATOR (OSPC) OR HIS/HER DESIGNEE PRIOR TO IMPLEMENTATION.
5. LOGGING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH ACCEPTABLE MANAGEMENT PRACTICES FOR MAINTAINING WATER QUALITY ON LOGGING JOBS IN VERMONT (AMPS, 2006).
6. PERMISSION MUST BE GRANTED BY VT DEC PRIOR TO USE OF ANY SUPPORT ACTIVITIES OCCURRING OUTSIDE OF THE APPROVED PROJECT BOUNDARIES.
7. ALL PARTIES ASSOCIATED WITH CONSTRUCTION ACTIVITIES WHO MEET EITHER OF THE FOLLOWING TWO CRITERIA OF "PRINCIPAL OPERATOR" MUST OBTAIN COVERAGE UNDER THE CONSTRUCTION STORMWATER DISCHARGE PERMIT FOR THE PROJECT PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES BY THAT OPERATOR:
   A. THE PARTY HAS OPERATIONAL CONTROL OVER CONSTRUCTION PLANS AND SPECIFICATION, INCLUDING BUT NOT LIMITED TO THE ABILITY TO MAKE MODIFICATIONS TO THOSE PLANS AND SPECIFICATIONS; OR
   B. THE PARTY HAS CONTINUOUS DAY-TO-DAY OPERATIONAL CONTROL OF THOSE ACTIVITIES AT THE PROJECT THAT ARE NECESSARY TO ENSURE COMPLIANCE WITH AN EPSC PLAN FOR THE SITE OR OTHER PERMIT CONDITIONS (E.G., THEY ARE AUTHORIZED TO DIRECT WORKERS AT A SITE TO CARRY OUT ACTIVITIES REQUIRED BY THE EPSC PLAN OR COMPLY WITH OTHER PERMIT CONDITIONS).
8. EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED TO THE EXTENT PRACTICABLE.
9. A VEGETATED BUFFER SHALL BE MAINTAINED FOR WATER BODIES WHERE FEASIBLE (E.G., WETLANDS AND STREAMS).
10. TO THE EXTENT PRACTICABLE, SURFACE FLOW SHALL BE DIVERTED AWAY FROM EXPOSED SOILS VIA DIVERSION BERMS, EARTH DIKES, PERIMETER DIKES/SWALES, TEMPORARY SWALES, WATER BARS, AND/OR CHECK DAMS.
11. RESOURCE AREAS (E.G., WETLANDS, STREAMS, RTE PLANT SPECIES) SHALL BE FLAGGED PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES OCCURRING WITHIN CLOSE PROXIMITY TO THOSE AREAS.
12. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT VIOLATE WATER QUALITY STANDARDS OR CONTRIBUTE TO EROSION. DEWATERING DETAILS SHALL BE REVIEWED AND APPROVED BY OSPC PRIOR TO USE.
13. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN STEEP SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL (SEE DETAILS), FLUME, OR SLOPE DRAIN STRUCTURE.
14. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
   A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
   B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES, WHERE FEASIBLE, BUT NOT IN RESOURCE AREAS.

8. WHERE FEASIBLE, ALL SEDIMENT REMOVED FROM SEDIMENT CONTROL PRACTICES AS PART OF MAINTENANCE SHALL BE DISPOSED OF IN AN AREA THAT IS AT LEAST ONE OF THE FOLLOWING, WITH IMMEDIATE STABILIZATION FOLLOWING DISPOSAL OF MATERIAL:
   A. LESS THAN 5±% SLOPE
   B. AT LEAST 100 FEET FROM ANY DOWNSLOPE WATER BODY OR CONVEYANCE TO A WATER BODY, INCLUDING A DITCH
   C. VEGETATED
9. DISTURBED AREAS BORDERING OR DRAINING TO EXISTING ROADS SHALL HAVE AN APPROPRIATE SEDIMENT BARRIER (E.G., SILT FENCE) SPANNING THE EDGE OF THE DISTURBANCE TO PREVENT WASHING OF SEDIMENT ONTO ROADWAYS OR INTO ROAD DITCHES.
10. IN ADVANCE OF PREDICTED RAINFALL OR SNOWMELT, ALL EPSC MEASURES THAT ARE LOCATED IN ACTIVE AREAS OF EARTH DISTURBANCE SHALL BE INSPECTED AND REPAIRED, AS NEEDED. IF NECESSARY, THIS SHALL INCLUDE TEMPORARY STABILIZATION OF ALL DISTURBED SOILS ON THE SITE IN ADVANCE OF THE ANTICIPATED RUNOFF PERIOD.
11. DUST CONTROL SHALL BE HANDLED VIA WATER APPLICATION TO ROADWAYS AND OTHER AREAS WHERE DUST MAY BE GENERATED.

GENERAL GRADING AND SITE WORK NOTES

1. ALL AREA DISTURBED AND ALL AREAS WITHIN THE CLEARING LIMITS SHALL BE GRADED AND COVERED WITH A MINIMUM OF 4" OF LOAM TOPSOIL. THE AREAS TO BE LOAMED SHALL BE FREE AND CLEAR OF ROOTS, WASTE MATERIAL AND OTHER DELETERIOUS MATERIAL. TOPSOIL SHALL BE SPREAD AND LIGHTLY COMPACTED TO A DEPTH OF 6". TOPSOIL SHALL BE APPROVED BY THE ENGINEER. ALL SIDE SLOPES ARE TO BE LOAMED.
2. ALL TURF ESTABLISHMENT SHALL BE IN ACCORDANCE WITH SECTION 651 OF THE VT STANDARD SPECIFICATIONS 2018 AND THE MUNICIPALITY SPECIFICATIONS. MULCHING SHALL FOLLOW SEEDING BY NO MORE THAN 24 HOURS.
3. ALL CUT SLOPES SHALL BE NO STEEPER THAN 2.0H ON 1.0V. ALL FILL SLOPES SHALL BE NO STEEPER THAN 2.0H ON 1.0V.
4. THE CONTRACTOR SHALL NOT DISTURB ANY GROUND BETWEEN OCTOBER 15TH BETWEEN APRIL 15TH WINTER MONTHS, UNLESS APPROVED BY THE ENGINEER.
5. TEMPORARY SILT FENCE SHALL BE ERECTED PRIOR TO ANY CLEARING OR CONSTRUCTION. FENCING MAY BE ERECTED IN PHASES, BUT IN NO CASE SHALL GROUND DISTURBANCE PROCEED FENCING. SPECIAL AREAS MAY BE DESIGNATED BY THE OWNER FOR PRESERVATION OF EXISTING TREES. THESE AREAS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE NO DAMAGE IS DONE TO DESIGNATED TREES.
6. EXISTING PLANTINGS ARE LOCATED IN GENERAL AREAS AS SHOWN ON THIS PLAN. CONTRACTOR SHALL PROTECT PLANTINGS SO AS NOT TO DAMAGE THESE OR THEIR ROOT SYSTEMS.
7. SLOPE STABILITY BASED UPON UNSATURATED SOIL CONDITIONS. IF DURING CONSTRUCTION SATURATED SOILS ARE ENCOUNTERED, CONTACT THE ENGINEER IMMEDIATELY.

ALL CONNECTIONS TO MUNICIPAL SEWER, WATER, AND STORMWATER UTILITIES INSTALLED ON THE PROJECT TO BE OBSERVED BY THE ENGINEER AND THE AUTHORIZED REPRESENTATIVE OF THE UTILITY, THE TOWN OF WATERBURY, AND THE WATER DISTRICT PRIOR TO BACKFILLING THE UTILITY BEING INSTALLED. THE ENGINEER SHALL BE NOTIFIED 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISIONS OF THE WATER DISTRICT SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES. PROJECT SHALL FOLLOW ALL DETAILS IN THIS PLAN SET, WATERBURY DPW SPECIFICATIONS, AND THE WATER DISTRICT SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.

WATER & SEWER CONSTRUCTION NOTES

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION OF WATER MAIN, STORM AND SANITARY SEWER SYSTEMS AS SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY ADAPTERS, FITTINGS, ETC. TO MAKE CONNECTIONS TO THE EXISTING AND PROPOSED UNITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK SHOWN OR IMPLIED ON THE PLANS AND/OR REFERENCED IN THE SPECIFICATIONS AND PERMITS. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL BY THE ENGINEER, ALL TYPES OF MATERIALS AND PRODUCTS USED.
2. THE CONTRACTOR SHALL COORDINATE ALL WORK ON THE WATER SUPPLY SYSTEM WITH THE OWNER, THE TOWN OF WATERBURY, WATERBURY PUBLIC WORKS, THE WATER DISTRICT, AND THE CIVIL ENGINEER. ALL WATER INSTALLATION WORK AND WATER DISTRIBUTION MATERIALS MUST COMPLY WITH THE CURRENT WPW SPECIFICATIONS.
3. THESE PLANS ARE NOT RESPONSIBLE FOR DESIGN OF WATER AND SEWER SERVICES WITHIN 5 FEET OF THE BUILDING. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING THE SERVICES TO THE PLUMBING AND/OR FIRE SYSTEM CONNECTION WITHIN THE BUILDING. SEE PLUMBING ENGINEER, MECHANICAL ENGINEER AND/OR FIRE PROTECTION PLANS FOR SCOPE, DESIGN AND SPECIFICATIONS WITHIN 5 FT. OF THE BUILDING.
4. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS AND APPURTENANCES TO COMPLETE THE WATERLINE CONSTRUCTION WORK. THIS INCLUDES TEMPORARY FITTINGS AND GAUGES NECESSARY TO SAFELY COMPLETE THE FLUSHING ACTIVITIES REQUIRED PRIOR TO MAKING CONNECTIONS WITH BUILDING PLUMBING.
5. THE PROJECT SHALL BE CONSTRUCTED, COMPLETED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH THE APPROVED PLANS. NO CHANGES SHALL BE MADE IN THE PROJECT WITH OUT THE WRITTEN APPROVAL OF THE TOWN, WATER DISTRICT, AND THE CIVIL ENGINEER. A COPY OF THE FINAL APPROVED PLANS SHALL BE SUBMITTED TO THE TOWN PRIOR TO CONSTRUCTION OF THE WATER SYSTEM IMPROVEMENTS.
6. THE TOWN AND WATER DISTRICT SHALL BE NOTIFIED IN ADVANCE TO INSPECT ALL MECHANICAL JOINTS FITTINGS, MAIN LINE TAPS, APPURTENANCES, THRUST BLOCKS, WATER LINE CROSSINGS, AND TESTING PRIOR TO OCCURRENCE OR BACKFILLING.
7. ALL DOMESTIC SERVICES AND FIRE SPRINKLER SYSTEMS THAT ARE CONNECTED TO THE PUBLIC WATER SYSTEM SHALL BE PROTECTED WITH A BACKFLOW PREVENTION ASSEMBLY, AND AN APPROPRIATE THERMAL EXPANSION SYSTEM. THE MECHANICAL CONTRACTOR SHALL COORDINATE APPROVED BACKFLOW PREVENTION WITH THE TOWN AND WATER DISTRICT.

WATER MAINS

1. APPLIES TO NEW DOMESTIC WATER MAINS AND SERVICES.
2. THE PIPE FOR WATER MAIN SHALL BE CL52 DUCTILE IRON OR C900 PVC. DUCTILE IRON FITTINGS SHALL CONFORM TO AWWA C110, 350 POUNDS WORKING PRESSURE. VALVES SHALL BE MANUFACTURED TO MEET ALL REQUIREMENTS OF AWWA SPECIFICATION C509 OR C515. FOUR-INCH AND SIX-INCH PIPE SHALL HAVE NO LESS THAN 2 BRASS WEDGES INSTALLED AT EACH JOINT. EIGHT-INCH AND 10" PIPE SHALL HAVE NO LESS THAN 3 WEDGES INSTALLED AT EACH JOINT.
3. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C600. THE PIPE SHALL BE KEPT FREE OF FOREIGN MATTER AND DEBRIS DURING INSTALLATION. WHEN THE PROCESS OF PIPE LAYING HAS STOPPED, ANY OPEN ENDS OF PIPE SHALL BE PLUGGED. THERE SHALL BE A MINIMUM OF 6'-0" COVER OVER ALL PIPE AND SERVICE LINES. ANY PIPE DEFLECTION SHALL NOT EXCEED FIFTY (50%) PERCENT OF RECOMMENDED MANUFACTURER'S MAXIMUM DEFLECTION. BACKFILL MATERIALS AND PROCEDURES SHALL BE AS DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL SHEETING AND/OR SHORING NECESSARY TO COMPLY WITH OSHA - VOSHA REGULATIONS.
4. THE TESTING OF THE WATER MAIN SHALL CONSIST OF THE TESTING OF ALL INSTALLED PIPE, SERVICES AND HYDRANTS IN ACCORDANCE WITH AWWA C600. THE TESTING SHALL CONSIST OF A PRESSURE TEST AND LEAKAGE TEST. ALL TESTING SHALL BE DONE WITH POTABLE WATER AND IN THE PRESENCE OF THE ENGINEER, REPRESENTATIVES FROM THE MUNICIPALITY AND THE MUNICIPALITY PUBLIC WORKS. THE PRESSURE TEST CONSISTS OF MAINTAINING A MINIMUM INTERNAL PIPE PRESSURE OF 200 PSI FOR TWO (2) HOURS. THE TESTING ALLOWANCE SHALL BE DEFINED AS THE MAXIMUM QUANTITY OF MAKEUP WATER THAT IS ADDED INTO A PIPELINE UNDERGOING HYDROSTATIC PRESSURE TESTING, OR ANY VALVED SECTION THEREOF, IN ORDER TO MAINTAIN PRESSURE WITHIN +/- 5 PSI OF THE SPECIFIED TEST PRESSURE (AFTER THE PIPELINE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED). NO PIPE INSTALLATION WILL BE ACCEPTED IF THE QUANTITY OF MAKEUP WATER IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{SD\sqrt{P}}{148,000}$$

L = TESTING ALLOWANCE (MAKEUP WATER), IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL PIPE DIAMETER, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST, IN POUNDS PER SQUARE INCH (GAUGE)

5. CHLORINATING OF THE SYSTEM SHALL BE ACCOMPLISHED AFTER THE WATER MAIN HAS BEEN SUCCESSFULLY PRESSURE TESTED AND THOROUGHLY FLUSHED. DISINFECTING SHALL BE IN ACCORDANCE WITH AWWA C-651. THE DISINFECTING PROCESS SHALL BE DEEMED ACCEPTABLE ONLY AFTER TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN FROM THE FLUSHED AND DISINFECTED MAIN 24 HOURS APART, SHOWS NO EVIDENCE OF BACTERIOLOGICAL CONTAMINATION. FOR PROPER DISINFECTION USE MINIMUM 25 MG/L CHLORINE CONCENTRATION FOR 24 HOURS. THE CONCENTRATION MUST REMAIN ABOVE 10 MG/L. TABLET DISINFECTING IS NOT ACCEPTABLE. DECHLORINATION SHALL BE REQUIRED WHILE FLUSHING THE ORIGINAL CHLORINE FROM THE NEW LINE. COORDINATE WITH THE THE MUNICIPALITY AND THE MUNICIPALITY PUBLIC WORKS REGARDING THE THE DISPOSAL OF THE HIGHLY CHLORINATED WATER FLUSHED FROM THE NEW WATERLINE.
6. THE WATER MAIN SHALL BE THOROUGHLY FLUSHED WITH A MINIMUM FLOW VELOCITY OF 2.5 FT/S TO FLUSH FOREIGN MATERIALS OUT OF THE VALVES AND HYDRANTS. AT LEAST 48 HOURS PRIOR TO WATERLINE FLUSHING, THE CONTRACTOR SHALL CONTACT THE OWNER, MUNICIPALITY FIRE DEPARTMENT, THE DISTRICT WATER SUPPLY COMPANY, AND THE ENGINEER.

SANITARY SEWER

1. ALL SEWER LINES AND MANHOLES SHALL BE THOROUGHLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION RULES (04/12/2019).
2. ALL SANITARY MANHOLES SHALL BE VACUUM TESTED IN THE PRESENCE OF THE ENGINEER. THE STRUCTURE SHALL BE TESTED PRIOR TO BACKFILL WITH THE LOWEST SEAM EXPOSED. TEST PROCEDURES AND PRESSURE SHALL BE DETERMINED JOINTLY BY THE LOCAL APPROVAL AGENCY AND THE ENGINEER. FAILURE OF ANY VACUUM TEST SHALL NECESSITATE REPAIR AND/OR REPLACEMENT OF THE STRUCTURE AND RETEST. WATER TESTING MANHOLES IS NOT ACCEPTABLE.
3. ALL SANITARY MAINS SHALL BE AIR TESTED IN THE PRESENCE OF THE ENGINEER. AT A MINIMUM, THE TEST PRESSURE SHALL BE 4 POUNDS PER SQUARE INCH AT THE HIGHEST POINT ALONG THE TEST FOR 4 MINUTES.
4. UTILITY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING SANITARY TESTING AT A MINIMUM OF 24 HOURS PRIOR TO THE TEST. BASED ON AVAILABILITY OF ENGINEER'S STAFF, THE ENGINEER SHALL ACCOMMODATE THE TESTING SCHEDULE WITHIN 24 HOURS OF THE CONTRACTOR REQUESTED TEST DATE/TIME.
5. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF PRE-SCHEDULED TESTING AND/OR WATER/SEWER CONSTRUCTION IS CANCELED. IF CONTRACTOR DOES NOT CONTACT ENGINEER AND ENGINEER VISITS THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEER'S FEES/MILEAGE FOR SITE VISIT.

ADDITIONAL NOTES AND TESTING REQUIREMENTS

1. IN ADDITION TO THE ABOVE REQUIREMENTS AND APPLIES TO WATER AND SANITARY SEWER.
2. ALL WATER LINES AND SEWER LINES SHALL BE THOROUGHLY TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION RULES (04/12/2019) AND THE CHAPTER 21 WATER SUPPLY RULES (03/17/2020) (THE MORE STRINGENT RULE SHALL APPLY).
3. ALL PRIVATE OR MUNICIPAL WATERLINES SHALL BE TESTED BY THE CONTRACTOR IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN AWWA C600 AND/OR NFPA 24.
4. NO WATER MAIN SHALL BE CLOSER THAN TEN (10) FEET TO ANY SANITARY SEWER OR SANITARY MANHOLE AND FIVE (5) FEET TO ANY CATCH BASIN OR STORM SEWER LINE. PROVIDE MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER MAIN AND STORM/SANITARY SEWER CROSSING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AS-BUILTS TO SERVICE LOCATIONS, AND ANY WATER MAIN FITTINGS. AS-BUILTS SHALL BE RECORDED IN ACCORDANCE WITH THE OUTLINED PROCEDURES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ENGINEER AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION ON ANY PORTION OF THE EXTERIOR WATER OR SANITARY SYSTEMS. THIS NOTIFICATION REQUIREMENT SHALL CONTINUE TO THE COMPLETION OF THE WATER AND SANITARY SYSTEMS.
7. UTILITY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING WATER AND SANITARY TESTING, WITH THE ENGINEER AND MUNICIPALITY PUBLIC WORKS, AT A MINIMUM OF 24 HOURS PRIOR TO THE TEST. BASED ON AVAILABILITY OF ENGINEER'S STAFF, THE ENGINEER SHALL ACCOMMODATE THE TESTING SCHEDULE WITHIN 24 HOURS OF THE CONTRACTOR REQUESTED TEST DATE/TIME.
8. THE CONTRACTOR SHALL PRE-TEST WATER FOR 2 HOURS. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF PRE-TEST FAILED.
9. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER IF PRE-SCHEDULED TESTING AND/OR WATER/SEWER CONSTRUCTION IS CANCELED. IF CONTRACTOR DOES NOT CONTACT ENGINEER AND ENGINEER VISITS THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEER'S FEES/MILEAGE FOR SITE VISIT.
10. THE CONTRACTOR SHALL COORDINATE WATER/SEWER CONSTRUCTION WITH THE MUNICIPALITY. THE CONTRACTOR SHALL LEAVE THRUST BLOCKS AND OTHER REQUIRED SECTIONS OF NEW LINE EXPOSED UNTIL MUNICIPALITY HAS INSPECTED AND APPROVED IT.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING
CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

DETAILS

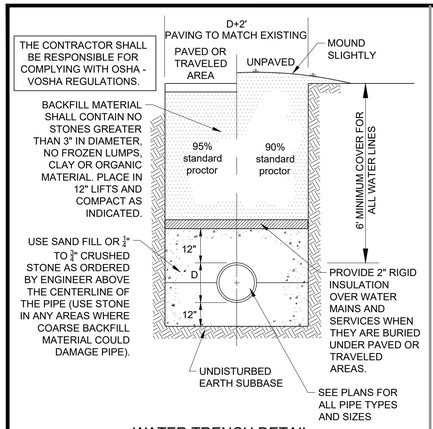
DATE ISSUED: 08/21/23

DRAWN BY: GTD CHECKED BY: GTD

PROJECT NO.: 23177 SCALE: N/A

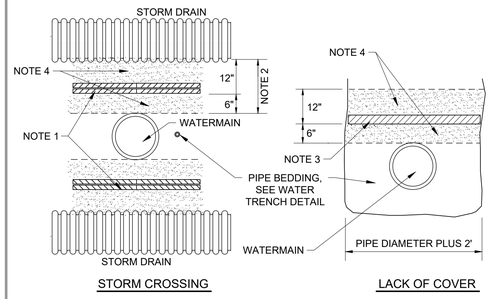
DRAWING NO.: C-2.00 REV. NO.:

DWG NAME: Israel-Wastewater-Base.dwg



WATER TRENCH DETAIL

N.T.S.



NOTES :

1. INSULATION THICKNESS BETWEEN WATER MAINS AND STORM DRAINS SHALL BE A MINIMUM OF 4" IN THICKNESS. EACH SHEET SHALL BE OFFSET ON EACH LAYER SO AS TO NOT CREATE VOIDS. INSULATION IS REQUIRED IF THE SEPARATIONS IS LESS THAN 18".
2. THE ISOLATION DISTANCES FOR INSULATING STORM DRAINS UNDER WATER MAINS ARE THE SAME AS CROSSING OVER.
3. IF COVER OVER SERVICE IS BETWEEN 5'-6', PLACE 2" THICK INSULATION BOARD OVER PIPE. IF COVER IS BETWEEN 4'-5' THEN PLACE 4" THICK INSULATION BOARD OVER PIPE. IN NO CASE SHALL THERE BE LESS THAN 5' OF COVER IN PAVED ARES OR 4' OF COVER IN GRASS AREAS.
4. BACKFILL WITH APPROVED EXCAVATED MATERIAL IN 6" LIFTS AND COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE. BACKFILL SHALL HAVE NO STONES LARGER THAN 1.5-INCHES, IN ORDER TO AVOID DAMAGING INSULATION.
5. ALL WORK SHALL CONFORM TO THESE SPECIFICATIONS AND PLANS UNLESS OTHERWISE SPECIFIED.

WATERLINE PIPE INSULATION DETAIL

N.T.S.

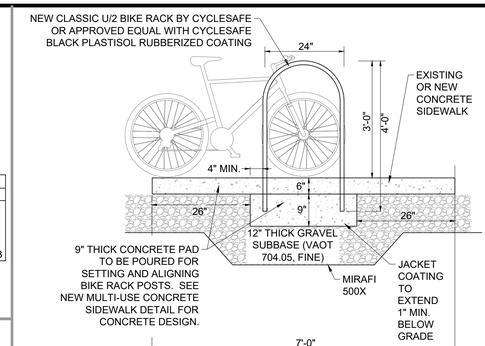
FIRE SERVICE MAIN

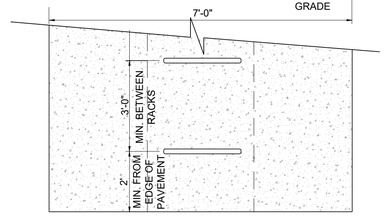
UNDERGROUND PIPING, FROM THE WATER SUPPLY TO THE SYSTEM RISER, AND LEAD-IN CONNECTIONS TO THE SYSTEM RISER SHALL BE COMPLETELY FLUSHED BEFORE THE CONNECTION IS MADE TO DOWNSTREAM FIRE PROTECTION SYSTEM PIPING. ACCEPTABLE WATER MAIN FLUSHING REQUIREMENTS ARE PROVIDED BELOW. PRIOR TO FLUSHING, THE CONTRACTOR SHALL CONTACT THE OWNER, MUNICIPAL FIRE DEPARTMENT, THE DISTRICT WATER SUPPLY COMPANY, AND THE ENGINEER. THE FLUSHING OPERATION SHALL BE CONTINUED FOR A SUFFICIENT TIME TO ENSURE THOROUGH CLEANING. THE MINIMUM RATE OF FLOW SHALL BE NOT LESS THAN ONE OF THE FOLLOWING:

1. HYDRAULICALLY CALCULATED WATER DEMAND FLOW RATE OF THE SYSTEM, INCLUDING ANY HOSE REQUIREMENTS. (PROVIDED BY THE MECHANICAL/SPRINKLER CONSULTANT)
2. FLOW NECESSARY TO PROVIDE A VELOCITY OF 10 FT/SEC (3.1 M/SEC) IN ACCORDANCE WITH THE TABLE.
3. MAXIMUM FLOW RATE AVAILABLE TO THE SYSTEM UNDER FIRE CONDITIONS. FLOW REQUIRED TO PRODUCE A VELOCITY OF 10 FT/SEC (3 M/S) IN PIPES

Pipe Size		Flow Rate	
in:	mm	gpm	L/min
4	102	390	1,476
6	152	880	3,331
8	203	1,560	5,905
10	254	2,440	9,235
12	305	3,520	13,323

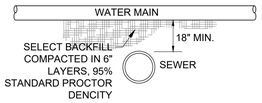
ALL CONNECTIONS TO MUNICIPAL SEWER, WATER, AND STORMWATER UTILITIES INSTALLED ON THE PROJECT TO BE OBSERVED BY THE ENGINEER AND THE AUTHORIZED REPRESENTATIVE OF THE UTILITY, THE TOWN OF WATERBURY, AND THE WATER DISTRICT PRIOR TO BACKFILLING THE UTILITY BEING INSTALLED. THE ENGINEER SHALL BE NOTIFIED 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISIONS OF THE WATER DISTRICT SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES. PROJECT SHALL FOLLOW ALL DETAILS IN THIS PLAN SET, WATERBURY DPW SPECIFICATIONS, AND THE WATER DISTRICT SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.





BIKE RACK DETAIL

N.T.S.



NOTES

1. THE LOCATION OF SEWER MAINS IN RELATION TO WATER MAINS SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED STANDARDS FOR SEWAGE WORKS" SO-CALLED TEN STATE STANDARDS AND WATER SUPPLY RULES.
2. SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED ACCORDING TO EPR, CHAPTER 1, APPENDIX 1A, 11A.
3. 18" SEPARATION SHALL BE MAINTAINED WHETHER WATER IS OVER OR UNDER SEWER. IF THIS DISTANCE CANNOT BE OBTAINED, THEN THE PIPES SHALL BE INSTALLED ACCORDING TO EPR CHAPTER 1, 11B.

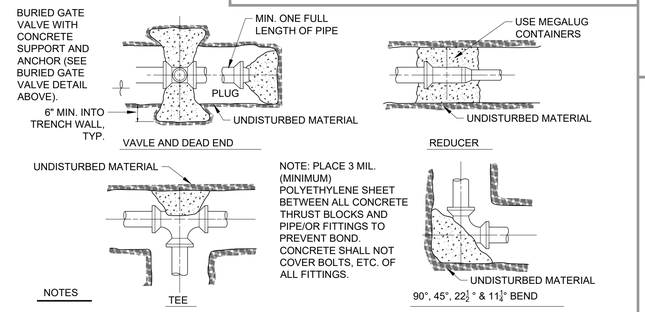
CROSSINGS

SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS POSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION:

1. THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS;
2. THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;
3. THE SECTION CONSTRUCTED TO WATER STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;
4. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.

WATER AND SEWER CROSSINGS DETAIL

N.T.S.



NOTES

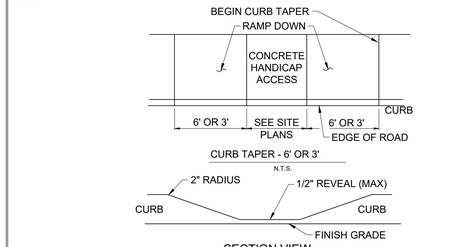
1. A THRUST BLOCK SHALL BE INSTALLED AT ALL WATER MAIN BENDS, REDUCERS, END CAPS AND TEES.
2. PRECAST THRUST BLOCKS ARE NOT ACCEPTABLE.
3. POURED CONCRETE (2,500 PSI MIN) MUST BE USED FOR THRUST BLOCKS. SACRETE IS NOT ACCEPTABLE.
4. USE EBAA MEGA-LUG, SIGMA, OR EQUAL, WEDGE-ACTION MECHANICAL JOINT RESTRAINTS WITH TWIST OFF NUTS AT ALL FITTINGS.

MINIMUM AREA OF BEARING SURFACE OF CONCRETE THRUST BLOCK (IN SQUARE FEET)

3"				4"				6"				8"				12"				SOIL CONDITION	SAFE BEARING LOAD(PSF)
ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.	ENDS & TEES	VALV 90° ELB.	REDU 45° ELB.	22.5° ELB.		
0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	Sound shale	10,000
1.0	1.0	1.0	0.5	1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	4.0	Cemented gravel & sand	4,000
1.0	1.0	1.0	0.5	2.0	0.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	Coarse & fine compact sand	3,000
1.5	2.5	1.5	1.0	2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	Medium clay (can be spaded)	2,000
3.0	4.5	2.5	1.5	5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	Soft clay	1,000
MAXIMUM WATER PRESSURE = 200 PSI (140,620 KG/M^2)																					

THRUST BLOCK DETAIL

N.T.S.

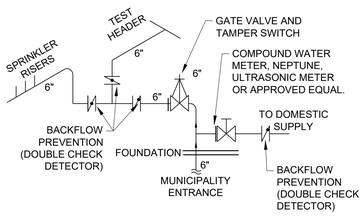


CURB TAPER - 6' OR 3'

N.T.S.

SECTION VIEW

BLANK

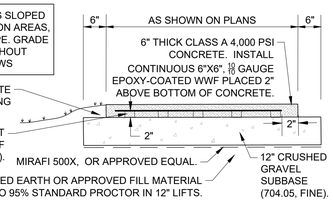


SEE MECHANICAL DRAWINGS FOR COMPLETE DESIGN AND DETAILS OF SPRINKLER SYSTEM, DOMESTIC WATER MUST BE ISOLATED FROM SPRINKLER SYSTEM WITH WATTS SERIES 709DCDA (DOUBLE CHECK DETECTOR ASSEMBLY) OR APPROVED EQUAL.

BACKFLOW PREVENTER SCHEMATIC

N.T.S.

SIDEWALKS SHALL BE CROSS SLOPED TOWARDS THE DISCONNECTION AREAS, MAXIMUM OF 2% CROSS SLOPE. GRADE SURFACES TO DRAIN WITHOUT CONCENTRATING FLOWS



NEW MULTI-USE CONCRETE SIDEWALK DETAIL

N.T.S.

NOTES FOR CONCRETE

1. BROOM FINISH CONCRETE. CONSTRUCTION JOINTS SHALL BE SPACED MAXIMUM 24' IN ALL DIRECTIONS. SAWCUT CONTROL JOINTS 1½" DEPTH AT INTERVALS EQUAL TO WIDTH OF SIDEWALK.
2. APPLY SPECCHEM CURE SHIELD, CURE & SEAL AGENT TO ALL CONCRETE SURFACES IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
3. CONCRETE CONSTRUCTION AND CURING SHALL CONFORM TO SECTION 618.03 OF THE CURRENT VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
4. CONCRETE MAY NOT BE POURED IF FROST IS PRESENT OR THAWING IN THE SUBGRADE, IF THE TEMPERATURE IS 40° F OR LESS, OR DURING UNSEASONABLE WEATHER CONDITIONS.
5. ALL CONCRETE USED IN THE CONSTRUCTION OF MULTI-USE CONCRETE SHALL BE MADE WITH PORTLAND CEMENT. THE CONCRETE SHALL MEET SECTION 541 OF THE STATE OF VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION, HAVE 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI, AND MEET THE FOLLOWING MIX DESIGN.

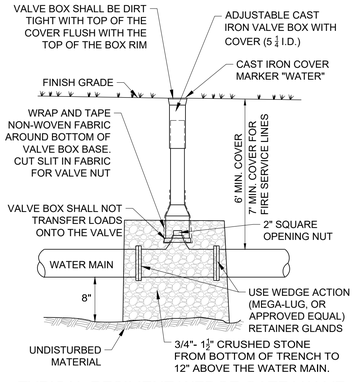
MAX. WATER-CEMENT RATIO (LB./LB.)	0.44
MIN. CEMENT FACTOR (LBS/C.Y.)	660
ENTRAINED AIR CONTENT (%)	5 - 7
SLUMP (INCHES, BEFORE ADDING HRWR)	2 - 4

   USE AIR ENTRAINED AGENT CONFORMING TO ASTM C260 WITH 5-7% TOTAL AIR. USE HIGH RANGE WATER REDUCING AGENT CONFORMING TO ASTM C494 IN ALL CONCRETE.

6. CONTRACTOR SHALL POUR AND FINISH ONE SAMPLE PANEL FOR APPROVAL BY OWNER AND ENGINEER. ALL CONCRETE SHALL MATCH THE QUALITY AND APPEARANCE OF THE SAMPLE PANEL. ANY CONCRETE THAT DOES NOT MEET THE STANDARD SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER.
7. CONCRETE SHALL BE INSTALLED IN ALTERNATING POURS AT CONSTRUCTION JOINTS. REFER TO CONCRETE CONSTRUCTION JOINT/CONTROL JOINT DETAIL
8. OWNER AND/OR CONTRACTOR IS NOT ALLOWED TO PLACE DEICING MATERIAL ON NEWLY POURED CONCRETE SIDEWALK FOR A PERIOD OF 6 MONTHS.

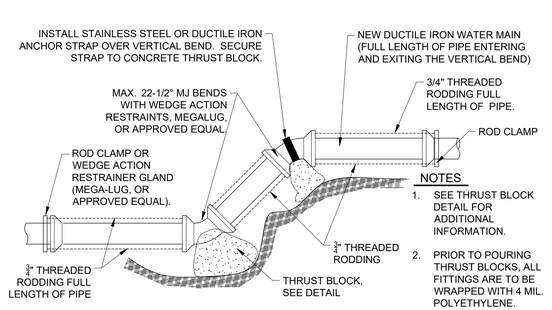
NOTES

1. VALVES SHALL BE MANUFACTURED TO MEET ALL REQUIREMENTS OF AWWA C509 OR C515 LATEST EDITION. VALVES TWELVE INCHES (12") AND SMALLER SHALL BE BUBBLE TIGHT, ZERO LEAKAGE AT 200 PSI WORKING PRESSURE. VALVES SHALL HAVE NON-RISING STEMS, OPEN COUNTER CLOCKWISE (LEFT) AND PROVIDE A TWO INCH (2") SQUARE OPERATING NUT WITH AN ARROW CAST IN THE METAL INDICATING DIRECTION OF OPENING. EACH VALVE SHALL HAVE THE MAKER'S NAME, PRESSURE RATING AND YEAR IN WHICH IT WAS MANUFACTURED CAST ON THE BODY. VALVES SHALL BE MECHANICAL JOINT ON EACH END, AND SECURED TO THE ADJOINING PIPE WITH AN APPROVED RETAINER GLAND. PRIOR TO SHIPMENT FROM THE FACTORY EACH VALVE SHALL BE TESTED BY HYDROSTATIC PRESSURE EQUAL TO TWICE THE SPECIFIED WORKING PRESSURE.
2. GATE VALVES SHALL BE MUELLER, KENNEDY, AFC, M&H OR APPROVED EQUAL ON WATER DISTRIBUTION MAINS AND MUELLER, AFC, OR APPROVED EQUAL ON CWD TRANSMISSION MAINS.
3. GATE VALVES USED TO CONVEY OR DISPENSE WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH THE VERMONT LAW (ACT 193) AN ACT RELATING TO PREVENTION OF LEAD POISONING BY EXPOSURE TO LEAD IN CONSUMER PRODUCTS, AND SHALL CONTAIN NO MORE THAN 0.25% LEAD BY WEIGHTED AVERAGE. FIXTURES CONTAINING BRASS MUST COMPLY WITH NSF/ANSI 61 ANNEX G.
4. BURIED GATE VALVES SHALL BE PROVIDED WITH A TWO INCH (2") SQUARE WRENCH NUT AND SHALL BE INSTALLED WITH A CAST IRON VALVE BOX AS REQUIRED TO ALLOW ACCESS TO THE VALVE OPERATING NUT AT ALL TIMES. IN INSTALLATIONS WHERE THE DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN FIVE FEET (5'), A VALVE STEM RISER SHALL BE PROVIDED AND INSTALLED SUCH THAT THE DEPTH FROM THE VALVE STEM RISER NUT TO GRADE IS FROM FOUR FEET TO FIVE FEET (4'-5'). VALVE STEM RISERS SHALL BE OF HIGH STRENGTH STAINLESS STEEL AND OF WELDED CONSTRUCTION (SEE VALVE STEM EXTENSION DETAIL IN CWD STANDARD SPECIFICATIONS).
5. ALL GATE VALVE BOLTS, STUDS AND NUTS SHALL BE MADE FROM CORROSION RESISTANT STAINLESS STEEL.
6. TAPPING VALVE INLET AND OUTLET CONNECTION SHALL BE STANDARDIZED MECHANICAL JOINT UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS FOR THE TYPE OF PIPE REQUIRED FOR THE BRANCH OR LATERAL PIPELINE.
7. VALVE BOXES LOCATED IN ROADWAYS SHALL HAVE ONE NON-ADJUSTABLE PAVING RISER OF A HEIGHT RANGING FROM ONE AND A HALF INCHES (1.5") TO SIX INCHES (6") AS NEEDED, TO BE BROUGHT TO FINAL PAVEMENT GRADES



TYPICAL RESILIENT WEDGE GATE VALVE

N.T.S.



