PZ clerk rec'd 04.01.2026

Alicia Legland, Esq.
Direct Dial: 518.433.2416
alegland@hodgsonruss.com

Hodgson Russ LLP ATTORNEYS

April 1, 2026

VIA HAND DELIVERY/ELECTRONIC MAIL
Town of New Lebanon Planning Board
14755 Route 22
New Lebanon, NY 12125

To: Members of the Planning Board

Re: Proposed Tilden Commons Project – April 2026 Submission

As you know, our firm represents Tilden Project LLC, and its partner Hudson River Housing, Inc. (Applicant), with its efforts to develop the Tilden Commons (Project) at 538 Route 20 New Lebanon, New York 12125 (Tax Map ID 19.2-1-69) in the Town of New Lebanon, New York.

Please see attached submission for the April 2026 Planning Board meeting, which includes the following documents:

- Exhibit A: Updated Project Narrative, dated April 1, 2026
- Exhibit B: Copy of the Permit from the Town Highway Superintendent, dated March 30, 2026
- Exhibit C: Updated Drawings, dated April 1, 2026
- Exhibit D: Lighting Package Cutsheets
- Exhibit E: Updated Water System Engineering Report, dated April 1, 2026
- Exhibit F: Responses to Town Designated Engineer's Comments (**Please note – the highlighting and other unique formatting of this document was in place when it was provided to the Applicant*)
- Exhibit G: Stormwater Pollution Prevent Plan (SWPPP)

Please contact me with any questions or concerns. We look forward to seeing you at the April 2026 meeting.

Very truly yours,

Alicia R. Legland

ARL
Enclosures
cc: Courtney Potter, *Planning Board Clerk*, Town of New Lebanon
Andrew E. Clark, Esq., *Attorney*, Town of New Lebanon Planning Board (*via email*)
Tilden Project LLC (*via email*)

Exhibit A

NARRATIVE FOR TILDEN COMMONS

Prepared for New Lebanon's Planning Board

Updated April 1, 2026

Project Overview

The proposed development is a mixed-use development on a 3.2-acre parcel in the Town's Central Commercial District. We are seeking to build a new space for a local grocery business and to build housing that is affordable to middle-class individuals and families who live in the area.

We are seeking local permitting for the housing, as a multifamily dwelling use, and for the grocery, as a retail store use. We expect this project to have a major positive impact on the downtown community and the Town overall. The project also includes 113 parking spaces, an outdoor courtyard and play area, and green spaces for tenants and customers.

Rendering from the SE corner of the lot, near Route 20. Landscaping subject to change.

Rendering from residential vehicle entry along Tilden Rd. Landscaping subject to change.

HOUSING — The proposed development includes 41 apartments, a mix of 21 one-bedroom apartments and 20 two-bedroom apartments. We anticipate reserving 10 apartments for seniors aged 62 and up. Based on substantial previous experience with similar developments, we expect an average of 1.25 people across the one-bedroom apartments and an average of 3.0 people across two-bedrooms apartments. Thus we expect this development to house approximately 86 people.

Using State and Federal funds will require all of these apartments to be "affordable," which is defined as total housing costs no greater than 30% of a household's gross income. We are targeting households whose gross incomes are 60% of Area Median Income (AMI). Here is a selection of current levels of AMI by number of people in the household:

	HOUSEHOLD SIZE			
	1 person	2 persons	3 persons	4 persons
100% of AMI	$78,900	$90,200	$101,400	$112,700
60% of AMI	$47,340	$54,120	$60,840	$67,620

We anticipate the monthly rent for one-bedroom apartments to be roughly $1100 and for two-bedroom apartments to be roughly $1300.

GROCERY — The proposed project also includes a roughly 12,500 square-foot grocery including 9500 square feet of retail space and an interior 2-bay loading dock suitable for anticipated deliveries. We have in place an agreement with the New Lebanon Farmers Market & Grocery to be the tenant for this space. It is committed to supporting local farmers and food producers. It expects this expansion from its current size of 2,400 square feet to enable it to scale its operations, lower prices, and serve a dramatically greater share of the local community.

Design and construction

The design team is led by Ari Goldstein of Substrate Architecture, based in Austerlitz, NY, and includes Brendon Becker of Lamont Engineers, based in Cobleskill, NY.

The design takes inspiration from the Town's rural and agricultural character and Shaker history. Its design adheres to strict design guidelines authored by New York State's Homes and Community Renewal, a recent copy of which can be accessed online at **https://tinyurl.com/hcr-design**. The project is a model for the newly revised zoning code and the comprehensive plan, including parking located in the rear, architectural details reflective of Shaker and rural vernacular buildings, and dark sky compliant lighting.

Environmental and safety considerations

WETLANDS — The DEC "has determined that there are no DEC regulated freshwater wetlands and/or adjacent areas identified on the parcel." *See LETTER OF NO JURISDICTION – FRESHWATER WETLANDS dated December 1, 2025.*

WATER SOURCE — This project will comply with New York State Department of Health (DOH) regulations as a community water system. We have performed comprehensive testing, including a 72-hour draw down pumping test to ensure that the well is more than able to meet the calculated demands. During this test, the hydrogeologist installed monitoring equipment on existing wells within a 1000–1500-foot radius of the existing well on the project site. We have submitted full results from this Hydrogeologic Evaluation Report, which confirms both that the existing well will suffice for the development and that anticipated water withdrawal during extreme conditions will not affect the wells on any nearby property. The proposed water system will include chlorination and treatment in compliance with DOH regulations. *See Hydrogeologic Evaluation Report, prepared by Hanson Van Vleet, PLLC.*

DOH has our most recent water system designs. Further review is pending Town SEQR determination.

WASTEWATER — The proposed wastewater system will fall under the review and regulations of DEC as an intermediate system. The development will use an advanced treatment system for wastewater treatment with clean discharge. This will require that the development obtain a State Pollutant Discharge Elimination System (SPDES) permit from the DEC, and the wastewater system will need to comply with the treatment quality requirements of such permit. The anticipated treatment system is a conventional septic tank for solids removal, an Orenco Advantex treatment system for secondary treatment, and UV disinfection. These treatment

steps render the wastewater as clean as stormwater. All wastewater will then discharge to an underground infiltrator system, ensuring that all wastewater stays on the site and filters safely back into the earth.

DEC has our most recent designs, and we have had several phone conversations with James Malcolm regarding same. One call included Sean Howard at DOH. Review of our most recent wastewater system designs is underway. In addition, we have submitted correspondence from Lena Phillips at DEC indicating that the proposed wastewater system is eligible for a SPDES General Permit. *See Tilden Commons DEC ID 4-1048-00120 (T) New Lebanon, Columbia County.*

STORMWATER — Proposed stormwater treatment for the new impervious surface areas for the project site will be provided mostly by infiltration basins at the northern portion of the site. Deep test pits have been completed and verified to ensure this is a viable treatment option. The stormwater basins will allow stormwater to percolate slowly into the soils and avoid any impact on any of the existing roadway drainage systems. These infiltration basins will be landscaped with appealing plantings. The filtration media will be maintained according to a maintenance plan.

Traffic

We have submitted a traffic assessment produced by Creighton Manning Engineering & Surveying, PLLC (CM). *See Traffic Assessment, Tilden Mixed-Use Development, 538 Route 20, Town of New Lebanon, Columbia County, New York; CM Project No. R251170.00.*

These are the key conclusions:

- The intersection and stopping sight distances meet relevant guidelines.
- The proposed project is expected to generate 56 new vehicle trips during the AM peak hour, 133 new vehicle trips during the PM peak hour, and 160 new vehicle trips during the Saturday peak hour.
- The relevant intersections — including US20 and NY22; US20 and Tilden Rd; US20 and West St / Shaker Rd — will operate at Level of Service C or better during peak hours, with an increase in average vehicle delay less than two seconds.
- Site Driveway intersections on US Route 20 and Tilden Rd will operate at Level of Service B or better during peak hours.
- The development will not significantly increase queuing in the study area during peak hours.

We have submitted a letter indicating that New York State Department of Transportation (NYSDOT) will permit the development's proposed curb cut on US-20. *See Letter from the Department of Transportation dated November 24, 2025, and signed by William C. First.*

Electricity

NYSEG completed a load study and confirmed that the grid currently has enough power to serve the site. The development will likely need to relocate one pole and install a new pad mount transformer. *See NYSEG email dated Wednesday August 6 2025 from Sierra Dexheimer.*

Project timeline

Our timeline is anchored to the State's annual application process for affordable housing. Given the competitiveness of this funding, the State effectively requires projects that are shovel-ready and fully permitted. If the State approves the application, we anticipate breaking ground in 3Q 2027 and beginning operation in 1Q 2029.

Key changes since prior submission

Below is a list of key changes since our prior submission. Some of these are responsive to notes made in Barton & Loguidice's memo dated December 17, 2025.

Traffic, parking, and deliveries

- Provided a traffic assessment by Creighton Manning.
- Modified the site entrance on US-20 to comply with the NYS DOT Minor Commercial Driveway requirements.
- Modified the curb cut and driveway servicing the loading dock on Tilden Rd to accommodate 43-foot trailers.
- Modified the handicap parking layout on the site plan and added spot elevations to the site plan at all ADA spots.
- Widened Tilden Rd 2 feet each side from near Route 20 past the North parking entry.

Water, wastewater, and stormwater

- Completed infiltration testing and deep test pits on September 26, 2025, and verified same on March 30, 2026. In communication with B&L, we have updated our stormwater design and our SWPPP.
- Updated our wastewater design, including the subsurface infiltrator system, to reflect seasonal ground water levels.
- Provided updated Water and Sanitary Systems Report.
- Provided updated Stormwater Pollution Prevention Plan (SWPPP).
- Provided final Hydrogeologic Evaluation Report.

- Updated underground grease trap for future commercial kitchen.

Landscaping and site design

- Relocated the playground from the northerly portion of the site to the yard adjacent to the building's courtyard along Tilden Rd.

- Removed the walking path, play mound, and gazebo from the green space at the northerly portion of the site.

- Removed sidewalks in front of the loading dock, trash enclosure, and generator along Tilden Rd.

- Provided fencing around the transformer.

- Included rooftop solar in the building design. See A-110.

- Provided tree species, planting caliper, and location on the landscape plan and renderings. See L-400.

- Added trees, grass, shrubs, a retaining wall and railing at the Tilden Rd property line to create an attractive landscaped ROW adjacent to the loading dock. See L-100 for detail.

Exhibit B

TOWN OF NEW LEBANON
P.O. Box 328
14755 State Route 22
New Lebanon, NY 12125
Phone : 518-794-8888
https://townofnewlebanon.com/

Cissy Hernandez
Zoning Enforcement Officer
Deputy Code Enforcement Officer

Zoning Permit

Driveway / Other (New) Permit
Permit Set 538 US ROUTE 20 P# BP-2026-013 R# 104800-19.2-1-69

LOCATION OF WORK

Address	Zoning	Legal description
538 US ROUTE 20		

PERMIT INFORMATION

Permit number	Date applied	Date issued
BP-2026-013	03/30/2026	03/30/2026

Status
Issued

Issuer	Expiration date
Cissy Hernandez	-

Reviewed by
Cissy Hernandez

GRANTED TO

Applicant, Property owner
Tilden Project LLC
Josh Young
58 Pool Hill Rd
New Lebanon, NY 12125

Two commercial driveway entrances on Tilden Road are hereby authorized to be installed in accordance with Drawing C-120 titled: turning radius plan and dated June 30, 2025 an revised April 1, 2026, as approved by the Highway Superintendent, and associated with Planning Board Case No. 2025-015. Any deviation from the approved driveway location and/or configuration shall render this permit null and void. This permit shall not become effective unless and until final approval has been granted by the Planning Board.

All work shall be performed in accordance with the construction documents which were submitted with and accepted as part of the application for the building permit. The permit holder shall immediately the Code Enforcement Officer of any change occurring during the course of the work- All work shall be executed in strict compliance with the construction documents submitted and accepted as part of the permit application, and the Uniform Fire Prevention and Building Code, and all other state and local laws, rules, and regulations, which apply. Building permits shall become invalid unless the authorized work is commenced within five months following the date of issuance. Building permits shall expire 12 months after the date of issuance. A building permit that has become invalid or which has expired pursuant to this subsection may be renewed upon application by the permit holder, payment of the applicable fee, and approval of the application by the Code Enforcement Officer. In addition to a Building Permit, when required, this document also serves as a zoning permit in accordance with Chapter 205 (Zoning Ordinance).

INSPECTIONS

PLEASE CALL FOR APPLICABLE INSPECTIONS- 48 HOURS NOTICE MUST BE GIVEN FOR ALL INSPECTIONS BELOW Work shall remain accessible and exposed until inspected and accepted by the Code Enforcement OMcer or by an inspector authorized by the Code Enforcement Officer. The permit holder shall notify the Code Enforcement Officer when any element of work described in Subsection B of this section is ready for inspection.

PERMIT IS VALID FOR ONE YEAR FROM DATE OF ISSUE. Please be sure to close or renew this permit before it expires to avoid potential violation(s)

TOWN OF NEW LEBANON
P.O. Box 328
14755 State Route 22
New Lebanon, NY 12125
Phone : 518-794-8888
https://townofnewlebanon.com/

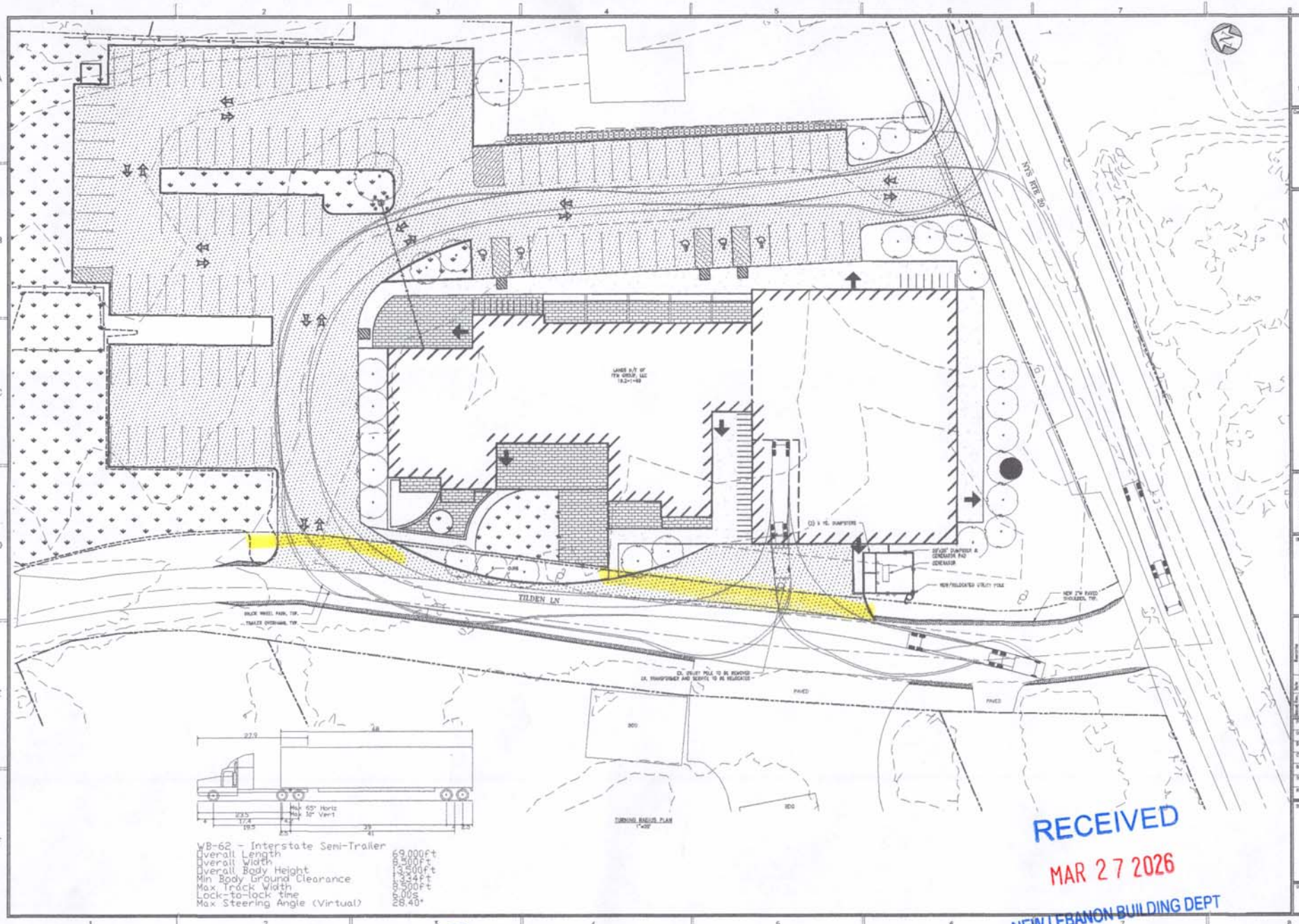
REQUIRED INSPECTIONS

Name	Description
Final Inspection	Final Inspection

INSTRUCTIONS

THE PERMIT HOLDER AND/OR PROPERTY OWNER IS RESPONSIBLE FOR ENSURING THAT ALL REQUIRED/APPLICABLE INSPECTIONS ARE SCHEDULED AND THAT THE PERMIT IS COMPLETE
WHAT INFORMATION MUST BE PROVIDED AT THE TIME OF INSPECTION?

- THE PERMIT
- THE APPROVED SET OF PLANS THAT HAVE BEEN INCLUDED WITH YOUR PERMIT PACKAGE
- ANY TEST RECORDS OR RELEVANT DOCUMENTATION
- SAFE ACCESS TO THE SITE AND THE AREAS WHERE INSPECTION ARE TO BE PERFORMED.



WB-62 - Interstate Semi-Trailer

Overall Length	69.000ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

RECEIVED
MAR 27 2026
NEW LEBANON BUILDING DEPT

Peter McLaren

Lamont Engineers
ENGINEERING - PLANNING
FACILITY OPERATIONS
157 GLEN ST., GLENS FALLS, NY 12801
(518) 234-4008
www.lamonteng.com

Consultant

TILDEN COMMONS
NEW LEBANON DEVELOPMENT, LLC.
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DRAWING AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT OR A PROJECT DRAWN FROM THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES, AND IS THEREFORE PROHIBITED.

Stamp

Revisions		
Sheet No.	Date	Description
1	1/2/26	Per Planning Board Comments
2	1/15/26	Per Planning Board Comments
3	1/20/26	Per Planning Board Comments
4	2/5/26	Per Planning Board Comments
5	2/10/26	Per Planning Board Comments
6	2/17/26	Per Planning Board Comments
7	3/2/26	Per Planning Board Comments
8	3/24/26	Per Planning Board Comments

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	8/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title
TURNING RADIUS PLAN

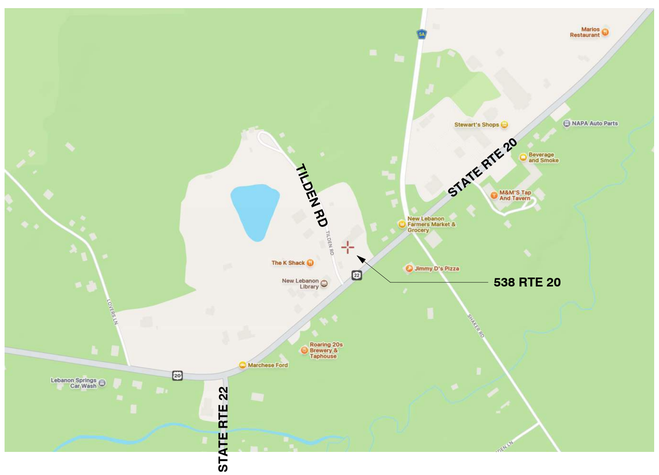
Sheet No.
C120

Exhibit C

TILDEN COMMONS

538 US ROUTE 20
NEW LEBANON, NY 12125

SCOPE OF WORK: NEW CONSTRUCTION OF A THREE-STORY MIXED-USE BUILDING INCLUDING RETAIL AND 41 RESIDENTIAL APARTMENTS.



DRAWING LIST		
SHEET NUMBER	**SHEET NAME**	**Sheet Issue Date**
A-110	ROOF PLAN	04/01/2026
A-200	EXTERIOR ELEVATIONS	04/01/2026
A-201	EXTERIOR ELEVATIONS	04/01/2026
A-202	EXTERIOR ELEVATIONS	04/01/2026
A-203	EXTERIOR ELEVATIONS	04/01/2026
G-015	EXTERIOR RENDERINGS	04/01/2025
L-100	LANDSCAPE PLAN	04/01/2026
L-500	LANDSCAPE DETAILS	04/01/2026
C35	STORMWATER POLLUTION PREVENTION NOTES	04/01/2026
C36	EROSION AND SEDIMENT CONTROL DETAILS	04/01/2026
C37	EROSION AND SEDIMENT CONTROL DETAILS	04/01/2026
C100	EXISTING CONDITIONS & DEMOLITION PLAN	04/01/2026
C110	OVERALL SITE PLAN	04/01/2026
C111	DETAILED PLAN VIEW	04/01/2026
C112	DETAILED PLAN VIEW	04/01/2026
C115	GRADING & STORMWATER PLAN	04/01/2026
C120	TURNING RADIUS PLAN	04/01/2026
C120A	TURNING RADIUS PLAN	04/01/2026
C130	NYSDOT ENTRANCE GENERAL PLAN	04/01/2026
C131	NYSDOT SITE PLAN & DETAILS	04/01/2026
C132	NYSDOT ENTRANCE NOTES	04/01/2026
C150	STORMWATER DETAILS	04/01/2026
C151	STORMWATER DETAILS	04/01/2026
C155	SITE DETAILS	04/01/2026
C156	SITE DETAILS	04/01/2026
C160	SEPTIC PLAN	04/01/2026
C161	SANITARY DETAILS	04/01/2026
C162	SANITARY DETAILS	04/01/2026
C163	SANITARY DETAILS	04/01/2026
C164	SANITARY DETAILS	04/01/2026
C165	UV SYSTEM PLAN AND SECTION	04/01/2026
LT-100	SITE LIGHTING LAYOUT	04/01/2026
LT-101	SITE LIGHTING LIGHT LEVELS	04/01/2026
LT-200	LIGHTING FIXTURE SCHEDULE	04/01/2026
LT-201	LIGHTING FIXTURE SCHEDULE	04/01/2026

OWNER:
TILDEN PROJECT LLC`
MANAGING PARTNER: JOSH YOUNG
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ARCHITECT:
ARIEL GOLDSTEIN, AIA
SUBSTRATE ARCHTECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

ENGINEER:
BRENDON BECKER, PE
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL, NY 12043

LIGHTING DESIGNER:
SARA SCHONOUR
LUXSI
555 US ROUTE 20
NEW LEBANON, NY 12125

GENERAL CONTRACTOR:
PIKE CONSTRUCTION
ONE CIRCLE STREET
ROCHESTER, NY 14607

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:
Tilden Commons

Drawing Tile:
COVER SHEET

Date: 04/01/2026

Seal/Signature:

Drawing Number:
C-000

1 LOOKING NORTHEAST FROM TILDEN AND RT 20

2 LOOKING SOUTHEAST RESIDENTIAL ENTRY

4 LOOKING SOUTH ON TILDEN ROAD

5 LOOKING NORTH ON TILDEN ROAD

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

EXTERIOR RENDERINGS

Date: 04/01/2026

Seal/Signature:

Drawing Number:

G-015

STORMWATER POLLUTION PREVENTION PLAN NOTES (SWPPP)

THIS SWPPP WAS PREPARED IN COMPLIANCE WITH THE SPDES GENERAL PERMIT GP-0-25-001.

THE OWNER IS SOLELY RESPONSIBLE FOR IMPLEMENTING AND ENFORCING THE CONTENTS OF THIS STORMWATER POLLUTION PREVENTION PLAN DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE FOR ALL POST-CONSTRUCTION INSPECTION AND MAINTENANCE DUTIES.
SEE CERTIFICATION REQUIREMENTS IN SECTION I.

I. CERTIFICATION:

THIS STORMWATER POLLUTION PREVENTION PLAN REFLECTS ALL REQUIREMENTS AS DESCRIBED IN THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. TO ENSURE COMPLIANCE, THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE LATEST EDITION OF "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" MANUAL PUBLISHED BY THE EMPIRE STATE SOIL AND WATER CONSERVATION SOCIETY, AND THE NYSDEC PUBLICATION ENTITLED "STORMWATER MANAGEMENT DESIGN MANUAL – JULY 2024".

ALL CONTRACTORS AND SUBCONTRACTORS RESPONSIBLE FOR SITEWORK ON THIS CONTRACT SHALL SIGN A COPY OF THE FOLLOWING STATEMENT BEFORE UNDERTAKING ANY CONSTRUCTION ACTIVITY ON THE PROJECT. A COPY OF THIS STATEMENT IS INCLUDED IN THE SWPPP.

"I HEREBY CERTIFY THAT I UNDERSTAND AND AGREE TO COMPLY WITH THE TERMS AND CONDITIONS OF THE SWPPP AND AGREE TO IMPLEMENT ANY CORRECTIVE ACTIONS IDENTIFIED BY THE QUALIFIED INSPECTOR DURING A SITE INSPECTION. I ALSO UNDERSTAND THAT THE OWNER OR OPERATOR MUST COMPLY WITH THE TERMS AND CONDITIONS OF THE MOST CURRENT VERSION OF THE NEW YORK STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES AND THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS. FURTHERMORE, I UNDERSTAND THAT CERTIFYING FALSE, INCORRECT OR INACCURATE INFORMATION IS A VIOLATION OF THE REFERENCED PERMIT AND THE LAWS OF NEW YORK STATE AND COULD SUBJECT ME TO CRIMINAL, CIVIL AND/OR ADMINISTRATIVE PROCEEDINGS."

THE CERTIFICATION MUST INCLUDE THE NAME AND TITLE OF THE PERSON PROVIDING THE SIGNATURE IN ACCORDANCE WITH PART V.H OF THE GENERAL PERMIT; THE NAME ADDRESS AND PHONE NO. OF THE CONTRACTING FIRM; THE ADDRESS OF THE SITE; AND THE DATE THE CERTIFICATION IS MADE. SEE THE COMPLETE SWPPP FOR CERTIFICATION FORM.

II. SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES:

NO WORK WILL BE ALLOWED TO BE COMPLETED OUT OF SEQUENCE WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER. CONTRACTOR MAY NOT DISTURB MORE THAN 5 ACRES AT ANY ONE TIME.

1. STAKE OUT LIMIT OF DISTURBANCE. STAKEOUT POINTS SHALL HAVE A MAXIMUM SPACING OF 15'. COORDINATE WITH RESIDENT PROJECT REPRESENTATIVE.
2. PROVIDE CONSTRUCTION/SNOW FENCE ALONG SENSITIVE AREAS DESIGNATED ON DRAWINGS AHEAD OF ALL FURTHER OPERATIONS. DO NOT TRENCH IN.
3. ACCESS WORK AREAS FROM APPROVED ACCESS WAYS SHOWN ON THE DRAWING.
4. PROVIDE SILT FENCE AS INDICATED ON THE DRAWINGS OR ORDERED BY ENGINEER.
5. PROVIDE STABILIZED CONSTRUCTION ENTRANCES AS INDICATED ON THE DRAWINGS.
6. FIELD LOCATE AND CONSTRUCT TEMPORARY STAGING AND STOCKPILING AREAS. COORDINATE WITH ENGINEER.
7. CONDUCT DEMOLITION WORK, INCLUDING BUILDINGS, ASPHALT, AND SUBBASE.
8. CLEAR TREES AND BRUSH WITHIN THE WORK AREA LIMITS. DO NOT DISTURB TREES AND BRUSH OUTSIDE THE LIMIT OF DISTURBANCE. DO NOT DISTURB TREES SCHEDULED TO REMAIN.
9. REMOVE ALL TOPSOIL WITHIN PROPOSED GRADING AREAS AND STOCKPILE AT LOCATIONS DESIGNATED ON PLANS.
10. REMOVE SUBSOIL AS REQUIRED, STOCKPILE ON-SITE OR DISPOSE SURPLUS OFF-SITE.
11. CONSTRUCT FOUNDATIONS AND ESTABLISH ROUGH GRADE TO WITHIN 6" OF FINISHED GRADE. CONSTRUCT UTILITY PIPING AND STRUCTURES.
12. PROVIDE PAVED PARKING/DRIVEWAY AREA SUBBASE.
13. CONSTRUCT BUILDING.
14. UPON COMPLETION OF ROUGH GRADING WORK, INCLUDING RE-USE OF STOCKPILED SUBSOIL, CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS WITHIN 7 DAYS.
15. EXCESS NATIVE SOIL NOT USED FOR THE PROJECT SHALL BE DISPOSED OF OFF-SITE AT AN APPROPRIATE SPOILS AREA.
16. CONSTRUCT INFILTRATION AND INFILTRATION BIORETENTION BASINS. IF SOILS WITHIN THESE AREAS ARE COMPACTED DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE SOIL RESTORATION AS REQUIRED BY ENGINEER.
17. CONTRACTOR SHALL PROVIDE JUTE MESH ON SLOPES GREATER THAN 3H:1V, AS INDICATED ON THE DRAWINGS, OR AS ORDERED BY ENGINEER.
18. ESTABLISH FINISHED GRADE. PROVIDE DRIVEWAY AND PARKING AREA ASPHALT PAVEMENT. REMOVE TEMPORARY STAGING/STOCKPILE AREAS AND RESTORE PER PLANS.
19. CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS WITH SEEDING AS OUTLINED IN SEEDING SCHEDULE.
20. UPON ESTABLISHMENT OF TURF, CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES AND RESTORE THOSE AREAS AS NECESSARY.

III. NON-STORMWATER DISCHARGES

DEWATERING

1. EXCAVATION DEWATERING SHALL BE ACCOMPLISHED BY INSTALLING A PERFORATED STANDPIPE PACKED IN STONE, IN A SUMP, ADJACENT TO THE WORK AREA
2. DO NOT PUMP WATER DIRECTLY FROM THE EXCAVATION
3. DIVERT SURFACE WATER AWAY FROM THE EXCAVATION AND WORK AREA
4. DEWATERING EFFLUENT SHALL BE PUMPED TO A STABLE GRASSY AREA, TO A GEOTEXTILE SEDIMENT BAG OR TO A TEMPORARY SETTLING BASIN FOR FILTERING AND SETTLING
5. FILTERING OR SETTLING PRACTICE SHALL BE APPROPRIATELY SIZED FOR THE PUMP USED
6. LOCATION OF FILTERING OR SETTLING PRACTICE SHALL BE APPROVED BY THE ENGINEER
7. DEWATERING EFFLUENT ENTERING ANY STREAM OR WATERCOURSE SHALL CAUSE NO VISIBLE CONTRAST TO THE RECEIVING WATERS
8. IF DEWATERING EFFLUENT FILTERING/SETTLING PRACTICES ARE FOUND TO BE INEFFECTIVE, CONTRACTOR SHALL CEASE OPERATIONS IMMEDIATELY AND CORRECT THE PROCEDURE.

CONCRETE TRUCK WASHOUT

CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE ONLY AT LOCATIONS SPECIFICALLY APPROVED BY THE ENGINEER. CONCRETE TRUCKS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE ALLOWED TO DISCHARGE WASH WATER INTO WETLANDS, WATER COURSES, OR STORM DRAINS. ALL CONCRETE TRUCK WASH AREAS SHALL BE ALLOWED TO DRY AND THEN BE BROKEN UP INTO PIECES NO LARGER THAN 4" IN ANY DIMENSION AND BURIED BELOW NEW PAVEMENT SURFACES.

THE WASHOUT SHALL BE LOCATED A MINIMUM OF 100 FEET FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER WATER SURFACES. PREVENT SURFACE WATER FROM ENTERING THE STRUCTURE EXCEPT FOR THE ACCESS ROAD. PROVIDE APPROPRIATE ACCESS WITH A GRAVEL ACCESS ROAD SLOPED DOWN TO THE STRUCTURE. SIGNS SHALL BE PLACED TO DIRECT DRIVERS TO THE FACILITY AFTER THEIR LOAD IS DISCHARGED.

IV. CONSTRUCTION EROSION & SEDIMENT CONTROLS:

IMMEDIATE STABILIZATION: FOR AREAS NEAR WETLANDS MULCH WORK AREA WITH WOOD CHIPS, HAY OR STRAW IMMEDIATELY AFTER ROUGH GRADING FOLLOWING EACH SOIL DISTURBING OPERATION. ANY WORK AREA ON SLOPES OF 10% OR GREATER SHALL BE STABILIZED NO LATER THAN THE END OF EACH DAY. SEE SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES ON SHEETS C110-C1160.

TEMPORARY STABILIZATION: TOPSOIL STOCKPILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH IMMEDIATELY AFTER THE TEMPORARY CESSATION OF CONSTRUCTION ACTIVITY IN THAT AREA. ALL AREAS MUST BE STABILIZED NO LATER THAN 7 DAYS AFTER WORK HAS CEASED. THE TEMPORARY SEED SHALL BE RYE APPLIED AT THE RATE OF 30 POUNDS PER ACRE. STRAW (CEREAL GRAIN) MULCH SHALL BE APPLIED AT A RATE OF 2 TON/ACRE. SLOPES OVER 3(H):1(V) SHALL BE STABILIZED WITH JUTE MESH, UNTIL SUCH TIME AS VEGETATION HAS BEEN ESTABLISHED. AREAS TO BE PAVED SHALL BE TEMPORARILY STABILIZED WITH GEOTEXTILES AND STONE SUB-BASE MATERIAL, AS SHOWN ON THE PLANS, UNTIL PAVEMENT IS INSTALLED.

PERMANENT STABILIZATION: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. PRIOR TO PERMANENT SEEDING, APPLY LIME TO THE SOIL TO ATTAIN A pH OF 6.5 IN THE UPPER 2 INCHES OF SOIL. APPLY COMMERCIAL FERTILIZER AT 850 LBS OF 5-5-10 OR EQUIVALENT PER ACRE.

PERMANENT SEED SHALL BE AS FOLLOWS:
LAWN/GRADED AREAS: 65% CREEPING RED FESCUE (85-114 LBS/ACRE), 20% PERENNIAL RYEGRASS (26-35 LBS/ACRE) 15% FINE FESCUE (19-26 LBS/ACRE)

NON-GRADED AREAS: CONSERVATION MIX BY NEW ENGLAND WETLAND PLANTS, OR EQUAL. APPLY AT 25 LBS/ACRE OR MANUFACTURERS RECOMMENDATION.

APPLY OTHER SEED MIXES AS NOTED ON THE DRAWINGS AT THE RESPECTIVE MANUFACTURERS RECOMMENDATIONS.

APPLY STRAW (CEREAL GRAIN) MULCH AT A RATE OF 2 TONS/ACRE.

MAINTAIN A pH OF 6.0-7.0 IN PERMANENT SEEDED AREAS. FERTILIZE IN LATE MAY TO EARLY JUNE AND REPEAT IN LATE AUGUST IF SOD DENSITY IS NOT ADEQUATE. AVOID FERTILIZING WHEN HEAT IS GREATER THAN 85°F.

SILT FENCING: AT A MINIMUM, SILT FENCING SHALL BE INSTALLED AT LOCATIONS SHOWN AND AS DETAILED ON THE DRAWINGS, CONTRACTOR MAY BE REQUIRED TO PROVIDE ADDITIONAL SILT FENCING, TO PROVIDE NECESSARY SEDIMENT CONTROL WHERE ACTIVITIES OF THE CONTRACTOR MAY RESULT IN OFF-SITE SEDIMENT DISCHARGE.

CONSTRUCTION FENCING: SHALL BE INSTALLED AT LOCATIONS SHOWN AND AS DETAILED ON THE DRAWINGS. THE PURPOSE OF THE FENCING IS TO DELINEATE THE LIMITS OF DISTURBANCE AND TO PROTECT THE BUFFER ZONE VEGETATION.

OFFSITE TRACKING OF VEHICLES: A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED, IF NECESSARY, TO REDUCE VEHICLE TRACKING OF SEDIMENTS ONTO THE ADJACENT PARKING AREAS AND ONTO STREETS. ALL SEDIMENTS TRACKED ONTO STREETS SHALL BE IMMEDIATELY REMOVED AND SEDIMENTS TRACKED ONTO THE PARKING AREAS SHALL BE REMOVED AT THE END OF EACH WORK DAY. SITEWORK CONTRACTOR SHALL PROVIDE TRUCK TIRE CLEANING AT ALL SITE EGRESS POINTS AS NEEDED TO PREVENT TRACKING ONTO STREETS AND THE EXISTING PARKING AREAS.

EXCAVATION: ALL EXCAVATED MATERIAL AND SIDE CAST FROM TRENCHING ACTIVITIES SHALL BE TEMPORARILY PLACED AWAY FROM ANY ENVIRONMENTALLY SENSITIVE AREA.

DUST CONTROL: ALL CONTRACTS SHALL APPLY WATER FOR THE CONTROL OF DUST WITHIN THE LIMITS OF THEIR RESPECTIVE WORK. WATER APPLICATION SHALL BE THE PRIMARY METHOD OF DUST CONTROL. CALCIUM CHLORIDE WILL NOT BE ALLOWED.

OTHER TEMPORARY CONTROLS: AS CONDITIONS WARRANT, OTHER TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE UTILIZED SO THAT ALL REQUIREMENTS OF THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" MANUAL ARE MET. NO ADDITIONAL PAYMENTS SHALL BE MADE FOR ADDITIONAL TEMPORARY MEASURES REQUIRED AS A RESULT OF THE CONTRACTOR'S PHASING OF THE WORK.

V. PERMANENT STORMWATER MANAGEMENT CONTROLS:

THE PERMANENT STORMWATER CONTROL SYSTEM WILL CONSIST OF A INFILTRATION BIORETENTION BASINS, INFILTRATION BASINS, A GRASS SWALE, CULVERTS, AND STORM SEWERS.

VI. SPILL PREVENTION PLAN (SPP):

ALL CONTRACTORS ARE RESPONSIBLE FOR IMPLEMENTING AND ENFORCING THE CONTENTS OF A SPILL PREVENTION PLAN AS OUTLINED IN THE SWPPP

VII. MAINTENANCE AND INSPECTION OF EROSION, SEDIMENT & STORMWATER MANAGEMENT PRACTICES BY THE CONTRACTOR:

THE CONTRACTOR SHALL NOT BEGIN THE WORK UNTIL ALL EROSION AND SEDIMENT CONTROLS ARE IN PLACE AND HAVE BEEN INSPECTED AND CERTIFIED AS DESCRIBED BELOW.

THE CONTRACTOR SHALL INSPECT THE SITE DAILY AND AFTER EVERY RAINFALL EVENT.

ANY DEFICIENCIES SHALL BE REPAIRED AND BROUGHT INTO COMPLIANCE DAILY.

CONSTRUCTION PHASE	SCHEDULED MAINTENANCE
-STABILIZED CONSTRUCTION ENTRANCE	-PROVIDE ADDITIONAL STONE AND MAINTENANCE AS NEEDED. ALL SEDIMENT TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.
-TEMPORARY DRAINAGE SWALES/DITCHES	-ADD STONE RIP RAP AND CLEAN AS NEEDED.
-TEMPORARY SILT FENCES	-MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN SILT FENCE.
-FABRIC DROP INLET PROTECTION	-INSPECT FABRIC BARRIER AFTER EACH RAIN EVENT. MAKE REPAIRS AS NEEDED. REMOVE SEDIMENT AS NECESSARY WITH CARE NOT TO DAMAGE FILTER.
-CONCRETE WASHOUT	-REMOVED HARDENED MATERIAL WHEN 75% OF STORAGE CAPACITY IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF-SITE. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.
-TEMPORARY SEDIMENT TRAPS	-INSPECT WEEKLY AND AFTER EACH RUNOFF EVENT. REPAIR AS NEEDED.
-ANCHORED STABILIZATION MATTING	-INSPECT WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 80% COVERAGE THROUGHOUT BLANKETED AREA.
-GENERAL SITE INSPECTION	-INSPECT THE CLEARING AND GRADING LIMITS ADJACENT TO THE ENVIRONMENTALLY SENSITIVE AREAS TO ENSURE THAT SEDIMENT IS NOT ENTERING THESE PROTECTED AREAS. ONCE A MONTH INSPECT THE PERIMETER OF THE SITE AND NOTE ANY AREAS IN NEED OF ADDITIONAL EROSION CONTROLS OR MAINTENANCE.

POST-CONSTRUCTION PHASE

THE CONTRACTOR SHALL CONTINUE TO PERFORM INSPECTION AND MAINTENANCE OF THE WORK UNTIL THE FINAL SITE INSPECTION AND CERTIFICATION HAS BEEN PERFORMED AS DESCRIBED BELOW

-STORMWATER TREATMENT FACILITIES	-AFTER ALL UPHILL AREAS ARE PERMANENTLY STABILIZED, REMOVE ACCUMULATED SILT AND TEMPORARY EROSION CONTROLS IN THE DESIGNATED AREA.
-BIORETENTION BASINS	-DURING FIRST 6 MONTHS, INSPECT AFTER EACH STORM EVENT GREATER THAN 0.5". BIORETENTION BASIN AND PLANTINGS SHALL BE PRUNED, WEEDED, AND MOWED AROUND AT MINIMUM 4 TIMES DURING GROWING SEASON. REMOVE SEDIMENT, TRASH, DEBRIS, AS NEEDED. REPAIR OR REPLACE DAMAGED/DEAD VEGETATION AS NEEDED. RESTORE EROSION AND REPLENISH MULCH AS NEEDED.

VIII. INSPECTION OF EROSION, SEDIMENT & STORMWATER MANAGEMENT PRACTICES BY THE OPERATOR (OWNER):

THE OPERATOR (OWNER) AGREES TO HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND CERTIFY IN AN INSPECTION REPORT THAT THE APPROPRIATE EROSION AND SEDIMENT CONTROLS DESCRIBED IN THE SWPPP HAVE BEEN ADEQUATELY INSTALLED OR IMPLEMENTED TO ENSURE OVERALL PREPAREDNESS OF THE SITE FOR THE COMMENCEMENT OF CONSTRUCTION. FOLLOWING COMMENCEMENT OF CONSTRUCTION, SITE INSPECTIONS SHALL BE CONDUCTED BY A QUALIFIED PROFESSIONAL AT LEAST 2 TIMES EVERY 7 CALENDAR DAYS WHILE MORE THAN 5 ACRES IS DISTURBED AND AT LEAST 1 TIME EVERY 7 CALENDAR DAYS WHEN LESS THAN 5 ACRES IS DISTURBED.

THE OPERATOR (OWNER) SHALL MAINTAIN A RECORD OF ALL INSPECTION REPORTS IN A SITE LOG BOOK. THE SITE LOG BOOK SHALL BE MAINTAINED ON SITE AND BE MADE AVAILABLE TO THE PERMITTING AUTHORITIES UPON REQUEST. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE OPERATOR SHALL CERTIFY IN THE SITE LOG BOOK THAT THE SWPPP MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND SEDIMENT CONTROL REQUIREMENTS.

PRIOR TO FILING THE NOTICE OF TERMINATION OR THE END OF THE PERMIT TERM, THE OPERATOR (OWNER) SHALL HAVE THE QUALIFIED PROFESSIONAL PERFORM A FINAL SITE INSPECTION. THE QUALIFIED PROFESSIONAL SHALL CERTIFY THAT THE SITE HAS UNDERGONE FINAL STABILIZATION USING EITHER VEGETATIVE OR STRUCTURAL STABILIZATION METHODS AND THAT ALL TEMPORARY EROSION AND SEDIMENT CONTROLS NOT NEEDED FOR LONG-TERM EROSION CONTROL HAVE BEEN REMOVED.

THE OWNERS QUALIFIED PROFESSIONAL SHALL REPORT ANY DEFICIENCIES IN THE CONTRACTORS EROSION AND SEDIMENT CONTROL DEVICES AND THE CONTRACTOR SHALL IMMEDIATELY MAKE CORRECTIVE ACTIONS AS REQUIRED. FAILURE OF CONTRACTOR TO MAKE SATISFACTORY CORRECTIVE MEASURES WILL BE GROUNDS FOR THE OWNER TO WITHHOLD DISBURSEMENTS FROM CONTRACTORS PAYMENT REQUEST.

IX. WINTER STABILIZATION:

THIS APPLIES TO ALL CONSTRUCTION ACTIVITIES INVOLVED WITH ONGOING LAND DISTURBANCE AND EXPOSURE BETWEEN NOVEMBER 15TH TO THE FOLLOWING APRIL 1ST.

WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ONE TIME.

SNOW MANAGEMENT

1. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY PRIOR TO A SNOW EVENT
2. CONTRACTOR SHALL USE AREAS DESIGNATED ON THE PLANS TO STOCKPILE SNOW. INSTALL SILT FENCE DOWNHILL OF STOCKPILE AREA.
3. ON ACCESS ROADS, SNOW SHALL BE STORED ON THE DOWNHILL SIDE TO AVOID RUNOFF FROM SNOWMELT CROSSING THE ROADWAY.
4. A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM ALL PERIMETER CONTROLS SUCH AS SILT FENCE. MARK SILT FENCE WITH TALL STAKES THAT ARE VISIBLE ABOVE THE SNOW PACK.
5. EDGES OF DISTURBED AREAS THAT DRAIN TO A WATERBODY WITHIN 100 FEET SHALL HAVE 2 ROWS OF SILT FENCE, 5 FEET APART, INSTALLED ON THE CONTOUR.
6. DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS. ALL DEBRIS, ICE DAMS, OR DEBRIS FROM PLOWING OPERATIONS, THAT RESTRICT THE FLOW OF RUNOFF AND MELTWATER, SHALL BE REMOVED.
7. SEDIMENT BARRIERS SHALL BE INSTALLED AT ALL APPROPRIATE PERIMETER AND SENSITIVE LOCATIONS. SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED BEFORE THE GROUND FREEZES.
8. SOIL STOCKPILES SHALL BE PROTECTED BY THE USE OF ESTABLISHED VEGETATION, ANCHORED STRAW MULCH, ROLLED STABILIZATION MATTING, OR OTHER DURABLE COVERING. A BARRIER SHALL BE INSTALLED AT LEAST 15 FEET FROM THE TOE OF THE STOCKPILE TO PREVENT SOIL MIGRATION AND TO CAPTURE LOOSE SOIL.
9. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED, THE APPLICATION OF SOIL STABILIZATION MEASURES SHALL BE INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN THREE (3) DAYS. ROLLED EROSION CONTROL BLANKETS MUST BE USED ON ALL SLOPES 3 HORIZONTAL TO 1 VERTICAL OR STEEPER.
10. STRAW MULCH ALONE IS USED FOR TEMPORARY STABILIZATION, IT SHALL BE APPLIED AT DOUBLE THE STANDARD RATE OF 2 TONS PER ACRE, MAKING THE APPLICATION RATE 4 TONS PER ACRE. OTHER MANUFACTURED MULCHES SHALL BE APPLIED AT DOUBLE THE MANUFACTURER'S RECOMMENDED RATE.
11. TO ENSURE ADEQUATE STABILIZATION OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL SHALL BE STABILIZED AT THE END OF EACH WORK DAY UNLESS:
    a. WORK WILL RESUME WITHIN 24 HOURS IN THE SAME AREA AND NO PRECIPITATION IS FORECAST OR;
    b. THE WORK IS IN DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES, FOUNDATION EXCAVATIONS, OR WATER MANAGEMENT AREAS.
12. USE STONE PATHS TO STABILIZE ACCESS PERIMETERS OF BUILDINGS UNDER CONSTRUCTION AND AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE PATHS SHALL BE A MINIMUM OF 10 FEET IN WIDTH BUT WIDER AS NECESSARY TO ACCOMMODATE EQUIPMENT.

MAINTENANCE

THE SITE SHALL BE INSPECTED FREQUENTLY TO ENSURE THAT THE EROSION AND SEDIMENT CONTROL PLAN IS PERFORMING ITS WINTER STABILIZATION FUNCTION. IF THE SITE WILL NOT HAVE EARTH DISTURBING ACTIVITIES ONGOING DURING THE "WINTER SEASON", ALL BARE EXPOSED SOIL MUST BE STABILIZED BY ESTABLISHED VEGETATION, STRAW OR OTHER ACCEPTABLE MULCH, MATTING, ROCK, OR OTHER APPROVED MATERIAL SUCH AS ROLLED EROSION CONTROL PRODUCTS. SEEDING OF AREAS WITH MULCH COVER IS PREFERRED BUT SEEDING ALONE IS NOT ACCEPTABLE FOR PROPER STABILIZATION.

COMPLIANCE INSPECTIONS SHALL BE PERFORMED ONCE PER MONTH AND REPORTS FILED PROPERLY IN ACCORDANCE WITH THE SWPPP FOR ALL SITES UNDER A WINTER SHUTDOWN.

X. SOIL RESTORATION – DEEP RIPPING AND DE-COMPACTION:

ALL DISTURBED SOILS SHALL BE RESTORED IN ACCORDANCE WITH TABLE 4.6 OF THE 2016 NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, OR AS ORDERED BY ENGINEER. RESTORATION SHALL OCCUR DURING THE ESTABLISHMENT OF FINAL GRADING SEQUENCE.

ALL ON-SITE SOILS HAVE BEEN IDENTIFIED AS HSG B.

FULL SOIL RESTORATION CRITERA:

1. APPLY 3 INCHES OF COMPOST OVER SUBSOIL.
2. TILL COMPOST INTO SUBSOIL TO DEPTH OF 12 INCHES USING CAT-MOUNTED RIPPER, TRACTOR-MOUNTED DISC OR TILLER, MIXING AND CIRCULATING AIR AND COMPOST INTO SUBSOILS.
3. ROCK PICK UNTIL UPLIFTED STONE/ROCK MATERIALS OF > 4 INCHES ARE REMOVED.
4. APPLY TOPOSOIL TO A DEPTH OF 6".
5. PROVIDE DENSE VEGETATION AS REQUIRED PER PLANS.

TABLE 4.6 – 2016 NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	
	Aerate* and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008".

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BUSH
087808
LICENSED PROFESSIONAL ENGINEER

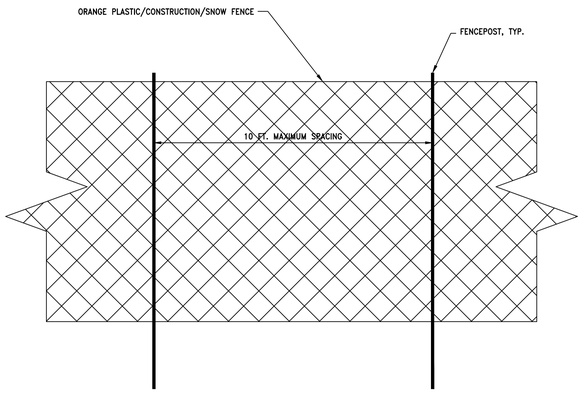
Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	9/4/25	PER PLANNING BOARD COMMENTS
1	9/9/25	PLANNING BOARD
E	10/29/25	PLANNING BOARD COMMENTS
F	11/20/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/25/25
Scale	AS SHOWN
File Name	C30

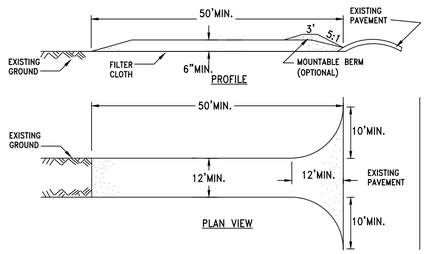
Sheet Title
STORMWATER POLLUTION PREVENTION PLAN NOTES

Sheet No.
C35

PLOT DATE: 4/1/2026 9:38:38 AM



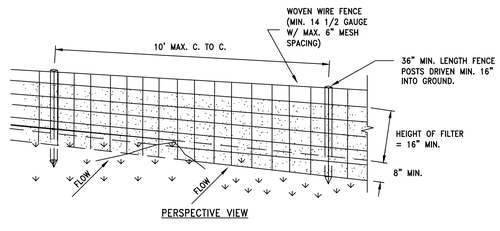
1 C36 DETAIL – CONSTRUCTION FENCE
SCALE: NTS



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

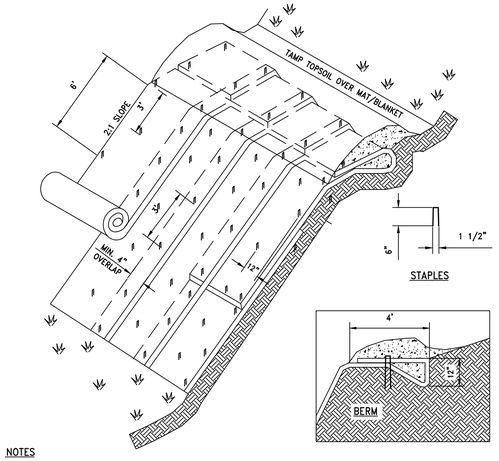
2 C36 STABILIZED CONSTRUCTION ENTRANCE
SCALE: NTS



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

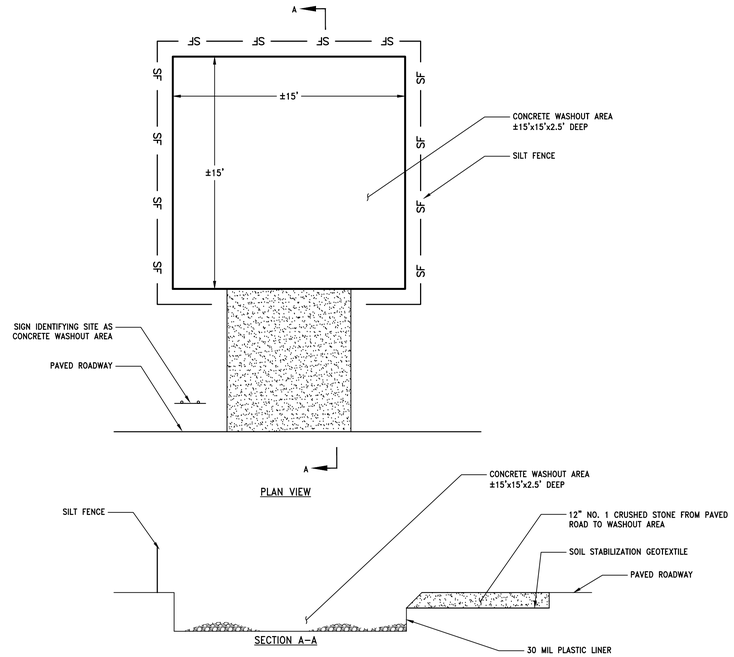
3 C36 SILT FENCE
SCALE: NTS



NOTES

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/ BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH
4. MATS/BLANKETS SHOULD BE INSTALLED VERTICALLY DOWNSLOPE.

4 C36 TYPICAL JUTE MESH SLOPE STABILIZATION
SCALE: NTS



5 C36 CONCRETE WASHOUT AREA
SCALE: NTS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BROWN · 091609 · LICENSED PROFESSIONAL ENGINEER

Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/2/25	PER PLANNING BOARD COMMENTS
E	10/29/25	PLANNING BOARD
F	12/3/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/25/25
Scale	AS SHOWN
File Name	C30

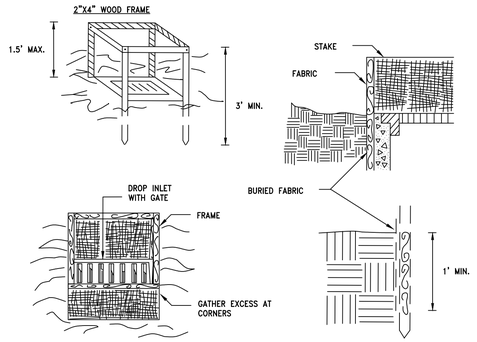
Sheet Title

EROSION AND SEDIMENT CONTROL DETAILS

Sheet No.

C36

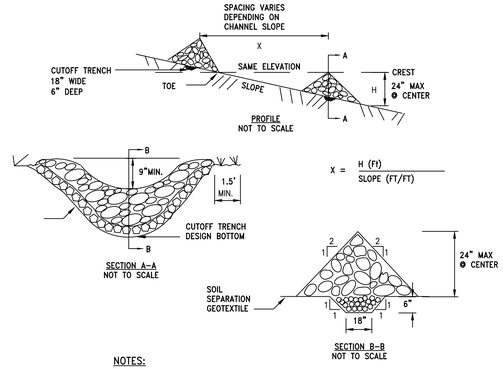
K:\PROJECTS\2024\2024125\CAD\2024125 Proj Ctrl, 6/1/2025 3:55:28 PM



CONSTRUCTION SPECIFICATIONS

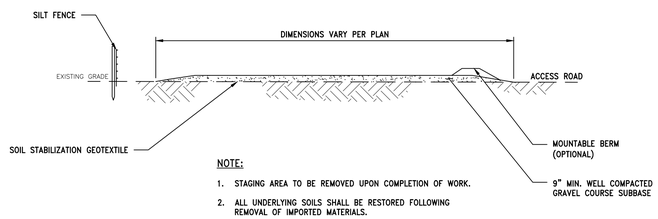
NOTES:
1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

1 / C37 FILTER FABRIC DROP INLET PROTECTION
SCALE: NTS



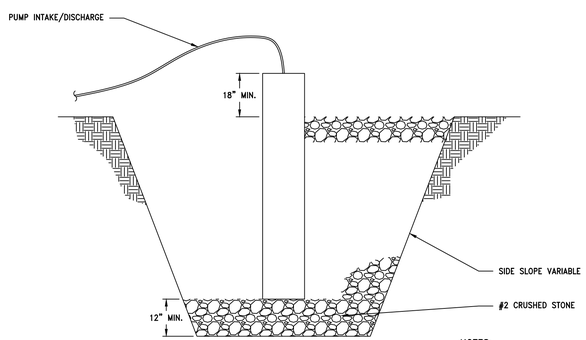
NOTES:
1. PLACE STONE ON A SOIL SEPARATION GEOTEXTILE FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN ON THE PLANS.
2. STONE CHECK DAM MATERIAL: NYSDOT LIGHT STONE FILL.
3. CUTOFF TRENCH MATERIAL: #2 STONE.
4. SET SPACING OF THE CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
5. EXTEND STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
6. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
7. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

2 / C37 CHECK DAM DETAIL
SCALE: NTS



NOTE:
1. STAGING AREA TO BE REMOVED UPON COMPLETION OF WORK.
2. ALL UNDERLYING SOILS SHALL BE RESTORED FOLLOWING REMOVAL OF IMPORTED MATERIALS.

3 / C37 TEMPORARY STAGING/STOCKPILING AREA
SCALE: NTS



NOTES:
1. PIT DIMENSIONS ARE VARIABLE.
2. PIT SURROUNDING STANDPIPE SHALL BE BACKFILLED WITH #2 CRUSHED STONE.
3. IF DISCHARGE WILL BE PUMPED DIRECTLY TO A STORM DRAINAGE SYSTEM, THE STANDPIPE SHALL BE WRAPPED WITH FILTER CLOTH BEFORE INSTALLATION.

4 / C37 DEWATERING SUMP PIT DETAIL
SCALE: N.T.S.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK BRENDON J. BUTLER 121605 LICENSED PROFESSIONAL ENGINEER

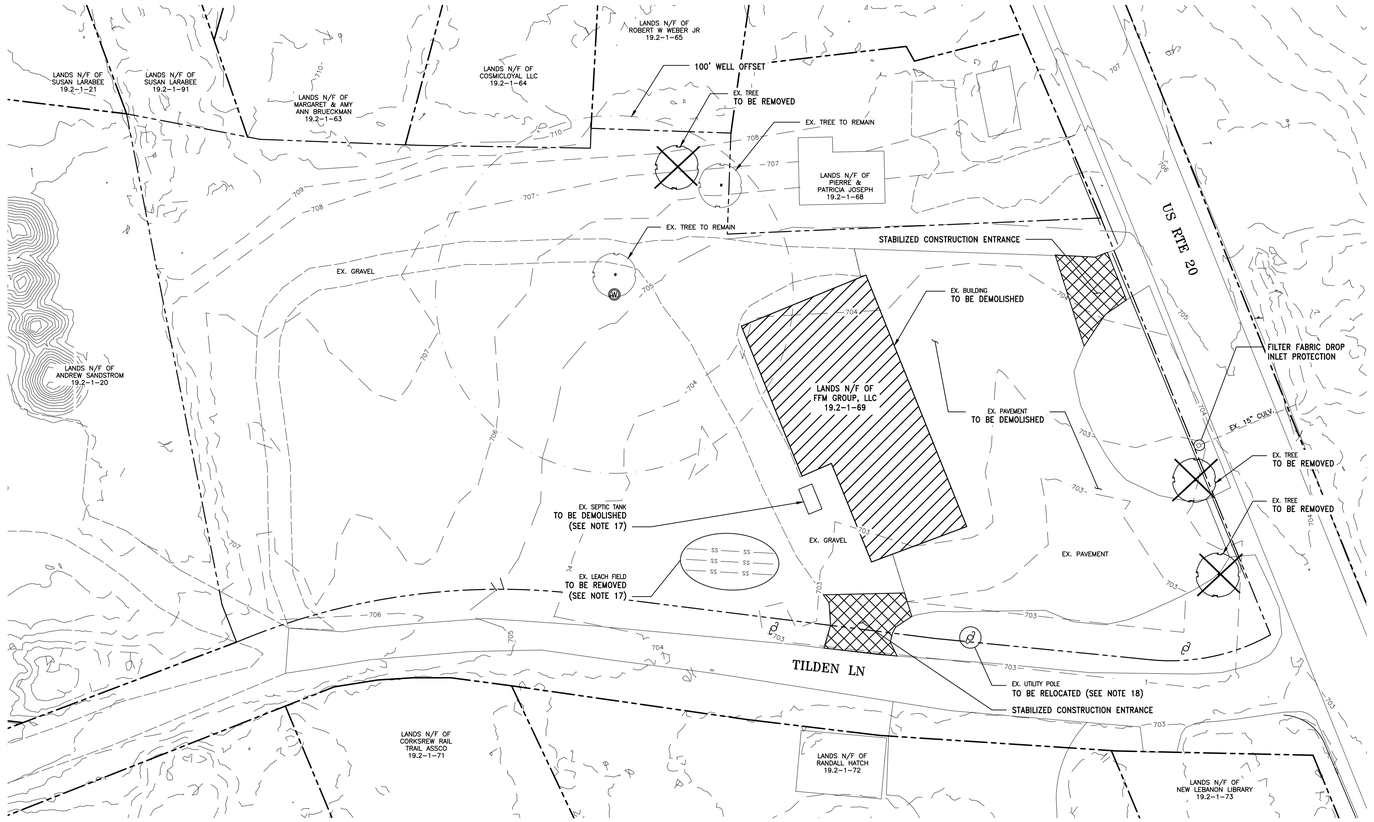
Issue/Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/2/25	PLANNING BOARD
	10/29/25	PLANNING BOARD
E	12/1/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/25/25
Scale	AS SHOWN
File Name	C30

Sheet Title
EROSION AND SEDIMENT CONTROL DETAILS

Sheet No.
C37

Plotted: 3/31/2026 8:31:19 AM By: CD Filename: C:\Users\CD\Desktop\2024125 Tilden Commons\Drawings\C30 EROSION AND SEDIMENT CONTROL DETAILS.dwg



EXISTING CONDITIONS AND DEMOLITION SITE PLAN
1"=40'

GRAPHIC SCALE

40 20 0 20 40 80 160

1 INCH = 40 FEET

ACKNOWLEDGEMENTS:

1. PARCEL 19.2-1-69 PROPERTY LINE SHOWN DIGITIZED FROM A SURVEY MAP PREPARED BY FREDERICK J. HALEY PLS LLC, TITLED "LANDS OF THE ESTATE OF FRANK JOHN RUBINO, SR. A/K/A FRANK RUBINO TO BE CONVEYED TO ASHLEY ZAPP", DATED 12/7/2022.
2. PROJECT SITE TOPOGRAPHY DEVELOPED BY LIMITED IN-FIELD GPS SURVEYS CONDUCTED BY LAMONT ENGINEERS.
3. OFF-SITE TOPOGRAPHY DEVELOPED FROM DIGATAL ELEVATION MODELS AS PROVIDED BY A PARTENERSHIP BETWEEN USGS AND NYSDEC.

GENERAL DEMOLITION NOTES:

1. IN ACCORDANCE WITH THIS DRAWING, ALL AT-GRADE OR ABOVE GRADE WOOD AND/OR METAL FRAMED STRUCTURES ARE TO BE DEMOLISHED, REMOVED FROM THE SITE, AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES, RULES, LAWS, REQUIREMENTS PERTAINING TO SUCH WORK.
2. ALL DEMOLITION WORK MUST CONFORM TO INDUSTRIAL CODE RULE 56 OF THE NEW YORK STATE LABOR DEPARTMENT AND CURRENT PUBLICATION OF NFPA 241, CHAPTER 14 OF THE NEW YORK STATE FIRE CODE AND ANY APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
3. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, STANDARDS AND CODES GOVERNING ASBESTOS ABATEMENT AND ANY OTHER TRADE WORK DONE IN CONJUNCTION WITH THE ABATEMENT.
4. CONTRACTOR SHALL CONTACT DIG SAFELY NEW YORK (1-800-962-7962) TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES 72 HOURS PRIOR TO ANY DEMOLITION WORK.
5. ALL MATERIALS TRANSPORTED OFF-SITE SHALL BE HANDLED IN SUCH A MANNER AS TO PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
6. THE CONTRACTOR SHALL PROVIDE FOR DUST CONTROL AT ALL TIMES. NO DUST SHALL BE ALLOWED TO LEAVE THE LIMITS OF THE PROJECT PROPERTY. CONTRACTOR SHALL FURNISH ALL WATER NECESSARY TO PROVIDE DUST CONTROL. THE OWNERS EXISTING WELL SHALL NOT BE USED AS A SOURCE OF WATER FOR THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING APPROPRIATE BARRICADES, FENCES, AND OTHER DEVICES, IN ACCORDANCE WITH NEW YORK STATE DEPARTMENT OF LABOR INDUSTRIAL CODE RULE 23, FOR THE PROTECTION OF THE PUBLIC.
8. ACTUAL DEMOLITION OPERATIONS SHALL TAKE PLACE IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES AND REGULATIONS GOVERNING DEMOLITION PROCEDURES AND DUST CONTROL. THE OWNER DOES NOT, AND WILL NOT IN ANY WAY DIRECT OR CONTROL THE MEANS OR METHODS EMPLOYED BY THE DEMOLITION CONTRACTOR TO ACCOMPLISH THE DEMOLITION. IT IS THE AFFIRMATIVE DUTY OF THE CONTRACTOR TO COMPLY WITH ANY APPLICABLE PROVISIONS OF THE NEW YORK STATE INDUSTRIAL CODE.
9. THE CONTRACTOR SHALL BE REQUIRED TO PROTECT ALL PUBLIC UTILITIES, RIGHTS-OF-WAY, PROPERTY MONUMENTATION, ETC., AND IF DAMAGES TO FACILITIES OCCUR (BY THE CONTRACTOR OR DUE TO ANY ACTIVITY RELATED TO THE DEMOLITION), THE CONTRACTOR SHALL BE REQUIRED TO PERFORM REPAIRS AS NECESSARY BY THE TO SATISFY THE BODY HAVING AUTHORITY. THE CONTRACTOR IS ENCOURAGED TO TAKE PRECONSTRUCTION PHOTOGRAPHS PRIOR TO THE START OF WORK.
10. ALL BURIED OIL TANKS ENCOUNTERED SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE STANDARDS. NO BURIED TANKS ARE KNOWN TO EXIST AT THE SITE.
11. ALL DEMOLISHED TELEPHONE POLES AND ELECTRICAL WIRING SHALL REMAIN THE PROPERTY OF THE OWNER. CONTRACTOR SHALL DISPOSE OF AT A LOCATION AT THE SITE AS DIRECTED BY OWNER.
12. CONTRACTOR MUST MAINTAIN VALID PERMIT(S) FOR DISPOSAL OF WASTE AT ALL WASTE DISPOSAL FACILITIES THAT CONTRACTOR THE UTILIZES.
13. CONTRACTOR SHALL SUPPLY THE OWNER WITH COPIES OF BILLS OF LADING AND INVOICES THERETO. BILL OF LANDINGS, DUMP TICKETS FOR HAZARDOUS AND NONHAZARDOUS WASTE, AND FINAL AIR MONITORING REPORT (IF APPLICABLE) SHALL BE SUBMITTED BEFORE ANY PAYMENT WILL BE MADE.
14. CONTRACTOR SHALL NOTIFY THE OWNERS OF PROPERTIES ADJACENT TO THE PROPOSED DEMOLITION (WITHIN 0.1 MILES OF SITE). NOTIFICATION SHALL TAKE PLACE AT LEAST TEN (10) BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF OPERATIONS. AT THIS TIME, THEY WILL BE NOTIFIED OF THEIR RIGHT TO HAVE PLASTIC PLACED ON OPENINGS OF THEIR BUILDING PER REGULATION.
15. THE OWNER SHALL BE RESPONSIBLE FOR SECURING ANY SITE-SPECIFIC VARIANCES PRIOR TO THE WORK TAKING PLACE. THE OWNER WILL BE RESPONSIBLE FOR ANY AIR-QUALITY MONITORING DURING ABATEMENT AND DEMOLITION ACTIVITIES. CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST TEN (10) BUSINESS DAYS PRIOR TO THE COMMENCEMENT OF ABATEMENT AND DEMOLITION OPERATIONS. NO WORK SHALL TAKE PLACE UNTIL ALL CONTROL AND MONITORING ARE IN PLACE.
16. THE HOURS OF WORK FOR DEMOLITION ACTIVITIES SHALL BE LIMITED TO BETWEEN 8:00 AM AND 5:00 PM MONDAY THROUGH FRIDAY.
17. EXISTING SEPTIC TANK SHALL BE EMPTIED, DEMOLISHED, REMOVED AND BACKFILLED WITH CLEAN STRUCTURAL FILL. TANK SHALL BE EMPTIED BY A LICENSED NYS SEPTIC HAULER. REMOVAL, ABANDONMENT, OR REMEDIATION OF EXISTING SEPTIC SYSTEMS IS SUBJECT TO OVERSIGHT AND APPROVAL BY THE APPROPRIATE REGULATORY AUTHORITY, INCLUDING THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) AND/OR THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), AS APPLICABLE
18. ALL UTILITY RELOCATION AND/OR REMOVAL SHALL BE COORDINATED WITH AND APPROVED BY THE UTILITY PRIOR TO CONSTRUCTION.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BRUNO · 39168 · LICENSED PROFESSIONAL ENGINEER

Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
1	9/2/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PLANNING BOARD
	10/29/25	PLANNING BOARD
6	12/1/25	PLANNING BOARD
7	1/7/26	PLANNING BOARD
3	3/4/26	PLANNING BOARD
4	4/1/26	PLANNING BOARD
5		

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=40'
File Name	BM_TILDEN

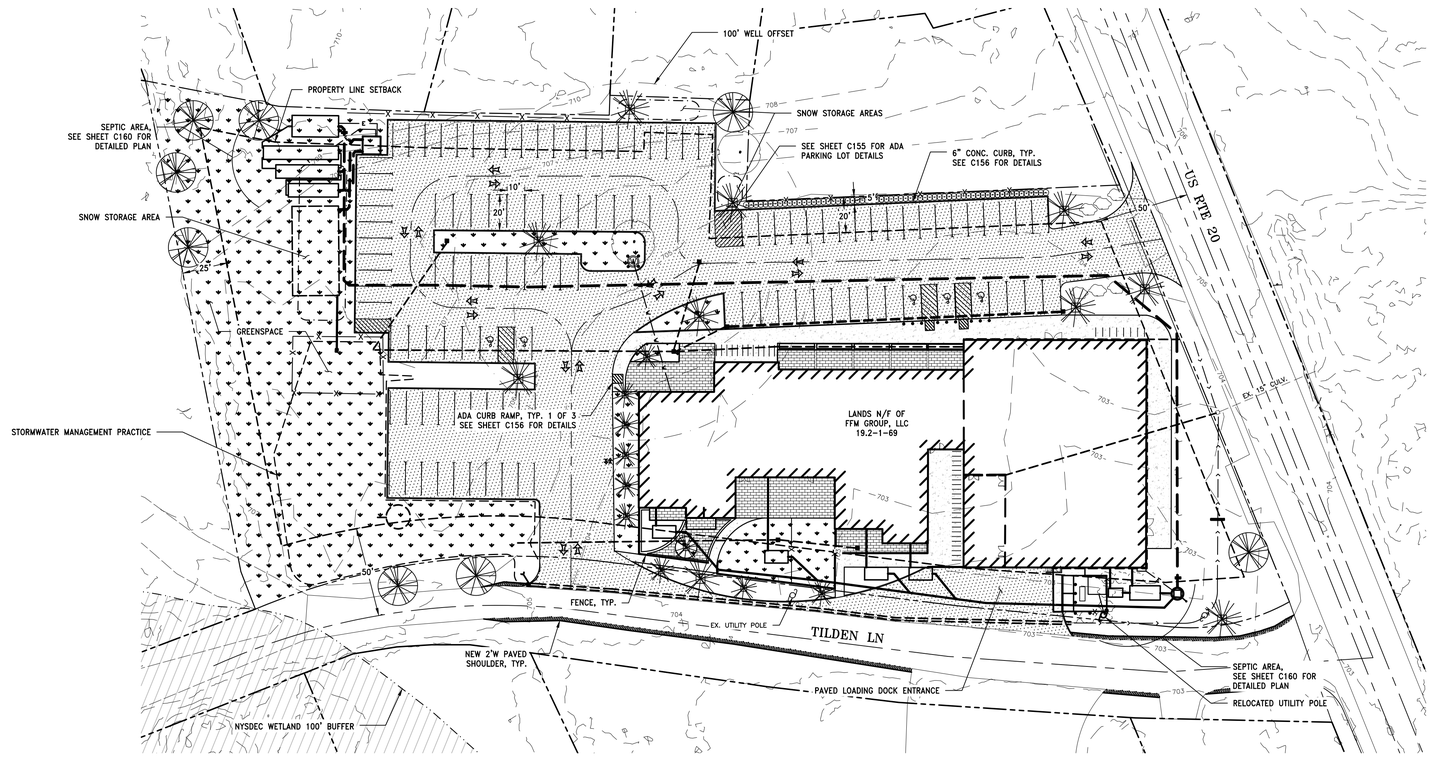
Sheet Title

EXISTING CONDITIONS & DEMOLITION PLAN

Sheet No.

C100

K:\JP\2024\2024125\DWG\2024125BM_Tilden Dwg, C100, 4/7/2026 3:38:38 PM



OVERALL SITE PLAN
1"=40'

GRAPHIC SCALE

40 20 0 20 40 80 160

1 INCH = 40 FEET

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- EX. CULVERT & CATCH BASIN
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER FORCEMAIN
- PROPOSED CULVERT & CATCH BASIN
- PROPOSED SWALE
- PROPOSED ELECTRICAL
- PROPOSED FENCE
- PROPOSED LANDSCAPING (SEE SHEETS L100 & L400 FOR PLANTING SCHEDULE)

SITE PLAN NOTES:

1. SEE SHEET C100 AND SECTION 02100 FOR CLEARING AND GRUBBING REQUIREMENTS AND LIMITATIONS.
2. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS.
3. PERFORM EXCAVATION AND GRADING WORK IN ACCORDANCE WITH SECTIONS 02218, 02222, 02223 & 02225.
4. ALL DISTURBED AREAS NOT RECEIVING ASPHALT OR CRUSHED STONE WEARING SURFACES SHALL BE TOPSOILED, SEEDED. AND ADDITIONALLY, SOME AREAS REQUIRE PREPARATORY SOIL RESTORATION.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING, OF ANY ERRORS OR DISCREPANCIES.
6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING, OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED WRITTEN APPROVAL OF THE OWNER AND ENGINEER.
7. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EX. SUBSURFACE UTILITIES AT THE SITE PRIOR TO SETTING HEAVY EQUIPMENT (E.G. CRANES) AND MATERIALS ON THE SITE.
8. PRIOR TO CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING DIG SAFE NEW YORK AND ANY REGIONAL UTILITIES TO LOCATE ALL RELATED UTILITIES. PRIVATELY OWNED UTILITIES SHALL BE COORDINATED WITH OWNER.
9. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATIONS, ETC.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINE AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE AS-BUILT PLANS WILL BE ACCEPTED.
12. CONTRACTOR SHALL FIELD VERIFY ALL LAYOUT DIMENSIONS AND ELEVATIONS WITH ENGINEER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE A FIELD VISIT WITH ENGINEER TO REVIEW LAYOUT AND DIMENSIONS. CONTRACTOR SHALL SCHEDULE FIELD VISIT WITH ENGINEER TO CONFIRM FINISHED FLOOR ELEVATION.
13. ALL SUITABLE TOPSOIL TO BE TEMPORARILY STOCKPILED (AS APPLICABLE) FOR REUSE.
14. ALL MATERIALS TRANSPORTED OFF-SITE SHALL BE HANDLED IN SUCH A MANNER AS TO PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR DE-WATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK, IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN.
16. BUILDING DIMENSIONS TO BE TAKEN FROM BUILDING CONSTRUCTION PLANS.
17. ALL AREAS WITHIN THE LIMIT OF DISTURBANCE (SEE SHEET C100) MAY BE USED FOR STOCKPILING, EQUIPMENT STORAGE, AND FIELD OFFICES. ADDITIONAL SEDIMENT AND EROSION CONTROL PRACTICES MAY BE NEEDED TO PROTECT SENSITIVE AREAS. COORDINATE WITH ENGINEER.
18. SEE ELECTRICAL DRAWINGS FOR ON-SITE ELECTRICAL, CONTROLS, AND INTERNET WIRING.

DESIGN CRITERIA:

PARKING:

TOTAL SPACES: 116
GROCERY: 37
APARTMENTS: 79
ACCESSIBLE: 5

DIMENSIONS: 9'x20'

REFUGE CALCULATIONS:

RESIDENTIAL:
41 APTS x 2 x 30GAL. / 7.48 / 27 = 12 YARDS
GROCERY:
8 YARDS
TOTAL AREA NEEDED: 20 YARDS

20'x15' REFUGE AREA WILL FIT 3 - 8 YARD DUMPSTERS
TOTAL AREA PROVIDED: 24 YARDS

REQUIRED AREA

	MIN. LOT REQUIREMENTS		MINIMUM YARD DIMENSIONS			MAX. STORIES	MAX. BUILDING HEIGHT	MIN. ROAD FOOTAGE
DISTRICT	AREA	MAX. BLDG COVERAGE	SETBACK CL	REAR	SIDE			
GENERAL COMMERICAL	30,000 SQ. FT.	75% OF LOT	50'	25'	20'	3	40'	100'

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

Issue Rev.	Date	Remarks
A	5/3/25	FOR ZBA REVIEW
B	7/1/25	PLANNING BOARD
1	9/3/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PER PLANNING BOARD
C	11/20/25	PLANNING BOARD
E	12/2/25	PLANNING BOARD
3	1/7/26	PLANNING BOARD
4	3/4/26	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=40'
File Name	BM_TILDEN

Sheet Title

OVERALL SITE PLAN

Sheet No.

C110

K:\MYPROJECTS\2024\2024125\BM_Tilden\dwg\C110 Overall SP.dwg, 6/7/2024 3:39:28 PM

MATCHLINE SEE SHEET C112

FENCED PLAYGROUND

RESIDENTIAL COURTYARD

706.3

704.4

5'

CONC. CB W/ 24" GRATE, TYP.

R172'-10"

SEPTIC TANK 3

6" CONC. CURB, TYP. SEE C156 FOR DETAILS

RAMP @ 5% SLOPE MAX

TENANT PATIO

707.5

RESIDENTIAL UNITS

FFE = 707.5'

BLOCK RETAINING WALL W/ 14" CAP, RAILING AS REQ.

SEPTIC TANK 4

7'-8"

705.0

66'

200'

BIKE RACKS

TILDEN LN

PAVED LOADING DOCK ENTRANCE

RETAINING WALL W/ 42" RAILING & HANDRAIL

704.0

LOADING DOCK

702.5

PRECAST TRENCH DRAIN W/ GRATE SEE DETAIL 7, SHEET C151

6" PVC

20'

5'

LANDS N/F OF FFM GROUP, LLC 19.2-1-69

12" CPP

CAST-IN-PLACE CONCRETE STAIRS SEE DETAIL 6, C156

703.0

STONE OUTLET

2 – 6'x10' DUMPSTERS

BOLLARDS TYP. SEE DETAIL 3, SHEET C155

GROCERY STORE

RESIDENTIAL UNITS @ 3RD FLOOR

FFE = 706'

704.0

GENERATOR

FENCE, TYP.

10'x10' TRANSFORMER PAD

25'

RELOCATED UTILITY POLE

GREASE TRAP

72" FENCE, HARDIPLANK ON PT POSTS. MATERIAL, TRIM & FINISH SAME AS BUILDING SIDING

CONTROL PANEL

706.0

FRENCH DRAIN SEE DETAIL 7, SHEET C155

107'

SEPTIC TANK 5

NEW 2'W PAVED SHOULDER, TYP.

14'

CONCRETE SIDEWALK, TYP. SEE SHEET C156 FOR DETAILS

705.8

6" CPP

SEE SHEET C160 FOR SEPTIC PLAN

2" HDPE DR-11

705

704

EX. UTILITY POLE

EFFLUENT PUMP STATION SEE DETAIL 1, SHEET C164

707.5

TENANT PATIO

24" DEEP PLANTER BOX/RETAINING WALL TOP LEVEL W/ PATIO

RAILING TO 42" (TYP. 1 OF 5

SCREENING WALL 6'-0" HIGH

2" HDPE DR-11

706

705.6

705.8

705.7

705.5

13'-6"

ADA CURB RAMP, TYP. 1 OF 3 SEE SHEET C156 FOR DETAILS

BOLLARDS TYP. SEE DETAIL 3, SHEET C155

PRECAST TRENCH DRAIN W/ GRATE SEE DETAIL 7, SHEET C151

10'

20'

26'-3"

20'

705.8

706.0

705.2

ADA COMPLIANT GRATE

14'

BIKE RACKS

R16'

2" HDPE DR-11

6" CPP TO DAYLIGHT W/ RODENT SCREEN

705

704

US RTE 20

TEMPORARY FENCE UNTIL SHRUBS ESTABLISHED

6" CONC. CURB, TYP. SEE C156 FOR DETAILS

SEE SHEET C130 FOR NYSDOT ENTRANCE PLAN

GRAPHIC SCALE

10 8 6 4 2 0 5 10 20 40

1 INCH = 10 FEET

DETAILED SITE PLAN

1"=10'

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- EX. CULVERT & CATCH BASIN
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER FORCEMAIN
- PROPOSED CULVERT & CATCH BASIN
- PROPOSED SWALE
- PROPOSED ELECTRICAL
- SILT FENCE
- PROPOSED FENCE
- PROPOSED SIDEWALK (SEE C156)
- PROPOSED ASPHALT PAVEMENT (SEE DETAIL 5, SHEET C155)
- PROPOSED PATIO PAVERS
- SPOT ELEVATION

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

BRENDON J. BROOKS
090603
LICENSED PROFESSIONAL ENGINEER
STATE OF NEW YORK

Issue Rev.	Date	Remarks
5	4/1/25	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=10'
File Name	BM_TILDEN

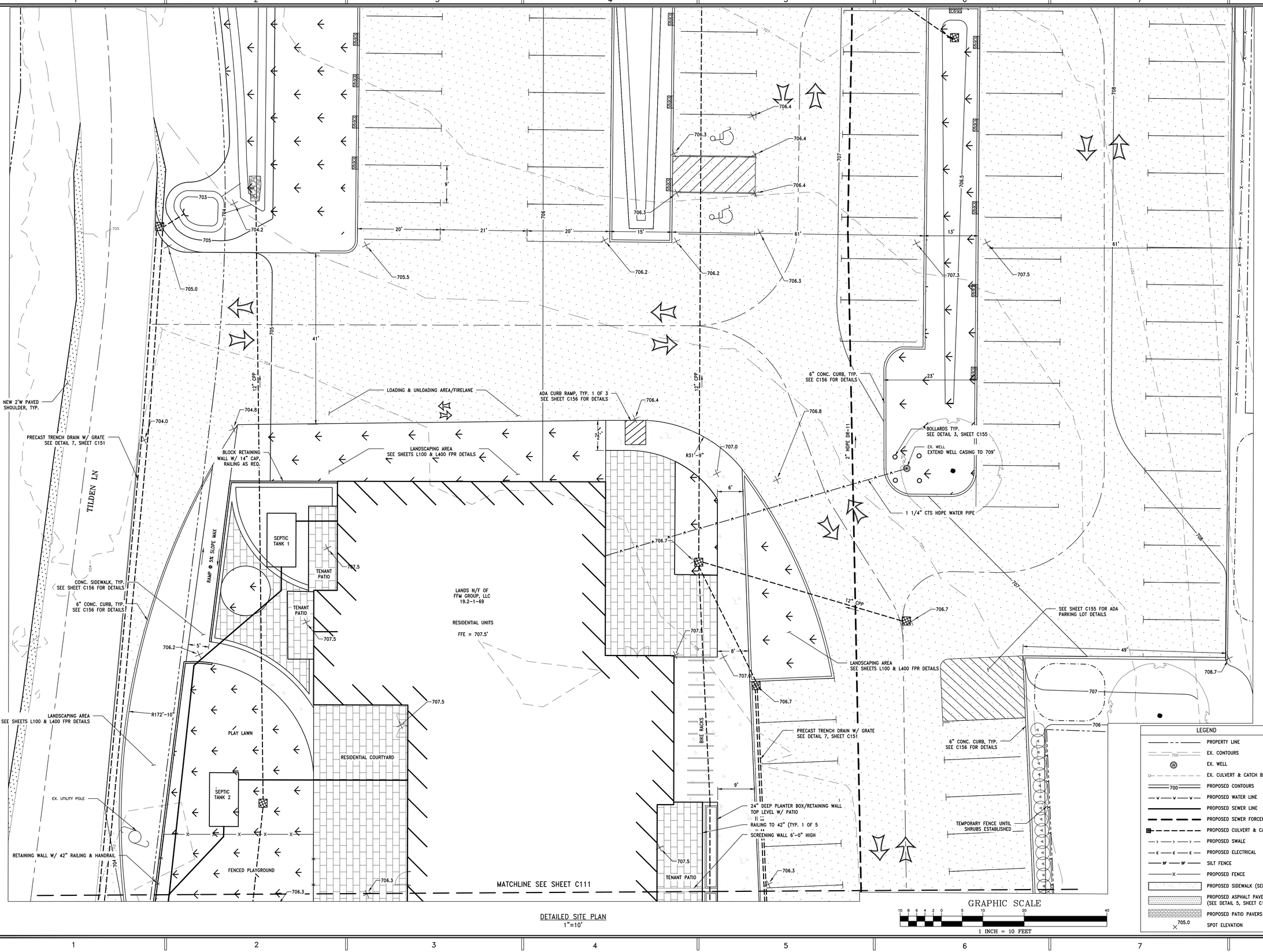
Sheet Title

DETAILED PLAN VIEW

Sheet No.

C111

K:\PROJECTS\2024\2024125\CAD\BM_Tilden Proj C111 4/1/2025 3:38:41 PM



DETAILED SITE PLAN
1"=10'

GRAPHIC SCALE
10 8 6 4 2 0 5 10 20 40
1 INCH = 10 FEET

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BROWN
091603
LICENSED PROFESSIONAL ENGINEER

Issue Rev.	Date	Remarks
5	4/1/26	PLANNING BOARD

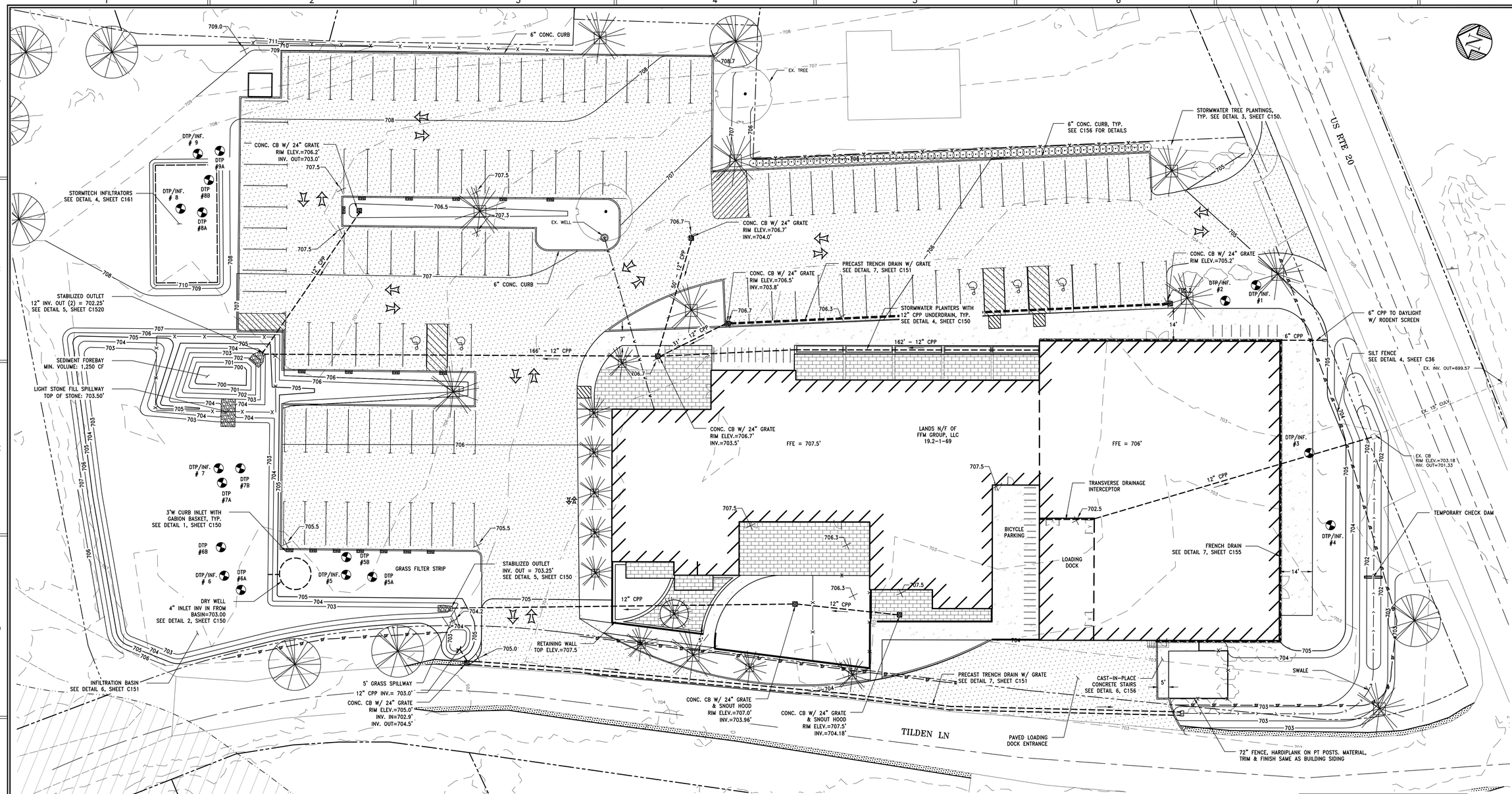
Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=10'
File Name	BM_TILDEN

Sheet Title

SITE PLAN

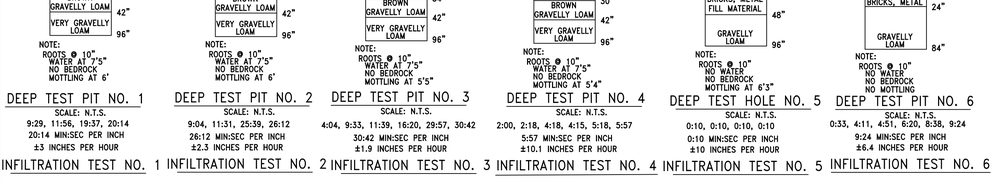
Sheet No.