NOTES

1. SEE THRUST BLOCK DETAIL FOR ADDITIONAL INFORMATION.
2. PRIOR TO POURING THRUST BLOCKS, ALL FITTINGS ARE TO BE WRAPPED WITH 4 MIL. POLYETHYLENE.
3. ALL RODDING AND HARDWARE MUST BE STAINLESS STEEL

VERTICAL BEND THRUST BLOCK RESTRAINT DETAIL

N.T.S.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :
Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:
Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

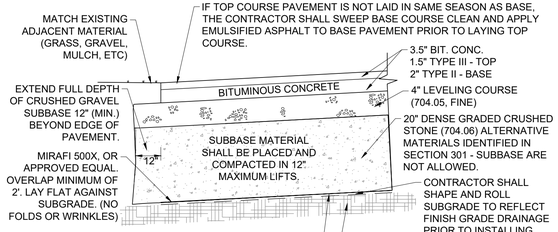
STAMP:

REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates for DRB Comments	09/27/23

DRAWING TITLE:
DETAILS

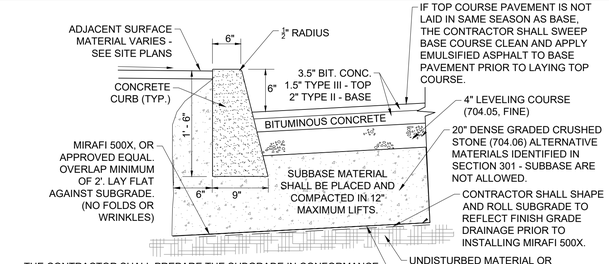
DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: N/A
DRAWING NO.: C-2.01 REV. NO.: 1

DWG NAME: Israel-Wastewater-Base.dwg



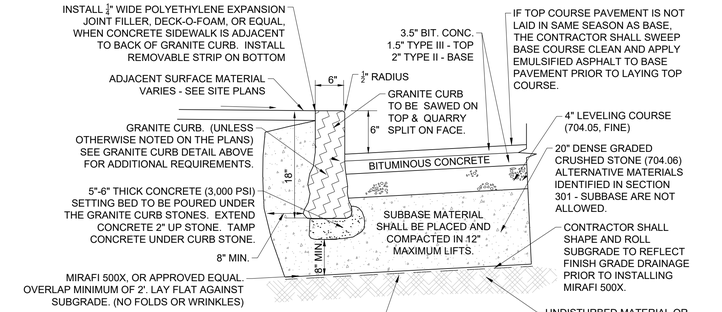
WITHOUT CURB

N.T.S.



WITH CONCRETE CURB

N.T.S.



THE CONTRACTOR SHALL PREPARE THE SUBGRADE IN CONFORMANCE WITH THE DESIGN GRADES THEN, IN THE PRESENCE OF THE ENGINEER, SHALL PROOF ROLL THE SUBGRADE WITH A LOADED TANDEM DUMP TRUCK. CONDITIONS MAY REQUIRE THE REMOVAL OF UNSUITABLE MATERIAL AND PLACEMENT OF ADDITIONAL SUBBASE. THE OWNER MUST APPROVE ANY WORK INVOLVED WITH THE REMOVAL OF UNSUITABLE MATERIAL AND PLACEMENT OF ADDITIONAL SUBBASE.

WITH GRANITE CURB

N.T.S.

GRAVEL NOTES

1. THE CONTRACTOR TO TAKE SIEVE ANALYSIS OF GRAVEL AS SOON IT ARRIVES ON SITE.
2. TRAVEL OVER GRAVEL WITH ANY VEHICLE TRACKING SOIL PRIOR TO PLACEMENT OF PAVEMENT IS PROHIBITED.
3. IF GRAVEL IS CONTAMINATED AFTER PLACEMENT, THE SITE CONTRACTOR SHALL BE RESPONSIBLE REMOVAL OF ALL CONTAMINATED GRAVEL AND PAYING FOR ALL RECOMMENDED SIEVE ANALYSIS AS DETERMINED BY THE ENGINEER.

CONTRACTOR SHALL MATCH EXISTING SUBBASE AND PAVEMENT DEPTHS. COORDINATE WITH THE TOWN OF WATERBURY.

NOTES FOR CONCRETE CURB

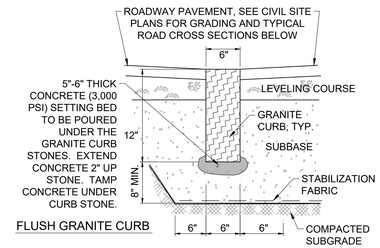
1. BROOM FINISH CONCRETE, ALL JOINTS TO BE TOOL FINISHED, EXPANSION/CONTRACTION JOINTS EVERY 20' WITH 1/2" JOINT FILLER, SCORE 1/3 TOTAL DEPTH AT 10' INTERVALS
2. APPLY 2 COATS OF SPECCHEM CURESHIELD CURE/SEAL COMPOUND TO ALL CONCRETE SURFACES, PER THE MANUFACTURER'S SPECIFICATIONS.
3. CONCRETE MAY NOT BE POURED IF FROST IS PRESENT OR THAWING IN THE SUBGRADE, IF THE TEMPERATURE IS 40° F OR LESS, OR DURING UNSEASONABLE WEATHER CONDITIONS.
4. CONCRETE CURB RADII LESS THAN 200 FT SHALL BE FORMED WITH FLEXIBLE FORMS. ALL CONCRETE USED IN THE CONSTRUCTION OF CONCRETE CURB SHALL BE AIR ENTRAINED AND MADE WITH PORTLAND CEMENT. THE CONCRETE SHALL MEET SECTION 541 OF THE STATE OF VERMONT STANDARD SPECIFICATION FOR CLASS A CONCRETE AND HAVE 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
5. JOINT FILLER SHALL BE RESILIENT NON-EXTRUDING CELLULAR FIBER JOINT, UNIFORMLY SATURATED WITH ASPHALT, OFFERING A MINIMUM OF 70% RECOVERY AFTER COMPRESSION.
6. THE ENGINEER SHALL BE CONTACTED AT LEAST 24 HOURS PRIOR TO FORMING CONCRETE CURB TO REVIEW LAYOUT.

PAVEMENT MARKING NOTES

1. TYPICAL TOWN OF WATERBURY PARKING SPACE IS 9'-0" CENTER OF LINE TO CENTER OF LINE MARKED WITH 4" WIDE YELLOW OR WHITE PAINT.
2. ADA SPACE IS YELLOW/WHITE STENCIL, YELLOW/WHITE TRIM. COORDINATE EXACT REQUIREMENTS WITH TOWN OF WATERBURY.
3. PAINT FOR PAVEMENT MARKINGS SHALL BE HYDROPHAST WATERBORNE TRAFFIC PAINT BY FRANKLIN PAINT COMPANY. IT SHALL BE REFLECTIVE, VOC COMPLIANT FAST DRYING, 100% ACRYLIC WATERBORNE TRAFFIC PAINT. PAINT FOR STOP BARS AND CROSSWALKS SHALL BE WHITE ALL OTHER LINE STRIPING SHALL BE YELLOW. CONFIRM PAINT COLOR WITH TOWN OF WATERBURY AND OWNER.
4. TRAFFIC PAINT SHALL BE APPLIED WITH A UNIFORM THICKNESS AND AT A RATE SUCH THAT NO PAVEMENT IS VISIBLE AFTER DRYING. ADDITIONAL PAINT APPLICATION WILL BE REQUIRED IF UNDERLYING PAVEMENT IS VISIBLE.

NOTES FOR GRANITE CURB

1. SEE GRANITE CURB SECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
2. ALL GRANITE CURB SHALL BE CUT TO A RADII SHOWN ON PLANS. SMALL STRAIGHT TANGENT SECTIONS OF GRANITE CURB ARE NOT ACCEPTABLE.
3. PROVIDE A 6' TAPER TO FLUSH AT END OF CURB
4. JOINTS BETWEEN STONES TO BE MORTARED PRIOR TO BACKFILLING. SEE VAOT STANDARD SPECIFICATIONS.



FLUSH GRANITE CURB

TYPICAL ROAD CROSS SECTION DETAILS - WITH CONCRETE CURBS, WITH GRANITE CURBS, AND WITHOUT CURBS

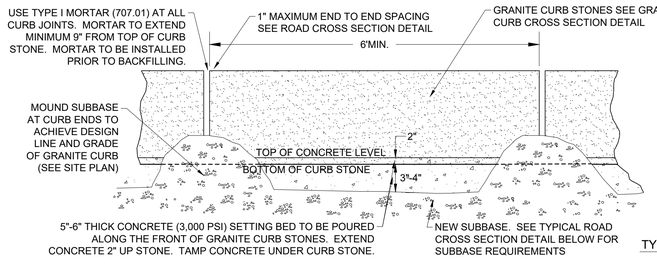
N.T.S.

ROAD CONSTRUCTION NOTES

1. ALL REFERENCES TO ROAD SHALL APPLY TO PARKING AREAS AS WELL.
2. NEW ROAD SHALL BE CONSTRUCTED TO THE LINE AND GRADE SHOWN ON THE DRAWINGS. THE ROAD AND UTILITY LOCATIONS SHALL BE AS TYPICALLY DETAILED UNLESS OTHERWISE SHOWN.
3. ALL ROAD AND PARKING CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2018, HEREAFTER CALLED VERMONT HIGHWAY SPECIFICATIONS, SPECIFICATIONS FOUND ON THESE PLANS, AND CITY/TOWN SPECIFICATIONS. IN CASE OF CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY AS DETERMINED BY THE ENGINEER. ALL GRAVEL AND STORM SEWER STRUCTURES SHALL BE APPROVED BY TOWN ENGINEER.
4. THE CONTRACTOR SHALL FOLLOW VERMONT HIGHWAY SPECIFICATIONS (2018) SECTION 203.11 FOR PLACING AND SPREADING EMBANKMENTS.
5. FILL MATERIAL FOR ROAD EMBANKMENT SHALL BE APPROVED BY THE ENGINEER. FILL SHALL BE PLACED IN 12" LIFTS, WETTED AND COMPACTED WITH SATISFACTORY COMPACTION EQUIPMENT TO 95% OF MAXIMUM DENSITY (STANDARD PROCTOR).
6. ROAD IN FILL SECTIONS SHALL BE PLACED AND COMPACTED A MINIMUM OF 3 FEET ABOVE TOP OF ANY UTILITY TO BE INSTALLED BEFORE TRENCH IS EXCAVATED FOR PIPE PLACEMENT. IN TRENCHES AND CUT SECTIONS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHEETING, SHORING AND BRACING TO MAINTAIN COMPLIANCE WITH ALL OSHA/VOSHA REGULATIONS.
7. METHODS FOR CONSTRUCTION OF SUBGRADE SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 203.12 OR AS DETERMINED BY THE ENGINEER.
8. ANY SUBGRADE OR SUBBASE DISTURBED BY CONTRACTOR, OR RENDERED UNSUITABLE BY CONSTRUCTION MACHINERY, SHALL BE REMOVED AND REPLACED WITH APPROVED GRANULAR BACKFILL AT THE CONTRACTOR'S EXPENSE. THE SUBGRADE SHALL BE COMPACTED TO ATTAIN AT LEAST 95% OF THE MAXIMUM DENSITY (STANDARD PROCTOR) BEFORE PLACING ROAD OR EMBANKMENT MATERIALS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF COMPACTION IN THE ROAD AND UTILITY TRENCHES.
10. SAND FILL SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 703.03, TABLE 703.03A. GRANULAR BORROW SHALL CONFORM TO THE VERMONT HIGHWAY SPECIFICATIONS 703.04 GRANULAR BORROW, TABLE 703.04A.
11. GRAVEL SUBBASE FOR PAVEMENT SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 704.05, TABLE 704.05A, COARSE.
12. LEVELING COURSE SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) 704.05, TABLE 704.05A, FINE. SHOULDERS SHALL CONFORM TO SECTION 704.12, AGGREGATE FOR SHOULDERS.
13. BITUMINOUS CONCRETE PAVEMENT SHALL CONFORM TO VERMONT HIGHWAY SPECIFICATIONS (2018) SECTION 404 AND 406. BINDER COURSE SHALL BE TYPE II, AND FINISH WEARING COURSE SHALL BE TYPE III OR IV. BASE COURSE PAVING TO BE PLACED FIRST YEAR, SURFACE COURSE TO BE PLACED THE SECOND OR THIRD YEAR, DETERMINED BY THE ENGINEER.
14. EMBANKMENT FILL FOR ROAD AND PARKING SHALL BE A SIEVE SPECIFICATION AS FOLLOWS:

SIEVE	% FINER
4"	100
2"	85-100
#4	60-100
#200	12 MAXIMUM

15. IF PROOF ROLL FAILS, CONTRACTOR SHALL REMOVE THE SITE SOIL AND REPLACE IT WITH SAND WITH THE ABOVE SPEC. UNTIL A PROOF ROLE CAN BE PLACED WITHOUT FAILING. ENGINEER WILL JUDGE PASS/FAILURE OF PROOF ROLE, THIS WILL BE PERFORMED WITHOUT FURTHER COSTS TO THE OWNER.

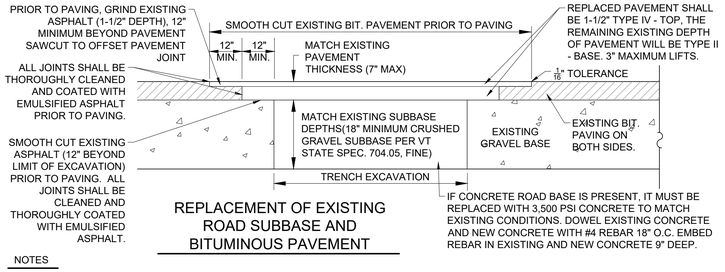


NOTES FOR GRANITE CURB

1. SEE GRANITE CURB SECTION DETAIL FOR ADDITIONAL REQUIREMENTS.
2. ALL GRANITE CURB SHALL BE CUT TO A RADII SHOWN ON PLANS. SMALL STRAIGHT TANGENT SECTIONS OF GRANITE CURB ARE NOT ACCEPTABLE.
3. PROVIDE A 6' TAPER TO FLUSH AT END OF CURB
4. JOINTS BETWEEN STONES TO BE MORTARED PRIOR TO BACKFILLING. SEE VAOT STANDARD SPECIFICATIONS.

TYPICAL GRANITE CURB SECTION DETAIL

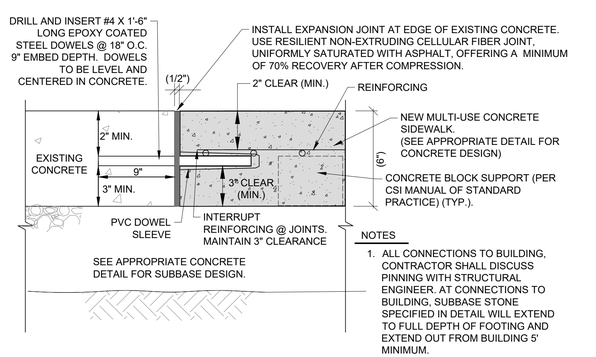
N.T.S.



REPLACEMENT OF EXISTING ROAD SUBBASE AND BITUMINOUS PAVEMENT

NOTES

1. SET UP AND MAINTAIN SIGNS AND OTHER SAFETY CONTROL DEVICES.
2. RESHAPE HOLE PATCH AREA BY CUTTING WITH A CONCRETE SAW INTO SQUARE OR RECTANGULAR SHAPE AND CUT SIDE FACED VERTICALLY. RESHAPE DOWNWARD SOLID MATERIAL AND AROUND HOLE TO SOUND PAVEMENT.
3. BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH TO 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.
4. REMOVE ALL LOOSE MATERIAL AND THOROUGHLY SWEEP THE HOLE AREA, CLEAN ANY MUD AND STANDING WATER.
5. APPLY LIQUID ASPHALT TRACK TO VERTICAL FACES IN UNIFORM MANNER. DO NOT PUDDLE TRACK COAT ON BOTTOM HOLE.
6. FILL TOP OF HOLE WITH TYPE IV BITUMINOUS CONCRETE AND COMPACT IN LIFTS NO MORE THAN 2' THICK. EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLAT COMPACTOR OR A PORTABLE ROLLER. EXPERIENCE HAS SHOWN THAT 15 TO 20 PASSES WITH THE VIBRATORY ROLLER AND MIX TEMPERATURE ABOVE 250°F (121°C) ARE NECESSARY TO ENSURE GOOD COMPACTION. HAND TAMP SHOULD ONLY BE USED FOR SMALL AREAS LESS THAN 1 S.F.
7. CLEAN UP AREA. DO NOT LEAVE EXCESS FILL OR EXCAVATED MATERIAL ON THE PAVEMENT. REMOVE SAFETY SIGNS.



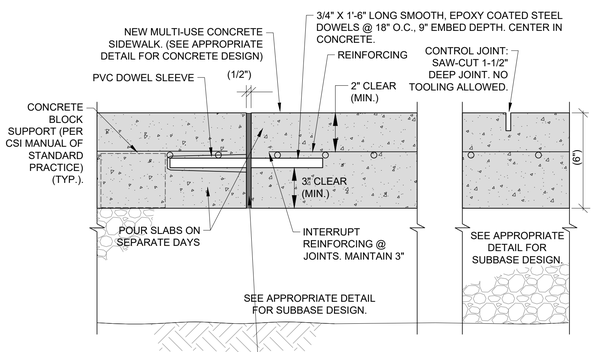
NOTES

1. ALL CONNECTIONS TO BUILDING, CONTRACTOR SHALL DISCUSS PINNING WITH STRUCTURAL ENGINEER. AT CONNECTIONS TO BUILDING, SUBBASE STONE SPECIFIED IN DETAIL WILL EXTEND TO FULL DEPTH OF FOOTING AND EXTEND OUT FROM BUILDING 5' MINIMUM.

CONSTRUCTION JOINT DETAIL FOR CONNECTION TO EXISTING CONCRETE

N.T.S.

CONTRACTOR TO USE THIS PINNING DETAIL TO PIN NEW CONCRETE TO EXISTING CONCRETE (WALK TO WALK, WALK TO BUILDINGS, ETC).



NEW CONCRETE CONSTRUCTION JOINT/CONTROL JOINT DETAIL

N.T.S.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

REV. NO.	REVISIONS/COMMENTS	DATE

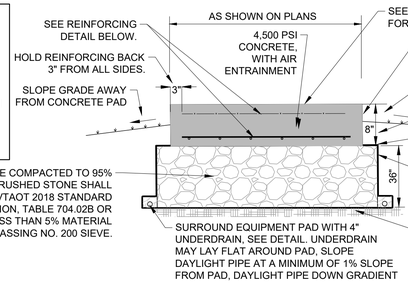
DRAWING TITLE:

DETAILS

DATE ISSUED: 08/21/23
DRAWN BY: GTD
CHECKED BY: GTD
PROJECT NO.: 23177
SCALE: N/A
DRAWING NO.: C-2.02
REV. NO.:

DWG NAME: Israel-Wastewater-Base.dwg

NOTE: STRUCTURES, FENCING, AND/OR BOLLARDS ARE **PROHIBITED** FROM BEING MOUNTED DIRECTLY TO THE CONCRETE PAD. STRUCTURES, FENCING, AND BOLLARDS SHALL BE DESIGNED TO STUB THROUGH CONCRETE SLAB WITH THEIR SUPPORTS EXTENDING BELOW THE PAD.

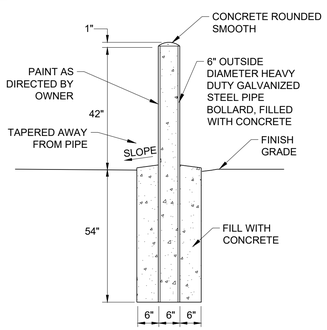


NOTES

1. COLD WEATHER CONSTRUCTION PROCEDURES:
   - A. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTINUOUSLY PROTECT SOILS, CONCRETE, MASONRY AND OTHER BUILDING MATERIALS FROM DAMAGE DUE TO COLD TEMPERATURES UNTIL THE SLAB HAS BEEN TURNED OVER TO THE OWNER.
   - B. THIS SHALL INCLUDE TEMPORARY ENCLOSURES, INSULATED BLANKETS AND TEMPORARY HEATING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE ANY DAMAGED OR DEFECTIVE WORK, IN A MANNER APPROVED BY THE ARCHITECT/ENGINEER.
   - C. ALL PROTECTIVE AND CORRECTIVE WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
2. PERFORM WORK IN ACCORDANCE WITH ACI 301 STANDARDS AND RECOMMENDED PRACTICES.
3. ACQUIRE CEMENT AND AGGREGATE FROM SAME SOURCE FOR ALL WORK.
4. CONFORM TO ACI 305R WHEN CONCRETING DURING HOT WEATHER.
5. CONFORM TO ACI 306R WHEN CONCRETING DURING COLD WEATHER.
6. CEMENT ASTM C150, TYPE I, GRAY - NORMAL; DO NOT CHANGE SOURCE OF MANUFACTURER OF CEMENT DURING THE COURSE OF THE WORK.
7. FINE AND COARSE AGGREGATES ASTM C33.
8. WATER CLEAN, POTABLE AND NOT DETRIMENTAL TO CONCRETE.
9. AIR ENTRAINMENT ASTM C260.
10. CHEMICAL ASTM C494 TYPE A - WATER REDUCING.
11. BONDING AGENT SIKA ARMATEC 110 EPOCEM BONDING AGENT, NO -SOLVENT THREE COMPONENT EPOXY AS MANUFACTURED BY SIKA OR EQUIVALENT.
12. NON -SHRINK GROUT PREMIXED COMPOUND CONSISTING OF NON -METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS; CAPABLE OF DEVELOPING MINIMUM COMPRESSIVE STRENGTH OF 2,400 PSI IN 48 HOURS AND 7,000 PSI IN 28 DAYS; MANUFACTURED BY FIVE STAR PRODUCTS, INC. OR APPROVED EQUIVALENT.
13. FORM RELEASE AGENT WATER BASED, NON TOXIC, ENVIRONMENTALLY FRIENDLY PRODUCT WHICH WILL NOT STAIN CONCRETE, OR ABSORB MOISTURE , OR IMPAIR NATURAL BONDING OR COLOR CHARACTERISTICS OF COATING INTENDED FOR USE ON CONCRETE.
14. MIX CONCRETE IN ACCORDANCE WITH ACI 304. DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94.
15. THE MIX DESIGN SHALL MEET THE REQUIREMENTS OF ACI 318, CHAPTER 19. INCLUDE THE WATER -CEMENT RATIO, AIR CONTENT, SLUMP, ADMIXTURES, AND THE PLANT TO BE USED.
16. CONCRETE MIXTURES SHALL CONSIST OF THE APPROPRIATE PROPORTIONS OF PORTLAND CEMENT, WATER, COARSE AND FINE AGGREGATE, AIR ENTRAINING AGENT AND WATER REDUCING AGENT FOR THE INTENDED APPLICATION.
17. PROVIDE CONCRETE TO THE FOLLOWING CRITERIA
    - A. COMPRESSIVE STRENGTH AT 28 DAYS SLABS ON GRADE = 4,500 PSI WITH AIR ENTRAINMENT
    - B. SLUMP 2 -4 INCHES BEFORE ADDITION OF WATER REDUCER, 6 -8 INCHES AFTER THE ADDITION OF WATER REDUCER.
    - C. MAXIMUM WATER TO CEMENT RATIO= 0.5
18. USE ACCELERATING ADMIXTURES IN COLD WEATHER ONLY WHEN APPROVED BY ARCHITECT/ENGINEER. USE OF ADMIXTURES WILL NOT RELAX COLD WEATHER PLACEMENT REQUIREMENTS.
19. USE CALCIUM CHLORIDE SHALL NOT BE PERMITTED.
20. USE SET RETARDING ADMIXTURES DURING HOT WEATHER ONLY WHEN APPROVED BY ARCHITECT/ENGINEER.
21. ADD AIR ENTRAINING AGENT TO NORMAL WEIGHT CONCRETE MIX FOR WORK EXPOSED TO EXTERIOR. DO NOT ADD AIR ENTRAINMENT TO INTERIOR SLABS.
22. PLACE CONCRETE IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 304.
23. ENSURE REINFORCEMENT, INSERTS, EMBEDDED PARTS, FORMED EXPANSION AND CONTRACTION JOINTS, ARE NOT DISTURBED DURING CONCRETE PLACEMENT.
24. DO NOT INTERRUPT SUCCESSIVE PLACEMENT; DO NOT PERMIT COLD JOINTS TO OCCUR.
25. SCREED SLABS ON GRADE LEVEL, MAINTAINING SURFACE FLATNESS OF MAXIMUM 1/4 INCH IN 10 FT.
26. FLOOR SLABS SHALL BE FINISHED AS FOLLOWS IN ACCORDANCE WITH ACI 301 AS FOLLOWS: EXTERIOR SURFACES = BROOM FINISH PERPENDICULAR TO PEDESTRIAN TRAFFIC. SAWCUT CONTROL JOINTS 4" DEPTH AT INTERVALS OF 20'.
27. IMMEDIATELY AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL DAMAGE.
28. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
29. CURE FLOOR SURFACES IN ACCORDANCE WITH ACI 305, ACI 306, AND ACI 308.
30. OWNER AND/OR CONTRACTOR IS NOT ALLOWED TO PLACE DEICING MATERIAL ON NEWLY PORED CONCRETE FOR A PERIOD OF 6 MONTHS.
31. APPLY 2 COATS OF SPECCHEM CURESHIELD CURE/SEAL COMPOUND TO ALL CONCRETE SURFACES, PER MANUFACTURER'S SPECIFICATIONS.

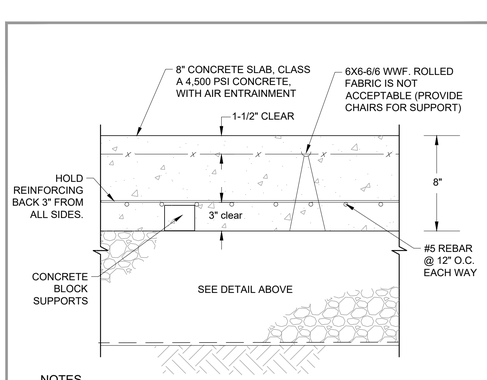
CONCRETE SLAB DETAIL FOR EQUIPMENT PAD (DUMPSTER LOCATION)

N.T.S.



PIPE BOLLARD DETAIL

N.T.S.

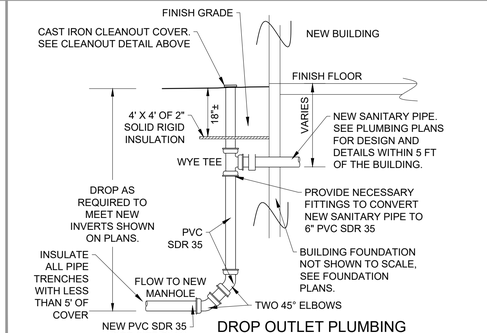


NOTES

1. PRECAST CONCRETE MAY BE USED FOR EQUIPMENT PAD. SHOP DRAWINGS FOR ALL PRECAST CONCRETE SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO PRODUCTION OF CONCRETE.

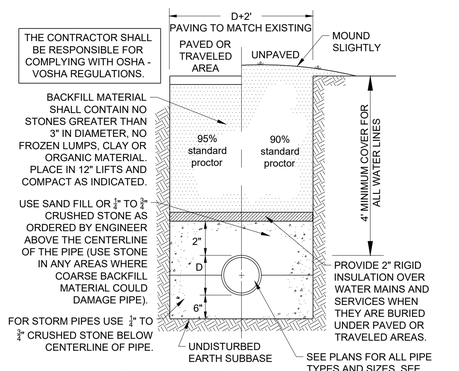
TYPICAL CONCRETE SLAB REINFORCING DETAIL

N.T.S.



DROP OUTLET PLUMBING CONNECTION DETAIL

N.T.S.

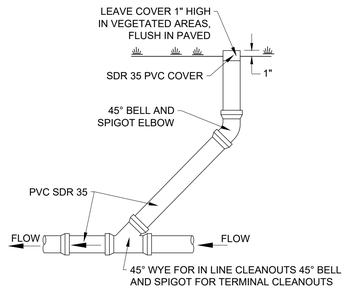


SANITARY TRENCH DETAIL

N.T.S.

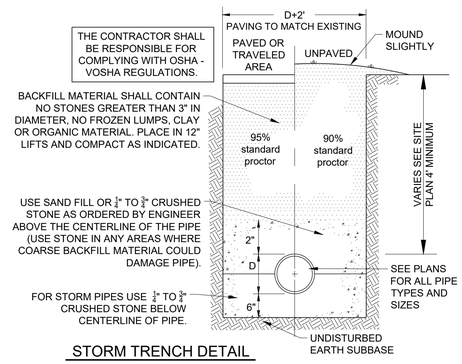
SANITARY MAINS NOTES

1. THE PIPE AND FITTINGS FOR SANITARY SEWER SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION D3034 FOR 4" - 15" SDR 35 AND F679 FOR 18" - 27". ALL PIPE SHALL BE LAID TO THE LINE AND GRADE SHOWN ON THE PLANS.
2. THE PIPE FOR GRAVITY SANITARY SEWER SHALL BE AS SHOWN ON THE PLANS AND DETAILED BELOW:
   - ALL PIPE SHALL BE LAID TO THE LINE AND GRADE AS SHOWN ON THE PLANS.
   - PVC SDR 35 - POLYVINYL CHLORIDE PIPE - PIPE SHALL CONFORM TO ASTM SPECIFICATION D-3034 OR F679, (PVC) SEWER PIPE AND FITTINGS, SDR35.
   - PIPE WITH RECYCLED CONTENT IS NOT ACCEPTABLE.
3. PVC SDR 35 SANITARY AND STORM PIPES SHALL BE INSTALLED SO THAT THE INITIAL DEFLECTION SHALL BE LESS THAN 5%.
4. PVC SDR 35 PIPE SHALL NOT BE INSTALLED WHEN THE TEMPERATURE DROPS BELOW 32° F OR GOES ABOVE 100° F UNLESS PRIOR APPROVAL IS OBTAINED FROM THE ENGINEER. EXTRA CARE IS REQUIRED WHEN HANDLING PVC PIPE DURING COLD WEATHER. PVC PIPE SHALL NOT BE STORED OUTSIDE AND EXPOSED TO PROLONGED PERIODS OF SUNLIGHT AS PIPE DISCOLORATION AND REDUCTION IN PIPE IMPACT STRENGTH WILL OCCUR. IF PVC PIPE IS TO BE STORED ON SITE FOR 1 MONTH OR LONGER IT SHALL BE COVERED WITH CANVAS OR OTHER OPAQUE MATERIAL.
5. THE INSTALLED GRAVITY SANITARY SEWER PIPE SHALL BE LOW PRESSURE AIR TESTED IN THE PRESENCE OF THE ENGINEER. AFTER CLEANING THE PIPE, THE PIPE SECTION (MANHOLE TO MANHOLE) SHALL BE TESTED ACCORDING TO THE PROCEDURES OUTLINED IN THE STATE OF VERMONT WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES, EFFECTIVE APRIL 12, 2019.



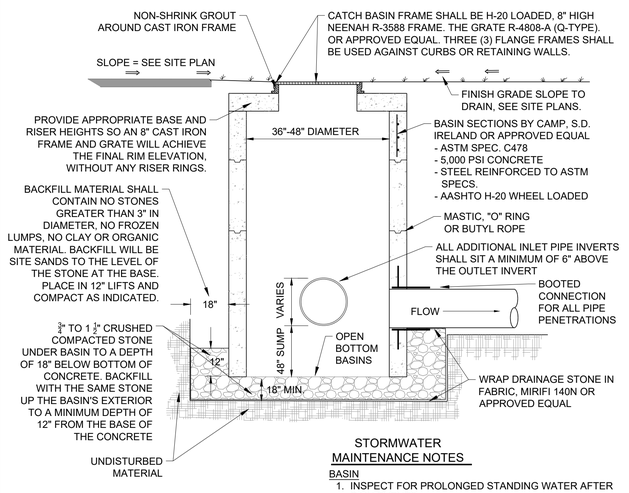
STORM/SANITARY SEWER CLEANOUT DETAIL

N.T.S.



STORM TRENCH DETAIL

N.T.S.



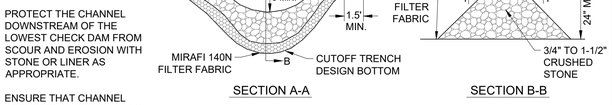
TYPICAL OPEN BOTTOM DROP INLET BASIN

N.T.S.

STORMWATER MAINTENANCE NOTES

BASIN

1. INSPECT FOR PROLONGED STANDING WATER AFTER RAIN EVENTS
2. INSPECT FOR EROSION, ACCUMULATED SEDIMENT AROUND RIM, MAKE SURE WATER STILL DRAINS TO BASIN. REMOVE SEDIMENT, TRASH, OR ORGANICS IN BASIN IF NOTICEABLE DURING INSPECTION.



NOTES

1. TYPICAL GRASS SWALE & INFILTRATION BASIN CROSS SECTION. SEE PLAN VIEW FOR LOCATIONS.
2. MAXIMUM SIDE SLOPES TO BE 3:1.
3. DURING CONSTRUCTION TEMPORARILY SEEDED AND HEAVILY MULCHED. POST CONSTRUCTION CONTRACTOR SHALL RE-GRADE ANY EROSION, REMOVE BUILD UP SEDIMENTS, PERMANENT SEED AND HEAVILY RE-MULCH.
4. CROSS-SECTION SHALL BE EXCAVATED TO NEAT LINES AND GRADES. OVER-EXCAVATED AREAS SHALL BE BACKFILLED WITH MOIST SOIL COMPACTED TO DENSITY OF SURROUNDING MATERIAL.
5. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF IN APPROVED UPLAND AREA (PER OSPC) SUCH THAT IT DOES NOT INTERFERE WITH FUNCTION.
6. STORING SNOW DURING THE WINTER MONTHS IN THE INFILTRATION BASIN IS PROHIBITED. SNOW REMOVAL CONTRACTOR WILL NOT USE THESE AREAS FOR SNOW DISPOSAL.

GRASS SWALE & INFILTRATION BASIN CROSS SECTION

N.T.S.

ALL CONNECTIONS TO MUNICIPAL SEWER, WATER, AND STORMWATER UTILITIES INSTALLED ON THE PROJECT TO BE OBSERVED BY THE ENGINEER AND THE AUTHORIZED REPRESENTATIVE OF THE UTILITY, THE TOWN OF WATERBURY, AND THE WATER DISTRICT PRIOR TO BACKFILLING THE UTILITY BEING INSTALLED. THE ENGINEER SHALL BE NOTIFIED 48 HOURS BEFORE THE WORK IS PLANNED TO BEGIN. ALL DETAILS ARE SUBJECT TO THE MOST RECENT REVISIONS OF THE WATER DISTRICT SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF WATER LINES AND APPURTENANCES. PROJECT SHALL FOLLOW ALL DETAILS IN THIS PLAN SET, WATERBURY DPW SPECIFICATIONS, AND THE WATER DISTRICT SPECIFICATIONS. THE MOST STRINGENT DETAILS WILL APPLY.

NOTES

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

STONE CHECK DAM

N.T.S.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :

Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:

Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

STAMP:

REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:

DETAILS

DATE ISSUED: 08/21/23

DRAWN BY: GTD CHECKED BY: GTD

PROJECT NO.: 23177 SCALE: N/A

DRAWING NO.: C-2.03

REV. NO.:

DWG NAME: Israel-Wastewater-Base.dwg

WINTER EROSION CONTROL PROCEEDURES

(FOR ANY EARTH WORK PERFORMED BETWEEN OCTOBER 15TH AND APRIL 15TH)

WINTER EROSION CONTROL NARRATIVE:
OBJECTIVE - ANY SITE WORK PERFORMED LATER THAN OCTOBER 15TH WILL RESULT IN EXPOSED SOIL THROUGH THE WINTER. THIS PRESENTS A POTENTIAL FOR EROSION THROUGH THE WINTER. THE WINTER EROSION CONTROL MEASURES ARE INTENDED TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION ZONE DURING THAWS AND RAINSTORMS.

WINTER EROSION CONTROL SEQUENCE:
ON-SITE COORDINATOR - THE ON-SITE COORDINATOR SHALL BE SURE ALL EROSION CONTROL MEASURES REQUIRED FOR WINTER CONSTRUCTION ARE INSTALLED BY OCTOBER 15TH AND PRIOR TO GROUND FREEZING. IF A PERMITTED AREA CAN BE LEFT UNDISTURBED UNTIL THE SPRING THE CONTRACTOR SHALL MAKE EVERY EFFORT TO LIMIT THESE AREAS OF DISTURBANCE.

THE CONTRACTOR SHALL STABILIZE ANY PORTION OF THE SITE THAT IS BEING WORKED AND DISTURBED PRIOR TO BEGINNING CONSTRUCTION AT ANOTHER AREA OF THE SITE. AT NO TIME DURING WINTER CONSTRUCTION SHALL THERE BE MORE THAN 1 ACRE OF EXPOSED SOIL ON SITE.

ANTICIPATED WINTER CONSTRUCTION ACTIVITIES WILL INCLUDE ALL ASPECTS OF THE PROJECT PROPOSED DURING SUMMER CONSTRUCTION. THIS IS A CONTINUATION OF WORK WHICH WAS NOT COMPLETED DURING THE SUMMER. MAJOR GRADING IS EXPECTED TO BE COMPLETE BEFORE OCTOBER 15TH.

LIMITS OF DISTURBANCE - LOD WILL BE MOVED AND/OR REPLACED TO REFLECT THE BOUNDARY OF WINTER WORK. CONTRACTOR WILL MAINTAIN A MINIMUM 25' BUFFER FROM PERIMETER CONTROLS TO ALLOW FOR SNOW CLEARING AND MAINTENANCE.

SNOW STORAGE ON SITE - CONTRACTOR WILL CREATE A SNOW MANAGEMENT PLAN. PLAN WILL IDENTIFY LOCATIONS FOR ADEQUATE SNOW STORAGE AND CONTROL SNOW MELT. SNOW STORAGE WILL BE DOWN GRADIENT OF ALL DISTURBED AREAS AND WILL NOT PROHIBIT THE FUNCTION OF ALL PERMANENT STORMWATER TREATMENT STRUCTURES. CONTRACTOR SHALL KEEP ALL DRAINAGE STRUCTURES OPWN AND FREE OF SNOW AND ICE DAMS.

INSTALL SILT FENCE - SILT FENCE SHALL BE INSTALLED ON THE DOWNHILL SIDE OF THE WINTER CONSTRUCTION AREAS AND SOIL STOCKPILE AREAS, AS SHOWN ON THE PLAN, BY OCTOBER 15TH. IF THE GROUND IS UNFROZEN THE SILT FENCE SHALL BE DUG IN AS NORMAL. IF THE GROUND IS FROZEN CONTACT THE ENGINEER FOR ALTERNATE OPTIONS (STONE BERM, FILTREXX SILT SOXX, STRAW WATTLES, ETC.).

STABILIZED CONSTRUCTION ENTRANCE - THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STABILIZED CONSTRUCTION ENTRANCES TO PREVENT SEDIMENT TRACKING OFF SITE. CONTRACTOR SHALL ENLARGE THE WIDTH OF ACCESS TO PROVIDE ADDITIONAL ROOM FOR SNOW STOCKPILING, IF NEEDED. ADDITIONAL STONE SHALL BE ADDED OR THE LENGTH SHALL BE INCREASED, IF ICE AND SNOW LIMITS CONSTRUCTION ENTRANCE'S ABILITY TO HOLD SEDIMENTS ON SITE.

WINTER STABILIZATION – ALL DISTURBED AREAS NOT INVOLVED IN WINTER CONSTRUCTION SHALL BE AT LEAST TEMPORARILY STABILIZED BY OCTOBER 15. AFTER OCTOBER 15TH, ALL AREAS DISTURBED DURING WINTER CONSTRUCTION SHALL BE STABILIZED DAILY TO PREVENT EXPOSURE FROM RAIN EVENTS AND ACCUMULATION OF SNOWFALL (SEE EXCEPTIONS BELOW). CONTRACTOR SHALL ADD ADDITIONAL STONE, AS NECESSARY, TO PROVIDE STABILIZATION THROUGH WINTER CONSTRUCTION ON ALL AREAS WHERE CONSTRUCTION TRAFFIC IS ANTICIPATED.

EXCEPTIONS:

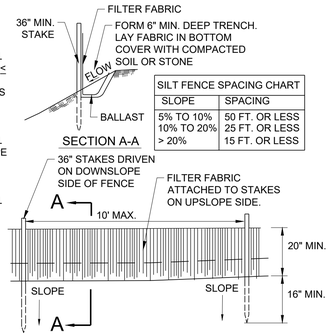
- HYDROSEEDING AFTER OCTOBER 15TH AND BEFORE APRIL 15TH MUST BE STABILIZED WITH STRAW MULCH OR EROSION CONTROL MATTING.*
- SNOW AND/OR ICE MUST BE REMOVED TO, AT MOST, ONE INCH PRIOR TO APPLYING MULCH OR EROSION CONTROL STABILIZATION MATTING.
- IF NO PRECIPITATION, WITHIN 24 HOURS, IS FORECASTED AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
- DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, REQUIRE STABILIZATION AT THE END OF EACH WORK WEEK.

MAINTENANCE - ALL DISTURBED AREAS SHALL BE MONITORED BY THE CONTRACTOR AND THE ON-SITE PLAN COORDINATOR IN ACCORDANCE WITH THE INSPECTION REQUIREMENT OUTLINED IN THE INDIVIDUAL CONSTRUCTION STORMWATER PERMIT. THE CONTRACTOR AND ON-SITE PLAN COORDINATOR SHALL EVALUATE THE SITE AFTER A THAW OR RAINSTORM. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL NOTIFY THE ENGINEER IF ANY EROSION CONTROL MEASURES APPEAR TO BE INADEQUATE. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL IMMEDIATELY (WITHIN THE SAME BUSINESS DAY) IMPLEMENT ANY FURTHER EROSION CONTROL MEASURES SPECIFIED BY THE ENGINEER. THE CONTRACTOR OR ON-SITE PLAN COORDINATOR SHALL ADD MULCH, AS NECESSARY, THROUGHOUT THE WINTER AFTER THAWS OR RAINSTORMS. THE MULCH DEPTH SHALL BE BROUGHT UP TO 2". THE MULCH AND SILT FENCE SHALL BE MAINTAINED UNTIL A PERMANENT GROUND COVER (70% STABILIZATION) IS ESTABLISHED IN THE SPRING. THE SITE SHALL BE REMULCHED AND RESEEDED, IN THE SPRING, AS REQUIRED TO ESTABLISH A VIGOROUS PERMANENT GROUND COVER.

INSPECTION - THE ON-SITE COORDINATOR SHALL BE RESPONSIBLE FOR, AT A MINIMUM, DAILY WRITTEN INSPECTIONS WHILE THE SITE IS DISTURBED OR WEEKLY IF EVERYTHING IS STABILIZED BUT CONSTRUCTION IS ON-GOING. IF, DURING WINTER CONSTRUCTION, EARTH DISTURBANCE ACTIVITIES TEMPORARILY CEASE AND THE SITE HAS BEEN FULLY STABILIZED, INSPECTION AND MONITORING REQUIREMENTS FOR THE ON-SITE COORDINATOR MAY BE REDUCED TO ONCE PER MONTH MINIMUM. ALL INSPECTION SHEETS SHALL BE KEPT ON SITE AND BE AVAILABLE UPON REQUEST.

NOTES

1. AT A MINIMUM, EPSC MEASURES MEET VT DEC STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
2. PERIMETER CONTROLS SHALL BE UTILIZED IN SMALL AREAS ≤ 1 ACRE. IN AREAS > 1 ACRE, TEMPORARY SEDIMENT TRAPS OR TEMPORARY SEDIMENT BASINS ARE TO BE UTILIZED.
3. PERIMETER CONTROLS SHALL BE INSTALLED ON DOWNSLOPE SIDE OF PLANNED EARTH DISTURBANCE.
4. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES WITHIN UPSLOPE CONTRIBUTING AREA.
5. SILT FENCE SHALL NOT BE USED AS CONSTRUCTION DEMARCATION.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER. SEE DETAIL.
7. IF SILT FENCE IS INSTALLED WHEN GROUND IS FROZEN, A GRAVEL, SHOT ROCK, OR SAND BALLAST MUST BE USED.

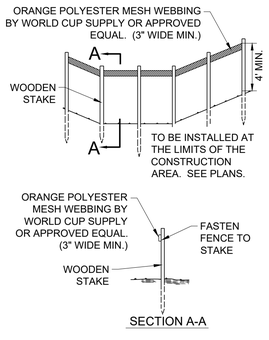


SILT FENCE SPACING CHART	
SLOPE	SPACING
5% TO 10%	50 FT. OR LESS
10% TO 20%	25 FT. OR LESS
> 20%	15 FT. OR LESS

TYPICALTEMPORARY SILT FENCE
N.T.S.

NOTES

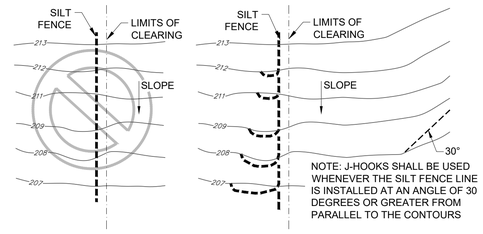
1. ACCEPTABLE EPSC MEASURE DETAILS ARE PROVIDED BELOW.
2. AT A MINIMUM, EPSC MEASURES MEET VT DEC STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL OR PREVIOUSLY APPROVED INTERCHANGEABLE PRACTICES.
3. LIMITS OF DISTURBANCE (OR "CONSTRUCTION DEMARCATION") SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
4. BARRIER TAPE/ROPE: FOR USE WHERE PROPOSED DISTURBANCE BORDERS NON-WOODED, VEGETATED AREAS MORE THAN 100 FT FROM THE NEAREST WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.). BARRIER TAPE IS HIGH VISIBILITY FIBERGLASS TAPE, MINIMUM 3" IN WIDTH COMMONLY USED IN SKI AREAS FOR DEMARCATING CLOSED AREAS. BARRIER TAPE AND ROPE SHOULD BE ATTACHED TO STAKES, AT A MINIMUM HEIGHT OF 4 FT FROM THE GROUND.
5. MINIMUM 1 TO 2 ROWS OF MESH BARRIER TAPE TO BE INSTALLED ALONG CONSTRUCTION PERIMETER.
6. EACH ROW OF BARRIER TAPE TO BE 3" WIDE MINIMUM.
7. BARRIER TAPE TO BE ORANGE.
8. SECURE BARRIER TAPE TO STAKES OR EXISTING TREE TRUNKS WITH BOTTOM ROW AT 4' DISTANCE FROM GROUND SURFACE (MINIMUM).
9. MAINTAIN AND REPLACE AS NEEDED. REMOVE AT COMPLETION OF PROJECT PER OSPC.
10. IN EVENT THE OSPC DETERMINES BARRIER TAPE IS NOT SUFFICIENT, REPLACE WITH ORANGE CONSTRUCTION FENCE OR SNOW FENCE.



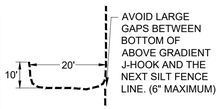
TYPICAL CONSTRUCTION LIMIT BARRIER
N.T.S.

NOTES

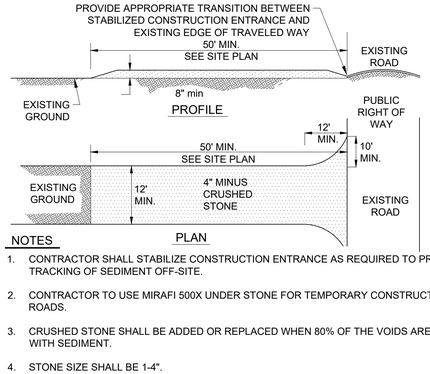
1. PROPER INSTALLATION OF J-HOOKS PROVIDES SILT FENCE THE ABILITY TO TEMPORARILY POND RUNOFF, ALLOWING TIME FOR SEDIMENTS TO SETTLE.
2. LONG RUNS OF SILT FENCE BETWEEN J-HOOKS SHOULD BE AVOIDED REFER TO ADJACENT TABLE FOR PROPER SPACING OF J-HOOKS.
3. J-HOOKS SHOULD BE BUILT ALONG CONTOUR IN A "SMILE" SHAPE WITH A MINIMUM WIDTH OF 20 FEET AND MINIMUM DEPTH OF 10 FEET.
4. ALONG A NARROW RIGHT OF WAY, NARROWER J-HOOKS CAN BE USED WITH A HIGHER SPACING FREQUENCY.



SLOPE STEEPNESS	MAXIMUM SPACING BETWEEN SILT FENCE J-HOOKS (FT.)
2:1 SLOPE (50%)	25
3:1 SLOPE (33%)	50
4:1 SLOPE (25%)	75
5:1 SLOPE OR FLATTER (50%)	100



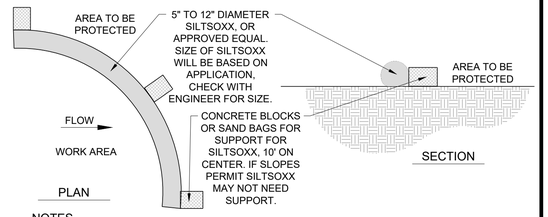
TYPICAL SILT FENCE "J-HOOK" CONSTRUCTION
N.T.S.



NOTES

1. CONTRACTOR SHALL STABILIZE CONSTRUCTION ENTRANCE AS REQUIRED TO PREVENT TRACKING OF SEDIMENT OFF-SITE.
2. CONTRACTOR TO USE MIRAFI 500X UNDER STONE FOR TEMPORARY CONSTRUCTION ROADS.
3. CRUSHED STONE SHALL BE ADDED OR REPLACED WHEN 80% OF THE VOIDS ARE FILLED WITH SEDIMENT.
4. STONE SIZE SHALL BE 1-4".
5. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES IS ALLOWED.

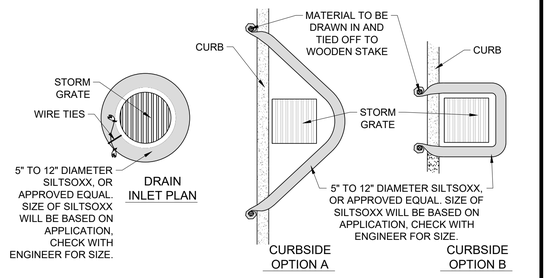
STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

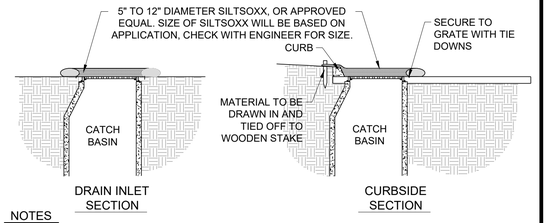


NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 2' WHEN TRANSITIONING TO A NEW LENGTH OF WATTLE.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.

TYPICAL SILTSOXX INSTALLATION ON PAVEMENT
N.T.S.



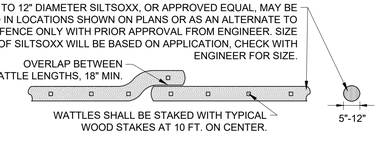


NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 2' WHEN TRANSITIONING TO A NEW LENGTH OF WATTLE.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.

SILTSOXX INLET PROTECTION
N.T.S.

TYPICAL SILTSOXX SEDIMENT CONTROL
N.T.S.



NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES OVER SILTSOXX FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL WATTLES WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 18" WHEN TRANSITIONING TO A NEW LENGTH OF SILTSOXX.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.
6. SILTSOXX CAN BE USED AS A SILT FENCE ALTERNATIVE, WITH PRIOR APPROVAL OF THE ENGINEER.

PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 5/15 AND 9/15 AND SHALL MEET THE FOLLOWING CRITERIA:

SEE LANDSCAPE ARCHITECTURAL PLANS AND DETAILS FOR PERMANENT SEEDING MIXTURES.

TEMPORARY SEED MIX SHALL BE USED BETWEEN 9/16 AND 5/14 AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT	%GERMINATION
WINTER RYE	80% MIN.	85% MIN.
RED FESCUE (CREEPING)	4% MIN.	80% MIN.
PERENNIAL RYE GRASS	3% MIN.	90% MIN.
RED CLOVER	3% MIN.	90% MIN.
OTHER CROP GRASS	0.5% MAX.	
NOXIOUS WEED SEED	0.5% MAX.	
INERT MATTER	1% MAX.	

SEEDING SPECIFICATIONS

GUIDE TO MULCH MATERIALS, RATES, AND USES

	QUALITY STANDARDS	PER 1000 SQ. FT.	PER ACRE	DEPTH OF APPLICATION	REMARKS
WOOD CHIPS OR SHAVINGS	AIR-DRIED. FREE OF OBJECTIONABLE COARSE MATERIAL	500-900 LBS	10-20 TONS	2 - 7"	USED PRIMARILY AROUND SHRUB AND TREE PLANTINGS AND RECREATION TRAILS TO INHIBIT WEED COMPETITION. RESISTANT TO WIND BLOWING. DECOMPOSES SLOWLY.
WOOD FIBER CELLULOSE (PARTLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS.	-	APPLY WITH HYDROMULCHER. NO TIE DOWN REQUIRED. LESS EROSION CONTROL PROVIDED THAN 2 TONS OF HAY OR STRAW.
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A - 1½"	9 CU. YDS.	405 CU. YDS.	3"	EXCELLENT MULCH FOR SHORT SLOPES AND AROUND PLANTS AND ORNAMENTALS. USE 2B WHERE SUBJECT TO TRAFFIC. (APPROXIMATELY 2,000 LBS./CU. YD.). FREQUENTLY USED OVER FILTER FABRIC FOR BETTER WEED CONTROL.
HAY OR STRAW	AIR-DRIED; FREE OF UNDESIRABLE SEEDS & COARSE MATERIALS	90-100 LBS 2-3 BALES	2 TONS (100-120 BALES)	COVER ABOUT 90% SURFACE	USE SMALL GRAIN STRAW WHERE MULCH IS MAINTAINED FOR MORE THAN THREE MONTHS. SUBJECT TO WIND BLOWING UNLESS ANCHORED. MOST COMMONLY USED MULCHING MATERIAL. PROVIDES THE BEST MICRO-ENVIRONMENTAL FOR GERMINATING SEEDS.
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3-9 CU. YDS.	134-402 CU. YDS.	1 - 3"	COARSER TEXTURED MULCHES MAY BE MORE EFFECTIVE IN REDUCING WEED GROWTH AND WIND EROSION.
EROSION CONTROL MIX	WELL-GRADED MIXTURE OF PARTICLE SIZES. ORGANIC CONTENT BETWEEN 80-100%, DRY WEIGHT. PARTICLE SIZE SHALL PASS 6" SCREEN (100%)	* SLOPES 3(HZ.):1(VERT.) OR FLATTER = 2 INCH DEPTH PLUS ADDITIONAL 1/2 INCH DEPTH PER 20 FT. OF SLOPE UP TO 100 FT. ** SLOPES BETWEEN 3(HZ.):1(VERT.) AND 2(HZ.):1(VERT.) = 4 INCH DEPTH PLUS ADDITIONAL 1/2 INCH PER 20 FT. OF SLOPE UP TO 100 FT. *** SLOPES STEEPER THAN 2(HZ.):1(VERT.) USE OF EROSION CONTROL MIX AND MULCH DEPTH TO BE REVIEWED AND APPROVED PRIOR TO USE BY OSPC OR EPSC SPECIALIST			COMPRISED OF SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS. MAY CONTAIN ROCK < 4" IN DIAMETER. ORGANICS SHALL BE FIBROUS AND ELONGATED. NO LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS.

NOTE: THIS MULCHING DETAIL IS FOR EROSION PREVENTION AND SEDIMENT CONTROL ONLY. THIS IS TO BE USED DURING CONSTRUCTION AS A BEST MANAGEMENT PRACTICE. LANDSCAPING MULCH IS DIFFERENT, SEE LANDSCAPE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION REGARDING LANDSCAPE MULCH.

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201
Colchester, Vermont 05446
P: (802) 878-0375
www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :
Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:
Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

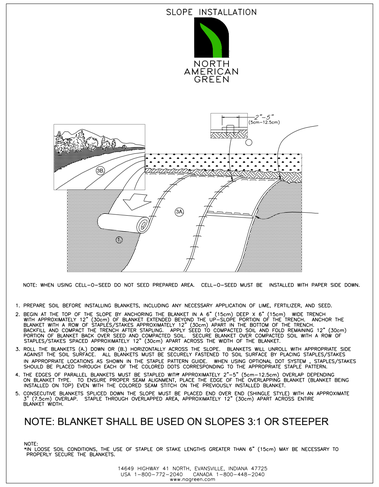
STAMP:

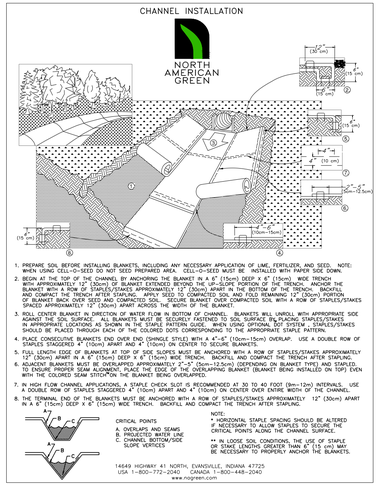
REV. NO.	REVISIONS/COMMENTS	DATE

DRAWING TITLE:
DETAILS

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: N/A
DRAWING NO.: C-2.04 REV. NO.:

DWG NAME: Israel-Wastewater-Base.dwg





EROSION CONTROL BLANKET

NORTH AMERICAN GREEN S75BN

MATERIAL SPECIFICATIONS:

- EROSION CONTROL BLANKET SHALL BE A MACHINE-PRODUCED MAT OF 100% AGRICULTURAL STRAW.
- THE BLANKET SHALL BE OF CONSISTENT THICKNESS WITH THE STRAW EVENLY DISTRIBUTED OVER THE ENTIRE AREA OF THE MAT. THE BLANKET SHALL BE COVERED ON THE TOP SIDE WITH 100% BIODEGRADABLE WOVEN NATURAL ORGANIC FIBER NETTING HAVING AN APPROXIMATE 1/2" X 1" MESH AND BE SEWN TOGETHER WITH BIODEGRADABLE THREAD.
- STRAW EROSION CONTROL BLANKET SHALL BE S75BN AS MANUFACTURED BY NORTH AMERICAN GREEN, INC. (812-867-6632) OR EQUIVALENT. EROSION CONTROL BLANKET SHALL HAVE THE FOLLOWING PROPERTIES:

MATERIAL CONTENT:

- STRAW: 100% (0.50 lbs/sq.yd.)(0.27 kg/m^2)
- NETTING: ONE SIDE ONLY, LENO WOVEN 100% BIODEGRADABLE NATURAL ORGANIC FIBER (APPROX. WEIGHT 9.3 lbs./100 sq. ft.)
- THREAD: BIODEGRADABLE

PHYSICAL SPECIFICATIONS (ROLL):

- WIDTH: 6.67 feet (2.03 m)
- LENGTH: 108 feet (32.92 m)
- WEIGHT: 46.4 lbs. ± 10% (21.05 kg)
- AREA: 80 sq. yd. (50 m^2)

POST-CONSTRUCTION SOIL DEPTH AND QUALITY NOTES

SOIL RETENTION: RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE.

SOIL QUALITY: ALL AREAS SUBJECT TO THE STANDARD SHALL DEMONSTRATE THE FOLLOWING:

A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 4% DRY WEIGHT IN PLANTING BEDS AND TURF AREAS. THE TOPSOIL LAYER SHALL HAVE A MINIMUM DEPTH OF 4 INCHES, EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA.

COMPOST AND OTHER MATERIALS SHALL BE USED THAT MEET THE FOLLOWING REQUIREMENTS:

- THE COMPOST OR OTHER MATERIALS SHALL HAVE A CARBON TO NITROGEN RATIO BELOW 25:1.
- COMPOST SHALL MEET THE DEFINITION OF "COMPOST" IN THE AGENCY'S SOLID WASTE MANAGEMENT RULES OR SHALL MEET THE CONTAMINANT STANDARDS IN THE VERMONT SOLID WASTE MANAGEMENT RULES §6-1104(G)(6- 7), §6-1105(E)(8-9), AND §6-1106(E)(7-9). COMPOST OR OTHER ORGANIC MATERIALS MAY BE AMENDED TO MEET THE FOREGOING REQUIREMENTS.
- EXCEPTIONAL QUALITY BIOSOLIDS (EQ BIOSOLIDS) MAY BE USED AS A SOIL AMENDMENT, AT A MAXIMUM PROPORTION OF 35% OF THE TOTAL SOIL VOLUME, AND SHALL BE WELL MIXED WITH EXISTING SOIL BEFORE OR DURING APPLICATION.
- THE RESULTING SOIL SHALL BE CONDUCIVE TO THE TYPE OF VEGETATION TO BE ESTABLISHED.

THE SOIL QUALITY REQUIREMENTS SHALL BE MET BY USING ONE OR A COMBINATION OF THE FOLLOWING METHODS:

- OPTION 1: LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION. FAILURE TO ESTABLISH AND MAINTAIN EXCLUSIONARY CONTROLS AROUND THESE AREAS DURING THE CONSTRUCTION PHASE MAY TRIGGER THE REQUIREMENT TO RESTORE SOILS PER ONE OF THE FOLLOWING OPTIONS.
- OPTION 2: AMEND EXISTING SITE TOPSOIL OR SUBSOIL IN PLACE.
  a. SCARIFY OR TILL SUBSOILS TO 4 INCHES OF DEPTH OR TO DEPTH NEEDED TO ACHIEVE A TOTAL DEPTH OF 8 INCHES OF UNCOMPACTED SOIL AFTER CALCULATED AMOUNT OF AMENDMENT IS ADDED. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION;
  b. AMEND SOIL TO MEET ORGANIC CONTENT REQUIREMENTS:
     1. PRE-APPROVED RATE: PLACE 1 INCH OF COMPOSTED MATERIAL WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 65% AND ROTOTILL INTO 3 INCHES OF SOIL, OR
     2. CALCULATED RATE: PLACE CALCULATED AMOUNT OF COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AND ROTOTILL INTO DEPTH OF SOIL NEEDED TO ACHIEVE 4 INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT. *CONTRACTOR TO PROVIDE CALCULATION AND SITE SKETCH INDICATING AREAS USED FOR CALCULATIONS.
  c. RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER; AND
  d. WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.
- OPTION 3: REMOVE AND STOCKPILE EXISTING TOPSOIL DURING GRADING.
  a. STOCKPILE SOIL ON SITE IN A DESIGNATED CONTROLLED AREA, AT LEAST 50 FEET FROM SURFACE WATERS, WETLANDS, FLOODPLAINS, OR OTHER CRITICAL RESOURCE AREAS;
  b. SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4 INCHES. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION;
  c. STOCKPILED TOPSOIL SHALL ALSO BE AMENDED, IF NEEDED, TO MEET THE ORGANIC CONTENT REQUIREMENTS:
     1. PRE-APPROVED RATE: COMPOST SHALL BE INCORPORATED WITH AN ORGANIC MATTER CONTENT BETWEEN 40 AND 65% INTO THE TOPSOIL AT A RATIO 1:3, OR
     2. CALCULATED RATE: INCORPORATE COMPOSTED MATERIAL OR APPROVED ORGANIC MATERIAL AT A CALCULATED RATE TO ACHIEVE 4 INCHES OF SETTLED SOIL AT 4% ORGANIC CONTENT;*
  d. REPLACE STOCKPILED TOPSOIL PRIOR TO PLANTING, SCREEN TOPSOIL, AND;
  e. RAKE TO LEVEL, AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER.
  f. OPTION 4: IMPORT TOPSOIL MIX, OR OTHER MATERIALS FOR MIXING, INCLUDING COMPOST, OF SUFFICIENT ORGANIC CONTENT AND DEPTH.
  g. SCARIFY OR TILL SUBGRADE TO A DEPTH OF 4 INCHES. EXCEPT FOR WITHIN THE DRIP LINE OF EXISTING TREES, THE ENTIRE SURFACE SHALL BE DISTURBED BY SCARIFICATION;
  h. PLACE 4 INCHES OF IMPORTED TOPSOIL MIX ON SURFACE. THE IMPORTED TOPSOIL MIX SHALL CONTAIN 4% ORGANIC MATTER. SOILS USED IN THE MIX SHALL BE SAND OR SANDY LOAM AS DEFINED BY THE USDA; SHOP DRAWING SUBMITTAL IS REQUIRED. FIND USDA SIEVE FOR SAND AND SANDY LOAM.
  i. RAKE BEDS TO SMOOTH AND REMOVE SURFACE ROCKS LARGER THAN 2 INCHES IN DIAMETER;
  j. WATER OR ROLL TO COMPACT SOIL IN TURF AREAS TO 85% OF MAXIMUM DRY DENSITY.

SOIL MANAGEMENT

- IDENTIFIES AREAS ON THE SITE SUBJECT TO THE STANDARD;
- SOIL DEPTH AND QUALITY SHALL BE ESTABLISHED TOWARDS THE END OF CONSTRUCTION AND ONCE ESTABLISHED, PROTECTED FROM COMPACTION, SUCH AS FROM LARGE MACHINERY, VEHICLE TRAFFIC, AND FROM EROSION;
- AFTER SOIL AMENDMENTS AND PLACEMENT IS COMPLETE, AND PRIOR TO SEEDING AND MULCHING, CONTRACTOR SHALL PERFORM VERIFICATION SAMPLING IN LOCATIONS INDICATED ON SAMPLING PLAN. VERIFICATION SAMPLING SHALL INCLUDE NINE, 8 INCH DEEP (MIN) TEST HOLES PER ACRE OF AREA SUBJECT TO THE STANDARD. TEST HOLES SHALL BE EXCAVATED USING ONLY A SHOVEL DRIVEN SOLELY BY INSPECTOR'S WEIGHT AND SHALL BE AT LEAST 50 FEET APART FROM EACH OTHER.
- A DENSE AND VIGOROUS VEGETATIVE COVER SHALL BE ESTABLISHED OVER TURF AREAS.

ADDITIONAL SOILS RESTORATION

1. SOIL DEPTH AND QUALITY SHALL BE ESTABLISHED TOWARDS THE END OF CONSTRUCTION, AND ONCE ESTABLISHED, BE PROTECTED FROM COMPACTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE POST CONSTRUCTION SOIL DEPTH AND QUALITY.
3. VERIFICATION SHALL BE VIA A SAMPLING SCHEME THAT INCLUDES NINE 8" DEEP TEST HOLES PER ACRE OF AREA SUBJECT TO THE STANDARD.
4. TEST HOLES SHALL BE EXCAVATED USING ONLY A SHOVEL DRIVEN SOLELY BY THE INSPECTOR'S WEIGHT AND SHALL BE AT LEAST 50 FEET APART FROM EACH OTHER.
5. ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS (LOD) ARE SUBJECT TO THE POST-CONSTRUCTION SOIL DEPTH AND QUALITY STANDARD
6. THERE IS NO PROPOSED EXCAVATION OR RE-GRADING ANTICIPATED WITHIN THE SOLAR ARRAY BEYOND WHAT IS NECESSARY FOR SETTING POSTS AND INSTALLING CONDUIT. IT IS ANTICIPATED THAT SOME GROUND DISTURBANCE WILL OCCUR WITHIN THE ARRAY FROM FREQUENT TRACKING OF EQUIPMENT. THE CONTRACTOR AND ENGINEER SHALL EVALUATE GROUND DISTURBANCE WITHIN THE SOLAR ARRAY AND EITHER:
   - •• CONFIRM THAT SOILS HAVE NOT BEEN EXCESSIVELY COMPACTED VIA TEST PITS AND PHOTO DOCUMENTATION.
   - •• IMPLEMENT THE MEASURES OUTLINED IN THE "POST CONSTRUCTION SOIL DEPTH & QUALITY STANDARD" IF EXCESSIVE COMPACTION HAS OCCURRED.

AS-BUILT (RECORD) DRAWINGS FOR SITE UTILITIES

AT THE COMPLETION OF THE PROJECT THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE OWNER WITH A COMPLETE UTILITY RECORD DRAWING IN AUTOCAD AND PDF FORMAT. THE RECORD DRAWING SHALL MEETS THE SPECIFICATIONS BELOW:

UTILITY

WATER

- ALL PIPE SIZES AND TYPES SHALL BE PROVIDED.
- PROVIDE RECORD ALIGNMENT AND PROFILE OF DIRECTIONALLY DRILLED WATERLINE.
- ALL WATER GATE VALVES AND SHUT-OFF VALVES SHALL BE HORIZONTALLY LOCATED WITH THREE (3) SWING TIES.
- ALL BENDS, FITTINGS, CAPS, CONNECTIONS, ETC. SHALL BE HORIZONTALLY LOCATED WITH THREE (3) SWING TIES AND THE TOP OF PIPE ELEVATION SHALL BE PROVIDED ACCURATE TO 0.1 FT.

STORM

- TOPOGRAPHIC SURVEY OF THE TWO INFILTRATION BASINS. TOPO SURVEY SHOULD BE SUFFICIENT ENOUGH TO GENERATE CONTOURS IN ORDER TO DETERMINE CONTRACTOR HAS MET APPROPRIATE VOLUMES.

ELECTRIC

- HORIZONTAL ALIGNMENT SHALL BE ACCURATELY SKETCHED ON A SITE PLAN. THE SITE PLAN SHALL BE SPECIFIC TO ELECTRIC AND COMMUNICATION UTILITIES ONLY.
- TRENCH X-SECTION (NUMBER AND TYPE CONDUIT, ENCASEMENT DETAIL, CONDUIT LENGTH, RUN DIRECTION) SHALL BE PROVIDED FOR EACH RUN OF CONDUIT. IF THE CROSS-SECTION CHANGES MID RUN THE LOCATION OF THE CHANGE MUST BE INDICATED WITH A NEW CROSS SECTION DETAIL.

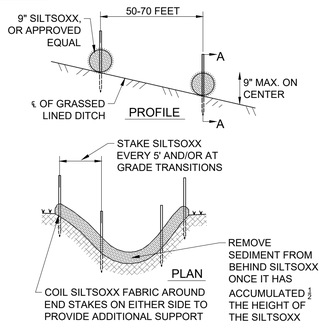
SITE LIGHTING

- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TO THE OWNER A COMPLETE "MARK-UP" PLAN SHOWING THE LAYOUT OF THE SITE LIGHTING CONDUIT FROM LIGHT POLE TO LIGHT POLE.

OTHER

- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND IDENTIFYING ALL EXISTING UTILITIES THAT ARE EXPOSED IN THE PROCESS OF INSTALLING NEW UTILITIES.
- CONTRACTOR IS TO PERFORM A SURVEY OF THE NEW ADA RAMPS IN THE COURTYARD "U" OF EACH BUILDING. THIS SURVEY WILL SHALL BE SUFFICIENT ENOUGH TO DETERMINE ELEVATIONS AND SLOPES ON RAMPS HAVE BEEN BUILT TO THE CORRECT CERTIFICATIONS.

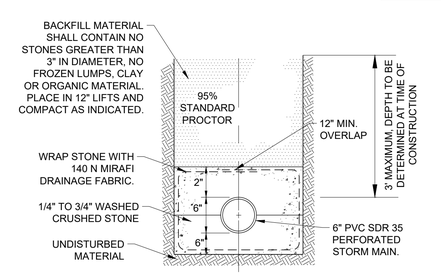
SWING TIES MAY BE SUBSTITUTED WITH SURVEY SHOTS TAKEN WITH SURVEY EQUIPMENT ABLE TO LOCATE INFRASTRUCTURE WITH A HORIZONTAL ACCURACY OF 1 FT AND A VERTICAL ACCURACY OF 0.1 FT.



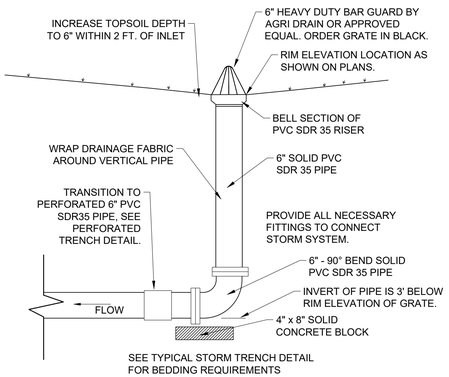
NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND REMOVAL OF SILTSOXX IN ALL LOCATIONS SHOWN ON THE PLANS. SILTSOXX MAY BE LEFT IN PLACE IF THE CONTRACTOR SEEDS AND MULCHES SILTSOXX FOR GROWTH POST CONSTRUCTION.
2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND ADDITIONAL SILTSOXX WILL BE ADDED WHEN SEDIMENT REACHES HALF OF PRODUCT HEIGHT.
3. WHEN INSTALLING LENGTHS OF SILTSOXX, LENGTHS WILL OVERLAP BY MINIMUM 18" WHEN TRANSITIONING TO A NEW LENGTH OF SILTSOXX.
4. CONTRACTOR SHALL REFER TO ALL MANUFACTURES SPECIFICATIONS AND DETAILS.
5. SILTSOXX CAN ONLY BE USED IN A GRASS LINED SWALE, MAY NOT BE USED IN STONE LINED SWALES.
6. SILTSOXX CHECK DAM CAN ONLY BE USED IN CHANNELS WITH SLOPES LESS THAN 5%.
5. SILTSOXX IS A SPECIFIC MANUFACTURER, OTHER MANUFACTURERS WITH EQUAL PRODUCTS MAY BE USED IF APPROVED BY ENGINEER.

TYPICAL SILTSOXX CHECK DAM DETAIL
N.T.S.



TYPICAL PERFORATED STORM TRENCH DETAIL
N.T.S.



YARD INLET DETAIL
N.T.S.

BLANK

51 S. Main Apartments

51 South Main Street
Waterbury, Vermont

KREBS & LANSING CONSULTING ENGINEERS
164 Main Street, Suite 201 P: (802) 878-0375
Colchester, Vermont 05446 www.krebsandlansing.com

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

APPLICANT :
Evernorth
100 Bank Street, Suite 400
Burlington, Vermont 05401

Downstreet Housing and Community Development
22 Keith Avenue, Suite 100
Barre, Vermont 05641

PROPERTY INFORMATION:
Address: 51 South Main Street
Parcel ID: 916-0051.V
SPAN: 696-221-11982
Area: 0.80 Acres
Zoning: Downtown Commercial
Setbacks:
Front: 0'
Rear: 0'
Side: 0'
Max. Building Height: 50'

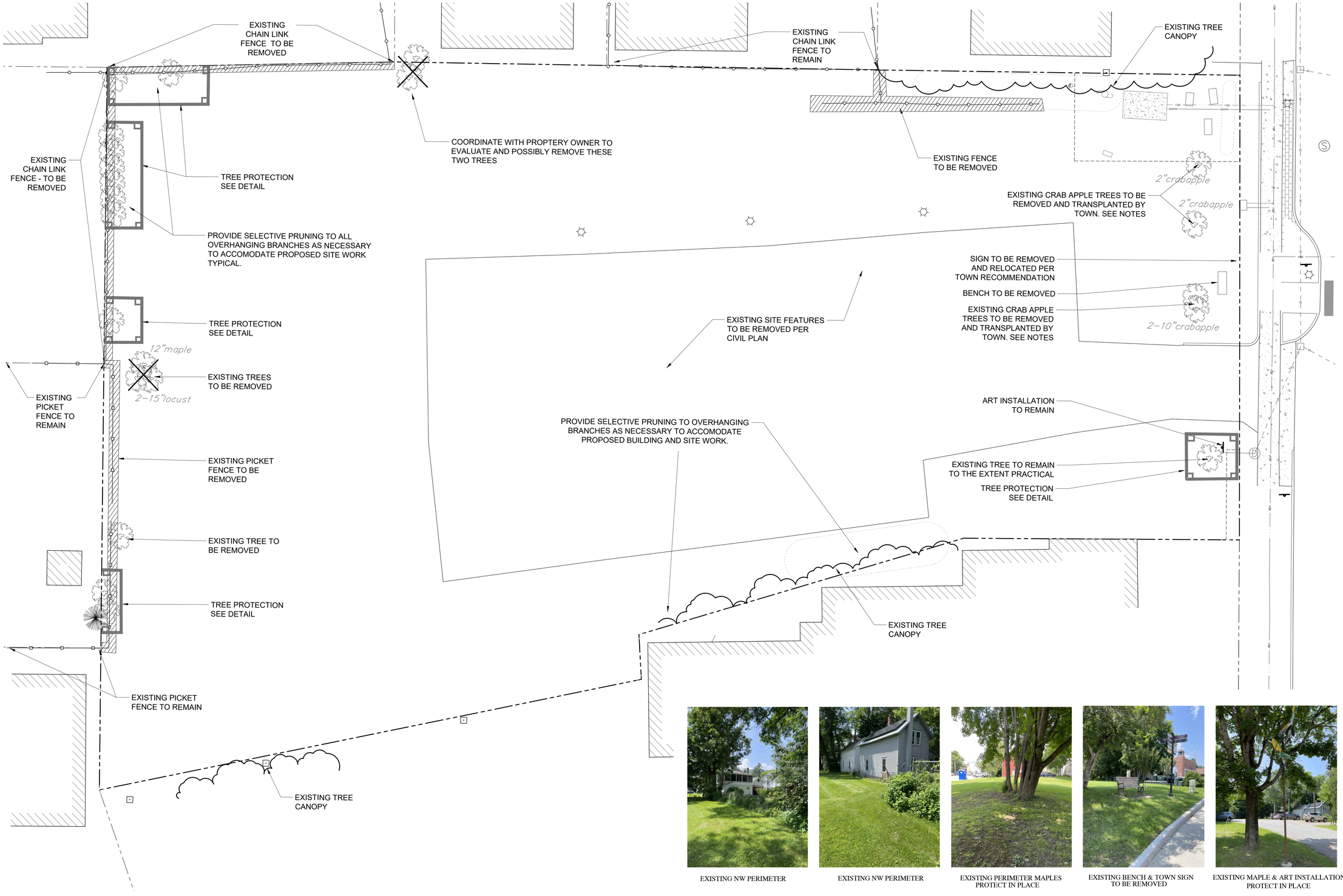
STAMP:

REV. NO.	REVISIONS/COMMENTS	DATE
1.	Updates for DRB Comments	09/27/23

DRAWING TITLE:
DETAILS

DATE ISSUED: 08/21/23
DRAWN BY: GTD CHECKED BY: GTD
PROJECT NO.: 23177 SCALE: N/A
DRAWING NO.: C-2.05 REV. NO.: 1

DWG NAME: Israel-Wastewater-Base.dwg



DRAFT

10' 0' 10' 20'

SCALE: 1" = 10FT

EXISTING NW PERIMETER

EXISTING NW PERIMETER

EXISTING PERIMETER MAPLES PROTECT IN PLACE

EXISTING BENCH & TOWN SIGN TO BE REMOVED

EXISTING MAPLE & ART INSTALLATION PROTECT IN PLACE

EXISTING CONDITIONS NOTES

1. REFER TO CIVIL AND ARCHITECTURAL PLANS FOR EXTENT OF SITE PREPARATION AND DEMOLITION.
2. CONTRACTOR SHALL COORDINATE WITH LANDSCAPE ARCHITECT PRIOR TO ANY TREE REMOVAL, TREE PROTECTION AND FENCE REMOVAL ON SITE.
3. WATERBURY PUBLIC WORKS TO REMOVE EXISTING CRAB APPLE TREES FOR REUSE / TRANSPLANTING OFF-SITE PRIOR TO CONSTRUCTION.