C112



GRADING AND STORMWATER PLAN
1"=20'

GRAPHIC SCALE
20 10 0 10 20 40 80
1 INCH = 20 FEET



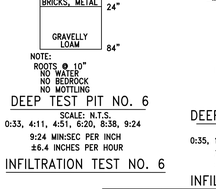
DEEP TEST PIT NO. 1
SCALE: N.T.S.
9:29, 11:56, 19:37, 20:14
20:14 MIN:SEC PER INCH
±3 INCHES PER HOUR

DEEP TEST PIT NO. 2
SCALE: N.T.S.
9:04, 11:31, 25:39, 26:12
26:12 MIN:SEC PER INCH
±2.3 INCHES PER HOUR

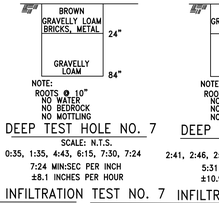
DEEP TEST PIT NO. 3
SCALE: N.T.S.
4:04, 9:33, 11:39, 16:20, 29:57, 30:42
30:42 MIN:SEC PER INCH
±1.9 INCHES PER HOUR

DEEP TEST PIT NO. 4
SCALE: N.T.S.
2:00, 2:18, 4:18, 4:15, 5:18, 5:57
5:57 MIN:SEC PER INCH
±10.1 INCHES PER HOUR

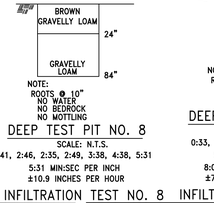
DEEP TEST HOLE NO. 5
SCALE: N.T.S.
0:10, 0:10, 0:10, 0:10
0:10 MIN:SEC PER INCH
±10 INCHES PER HOUR



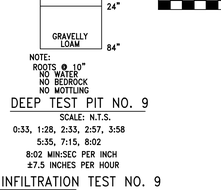
DEEP TEST PIT NO. 6
SCALE: N.T.S.
0:33, 4:11, 4:51, 6:20, 8:38, 9:24
9:24 MIN:SEC PER INCH
±6.4 INCHES PER HOUR



DEEP TEST HOLE NO. 7
SCALE: N.T.S.
0:35, 1:35, 4:43, 6:15, 7:30, 7:24
7:24 MIN:SEC PER INCH
±8.1 INCHES PER HOUR

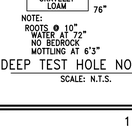


DEEP TEST PIT NO. 8
SCALE: N.T.S.
2:41, 2:46, 2:35, 2:49, 3:38, 4:38, 5:31
5:31 MIN:SEC PER INCH
±10.9 INCHES PER HOUR

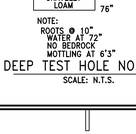


DEEP TEST PIT NO. 9
SCALE: N.T.S.
0:33, 1:28, 2:33, 2:57, 3:58
5:35, 7:15, 8:02
8:02 MIN:SEC PER INCH
±7.5 INCHES PER HOUR

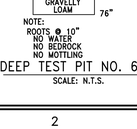
INFILTRATION TEST NO. 1 | INFILTRATION TEST NO. 2 | INFILTRATION TEST NO. 3 | INFILTRATION TEST NO. 4 | INFILTRATION TEST NO. 5 | INFILTRATION TEST NO. 6 | INFILTRATION TEST NO. 7 | INFILTRATION TEST NO. 8 | INFILTRATION TEST NO. 9



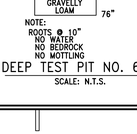
DEEP TEST HOLE NO. 5A
SCALE: N.T.S.



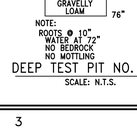
DEEP TEST HOLE NO. 5B
SCALE: N.T.S.



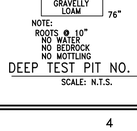
DEEP TEST PIT NO. 6A
SCALE: N.T.S.



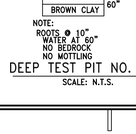
DEEP TEST PIT NO. 6B
SCALE: N.T.S.



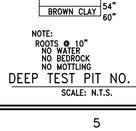
DEEP TEST PIT NO. 7A
SCALE: N.T.S.



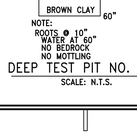
DEEP TEST PIT NO. 7B
SCALE: N.T.S.



DEEP TEST PIT NO. 8A
SCALE: N.T.S.



DEEP TEST PIT NO. 8B
SCALE: N.T.S.



DEEP TEST PIT NO. 9A
SCALE: N.T.S.

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- EX. CULVERT & CATCH BASIN
- EX. TREE
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED CULVERT & CATCH BASIN
- SILT FENCE
- PROPOSED SWALE
- DTP/INF. #1 — DEEP TEST PIT/INFILTRATION SOIL TEST SITE
- 705.0 — SPOT ELEVATION
- PROPOSED LANDSCAPING (SEE SHEETS L100 & L400 FOR PLANTING SCHEDULE)
- PROPOSED SIDEWALK (SEE C156)
- PROPOSED ASPHALT PAVEMENT (SEE DETAIL 5, SHEET C155)
- PROPOSED PATIO PAVERS

NOTES:

1. SOILS INVESTIGATIONS AND INFILTRATION TESTING CONDUCTED ON 9/26/25 AND 3-30-2026 BY LAMONT ENGINEERS.
2. INFILTRATION TESTING AND DEEP TEST HOLE OBSERVATIONS SHALL BE RE-EVALUATED DURING SPRING HIGH GROUNDWATER CONDITIONS TO VERIFY DEPTH TO SEASONAL HIGH GROUNDWATER AND CONFIRM THE SUITABILITY OF THE PROPOSED INFILTRATION AND BIORETENTION PRACTICES PRIOR TO CONSTRUCTION. ALL SUCH TESTING SHALL BE WITNESSED BY THE TOWN OR ITS DESIGNATED REPRESENTATIVE.
3. INFILTRATION BASIN DESIGN INFILTRATION RATE: 6 INCHES PER HOUR.
4. STORMTECH INFILTRATOR DESIGN INFILTRATION RATE: 7.5 INCHES PER HOUR.
5. RELOCATION OF EXISTING UTILITY POLES SHALL BE COORDINATED WITH AND APPROVED BY THE APPLICABLE UTILITY PROVIDER PRIOR TO CONSTRUCTION

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRADLEY J. BEDORE
091605
LICENSED PROFESSIONAL ENGINEER

Issue	Rev.	Date	Remarks
B	1	7/1/25	PLANNING BOARD COMMENTS
C	2	8/4/25	PER PLANNING BOARD COMMENTS
	3	9/12/25	PER PLANNING BOARD COMMENTS
	4	10/7/25	PLAN PLANNING BOARD COMMENTS
	5	12/22/25	PLANNING BOARD
	6	1/7/26	PLANNING BOARD
	7	3/4/26	PLANNING BOARD
	8	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title

GRADING & STORMWATER PLAN

Sheet No.

C115

LANDS N/F OF
PIERRE &
PATRICIA JOSEPH
19.2-1-68

US RTE 20

LANDS N/F OF
FFM GROUP, LLC
19.2-1-69

6" CONC. CURB, TYP.
SEE C156 FOR DETAILS

(2) 9 YD. DUMPSTERS

20'x25' DUMPSTER &
GENERATOR PAD

GENERATOR

NEW/RELOCATED UTILITY POLE

NEW 2'W PAVED
SHOULDER, TYP.

TILDEN LN

TRUCK WHEEL PATH, TYP.

TRAILER OVERHANG, TYP.

LANDS N/F OF
CORNISREM RAIL
TRAIL ASSCO
19.2-1-71

EX. UTILITY POLE TO BE REMOVED
EX. TRANSFORMER AND SERVICE TO BE RELOCATED

PAVED

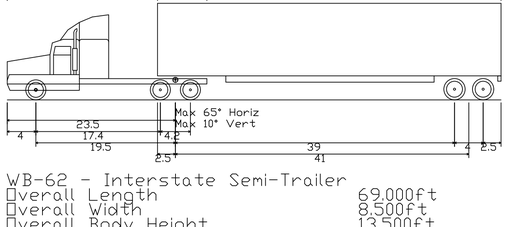
PAVED

BDG

LANDS N/F OF
RANDALL HATCH
19.2-1-72

LANDS N/F OF
NEW LEBANON LIBRARY
19.2-1-73

BDG



TURNING RADIUS PLAN
1"=20'

WB-62 - Interstate Semi-Trailer

Overall Length	69.000ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BROOKER
097603
LICENSED PROFESSIONAL ENGINEER

Issue	Rev.	Date	Remarks
B		7/1/25	PLANNING BOARD
C		8/4/25	PER PLANNING BOARD COMMENTS
	1	9/2/25	PER PLANNING BOARD COMMENTS
	2	10/7/25	PER PLANNING BOARD COMMENTS
E		11/7/25	PLANNING BOARD
F		12/2/25	PLANNING BOARD
	3	1/7/26	PLANNING BOARD
	4	3/4/26	PLANNING BOARD
	5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title

TURNING
RADIUS
PLAN

Sheet No.

C120

Plotted: 3:39:42 PM on 3/30/26 by Sean Kelley (Lamont Engineers) - Filename: C:\Users\SeanKelley\Lamont Engineers\Lamont Engineers - Documents\2024125 TILDEN COMMONS\CAD\Sheets\BM_TILDEN.dwg

LANDS N/F OF
PIERRE &
PATRICIA JOSEPH
19.2-1-68

US RTE 20

LANDS N/F OF
FFW GROUP, LLC
19.2-1-69

(2) 9 YD. DUMPSTERS

20'x15' DUMPSTER &
GENERATOR PAD

GENERATOR

NEW/RELOCATED UTILITY POLE

NEW 2'W PAVED
SHOULDER, TYP.

6" CONC. CURB, TYP.
SEE C156 FOR DETAILS

TILDEN LN

EX. UTILITY POLE TO BE REMOVED
EX. TRANSFORMER AND SERVICE TO BE RELOCATED

TRUCK WHEEL PATH, TYP.

TRAILER OVERHANG, TYP.

LANDS N/F OF
CORKSCREW RAIL
TRAIL ASSOC
19.2-1-71

PAVED

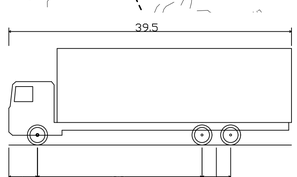
PAVED

BDG

LANDS N/F OF
RANDALL HATCH
19.2-1-72

LANDS N/F OF
NEW LEBANON LIBRARY
19.2-1-73

BDG



SU-40 - Single Unit Truck

Overall Length	39.500ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°

TURNING RADIUS PLAN
1"=20'

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

BRENDON J. BROWN
090008
LICENSED PROFESSIONAL ENGINEER

Issue	Rev.	Remarks	Date
B	1	PLANNING BOARD	7/1/25
C	2	PER PLANNING BOARD COMMENTS	8/4/25
			9/2/25
		PER PLANNING BOARD COMMENTS	10/7/25
		PLANNING BOARD	11/4/25
	E	PLANNING BOARD	12/2/25
	F	PLANNING BOARD	1/7/26
	3	PLANNING BOARD	4/7/26
	5	PLANNING BOARD	

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

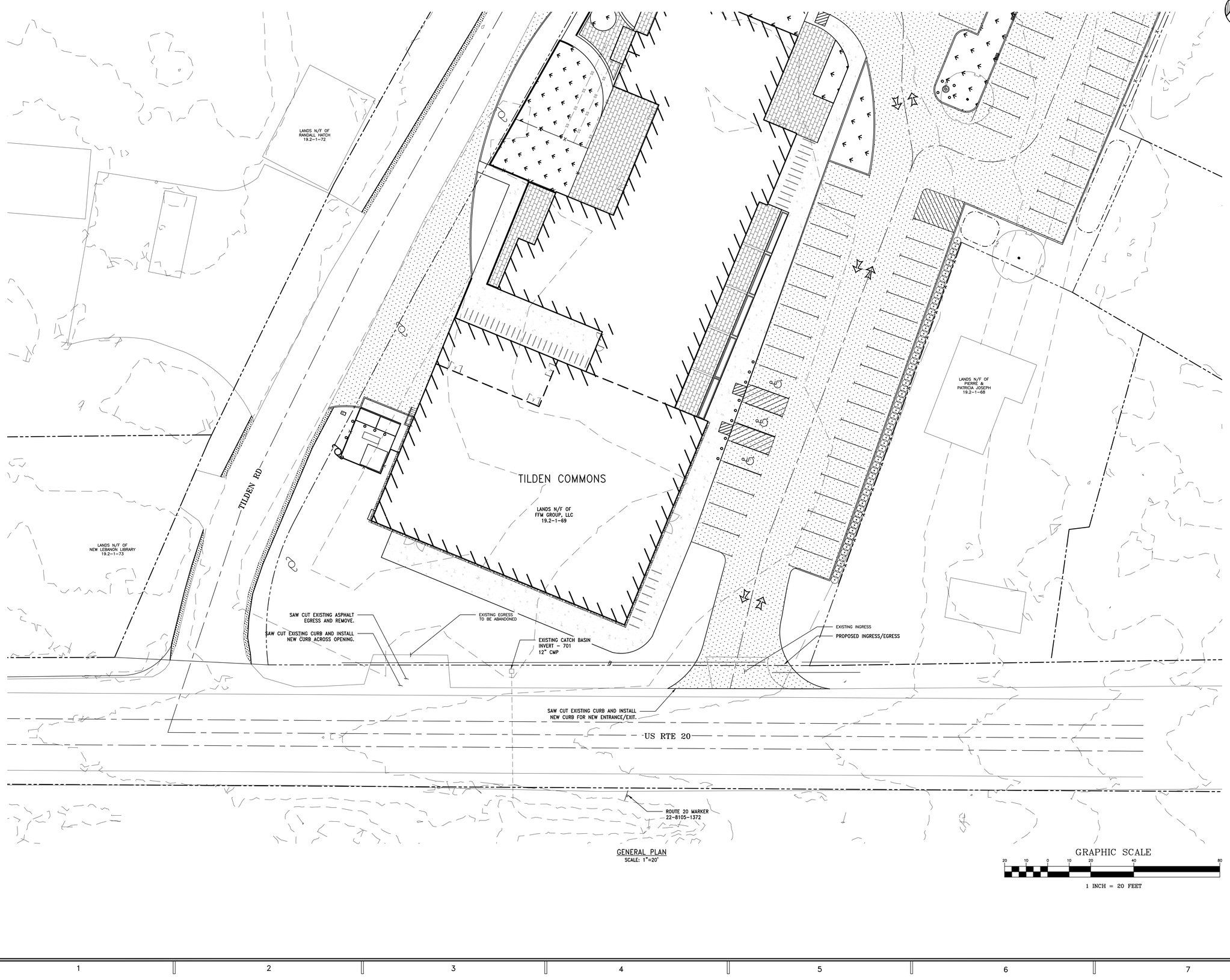
Sheet Title

TURNING
RADIUS
PLAN

Sheet No.

C120A

K:\PROJECTS\2024\2024125\BM_Tilden.dwg, C120 GarbageTruck, 4/7/2026 3:39:53 PM



GENERAL PLAN
SCALE: 1"=20'

GRAPHIC SCALE

20 10 0 10 20 40 80

1 INCH = 20 FEET

ACKNOWLEDGEMENTS:

1. PARCEL 19.2-1-69 PROPERTY LINE SHOWN DIGITIZED FROM A SURVEY MAP PREPARED BY FREDERICK J. HALEY PLS LLC, TITLED "LANDS OF THE ESTATE OF FRANK JOHN RUBINO, SR. A/K/A FRANK RUBINO TO BE CONVEYED TO ASHLEY ZAPP", DATED 12/7/2022.
2. PROJECT SITE TOPOGRAPHY DEVELOPED BY LIMITED IN-FIELD GPS SURVEYS CONDUCTED BY LAMONT ENGINEERS.
3. OFF-SITE TOPOGRAPHY DEVELOPED FROM DIGATAL ELEVATION MODELS AS PROVIDED BY A PARTENERSHIP BETWEEN USGS AND NYSDEC.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BRUSH
LICENSED PROFESSIONAL ENGINEER
091608

Issue Rev.	Date	Remarks
A	5/7/25	FOR PB REVIEW
B	9/2/25	PLANNING BOARD
1	9/2/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PER PLANNING BOARD COMMENTS
	10/7/25	FOR NYSDOT
C	10/29/25	PLANNING BOARD
E	11/21/25	NYSDOT DR SET
3	12/1/25	PLANNING BOARD
F	4/1/26	
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	JW
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=20'
File Name	BM_TILDEN

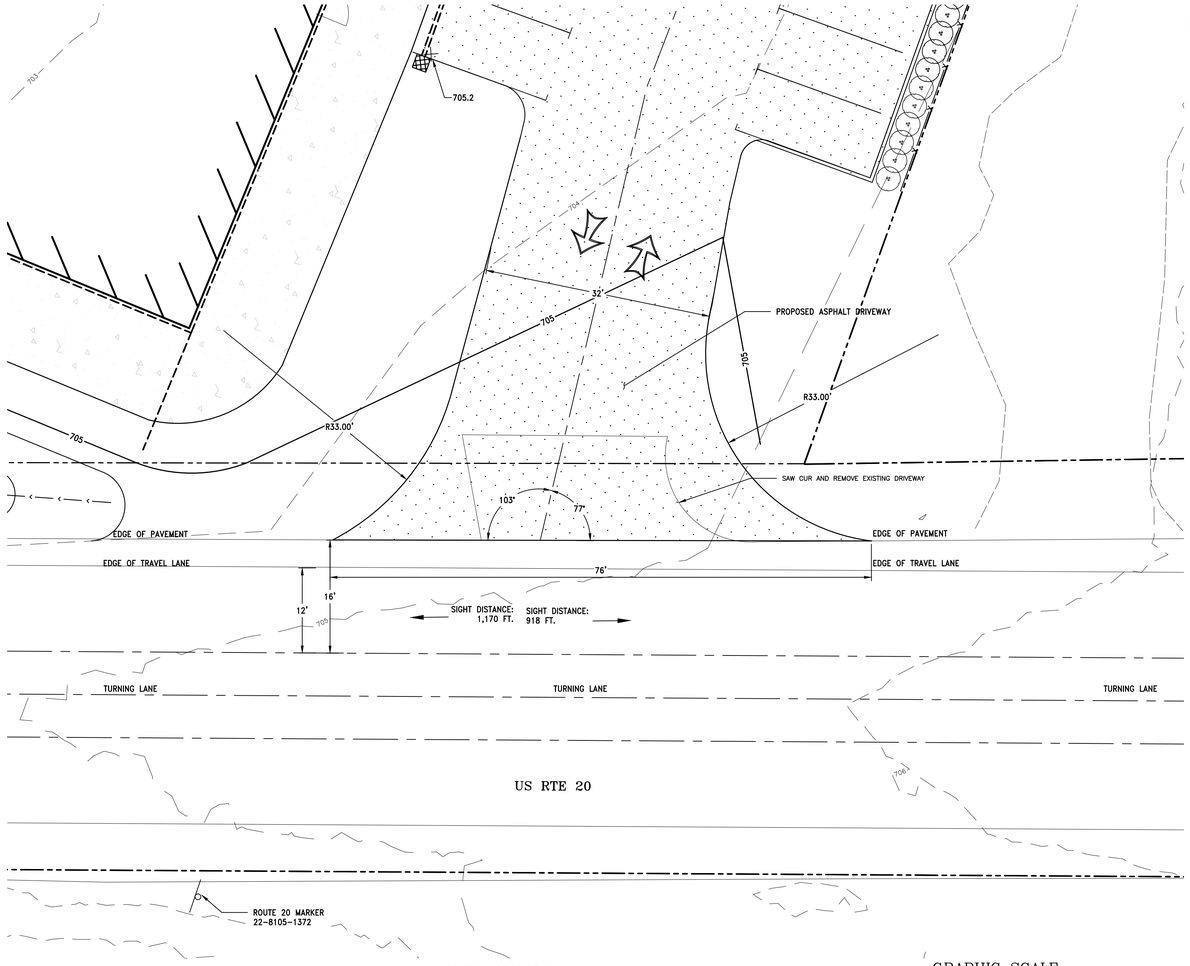
Sheet Title

NYSDOT
ENTRANCE
GENERAL PLAN

Sheet No.

C130

K:\Projects\2024\2024125\Tilden Proj C130.dwg 4/1/2026 3:59:55 PM



ENTRANCE SITE PLAN
SCALE: 1"=10'

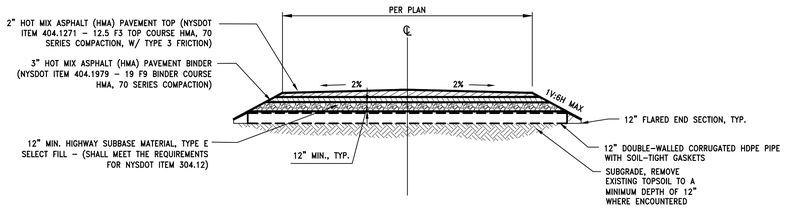
GRAPHIC SCALE

10 5 0 5 10 20 40

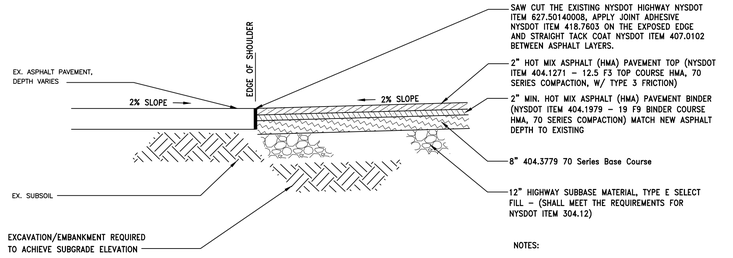
1 INCH = 10 FEET

NYSDOT NOTES:

1. NYSDOT HIGHWAY WORK PERMIT SHALL BE ISSUED AND PRESENT AT THE JOB LOCATION AT ALL TIMES, WITH THE STAMPED NYSDOT APPROVED PLANS. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND CONDITIONS ATTACHED TO THE NYSDOT WORK PERMIT.
2. DETAILS ARE INTENDED TO SHOW FINAL DESIGN. MODIFICATIONS MAY BE REQUIRED TO SUIT EXISTING FIELD DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE REQUIRED WORK.
3. DRIVEWAY ENTRANCE SHALL CONFORM TO NYSDOT STANDARD SHEETS 608-03.
4. THE MINIMUM PAVING LIMIT SHALL BE 30' FROM THE EDGE OF THE TRAVEL LANE OR TO THE R.O.W., WHICHEVER IS GREATER.
5. ALL WORK WITHIN THE NYSDOT RIGHT-OF-WAY OR WORK THAT MAY IMPACT IT SHALL BE CONSTRUCTED TO THE CURRENT NYSDOT STANDARDS AND SPECIFICATIONS.
6. THE WORK ZONE TRAFFIC CONTROL PLAN IS A VERY CRITICAL PART OF THE WORK PERMIT AND SHALL BE PROVIDED IN ACCORDANCE WITH THE CURRENT 619 NYSDOT STANDARD SERIES SPECIFICATION, THE NATIONAL MANUAL OF TRAFFIC CONTROL DEVICES, AND THE NYS SUPPLEMENT.
7. THE NYSDOT RIGHT-OF-WAY IS NOT TO BE USED FOR MATERIAL AND/OR EQUIPMENT STAGING.
8. A ROADWORK REPORTING FORM SHALL BE PROVIDED 7 DAYS PRIOR TO ANY WORK WITHIN THE NYSDOT RIGHT-OF-WAY.
9. NO WORK SHALL OCCUR WITHIN THE NYSDOT RIGHT-OF-WAY DURING ACTIVE SNOW & ICE REMOVAL OPERATIONS.
10. AS-BUILT PLANS SHALL BE SUPPLIED TO THE REGIONAL PERMITTING OFFICE.
11. THE NYSDOT RESERVES THE RIGHT TO CANCEL ANY WORK OPERATIONS AT ANY POINT DURING THE PROJECT.
12. CONTRACTOR SHALL COORDINATE WITH THE RESIDENCY:
    COLUMBIA RESIDENCY
    RESIDENT ENGINEER – DARRIN MORET
    EMAIL – DARRIN.MORRET@DOT.NY.GOV



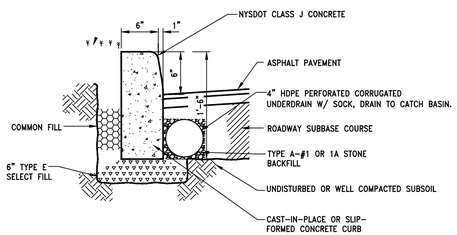
TYPICAL ASPHALT PAVEMENT CROSS SECTION
SCALE: N.T.S



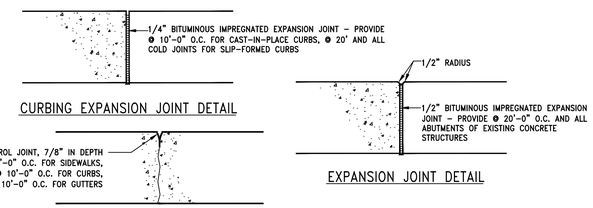
NOTES:

1. REFERENCE NYSDOT STANDARD DETAIL SHEETS 608-03, SHEET 5 FOR RECONSTRUCTION DETAILS

PAVEMENT TRANSITION DETAIL
SCALE: N.T.S



CAST IN PLACE CURB
SCALE: NTS

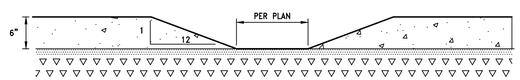


CURBING EXPANSION JOINT DETAIL

EXPANSION JOINT DETAIL

CONTROL JOINT DETAIL

TYPICAL CONSTRUCTION DETAILS FOR SIDEWALKS, CURBS AND GUTTERS
SCALE: NTS



CURB DROP DETAIL
SCALE: NTS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK BRENDON J. BROWN 091608 LICENSED PROFESSIONAL ENGINEER

Issued Rev.	Date	Remarks
A	5/1/25	FOR REVIEW
B	5/7/25	PER PLANNING BOARD
1	9/3/25	PER PLANNING BOARD COMMENTS
2	10/7/25	PER PLANNING BOARD COMMENTS
C	10/7/25	FOR NYSDOT
E	10/29/25	PLANNING BOARD
3	11/17/25	REVISED TOK LOT
F	12/17/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	JW
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	AS NOTED
File Name	BM_TILDEN

Sheet Title

NYSDOT SITE PLAN & DETAILS

Sheet No.

C131

PM: 2/25/26 8:53:51 AM | C:\Users\bjb\Desktop\2024125_TILDEN_BM_TILDEN.rvt

NOTES:

1. INTERMEDIATE-TERM IS STATIONARY WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOUR.
2. WHEN A SIDE ROAD OR DRIVEWAY INTERSECTS THE ROADWAY WITHIN A WORK ZONE TRAFFIC CONTROL AREA, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES AND/OR FLAGGERS SHALL BE PLACED AS NEEDED. ADDITIONAL FLAGGERS SHALL BE LOCATED AT ALL INTERSECTIONS AND COMMERCIAL DRIVEWAYS LOCATED WITHIN OR NEAR THE ACTIVE WORK SPACE. NO WORK ACTIVITY, EQUIPMENT, OR STORAGE OF VEHICLES, OR MATERIAL SHALL OCCUR WITHIN THE BUFFER SPACE AT ANY TIME.
3. CHANNELIZING DEVICE SPACING (CENTER TO CENTER) SHALL NOT EXCEED 20' IN THE ACTIVE WORK SPACE.
4. CHANNELIZING DEVICES SHALL BE PLACED TRANSVERSELY A MINIMUM OF EVERY 800' AS SHOWN WHEN A PAVED SHOULDER HAVING A WIDTH OF 8' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 800'.
5. IF THE TRAFFIC IS EXPECTED TO QUEUE PAST THE W20-4 SIGN, A W3-4 SIGN SHOULD BE ADDED HALFWAY BETWEEN THE W20-4 AND W20-1 SIGNS.
6. IF CONDITION WARRANTS, PROTECTIVE VEHICLE WITH APPROPRIATE ROLL AHEAD DISTANCE MAY BE USED IN ADVANCE OF THE WORK AREA. TO USE PROTECTIVE VEHICLE, BUFFER SPACE SHALL BE PROVIDED ACCORDINGLY, AND THE WHEELS SHALL BE ALIGNED WITH THE LANE STRIPING.
7. FLAGGER SIGN (W20-7a) AND ONE LANE ROAD AHEAD SIGN (W20-4) SHALL BE REMOVED, COVERED OR TURNED AWAY FROM ROAD USERS WHEN FLAGGING OPERATIONS ARE NOT OCCURRING.
8. ALL FLAGGERS SHALL USE 24" (MIN.) OCTAGON SHAPED STOP/SLOW PADDLES HAVING 6' STAFF. THE PADDLE IS THE PREFERRED DEVICE, BUT THE FLAG MAY BE USED AT INTERSECTIONS WHERE THE STOP/SLOW PADDLE WOULD OFFER CONTRADICTING INFORMATION TO DRIVERS TRAVELING IN OPPOSITE DIRECTIONS/LEGS OF THE INTERSECTION OR DURING INCIDENT MANAGEMENT SITUATIONS.
9. CENTERLINE CONES MAY BE ADDED TO ENHANCE THE VISIBILITY OF THE FLAGGER STATION. IF CONES ARE USED, PLACE THEM 100 FT. (MINIMUM) FROM FLAGGER.
10. THE NY9-11 SIGN IS RECOMMENDED. WHEN USED, IT SHALL BE PLACED IN ADVANCE OF THE FIRST ADVANCE WARNING SIGN. THE PLACEMENT DISTANCE SHALL BE 1000' FOR POSTED SPEED LIMITS OF 45 MPH OR HIGHER, AND 300' – 500' FOR POSTED SPEED LIMITS OF LESS THAN 45 MPH.

TABLE 410-04: ROLL AHEAD DISTANCE

ROLL AHEAD DISTANCE (FT.)/# OF SKIP LINES FOR VEHICLES

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	STATIONARY OPERATION	
	MIN	MAX
≥ 55	120/3	200/5
45–50	80/2	160/4
≤ 40	40/1	120/3

TABLE 410-05: CHANNELIZING DEVICE APPLICATION FOR INTERMEDIATE-TERM STATIONARY WORK ZONES

WORK ZONE PROVISIONS	MAXIMUM DEVICE SPACING (CENTER TO CENTER)	MUTCD COMPLIANT CHANNELIZING DEVICE								
		DRUMS	STANDARD CONES	TALL CONES	EXTRA TALL CONES	TEMPORARY TUBULAR MARKERS	INTERIM TUBULAR MARKERS	VERTICAL PANELS	OVERSIZED VERTICAL PANELS	TYPE III BARRICADES
INTERMEDIATE-TERM STATIONARY WORK ZONES INVOLVE WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR										
SHOULDER/MERGING/ SHIFTING TAPERS	20 FT. *	X							X	
	40 FT.	X							X	
MARKING FOR TRANSVERSE BUMPS (1)	N/A	X (2)			X (2)				X (2)	
TRANSVERSE DEVICE WITHIN CLOSED TRAFFIC LANE AND/OR SHOULDER	800 FT.	X		X	X			X	X	0
REMOVAL OF EXISTING GUIDE RAIL	80 FT.	X		X	X	X		X	X	0
	40 FT.									

NOTES: X= ALLOWED, BLANK= NOT ALLOWED
1. – A TYPE 1 OBJECT MARKER MAY BE USED IN LIEU OF CHANNELIZING DEVICE
2. – CHANNELIZING DEVICES SHALL BE EQUIPPED WITH A FLASHING WARNING LIGHT

* SEE NOTE 3 ABOVE

TABLE 410-06: REQUIRED SIGN SIZES*

SIGN	NON-FREEWAY	FREEWAY
G20-2	36x18	48x24
W20-1	36x36	48x48
W21-5	36x36	48x48
W7-3a	24x18	36x30
G20-1	36x18	48x24
WARNING FLAG	18x18	18x18

*FREEWAY SIZES MAY BE USED ON NON-FREEWAY, IF SPACE CONSTRAINTS DO NOT EXIST.

TABLE 410-01: ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS	
	A (FT.)	B (FT.)
URBAN (≤ 30 MPH*)	100	100
URBAN (35–40 MPH*)	200	200
URBAN (≥ 45 MPH*)	350	350
RURAL	500	500

*PRECONSTRUCTION POSTED SPEED LIMIT

TABLE 410-02: LONGITUDINAL BUFFER SPACE AND TAPER LENGTHS

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE DISTANCE (FT.)/ # OF SKIP LINES	TAPER LENGTH: L (FT.)/# OF SKIP LINES/ # OF CHANNELIZING DEVICES			SHOULDER TAPER LENGTH: L/3 (FT.)/ # OF SKIP LINES/ # OF CHANNELIZING DEVICES		
		FOR LANE WIDTH IN FT. (LATERAL SHIFT OF TRAFFIC FLOW PATH)			FOR SHOULDER WIDTH		
		10	11	12			
25	155/4	120/3/4	120/3/4	120/3/4	40/1/2	40/1/2	40/1/2
30	200/5	160/4/5	160/4/5	200/5/6	40/1/2	40/1/2	40/1/2
35	250/6	200/5/6	240/6/7	240/6/7	40/1/2	40/1/2	80/2/3
40	305/8	280/7/8	320/8/9	320/8/9	40/1/2	80/2/3	80/2/3
45	360/9	440/11/12	520/13/14	560/14/15	80/2/3	80/2/3	120/3/4
50	425/11	520/13/14	560/14/15	600/15/16	80/2/3	120/3/4	160/4/5
55	495/13	560/14/15	600/15/16	680/17/18	80/2/3	120/3/4	160/4/5

TABLE 410-03: PROTECTIVE VEHICLE REQUIREMENTS

CLOSURE TYPE	ROAD TYPE & SPEED	NON-FREEWAY		
		≥ 45 MPH	35 – 40 MPH	≤ 30 MPH
	EXPOSURE CONDITIONS (1)			
LANE CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMIA	P, TMIA	SEE NOTE 2
	OTHER HAZARDS NO WORKERS EXPOSED	P, TMIA	SEE NOTE 2	SEE NOTE 2
SHOULDER CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMIA	SEE NOTE 2	SEE NOTE 2
	OTHER HAZARDS NO WORKERS EXPOSED	SEE NOTE 2	SEE NOTE 2	SEE NOTE 2

LEGEND
P: PROTECTIVE VEHICLE REQUIRED FOR EACH CLOSED LANE & EACH CLOSED PAVED SHOULDER 8' OR WIDER, IF THE WORK SPACE MOVES WITHIN THE STATIONARY CLOSURE, THE PROTECTIVE VEHICLE SHALL BE REPOSITIONED ACCORDINGLY

TMIA: TMIA REQUIRED

NOTES:

1. THE EXPOSURE CONDITIONS ASSUME THERE IS NO POSITIVE PROTECTION PRESENT
2. EITHER A PROTECTIVE VEHICLE OR THE STANDARD BUFFER SPACE SHALL BE PROVIDED

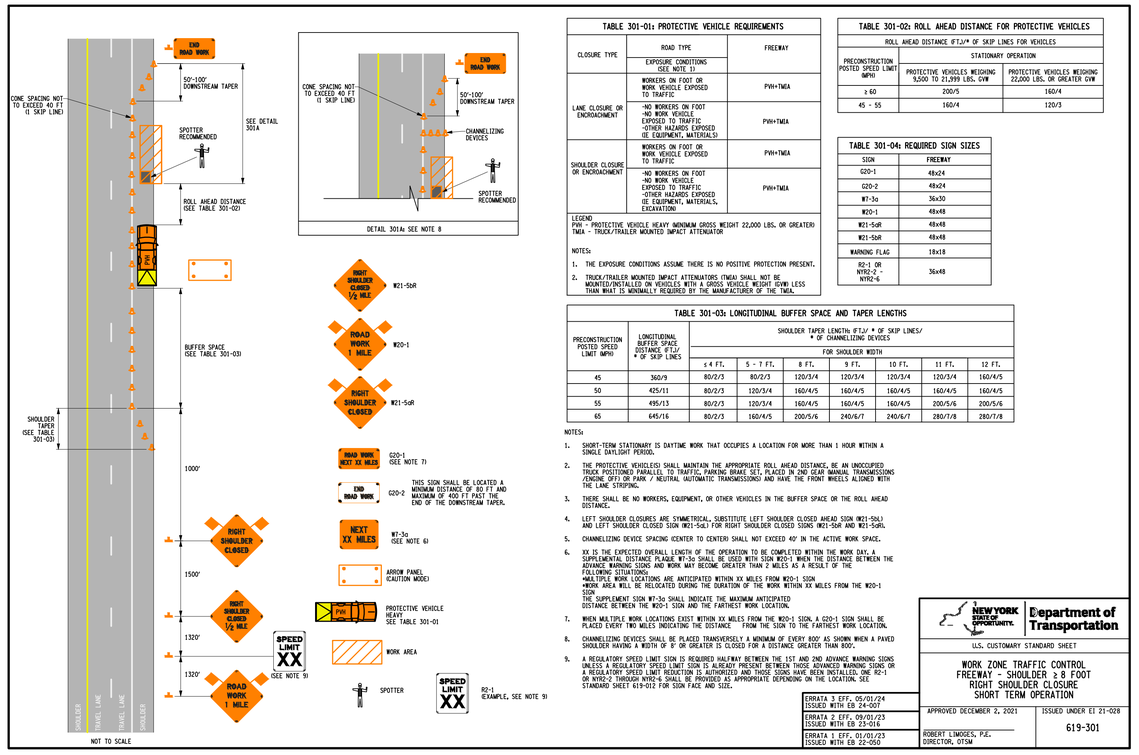


TABLE 301-01: PROTECTIVE VEHICLE REQUIREMENTS

CLOSURE TYPE	ROAD TYPE	FREEWAY
	EXPOSURE CONDITIONS (SEE NOTE 1)	
LANE CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR WORK VEHICLE EXPOSED TO TRAFFIC	PVH+TMIA
	•NO WORKERS ON FOOT •NO WORK VEHICLE EXPOSED TO TRAFFIC •OTHER HAZARDS EXPOSED (IE EQUIPMENT, MATERIALS)	PVH+TMIA
SHOULDER CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR WORK VEHICLE EXPOSED TO TRAFFIC	PVH+TMIA
	•NO WORKERS ON FOOT •NO WORK VEHICLE EXPOSED TO TRAFFIC •OTHER HAZARDS EXPOSED (IE EQUIPMENT, MATERIALS, EXCAVATION)	PVH+TMIA

LEGEND
PVH - PROTECTIVE VEHICLE HEAVY (MINIMUM GROSS WEIGHT 22,000 LBS. OR GREATER)
TMIA - TRUCK/TRAILER MOUNTED IMPACT ATTENUATOR

NOTES:
1. THE EXPOSURE CONDITIONS ASSUME THERE IS NO POSITIVE PROTECTION PRESENT.
2. TRUCK/TRAILER MOUNTED IMPACT ATTENUATORS (TMIA) SHALL NOT BE MOUNTED/INSTALLED ON VEHICLES WITH A GROSS VEHICLE WEIGHT (GVW) LESS THAN WHAT IS MINIMALLY REQUIRED BY THE MANUFACTURER OF THE TMIA.

TABLE 301-02: ROLL AHEAD DISTANCE FOR PROTECTIVE VEHICLES

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	ROLL AHEAD DISTANCE (FT.)/* OF SKIP LINES FOR VEHICLES	
	STATIONARY OPERATION	
	PROTECTIVE VEHICLES WEIGHING 9,500 TO 21,999 LBS. GVW	PROTECTIVE VEHICLES WEIGHING 22,000 LBS. OR GREATER GVW
≥ 60	200/5	160/4
45 - 55	160/4	120/3

TABLE 301-04: REQUIRED SIGN SIZES

SIGN	FREEWAY
G20-1	48x24
G20-2	48x24
W7-3a	36x30
W20-1	48x48
W21-5aR	48x48
W21-5bR	48x48
WARNING FLAG	18x18
R2-1 OR W7R2-2 - W7R2-6	36x48

TABLE 301-03: LONGITUDINAL BUFFER SPACE AND TAPER LENGTHS

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE DISTANCE (FT.)/ * OF SKIP LINES	SHOULDER TAPER LENGTH: (FT.)/ * OF SKIP LINES/ * OF CHANNELIZING DEVICES					
		FOR SHOULDER WIDTH					
		≤ 4 FT.	5 - 7 FT.	8 FT.	9 FT.	10 FT.	11 FT.	12 FT.
45	360/9	80/2/3	80/2/3	120/3/4	120/3/4	120/3/4	120/3/4	160/4/5
50	425/11	80/2/3	120/3/4	160/4/5	160/4/5	160/4/5	160/4/5	160/4/5
55	495/13	80/2/3	120/3/4	160/4/5	160/4/5	160/4/5	200/5/6	200/5/6
65	645/16	80/2/3	160/4/5	200/5/6	240/6/7	240/6/7	280/7/8	280/7/8

NOTES:
1. SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
2. THE PROTECTIVE VEHICLE(S) SHALL MAINTAIN THE APPROPRIATE ROLL AHEAD DISTANCE, BE AN UNOCCUPIED TRUCK POSITIONED PARALLEL TO TRAFFIC, PARKING BRAKE SET, PLACED IN 2ND GEAR (MANUAL TRANSMISSIONS (ENGINE OFF) OR PARK / NEUTRAL (AUTOMATIC TRANSMISSIONS) AND HAVE THE FRONT WHEELS ALIGNED WITH THE LANE STRIPING.
3. THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD DISTANCE.
4. LEFT SHOULDER CLOSURES ARE SYMMETRICAL, SUBSTITUTE LEFT SHOULDER CLOSED AHEAD SIGN (W21-5bL) AND LEFT SHOULDER CLOSED SIGN (W21-5aL) FOR RIGHT SHOULDER CLOSED SIGNS (W21-5bR AND W21-5aR).
5. CHANNELIZING DEVICE SPACING (CENTER TO CENTER) SHALL NOT EXCEED 40' IN THE ACTIVE WORK SPACE.
6. XX IS THE EXPECTED OVERALL LENGTH OF THE OPERATION TO BE COMPLETED WITHIN THE WORK DAY. A SUPPLEMENTAL DISTANCE PLAQUE W7-3a SHALL BE USED WITH SIGN W20-1 WHEN THE DISTANCE BETWEEN THE ADVANCE WARNING SIGNS AND WORK MAY BECOME GREATER THAN 2 MILES AS A RESULT OF THE FOLLOWING SITUATIONS:
•MULTIPLE WORK LOCATIONS ARE ANTICIPATED WITHIN XX MILES FROM W20-1 SIGN
•WORK AREA WILL BE RELOCATED DURING THE DURATION OF THE WORK WITHIN XX MILES FROM THE W20-1 SIGN
THE SUPPLEMENT SIGN W7-3a SHALL INDICATE THE MAXIMUM ANTICIPATED DISTANCE BETWEEN THE W20-1 SIGN AND THE FARTHEST WORK LOCATION.
7. WHEN MULTIPLE WORK LOCATIONS EXIST WITHIN XX MILES FROM THE W20-1 SIGN, A G20-1 SIGN SHALL BE PLACED EVERY TWO MILES INDICATING THE DISTANCE FROM THE SIGN TO THE FARTHEST WORK LOCATION.
8. CHANNELIZING DEVICES SHALL BE PLACED TRANSVERSELY A MINIMUM OF EVERY 800' AS SHOWN WHEN A PAVED SHOULDER HAVING A WIDTH OF 8' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 800'.
9. A REGULATORY SPEED LIMIT SIGN IS REQUIRED HALFWAY BETWEEN THE 1ST AND 2ND ADVANCE WARNING SIGNS UNLESS A REGULATORY SPEED LIMIT SIGN IS ALREADY PRESENT BETWEEN THOSE ADVANCED WARNING SIGNS OR A REGULATORY SPEED LIMIT REDUCTION IS AUTHORIZED AND THOSE SIGNS HAVE BEEN INSTALLED. ONE R2-1 OR W7R2-2 THROUGH W7R2-6 SHALL BE PROVIDED AS APPROPRIATE DEPENDING ON THE LOCATION. SEE STANDARD SHEET 619-012 FOR SIGN FACE AND SIZE.

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL
FREEWAY – SHOULDER ≥ 8 FOOT
RIGHT SHOULDER CLOSURE
SHORT TERM OPERATION

ERRATA 3 EFF. 05/01/24 ISSUED WITH EB 24-007
ERRATA 2 EFF. 09/01/23 ISSUED WITH EB 23-016
ERRATA 1 EFF. 01/01/23 ISSUED WITH EB 22-050

APPROVED DECEMBER 2, 2021
ROBERT LIMOGES, P.E.
DIRECTOR, OTCM

ISSUED UNDER EI 21-028
619-301

SHOULDER CLOSURE
2-LANE 2-WAY ROADWAY
(NOT TO SCALE)

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

BRENDON T. BROOKS — 091908 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

Issue Rev.	Date	Remarks
A	5/1/25	FOR REVIEW
B	5/7/25	PLANNING BOARD
1	9/3/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PER PLANNING BOARD
C	10/7/25	FOR NYSDOT
E	10/20/25	PLANNING BOARD
3	11/17/25	REVISED FOR DOT
F	12/1/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	JW
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	NTS
File Name	BM_TILDEN

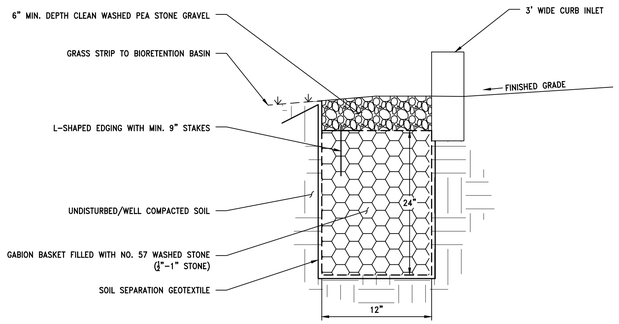
Sheet Title

NYSDOT ENTRANCE NOTES

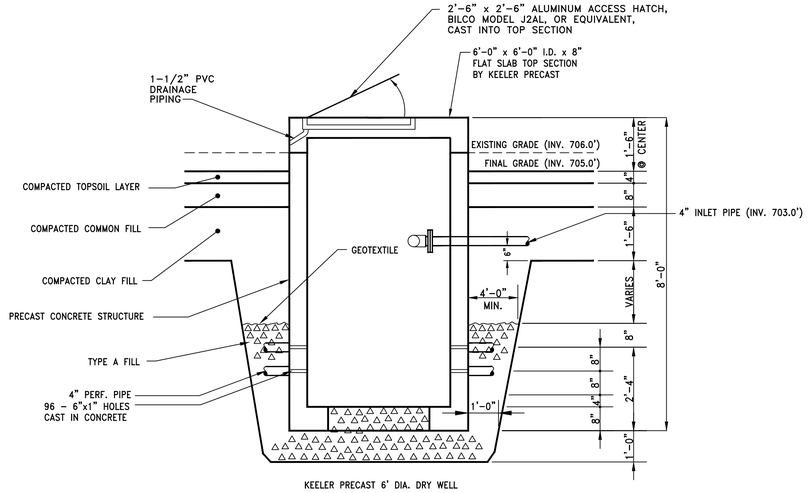
Sheet No.

C132

PM 4/8/26 5:39:02 C:\D2\Projects\2024125\CAD\Sheets\2024125-TEMP-NOTES.dwg

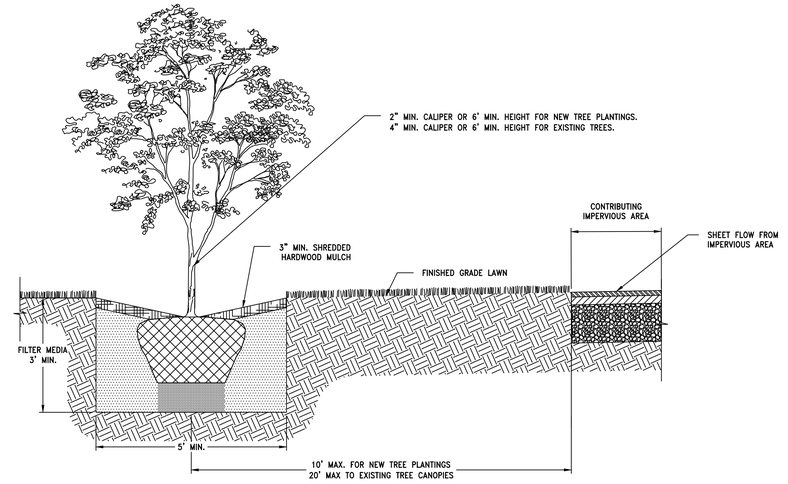


1 C150 TYPICAL GABION BASKET CURB INLET
SCALE: NTS



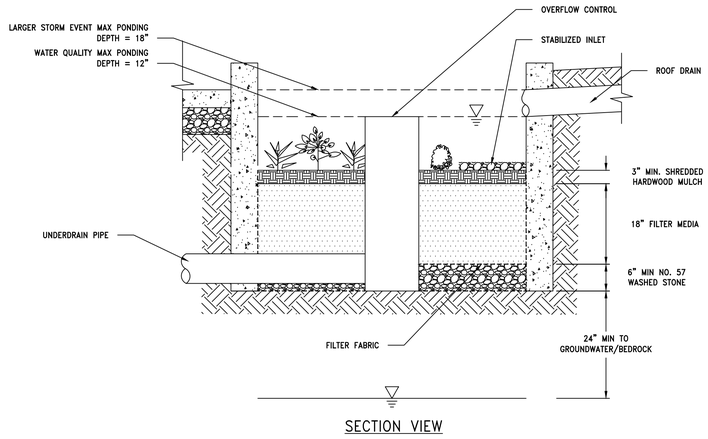
2 C150 DETAIL -- SPRING BASIN DRYWELL
SCALE: N.T.S.

NOTE:
1. 4" PERF. PIPE GOING OUT 3' INTO STONE, 4 PER LAYER, 2' OFF BOTTOM AND 4' OFF BOTTOM



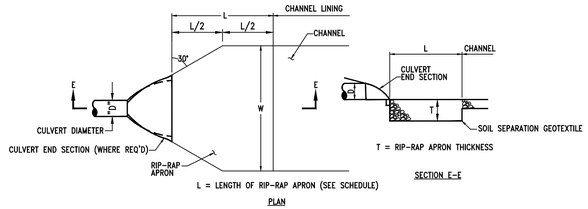
PROFILE VIEW

3 C150 TYPICAL TREE PLANTING
SCALE: NTS



SECTION VIEW

4 C150 TYPICAL STORMWATER PLANTER
SCALE: NTS



RIP-RAP APRON

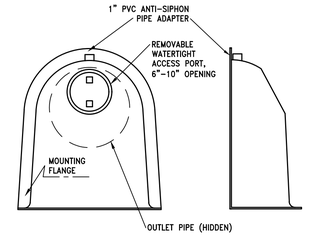
RIP-RAP SHALL BE INSTALLED AS PER NYSDOT "STANDARD SPECIFICATIONS - CONSTRUCTION AND MATERIALS" (1/2/90) SECTIONS 620-3.02 & 3.03. RIP-RAP GRADATION SHALL BE AS PER FIGURE 620-1 AND BELOW:

CULVERT OUTLET RIP-RAP APRON SCHEDULE				
"D" CULVERT OUTLET DIAMETER	L	T	W	NYSDOT GRADATION
12"ø	6 ft.	12"	±54"	"LIGHT"
15"ø	7.5 ft.	12"	±67"	"LIGHT"
24"ø	12 ft.	12"	±107"	"LIGHT"

NOTE: L=LENGTH OF APRON
T=THICKNESS OF RIP-RAP APRON

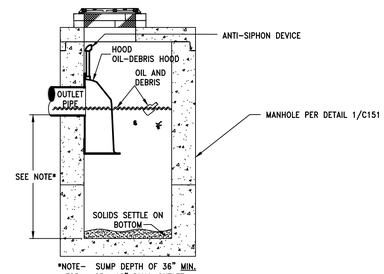
5 C150 STABILIZED OUTLET STRUCTURE
SCALE: N.T.S.

CONFIGURATION DETAIL



HOOD OIL-WATER-DEBRIS SEPARATOR

TYPICAL INSTALLATION

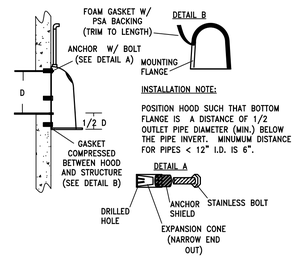


*NOTE- SUMP DEPTH OF 36" MIN. FOR < OR= 12" DIAM. OUTLET.
FOR OUTLETS >OR= 15", DEPTH = 2.5-3X DIAM.

NOTES:

1. ALL SNOUTS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
   BEST MANAGEMENT PRODUCTS, INC.
   53 MT. ARCHER RD.
   LYME, CT 06371
   (860) 434-0277, (860) 434-3195 FAX
   TOLL FREE: (800) 504-8008 OR (888) 434-0277
   WEB SITE: www.bmpinc.com
   OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (HOOD SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8' STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.
   INSTALLATION KIT SHALL INCLUDE:
   A. INSTALLATION INSTRUCTIONS
   B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
   C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
   D. 3/8" STAINLESS STEEL BOLTS
   E. ANCHOR SHIELDS

INSTALLATION DETAIL



INSTALLATION NOTE:

POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE OF 1/2 OUTLET PIPE DIAMETER (MIN.) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES < 12" I.D. IS 6".

6 C150 SNOUT DETAILS AND NOTES
SCALE: N.T.S.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

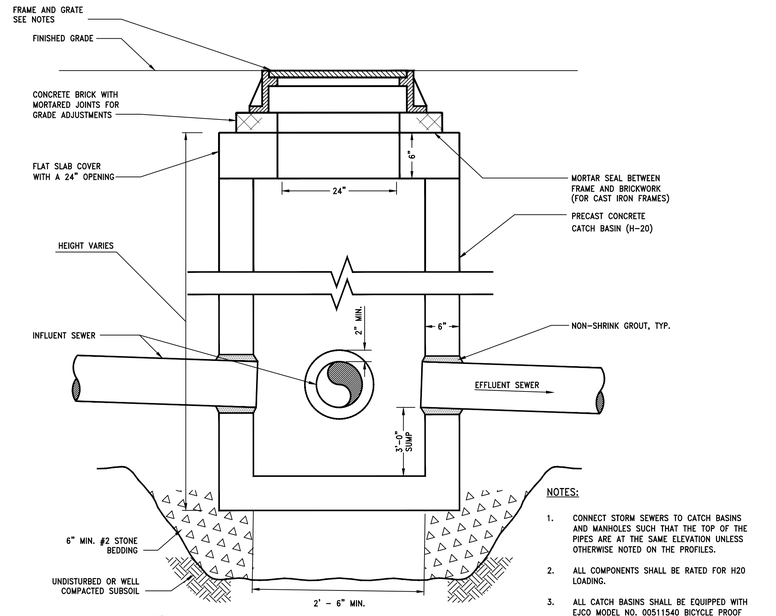
Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/3/25	PLANNING BOARD
D	10/30/25	PLANNING BOARD
E	11/20/25	PLANNING BOARD
F	4/1/26	PLANNING BOARD
5		

Project Number	2024125
Drawn By	AS
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title
STORMWATER DETAILS

Sheet No.
C150

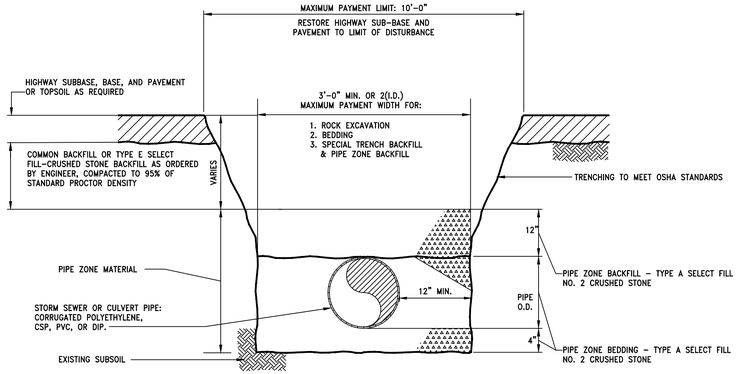
K:\PROJECTS\2024\2024125\site details\Site Plan_C150 storm details_4/1/2026 3:46:09 PM



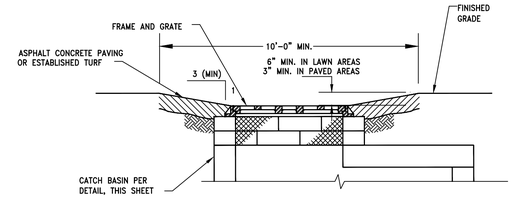
NOTES:

1. CONNECT STORM SEWERS TO CATCH BASINS AND MANHOLES SUCH THAT THE TOP OF THE PIPES ARE AT THE SAME ELEVATION UNLESS OTHERWISE NOTED ON THE PROFILES.
2. ALL COMPONENTS SHALL BE RATED FOR H20 LOADING.
3. ALL CATCH BASINS SHALL BE EQUIPPED WITH EJCO MODEL NO. 00511540 BICYCLE PROOF GRATE, OR EQUAL.
4. ALL DRAINAGE MANHOLES SHALL BE EQUIPPED WITH A FRAME AND SOLID COVER. EJCO MODEL NO. 00166567, OR EQUAL.

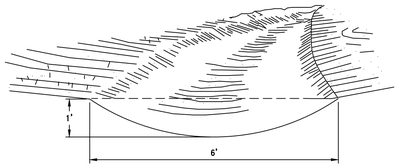
1 / C151 CATCH BASIN AND MANHOLE DETAIL
SCALE: N.T.S.



2 / C151 TYPICAL STORM SEWER TRENCH DETAIL
SCALE: N.T.S.



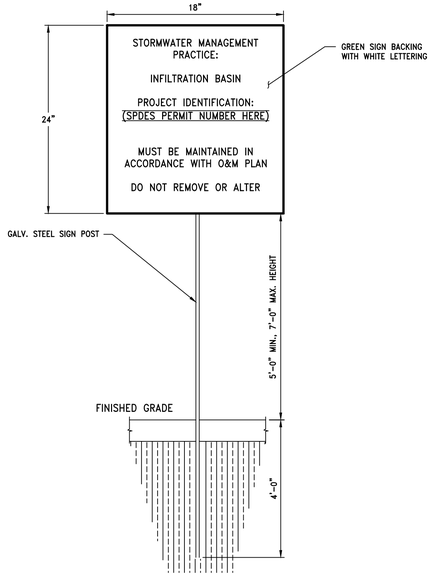
3 / C151 OPEN AREA FRAME AND GRATE DETAIL
SCALE: N.T.S.



NOTES:

1. SEED SWALE WITH THE FOLLOWING MIX:
   1.1. PERENNIAL RYGRASS @ 30 LBS/ACRE
   1.2. TALL FESCUE @ 20 LBS/ACRE
   1.3. REDTOP @ 2 LBS/ACRE
2. MULCH PER PLAN. APPLY ANCHORED STABILIZATION MATTING IF RILLING OCCURS, OR A.O.B.E.
3. GRADE SWALE SO THAT IT IS MOWABLE.

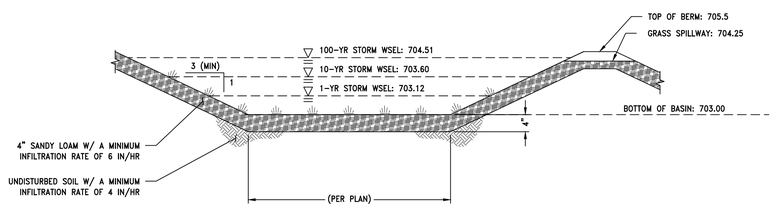
4 / C151 TYPICAL GRASS SWALE
SCALE: NTS



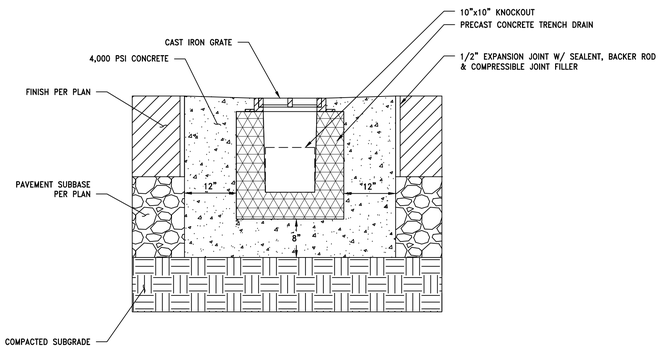
NOTES:

1. STORMWATER PRACTICE NAMED IN THIS DETAIL IS FOR EXAMPLE. ACTUAL PRACTICE NAME SHALL BE USED FOR EACH PRACTICE.

5 / C151 STORMWATER SIGN
SCALE: N.T.S.



6 / C151 TYPICAL INFILTRATION BASIN CROSS SECTION
SCALE: N.T.S.



7 / C105 PRECAST TRANSVERSE DRAINAGE INTERCEPTOR
SCALE: N.T.S.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

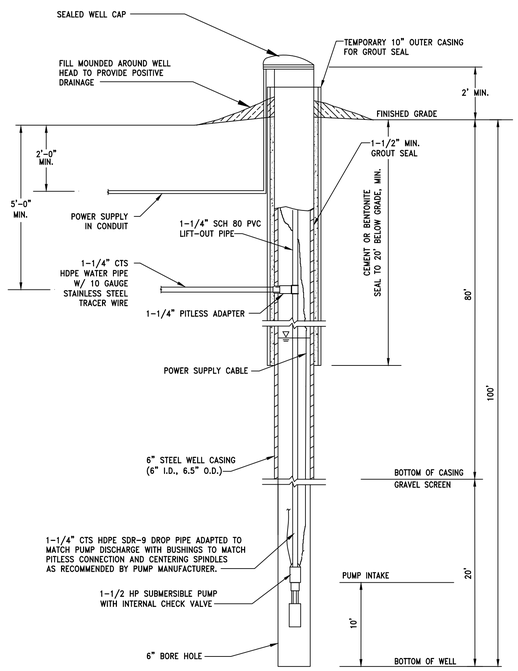
Issue/Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/3/25	PLANNING BOARD
E	10/29/25	PLANNING BOARD
F	12/1/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	AS
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title
STORMWATER DETAILS

Sheet No.
C151

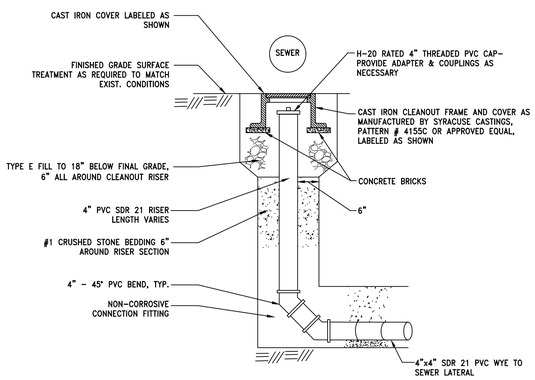
K:\PROJECTS\2024\2024125\site details\dwg\C151 STORMWATER DETAILS 4/1/2026 9:40:19 PM



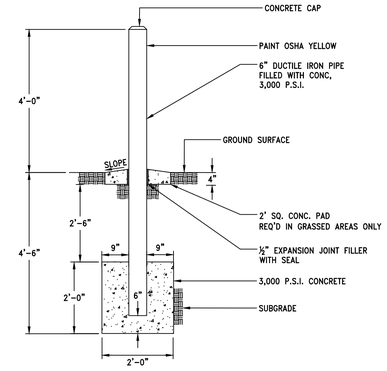
NOTE:

1. PLACE A 6" WIDE STRIP OF METALLIC BLUE BURIED PIPELINE TAPE 2'-0' BELOW FINAL GRADE FOR THE WELL WATER PIPE.

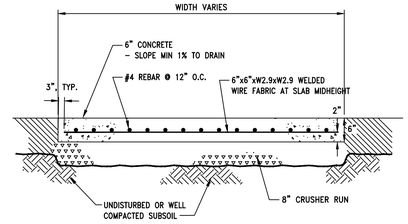
1 C155 WELL DETAIL
SCALE: N.T.S.



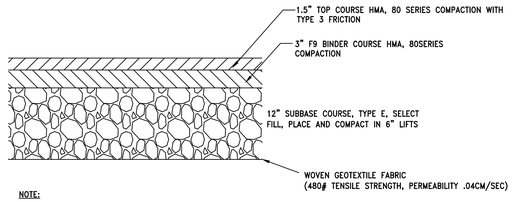
2 C155 TYPICAL PVC CLEANOUT DETAIL (H-20)
SCALE: NTS



3 C155 TYPICAL BOLLARD DETAIL
SCALE: NTS



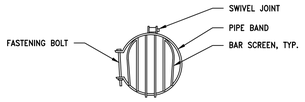
4 C155 TYPICAL CONCRETE EQUIPMENT PAD DETAIL
SCALE: N.T.S.



NOTE:

1. DETAIL APPLIES TO ASPHALT PAVEMENT OUTSIDE OF NYSDOT RIGHT-OF-WAY ONLY.

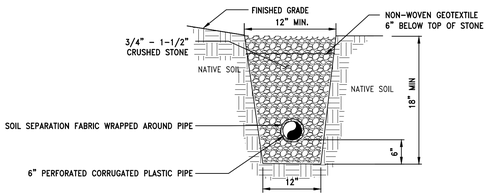
5 C155 STANDARD ASPHALT PAVEMENT DETAIL
SCALE: N.T.S.



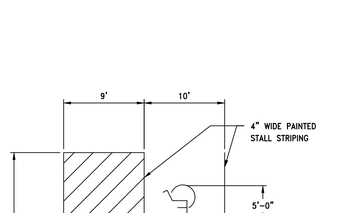
NOTES:

1. FOR PVC PIPE USE BAND-TYPE RAT GUARD BY AGRIDRAIN, OR EQUAL.
2. FOR CORRUGATED HDPE PIPE USE EXTERNAL RODENT GUARDS BY AGRIDRAIN, OR EQUAL.
3. PROVIDE APPROPRIATELY SIZED SCREEN PER PIPE DIAMETER.
4. ALL SCREENS SHALL BE SECURED TO THE EXTERIOR OF THE PIPE'S OUTLET. INTERNAL MESH GUARDS SHALL NOT BE ACCEPTED.

6 C155 TYPICAL RODENT SCREEN DETAIL
SCALE: NTS



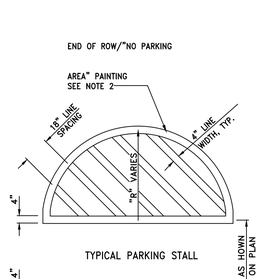
7 C155 FRENCH DRAIN DETAIL
SCALE: N.T.S.



8 C155 HC PARKING STALL
SCALE: N.T.S.

NOTES:

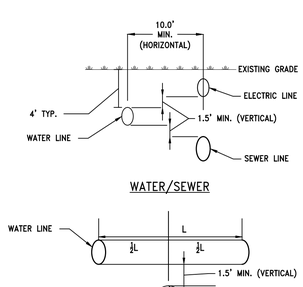
1. HANDICAP PARKING SIGNS SHALL BE SETON #M5398 OR APPROVED EQUAL.
2. HANDICAP ACCESS AISLE SIGNS SHALL BE SETON #37899 OR APPROVED EQUAL.



NOTES:

1. PAVEMENT MARKING MATERIALS AND CONSTRUCTION SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION 640 FOR REFLECTORIZED PAVEMENT MARKINGS. STALL STRIPING SHALL BE WHITE, "NO PARKING" STRIPING SHALL BE YELLOW, ALL HANDICAP AREAS SHALL BE BLUE.
2. "NO PARKING AREA" RADII AND SHAPE SHALL BE AS INDICATED ON SITE PLAN.
3. PROVIDE ALL NECESSARY HANDICAP SIGNAGE AS REQUIRED PER CODE.

9 C155 PAVEMENT MARKINGS DETAILS
SCALE: N.T.S.



10 C155 TYPICAL DETAILS FOR UTILITY CROSSINGS
SCALE: NOT TO SCALE

NOTES:
1. ALL SEWER MAIN AND WATER MAINS SHALL BE SEPARATED BY DISTANCES SPECIFIED IN THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (10 STATES STANDARDS).
2. PIPE JOINTS ARE TO BE ARRANGED SO THAT SEWER MAIN JOINTS AND WATER MAIN JOINTS ARE SEPARATED AS FAR AS POSSIBLE FROM EACH OTHER.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

Issue/Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/3/25	PLANNING BOARD
E	10/29/25	PER PLANNING BOARD COMMENTS
F	12/4/25	PLANNING BOARD

Project Number	2024125
Drawn By	AS
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title

SITE DETAILS

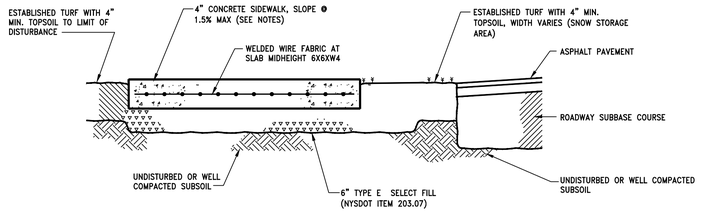
Sheet No.

C155

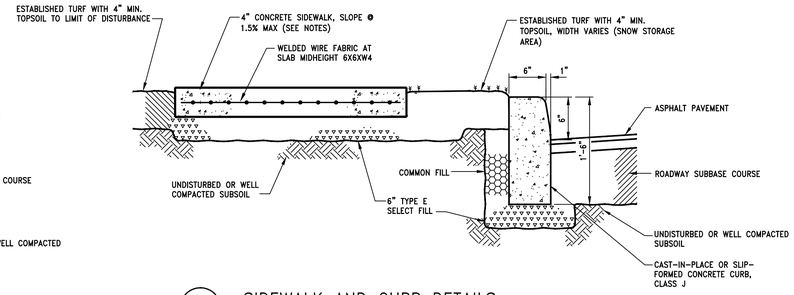
J:\APPS\SDDRIVE\PROJ\2024125\Site details\Site detail.dwg, C155 SITE, 4/7/2026 3:46:15 PM

NOTES:

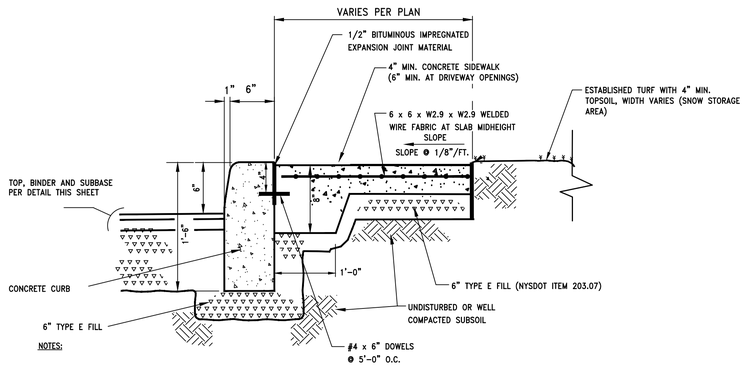
1. INCREASE SIDEWALK THICKNESS TO 6" MIN. AND INCREASE REINFORCEMENT PER SECTION 02520 THROUGHOUT LENGTH OF DRIVEWAY OPENINGS.
2. MATCH EXISTING SIDEWALK WIDTHS BY PROVIDING A 10'-0" LONG TAPER SECTION.
3. SIDEWALK CONCRETE SHALL BE NYSDOT CLASS D (NYSDOT ITEM 608.0101) WITH FIBER MESH (2 LBS/CY).



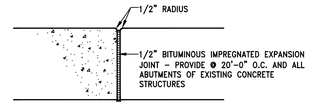
1 / C156 SIDEWALK DETAILS
SCALE: N.T.S.



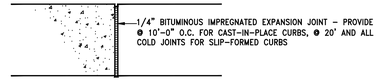
2 / C156 SIDEWALK AND CURB DETAILS
SCALE: N.T.S.



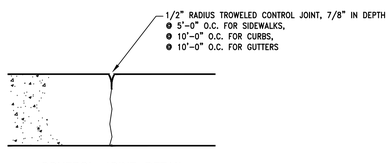
3 / C156 INTEGRAL SIDEWALK AND CURBING DETAILS
SCALE: N.T.S.



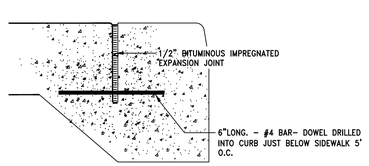
EXPANSION JOINT DETAIL



CURBING EXPANSION JOINT DETAIL

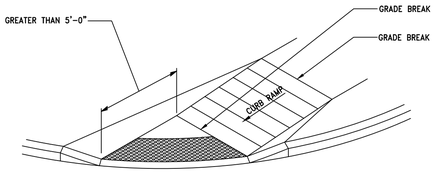


CONTROL JOINT DETAIL



CURBING TO SIDEWALK EXPANSION JOINT DETAIL

NOTE:
1. SIDEWALKS TO BE PICTURE FRAMED W/ BROOM FINISH.

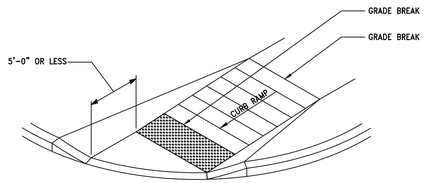


DETECTABLE WARNING PLACEMENT DETAIL 1

NOTE: IF THE DISTANCE FROM THE BOTTOM GRADE BREAK IS GREATER THAN OF EQUAL TO 5'-0", DETECTABLE WARNINGS SHOULD BE PLACED ALONG THE RADIUS OF THE CURVE AS SHOWN IN THE ABOVE DETAIL.

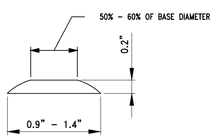
DETECTABLE WARNING NOTES:

1. THE DETAILS PROVIDED ARE NOT DRAWN TO SCALE. THE QUANTITY OF DOMES DEPICTED ON THE DETECTABLE WARNING UNIT (THE DOMES AND THE ENTIRE 24" LEVEL SURFACE) IS FOR ILLUSTRATION ONLY.
2. DETECTABLE WARNING UNIT DIMENSIONS:
   THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 24" IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUSIVE OF SIDE FLARES.
3. DOME ALIGNMENT:
   THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP LANDING OR CURB RAMP AND THE STREET.
4. WHERE DOMES ARE ARRAYED RADIALLY THEY MAY DIFFER IN DOME DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET.
5. COLOR REQUIREMENTS:
   THE DETECTABLE WARNING FIELD SHALL BE THE COLOR SPECIFIED IN THE CONTRACT DOCUMENTS OR MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
6. DETECTABLE WARNINGS LOCATIONS:
   DETECTABLE WARNINGS SHALL BE LOCATED SO THAT THE EDGE OR CORNER OF THE WARNING FIELD NEAREST TO THE ROADWAY IS 5" TO 9" FROM THE FRONT OF THE CURB OR THE ROADWAY EDGE (12" WHERE TRAVERSABLE CURB IS USED).

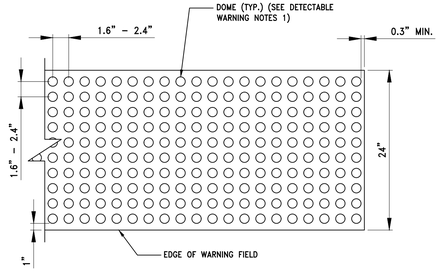


DETECTABLE WARNING PLACEMENT DETAIL 2

NOTE: IF THE DISTANCE FROM THE BOTTOM GRADE BREAK IS LESS THAN OR EQUAL TO 5'-0", DETECTABLE WARNINGS SHOULD BE PLACED ON THE CURB RAMP ALONG THE BOTTOM GRADE BREAK WITH ONE CORNER 5" TO 9" FROM THE FRONT OF THE CURB OR EDGE OF THE ROADWAY.



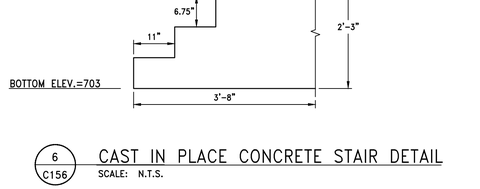
DOME SECTION



DOME SPACING

4 / C156 CONCRETE SIDEWALK DETECTABLE WARNING DETAILS
SCALE: N.T.S.

5 / C156 TYPICAL CONSTRUCTION DETAILS FOR SIDEWALKS AND CURBS
SCALE: N.T.S.



6 / C156 CAST IN PLACE CONCRETE STAIR DETAIL
SCALE: N.T.S.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BROWN · 091908 · LICENSED PROFESSIONAL ENGINEER

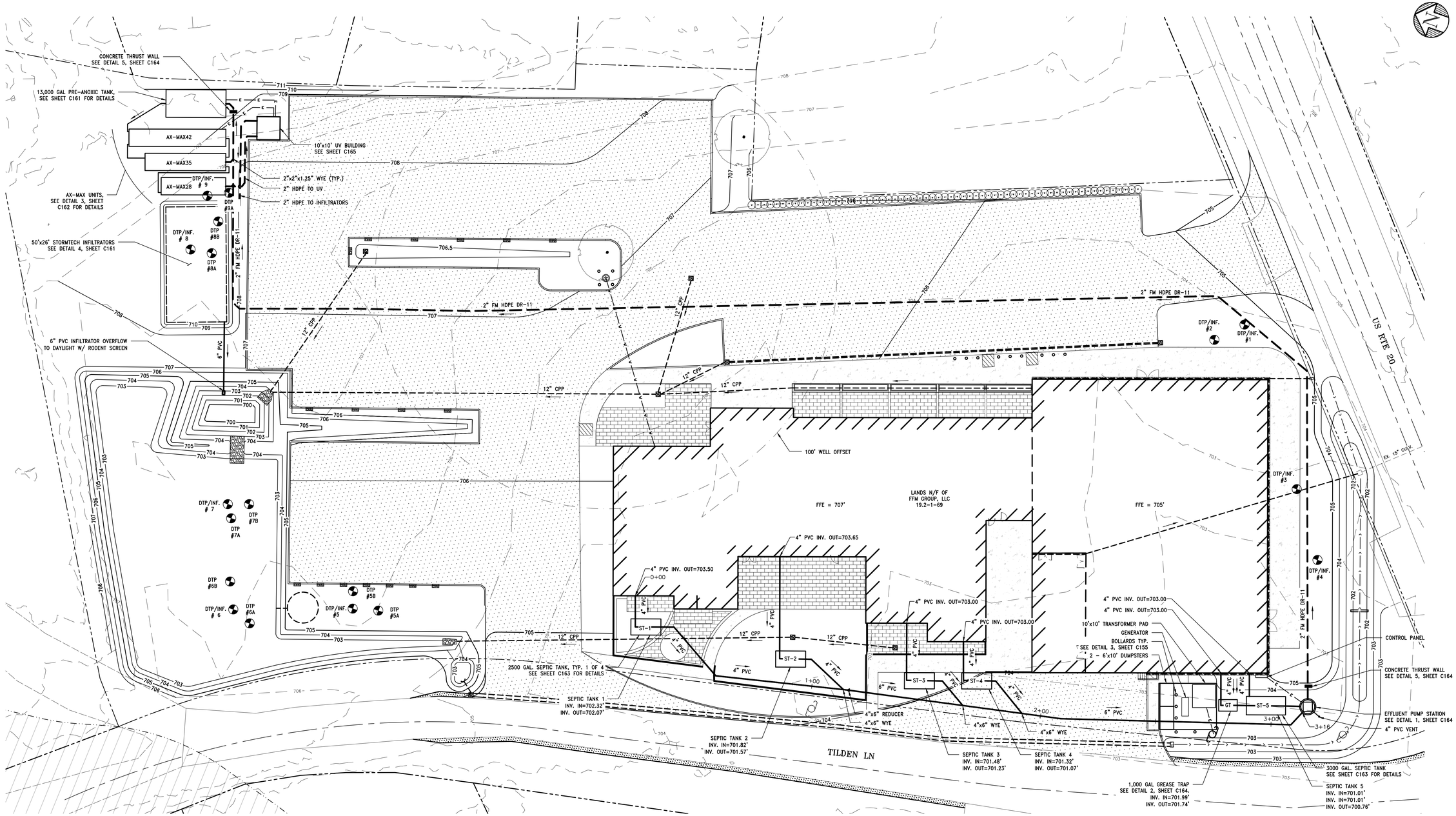
Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/3/25	PLANNING BOARD
E	10/29/25	PLANNING BOARD
F	11/21/25	PLANNING BOARD
4	3/4/26	PLANNING BOARD

Project Number	2024125
Drawn By	AS
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

Sheet Title
SITE DETAILS

Sheet No.
C156

K:\PROJECTS\2024\2024125\site details\sheet dwg\ C156 SIDEWALK, 6/17/2026 3:40:18 PM



SEPTIC PLAN
1"=20'

GRAPHIC SCALE
20 10 0 10 20 40 80
1 INCH = 20 FEET

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- PROPOSED WATER LINE
- PROPOSED CONTOURS
- PROPOSED CULVERT & CATCH BASIN
- PROPOSED GRAVITY SEWER
- PROPOSED SEWER FORCEMAIN
- PROPOSED ELECTRICAL
- PROPOSED SWALE
- DTP/INF. #1 DEEP TEST PIT/INFILTRATION SOIL TEST SITE
- PROPOSED SIDEWALK (SEE C156)
- PROPOSED ASPHALT PAVEMENT (SEE DETAIL 5, SHEET C155)
- PROPOSED PATIO PAVERS

UTILITY NOTES:

1. CONTRACTOR SHALL INSTALL ALL GRAVITY SEWER LINES WITH A MINIMUM 1.0% SLOPE POSITIVE DRAINAGE.
2. CONTRACTOR SHALL MAINTAIN ALL MINIMUM WELL OFFSETS TO NYSDOH & NYSDEC STANDARDS.
3. ALL NEW MANHOLES CONSTRUCTED WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH THE EXISTING PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.
4. PROVIDE TWO (2) 45° BENDS INSTEAD OF ONE (1) 90° BEND AT ALL "RIGHT-ANGLE" BENDS IN GRAVITY FLOW PIPING (UNLESS OTHERWISE NOTED) -- PROVIDE WYES WITH 45° BENDS AT ALL "T-TYPE" JUNCTIONS IN GRAVITY FLOW PIPING.
5. AT LEAST 2 DAYS PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL CONTACT ENGINEER IN ORDER TO SCHEDULE INSPECTIONS. IF CONSTRUCTION CEASES FOR MORE THAN 7 DAYS ENGINEER WILL BE RE-CONTACTED AT LEAST 2 DAYS PRIOR TO RESTART OF CONSTRUCTION. ENGINEER SHALL BE NOTIFIED 1 BUSINESS DAY BEFORE BURYING ANY COMPONENT OF THE APPROVED DESIGN.
6. SEE SHEET C110 FOR STORMTECH INFILTRATOR SYSTEM LOCATION. SEE DETAIL 2, SHEET C161 FOR DETAILS.
7. SEE SHEET C161 FOR SEWER PROFILE.
8. TABLE OF SEPTIC TANK VOLUMES ON TABLE C163.
9. CONSTRUCTION AND OPERATION OF THE PROPOSED SEPTIC AND SANITARY SYSTEM ARE SUBJECT TO NYSDEC APPROVAL AND SPDES PERMIT COVERAGE, AND THAT NO SYSTEM COMPONENTS SHALL BE INSTALLED OR PLACED INTO SERVICE WITHOUT SUCH APPROVALS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BROWN
091008
LICENSED PROFESSIONAL ENGINEER

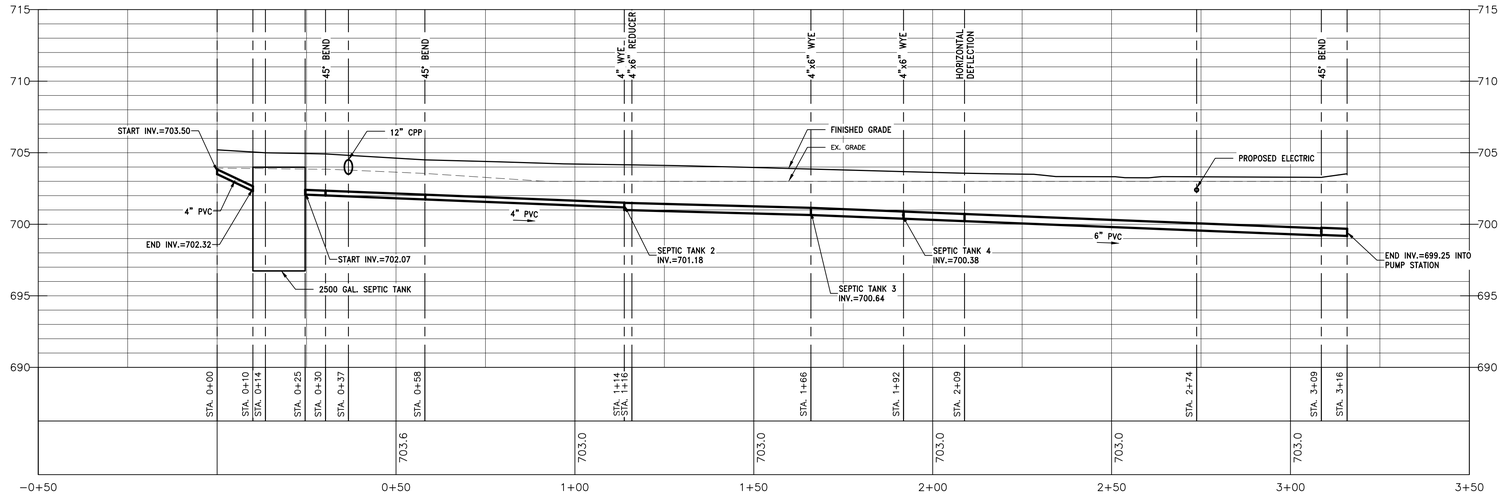
Issue/Rev	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/3/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PER PLANNING BOARD COMMENTS
0	10/29/25	PLANNING BOARD
E	10/29/25	PLANNING BOARD
F	12/2/25	PLANNING BOARD
3	1/7/26	PLANNING BOARD
4	3/4/26	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

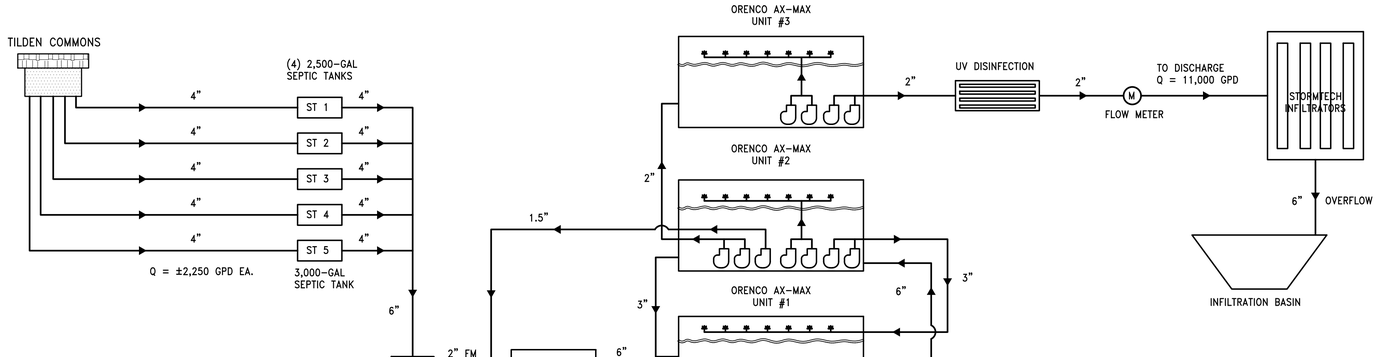
Sheet Title
SEPTIC PLAN

Sheet No.
C160

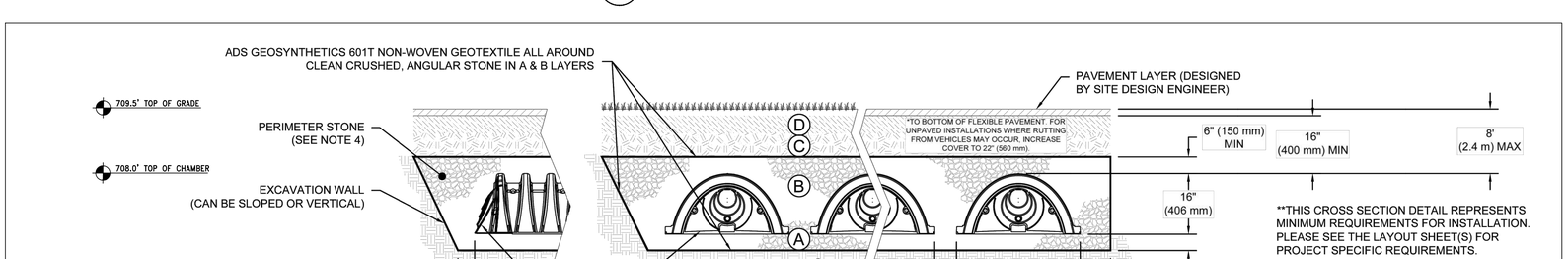
K:\PROJECTS\2024\2024125\DWG_TILDEN.dwg, C160, 4/1/2026 3:42:20 PM



SEPTIC PROFILE
H: 1"=20' / V: 1"=5'



1 / C161 PROCESS FLOW DIAGRAM
SCALE: NTS



2 / C161 TYPICAL STORMTECH DC-780 INFILTRATOR DETAIL
SCALE: NTS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK
BRENDON J. BUTLER
091905
LICENSED PROFESSIONAL ENGINEER

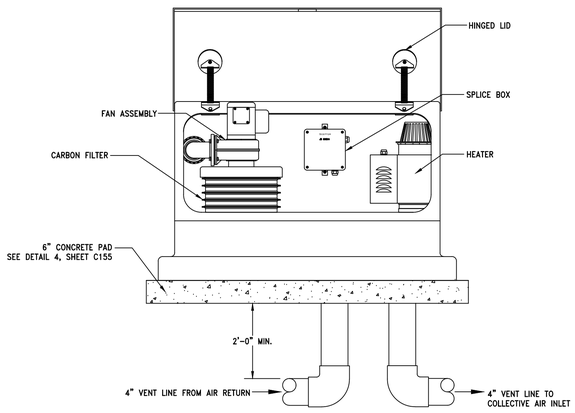
Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
D	10/16/25	FOR SEC REVIEW
E	10/23/25	PLANNING BOARD
F	11/20/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	LM
Designed By	BJB
Checked By	BJB
Date	6/30/2025
Scale	NTS
File Name	SEPTIC DETAILS

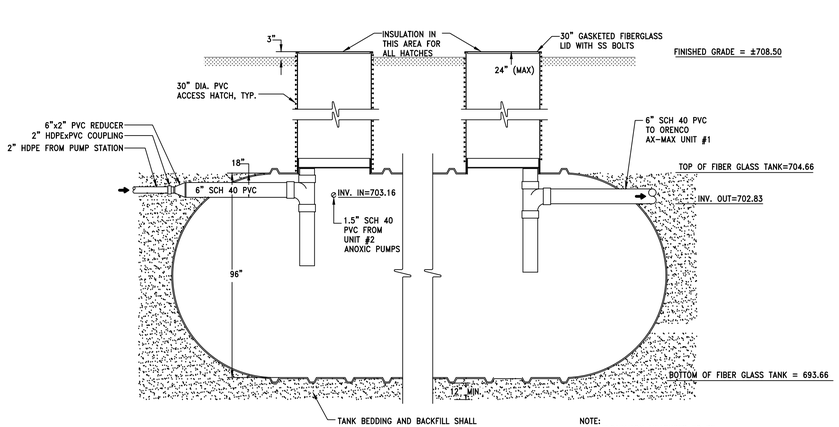
Sheet Title
SANITARY DETAILS

Sheet No.
C161

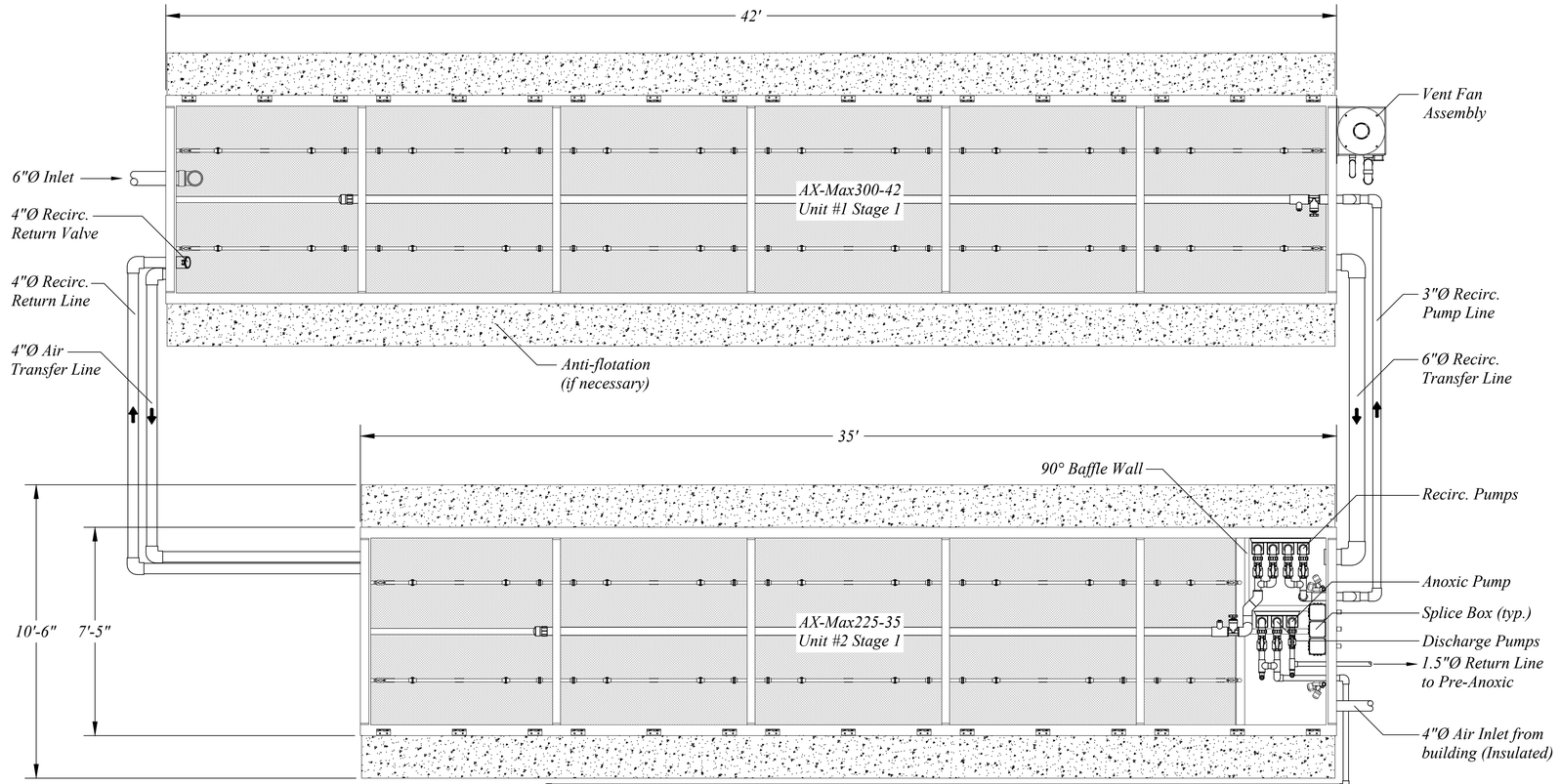
K:\PROJECTS\2024\2024125\SEPTIC\DETAILS.dwg, C161 RECIRC TANK DETAILS (2), 6/1/2025 9:45:35 PM

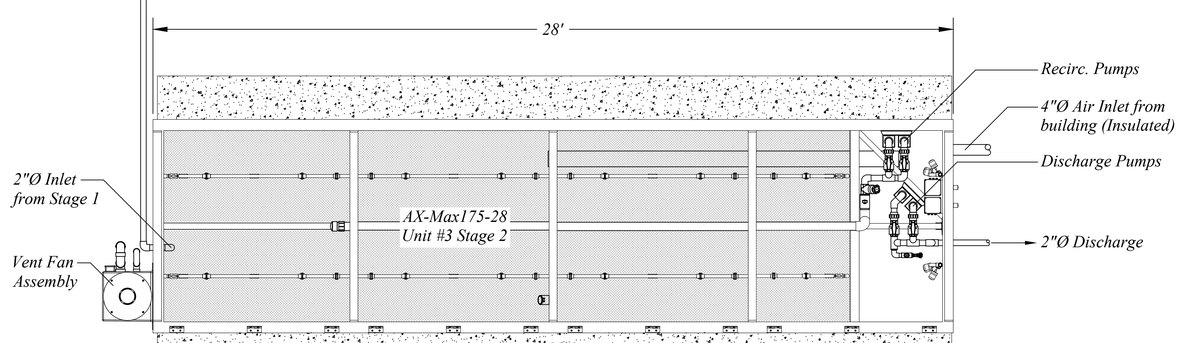


1 C162 ABOVE GROUND FAN ASSEMBLY
SCALE: NTS



2 C162 8' DIAMETER PRE-ANOXIC TANK - 13,000 GALLONS
SCALE: NTS





Design Parameters

Q_{avg} = 11,000 gpd
Q_{max} = 22,000 gpd

Influent (Avg.):

BOD: 250 mg/L
TSS: 250 mg/L
TKN: 65 mg/L
NH3-N: 45 mg/L (Summer)
NH3-N: 45 mg/L (Winter)
pH: 7 - 8

Effluent Limits:

BOD: 5 mg/L
TSS: 10 mg/L
NH3-N: 1.5 mg/L (Summer)
NH3-N: 2.2 mg/L (Winter)
pH: 6 - 9
SS: 0.1 mg/L
DO: 7 mg/L

Note: AX-Max units are designed to withstand lateral loads, uniform loads, and buoyancy forces. Consult Orenco Engineering for spacing requirements and the most up-to-date structural calculations.

3 C162 AX-MAX UNITS
SCALE: NTS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

Issue/Rev.	Remarks	Date
B	PLANNING BOARD	7/1/25
C	PER PLANNING BOARD COMMENTS	8/4/25
D	FOR SEC REVIEW	10/16/25
E	PLANNING BOARD	10/29/25
F	PLANNING BOARD	11/17/25
S	PLANNING BOARD	4/1/26

Project Number	2024125
Drawn By	LM
Designed By	BJB
Checked By	BJB
Date	7/1/25
Scale	NTS
File Name	SEPTIC DETAILS

Sheet Title

SANITARY DETAILS

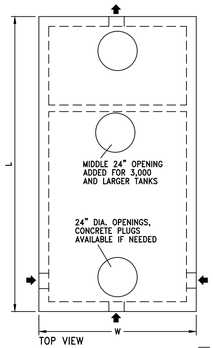
Sheet No.

C162

M:\PROJECTS\2024\2024125\SEPTIC DETAILS.dwg, C162 AX-MAX DETAILS, 4/1/2026 3:46:03 PM

SEPTIC TANK SCHEDULE

TANK NO.	1	2	3	4	5
INVERT IN (FT)	703.44	703.10	702.68	702.50	701.68
INVERT OUT (FT)	703.19	702.85	702.43	702.25	701.43

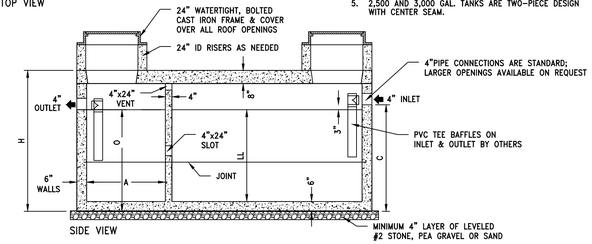


TOP VIEW

GALLONS	L	W	H	LL	A	C	O
2,500	13'	7'	6'-11"	57"	42"	69"	66"
3,000	17'	8'	6'-2"	48"	64"	61"	58"

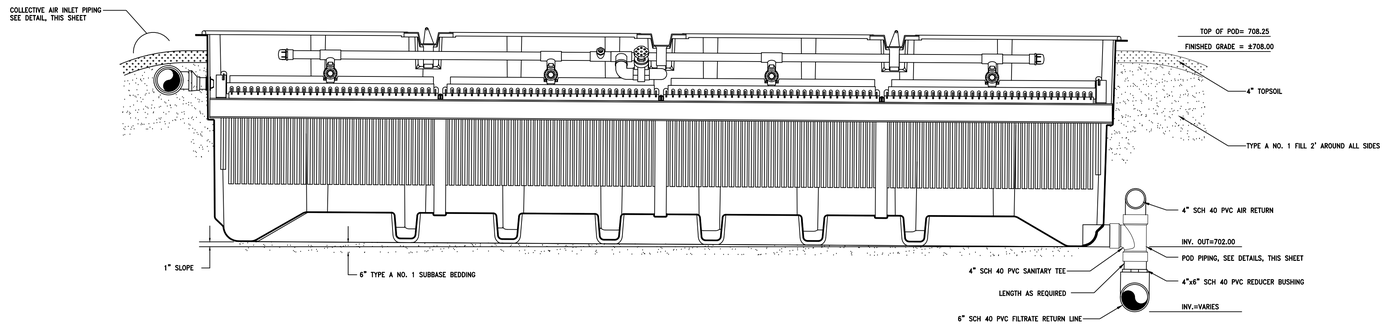
NOTES:

1. EFFLUENT OUTLET FILTERS ARE AVAILABLE AS WELL AS HIGH LEVEL ALARMS.
2. GAS DEFLECTORS ARE AVAILABLE FOR 4" OUTLET PIPES.
3. TANK DESIGNS BASED ON THE 2014 NYSDEC DESIGN STANDARDS.
4. GREASE TRAPS ARE TYPE 2 WITH LONGER OUTLET BAFFLES THAN SEPTIC TANKS.
5. 2,500 AND 3,000 GAL. TANKS ARE TWO-PIECE DESIGN WITH CENTER SEAM.



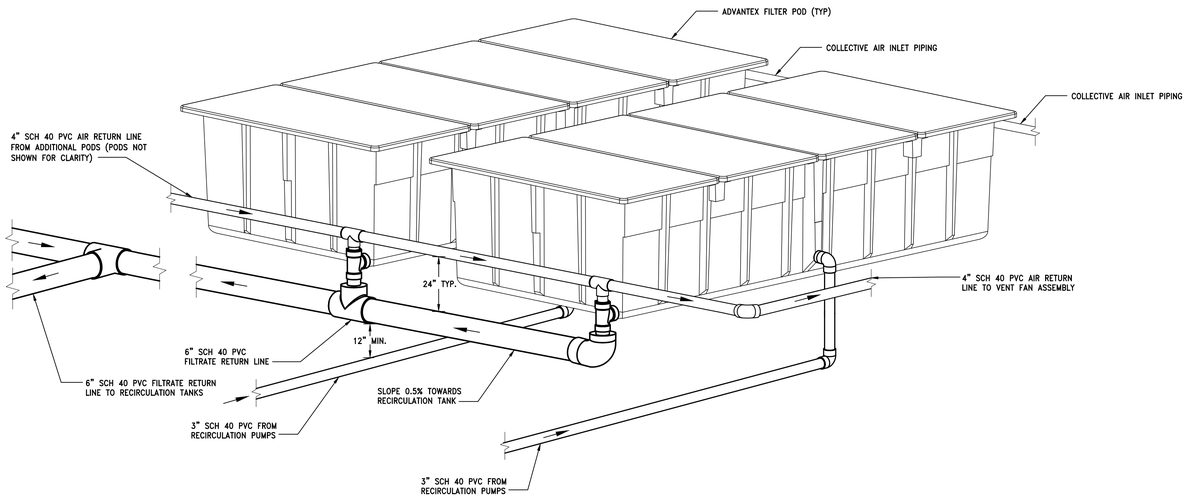
SIDE VIEW

1 / C163 TYPICAL SEPTIC TANK DETAIL – 2,500 GAL TO 3,000 GAL
SCALE: NTS

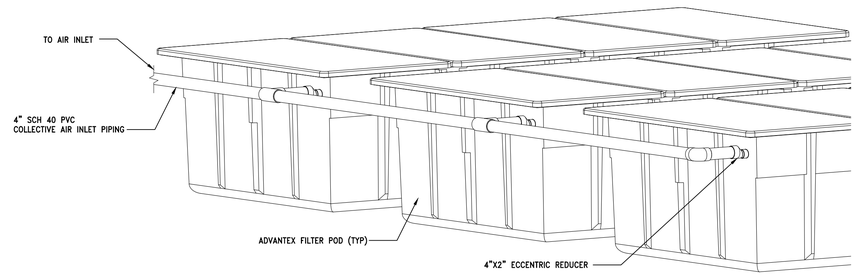


NOTE:
TANK MANUFACTURER SHALL DESIGN AND CONTRACTOR SHALL PROVIDE APPROPRIATE ANTI-FLOATATION MEASURE.

2 / C163 ADVANTEX FILTER DETAIL
SCALE: NTS



3 / C163 TYPICAL POD PIPING DETAIL
SCALE: NTS



4 / C163 COLLECTIVE AIR INLET PIPING
SCALE: NTS

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BROSS · 091908 · LICENSED PROFESSIONAL ENGINEER

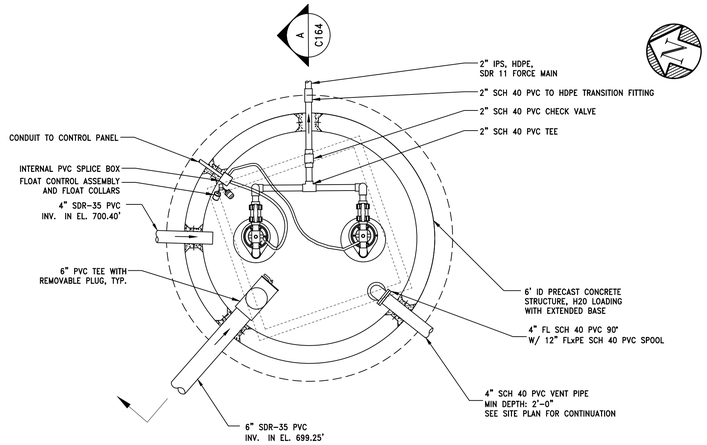
Issue/Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	TEK PLANNING BOARD COMMENTS
D	10/16/25	FOR SEC REVIEW
E	10/29/25	PLANNING BOARD
F	12/10/25	PLANNING BOARD
4	3/4/26	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	LM
Designed By	BJB
Checked By	BJB
Date	7/1/25
Scale	NTS
File Name	SEPTIC DETAILS

Sheet Title
SANITARY DETAILS

Sheet No.
C163

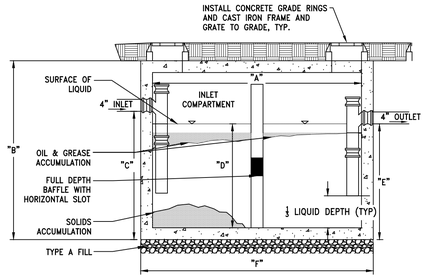
K:\PROJECTS\2024\2024125\SEPTIC DETAILS.dwg, C163 SEPTIC TANKS AND ADV, 4/1/2026 3:48:10 PM



PLAN VIEW

TANK SIZE (GAL.)	DETAIL	A	B	C	D	E	F
~~500~~	~~1~~	~~6' 1 3/4"~~	~~4'-8"~~	~~4'-0"~~	~~3'-0"~~	~~3'-9"~~	~~6'-7"~~
1000	1	7'-6 3/4"	5'-0"	4'-4"	3'-10"	4'-1"	8'-0"

GREASE TRAP DIMENSION CHART



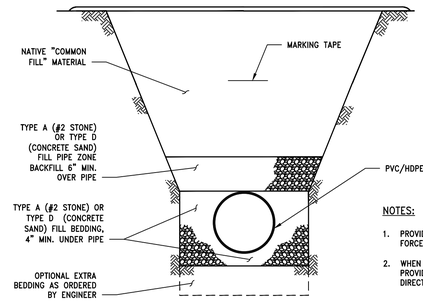
NOTES:

1. GREASE TRAP SIZING: PER NEW YORK STATE DESIGN STANDARDS FOR INTERMEDIATE SIZED WASTEWATER TREATMENT SYSTEMS MARCH 2014. TABLE D-1.
2. THE OUTLET TEE SHALL HAVE A VERTICAL PIPE RISE 6" ABOVE THE FLOW LINE AND PIPE DROP EXTENDING DOWN TO TYPICALLY THE BOTTOM THIRD OF THE TANK, BUT NO CLOSER THAN 12" FROM THE TANK FLOOR.
3. THE OUTLET TEE SHALL BE LOCATED NO FARTHER THAN 6" FROM THE OUTLET END WALL.
4. TEES SHALL BE LOCATED DIRECTLY UNDER ACCESS MANHOLES.
5. GREASE TRAPS SHALL HAVE ACCESS OPENINGS WITH A 24-INCH MINIMUM DIMENSION OVER THE INFLUENT AND EFFLUENT TEE.
6. THE HORIZONTAL SLOT BETWEEN COMPARTMENTS SHALL BE LOCATED IN THE MIDDLE 25 PERCENT OF THE DISTANCE BETWEEN THE TANK FLOOR AND THE WATERLINE, AND BE A MINIMUM AREA OF 50 SQUARE INCHES.
7. THE INLET COMPARTMENT OF TANK SHALL HAVE A CAPACITY OF 65 TO 75 PERCENT OF THE TOTAL CAPACITY.
8. THE FULL DEPTH BAFFLE SHALL EXTEND FROM THE TANK BOTTOM TO SIX INCHES ABOVE THE FLOW LINE AND SHOULD NOT EXTEND TO THE ROOF INTERIOR.
9. BED GREASE TRAP ON 12" TYPE A FILL.
10. GREASE TRAP INLET PIPE SHALL BE SET AT 3" ABOVE LIQUID LEVEL.
11. PROVIDE FLEXIBLE BOOT FOR ALL PIPE PENETRATIONS.

2 C164 GREASE TRAP DETAIL

SCALE: NTS

POLY VINYL CHLORIDE PIPE (SDR-35)									
PIPE DIMENSIONS I			TRENCH DIMENSIONS						
NOMINAL SIZE I.D.	MIN. WALL THICKNESS T	BARREL O.D. (AVG.) Bc	I.D./4	Bc/8	Bc/6	Bc/4	Bc/2	Bd (FT.)	ROCK EXCAVATION BELOW PIPE (d)
4"	0.120"	4.215"	1"	1"	1"	1"	2"	3.0'	7"
6"	0.180"	6.275"	2"	1"	2"	2"	4"	3.0'	7"
8"	0.240"	8.400"	2"	2"	2"	3"	5"	3.0'	7"

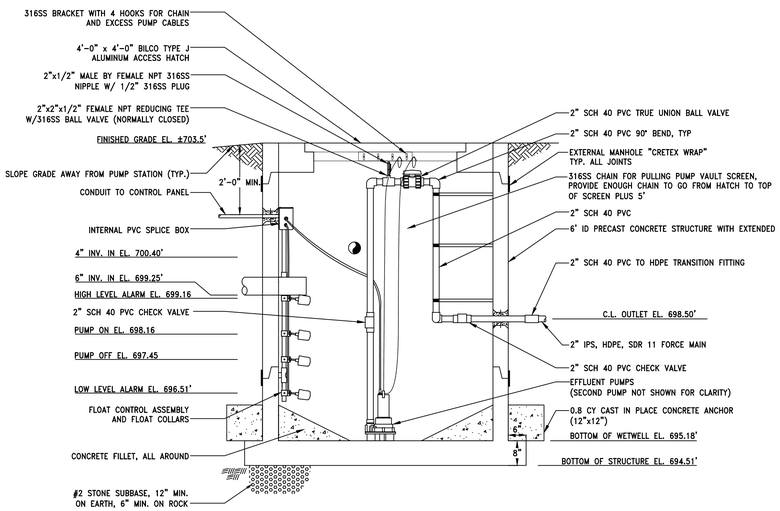


NOTES:

1. PROVIDE A MIN. 5' OF COVER ABOVE HDPE FORCE MAIN, WHEN POSSIBLE.
2. WHEN 5' OF COVER IS NOT POSSIBLE, PROVIDE RIGID FOAM BOARD INSULATION AS DIRECTED BY THE ENGINEER.

4 C164 TYPICAL BEDDING DETAILS FOR PVC/HDPE PIPE

SCALE: NTS



A-A SECTION VIEW

PUMP STATION NOTES:

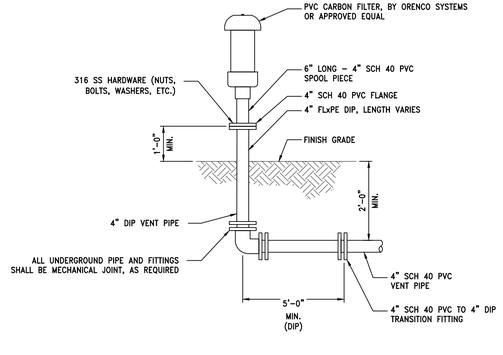
1. CONTRACTOR SHALL COORDINATE WITH OWNER REGARDING ON-SITE ELECTRICAL SERVICES PRIOR TO ORDERING EQUIPMENT.
2. THE PUMPS AND PANEL LISTED BELOW WERE SELECTED WITH THE ASSUMPTION THAT THE ELECTRICAL SERVICE WILL BE 120V/1P.
3. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION.
4. PUMPS SHALL BE 1/2 HP FL51A SUBMERSIBLE EFFLUENT PUMPS BY LIBERTY PUMPS, OR APPROVED EQUAL.
5. DESIGN PUMPING CAPABILITY: 30 GPM @ 24' TDH, TYP. EACH PUMP.
6. PROVIDE LIBERTY DUPLEX CONTROL PANEL, MODEL AE24L=4, OR APPROVED EQUAL.
7. PROVIDE LIBERTY MODEL K001347 FLOAT SWITCHES, OR APPROVED EQUAL.
8. FLOAT RACKS AND VALVES SHALL BE ACCESSIBLE FROM ACCESS HATCH WITHOUT ENTERING TANK.

PUMP STATION STARTUP NOTES:

1. STARTUP: CONTRACTOR SHALL START PUMPS/MOTORS AND MAKE ADJUSTMENTS REQUIRED TO PLACE THE SYSTEM IN PROPER OPERATING CONDITION.
2. CONTRACTOR SHALL CONDUCT A FLOW TEST FOR EACH PUMP TO DETERMINE THAT THE PUMPS ARE PERFORMING ACCORDING TO THEIR RESPECTIVE PUMP CURVE AND SYSTEM CURVE. CONTRACTOR SHALL PROVIDE ALL MATERIALS (INCLUDING WATER) AND LABOR NECESSARY TO PERFORM THE PUMP FLOW TESTING. CONTRACTOR SHALL PROVIDE THE MEANS AND METHODS FOR MEASURING THE AVERAGE DISCHARGE THE FORCE MAIN FOR EACH PUMP UNDER NORMAL OPERATING CONDITIONS.ONE ACCEPTABLE METHOD WOULD BE TO MEASURE THE CHANGE IN THE WATER ELEVATION IN THE PUMP STATION WET WELL AT A SPECIFIC TIMING INTERVAL.

1 C150 EFFLUENT PUMP STATION DETAIL

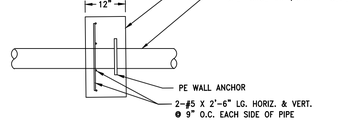
SCALE: 3/8" = 1'-0"



3 C164 SEWER VENT DETAIL

SCALE: NTS

NOTE:
1. WHERE CALLED OUT ON PLANS. PROVIDE BOLLARDS AROUND VENT FOR PROTECTION.



5 C164 HDPE THRUST WALL DETAIL

SCALE: N.T.S

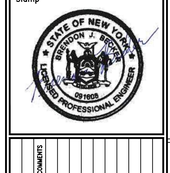
Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON NY 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp



Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
D	10/16/25	FOR SEC REVIEW
E	10/29/25	PLANNING BOARD
F	11/17/25	PLANNING BOARD
5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	LM
Designed By	BJB
Checked By	BJB
Date	7/1/25
Scale	NTS
File Name	SEPTIC DETAILS

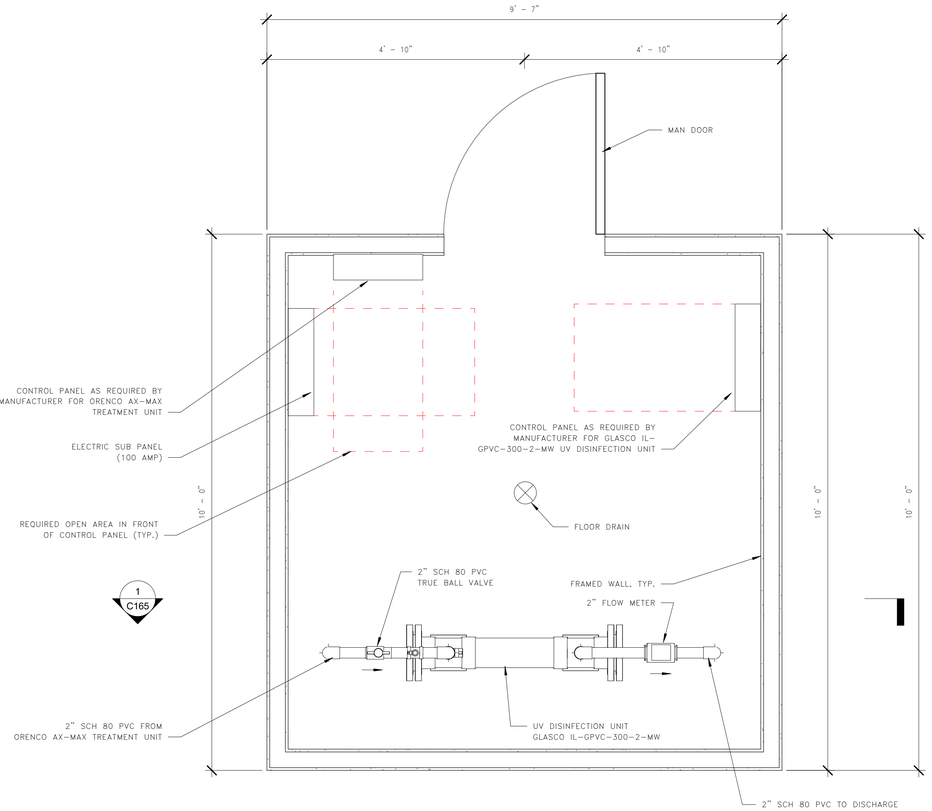
Sheet Title

SANITARY DETAILS

Sheet No.

C164

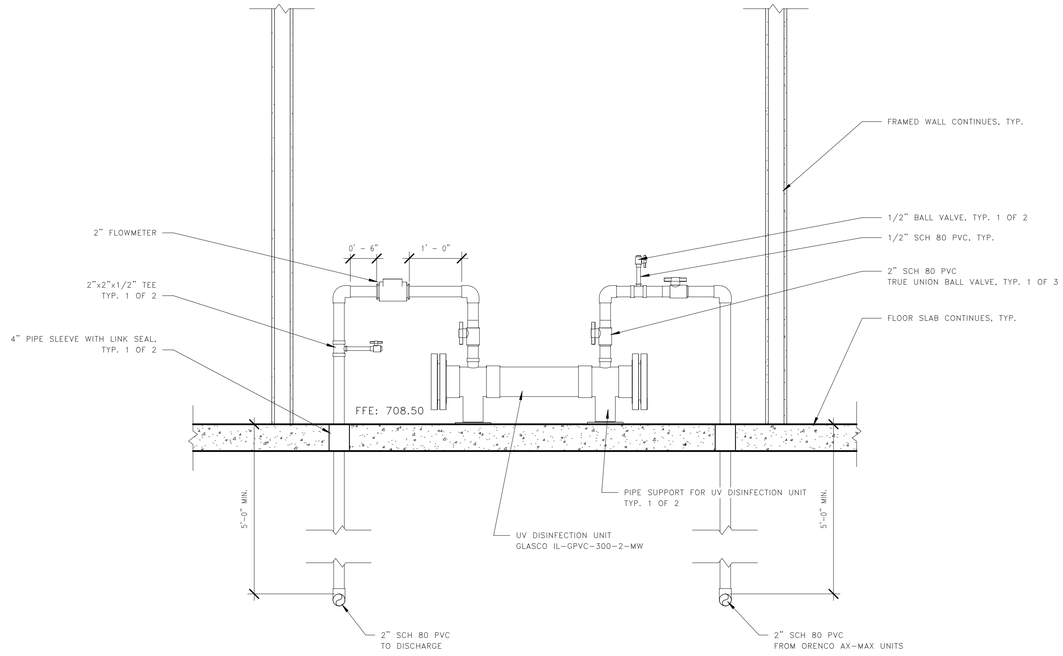
G:\PROJECTS\2024\2024125\SEPTIC\DETAILS.dwg, C164 PUMP STATION AND DET, 4/1/2026 3:48:13 PM



NOTE:

1. UV ROOM LOCATION AND ORIENTATION IN BUILDING TO BE DETERMINED

FLOOR PLAN
3/4" = 1'-0"



UV SYSTEM SECTION
3/4" = 1'-0"

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
TILDEN PROJECT, LLC.
538 US RTE 20 NEW LEBANON 12125
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRANDON J. BROOKS · LICENSED PROFESSIONAL ENGINEER · 091603

Issue	Rev.	Date	Remarks
B		7/1/25	PLANNING BOARD
C		8/4/2025	PER PLANNING BOARD COMMENTS
D		10/16/25	FOR TEC REVIEW
E		10/29/25	PLANNING BOARD
F		12-2-25	PLANNING BOARD
	5	4/1/26	PLANNING BOARD

Project Number	2024125
Drawn By	AS
Designed By	BJB
Checked By	BJB
Date	12-5-19
Scale	3/4" = 1'-0"
File Name	UV TREATMENT...

Sheet Title

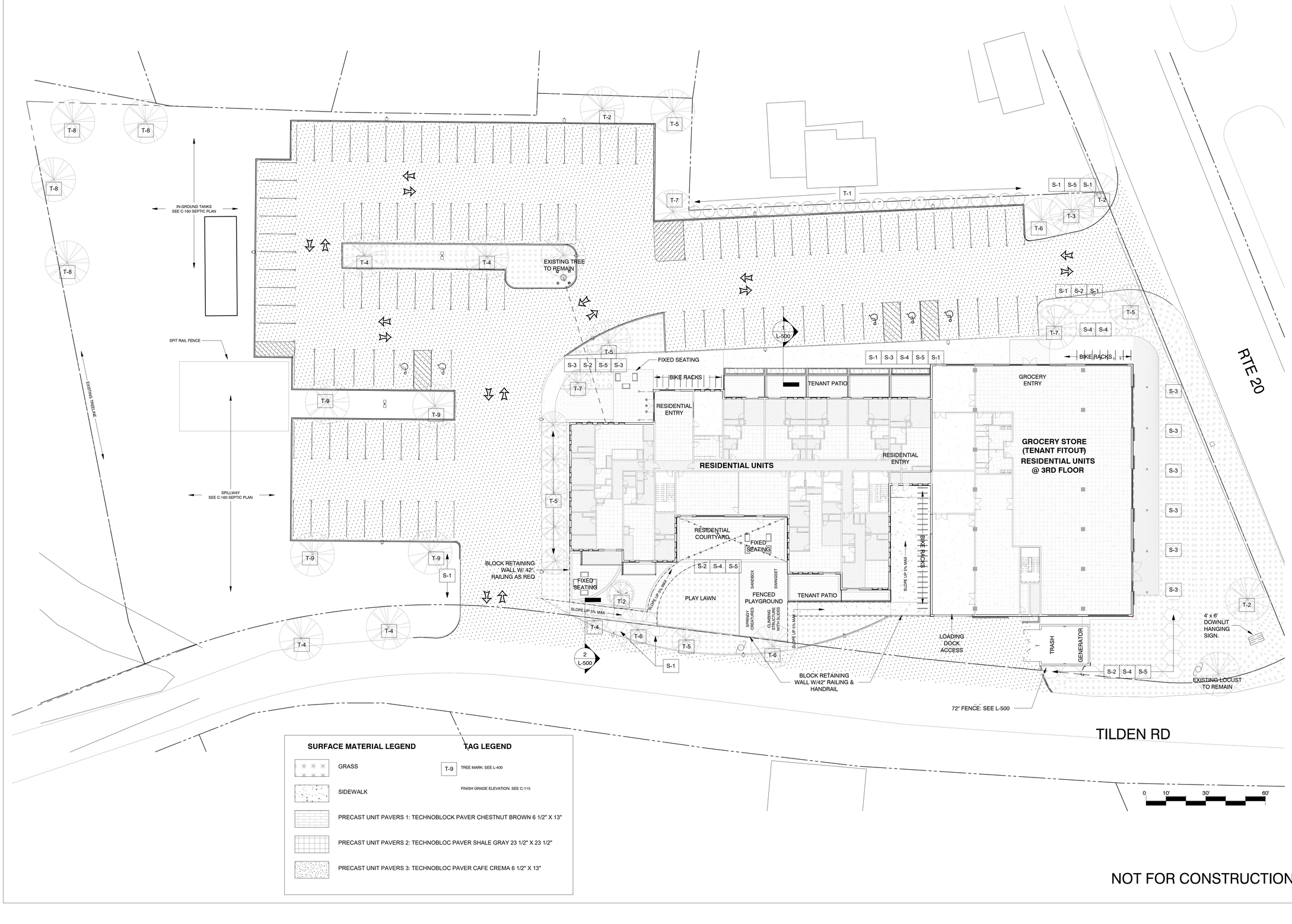
UV SYSTEM PLAN AND SECTION

Sheet No.

C165

4/1/2026 12:06:21 PM

K:\LAP\SUBDIV\2024125\mxd\UV Treatment.mxd



SURFACE MATERIAL LEGEND

- GRASS
- SIDEWALK
- PRECAST UNIT PAVERS 1: TECHNOBLOCK PAVER CHESTNUT BROWN 6 1/2" X 13"
- PRECAST UNIT PAVERS 2: TECHNOBLOC PAVER SHALE GRAY 23 1/2" X 23 1/2"
- PRECAST UNIT PAVERS 3: TECHNOBLOC PAVER CAFE CREMA 6 1/2" X 13"

TAG LEGEND

- T-9 — TREE MARK: SEE L-400
- FINISH GRADE ELEVATION: SEE C-115

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

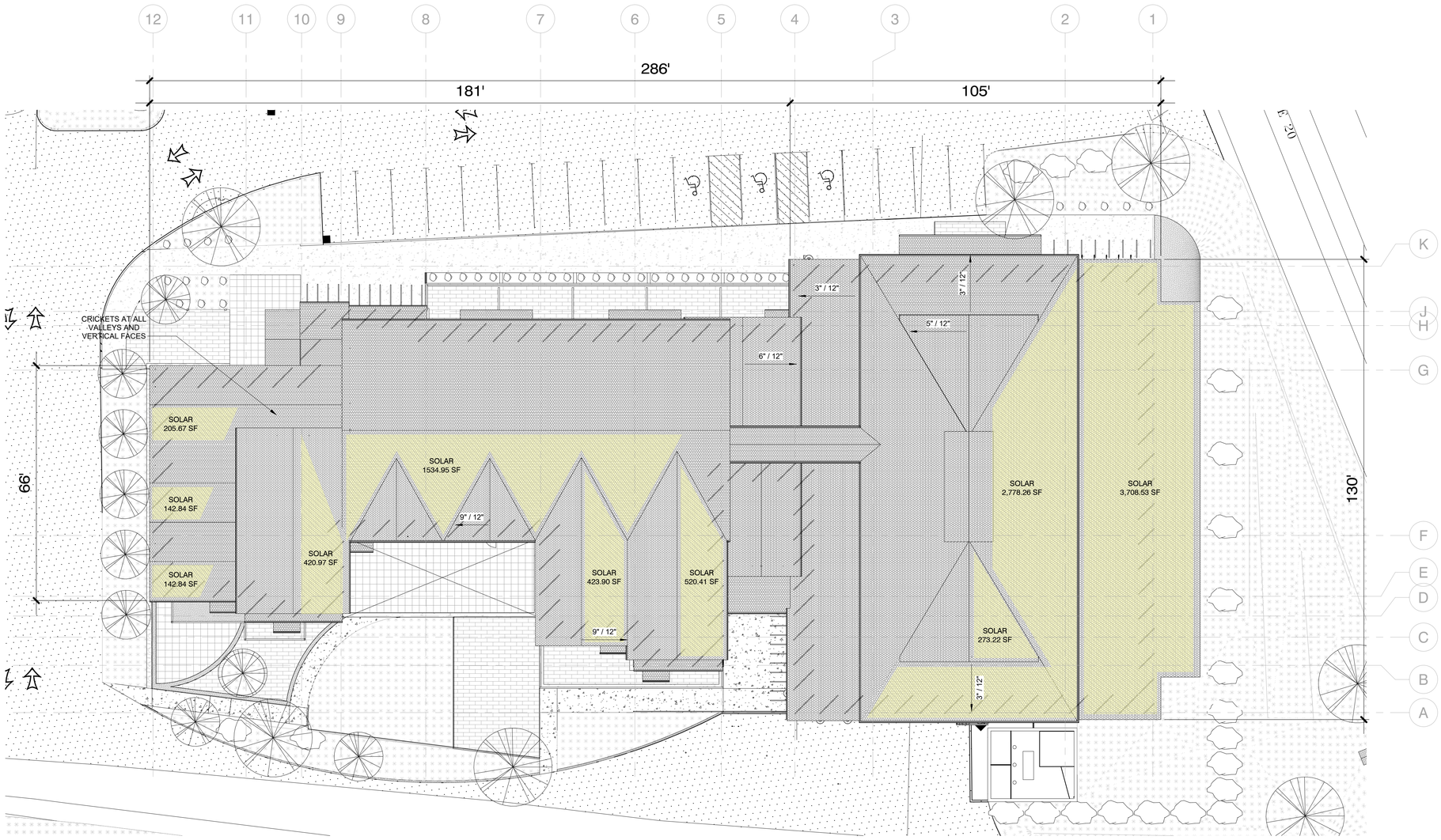
LANDSCAPE PLAN

Date: 04/01/2026

Seal/Signature:

Drawing Number:

L-100



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

0 8' 16' 32'
0 2'
1/16" = 1'-0"

TOTAL ROOF AREA: 37,500 SF

AREA AVAILABLE FOR SOLAR PANEL: 10,295 SF

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

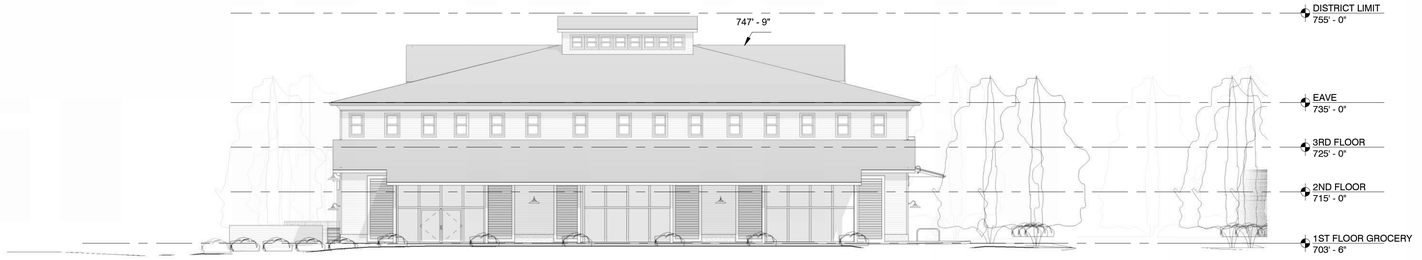
ROOF PLAN

Date: 04/01/2026

Seal/Signature:

Drawing Number:

A-110



2 EXTERIOR SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

1 EXTERIOR NORTH ELEVATION
SCALE: 1/16" = 1'-0"

3 EXTERIOR EAST ELEVATION
SCALE: 1/16" = 1'-0"

4 EXTERIOR WEST ELEVATION
SCALE: 1/16" = 1'-0"

0 8' 16' 32'
0 2'
1/16" = 1'-0"

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

EXTERIOR ELEVATIONS

Date: 04/01/2026

Seal/Signature:

REGISTERED ARCHITECT ARI ROSENBERG STATE OF NEW YORK

Drawing Number:

A-200

1 EXTERIOR EAST ELEVATION (RESIDENTIAL)
SCALE: 1/8" = 1'-0"

2 EXTERIOR EAST ELEVATION (MIXED USE)
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
0 2"
1/8" = 1'-0"

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

EXTERIOR ELEVATIONS

Date: 04/01/2026

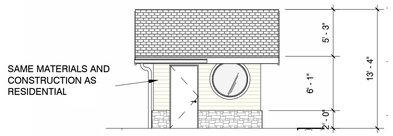
Seal/Signature:

REGISTERED ARCHITECT ARI D. SUBSTRATE STATE OF NEW YORK

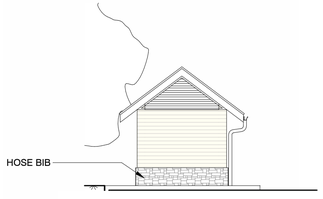
Drawing Number:

A-201

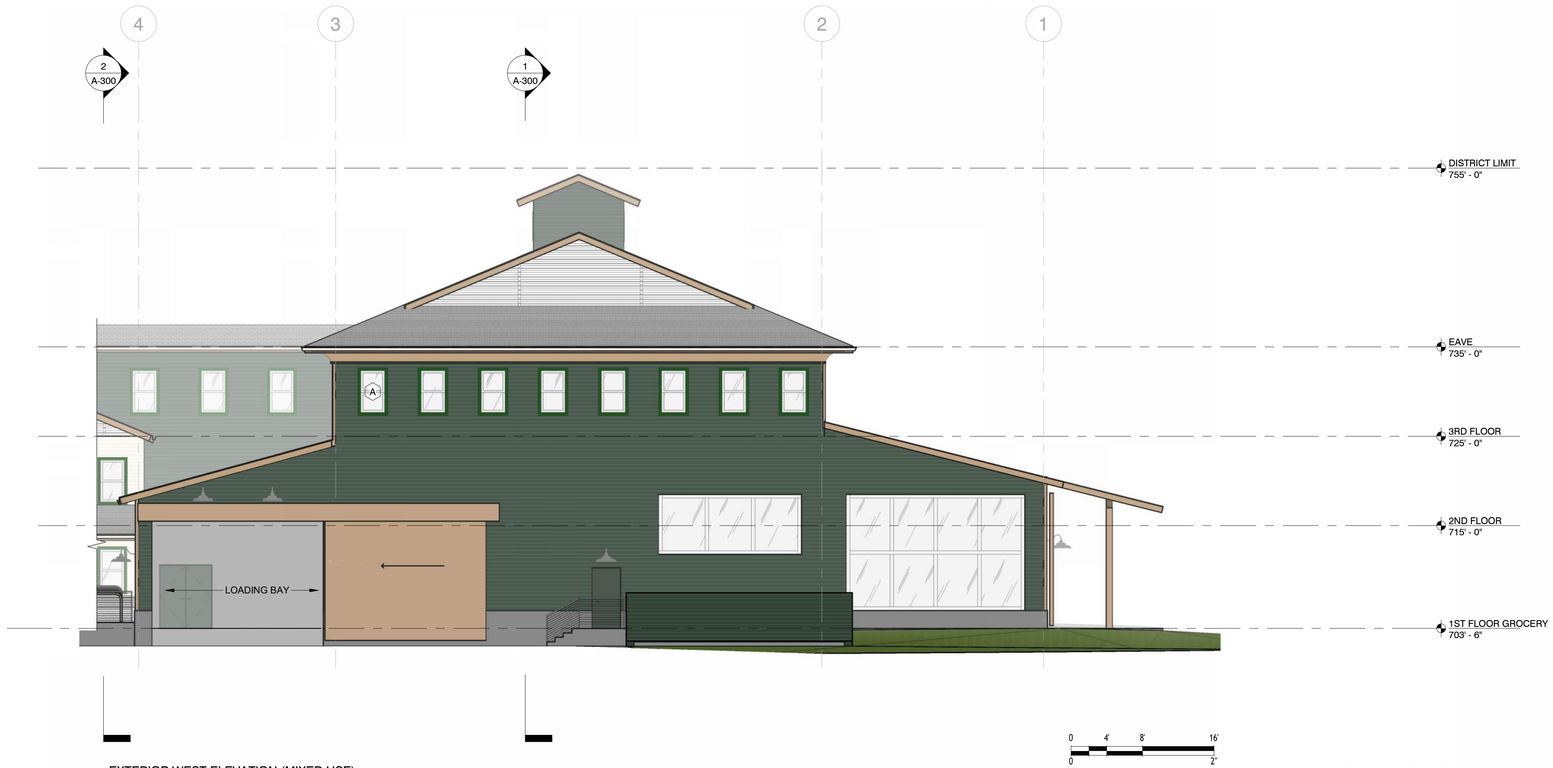
1 EXTERIOR WEST ELEVATION (RESIDENTIAL)
SCALE: 1/8" = 1'-0"



3 ELEVATION SHED SOUTH
SCALE: 1/8" = 1'-0"



4 ELEVATION SHED WEST (EAST & NORTH SIM)
SCALE: 1/8" = 1'-0"



2 EXTERIOR WEST ELEVATION (MIXED USE)
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
0 2"
1/8" = 1'-0"

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

EXTERIOR ELEVATIONS

Date: 04/01/2026

Seal/Signature:

REGISTERED ARCHITECT ARI D. SUBSTRATE STATE OF NEW YORK

Drawing Number:

A-202

1 SOUTH ELEVATION (RTE 20)
SCALE: 1/8" = 1'-0"

2 NORTH ELEVATION (RESIDENTIAL)
SCALE: 1/8" = 1'-0"

0 4' 8' 16'
0 2"
1/8" = 1'-0"

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

EXTERIOR ELEVATIONS

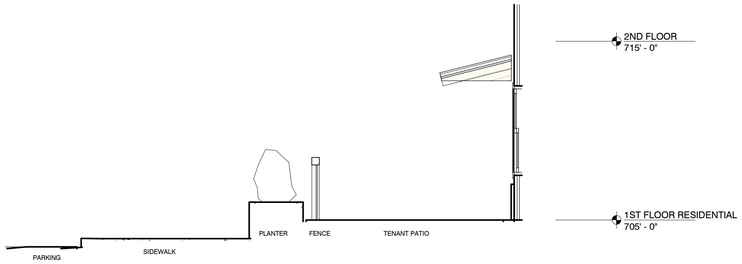
Date: 04/01/2026

Seal/Signature:

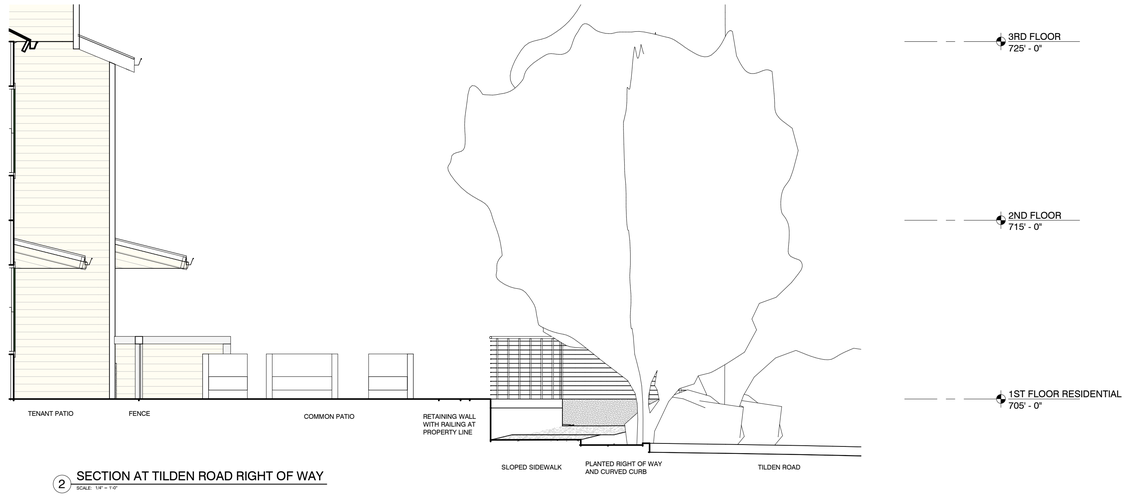
REGISTERED ARCHITECT ARI D. SUBSTRATE STATE OF NEW YORK

Drawing Number:

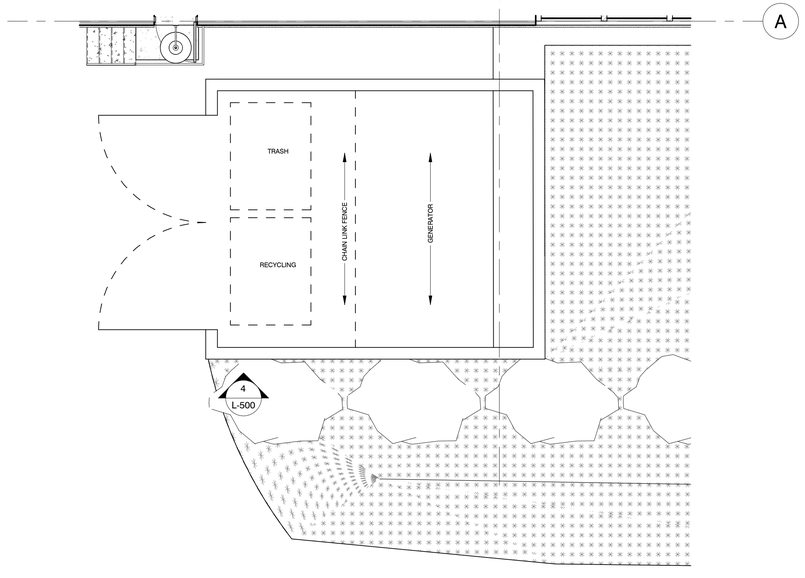
A-203



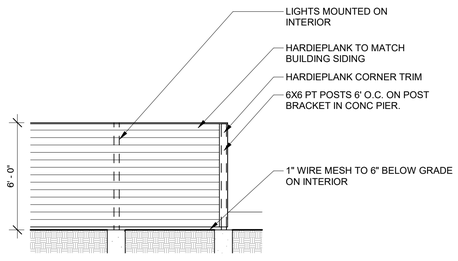
1 SECTION AT EAST SIDEWALK
SCALE: 1/4" = 1'-0"



2 SECTION AT TILDEN ROAD RIGHT OF WAY
SCALE: 1/4" = 1'-0"

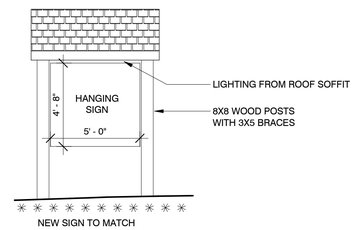


3 TRASH ENCLOSURE
SCALE: 3/16" = 1'-0"



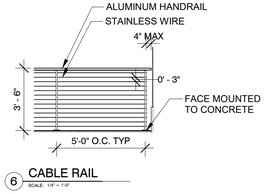
4 TRASH ENCLOSURE
SCALE: 1/4" = 1'-0"

EXISTING BUSINESS SIGNAGE

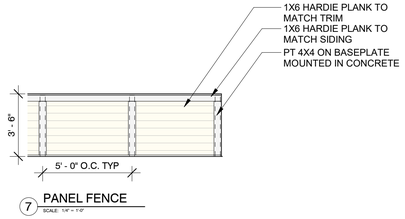


NEW SIGN TO MATCH EXISTING BUSINESS SIGNAGE

5 SIGN ELEVATION
SCALE: 1/4" = 1'-0"



6 CABLE RAIL
SCALE: 1/4" = 1'-0"



7 PANEL FENCE
SCALE: 1/4" = 1'-0"

0 2' 4' 8'
0 2"
1/4" = 1'-0"

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

LANDSCAPE DETAILS

Date: 04/01/2026

Seal/Signature:

Drawing Number:

L-500

TREES

T-1 ARBOR VITAE

T-2 EASTERN REDBUD

T-3 BUTTERNUT

T-4 RIVER BIRCH

T-5 SUGAR MAPLE

T-6 WHITE OAK

T-7 YELLOW BIRCH

T-8 WHITE PINE

T-9 PUSSY WILLOW

SHRUBS

S-1 NINEBARK

S-2 WITCH HAZEL

S-3 INKBERRY

S-4 CHOKEBERRY

S-5 WINTERBERRY

PLANTING SCHEDULE

TYPE	PLANT TAG	SPECIES	PLANTING CALIPER	PLANTING HEIGHT	SPACING	MATURE HEIGHT
TREE	T-1	ARBOR VITAE	3"	10-12'	5'	
TREE	T-2	EASTERN REDBUD	3"	10-12'	25'	25'-35'
TREE	T-3	BUTTERNUT	3"	10'-12'	25'	50--60'
TREE	T-4	RIVER BIRCH	3"	10-12'	20'	40'-60'
TREE	T-5	SUGAR MAPLE	3"	10'-12'	30'	60'-80'
TREE	T-6	WHITE OAK	3"	10-12'	30'	60'-80'
TREE	T-7	YELLOW BIRCH	3"	10-12'	25'	50' - 75'
TREE	T-8	WHITE PINE	3"	10-12'	20'	50-80'
TREE	T-9	PUSSY WILLOW	2"	10-12'	15'	12'
SHRUB	S-1	NINEBARK		4'		
SHRUB	S-2	WITCH HAZEL		4'		
SHRUB	S-3	INKBERRY		4'		
SHRUB	S-4	CHOKEBERRY		4'		
SHRUB	S-5	WINTERBERRY		4'		

NOT FOR CONSTRUCTION

SUBSTRATE

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

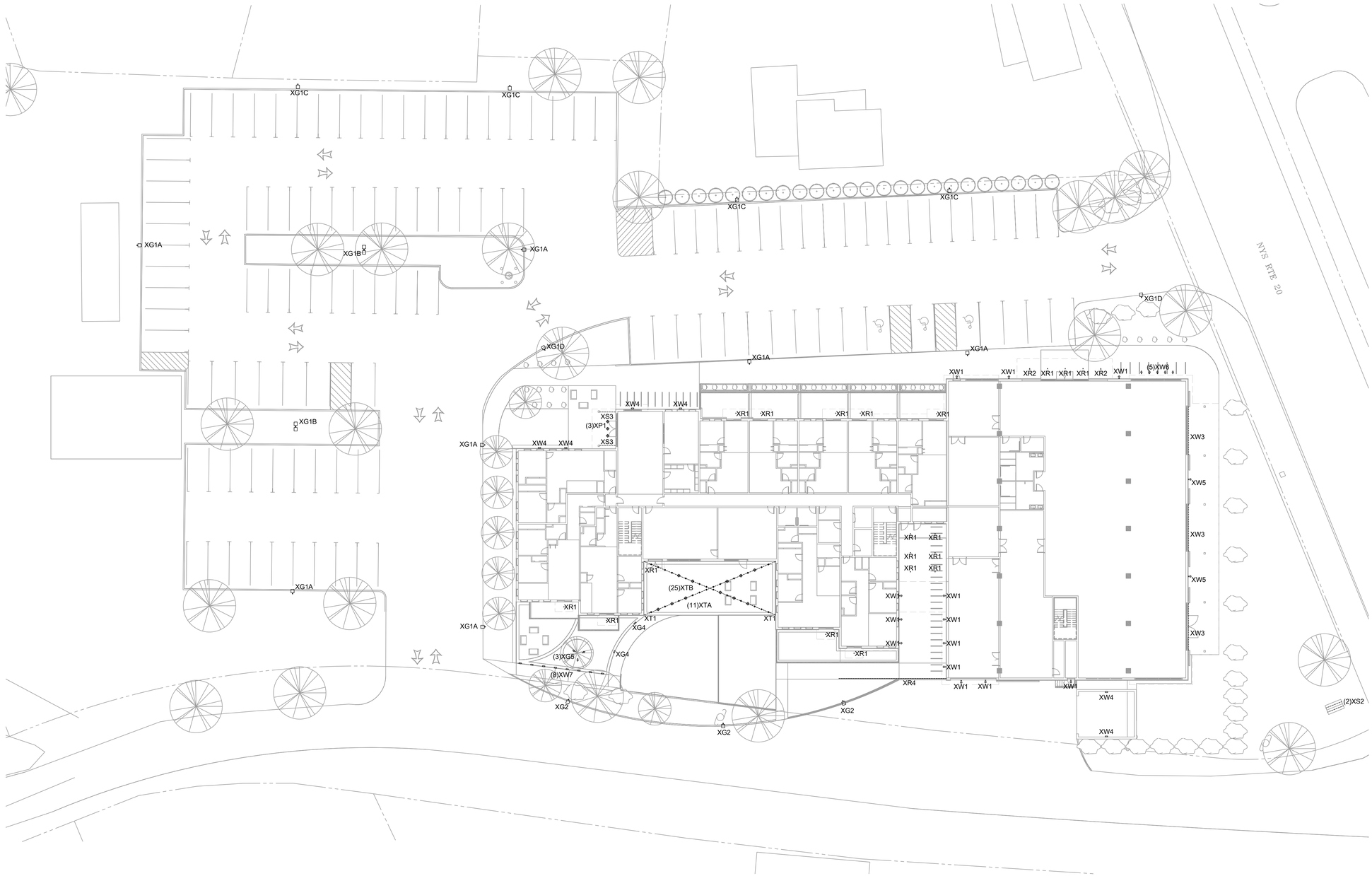
PLANTING SCHEDULE

Date: 04/01/2026

Seal/Signature:

Drawing Number:

L-400



1 SITE LIGHTING LAYOUT
SCALE: 3/64" = 1'-0"

NOT FOR CONSTRUCTION

PROGRESS SET

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

SITE LIGHTING LAYOUT

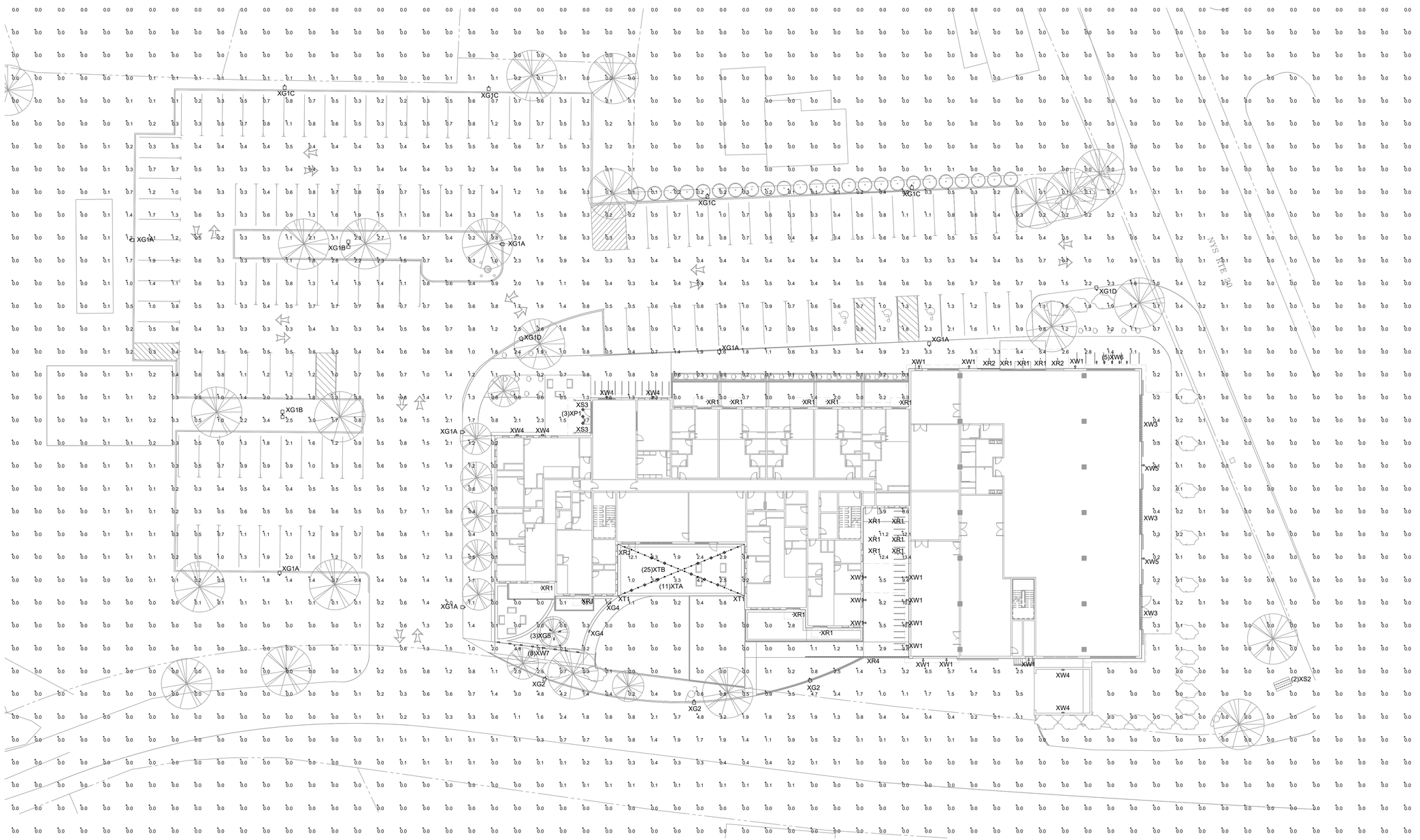
Date: 04/01/26

Scale: As indicated

Seal/Signature:

Drawing #: LT-100

Sheet #: 01 of 04



1 SITE LIGHTING LIGHT LEVELS
SCALE: 3/64" = 1'-0"

Calculation Summary					
Label	Units	Avg	Max	Min	Avg/Min
Parking and Drive Aisles	Fc	0.81	3.1	0.2	4.05

NOT FOR CONSTRUCTION

PROGRESS SET

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

SITE LIGHTING
LIGHT LEVELS

Date: 04/01/26 | **Scale:** As indicated

Seal/Signature:

Drawing #: LT-101

Sheet #: 02 of 04

Lighting Fixture Schedule

TILDEN COMMONS, NEW LEBANON, NY
Progress CD / April 1st, 2026

General Notes
1. For bidding purposes, lighting fixture schedule shall be fully incorporated into the project contract documentation by the architect and/or electrical engineer.
2. Contractor shall bid on and supply all required components for a complete and operational system.
3. The manufacturers and specification listed in this schedule are for basis of design. Alternates, equals, or equivalents will not be accepted unless pre-approved by the lighting designer during the design phase.
4. Contractor is responsible for confirming fixture quantities and overall lengths of linear fixtures. Continuous light fixtures shall have no light gaps or socket shadows between wiring components.
5. Contractor is responsible for verifying ceiling materials, thickness, and plenum depth prior to ordering fixtures.
6. If mud-in/plaster flange/trims are specified, contractor shall coordinate with ceiling installer prior to rough in. Contractor shall provide a seamless, unnoticeable integration with ceiling.
7. Submittals and shop drawings shall be submitted to the lighting designer for approval and signoff prior to purchasing or ordering fixtures.
8. Contractor to coordinate control system and wall box dimmers with specified drivers and dimming protocol.
9. Contractor to verify code compliance with all local and state codes.
10. Contractor to refer to installation guides and coordinate directly with manufacturer for all installation issues.
11. Unless noted otherwise, EM tagged fixtures on lighting plans shall have emergency power provided by remote central inverter (or generator). Inverter shall be specified by a licensed professional.
12. Contractor to aim adjustable light fixtures on site per direction from lighting designer or design team.

Fixture Type Key
G#: Ground mounted
H#: Handrail mounted
P#: Pendant mounted
R#: Recessed mounted
S#: Surface mounted
T#: Track head
T: Track
W#: Wall mounted
X: Denotes the fixture is located outside

	Type	Date	Location	Description	Manufacturer	Catalog Number	Source Type CRI CCT	Delivered Lumens (lm or lm/ft)	Wattage (W or W/ft)	Control Intent	Driver Location	Voltage	Finish	Dimensions	Notes
	XG1A	9/7/2025	Parking Lot	18' tall single head pole mounted fixture with type 3 wide distribution	Selux - Avanza 450	Head: #AV4-R3W-S1-L700-30-22-FINISH PER ARCHITECT-UNV-DM Pole: #AT535-20-FINISH PER ARCHITECT-BC3	Integral LED 80+ CRI 3000K	3866lms	36W	0-10V Dimming	Integral	UNV	TBD	Head: 21"x17" Pole: 20'-0"	
	XG1B	9/7/2025	Parking Lot Medians	18' tall double head pole mounted fixture with type 3 wide distribution, heads to be mounted 180 deg from each other	Selux - Avanza 450	Heads: #AV4-R3W-S2-L700-30-22-FINISH PER ARCHITECT-UNV-DM Pole: #AT535-20-FINISH PER ARCHITECT-BC3	Integral LED 80+ CRI 3000K	(2)3866lms	(2)36W	0-10V Dimming	Integral	UNV	TBD	Head: 21"x17" Pole: 20'-0"	
	XG1C	1/30/2026	Parking Lot -Adjacent to 536 property line	18' tall single head pole mounted fixture with type 3 wide distribution and house side shield to reduce back light	Selux - Avanza 450	Head: AV4-R3W-S1-L700-30-22-FINISH PER ARCHITECT-UNV-DM-HS-CN26xxxx Pole: #AT535-20-FINISH PER ARCHITECT-BC3	Integral LED 80+ CRI 3000K	3866lms	36W	0-10V Dimming	Integral	UNV	TBD	Head: 21"x17" Pole: 20'-0"	HS-CN26xxxx: AV4 with internal house side shield
	XG1D	4/1/2026	Parking Lot -Adjacent to both main entrances	18' tall single head pole mounted fixture with type 5 distribution	Selux - Avanza 450	Head: #AV4-R5-S1-L700-30-22-FINISH PER ARCHITECT-UNV-DM Pole: #AT535-20-FINISH PER ARCHITECT-BC3	Integral LED 80+ CRI 3000K	3866lms	36W	0-10V Dimming	Integral	UNV	TBD	Head: 21"x17" Pole: 20'-0"	
	XG2	9/7/2025	Tilden Street	12' tall single head pedestrian scale pole mounted fixture with type 3 wide distribution	Selux - Avanza 450	Head: AV4-R3W-S1-L700-30-14-FINISH PER ARCHITECT-UNV-DM Pole: #AT535-20-FINISH PER ARCHITECT-BC3	Integral LED 80+ CRI 3000K	3866lms	36W	0-10V Dimming	Integral	UNV	TBD	Head: 21"x17" Pole: 12'-0"	
	XG3	4/1/2026		DELETED											
	XG4	4/1/2026	Residential Courtyard & Garden Area Pathway	30" tall bollard with wood accent	DesignPlan - PLIN Wood 2.2	PH2210-00-00-5-0A-C + REMOTE DIMMING DRIVER	Integral LED 80 CRI 3000K	492lms	12W	0-10V Dimming to 15%	Remote	24	TBD	2.75"x4.75" x30" tall	Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.
	XG5	4/1/2026	Residential Courtyard & Garden Area Pathway	Stake mounted tree uplight with 45deg visor, soft focus lens, honeycomb baffle, 25 foot wire leads	BK - Denali	Head: DE-FL-LID-LCB-AL-TKM-CA-VOLTAGE-x99-45-010-12-11-WL25-FINISH PER ARCHITECT Stake: P12-S18-S1-AL-FINISH PER ARCHITECT	Integral LED 80 CRI 3000K	1237lms	13W	0-10V Dimming	Integral	120 or 277	TBD	3" dia x10.5" tall	Final location to be coordinate with tree root ball diameter.
	XH1	4/1/2026	Bike Ramp	Asymmetric handrail pod light mounted 2' o.c., handrail by others.	Klik - Litpod40	LP40-30K-A-TBD-PC-STD-350-FINISH PER ARCHITECT-0-10V + REMOTE DIMMING DRIVER	Integral LED 80 CRI 3000K	100lms	1.5W		Remote	24V	TBD	Fits into a 1.5"-1.75" handrail Max wall thickness is 0.2"	Handrail pricing will be part of architectural scope Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.
	XP1	4/1/2026	Residential Entry	12" round decorative shade with frosted sphere gem pendant mounted from structure with custom stem length	Tegan - Ambria Shade Direct Mount	EX5-K-P(CUSTOM STEM LENGTH)-4MP-RGS-FSG-BLK-AMB-12-BLKCP + REMOTE DIMMING DRIVER	Integral LED 90 CRI 2700K	200lms	5W	0-10V Dimming	Remote	24V	Exterior: Black Interior: Copper	12"dia 13.25" tall	See architects elevations for fixture mounting locations and heights
	XR1	1/30/2026	Various Soffits	3.5" dia round trimmed downlight with diffusing lens	Senso by Luminii - Artemis 2 Wet Downlight	ART2W-D-TR-10-30K-S45-DL-FINISH PER ARCHITECT-FINISH PER ARCHITECT-HOUSING-ART2W-D-SAME-SAME-SAME-010S	Integral LED 95 CRI 3000K	1000lms	9.1W	0-10V Dimming to 1%	Integral	120/277	TBD	Housing size TBD	
	XR2	1/30/2026	Grocery Store Main Entrance Soffit	3.5" dia round trimmed wall wash with diffusing lens	Senso by Luminii - Artemis 2 Wet WW	ART2W-W-TR-10-30K-F15-DL-FINISH PER ARCHITECT-FINISH PER ARCHITECT-HOUSING-ART2W-W-SAME-SAME-SAME-010S	Integral LED 95 CRI 3000K	1550lms	15.3W	0-10V Dimming to 1%	Integral	120/277	TBD	Housing size TBD	
	XR3	4/1/2026		DELETED											
	XS1	4/1/2026		DELETED											
	XS2	4/1/2026	Corner of Rt 20 & Tilden St	Continuous linear fixture mounted in street sign aimed down to highlight face of sign	Luminii - Bosca Wet - Static White	BOSW-CONTINUOUS (SEE DRAWINGS) - 72HO-30K-F-MOUNTING-FINISH PER ARCHITECT-FEEDS TBD + REMOTE DIMMING DRIVER	Integral LED 96 CRI 3000K	181lms/ft	4.8W/ft	0-10V Dimming to 1%	Remote	24V	TBD	0.6"x0.6"	See drawings for lengths See architects elevations for fixture mounting locations and heights Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.
	XS3	4/1/2026	Residential Entry	Continuous linear fixture mounted on structural beams aimed up to highlight underside of soffit	Luminii - Bosca Wet - Static White	BOSW-CONTINUOUS (SEE DRAWINGS) - 72HO-30K-F-MOUNTING-FINISH PER ARCHITECT-FEEDS TBD + REMOTE DIMMING DRIVER	Integral LED 96 CRI 3000K	181lms/ft	4.8W/ft	0-10V Dimming to 1%	Remote	24V	TBD	0.6"x0.6"	See drawings for lengths See architects elevations for fixture mounting locations and heights Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.

NOT FOR CONSTRUCTION

PROGRESS SET

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

LIGHTING FIXTURE SCHEDULE

Date: 04/01/26

Scale: As indicated

Seal/Signature:

Drawing #: LT-200

Sheet #: 03 of 04

Lighting Fixture Schedule

TILDEN COMMONS, NEW LEBANON, NY
Progress CD / April 1st, 2026

General Notes

1. For bidding purposes, lighting fixture schedule shall be fully incorporated into the project contract documentation by the architect and/or electrical engineer.
2. Contractor shall bid on and supply all required components for a complete and operational system.
3. The manufacturers and specification listed in this schedule are for basis of design. Alternates, equals, or equivalents will not be accepted unless pre-approved by the lighting designer during the design phase.
4. Contractor is responsible for confirming fixture quantities and overall lengths of linear fixtures. Continuous light fixtures shall have no light gaps or socket shadows between wiring components.
5. Contractor is responsible for verifying ceiling materials, thickness, and plenum depth prior to ordering fixtures.
6. If mud-in/plaster flange/trims are specified, contractor shall coordinate with ceiling installer prior to rough in. Contractor shall provide a seamless, unnoticeable integration with ceiling.
7. Submittals and shop drawings shall be submitted to the lighting designer for approval and signoff prior to purchasing or ordering fixtures.
8. Contractor to coordinate control system and wall box dimmers with specified drivers and dimming protocol.
9. Contractor to verify code compliance with all local and state codes.
10. Contractor to refer to installation guides and coordinate directly with manufacturer for all installation issues.
11. Unless noted otherwise, EM tagged fixtures on lighting plans shall have emergency power provided by remote central inverter (or generator). Inverter shall be specified by a licensed professional.
12. Contractor to aim adjustable light fixtures on site per direction from lighting designer or design team.

Fixture Type Key

G#: Ground mounted
H#: Handrail mounted
P#: Pendant mounted
R#: Recessed mounted
S#: Surface mounted
T#: Track head
T: Track
W#: Wall mounted
X: Denotes the fixture is located outside

	Type	Date	Location	Description	Manufacturer	Catalog Number	Source Type CRI CCT	Delivered Lumens (lm or lm/ft)	Wattage (W or W/ft)	Control Intent	Driver Location	Voltage	Finish	Dimensions	Notes
	XT1	4/1/2026	Residential Courtyard Patio	~60 foot long catenary system mounted between building facades	Tegan - Eton Powerspan Cable System	Cable: EX-C-BLK Mounting: EX-TSEB-PCSC-BLK Power Feed: TBD + REMOTE DIMMING DRIVER	N/A	N/A	N/A	0-10V Dimming	Remote	24V	Black	N/A	Structural engineer to review tension load and anchoring details, assume sag is 6" per 20' of cable run
	XTA	4/1/2026	Residential Courtyard Patio	12" round decorative shade with frosted sphere gem mounted directly to catenary cable system	Tegan - Ambria Shade Direct Mount	EX5-K-C-FSG-BLK-AMB-12-BLKCP	Integral LED 90 CRI 2700K	200lms	5W	0-10V Dimming	Remote	24V	Exterior: Black Interior: Copper	12"dia 13.25" tall	
	XTB	4/1/2026	Residential Courtyard Patio	6" round decorative shade with frosted sphere gem mounted directly to catenary cable system	Tegan - Ambria Shade Direct Mount	EX5-K-C-FSG-BLK-AMB-6-BLKCP	Integral LED 90 CRI 2700K	200lms	5W	0-10V Dimming	Remote	24V	Exterior: Black Interior: Copper	6"dia 7.25" tall	
	XW1A	4/1/2026	Grocery Store Façade - Various Locations	24" dia barn style shade with 22.75" deep by 17.75" tall gooseneck arm and domed lens	Barnlight - The Original LED Wall Sconce	BLE-G-WHS24-FINISH PER ARCHITECT-G22-FINISH PER ARCHITECT-LED16-3000K-DL	Integral LED 90 CRI 3000K	1250lms	16W	0-10V Dimming to 5%	Integral	120	TBD	33.5"x28" x17" tall	See architects elevations for fixture mounting locations and heights
	XW1B	4/1/2026	Loading Dock Entrance	28" dia barn style shade with 22.75" deep by 8" tall gooseneck arm and domed lens	Barnlight - The Original LED Wall Sconce	BLE-G-WHS28-FINISH PER ARCHITECT-G22-FINISH PER ARCHITECT-LED27-3000K-DL	Integral LED 90 CRI 3000K	2000lms	27W	0-10V Dimming to 5%	Integral	120	TBD	35.5"x28" x17" tall	See architects elevations for fixture mounting locations and heights
	XW2	4/1/2026		DELETED											
	XW3	1/30/2026	Grocery Store Patio Area	Continuous linear fixture mounted above window frames aimed up to highlight underside of soffit	Luminii - Bosca Wet - Static White	BOSW-CONTINUOUS (SEE DRAWINGS) - 72HO-30K-F-MOUNTING-FINISH PER ARCHITECT-FEEDS TBD + REMOTE DIMMING DRIVER	Integral LED 96 CRI 3000K	181lms/ft	4.8W/ft	0-10V Dimming to 1%	Remote	24V	TBD	0.6"x0.6"	See drawings for lengths See architects elevations for fixture mounting locations and heights Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.
	XW4	1/30/2026	Residential Bld Façade	Wall mounted downlight with forward throw optics	DesignPlan - Geko 5.1	GK5110-5-A-FINISH PER ARCHITECT	Integral LED 80 CRI 3000K	521lms	10W	0-10V Dimming	Integral	120-277	TBD	6.7"x4" x4" tall	See architects elevations for fixture mounting locations and heights
	XW5	4/1/2026	Grocery Store Patio Area	15.7" dia decorative ADA wall sconce	Louis Poulsen - Flindt Wall Lamp	57479 FINISH PER ARCHITECT	Integral LED 80 CRI 3000K	632lms	20W	0-10V Dimming	Integral	120-277	TBD	15.7"dia 3.9" deep	See architects elevations for fixture mounting locations and heights
	XW6	4/1/2026	Grocery Store Main Entrance Sign	Wall mounted sign light with 45deg visor, gooseneck arm, wide flood optics, soft focus lens, honeycomb baffle, 25 foot wire leads	BK - Denali	DE-WM-LID-AL-BC14-CA-SA-F10-VOLTAGE-ST24-x99-WFL-010-12-11-WL25-FINISH PER ARCHITECT	Integral LED 80 CRI 3000K	1237lms	13W	0-10V Dimming	Integral	120 or 277	TBD	1.5"x24" x23" tall	See architects elevations for fixture mounting locations and heights
	XW7	4/1/2026	Residential Courtyard Patio	5" square step light mounted in retaining wall	BK - Mini Yukon	YK-WR-LID-LHP-AL-RH-JB-FSD-BCU-IN-MIN-VOLTAGE-e191-T2W-010-WL00-FINISH PER ARCHITECT	Integral LED 80 CRI 3000K	372lms	8W	0-10V Dimming	Integral	120 or 277	TBD	5"x5" x4" deep	Back box to be water tight See architects elevations for fixture mounting locations and heights
	S1	9/7/2025	Interior Cupola	Continuous linear fixture mounted inside cupola	Luminii - Bosca - Dynamic Color	BOSW-CONTINUOUS (SEE DRAWINGS) - RGBW36HO-CLR-F-MOUNTING-FINISH PER ARCHITECT-FEEDS TBD + REMOTE DIMMING DRIVER	Integral LED 95 CRI RGBW	N/A	7.3W/ft	TBD	Remote	24V	TBD	0.6"x0.6"	Controls TBD once the design intent has been confirmed. See drawings for lengths See architects elevations for fixture mounting locations and heights Remote drivers shall be concealed, out of sight, in a dry, well-ventilated, and accessible location. Contractor shall coordinate final locations with the Architect. Final quantities shall be determined based on manufacturer recommendations and voltage drop limitations.

NOT FOR CONSTRUCTION

PROGRESS SET

SUBSTRATE ARCHITECTURE LLC
33 UPPER HOLLOW ROAD
HILLSDALE, NY 12529

WWW.SUBSTRATEAC.COM
ARI@SUBSTRATEAC.COM
646-282-8253

OWNER:
NEW LEBANON DEVELOPMENT LLC
58 POOL HILL ROAD
NEW LEBANON, NY 12125

ENGINEER:
LAMONT ENGINEERS
197 ELM STREET
COBLESKILL NY 12043
518-234-4028

Issue Dates

#	Description	Date

STAMPS:

NORTH:

PROJECT:

Tilden Commons

Drawing Tile:

LIGHTING FIXTURE SCHEDULE

Date: 04/01/26 | **Scale:** As indicated

Seal/Signature:

REGISTERED ARCHITECT ARI M. LAMONT STATE OF NEW YORK

Drawing #: LT-201

Sheet #: 04 of 04

Exhibit D

Date: _____ Customer: _____

Project: _____

Type: _____ Qty: _____

selux

Avanza 450

Fixture Order Code: AV4 - _____ - _____ - _____ - _____ - _____ - _____ - _____ - _____ - _____ - _____

Pole Order Code: _____ - _____ - _____ - _____

Series Height Finish Options

AV4	Series	**AV4** Avanza 450								
_____	Optics	**R3W** Type III Distribution Wide	**R3N** Type III Distribution Narrow	**R5** Type V Distribution						
_____	Mounting	**S1** Single Short Arm	**S2** Double Short Arm (180°)	**L1** Single Long Arm	**L2** Double Long Arm (180°)	**SW** Short Arm Wall	**LW** Long Arm Wall	**LGW** Long Arm Wall with Gusset	**LG1** Single Long Arm with Gusset	**LG2** Double Long Arm with Gusset (180°)
_____	Light Engine	**L700** 36W/3,866lm	**L105** 54W/5,332lm							
_____	CCT	**27**[1,2] 2700K	**30**[2] 3000K	**35**[1] 3500K	**40** 4000K	**50**[1] 5000K				
_____	Power Cord Length	**12** 12′	**15** 15′	**18** 18′	**20** 20′	**25** 25′	**XX**[3] XX′			
_____	Finish	**WH** White	**BK** Black	**BL** Semi-Matte Black	**BZ** Bronze	**SV** Silver	**SP** Specify Premium Color			
_____	Voltage	**UNV** 120-277V	**120**[4] 120V	**208** 208V	**240**[4] 240V	**277**[4] 277V	**347**[5] 347V	**480**[5] 480V		
_____	Options	**DM**[7] Dimming (0-10V)	**HL30**[6,7,9] Hi-Lo Switching Low Output 30%	**HL50**[6,7,9] Hi-Lo Switching Low Output 50%	**TLR**[7,8] 7-pin NEMA socket with shorting cap	**TLRP**[7,8] Twist Lock Receptacle 3-Pin with Photocell	**MS**[7,8] Motion Sensor with Optional Photocell (meets title 24 requirements) See page 8 for Order Code			

[1] Consult factory.
[2] DarkSky approved with 2700K and 3000K CCT.
[3] Add length of arm and height of pole to determine power cord length.
[4] Specify 120V, 240V, 277V for HL option.
[5] Equipped with step-down transformer.
[6] 120V, 240V, 277V only.
[7] DM, HL30, HL50, TLR, TLRP, or MS only. Cannot be combined.
[8] Not available with SW, LW, LGW mounting.
[9] L105 Light Engine only.

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Tilden Commons/25009
PROGRESS CD/04-01-2026

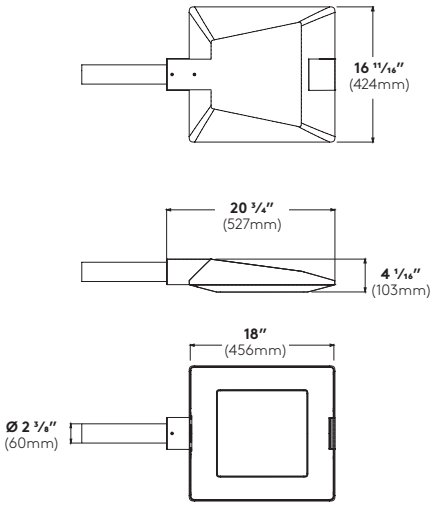
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XG1A-D

Avanza 450

selux

AV4



Specifications

Fixture Housing - Made from high pressure die cast, low copper aluminum alloy.

Gasketing - Continuous molded silicone gasket provides weatherproofing, dust and insect control at all luminaire connections.

Fitter - Part of upper aluminum housing for direct connection to standard Ø2 3/8" (60mm) short and long arms, as well as specially designed die cast pole adapter.

LED Array - LEDs mounted to PC boards and directly attached to upper aluminum housing for maximum LED performance and life. For future upgrades, light engine can be removed without tools.

LED Optics - High precision injection molded cross beam technology reflectors are vacuum metalized. IDA approved "Dark Sky Friendly" with 2700K or 3000K CCT.

LED Driver - LEDs are driven by RoHS compliant high-efficiency driver. Minimum starting temperature is -35°C (-31°F).

Mounting Arm - Welded steel with powder coat finish. To fit Ø3.5" Tenon.

Pole Adapter - Made from high pressure die cast, low copper aluminum alloy. To fit Ø3.5" Tenon.

Glass Lens - Tempered and screened glass lens protects and helps seal optical chamber.

Toolless Latch - Toolless die cast aluminum latch for easy access to light engine.

Access Door - Lower casting features tempered glass lens and a built-in hinge that attaches to upper casting on mounting arm side. Other side is secured with toolless latch for ease of maintenance.

Surge Protection - Designed to protect luminaire from electrical surge (20kA).

Internal Step-down Transformer - Step-down Transformer for 347V and 480V.

Exterior Luminaire Finish - Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated, and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide.

5 Year Limited LED Luminaire Warranty - Selux offers a 5 Year Limited Warranty to the original purchaser that the Selux Avanza LED luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers the fixture, LED driver and LED light engine when installed and operated according to Selux instructions. Fixture suitable for ambient temperatures of 40°C (104°F). For details and exclusions, see "Selux Terms and Condition of Sale."

Listings and Ratings: Luminaire tested to IESNA LM-79-08 and LED tested to LM-80 test standards at 25°C ambient temperature.

Visit selux.us for our LED End of Life recycling policy.

For Buy American compliance on poles, please consult the factory.