LEGEND

FENCE SECTION TO BE REMOVED

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH
Tel: 603-643-3400 Mobile: 617-905-0467
Email: parkarchitecture@gmail.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:

PA Project Number: 2312

Phase: PERMIT REVIEW NOT FOR CONSTRUCTION

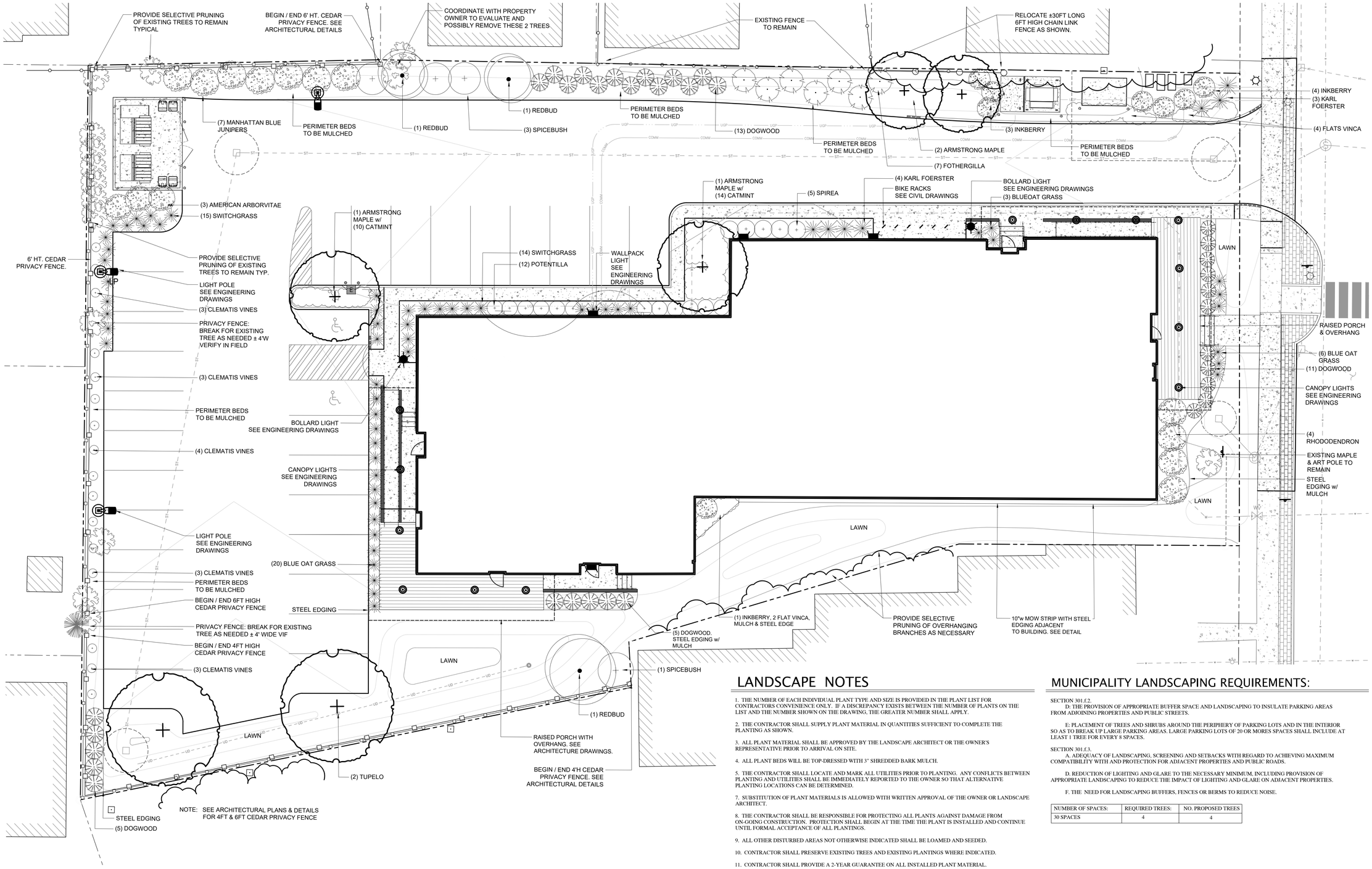
Scale: 1" = 10'

Date: 09/27/2023

EXISTING CONDITIONS PLAN

L1.0

PERMIT SUBMISSION



DRAFT

10' 0' 10' 20'

SCALE: 1" = 10FT

LANDSCAPE NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.

2. THE CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.

3. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.

4. ALL PLANT BEDS WILL BE TOP-DRESSED WITH 3" SHREDDED BARK MULCH.

5. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATIVE PLANTING LOCATIONS CAN BE DETERMINED.

7. SUBSTITUTION OF PLANT MATERIALS IS ALLOWED WITH WRITTEN APPROVAL OF THE OWNER OR LANDSCAPE ARCHITECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON-GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTINGS.

9. ALL OTHER DISTURBED AREAS NOT OTHERWISE INDICATED SHALL BE LOAMED AND SEEDED.

10. CONTRACTOR SHALL PRESERVE EXISTING TREES AND EXISTING PLANTINGS WHERE INDICATED.

11. CONTRACTOR SHALL PROVIDE A 2-YEAR GUARANTEE ON ALL INSTALLED PLANT MATERIAL.

12. ALL PROPOSED TREES SHALL BE PLACED A MINIMUM OF 10FT FROM EXISTING AND PROPOSED UTILITIES.

13. ALL TREES SPECIFIED WILL BE OF GOOD QUALITY AND IN COMPLIANCE WITH THE MOST RECENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.

14. SPECIAL ATTENTION SHALL BE PAID TO THE SITE PREPARATION AND SOILS FOR ALL PLANTING AREAS TO ENSURE THE HEALTH AND VIGOROUS GROWTH OF PLANTINGS (ESPECIALLY TREES AND SHRUBS). CONTRACTOR SHALL PROVIDE ADEQUATE SOIL VOLUME AS DEPICTED IN THE TREE AND SHRUB PLANTING DETAILS HEREIN.

15. OWNER SHALL OBTAIN AN EASEMENT AND PERMISSION FOR CONTRACTOR ACTIVITIES WITHIN ABUTTING LOT. THIS INCLUDES ALL SITE LANDSCAPING IMPROVEMENTS ALONG THE PROPERTY LINE, FENCE REMOVAL, AND NEW FENCING WORK AS SHOWN ON THE PLANS.

16. LIGHT LOCATIONS ARE APPROXIMATE. SEE ENGINEERING PLANS.

MUNICIPALITY LANDSCAPING REQUIREMENTS:

SECTION 301.f.2.

D: THE PROVISION OF APPROPRIATE BUFFER SPACE AND LANDSCAPING TO INSULATE PARKING AREAS FROM ADJOINING PROPERTIES AND PUBLIC STREETS.

E: PLACEMENT OF TREES AND SHRUBS AROUND THE PERIPHERY OF PARKING LOTS AND IN THE INTERIOR SO AS TO BREAK UP LARGE PARKING AREAS. LARGE PARKING LOTS OF 20 OR MORES SPACES SHALL INCLUDE AT LEAST 1 TREE FOR EVERY 8 SPACES.

SECTION 301.f.3.

A. ADEQUACY OF LANDSCAPING, SCREENING AND SETBACKS WITH REGARD TO ACHIEVING MAXIMUM COMPATIBILITY WITH AND PROTECTION FOR ADJACENT PROPERTIES AND PUBLIC ROADS.

D. REDUCTION OF LIGHTING AND GLARE TO THE NECESSARY MINIMUM, INCLUDING PROVISION OF APPROPRIATE LANDSCAPING TO REDUCE THE IMPACT OF LIGHTING AND GLARE ON ADJACENT PROPERTIES.

F. THE NEED FOR LANDSCAPING BUFFERS, FENCES OR BERMS TO REDUCE NOISE.

NUMBER OF SPACES:	REQUIRED TREES:	NO. PROPOSED TREES
30 SPACES	4	4

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH
Tel: 603-643-3400 Mobile: 617-905-0467
Email: parkarchitecture@gmail.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:

PA Project Number: 2312

Phase: PERMIT REVIEW NOT FOR CONSTRUCTION

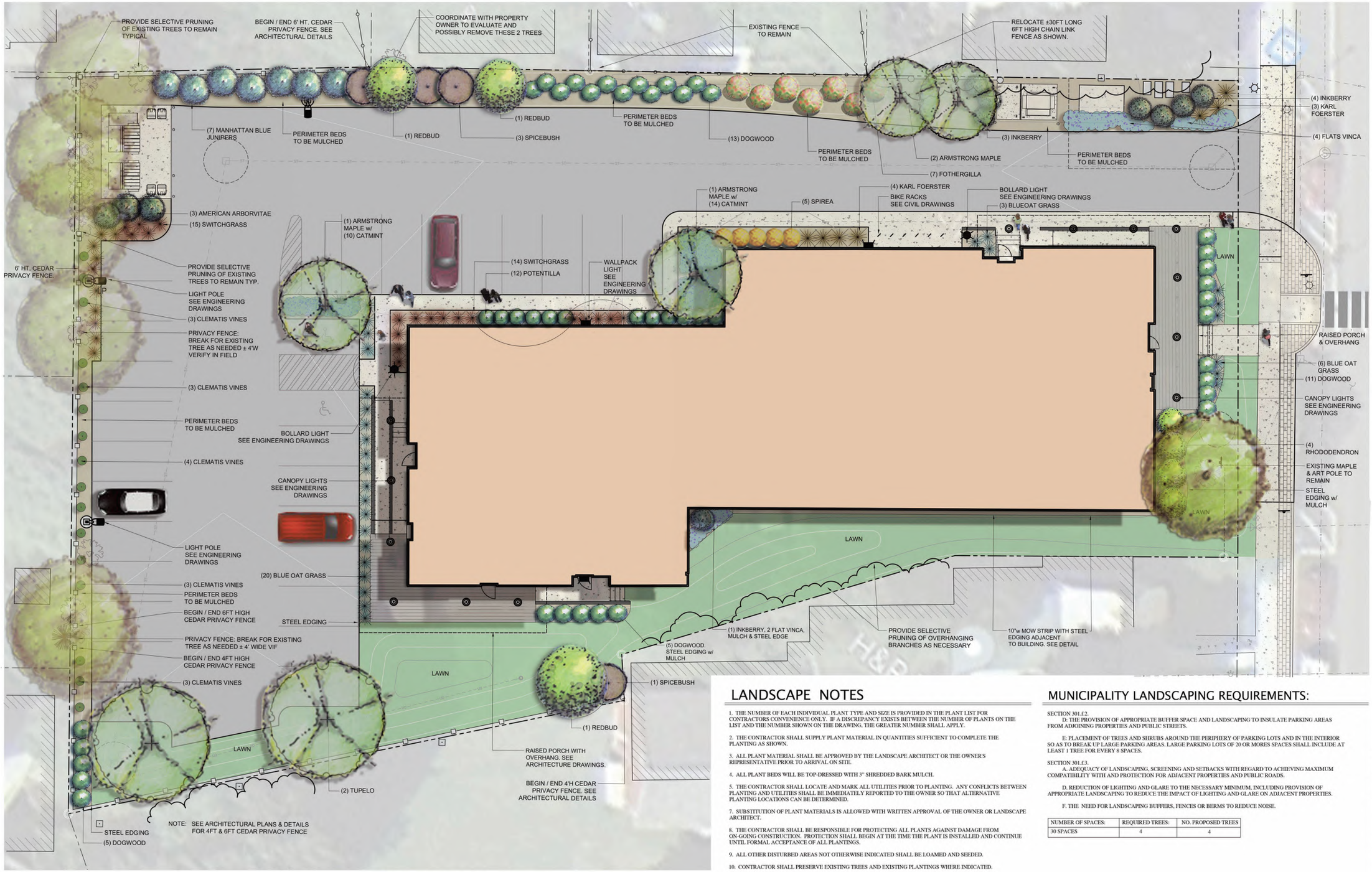
Scale: 1" = 10'

Date: 09/27/2023

LANDSCAPE PLAN

L2.0

PERMIT SUBMISSION



DRAFT

10' 0' 10' 20'

SCALE: 1" = 10FT

LANDSCAPE NOTES

1. THE NUMBER OF EACH INDIVIDUAL PLANT TYPE AND SIZE IS PROVIDED IN THE PLANT LIST FOR CONTRACTORS CONVENIENCE ONLY. IF A DISCREPANCY EXISTS BETWEEN THE NUMBER OF PLANTS ON THE LIST AND THE NUMBER SHOWN ON THE DRAWING, THE GREATER NUMBER SHALL APPLY.

2. THE CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING AS SHOWN.

3. ALL PLANT MATERIAL SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S REPRESENTATIVE PRIOR TO ARRIVAL ON SITE.

4. ALL PLANT BEDS WILL BE TOP-DRESSED WITH 3" SHREDDED BARK MULCH.

5. THE CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES PRIOR TO PLANTING. ANY CONFLICTS BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATIVE PLANTING LOCATIONS CAN BE DETERMINED.

7. SUBSTITUTION OF PLANT MATERIALS IS ALLOWED WITH WRITTEN APPROVAL OF THE OWNER OR LANDSCAPE ARCHITECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PLANTS AGAINST DAMAGE FROM ON-GOING CONSTRUCTION. PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED AND CONTINUE UNTIL FORMAL ACCEPTANCE OF ALL PLANTINGS.

9. ALL OTHER DISTURBED AREAS NOT OTHERWISE INDICATED SHALL BE LOAMED AND SEEDED.

10. CONTRACTOR SHALL PRESERVE EXISTING TREES AND EXISTING PLANTINGS WHERE INDICATED.

11. CONTRACTOR SHALL PROVIDE A 2-YEAR GUARANTEE ON ALL INSTALLED PLANT MATERIAL.

12. ALL PROPOSED TREES SHALL BE PLACED A MINIMUM OF 10FT FROM EXISTING AND PROPOSED UTILITIES.

13. ALL TREES SPECIFIED WILL BE OF GOOD QUALITY AND IN COMPLIANCE WITH THE MOST RECENT EDITION OF ANSI Z60.1 AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY AMERICANHORT.

14. SPECIAL ATTENTION SHALL BE PAID TO THE SITE PREPARATION AND SOILS FOR ALL PLANTING AREAS TO ENSURE THE HEALTH AND VIGOROUS GROWTH OF PLANTINGS (ESPECIALLY TREES AND SHRUBS). CONTRACTOR SHALL PROVIDE ADEQUATE SOIL VOLUME AS DEPICTED IN THE TREE AND SHRUB PLANTING DETAILS HEREIN.

15. OWNER SHALL OBTAIN AN EASEMENT AND PERMISSION FOR CONTRACTOR ACTIVITIES WITHIN ABUTTING LOT. THIS INCLUDES ALL SITE LANDSCAPING IMPROVEMENTS ALONG THE PROPERTY LINE, FENCE REMOVAL, AND NEW FENCING WORK AS SHOWN ON THE PLANS.

16. LIGHT LOCATIONS ARE APPROXIMATE. SEE ENGINEERING PLANS.

MUNICIPALITY LANDSCAPING REQUIREMENTS:

SECTION 301.f.2.
D: THE PROVISION OF APPROPRIATE BUFFER SPACE AND LANDSCAPING TO INSULATE PARKING AREAS FROM ADJOINING PROPERTIES AND PUBLIC STREETS.

E: PLACEMENT OF TREES AND SHRUBS AROUND THE PERIPHERY OF PARKING LOTS AND IN THE INTERIOR SO AS TO BREAK UP LARGE PARKING AREAS. LARGE PARKING LOTS OF 20 OR MORES SPACES SHALL INCLUDE AT LEAST 1 TREE FOR EVERY 8 SPACES.

SECTION 301.f.3.
A. ADEQUACY OF LANDSCAPING, SCREENING AND SETBACKS WITH REGARD TO ACHIEVING MAXIMUM COMPATIBILITY WITH AND PROTECTION FOR ADJACENT PROPERTIES AND PUBLIC ROADS.

D. REDUCTION OF LIGHTING AND GLARE TO THE NECESSARY MINIMUM, INCLUDING PROVISION OF APPROPRIATE LANDSCAPING TO REDUCE THE IMPACT OF LIGHTING AND GLARE ON ADJACENT PROPERTIES.

F. THE NEED FOR LANDSCAPING BUFFERS, FENCES OR BERMS TO REDUCE NOISE.

NUMBER OF SPACES:	REQUIRED TREES:	NO. PROPOSED TREES
30 SPACES	4	4

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH
Tel: 603-643-3400 Mobile: 617-905-0467
Email: parkarchitecture@gmail.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:

PA Project Number: 2312

Phase: PERMIT REVIEW NOT FOR CONSTRUCTION

Scale: 1" = 10'

Date: 09/27/2023

LANDSCAPE PLAN

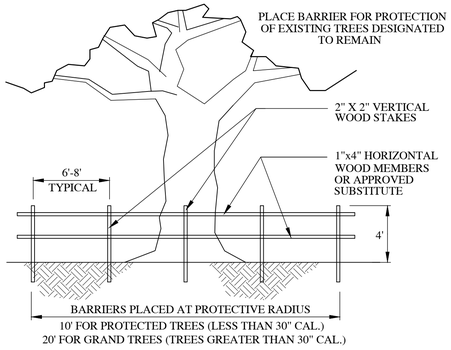
(COLOR VERSION)

L2.1

PERMIT SUBMISSION

TREE PROTECTION BARRIER

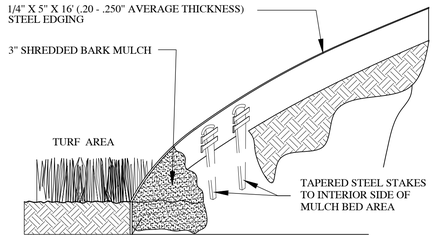
NOT TO SCALE



STEEL LANDSCAPE EDGING

NOT TO SCALE

STEEL LANDSCAPE EDGING AS MANUFACTURED BY:
SURE-LOC ALUMINUM EDGING CORPORATION - HOLLAND MI
TEL: 1-800-787-3562 OR APPROVED EQUAL



NOTES:

INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SEE LANDSCAPE PLAN FOR LOCATION OF LAWN VS. MULCHED BED AREAS AND PLACEMENT OF STEEL EDGING.

CONTRACTOR TO PROVIDE SHOP DRAWING TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO MATERIALS ORDERING AND INSTALLATION.

LANDSCAPE PLANTING SCHEDULE

QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
4	ACER x FREEMANII 'ARMSTRONG'	*ARMSTRONG MAPLE*	2.5" – 3" CAL
3	CERCIS CANADENSIS 'THE RISING SUN'	*RISING SUN REDBUD*	2.5" – 3" CAL
2	NYSSA SYLVATICA 'GREEN GABLE'	*GREEN GABLE TUPELO*	2.5" – 3" CAL
EVERGREEN TREES			
3	THUJA OCCIDENTALIS	*AMERICAN ARBORVITAE*	6FT–8FT B&B
EVERGREEN SHRUBS			
8	ILEX GLABRA	*INKBERRY*	30"–36" HT, #7
7	JUNIPERUS VIRGINIANA MANHATTAN BLUE	*MANHATTAN BLUE JUNIPER*	30"–36" HT, #7
4	RHODODENDRON 'PJM ALBA'	*WHITE PJM RHODODENDRON*	30"–36" HT, #7
DECIDUOUS SHRUBS			
34	CORNUS SERICERA 'FIREDANCE'	*FIREDANCE DOGWOOD*	24"–30" HT, #5
4	LINDERA BENZOIN	*NORTHERN SPICEBUSH*	30"–36" HT, #7
7	FOTHERGILLA GARDENII	*DWARF FOTHERGILLA*	24"–30" HT, #7
12	POTENTILLA FRUITICOSA 'SUMMER DAWN'	*SUMMER DAWN POTENTILLA*	24"–30" HT, #5
5	SPIREA 'LATIFOLIA'	*COMMON MEADOWSWEET*	24"–30" HT, #5
PERENNIALS, VINES & GRASSES			
7	CALAMAGROSTIS 'KARL FOERSTER'	*KARL FOERSTER GRASS*	#5
16	CLEMATIS SP.	*CLEMATIS VINE*	#2
29	HELICTOTRICHON SEMPERVIRENS	*BLUE OAT GRASS*	#5
24	NEPETA 'WALKERS LOW'	*WALKERS LOW CATMINT*	#2
29	PANICUM VIRGATUM 'SHENANDOAH'	*SWITCHGRASS*	#5
6	VINCA MINOR	*BLUE MYRTLE*	FLAT

PROPOSED TREE IMAGES:

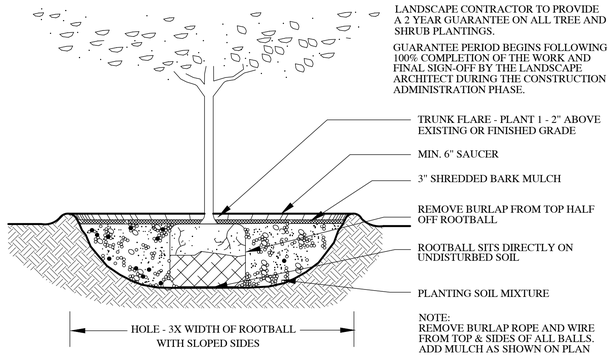
ARMSTRONG MAPLE
(COLUMNAR)

RISING SUN REDBUD

TUPELO

TREE PLANTING DETAIL

NOT TO SCALE



PROPOSED SHRUBS, GRASSES AND PERENNIAL IMAGES:

INKBERRY

DWARF FOTHERGILLA

JUNIPER

RHODODENRON

DOGWOOD

SPICEBUSH

POTENTILLA

SPIREA

KARL FOERSTER

CLEMATIS

BLUE OAT GRASS

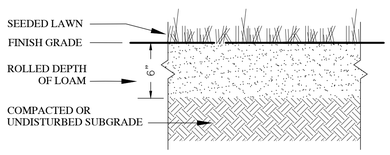
CATMINT

SWITCHGRASS

VINCA

TURF PLANTING DETAIL

NOT TO SCALE



NOTES:

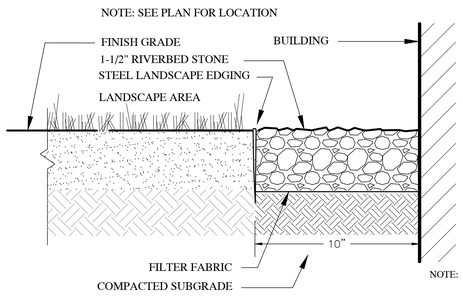
SEED ALL IDENTIFIED AREAS FOR LAWN AND ALL DISTURBED AREAS WITHIN 48 HOURS OF FINAL GRADING.
SEED AFTER APRIL 15TH AND BEFORE SEPTEMBER 15TH IN ORDER TO ESTABLISH BEFORE FREEZING TEMPERATURES.

CONTRACTOR IS RESPONSIBLE TO WATER AND ESTABLISH SEEDED LAWN AREAS. WARRANTY SHALL BE 9 WEEKS FOLLOWING INSTALLATION PERIOD.

CONTRACTOR TO INCLUDE NECESSARY TOUCH-UP / RESEEDING FOR ANY AREAS WHERE GRASS SEED DOES NOT GERMINATE DURING THE WARRANTY PERIOD.

MOW STRIP

SCALE: NTS



NOTE: MOW STRIP BY THE DIRT DOCTORS OR APPROVED EQUAL. PEMBROKE, NH (603) 229-3200

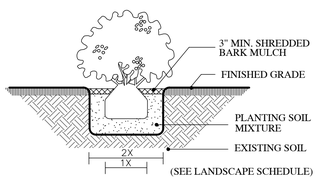
PROPOSED EVERGREEN TREE

SCALE: NTS

AMERICAN ARBORVITAE

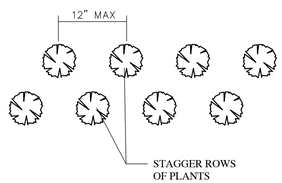
SHRUB PLANTING DETAIL

NOT TO SCALE



GROUNDCOVER SPACING

NOT TO SCALE



gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

ParkArchitecture.com
3 School House Lane, Suite #1 Etna NH
Tel: 603-643-3400 Mobile: 617-905-0467
Email: parkarchitecture@gmail.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:

PA Project Number: 2312

Phase: PERMIT REVIEW NOT FOR CONSTRUCTION

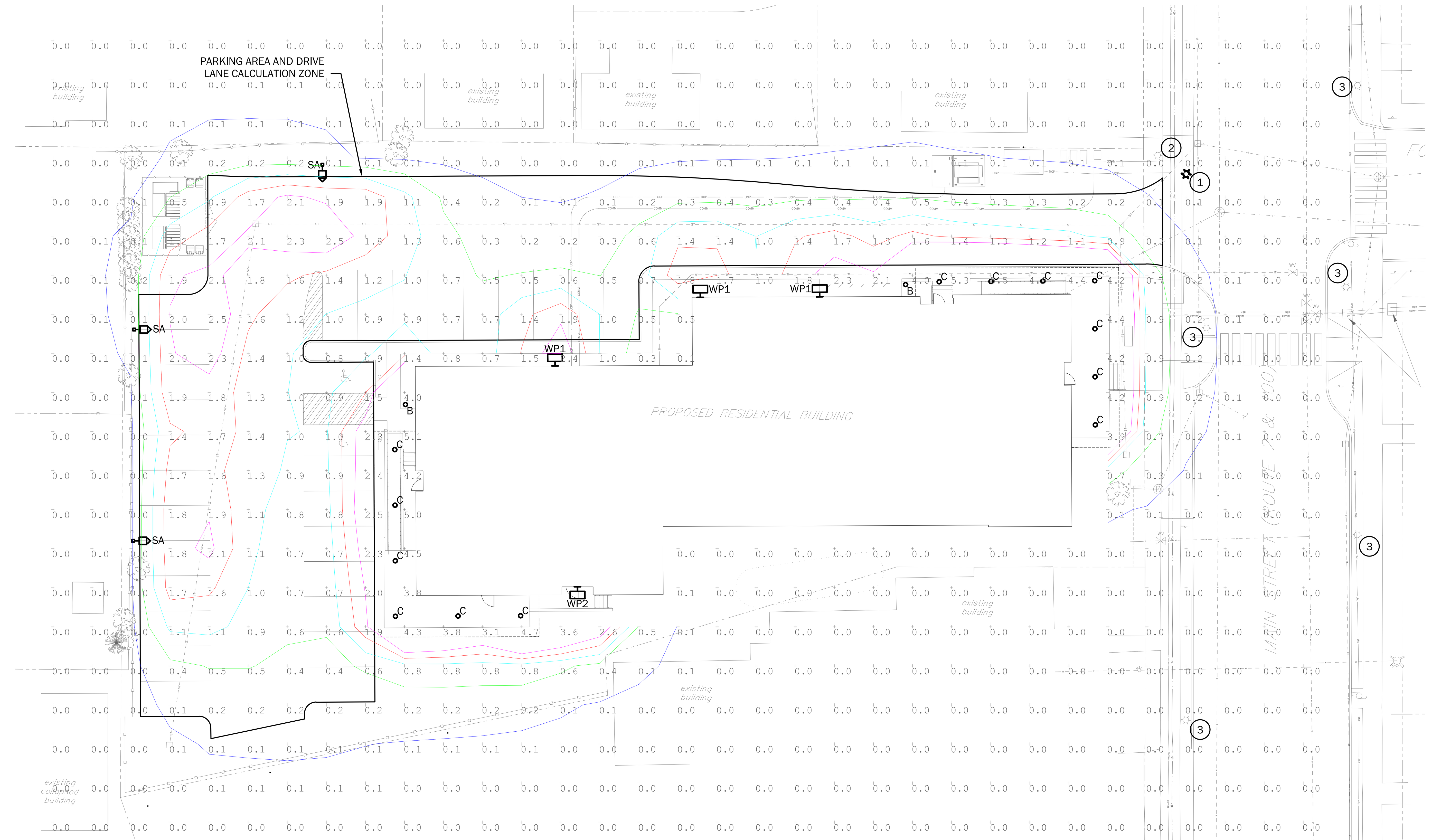
Scale: AS NOTED

Date: 09/27/2023

LANDSCAPE DETAILS

L3.0

PERMIT SUBMISSION

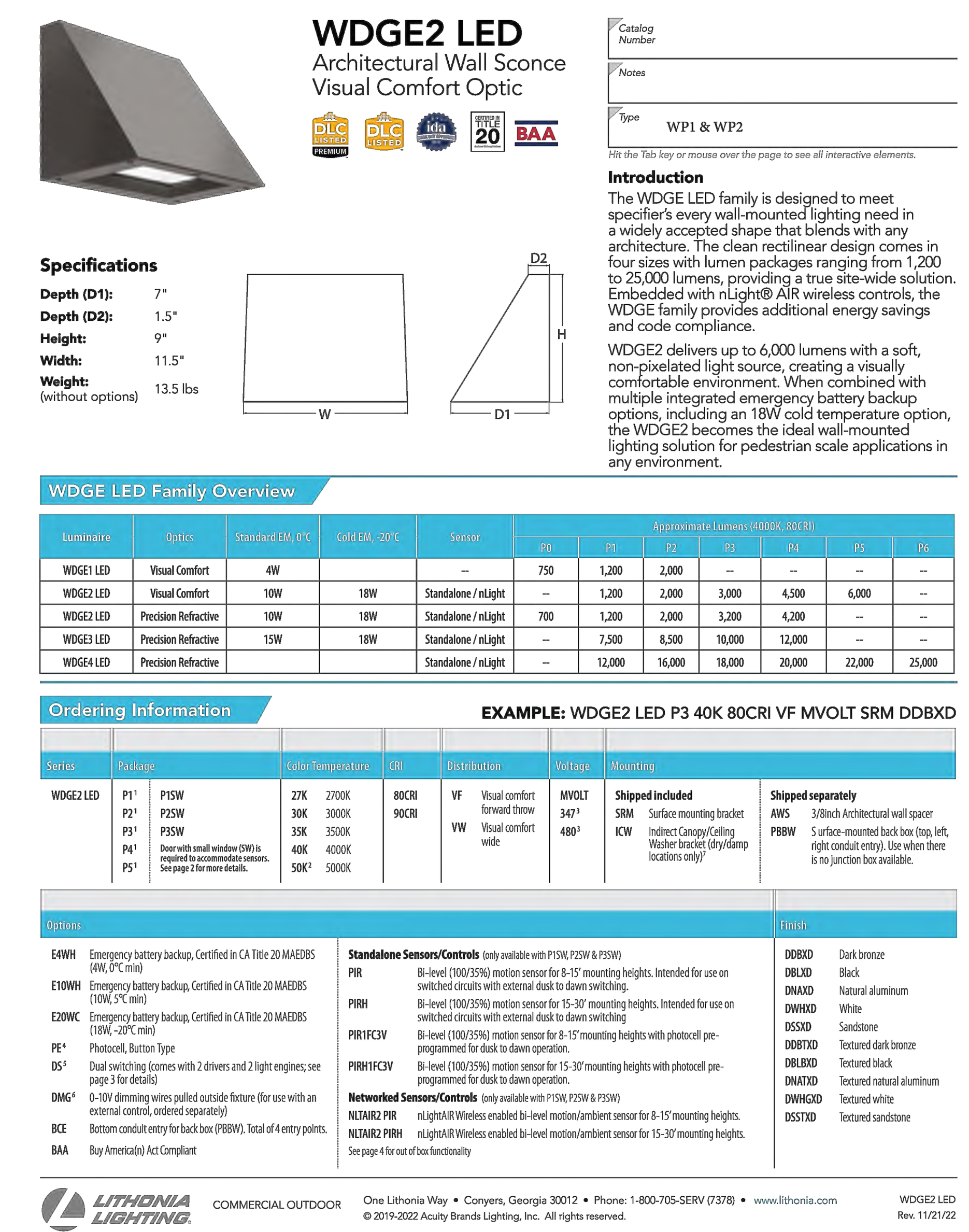


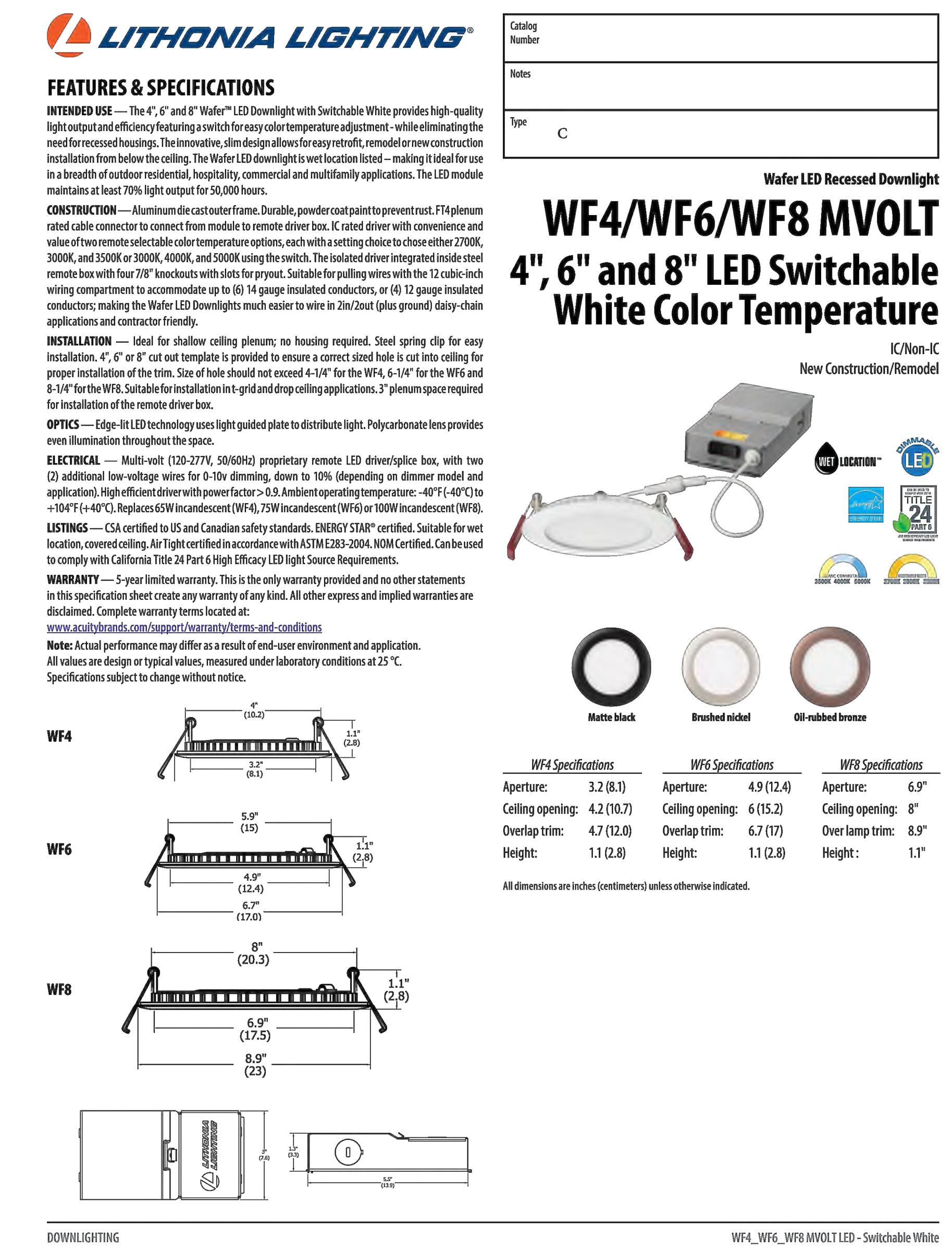
SITE PHOTOMETRIC PLAN

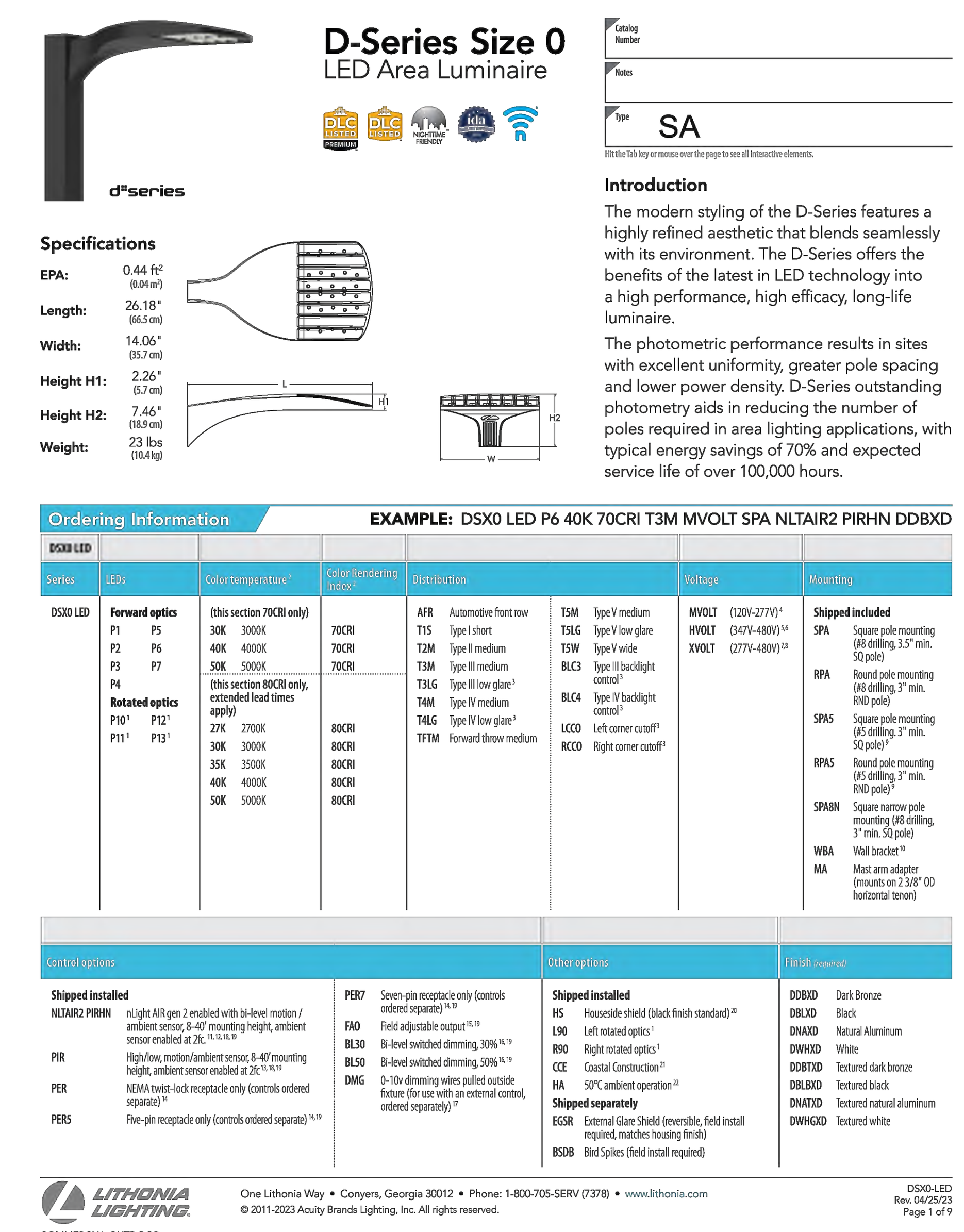
SCALE: 1" = 20'