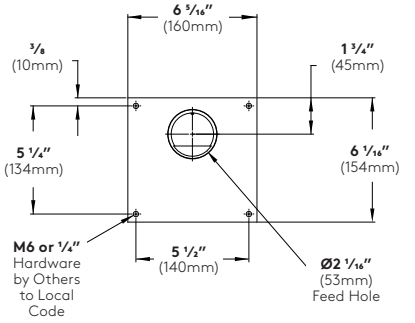
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

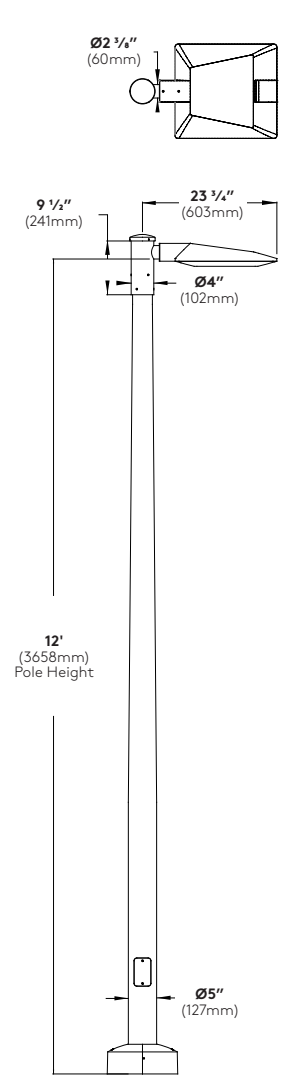
selux

Mounting

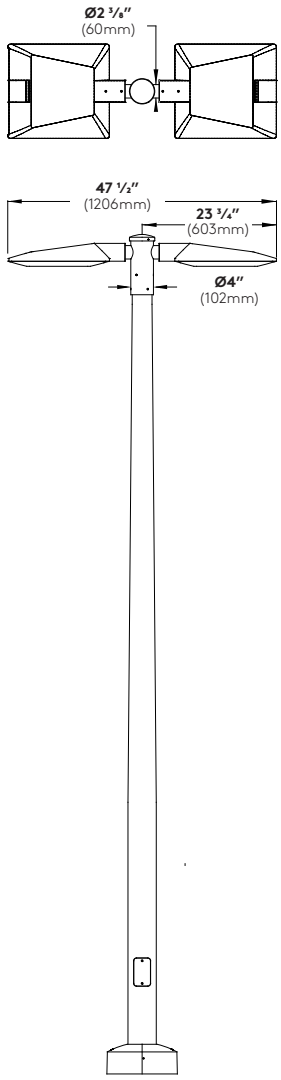
SW Short Arm Wall
EPA = 0.6ft² (0.06m²)
Weight = 17.2 lbs. (7.8kg)



S1 Single Short Arm
EPA = 0.7ft² (0.07m²)
Weight = 17.2 lbs. (7.8kg)



S2 Double Short Arm
EPA = 1.3ft² (0.12m²)
Weight = 34.4 lbs. (15.6kg)



Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Tilden Commons/25009
PROGRESS CD/04-01-2026

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XG1A-D

Avanza 450

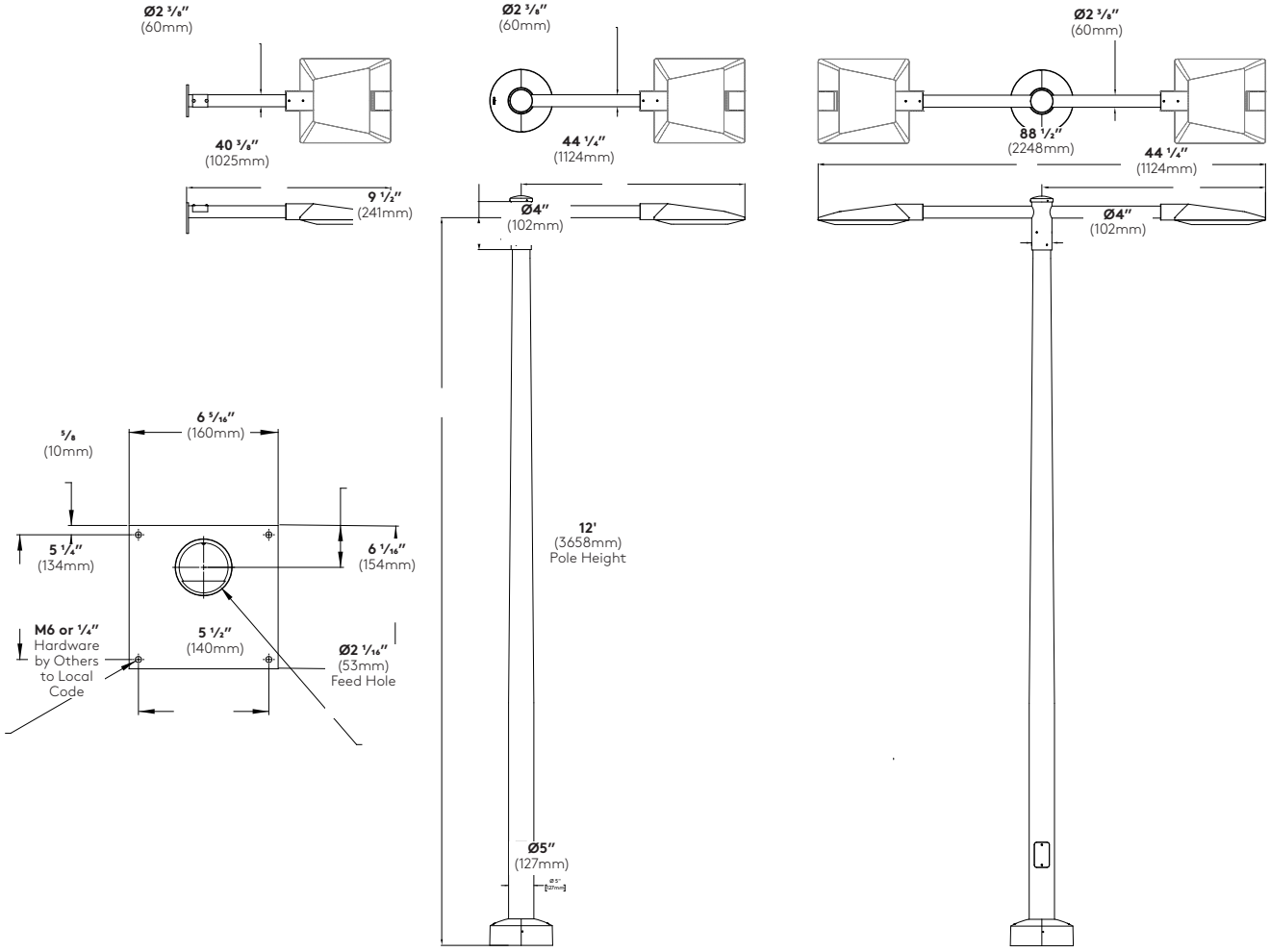
selux

Mounting

LW Long Arm Wall
EPA = 0.8ft² (0.08m²)
Weight = 18.8 lbs. (8.6kg)

L1 Single Long Arm
EPA = 0.9ft² (0.8m²)
Weight = 28.2 lbs. (12.8kg)

L2 Double Long Arm
EPA = 1.6ft² (0.15m²)
Weight = 55.1 lbs. (25kg)



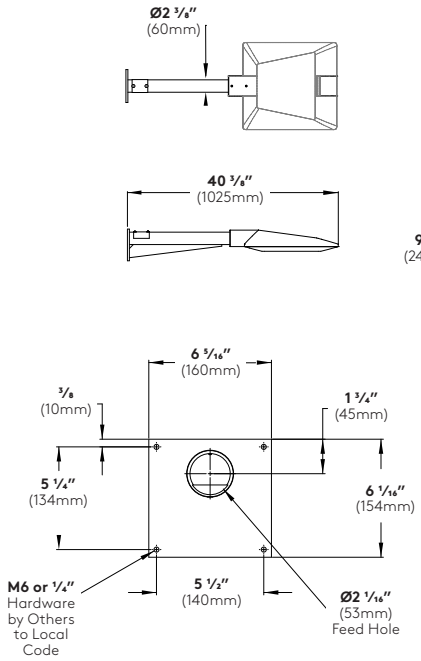
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

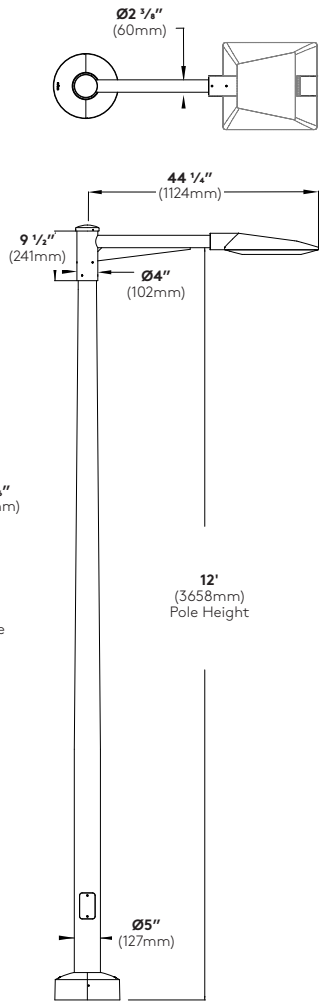
selux

Mounting

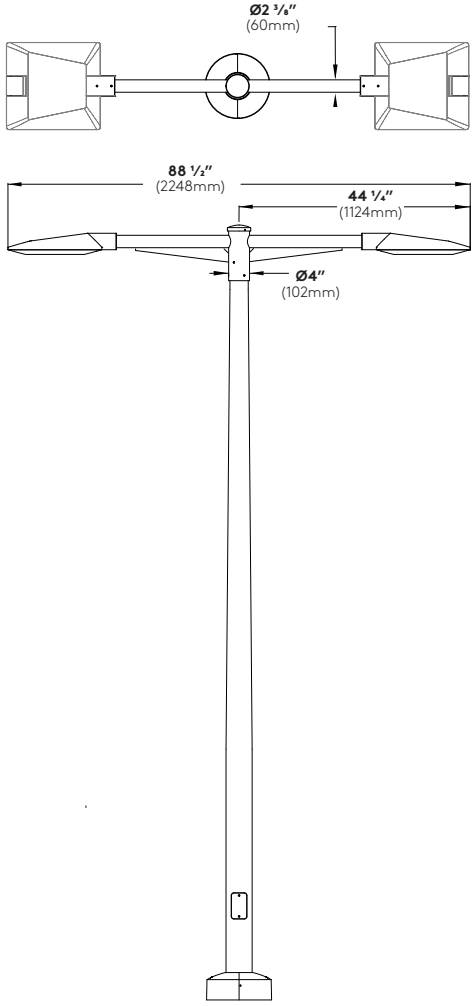
LGW Long Arm Wall
EPA = 1.0ft² (0.09m²)
Weight = 19.8 lbs. (9.0kg)



LG1 Single Long Arm with Gusset
EPA = 1.1ft² (0.10m²)
Weight = 29.2 lbs (13.3kg)



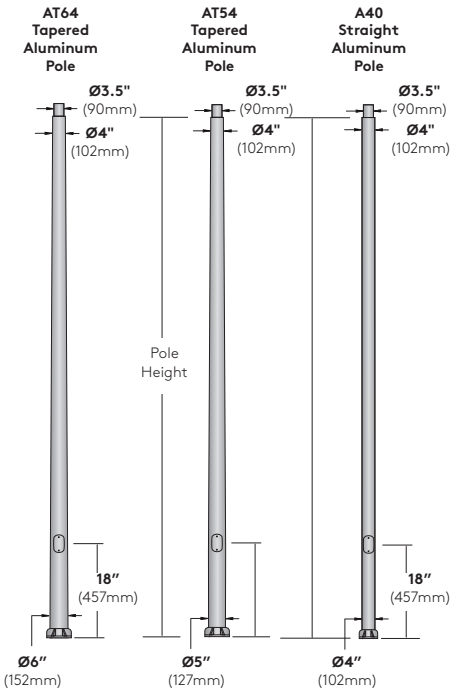
LG2 Double Long Arm with Gusset
EPA = 2.0ft² (0.19m²)
Weight = 57.1 lbs (25.9kg)



Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Pole Information

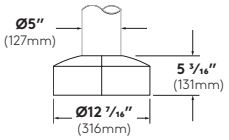
Refer to pole specification sheets for construction details, anchorage information and additional options.



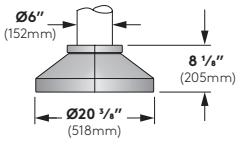
Optional Base Covers for Poles

Die cast aluminum, two piece field installable base covers.

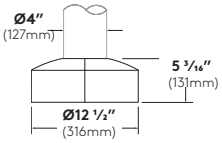
BC3 Optional Base Cover (AT54)



BC9 Optional Base Cover (AT64)



BC13 Optional Base Cover (AT40)



Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

selux

Pole Data Chart

Pole Series	Bolt Circle	Wall (in)	Max Luminaire Weight (lbs)	EPA Information (ft²) Wind Speed (mph) 85	90	100	110	120	130	140	150	160	170	180	Height	Finish	Options
A40-188 4" Round Straight Aluminum Pole	7 ½"	0.188	100	10.7	9.3	7.2	5.6	4.5	3.7	3.1	2.7	2.3	2.0	1.7	**12** 12 ft	**WH** White **BK** Black **BL** Semi-Matte Black **BZ** Bronze **SV** Silver **SP** Specify Premium Color	**BC3** Die Cast Base Cover (AT54 pole only) **BC9** Die Cast Base Cover (AT64 pole only) **BC13** Die Cast Base Cover (AT40 pole only) **REC** GFCI Receptacle with weatherproof cover* **REC2** GFCI Receptacle with padlockable in-use cover **REC3** USB & Duplex Receptacle with weatherproof cover **REC4** USB & Duplex Receptacle with weatherproof padlockable in-use cover **T35** 3.5" Tenon (Required for Avanza) *Weatherproof cover intended for portable tools or other portable equipment connected to the outlet only when attended. For other requirements please consult factory.
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	15.1	13.3	10.4	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	22.9	20.3	16.1	13.1	10.9	9.2	7.9	6.8	5.9	5.2	4.5			
AT40-250 4" Rounds Straight Aluminum Pole	7 ½"	0.250	100	11.8	10.3	7.9	6.1	4.9	4.0	3.4	2.9	2.5	2.1	1.8	**14** 14 ft		
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	12.7	11.0	8.5	6.8	5.5	4.6	3.9	3.3	2.8	2.4	2.1			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	19.5	17.2	13.6	11.0	9.1	7.6	6.5	5.6	4.8	4.2	3.7			
AT40-250 4" Rounds Straight Aluminum Pole	7 ½"	0.250	100	9.6	8.3	6.2	4.7	3.6	3.0	2.5	2.1	1.7	1.5	1.2	**16** 16 ft		
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	10.4	9.0	6.8	5.3	4.2	3.5	2.9	2.4	2.1	1.8	1.5			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	16.3	14.3	11.2	9.0	7.4	6.2	5.2	4.4	3.8	3.3	2.9			

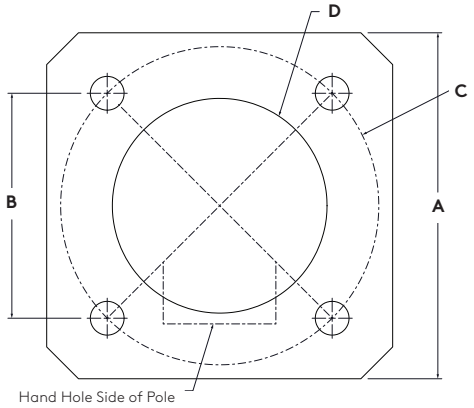
Notes:
1. Maximum EPA ratings certified in accordance with AASHTO 2013 (LTS-6-I3) for 3-s gust wind speeds based on Allowable Stress Design (ASD) analysis.
2. Consult factory for equivalent Load and Resistance Factor Design (LRFD) wind speeds.
3. Rated performance is dependant upon the pole being properly attached to a supporting foundation of adaquate design at ground level.

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

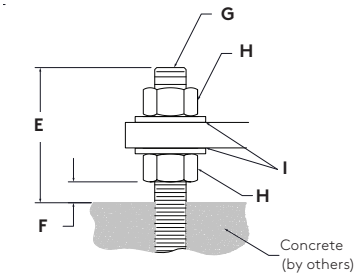
Avanza 450

selux

Pole Information
Refer to pole specification sheets for construction details, anchorage information and additional options.



Aluminum Tapered Pole Bolt Circle Info	A Base Plate SQ	B Bolt Spacing SQ	C Bolt Circle Ø	D Conduit Opening Ø
A40 4" Diameter Straight Aluminum Pole	8 15/16" (226mm)	5 5/16" (135mm)	7 1/2" (191mm)	3 3/4" (95mm)
AT54 5" to 4" Diameter Tapered Aluminum Pole	9 5/8" (244mm)	6 1/8" (155mm)	8 5/8" (219mm)	4 5/8" (117mm)
AT64 6" to 4" Diameter Tapered Aluminum Pole	10 5/16" (262mm)	6 3/4" (171mm)	9 1/2" (241mm)	5 1/2" (139mm)



Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown. Concrete footing and feed conduit to be designed and installed by others. Individual 1:1 scale drawings for installation available, please consult factory

All Hardware is Galvanized

Aluminum Tapered Pole Bolt Circle Info	E Bolt Projection	F For Leveling	G Anchor Bolt	H Heavy hex Nut	I Flat Washer
A40 4" Diameter Straight Aluminum Pole	3 1/4" (83mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID
AT54 5" to 4" Diameter Tapered Aluminum Pole	3 1/4" (83mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID
AT64 6" to 4" Diameter Tapered Aluminum Pole	3 1/2" (85mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

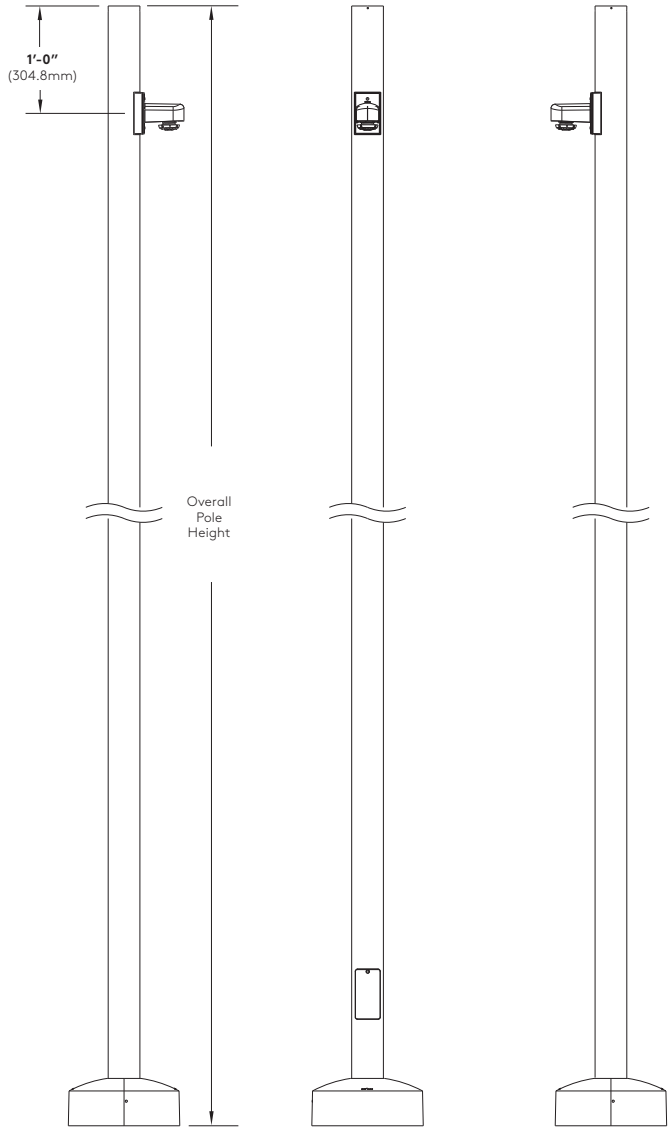
selux

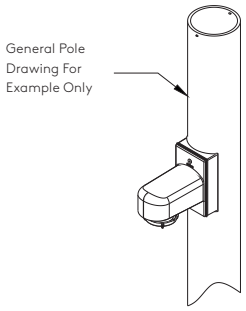
Round Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) Technology for motion sensing and also includes built-in photocell. Sensor comes pre-installed in cast aluminum housing painted to match pole finish.

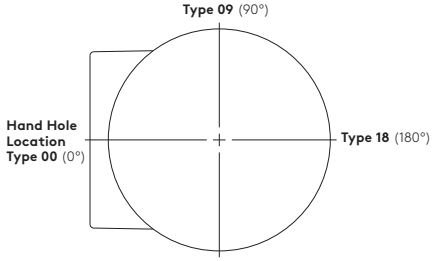
Series	Hand Hole Orientation	Dim Level	Photocell Feature	Voltage
MS Motion Sensor	**00** 0° Clockwise from Hand Hole **09** 90° Clockwise from Hand Hole **18** 180° Clockwise from Hand Hole **27** 270° Clockwise from Hand Hole	**D0** (Off) **D1** (1V=10%) **D3** (3V=30%) **D5** (5V=50%)	**Y** Yes **N** No	**UNV** (100-347VAC single phase or 208/230/480VAC phase-to-phase)

Factory Defaults:
Delay to Dim: 5 minutes
Delay to Off: Disabled
Sensitivity: Max
Custom Programming: Consult Factory





Sensor angular orientation from hand hole 0°
90° increments clockwise around pole (Type 00, 09, 18, 27)



Top View

Motion Sensor Features

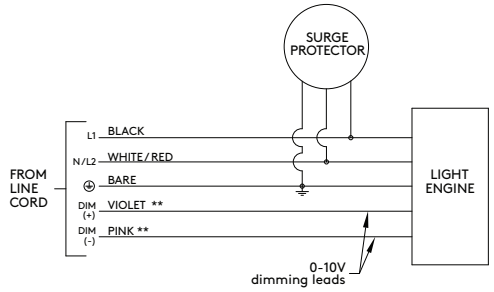
- Customize programming using smartphone application (Refer to the FSP-321 at www.wattstopper.com).
- 5 Year Warranty.
- 100% Digital PIR Detection, excellent RF Immunity.
- 270° coverage pattern.
- IP66 Rated for outdoor applications.
- Made for LED light source.
- Adjustable time delays, max/min dim levels, and ramp rates.
- Suitable for Title 24 applications.

(For coverage details refer to wattstopper FSP-321 spec sheet at www.wattstopper.com).

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

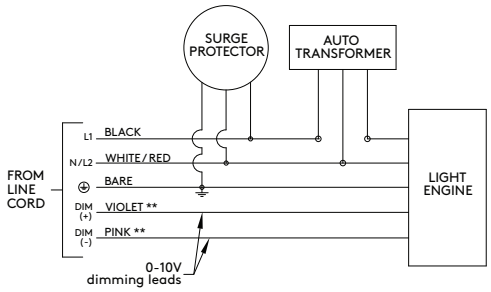
Standard Wiring (120V-277V)

**When dimming is not required cap dimming wires.

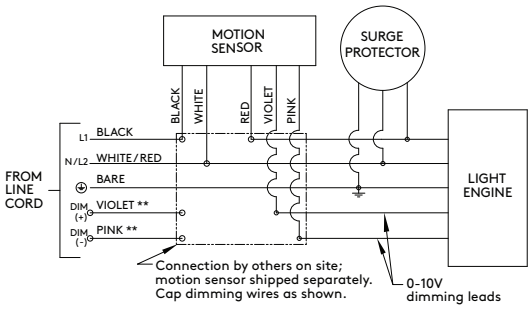


Standard Wiring (347/480V with Step-down Transformer)

**When dimming is not required cap dimming wires.

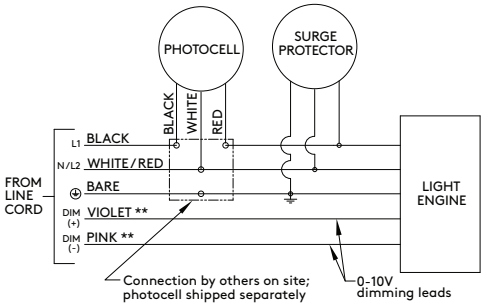


Motion Sensor Option (MS) Wiring (120-480V)

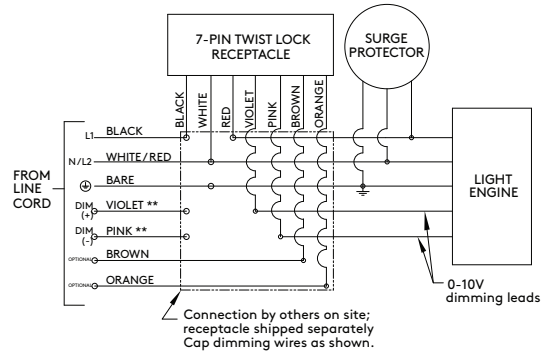


Photocell Option (TLRP) Wiring

**When dimming is not required cap dimming wires.

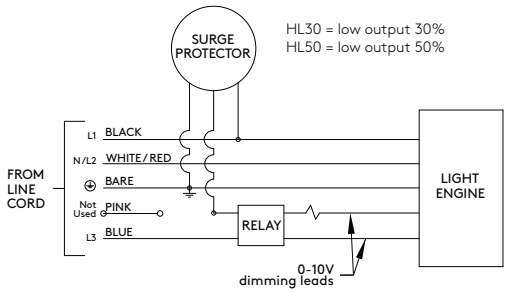


7-Pin Twist Lock Receptacle Option (TLR) Wiring



Hi-Lo Switching Option (HL) Wiring HL30/HL50 Only

120V, 240V, 277V. When blue is energized, light output will be at "Lo" level. Specify low-level by using the level listed below. For other combinations, consult factory.

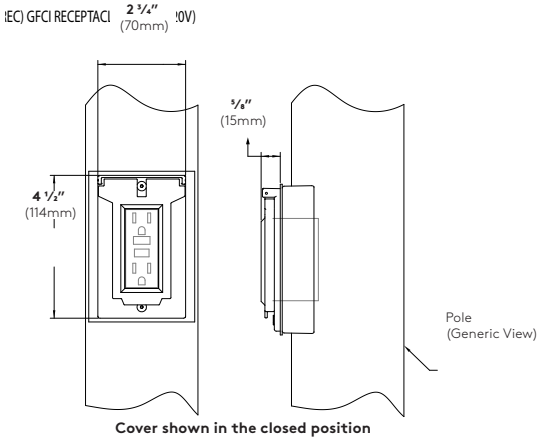


Wire Designation Table		
Source Voltage (VAC)	**Wire Color**	**Wire Designation**
120V, 277V, or 347V	Black	L1
	White	Neutral
208V, 240V, or 480V	Black	L1
	Red	L2
UNV (120V-277V)	Black	L1
	White	Neutral (120/277V) or L2 (208/240V)

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

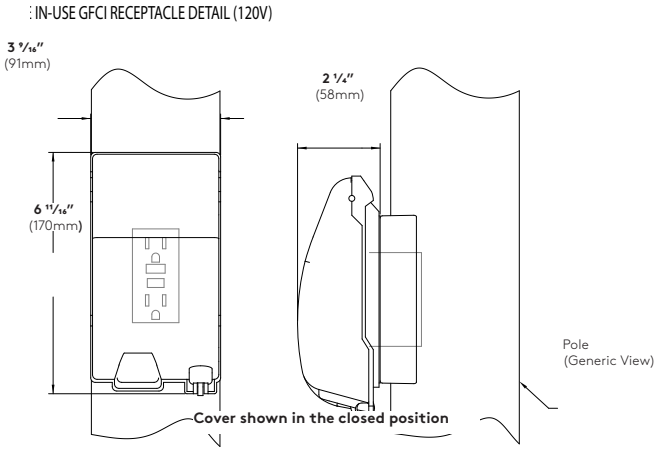
Optional Accessories

REC and REC3



Cover shown in the closed position

REC2 and REC4



Cover shown in the closed position

GFCI Receptacle (REC) - 120V 15A GFCI duplex receptacle with weatherproof, self closing cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & Duplex Receptacle (REC3) (not shown) - 120V 20A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5A, 5V USB outlets. With weatherproof, self closing cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

REC3 does not incorporate GFCI (Ground Fault Circuit Interrupter) protection, and shall be powered by a GFCI protected branch circuit (by others).

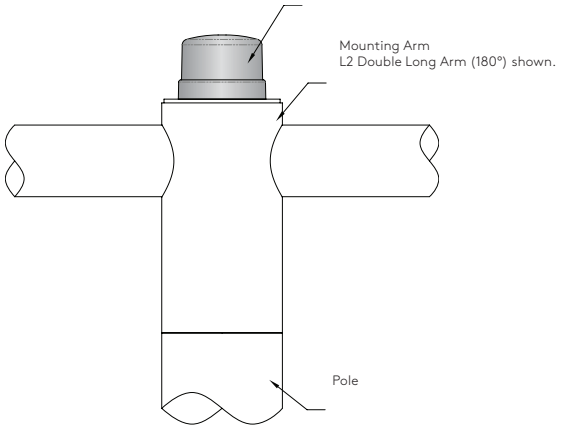
GFCI Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weatherproof, self closing, padlockable in use cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & Duplex Receptacle (REC4) (not shown) - 120V 20A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5A, 5V USB outlets. With weatherproof, self closing padlockable in use cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

REC4 does not incorporate GFCI (Ground Fault Circuit Interrupter) protection, and shall be powered by a GFCI protected branch circuit (by others).

TLRP and TLR - A 3-pin twist-lock receptacle with photocell and 7-pin twist-lock receptacle with shorting cap.

Available for all pole and arm mounting configurations except Short Arm Wall (SW), Long Arm Wall (LW), and Long Arm Wall with Gusset (LGW).



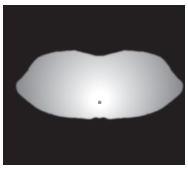
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

selux

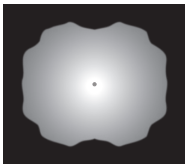
Photometry

Photometric Performance - R3W, R3N & R5				
Light Engine	Lumens	CCT	Input Watts	lm/W
L700	3866	3000K	36	107
L105	5332	3000K	54	99



R3W - Type III (wide)

R3N - Type III (Narrow)



R5 - Type V

CCT Multiplier	
2700K	0.962
3000K	1.000
3500K	1.000
4000K	1.063
5000K	1.070

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Date: _____ Customer: _____

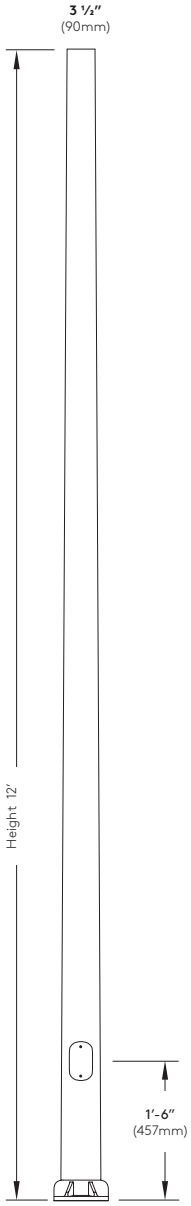
Project: _____

Type: _____ Qty: _____

selux

AT535

5″- 3½″ Round Tapered Aluminum Pole



Order Code: AT535 - _____ - _____ - _____

AT535	**Series**	**AT535** 5″- 3 ½″ Round Tapered Aluminum Pole						
_____	**Height**	**12** 12′	**14** 14′	**16** 16′	**18** 18′	**20** 20′		
_____	**Finish**	**WH** White	**BK** Black	**BL** Semi-Matte Black	**BZ** Bronze	**SV** Silver	**SP** Specify Premium Color	
_____	**Options**	**BC3** Decorative Cast Aluminum Base Cover	**REC**[1] GFCI Receptacle with weahterproof cover	**REC2**[1] GFCI Receptacle with padlockable in-use cover	**REC3**[1] USB and Duplex Receptacle with weatherproof cover	**REC4**[1] USB and Duplex Receptacle with weatherproof padlockable in-use cover	**MS**[2] Motion Sensor with Optional Photocell (Meets Title 24 requirement	[1] See page 4 for details [2] See page 5 for details

Product Modifications

Please list modification requirements for review by factory:

Approvals

Date:

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Tilden Commons/25009
PROGRESS CD/04-01-2026

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XG1A-D

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

Specifications

Pole Shaft - Pole shaft is spun from seamless 6063 alloy aluminum which is heat treated to a T6 temper.

Anchor Base - Anchor base is cast from 356 alloy aluminum which is heat treated to a T6 temper. The anchor base casting and shaft are joined by a continuous circumferential weld at the outside top and inside bottom of the anchor base.

Access Hole - The opening measures 3″ x 5″ (76mm x 127mm) with a cast 356 aluminum tempered to a T6 condition reinforced frame. Frame is supplied with integral ground lug connection located inside pole. Flush fitting cover is supplied with tamper resistant fasteners.

Anchor Bolts - Pole is supplied with four steel hot dip galvanized anchor bolts, ¾″ x 17″, each with two nuts and two flat washers.

Nut Cover - Poles come standard with cast aluminum nut covers.

Exterior Luminaire Finish - Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Semi-Maßtte Black (BL), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide.

All Poles are constructed per AASHTO standards for structural supports for highway signs, luminaires and traffic signals as published in 2013.

A consideration of field conditions such as (but not limited to) wind zone, height, vibration must be given by the designer/specifier for the appropriate application.
Performance of poles is dependent upon proper support/attachment of pole to adequate foundation design. Selux does not design or offer recommendations for foundations. EPA values assume that the bottom of the pole is at grade level.

Call Selux **(800) 735-8927** if there are any questions, or for any assistance in determining suitability with appropriate fixtures.

AT535- EPA MATRIX

Height (ft)	Bolt Circle (in)	Wall (in)	Max Luminaire Weight (lbs)	Wind Speed (mph) - AASHTO 2013										
				85	90	100	110	120	130	140	150	160	170	180
12	8 ⅝	0.156	75	15.2	13.4	10.5	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8
14				12.8	11.2	8.7	6.9	5.5	4.6	3.8	3.3	2.8	2.4	2.1
16				10.5	9.1	6.9	5.4	4.3	3.4	2.9	2.4	2.0	1.7	1.5
18		0.188	100	8.9	7.6	5.7	4.3	3.3	2.6	2.1	1.7	1.4	1.2	1.0
20				7.3	6.2	4.4	3.2	2.3	1.7	1.4	1.1	0.9	-	-

Notes:
1. Maximum EPA ratings certified in accordance with AASHTO 2013 (LTS-6-I3) for 3-s gust wind speeds based on Allowable Stress Design (ASD) analysis
2. Consult factory for equivalent Load and Resistance Factor Design (LRFD) wind speeds
3. Centroid of all loads located a max height of 2′-6″ above pole top and 2′-0″ eccentric
4. Rated performance is dependant upon the pole being properly attached to a supporting foundation of adequate design

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

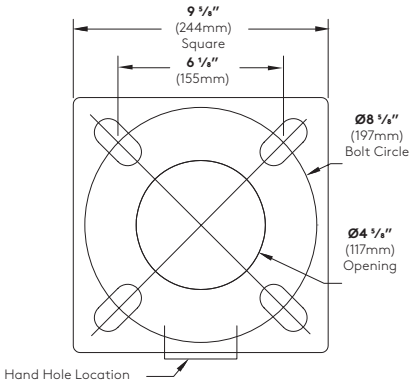
AT535

5″-3½″ Round Tapered Aluminum Pole

selux

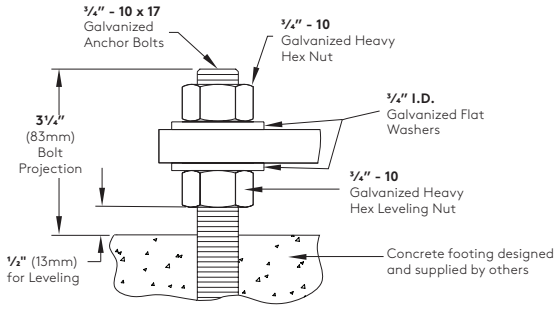
Bolt Circle

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown.



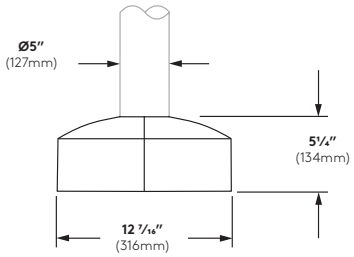
Note: Adequate drainage must be provided in concrete foundation.

Anchor Bolt Detail



BC3 Optional Base Cover

Die-cast aluminum, two-piece field installable base cover.



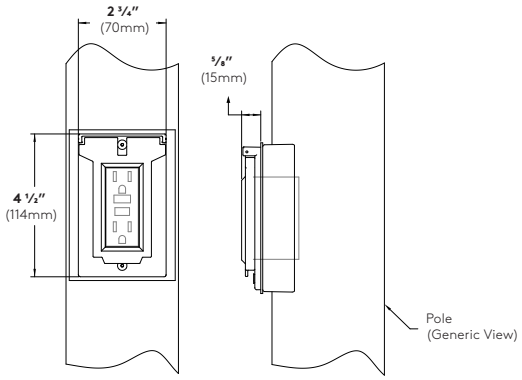
Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

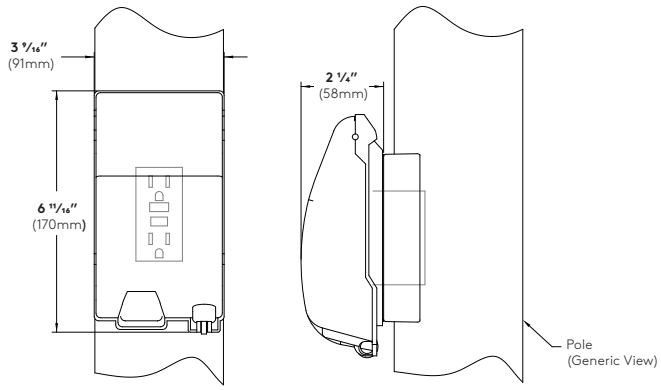
Optional Accessories

REC and REC3



Cover shown in the closed position

REC2 and REC4



Cover shown in the closed position

GFCI Duplex Receptacle (REC) - 120V 15A GFCI duplex receptacle with weatherproof, self-closing cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & GFCI Duplex Receptacle (REC3) (not shown) - 120V 15A GFCI duplex receptacle with USB combination ports. (1) USB Type-A and (1) USB Type-C port share 2.0A charging capacity between both ports. Includes weatherproof, self-closing cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

GFCI Duplex Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weatherproof, self-closing, padlockable in-use cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & GFCI Duplex Receptacle (REC4) (not shown) - 120V 15A GFCI duplex receptacle with USB combination ports. (1) USB Type-A and (1) USB Type-C port share 2.0A charging capacity between both ports. Includes weatherproof, self-closing padlockable in-use cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535

5″-3½″ Round Tapered Aluminum Pole

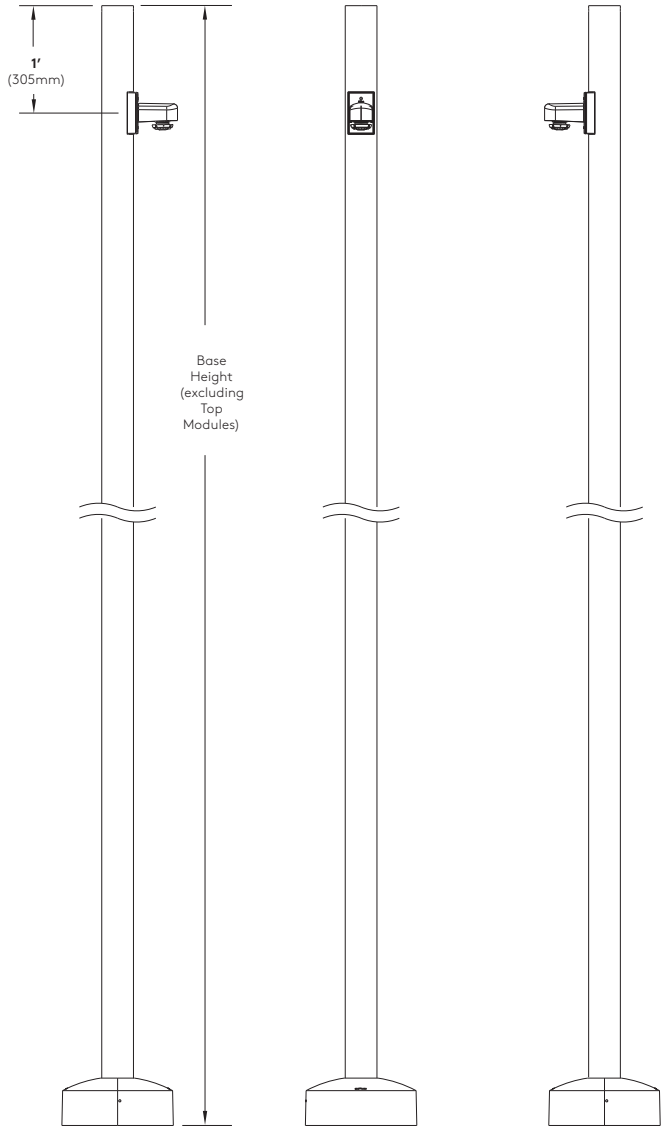
selux

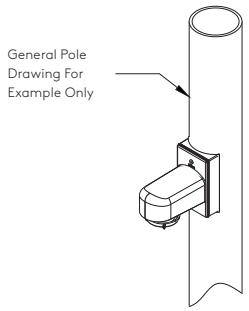
Round Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) Technology for motion sensing and also includes built-in photocell. Sensor comes pre-installed in cast aluminum housing painted to match pole finish.

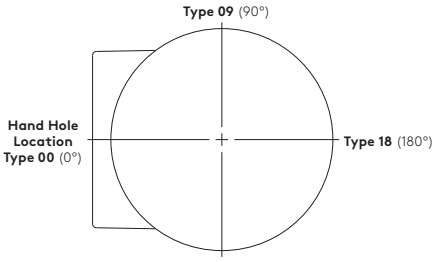
Series	Hand Hole Orientation	Dim Level	Photocell Feature	Voltage
MS Motion Sensor	**00** 0° Clockwise from Hand Hole **09** 90° Clockwise from Hand Hole **18** 180° Clockwise from Hand Hole **27** 270° Clockwise from Hand Hole	**D0** (Off) **D1** (1V=10%) **D3** (3V=30%) **D5** (5V=50%)	**Y** Yes **N** No	**UNV** (120/277/347VAC single phase or 208/240/480VAC phase-to-phase)

Factory Defaults:
Delay to Dim: 5 minutes
Delay to Off: 1 hour
Sensitivity: Max
Custom Programming: Consult Factory





Sensor angular orientation from hand hole 0°
90° increments clockwise around pole (Type 00, 09, 18, 27)



Top View

Motion Sensor Features

- Customize programming using smartphone application (Refer to the FSP-321 at www.wattstopper.com).
- 5 Year Warranty.
- 100% Digital PIR Detection, excellent RF Immunity.
- 270° coverage pattern.
- IP66 Rated for outdoor applications.
- Made for LED light source.
- Adjustable time delays, max/min dim levels, and ramp rates.
- Suitable for Title 24 applications.

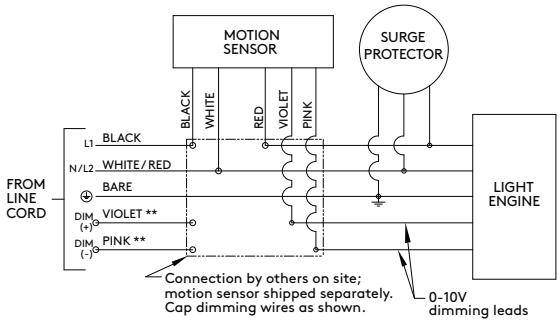
(For coverage details refer to wattstopper FSP-321 spec sheet at www.wattstopper.com).

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

Motion Sensor Option (MS) Wiring (120-480V)



Wire Designation Table		
Source Voltage (VAC)	**Wire Color**	**Wire Designation**
120V, 277V, or 347V	Black	L1
	White	Neutral
208V, 240V, or 480V	Black	L1
	Red	L2
UNV (120V-277V)	Black	L1
	White	Neutral (120/277V) or L2 (208/240V)

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Date: _____ Customer: _____

Project: _____

Type: _____ Qty: _____

selux

Avanza 450

Fixture Order Code: AV4 - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____

Pole Order Code: ____ - ____ - ____ - ____
Series Height Finish Options

AV4	Series	**AV4** Avanza 450								
_____	Optics	**R3W** Type III Distribution Wide	**R3N** Type III Distribution Narrow	**R5** Type V Distribution						
_____	Mounting	**S1** Single Short Arm	**S2** Double Short Arm (180°)	**L1** Single Long Arm	**L2** Double Long Arm (180°)	**SW** Short Arm Wall	**LW** Long Arm Wall	**LGW** Long Arm Wall with Gusset	**LG1** Single Long Arm with Gusset	**LG2** Double Long Arm with Gusset (180°)
_____	Light Engine	**L700** 36W/3,866lm	**L105** 54W/5,332lm							
_____	CCT	**27**[1,2] 2700K	**30**[2] 3000K	**35**[1] 3500K	**40** 4000K	**50**[1] 5000K				
_____	Power Cord Length	**12** 12′	**15** 15′	**18** 18′	**20** 20′	**25** 25′	**XX**[3] XX′			
_____	Finish	**WH** White	**BK** Black	**BL** Semi-Matte Black	**BZ** Bronze	**SV** Silver	**SP** Specify Premium Color			
_____	Voltage	**UNV** 120-277V	**120**[4] 120V	**208** 208V	**240**[4] 240V	**277**[4] 277V	**347**[5] 347V	**480**[5] 480V		
_____	Options	**DM**[7] Dimming (0-10V)	**HL30**[6,7,9] Hi-Lo Switching Low Output 30%	**HL50**[6,7,9] Hi-Lo Switching Low Output 50%	**TLR**[7,8] 7-pin NEMA socket with shorting cap	**TLRP**[7,8] Twist Lock Receptacle 3-Pin with Photocell	**MS**[7,8] Motion Sensor with Optional Photocell (meets title 24 requirements) See page 8 for Order Code			

[1] Consult factory.
[2] DarkSky approved with 2700K and 3000K CCT.
[3] Add length of arm and height of pole to determine power cord length.
[4] Specify 120V, 240V, 277V for HL option.
[5] Equipped with step-down transformer.
[6] 120V, 240V, 277V only.
[7] DM, HL30, HL50, TLR, TLRP, or MS only. Cannot be combined.
[8] Not available with SW, LW, LGW mounting.
[9] L105 Light Engine only.

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Tilden Commons/25009
PROGRESS CD/04-01-2026

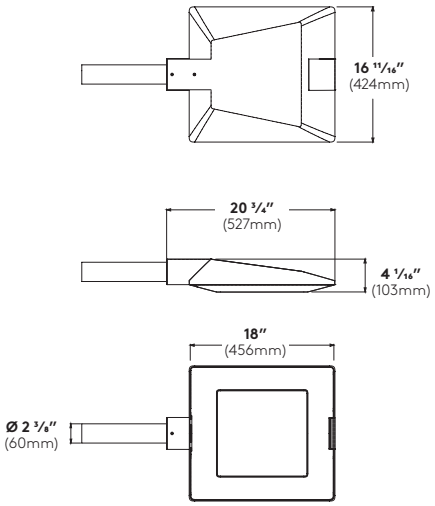
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XG2

Avanza 450

selux

AV4



Specifications

Fixture Housing - Made from high pressure die cast, low copper aluminum alloy.

Gasketing - Continuous molded silicone gasket provides weatherproofing, dust and insect control at all luminaire connections.

Fitter - Part of upper aluminum housing for direct connection to standard Ø2 3/8" (60mm) short and long arms, as well as specially designed die cast pole adapter.

LED Array - LEDs mounted to PC boards and directly attached to upper aluminum housing for maximum LED performance and life. For future upgrades, light engine can be removed without tools.

LED Optics - High precision injection molded cross beam technology reflectors are vacuum metalized. IDA approved "Dark Sky Friendly" with 2700K or 3000K CCT.

LED Driver - LEDs are driven by RoHS compliant high-efficiency driver. Minimum starting temperature is -35°C (-31°F).

Mounting Arm - Welded steel with powder coat finish. To fit Ø3.5" Tenon.

Pole Adapter - Made from high pressure die cast, low copper aluminum alloy. To fit Ø3.5" Tenon.

Glass Lens - Tempered and screened glass lens protects and helps seal optical chamber.

Toolless Latch - Toolless die cast aluminum latch for easy access to light engine.

Access Door - Lower casting features tempered glass lens and a built-in hinge that attaches to upper casting on mounting arm side. Other side is secured with toolless latch for ease of maintenance.

Surge Protection - Designed to protect luminaire from electrical surge (20kA).

Internal Step-down Transformer - Step-down Transformer for 347V and 480V.

Exterior Luminaire Finish - Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated, and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide.

5 Year Limited LED Luminaire Warranty - Selux offers a 5 Year Limited Warranty to the original purchaser that the Selux Avanza LED luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers the fixture, LED driver and LED light engine when installed and operated according to Selux instructions. Fixture suitable for ambient temperatures of 40°C (104°F). For details and exclusions, see "Selux Terms and Condition of Sale."

Listings and Ratings: Luminaire tested to IESNA LM-79-08 and LED tested to LM-80 test standards at 25°C ambient temperature.

Visit selux.us for our LED End of Life recycling policy.

For Buy American compliance on poles, please consult the factory.

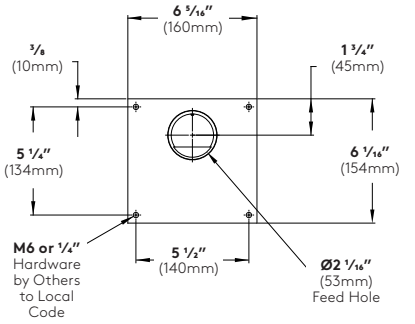
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

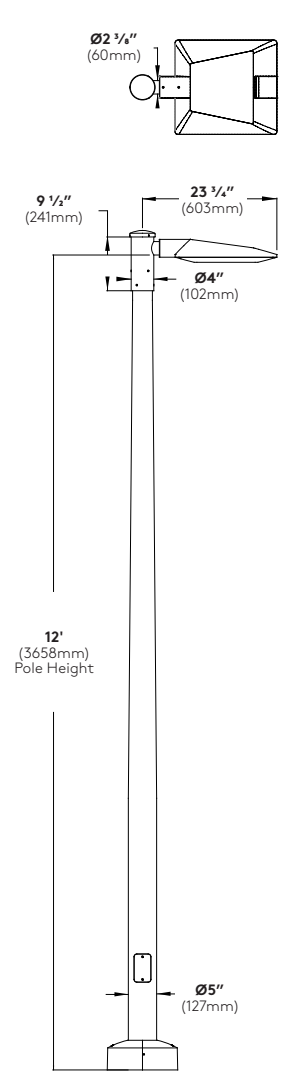
selux

Mounting

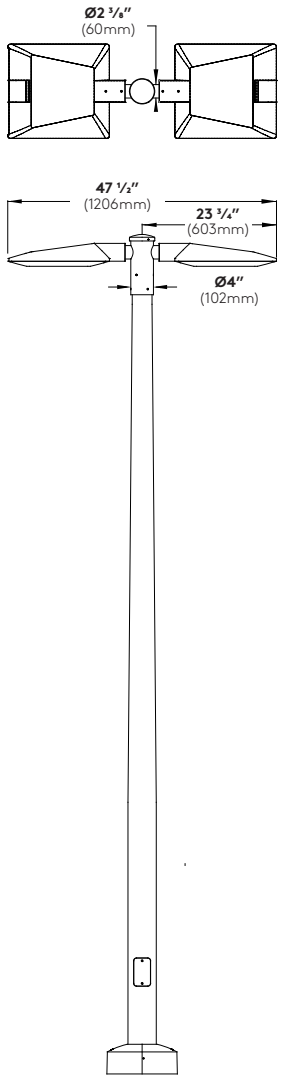
SW Short Arm Wall
EPA = 0.6ft² (0.06m²)
Weight = 17.2 lbs. (7.8kg)



S1 Single Short Arm
EPA = 0.7ft² (0.07m²)
Weight = 17.2 lbs. (7.8kg)



S2 Double Short Arm
EPA = 1.3ft² (0.12m²)
Weight = 34.4 lbs. (15.6kg)



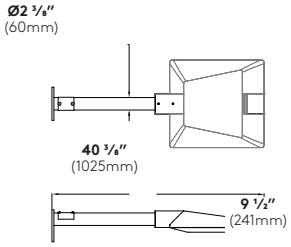
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

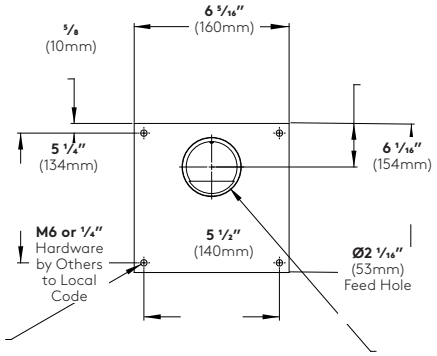
Avanza 450

selux

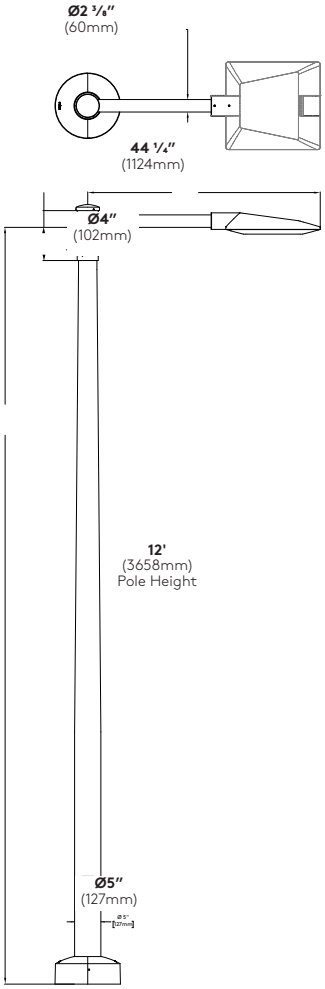
Mounting

LW Long Arm Wall
EPA = 0.8ft² (0.08m²)
Weight = 18.8 lbs. (8.6kg)

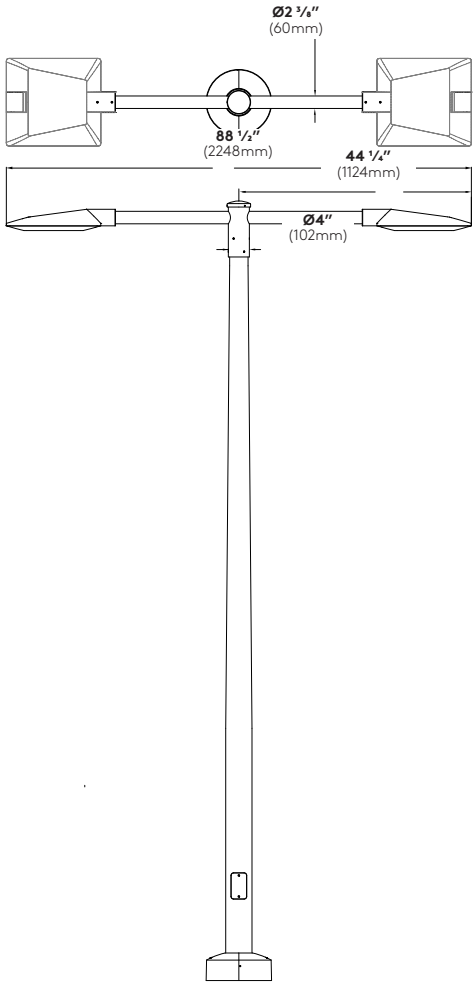




L1 Single Long Arm
EPA = 0.9ft² (0.8m²)
Weight = 28.2 lbs. (12.8kg)



L2 Double Long Arm
EPA = 1.6ft² (0.15m²)
Weight = 55.1 lbs. (25kg)



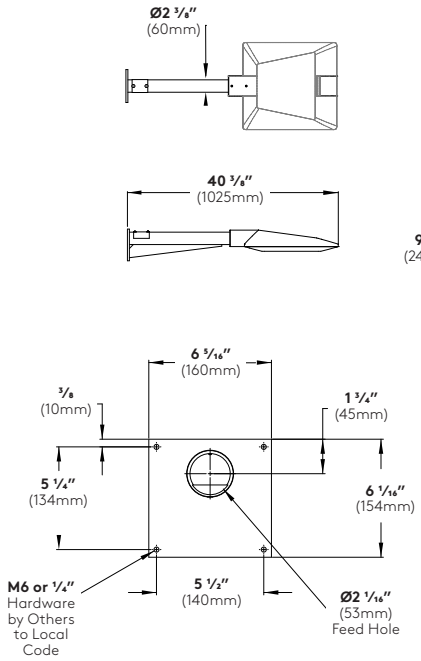
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

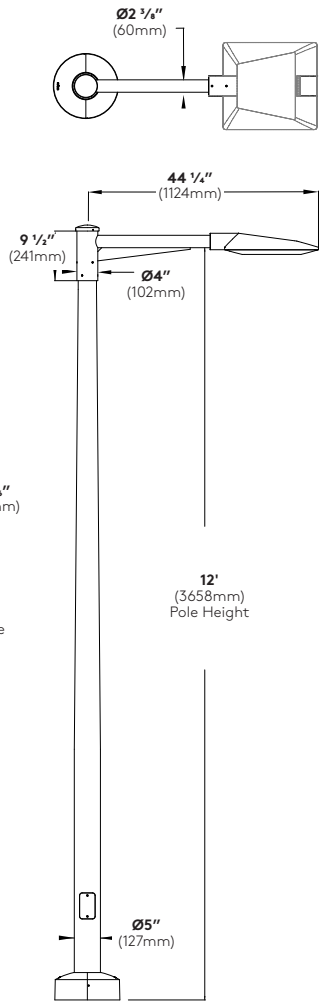
selux

Mounting

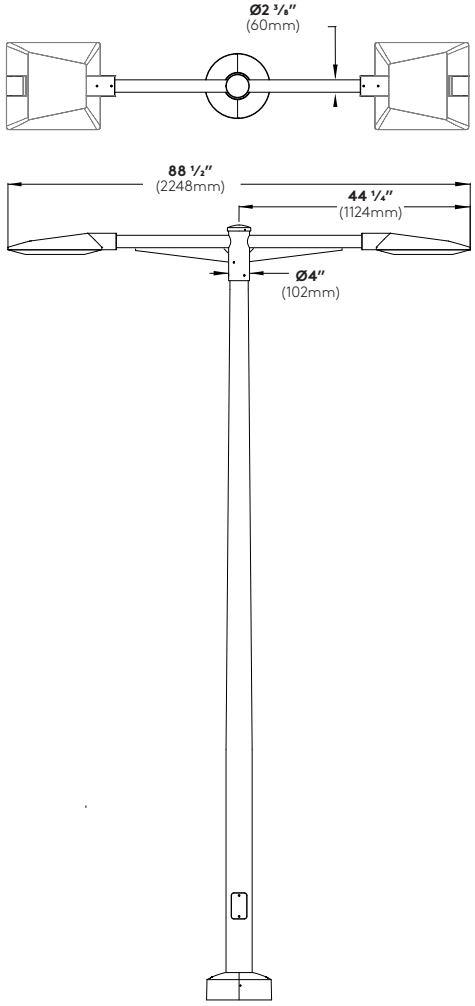
LGW Long Arm Wall
EPA = 1.0ft² (0.09m²)
Weight = 19.8 lbs. (9.0kg)



LG1 Single Long Arm with Gusset
EPA = 1.1ft² (0.10m²)
Weight = 29.2 lbs (13.3kg)



LG2 Double Long Arm with Gusset
EPA = 2.0ft² (0.19m²)
Weight = 57.1 lbs (25.9kg)

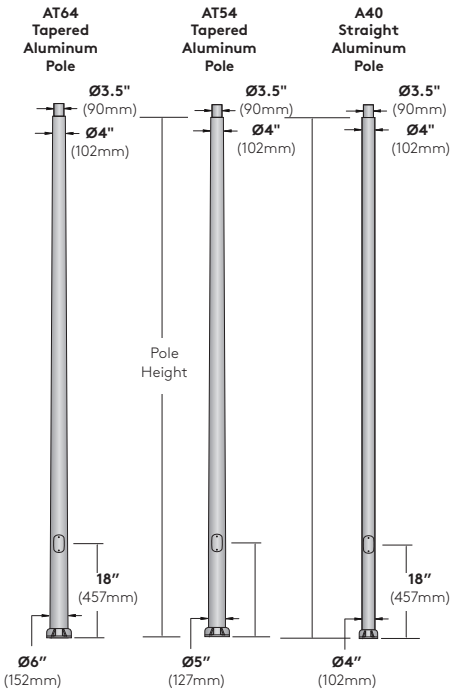


Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

selux

Pole Information

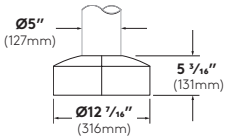
Refer to pole specification sheets for construction details, anchorage information and additional options.



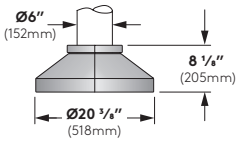
Optional Base Covers for Poles

Die cast aluminum, two piece field installable base covers.

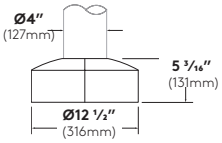
BC3 Optional Base Cover (AT54)



BC9 Optional Base Cover (AT64)



BC13 Optional Base Cover (AT40)



Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

selux

Pole Data Chart

Pole Series	Bolt Circle	Wall (in)	Max Luminaire Weight (lbs)	EPA Information (ft²) Wind Speed (mph) 85	90	100	110	120	130	140	150	160	170	180	Height	Finish	Options
A40-188 4" Round Straight Aluminum Pole	7 ½"	0.188	100	10.7	9.3	7.2	5.6	4.5	3.7	3.1	2.7	2.3	2.0	1.7	**12** 12 ft	**WH** White **BK** Black **BL** Semi-Matte Black **BZ** Bronze **SV** Silver **SP** Specify Premium Color	**BC3** Die Cast Base Cover (AT54 pole only) **BC9** Die Cast Base Cover (AT64 pole only) **BC13** Die Cast Base Cover (AT40 pole only) **REC** GFCI Receptacle with weatherproof cover* **REC2** GFCI Receptacle with padlockable in-use cover **REC3** USB & Duplex Receptacle with weatherproof cover **REC4** USB & Duplex Receptacle with weatherproof padlockable in-use cover **T35** 3.5" Tenon (Required for Avanza) *Weatherproof cover intended for portable tools or other portable equipment connected to the outlet only when attended. For other requirements please consult factory.
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	15.1	13.3	10.4	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	22.9	20.3	16.1	13.1	10.9	9.2	7.9	6.8	5.9	5.2	4.5			
AT40-250 4" Rounds Straight Aluminum Pole	7 ½"	0.250	100	11.8	10.3	7.9	6.1	4.9	4.0	3.4	2.9	2.5	2.1	1.8	**14** 14 ft		
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	12.7	11.0	8.5	6.8	5.5	4.6	3.9	3.3	2.8	2.4	2.1			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	19.5	17.2	13.6	11.0	9.1	7.6	6.5	5.6	4.8	4.2	3.7			
AT40-250 4" Rounds Straight Aluminum Pole	7 ½"	0.250	100	9.6	8.3	6.2	4.7	3.6	3.0	2.5	2.1	1.7	1.5	1.2	**16** 16 ft		
AT54-156 5"-4" Round Tapered Aluminum Pole	8 ⅝"	0.156	75	10.4	9.0	6.8	5.3	4.2	3.5	2.9	2.4	2.1	1.8	1.5			
AT64-156 6"-4" Round Tapered Aluminum Pole	9 ½"	0.156	100	16.3	14.3	11.2	9.0	7.4	6.2	5.2	4.4	3.8	3.3	2.9			

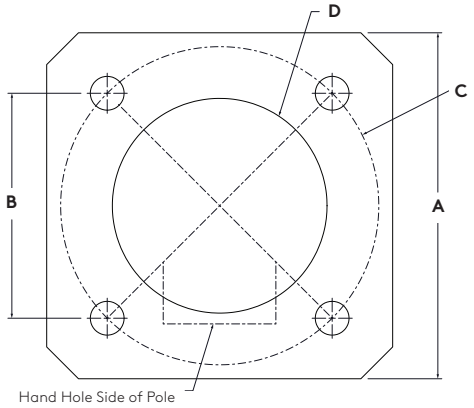
Notes:
1. Maximum EPA ratings certified in accordance with AASHTO 2013 (LTS-6-I3) for 3-s gust wind speeds based on Allowable Stress Design (ASD) analysis.
2. Consult factory for equivalent Load and Resistance Factor Design (LRFD) wind speeds.
3. Rated performance is dependant upon the pole being properly attached to a supporting foundation of adaquate design at ground level.

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

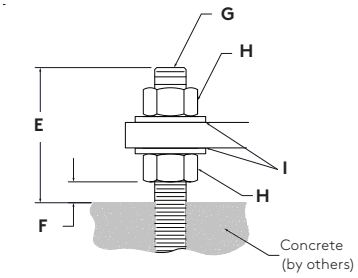
Avanza 450

selux

Pole Information
Refer to pole specification sheets for construction details, anchorage information and additional options.



Aluminum Tapered Pole Bolt Circle Info	A Base Plate SQ	B Bolt Spacing SQ	C Bolt Circle Ø	D Conduit Opening Ø
A40 4" Diameter Straight Aluminum Pole	8 15/16" (226mm)	5 5/16" (135mm)	7 1/2" (191mm)	3 3/4" (95mm)
AT54 5" to 4" Diameter Tapered Aluminum Pole	9 5/8" (244mm)	6 1/8" (155mm)	8 5/8" (219mm)	4 5/8" (117mm)
AT64 6" to 4" Diameter Tapered Aluminum Pole	10 5/16" (262mm)	6 3/4" (171mm)	9 1/2" (241mm)	5 1/2" (139mm)



Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown. Concrete footing and feed conduit to be designed and installed by others. Individual 1:1 scale drawings for installation available, please consult factory

All Hardware is Galvanized

Aluminum Tapered Pole Bolt Circle Info	E Bolt Projection	F For Leveling	G Anchor Bolt	H Heavy hex Nut	I Flat Washer
A40 4" Diameter Straight Aluminum Pole	3 1/4" (83mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID
AT54 5" to 4" Diameter Tapered Aluminum Pole	3 1/4" (83mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID
AT64 6" to 4" Diameter Tapered Aluminum Pole	3 1/2" (85mm)	1/2" (13mm)	3/4"-10 UNC x 17"	3/4"-10 UNC	3/4" ID

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

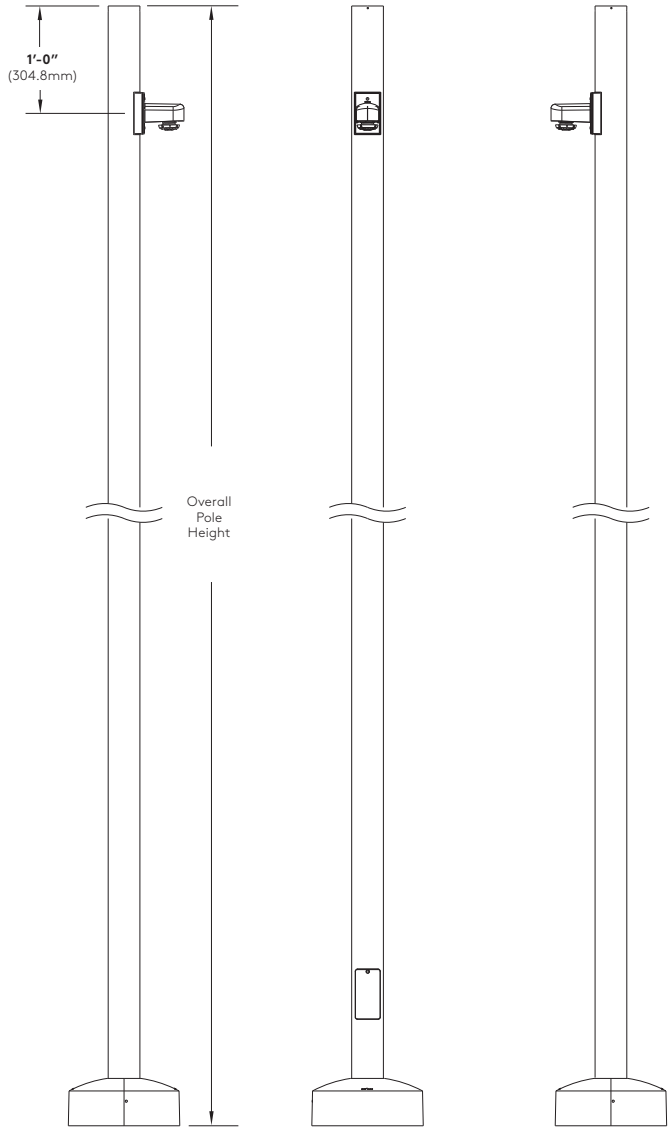
selux

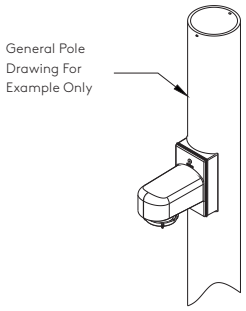
Round Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) Technology for motion sensing and also includes built-in photocell. Sensor comes pre-installed in cast aluminum housing painted to match pole finish.

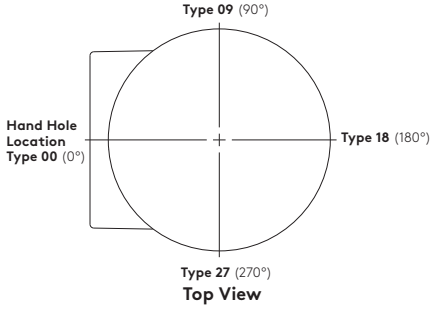
Series	Hand Hole Orientation	Dim Level	Photocell Feature	Voltage
MS Motion Sensor	**00** 0° Clockwise from Hand Hole **09** 90° Clockwise from Hand Hole **18** 180° Clockwise from Hand Hole **27** 270° Clockwise from Hand Hole	**D0** (Off) **D1** (1V=10%) **D3** (3V=30%) **D5** (5V=50%)	**Y** Yes **N** No	**UNV** (100-347VAC single phase or 208/230/480VAC phase-to-phase)

Factory Defaults:
Delay to Dim: 5 minutes
Delay to Off: Disabled
Sensitivity: Max
Custom Programming: Consult Factory





Sensor angular orientation from hand hole 0°
90° increments clockwise around pole (Type 00, 09, 18, 27)



Top View

Motion Sensor Features

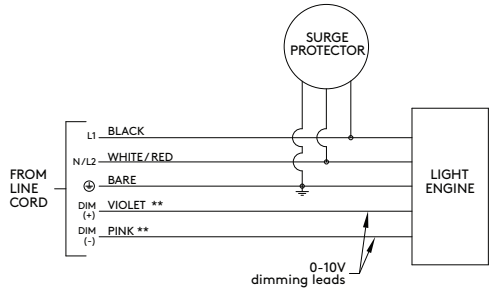
- Customize programming using smartphone application (Refer to the FSP-321 at www.wattstopper.com).
- 5 Year Warranty.
- 100% Digital PIR Detection, excellent RF Immunity.
- 270° coverage pattern.
- IP66 Rated for outdoor applications.
- Made for LED light source.
- Adjustable time delays, max/min dim levels, and ramp rates.
- Suitable for Title 24 applications.

(For coverage details refer to wattstopper FSP-321 spec sheet at www.wattstopper.com).

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

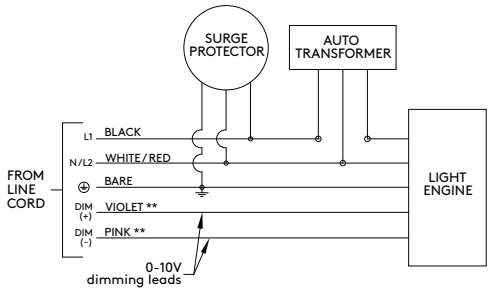
Standard Wiring (120V-277V)

**When dimming is not required cap dimming wires.

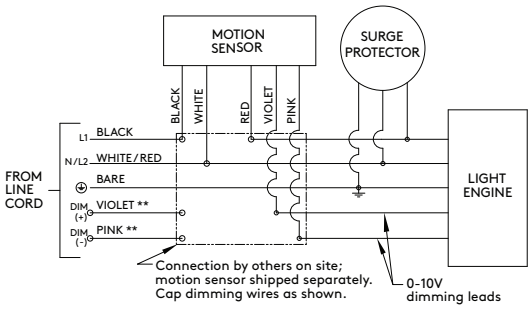


Standard Wiring (347/480V with Step-down Transformer)

**When dimming is not required cap dimming wires.

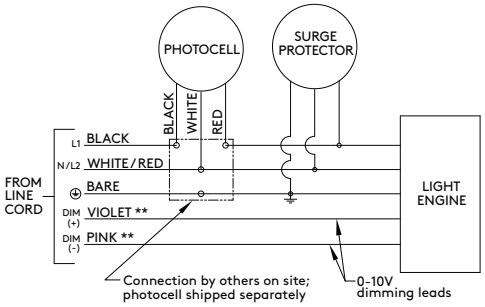


Motion Sensor Option (MS) Wiring (120-480V)

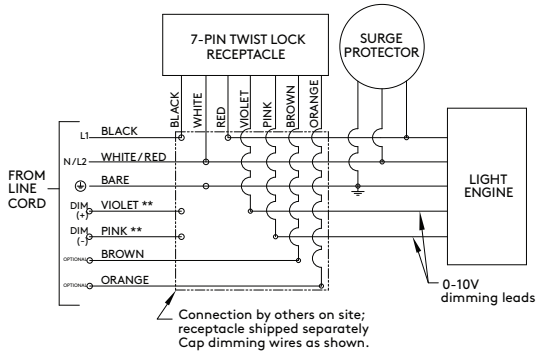


Photocell Option (TLRP) Wiring

**When dimming is not required cap dimming wires.

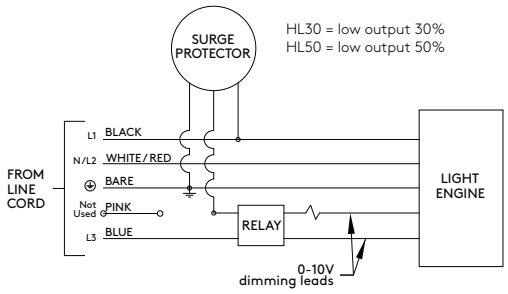


7-Pin Twist Lock Receptacle Option (TLR) Wiring



Hi-Lo Switching Option (HL) Wiring HL30/HL50 Only

120V, 240V, 277V. When blue is energized, light output will be at "Lo" level. Specify low-level by using the level listed below. For other combinations, consult factory.



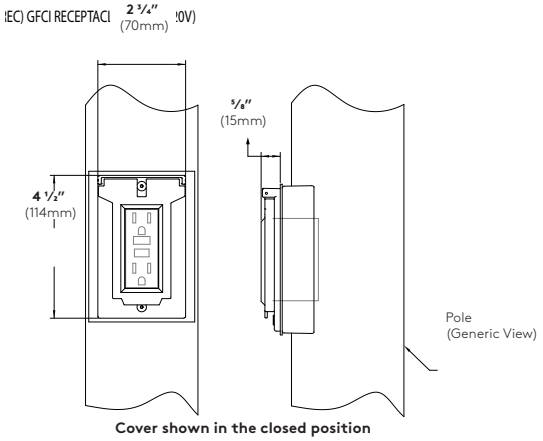
Wire Designation Table		
Source Voltage (VAC)	**Wire Color**	**Wire Designation**
120V, 277V, or 347V	Black	L1
	White	Neutral
208V, 240V, or 480V	Black	L1
	Red	L2
UNV (120V-277V)	Black	L1
	White	Neutral (120/277V) or L2 (208/240V)

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

selux

Optional Accessories

REC and REC3



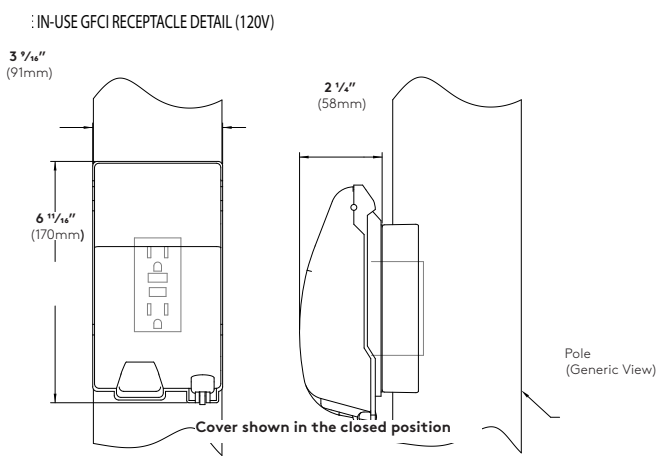
Cover shown in the closed position

GFCI Receptacle (REC) - 120V 15A GFCI duplex receptacle with weatherproof, self closing cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & Duplex Receptacle (REC3) (not shown) - 120V 20A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5A, 5V USB outlets. With weatherproof, self closing cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

REC3 does not incorporate GFCI (Ground Fault Circuit Interrupter) protection, and shall be powered by a GFCI protected branch circuit (by others).

REC2 and REC4



Cover shown in the closed position

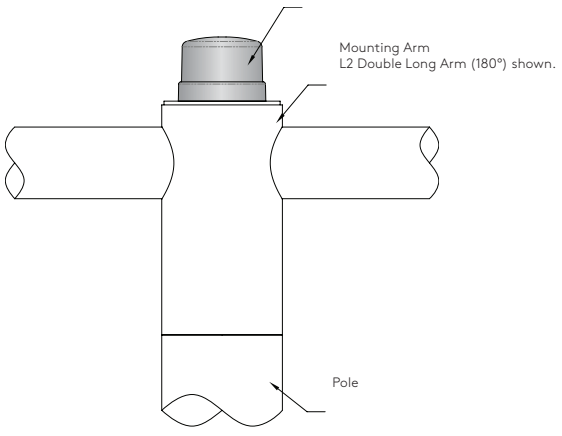
GFCI Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weatherproof, self closing, padlockable in use cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & Duplex Receptacle (REC4) (not shown) - 120V 20A duplex receptacle with USB combination ports. (1) type A and (1) type C high power 5A, 5V USB outlets. With weatherproof, self closing padlockable in use cover; located 36" (915mm) o.c. from base of pole, in line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

REC4 does not incorporate GFCI (Ground Fault Circuit Interrupter) protection, and shall be powered by a GFCI protected branch circuit (by others).

TLRP and TLR - A 3-pin twist-lock receptacle with photocell and 7-pin twist-lock receptacle with shorting cap.

Available for all pole and arm mounting configurations except Short Arm Wall (SW), Long Arm Wall (LW), and Long Arm Wall with Gusset (LGW).



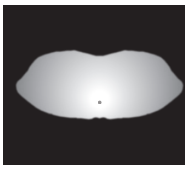
Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Avanza 450

selux

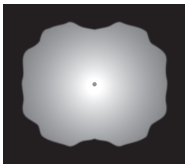
Photometry

Photometric Performance - R3W, R3N & R5				
Light Engine	Lumens	CCT	Input Watts	lm/W
L700	3866	3000K	36	107
L105	5332	3000K	54	99



R3W - Type III (wide)

R3N - Type III (Narrow)



R5 - Type V

CCT Multiplier	
2700K	0.962
3000K	1.000
3500K	1.000
4000K	1.063
5000K	1.070

Selux Corporation © 2023, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Date: _____ Customer: _____

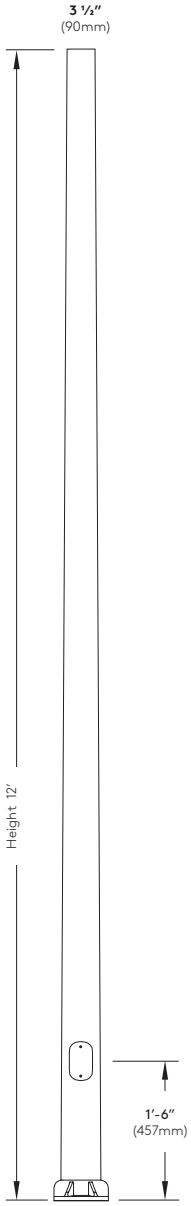
Project: _____

Type: _____ Qty: _____

selux

AT535

5″- 3½″ Round Tapered Aluminum Pole



Order Code: AT535 - _____ - _____ - _____

AT535	**Series**	**AT535** 5″- 3 ½″ Round Tapered Aluminum Pole						
_____	**Height**	**12** 12′	**14** 14′	**16** 16′	**18** 18′	**20** 20′		
_____	**Finish**	**WH** White	**BK** Black	**BL** Semi-Matte Black	**BZ** Bronze	**SV** Silver	**SP** Specify Premium Color	
_____	**Options**	**BC3** Decorative Cast Aluminum Base Cover	**REC**[1] GFCI Receptacle with weahterproof cover	**REC2**[1] GFCI Receptacle with padlockable in-use cover	**REC3**[1] USB and Duplex Receptacle with weatherproof cover	**REC4**[1] USB and Duplex Receptacle with weatherproof padlockable in-use cover	**MS**[2] Motion Sensor with Optional Photocell (Meets Title 24 requirement	[1] See page 4 for details [2] See page 5 for details

Product Modifications

Please list modification requirements for review by factory:

Approvals

Date:

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

Tilden Commons/25009
PROGRESS CD/04-01-2026

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XG2

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

Specifications

Pole Shaft - Pole shaft is spun from seamless 6063 alloy aluminum which is heat treated to a T6 temper.

Anchor Base - Anchor base is cast from 356 alloy aluminum which is heat treated to a T6 temper. The anchor base casting and shaft are joined by a continuous circumferential weld at the outside top and inside bottom of the anchor base.

Access Hole - The opening measures 3″ x 5″ (76mm x 127mm) with a cast 356 aluminum tempered to a T6 condition reinforced frame. Frame is supplied with integral ground lug connection located inside pole. Flush fitting cover is supplied with tamper resistant fasteners.

Anchor Bolts - Pole is supplied with four steel hot dip galvanized anchor bolts, ¾″ x 17″, each with two nuts and two flat washers.

Nut Cover - Poles come standard with cast aluminum nut covers.

Exterior Luminaire Finish - Selux utilizes a high quality Polyester Powder Coating. All Selux luminaires and poles are finished in our Tiger Drylac certified facility and undergo a five stage intensive pretreatment process where product is thoroughly cleaned, phosphated and sealed. Selux powder coated products provide excellent salt and humidity resistance as well as ultra violet resistance for color retention. All products are tested in accordance with test specifications for coatings from ASTM and PCI.

Standard exterior colors are White (WH), Black (BK), Semi-Maßtte Black (BL), Bronze (BZ), and Silver (SV). Selux premium colors (SP) are available, please specify from your Selux color selection guide.

All Poles are constructed per AASHTO standards for structural supports for highway signs, luminaires and traffic signals as published in 2013.

A consideration of field conditions such as (but not limited to) wind zone, height, vibration must be given by the designer/specifier for the appropriate application.
Performance of poles is dependent upon proper support/attachment of pole to adequate foundation design. Selux does not design or offer recommendations for foundations. EPA values assume that the bottom of the pole is at grade level.

Call Selux **(800) 735-8927** if there are any questions, or for any assistance in determining suitability with appropriate fixtures.

AT535- EPA MATRIX

Height (ft)	Bolt Circle (in)	Wall (in)	Max Luminaire Weight (lbs)	Wind Speed (mph) - AASHTO 2013										
				85	90	100	110	120	130	140	150	160	170	180
12	8 ⅝	0.156	75	15.2	13.4	10.5	8.4	6.9	5.8	4.9	4.2	3.6	3.2	2.8
14				12.8	11.2	8.7	6.9	5.5	4.6	3.8	3.3	2.8	2.4	2.1
16				10.5	9.1	6.9	5.4	4.3	3.4	2.9	2.4	2.0	1.7	1.5
18		0.188	100	8.9	7.6	5.7	4.3	3.3	2.6	2.1	1.7	1.4	1.2	1.0
20				7.3	6.2	4.4	3.2	2.3	1.7	1.4	1.1	0.9	-	-

Notes:
1. Maximum EPA ratings certified in accordance with AASHTO 2013 (LTS-6-I3) for 3-s gust wind speeds based on Allowable Stress Design (ASD) analysis
2. Consult factory for equivalent Load and Resistance Factor Design (LRFD) wind speeds
3. Centroid of all loads located a max height of 2′-6″ above pole top and 2′-0″ eccentric
4. Rated performance is dependant upon the pole being properly attached to a supporting foundation of adequate design

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

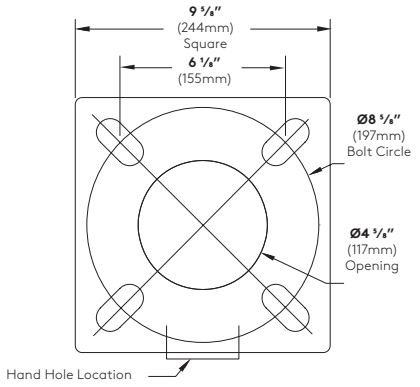
AT535

5″-3½″ Round Tapered Aluminum Pole

selux

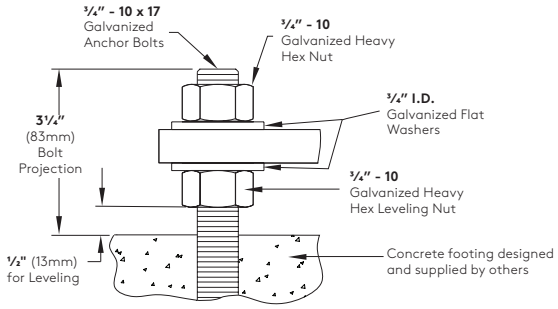
Bolt Circle

Use caution when setting anchor bolts. Bolts must be vertically straight and centered on dimensions shown.



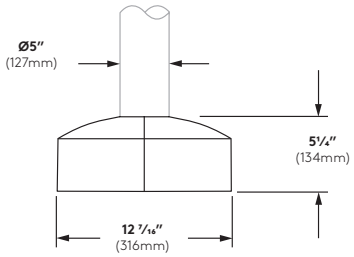
Note: Adequate drainage must be provided in concrete foundation.

Anchor Bolt Detail



BC3 Optional Base Cover

Die-cast aluminum, two-piece field installable base cover.



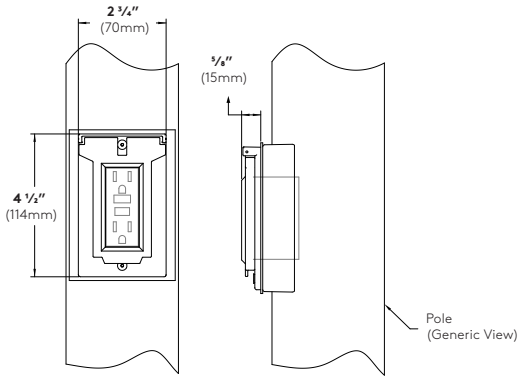
Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

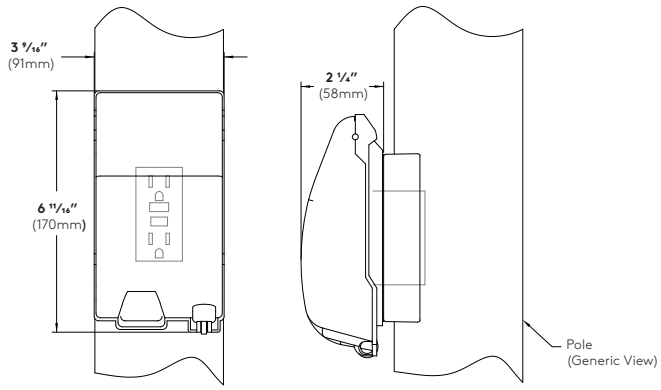
Optional Accessories

REC and REC3



Cover shown in the closed position

REC2 and REC4



Cover shown in the closed position

GFCI Duplex Receptacle (REC) - 120V 15A GFCI duplex receptacle with weatherproof, self-closing cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & GFCI Duplex Receptacle (REC3) (not shown) - 120V 15A GFCI duplex receptacle with USB combination ports. (1) USB Type-A and (1) USB Type-C port share 2.0A charging capacity between both ports. Includes weatherproof, self-closing cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

GFCI Duplex Receptacle (REC2) - 120V 15A GFCI duplex receptacle with weatherproof, self-closing, padlockable in-use cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel (120V only).

USB & GFCI Duplex Receptacle (REC4) (not shown) - 120V 15A GFCI duplex receptacle with USB combination ports. (1) USB Type-A and (1) USB Type-C port share 2.0A charging capacity between both ports. Includes weatherproof, self-closing padlockable in-use cover; located 36″ (914mm) o.c. from base of pole, in-line with hand hole. Receptacle is intended only for portable tools or other portable equipment to be connected to outlet only when attended by operating personnel.

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535

5″-3½″ Round Tapered Aluminum Pole

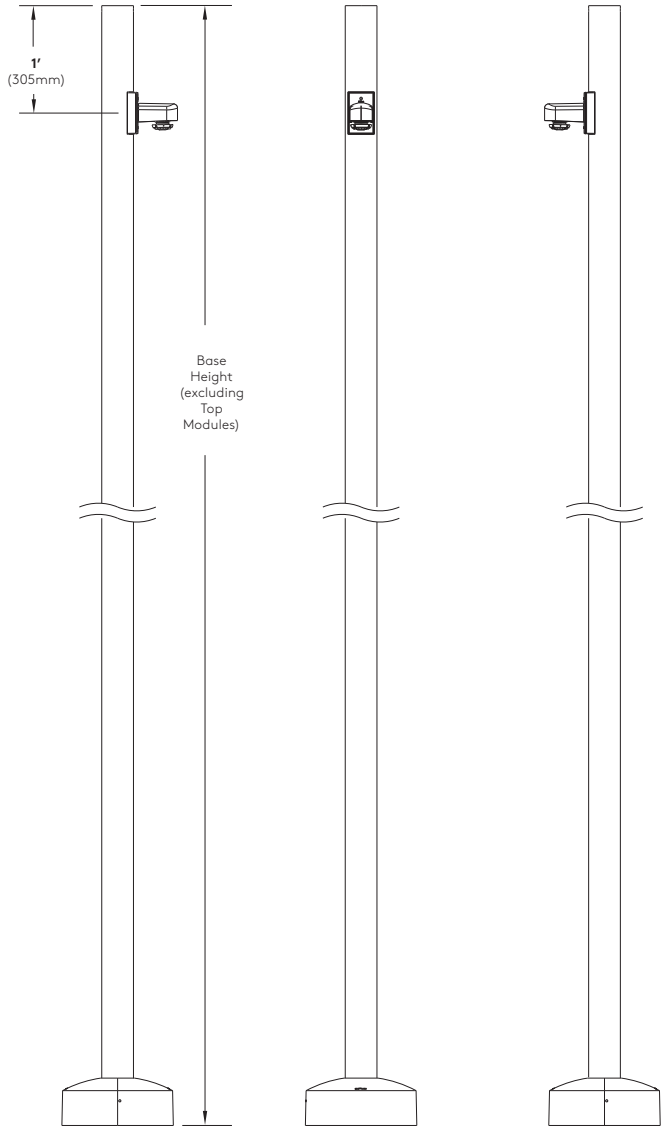
selux

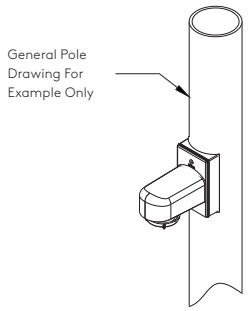
Round Pole Motion Sensor

The Selux outdoor rated sensor incorporates Passive Infrared (PIR) Technology for motion sensing and also includes built-in photocell.
Sensor comes pre-installed in cast aluminum housing painted to match pole finish.

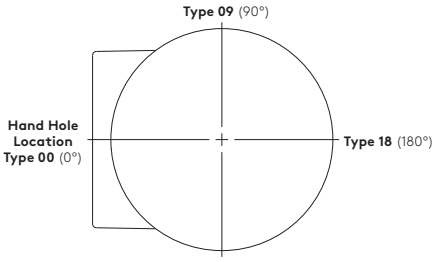
Series	Hand Hole Orientation	Dim Level	Photocell Feature	Voltage
MS Motion Sensor	**00** 0° Clockwise from Hand Hole **09** 90° Clockwise from Hand Hole **18** 180° Clockwise from Hand Hole **27** 270° Clockwise from Hand Hole	**D0** (Off) **D1** (1V=10%) **D3** (3V=30%) **D5** (5V=50%)	**Y** Yes **N** No	**UNV** (120/277/347VAC single phase or 208/240/480VAC phase-to-phase)

Factory Defaults:
Delay to Dim: 5 minutes
Delay to Off: 1 hour
Sensitivity: Max
Custom Programming: Consult Factory





Sensor angular orientation from hand hole 0°
90° increments clockwise around pole (Type 00, 09, 18, 27)



Top View

Motion Sensor Features

- Customize programming using smartphone application (Refer to the FSP-321 at www.wattstopper.com).
- 5 Year Warranty.
- 100% Digital PIR Detection, excellent RF Immunity.
- 270° coverage pattern.
- IP66 Rated for outdoor applications.
- Made for LED light source.
- Adjustable time delays, max/min dim levels, and ramp rates.
- Suitable for Title 24 applications.

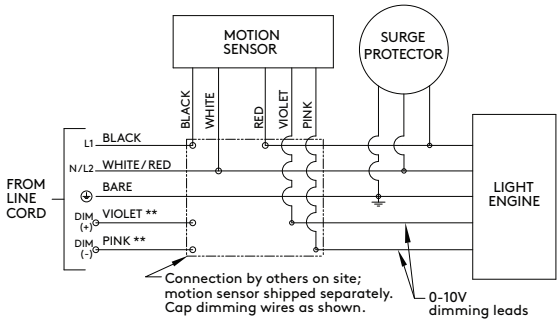
(For coverage details refer to wattstopper FSP-321 spec sheet at www.wattstopper.com).

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

AT535
5″-3½″ Round Tapered Aluminum Pole

selux

Motion Sensor Option (MS) Wiring (120-480V)



Wire Designation Table		
Source Voltage (VAC)	**Wire Color**	**Wire Designation**
120V, 277V, or 347V	Black	L1
	White	Neutral
208V, 240V, or 480V	Black	L1
	Red	L2
UNV (120V-277V)	Black	L1
	White	Neutral (120/277V) or L2 (208/240V)

Selux Corporation © 2024, T 845-834-1400, 800-735-8927, F 845-834-1401, www.selux.us
In a continuing effort to offer the best product possible, we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Specification sheets found at www.selux.us are the most recent versions and supercede all other printed or electronic versions.

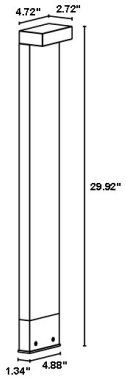
PLIN WOOD 2.2

designplan®

datasheet

Plin Wood is a family of outdoor bollards that combines a body of weather-resistant teak sourced from FSC®-certified plantations with a head and base in 6082 Anticorodal® aluminum and an anthracite finish. It is available in 3 styles - 2 heights each. Plin Wood 2.2 is the 29.9" version with a flat head.

Fixture Dimensions



TECHNICAL DATA

Wattage / Input	12W (24VDC)
Power Supply	Remote, not included. See page 2.
Construction	Head: Anticorodal® Aluminum 6082 Body: Teak Wood Mounting Plate: Aluminum 6060 Lens: Tempered Extra-Clear Glass
CCT	2700K, 3000K, 4000K
BUG Rating	B1-U1-G0 (3000K)
CRI	80
Delivered Lumens	492 lm (3000K)
Efficacy	41 lm/W (3000K)
Optics	Diffuse, Asymmetrical
Finishes	Anthracite, Custom RAL on request
Fixture Dimensions	4.88" l x 1.34" w x 29.92" h Head: 4.72" x 2.72"
Fixture Weight	5.67 lbs
LED Source	18 mid-power LEDs
Lumen Maintenance	L85, B10>50,000hrs (Ta 25°C)
Color Consistency	3-Step MacAdam
Operating Temp.	-4°F to +113°F
IP Rating	IP65
Impact Resistance	IK08

ORDERING INFORMATION

Example: PH2210000050AH. Accessories / Power Supplies ordered separately.

PH2210	00	00		0A	
Model No.	**Power**	**Optical Accessory**	**CCT**	**Optics**	**Finish**
PH2210	**00** - Remote	**00** - No accessory	**F** - 2700K **5** - 3000K **9** - 4000K	**0A** - Diffuse, Asymmetrical	**H** - Anthracite **C** - Custom RAL *(consult factory for "C")*

Job Name/Date:

Fixture Type Designation:

sales@designplan.com
www.designplan.com

79 Trenton Avenue, Frenchtown NJ 08825
© Copyright 2026 Designplan Lighting, Inc.
Published: March 12, 2026

P: 908-996-7710
F: 908-996-7042

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

PLIN WOOD 2.2

designplan®

datasheet

SUGGESTED POWER SUPPLIES

24VDC

Part Number	Description	Input/Output	# of Fixtures
PPLT00284	Non-Dim	120-277VAC to 24VDC, 100W, Class 2, DAMP	1-6
PPLT00543	0-10V Dimming to 15% (-40°C / -40°F cold weather start)	120-277VAC to 24VDC, 100W, Class 2	1-6

Suggested Lutron Compatible

Part Number	Option	Lutron SKU	Dim Range	Description	Input/Output	# of Fixtures
PPLT00530	L3DAE / L3D0	L3DA/L3D0	100%-1%	Hi-Lume™ 0.1% EcoSystem™ or 3-Wire LED Driver	120-277VAC to 24VDC, 96W, Class 2	1-6

DRIVERS IN NEMA 4X ENCLOSURE

Remote 24VDC - ELV / TRIAC / 0-10V

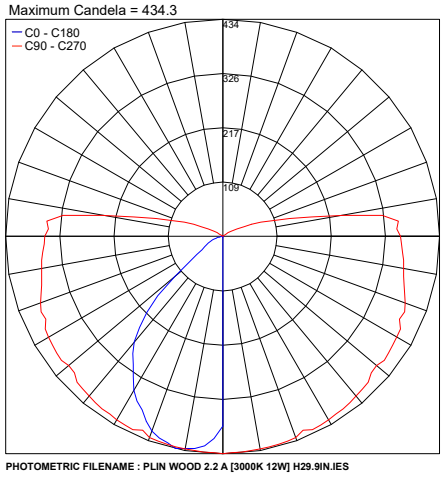
PPLT00715

Part Number	Description	Input/Output	# of Fixtures
PPLT00715	ELV / TRIAC / 0-10V Dimming to 0.1%	120-277VAC to 24VDC, 96W, Class 2, WET/DAMP	1-6

For other power supply options consult factory.

PHOTOMETRIC DATA

Note all Photometry is 3000K



Job Name/Date:

Fixture Type Designation:

sales@designplan.com
www.designplan.com

79 Trenton Avenue, Frenchtown NJ 08825
© Copyright 2026 Designplan Lighting, Inc.
Published: March 12, 2026

P: 908-996-7710
F: 908-996-7042

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

Fixtures | Floodlight (formerly Denali Integral / DE-LED-TR)

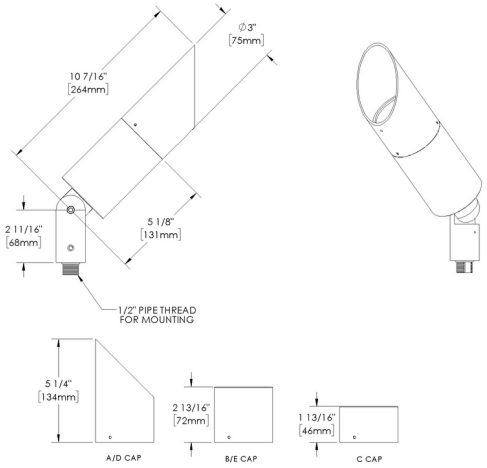
DENALI - Floodlight - Line Voltage - LED COB

UPGRADED

IP66

Downloads
Product Images (.zip)
Technical Drawing (.zip)
2D (.dwg)
2D (.dxf)
IES Files (.zip)
BIM - Revit (.zip)
Installation Instructions (.pdf)

Product Variant Examples



Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Floodlight (formerly Denali Integral / DE-LED-TR)

DENALI - Floodlight - Line Voltage - LED COB

Available Logic & Configurations

DE-	FL-	LID-	LCB-	AL-	TKM-	___-	___-
01	02	03	04	05	06B	06C	06E

01 SERIES
DE - DENALI
02 CATEGORY
FL - Floodlight
03 DRIVER
LID - Line Voltage
04 LIGHT SOURCE (TYPE)
LCB - LED COB

05 MATERIAL
AL - Aluminum
06B MOUNT
TKM - Threaded Knuckle Mount
06C STYLE
CA - Cap A - 45° (With Weephole)
CB - Cap B - 90° (With Weephole)
CC - Cap C - Flush Lens
CD - Cap D - 45°
CE - Cap E - 90°
06E INPUT VOLTAGE
120 - 120V
277 - 277V

___-	___-	___-	___-	___-	___-	___-
07	08	09	10A	10B	11	12

07 LIGHT SOURCE
x98 - 2700K CRI80 - 13W (829 - 1180 lm)
x99 - 3000K CRI80 - 13W (869 - 1237 lm)
x100 - 4000K CRI80 - 13W (903 - 1285 lm)
x101 - 2700K CRI90 - 13W (574 - 817 lm)
x102 - 3000K CRI90 - 13W (631 - 899 lm)
x103 - 3500K CRI80 - 13W (855 - 1217 lm)
x104 - 3500K CRI90 - 13W (611 - 869 lm)
x121 - 4000K CRI90 - 13W (681 - 969 lm)
x122 - 2700K CRI80 - 21W (1208 - 1416 lm)
x123 - 3000K CRI80 - 21W (1341 - 1571 lm)
x124 - 3500K CRI80 - 21W (1136 - 1331 lm)
x125 - 4000K CRI80 - 21W (1394 - 1634 lm)
x126 - 2700K CRI90 - 21W (818 - 959 lm)
x127 - 3000K CRI90 - 21W (1007 - 1180 lm)
x128 - 3500K CRI90 - 21W (723 - 847 lm)
x129 - 4000K CRI90 - 21W (1089 - 1277 lm)
08 OPTIC
SP - Spot (17°)
FL - Flood (45°)
WFL - Wide Flood (53°)

09 CONTROL
ELV - ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.)
INC - INC Dimming (For use with Incandescent Dimmer. 120V only.)
010 - 0-10V (120V,277V)
10A LENS
09 - Clear (Standard)
12 - Soft Focus
13 - Rectilinear
10B SHIELDING
00 - Not included (Standard)
11 - Honeycomb Baffle
11 WIRING LENGTH
WL00 - Standard
WL05 - 5 Ft Leads
WL25 - 25 Ft Leads
12 FINISH
Standard Finishes
BLP, **BZP**, **WHP**, **SAP**, **BLW**, **BZW**, **WHW**, **VER**
Premium Finishes
CMG, **SMG**, **RMG**, **AMG**, **TXF**, **BCM**, **BGE**, **WCP**, **OCP**, **HUG**, **ABP**, **BPP**, **SDS**, **WIR**, **CAP**, **CRM**, **AQW**, **NBP**
Other - RAL
RAL
Other - Custom Color
CUS

NOTE: Not all configurations may be compatible with one another. Please configure the product for specific 2D, Photometry, Downloads, Spec Sheet and Compatible mountings and power supplies.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Floodlight (formerly Denali Integral / DE-LED-TR)

DENALI - Floodlight - Line Voltage - LED COB

Features

Anti-condensation vent allows moisture to exit the fixture but never enter in

Lens factory adhered to fixture cap providing hermetically sealed optical compartment

Manufactured in the USA with sustainable processes

Aim & Lock knuckle eliminates need for re-aiming & adjustments

Water-tight anti-siphon plug prevents moisture ingress from wireways

Secured with tamper-resistant, stainless steel hardware

Easily replaceable modular components reduce waste and extend fixture life

Slip fit cap & high temp. silicone 'O' ring provides reliable water-tight seal

Solid billet fixture body provides unmatched durability and heat management

360HD knuckle provides 360° horizontal rotation and vertical adjustment

Technical

Driver: Line Voltage

Light Source (Type): LED COB

Material: Aluminum

CCT (K): 2700, 3500, 3000, 4000

CRI: 80, 90

Input Power (W): 13, 21

Delivered Lumens (lm): 574 - 1634

Beam Angle (°): 17, 45, 53

Control: 0-10V (120V,277V), ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.), INC Dimming (For use with Incandescent Dimmer. 120V only.)

Mount: Threaded Knuckle Mount

Style: Cap A - 45° (With Weephole), Cap B - 90° (With Weephole), Cap C - Flush Lens, Cap D - 45°, Cap E - 90°

Input Voltage: 120V, 277V

Lens: Soft Focus, Clear (Standard), Rectilinear

Shielding: Not included (Standard), Honeycomb Baffle

Wiring Length: Standard, 5 Ft Leads, 25 Ft Leads

Finish: Standard Finishes, Premium Finishes, Other - RAL, Other - Custom Color

Body: Unibody design with enclosed, water-proof wireway, integral heat sink, fully machined from solid billet, anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.

Material Detail: Furnished in copper-free aluminum (6061-T6).

Aiming: 360HD Mounting System can adjust 180° vertically and rotate 360° horizontally. 'O' Ring helps maintain fixture position. Design withstands 73 lb. static load prior to movement for optical alignment with a ½" pipe thread for mounting.

Light Source Detail: COB (Chip on Board) technology and modular design with electrical quick disconnects.

Optics: Interchangeable optics permit changes in the field.

Hardware: Tamper-resistant, stainless steel hardware. Hardware is black oxide treated for additional corrosion resistance.

Sealing: 'O' Ring provides water-tight seal., Anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.

Note: Extended leads are NOT for direct burial. Contact factory for direct burial lead options.

Finish Detail: StarGuard, our 15-stage chromate-free process, cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. It is RoHS compliant.

Warranty: 5-year limited warranty.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Floodlight (formerly Denali Integral / DE-LED-TR)

DENALI - Floodlight - Line Voltage - LED COB

Finishes

STANDARD FINISHES

[BLP]
Satin Black

[BZP]
Satin Bronze

[WHP]
Satin White

[SAP]
Satin Aluminum

[BLW]
Black Wrinkle

[BZW]
Bronze Wrinkle

[WHW]
White Wrinkle

[VER]
Verde

PREMIUM FINISHES

[CMG]
Cascade Mountain Granite

[SMG]
Sierra Mountain Granite

[RMG]
Rocky Mountain Granite

[AMG]
Aleutian Mountain Granite

[TXF]
Textured Forest

[BCM]
Black Chrome

[BGE]
Beige

[WCP]
Weathered Copper

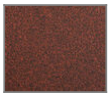
[OCP]
Old Copper

[HUG]
Hunter Green

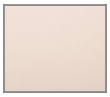
[ABP]
Antique Brass Powder

[BPP]
Brown Patina Powder

[SDS]
Sonoran Desert Sandstone


[WIR]
Weathered Iron

[CAP]
Clear Anodized Powder


[CRM]
Cream

[AQW]
Antique White

[NBP]
Natural Brass Powder

OTHER - RAL

[RAL]
RAL Color

OTHER - CUSTOM COLOR

[CUS]
Custom Color

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Floodlight (formerly Denali Integral / DE-LED-TR)

DENALI - Floodlight - Line Voltage - LED COB

Light Source

Light Source	Optic	Beam Angle	CCT (K)	CRI	R9	Input Power (W)	Delivered Lumens (Lm)	CBCP
x98	SP - Spot	17	2700	80	>15	13	829	6480
x98	FL - Flood	45	2700	80	>15	13	1041	1773
x98	WFL - Wide Flood	53	2700	80	>15	13	1180	1478
x99	SP - Spot	17	3000	80	>15	13	869	6796
x99	FL - Flood	45	3000	80	>15	13	1091	1860
x99	WFL - Wide Flood	53	3000	80	>15	13	1237	1550
x100	SP - Spot	17	4000	80	>15	13	903	7059
x100	FL - Flood	45	4000	80	>15	13	1134	1931
x100	WFL - Wide Flood	53	4000	80	>15	13	1285	1610
x101	SP - Spot	17	2700	90	>50	13	574	4486
x101	FL - Flood	45	2700	90	>50	13	720	1228
x101	WFL - Wide Flood	53	2700	90	>50	13	817	1023
x102	SP - Spot	17	3000	90	>50	13	631	4936
x102	FL - Flood	45	3000	90	>50	13	793	1350
x102	WFL - Wide Flood	53	3000	90	>50	13	899	1126
x103	SP - Spot	17	3500	80	>15	13	855	6685
x103	FL - Flood	45	3500	80	>15	13	1074	1829
x103	WFL - Wide Flood	53	3500	80	>15	13	1217	1525
x104	SP - Spot	17	3500	90	>50	13	611	4775
x104	FL - Flood	45	3500	90	>50	13	767	1307
x104	WFL - Wide Flood	53	3500	90	>50	13	869	1089
x121	SP - Spot	17	4000	90	>50	13	681	5324
x121	FL - Flood	45	4000	90	>50	13	855	1457
x121	WFL - Wide Flood	53	4000	90	>50	13	969	1214
x122	SP - Spot	17	2700	80	>15	21	1208	9040
x122	FL - Flood	45	2700	80	>15	21	1359	2437
x122	WFL - Wide Flood	53	2700	80	>15	21	1416	1876
x123	SP - Spot	17	3000	80	>15	21	1341	10030
x123	FL - Flood	45	3000	80	>15	21	1508	2704
x123	WFL - Wide Flood	53	3000	80	>15	21	1571	2082
x124	SP - Spot	17	3500	80	>15	21	1136	8496
x124	FL - Flood	45	3500	80	>15	21	1277	2290
x124	WFL - Wide Flood	53	3500	80	>15	21	1331	1763
x125	SP - Spot	17	4000	80	>15	21	1394	10431
x125	FL - Flood	45	4000	80	>15	21	1568	2812
x125	WFL - Wide Flood	53	4000	80	>15	21	1634	2165
x126	SP - Spot	17	2700	90	>50	21	818	6120
x126	FL - Flood	45	2700	90	>50	21	920	1650
x126	WFL - Wide Flood	53	2700	90	>50	21	959	1270
x127	SP - Spot	17	3000	90	>50	21	1007	7535
x127	FL - Flood	45	3000	90	>50	21	1133	2031
x127	WFL - Wide Flood	53	3000	90	>50	21	1180	1564
x128	SP - Spot	17	3500	90	>50	21	723	5406
x128	FL - Flood	45	3500	90	>50	21	813	1457
x128	WFL - Wide Flood	53	3500	90	>50	21	847	1225
x129	SP - Spot	17	4000	90	>50	21	1089	8148
x129	FL - Flood	45	4000	90	>50	21	1225	2196
x129	WFL - Wide Flood	53	4000	90	>50	21	1277	1691

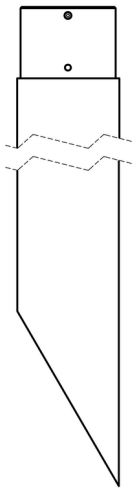
Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Pipe

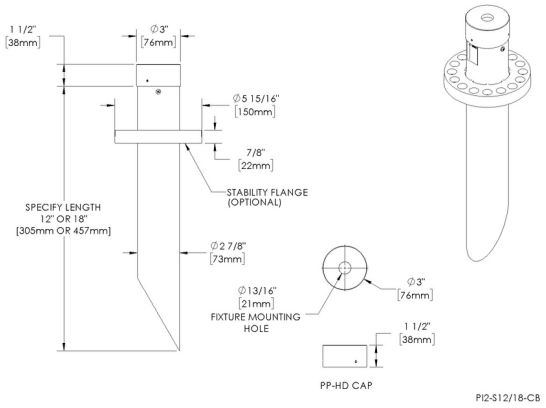
Pipe PI2 - 18” Stake - Single - Aluminum

Date	Project	Type



Downloads

Installation Instructions
Product Image
Technical Drawing
2D (.dwg)
2D (.dxf)



Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Updated 02/10/2026

Pipe

Pipe PI2 - 18” Stake - Single - Aluminum

Date	Project	Type

Configure

PI2 -	S18 -	SI -	AL -	___ -
01	02	03	04	06

Pipe PI2 - 18” Stake - Single - Aluminum

01 ACCESSORIES
PI2 - Pipe PI2

02 MOUNT
S18 - 18” Stake

03 VERSION
SI - Single

04 MATERIAL
AL - Aluminum

06 FINISHES
Standard Finishes
BLP, BZP, WHP, SAP, BLW, BZW, WHW, VER
Premium Finishes
CMG, SMG, RMG, AMG, TXF, BCM, BGE, WCP, OCP, HUG, ABP, BPP, SDS, WIR, CAP, CRM, AQW, NBP
Other - RAL
RAL
Other - Custom Color
CUS

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Updated 02/10/2026

Pipe

Pipe PI2 - 18” Stake - Single - Aluminum

Date	Project	Type

Technical

Body: Machined cap.

Material Detail: Furnished in copper-free aluminum (6061-T6).

Installation: Stability Flange included., 2” Schedule 80 PVC pipe. For direct burial in soil or concrete. 60° angled bottom designed for use with conduit or direct burial low voltage cable.

Finish: Standard Finishes, Premium Finishes, Other - RAL, Other - Custom Color

Note: All line and low voltage connections must be made in compliance with the National Electrical Code. Failure to do so will void warranty.

Finish Detail: StarGuard, our 15-stage chromate-free process, cleans and conversion coats aluminum components prior to application of Class ‘A’ TGIC polyester powder coating. It is RoHS compliant.

Warranty: 5-year limited warranty.

Certification: RoHS compliant components., UL tested to IESNA LM-79. UL Listed. Certified to CAN/CSA/ANSI Standards.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Updated 02/10/2026

Pipe

Pipe PI2 - 18” Stake - Single - Aluminum

Date | Project | Type

Finishes

STANDARD FINISHES

[BLP] Satin Black

[BZP] Satin Bronze

[WHP] Satin White

[SAP] Satin Aluminum

[BLW] Black Wrinkle

[BZW] Bronze Wrinkle

[WHW] White Wrinkle

[VER] Verde

PREMIUM FINISHES

[CMG] Cascade Mountain Granite

[SMG] Sierra Mountain Granite

[RMG] Rocky Mountain Granite

[AMG] Aleutian Mountain Granite

[TXF] Textured Forest

[BCM] Black Chrome

[BGE] Beige

[WCP] Weathered Copper

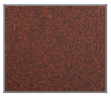
[OCP] Old Copper

[HUG] Hunter Green

[ABP] Antique Brass Powder

[BPP] Brown Patina Powder

[SDS] Sonoran Desert Sandstone


[WIR] Weathered Iron

[CAP] Clear Anodized Powder

[CRM] Cream

[AQW] Antique White

[NBP] Natural Brass Powder

OTHER - RAL

[RAL] RAL Color

OTHER - CUSTOM COLOR

[CUS] Custom Color

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe. Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Updated 02/10/2026

KLIK USA

2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045

PH: 262.505.5124
sales@klikusa.com

www.klikusa.com

Project Name: .....

Location: .....

Specifier: .....

Rep Agency: .....

Fixture Type: .....

Product Code: .....

KLIK LEDpod™ 40 Patented

DESCRIPTION

Discrete, seamless point source LED fixture for use in all code-compliant handrail, especially curving ramps and helical stairs as well as long runs on bridges and pedestrian paths. Asymmetric optic allows mounting at rail nadir, eliminating uncomfortable glare issues. Typical spacing between LEDpods on stairs is 24", and on level runs is 48".

HOUSING

Aluminum body has a fine 25-micron finish and is then hard-coat anodized, thus preventing galvanic corrosion. Silicone gasket seals the installation from water ingress and provides added means of electrical isolation to minimize potential for galvanic reaction.

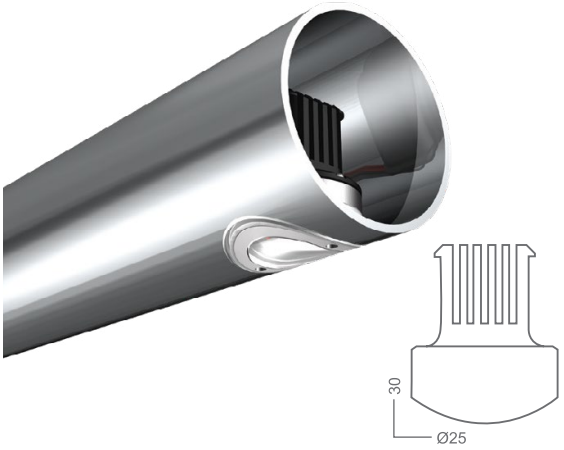
MOUNTING

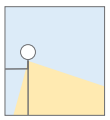
Patented attachment method offers unparalleled security and ease of mounting. Requires only a simple drilled hole in railing material. All conductors remain internal to railing to provide secure and safe wiring. IK10 Impact rating ensures vandal resistance.

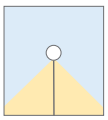
- Tube Size: Ø 1.5" - 1.75", Max. wall .2"
  Other sizes available upon request.
- Cut Out: 25mm
  - Must use a 25mm annular cutter [NOT a 1" cutter].

ELECTRICAL/LED DRIVER

- Input Voltage: 24 VDC
- Driver: Must use class 2 driver
  - Primary Driver: 110 - 277 VAC UL Listed Constant Voltage
  - Secondary Driver: 350 - 700mA Constant Current (provided with fixture)
- Control: 0-10V, DALI, DMX
  - DMX control for dimming only, not for individually addressed LEDpod
- Enclosure: Minimum NEMA2 for indoor, NEMA 3R for outdoor
- Wire connectors provided; factory pre-wire available, consult factory




Asymmetrical
65° beam


Symmetrical
90° beam

ETL listed
UL 1598/CSA 22.2; CE

LED Operating Temp:
-40°F – 160°F

Weatherproof Rating:
IP66
Wet location rated

3G Vibration
per MIL-STD-810G

Impact resistance:
IK10

Wildlife friendly

International Dark Sky Association Certified Amber ≤ 3000K

* All IP rated luminaires tested to AS60529-2004 Degrees of protection provided by enclosures (IP Code)

LP40 R1.1 01.07.2025

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented

SPECIFICATION TABLE

Follow the steps to specify your fixture. Enter Product Code in field at top of page. Example: LP4030KA40

Fixture Type	Color Temp [K]	Distribution	Rail Wall Thicness[1]	Lens Options	Security	Output (W)	Anodized Bezel Options	Control
LP40	**22K** 2200K	**A** Asymmetric	**1512** 1.5" x 11ga	**-** Clear lens [Std]	**-** Tamper resistant [Std]	**-** 500mA 2W [Std]	**-** Marine grade anodized [Std]	**-** 0-10V Dim
	27K 2700K	**S** Symmetric	**1513** 1.5" x 1/8 Wall	**FR** Opaque frost	**TP** Tamperproof	**350** 350mA 1.5W	**BRS** Antique Brass	**DMX1** DMX 1 Ch
	30K 3000K		**1506** 1.5" 16ga	**OT** Optical filter	[Requires the KLIK tool]	**700** 700mA 2.6W	**BLK** Black Anodized	**PH** [Phase dim]
	35K 3500K		**05** 1 1/4 SC5 Pipe				**BZ** Bronze	
	40K 4000K		**10** 1 1/4 SC10 Pipe				**ANT** Dark Antique	
	AMB FWC Amber		**40** 1 1/4 SC40 Pipe				**GLD** Rose Gold	
	PCA Phos-converted Amber		**80** 1 1/4 SC80 Pipe					
	R Red		**CUST** Non-stock					
	G Green							
	B Blue							

[1]Clips for Bronze railing requires a special alloy | consult factory

LED PERFORMANCE

LED:	Cree XT-E
CCT:	Refer to the specification table for details
CRI:	80-85
Life:	80% at 50k hrs and 85°C
Binning:	3 MacAdam Steps
Warranty:	5 Year Warranty

Outputs based on 3000K

W	mA	V	SYMMETRICAL Delivered Lumens	ASYMMETRICAL Delivered Lumens
1.5	350	3	115	81
2	500	3	165	123
2.6	700	3	214	160

REMOTE MOUNTING DISTANCE CHART

24 VDC 100W Driver	Approx. distance from driver to first LED at 32 fixtures			
Wire Size	10 AWG	12 AWG	14 AWG	16 AWG
Distance	525'	328'	213'	131'

Increased spacing or higher output LEDpods reduces the number of PODs per circuit and the remote distance.

PRIMARY DRIVER

Power Supply 24V DC [PSU]	Secondary LED Driver	Spacing	Maximum KLIK LEDpods™*
110 - 277 Primary Voltage Remotely Mounted Dimming Control 10" x 1.5" x 2"	700mA	24"	30
	500mA	24"	37
	350mA	24"	50

*Based on 16 AWG between LEDpods ≤ 50' remote distance

REMOTE POWER SUPPLIES [PSUs]

LP040WPRITRNDIMIP	Class 2; 40W; 0-10 Dim Constant Voltage Remote PSU [IP67 (Temp Submersion) Rated; -40°C ~ +85°C]
LP096WPRITRNDIM	Class 2, 96W, 0-10 Dim Constant Voltage Remote PSU [IP67 (Temp Submersion) Rated; -40°C ~ +80°C]
LP100WPRITRNDIM	Class 2, 96W, 0-10 Dim Constant Voltage Remote PSU [IP64 (Damp Location) Rated; -25°C ~ +40°C]
LPQZ96WUNV24VPH010	Class 2, 96W, Phase or 0-10 Dim Constant Voltage Remote PSU [IP66 (Wet Location) Rated; -40°C ~ +60°C]
LPQZ96WUNV24VDMX1CH	Class 2, 96W, 8-Bit DMX Dim Constant Voltage Remote PSU [IP66 (Wet Location) Rated; -40°C ~ +60°C]

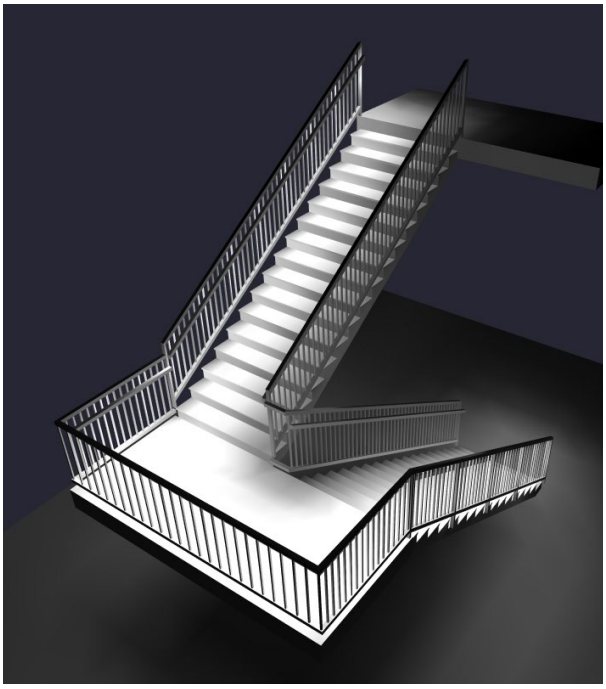
REMOTE NEMA ENCLOSURES

LPNEMA2RENCL	NEMA2 INDOOR enclosure for LP100WPRITRNDIM, 12 x 3.3 x 2
LPNEMA3RENCLJR	NEMA3R Drip Proof Enclosure, 4 x 4 x 12 [IP24 Equivalent]
LPNEMA3RXENCLSS	NEMA3 304 Lockable Stainless Steel Drip Proof Enclosure 4 x 4 x 12 [IP24 Equivalent]
LPNEMA4ENCLJR	NEMA4 Watertight Enclosure, 6 x 4 x 12 [IP66 Equivalent]; NEMA4X
LPNEMA4XENCLSSJR	NEMA4 304 Lockable Stainless Steel Watertight Enclosure 6 x 4 x 12 [IP66 Equivalent] NEMA4X
LPNEMA6PTRO	NEMA6 Watertight Enclosure Wiring Trough, 2 x 3 x 14 [IP68 Equivalent]

Additional driver & enclosure configurations available, including IP68 options
Please note the KLIK UL Listing requires purchase of a remote driver and enclosure.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented SINGLE SIDED

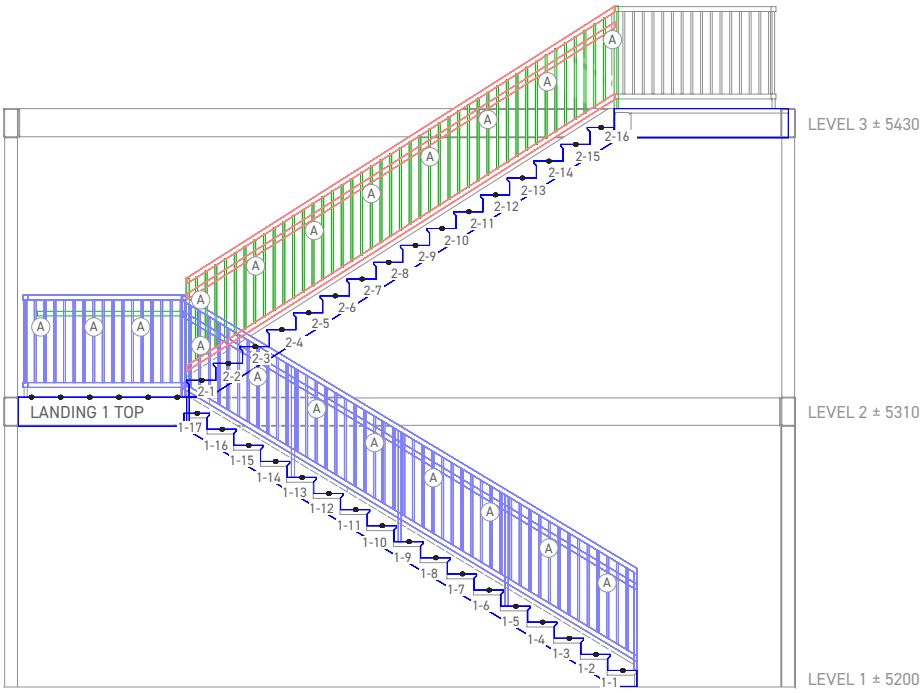


QTY	LABEL	ARRANGEMENT	LUMENS	LLF	DESCRIPTION
26	A	Single	130	0.900	LPOD40-3K-500mA-2.0W-Asym Clear Lens

Landing readings taken on landing. Stair readings taken on stair. *(Design based on 2' centers.)*

LABEL	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
Landing	Fc	13.73	22.2	3.0	4.58	7.40

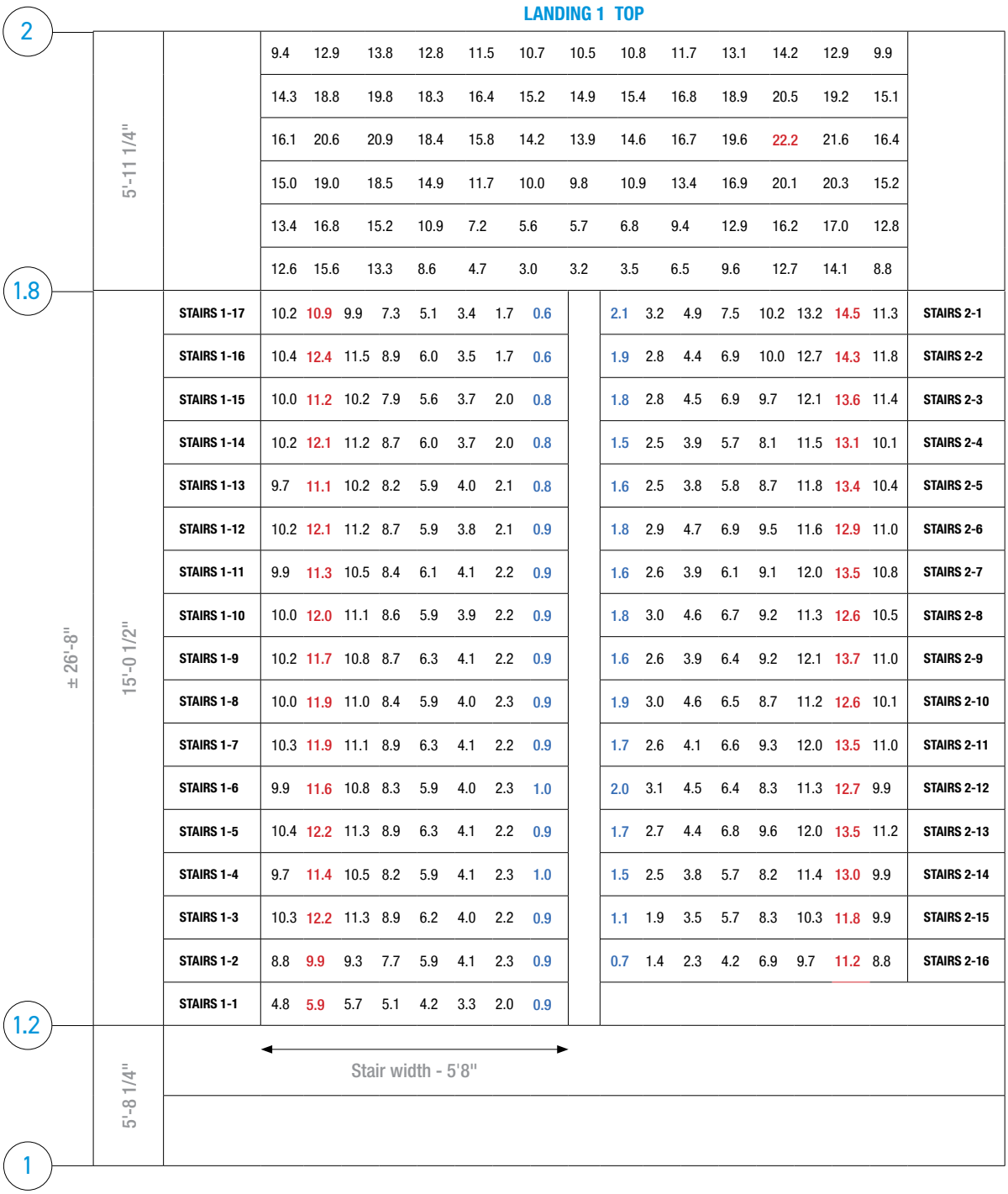
STAIRS	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
1-1	Fc	3.99	5.9	0.9	4.43	6.56
1-10	Fc	6.83	12.0	0.9	7.59	13.33
1-11	Fc	6.68	11.3	0.9	7.42	12.56
1-12	Fc	6.86	12.1	0.9	7.62	13.44
1-13	Fc	6.50	11.1	0.8	8.13	13.88
1-14	Fc	6.84	12.1	0.8	8.55	15.13
1-15	Fc	6.43	11.2	0.8	8.04	14.00
1-16	Fc	6.88	12.4	0.6	11.47	20.67
1-17	Fc	6.14	10.9	0.6	10.23	18.17
1-2	Fc	6.11	9.9	0.9	6.79	11.00
1-3	Fc	7.00	12.2	0.9	7.78	13.56
1-4	Fc	6.64	11.4	1.0	6.64	11.40
1-5	Fc	7.04	12.2	0.9	7.82	13.56
1-6	Fc	6.73	11.6	1.0	6.73	11.60
1-7	Fc	6.96	11.9	0.9	7.73	13.22
1-8	Fc	6.80	11.9	0.9	7.56	13.22
1-9	Fc	6.86	11.7	0.9	7.62	13.00
2-1	Fc	8.36	14.5	2.1	3.98	6.90
2-10	Fc	7.33	12.6	1.9	3.86	6.63
2-11	Fc	7.60	13.5	1.7	4.47	7.94
2-12	Fc	7.28	12.7	2.0	3.64	6.35
2-13	Fc	7.74	13.5	1.7	4.55	7.94
2-14	Fc	7.00	13.0	1.5	4.67	8.67
2-15	Fc	6.56	11.8	1.1	5.96	10.73
2-16	Fc	5.65	11.2	0.7	8.07	16.00
2-2	Fc	8.10	14.3	1.9	4.26	7.53
2-3	Fc	7.05	13.1	1.5	4.70	8.73
2-4	Fc	7.85	13.6	1.8	4.36	7.56
2-5	Fc	7.25	13.4	1.6	4.53	8.38
2-6	Fc	7.66	12.9	1.8	4.26	7.17
2-7	Fc	7.45	13.5	1.6	4.66	8.44
2-8	Fc	7.46	12.6	1.8	4.14	7.00
2-9	Fc	7.56	13.7	1.6	4.73	8.56



Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented SINGLE SIDED

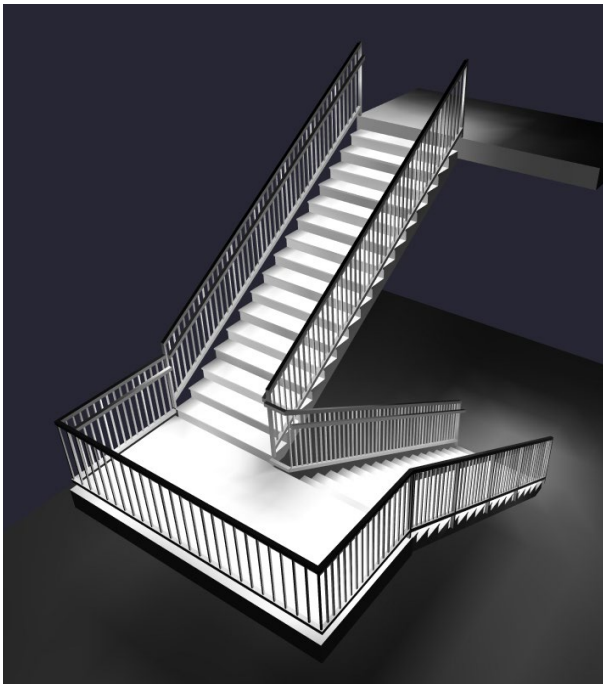


			9.4	12.9	13.8	12.8	11.5	10.7	10.5	10.8	11.7	13.1	14.2	12.9	9.9																
			14.3	18.8	19.8	18.3	16.4	15.2	14.9	15.4	16.8	18.9	20.5	19.2	15.1																
			16.1	20.6	20.9	18.4	15.8	14.2	13.9	14.6	16.7	19.6	22.2	21.6	16.4																
			15.0	19.0	18.5	14.9	11.7	10.0	9.8	10.9	13.4	16.9	20.1	20.3	15.2																
			13.4	16.8	15.2	10.9	7.2	5.6	5.7	6.8	9.4	12.9	16.2	17.0	12.8																
			12.6	15.6	13.3	8.6	4.7	3.0	3.2	3.5	6.5	9.6	12.7	14.1	8.8																
		STAIRS 1-17	10.2	10.9	9.9	7.3	5.1	3.4	1.7	0.6														2.1	3.2	4.9	7.5	10.2	13.2	14.5	11.3	STAIRS 2-1
		STAIRS 1-16	10.4	12.4	11.5	8.9	6.0	3.5	1.7	0.6														1.9	2.8	4.4	6.9	10.0	12.7	14.3	11.8	STAIRS 2-2
		STAIRS 1-15	10.0	11.2	10.2	7.9	5.6	3.7	2.0	0.8														1.8	2.8	4.5	6.9	9.7	12.1	13.6	11.4	STAIRS 2-3
		STAIRS 1-14	10.2	12.1	11.2	8.7	6.0	3.7	2.0	0.8														1.5	2.5	3.9	5.7	8.1	11.5	13.1	10.1	STAIRS 2-4
		STAIRS 1-13	9.7	11.1	10.2	8.2	5.9	4.0	2.1	0.8														1.6	2.5	3.8	5.8	8.7	11.8	13.4	10.4	STAIRS 2-5
		STAIRS 1-12	10.2	12.1	11.2	8.7	5.9	3.8	2.1	0.9														1.8	2.9	4.7	6.9	9.5	11.6	12.9	11.0	STAIRS 2-6
		STAIRS 1-11	9.9	11.3	10.5	8.4	6.1	4.1	2.2	0.9														1.6	2.6	3.9	6.1	9.1	12.0	13.5	10.8	STAIRS 2-7
		STAIRS 1-10	10.0	12.0	11.1	8.6	5.9	3.9	2.2	0.9														1.8	3.0	4.6	6.7	9.2	11.3	12.6	10.5	STAIRS 2-8
		STAIRS 1-9	10.2	11.7	10.8	8.7	6.3	4.1	2.2	0.9														1.6	2.6	3.9	6.4	9.2	12.1	13.7	11.0	STAIRS 2-9
		STAIRS 1-8	10.0	11.9	11.0	8.4	5.9	4.0	2.3	0.9														1.9	3.0	4.6	6.5	8.7	11.2	12.6	10.1	STAIRS 2-10
		STAIRS 1-7	10.3	11.9	11.1	8.9	6.3	4.1	2.2	0.9														1.7	2.6	4.1	6.6	9.3	12.0	13.5	11.0	STAIRS 2-11
		STAIRS 1-6	9.9	11.6	10.8	8.3	5.9	4.0	2.3	1.0														2.0	3.1	4.5	6.4	8.3	11.3	12.7	9.9	STAIRS 2-12
		STAIRS 1-5	10.4	12.2	11.3	8.9	6.3	4.1	2.2	0.9														1.7	2.7	4.4	6.8	9.6	12.0	13.5	11.2	STAIRS 2-13
		STAIRS 1-4	9.7	11.4	10.5	8.2	5.9	4.1	2.3	1.0														1.5	2.5	3.8	5.7	8.2	11.4	13.0	9.9	STAIRS 2-14
		STAIRS 1-3	10.3	12.2	11.3	8.9	6.2	4.0	2.2	0.9														1.1	1.9	3.5	5.7	8.3	10.3	11.8	9.9	STAIRS 2-15
		STAIRS 1-2	8.8	9.9	9.3	7.7	5.9	4.1	2.3	0.9														0.7	1.4	2.3	4.2	6.9	9.7	11.2	8.8	STAIRS 2-16
		STAIRS 1-1	4.8	5.9	5.7	5.1	4.2	3.3	2.0	0.9																						

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented DOUBLE SIDED

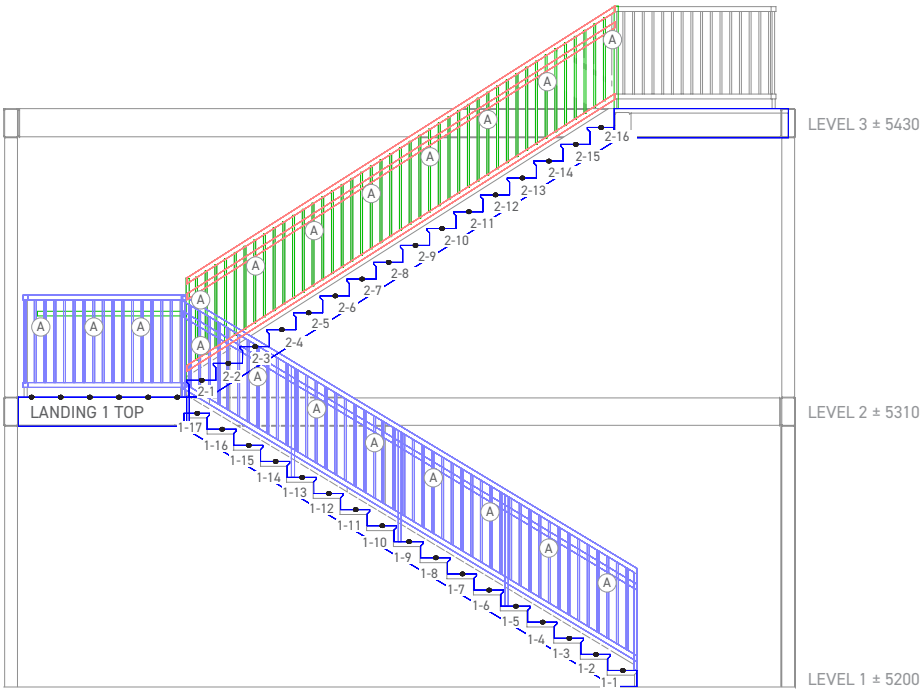


QTY	LABEL	ARRANGEMENT	LUMENS	LLF	DESCRIPTION
42	A	Single	130	0.900	LPOD40-3K-500mA-2.0W-Asym Clear Lens

Landing readings taken on landing. Stair readings taken on stair. *(Design based on 2' centers.)*

LABEL	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
Landing	Fc	15.37	23.9	6.6	2.33	3.62

STAIRS	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
1-1	Fc	7.88	9.6	3.5	2.25	2.74
1-10	Fc	13.25	15.7	6.1	2.17	2.57
1-11	Fc	13.11	15.3	6.2	2.11	2.47
1-12	Fc	13.35	15.7	6.2	2.15	2.53
1-13	Fc	12.69	14.6	6.0	2.12	2.43
1-14	Fc	13.20	15.3	6.4	2.06	2.39
1-15	Fc	12.20	14.0	5.9	2.07	2.37
1-16	Fc	12.61	14.7	6.0	2.10	2.45
1-17	Fc	10.50	12.3	5.0	2.10	2.46
1-2	Fc	11.95	13.9	5.6	2.13	2.48
1-3	Fc	13.63	15.8	6.3	2.16	2.51
1-4	Fc	12.95	15.0	6.2	2.09	2.42
1-5	Fc	13.75	15.9	6.4	2.15	2.48
1-6	Fc	13.18	15.3	6.3	2.09	2.43
1-7	Fc	13.74	15.9	6.8	2.02	2.34
1-8	Fc	13.16	15.5	6.0	2.19	2.58
1-9	Fc	13.45	15.6	6.6	2.04	2.36
2-1	Fc	14.94	17.7	10.8	1.38	1.64
2-10	Fc	14.39	15.6	11.7	1.23	1.33
2-11	Fc	15.03	16.0	12.6	1.19	1.27
2-12	Fc	14.31	15.8	11.8	1.21	1.34
2-13	Fc	15.38	16.3	12.8	1.20	1.27
2-14	Fc	13.70	15.3	11.3	1.21	1.35
2-15	Fc	13.03	13.8	11.0	1.18	1.25
2-16	Fc	11.06	12.5	9.4	1.18	1.33
2-2	Fc	15.96	17.0	13.5	1.18	1.26
2-3	Fc	13.85	15.6	11.2	1.24	1.39
2-4	Fc	15.59	16.6	13.1	1.19	1.27
2-5	Fc	14.33	15.9	11.7	1.22	1.36
2-6	Fc	15.21	16.3	12.6	1.21	1.29
2-7	Fc	14.74	16.0	12.2	1.21	1.31
2-8	Fc	14.74	15.9	12.1	1.22	1.31
2-9	Fc	14.94	16.1	12.6	1.19	1.28



Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented DOUBLE SIDED

		9.5	12.9	13.9	12.9	11.6	10.8	10.7	11.1	12.2	13.6	14.7	13.4	10.3						
		14.3	18.9	19.9	18.5	16.6	15.4	15.2	16.0	17.7	19.9	21.4	20.0	15.7						
		16.2	20.7	21.1	18.8	16.3	14.6	14.6	16.0	18.5	21.5	23.9	22.9	17.4						
		15.2	19.3	19.1	16.4	13.5	11.4	11.4	13.6	16.6	20.0	22.8	22.4	16.9						
		13.6	17.3	16.8	14.4	12.1	9.6	8.4	10.7	14.0	17.1	19.8	19.7	15.0						
		12.9	16.3	15.6	13.5	11.7	9.4	6.6	7.1	11.4	14.1	16.3	16.8	10.4						
STAIRS 1-17	SIDE 66	11.0	12.2	12.3	11.1	11.1	11.9	9.4	5.0	10.8	13.7	14.7	15.2	16.5	17.7	17.6	13.3	STAIRS 2-1	SIDE 4	
STAIRS 1-16	SIDE 62	11.4	14.1	14.7	14.4	14.3	14.2	11.8	6.0	13.7	16.5	16.7	16.6	16.8	17.0	16.9	13.5	STAIRS 2-2	SIDE 8	
STAIRS 1-15	SIDE 58	11.3	13.5	14.0	13.6	13.6	13.9	11.8	5.9	11.2	15.3	15.0	13.4	13.7	15.2	15.6	11.4	STAIRS 2-3	SIDE 12	
STAIRS 1-14	SIDE 54	11.6	14.5	15.1	14.9	15.1	15.3	12.7	6.4	13.1	16.3	16.4	16.5	16.6	16.5	16.2	13.1	STAIRS 2-4	SIDE 16	
STAIRS 1-13	SIDE 50	11.2	13.8	14.6	14.5	14.6	14.6	12.2	6.0	11.7	15.8	15.6	14.0	14.2	15.5	15.9	11.9	STAIRS 2-5	SIDE 20	
STAIRS 1-12	SIDE 46	11.8	14.8	15.3	15.0	15.3	15.7	12.7	6.2	12.8	15.8	16.1	16.3	16.2	16.2	15.7	12.6	STAIRS 2-6	SIDE 24	
STAIRS 1-11	SIDE 42	11.5	14.1	15.0	15.1	15.3	15.1	12.6	6.2	12.2	16.0	15.8	14.9	14.9	15.7	16.0	12.4	STAIRS 2-7	SIDE 28	
STAIRS 1-10	SIDE 38	11.8	14.8	15.3	14.8	15.0	15.7	12.5	6.1	12.4	15.2	15.7	15.6	15.6	15.9	15.4	12.1	STAIRS 2-8	SIDE 32	
STAIRS 1-9	SIDE 34	11.8	14.5	15.4	15.5	15.6	15.4	12.8	6.6	12.6	16.0	15.9	15.5	15.3	15.5	16.1	12.6	STAIRS 2-9	SIDE 36	
STAIRS 1-8	SIDE 30	11.8	14.8	15.3	14.7	14.9	15.5	12.3	6.0	11.9	15.0	15.3	15.0	15.0	15.6	15.6	11.7	STAIRS 2-10	SIDE 40	
STAIRS 1-7	SIDE 26	12.0	14.8	15.6	15.8	15.9	15.8	13.2	6.8	12.8	15.8	16.0	15.7	15.6	15.8	15.9	12.6	STAIRS 2-11	SIDE 44	
STAIRS 1-6	SIDE 22	11.8	14.7	15.3	14.6	14.6	15.2	12.9	6.3	11.8	15.4	15.3	14.2	14.5	15.8	15.7	11.8	STAIRS 2-12	SIDE 48	
STAIRS 1-5	SIDE 18	12.2	15.1	15.8	15.8	15.9	15.8	13.0	6.4	13.1	16.1	16.3	16.2	16.3	16.2	16.0	12.8	STAIRS 2-13	SIDE 52	
STAIRS 1-4	SIDE 14	11.6	14.4	15.0	14.6	14.5	14.8	12.5	6.2	11.3	15.1	14.8	13.2	13.6	15.0	15.3	11.3	STAIRS 2-14	SIDE 56	
STAIRS 1-3	SIDE 10	12.1	15.1	15.6	15.6	15.7	15.8	12.8	6.3	11.3	13.6	13.6	13.7	13.8	13.7	13.5	11.0	STAIRS 2-15	SIDE 60	
STAIRS 1-2	SIDE 6	10.5	12.9	13.7	13.9	13.9	13.7	11.4	5.6	9.5	12.4	11.7	10.5	10.7	11.8	12.5	9.4	STAIRS 2-16	SIDE 64	
STAIRS 1-1	SIDE 2	6.4	8.5	9.3	9.6	9.5	9.2	7.0	3.5											

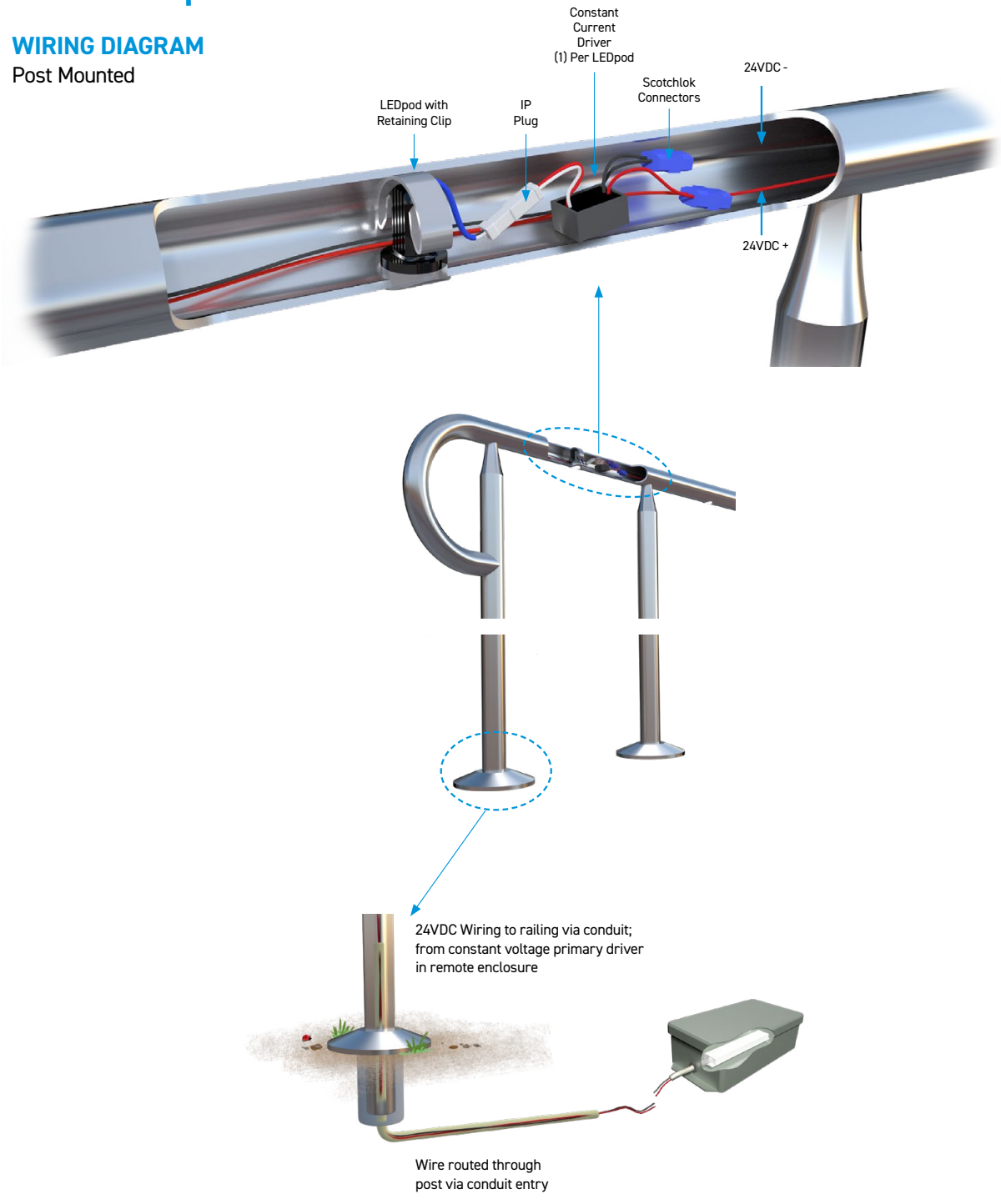
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented

WIRING DIAGRAM

Post Mounted



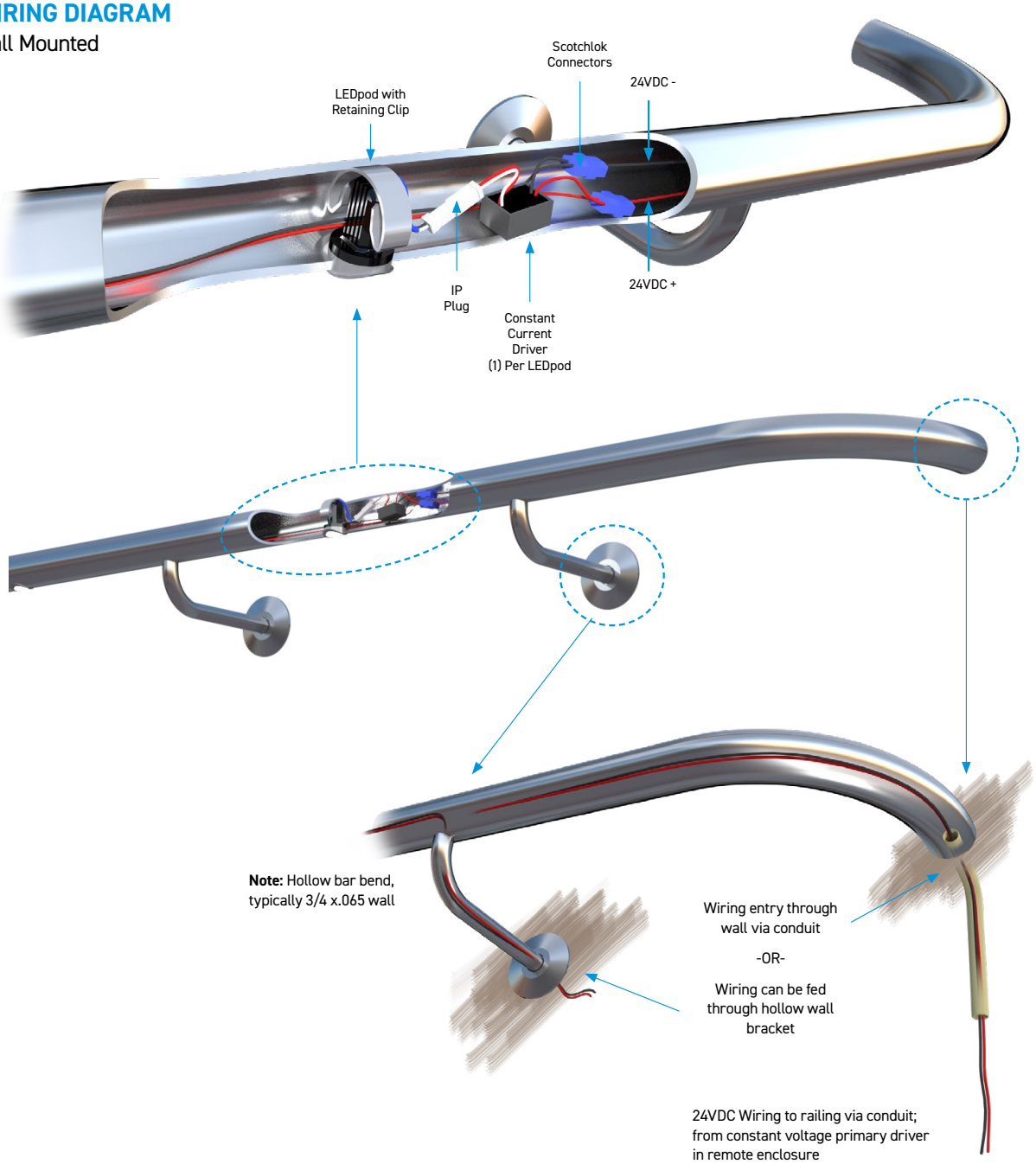
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented

WIRING DIAGRAM

Wall Mounted

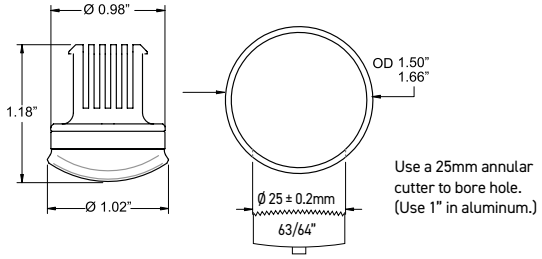


Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

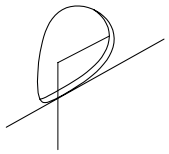
KLIK USA
2840 N Brookfield Rd, Suite 3
Brookfield, WI 53045
PH: 262.505.5124
sales@klikusa.com
www.klikusa.com

KLIK LEDpod™ 40 Patented

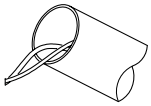
INSTALLATION INSTRUCTIONS Additional instructions may apply, consult factory.



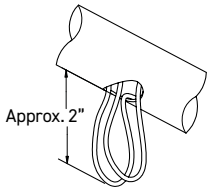
Use a 25mm annular cutter to bore hole. (Use 1" in aluminum.)



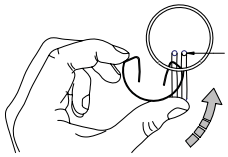
1 Make sure drilled holes are deburred and excess chips are removed from railing.



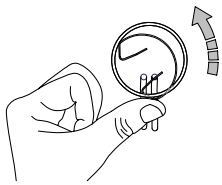
2 Feed through appropriate wires (14ga - 18ga).



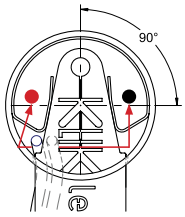
3 Pull a loop of wire through hole.



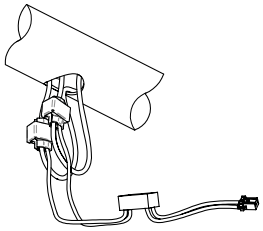
4 Rotate retaining clips in as shown. Avoid tangling or severing through wire.



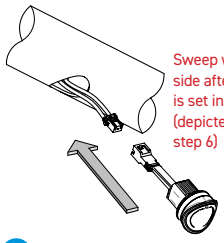
5 Apply pressure as shown to deform clip into place in a circular motion. Avoid damaging the surface of tube and tangling or damaging wire.



6 Fit clip into place until the clamping ends are equally centered over the hole. Use the tool to center the clip until equal pressure can be felt and inspect by eye.



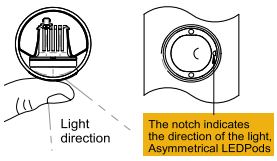
7 Install Scotchlok connectors to the red and black wires. Connect the corresponding color wires of the driver to the Scotchloks and assure the clip is secured.



8 CAREFULLY feed the Scotchloks to the left of the clip and the driver to the right with the driver connector hanging out. Ensure wires are clear from where the LEDPOD is to fit.

Proceed to connect the LEDPOD.

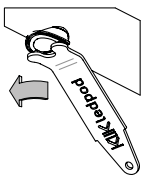
Install all LEDpods to this point, then perform a circuit test to ensure all LEDpods are operational BEFORE final installation.



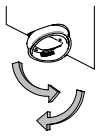
9 Push LEDPOD in until it snaps into place and the outer surface is flush with the outer surface of the tube.

Prod the rim of the clear silicone IP Seal to provide a tighter fit.

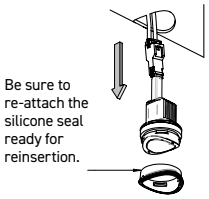
LEDPOD REMOVAL STEPS



1 Insert removal tool into the 2mm holes in the LEDPOD. With firm pressure, rotate the LEDPod 90°.



2 Carefully peel back the IP silicone seal one side at a time.



3 Carefully remove the LEDPOD from the clip, ensuring not to damage or disconnect wires in the process.

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

NEW

Exton 4” Monopoint Pendant

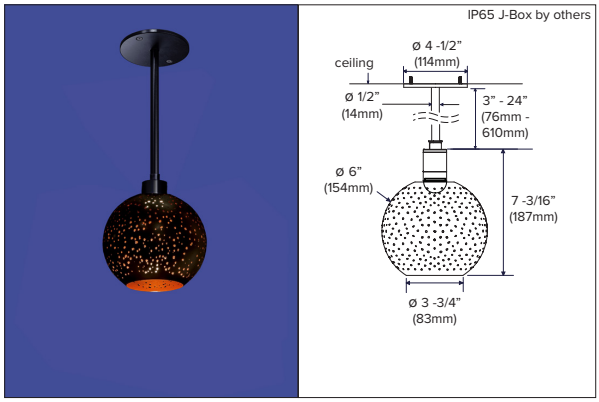
Kore EX5 IP65
Rigid Stem 4” Monopoint Pendant
AMBRIA Shade, Gem
Remote Power, 0-10V DM

CATALOG NUMBER LOGIC

EX5 – K – P24 – 4MP – RGS – FSG – BLK – AMB-6 – BLKCP

Exton 5-Watt Model	Kore Module 27K LED	24” Pendant	4” Monopoint Mounting	Rigid Stem	Frosted Sphere Gem	Finish: Black	6” AMBRIA Shade	Finish: Black/ Copper

Exton Kore EX5 LED 4” Rigid Stem Monopoint with AMBRIA Shade & Gem - Combinations

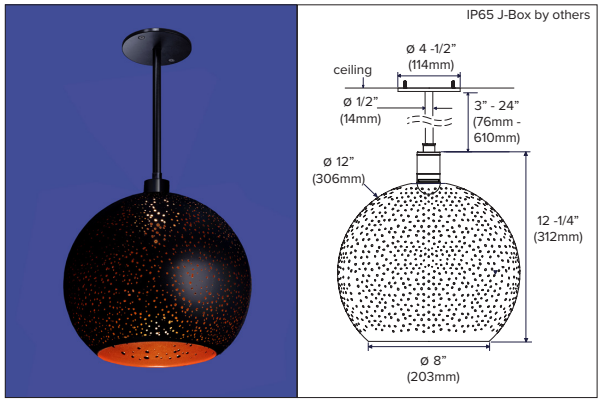


Kore EX5 Rigid Stem Pendant, 4” Monopoint in Black Finish with Frosted Button Gem, 6” AMBRIA Shade in Matte Black Exterior & Matte Copper Interior Finish

Catalog Number

For use with Remote Power Supply(s) - See page 3 for links to order Power Supply(s), ordered separately.

EX5-K-P24-4MP-RGS-BG-BLK-AMB-6-BLKCP

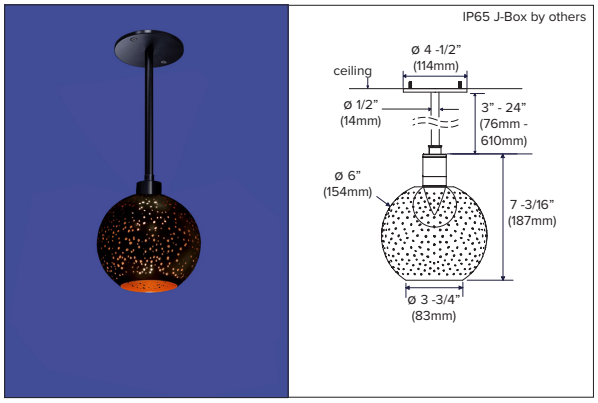


Kore EX5 Rigid Stem Pendant, 4” Monopoint in Black Finish with Frosted Button Gem, 12” AMBRIA Shade in Matte Black Exterior & Matte Copper Interior Finish

Catalog Number

For use with Remote Power Supply(s) - See page 3 for links to order Power Supply(s), ordered separately.

EX5-K-P24-4MP-RGS-BG-BLK-AMB-12-BLKCP

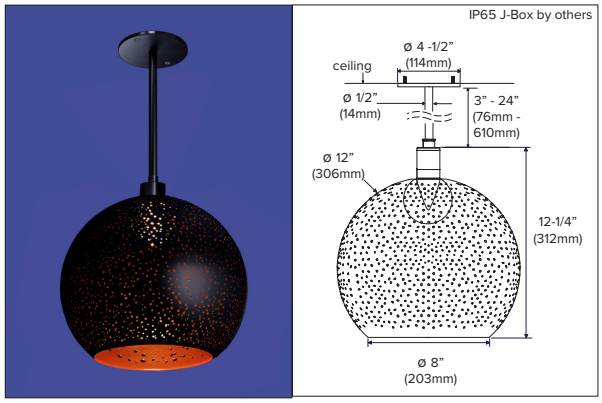


Kore EX5 Rigid Stem Pendant, 4” Monopoint in Black Finish with Frosted Sphere Gem, 6” AMBRIA Shade in Matte Black Exterior & Matte Copper Interior Finish

Catalog Number

For use with Remote Power Supply(s) - See page 3 for links to order Power Supply(s), ordered separately.

EX5-K-P24-4MP-RGS-FSG-BLK-AMB-6-BLKCP



Kore EX5 Rigid Stem Pendant, 4” Monopoint in Black Finish with Frosted Sphere Gem, 12” AMBRIA Shade in Matte Black Exterior & Matte Copper Interior Finish

Catalog Number

For use with Remote Power Supply(s) - See page 3 for links to order Power Supply(s), ordered separately.

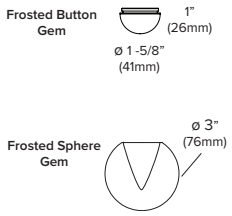
EX5-K-P24-4MP-RGS-FSG-BLK-AMB-12-BLKCP

Kore EX5 IP65
Rigid Stem 4” Monopoint Pendant
AMBRIA Shade, Gem
Remote Power, 0-10V DM

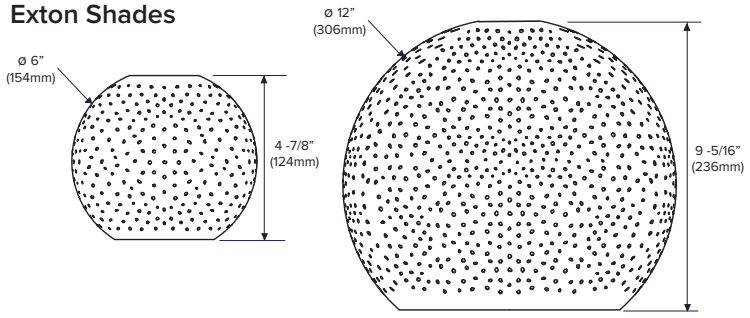
Exton 4” Monopoint Pendant

Exton Kore EX5 LED 4” Rigid Stem Monopoint with AMBRIA Shade & Gem - Combinations

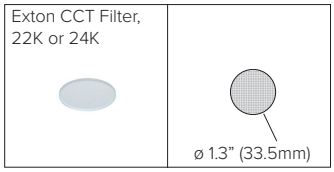
Exton Kore EX5 - Gems



Exton Shades



Exton Kore EX5 LED 4” Rigid Stem Monopoint with AMBRIA Shade & Gem - Accessory



Exton Color Correction Filter, 22K or 24K

(EX5-CCT-22K/24K)

22K or 24K Kelvin Temperature results when used with the standard 27K Cree LED.

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

Kore EX5 IP65
Rigid Stem 4” Monopoint Pendant
AMBRIA Shade, Gem
Remote Power, 0-10V DM

Exton 4” Monopoint Pendant

Category: Featuring the Exton IP65 Rigid Stem Pendant 4” Monopoint with Gem and AMBRIA Shade. AMBRIA features a random “star” perforated pattern with a matte black exterior and matte copper interior finish. Designed for use with remote Power Supply Enclosure(s) with Driver. Optional 0-10V Dimming.

Material: Monopoint: Powdercoated or anodized aluminum.
Kore EX5 LED Module: UV stable exterior anodized aluminum, UV stable polycarbonate, rubber o-rings.
Gems: 100% machined, clear/frosted acrylic.
AMBRIA Shade: Steel.

Finish: Kore EX5 LED Module: Exterior rated, brushed, two-step electrolytic color anodizing. Anodized Black (BLK).
24” Rigid Stem: Field cuttable, black finish.
Gems: Clear/frosted acrylic.
AMBRIA Shade: two-tone. Matte exterior powercoated black on the outside of the shade and matte exterior powdercoated copper on the inside. (BLKCP).

Gems: Frosted Button Gem (BG), Frosted Sphere Gem (FSG).

Shades: 6” AMBRIA Shade (AMB-6), 12” AMBRIA Shade (AMB-12)

Accessories: 22K Color Correction Filter (CCT-22K), 24K Color Correction Filter (CCT-24K), Note: CCT22/24 = Kelvin Temperature results when used with the standard 27K Cree LED.

LED: High Wattage Array Cree LED, 2-Step Macadam. 5W @ 500 Lumen Output with 2700K 82-85 CRI typical. All values are initial lumens. For exact lumen output and wattage consumption data, please consult IES reports. Online power consumption does not include driver losses. Contact factory for 3000K, 3500K, 4000K or 90 CRI.

Optics: A 15° reflector is supplied in all decorative options to maximize decorative element illumination.

Electrical: 24VDC. Total input watts: 6.5W per LED module. 300W max. per circuit.

Remote Power Supply: Refer to Exton Power Supply IP20 Specsheet, IP24 Specsheet or IP66 Specsheet for details. Use Tegan Lighting Power Enclosures and Drivers only. If supplied “by others” the warranty and listing are void.

Installation: Minimum field-cuttable length for Rigid stem is 3”. Mount to 4/0 IP65 J-Box by others. Refer to Installation Instructions for details. For system layout, and specification assistance, refer to the Exton IP65 Application Guide for details.

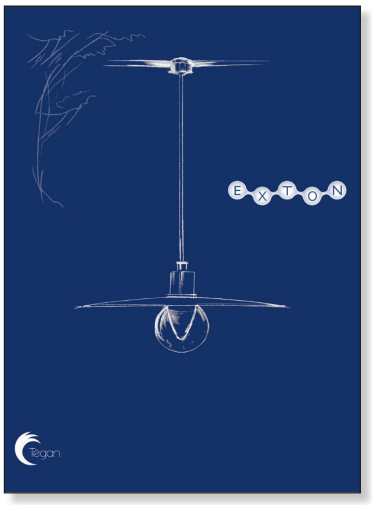
Labels: ETL Listed; Tested to UL 2108 Low Voltage Lighting Systems. In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials. Technical specification sheets that appear on teganlighting.com are the most recent version and supersede all other versions that exist in any other printed or electronic form. Kore EX5 Module, Monopoint Mounting - 3 year warranty. Refer to Exton IP65 Application Guide for details.

300W MAX | LED 24VDC | 0-10V Dimming | IP 65 | EXTON

Kore EX5 IP65
Rigid Stem 4” Monopoint Pendant
AMBRIA Shade, Gem
Remote Power, 0-10V DM

Exton 4” Monopoint Pendant

Click on the image below to visit the Exton IP65 Application Guide.



Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

ARTEMIS 2 WET

DOWNLIGHT - WALL WASH

senso by luminii

Features

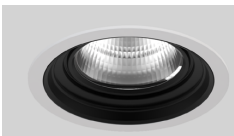
- Four output options available up to 2000 lumens.
- Ceiling thickness must be between 1/4" and 1" (6mm & 25mm).
- Faceted and Smooth metal reflectors provide beam spreads between 15° to 60°
- Five year warranty.

Finish Options

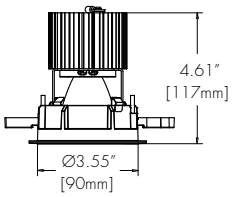
- White
- Black
- Silver

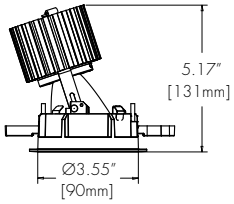
TITLE 24 JA8 COMPLIANT · RoHS · Declare · c UL us LISTED · Made in Canada with Imported Parts · WET

Downlight



Wall Wash





Technical Information

OUTPUT OPTIONS	700 lm	1000 lm	1500 lm	2000 lm
Fixture wattage	5.8 W	9.1 W	15.3 W	20.6 W
Delivered Lumen at 3500K	687 lm	1031 lm	1597 lm	1985 lm
Efficacy	118 lm/W	113 lm/W	104 lm/W	96 lm/W
Center Beam Candlepower (15° Faceted Reflector)	911 cd	1368 cd	2118 cd	2633 cd

CCT	Multiplier	TM-30 CRI	R_f	R_g	R_9
2500K	0.81	92	90	104	77
2700K	0.92	92	91	102	61
3000K	0.97	95	92	102	61
3500K	1.00	95	93	101	72
4000K	1.07	95	92	103	68
6500K	1.05	96	91	100	89

Ordering Code

Example: Fixture ART2W-D-TR-07-25K-F15-CL-WH-WH
HRM-ART2W-D-TR-07-25K-PHSD-NA

Fixture

MODEL	TYPE	TRIM	OUTPUT	CCT	OPTIC	ACCESSORY	TRIM FINISH	BAFFLE FINISH
ART2W-Artemis 2" Wet	D-Fixed Downlight W-Wall Wash[1]	TR-Trimmed	07-700 lumens (5.8W) 10-1000 lumens (9.1W) 15-1500 lumens (15.3W) 20-2000 lumens (20.6W)	25K-2500K 27K-2700K 30K-3000K 35K-3500K 40K-4000K 65K-6500K	F15-15 Degree, Faceted F30-30 Degree, Faceted F45-45 Degree, Faceted F60-60 Degree, Faceted S30-30 Degree, Smooth S45-45 Degree, Smooth	CL-Clear Lens DL-Diffusing Lens	WH-White BK-Black SL-Silver	WH-White BK-Black SL-Silver

HOUSING	MODEL	TRIM	OUTPUT	CCT	DRIVER	DRIVER OPTIONS
HRM-Remote Power Supply HP-(Non-IC) HIC-New Construction Pan HCP-(Non-IC) Housing, IC Rated[2] Housing, IC Rated, Chicago Plenum Rated[2]	ART2W-D-Artemis 2" Wet Fixed Downlight ART2W-W-Artemis 2" Wet Wall Wash	Same as Fixture	Same as Fixture	Same as Fixture	PHSD-Forward/Reverse Phase, 1% Dimming, 120V Only 010S-0-10V, 1% Dimming, 120/277V 0103-0-10V, 1% Dimming, 347V Only[4] 010L-EldoLED, 0-10V, Linear, 0.1% Dimming, 120/277V[4] 010G-EldoLED, 0-10V, Log, 0.1% Dimming, 120/277V[4] DALI-EldoLED, DALI Protocol 2, DT-6, 0.1% Dimming, 120/277V (Standard as LOG)[4,6] DALI8-EldoLED, DALI Protocol 2, DT-8, 0.1% Dimming, 120/277V (Standard as LOG)[4,6] LUTE-Lutron Hilume Ecodigital, 1% Dimming, 120V/277V[3,4] DMX-EldoLED, DMX, 0.1% Dimming, 120V/277V[4]	NA-None EMG-Emergency Driver[4,5]

1 - Wall Wash is only available with Optic F15 - 15 Degree, Faceted and DL - Diffusing Lens.
2 - Housings HIC and HCP are not available when output exceeds 2000 lumens.
3 - LUTE driver is not available at 700 lumens.
4 - Drivers 0103/010L/010G/DALI/DALI8/LUTE/DMX/EMG are only available with HRM- Remote Power Supply.
5 - Emergency option comes prewired from factory with driver in remote housing. 8W of continuous power provided for a minimum of 90 minutes. Must be installed within 30 feet of luminaire using 18 AWG wire. Only available with 010S/010L/010G/PHSD/DALI Drivers.
6 - DALI and DALI8 driver options use logarithmic dimming curve as standard. For LINEAR dimming curve, add "LIN" after the dimming code, i.e. DALILIN

CONTACT FACTORY FOR MORE OPTIONS

info@luminii.com | luminii.com

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

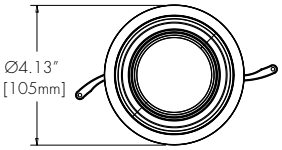
ARTEMIS 2 WET

DOWNLIGHT - WALL WASH

senso by luminii

Dimensions

Trimmed



Downlight Lens

CL
Clear Lens

DL
Diffusing Lens

Wall Wash Lens

DL
Diffusing Lens

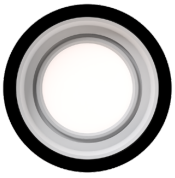
Optics

Faceted Reflector
(15°,30°, 45°, 60°)

Smooth Reflector
(30°, 45°)

Trim Finishes

BK
Black



WH
White

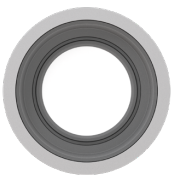
SL
Silver

Baffle Finishes

BK
Black

WH
White

SL
Silver



Any combination may be used for Trim and Baffle finishes.

info@luminii.com | luminii.com

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

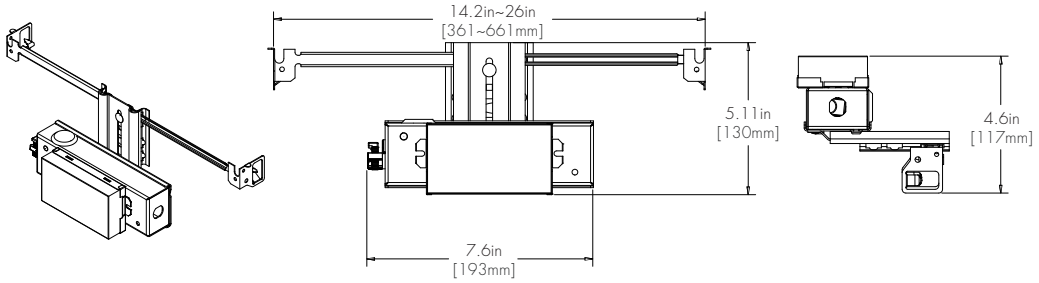
ARTEMIS 2 WET
DOWNLIGHT - WALL WASH

senso by luminii

Remote Driver Housing

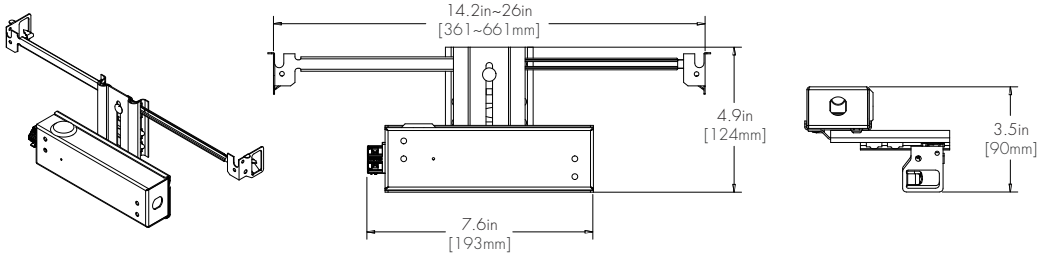
Maximum mounting distance to luminaire using 18 AWG wire						
010S	PHSD	010L	010G	DALI DALI8	DMX	LUTE
16'	16'	72'	72'	72'	149'	15'

HRM Single with Externally Mounted Driver



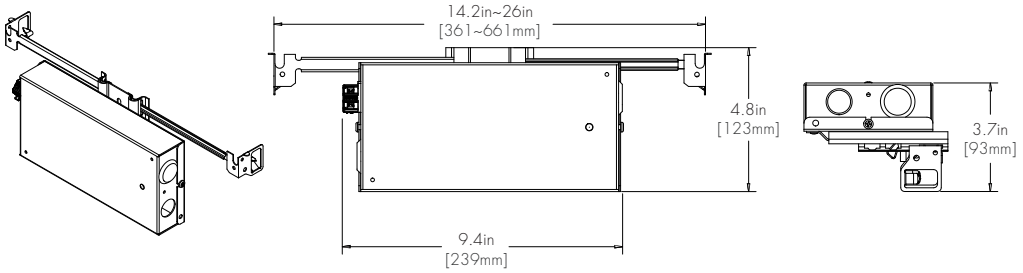
Driver	+	Driver Option
010L	+	NA
010G	+	NA
010S	+	NA
DALI	+	NA
LUTE	+	NA

HRM Single



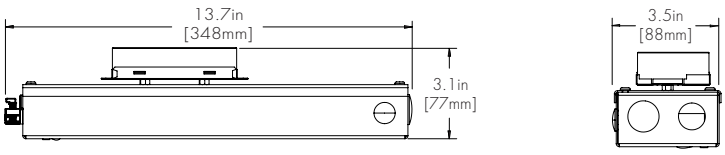
Driver	+	Driver Option
PHSD	+	NA

HRM Double



Driver	+	Driver Option
DALI8	+	NA
DMX	+	NA

EMG Emergency Driver (120 minutes EMG operation time)



Driver	+	Driver Option
010L	+	EMG
010G	+	EMG
010S	+	EMG
DALI	+	EMG
PHSD	+	EMG

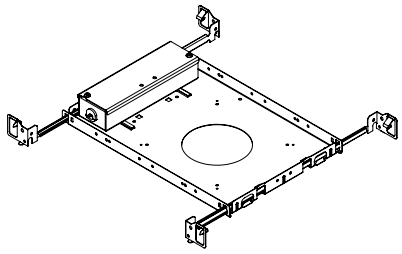
info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

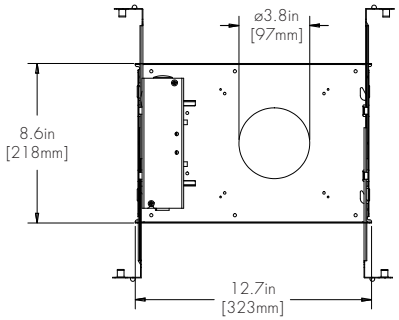
ARTEMIS 2 WET
DOWNLIGHT - WALL WASH

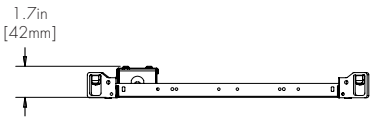
senso by luminii

Remote Driver Housing

HP
New Construction Pan (Non-IC)

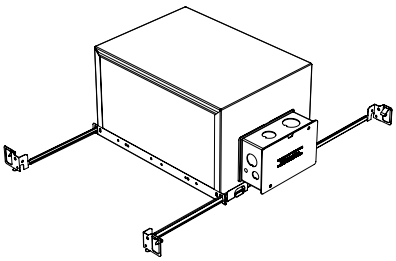


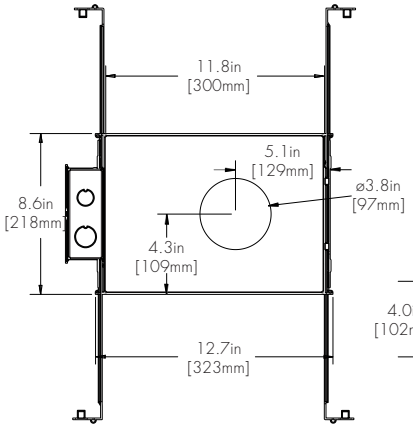


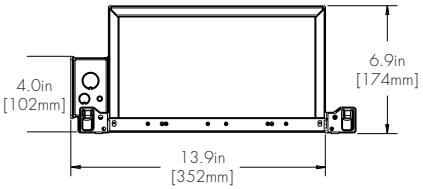


Driver	+	Driver Option
PHSD	+	NA
010S	+	NA

HIC/HCP
Housing, IC Rated/ Housing, IC Rated, Chicago Plenum Rated







Driver	+	Driver Option
PHSD	+	NA
010S	+	NA

info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

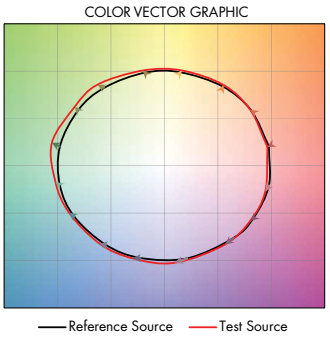
ARTEMIS 2 WET

DOWNLIGHT - WALL WASH

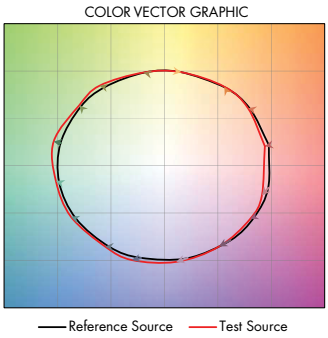
senso by luminii

TM-30

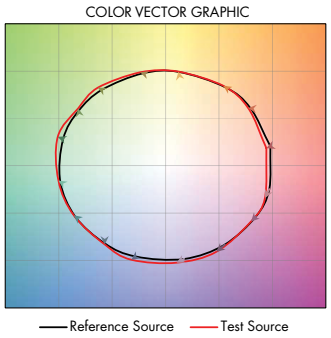
2500K



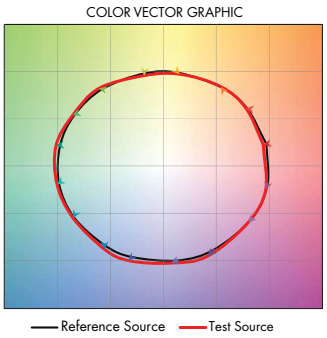
2700K



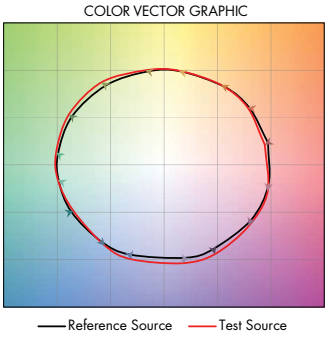
3000K



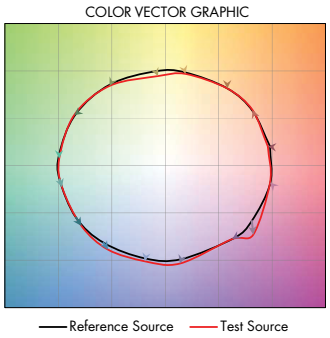
3500K



4000K



6500K



info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

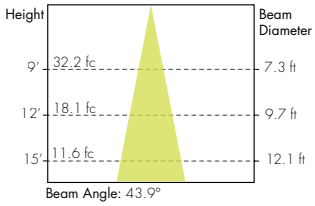
ARTEMIS 2 WET

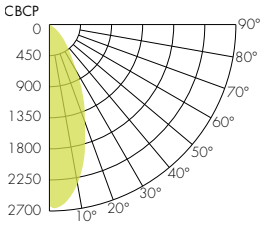
DOWNLIGHT - WALL WASH

senso by luminii

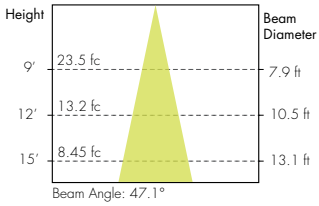
Photometry

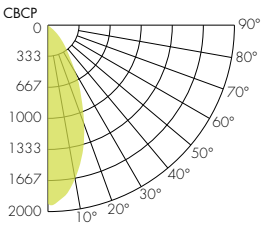
15° Faceted Reflector



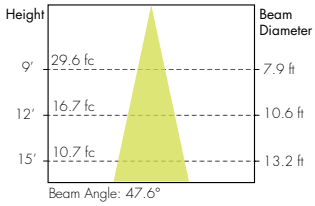


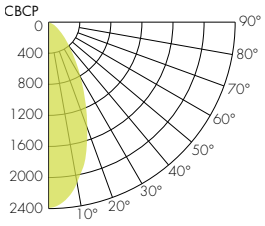
30° Smooth Reflector



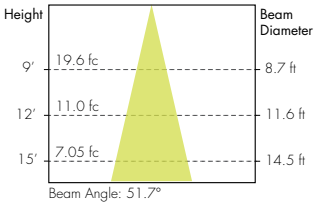


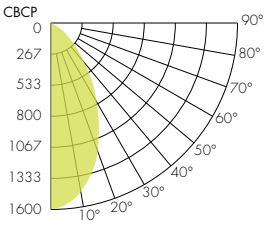
30° Faceted Reflector



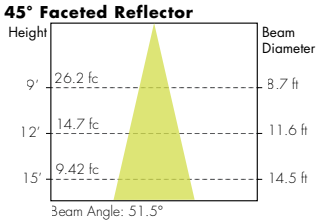


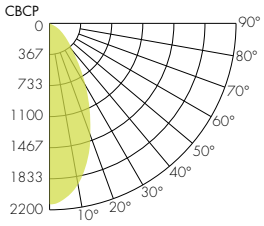
45° Smooth Reflector



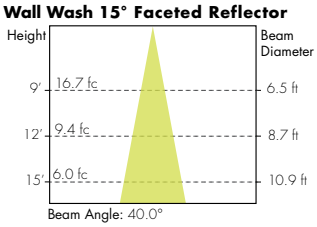


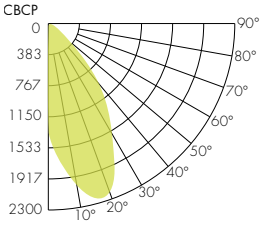
45° Faceted Reflector



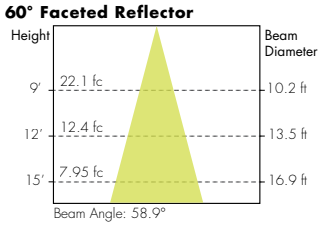


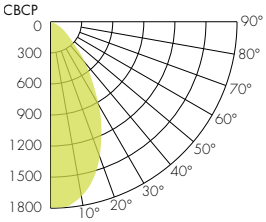
Wall Wash 15° Faceted Reflector





60° Faceted Reflector





info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Tilden Commons/25009
PROGRESS CD/04-01-2026

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XR1

ARTEMIS 2 WET

DOWNLIGHT - WALL WASH

senso by luminii

Features

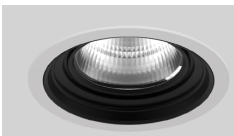
- Four output options available up to 2000 lumens.
- Ceiling thickness must be between 1/4" and 1" (6mm & 25mm).
- Faceted and Smooth metal reflectors provide beam spreads between 15° to 60°
- Five year warranty.