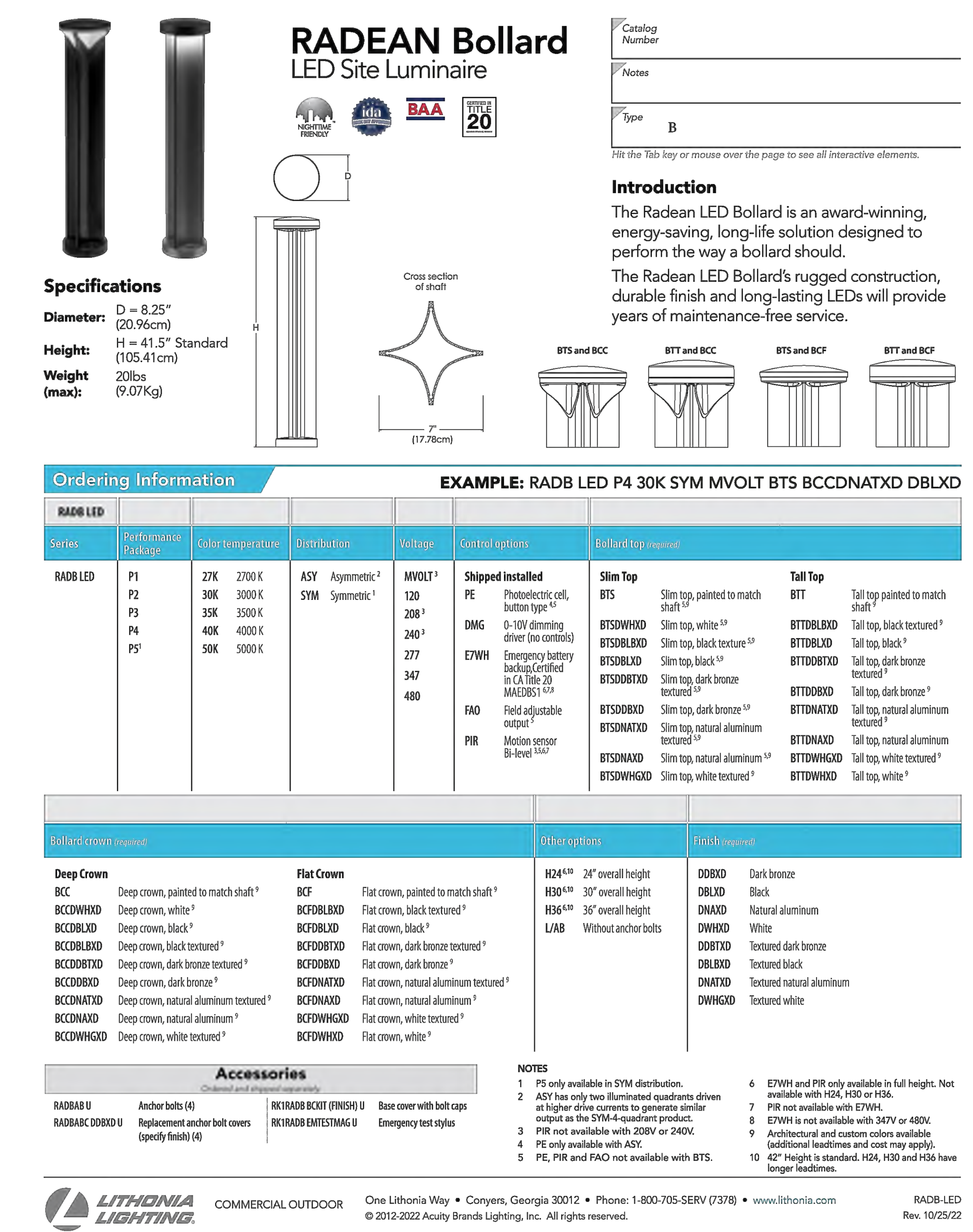
HORIZONTAL SCALE IN FEET

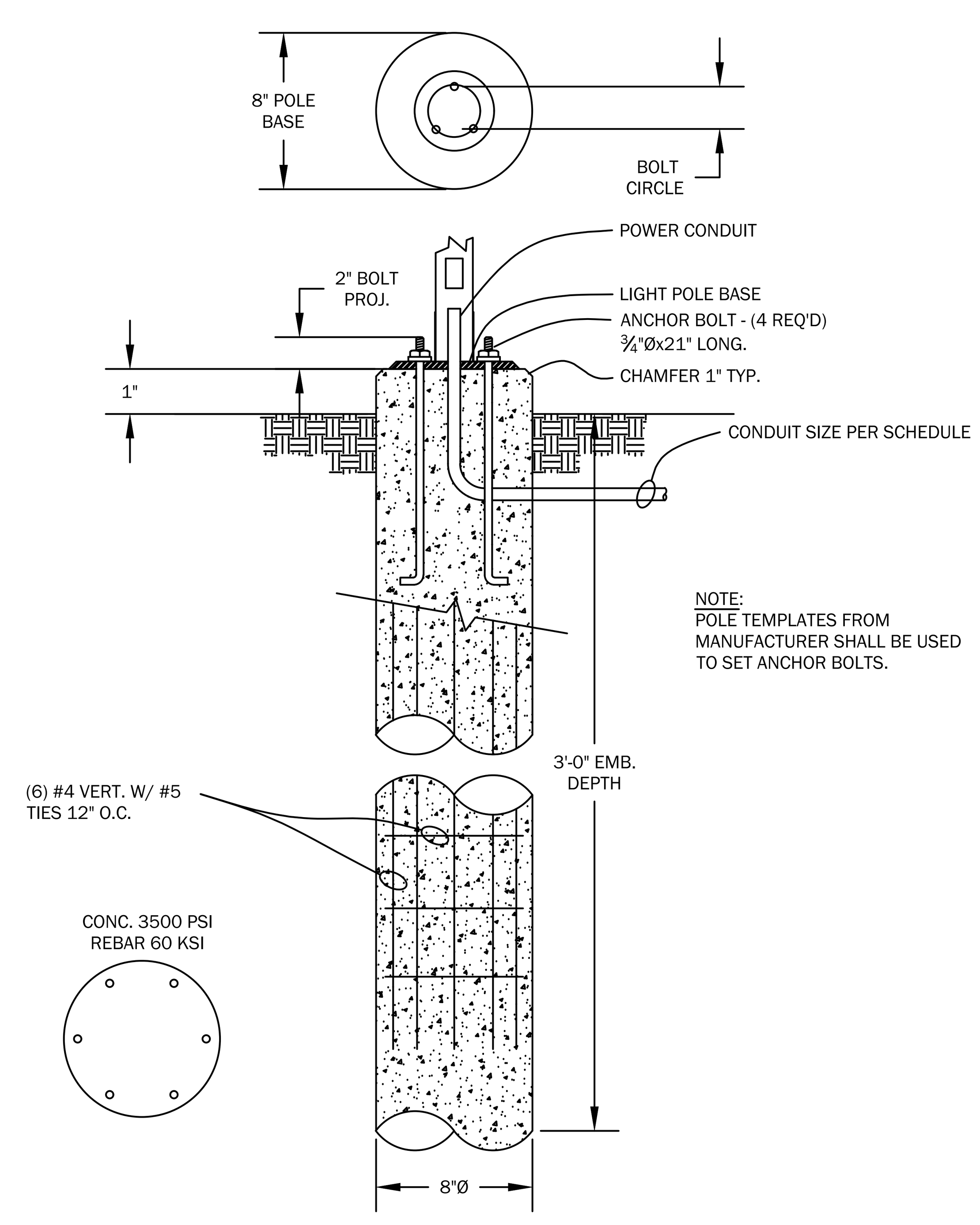
20 10 0 20 40 60 80







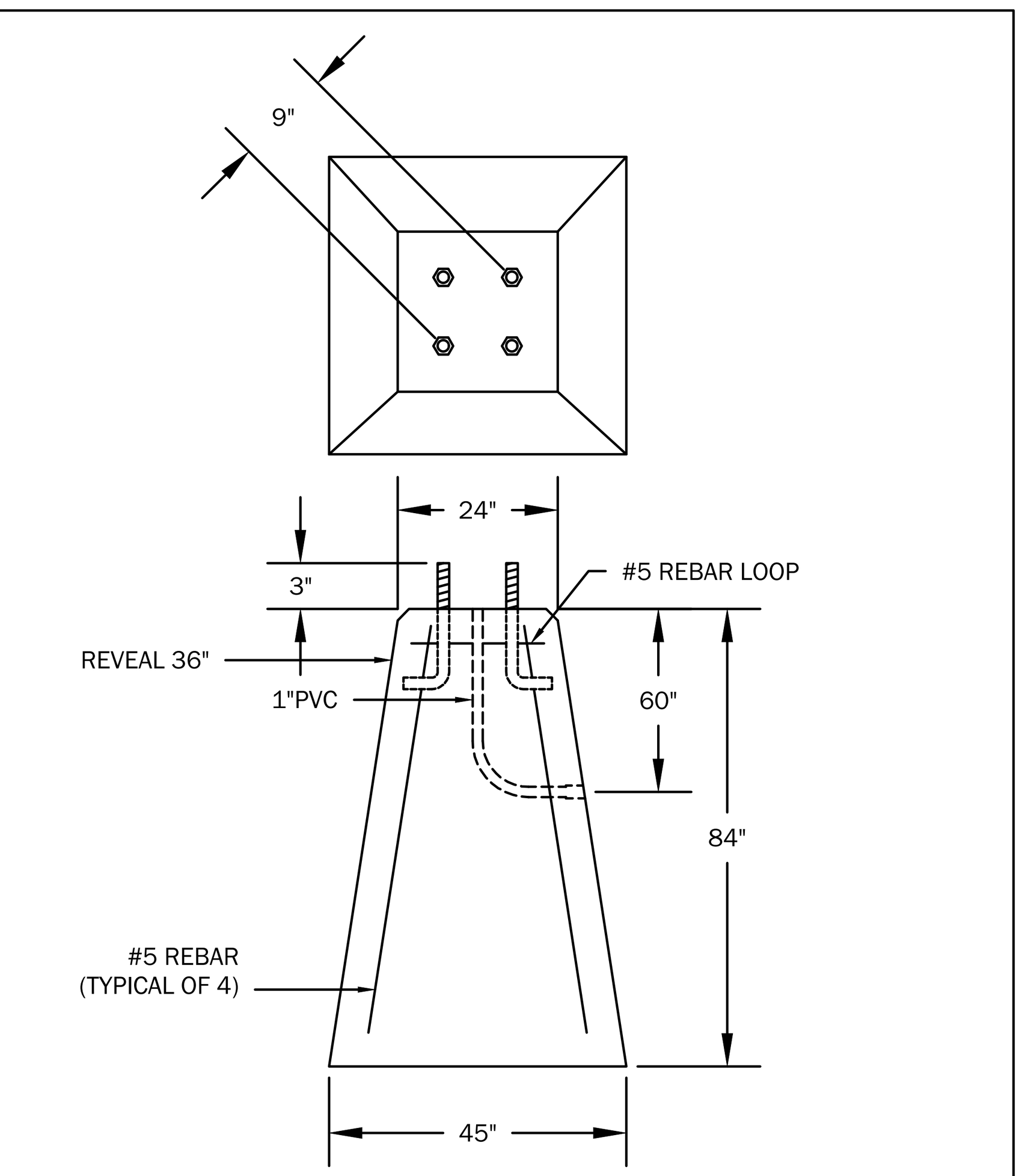




BOLLARD CONCRETE BASE DETAIL

NOT TO SCALE

STATISTICS					
Description	Symbol	Avg	Max	Min	Avg/Min Ratio
PARKING AREA AND DRIVE LANE	+	1.08 Fc	2.5 Fc	0.1 Fc	25.00



TAPERED LIGHT POLE BASE DETAIL

NOT TO SCALE

KEYED NOTES:

1. EXISTING STREET LIGHT IN THIS LOCATION TO BE RELOCATED.
2. PROPOSED NEW LOCATION FOR EXISTING STREET LIGHT TO BE RELOCATED.
3. EXISTING POLE LIGHT TO REMAIN.

ISOLINE LEGEND

- 2 FOOTCANDELS
- 1.5 FOOTCANDELS
- 1 FOOTCANDELS
- .5 FOOTCANDELS
- .1 FOOTCANDELS

GENERAL NOTES:

1. $+_{0.3}$ DENOTES FOOTCANDLE LEVEL AT EACH POINT.
2. STREET LIGHTING FIXTURES NOT PROVIDED BY THIS PROJECT. LIGHTING CONTRIBUTION BY THESE FIXTURES IS NOT SHOW.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER & MODEL NO.	DESCRIPTION	COUNT	LAMPS	WATTS	LUMENS	VOLTS	MOUNTING	REMARKS
B	LITHONIA LIGHTING RADBLED-P4-40K-SYM-MVOLT-PIR-BTS-BCC-H36-xxxxx	42" BOLLARD	2	LED	17	2081	120/277	MOUNTED ON CONCRETE BOLLARD BASE	xxxxx - ARCHITECT TO SELECT FINISH, CONTROLLED BY SITE LIGHTING TIME CLOCK AND INTEGRAL HIGH/LOW OCCUPANCY SENSING
C	LITHONIA LIGHTING WF6-LED-30K40K50K-MVOLT-90CRI-xx	RECESSED	13	LED	14	1190	120/277	MOUNTED UNDERNEATH CANOPY	xx-ARCHITECT TO SELECT FINISH, EC TO SET COLOR TEMP TO 40K IN FIELD, CONTROLLED BY SITE LIGHTING TIME CLOCK
WP1	LITHONIA LIGHTING WDGE2-LED-P1SW-40K-80CRI-VW-MVOLT-SRM-PIR1FC3V-xxxxx	WALL PACK	3	LED	10	1200	120/277	WALL MOUNTED AT 15'	xxxxx-ARCHITECT TO SELECT FINISH, INTEGRAL HIGH/LOW OCCUPANCY SENSING AND AMBIENT LIGHT SENSOR
WP2	LITHONIA LIGHTING WDGE2-LED-P1SW-40K-80CRI-VW-MVOLT-SRM-E20WC-PIR1FC3V-xxxxx	WALL PACK	1	LED	10	1200	120/277	WALL MOUNTED AT 10'	xxxxx-ARCHITECT TO SELECT FINISH, INTEGRAL HIGH/LOW OCCUPANCY SENSING AND AMBIENT LIGHT SENSOR, COLD WEATHER BATTERY BACKUP
SA	LITHONIA LIGHTING DSXOLED-P1-40K-70CRI-BLC4-MVOLT-SPA-NLTAIR2PIRHN-xxxxx	POLE LIGHT	3	LED	33	3599	120/277	POLE MOUNTED AT 15'	xxxxx-ARCHITECT TO SELECT FINISH, INTEGRAL HIGH/LOW OCCUPANCY SENSING AND AMBIENT LIGHT SENSOR

SITE POLE LIGHTING TO BE MOUNTED ON LITHONIA LIGHTING #SSA-12-4G-DM19AS-UL-xxxxx POLE (ARCHITECT TO SELECT POLE AND FIXTURE FINISH).

ISSUED FOR PERMIT 9/27/23

NOT FOR CONSTRUCTION

DuBois & King inc.

www.dubois-king.com

PROFESSIONAL SEAL

NO.	DATE	DESCRIPTION	BY	CK'D

PROJECT NAME:
51 SOUTH MAIN STREET APARTMENTS
51 S MAIN ST WATERBURY, VT, 05676

SHEET TITLE:
SITE PHOTOMETRIC PLAN

DRAWN BY	DATE
BDF	09/27/2023
CHECKED BY	D&K PROJECT #
ASG	528974
PROJ. ENG.	SCALE
BDF	AS NOTED

SHEET NUMBER

SP1.0

SHEET 1 OF 1

I:\5\528974 GBA 51 South Main St\Drawings\Electrical\528974 Site Photometric Drawing D&K.dwg 9/27/2023 10:25 AM

51 S. MAIN - BUILDING AREA

LEVEL 1

1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
1 BEDROOM - ADA	732 SF
1 BEDROOM - AV	730 SF
2 BEDROOM - ADA	923 SF
STUDIO	431 SF
COMMON ROOM	455 SF
CORRIDOR	1359 SF
EL. EQ.	56 SF
ELEC.	177 SF
ELEV.	115 SF
FLEX / MEETING	149 SF
JAN.	53 SF
LAUNDRY	307 SF
LOBBY	241 SF
MAIL	93 SF
MECH. / F.R.	176 SF
OFFICE / TRAINING	428 SF
RR	60 SF
STAIR A	216 SF
STAIR B	213 SF
STOR.	44 SF
STOR.	83 SF
STOR.	45 SF
STOR.	43 SF
STOR.	43 SF
STOR.	45 SF
VEST.	54 SF
LEVEL 1	9445 SF

LEVEL 2

1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	728 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
2 BEDROOM	923 SF
2 BEDROOM	923 SF
STUDIO	431 SF
CORRIDOR	1340 SF
ELEV.	115 SF
STAIR A	216 SF
STAIR B	216 SF
STOR.	119 SF
T/D	53 SF
LEVEL 2	9451 SF

LEVEL 3

1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
2 BEDROOM	921 SF
2 BEDROOM	923 SF
STUDIO	431 SF
STUDIO	431 SF
CORRIDOR	1249 SF
ELEV.	115 SF
FLEX	119 SF
STAIR A	218 SF
STAIR B	216 SF
T/D	54 SF
LEVEL 3	8332 SF
TOTAL BUILDING AREA	27228 SF

51 S. MAIN - EXTERIOR AREA

LEVEL 1

COMMON PORCH	438 SF
FRONT PORCH	437 SF
LEVEL 1	874 SF

1 SITE PLAN

SCALE: 1/16" = 1'-0"

Address: 51 S. Main St. Waterbury, VT 05676
Parcel ID: 916-0051.V
span: 696-221-11982
0.8 ac (34,848 sf)

Village Zoning: Downtown
Use: Multi-Family Dwelling
Special Flood Hazard Area (partial): Base Flood Level = 425' (FEMA)
F.F. Elevation: 427'-0"

Lot Area Size: +/-34,848 sf (0.80 acres)	**(2,000 sf min.)**
Lot Frontage: +/-107'	**(30' min.)**
Lot Coverage: +/-30%	**(100% max.)**

Setbacks:
Front: 0' min. – 10' max.
Side: 0'
Back: 0'

Build-to-Line: 8'

Min. Build-to-Line Coverage: 60%	**(proposed: 43%)**
Max. Structure Height: 60' max.	**(proposed max. = 43'-0")**
Min. Principal Bldg. Height: 24' min.	**(proposed min. = 24'-4")**
Max. Principal Bldg. Footprint: 10,000 sf.	**(proposed footprint: 9,445 sf.)**

(area of ground covered by the building as measured around the exterior building walls.)

Max. Residential Density: N/A

Parking Required:	**(4) Studio Apt. =**	**4 spaces**
	(17) 1BR Apt. =	**17 spaces**
	(5) 2BR Apt. =	**7.5 spaces**
	Office: 428sf =	**1.43 spaces**
	Total Parking Required =	**29.93 spaces (proposed parking: 30 spaces)**

N

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	1/16" = 1'-0"
Date	09/27/2023

SITE PLAN

A100

9/27/2023 11:20:32 AM

LEVEL 1	
1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
1 BEDROOM - ADA	732 SF
1 BEDROOM - AV	730 SF
2 BEDROOM - ADA	923 SF
STUDIO	431 SF

1 2 4 6 7 9 11 12 14

166' - 8"
70' - 11"
95' - 9"
36' - 1 1/2" 14' - 3" 14' - 6 1/2" 6' - 0" 28' - 9 1/2" 28' - 8" 9' - 6" 28' - 9 1/2"

2 A300

BIKE RACK

RAMP UP

DN

OFFICE / TRAINING 428 SF

FLEX / MEETING 149 SF

LOBBY 241 SF

FRONT PORCH 437 SF

STAIR A 216 SF

1 BEDROOM - ADA 732 SF

1 BEDROOM 730 SF

REF

3 A300

EV CHARGER

FUTURE EV PARKING (RUN CONDUIT ONLY)

ELEC. 177 SF

MECH. / F.R. 176 SF

JAN. 53 SF

2 BEDROOM - ADA 923 SF

STOR. 45 SF

STOR. 43 SF

STOR. 44 SF

STOR. 43 SF

STOR. 45 SF

STOR. 63 SF

EL. EQ. 56 SF

ELEV. 115 SF

1 BEDROOM - AV 730 SF

1 BEDROOM 730 SF

1 BEDROOM 733 SF

VEST. 54 SF

CORRIDOR 1359 SF

MAIL 93 SF

RR 60 SF

LAUNDRY 307 SF

STAIR B 213 SF

COMMON ROOM 455 SF

STUDIO 431 SF

COMMON PORCH 438 SF

17' - 5"

25' - 11"

57' - 10"

6' - 0"

1A A300

1B A300

A B C D E F G H

36' - 1 1/2" 9' - 6" 16' - 9 1/2" 8' - 6" 9' - 7 1/2" 28' - 8" 28' - 8" 28' - 9 1/2"

62' - 5"

104' - 3"

166' - 8"

1 3 5 8 10 13 14

FLOORING

- CARPET TILE
- RESILIENT - PLANK
- RESILIENT - SHEET
- WALK-OFF MAT
- CONCRETE - SEALED

1 LEVEL 1

SCALE: 1/8" = 1'-0"

9/27/2023 11:20:37 AM

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	1/8" = 1'-0"
Date	09/27/2023

FLOOR PLAN - LEVEL 1

A101

LEVEL 2	
1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	728 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
2 BEDROOM	923 SF
2 BEDROOM	923 SF
STUDIO	431 SF

1 LEVEL 2
SCALE: 1/8" = 1'-0"

9/27/2023 11:20:42 AM

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

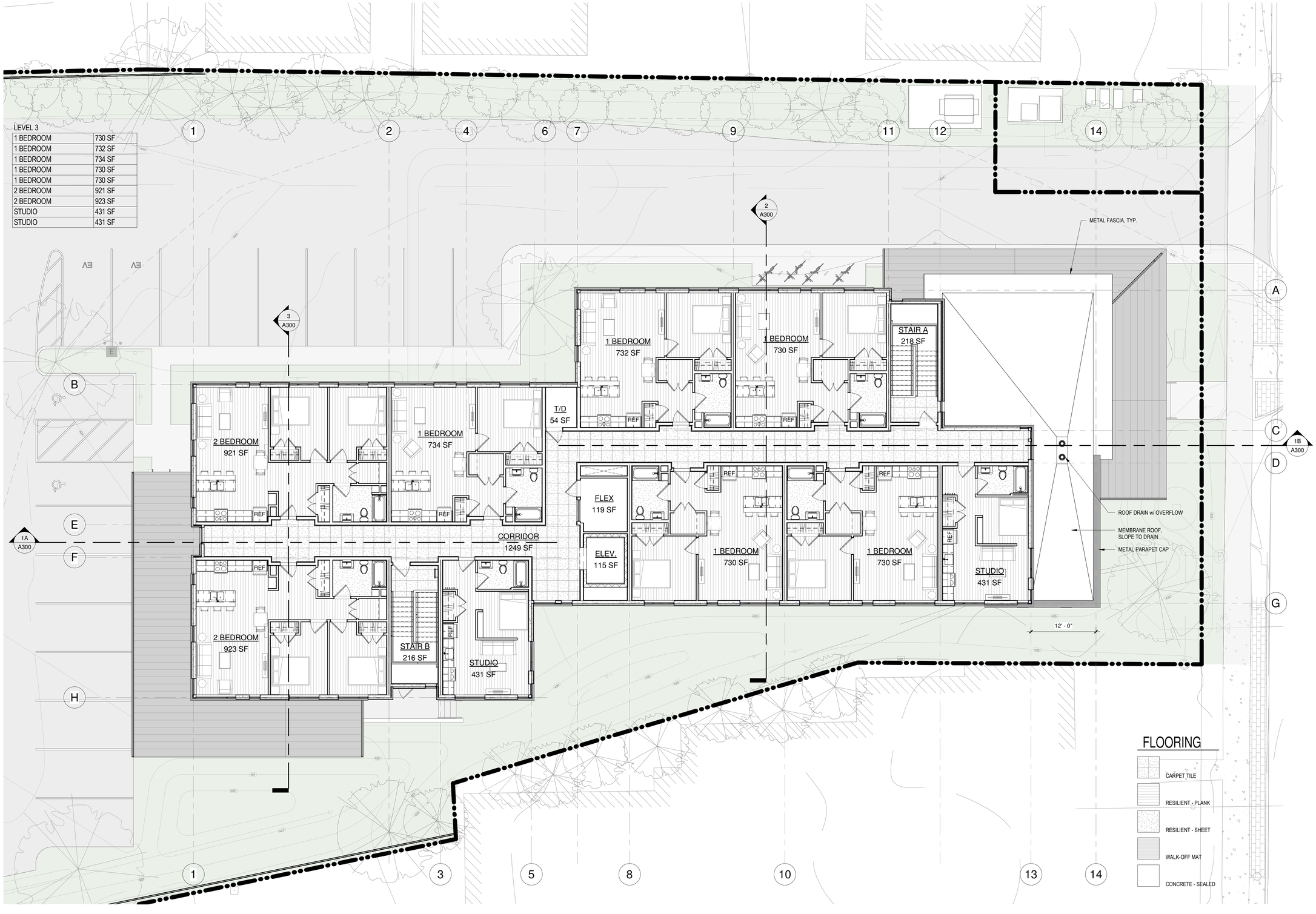
Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	1/8" = 1'-0"
Date	09/27/2023

FLOOR PLAN - LEVEL 2

A102

LEVEL 3	
1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
2 BEDROOM	921 SF
2 BEDROOM	923 SF
STUDIO	431 SF
STUDIO	431 SF



1 LEVEL 3

SCALE: 1/8" = 1'-0"

9/27/2023 11:20:47 AM

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:	
#	
Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	1/8" = 1'-0"
Date	09/27/2023

FLOOR PLAN - LEVEL 3

A103

LEVEL 1

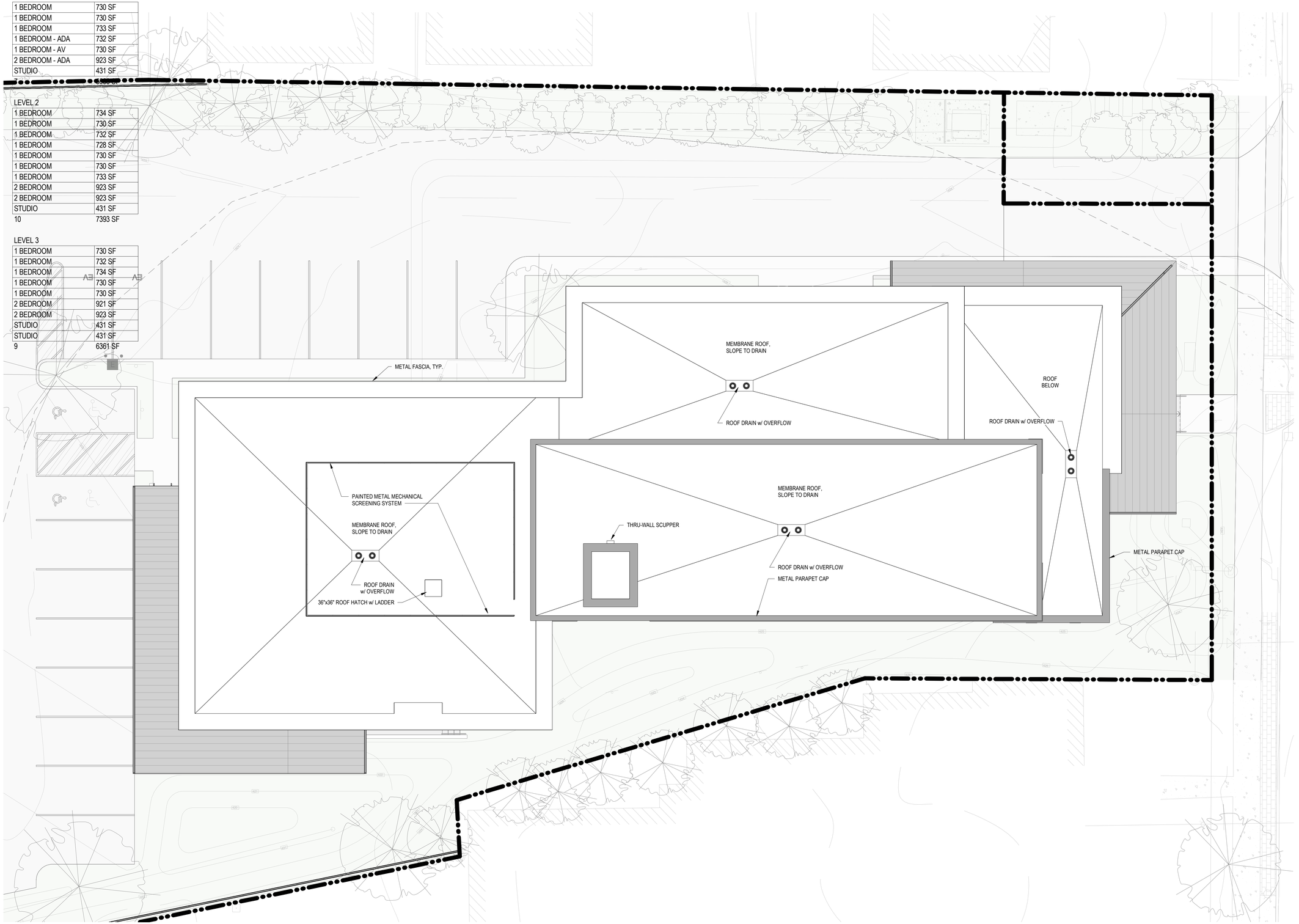
1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
1 BEDROOM - ADA	732 SF
1 BEDROOM - AV	730 SF
2 BEDROOM - ADA	923 SF
STUDIO	431 SF
7	5209 SF

LEVEL 2

1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	728 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
1 BEDROOM	733 SF
2 BEDROOM	923 SF
2 BEDROOM	923 SF
STUDIO	431 SF
10	7393 SF

LEVEL 3

1 BEDROOM	730 SF
1 BEDROOM	732 SF
1 BEDROOM	734 SF
1 BEDROOM	730 SF
1 BEDROOM	730 SF
2 BEDROOM	921 SF
2 BEDROOM	923 SF
STUDIO	431 SF
STUDIO	431 SF
9	6361 SF



1 ROOF PLAN

SCALE: 1/8" = 1'-0"

9/27/2023 11:20:49 AM

N

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664

www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

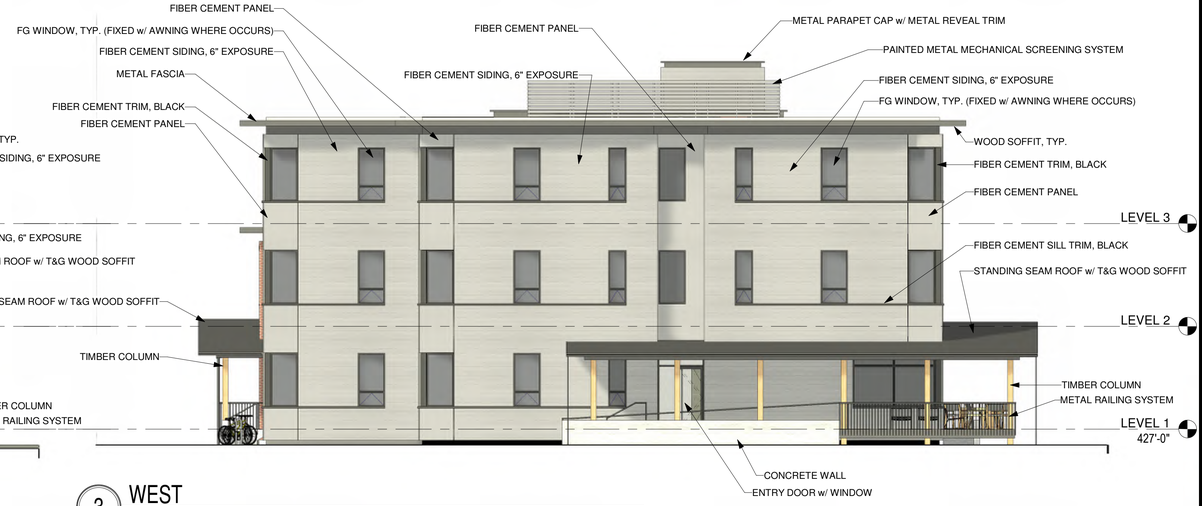
Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	1/8" = 1'-0"
Date	09/27/2023

ROOF PLAN

A104

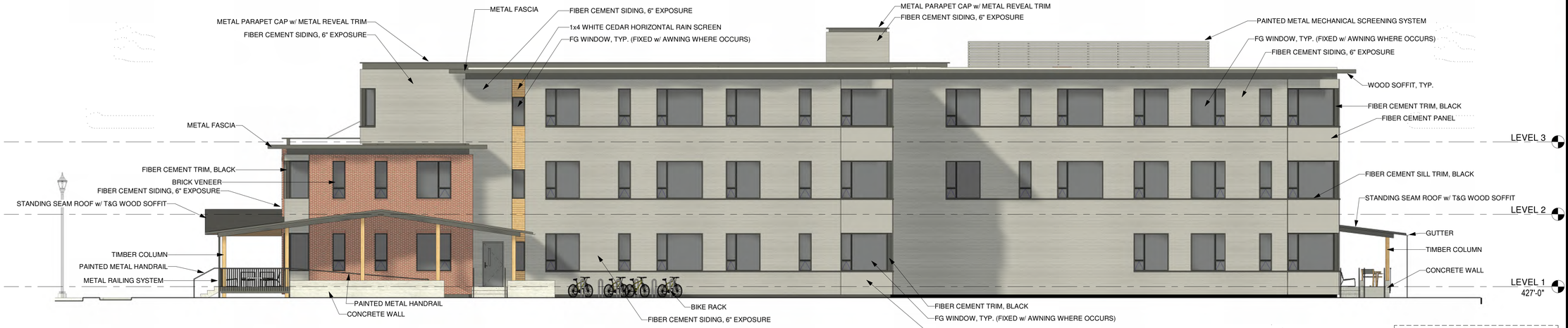
1 EAST

SCALE: 1/8" = 1'-0"



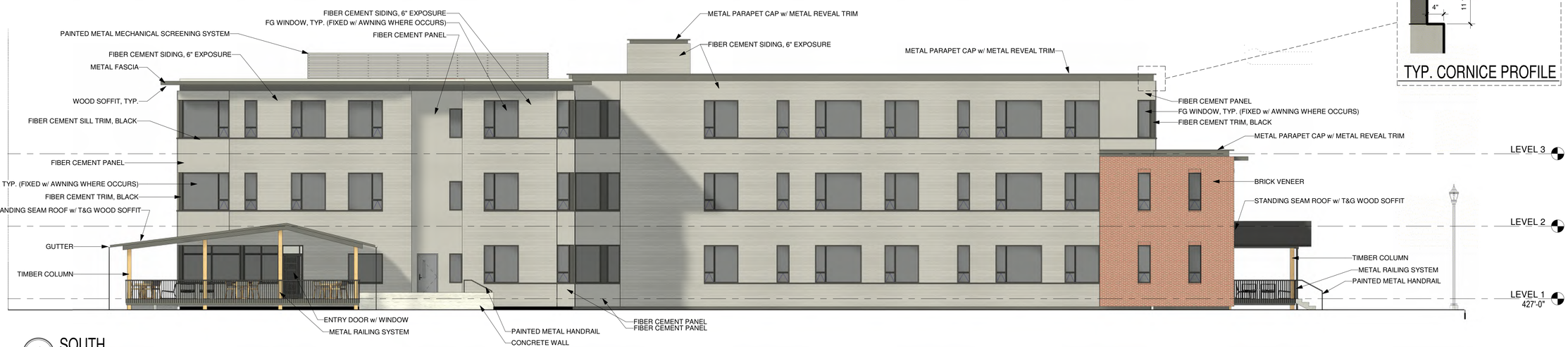
3 WEST

SCALE: 1/8" = 1'-0"



2 NORTH

SCALE: 1/8" = 1'-0"



4 SOUTH

SCALE: 1/8" = 1'-0"

TYP. CORNICE PROFILE

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

CEDAR SIDING

FIBER CEMENT SIDING

BRICK

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	As indicated
Date	09/27/2023

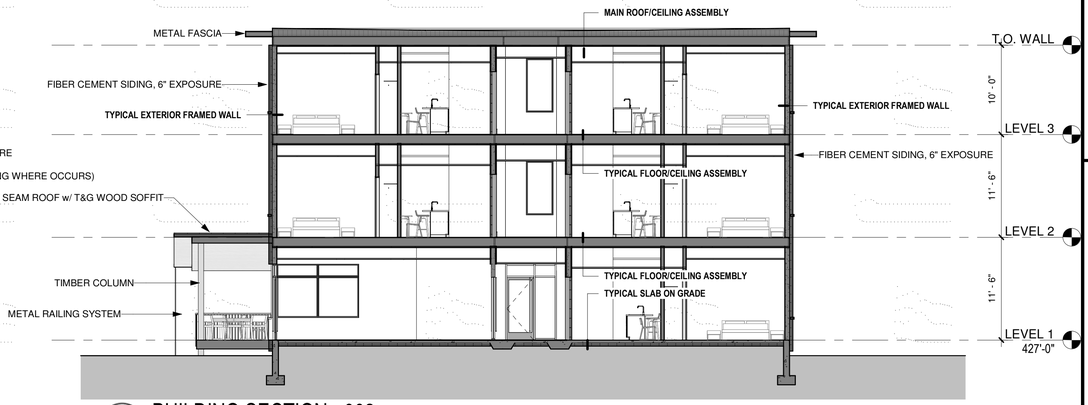
ELEVATIONS - COLOR

A200

9/27/2023 11:21:29 AM

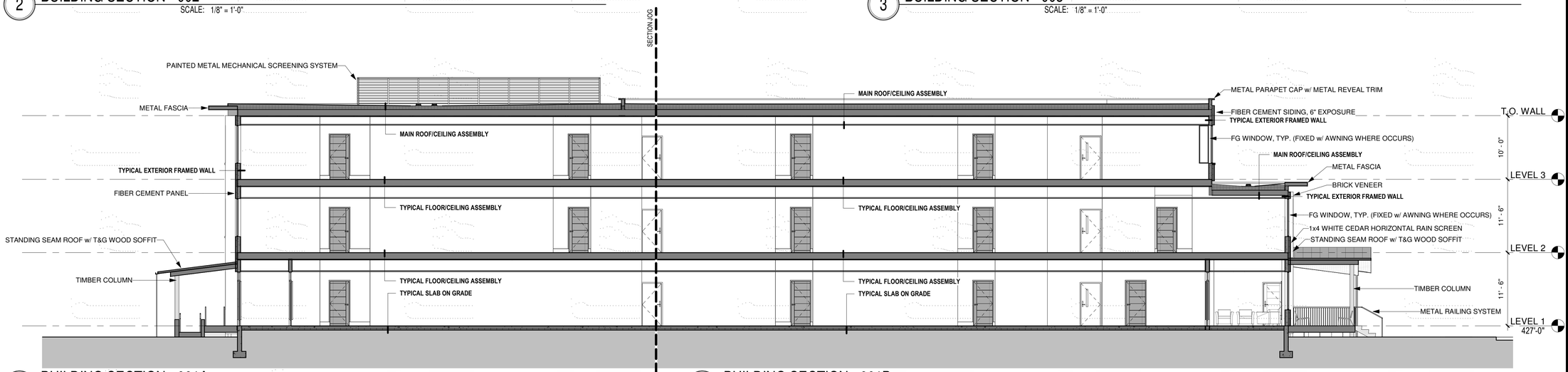
2 BUILDING SECTION - 002

SCALE: 1/8" = 1'-0"



3 BUILDING SECTION - 003

SCALE: 1/8" = 1'-0"

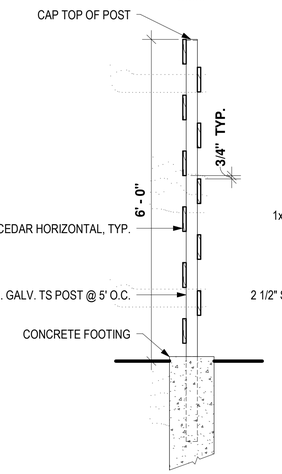


1A BUILDING SECTION - 001A

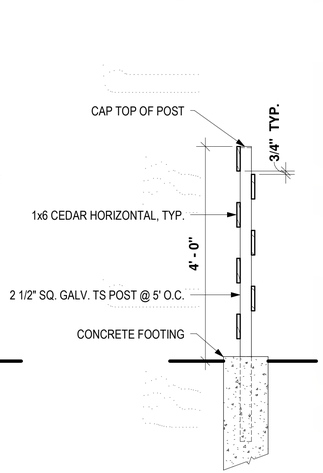
SCALE: 1/8" = 1'-0"

1B BUILDING SECTION - 001B

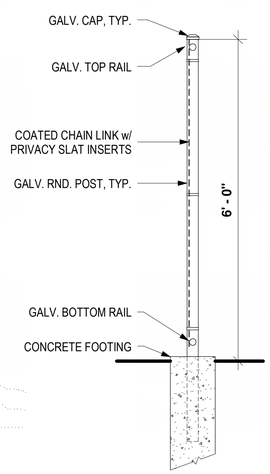
SCALE: 1/8" = 1'-0"



6' TALL WOOD FENCE



4' TALL WOOD FENCE



6' TALL CHAIN LINK w/ PVC SLAT INFILL

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664
www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	As indicated
Date	09/27/2023

BUILDING SECTIONS

A300

9/27/2023 11:21:53 AM

VIEW FROM REAR OF PROPERTY

VIEW FROM MAIN ST. - APPROACHING FROM THE 'SOUTH'

VIEW FROM MAIN ST. - APPROACHING FROM THE 'NORTH'

VIEW FROM MAIN ST.