Finish Options

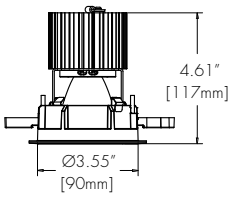
- White
- Black
- Silver

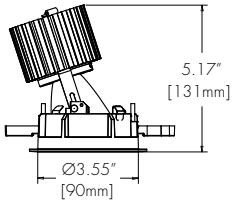
TITLE 24 JA8 COMPLIANT · RoHS · Declare · c UL us LISTED · Made in Canada with Imported Parts · WET

Downlight



Wall Wash





Technical Information

OUTPUT OPTIONS	700 lm	1000 lm	1500 lm	2000 lm
Fixture wattage	5.8 W	9.1 W	15.3 W	20.6 W
Delivered Lumen at 3500K	687 lm	1031 lm	1597 lm	1985 lm
Efficacy	118 lm/W	113 lm/W	104 lm/W	96 lm/W
Center Beam Candlepower (15° Faceted Reflector)	911 cd	1368 cd	2118 cd	2633 cd

CCT	Multiplier	TM-30 CRI	R_f	R_g	R_9
2500K	0.81	92	90	104	77
2700K	0.92	92	91	102	61
3000K	0.97	95	92	102	61
3500K	1.00	95	93	101	72
4000K	1.07	95	92	103	68
6500K	1.05	96	91	100	89

Ordering Code

Example: Fixture ART2W-D-TR-07-25K-F15-CL-WH-WH
HRM-ART2W-D-TR-07-25K-PHSD-NA

Fixture

MODEL	TYPE	TRIM	OUTPUT	CCT	OPTIC	ACCESSORY	TRIM FINISH	BAFFLE FINISH
ART2W-Artemis 2" Wet	D-Fixed Downlight W-Wall Wash[1]	TR-Trimmed	07-700 lumens (5.8W) 10-1000 lumens (9.1W) 15-1500 lumens (15.3W) 20-2000 lumens (20.6W)	25K-2500K 27K-2700K 30K-3000K 35K-3500K 40K-4000K 65K-6500K	F15-15 Degree, Faceted F30-30 Degree, Faceted F45-45 Degree, Faceted F60-60 Degree, Faceted S30-30 Degree, Smooth S45-45 Degree, Smooth	CL-Clear Lens DL-Diffusing Lens	WH-White BK-Black SL-Silver	WH-White BK-Black SL-Silver

HOUSING	MODEL	TRIM	OUTPUT	CCT	DRIVER	DRIVER OPTIONS
HRM-Remote Power Supply HP-(Non-IC) HIC-New Construction Pan HCP-(Non-IC) Housing, IC Rated[2] Housing, IC Rated, Chicago Plenum Rated[2]	ART2W-D-Artemis 2" Wet Fixed Downlight ART2W-W-Artemis 2" Wet Wall Wash	Same as Fixture	Same as Fixture	Same as Fixture	PHSD-Forward/Reverse Phase, 1% Dimming, 120V Only 010S-0-10V, 1% Dimming, 120/277V 0103-0-10V, 1% Dimming, 347V Only[4] 010L-EldoLED, 0-10V, Linear, 0.1% Dimming, 120/277V[4] 010G-EldoLED, 0-10V, Log, 0.1% Dimming, 120/277V[4] DALI-EldoLED, DALI Protocol 2, DT-6, 0.1% Dimming, 120/277V (Standard as LOG)[4,6] DALI8-EldoLED, DALI Protocol 2, DT-8, 0.1% Dimming, 120/277V (Standard as LOG)[4,6] LUTE-Lutron Hilume Ecodigital, 1% Dimming, 120V/277V[3,4] DMX-EldoLED, DMX, 0.1% Dimming, 120V/277V[4]	NA-None EMG-Emergency Driver[4,5]

1 - Wall Wash is only available with Optic F15 - 15 Degree, Faceted and DL - Diffusing Lens.
2 - Housings HIC and HCP are not available when output exceeds 2000 lumens.
3 - LUTE driver is not available at 700 lumens.
4 - Drivers 0103/010L/010G/DALI/DALI8/LUTE/DMX/EMG are only available with HRM- Remote Power Supply.
5 - Emergency option comes prewired from factory with driver in remote housing. 8W of continuous power provided for a minimum of 90 minutes. Must be installed within 30 feet of luminaire using 18 AWG wire. Only available with 010S/010L/010G/PHSD/DALI Drivers.
6 - DALI and DALI8 driver options use logarithmic dimming curve as standard. For LINEAR dimming curve, add "LIN" after the dimming code, i.e. DALILIN

CONTACT FACTORY FOR MORE OPTIONS

info@luminii.com | luminii.com

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

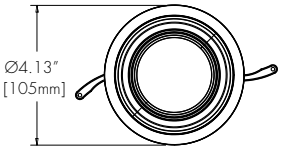
ARTEMIS 2 WET

DOWNLIGHT - WALL WASH

senso by luminii

Dimensions

Trimmed



Downlight Lens

CL
Clear Lens

DL
Diffusing Lens

Wall Wash Lens

DL
Diffusing Lens

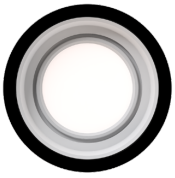
Optics

Faceted Reflector
(15°,30°, 45°, 60°)

Smooth Reflector
(30°, 45°)

Trim Finishes

BK
Black



WH
White

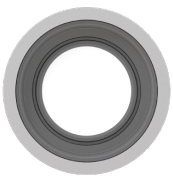
SL
Silver

Baffle Finishes

BK
Black

WH
White

SL
Silver



Any combination may be used for Trim and Baffle finishes.

info@luminii.com | luminii.com

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

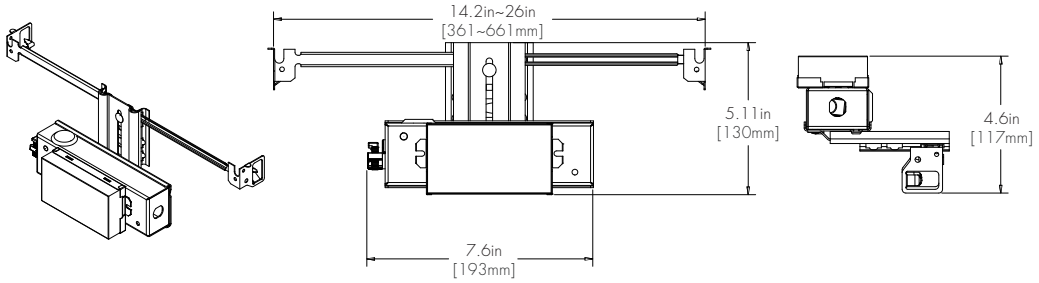
ARTEMIS 2 WET
DOWNLIGHT - WALL WASH

senso by luminii

Remote Driver Housing

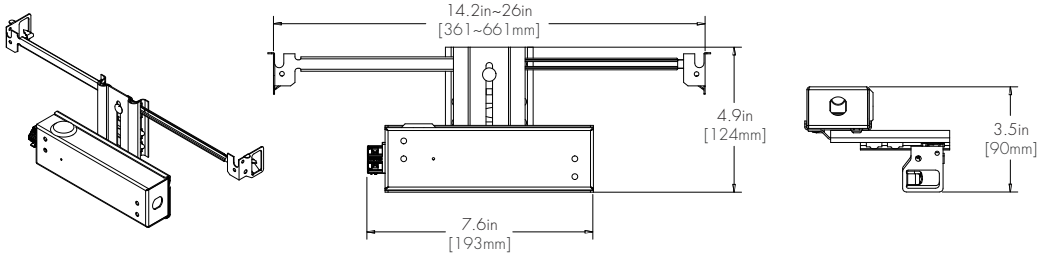
Maximum mounting distance to luminaire using 18 AWG wire						
010S	PHSD	010L	010G	DALI DALI8	DMX	LUTE
16'	16'	72'	72'	72'	149'	15'

HRM Single with Externally Mounted Driver



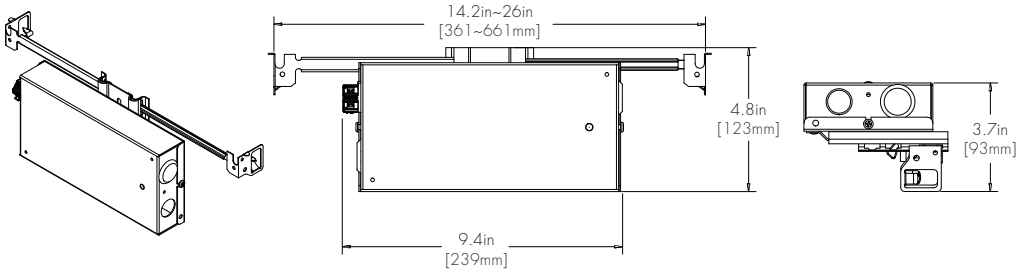
Driver	+	Driver Option
010L	+	NA
010G	+	NA
010S	+	NA
DALI	+	NA
LUTE	+	NA

HRM Single



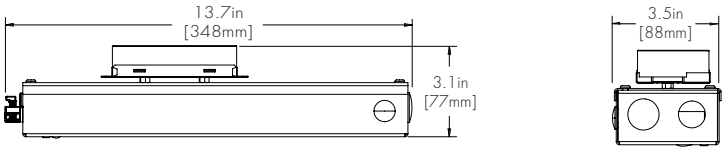
Driver	+	Driver Option
PHSD	+	NA

HRM Double



Driver	+	Driver Option
DALI8	+	NA
DMX	+	NA

EMG Emergency Driver (120 minutes EMG operation time)



Driver	+	Driver Option
010L	+	EMG
010G	+	EMG
010S	+	EMG
DALI	+	EMG
PHSD	+	EMG

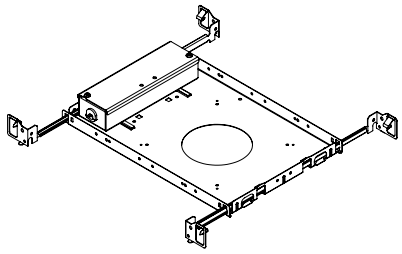
info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

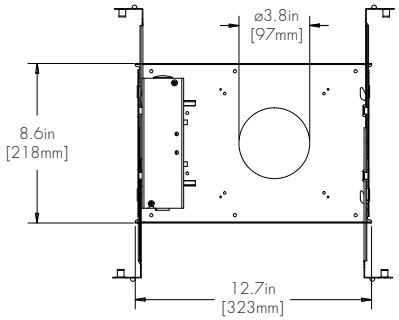
ARTEMIS 2 WET
DOWNLIGHT - WALL WASH

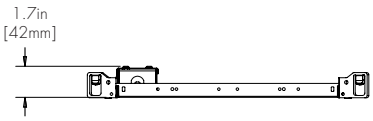
senso by luminii

Remote Driver Housing

HP
New Construction Pan (Non-IC)

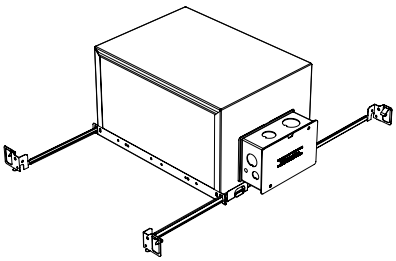


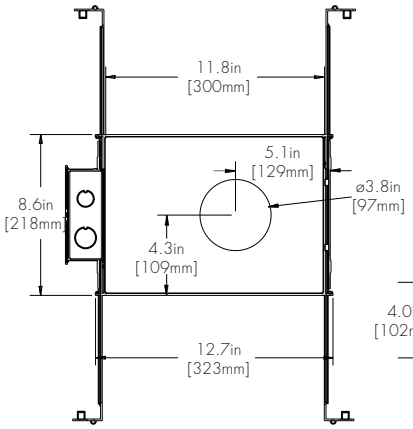


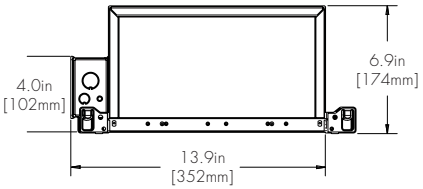


Driver	+	Driver Option
PHSD	+	NA
010S	+	NA

HIC/HCP
Housing, IC Rated/ Housing, IC Rated, Chicago Plenum Rated







Driver	+	Driver Option
PHSD	+	NA
010S	+	NA

info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

ARTEMIS 2 WET

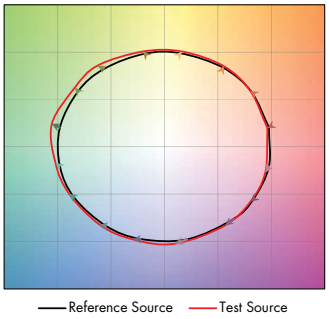
DOWNLIGHT - WALL WASH

senso by luminii

TM-30

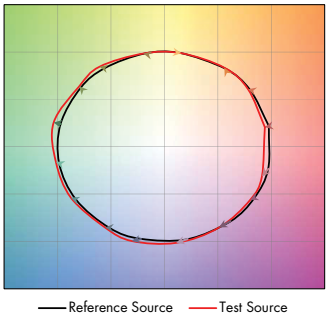
2500K

COLOR VECTOR GRAPHIC



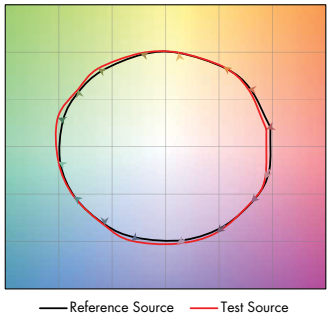
2700K

COLOR VECTOR GRAPHIC



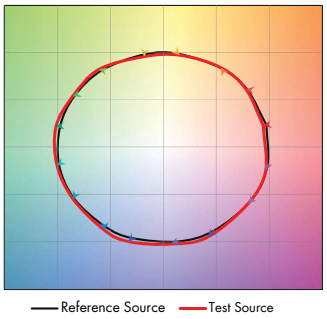
3000K

COLOR VECTOR GRAPHIC



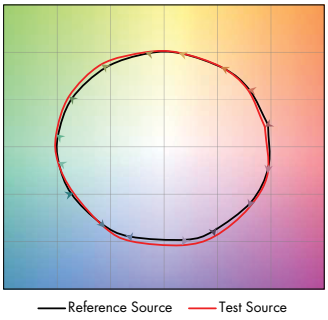
3500K

COLOR VECTOR GRAPHIC



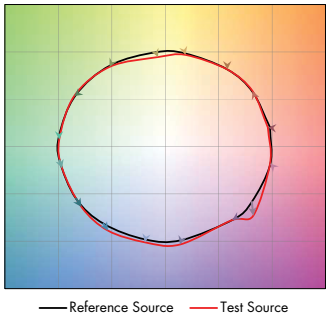
4000K

COLOR VECTOR GRAPHIC



6500K

COLOR VECTOR GRAPHIC



info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

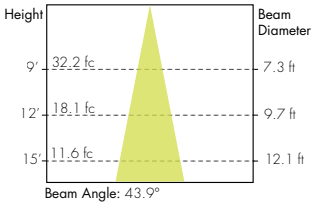
ARTEMIS 2 WET

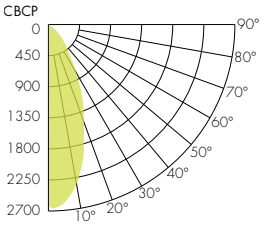
DOWNLIGHT - WALL WASH

senso by luminii

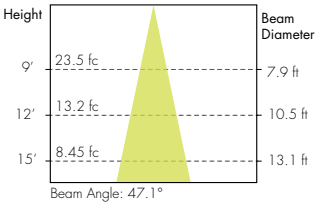
Photometry

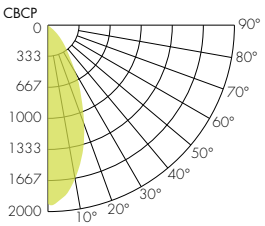
15° Faceted Reflector



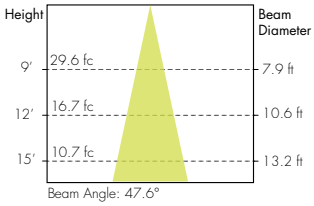


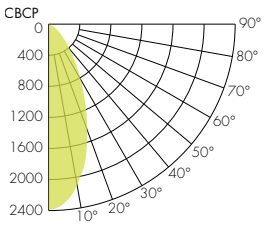
30° Smooth Reflector



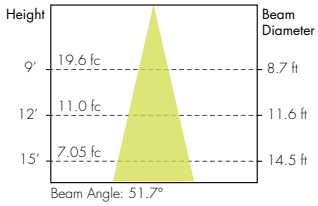


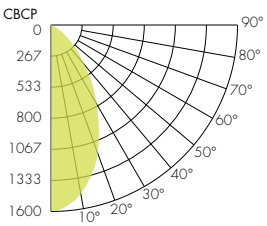
30° Faceted Reflector



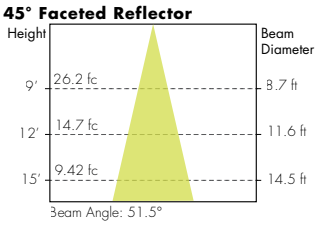


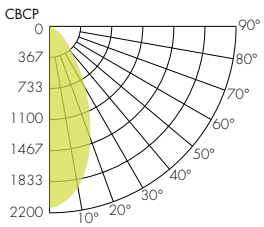
45° Smooth Reflector



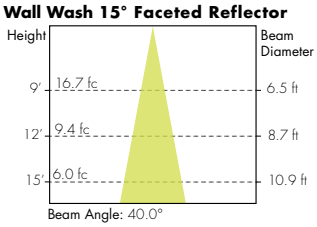


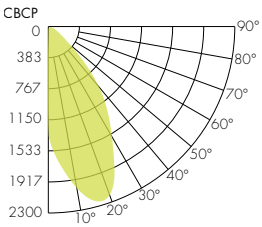
45° Faceted Reflector



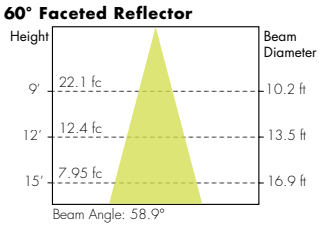


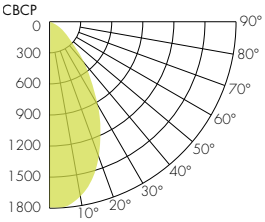
Wall Wash 15° Faceted Reflector





60° Faceted Reflector

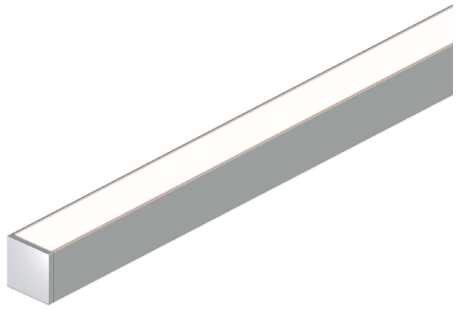




info@luminii.com | luminii.com
*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Bosca Wet - Static White | Linear Illumination System

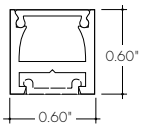
luminii



Features

- 24VDC Class 2 and IP68 Wet Rated fixtures made to order up to 144". Fixtures can be linked up to 48' depending on output
- Suitable for undercabinet, millwork, direct view, wet, outdoor, architectural reveals, accent lighting and surface mount applications
- Dot free even illumination with frosted lens
- Average Life (L70): 50,000hrs
- High Color Quality options offer premium quality and vibrant colors with R9 values up to 97
- High Efficacy options offer best in class output and efficacy with over 470 lm/ft and up to 66 lm/W
- Proprietary strong bond solder method handles up to 50 lbs of pull force on wire leads and connectors
- 3 year warranty

IP68



Finish Options (see page 3 for additional information)

Base	Silver Anodized					
Powder Coat	Black	Bronze	White			
Premium	Matte Black	Warm Nickel	Aged Brass	Polished Gold	Chrome	

Declare. CE RoHS MADE IN U.S.A cULus LISTED TITLE 24 JA8 COMPLIANT Single Bin +/-30 CCT DIM

Technical Information

TYPE	High Color Quality			High Efficacy				High Efficacy
OUTPUT OPTIONS	**72SO**	**72HO**	**72VHO**	**HE48LO**	**HE48SO**	**HE48MO**	**HE48HO**	**HE64VHO**
Lumens Output (3000K) (with a Graze Lens)	111 lm/ft	181 lm/ft	220 lm/ft	109 lm/ft	150 lm/ft	201 lm/ft	322 lm/ft	407 lm/ft
Average Power Consumption (for a 4' section)	2.8 W/ft	4.8 W/ft	6 W/ft	1.9 W/ft	2.8 W/ft	3.5 W/ft	6.5 W/ft	7.5 W/ft
Efficacy	40 lm/W	38 lm/W	37 lm/W	57 lm/W	54 lm/W	57 lm/W	50 lm/W	54 lm/W
Max Run Length (in series)	40 ft	31 ft	22 ft	48 ft	42 ft	33 ft	21 ft	15 ft
Ambient Operating Temperature Range*	-15°F – 125°F (-25°C – 50°C)			-15°F – 125°F (-25°C – 50°C)				-15°F – 115°F (-25°C – 45°C)

*Ambient Operating Temperature Range to maintain L70 of 50k+ hours in normal mounting conditions for the fixture. Exceeding Ambient Operating Temperature Range may result in decreased life/output. Consult Technical Support for specific inquiries.

High Color Quality (72)

CCT	Multiplier (reference - 3000K)	TM-30 CRI	R_f	R_g	R_9
2700K	0.97	97	96	99	93
3000K	1.00	96	95	99	92
3500K	1.01	96	95	100	94
4000K	1.34	97	96	102	92

High Efficacy (HE48/HE64)

CCT	Multiplier (reference - 3000K)	TM-30 CRI	R_f	R_g	R_9
2700K	0.94	92	90	99	46
3000K	1.00	92	89	99	62
3500K	1.02	92	89	99	58
4000K	1.02	92	86	94	52

Ordering Code

MODEL - LENGTH[1] - OUTPUT[2] - CCT - LENS - MOUNTING - FINISH[3] - FEED POSITION LEFT[4] - FEED POSITION RIGHT[4]

MODEL
BOSW - Bosca Wet

LENGTH[1]
12" - 144" 1" increments
12" - 144" 2" increments

OUTPUT[2]
72SO - Standard
72HO - High
72VHO - Very High
HE48LO - Low
HE48SO - Standard
HE48MO - Medium
HE48HO - High
HE64VHO - Very High

CCT
27K - 2700K
30K - 3000K
35K - 3500K
40K - 4000K

LENS
F - Frosted
G - Graze

MOUNTING
FC - Fixed Clip[5]
SC - Screwin
A - Adjustable Hinge Mounting

FINISH[3]
BASE
SA - Silver Anodized
POWDER COAT
BK - Black
BZ - Bronze
WH - White
PREMIUM
MBK - Matte Black
WN - Warm Nickel
AB - Aged Brass
PG - Polished Gold[6]
CH - Chrome[6]

FEED POSITION LEFT[4]
WIRE LEADS (72")
LWE - Wire End Feed
LWB - Wire Back Feed
LWSA - Wire Side A Feed
LWSB - Wire Side B Feed
LNPF - No Power Feed
QUICK CONNECTS (6")
LFE - Female Q/C, End Feed
LFB - Female Q/C, Back Feed
LFSA - Female Q/C, Side A Feed
LFSB - Female Q/C, Side B Feed
LNPF - No Power Feed

FEED POSITION RIGHT[4]
WIRE LEADS (72")
RWE - Wire End Feed
RWB - Wire Back Feed
RWSA - Wire Side A Feed
RWSB - Wire Side B Feed
RNPF - No Power Feed
QUICK CONNECTS (6")
RFE - Female Q/C, End Feed
RFB - Female Q/C, Back Feed
RFSA - Female Q/C, Side A Feed
RFSB - Female Q/C, Side B Feed
RNPF - No Power Feed

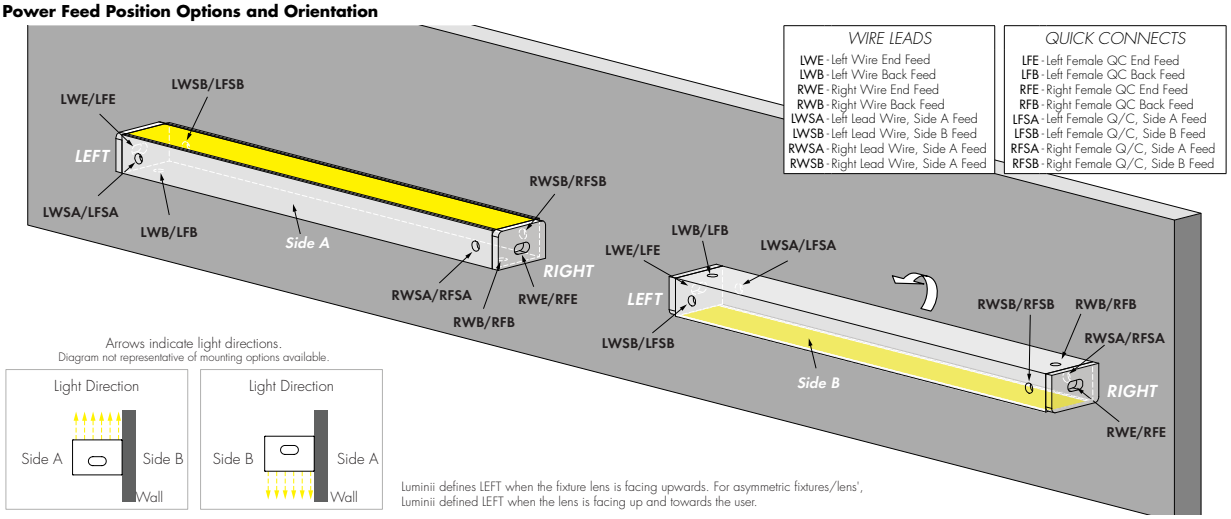
1 - Custom lengths and increments are available, please consult Inside Sales with specific request.
2 - All High Efficacy options can be used to comply with Title 24 JA8. High Color Quality options can be used to comply with Title 24 JA8 depending on Output, CCT, and Lens selections, see multiplier charts to calculate specific efficacies.
3 - Non Base finishes may have extended lead times. Custom RALs are available, please consult Inside Sales with specific request.
4 - LNPF - RNPF is not a valid configuration option
5 - Fixed Clip mount not rated for exterior use.
6 - Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".

Bosca Wet - Static White | Linear Illumination System

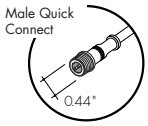
luminii

Powerfeeds and Connectors

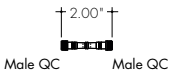
Power Feed Position Options and Orientation



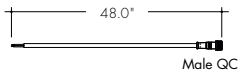
Linking and Extension Cable Options



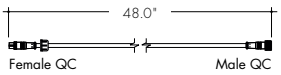
WET-FMA-2-2
Female to Male Adapter, 2 pin

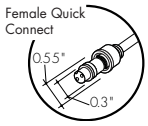


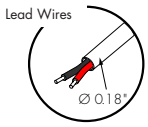
WET-CON-LEAD-M-2-48
Male Wet Connector Cable, 2 pin, 48"



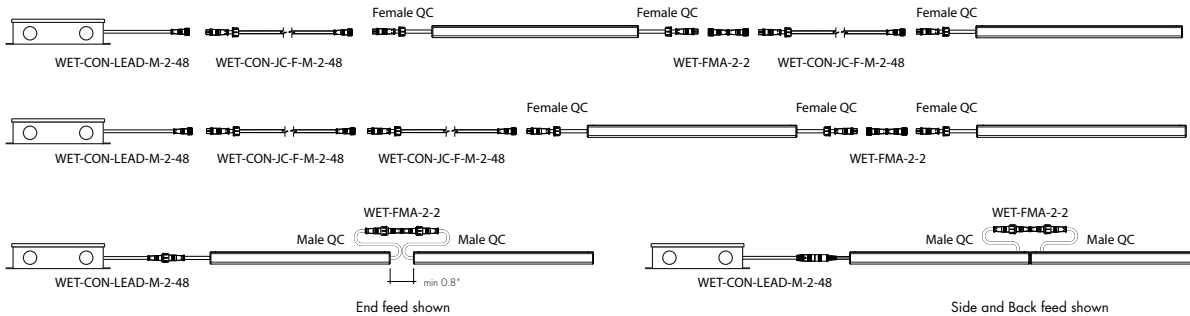
WET-CON-JC-F-M-2-48
Female/Male Wet Jumper Cable, 2 pin, 48"







Sample Layout

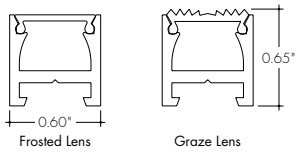


Bosca Wet - Static White | Linear Illumination System

luminii

Product Dimensions

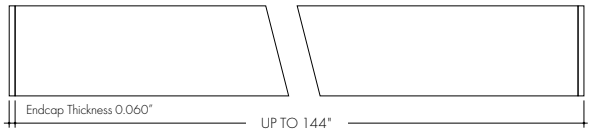
Fixture/Lens Profile



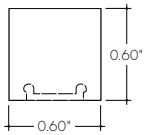
Frosted Lens

Graze Lens

Fixture Side

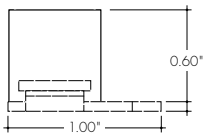


Fixture/Mounting Profile

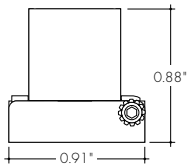


Frosted Lens using the Clip-in Channel

Fixed Clip mount not rated for exterior use.



Frosted Lens using the Screw-in Channel

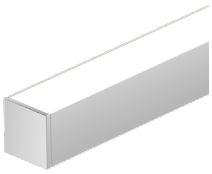


Frosted Lens using the Adjustable Bracket, up to 90°

Finish Options

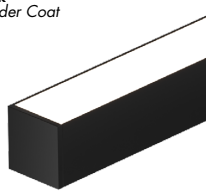
- Finish options are available in a wide variety, allowing for complete customization of style and aesthetic.
- Non Base finishes may have extended lead times and price adder.
- Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".
- Custom RALs are available, please consult Inside Sales with specific request.

Silver Anodized *Base*



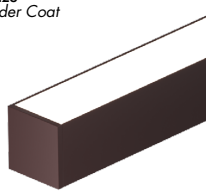
Silver Anodized is a soft silver with a clear finish.

Black *Powder Coat*



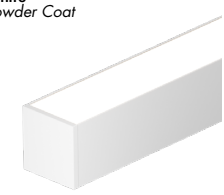
Black is a true deep black with a glossy finish.

Bronze *Powder Coat*



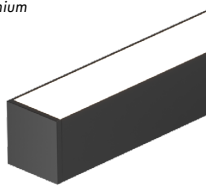
Bronze is a rich, dark brown with a satin finish.

White *Powder Coat*



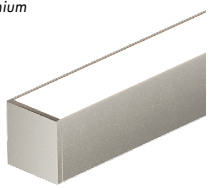
White is a polar bright white and field paintable.

Matte Black *Premium*



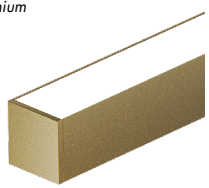
Matte Black is a dark, pitch-black with a soft flat finish.

Warm Nickel *Premium*



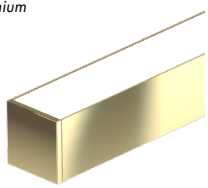
Warm Nickel is a soft, silvery smoke with warm tones and a satin finish.

Aged Brass *Premium*



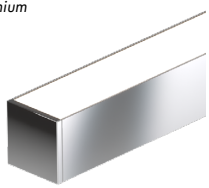
Aged Brass is a deep brown shade with slightly golden undertones.

Polished Gold *Premium*



Polished Gold is bright and radiant for a brilliant finish.

Chrome *Premium*



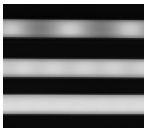
Chrome is a highly reflective silver polish.

Bosca Wet - Static White | Linear Illumination System

luminii

Light Transmission and Dotting

	Lens Type							
Output Options	**Graze Lens**				**Frosted Lens**			
Dimming Level	100%	50%	10%	1%	100%	50%	10%	1%
72SO	CD	CD	CD	CD	ND	ND	ND	ND
72HO	CD	CD	CD	CD	ND	ND	ND	ND
72VHO	CD	CD	CD	CD	ND	ND	ND	ND
HE48LO	CD	CD	CD	CD	ND	ND	ND	ND
HE48SO	CD	CD	CD	CD	ND	ND	ND	ND
HE48MO	CD	CD	CD	CD	ND	ND	ND	ND
HE48HO	CD	CD	CD	CD	ND	ND	ND	ND
HE64VHO	CD	CD	CD	CD	ND	ND	ND	ND
Transmission Percentage	100%				75%			



CD - Clear Dotting

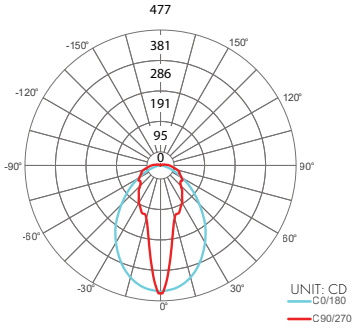
SD - Slight Dotting

ND - No Dotting

Photometry

BOSW-48-30K-LL72VHO-G

Bosca Wet, 4ft, 3000K, VHO, Graze Lens



Zonal Lumen Summary 3000K

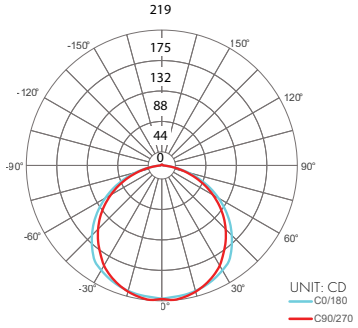
Zone	Lumen	% Fixture
0-30	320	48.2%
0-40	450	65.2%
0-60	663	88.0%
0-90	842	98.9%
Total 0-180	880	100.0%

Beam Angle

44°

BOSW-48-30K-LL72VHO-F

Bosca Wet, 4ft, 3000K, VHO, Frosted Lens



Zonal Lumen Summary 3000K

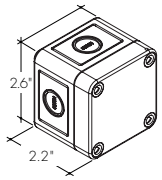
Zone	Lumen	% Fixture
0-30	173	26.3%
0-40	287	43.6%
0-60	514	78.0%
0-90	652	99.0%
Total 0-180	659	100.0%

Beam Angle

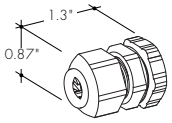
115°

Accessory Options

LVSP-WET
Splice box: wet rated, low voltage, gray



LVSP-WET-CM
Connector for splice box, low voltage for cable management, gray.



Bosca Wet - Static White | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Color Quality (72)

Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts		
		SO	HO	VHO			SO	HO	VHO			SO	HO	VHO			SO	HO	VHO
12	11 5/16	2.7	4.4	6.2	**47**	46 1/16	10.2	17.1	22.6	**82**	81 15/16	18.3	29.5	38.4	**117**	116 11/16	25.9	40.8	52.4
13	12 7/16	2.7	4.4	6.2	**48**	47 3/16	10.5	17.4	23.1	**83**	–	–	–	–	**118**	117 13/16	26.1	41.1	52.8
14	13 10/16	2.9	4.8	6.7	**49**	48 6/16	10.7	17.8	23.5	**84**	83 1/16	18.5	29.8	38.8	**119**	119	26.3	41.4	53.2
15	14 12/16	3.1	5.2	7.3	**50**	49 8/16	11.1	18.6	24.4	**85**	84 4/16	18.7	30.1	39.2	**120**	–	–	–	–
16	15 15/16	3.4	5.6	7.8	**51**	50 11/16	11.4	18.9	24.9	**86**	85 6/16	19.2	30.8	40.0	**121**	120 2/16	26.5	41.7	53.6
17	–	–	–	–	**52**	51 13/16	11.6	19.3	25.3	**87**	86 9/16	19.4	31.1	40.4	**122**	121 5/16	26.7	42.0	54.0
18	17 1/16	3.6	6.0	8.3	**53**	53	11.9	19.7	25.7	**88**	87 12/16	19.6	31.5	40.8	**123**	122 7/16	27.1	42.6	54.7
19	18 4/16	3.9	6.5	8.9	**54**	–	–	–	–	**89**	88 14/16	19.9	31.8	41.1	**124**	123 10/16	27.3	42.9	55.0
20	19 6/16	4.4	7.3	9.9	**55**	54 2/16	12.1	20.1	26.1	**90**	–	–	–	–	**125**	124 12/16	27.5	43.1	55.4
21	20 9/16	4.6	7.7	10.5	**56**	55 5/16	12.3	20.5	26.6	**91**	90 1/16	20.1	32.2	41.5	**126**	125 15/16	27.7	43.4	55.7
22	21 11/16	4.8	8.1	11.0	**57**	56 7/16	12.8	21.3	27.4	**92**	91 3/16	20.4	32.5	41.9	**127**	–	–	–	–
23	22 14/16	5.1	8.6	11.5	**58**	57 10/16	13.1	21.6	27.8	**93**	92 6/16	20.6	32.9	42.3	**128**	127 1/16	27.9	43.7	56.1
24	–	–	–	–	**59**	58 12/16	13.3	22.0	28.3	**94**	93 8/16	21.1	33.6	43.1	**129**	128 4/16	28.1	43.9	56.4
25	24 1/16	5.3	9.0	12.1	**60**	59 15/16	13.6	22.4	28.7	**95**	94 11/16	21.3	33.9	43.4	**130**	129 7/16	28.5	44.5	57.1
26	25 3/16	5.6	9.4	12.6	**61**	–	–	–	–	**96**	95 13/16	21.5	34.2	43.8	**131**	130 9/16	28.7	44.7	57.4
27	26 6/16	5.8	9.8	13.1	**62**	61 1/16	13.8	22.8	29.1	**97**	97	21.8	34.6	44.2	**132**	131 12/16	28.9	45.0	57.8
28	27 8/16	6.2	10.5	14.1	**63**	62 4/16	14.0	23.1	29.6	**98**	–	–	–	–	**133**	132 14/16	29.1	45.3	58.1
29	28 11/16	6.5	10.9	14.5	**64**	63 6/16	14.5	23.8	30.5	**99**	98 2/16	22.0	34.9	44.6	**134**	–	–	–	–
30	29 13/16	6.7	11.2	15.0	**65**	64 9/16	14.7	24.1	31.0	**100**	99 5/16	22.2	35.2	45.0	**135**	134 1/16	29.3	45.5	58.4
31	31	6.9	11.6	15.5	**66**	65 12/16	14.9	24.4	31.4	**101**	100 7/16	22.5	35.9	45.9	**136**	135 3/16	29.5	45.7	58.7
32	–	–	–	–	**67**	66 14/16	15.1	24.7	31.9	**102**	101 10/16	22.7	36.2	46.3	**137**	136 6/16	29.6	45.9	59.1
33	32 2/16	7.1	12.0	16.0	**68**	–	–	–	–	**103**	102 12/16	22.9	36.5	46.7	**138**	137 8/16	30.0	46.3	59.7
34	33 5/16	7.3	12.3	16.5	**69**	68 1/16	15.3	25.0	32.4	**104**	103 15/16	23.1	36.8	47.1	**139**	138 11/16	30.2	46.5	60.0
35	34 7/16	7.8	13.1	17.4	**70**	69 3/16	15.5	25.4	32.8	**105**	–	–	–	–	**140**	139 13/16	30.3	46.8	60.3
36	35 10/16	8.0	13.4	17.9	**71**	70 6/16	15.8	25.7	33.3	**106**	105 1/16	23.3	37.1	47.5	**141**	141	30.5	47.0	60.6
37	36 12/16	8.2	13.8	18.4	**72**	71 8/16	16.2	26.3	34.2	**107**	106 4/16	23.5	37.4	48.0	**142**	–	–	–	–
38	37 15/16	8.4	14.2	18.9	**73**	72 11/16	16.4	26.6	34.7	**108**	107 6/16	23.9	38.1	48.8	**143**	142 2/16	30.7	47.2	61.0
39	–	–	–	–	**74**	73 13/16	16.6	26.9	35.1	**109**	108 9/16	24.1	38.4	49.2	**144**	143 5/16	30.8	47.4	61.3
40	39 1/16	8.7	14.5	19.3	**75**	75	16.8	27.3	35.5	**110**	109 12/16	24.3	38.7	49.6					
41	40 4/16	8.9	14.9	19.8	**76**	–	–	–	–	**111**	110 14/16	24.5	39.0	50.0					
42	41 6/16	9.3	15.6	20.7	**77**	76 2/16	17.1	27.6	35.9	**112**	–	–	–	–					
43	42 9/16	9.6	16.0	21.2	**78**	77 5/16	17.3	27.9	36.3	**113**	112 1/16	24.8	39.3	50.4					
44	43 12/16	9.8	16.4	21.7	**79**	78 7/16	17.7	28.5	37.2	**114**	113 3/16	25.0	39.6	50.8					
45	44 14/16	10.0	16.7	22.1	**80**	79 10/16	17.9	28.9	37.6	**115**	114 6/16	25.2	39.9	51.2					
46	–	–	–	–	**81**	80 12/16	18.1	29.2	38.0	**116**	115 8/16	25.6	40.5	52.0					

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Efficacy (HE48)

Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts			
		LO	SO	MO	HO			LO	SO	MO	HO			LO	SO	MO	HO			LO	SO	MO	HO
12	10 11/16	1.7	2.5	3.5	5.7	**47**	46 2/16	6.9	10.7	13.3	24.7	**82**	81 9/16	12.5	19.9	23.9	42.2	**117**	–	–	–	–	–
13	12 11/16	1.7	2.5	3.5	5.7	**48**	–	–	–	–	–	**83**	–	–	–	–	–	**118**	117	17.5	27.7	34.3	58.7
14	–	–	–	–	–	**49**	48 2/16	7.1	11.2	13.9	25.4	**84**	83 9/16	12.8	20.3	24.5	43.1	**119**	119	17.8	28.1	34.9	59.6
15	14 10/16	2.0	3.0	4.0	7.2	**50**	–	–	–	–	–	**85**	–	–	–	–	–	**120**	–	–	–	–	–
16	–	–	–	–	–	**51**	50 1/16	7.4	11.7	14.5	26.3	**86**	85 8/16	13.1	20.8	25.1	44.1	**121**	120 15/16	18.1	28.6	35.5	60.5
17	16 10/16	2.4	3.5	4.6	8.7	**52**	–	–	–	–	–	**87**	–	–	–	–	–	**122**	–	–	–	–	–
18	–	–	–	–	–	**53**	52 1/16	7.7	12.3	15.1	27.4	**88**	87 8/16	13.4	21.3	25.7	45.0	**123**	122 15/16	18.3	29.0	36.0	62.1
19	18 9/16	2.7	3.9	5.2	10.2	**54**	–	–	–	–	–	**89**	–	–	–	–	–	**124**	–	–	–	–	–
20	–	–	–	–	–	**55**	54	8.0	12.9	15.7	28.5	**90**	89 7/16	13.7	21.7	26.3	46.0	**125**	124 14/16	18.4	29.5	36.6	63.8
21	20 9/16	3.0	4.4	5.8	11.7	**56**	56	8.4	13.5	16.4	29.5	**91**	–	–	–	–	–	**126**	–	–	–	–	–
22	–	–	–	–	–	**57**	–	–	–	–	–	**92**	91 7/16	14.0	22.1	26.9	47.0	**127**	126 14/16	18.6	29.9	37.2	65.4
23	22 8/16	3.4	4.9	6.4	13.2	**58**	57 15/16	8.7	14.0	17.0	30.6	**93**	–	–	–	–	–	**128**	–	–	–	–	–
24	–	–	–	–	–	**59**	–	–	–	–	–	**94**	93 6/16	14.3	22.6	27.5	47.9	**129**	128 13/16	18.8	30.4	37.7	67.0
25	24 8/16	3.7	5.4	7.0	14.7	**60**	59 15/16	9.0	14.6	17.6	31.6	**95**	–	–	–	–	–	**130**	–	–	–	–	–
26	–	–	–	–	–	**61**	–	–	–	–	–	**96**	95 6/16	14.4	22.8	27.8	48.4	**131**	130 13/16	18.9	30.8	38.3	68.6
27	26 7/16	4.1	5.9	7.5	15.8	**62**	61 14/16	9.4	15.2	18.2	32.6	**97**	–	–	–	–	–	**132**	–	–	–	–	–
28	–	–	–	–	–	**63**	–	–	–	–	–	**98**	97 5/16	14.7	23.3	28.5	49.4	**133**	132 12/16	19.1	31.2	38.9	70.2
29	28 7/16	4.4	6.4	8.1	16.8	**64**	63 14/16	9.7	15.6	18.7	33.7	**99**	–	–	–	–	–	**134**	–	–	–	–	–
30	–	–	–	–	–	**65**	–	–	–	–	–	**100**	99 5/16	15.0	23.7	29.0	50.4	**135**	134 12/16	19.3	31.8	39.4	70.7
31	30 6/16	4.8	6.9	8.7	17.9	**66**	65 13/16	10.0	16.1	19.2	34.7	**101**	–	–	–	–	–	**136**	–	–	–	–	–
32	–	–	–	–	–	**67**	–	–	–	–	–	**102**	101 4/16	15.3	24.1	29.6	51.3	**137**	136 11/16	19.5	32.3	40.0	71.2
33	32 6/16	5.0	7.2	9.0	18.5	**68**	67 13/16	10.4	16.5	19.8	35.7	**103**	–	–	–	–	–	**138**	–	–	–	–	–
34	–	–	–	–	–	**69**	–	–	–	–	–	**104**	103 4/16	15.6	24.6	30.2	52.3	**139**	138 11/16	19.8	32.8	40.6	71.8
35	34 5/16	5.4	7.7	9.6	19.5	**70**	69 12/16	10.7	17.0	20.3	36.7	**105**	–	–	–	–	–	**140**	–	–	–	–	–
36	–	–	–	–	–	**71**	–	–	–	–	–	**106**	105 3/16	15.8	25.0	30.7	53.2	**141**	140 10/16	20.0	33.3	41.1	72.3
37	36 5/16	5.7	8.2	10.2	20.6	**72**	71 12/16	11.0	17.4	20.8	37.7	**107**	–	–	–	–	–	**142**	–	–	–	–	–
38	–	–	–	–	–	**73**	–	–	–	–	–	**108**	107 3/16	16.1	25.5	31.3	54.2	**143**	142 10/16	20.2	33.9	41.7	72.8
39	38 4/16	6.0	8.7	10.8	21.5	**74**	73 11/16	11.3	17.9	21.4	38.7	**109**	–	–	–	–	–	**144**	–	–	–	–	–
40	–	–	–	–	–	**75**	–	–	–	–	–	**110**	109 2/16	16.4	25.9	31.9	55.2						
41	40 4/16	6.2	9.2	11.4	22.3	**76**	75 11/16	11.6	18.4	22.0	39.6	**111**	–	–	–	–	–						
42	–	–	–	–	–	**77**	–	–	–	–	–	**112**	111 2/16	16.7	26.4	32.5	56.1						
43	42 3/16	6.4	9.7	12.0	23.1	**78**	77 10/16	11.9	18.9	22.7	40.5	**113**	–	–	–	–	–						
44	–	–	–	–	–	**79**	–	–	–	–	–	**114**	113 1/16	17.0	26.8	33.1	57.0						
45	44 3/16	6.7	10.2	12.6	23.9	**80**	79 10/16	12.2	19.4	23.3	41.4	**115**	–	–	–	–	–						
46	–	–	–	–	–	**81**	–	–	–	–	–	**116**	115 1/16	17.3	27.3	33.7	57.9						

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Efficacy (HE64)

Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO
12	11 8/16	7.6	**47**	46 5/16	28.2	**82**	81 2/16	50.4	**117**	–	–
13	13	7.6	**48**	47 13/16	29.5	**83**	82 10/16	51.7	**118**	117 8/16	72.8
14	–	–	**49**	–	–	**84**	–	–	**119**	119	73.3
15	14 8/16	8.9	**50**	49 5/16	30.1	**85**	84 3/16	52.3	**120**	–	–
16	–	–	**51**	50 14/16	31.4	**86**	85 11/16	53.6	**121**	120 8/16	74.4
17	16	9.5	**52**	–	–	**87**	–	–	**122**	–	–
18	17 9/16	10.7	**53**	52 6/16	32.0	**88**	87 3/16	54.2	**123**	122	74.8
19	–	–	**54**	53 14/16	33.3	**89**	88 11/16	55.5	**124**	123 8/16	75.6
20	19 1/16	11.4	**55**	–	–	**90**	–	–	**125**	–	–
21	20 9/16	12.6	**56**	55 6/16	34.0	**91**	90 3/16	56.2	**126**	125 1/16	76.0
22	–	–	**57**	56 14/16	35.2	**92**	91 12/16	57.5	**127**	126 9/16	76.8
23	22 1/16	13.2	**58**	–	–	**93**	–	–	**128**	–	–
24	23 9/16	14.5	**59**	58 7/16	36.5	**94**	93 4/16	58.2	**129**	128 1/16	77.2
25	–	–	**60**	59 15/16	37.2	**95**	94 12/16	59.5	**130**	129 9/16	78.0
26	25 2/16	15.1	**61**	–	–	**96**	–	–	**131**	–	–
27	26 10/16	16.4	**62**	61 7/16	38.4	**97**	96 4/16	60.1	**132**	131 2/16	78.4
28	–	–	**63**	62 15/16	39.1	**98**	97 13/16	61.4	**133**	132 10/16	79.2
29	28 2/16	17.0	**64**	–	–	**99**	–	–	**134**	–	–
30	29 10/16	18.2	**65**	64 8/16	40.4	**100**	99 5/16	62.0	**135**	134 2/16	79.6
31	–	–	**66**	66	41.0	**101**	100 13/16	63.2	**136**	135 10/16	80.3
32	31 3/16	18.9	**67**	–	–	**102**	–	–	**137**	–	–
33	32 11/16	20.1	**68**	67 8/16	42.3	**103**	102 5/16	63.8	**138**	137 2/16	80.6
34	–	–	**69**	–	–	**104**	103 13/16	65.0	**139**	138 11/16	81.3
35	34 3/16	20.7	**70**	69	42.9	**105**	–	–	**140**	–	–
36	35 11/16	22.0	**71**	70 8/16	44.2	**106**	105 6/16	65.6	**141**	140 3/16	81.7
37	–	–	**72**	–	–	**107**	106 14/16	66.8	**142**	141 11/16	82.4
38	37 3/16	22.6	**73**	72 1/16	44.9	**108**	–	–	**143**	–	–
39	38 12/16	23.9	**74**	73 9/16	46.1	**109**	108 6/16	67.4	**144**	143 3/16	82.7
40	–	–	**75**	–	–	**110**	109 14/16	68.5			
41	40 4/16	24.5	**76**	75 1/16	46.7	**111**	–	–			
42	41 12/16	25.7	**77**	76 9/16	48.0	**112**	111 7/16	69.6			
43	–	–	**78**	–	–	**113**	112 15/16	70.1			
44	43 4/16	26.4	**79**	78 2/16	48.6	**114**	–	–			
45	44 13/16	27.6	**80**	79 10/16	49.8	**115**	114 7/16	71.2			
46	–	–	**81**	–	–	**116**	115 15/16	71.7			

Voltage Drop Calculator

The below chart assumes nominal voltage of 24 Volts and a Voltage Drop Allowance of 3% through the wire

Wattage [W]	Maximum Wire Length From Power Supply to Start of Run [ft]						
	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG
5	1088.2	684.4	430.3	270.6	170.2	107.1	67.3
10	544.1	342.2	215.1	135.3	85.1	53.5	33.7
15	362.7	228.1	143.4	90.2	56.7	35.7	22.4
20	272.0	171.1	107.6	67.7	42.6	26.8	16.8
25	217.6	136.9	86.1	54.1	34.0	21.4	13.5
30	181.4	114.1	71.7	45.1	28.4	17.8	11.2
35	155.5	97.8	61.5	38.7	24.3	15.3	9.6
40	136.0	85.5	53.8	33.8	21.3	13.4	8.4
45	120.9	76.0	47.8	30.1	18.9	11.9	7.5
50	108.8	68.4	43.0	27.1	17.0	10.7	6.7
55	98.9	62.2	39.1	24.6	15.5	9.7	6.1
60	90.7	57.0	35.9	22.6	14.2	8.9	5.6
65	83.7	52.6	33.1	20.8	13.1	8.2	5.2
70	77.7	48.9	30.7	19.3	12.2	7.6	4.8
75	72.5	45.6	28.7	18.0	11.3	7.1	4.5
80	68.0	42.8	26.9	16.9	10.6	6.7	4.2
85	64.0	40.3	25.3	15.9	10.0	6.3	4.0
90	60.5	38.0	23.9	15.0	9.5	5.9	3.7
96	56.7	35.6	22.4	14.1	8.9	5.6	3.5

Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

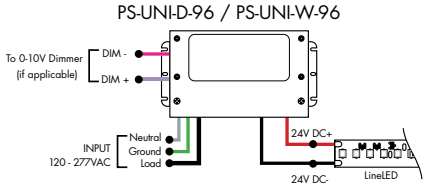
Ordering Code Universal Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	UNI - 0-10V Dimming, Phase Dimming	D - Dry W - Wet	30 - 30 Watts 60 - 60 Watts 96 - 96 Watts 3x96 - 3x96 Watts	24 - 24 VDC

Compatibility: View a complete list of compatible dimmers on product page (Link)

0-10V - 1% dimming
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart

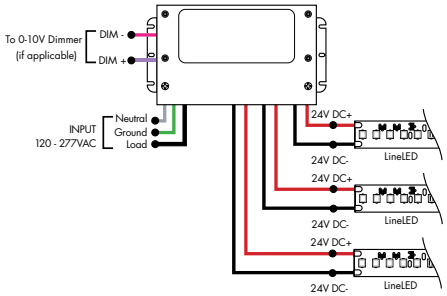
PS-UNI-D-96 / PS-UNI-W-96



MODELS	PS-UNI-W-30W	PS-UNI-W-60W	PS-UNI-W-96W	PS-UNI-W-3X96W
Length	6.50"	7.40"	8.66"	11.85"
Width	3.73"	3.73"	3.73"	4.32"
Depth	1.61"	1.61"	1.61"	1.81"

MODELS	PS-UNI-D-30W	PS-UNI-D-60W	PS-UNI-D-96W	PS-UNI-D-3X96W
Length	8.77"	8.77"	8.11"	9.94"
Width	4.27"	4.27"	5.60"	7.61"
Depth	1.83"	1.83"	1.83"	2.02"

PS-UNI-D-3X96 / PS-UNI-W-3X96

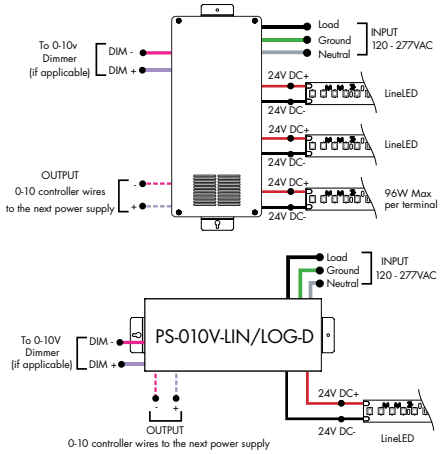


Ordering Code 0-10V Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	010V-LIN - 0-10V Dimming (0.1%), Linear 010V-LOG - 0-10V Dimming (0.1%), Logarithmic	D - Dry	96 - 96 Watts 3X96 - 3x96 Watts	24 - 24 VDC

MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.45"

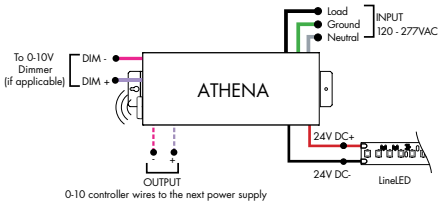
PS-010V-LIN/LOG-D-3X96



Athena 0-10V LED Driver

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-LIN - 0-10V Dimming, Linear 010V-LOG - 0-10V Dimming, Logarithmic	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena

MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"



Power Supplies

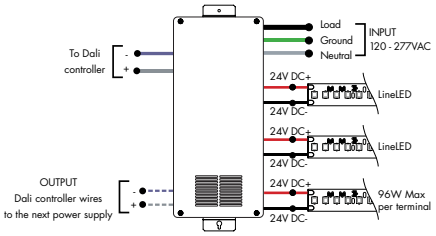
See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

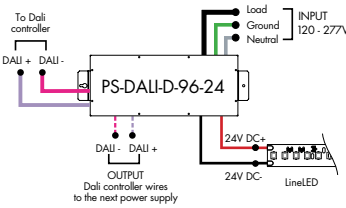
Ordering Code DALI1 Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT
	–		–		–		–	
PS - Power Supply, 120-277VAC		DALI - DALI (0.1%)		D - Dry		96 - 96 Watts 3X96 - 3X96 Watts		24 - 24 VDC

Model	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

PS-DALI-D-3X96-24





Ordering Code DMX Dimming Power Supplies 0.1% 120VAC - 277VAC

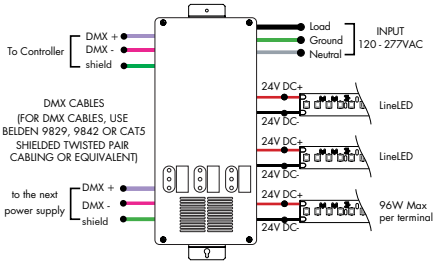
Requires Zonal Control

MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT
	–		–		–		–	
PS - Power Supply, 120-277VAC		DMX - DMX (0.1%)		D - Dry		96 - 96 Watts 3X96 - 3X96 Watts		24 - 24 VDC

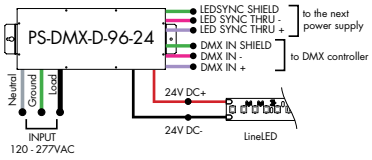
*Zonal control power supplies. Control multiple tapes/zones using DMX channels.

MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

PS-DMX-D-3X96-24



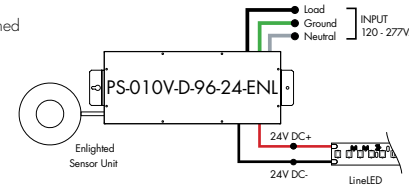
DMX CABLES
(FOR DMX CABLES, USE BELDEN 9829, 9842 OR CAT5 SHIELDED TWISTED PAIR CABLING OR EQUIVALENT)



Ordering Code Enlighted Enabled Dimming Power Supplies 1% 120VAC - 277VAC

MODEL		INPUT CONTROL		ENVIRONMENT		WATTAGE		OUTPUT		FEATURE
	–		–		–		–		–	
PS - Power Supply, 120-277VAC		010V - 0-10V Dimming (1%)		D - Dry		96 - 96 Watts		24 - 24 VDC		ENL - 0-10V Enlightened

Model	96W
Length	14.40"
Width	5.20"
Depth	2.60"



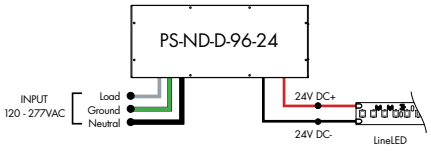
Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

Ordering Code Non-Dimming Power Supply 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	ND-Non Dimming	D-Dry	96-96 Watts	24-24 VDC

MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

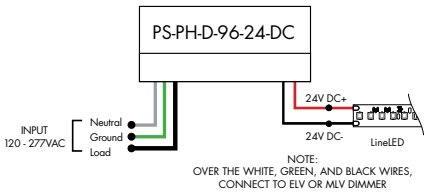


Ordering Code Phase Dimming Power Supply 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	OUTPUT CONTROL
PS-Power Supply, 120-277VAC	PH-Phase Dimming (Triac, ELV, MLV)	D-Dry	96-96 Watts	24-24 VDC	DC-Direct Current

MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart (Link)

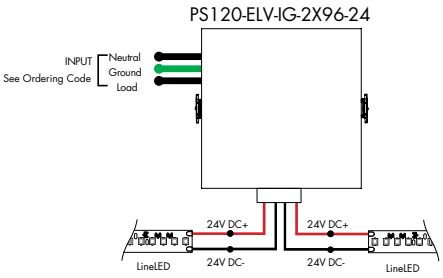
MODELS	96W
Length	8.25"
Width	4.10"
Depth	1.56"



Ordering Code In-Ground Power Supplies

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS120-Power Supply, 120VAC PS240-Power Supply, 240VAC PS277-Power Supply, 277VAC	ELV-ELV Dimming (1%)	IG-In Ground	2X96-2X96 Watts	24-24 VDC

MODELS	2X96W
Length	8.40"
Width	8.30"
Depth	8.10"



Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

LUTRON®

Luminii is a Lutron OEM Advantage Partner

Lutron Power Supplies 1%

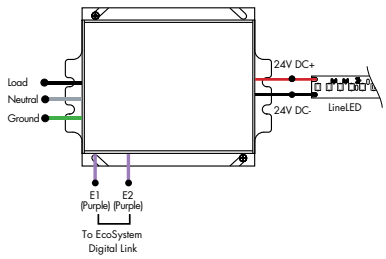
MODEL

L3DA4U1UKL-CV240

Hi-lume™ 1% EcoSystem Voltage LED driver
40W max

MODELS	L3DA4U1UKL-CV240
Length	4.98"
Width	4.00"
Depth	2.62"

L3DA4U1UKL-CV240



LUTRON®

Luminii is a Lutron OEM Advantage Partner

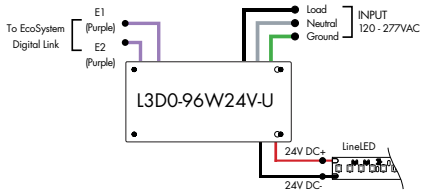
Lutron Power Supplies 0.1%

MODEL

L3D0-96W24V-U

Hi-lume™ 0.1% EcoSystem Voltage LED Driver with Soft-On, Fade-to-Black™
96W max

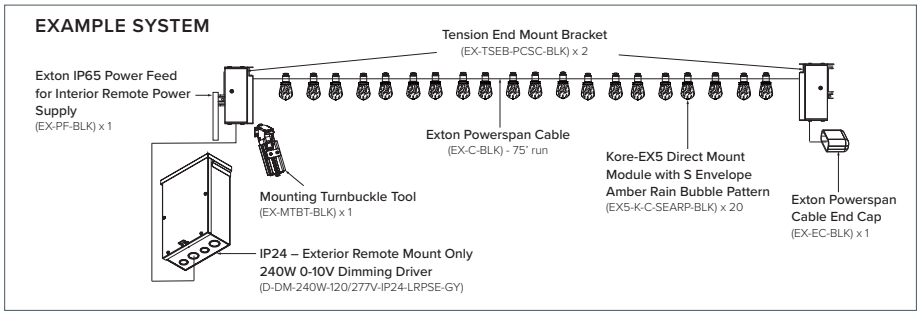
MODELS	L3D0
Length	10.50"
Width	5.50"
Depth	2.00"



Tegan LIGHTING

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM



If mounting to a tree, consult an Arborist and see below for more details.

TENSION MOUNT – SYSTEM COMPONENTS TO MAKE A COMPLETE SYSTEM

COMPONENT	DESCRIPTION	CODE	FINISH
POWERSPAN CABLE			
	Exton - Powerspan Cable - Black (Specify in 1' increments + add 20% extra length)	EX-C-BLK	Black
	Exton End Cap - Black Finish (One per Run), includes a T15 Tool for top cap installation of EX5 LED Module.	EX-EC-BLK	Black
MOUNTING			
	Exton Tension End Mount Bracket and SSS Powerspan Cable Safety Clamp	EX-TSEB-PCSC-BLK	Black
	Exton Tension End Mount Bracket with Corner Mounting Plate and SSS Powerspan Cable Safety Clamp	EX-TSEB-CM-PCSC-BLK	Black
	Exton Tension End Mount Bracket with Shallow Angle Mounting Plate and SSS Powerspan Cable Safety Clamp	EX-TSEB-SA-PCSC-BLK	Black
	Exton Double Tension End Mount Brackets with Shallow Angle Mounting Plate and SSS Powerspan Cable Safety Clamps	EX-2TSEB-SA-PCSC-BLK	Black
	Exton Triple Tension End Mount Brackets with Mounting Plate and SSS Powerspan Cable Safety Clamps	EX-3TSEB-PCSC-BLK	Black
	Exton Mounting Turnbuckle Tool	EX-MTBT-BLK	Black
	Exton 2" Wrap Bracket, maximum angle of 36°	EX-WB2-BLK	Black
	Exton 3" Wrap Bracket, maximum angle of 60°	EX-WB3-BLK	Black
	Exton 4" Wrap Bracket, maximum angle of 81°	EX-WB4-BLK	Black
	Exton Horizontal Surface Mount Bracket	EX-HSMB-BLK	Black
	Set of Exton 6.5' Bottom/Top Cover Channels, for Powerspan Cable management	EX-RDTC-BCCV-BLK	Black
POWER FEED			
	Exton IP65 Power Feed for Interior Mount Remote Power Supply	EX-PF-BLK	Black
	Exton Cable Gland + Lock Nut Power Feed, available in Black only	EX-CG-LN-PF	Black
EXTON LED MODULES (Ordered separately, see below for link)			
	Select an Exton LED EX5 Direct or Pendant Mount Module ("Typical" shown)	SELECT TYPE	Black or Aluminum

© 2026 Tegan Lighting. All rights reserved.

teganlighting.com | info@teganlighting.com | 415-504-3536

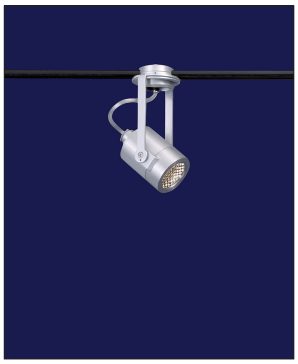
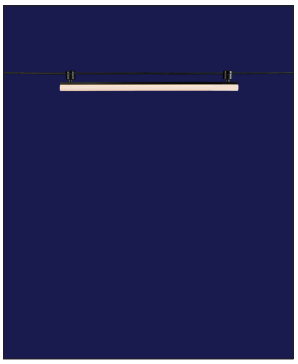
KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

COMPONENT	DESCRIPTION	CODE	FINISH
REMOTE POWER SUPPLY (Ordered separately)			
	Exton IP20 Power Supply. Indoor use only. Contact Factory for alternative finishes, see page 11 for more details.	SELECT TYPE	Grey
	Exton IP24 Power Supply. Exterior, non-spray down use only. Contact Factory for alternative finishes, see page 11 for more details.	SELECT TYPE	Grey
	Exton IP66 Power Supply. Exterior use only. Contact Factory for alternative finishes, see page 11 for more details.	SELECT TYPE	Grey
	Exton IP68 Power Supply. Q-Tran direct burial, exterior use only. Contact Factory for alternative finishes, see page 11 for more details.	SELECT TYPE	Black
POLE (Ordered separately)			
	AV Poles, supplied by Tegan Lighting for a complete lighting package. Wet Stamp Calculations and Foundation Design/Calc's available. Refer to link for the Quote Request Form on page 10.	REQUEST A QUOTE	SELECT FINISH

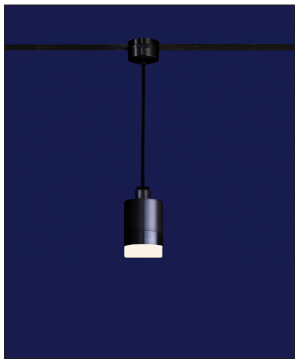
COMPATIBLE EXTON LED MODULES – DIRECT MOUNT (Ordered separately, examples shown here)

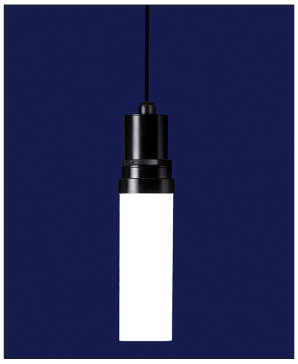
Exton Powerspan Cable Direct Mount Click this link to access individual spec sheets to specify Direct Mount options below.

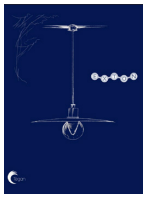



COMPATIBLE EXTON LED MODULES – PENDANT MOUNT (Ordered separately, examples shown here)

Exton Powerspan Cable Pendant Mount Click this link to access individual spec sheets to specify Pendant Mount options below.







Click here to visit:
Exton IP65 Application Guide - Direct Mount - In "Tech" Menu

Click here to visit:
Exton IP65 Application Guide - Pendant Mount - In "Tech" Menu

Click on the linked image to visit:
Exton Powerspan Cable Installation Instructions In "Tech" Menu

© 2026 Tegan Lighting. All rights reserved.

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

HOW TO SPECIFY EXTON TENSIONED POWERSPAN CABLE SYSTEM WITH REMOTE POWER

STEP 1

a. Determine the design & layout, i.e the number of Powerspan Cable Runs.
b. Pick a LED Module – Direct Mount or Pendant
c. Determine Module Quantity & the number of LED Modules per Cable Run

Example:
a. 2 - 30' Powerspan Cable Runs
b. 15 - Exton LED, Direct Mount, Sphere GEM Modules per Cable Run

STEP 2

a. Determine total length of each Run for the Powerspan Cable (add 20% extra).
b. Determine where the Power Supply(s) will be located remotely.

General Guidelines:
- 2 Tension End Mount Brackets per Run
- 1 End Cap per Run
- 1 Power Feed per Run
- 1 Tension Tool per project

Example:
- 72' Powerspan Cable (36' per Run)

- 4 Surface Mount Tension End Brackets

- 2 End Caps

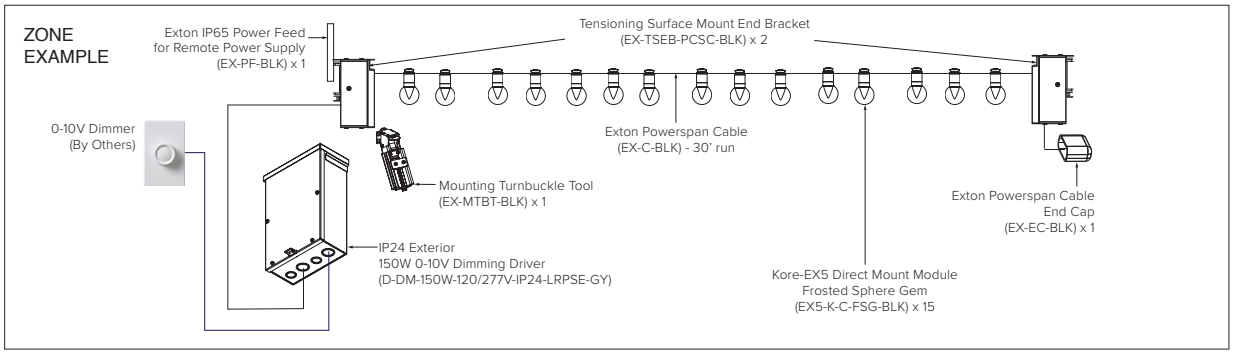
- 2 Power Feeds

- 1 Tension Tool

STEP 3

a. Determine Zoning & Power Supply(s). Each Run can be controlled with one Power Supply or many Runs can be controlled together on one Power Supply to be switched together.
b. Determine wattage & quantity of Power Supply(s).

Example:
a. Power Supplies are inside the building = IP20 Rating
b. 2 – 150W IP20 24VDC Power Supplies (1 per Run)



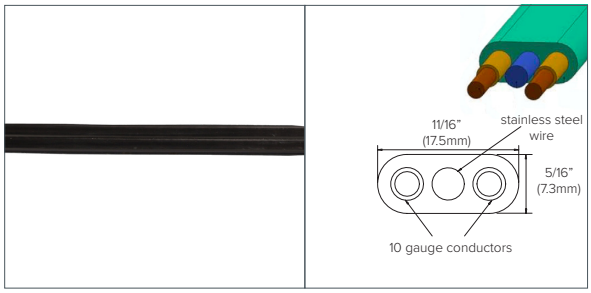
NOTES:
- Refer to Tegan's Exton Power Supply Spec Sheets for the number of LED Modules to use with each Power Supply Wattage based on the Zoning. Exton Remote Power Supply Enclosure(s) can be mounted interior or exterior. The Exton Power Supply Spec Sheet has four options for various mounting locations; IP20 (Interior), IP24 (Exterior), IP66 (Exterior) and IP68 (Exterior Direct Burial).
- There can be 1–XX Zones on a project for this type.
- IP65 Power Feed is used with a IP20 power supply remote mounted in a building.
- Max 300W per circuit.

© 2026 Tegan Lighting. All rights reserved.

EXTON POWERSPAN CABLE SYSTEM

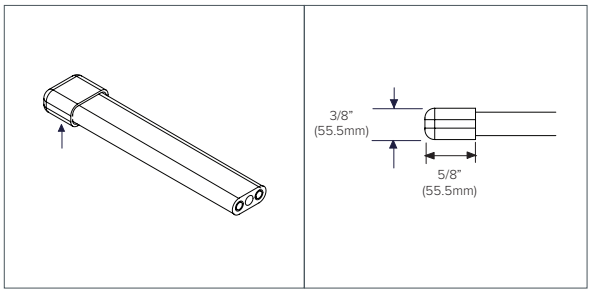
SYSTEM DETAILS

Powerspan Cable



(EX-C-BLK) **Exton Powerspan Cable - Black Finish**

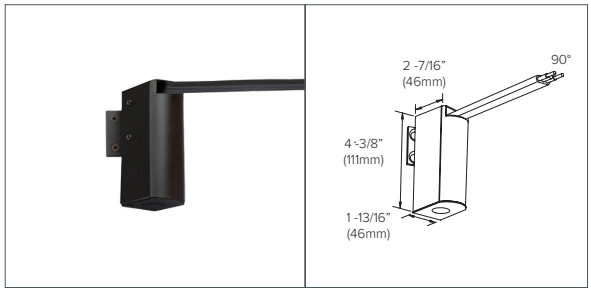
Exton Self-Sealing Powerspan Cable is IP65 for exterior applications. Order in 1' (30.5cm) increments. Exton Powerspan Cable contains two #10 AWG stranded copper conductors alongside a central strand of steel support cable. Maximum Span: 110' (33" sag). Maximum # of LED Modules per Run/Circuit: 40. Maximum Shade weight: 5lb. Field cuttable. 24VDC at 300W Max. per Run. Optional 0-10V DM Power Supply, ordered separately. Polarity does not matter. Powerspan Cable is not Listed for direct burial or "in wall" installation. Available in Black finish (only). Refer to Installation Instructions for details.



(EX-EC-BLK) **Exton End Cap - Black Finish**

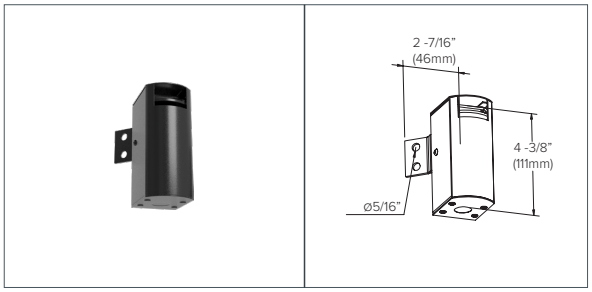
Exton End Cap. One (1) required per Run. Available in Black finish (only).
Refer to Installation Instructions for details.

Mounting



(EX-TSEB-PCSC-BLK) **Tension End Mount Bracket**

Tensioning Surface End Bracket and SSS Powerspan Cable Safety Clamp for Exton Powerspan Cable installations. Can be mounted to any suitable surface; wall, tree, pole, beam, etc. Brackets are engineered to be installed as shown or in an upside-down orientation (Powerspan Cable may exit the top or bottom of the EX-TSEB bracket cover depending upon mounting position). Brackets can be installed side-by-side for multiple runs. Tension Mount Brackets can hold Powerspan Cable so it angles at up to 45° away from perpendicular, for a total adjustability of 90° left and right. Supplied with SSS Wire Rope Safety Clamp, refer to Installation Instruction for details. Available in Black (BLK) finish. Can be field painted or contact factory for custom colors. Mounting fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details. Refer to page 10 for mounting Exton Brackets to Pole(s).

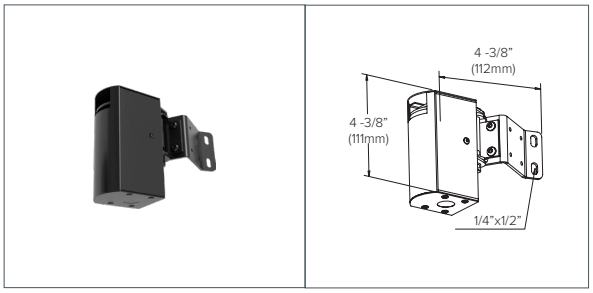


(EX-TSEB-CM-PCSC-BLK) **Tension Corner Mount Bracket**

Tension End Mount Bracket with Corner Mounting Plate and SSS Powerspan Cable Safety Clamp for Exton Powerspan Cable installations. Features one tensioning bracket for corner mounting to structure. Can be mounted to any suitable surface; wall corner, square pole, square beam, etc. Two tensioning brackets required per tensioned run. Available in Black (BLK) finish. Can be field painted or contact factory for custom colors. Mounting fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details. Refer to page 10 for mounting Exton Brackets to Pole(s).

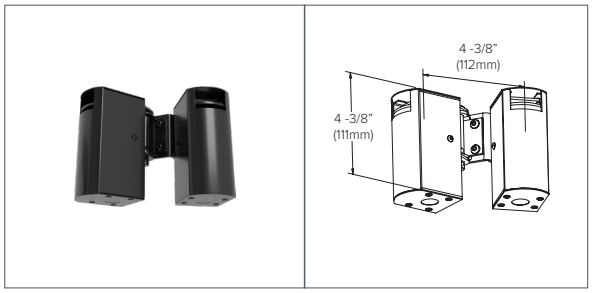
© 2026 Tegan Lighting. All rights reserved.

EXTON POWERSPAN CABLE SYSTEM



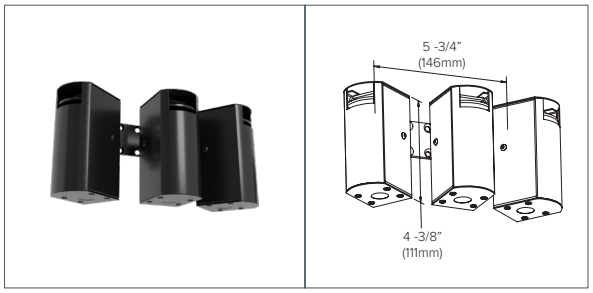
(EX-TSEB-SA-PCSC-BLK) **Tension Shallow Angle Bracket**

Exton Tension End Mount Bracket, Shallow Angle Mounting Plate and SSS Powerspan Cable Safety Clamp for Exton Powerspan Cable installations. Can be mounted to any suitable surface; wall or beam are most common due to long flat mounting bracket. Not suitable for round poles. Features one tensioning bracket on a mounting plate for ease of installation. For spans to structure from opposing angles less than 45 to 14 degrees. Two tensioning brackets required per tensioned run. Available in Black (BLK) finish. Can be field painted or contact factory for custom colors. Mounting fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details. Refer to page 10 for mounting Exton Brackets to Pole(s).



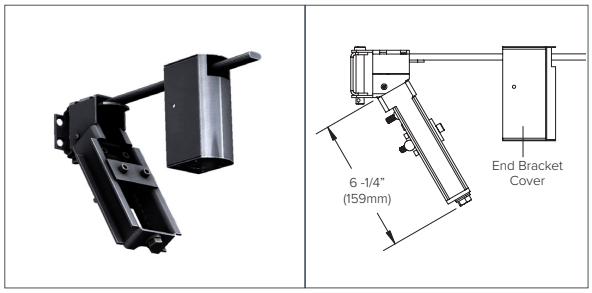
(EX-2TSEB-SA-PCSC-BLK) **Double Tension Mount Bracket**

Exton Double Tension End Mount Brackets with Shallow Angle Mounting Plate with SSS Powerspan Cable Safety Clamp for Exton Powerspan Cable installations. Features two tensioning brackets on a one-piece mounting plate for ease of installation with less structure penetrations. For spans to structure from opposing angles less than 45 to 14 degrees. Two tensioning brackets at each end required per tensioned run. Available in Black (BLK) finish. Can be field painted or contact factory for custom colors. Mounting fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details. Refer to page 10 for mounting Exton Brackets to Pole(s).



(EX-3TSEB-PCSC-BLK) **Triple Tension Mount Bracket**

Triple Tension End Mount Brackets with Mounting Plate and SSS Powerspan Cable Safety Clamp for Exton Powerspan Cable installations. Features three tensioning brackets on a one-piece mounting plate for ease of installation with less structure penetrations. Two tensioning brackets at each end required per tensioned run. Available in Black (BLK) finish. Can be field painted or contact factory for custom colors. Mounting fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details.



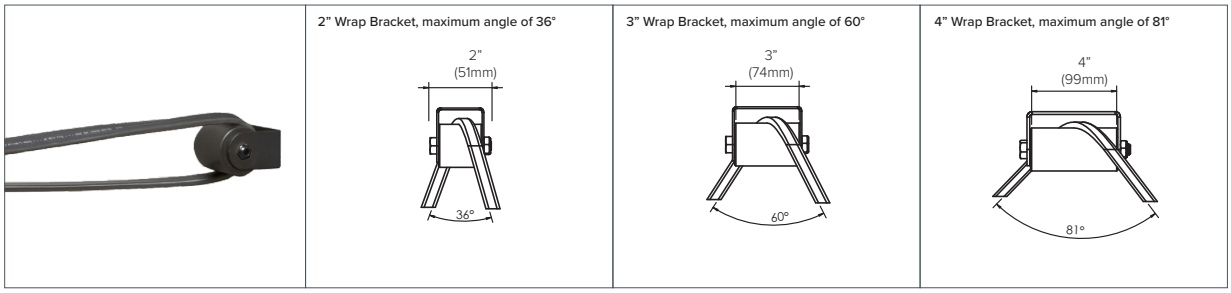
(EX-MTBT-BLK) **Turnbuckle Tool**

The Turnbuckle Tool's Sliding Clamp is used to incrementally pull and make the Powerspan Cable taught. Tighten cable by manually pulling it through the End Mount Tension Bracket(s) before using the Tool. The Tensioning Tool should only be used to tighten away the last few inches off swag. Be sure to loosen the End Mount Tension Bracket(s) Screws before using the Bolt, or you may damage the Powerspan Cable. Allow 6" of sag in the middle of the Powerspan Cable per 20' of span. For example, 40' of span (2 x 20') requires 2 x 6" (12") of sag. Keeping it tighter may create higher tension than the Powerspan Cable can withstand. Do not exceed 450 lbs of tension load on the Powerspan Cable. Use provided tensioning device if necessary.

© 2026 Tegan Lighting. All rights reserved.

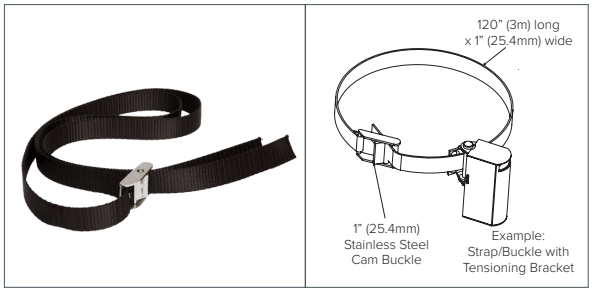
KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM



Wrap Bracket 2", 3", 4" **(EX-WB2-BLK)** **(EX-WB3-BLK)** **(EX-WB4-BLK)**

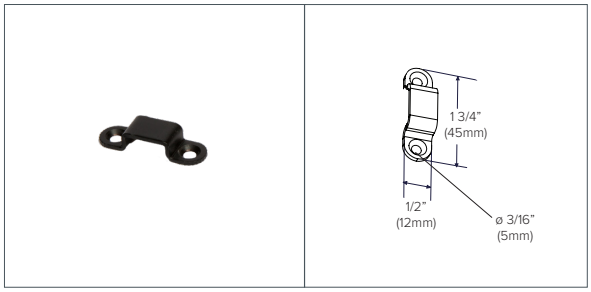
The Surface Wrap Bracket may be used to allow the Powerspan Cable to wrap around the pivot bar and change direction. Wrap Brackets are for very specific applications for Exton Powerspan Cable mounting to a suitable surface like a wall or beam to continue up to 60' (18.29m) consisting of (3) spans total always requiring a Tension End Mount Bracket (EX-TSEB-PCSC-BLK) at the start/finish of every run. Wrap Brackets can never start of finish any run. Contact factory for Runs up to 110' (33.5m). 300W per Run. Available in Black (BLK) finish. They cannot be used for long spans with many "turnarounds", because it will be hard to pull the Powerspan Cable to a desired tension and keep it flat. The Wrap Bracket is ideal to use over a walkway or with individual segments with a 20' (maximum span). Can be field painted or contact factory for custom colors. Fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions Guidelines for more detail.



(EX-10-TSB) **Tree Strap**

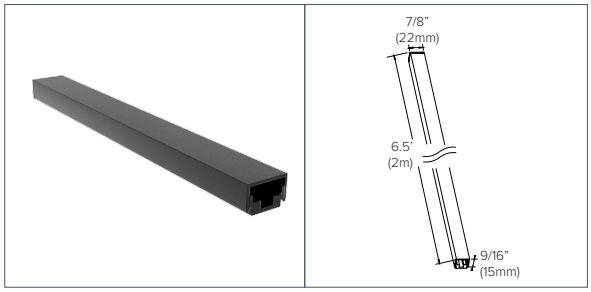
Tree Strap & Buckle for Exton Powerspan Cable mounting to a tree. 1500 lbs. test, UV-resistant, water-resistant. Field-cuttable. 10' (3m) Strap length; contact factory for alternative strap lengths over 10' in 1' increments. Strap available in Black (BLK) finish (only). Galvanized Stainless Steel buckle (only). Tensioning Bracket shown is ordered separately. WARNING: Tree Straps are known to damage or "strangle" a tree if not loosened and/or properly maintained. Consult an Arborist and refer to Installation Instructions for details.

Mounting Accessories



(EX-HSMB-BLK) **Horizontal Surface Mount Bracket**

Horizontal Surface Mount Bracket for Exton Powerspan Cable installations. Can be used to secure the Powerspan Cable to wall surfaces, Poles, etc. Mount Horizontal Brackets every 12" and within 2" of the start and end. Refer to the Installation Guide for details. Available in Black Finish (BLK). Can be factory painted RAL colors or field-painted to match structure/pole. Fasteners provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate. Refer to Installation Instructions for details.



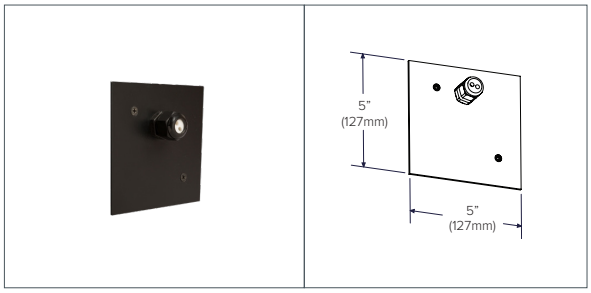
(EX-RDTC-BCCV-BLK) **Bottom/Top Cover Channel Set**

Top/Bottom Cover Channels can be used to secure Powerspan Cable to structure or Poles, etc. Refer to the Installation Guide for details. Sold in 6.5ft lengths only, field-cuttable. Available in Black Finish (BLK). Can be factory painted RAL colors or field-painted to match structure/pole. Fasteners provided by others.

© 2026 Tegan Lighting. All rights reserved.

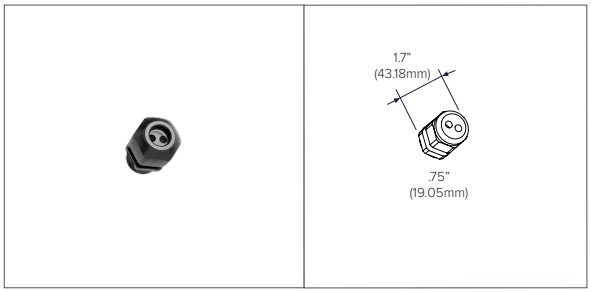
EXTON POWERSPAN CABLE SYSTEM

Power Feed & Pole



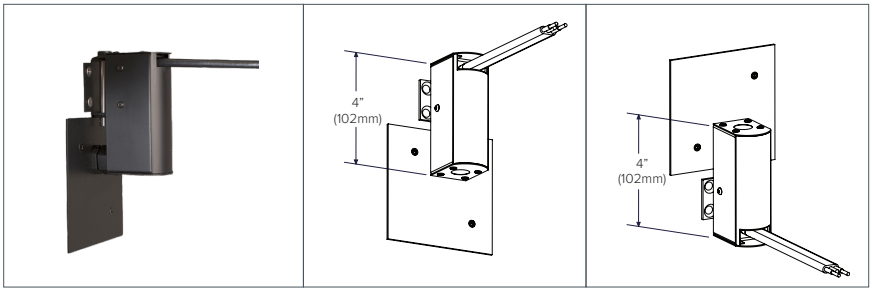
(EX-PF-BLK) **Power Feed Plate**

The IP65 Power Feed will allow the Exton Powerspan Cable to feed into a building via a 4/0 J-Box by others for connection to a Remote Power Supply. The Power Feed is not structural. It is for feeding wire (only) into a J-Box to make an electrical connection. It can not be used alone for tension mounting. Field-paintable. Can mount to a building structure. Available in Black (BLK) finish. Contact factory for custom colors (backplate only). Remote Power Supply ordered separately. Refer to Installation Instructions for additional details.