VIEW ACROSS MAIN ST.

CONCEPTUAL MAIN ST. ELEVATION

9/27/2023 11:21:54 AM

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664

www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number:	2022-0017
Phase:	ZONING / DRB
Scale	
Date	09/27/2023

RENDERED VIEWS

A400

55 S. Main St.

7 & 6 Parker Ct. (from site)

47 S. Main St.

5 Parker Ct.

48 S. Main St.

55 S. Main St. (from site)

Project Site: 51 S. Main St.

47 S. Main St. (from site)

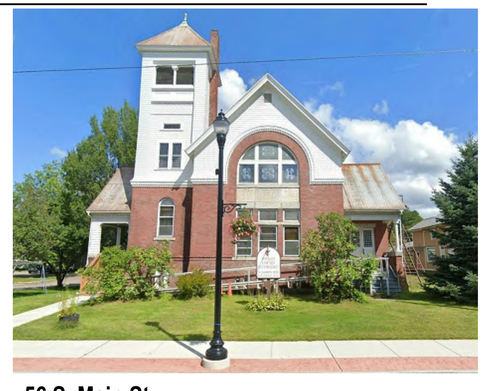
Back property line (to Randall St.)

10 Randall St.

12 Randall St.

16 Randall St.

18 Randall St.



56 S. Main St.

9/27/2023 11:21:55 AM

gbArchitecture
85 Granite Shed Lane
Montpelier VT 05602
802-229-1664

www.gbArchitecture.com

51 S. MAIN

51 S. MAIN ST. WATERBURY, VT

Revisions:
#

Project Number: 2022-0017

Phase: ZONING / DRB

Scale

Date 09/27/2023

SITE PHOTOS

A500

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Project Name 51 South Main Street

The name above will appear on all the discharge point tabs

Site Summary

Do not fill this tab out, apart from the project name and notes. It will auto-populated based on the values on the discharge point tabs. Discharge points (SN) will only show on the summary if an area has been entered on that tab. Areas listed below are those seeking permit coverage.

		Total	SN1	SN2	SN3
Impervious	New	0.59	0.59	0.00	0.00
	Redeveloped	0.00	0.00	0.00	0.00
	Existing	0.00	0.00	0.00	0.00
	Previously Authorized	0.00	0.00	0.00	0.00
	Total	0.59	0.59	0.00	0.00
	Site Area	0.80	0.75	0.04	0.01
	Latitude		44.33649	44.33607	44.33581
	Longitude		-72.75519	-72.75598	-72.75549
	Receiving Water		Town Municpal System (Winooski River)	Winooski River	Winooski River

Recharge

	Total	SN1	SN2	SN3
Required	0.0172	0.0172	0.0000	0.0000
Provided	0.0000	0.0000	0.0000	0.0000
Standard met?	No	No	n/a	n/a

Notes:

Water Quality

	Total	SN1	SN2	SN3
Required	0.0474	0.0474	0.0000	0.0000
Provided	0.0000	0.0000	0.0000	0.0000
Standard met?	No	No	n/a	n/a

A minimum WQ_V of 0.2" ($P*R_V$) is required for sites with low impervious (<16.67%). This calculation has not been incorporated into this workbook. Designers should check that the minimum WQ_V has been met for their site.

Notes:

Channel Protection

	Total	SN1	SN2	SN3
Standard Applies?		Yes	No	Yes
Waiver		n/a	n/a	n/a
Method		Extended Detention	n/a	Hydrologic Condition Method
HC_V	0.0494	0.0813	-0.0241	-0.0078
T_V Provided	0.0000	0.0000	0.0000	0.0000

Notes:

Overbank Flood Protection

	SN1	SN2	SN3
Standard Applies?	Yes	Yes	Yes
Pre-Dev Q (cfs)	0	0	0
Routed, Post-Dev Q (cfs)	0	0	0
Waiver	n/a	n/a	n/a

Notes:

Extreme Flood Protection

	SN1	SN2	SN3
Standard Applies?	Yes	Yes	Yes
Pre-Dev Q (cfs)	0	0	0
Routed, Post-Dev Q (cfs)	0	0	0
Waiver	n/a	n/a	n/a

Notes:

General Notes

Vermont Operational Stormwater Permit - Standards Compliance Workbook

General Discharge Point Information

Project name	**51 South Main Street**
Discharge point serial number (e.g. S/N 001)	SN1 (Roadway/Municpal)
Name of receiving water	Town Municpal System (Winooski River)
Latitude (decimal degrees to five decimal places)	44.33649
Longitude (decimal degrees to five decimal places)	-72.75519

Precipitation Data

* Preciptation values shall be obtained from NOAA Atlas 14

Storm	WQ Storm	1 yr, 24 hr	10 yr, 24 hr	100 yr, 24 hr
Precipitation (inches)	1.00	1.99	3.55	5.40

Drainage Area Information

Pre Development Land Use (acres)

Landuse	A	B	C	D	Total
Grass	0.000	0.090	0.000	0.000	**0.090**
Meadow	0.000	0.000	0.000	0.000	**0.000**
Woods	0.000	0.000	0.000	0.000	**0.000**
Existing Impervious	0.000	0.040	0.000	0.000	**0.040**
Impervious previously authorized under 2002 VSMM (not included in calculations)					**0.000**
Total Pre Site Area					**0.130**

Post Development Land Use (acres)

Landuse	A	B	C	D	Total	%
Grass	0.000	0.160	0.000	0.000	**0.160**	
Meadow	0.000	0.000	0.000	0.000	**0.000**	
Woods	0.000	0.000	0.000	0.000	**0.000**	
New Impervious	0.000	0.590	0.000	0.000	**0.590**	*78.7%*
Existing for Permit Coverage (Treated to New Standards)	0.000	0.000	0.000	0.000	**0.000**	*0.0%*
Existing Impervious Not for Permit Coverage					**0.000**	*0.0%*
Redeveloped Impervious					**0.000**	*0.0%*
Impervious previously authorized under 2002 VSMM					**0.000**	
Total Site Area					**0.750**	
Total Impervious for Permit Coverage					**0.590**	
Net Reduced Impervious					**0.000**	*0.0%*
Reduced Existing Impervious (for redevelopment)					**0.040**	*100.0%*

WARNING: Pre development and post development areas don't match, so evaluation of the Hydrologic Condition Method is not appropriate within this drainage area. Designer may consider HCM across drainage

Information for Calculating T_C by the Watershed Lag Method

	Average Catchment Slope, Y (%)	Hydraulic Length, l (ft)
Pre Development	4.4	55.00
Post Development	2.3	220.00

Runoff Calculations

	1 yr, 24-hr	10 yr, 24-hr	100 yr, 24-hr
Predevelopment runoff volume (ac-ft)	0.0064	0.0165	0.0351
Pre-routed, post development runoff volume (ac-ft)	0.0877	0.1727	0.2857

Tier 1/Runoff Reduction Practices

List all Tier 1 practices below with the associated treatment volume (T_V). The T_V will be applied to all treatment standards, except for Green Roofs, which do not receive recharge or water quality credit. Please include the appropriate STP worksheet(s) with the application.

Practice	T_V (ac-ft)	Practice	T_V (ac-ft)

Runoff Reduction Calculations

Standard	Re	WQ	CP	Q_{P10}	Q_{P100}
T_V Required (ac-ft)	0.0172	0.0474	0.0813	0.1562	0.2506
T_V Provided (ac-ft)	0.0000	0.0000	0.0000	0.0000	0.0000
T_V Remaining (ac-ft)	0.0172	0.0474	0.0813	0.1562	0.2506
Standard met with HCM?	No	No	No	No	No
Post-Development CN	n/a	98	94	93	93
CN_{adj}	n/a	98	94	93	93
Pre-Development CN	n/a	n/a	81	78	80

Groundwater Recharge Standard (Re)

Standard Applicable? (●) Yes ( ) No

Re_V: 0.0172

Standard met with Tier 1 Practices?: No

NOTE: Treatment provided is insufficient to meet the recharge standard within this drainage area. Add more infiltrating practices unless recharge is being met site-wide. (check summary tab)

Recharge Notes:

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Water Quality Treatment Standard (WQ)

	(ac-ft)
WQ_V - New & Existing	0.0474
WQ_V - Redevelopment	0.0000
Total WQ_V	0.0474
WQ_V met with Tier 1 practices	0.0000
WQ_V to be met with Tier 2 and/or Tier 3 practices	0.0474

		Apply Reduction?	
% Net Reduction	0.0%	(•) No ( ) Yes	
% Removed Existing Impervious (Redevelopment)	100.0%	(•) No ( ) Yes	Max 25% applied

Is all impervious treated by disconnection? (•) No ( ) Yes (WQv met)

Tier 2 & 3 Water Quality Practice	WQ_V Provided (ac-ft)	Tier
Total WQ_V Provided (ac-ft)	0.0000	ac-ft
Is the WQ_V Standard met?	No	

NOTE: Add more water quality practices unless site balancing is being used. (Check summary tab)

Water Quality Notes:

Channel Protection Standard (CP)

Standard Applicable? (•) Yes ( ) No

Standard Met with HCM? **No**

The channel protection standard has not been fully met. Either increase Tv credit to fully meet HCM or provide extended detention.

Provide Extended Detention for: **0.088** ac-ft

Warm or Cold Water Fishery? (•) Cold ( ) Warm

→ Provide: **12 hours of extended detention**

OR

☐ The Alternative Extended Detention Method (§2.2.5.4) is being used.

[See the Vermont Water Quality Standards for warm and cold water designations]

Extended Detention STP:

Modeling Info: When demonstrating CP compliance with extended detention in a hydrologic model, use the CN and T_C below if the practice being modelled is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.

CN_{Adj} **94** Post Development T_C (min) **3.6** (Watershed Lag Method)

Channel Protection Notes:

Overbank Flood Protection (Q_{P10})

Standard Applicable?	(●) Yes ( ) No	
Standard Met with HCM?	No	*The QP10 standard has not been fully met. Provide additional STPs to ensure post development peak runoff does not exceed pre development peak runoff for the 10 yr, 24 hour storm event.*
STP used:		
Pre-development peak discharge rate (cfs)		
Pre-routed, post-development peak discharge rate (cfs)		
Routed, post-development peak discharge rate (cfs)		

Modeling Info: *When demonstrating Q_{P10} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P10} is not itself a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	78	Pre Development T_C (min)	1.6	(Watershed Lag Method)
CN_{Adj}	93	Post Development T_C (min)	3.9	
Overbank Flood Notes:				

Extreme Flood Protection (Q_{P100})

Standard Applicable?	(●) Yes ( ) No	
Standard Met with HCM?	No	*The extreme standard has not been fully met. Provide additional STPs to ensure post development peak runoff does not exceed pre development peak runoff for the 100 yr, 24 hour storm event.*
STP used:		
Pre-development peak discharge rate (cfs)		
Pre-routed, post-development peak discharge rate (cfs)		
Routed, post-development peak discharge rate (cfs)		

Modeling Info: *When demonstrating Q_{P100} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P100} is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through runoff reduction practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	80	Pre Development T_C (min)	1.5	(Watershed Lag Method)
CN_{Adj}	93	Post Development T_C (min)	3.9	
Extreme Flood Notes:				

Vermont Operational Stormwater Permit - Standards Compliance Workbook

General Discharge Point Information

Project name	**51 South Main Street**
Discharge point serial number (e.g. S/N 001)	SN2 (Northern Property Line)
Name of receiving water	Winooski River
Latitude (decimal degrees to five decimal places)	44.33607
Longitude (decimal degrees to five decimal places)	-72.75598

Precipitation Data * Preciptation values shall be obtained from NOAA Atlas 14

Storm	WQ Storm	1 yr, 24 hr	10 yr, 24 hr	100 yr, 24 hr
Precipitation (inches)	1.00	1.99	3.55	5.40

Drainage Area Information

Pre Development Land Use (acres)

Landuse	A	B	C	D	Total
Grass	0.000	0.390	0.000	0.000	**0.390**
Meadow	0.000	0.000	0.000	0.000	**0.000**
Woods	0.000	0.000	0.000	0.000	**0.000**
Existing Impervious	0.000	0.150	0.000	0.000	**0.150**
Impervious previously authorized under 2002 VSMM (not included in calculations)					**0.000**
Total Pre Site Area					**0.540**

Post Development Land Use (acres)

Landuse	A	B	C	D	Total	%
Grass	0.000	0.040	0.000	0.000	**0.040**	
Meadow	0.000	0.000	0.000	0.000	**0.000**	
Woods	0.000	0.000	0.000	0.000	**0.000**	
New Impervious	0.000	0.000	0.000	0.000	**0.000**	*0.0%*
Existing for Permit Coverage (Treated to New Standards)	0.000	0.000	0.000	0.000	**0.000**	*0.0%*
Existing Impervious Not for Permit Coverage					**0.000**	*0.0%*
Redeveloped Impervious					**0.000**	*0.0%*
Impervious previously authorized under 2002 VSMM					**0.000**	
Total Site Area					**0.040**	
Total Impervious for Permit Coverage					**0.000**	
Net Reduced Impervious					**0.150**	*100.0%*
Reduced Existing Impervious (for redevelopment)					**0.150**	*100.0%*

WARNING: Pre development and post development areas don't match, so evaluation of the Hydrologic Condition Method is not appropriate within this drainage area. Designer may consider HCM across drainage

Information for Calculating T_C by the Watershed Lag Method

	Average Catchment Slope, Y (%)	Hydraulic Length, l (ft)
Pre Development	1.1	220.00
Post Development	1.1	190.00

Runoff Calculations

	1 yr, 24-hr	10 yr, 24-hr	100 yr, 24-hr
Predevelopment runoff volume (ac-ft)	0.0244	0.0651	0.1422
Pre-routed, post development runoff volume (ac-ft)	0.0002	0.0024	0.0080

Tier 1/Runoff Reduction Practices

List all Tier 1 practices below with the associated treatment volume (T_V). The T_V will be applied to all treatment standards, except for Green Roofs, which do not receive recharge or water quality credit. Please include the appropriate STP worksheet(s) with the application.

Practice	T_V (ac-ft)	Practice	T_V (ac-ft)

Runoff Reduction Calculations

Standard	Re	WQ	CP	Q_{P10}	Q_{P100}
T_V Required (ac-ft)	0.0000	0.0000	-0.0241	-0.0626	-0.1343
T_V Provided (ac-ft)	0.0000	0.0000	0.0000	0.0000	0.0000
T_V Remaining (ac-ft)	0.0000	0.0000	0.0000	0.0000	0.0000
Standard met with HCM?	n/a	Yes	Yes	Yes	Yes
Post-Development CN	n/a	67	61	64	71
CN_{adj}	n/a	67	n/a	n/a	n/a
Pre-Development CN	n/a	n/a	80	77	79

Groundwater Recharge Standard (Re)

Standard Applicable?	(●) Yes ( ) No
Re_V	0.0000
Standard met with Tier 1 Practices?	n/a
Recharge Notes:	

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Water Quality Treatment Standard (WQ)

	(ac-ft)
WQ_V - New & Existing	0.0000
WQ_V - Redevelopment	0.0000
Total WQ_V	0.0000
WQ_V met with Tier 1 practices	0.0000
WQ_V to be met with Tier 2 and/or Tier 3 practices	0.0000

		Apply Reduction?	
% Net Reduction	100.0%	(•) No ( ) Yes	
% Removed Existing Impervious (Redevelopment)	100.0%	(•) No ( ) Yes	Max 25% applied

Is all impervious treated by disconnection? (•) No ( ) Yes (WQv met)

Tier 2 & 3 Water Quality Practice	WQ_V Provided (ac-ft)	Tier
Total WQ_V Provided (ac-ft)	0.0000	ac-ft
Is the WQ_V Standard met?	Yes	

Water Quality Notes:

Channel Protection Standard (CP)

Standard Applicable? ( ) Yes (•) No

Waiver (if No is selected):

Standard Met with HCM? Yes

The channel protection standard has been fully met with hydrologic condition method. Additional treatment of the 1 year storm is not required.

Provide Extended Detention for: n/a ac-ft

Warm or Cold Water Fishery? (•) Cold ( ) Warm

→

Provide: 12 hours of extended detention

OR

☐ The Alternative Extended Detention Method (§2.2.5.4) is being used.

See the Vermont Water Quality Standards for warm and cold water designations

Extended Detention STP:

Modeling Info: When demonstrating CP compliance with extended detention in a hydrologic model, use the CN and T_C below if the practice being modelled is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.

CN_{Adj}: n/a

Post Development T_C (min): 4.5 (Watershed Lag Method)

Channel Protection Notes:

Overbank Flood Protection (Q_{P10})

Standard Applicable?	◉ Yes ○ No
Standard Met with HCM?	Yes — *The QP10 standard has been fully met. No additional STPs are required.*
STP used:	
Pre-development peak discharge rate (cfs)	
Pre-routed, post-development peak discharge rate (cfs)	
Routed, post-development peak discharge rate (cfs)	

Modeling Info: *When demonstrating Q_{P10} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P10} is not itself a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	77	Pre Development T_C (min)	10.0	(Watershed Lag Method)
CN_{Adj}	n/a	Post Development T_C (min)	4.5	

Overbank Flood Notes:

Extreme Flood Protection (Q_{P100})

Standard Applicable?	◉ Yes ○ No
Standard Met with HCM?	Yes — *The extreme flood standard has been fully met. No additional STPs are required.*
STP used:	
Pre-development peak discharge rate (cfs)	
Pre-routed, post-development peak discharge rate (cfs)	
Routed, post-development peak discharge rate (cfs)	

Modeling Info: *When demonstrating Q_{P100} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P100} is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through runoff reduction practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	79	Pre Development T_C (min)	9.3	(Watershed Lag Method)
CN_{Adj}	n/a	Post Development T_C (min)	4.5	

Extreme Flood Notes:

Vermont Operational Stormwater Permit - Standards Compliance Workbook

General Discharge Point Information

Project name	**51 South Main Street**
Discharge point serial number (e.g. S/N 001)	SN3 (Southern Property Line)
Name of receiving water	Winooski River
Latitude (decimal degrees to five decimal places)	44.33581
Longitude (decimal degrees to five decimal places)	-72.75549

Precipitation Data * Preciptation values shall be obtained from NOAA Atlas 14

Storm	WQ Storm	1 yr, 24 hr	10 yr, 24 hr	100 yr, 24 hr
Precipitation (inches)	1.00	1.99	3.55	5.40

Drainage Area Information

Pre Development Land Use (acres)

Landuse	A	B	C	D	Total
Grass	0.000	0.080	0.000	0.000	**0.080**
Meadow	0.000	0.000	0.000	0.000	**0.000**
Woods	0.000	0.000	0.000	0.000	**0.000**
Existing Impervious	0.000	0.050	0.000	0.000	**0.050**
Impervious previously authorized under 2002 VSMM (not included in calculations)					**0.000**
Total Pre Site Area					**0.130**

Post Development Land Use (acres)

Landuse	A	B	C	D	Total	%
Grass	0.000	0.010	0.000	0.000	**0.010**	
Meadow	0.000	0.000	0.000	0.000	**0.000**	
Woods	0.000	0.000	0.000	0.000	**0.000**	
New Impervious	0.000	0.000	0.000	0.000	**0.000**	*0.0%*
Existing for Permit Coverage (Treated to New Standards)	0.000	0.000	0.000	0.000	**0.000**	*0.0%*
Existing Impervious Not for Permit Coverage					**0.000**	*0.0%*
Redeveloped Impervious					**0.000**	*0.0%*
Impervious previously authorized under 2002 VSMM					**0.000**	
Total Site Area					**0.010**	
Total Impervious for Permit Coverage					**0.000**	
Net Reduced Impervious					**0.050**	*100.0%*
Reduced Existing Impervious (for redevelopment)					**0.050**	*100.0%*

WARNING: Pre development and post development areas don't match, so evaluation of the Hydrologic Condition Method is not appropriate within this drainage area. Designer may consider HCM across drainage

Information for Calculating T_C by the Watershed Lag Method

	Average Catchment Slope, Y (%)	Hydraulic Length, l (ft)
Pre Development	1.8	160.00
Post Development	1.8	2.00

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Runoff Calculations	1 yr, 24-hr	10 yr, 24-hr	100 yr, 24-hr
Predevelopment runoff volume (ac-ft)	0.0078	0.0187	0.0374
Pre-routed, post development runoff volume (ac-ft)	0.0001	0.0006	0.0020

Tier 1/Runoff Reduction Practices

List all Tier 1 practices below with the associated treatment volume (T_V). The T_V will be applied to all treatment standards, except for Green Roofs, which do not receive recharge or water quality credit. Please include the appropriate STP worksheet(s) with the application.

Practice	T_V (ac-ft)	Practice	T_V (ac-ft)

Runoff Reduction Calculations

Standard	Re	WQ	CP	Q_{P10}	Q_{P100}
T_V Required (ac-ft)	0.0000	0.0000	-0.0078	-0.0181	-0.0355
T_V Provided (ac-ft)	0.0000	0.0000	0.0000	0.0000	0.0000
T_V Remaining (ac-ft)	0.0000	0.0000	0.0000	0.0000	0.0000
Standard met with HCM?	n/a	Yes	Yes	Yes	Yes
Post-Development CN	n/a	67	61	64	71
CN_{adj}	n/a	67	n/a	n/a	n/a
Pre-Development CN	n/a	n/a	84	81	82

Groundwater Recharge Standard (Re)

Standard Applicable?	(●) Yes ( ) No
Re_V	0.0000
Standard met with Tier 1 Practices?	n/a
Recharge Notes:	

Vermont Operational Stormwater Permit - Standards Compliance Workbook

Water Quality Treatment Standard (WQ)

	(ac-ft)
WQ_V - New & Existing	0.0000
WQ_V - Redevelopment	0.0000
Total WQ_V	0.0000
WQ_V met with Tier 1 practices	0.0000
WQ_V to be met with Tier 2 and/or Tier 3 practices	0.0000

		Apply Reduction?	
% Net Reduction	100.0%	(•) No ( ) Yes	
% Removed Existing Impervious (Redevelopment)	100.0%	(•) No ( ) Yes	Max 25% applied

Is all impervious treated by disconnection? (•) No ( ) Yes (WQv met)

Tier 2 & 3 Water Quality Practice	WQ_V Provided (ac-ft)	Tier
Total WQ_V Provided (ac-ft)	0.0000	ac-ft
Is the WQ_V Standard met?	Yes	

Water Quality Notes:

Channel Protection Standard (CP)

Standard Applicable? (•) Yes ( ) No

Standard Met with HCM? Yes

The channel protection standard has been fully met with hydrologic condition method. Additional treatment of the 1 year storm is not required.

Provide Extended Detention for: n/a ac-ft

Warm or Cold Water Fishery? (•) Cold ( ) Warm →

Provide: 12 hours of extended detention

OR

☐ The Alternative Extended Detention Method (§2.2.5.4) is being used.

See the Vermont Water Quality Standards for warm and cold water designations

Extended Detention STP:

Modeling Info: When demonstrating CP compliance with extended detention in a hydrologic model, use the CN and T_C below if the practice being modelled is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.

CN_{Adj} n/a Post Development T_C (min) 0.1 (Watershed Lag Method)

Channel Protection Notes:

Last Updated 8/28/2018

Overbank Flood Protection (Q_{P10})

Standard Applicable?	◉ Yes ○ No
Standard Met with HCM?	Yes — *The QP10 standard has been fully met. No additional STPs are required.*
STP used:	
Pre-development peak discharge rate (cfs)	
Pre-routed, post-development peak discharge rate (cfs)	
Routed, post-development peak discharge rate (cfs)	

Modeling Info: *When demonstrating Q_{P10} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P10} is not itself a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through Tier 1 practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

Pre-Development CN (Flow-weighted composite)	81	Pre Development T_C (min)	5.4	(Watershed Lag Method)
CN_{Adj}	n/a	Post Development T_C (min)	0.1	

Overbank Flood Notes:

Extreme Flood Protection (Q_{P100})

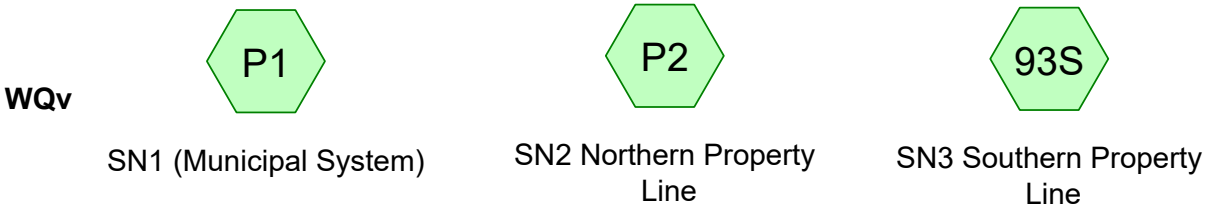
Standard Applicable?	◉ Yes ○ No
Standard Met with HCM?	Yes — *The extreme flood standard has been fully met. No additional STPs are required.*
STP used:	
Pre-development peak discharge rate (cfs)	
Pre-routed, post-development peak discharge rate (cfs)	
Routed, post-development peak discharge rate (cfs)	

Modeling Info: *When demonstrating Q_{P100} compliance in a hydrologic model, use the following CN and T_C below, if the practice used to meet Q_{P100} is not a Tier 1 practice. The CN_{Adj} takes into account the reduction in runoff volume achieved through runoff reduction practices. The T_C is calculated by the watershed lag method using CN_{Adj} as CN'.*

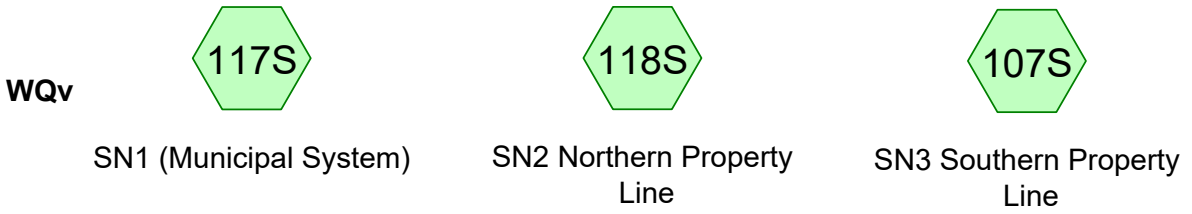
Pre-Development CN (Flow-weighted composite)	82	Pre Development T_C (min)	5.1	(Watershed Lag Method)
CN_{Adj}	n/a	Post Development T_C (min)	0.1	

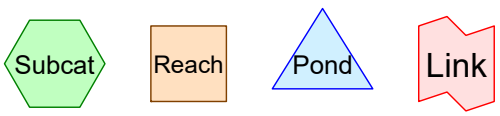
Extreme Flood Notes:

PRE-DEVELOPMENT



POST-DEVELOPMENT





Routing Diagram for 51-S-Main-Apartments
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 9/27/2023
HydroCAD® 10.00 s/n 06429 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 93S: SN3 Southern Property Line

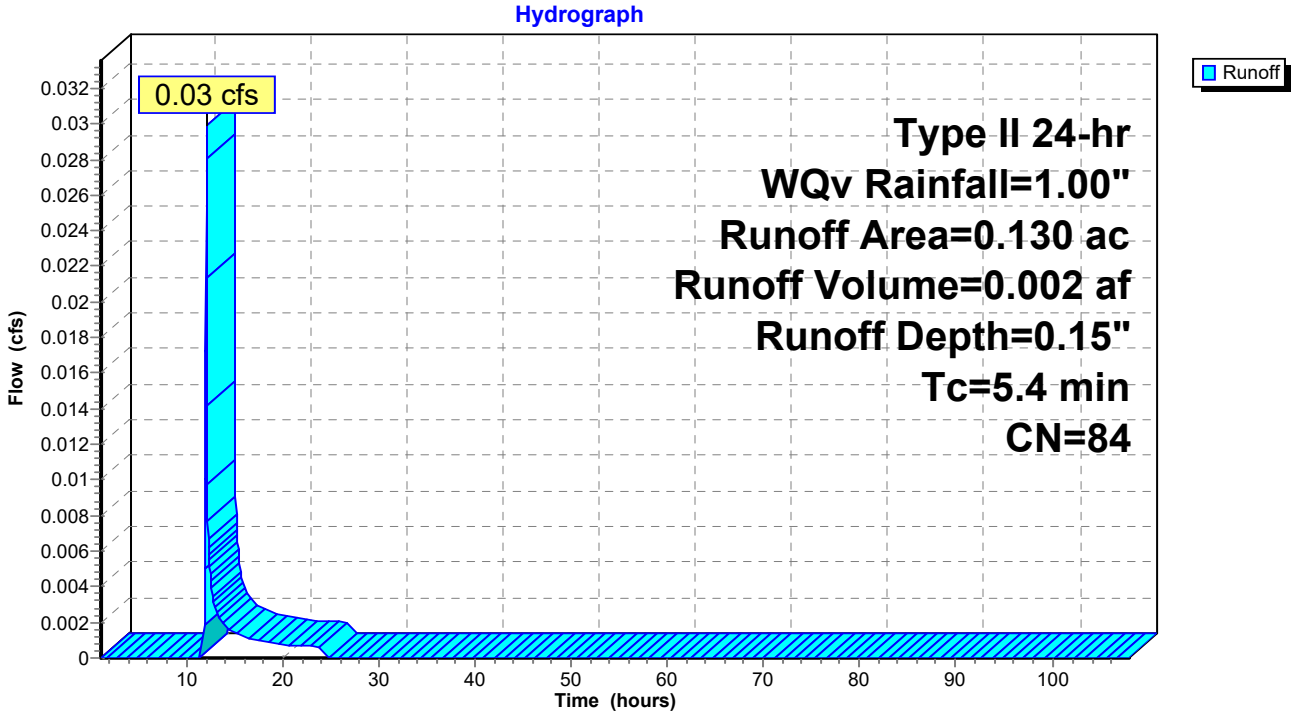
Runoff = 0.03 cfs @ 11.99 hrs, Volume= 0.002 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	0.130	84	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4					**Direct Entry, From Workbook**

Subcatchment 93S: SN3 Southern Property Line



Summary for Subcatchment 107S: SN3 Southern Property Line

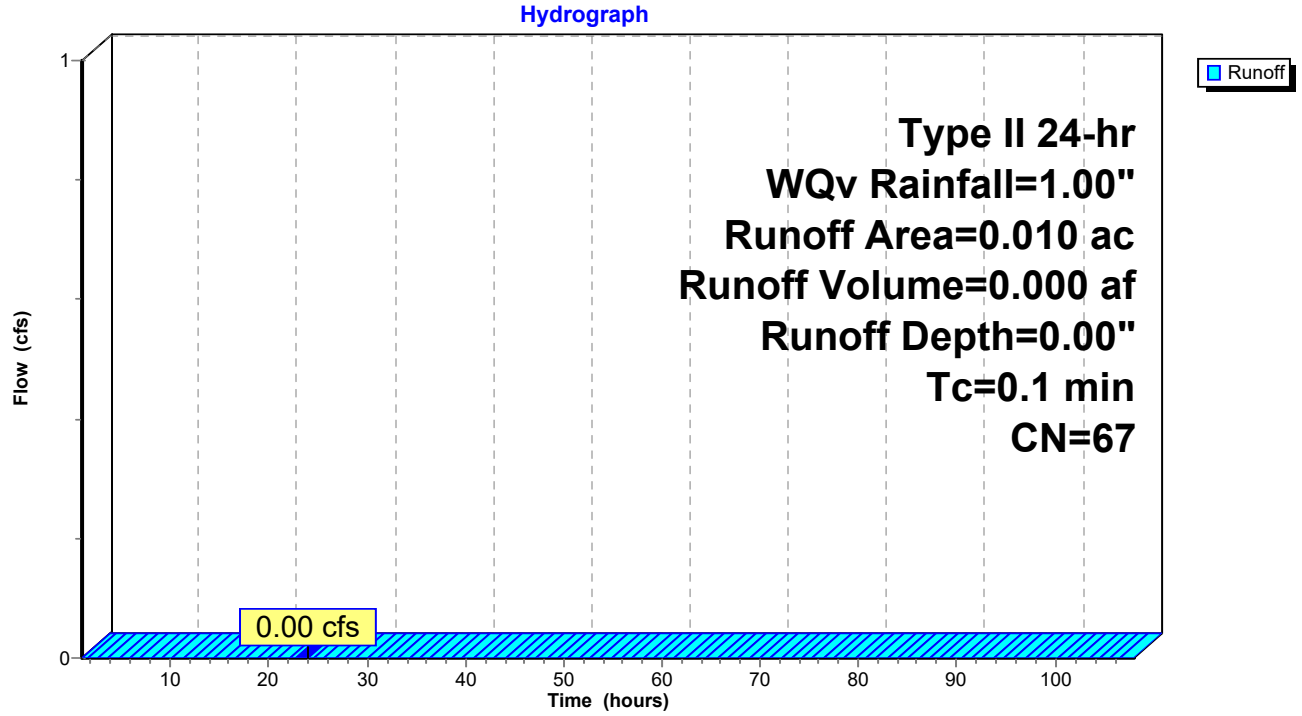
Runoff = 0.00 cfs @ 23.98 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	0.010	67	From Workbook
	0.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1					**Direct Entry, From Workbook**

Subcatchment 107S: SN3 Southern Property Line



Summary for Subcatchment 117S: SN1 (Municipal System)

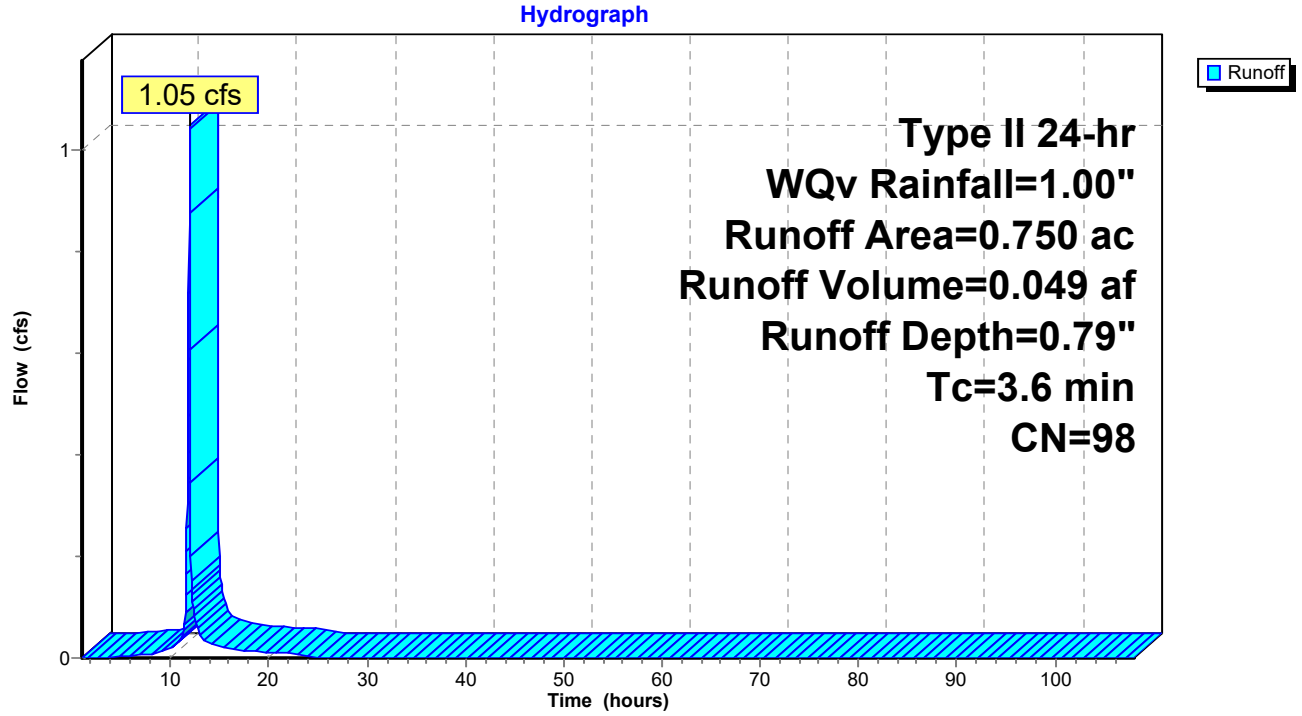
Runoff = 1.05 cfs @ 11.94 hrs, Volume= 0.049 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	0.750	98	From Workbook
	0.750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6					**Direct Entry, From Workbook**

Subcatchment 117S: SN1 (Municipal System)



Summary for Subcatchment 118S: SN2 Northern Property Line

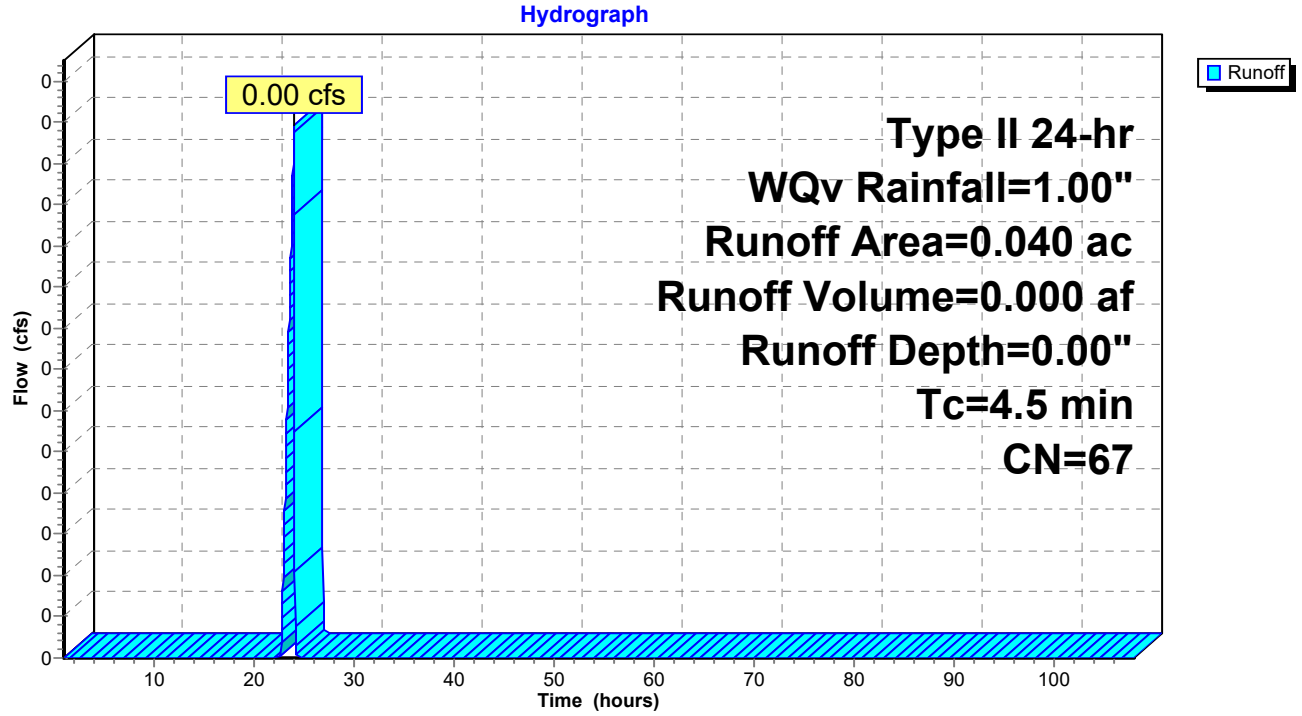
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	0.040	67	From Workbook
	0.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5					**Direct Entry, From Workbook**

Subcatchment 118S: SN2 Northern Property Line



Summary for Subcatchment P1: SN1 (Municipal System)

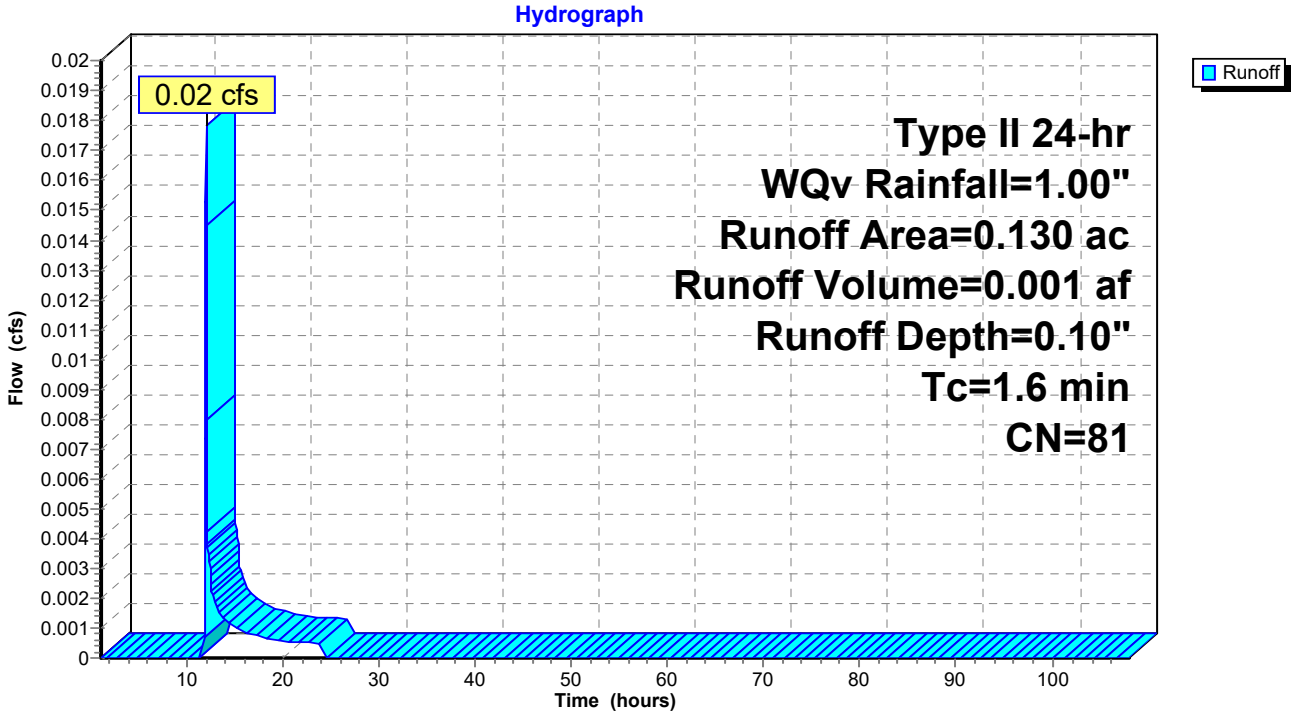
Runoff = 0.02 cfs @ 11.95 hrs, Volume= 0.001 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

	Area (ac)	CN	Description
*	0.130	81	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry, From Workbook**

Subcatchment P1: SN1 (Municipal System)



Summary for Subcatchment P2: SN2 Northern Property Line

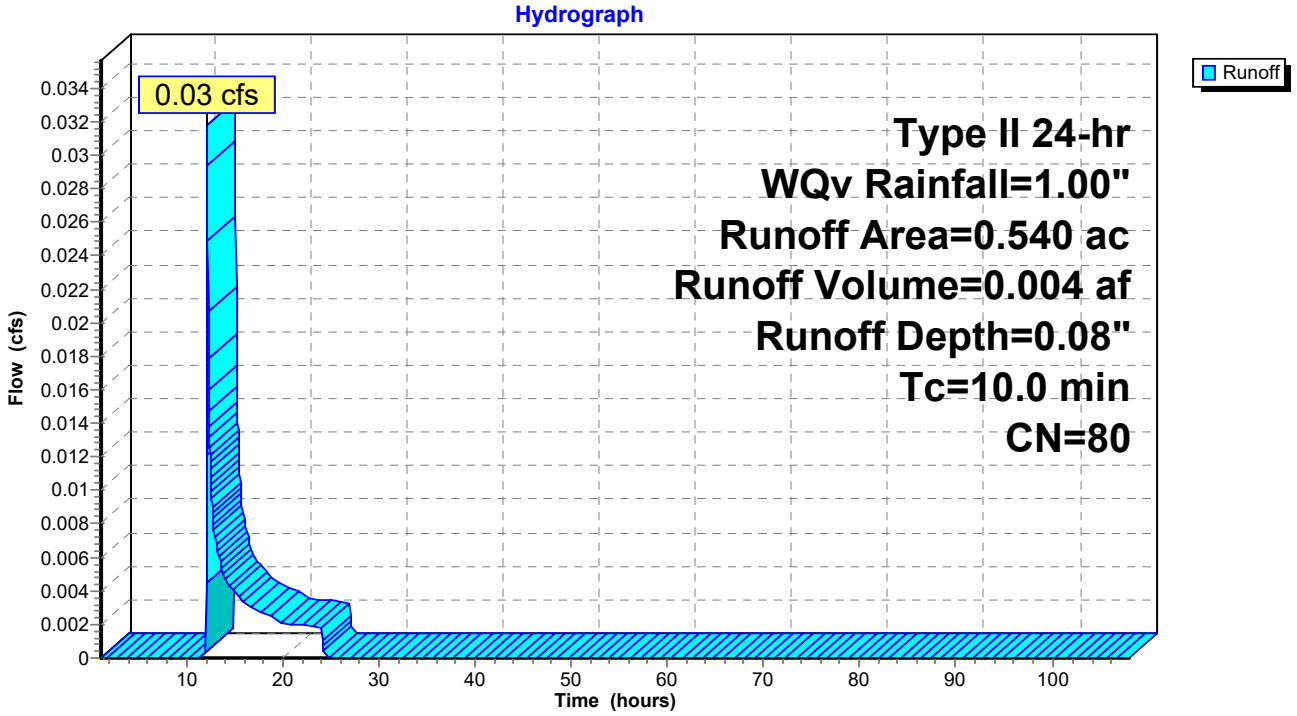
Runoff = 0.03 cfs @ 12.07 hrs, Volume= 0.004 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr WQv Rainfall=1.00"

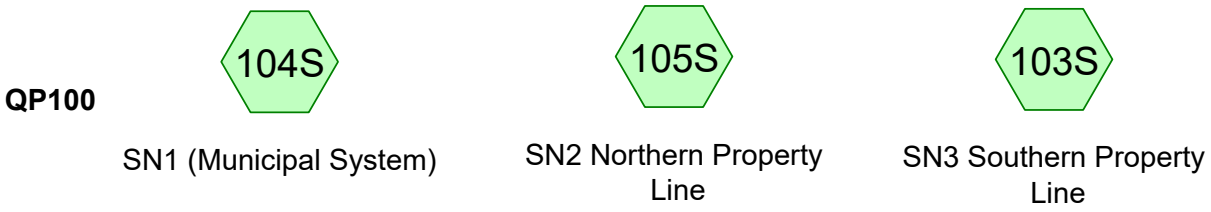
	Area (ac)	CN	Description
*	0.540	80	From Workbook
	0.540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, From Workbook**

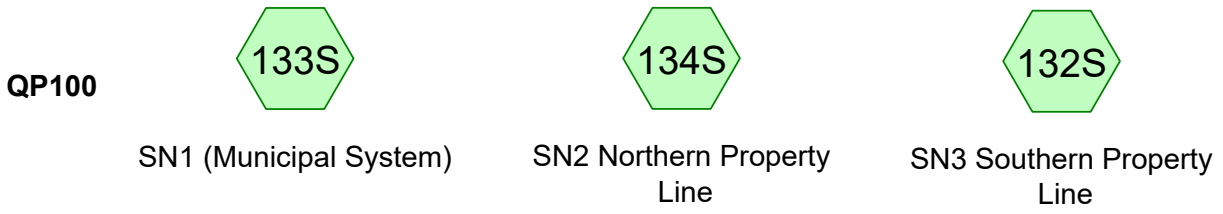
Subcatchment P2: SN2 Northern Property Line

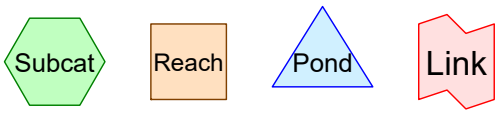


PRE-DEVELOPMENT



POST-DEVELOPMENT





Routing Diagram for 51-S-Main-Apartments
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 9/27/2023
HydroCAD® 10.00 s/n 06429 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 103S: SN3 Southern Property Line

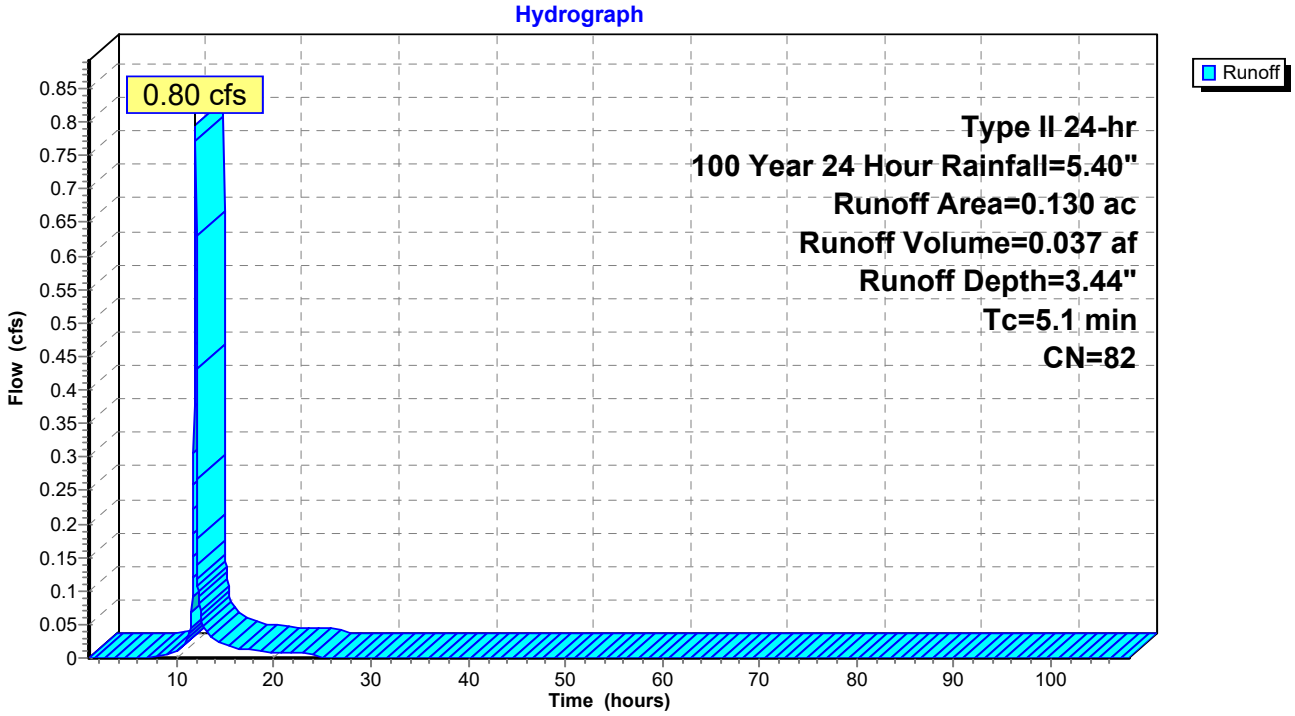
Runoff = 0.80 cfs @ 11.96 hrs, Volume= 0.037 af, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

	Area (ac)	CN	Description
*	0.130	82	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1					**Direct Entry, From Workbook**

Subcatchment 103S: SN3 Southern Property Line



Summary for Subcatchment 104S: SN1 (Municipal System)

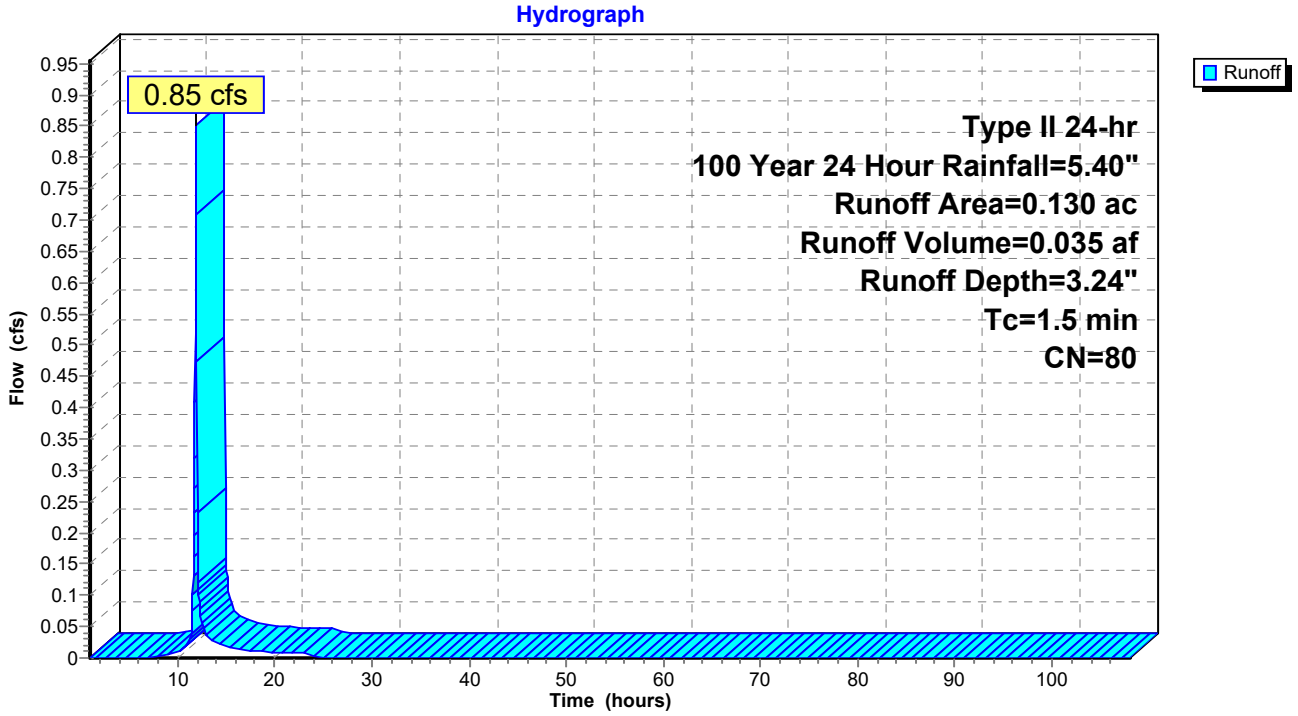
Runoff = 0.85 cfs @ 11.92 hrs, Volume= 0.035 af, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

	Area (ac)	CN	Description
*	0.130	80	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5					**Direct Entry, From Workbook**

Subcatchment 104S: SN1 (Municipal System)



Summary for Subcatchment 105S: SN2 Northern Property Line

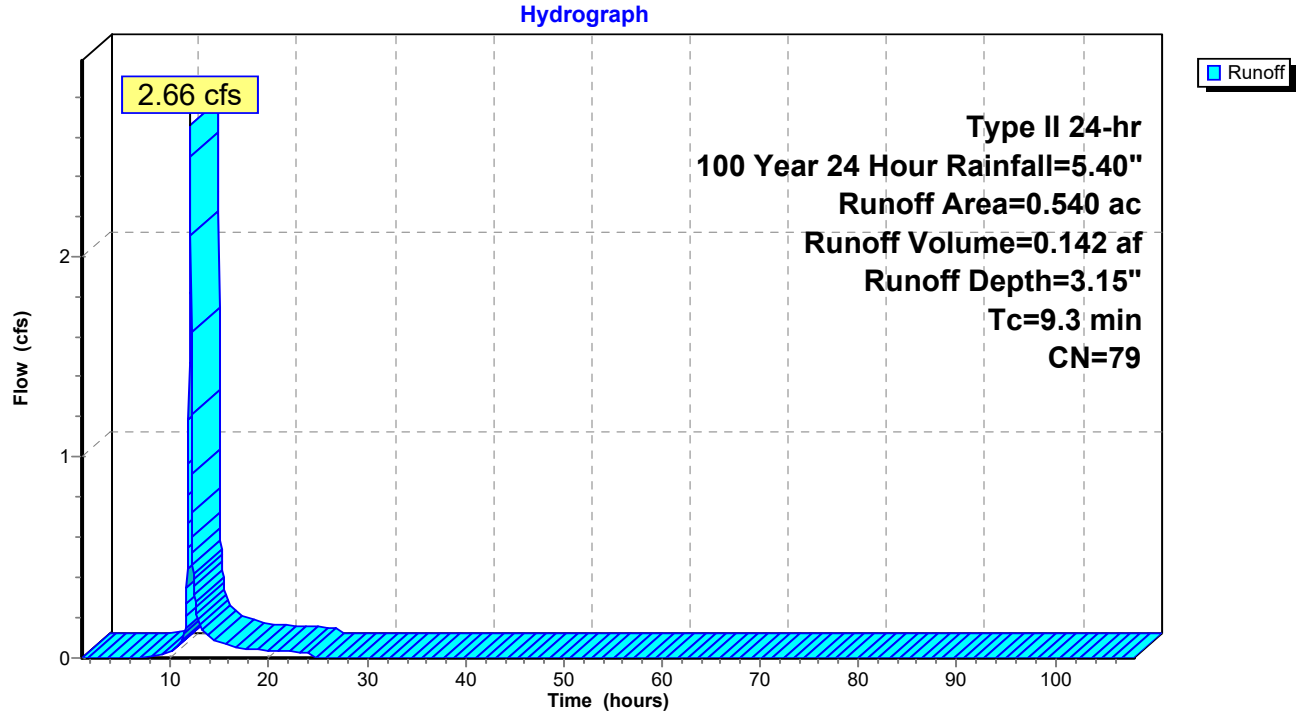
Runoff = 2.66 cfs @ 12.01 hrs, Volume= 0.142 af, Depth= 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

	Area (ac)	CN	Description
*	0.540	79	From Workbook
	0.540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.3					**Direct Entry, From Workbook**

Subcatchment 105S: SN2 Northern Property Line



Summary for Subcatchment 132S: SN3 Southern Property Line

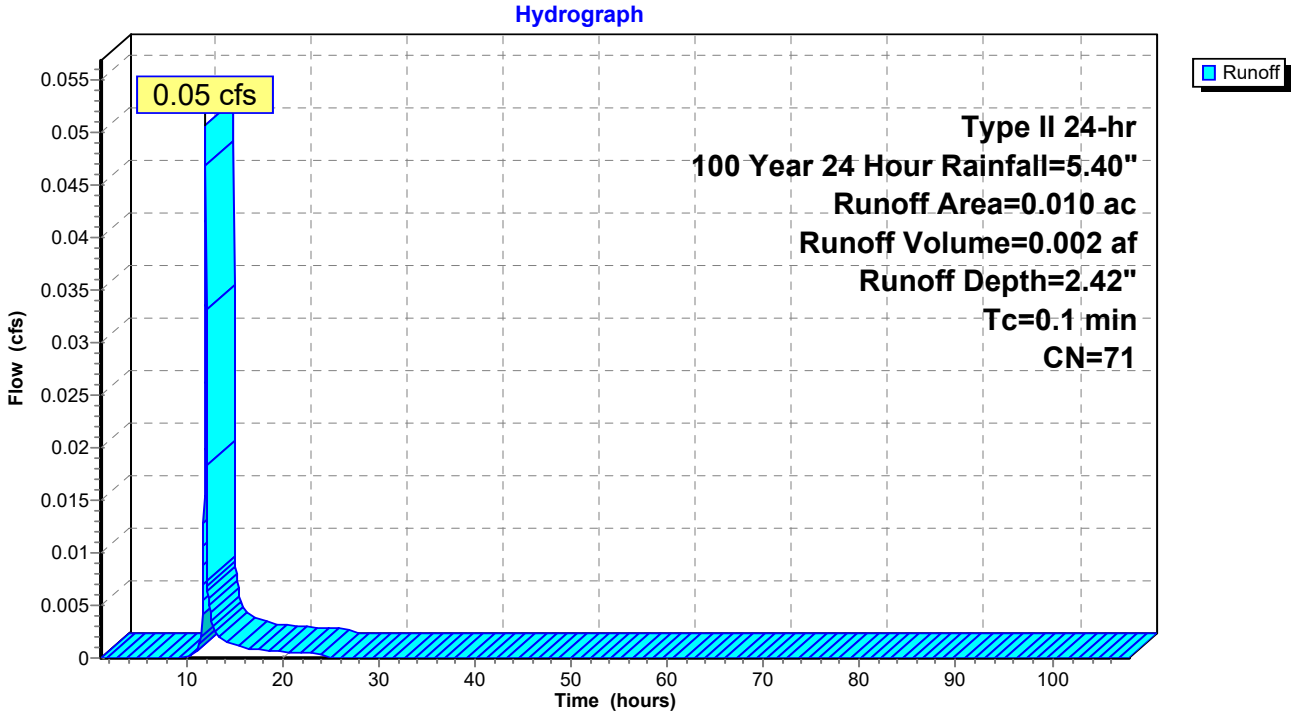
Runoff = 0.05 cfs @ 11.90 hrs, Volume= 0.002 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

	Area (ac)	CN	Description
*	0.010	71	From Workbook
	0.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1					**Direct Entry, From Workbook**

Subcatchment 132S: SN3 Southern Property Line



Summary for Subcatchment 133S: SN1 (Municipal System)

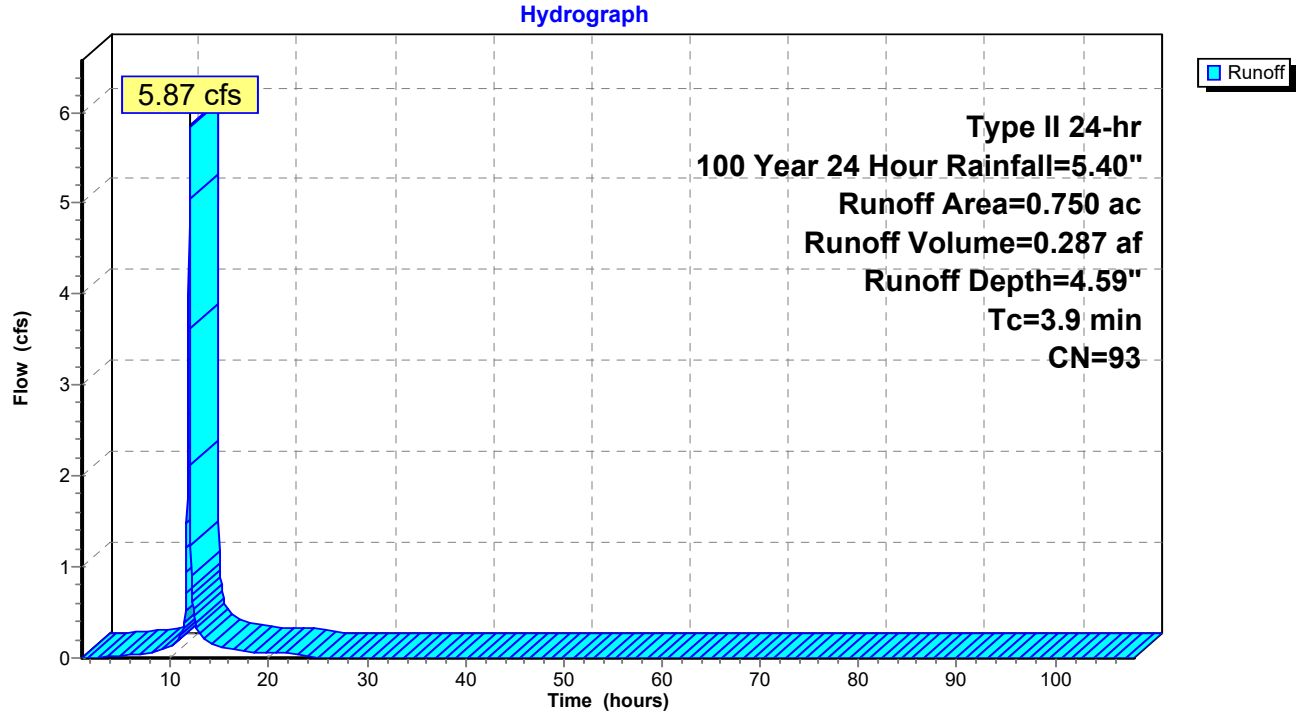
Runoff = 5.87 cfs @ 11.94 hrs, Volume= 0.287 af, Depth= 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

	Area (ac)	CN	Description
*	0.750	93	From Workbook
	0.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry, From Workbook**

Subcatchment 133S: SN1 (Municipal System)



Summary for Subcatchment 134S: SN2 Northern Property Line

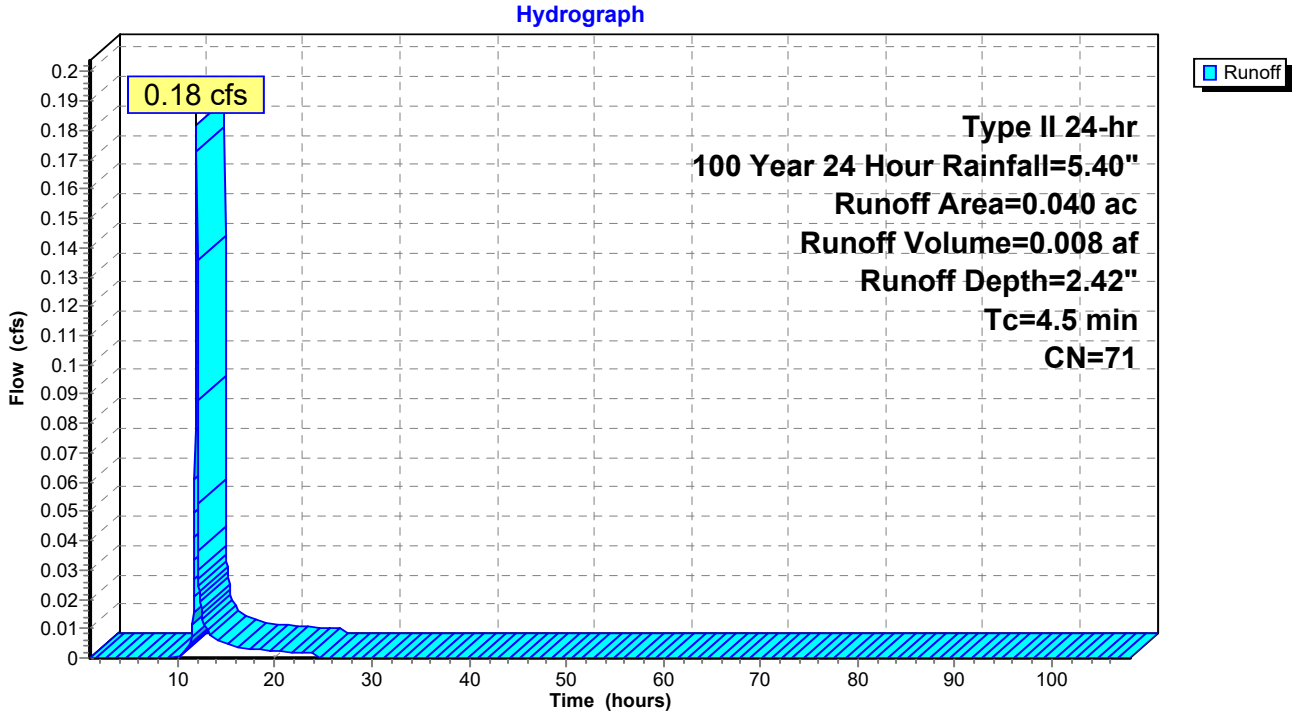
Runoff = 0.18 cfs @ 11.96 hrs, Volume= 0.008 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 100 Year 24 Hour Rainfall=5.40"

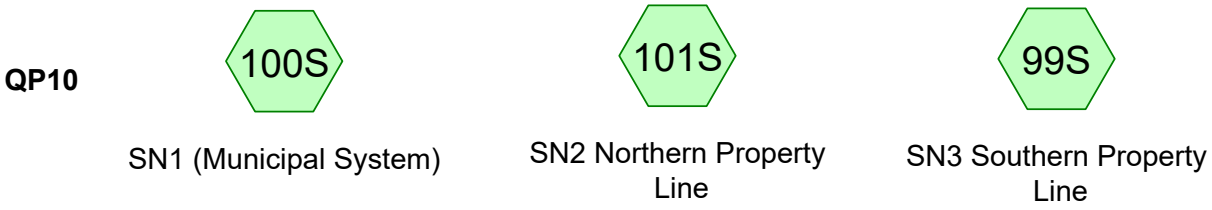
	Area (ac)	CN	Description
*	0.040	71	From Workbook
	0.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5					**Direct Entry, From Workbook**

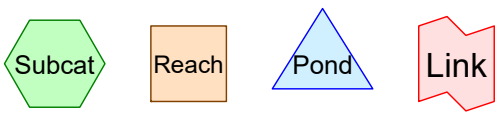
Subcatchment 134S: SN2 Northern Property Line



PRE-DEVELOPMENT



POST-DEVELOPMENT



Routing Diagram for 51-S-Main-Apartments
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 9/27/2023
HydroCAD® 10.00 s/n 06429 © 2013 HydroCAD Software Solutions LLC

Summary for Subcatchment 99S: SN3 Southern Property Line

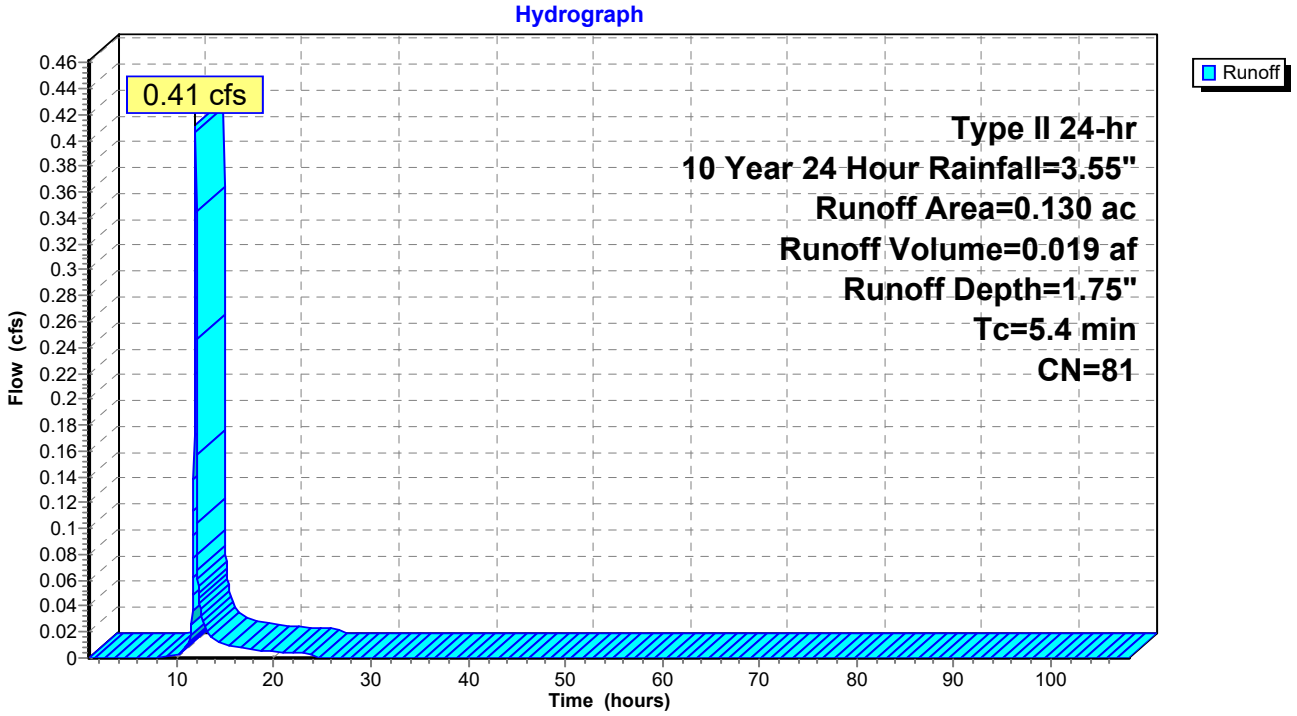
Runoff = 0.41 cfs @ 11.97 hrs, Volume= 0.019 af, Depth= 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

	Area (ac)	CN	Description
*	0.130	81	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4					**Direct Entry, From Workbook**

Subcatchment 99S: SN3 Southern Property Line



Summary for Subcatchment 100S: SN1 (Municipal System)