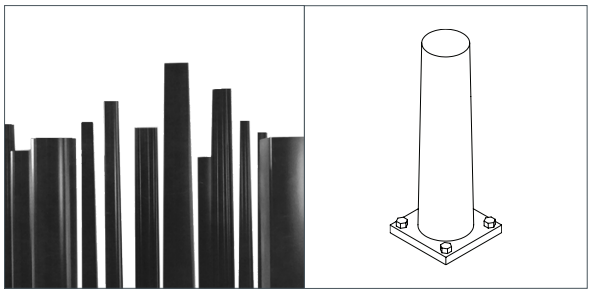


(EX-CG-LN-PF) **Cable Gland Power Feed**

Cable Gland + Locknut Power Feed for Exton Powerspan Cable Pole installations to use with Remote Power Supplies. To be used with J-Box covers by others and/or used to splice/feed power from poles in municipalities where allowed by code. The Power Feed may be covered by the Tension End Mount Bracket Cover. Available in Black (BLK) finish (only). Tensioning bracket and Remote Power Supply are ordered separately. Refer to Installation Instructions for details.



Example of **Exton Tension End Mount Bracket (EX-TSEB-PCSC-BLK) & Power Feed Plate (EX-PF-BLK)** installed for use with an interior mount Remote Power Supply. They can be installed in an orientation so the Powerspan Cable (EX-C-BLK) exits the top of the bracket as shown here or the bottom of the bracket depending upon mounting orientation. All parts are ordered separately.



AV Poles from Tegan Lighting (Ordered separately)

AV Poles, supplied by Tegan Lighting for a complete lighting package. Click this link to access Tegan/AVP Pole Quote Request Form. Wet Stamp Calculations and Foundation Design/Calc's available. AV is well-versed on the Exton System and has engineered many similar tensioned projects. As required, engineering services will be provided in the quote to insure proper structural installation per code requirements. Refer to Exton Installation Instruction Guide for more details. Poles can also be provided by others; engineering is required by others to ensure structural integrity. **Note: Tegan is not responsible for Poles/Engineering provided by others.**

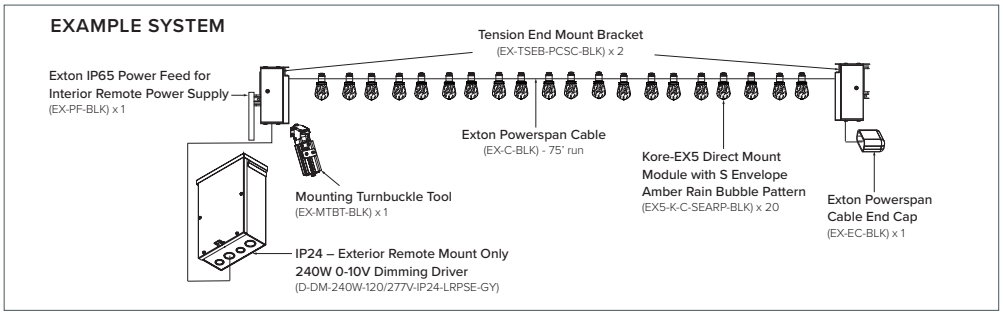
Remote Power Supply (Ordered separately, see page 11 for more details)

© 2026 Tegan Lighting. All rights reserved.

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

INSTALLATION GUIDELINES "AT A GLANCE" (Refer to complete Installation Instructions online for details)



GENERAL SYSTEM GUIDELINES

- Contact Tegan Lighting with any installation questions @ info@teganlighting.com.
- If you experience any problems, do not modify the LED Modules or hardware in any way. The LED Modules are potted for IP65 compliance.
- Any modifications to Tegan Lighting parts on site that are not compliant with the installation instructions will void the warranty and listing.
- In addition, Tegan Lighting will not replace modified parts at no charge or pay for labor without pre-approval. No exceptions.
- Lighting systems from Tegan Lighting are supplied as complete systems. Use only factory-supplied parts to preserve the validity of the ETL/UL listing and manufacturer's warranty.
- Tegan Lighting system hardware is intended for installation in accordance with the National Electric Code and local regulations. To ensure full compliance with local codes and regulations, check with your local electrical inspector before installation.
- Read all instructions and use only as described in these Tegan Lighting Installation Instructions. Failure to follow installation instructions, or failure to heed all installation precautions, could result in falling fixtures which could cause serious injury or death. Failure to properly connect electrical systems could result in permanent system failure, as well as fire, shock, or electrocution.
- Do not install any part of Powerspan system less than 8 feet A.F.F. (Above Finished Floor) or ground, or in a place where a person can hang or pull on the system when tensioned or swagged.
- Disconnect electrical power before adding to or changing the configuration of the lighting span, or changing any accessory/shade.

⚠ • **DO NOT ATTEMPT TO ENERGIZE ANYTHING OTHER THAN EXTON LUMINAIRES ON THE POWERSPAN CABLE.**

- To reduce the risk of fire and electric shock, do not attempt to connect power tools, extension cords, appliances, and the like to the Powerspan Cable.
- Wire only into the output of a dedicated Exton 24VDC driver provided by Tegan Lighting.
- This system is for 24VDC Exton Spotlights only; it must be used with an appropriate 24VDC power supply provided by Tegan Lighting. Refer to Specification Sheets.
- Use only Tegan Lighting supplied accessories. Do not hang non-Exton devices (signs, etc.) on the Exton Powerspan Cable.
- To ensure proper installation, we recommend having a qualified electrician install this product.
- Fasteners for mounting brackets provided by others. Use fasteners as per the specification of a licensed structural engineer for the mounting substrate.
- This system must be wired and grounded in accordance with accepted electrical installation practices, local codes, and ordinances.
- Wire supply connections must be made with U.L. or comparable testing agency-approved connectors.
- Powerspan Cable is not listed for in-ground direct burial or in interior wall installation.
- Turn off electrical power before modifying the lighting system in any way.

⚠ **WARNING:** UNPACKING and STORING EXTON POWERSPAN CABLE

Exton Powerspan Cable Roll

Unroll Powerspan Cable only when ready to install. To avoid kinking, do not allow cable to rest in a tangled heap. If installation is delayed, re-roll Powerspan Cable onto spool FLAT WITHOUT TWISTS OR KINKS for longer term storage. Never allow cable to be rolled so that it gets twisted. Tegan will not replace cable free of charge if it has kinked. Contact your local agent to order replacement cable(s).

© 2026 Tegan Lighting. All rights reserved.

Tilden Commons/25009
PROGRESS CD/04-01-2026

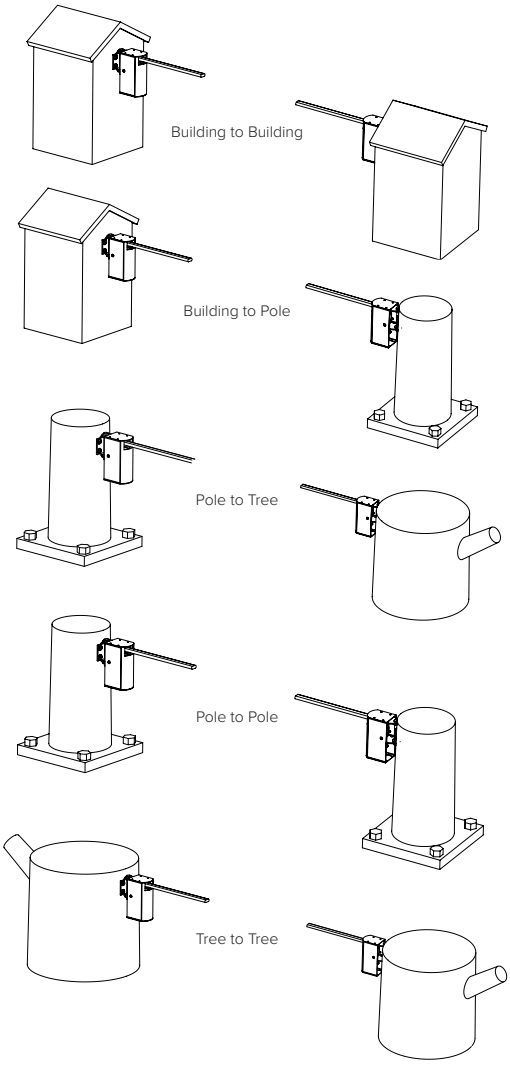
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

XT1

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

MOUNTING BRACKET INSTALLATION GUIDELINES "AT A GLANCE" (Refer to complete Installation Instructions online for details)
Tensioned System Mounting Options



Building to Building

Refer to Installation Instruction Guide for building mount guidelines.

Building to Pole

Refer to Installation Instruction Guide for pole mount guidelines and ordering.

Pole to Tree

Ensure Tree is large enough and rigid enough for a safe installation. Due to the variable nature of trees, please use minimal tensioning on the cable. Consult with a licensed Arborist to determine tree mounting compatibility.

Pole to Pole

Poles are optionally provided by Tegan's partners, AV Poles, with engineered specifications per project, and can be drilled in most cases to match the tensioning brackets. Use of existing poles or structures without engineering review can result in property damage or harm to persons. Pole Type/ Height to be engineered per project. Refer to Installation Instruction Guide for pole mount guidelines and ordering.

Tree to Tree

Ensure Trees are large enough and rigid enough for a safe installation. Due to the variable nature of trees, please use minimal tensioning on the cable. Consult with a licensed Arborist to determine tree mounting compatibility.

WARNING:

Do not install the Exton LED Modules or Solo Linear, which involves blades piercing the Powerspan Cable to make electrical connection, below the outdoor ambient temperature of 10C/50F. The Powerspan outer jacket is more flexible in warmer temperatures.

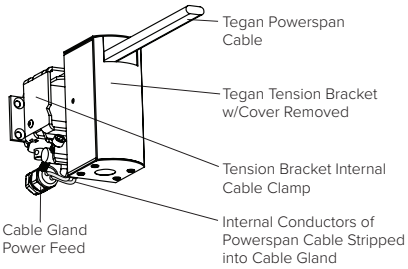
Use Tegan engineered mounting brackets only. Use of non-Tegan mounting brackets may result in damage to the Powerspan Cable, LED Modules, Power Supply(s) and/or structure. Use of non-Tegan supplied brackets will void the warranty and listing.

Tegan can provide custom brackets as requested. Contact the factory for a quote. **THE USE OF MOUNTING BRACKETS "BY OTHERS", WITHOUT WRITTEN ENGINEERING APPROVAL FROM TEGAN LIGHTING WILL VOID THE WARRANTY.**

© 2026 Tegan Lighting. All rights reserved.

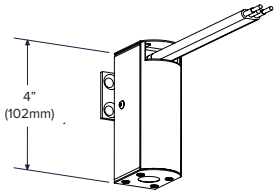
EXTON POWERSPAN CABLE SYSTEM

POLE SUPPLY INSTALLATION GUIDELINES "AT A GLANCE" (Refer to complete Installation Instructions online for details)
Poles Mounting Details – Poles Provided by Tegan in Partnership with AV Poles



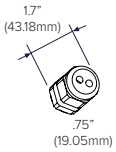
Perspective

Hook-up to Remote Power Feed with Horizontal Surface Mount Brackets.



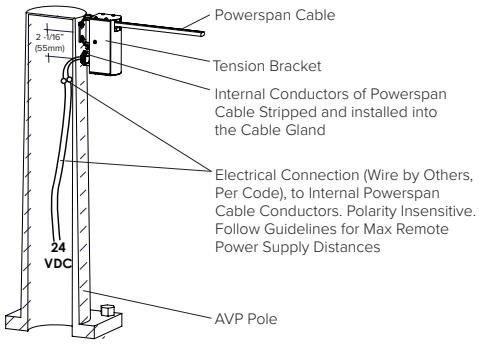
Perspective

Tension End Mount Bracket, Pole Mount (EX-TSEB-PCSC)



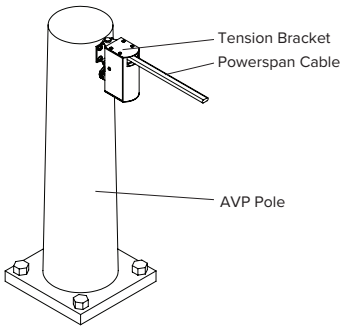
Perspective

Cable Gland + Lock Nut Power Feed (EX-CG-LN-PF)



Section

AVP Pole Installation with Internal Wiring, Tension End Mount Bracket, Cable Gland + Locknut Power Feed. For Remote Power Supply.



Perspective

AVP Pole Installation with Internal Wiring, Tension End Mount Bracket, Cable Gland + Locknut Power Feed. For Remote Power Supply.

Tegan Lighting has teamed up with AV Poles to offer a complete system specification; a complete "package" for Exton Systems. AVP, based in Southern California, offers a wide variety of Pole types with specialty finishes, brackets and bases. To request a quote, complete and email Tegan a plan detail showing span lengths and number of modules per span along with the AVP Checklist Quote Request Form. AVP can provide Wet Stamped Exton System Calc's, Pole Foundation Design and Foundation Calc's. Ordering AVP Poles through Tegan for a complete Exton System is optional.

Typical installation of span on a pole, powered (These details relate to AVP/Exton installations only):

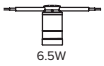
1. Cable by others is run from the remote power supply (IP20, IP24, IP66 or IP68) into the pole.
2. Cable by others is spliced inside pole with outdoor-rated splice connectors by others to the Powerspan Cable conductors.
3. Drill mounting holes into pole for mounting of the Tension End Mount Bracket at desired starting height of tensioned span, holes can vary based on mounting bracket used. Recommend minimum of 2" below top cap for 7 gauge poles and 4" below thinner gauge poles.
4. Drill hole for 1/2" trade size conduit below the drilled mounting holes of the Tension End Mount Bracket. Optimum placement is center hole 1.5" below the bottom plate of the Tension End Mount Bracket. Protect Powerspan Cable from any sharp edges to prevent damage. For electrical connections inside the Pole, take care to waterproof the pole penetration(s). Re-coat drilled pole hole edges for weather protection.
5. Use the Cable Gland + Locknut to secure the (2) Powerspan Cable Conductors to the pole. The connector will be covered by the Tension End Mount Bracket Cover.
6. Contact factory for special order brackets for specific mountings not shown. **THE USE OF MOUNTING BRACKETS "BY OTHERS", WITHOUT WRITTEN ENGINEERING APPROVAL FROM TEGAN LIGHTING WILL VOID THE WARRANTY.**
7. Poles can also be provided by others. In this case, all engineering for Exton System(s) and Pole(s) and calculations are required by others for proper installation and to ensure structural integrity.
8. **Note: Tegan is not responsible for Poles/Engineering provided by others.**

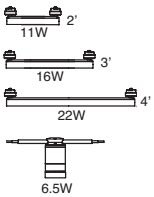
© 2026 Tegan Lighting. All rights reserved.

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

ELECTRICAL INSTALLATION GUIDELINES "AT A GLANCE" (Refer to complete Installation Instructions online for details)
Tegan Power Supplies and Wattage Guidelines





# of LED Modules per Driver Wattage IP20, IP24, IP66, IP68

DESCRIPTION	MAX # OF LED MODULES
40W Dim/Non-Dimming Driver	4
60W Dim/Non-Dimming Driver	7
100W Dim/Non-Dimming Driver	12
150W Dim/Non-Dimming Driver	17
240W Dim/Non-Dimming Driver	27
288W Dimming Driver	32
320W Non-Dimming Driver	36
100W Q-Tran Direct Burial Power Supply	12
200W Q-Tran Direct Burial Power Supply	(2) INDEPENDENT CIRCUITS OF 12 MODULES EACH

Max Wattage per Driver for SOLO or SOLO + LED Module

DESCRIPTION	MAX TOTAL WATTAGE
40W Dim/Non-Dimming Driver	32W
60W Dim/Non-Dimming Driver	48W
100W Dim/Non-Dimming Driver	80W
150W Dim/Non-Dimming Driver	120W
240W Dim/Non-Dimming Driver	192W
288W Dimming Driver	230W
320W Non-Dimming Driver	256W
100W Q-Tran Direct Burial Power Supply	80W
200W Q-Tran Direct Burial Power Supply	160W

POWER SUPPLY OPTIONS

IP20 Power Supply
Indoor use only
IP20 Power Supply Spec sheet

IP24 Power Supply
Exterior, non-spray down use only
IP24 Power Supply Spec sheet

IP66 Power Supply
Exterior use only
IP66 Power Supply Spec sheet

IP68 Power Supply
Q-Tran direct burial, exterior use only
IP68 Power Supply Spec sheet

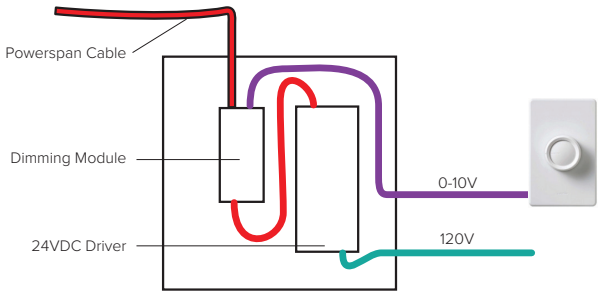
- The chart above lists the maximum number of Kore-EX5 Modules for each Driver option based on the following common practice of "Recommended De-Rating." Like all electronic power supplies, life is significantly increased when loads are 75/80% or less of the nominal power capacity. Best life is in climate controlled conditions, or when the power supply stays below 70˚C/158˚F. The type of enclosure and ambient environment can affect the operating temperature, and therefore the lifetime of the power supply. For all Tegan Lighting enclosures, load power supplies to only 75/80% of their nominal. These are general suggestions to increase the life of the supply in moderate climates; the actual operating lifetime of the power supply depends on the actual environment and use. Do not operate the power supplies during the day with direct sunlight with extreme hot temperatures.
- Do not operate Exton Systems (all mounting types/applications) in environments above 40˚C/104˚F ambient air temperature.
- Do not operate Power Supplies where the sun's radiation causes any metal surface to be greater than 40˚C/104˚F.
- Do not operate Exton Systems, including Power Supply(s), below -20˚C/-4˚F.
- When using SOLO alone or when combining SOLO with LED Modules on one or more runs, note the maximum total wattage per Power Supply Wattage. Refer to the chart above.
- **DO NOT EXCEED A MAXIMUM OF 40 EXTON LED FIXTURES PER RUN/CIRCUIT.**
- VOLTAGE DROP: To calculate the maximum Exton span, add the desired span distance to the wiring distance between the power supply and the start of the Exton span cable. This is the "total run." All wiring used between the power supply and the start of the Exton cable should be 10AWG or thicker. At 300W loads, the maximum total run length is 150'.
- IP68 Q-Tran Direct Burial: For complete water-tight guarantee, use of Q-Tran's Q-Clik fittings and Q-Wire stranded wire is required. Warranty is void if these components are not used. Refer to the Spec Sheet for Q-Tran Water Trac Fittings Guide for details.
- TRIAC or ELV dimming are not compatible at this time.

WARNING:
Use of non-Tegan Lighting power supply(s) will void system warranty and listing.

© 2026 Tegan Lighting. All rights reserved.

EXTON POWERSPAN CABLE SYSTEM

ELECTRICAL INSTALLATION GUIDELINES "AT A GLANCE" (Refer to complete Installation Instructions online for details)
Wiring Installation Guidelines for Remote Power Supplies



Tegan Power Supply Enclosure
Internal Diagram

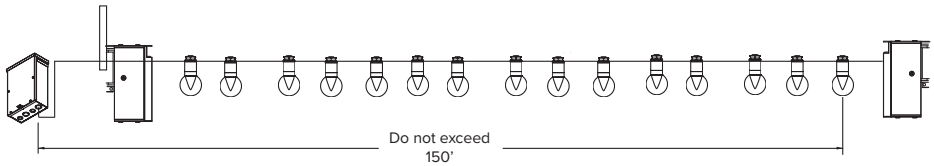
Tegan Lighting Remote Power Supply
Enclosures – IP20, IP24 & IP66

Tegan's Power Supplies consist of an enclosure with a 24VDC driver and an optional Dimmer Module. **Wire into the output of a dedicated Exton 24VDC driver provided by Tegan Lighting (only).**

Loading and Operation Guidelines

It's important not to exceed these guidelines in order to prevent damage to the Power Supply or cause problems with performance:
Load power supplies at 80% of their maximum nominal output. Refer to page 11 for recommended wattage for power supplies.

- Do not exceed 150 feet between last EX5 module (i.e. the module farthest away from the Power Supply) and the Power Supply.



- Do not group EX5 modules near the end of a long run; on a 110 foot span, keep the average distance from EX5s to Power Supply about 75 feet.

- The length of the Powerspan Cable, and any intermediate remote wiring, must be counted together (i.e. with a 100' Cable Span, + 50' of building wire between the start of the span + the power supply, cannot exceed a maximum 150' distance.)
- The Polarity of the drivers output to the Exton Powerspan Cable does not matter.

Temperature Guidelines

- Do not operate Power Supplies in environments above 40C/104F ambient air temperature.
- Do not operate Power Supplies where the sun's radiation causes any Power Enclosure to be greater than 40C/104F.
- Do not operate Exton Systems, including Power Supply(s), below -20C/-4F.

WARNING:
Use of non-Tegan Lighting power supply(s) will void system warranty and listing. Do not install the Exton LED Modules or Solo Linear, which involves blades piercing the Powerspan Cable to make electrical connection, below the outdoor ambient temperature of 10C/50F. The Powerspan outer jacket is more flexible in warmer temperatures.

Keep distance from Power Supply to last fixture (Module that is farthest away from the Power Supply) less than 150', including any internal building wire.

© 2026 Tegan Lighting. All rights reserved.

KORE EX5 LED MODULES
Application Type – Tension Mount
Exterior IP65 Rated
24VDC 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

TENSION MOUNTING – TECHNICAL DETAILS

Category: Tegan's exclusive Exton Powerspan Cable features LED Modules with various Gems, Glass Envelopes and Shades, ordered separately. Designed for use with Remote Power Supplies, ordered separately. Optional 0-10V Dimming.

Material: Powerspan Cable: Embedded stainless steel wire in the center of the custom cable with 10 gauge conductors inside a IP65 Self-Sealing Jacket.

Mounting: Powdercoated or anodized steel and aluminum.

Finish Powerspan Cable: Black (BLK). Custom finishes not available. Mounting Hardware: Black (BLK). Contact factory for custom finish.

Powerspan Cable: Exton Powerspan, Self-Sealing Cable is IP65 for exterior use. Supplied in 1' (30.5cm) increments. Order one End Cap per Run, Black Finish. Field cuttable. Refer to Installation Instructions for details.

Cable Span: Maximum Cable mounting is 110' (33.5m). Note that the cable must be a continuous run without interruption. Maximum Span: 110' (33" sag). Maximum # of LED Modules per Run/Circuit: 40. Maximum Shade weight: 5lb. 300W max. per circuit. When specifying Powerspan Cable length, add 20% to the run length for installation site variations.

System Mounting: Refer to Mounting, pages 8-10 for "At a Glance" instructions. Refer to the complete Installation Instruction Guidelines for more details.

Pole Mounting: AV Poles, supplied by Tegan Lighting for a complete lighting package. Wet Stamp Calculations and Foundation Design/Calc's available. Poles can be ordered from Tegan Lighting to create a complete package. AV is well-versed on the Exton System and has engineered many similar tensioned projects. As required, engineering services will be provided in the quote to insure proper structural installation per code requirements. Refer to Exton Application Guide for information and more details. Poles can also be provided by others; engineering is required by others to ensure structural integrity.

Note: Tegan is not responsible for Poles/Engineering provided by others.

LED Modules: Ordered separately. Refer to links on page 2.

Power Feed: Exton IP65 Power Feed for Remote Power Supply - Black Finish (EX-PF-BLK), Cable Gland + Lock Nut Power Feed (EX-CG-LN-PF). (EX-PF-BLK) Plate is field paintable; Cable Gland is not. Contact Factory for custom colors. Mounts to IP65 J-Box (for exterior Install, by others) or Pole. Note: Power Feed cannot be used for structural Powerspan Cable support. Refer to Installation Instructions for details.

Electrical: 24VDC. Total input watts per EX-5 Module (ordered separately): 6.5W. 300W max. per circuit.

Remote Power Supply: The Exton System is designed for use with Remote Power Supplies, ordered separately. Refer to Exton Power Supply links on page 11 for details. Use of Tegan Lighting Power Enclosures and Drivers only. If supplied "by others" the warranty and listing are void.

Installation: Exton is not approved or listed for indoor pool/sauna installations where chemicals are present. Refer to Installation Instructions for details. For system layout, and specification assistance, refer to the Exton Application Guide for details.

Labels: ETL Listed; Tested to UL 2108 Low Voltage Lighting Systems. In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials. Technical specification sheets that appear on teganlighting.com are the most recent version and supersede all other versions that exist in any other printed or electronic form. Kore-EX5 Module and Cable - 3 year warranty. Refer to Exton Application Guide for details. Consult with an arborist for proper tree installation per the type of tree(s). Tegan Lighting is not liable for any damage/injury as a result of tree installation. Refer to Installation Instructions for more details.

© 2026 Tegan Lighting. All rights reserved.

Tegan LIGHTING

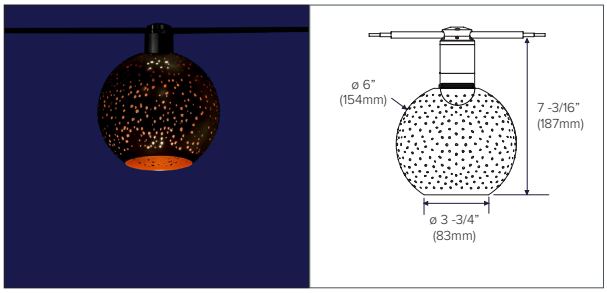
AMBRIA SHADE MODULES
Kore EX5 IP65, Direct Cable Mount Modules
Tensioned/Draped Systems
24VDC Remote Power, 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

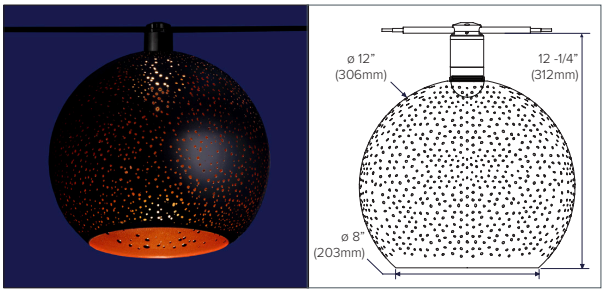
CATALOG NUMBER LOGIC

EX5	– K	– C	– BG	– BLK	– AMB	– BLK
EXTON 5-WATT	KORE LED MODULE 2700K	DIRECT CABLE MOUNT	FROSTED BUTTON GEM	BLACK FINISH	AMBRIA SHADE	BLACK FINISH

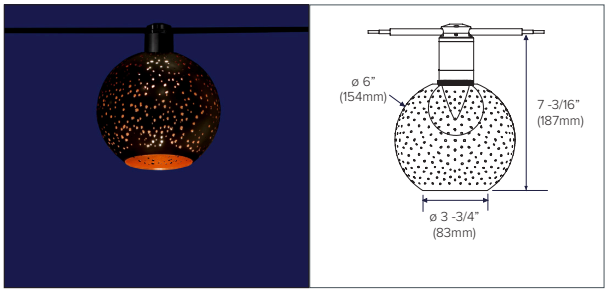
EXTON – KORE EX5 LED DIRECT MOUNT MODULE WITH AMBRIA SHADE & GEM – COMBINATIONS



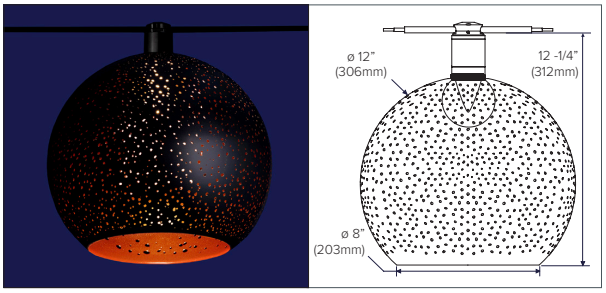
Kore-EX5 LED 6" Ambria Shade with Frosted Button Gem Module, Direct Cable Mount, Matte Black Exterior with Matte Copper Interior Finish
(EX5-K-C-BG-BLK-AMB-6-BLKCP)



Kore-EX5 LED 12" Ambria Shade with Frosted Button Gem Module, Direct Cable Mount, Matte Black Exterior with Matte Copper Interior Finish
(EX5-K-C-BG-BLK-AMB-12-BLKCP)



Kore-EX5 LED 6" Ambria Shade with Frosted Sphere Gem Module, Direct Cable Mount, Matte Black Exterior with Matte Copper Interior Finish
(EX5-K-C-FSG-BLK-AMB-6-BLKCP)



Kore-EX5 LED 12" Ambria Shade with Frosted Sphere Gem Module, Direct Cable Mount, Matte Black Exterior with Matte Copper Interior Finish
(EX5-K-C-FSG-BLK-AMB-12-BLKCP)

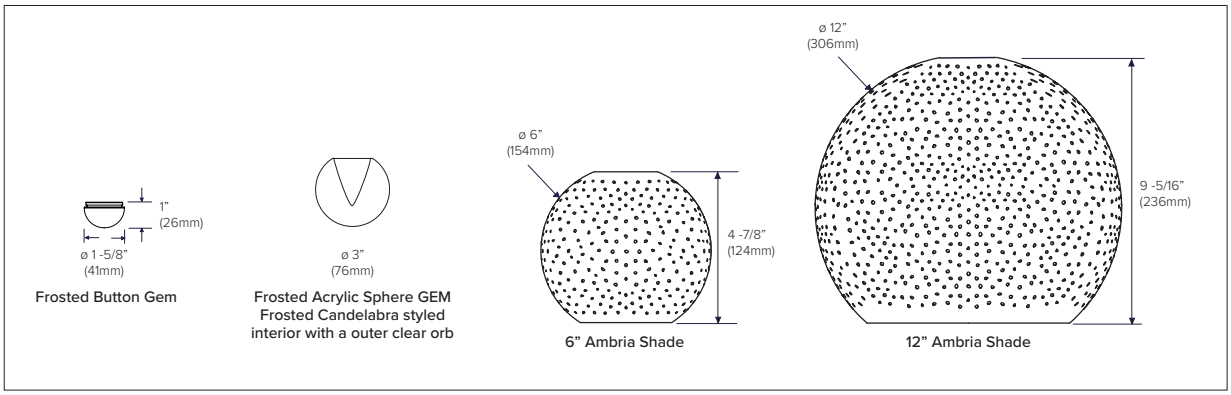
Kore-EX5 LED Ambria Shade with Frosted Button or Sphere Gem feature a 27K, 5W LED source with an integral current controller for 24V DC operation. Black (BLK) finish. System and Remote Power Supply(s) ordered separately to create a complete System.

© 2023 Tegan Lighting. All rights reserved.

AMBRIA SHADE MODULES
Kore EX5 IP65, Direct Cable Mount Modules
Tensioned/Draped Systems
24VDC Remote Power, 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

EXTON - KORE-EX5 “GEM”& SHADES TYPES



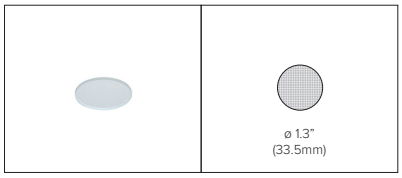
Frosted Button Gem

Frosted Acrylic Sphere GEM
Frosted Candelabra styled
interior with a outer clear orb

6” Ambria Shade

12” Ambria Shade

ACCESSORIES



Exton Color Corrected Filter, 22K or 24K (EX5-CCT-22K/24K)
22K or 24K Kelvin Temperature results when used with the standard 27K Cree LED

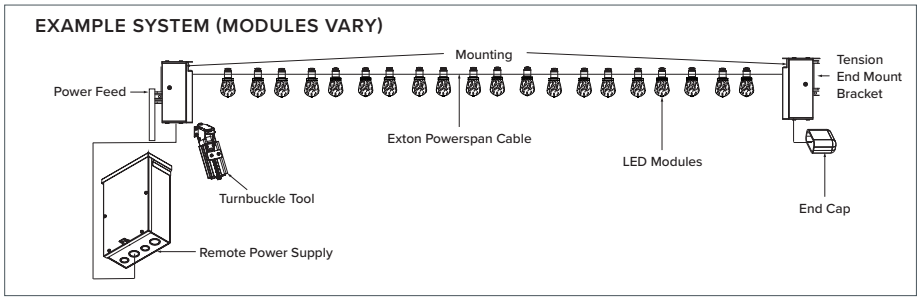
NOTES

1. Order System and Remote Power Supplies separately to create a complete System. Refer to Exton Remote Power Supply IP20, IP24, IP66 or IP68 and System spec sheets for options.
2. 24VDC operation. 0-10V Dimming. Refer to Remote Power Supply Spec Sheets for details.
3. Any field modification will void the warranty and listing.

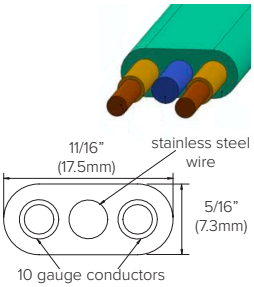
© 2023 Tegan Lighting. All rights reserved.

AMBRIA SHADE MODULES
Kore EX5 IP65, Direct Cable Mount Modules
Tensioned/Draped Systems
24VDC Remote Power, 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM



COMPATIBLE POWERSPAN CABLE, MOUNTING, POWER SUPPLIES & POLES TO CREATE A COMPLETE SYSTEM
(Ordered separately, examples shown here)
System, Power Supplies and Poles Click this link to access the details below.

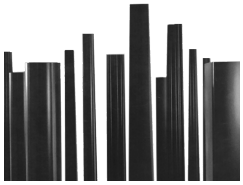


POWERSPAN CABLE

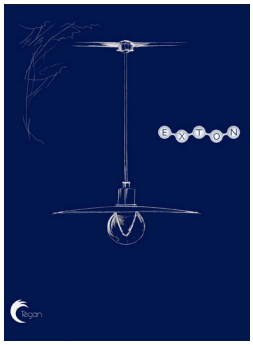
MOUNTING

POWER FEEDS

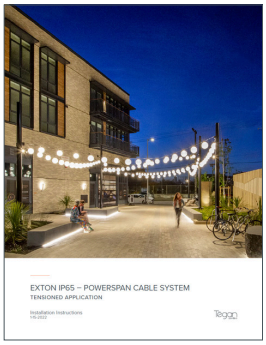
REMOTE POWER SUPPLIES



POLES



Click here to visit:
Exton IP65 Application Guide - Direct Mount - In "Tech" Menu



Click on the linked image below to visit the Exton Installation Guide.

© 2023 Tegan Lighting. All rights reserved.

AMBRIA SHADE MODULES
Kore EX5 IP65, Direct Cable Mount Modules
Tensioned/Draped Systems
24VDC Remote Power, 0-10V Dimming

EXTON POWERSPAN CABLE SYSTEM

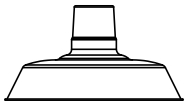
Category	Exton Direct Cable Mount, Ambria Shade Modules are designed for use with Tegan's exclusive Tension Mount Powerspan System with Remote Power Supply(s), ordered separately. 24VDC, 0-10V Dimming.
Material/Finish	Kore-EX5 LED Module: UV stable exterior anodized aluminum, O-rings. Exterior rated, brushed, two-step electrolytic color anodizing. Anodized Black (BLK) or Anodized Aluminum (AL) finish. Note: Anodizing is an electrochemical process that results in superior corrosion resistance. This process can result in a variance of finish from batch-to-batch. Shade: Spun aluminum or steel. black and copper finish. Contact factory for custom colors. GEM: 100% machined, clear/frosted acrylic.
Powerspan Cable & Mounting	Specified separately.
Remote Power Supply	Specified separately. The Exton System is designed for use with a Remote Power Supply Enclosure and Driver. Refer to Exton Power Supply IP20, IP24, IP66 or IP68 Spec Sheets for details. **Use of Tegan Lighting Power Enclosures and Drivers only. If supplied "by others" the warranty and listing are void.**
Accessories	Exton 22K Color Correction Filter Accessories: (EX5-CCT-22K), 24K Color Correction Filter (EX5-CCT-24K). Note: CCT22/24 = Kelvin Temperature results when used with the standard 27K Cree LED.
LED	High Wattage Array Cree LED, 2-Step Macadam. 5W @ 500 lumens with 2700K 82-85 CRI typical. All values are initial lumens. For exact lumen output and wattage consumption data, please consult LM79 reports. Online power consumption does not include driver losses. Contact factory for 3000K, 3500K, 4000K or 90 CRI.
Optics	A 15° reflector is supplied in all decorative options to maximize decorative element illumination. Refer to IES Photometric Report for details.
Electrical	24VDC. Total input watts: 6.5W. 300W max. per circuit.
Installation	Exton is not approved or listed for indoor pool/sauna installations. Refer to Installation Instructions for details.
Labels	ETL Listed; Tested to UL 2108 Low Voltage Lighting Systems. In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials. Technical specification sheets that appear on teganlighting.com are the most recent version and supersede all other versions that exist in any other printed or electronic form. Kore-EX5 Module and System: 3-year warranty.

© 2023 Tegan Lighting. All rights reserved.

SPS-0448 REV B

THE ORIGINAL™ INTEGRATED LED SERIES

JOB NAME: _____ FIXTURE TYPE: _____



BLE - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____ - ____

A B C D E F G H I J K L

Order Example: BLE - G - WHS16 - 600 - G22 - 980 - NA - ACR - 600 - NA - LED38 - 2700K - DL

A - MOUNTING STYLE

C	Cord Hung
CN	Chain Hung
F	Flush Mount
G	Gooseneck
S	Stem Mount

B - SHADE SIZE

THE ORIGINAL™:

WHS12[10]	**WHS20**[1]
WHS14	**WHS24**[1,2,6,10]
WHS16	**WHS28**[1,2,6,10]
WHS18	

C - SHADE FINISH

PORCELAIN FINISHES[3]*:*

150	Black
250	White
350	Vintage Green
355	Jadite
455	Cherry Red
550	Yellow
650	Bronze
750	Cobalt Blue
765	Delphite Blue
850	Graphite
950	Metallic Chrome

POWDER COAT FINISHES[4]*:*

100	Black
105	Textured Black
200	White
300	Dark Green
307	Emerald Green
311	Jadite
370	Mint
380	Chartreuse
390	Teal
400	Barn Red
420	Orange
470	Watermelon
480	Blush Pink
490	Magenta
495	Sherbet Orange
500	Buttery Yellow
570	Sunflower
600	Bronze
601	Chocolate
605	Rust
615	Oil-Rubbed Bronze
700	Royal Blue
705	Navy
710	Cobalt Blue
715	Delphite Blue

C - SHADE FINISH (CONTINUED)

POWDER COAT FINISHES[4]*:*

790	Lavender
800	Industrial Grey
805	Charcoal Granite
810	Graphite
975	Galvanized

NATURAL METALS[8]*:*

995	Raw Copper
996	Weathered Copper
997	Raw Brass
998	Weathered Brass
999	Oil-Rubbed Copper

D - MOUNTING

*Please Note: If Flush Mount [F] is selected in **Section A**, please select **NA***

NA	Not Applicable

CSA LISTED CORDS:

SBK	Standard Black
SWH	Standard White
CSB	Black Cloth
CSW	White Cloth
CMG	Grey Cloth
CSR	Red Cloth
CRZ	Red Chevron Cloth
CSBB	Black & Brown Cloth
CSRW	Red & White Cloth
CSGW	Gold & White Cloth
CSBG	Black & Gold Cloth
CSBW	Black & White Cloth
CSBP	Black & Pink Cloth
CSUW	Blue & White Cloth

CHAIN MOUNT OPTIONS:

CN36	3' of Chain[1]
CN48	4' of Chain[1]
CN60	5' of Chain[1]
CN72	6' of Chain[1]

GOOSENECK OPTIONS:

G1[1]	**G11**[1]	**G26**[1]
G2[1]	**G12**[1]	**G32**
G3[1,11]	**G13**	**G34**[1]
G4[11]	**G14**	**G35**[1]
G5[1]	**G15**	**G36**[1]
G6	**G16**[1]	**G64**[1]
G7	**G17**	**G65**[1]
G8	**G22**	
G9	**G24**	
G10	**G25**	

D - MOUNTING (CONTINUED)

STEM MOUNT OPTIONS:

ST506	.5" Stem Mount, 6"[1]
ST512	.5" Stem Mount, 12"[1]
ST518	.5" Stem Mount, 18"[1]
ST524	.5" Stem Mount, 24"[1]
ST536	.5" Stem Mount, 36"[1]
ST548	.5" Stem Mount, 48"[1]
ST706	.75" Stem Mount, 6"
ST712	.75" Stem Mount, 12"
ST718	.75" Stem Mount, 18"
ST724	.75" Stem Mount, 24"
ST736	.75" Stem Mount, 36"
ST748	.75" Stem Mount, 48"

E - MOUNTING FINISH

*Please Note: See **Section C** for Finish Options. 980-Brushed Aluminum is also available for Gooseneck and Stem mounting styles. If a Porcelain shade finish is selected, mounting will be powder coat painted-to-match. Porcelain shade finishes are not available with a Natural Metal mounting finish*
(I) If Cord Hung [C], selection identifies canopy finish
(II) If Chain Hung [CN] Mounting Style, selection identifies chain and canopy finish. Natural Metals are not applicable
(III) If Stem Mount [S] Mounting Style, selection identifies stem and canopy finish
(IV) If Flush Mount [F] Mounting Style, selection identifies hex coupler and canopy finish. Natural Metals are not applicable

980	Brushed Aluminum

F - CORDS[7]

NA	Not Applicable

*Please Note: See **Section D** for all applicable CSA Listed Cord Options*

G - SHADE ACCESSORIES

NA	None
WC	Wire Cage[1,12]
ACR	Acrylic Diffuser[5]

H - SHADE ACCESSORY FINISH

*Please Note: See **Section C** for Finish Options. Natural Metals not applicable with Acrylic Diffuser or Wire Cage. If Porcelain Finish is selected, accessory will be powder coat painted-to-match*

NA	Not Applicable

I - MOUNTING ACCESSORY

Please Note: Mounting Accessories below are only applicable with select Mounting Styles. Please refer to product listings on our website for further detail.

NA	None/Not Applicable
HSC	Hang Straight Canopy[1,9]
LDBPC	LED Decorative Backing Plate Cover[13]
LDCHX	LED Decorative Backing Plate Cover & Hex Cover[13]

J - LIGHT SOURCE

LED11	850 Lumen, 11W LED
LED16	1250 Lumen, 16W LED
LED27	2000 Lumen, 27W LED
LED38	3000 Lumen, 38W LED
LED43	4000 Lumen, 43W LED[10]

K - COLOR TEMPERATURE

2700K	2700K, Warm White
3000K	3000K, Neutral White
3500K	3500K, Bright White
4000K	4000K, Cool White

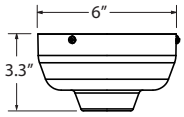
L - LED LENS

DL	Domed Lens
FL	Flat Lens

IMPORTANT: *(1) Not available in Natural Metals (2) Not available in Porcelain Enamel (3) All Porcelain Enamel finished shades feature a white interior and a black outer rim (4) All Powder Coat finished shades, Galvanized excluded, feature a white interior (5) Acrylic Diffuser limits the maximum lumen selection as well as reduces lumens delivered and LPW. Selection Limits: 2000 Max for 12" and 14" shades; 3000 Max for 16" through 28" shades (6) Wire Cage not available with select size (7) Only applicable if Chain Hung Mounting Style selected in Section A, select NA if another Mounting Style is selected (8) Natural Metals have a longer estimated manufacturing time, please check the website for exact lead time. There are no returns accepted on Natural Metals (9) Only applicable if Stem Mounting Style is selected in Section A (10) Not available with Acrylic Diffuser shade accessory (11) Not compatible with 16" shade size and larger (12) Wire Cage not available for 24" & 28" shade sizes (13) Not available with G36 Gooseneck option*

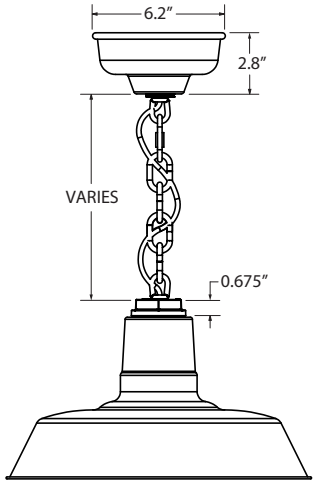
MOUNTING STYLE

HIGH LUMEN CANOPY FOR PENDANT & FLUSH MOUNT



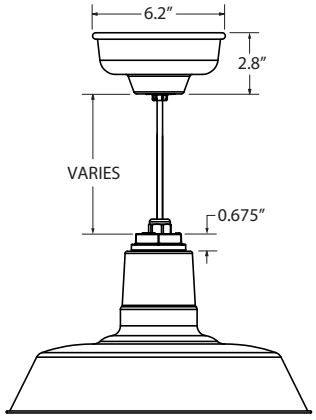
Required if LED 27, 38, 43 Light Source selected in Section J

CHAIN HUNG PENDANT (CN)



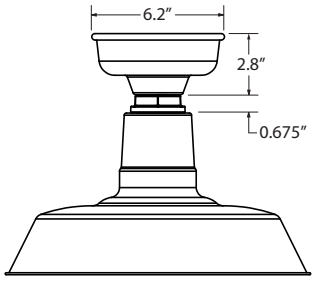
Canopy shown required if LED 11 & 16 Light Source selected in Section J

CORD HUNG PENDANT (C)



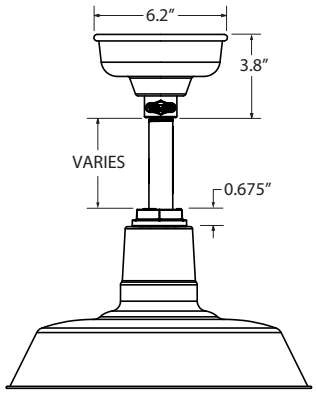
Canopy shown required if LED 11 & 16 Light Source selected in Section J

FLUSH MOUNT (F)



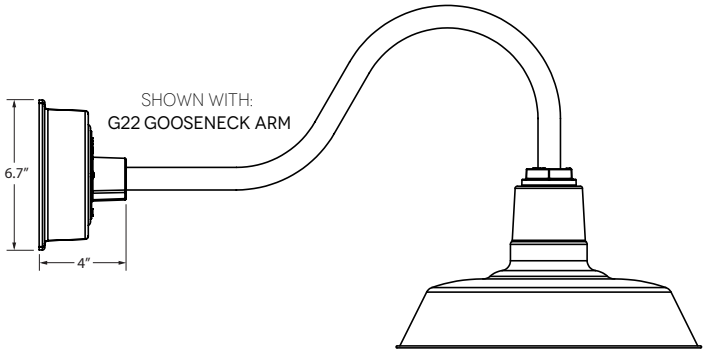
Canopy shown required if LED 11 & 16 Light Source selected in Section J

STEM MOUNT PENDANT (S)

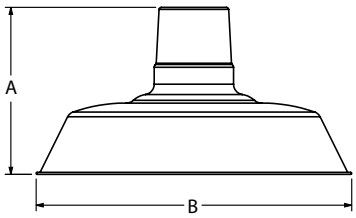


Canopy shown required if LED 11 & 16 Light Source selected in Section J

GOOSENECK (G)



LUMINAIRE DIMENSIONS



SHADE CODE	HEIGHT (A)	DIAMETER (B)
WHS12	7″	12″
WHS14	7.5″	14″
WHS16	7.75″	16″
WHS18	8.5″	18″
WHS20	9.25″	20″
WHS24	10.75″	24″
WHS28	11″	28″

LIGHT SOURCE

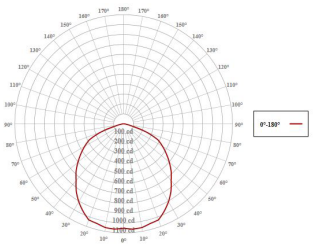
All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP accredited laboratory. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. To obtain an IES file specific to your project, please contact the factory.

	LUMENS	850		1250		2000		3000		4000	
	Wattage	11		16		27		38		43	
	Optics	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
WHS12	FLAT	846	74	1244	78	1997	74	2996	79	3995	93
	DOMED	824	72	1212	76	1936	72	2904	76	3872	90
WHS14	FLAT	845	74	1243	77	1982	73	2973	78	3964	92
	DOMED	823	72	1210	75	1904	71	2856	75	3808	88
WHS16	FLAT	845	74	1243	77	1982	73	2973	78	3964	92
	DOMED	822	72	1209	75	1902	70	2854	75	3805	88
WHS18	FLAT	843	74	1240	77	1978	73	2967	78	3956	92
	DOMED	819	72	1204	75	1895	70	2843	75	3791	88
WHS20	FLAT	841	74	1237	77	1973	73	2959	78	3945	91
	DOMED	815	72	1199	75	1887	70	2830	74	3773	87
WHS24	FLAT	838	74	1233	77	1968	73	2952	77	3936	91
	DOMED	810	71	1191	74	1877	70	2815	74	3753	87
WHS28	FLAT	840	74	1235	77	1974	73	2961	78	3948	92
	DOMED	811	71	1193	74	1885	70	2828	74	3771	87

*Acrylic Diffuser option reduces lumens delivered and LPW

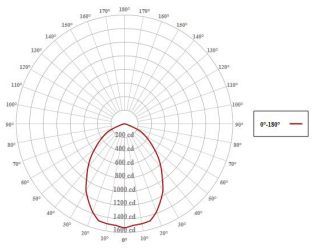
LIGHT DISTRIBUTION

DOMED LENS (DL)

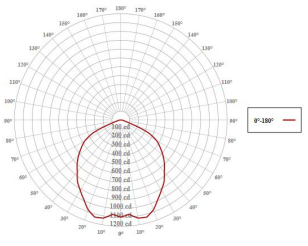


Shown above with 16" Shade (WHS16), White Interior (200-White) and 3000 Lumen (LED38)

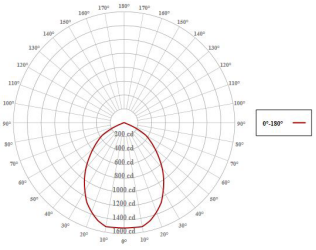
FLAT LENS (FL)



Shown above with 16" Shade (WHS16), White Interior (200-White) and 3000 Lumen (LED38)



Shown above with 20" Shade (WHS20), White Interior (200-White) and 3000 Lumen (LED38)



Shown above with 20" Shade (WHS20), White Interior (200-White) and 3000 Lumen (LED38)

SPECIFICATIONS

LED 11, 16, 27, 38, 43 LIGHT SOURCE

LED TYPE: CREE LMH2 MODULE

INITIAL LUMENS DELIVERED: UP TO 4000 LUMENS

L90(6K) > 36,300 HOURS

AVAILABLE CCT: 2700K, 3000K, 3500K, 4000K
Custom Temperatures Available upon Request

90+ CRI

2 STEP MACADAMS ELLIPSE

EFFICACY: UP TO 93 LPW
High Efficacy Available upon Request, Consult Factory for Additional Information

DIMMING

LED 11 & 16
Triac Dimming at 100-120VAC, Able to Dim down to 5%.
Dependent on Specific Dimmer.
0-10V & ELV Dimming Available upon Request.

LED 27, 38 & 43
0-10V Dimming, Able to Dim down to 10%.
Dependent on Specific Dimmer.
Triac & ELV Dimming Available upon Request.

TRIAC & ELV DIMMING AT 230 VAC
Available by Request

COMPATIBLE DIMMERS
Consult Factory for Additional Information on Dimming

LED 27, 38, 43 ELECTRICAL/LED DRIVER

DRIVER TYPE: LMD400

DRIVE CURRENT: 940mA

POWER FACTOR > 0.95

EFFICIENCY: UP TO 81% TYPICAL

INPUT VOLTAGE: 120–277 VAC (SEE DIMMING SECTION)

CLASS 2 POWER SUPPLY

LED DRIVER LIFETIME: > 50,000 HOURS (@ 25 DEG C AMBIENT)

CONDUCTED AND RADIATED EMI
Compliant with FCC CFR Title 47 Part 15 Class B (120 VAC), Class A (277 VAC) and EN55015 (CISPR 15) at 230 VAC

CERTIFICATIONS, LISTINGS & WARRANTY

MADE IN THE USA
Manufactured and Hand-Crafted in Our 60,000 Square Foot Facility Located in Titusville, FL

CSA LISTED FOR WET LOCATIONS
Includes All Gooseneck, Stem and Flush Mounting Styles

CSA LISTED FOR DAMP LOCATIONS
Includes All Chain and Select Cord Hung Mounting Styles

LIMITED WARRANTY
For Additional Information on Our Limited Warranty, Please See Our Terms & Conditions

OPERATING TEMPERATURE
-30˚C to 40˚C

LED 11, 16 ELECTRICAL/LED DRIVER

DRIVER TYPE: LMD125

DRIVE CURRENT: 440mA

POWER FACTOR > 0.9

EFFICIENCY: UP TO 81% TYPICAL

INPUT VOLTAGE: 100–120 VAC (SEE DIMMING SECTION)

CLASS 2 POWER SUPPLY

LED DRIVER LIFETIME: > 50,000 HOURS (@ 25 DEG C AMBIENT)

CONDUCTED AND RADIATED EMI
Compliant with FCC CFR Title 47 Part 15 Class B (120 VAC), Class A (277 VAC) and EN55015 (CISPR 15) at 230 VAC

SHADE & FINISHES

POWDER COAT SHADE
Hand-Spun from High Purity 0.050" Thick 3003-O Temper Aluminum

PORCELAIN SHADE
Hand-Spun from 20 Gauge Sheet Metal

POWDER COAT FINISHES
Polyester Powder Coat Finishes Are Electro-Statically Applied and Thermocured

PORCELAIN FINISHES
Applied by Hand and Fired in a High Temperature Oven

COPPER
Hand-Spun from High Purity .032 Thick C11000-O60 ETP Copper

BRASS
Hand-Spun from High Purity .050" Thick C2600-O60 Brass

MOUNTING

STEM
1/2" Nominal (0.84" Actual) or 3/4" Nominal (1.05" Actual) Sch 40, 6063 Aluminum Mounting Stem. Custom Lengths Available upon Request.

GOOSENECK
1/2" Nominal (0.84" Actual) or 3/4" Nominal (1.05" Actual) Sch 40, 6063 Aluminum Gooseneck

CORD
Cord-Hung Pendants Include 7' of Standard Cord or 5' of Cloth Cord, +/- For Socket Orientation

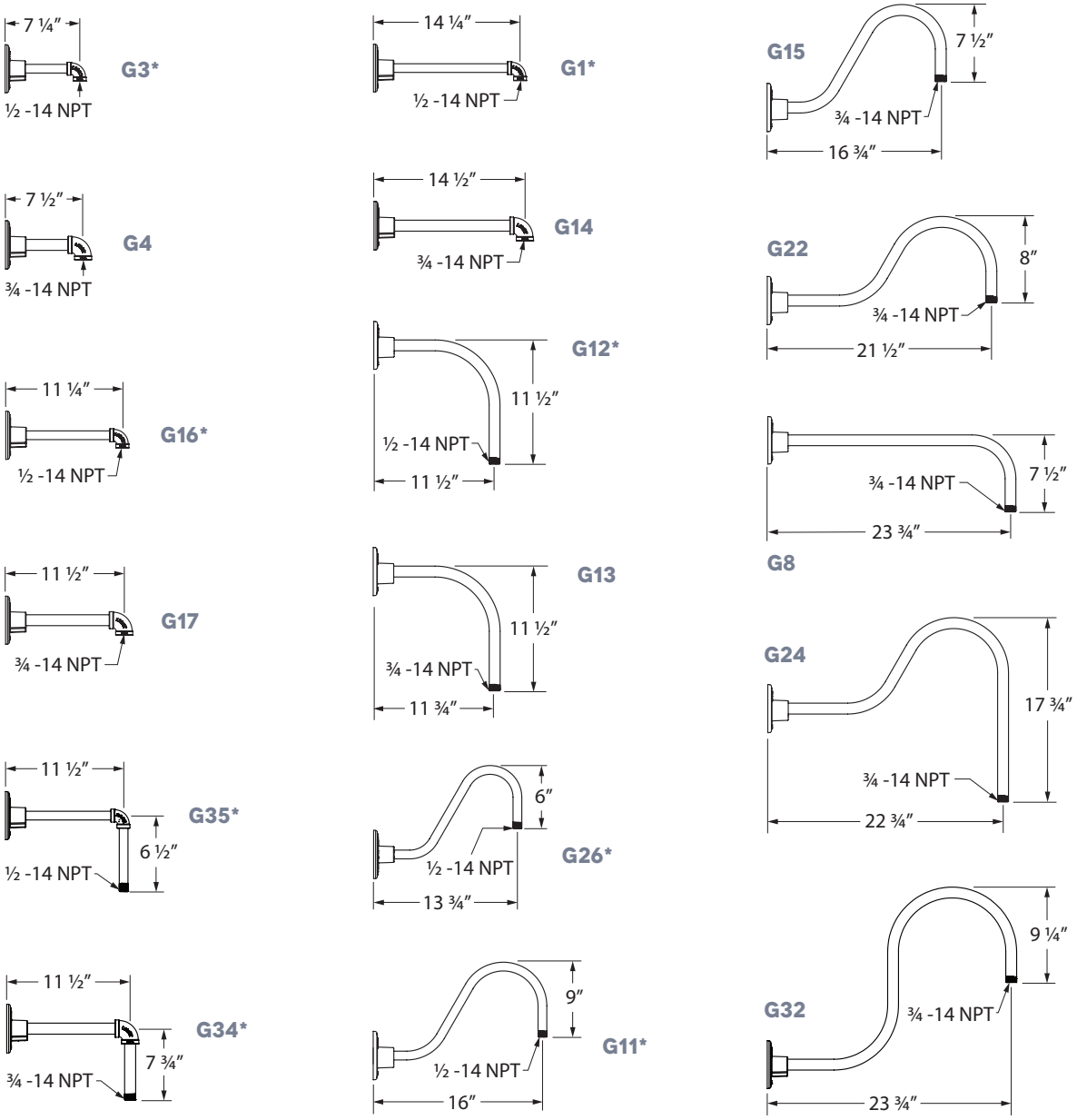
CHAIN
4-Gauge Chain Complete with Quick Link for On-Site Adjustments to Chain's Length

MAX FIXTURE WEIGHT
10 lbs

GOOSENECK LIGHTING

MKT-0018, REV B

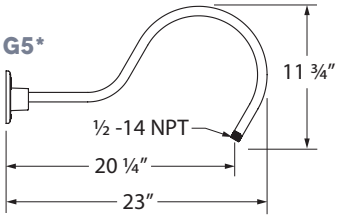
Timeless and practical, our vast selection of gooseneck arms provides the perfect angle and style for any setting. The curved arms evoke classic light styles while helping the shade direct light onto sidewalks, signs and more. Each gooseneck arm is crafted in our Florida-based manufacturing facility! Please Note: Select gooseneck arms cannot be used with certain designs and shades. For additional information, please visit the individual product listing. Additionally, gooseneck arms indicated with an asterisk are not available in copper and brass finishes.



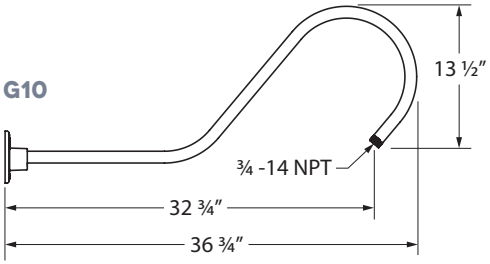
SALES@BARNLIGHT.COM (800) 407-8784 320 KNOX MCRAE DRIVE, TITUSVILLE, FL 32780 BARNLIGHT.COM

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

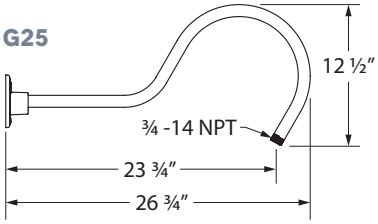
G5*



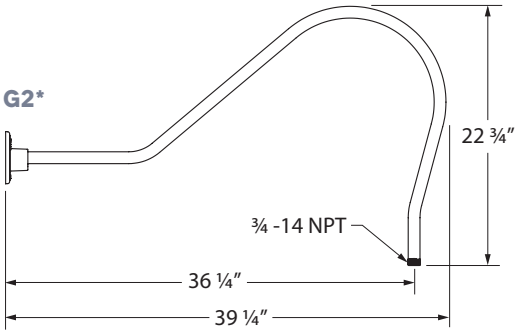
G10



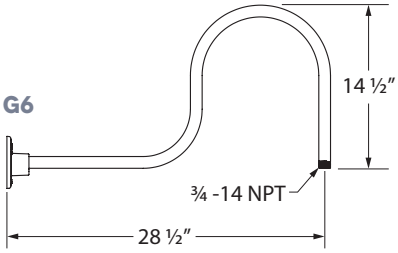
G25



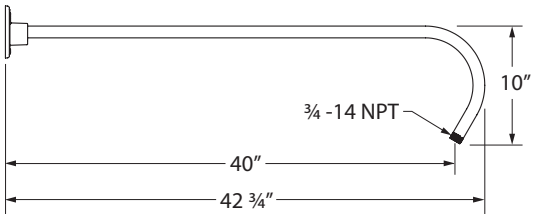
G2*



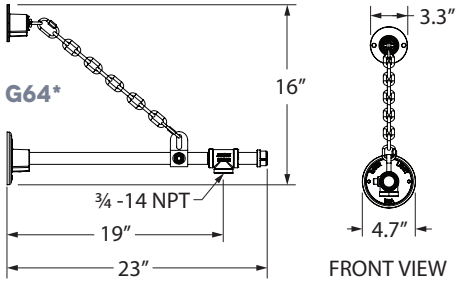
G6



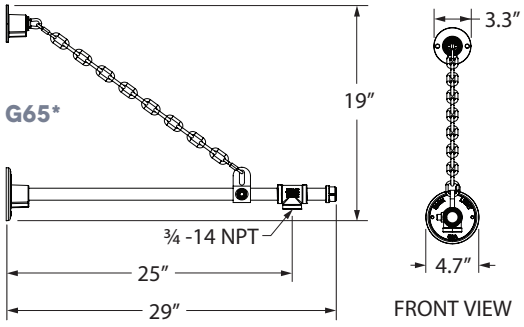
G7



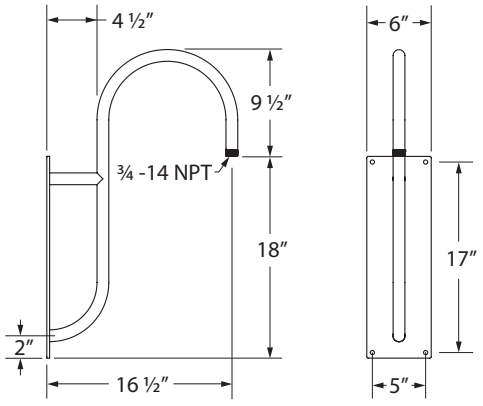
G64*



G65*

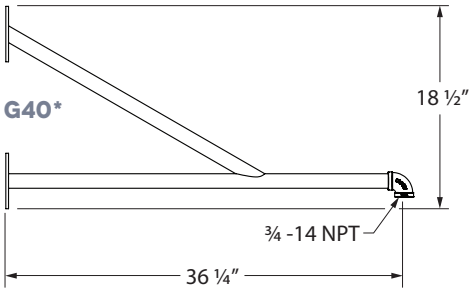


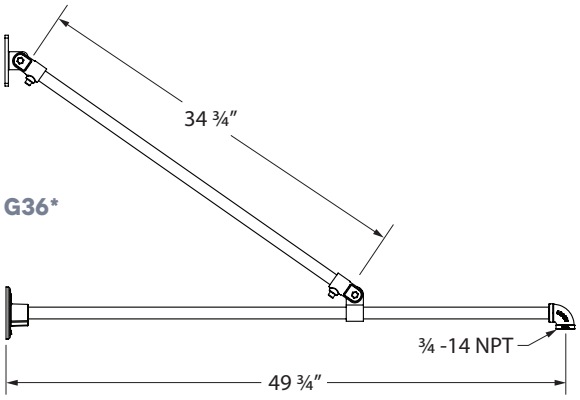
G19*

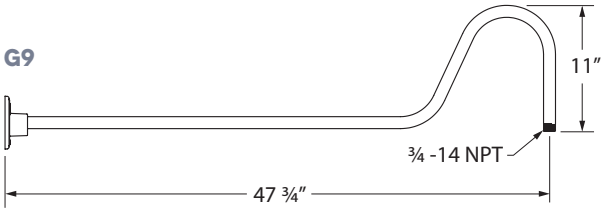


SALES@BARNLIGHT.COM (800) 407-8784 320 KNOX MCRAE DRIVE, TITUSVILLE, FL 32780 BARNLIGHT.COM

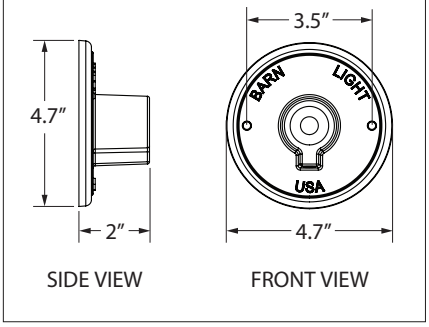
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.





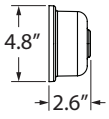


WALL BACKING PLATE DIMENSIONS

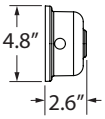


OPTIONAL MOUNTING ACCESSORIES

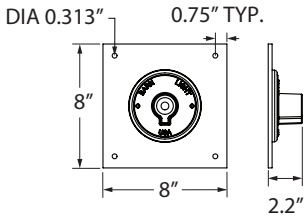
Please Note: Select gooseneck arms are not applicable with below accessories, reference website for additional information.



DBPC
Decorative Backing Plate Cover



DD
Dusk-to-Dawn Photocell



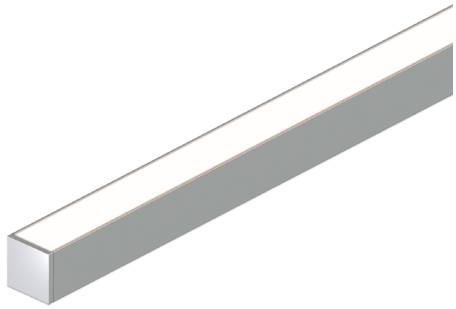
HDBP
Heavy Duty Wall Backing Plate

SALES@BARNLIGHT.COM (800) 407-8784 320 KNOX MCRAE DRIVE, TITUSVILLE, FL 32780 BARNLIGHT.COM

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

Bosca Wet - Static White | Linear Illumination System

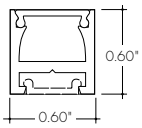
luminii



Features

- 24VDC Class 2 and IP68 Wet Rated fixtures made to order up to 144". Fixtures can be linked up to 48' depending on output
- Suitable for undercabinet, millwork, direct view, wet, outdoor, architectural reveals, accent lighting and surface mount applications
- Dot free even illumination with frosted lens
- Average Life (L70): 50,000hrs
- High Color Quality options offer premium quality and vibrant colors with R9 values up to 97
- High Efficacy options offer best in class output and efficacy with over 470 lm/ft and up to 66 lm/W
- Proprietary strong bond solder method handles up to 50 lbs of pull force on wire leads and connectors
- 3 year warranty

IP68



Finish Options (see page 3 for additional information)

Base	Silver Anodized				
Powder Coat	Black	Bronze	White		
Premium	Matte Black	Warm Nickel	Aged Brass	Polished Gold	Chrome

Declare. CE RoHS MADE IN U.S.A Single Bin +/-30 CCT cULus LISTED TITLE 24 JA8 COMPLIANT DIM

Technical Information

TYPE	High Color Quality			High Efficacy				High Efficacy
OUTPUT OPTIONS	**72SO**	**72HO**	**72VHO**	**HE48LO**	**HE48SO**	**HE48MO**	**HE48HO**	**HE64VHO**
Lumens Output (3000K) (with a Graze Lens)	111 lm/ft	181 lm/ft	220 lm/ft	109 lm/ft	150 lm/ft	201 lm/ft	322 lm/ft	407 lm/ft
Average Power Consumption (for a 4' section)	2.8 W/ft	4.8 W/ft	6 W/ft	1.9 W/ft	2.8 W/ft	3.5 W/ft	6.5 W/ft	7.5 W/ft
Efficacy	40 lm/W	38 lm/W	37 lm/W	57 lm/W	54 lm/W	57 lm/W	50 lm/W	54 lm/W
Max Run Length (in series)	40 ft	31 ft	22 ft	48 ft	42 ft	33 ft	21 ft	15 ft
Ambient Operating Temperature Range*	-15°F – 125°F (-25°C – 50°C)			-15°F – 125°F (-25°C – 50°C)				-15°F – 115°F (-25°C – 45°C)

*Ambient Operating Temperature Range to maintain L70 of 50k+ hours in normal mounting conditions for the fixture. Exceeding Ambient Operating Temperature Range may result in decreased life/output. Consult Technical Support for specific inquiries.

High Color Quality (72)

CCT	Multiplier (reference - 3000K)	TM-30 CRI	R_f	R_g	R_9
2700K	0.97	97	96	99	93
3000K	1.00	96	95	99	92
3500K	1.01	96	95	100	94
4000K	1.34	97	96	102	92

High Efficacy (HE48/HE64)

CCT	Multiplier (reference - 3000K)	TM-30 CRI	R_f	R_g	R_9
2700K	0.94	92	90	99	46
3000K	1.00	92	89	99	62
3500K	1.02	92	89	99	58
4000K	1.02	92	86	94	52

Ordering Code

MODEL	LENGTH[1]	OUTPUT[2]	CCT	LENS	MOUNTING	FINISH[3]	FEED POSITION LEFT[4]	FEED POSITION RIGHT[4]
BOSW-Bosca Wet	12" - 144" 1" increments	72SO-Standard 72HO-High 72VHO-Very High	27K-2700K 30K-3000K 35K-3500K 40K-4000K	F-Frosted G-Graze	FC-Fixed Clip[5] SC-Screwin A-Adjustable Hinge Mounting	*BASE* SA-Silver Anodized *POWDER COAT* BK-Black BZ-Bronze WH-White	*WIRE LEADS (72")* LWE-Wire End Feed LWB-Wire Back Feed LWSA-Wire Side A Feed LWSB-Wire Side B Feed LNPF-No Power Feed	*WIRE LEADS (72")* RWE-Wire End Feed RWB-Wire Back Feed RWSA-Wire Side A Feed RWSB-Wire Side B Feed RNPF-No Power Feed
	12" - 144" 2" increments	HE48LO-Low HE48SO-Standard HE48MO-Medium HE48HO-High HE64VHO-Very High	27K-2700K 30K-3000K 35K-3500K 40K-4000K			*PREMIUM* MBK-Matte Black WN-Warm Nickel AB-Aged Brass PG-Polished Gold[6] CH-Chrome[6]	*QUICK CONNECTS (6")* LFE-Female Q/C, End Feed LFB-Female Q/C, Back Feed LFSA-Female Q/C, Side A Feed LFSB-Female Q/C, Side B Feed LNPF-No Power Feed	*QUICK CONNECTS (6")* RFE-Female Q/C, End Feed RFB-Female Q/C, Back Feed RFSA-Female Q/C, Side A Feed RFSB-Female Q/C, Side B Feed RNPF-No Power Feed

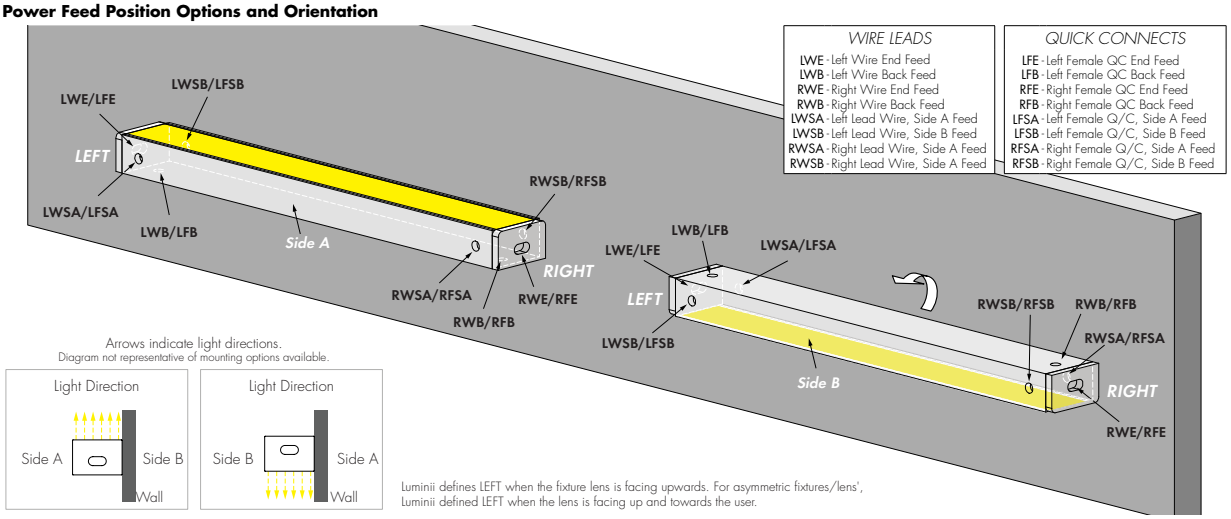
1 - Custom lengths and increments are available, please consult Inside Sales with specific request.
2 - All High Efficacy options can be used to comply with Title 24 JA8. High Color Quality options can be used to comply with Title 24 JA8 depending on Output, CCT, and Lens selections, see multiplier charts to calculate specific efficacies.
3 - Non Base finishes may have extended lead times. Custom RALs are available, please consult Inside Sales with specific request.
4 - LNPF - RNPF is not a valid configuration option
5 - Fixed Clip mount not rated for exterior use.
6 - Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".

Bosca Wet - Static White | Linear Illumination System

luminii

Powerfeeds and Connectors

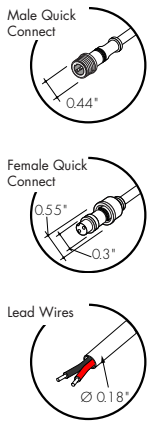
Power Feed Position Options and Orientation



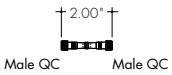
Arrows indicate light directions.
Diagram not representative of mounting options available.

Luminii defines LEFT when the fixture lens is facing upwards. For asymmetric fixtures/lens', Luminii defined LEFT when the lens is facing up and towards the user.

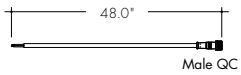
Linking and Extension Cable Options



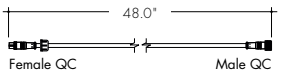
WET-FMA-2-2
Female to Male Adapter, 2 pin



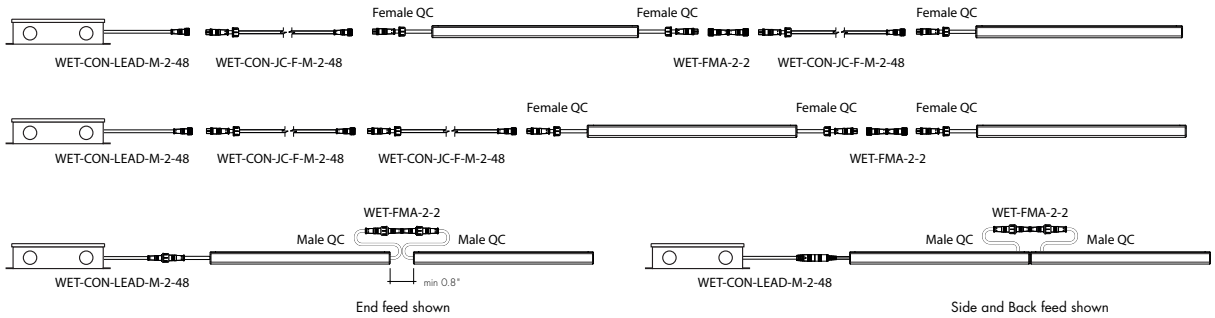
WET-CON-LEAD-M-2-48
Male Wet Connector Cable, 2 pin, 48"



WET-CON-JC-F-M-2-48
Female/Male Wet Jumper Cable, 2 pin, 48"



Sample Layout

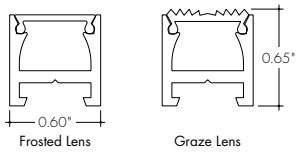


Bosca Wet - Static White | Linear Illumination System

luminii

Product Dimensions

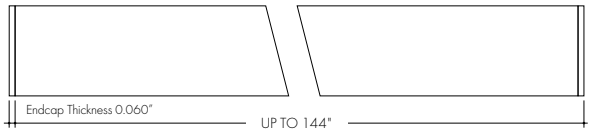
Fixture/Lens Profile



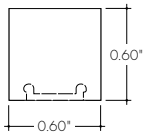
Frosted Lens

Graze Lens

Fixture Side

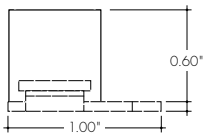


Fixture/Mounting Profile

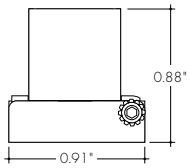


Frosted Lens using the Clip-in Channel

Fixed Clip mount not rated for exterior use.



Frosted Lens using the Screw-in Channel

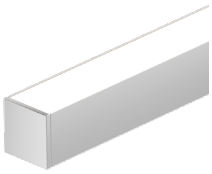


Frosted Lens using the Adjustable Bracket, up to 90°

Finish Options

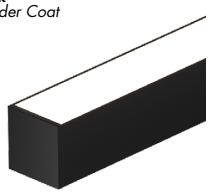
- Finish options are available in a wide variety, allowing for complete customization of style and aesthetic.
- Non Base finishes may have extended lead times and price adder.
- Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".
- Custom RALs are available, please consult Inside Sales with specific request.

Silver Anodized
Base



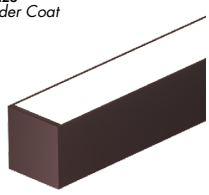
Silver Anodized is a soft silver with a clear finish.

Black
Powder Coat



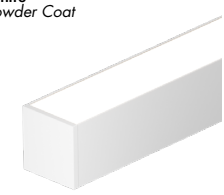
Black is a true deep black with a glossy finish.

Bronze
Powder Coat



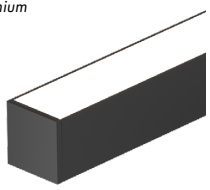
Bronze is a rich, dark brown with a satin finish.

White
Powder Coat



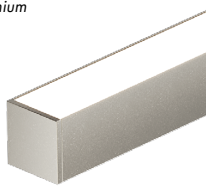
White is a polar bright white and field paintable.

Matte Black
Premium



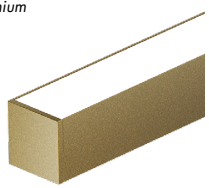
Matte Black is a dark, pitch-black with a soft flat finish.

Warm Nickel
Premium



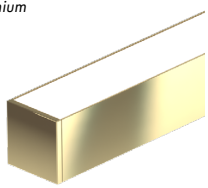
Warm Nickel is a soft, silvery smoke with warm tones and a satin finish.

Aged Brass
Premium



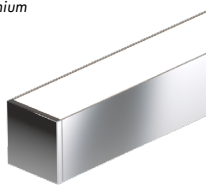
Aged Brass is a deep brown shade with slightly golden undertones.

Polished Gold
Premium



Polished Gold is bright and radiant for a brilliant finish.

Chrome
Premium



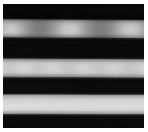
Chrome is a highly reflective silver polish.

Bosca Wet - Static White | Linear Illumination System

luminii

Light Transmission and Dotting

	Lens Type							
Output Options	**Graze Lens**				**Frosted Lens**			
Dimming Level	100%	50%	10%	1%	100%	50%	10%	1%
72SO	CD	CD	CD	CD	ND	ND	ND	ND
72HO	CD	CD	CD	CD	ND	ND	ND	ND
72VHO	CD	CD	CD	CD	ND	ND	ND	ND
HE48LO	CD	CD	CD	CD	ND	ND	ND	ND
HE48SO	CD	CD	CD	CD	ND	ND	ND	ND
HE48MO	CD	CD	CD	CD	ND	ND	ND	ND
HE48HO	CD	CD	CD	CD	ND	ND	ND	ND
HE64VHO	CD	CD	CD	CD	ND	ND	ND	ND
Transmission Percentage	100%				75%			



CD - Clear Dotting

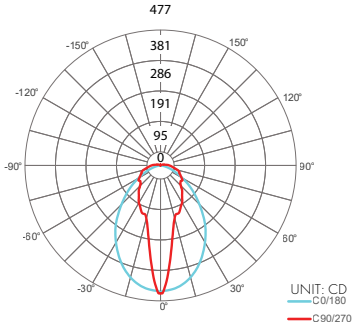
SD - Slight Dotting

ND - No Dotting

Photometry

BOSW-48-30K-LL72VHO-G

Bosca Wet, 4ft, 3000K, VHO, Graze Lens



Zonal Lumen Summary 3000K

Zone	Lumen	% Fixture
0-30	320	48.2%
0-40	450	65.2%
0-60	663	88.0%
0-90	842	98.9%
0-180	880	100.0%

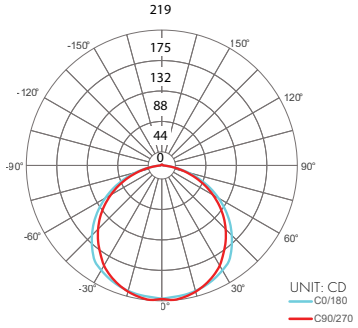
Total

Beam Angle

44°

BOSW-48-30K-LL72VHO-F

Bosca Wet, 4ft, 3000K, VHO, Frosted Lens



Zonal Lumen Summary 3000K

Zone	Lumen	% Fixture
0-30	173	26.3%
0-40	287	43.6%
0-60	514	78.0%
0-90	652	99.0%
0-180	659	100.0%

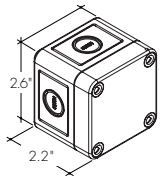
Total

Beam Angle

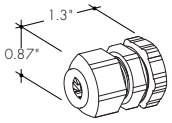
115°

Accessory Options

LVSP-WET
Splice box: wet rated, low voltage, gray



LVSP-WET-CM
Connector for splice box, low voltage for cable management, gray.