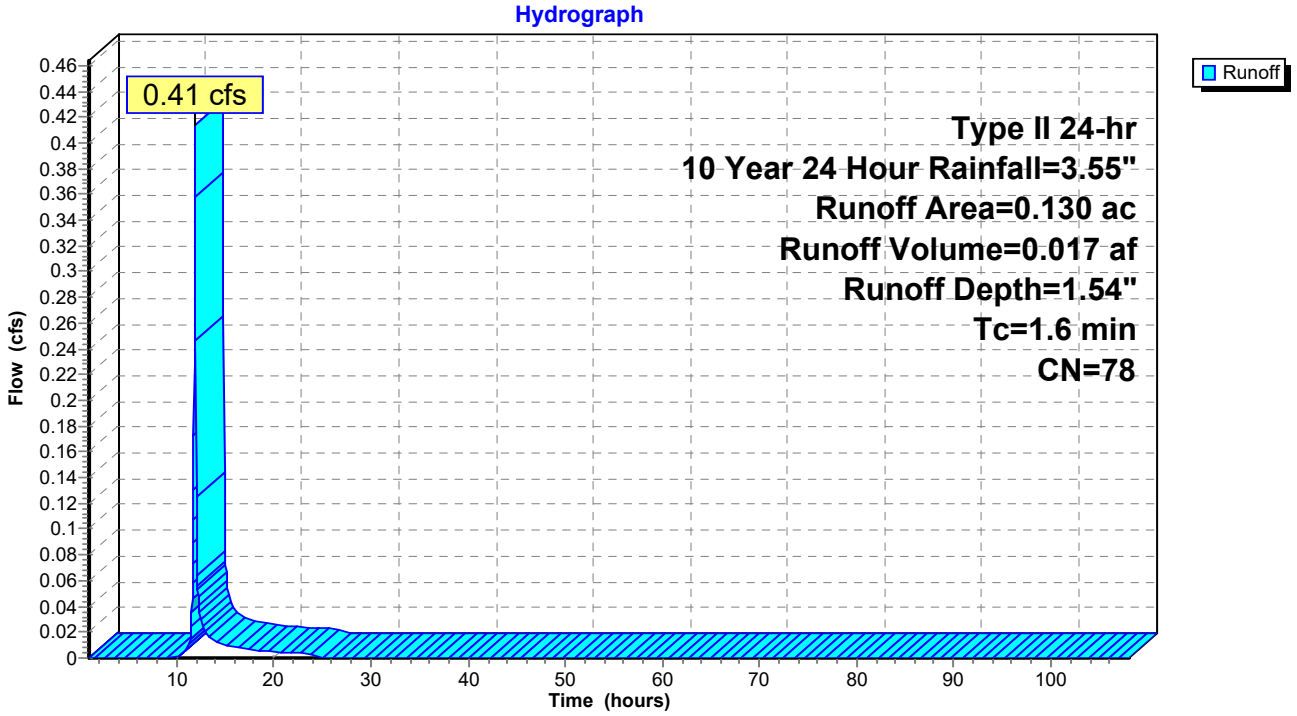
Runoff = 0.41 cfs @ 11.92 hrs, Volume= 0.017 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

	Area (ac)	CN	Description
*	0.130	78	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry, From Workbook**

Subcatchment 100S: SN1 (Municipal System)



Summary for Subcatchment 101S: SN2 Northern Property Line

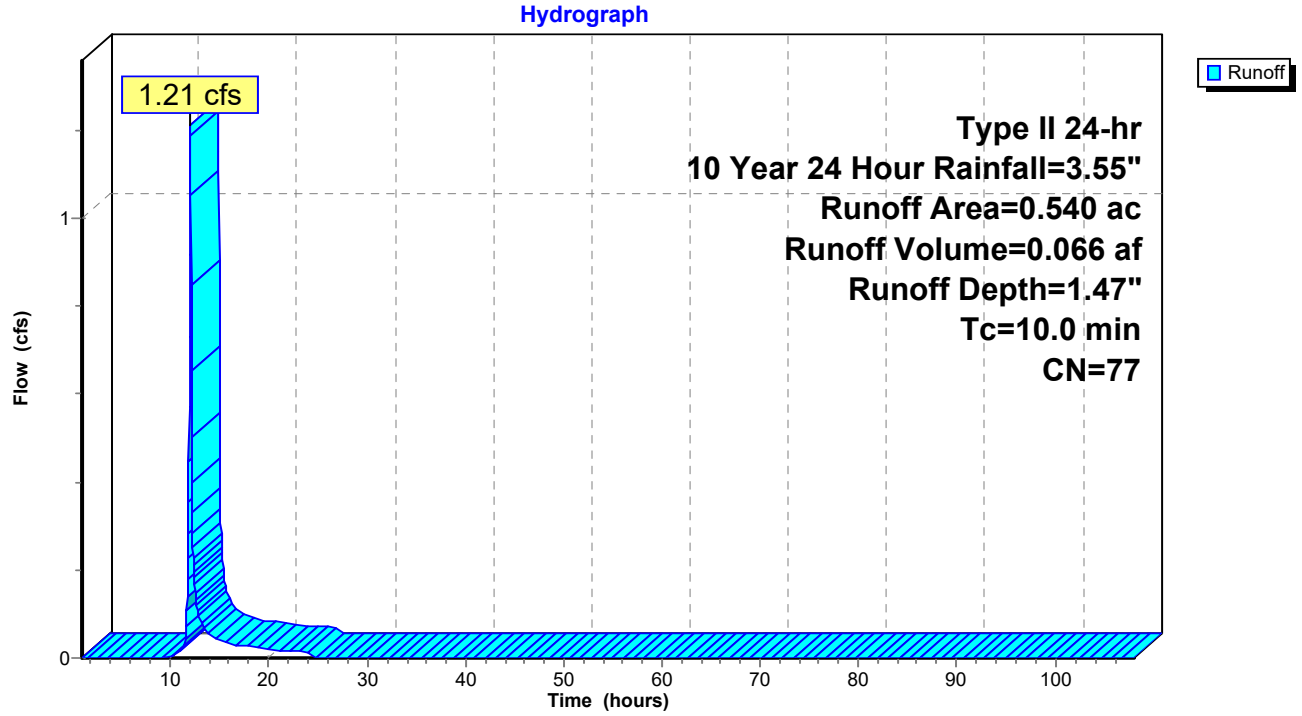
Runoff = 1.21 cfs @ 12.02 hrs, Volume= 0.066 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

	Area (ac)	CN	Description
*	0.540	77	From Workbook
	0.540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, From Workbook**

Subcatchment 101S: SN2 Northern Property Line



Summary for Subcatchment 128S: SN3 Southern Property Line

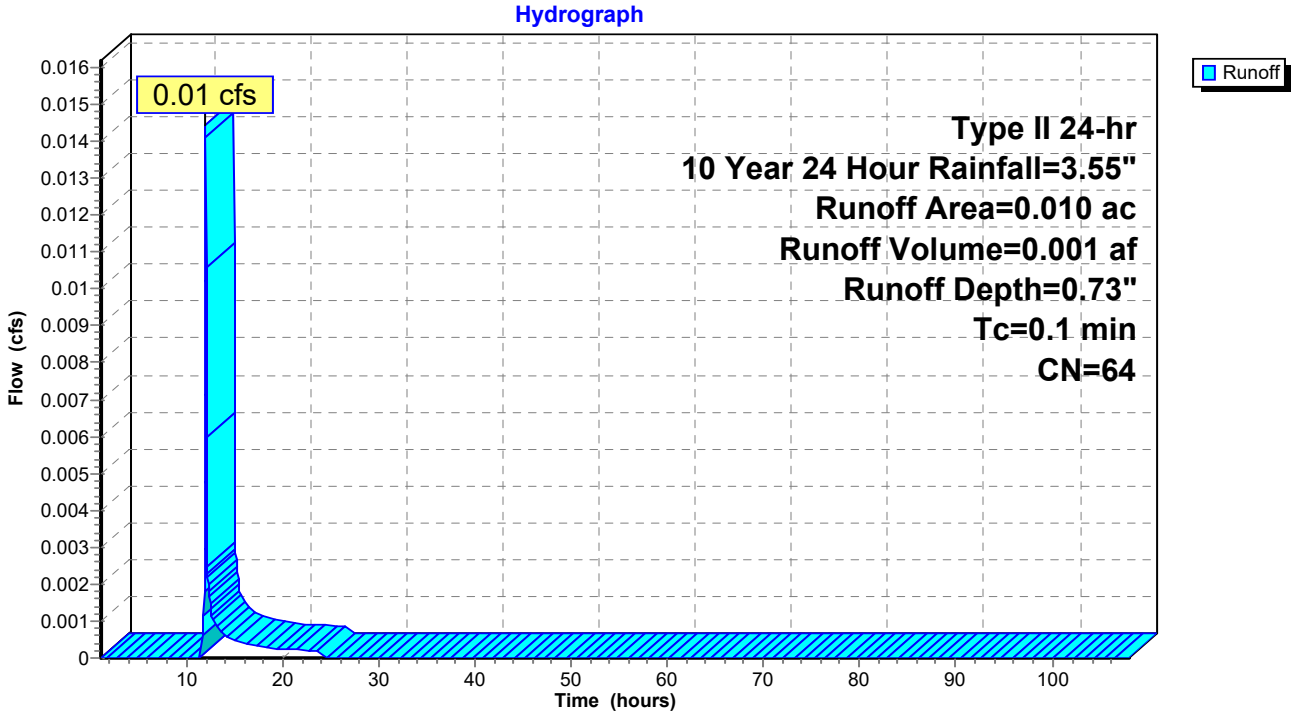
Runoff = 0.01 cfs @ 11.91 hrs, Volume= 0.001 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

	Area (ac)	CN	Description
*	0.010	64	From Workbook
	0.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1					**Direct Entry, From Workbook**

Subcatchment 128S: SN3 Southern Property Line



Summary for Subcatchment 129S: SN1 (Municipal System)

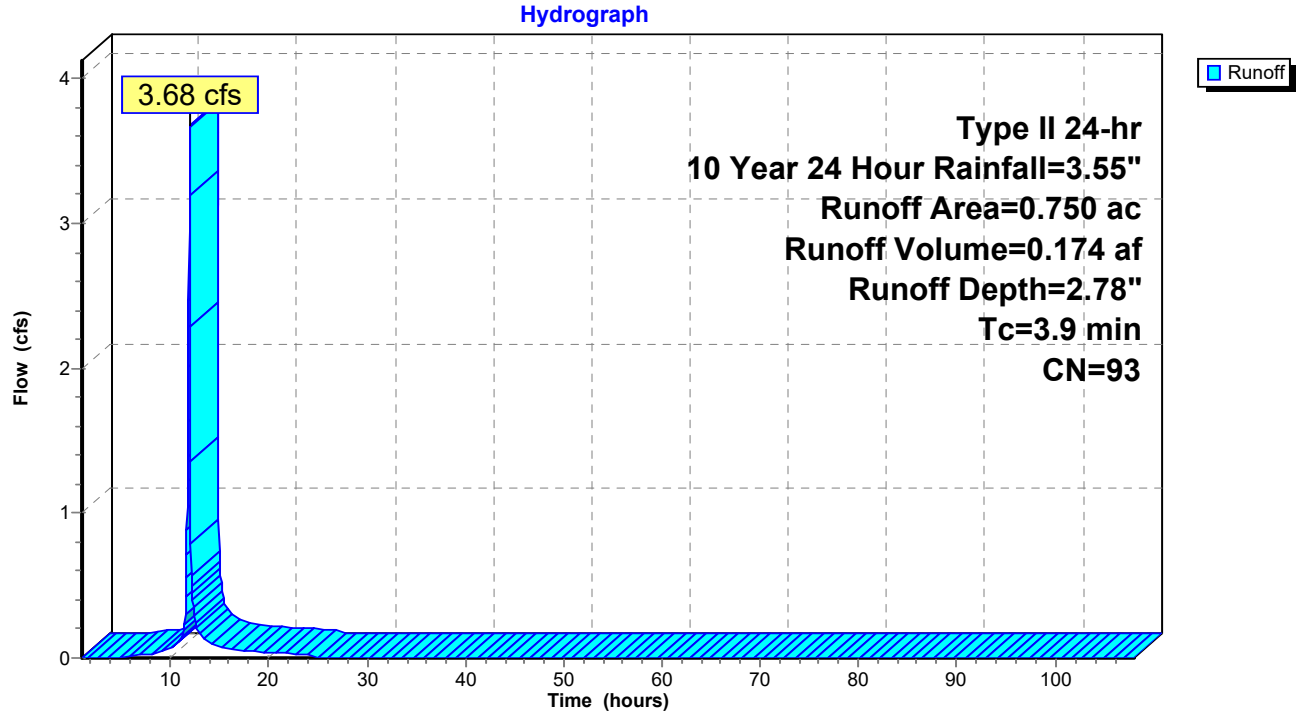
Runoff = 3.68 cfs @ 11.94 hrs, Volume= 0.174 af, Depth= 2.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

	Area (ac)	CN	Description
*	0.750	93	From Workbook
	0.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9					**Direct Entry, From Workbook**

Subcatchment 129S: SN1 (Municipal System)



Summary for Subcatchment 130S: SN2 Northern Property Line

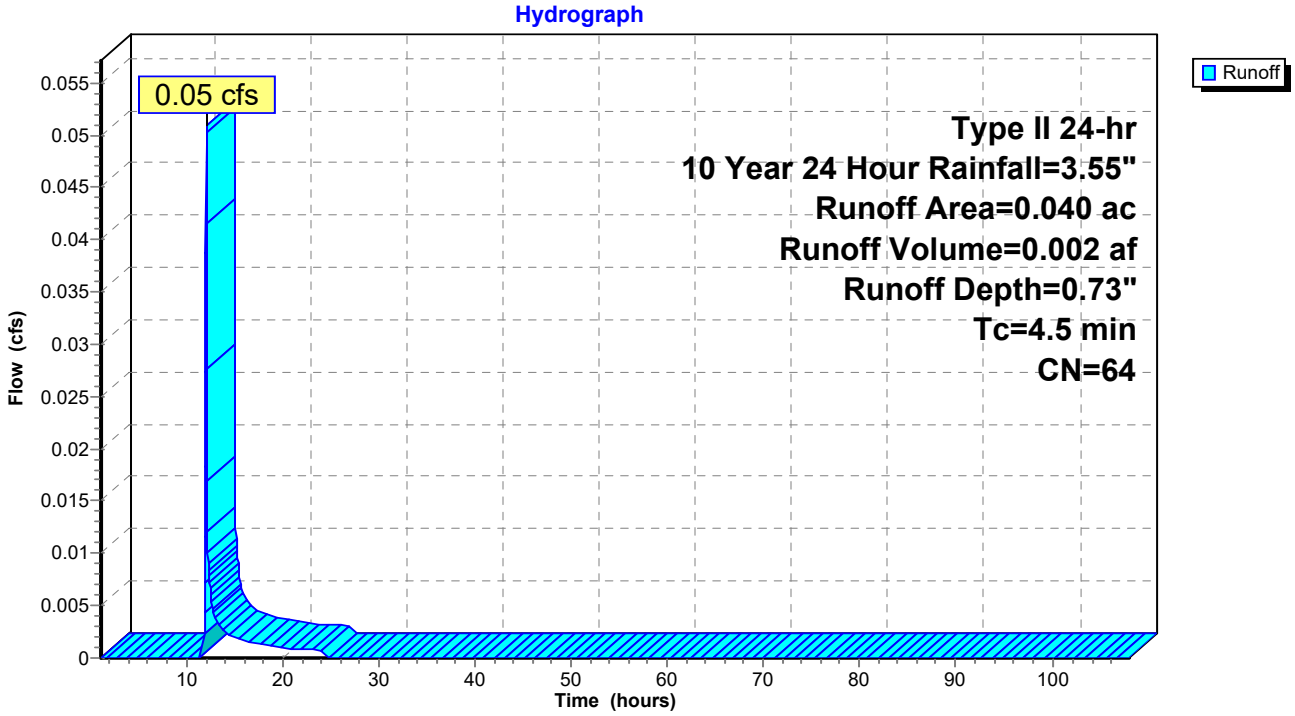
Runoff = 0.05 cfs @ 11.97 hrs, Volume= 0.002 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 10 Year 24 Hour Rainfall=3.55"

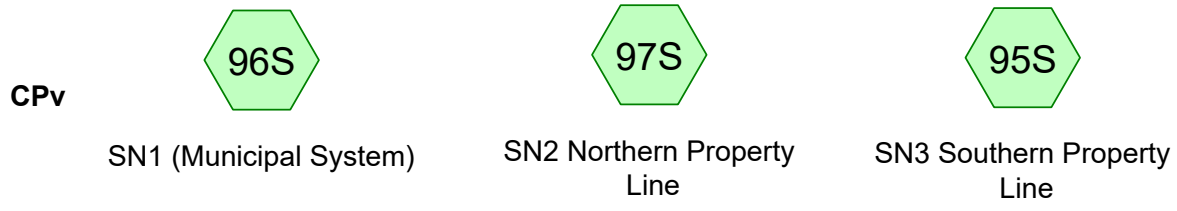
	Area (ac)	CN	Description
*	0.040	64	From Workbook
	0.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5					**Direct Entry, From Workbook**

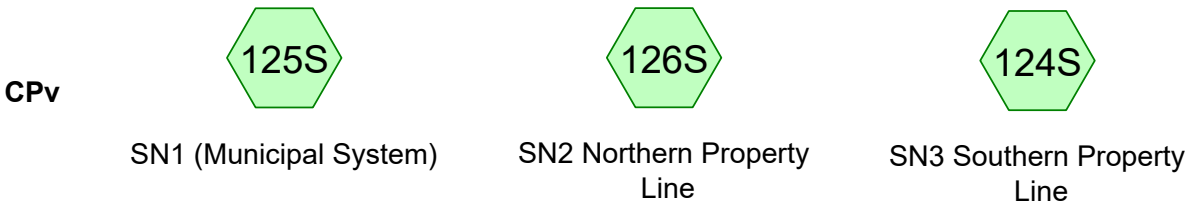
Subcatchment 130S: SN2 Northern Property Line

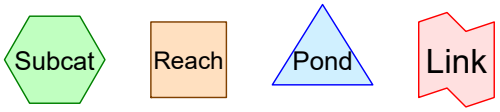


PRE-DEVELOPMENT



POST-DEVELOPMENT





Routing Diagram for 51-S-Main-Apartments
Prepared by Krebs & Lansing Consulting Engineers, Inc., Printed 9/27/2023

Summary for Subcatchment 95S: SN3 Southern Property Line

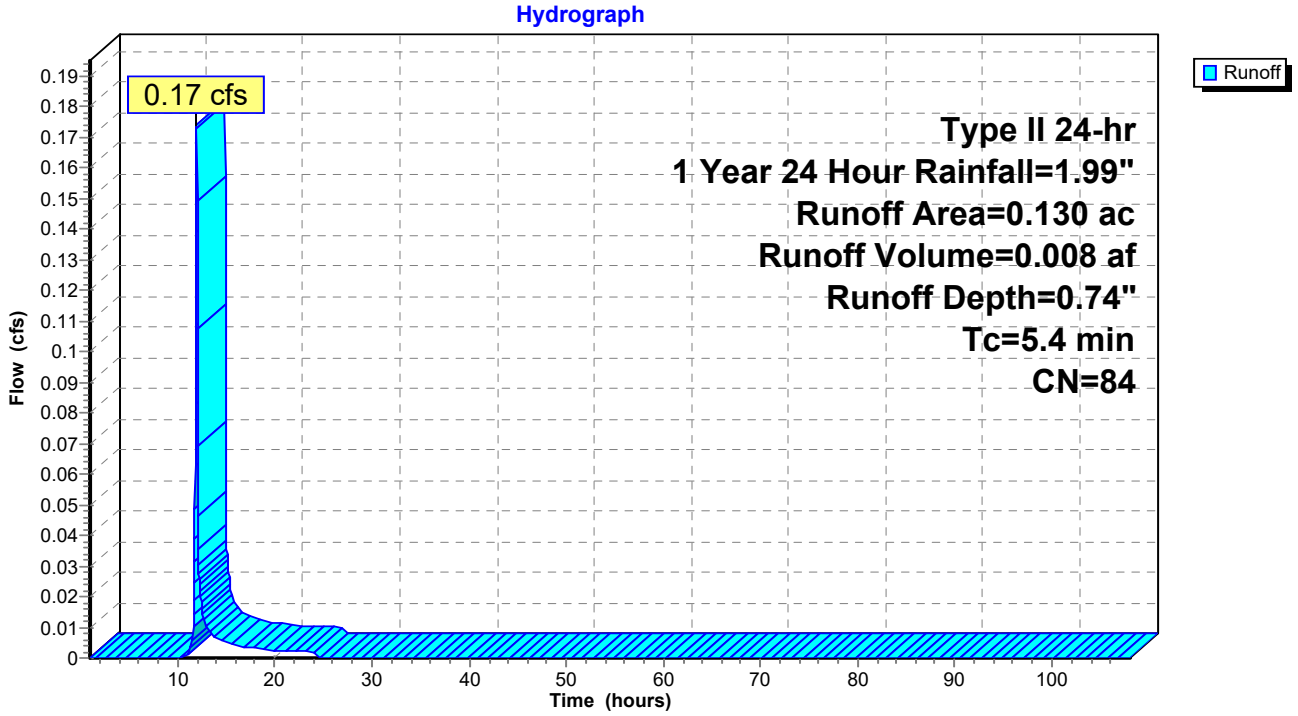
Runoff = 0.17 cfs @ 11.97 hrs, Volume= 0.008 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.130	84	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4					**Direct Entry, From Workbook**

Subcatchment 95S: SN3 Southern Property Line



Summary for Subcatchment 96S: SN1 (Municipal System)

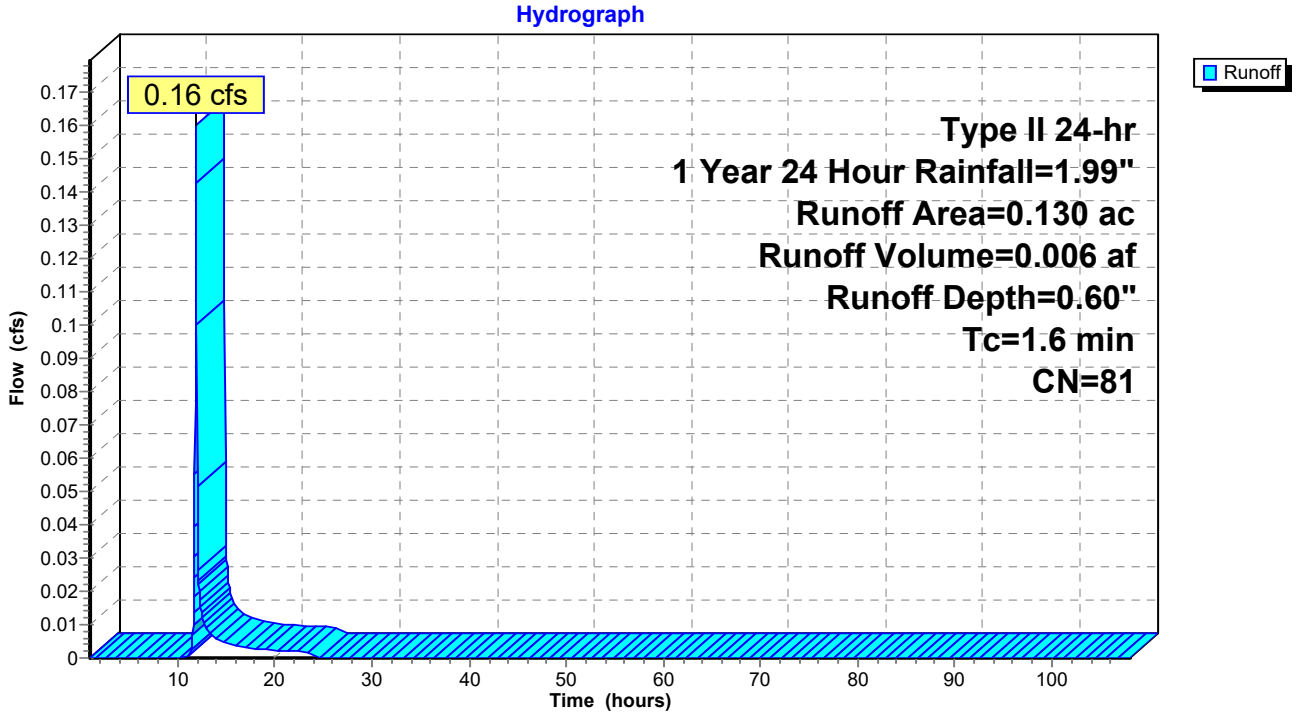
Runoff = 0.16 cfs @ 11.92 hrs, Volume= 0.006 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.130	81	From Workbook
	0.130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6					**Direct Entry, From Workbook**

Subcatchment 96S: SN1 (Municipal System)



Summary for Subcatchment 97S: SN2 Northern Property Line

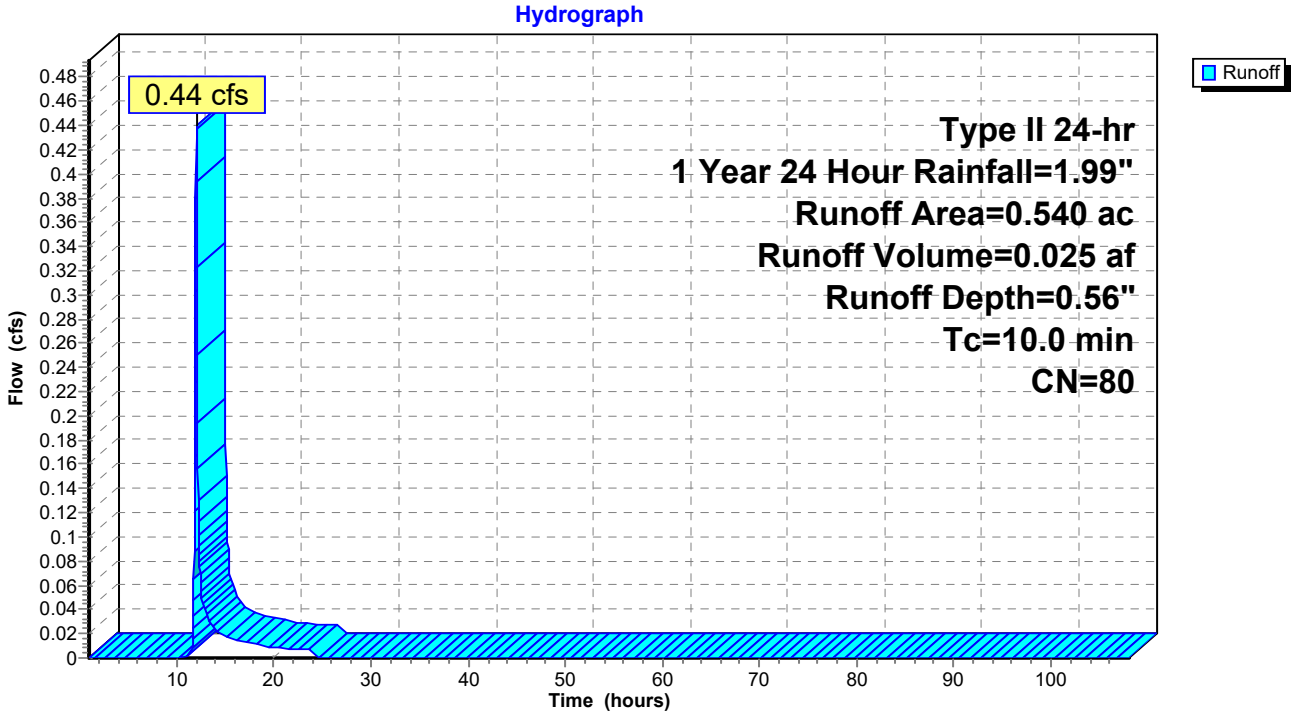
Runoff = 0.44 cfs @ 12.03 hrs, Volume= 0.025 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.540	80	From Workbook
	0.540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, From Workbook**

Subcatchment 97S: SN2 Northern Property Line



Summary for Subcatchment 124S: SN3 Southern Property Line

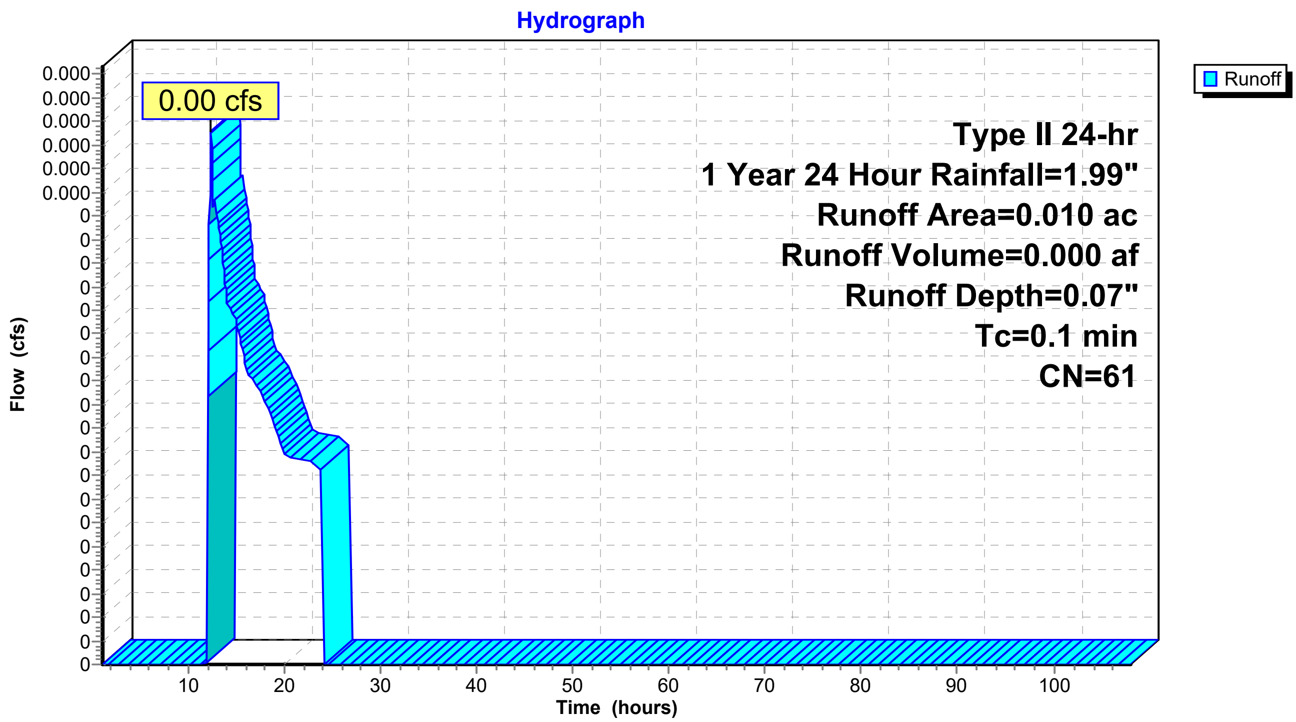
Runoff = 0.00 cfs @ 12.31 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.010	61	From Workbook
	0.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1					**Direct Entry, From Workbook**

Subcatchment 124S: SN3 Southern Property Line



Summary for Subcatchment 125S: SN1 (Municipal System)

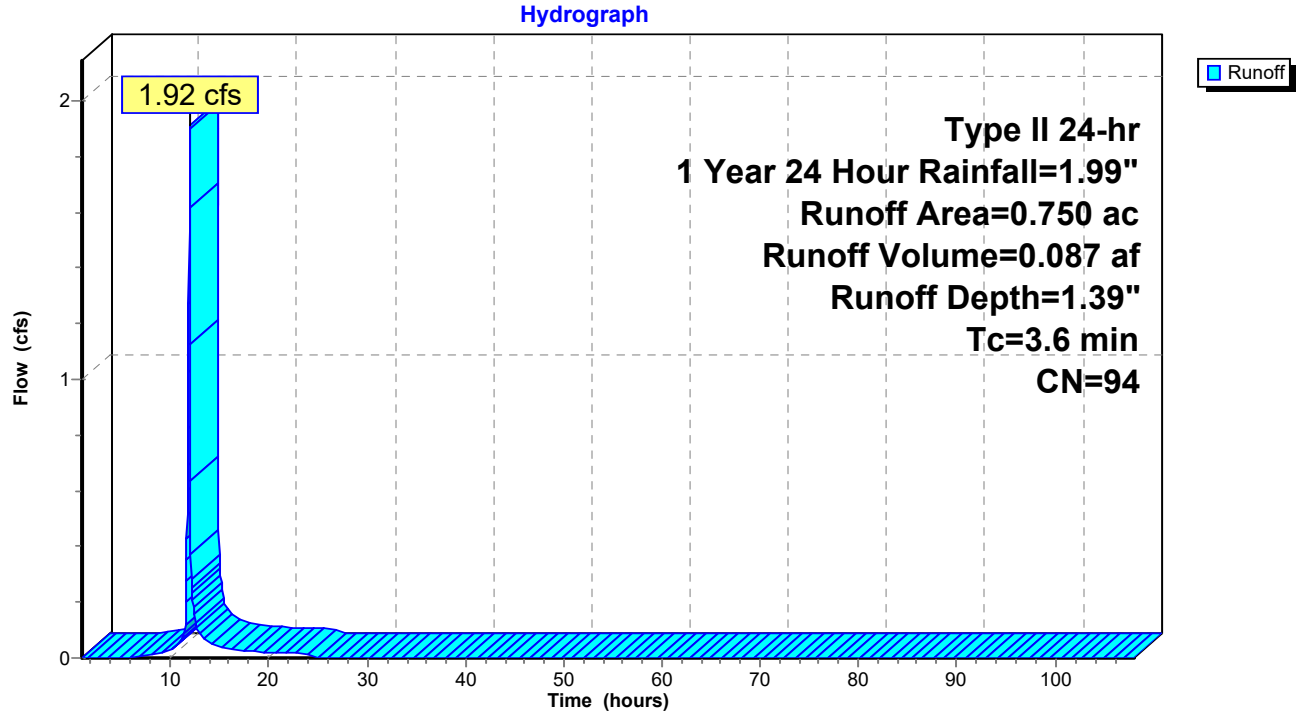
Runoff = 1.92 cfs @ 11.94 hrs, Volume= 0.087 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.750	94	From Workbook
	0.750		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6					**Direct Entry, From Workbook**

Subcatchment 125S: SN1 (Municipal System)



Summary for Subcatchment 126S: SN2 Northern Property Line

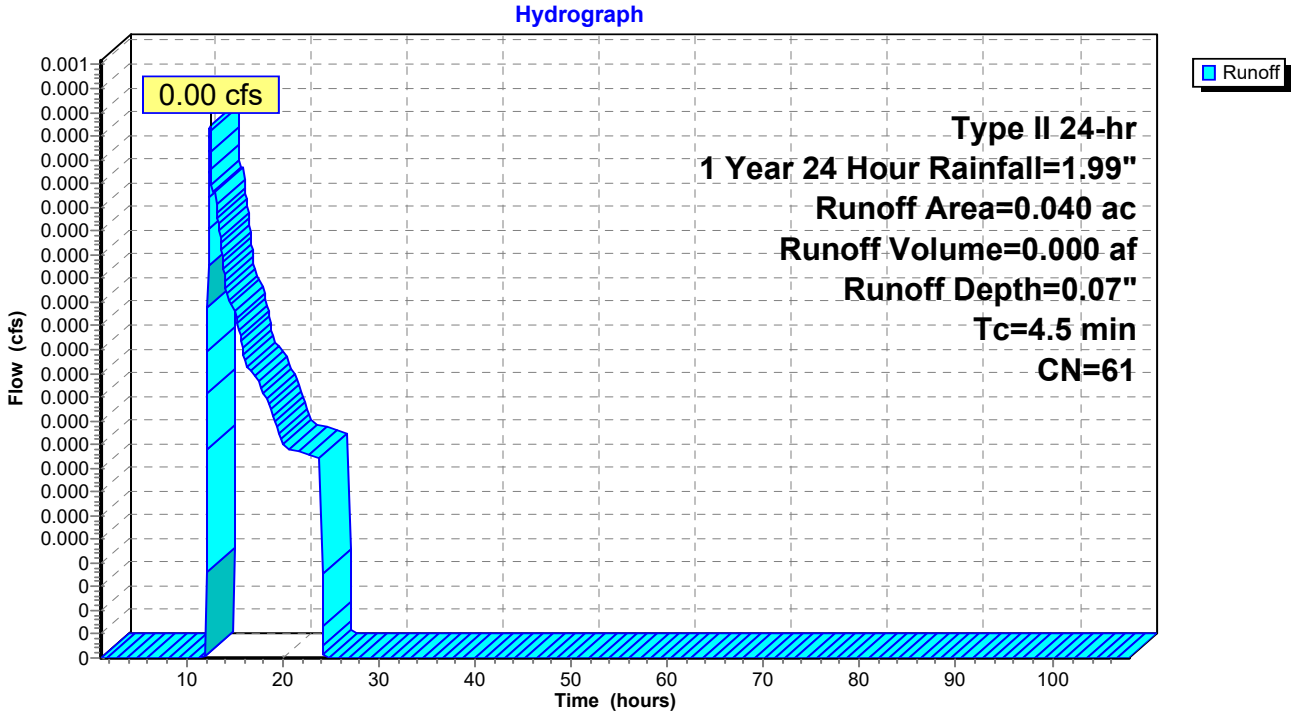
Runoff = 0.00 cfs @ 12.38 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 1.00-108.01 hrs, dt= 0.03 hrs
Type II 24-hr 1 Year 24 Hour Rainfall=1.99"

	Area (ac)	CN	Description
*	0.040	61	From Workbook
	0.040		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5					**Direct Entry, From Workbook**

Subcatchment 126S: SN2 Northern Property Line



Stormwater Flows from Project Parcel - Compairing Pre and Post Development of the Project
51 South Main Apartments - Waterbury, Vermont
Prepared By: Greg Dixson, P.E. - Krebs and Lansing Consulting Engineers, Inc.
Date: September 27, 2023

PRE-DEVELOPMENT

Watershed	Area (Acres)	Flow (CFS) WQv (1")	Flow (CFS) CPv (1 year)	Flow (CFS) QP10 (10 year)	Flow (CFS) QP100 (100 year)
SN1 (Municipal)	0.13	0.02	0.16	0.41	0.85
SN2 (Northern PL)	0.54	0.03	0.44	1.21	2.66
SN3 (Southern PL)	0.13	0.03	0.17	0.41	0.80
TOTAL FROM SITE	**0.80**	**0.08**	**0.77**	**2.03**	**4.31**

POST-DEVELOPMENT

Watershed	Area (Acres)	Flow (CFS) WQv (1")	Flow (CFS) CPv (1 year)	Flow (CFS) QP10 (10 year)	Flow (CFS) QP100 (100 year)
SN1 (Municipal)	0.75	1.05	1.92	3.68	5.87
SN2 (Northern PL)	0.04	0.00	0.00	0.05	0.18
SN3 (Southern PL)	0.01	0.00	0.00	0.01	0.05
TOTAL FROM SITE	**0.80**	**1.05**	**1.92**	**3.74**	**6.10**

INCREASE IN FLOW AND VOLUME TO THE MUNICPAL SYSTEM - SN1 MUNICIPAL

Flow	Area (Acres)	Flow (CFS) WQv (1")	Flow (CFS) CPv (1 year)	Flow (CFS) QP10 (10 year)	Flow (CFS) QP100 (100 year)
PRE vs POST	0.62	1.03	1.76	3.27	5.02

INCREASE IN FLOW AND VOLUME TO THE MUNICPAL SYSTEM - FROM SITE

Flow	Area (Acres)	Flow (CFS) WQv (1")	Flow (CFS) CPv (1 year)	Flow (CFS) QP10 (10 year)	Flow (CFS) QP100 (100 year)
PRE vs POST	0.80	0.97	1.15	1.71	1.79