Bosca Wet - Static White | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Color Quality (72)

Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts			Nominal Length (in)	Actual Length	Watts		
		SO	HO	VHO			SO	HO	VHO			SO	HO	VHO			SO	HO	VHO
12	11 5/16	2.7	4.4	6.2	**47**	46 1/16	10.2	17.1	22.6	**82**	81 15/16	18.3	29.5	38.4	**117**	116 11/16	25.9	40.8	52.4
13	12 7/16	2.7	4.4	6.2	**48**	47 3/16	10.5	17.4	23.1	**83**	–	–	–	–	**118**	117 13/16	26.1	41.1	52.8
14	13 10/16	2.9	4.8	6.7	**49**	48 6/16	10.7	17.8	23.5	**84**	83 1/16	18.5	29.8	38.8	**119**	119	26.3	41.4	53.2
15	14 12/16	3.1	5.2	7.3	**50**	49 8/16	11.1	18.6	24.4	**85**	84 4/16	18.7	30.1	39.2	**120**	–	–	–	–
16	15 15/16	3.4	5.6	7.8	**51**	50 11/16	11.4	18.9	24.9	**86**	85 6/16	19.2	30.8	40.0	**121**	120 2/16	26.5	41.7	53.6
17	–	–	–	–	**52**	51 13/16	11.6	19.3	25.3	**87**	86 9/16	19.4	31.1	40.4	**122**	121 5/16	26.7	42.0	54.0
18	17 1/16	3.6	6.0	8.3	**53**	53	11.9	19.7	25.7	**88**	87 12/16	19.6	31.5	40.8	**123**	122 7/16	27.1	42.6	54.7
19	18 4/16	3.9	6.5	8.9	**54**	–	–	–	–	**89**	88 14/16	19.9	31.8	41.1	**124**	123 10/16	27.3	42.9	55.0
20	19 6/16	4.4	7.3	9.9	**55**	54 2/16	12.1	20.1	26.1	**90**	–	–	–	–	**125**	124 12/16	27.5	43.1	55.4
21	20 9/16	4.6	7.7	10.5	**56**	55 5/16	12.3	20.5	26.6	**91**	90 1/16	20.1	32.2	41.5	**126**	125 15/16	27.7	43.4	55.7
22	21 11/16	4.8	8.1	11.0	**57**	56 7/16	12.8	21.3	27.4	**92**	91 3/16	20.4	32.5	41.9	**127**	–	–	–	–
23	22 14/16	5.1	8.6	11.5	**58**	57 10/16	13.1	21.6	27.8	**93**	92 6/16	20.6	32.9	42.3	**128**	127 1/16	27.9	43.7	56.1
24	–	–	–	–	**59**	58 12/16	13.3	22.0	28.3	**94**	93 8/16	21.1	33.6	43.1	**129**	128 4/16	28.1	43.9	56.4
25	24 1/16	5.3	9.0	12.1	**60**	59 15/16	13.6	22.4	28.7	**95**	94 11/16	21.3	33.9	43.4	**130**	129 7/16	28.5	44.5	57.1
26	25 3/16	5.6	9.4	12.6	**61**	–	–	–	–	**96**	95 13/16	21.5	34.2	43.8	**131**	130 9/16	28.7	44.7	57.4
27	26 6/16	5.8	9.8	13.1	**62**	61 1/16	13.8	22.8	29.1	**97**	97	21.8	34.6	44.2	**132**	131 12/16	28.9	45.0	57.8
28	27 8/16	6.2	10.5	14.1	**63**	62 4/16	14.0	23.1	29.6	**98**	–	–	–	–	**133**	132 14/16	29.1	45.3	58.1
29	28 11/16	6.5	10.9	14.5	**64**	63 6/16	14.5	23.8	30.5	**99**	98 2/16	22.0	34.9	44.6	**134**	–	–	–	–
30	29 13/16	6.7	11.2	15.0	**65**	64 9/16	14.7	24.1	31.0	**100**	99 5/16	22.2	35.2	45.0	**135**	134 1/16	29.3	45.5	58.4
31	31	6.9	11.6	15.5	**66**	65 12/16	14.9	24.4	31.4	**101**	100 7/16	22.5	35.9	45.9	**136**	135 3/16	29.5	45.7	58.7
32	–	–	–	–	**67**	66 14/16	15.1	24.7	31.9	**102**	101 10/16	22.7	36.2	46.3	**137**	136 6/16	29.6	45.9	59.1
33	32 2/16	7.1	12.0	16.0	**68**	–	–	–	–	**103**	102 12/16	22.9	36.5	46.7	**138**	137 8/16	30.0	46.3	59.7
34	33 5/16	7.3	12.3	16.5	**69**	68 1/16	15.3	25.0	32.4	**104**	103 15/16	23.1	36.8	47.1	**139**	138 11/16	30.2	46.5	60.0
35	34 7/16	7.8	13.1	17.4	**70**	69 3/16	15.5	25.4	32.8	**105**	–	–	–	–	**140**	139 13/16	30.3	46.8	60.3
36	35 10/16	8.0	13.4	17.9	**71**	70 6/16	15.8	25.7	33.3	**106**	105 1/16	23.3	37.1	47.5	**141**	141	30.5	47.0	60.6
37	36 12/16	8.2	13.8	18.4	**72**	71 8/16	16.2	26.3	34.2	**107**	106 4/16	23.5	37.4	48.0	**142**	–	–	–	–
38	37 15/16	8.4	14.2	18.9	**73**	72 11/16	16.4	26.6	34.7	**108**	107 6/16	23.9	38.1	48.8	**143**	142 2/16	30.7	47.2	61.0
39	–	–	–	–	**74**	73 13/16	16.6	26.9	35.1	**109**	108 9/16	24.1	38.4	49.2	**144**	143 5/16	30.8	47.4	61.3
40	39 1/16	8.7	14.5	19.3	**75**	75	16.8	27.3	35.5	**110**	109 12/16	24.3	38.7	49.6					
41	40 4/16	8.9	14.9	19.8	**76**	–	–	–	–	**111**	110 14/16	24.5	39.0	50.0					
42	41 6/16	9.3	15.6	20.7	**77**	76 2/16	17.1	27.6	35.9	**112**	–	–	–	–					
43	42 9/16	9.6	16.0	21.2	**78**	77 5/16	17.3	27.9	36.3	**113**	112 1/16	24.8	39.3	50.4					
44	43 12/16	9.8	16.4	21.7	**79**	78 7/16	17.7	28.5	37.2	**114**	113 3/16	25.0	39.6	50.8					
45	44 14/16	10.0	16.7	22.1	**80**	79 10/16	17.9	28.9	37.6	**115**	114 6/16	25.2	39.9	51.2					
46	–	–	–	–	**81**	80 12/16	18.1	29.2	38.0	**116**	115 8/16	25.6	40.5	52.0					

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

Bosca Wet - Static White | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Efficacy (HE48)

Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts			
		LO	SO	MO	HO			LO	SO	MO	HO			LO	SO	MO	HO			LO	SO	MO	HO
12	10 11/16	1.7	2.5	3.5	5.7	**47**	46 2/16	6.9	10.7	13.3	24.7	**82**	81 9/16	12.5	19.9	23.9	42.2	**117**	–	–	–	–	–
13	12 11/16	1.7	2.5	3.5	5.7	**48**	–	–	–	–	–	**83**	–	–	–	–	–	**118**	117	17.5	27.7	34.3	58.7
14	–	–	–	–	–	**49**	48 2/16	7.1	11.2	13.9	25.4	**84**	83 9/16	12.8	20.3	24.5	43.1	**119**	119	17.8	28.1	34.9	59.6
15	14 10/16	2.0	3.0	4.0	7.2	**50**	–	–	–	–	–	**85**	–	–	–	–	–	**120**	–	–	–	–	–
16	–	–	–	–	–	**51**	50 1/16	7.4	11.7	14.5	26.3	**86**	85 8/16	13.1	20.8	25.1	44.1	**121**	120 15/16	18.1	28.6	35.5	60.5
17	16 10/16	2.4	3.5	4.6	8.7	**52**	–	–	–	–	–	**87**	–	–	–	–	–	**122**	–	–	–	–	–
18	–	–	–	–	–	**53**	52 1/16	7.7	12.3	15.1	27.4	**88**	87 8/16	13.4	21.3	25.7	45.0	**123**	122 15/16	18.3	29.0	36.0	62.1
19	18 9/16	2.7	3.9	5.2	10.2	**54**	–	–	–	–	–	**89**	–	–	–	–	–	**124**	–	–	–	–	–
20	–	–	–	–	–	**55**	54	8.0	12.9	15.7	28.5	**90**	89 7/16	13.7	21.7	26.3	46.0	**125**	124 14/16	18.4	29.5	36.6	63.8
21	20 9/16	3.0	4.4	5.8	11.7	**56**	56	8.4	13.5	16.4	29.5	**91**	–	–	–	–	–	**126**	–	–	–	–	–
22	–	–	–	–	–	**57**	–	–	–	–	–	**92**	91 7/16	14.0	22.1	26.9	47.0	**127**	126 14/16	18.6	29.9	37.2	65.4
23	22 8/16	3.4	4.9	6.4	13.2	**58**	57 15/16	8.7	14.0	17.0	30.6	**93**	–	–	–	–	–	**128**	–	–	–	–	–
24	–	–	–	–	–	**59**	–	–	–	–	–	**94**	93 6/16	14.3	22.6	27.5	47.9	**129**	128 13/16	18.8	30.4	37.7	67.0
25	24 8/16	3.7	5.4	7.0	14.7	**60**	59 15/16	9.0	14.6	17.6	31.6	**95**	–	–	–	–	–	**130**	–	–	–	–	–
26	–	–	–	–	–	**61**	–	–	–	–	–	**96**	95 6/16	14.4	22.8	27.8	48.4	**131**	130 13/16	18.9	30.8	38.3	68.6
27	26 7/16	4.1	5.9	7.5	15.8	**62**	61 14/16	9.4	15.2	18.2	32.6	**97**	–	–	–	–	–	**132**	–	–	–	–	–
28	–	–	–	–	–	**63**	–	–	–	–	–	**98**	97 5/16	14.7	23.3	28.5	49.4	**133**	132 12/16	19.1	31.2	38.9	70.2
29	28 7/16	4.4	6.4	8.1	16.8	**64**	63 14/16	9.7	15.6	18.7	33.7	**99**	–	–	–	–	–	**134**	–	–	–	–	–
30	–	–	–	–	–	**65**	–	–	–	–	–	**100**	99 5/16	15.0	23.7	29.0	50.4	**135**	134 12/16	19.3	31.8	39.4	70.7
31	30 6/16	4.8	6.9	8.7	17.9	**66**	65 13/16	10.0	16.1	19.2	34.7	**101**	–	–	–	–	–	**136**	–	–	–	–	–
32	–	–	–	–	–	**67**	–	–	–	–	–	**102**	101 4/16	15.3	24.1	29.6	51.3	**137**	136 11/16	19.5	32.3	40.0	71.2
33	32 6/16	5.0	7.2	9.0	18.5	**68**	67 13/16	10.4	16.5	19.8	35.7	**103**	–	–	–	–	–	**138**	–	–	–	–	–
34	–	–	–	–	–	**69**	–	–	–	–	–	**104**	103 4/16	15.6	24.6	30.2	52.3	**139**	138 11/16	19.8	32.8	40.6	71.8
35	34 5/16	5.4	7.7	9.6	19.5	**70**	69 12/16	10.7	17.0	20.3	36.7	**105**	–	–	–	–	–	**140**	–	–	–	–	–
36	–	–	–	–	–	**71**	–	–	–	–	–	**106**	105 3/16	15.8	25.0	30.7	53.2	**141**	140 10/16	20.0	33.3	41.1	72.3
37	36 5/16	5.7	8.2	10.2	20.6	**72**	71 12/16	11.0	17.4	20.8	37.7	**107**	–	–	–	–	–	**142**	–	–	–	–	–
38	–	–	–	–	–	**73**	–	–	–	–	–	**108**	107 3/16	16.1	25.5	31.3	54.2	**143**	142 10/16	20.2	33.9	41.7	72.8
39	38 4/16	6.0	8.7	10.8	21.5	**74**	73 11/16	11.3	17.9	21.4	38.7	**109**	–	–	–	–	–	**144**	–	–	–	–	–
40	–	–	–	–	–	**75**	–	–	–	–	–	**110**	109 2/16	16.4	25.9	31.9	55.2						
41	40 4/16	6.2	9.2	11.4	22.3	**76**	75 11/16	11.6	18.4	22.0	39.6	**111**	–	–	–	–	–						
42	–	–	–	–	–	**77**	–	–	–	–	–	**112**	111 2/16	16.7	26.4	32.5	56.1						
43	42 3/16	6.4	9.7	12.0	23.1	**78**	77 10/16	11.9	18.9	22.7	40.5	**113**	–	–	–	–	–						
44	–	–	–	–	–	**79**	–	–	–	–	–	**114**	113 1/16	17.0	26.8	33.1	57.0						
45	44 3/16	6.7	10.2	12.6	23.9	**80**	79 10/16	12.2	19.4	23.3	41.4	**115**	–	–	–	–	–						
46	–	–	–	–	–	**81**	–	–	–	–	–	**116**	115 1/16	17.3	27.3	33.7	57.9						

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

High Efficacy (HE64)

Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO	Nominal Length (in)	Actual Length	Watts VHO
12	11 8/16	7.6	**47**	46 5/16	28.2	**82**	81 2/16	50.4	**117**	–	–
13	13	7.6	**48**	47 13/16	29.5	**83**	82 10/16	51.7	**118**	117 8/16	72.8
14	–	–	**49**	–	–	**84**	–	–	**119**	119	73.3
15	14 8/16	8.9	**50**	49 5/16	30.1	**85**	84 3/16	52.3	**120**	–	–
16	–	–	**51**	50 14/16	31.4	**86**	85 11/16	53.6	**121**	120 8/16	74.4
17	16	9.5	**52**	–	–	**87**	–	–	**122**	–	–
18	17 9/16	10.7	**53**	52 6/16	32.0	**88**	87 3/16	54.2	**123**	122	74.8
19	–	–	**54**	53 14/16	33.3	**89**	88 11/16	55.5	**124**	123 8/16	75.6
20	19 1/16	11.4	**55**	–	–	**90**	–	–	**125**	–	–
21	20 9/16	12.6	**56**	55 6/16	34.0	**91**	90 3/16	56.2	**126**	125 1/16	76.0
22	–	–	**57**	56 14/16	35.2	**92**	91 12/16	57.5	**127**	126 9/16	76.8
23	22 1/16	13.2	**58**	–	–	**93**	–	–	**128**	–	–
24	23 9/16	14.5	**59**	58 7/16	36.5	**94**	93 4/16	58.2	**129**	128 1/16	77.2
25	–	–	**60**	59 15/16	37.2	**95**	94 12/16	59.5	**130**	129 9/16	78.0
26	25 2/16	15.1	**61**	–	–	**96**	–	–	**131**	–	–
27	26 10/16	16.4	**62**	61 7/16	38.4	**97**	96 4/16	60.1	**132**	131 2/16	78.4
28	–	–	**63**	62 15/16	39.1	**98**	97 13/16	61.4	**133**	132 10/16	79.2
29	28 2/16	17.0	**64**	–	–	**99**	–	–	**134**	–	–
30	29 10/16	18.2	**65**	64 8/16	40.4	**100**	99 5/16	62.0	**135**	134 2/16	79.6
31	–	–	**66**	66	41.0	**101**	100 13/16	63.2	**136**	135 10/16	80.3
32	31 3/16	18.9	**67**	–	–	**102**	–	–	**137**	–	–
33	32 11/16	20.1	**68**	67 8/16	42.3	**103**	102 5/16	63.8	**138**	137 2/16	80.6
34	–	–	**69**	–	–	**104**	103 13/16	65.0	**139**	138 11/16	81.3
35	34 3/16	20.7	**70**	69	42.9	**105**	–	–	**140**	–	–
36	35 11/16	22.0	**71**	70 8/16	44.2	**106**	105 6/16	65.6	**141**	140 3/16	81.7
37	–	–	**72**	–	–	**107**	106 14/16	66.8	**142**	141 11/16	82.4
38	37 3/16	22.6	**73**	72 1/16	44.9	**108**	–	–	**143**	–	–
39	38 12/16	23.9	**74**	73 9/16	46.1	**109**	108 6/16	67.4	**144**	143 3/16	82.7
40	–	–	**75**	–	–	**110**	109 14/16	68.5			
41	40 4/16	24.5	**76**	75 1/16	46.7	**111**	–	–			
42	41 12/16	25.7	**77**	76 9/16	48.0	**112**	111 7/16	69.6			
43	–	–	**78**	–	–	**113**	112 15/16	70.1			
44	43 4/16	26.4	**79**	78 2/16	48.6	**114**	–	–			
45	44 13/16	27.6	**80**	79 10/16	49.8	**115**	114 7/16	71.2			
46	–	–	**81**	–	–	**116**	115 15/16	71.7			

Voltage Drop Calculator

The below chart assumes nominal voltage of 24 Volts and a Voltage Drop Allowance of 3% through the wire

Wattage [W]	Maximum Wire Length From Power Supply to Start of Run [ft]						
	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG
5	1088.2	684.4	430.3	270.6	170.2	107.1	67.3
10	544.1	342.2	215.1	135.3	85.1	53.5	33.7
15	362.7	228.1	143.4	90.2	56.7	35.7	22.4
20	272.0	171.1	107.6	67.7	42.6	26.8	16.8
25	217.6	136.9	86.1	54.1	34.0	21.4	13.5
30	181.4	114.1	71.7	45.1	28.4	17.8	11.2
35	155.5	97.8	61.5	38.7	24.3	15.3	9.6
40	136.0	85.5	53.8	33.8	21.3	13.4	8.4
45	120.9	76.0	47.8	30.1	18.9	11.9	7.5
50	108.8	68.4	43.0	27.1	17.0	10.7	6.7
55	98.9	62.2	39.1	24.6	15.5	9.7	6.1
60	90.7	57.0	35.9	22.6	14.2	8.9	5.6
65	83.7	52.6	33.1	20.8	13.1	8.2	5.2
70	77.7	48.9	30.7	19.3	12.2	7.6	4.8
75	72.5	45.6	28.7	18.0	11.3	7.1	4.5
80	68.0	42.8	26.9	16.9	10.6	6.7	4.2
85	64.0	40.3	25.3	15.9	10.0	6.3	4.0
90	60.5	38.0	23.9	15.0	9.5	5.9	3.7
96	56.7	35.6	22.4	14.1	8.9	5.6	3.5

Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

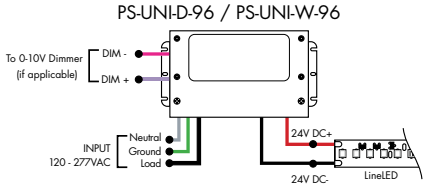
Ordering Code Universal Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	UNI - 0-10V Dimming, Phase Dimming	D - Dry W - Wet	30 - 30 Watts 60 - 60 Watts 96 - 96 Watts 3x96 - 3x96 Watts	24 - 24 VDC

Compatibility: View a complete list of compatible dimmers on product page (Link)

0-10V - 1% dimming
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart

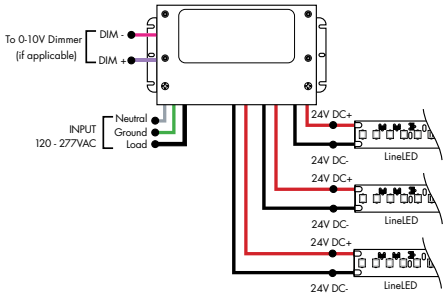
PS-UNI-D-96 / PS-UNI-W-96



MODELS	PS-UNI-W-30W	PS-UNI-W-60W	PS-UNI-W-96W	PS-UNI-W-3X96W
Length	6.50"	7.40"	8.66"	11.85"
Width	3.73"	3.73"	3.73"	4.32"
Depth	1.61"	1.61"	1.61"	1.81"

MODELS	PS-UNI-D-30W	PS-UNI-D-60W	PS-UNI-D-96W	PS-UNI-D-3X96W
Length	8.77"	8.77"	8.11"	9.94"
Width	4.27"	4.27"	5.60"	7.61"
Depth	1.83"	1.83"	1.83"	2.02"

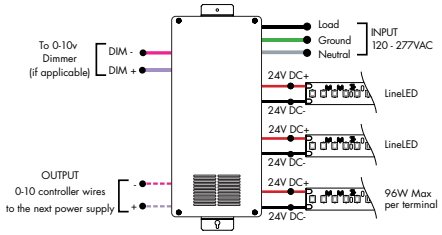
PS-UNI-D-3X96 / PS-UNI-W-3X96



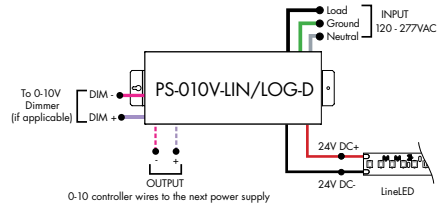
Ordering Code 0-10V Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	010V-LIN - 0-10V Dimming (0.1%), Linear 010V-LOG - 0-10V Dimming (0.1%), Logarithmic	D - Dry	96 - 96 Watts 3X96 - 3x96 Watts	24 - 24 VDC

PS-010V-LIN/LOG-D-3X96

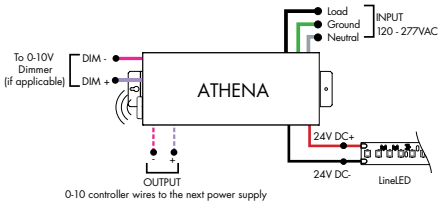


MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.45"



Athena 0-10V LED Driver

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-LIN - 0-10V Dimming, Linear 010V-LOG - 0-10V Dimming, Logarithmic	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena



MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

Power Supplies

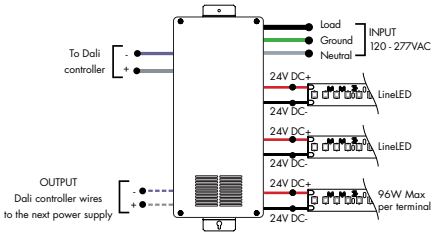
See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

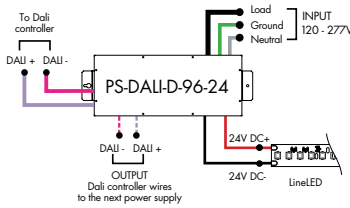
Ordering Code DALI1 Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	DALI - DALI (0.1%)	D - Dry	96 - 96 Watts 3X96 - 3X96 Watts	24 - 24 VDC

Model	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

PS-DALI-D-3X96-24





Ordering Code DMX Dimming Power Supplies 0.1% 120VAC - 277VAC

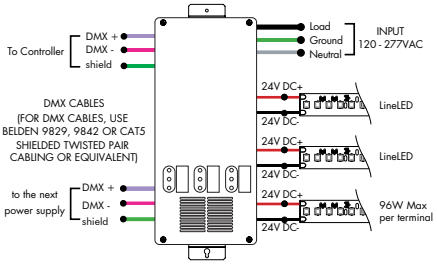
Requires Zonal Control

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	DMX - DMX (0.1%)	D - Dry	96 - 96 Watts 3X96 - 3X96 Watts	24 - 24 VDC

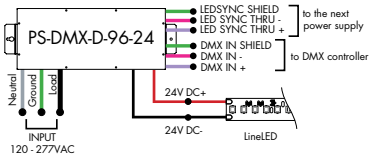
*Zonal control power supplies. Control multiple tapes/zones using DMX channels.

MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

PS-DMX-D-3X96-24



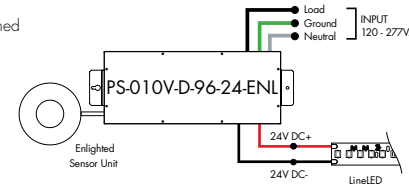
DMX CABLES
(FOR DMX CABLES, USE BELDEN 9829, 9842 OR CAT5 SHIELDED TWISTED PAIR CABLING OR EQUIVALENT)



Ordering Code Enlighted Enabled Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V - 0-10V Dimming (1%)	D - Dry	96 - 96 Watts	24 - 24 VDC	ENL - 0-10V Enlightened

Model	96W
Length	14.40"
Width	5.20"
Depth	2.60"

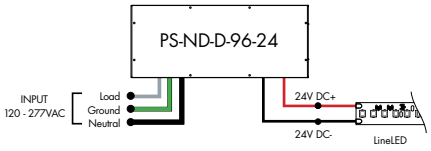


Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

Ordering Code Non-Dimming Power Supply 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS-Power Supply, 120-277VAC	ND-Non Dimming	D-Dry	96-96 Watts	24-24 VDC

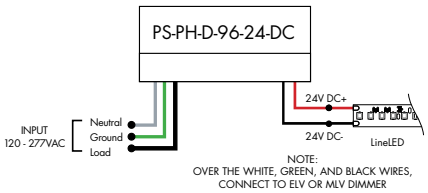


MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

Ordering Code Phase Dimming Power Supply 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	OUTPUT CONTROL
PS-Power Supply, 120-277VAC	PH-Phase Dimming (Triac, ELV, MLV)	D-Dry	96-96 Watts	24-24 VDC	DC-Direct Current

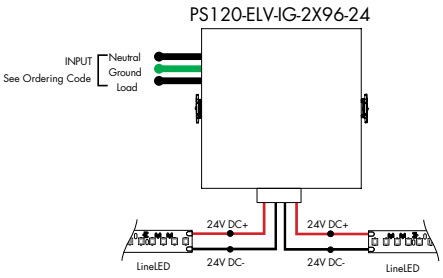
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart (Link)



MODELS	96W
Length	8.25"
Width	4.10"
Depth	1.56"

Ordering Code In-Ground Power Supplies

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS120-Power Supply, 120VAC PS240-Power Supply, 240VAC PS277-Power Supply, 277VAC	ELV-ELV Dimming (1%)	IG-In Ground	2X96-2X96 Watts	24-24 VDC



MODELS	2X96W
Length	8.40"
Width	8.30"
Depth	8.10"

Power Supplies

See Power Supply instructions and spec sheet for wiring information. For a complete list of compatible dimmers, see Compatible Dimming Chart on the Resources page.

LUTRON®

Luminii is a Lutron OEM Advantage Partner

Lutron Power Supplies 1%

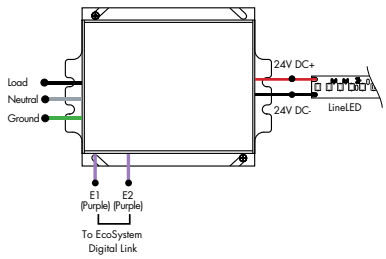
MODEL

L3DA4U1UKL-CV240

Hi-lume™ 1% EcoSystem Voltage LED driver
40W max

MODELS	L3DA4U1UKL-CV240
Length	4.98"
Width	4.00"
Depth	2.62"

L3DA4U1UKL-CV240



LUTRON®

Luminii is a Lutron OEM Advantage Partner

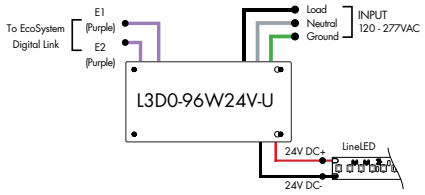
Lutron Power Supplies 0.1%

MODEL

L3D0-96W24V-U

Hi-lume™ 0.1% EcoSystem Voltage LED Driver with Soft-On, Fade-to-Black™
96W max

MODELS	L3D0
Length	10.50"
Width	5.50"
Depth	2.00"



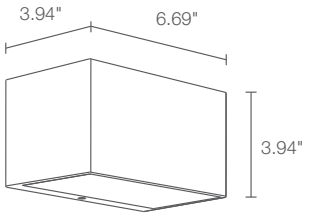
GEKO 5.1

designplan

datasheet

The Geko series are outdoor wall-mounted fixtures with a simplified design perfect for general or scenographic lighting. Geko 5.1 is a single-beam version with 4 color temperatures, 6 optics options and 4 standard finishes.

Fixture Dimensions



Optic versions

Asymmetric optics

TECHNICAL DATA

Wattage / Input	10W (120-277VAC)
Power Supply	Integral (0-10V Dimming)
Construction	Body: Die-cast Aluminum Alloy EN AB 47100 Lens: Tempered, Serigraphed, Transparent Glass Cable: 1.0' with connection box
CCT	2700K, 3000K, 4000K, 5000K
CRI	>80
BUG Rating	B1-U0-G0 (3000K, 7°, 10°, 30°, 70°) B1-U1-G0 (3000K, 10°x45°) B0-U1-G0 (3000K, Asymmetrical)
Delivered Lumens	535 lm (3000K, 30°)
Efficacy	53.5 lm/W
Optics	6 Standard (see below)
Finishes	4 Standard, Custom RAL (see below) *(4 Stage Marine Grade Finish)*
Fixture Dimensions	6.69" l x 3.94" w x 3.94" h
Fixture Weight	3.97 lbs
LED Source	5 Power LEDs
Lumen Maintenance	L90, B10>50,000hrs (Ta 25°C)
Color Consistency	1/4 ANSI BIN
Operating Temp.	-4°F to +113°F
IP Rating	IP65
Impact Rating	IK07

ORDERING INFORMATION

Example: GK5110FSH. Accessories ordered separately.

GK5110			
Model No.	**CCT**	**Optics**	**Finish**
GK5110	**F** - 2700K	**T** -7°	**E** - White
	5 - 3000K	**S** - 10°	**F** - Gray
	9 - 4000K	**F** - 30°	**H** - Anthracite
	0 - 5000K	**K** - 70°	**T** - Cor-ten
		W - 10°x45°	**C** - Custom RAL
		A - Asymmetrical	*(Consult factory for "C")*

Job Name/Date:

Fixture Type Designation:

sales@designplan.com
www.designplan.com

79 Trenton Avenue, Frenchtown NJ 08825
© Copyright 2019 Designplan Lighting, Inc.
Published: April 30, 2025

P: 908-996-7710
F: 908-996-7042

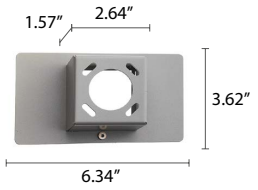
Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

GEKO 5.1

designplan®

datasheet

ACCESSORIES - Installation



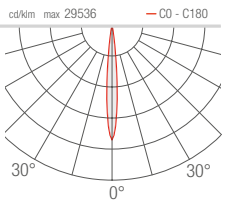
WD0300__
Spacer
For Spacer include one of the below finishes:
E - White
F - Gray
H - Anthracite
T - Corten
C - Custom RAL *(consult factory)*

PHOTOMETRIC DATA

Note all Photometry is 3000K

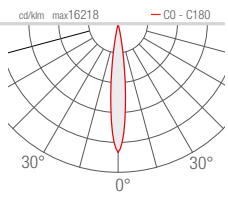
T - 7°

H (ft)	Ø (ft)	fc max (3000K)
3.28'	0.20'	1607.97
6.56'	0.43'	401.99
9.84'	0.82'	178.65
13.12'	1.02'	100.52
16.40'	1.25'	64.29



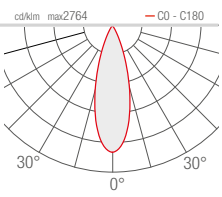
S - 10°

H (ft)	Ø (ft)	fc max (3000K)
3.28'	0.75'	843.75
6.56'	1.51'	210.98
9.84'	2.26'	93.74
13.12'	3.02'	52.77
16.40'	3.77'	33.72



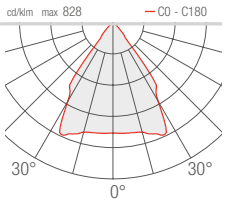
F - 30°

H (ft)	Ø (ft)	fc max (3000K)
3.28'	1.84'	137.40
6.56'	3.67'	34.37
9.84'	5.51'	15.24
13.12'	7.35'	8.55
16.40'	9.15'	5.48



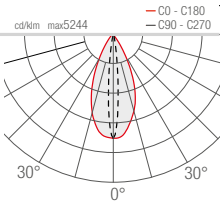
K - 70°

H (ft)	Ø (ft)	fc max (3000K)
3.28'	4.86'	35.95
6.56'	9.68'	9.01
9.84'	14.53'	3.99
13.12'	19.39'	2.23
16.40'	24.21'	1.39



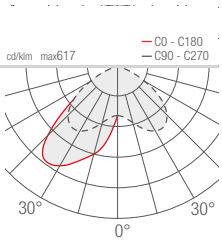
W - 10°x45°

H (ft)	Ø (ft)	Ø (ft)	fc max (3000K)
3.28'	0.62'	2.82'	243.87
6.56'	1.21'	5.61'	60.94
9.84'	1.84'	8.43'	27.13
13.12'	2.43'	11.22'	15.24
16.40'	3.05'	14.04'	9.75



A - Asymmetrical

H (ft)	Ø (ft)	fc max (3000K)
3.28'	10.70'	19.70
6.56'	21.39'	4.92
9.84'	32.09'	2.23
13.12'	42.78'	1.21
16.40'	53.48'	0.74



Job Name/Date:

Fixture Type Designation:

sales@designplan.com
www.designplan.com

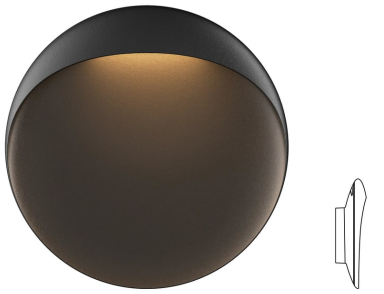
79 Trenton Avenue, Frenchtown NJ 08825
© Copyright 2019 Designplan Lighting, Inc.
Published: April 30, 2025
P: 908-996-7710
F: 908-996-7042

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

FLINDT WALL LAMP

Black texture, 5747930276, Designed by Christian Flindt

Type:
Product:
Project:
Modified:



Technical specifications

Materials
Die cast aluminum and injection molded acrylic.

Finishes
Corten color, natural painted aluminum or white, powder coated.

Mounting
Surface: Mounted directly to finished surface over a recessed 3 inch octagonal junction box (7.9 IN) or 4 inch octagonal junction box (11.8 IN/15.7 IN). For mounting instructions, see download section on the product detail page.

Information
Electrical:
System Wattage: 10 - 30 W
LED Wattage: 9 - 28 W
Delivered lumens: 336 lm - 1,052 lm
Efficacy: 33.6 - 35.1 lm/W

Certifications:
cULus, Wet Location
Protection class IP65
IK class 08 (7.9IN); 09 (11.8IN & 15.7IN)
BUG Rating: B0-U3-G1
Controllability: 0-10V Dimming
Min.-Max. Ambient Temp: -20°C to +40°C
Color Rendering: Ra≥90 For the E-socket product variants, bulbs are not included. LED light source is part of the product.

SPECIFICATION NOTES
a. 7.9 IN only available with DIM PHASE+0-10V.
b. 11.8 IN and 15.7 IN only available with DIM 0-10V.

Variant Options

For particular variant options, please check our online Product Variants Configurator on the product detail page.

FLINDT WALL LAMP

Black texture, 5747930276, Designed by Christian Flindt

VARIANT NO.	LIGHT SOURCE	VOLTAGE/FRQ	DELIVERED LUMEN	FEATURES	CABLE	COLOR, RAL	W / H / L (IN) / W (LB)
5747912621	LED 2700K 10W	120-277V/60HZ	359	Phase dimming	-	NAT PAINT ALU, 162	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912634	LED 3000K 10W	120-277V/60HZ	371	Phase dimming	-	NAT PAINT ALU, 162	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912663	LED 2700K 10W	120-277V/60HZ	326	Phase dimming	-	CORTEN COLOR, 954	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912676	LED 3000K 10W	120-277V/60HZ	336	Phase dimming	-	CORTEN COLOR, 954	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912702	LED 2700K 10W	120-277V/60HZ	494	Phase dimming	-	WHT, 044	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912715	LED 3000K 10W	120-277V/60HZ	509	Phase dimming	-	WHT, 044	7.9 / 2.4 / 7.9 in / 2.2 lb
5747912744	LED 2700K 30W	120-277V/60HZ	495	Dim 0-10v	-	NAT PAINT ALU, 162	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912757	LED 3000K 30W	120-277V/60HZ	510	Dim 0-10v	-	NAT PAINT ALU, 162	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912786	LED 2700K 30W	120-277V/60HZ	449	Dim 0-10v	-	CORTEN COLOR, 954	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912799	LED 3000K 30W	120-277V/60HZ	463	Dim 0-10v	-	CORTEN COLOR, 954	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912825	LED 2700K 30W	120-277V/60HZ	680	Dim 0-10v	-	WHT, 044	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912838	LED 3000K 30W	120-277V/60HZ	701	Dim 0-10v	-	WHT, 044	11.8 / 3.1 / 11.8 in / 8.5 lb
5747912867	LED 2700K 30W	120-277V/60HZ	751	Dim 0-10v	-	NAT PAINT ALU, 162	15.7 / 3.9 / 15.7 in / 14.8 lb
5747912870	LED 3000K 30W	120-277V/60HZ	774	Dim 0-10v	-	NAT PAINT ALU, 162	15.7 / 3.9 / 15.7 in / 14.8 lb
5747912906	LED 2700K 30W	120-277V/60HZ	680	Dim 0-10v	-	CORTEN COLOR, 954	15.7 / 3.9 / 15.7 in / 14.8 lb
5747912919	LED 3000K 30W	120-277V/60HZ	701	Dim 0-10v	-	CORTEN COLOR, 954	15.7 / 3.9 / 15.7 in / 14.8 lb
5747912948	LED 2700K 30W	120-277V/60HZ	1020	Dim 0-10v	-	WHT, 044	15.7 / 3.9 / 15.7 in / 14.8 lb
5747912951	LED 3000K 30W	120-277V/60HZ	1052	Dim 0-10v	-	WHT, 044	15.7 / 3.9 / 15.7 in / 14.8 lb
5747930276	LED 2700K 10W	120-277V/60HZ	270	Phase dimming	-	BLK, 731	7.9 / 2.4 / 7.9 in / 2.2 lb
5747930289	LED 3000K 10W	120-277V/60HZ	279	Phase dimming	-	BLK, 731	7.9 / 2.4 / 7.9 in / 2.2 lb
5747930315	LED 2700K 16W	120-277V/60HZ	418	Dim 0-10v	-	BLK, 731	11.8 / 3.1 / 11.8 in / 8.5 lb
5747930328	LED 3000K 16W	120-277V/60HZ	431	Dim 0-10v	-	BLK, 731	11.8 / 3.1 / 11.8 in / 8.5 lb
5747930357	LED 2700K 20W	120-277V/60HZ	632	Dim 0-10v	-	BLK, 731	15.7 / 3.9 / 15.7 in / 14.8 lb
5747930360	LED 3000K 20W	120-277V/60HZ	652	Dim 0-10v	-	BLK, 731	15.7 / 3.9 / 15.7 in / 14.8 lb

Fixtures | Wall Mount (formerly Denali Integral Sign Star Style A / SN-#-A-DE)

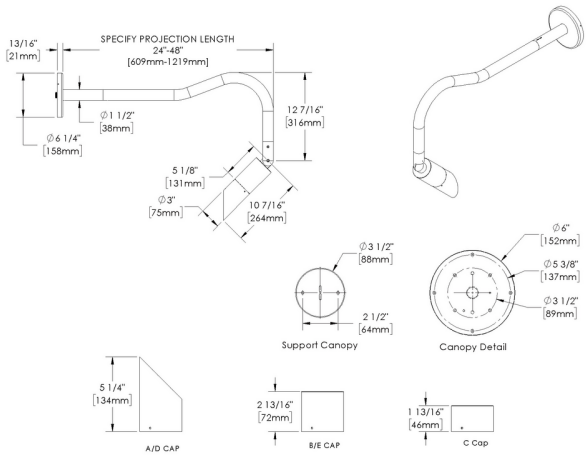
DENALI - Wall Mount - Line Voltage - LED COB - Style A - Single

UPGRADED

IP66

Downloads
Product Images (.zip)
Technical Drawing (.zip)
2D (.dwg)
2D (.dxf)
IES Files (.zip)
BIM - Revit (.zip)
Installation Instructions (.pdf)

Product Variant Examples



Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Mount (formerly Denali Integral Sign Star Style A / SN-#-A-DE)

DENALI - Wall Mount - Line Voltage - LED COB - Style A - Single

Available Logic & Configurations

DE-	WM-	LID-	LCB-	AL-	BC14-	___-	SA-F10-	___-	___-
01	02	03	04	05	06B	06C	06D	06E	06F

01 SERIES
- **DE** - DENALI

02 CATEGORY
- **WM** - Wall Mount

03 DRIVER
- **LID** - Line Voltage

04 LIGHT SOURCE (TYPE)
- **LCB** - LED COB

05 MATERIAL
- **AL** - Aluminum

06B MOUNT
- **BC14** - Canopy BC14

06C STYLE
- **CA** - Cap A - 45° (With Weephole)
- **CB** - Cap B - 90° (With Weephole)
- **CC** - Cap C - Flush Lens
- **CD** - Cap D - 45°
- **CE** - Cap E - 90°

06D VERSION
- **SA-F10** - Style A - Single

06E INPUT VOLTAGE
- **120** - 120V
- **277** - 277V

06F SIZE
- **ST24** - Stem length: 24"
- **ST30** - Stem length: 30"
- **ST36** - Stem length: 36"
- **ST42** - Stem length: 42"
- **ST48** - Stem length: 48"

___-	___-	___-	___-	___-	___-	___-
07	08	09	10A	10B	11	12

07 LIGHT SOURCE
- **x98** - 2700K CRI80 - 13W (829 - 1180 lm)
- **x99** - 3000K CRI80 - 13W (869 - 1237 lm)
- **x100** - 4000K CRI80 - 13W (903 - 1285 lm)
- **x101** - 2700K CRI90 - 13W (574 - 817 lm)
- **x102** - 3000K CRI90 - 13W (631 - 899 lm)
- **x103** - 3500K CRI80 - 13W (855 - 1217 lm)
- **x104** - 3500K CRI90 - 13W (611 - 869 lm)
- **x121** - 4000K CRI90 - 13W (681 - 969 lm)
- **x122** - 2700K CRI80 - 21W (1208 - 1416 lm)
- **x123** - 3000K CRI80 - 21W (1341 - 1571 lm)
- **x124** - 3500K CRI80 - 21W (1136 - 1331 lm)
- **x125** - 4000K CRI80 - 21W (1394 - 1634 lm)
- **x126** - 2700K CRI90 - 21W (818 - 959 lm)
- **x127** - 3000K CRI90 - 21W (1007 - 1180 lm)
- **x128** - 3500K CRI90 - 21W (723 - 847 lm)
- **x129** - 4000K CRI90 - 21W (1089 - 1277 lm)

08 OPTIC
- **SP** - Spot (17°)
- **FL** - Flood (45°)
- **WFL** - Wide Flood (53°)

09 CONTROL
- **ELV** - ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.)
- **INC** - INC Dimming (For use with Incandescent Dimmer. 120V only.)
- **010** - 0-10V (120V,277V)

10A LENS
- **09** - Clear (Standard)
- **12** - Soft Focus
- **13** - Rectilinear

10B SHIELDING
- **00** - Not included (Standard)
- **11** - Honeycomb Baffle

11 WIRING LENGTH
- **WL00** - Standard
- **WL05** - 5 Ft Leads
- **WL25** - 25 Ft Leads

12 FINISH

Standard Finishes
BLP, **BZP**, **WHP**, **SAP**, **BLW**, **BZW**, **WHW**, **VER**

Premium Finishes
CMG, **SMG**, **RMG**, **AMG**, **TXF**, **BCM**, **BGE**, **WCP**, **OCP**, **HUG**, **ABP**, **BPP**, **SDS**, **WIR**, **CAP**, **CRM**, **AQW**, **NBP**

Other - RAL
RAL

Other - Custom Color
CUS

NOTE: Not all configurations may be compatible with one another. Please configure the product for specific 2D, Photometry, Downloads, Spec Sheet and Compatible mountings and power supplies.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Mount (formerly Denali Integral Sign Star Style A / SN-#-A-DE)

DENALI - Wall Mount - Line Voltage - LED COB - Style A - Single

Features

Anti-condensation vent allows moisture to exit the fixture but never enter in

Lens factory adhered to fixture cap providing hermetically sealed optical compartment

Manufactured in the USA with sustainable processes

Aim & Lock knuckle eliminates need for re-aiming & adjustments

Water-tight anti-siphon plug prevents moisture ingress from wireways

Secured with tamper-resistant, stainless steel hardware

Easily replaceable modular components reduce waste and extend fixture life

Slip fit cap & high temp. silicone 'O' ring provides reliable water-tight seal

Solid billet fixture body provides unmatched durability and heat management

360HD knuckle provides 360° horizontal rotation and vertical adjustment

Technical

Driver: Line Voltage

Light Source (Type): LED COB

Material: Aluminum

CCT (K): 2700, 3500, 3000, 4000

CRI: 80, 90

Input Power (W): 13, 21

Delivered Lumens (lm): 574 - 1634

Beam Angle (°): 17, 45, 53

Control: 0-10V (120V,277V), ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.), INC Dimming (For use with Incandescent Dimmer. 120V only.)

Mount: Canopy BC14

Style: Cap A - 45° (With Weephole), Cap B - 90° (With Weephole), Cap C - Flush Lens, Cap D - 45°, Cap E - 90°

Version: Style A - Single

Input Voltage: 120V, 277V

Size: Stem length: 24", Stem length: 30", Stem length: 36", Stem length: 42", Stem length: 48"

Lens: Soft Focus, Clear (Standard), Rectilinear

Shielding: Not included (Standard), Honeycomb Baffle

Wiring Length: Standard, 5 Ft Leads, 25 Ft Leads

Finish: Standard Finishes, Premium Finishes, Other - RAL, Other - Custom Color

Body: Unibody design with enclosed, water-proof wireway, integral heat sink, fully machined from solid billet, anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.

Material Detail: Furnished in copper-free aluminum (6061-T6).

Aiming: 360HD Mounting System can adjust 180° vertically and rotate 360° horizontally. 'O' Ring helps maintain fixture position. Design withstands 73 lb. static load prior to movement for optical alignment with a ½" pipe thread for mounting.

Light Source Detail: COB (Chip on Board) technology and modular design with electrical quick disconnects.

Optics: Interchangeable optics permit changes in the field.

Hardware: Tamper-resistant, stainless steel hardware. Hardware is black oxide treated for additional corrosion resistance.

Sealing: 'O' Ring provides water-tight seal., Anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.

Finish Detail: StarGuard, our 15-stage chromate-free process, cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. It is RoHS compliant.

Warranty: 5-year limited warranty.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Mount (formerly Denali Integral Sign Star Style A / SN-#-A-DE)

DENALI - Wall Mount - Line Voltage - LED COB - Style A - Single

Finishes

STANDARD FINISHES

[BLP]
Satin Black

[BZP]
Satin Bronze

[WHP]
Satin White

[SAP]
Satin Aluminum

[BLW]
Black Wrinkle

[BZW]
Bronze Wrinkle

[WHW]
White Wrinkle

[VER]
Verde

PREMIUM FINISHES

[CMG]
Cascade Mountain Granite

[SMG]
Sierra Mountain Granite

[RMG]
Rocky Mountain Granite

[AMG]
Aleutian Mountain Granite

[TXF]
Textured Forest

[BCM]
Black Chrome

[BGE]
Beige

[WCP]
Weathered Copper

[OCP]
Old Copper

[HUG]
Hunter Green

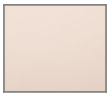
[ABP]
Antique Brass Powder

[BPP]
Brown Patina Powder

[SDS]
Sonoran Desert Sandstone

[WIR]
Weathered Iron

[CAP]
Clear Anodized Powder


[CRM]
Cream

[AQW]
Antique White

[NBP]
Natural Brass Powder

OTHER - RAL

[RAL]
RAL Color

OTHER - CUSTOM COLOR

[CUS]
Custom Color

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Mount (formerly Denali Integral Sign Star Style A / SN-#-A-DE)

DENALI - Wall Mount - Line Voltage - LED COB - Style A - Single

Light Source

Light Source	Optic	Beam Angle	CCT (K)	CRI	R9	Input Power (W)	Delivered Lumens (Lm)	CBCP
x98	SP - Spot	17	2700	80	>15	13	829	6480
x98	FL - Flood	45	2700	80	>15	13	1041	1773
x98	WFL - Wide Flood	53	2700	80	>15	13	1180	1478
x99	SP - Spot	17	3000	80	>15	13	869	6796
x99	FL - Flood	45	3000	80	>15	13	1091	1860
x99	WFL - Wide Flood	53	3000	80	>15	13	1237	1550
x100	SP - Spot	17	4000	80	>15	13	903	7059
x100	FL - Flood	45	4000	80	>15	13	1134	1931
x100	WFL - Wide Flood	53	4000	80	>15	13	1285	1610
x101	SP - Spot	17	2700	90	>50	13	574	4486
x101	FL - Flood	45	2700	90	>50	13	720	1228
x101	WFL - Wide Flood	53	2700	90	>50	13	817	1023
x102	SP - Spot	17	3000	90	>50	13	631	4936
x102	FL - Flood	45	3000	90	>50	13	793	1350
x102	WFL - Wide Flood	53	3000	90	>50	13	899	1126
x103	SP - Spot	17	3500	80	>15	13	855	6685
x103	FL - Flood	45	3500	80	>15	13	1074	1829
x103	WFL - Wide Flood	53	3500	80	>15	13	1217	1525
x104	SP - Spot	17	3500	90	>50	13	611	4775
x104	FL - Flood	45	3500	90	>50	13	767	1307
x104	WFL - Wide Flood	53	3500	90	>50	13	869	1089
x121	SP - Spot	17	4000	90	>50	13	681	5324
x121	FL - Flood	45	4000	90	>50	13	855	1457
x121	WFL - Wide Flood	53	4000	90	>50	13	969	1214
x122	SP - Spot	17	2700	80	>15	21	1208	9040
x122	FL - Flood	45	2700	80	>15	21	1359	2437
x122	WFL - Wide Flood	53	2700	80	>15	21	1416	1876
x123	SP - Spot	17	3000	80	>15	21	1341	10030
x123	FL - Flood	45	3000	80	>15	21	1508	2704
x123	WFL - Wide Flood	53	3000	80	>15	21	1571	2082
x124	SP - Spot	17	3500	80	>15	21	1136	8496
x124	FL - Flood	45	3500	80	>15	21	1277	2290
x124	WFL - Wide Flood	53	3500	80	>15	21	1331	1763
x125	SP - Spot	17	4000	80	>15	21	1394	10431
x125	FL - Flood	45	4000	80	>15	21	1568	2812
x125	WFL - Wide Flood	53	4000	80	>15	21	1634	2165
x126	SP - Spot	17	2700	90	>50	21	818	6120
x126	FL - Flood	45	2700	90	>50	21	920	1650
x126	WFL - Wide Flood	53	2700	90	>50	21	959	1270
x127	SP - Spot	17	3000	90	>50	21	1007	7535
x127	FL - Flood	45	3000	90	>50	21	1133	2031
x127	WFL - Wide Flood	53	3000	90	>50	21	1180	1564
x128	SP - Spot	17	3500	90	>50	21	723	5406
x128	FL - Flood	45	3500	90	>50	21	813	1457
x128	WFL - Wide Flood	53	3500	90	>50	21	847	1225
x129	SP - Spot	17	4000	90	>50	21	1089	8148
x129	FL - Flood	45	4000	90	>50	21	1225	2196
x129	WFL - Wide Flood	53	4000	90	>50	21	1277	1691

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Recessed (formerly Mini Yukon / MYK-I)

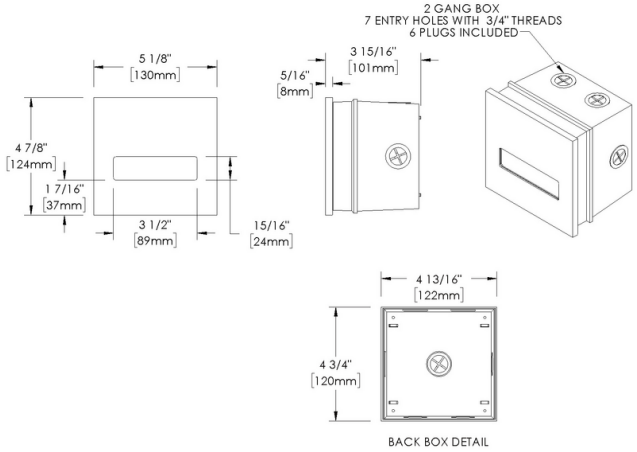
MINI YUKON - Wall Recessed - Line Voltage - LED High-Power - Indirect - Mini

NEW

IP66

Downloads
Product Images (.zip)
Technical Drawing (.zip)
IES Files (.zip)
BIM - Revit (.zip)
Installation Instructions (.pdf)

Product Variant Examples



Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Recessed (formerly Mini Yukon / MYK-I)

MINI YUKON - Wall Recessed - Line Voltage - LED High-Power - Indirect - Mini

Available Logic & Configurations

YK-	WR-	LID-	LHP-	AL-	RH-	JB-	FSD-BCU-	IN-MIN-	___-
01	02	03	04	05	06A	06B	06C	06D	06E

01 SERIES
YK - YUKON
02 CATEGORY
WR - Wall Recessed
03 DRIVER
LID - Line Voltage
04 LIGHT SOURCE (TYPE)
LHP - LED High-Power

05 MATERIAL
AL - Aluminum
06A SHAPE
RH - Rectangular Horizontal
06B MOUNT
JB - Junction Box
06C STYLE
FSD-BCU - Faceplate: Standard - Backplate: Curved
06D VERSION
IN-MIN - Indirect - Mini
06E INPUT VOLTAGE
120 - 120V
277 - 277V

___-	___-	___-	WL00-	___-	___-
07	08	09	11	12	13

07 LIGHT SOURCE
e190 - 2700K CRI80 - 8W - Type II - Wide Throw (322 - 322 lm)
e191 - 3000K CRI80 - 8W - Type II - Forward Throw (372 - 372 lm)
e192 - 3500K CRI80 - 8W - Type II - Forward Throw (364 - 364 lm)
e193 - 4000K CRI80 - 8W - Type II - Forward Throw (396 - 396 lm)
e194 - 2700K CRI90 - 8W - Type II - Forward Throw (320 - 320 lm)
e195 - 3000K CRI90 - 8W - Type II - Forward Throw (301 - 301 lm)
e196 - 2700K CRI80 - 8W - Type II - Forward Throw (429 - 429 lm)
e197 - 3000K CRI80 - 8W - Type II - Forward Throw (496 - 496 lm)
e198 - 3500K CRI80 - 8W - Type II - Forward Throw (485 - 485 lm)
e199 - 4000K CRI80 - 8W - Type II - Forward Throw (527 - 527 lm)
e200 - 2700K CRI90 - 8W - Type II - Forward Throw (426 - 426 lm)
e201 - 3000K CRI90 - 8W - Type II - Forward Throw (401 - 401 lm)
e202 - Amber - 7W - Type II - Wide Throw (73 - 73 lm)
e203 - Amber - 7W - Type II - Forward Throw (97 - 97 lm)
08 OPTIC
T2-F - Type II-Forward
T2-W - Type II-Wide

09 CONTROL
ELV - ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.)
INC - INC Dimming (For use with Incandescent Dimmer. 120V only.)
010 - 0-10V (120V,277V)
11 WIRING LENGTH
WL00 - Standard
12 FINISH
Standard Finishes
BLP, **BZP**, **WHP**, **SAP**, **BLW**, **BZW**, **WHW**, **VER**
Premium Finishes
CMG, **SMG**, **RMG**, **AMG**, **TXF**, **BCM**, **BGE**, **WCP**, **OCP**, **HUG**, **ABP**, **BPP**, **SDS**, **WIR**, **CAP**, **CRM**, **AQW**, **NBP**
Other - RAL
RAL
Other - Custom Color
CUS
13 OPTION
BF - Black wrinkle finish on backplate for glare reduction

NOTE: Not all configurations may be compatible with one another. Please configure the product for specific 2D, Photometry, Downloads, Spec Sheet and Compatible mountings and power supplies.

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Recessed (formerly Mini Yukon / MYK-I)

MINI YUKON - Wall Recessed - Line Voltage - LED High-Power - Indirect - Mini

Features

Secured with hidden tamper-resistant stainless steel hardware

Compact housing designed to fit standard stud wall construction

Manufactured in the USA with sustainable processes

Easily replaceable modular components reduce waste and extend fixture life

Technical

Driver: Line Voltage

Light Source (Type): LED High-Power

Material: Aluminum

CCT (K): Amber, 2700, 3500, 3000, 4000

CRI: 80, 90

Input Power (W): 8, 7

Delivered Lumens (lm): 73 - 527

Control: 0-10V (120V,277V), ELV Dimming (For use with Electronic Low Voltage Dimmer. 120V only.), INC Dimming (For use with Incandescent Dimmer. 120V only.)

Shape: Rectangular Horizontal

Mount: Junction Box

Style: Faceplate: Standard - Backplate: Curved

Version: Indirect - Mini

Input Voltage: 120V, 277V

Wiring Length: Standard

Finish: Standard Finishes, Premium Finishes, Other - RAL, Other - Custom Color

Option: Black wrinkle finish on backplate for glare reduction

Material Detail: Furnished in copper-free aluminum (6061-T6).

Light Source Detail: High power LEDs modular design with electrical disconnects.

Hardware: Tamper-resistant, stainless steel hardware.

Sealing: Anti-condensation and corrosion vent equalizes fixture pressure and eliminates potential for damage to internal components.

Finish Detail: StarGuard, our 15-stage chromate-free process, cleans and conversion coats aluminum components prior to application of Class 'A' TGIC polyester powder coating. It is RoHS compliant.

Warranty: 5-year limited warranty.

AMERICAN MADE + EMPLOYEE OWNED | 40429 Brickyard Drive, Madera, CA 93636 | +1 (559) 438-5800 | info@bklighting.com | bklighting.com

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Recessed (formerly Mini Yukon / MYK-I)

MINI YUKON - Wall Recessed - Line Voltage - LED High-Power - Indirect - Mini

Finishes

STANDARD FINISHES

[BLP]
Satin Black

[BZP]
Satin Bronze

[WHP]
Satin White

[SAP]
Satin Aluminum

[BLW]
Black Wrinkle

[BZW]
Bronze Wrinkle

[WHW]
White Wrinkle

[VER]
Verde

PREMIUM FINISHES

[CMG]
Cascade Mountain Granite

[SMG]
Sierra Mountain Granite

[RMG]
Rocky Mountain Granite

[AMG]
Aleutian Mountain Granite

[TXF]
Textured Forest

[BCM]
Black Chrome

[BGE]
Beige

[WCP]
Weathered Copper

[OCP]
Old Copper

[HUG]
Hunter Green

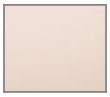
[ABP]
Antique Brass Powder

[BPP]
Brown Patina Powder

[SDS]
Sonoran Desert Sandstone

[WIR]
Weathered Iron

[CAP]
Clear Anodized Powder


[CRM]
Cream

[AQW]
Antique White

[NBP]
Natural Brass Powder

OTHER - RAL

[RAL]
RAL Color

OTHER - CUSTOM COLOR

[CUS]
Custom Color

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

Fixtures | Wall Recessed (formerly Mini Yukon / MYK-I)

MINI YUKON - Wall Recessed - Line Voltage - LED High-Power - Indirect - Mini

Light Source

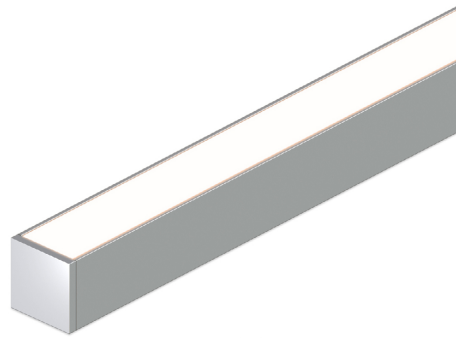
Light Source	Optic	Beam Angle	CCT (K)	CRI	R9	Input Power (W)	Delivered Lumens (Lm)	CBCP
e190	T2-W - Type II-Wide	360h x 270v	2700	80	>15	8	322	
e191	T2-W - Type II-Wide	360h x 270v	3000	80	>15	8	372	
e192	T2-W - Type II-Wide	360h x 270v	3500	80	>15	8	364	
e193	T2-W - Type II-Wide	360h x 270v	4000	80	>15	8	396	
e194	T2-W - Type II-Wide	360h x 270v	2700	90	>50	8	320	
e195	T2-W - Type II-Wide	360h x 270v	3000	90	>50	8	301	
e196	T2-F - Type II-Forward	360h x 270v	2700	80	>15	8	429	
e197	T2-F - Type II-Forward	360h x 270v	3000	80	>15	8	496	
e198	T2-F - Type II-Forward	360h x 270v	3500	80	>15	8	485	
e199	T2-F - Type II-Forward	360h x 270v	4000	80	>15	8	527	
e200	T2-F - Type II-Forward	360h x 270v	2700	90	>50	8	426	
e201	T2-F - Type II-Forward	360h x 270v	3000	90	>50	8	401	
e202	T2-W - Type II-Wide	360h x 270v	Amber			7	73	
e203	T2-F - Type II-Forward	360h x 270v	Amber			7	97	

Copyright © B-K Lighting, Inc. This document contains proprietary information of B-K Lighting, inc. and its receipt or possession does not convey any rights to reproduce, disclose its contents, or to manufacture, use or sell anything it may describe.

Technical information is subject to change at the discretion of B-K Lighting Inc. For the most current technical data, please refer to bklighting.com

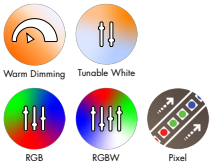
Bosca - Dynamic Color | Linear Illumination System

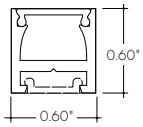
luminii



Features

- 24VDC Class 2 fixtures made to order up to 144". Fixtures can be linked up to 32' depending on output
- Suitable for undercabinet, millwork, direct view, grazer, vanity, architectural reveals, accent lighting and surface mount applications
- Approved for closet/storage space installation per NEC 410.16(A) (3) and 410.16(C)(5) on outputs 5.7 W/ft or less
- Class two listed for damp locations
- Dot free even illumination with frosted and raised lens
- Average Life (L70): 50,000hrs
- 7 year warranty
- Proprietary strong bond solder method handles up to 50 lbs of pull force on wire leads and connectors.
- Tunable White allows individual control of CCT and output, can be paired with Vintage Dim power supply for warm dim effect
- Warm Dim follows the incandescent dimming curve and is compatible with MLV, ELV, and Incandescent dimmers.
- RGB offers balanced output across the color gamut and a true white with RGBW
- Smart Pixel allows for infinite color combinations with cascading and chasing effects





Finish Options (see page 3 for additional information)

Base	Silver Anodized				
Powder Coat	Black	Bronze	White		
Premium	Matte Black	Warm Nickel	Aged Brass	Polished Gold	Chrome

Declare. CE RoHS MADE IN U.S.A. Single Bin +/-30 CCT c UL us LISTED TITLE 24 JA8 COMPLIANT DIM

Technical Information

TYPE	Warm Dim	Tunable White		RGBW		RGB		Pixel	
OUTPUT OPTIONS	**WD68SO (19K-27K)**	**TW68SO (27K-65K)**	**TW68HO (27K-65K)**	**RGBW36SO**	**RGBW36HO**	**RGB42SO**	**RGB42HO**	**RGBWX18SO**	**RGBX18SO**
Lumens Output (all channels full on) (with a Satin Ice Lens)	230 lm/ft	279 lm/ft	335 lm/ft	140 lm/ft	232 lm/ft	139 lm/ft	204 lm/ft	169 lm/ft	112 lm/ft
Average Power Consumption (for a 4' section)	5.4 W/ft	4.6 W/ft	5.6 W/ft	4.0 W/ft	7.6 W/ft	4.5 W/ft	8.3 W/ft	5.7 W/ft	4.5 W/ft
Efficacy	43 lm/W	61 lm/W	60 lm/W	35 lm/W	31 lm/W	31 lm/W	25 lm/W	30 lm/W	25 lm/W
Max Run Length (in series)	20 ft	32 ft	32 ft	26 ft	13 ft	28 ft	13 ft	20 ft	30 ft
Ambient Operating Temperature Range*	-5°F – 125°F (-20°C – 50°C)	-5°F – 125°F (-20°C – 50°C)		-5°F – 125°F (-20°C – 50°C)	-5°F – 105°F (-20°C – 40°C)	-5°F – 125°F (-20°C – 50°C)	-5°F – 95°F (-20°C – 35°C)	-5°F – 125°F (-20°C – 50°C)	
Control/Dimming Protocol	MLV, ELV, Inc.	0–10V, DMX		DMX				SPI Protocol UCS 2904	SPI Protocol UCS 2903

*Ambient Operating Temperature Range to maintain L70 of 50k+ hours in normal mounting conditions for the fixture. Exceeding Ambient Operating Temperature Range may result in decreased life/output. Consult Technical Support for specific inquiries.

Warm Dim (WD68)

CCT	TM-30 CRI	R_f	R_g	R_9
1900K	96	92	96	94
2700K	96	93	106	95

Tunable White (TW68)

CCT	TM-30 CRI	R_f	R_g	R_9
1900K	97	94	98	95
2700K	98	96	101	91
2900K	98	96	102	94
3500K	97	94	105	97
4400K	97	91	101	97
6500K	92	88	97	64

RGBW (3000K)

Tape	TM-30 CRI	R_f	R_g	R_9
RGBW36	95	93	106	84
RGBWX18	93	91	99	64

TW68

CCT	Multiplier
27K - 65K	1.00
19K - 35K	0.78

Dominant Wavelength

Color	RGB42/ RGBW36	RGBX18/ RGBWX18
Red	620nm	621nm
Green	525nm	519nm
Blue	467nm	465nm

Ordering Code

MODEL	LENGTH[1]	OUTPUT[2]	CCT	LENS	MOUNTING	FINISH[3]	FEED POSITION LEFT[4]	FEED POSITION RIGHT[4]
BOS - Bosca	12"–144" 3" increments	WD68SO - Standard	19K27K - 1900K - 2700K	F - Frosted G - Graze R - Raised SI - Satin Ice	FC - Fixed Clip SC - Screw-in MAG - Magnetic A - Adjustable Hinge Mounting	*BASE* SA - Silver Anodized	*WIRE LEADS (72")* LWE - Wire End Feed LWB - Wire Back Feed LWSA - Wire Side A Feed LWSB - Wire Side B Feed LNPF - No Power Feed	*WIRE LEADS (72")* RWE - Wire End Feed RWB - Wire Back Feed RWSA - Wire Side A Feed RWSB - Wire Side B Feed RNPF - No Power Feed
	12"–144" 3" increments	TW68SO - Standard TW68HO - High	19K35K - 1900K - 3500K 27K65K - 2700K - 6500K			*POWDER COAT* BK - Black BZ - Bronze WH - White		
	12"–144" 2" increments	RGBW36SO - Standard RGBW36HO - High RGB42SO - Standard RGB42HO - High	CLR - Color			*PREMIUM* MBK - Matte Black WN - Warm Nickel AB - Aged Brass PG - Polished Gold[5] CH - Chrome[5]	*QUICK CONNECTS (4")* LFE - Female Q/C, End Feed LFB - Female Q/C, Back Feed LFSA - Female Q/C, Side A Feed LFSB - Female Q/C, Side B Feed LNPF - No Power Feed	*QUICK CONNECTS (4")* RFE - Female Q/C, End Feed RFB - Female Q/C, Back Feed RFSA - Female Q/C, Side A Feed RFSB - Female Q/C, Side B Feed RNPF - No Power Feed
	12"–144" 4" increments	RGBWX18SO - Standard RGBX18SO - Standard	PXSPI - Smart Pixel Control					

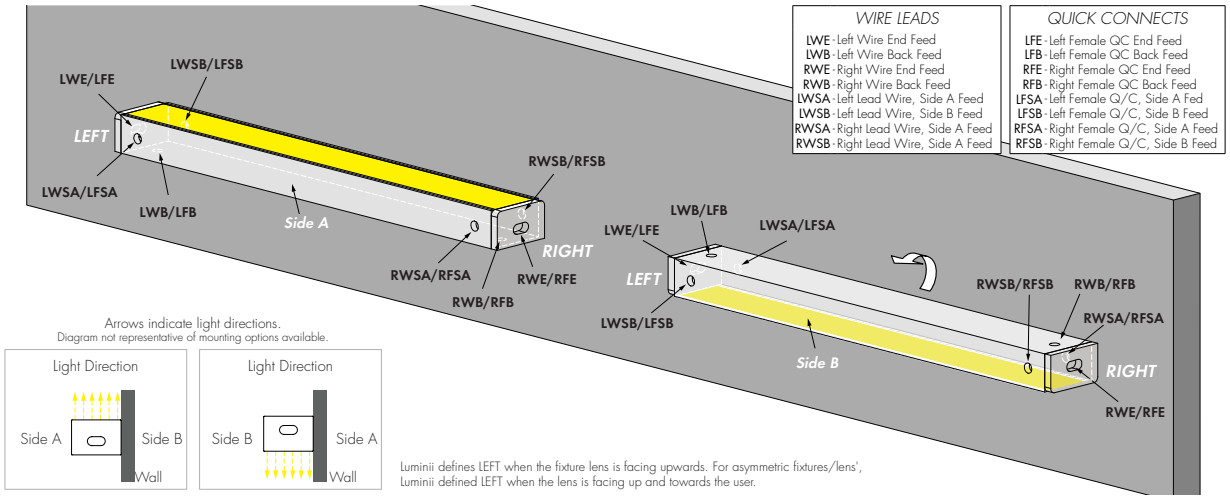
1 - Custom lengths and increments are available, please consult Inside Sales with specific request.
2 - Warm Dim and Tunable White options can be used to comply with Title 24 JA8 at max brightness depending on lens selection, see multiplier charts to calculate specific efficacy.
3 - Non Base finishes may have extended lead times. Custom RALs are available, please consult Inside Sales with specific request.
4 - LNPF - RNPF is not a valid configuration option
5 - Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".

Bosca - Dynamic Color | Linear Illumination System

luminii

Powerfeeds and Connectors

Power Feed Position Options and Orientation



WIRE LEADS

LWE - Left Wire End Feed
LWB - Left Wire Back Feed
RWE - Right Wire End Feed
RWB - Right Wire Back Feed
LWSA - Left Lead Wire, Side A Feed
LWSB - Left Lead Wire, Side B Feed
RWSA - Right Lead Wire, Side A Feed
RWSB - Right Lead Wire, Side A Feed

QUICK CONNECTS

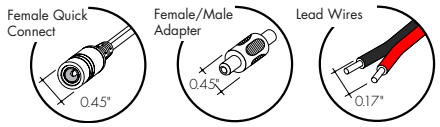
LFE - Left Female QC End Feed
LFB - Left Female QC Back Feed
RFE - Right Female QC End Feed
RFB - Right Female QC Back Feed
LFSA - Left Female Q/C, Side A Feed
LFSB - Left Female Q/C, Side B Feed
RFSA - Right Female Q/C, Side A Feed
RFSB - Right Female Q/C, Side B Feed

Arrows indicate light directions.
Diagram not representative of mounting options available.

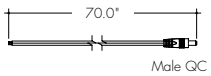
Luminii defines LEFT when the fixture lens is facing upwards. For asymmetric fixtures/lens', Luminii defined LEFT when the lens is facing up and towards the user.

Linking and Extension Cable Options

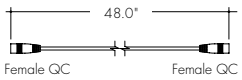
For use with Warm Dim (WD68):



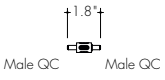
LMC-70
Male quick-connect long, 2 pin, 70"



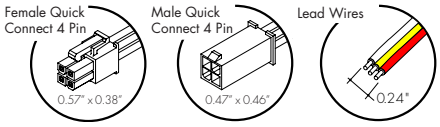
EC-48
Female/Female Extension Cable, 2 pin, 48"



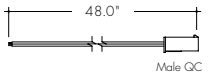
FMA
Female to male adapter



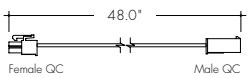
For use with Tunable White (TW68), RGB Pixel (RGBX18) and RGBW Pixel (RGBWX18):



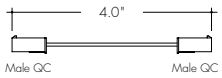
MOLEX-CON-LEAD-M-3-48
Molex Male Connector Cable, 3 pin, 48"



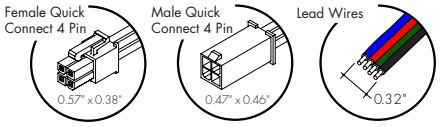
MOLEX-JC-F-M-3-48
Female/Male Jumper Cable, 3 pin, 48"



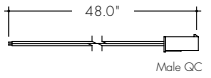
MOLEX-JC-M-M-3-4
Female to Male Adapter, 3 pin, 4"



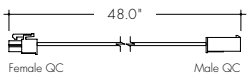
For use with RGB (RGB42):



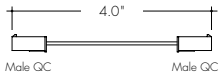
MOLEX-CON-LEAD-M-4-48
Molex Male Connector Cable, 4 pin, 48"



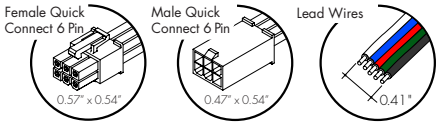
MOLEX-JC-F-M-4-48
Female/Male Jumper Cable, 4 pin, 48"



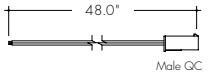
MOLEX-JC-M-M-4-4
Female to Male Adapter, 4 pin, 4"



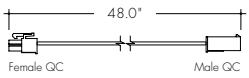
For use with RGBW (RGBW36):



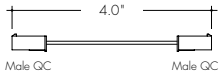
MOLEX-CON-LEAD-M-5-48
Molex Male Connector Cable, 5 pin, 48"



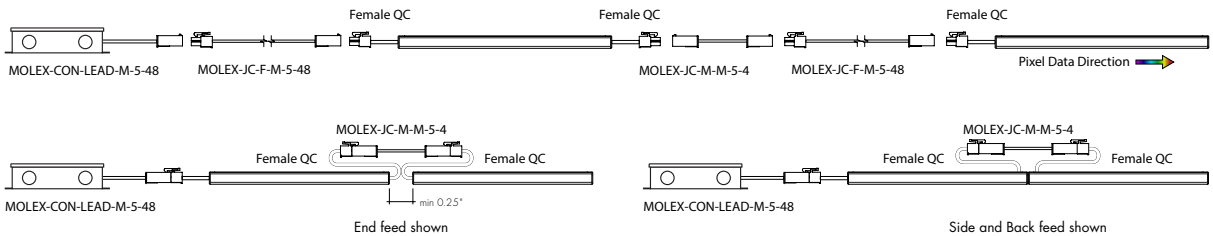
MOLEX-JC-F-M-5-48
Female/Male Jumper Cable, 5 pin, 48"



MOLEX-JC-M-M-5-4
Female to Male Adapter, 5 pin, 4"



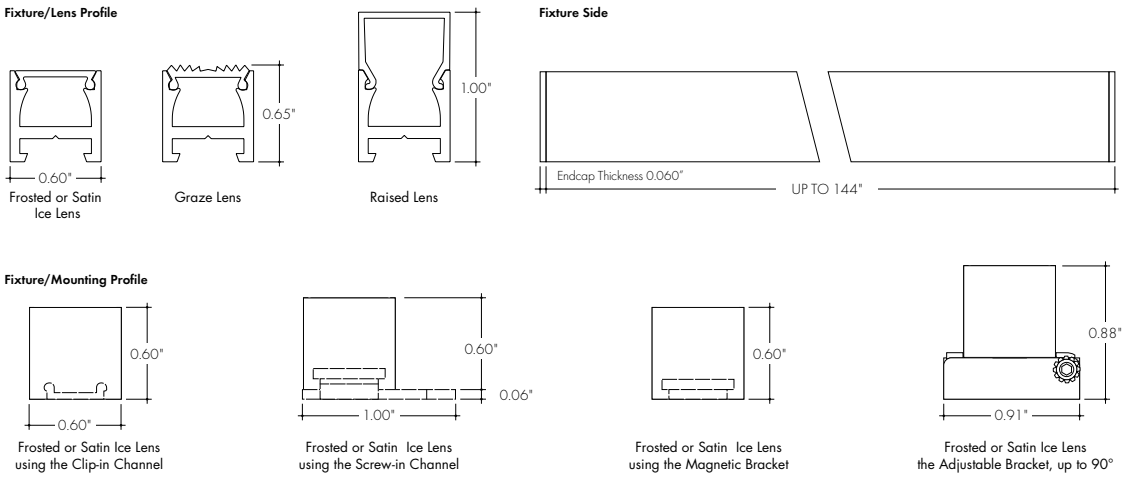
Sample Layout



Bosca - Dynamic Color | Linear Illumination System

luminii

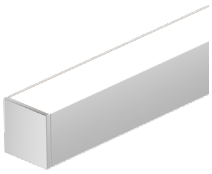
Product Dimensions



Finish Options

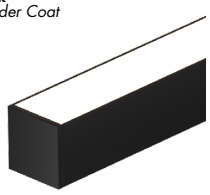
- Finish options are available in a wide variety, allowing for complete customization of style and aesthetic.
- Non Base finishes may have extended lead times and price adder.
- Polished Gold finishes and Chrome finishes have a maximum fixture length of 96".
- Custom RALs are available, please consult Inside Sales with specific request.

Silver Anodized
Base



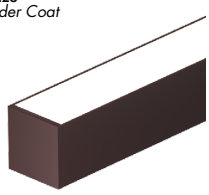
Silver Anodized is a soft silver with a clear finish.

Black
Powder Coat



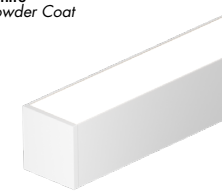
Black is a true deep black with a glossy finish.

Bronze
Powder Coat



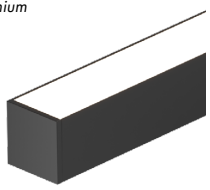
Bronze is a rich, dark brown with a satin finish.

White
Powder Coat



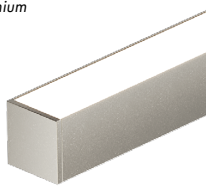
White is a polar bright white and field paintable.

Matte Black
Premium



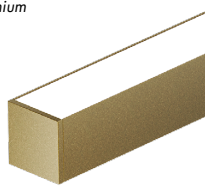
Matte Black is a dark, pitch-black with a soft flat finish.

Warm Nickel
Premium



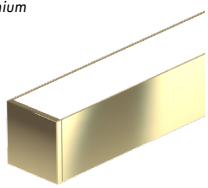
Warm Nickel is a soft, silvery smoke with warm tones and a satin finish.

Aged Brass
Premium



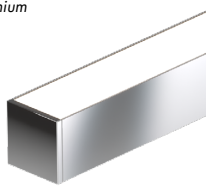
Aged Brass is a deep brown shade with slightly golden undertones.

Polished Gold
Premium



Polished Gold is bright and radiant for a brilliant finish.

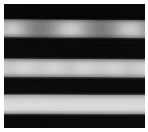
Chrome
Premium



Chrome is a highly reflective silver polish.

Light Transmission and Dotting

	Lens/Accessory															
Output Options	**Graze**				**Satin Ice**				**Raised**				**Frosted**			
Dimming Level	100%	50%	10%	1%	100%	50%	10%	1%	100%	50%	10%	1%	100%	50%	10%	1%
WD68SO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	ND	ND	CD	CD
TW68SO (All On)	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	ND	ND	ND	ND
TW68SO (1-Channel)	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	SD	SD	CD	CD
TW68HO (All On)	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	ND	ND	ND	ND
TW68HO (1-Channel)	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	SD	SD	CD	CD
RGBW36SO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	CD	CD	CD	CD
RGBW36HO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	CD	CD	CD	CD
RGB42SO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	ND	ND	ND	ND
RGB42HO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	ND	ND	ND	ND
RGBWX18SO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	CD	CD	CD	CD
RGBX18SO	CD	CD	CD	CD	CD	CD	CD	CD	ND	ND	ND	ND	CD	CD	CD	CD
Transmission Percentage	114%				100%				91%				78%			



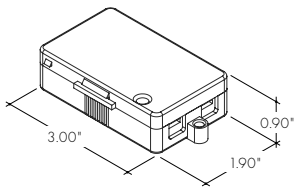
CD - Clear Dotting

SD - Slight Dotting

ND - No Dotting

Accessory Options

LVSP-4T-BK
Low Voltage, 4 Terminal Splice Box, Black



Bosca - Dynamic Color | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
*For Back Feed add 4/16" (1/4") to Actual Length. Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

Warm Dim (WD68)

Nominal Length (in)	End and Side Feed Actual Length*	Watts SO	Nominal Length (in)	End and Side Feed Actual Length*	Watts SO	Nominal Length (in)	End and Side Feed Actual Length*	Watts SO	Nominal Length (in)	End and Side Feed Actual Length*	Watts SO
12	10 7/16	4.6	**47**	–	–	**82**	81 13/16	34.8	**117**	116 4/16	47.5
13	12 15/16	5.8	**48**	47 6/16	21.0	**83**	–	–	**118**	–	–
14	–	–	**49**	–	–	**84**	–	–	**119**	118 12/16	48.3
15	–	–	**50**	49 13/16	22.0	**85**	84 5/16	35.7	**120**	–	–
16	15 6/16	6.9	**51**	–	–	**86**	–	–	**121**	–	–
17	–	–	**52**	–	–	**87**	86 12/16	36.7	**122**	121 3/16	49.1
18	17 14/16	8.0	**53**	52 5/16	23.0	**88**	–	–	**123**	–	–
19	–	–	**54**	–	–	**89**	–	–	**124**	123 11/16	49.9
20	–	–	**55**	54 12/16	24.1	**90**	89 3/16	37.6	**125**	–	–
21	20 5/16	9.1	**56**	–	–	**91**	–	–	**126**	–	–
22	–	–	**57**	–	–	**92**	91 11/16	38.6	**127**	126 2/16	50.6
23	22 12/16	10.2	**58**	57 4/16	25.1	**93**	–	–	**128**	–	–
24	–	–	**59**	–	–	**94**	–	–	**129**	128 9/16	51.5
25	–	–	**60**	59 11/16	26.1	**95**	94 2/16	39.6	**130**	–	–
26	25 4/16	11.3	**61**	–	–	**96**	–	–	**131**	–	–
27	–	–	**62**	–	–	**97**	96 9/16	40.5	**132**	131 1/16	52.5
28	27 11/16	12.3	**63**	62 2/16	27.1	**98**	–	–	**133**	–	–
29	–	–	**64**	–	–	**99**	–	–	**134**	133 8/16	53.3
30	–	–	**65**	64 10/16	28.0	**100**	99 1/16	41.4	**135**	–	–
31	30 2/16	13.4	**66**	–	–	**101**	–	–	**136**	135 15/16	54.2
32	–	–	**67**	–	–	**102**	101 8/16	42.2	**137**	–	–
33	32 10/16	14.5	**68**	67 1/16	29.0	**103**	–	–	**138**	–	–
34	–	–	**69**	–	–	**104**	104	43.0	**139**	138 7/16	54.8
35	–	–	**70**	69 8/16	30.0	**105**	–	–	**140**	–	–
36	35 1/16	15.6	**71**	–	–	**106**	–	–	**141**	140 14/16	55.4
37	–	–	**72**	72	30.9	**107**	106 7/16	43.9	**142**	–	–
38	37 9/16	16.7	**73**	–	–	**108**	–	–	**143**	–	–
39	–	–	**74**	–	–	**109**	108 14/16	44.8	**144**	143 5/16	56.2
40	40	17.8	**75**	74 7/16	32.0	**110**	–	–			
41	–	–	**76**	–	–	**111**	–	–			
42	–	–	**77**	76 14/16	33.1	**112**	111 6/16	45.8			
43	42 7/16	18.9	**78**	–	–	**113**	–	–			
44	–	–	**79**	–	–	**114**	113 13/16	46.6			
45	44 15/16	20.0	**80**	79 6/16	33.9	**115**	–	–			
46	–	–	**81**	–	–	**116**	–	–			

Bosca - Dynamic Color | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

Tunable White (TW68)

Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts	
		SO	HO			SO	HO			SO	HO			SO	HO
12	10 11/16	4.6	5.9	**47**	–	–	–	**82**	–	–	–	**117**	116 8/16	41.5	50.8
13	–	–	–	**48**	47 10/16	18.3	23.1	**83**	82 1/16	29.9	37.3	**118**	–	–	–
14	13 3/16	4.6	5.9	**49**	–	–	–	**84**	–	–	–	**119**	119	41.9	51.5
15	–	–	–	**50**	–	–	–	**85**	84 9/16	30.5	38.5	**120**	–	–	–
16	15 10/16	5.9	7.4	**51**	50 1/16	19.0	24.0	**86**	–	–	–	**121**	–	–	–
17	–	–	–	**52**	–	–	–	**87**	87	31.4	39.5	**122**	121 7/16	42.7	52.5
18	–	–	–	**53**	52 9/16	20.0	25.4	**88**	–	–	–	**123**	–	–	–
19	18 2/16	6.7	8.4	**54**	–	–	–	**89**	–	–	–	**124**	123 14/16	43.3	53.0
20	–	–	–	**55**	–	–	–	**90**	89 7/16	32.7	40.9	**125**	–	–	–
21	20 9/16	7.9	9.8	**56**	55	20.7	26.3	**91**	–	–	–	**126**	–	–	–
22	–	–	–	**57**	–	–	–	**92**	91 15/16	33.6	41.8	**127**	126 6/16	44.0	53.5
23	–	–	–	**58**	57 8/16	21.8	27.7	**93**	–	–	–	**128**	–	–	–
24	23	8.7	10.8	**59**	–	–	–	**94**	–	–	–	**129**	128 13/16	45.0	54.3
25	–	–	–	**60**	59 15/16	22.5	28.6	**95**	94 6/16	34.9	43.3	**130**	–	–	–
26	25 8/16	9.8	12.3	**61**	–	–	–	**96**	–	–	–	**131**	–	–	–
27	–	–	–	**62**	–	–	–	**97**	96 13/16	35.8	44.2	**132**	131 5/16	45.6	54.8
28	27 15/16	10.6	13.3	**63**	62 6/16	23.7	29.8	**98**	–	–	–	**133**	–	–	–
29	–	–	–	**64**	–	–	–	**99**	–	–	–	**134**	133 12/16	46.5	55.7
30	–	–	–	**65**	64 14/16	24.6	30.6	**100**	99 5/16	36.4	44.8	**135**	–	–	–
31	30 6/16	11.8	14.8	**66**	–	–	–	**101**	–	–	–	**136**	–	–	–
32	–	–	–	**67**	–	–	–	**102**	101 12/16	37.4	45.7	**137**	136 3/16	46.8	56.3
33	32 14/16	12.6	15.8	**68**	67 5/16	25.4	31.3	**103**	–	–	–	**138**	–	–	–
34	–	–	–	**69**	–	–	–	**104**	–	–	–	**139**	138 11/16	47.3	57.4
35	–	–	–	**70**	69 12/16	26.7	32.4	**105**	104 4/16	38.0	46.3	**140**	–	–	–
36	35 5/16	13.4	16.8	**71**	–	–	–	**106**	–	–	–	**141**	–	–	–
37	–	–	–	**72**	–	–	–	**107**	106 11/16	39.0	47.2	**142**	141 2/16	47.6	58.1
38	37 13/16	14.5	18.3	**73**	72 4/16	27.6	33.1	**108**	–	–	–	**143**	–	–	–
39	–	–	–	**74**	–	–	–	**109**	–	–	–	**144**	143 9/16	48.1	59.1
40	–	–	–	**75**	74 11/16	28.4	34.3	**110**	109 2/16	39.7	47.8				
41	40 4/16	15.3	19.3	**76**	–	–	–	**111**	–	–	–				
42	–	–	–	**77**	–	–	–	**112**	111 10/16	40.3	48.9				
43	42 11/16	16.4	20.7	**78**	77 2/16	28.9	35.2	**113**	–	–	–				
44	–	–	–	**79**	–	–	–	**114**	–	–	–				
45	–	–	–	**80**	79 10/16	29.5	36.4	**115**	114 1/16	40.8	49.7				
46	45 3/16	17.2	21.7	**81**	–	–	–	**116**	–	–	–				

Note: cutsheets are for reference purposes only. Refer to fixture schedule for complete and current catalog numbers and notes.

Bosca - Dynamic Color | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

RGB/RGBW (RGB42/RGBW36)

Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts				Nominal Length (in)	Actual Length	Watts			
		RGBW36		RGB42				RGBW36		RGB42				RGBW36		RGB42				RGBW36		RGB42	
		SO	HO	SO	HO			SO	HO	SO	HO			SO	HO	SO	HO			SO	HO	SO	HO
12	10 11/16	4.0	7.3	4.4	8.6	**47**	46 2/16	14.4	27.5	16.8	31.3	**82**	81 9/16	26.1	49.6	29.4	53.8	**117**	–	–	–	–	–
13	12 11/16	4.0	7.3	4.4	8.6	**48**	–	–	–	–	–	**83**	–	–	–	–	–	**118**	117	37.1	66.2	41.3	73.1
14	–	–	–	–	–	**49**	48 2/16	15.1	28.8	17.5	32.7	**84**	83 9/16	26.8	50.8	30.0	55.0	**119**	119	37.8	67.5	41.9	74.0
15	14 10/16	4.5	8.5	5.2	10.0	**50**	–	–	–	–	–	**85**	–	–	–	–	–	**120**	–	–	–	–	–
16	–	–	–	–	–	**51**	50 1/16	15.8	30.0	18.3	34.0	**86**	85 8/16	27.4	51.9	30.7	56.2	**121**	120 15/16	38.6	68.7	42.6	74.9
17	16 10/16	5.1	9.7	5.9	11.3	**52**	–	–	–	–	–	**87**	–	–	–	–	–	**122**	–	–	–	–	–
18	–	–	–	–	–	**53**	52 1/16	16.4	31.2	18.9	35.1	**88**	87 8/16	28.0	52.9	31.4	57.3	**123**	122 15/16	39.2	69.7	43.2	75.3
19	18 9/16	5.6	10.9	6.7	12.6	**54**	–	–	–	–	–	**89**	–	–	–	–	–	**124**	–	–	–	–	–
20	–	–	–	–	–	**55**	54	17.0	32.4	19.6	36.3	**90**	89 7/16	28.6	53.8	32.2	58.4	**125**	124 14/16	39.7	70.7	43.8	75.7
21	20 9/16	6.2	12.1	7.4	13.9	**56**	56	17.6	33.5	20.3	37.5	**91**	–	–	–	–	–	**126**	–	–	–	–	–
22	–	–	–	–	–	**57**	–	–	–	–	–	**92**	91 7/16	29.2	54.8	32.9	59.5	**127**	126 14/16	40.3	71.7	44.4	76.1
23	22 8/16	6.7	13.3	8.2	15.2	**58**	57 15/16	18.2	34.7	21.0	38.7	**93**	–	–	–	–	–	**128**	–	–	–	–	–
24	–	–	–	–	–	**59**	–	–	–	–	–	**94**	93 6/16	29.9	55.8	33.6	60.5	**129**	128 13/16	40.8	72.8	45.0	76.6
25	24 8/16	7.3	14.5	8.9	16.6	**60**	59 15/16	18.9	35.9	21.7	39.8	**95**	–	–	–	–	–	**130**	–	–	–	–	–
26	–	–	–	–	–	**61**	–	–	–	–	–	**96**	95 6/16	30.2	56.3	34.0	61.1	**131**	130 13/16	41.4	73.8	45.6	77.0
27	26 7/16	8.0	15.7	9.6	18.0	**62**	61 14/16	19.5	37.1	22.4	41.1	**97**	–	–	–	–	–	**132**	–	–	–	–	–
28	–	–	–	–	–	**63**	–	–	–	–	–	**98**	97 5/16	30.8	57.2	34.7	62.2	**133**	132 12/16	41.9	74.8	46.3	77.4
29	28 7/16	8.6	17.0	10.4	19.4	**64**	63 14/16	20.2	38.4	23.2	42.4	**99**	–	–	–	–	–	**134**	–	–	–	–	–
30	–	–	–	–	–	**65**	–	–	–	–	–	**100**	99 5/16	31.3	57.9	35.4	63.4	**135**	134 12/16	42.5	75.5	46.8	78.1
31	30 6/16	9.3	18.2	11.1	20.7	**66**	65 13/16	20.8	39.7	24.0	43.7	**101**	–	–	–	–	–	**136**	–	–	–	–	–
32	–	–	–	–	–	**67**	–	–	–	–	–	**102**	101 4/16	31.9	58.6	36.0	64.7	**137**	136 11/16	43.1	76.3	47.3	78.8
33	32 6/16	9.7	18.8	11.5	21.4	**68**	67 13/16	21.5	41.0	24.7	45.1	**103**	–	–	–	–	–	**138**	–	–	–	–	–
34	–	–	–	–	–	**69**	–	–	–	–	–	**104**	103 4/16	32.4	59.3	36.7	65.9	**139**	138 11/16	43.7	77.0	47.8	79.6
35	34 5/16	10.3	20.0	12.2	22.8	**70**	69 12/16	22.1	42.3	25.5	46.4	**105**	–	–	–	–	–	**140**	–	–	–	–	–
36	–	–	–	–	–	**71**	–	–	–	–	–	**106**	105 3/16	32.9	60.0	37.3	67.2	**141**	140 10/16	44.3	77.7	48.3	80.3
37	36 5/16	11.0	21.3	13.0	24.2	**72**	71 12/16	22.8	43.5	26.3	47.8	**107**	–	–	–	–	–	**142**	–	–	–	–	–
38	–	–	–	–	–	**73**	–	–	–	–	–	**108**	107 3/16	33.5	60.7	38.0	68.4	**143**	142 10/16	44.9	78.5	48.8	81.0
39	38 4/16	11.7	22.5	13.7	25.6	**74**	73 11/16	23.5	44.8	26.9	49.0	**109**	–	–	–	–	–	**144**	–	–	–	–	–
40	–	–	–	–	–	**75**	–	–	–	–	–	**110**	109 2/16	34.0	61.4	38.6	69.7						
41	40 4/16	12.4	23.8	14.5	27.0	**76**	75 11/16	24.1	46.0	27.6	50.2	**111**	–	–	–	–	–						
42	–	–	–	–	–	**77**	–	–	–	–	–	**112**	111 2/16	34.8	62.6	39.3	70.5						
43	42 3/16	13.1	25.0	15.2	28.5	**78**	77 10/16	24.8	47.2	28.2	51.4	**113**	–	–	–	–	–						
44	–	–	–	–	–	**79**	–	–	–	–	–	**114**	113 1/16	35.6	63.8	39.9	71.4						
45	44 3/16	13.8	26.3	16.0	29.9	**80**	79 10/16	25.4	48.4	28.8	52.6	**115**	–	–	–	–	–						
46	–	–	–	–	–	**81**	–	–	–	–	–	**116**	115 1/16	36.3	65.0	40.6	72.3						

Bosca - Dynamic Color | Linear Illumination System

luminii

Power Consumption

Tested at Full Power with PS-UNI Series power supplies.
Standard Nominal Lengths offered provide minimal shadowing. For alternate lengths, please consult Inside Sales with specific request.

PIXEL (RGBX18/RGBWX18)

Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts		Nominal Length (in)	Actual Length	Watts	
		RGBX18 SO	RGBWX18 SO			RGBX18 SO	RGBWX18 SO			RGBX18 SO	RGBWX18 SO			RGBX18 SO	RGBWX18 SO
12	8 12/16	4.6	5.7	**47**	–	–	–	**82**	–	–	–	**117**	–	–	–
13	12 11/16	4.6	5.7	**48**	–	–	–	**83**	–	–	–	**118**	–	–	–
14	–	–	–	**49**	48 2/16	17.4	21.9	**84**	83 9/16	29.8	37.1	**119**	119	40.9	51.2
15	–	–	–	**50**	–	–	–	**85**	–	–	–	**120**	–	–	–
16	–	–	–	**51**	–	–	–	**86**	–	–	–	**121**	–	–	–
17	16 10/16	6.1	7.5	**52**	–	–	–	**87**	–	–	–	**122**	–	–	–
18	–	–	–	**53**	52 1/16	18.9	23.7	**88**	87 8/16	31.1	38.7	**123**	122 15/16	42.1	52.8
19	–	–	–	**54**	–	–	–	**89**	–	–	–	**124**	–	–	–
20	–	–	–	**55**	–	–	–	**90**	–	–	–	**125**	–	–	–
21	20 9/16	7.6	9.4	**56**	56	20.3	25.4	**91**	–	–	–	**126**	–	–	–
22	–	–	–	**57**	–	–	–	**92**	91 7/16	32.4	40.3	**127**	126 14/16	43.3	54.3
23	–	–	–	**58**	–	–	–	**93**	–	–	–	**128**	–	–	–
24	–	–	–	**59**	–	–	–	**94**	–	–	–	**129**	–	–	–
25	24 8/16	9.1	11.3	**60**	59 15/16	21.7	27.1	**95**	–	–	–	**130**	–	–	–
26	–	–	–	**61**	–	–	–	**96**	95 6/16	33.4	41.6	**131**	130 13/16	44.5	55.9
27	–	–	–	**62**	–	–	–	**97**	–	–	–	**132**	–	–	–
28	–	–	–	**63**	–	–	–	**98**	–	–	–	**133**	–	–	–
29	28 7/16	10.6	13.2	**64**	63 14/16	23.0	28.8	**99**	–	–	–	**134**	–	–	–
30	–	–	–	**65**	–	–	–	**100**	99 5/16	34.6	43.2	**135**	134 12/16	45.7	57.4
31	–	–	–	**66**	–	–	–	**101**	–	–	–	**136**	–	–	–
32	–	–	–	**67**	–	–	–	**102**	–	–	–	**137**	–	–	–
33	32 6/16	11.7	14.6	**68**	67 13/16	24.4	30.5	**103**	–	–	–	**138**	–	–	–
34	–	–	–	**69**	–	–	–	**104**	103 4/16	35.9	44.8	**139**	138 11/16	46.9	58.9
35	–	–	–	**70**	–	–	–	**105**	–	–	–	**140**	–	–	–
36	–	–	–	**71**	–	–	–	**106**	–	–	–	**141**	–	–	–
37	36 5/16	13.1	16.5	**72**	71 12/16	25.8	32.3	**107**	–	–	–	**142**	–	–	–
38	–	–	–	**73**	–	–	–	**108**	107 3/16	37.2	46.4	**143**	142 10/16	48.0	60.4
39	–	–	–	**74**	–	–	–	**109**	–	–	–	**144**	–	–	–
40	–	–	–	**75**	–	–	–	**110**	–	–	–				
41	40 4/16	14.6	18.3	**76**	75 11/16	27.1	33.9	**111**	–	–	–				
42	–	–	–	**77**	–	–	–	**112**	111 2/16	38.4	48.0				
43	–	–	–	**78**	–	–	–	**113**	–	–	–				
44	–	–	–	**79**	–	–	–	**114**	–	–	–				
45	44 3/16	16.0	20.1	**80**	79 10/16	28.4	35.5	**115**	–	–	–				
46	–	–	–	**81**	–	–	–	**116**	115 1/16	39.7	49.6				

Voltage Drop Calculator

The below chart assumes nominal voltage of 24 Volts and a Voltage Drop Allowance of 3% through the wire

Wattage [W]	Maximum Wire Length From Power Supply to Start of Run [ft]						
	12 AWG	14 AWG	16 AWG	18 AWG	20 AWG	22 AWG	24 AWG
5	1088.2	684.4	430.3	270.6	170.2	107.1	67.3
10	544.1	342.2	215.1	135.3	85.1	53.5	33.7
15	362.7	228.1	143.4	90.2	56.7	35.7	22.4
20	272.0	171.1	107.6	67.7	42.6	26.8	16.8
25	217.6	136.9	86.1	54.1	34.0	21.4	13.5
30	181.4	114.1	71.7	45.1	28.4	17.8	11.2
35	155.5	97.8	61.5	38.7	24.3	15.3	9.6
40	136.0	85.5	53.8	33.8	21.3	13.4	8.4
45	120.9	76.0	47.8	30.1	18.9	11.9	7.5
50	108.8	68.4	43.0	27.1	17.0	10.7	6.7
55	98.9	62.2	39.1	24.6	15.5	9.7	6.1
60	90.7	57.0	35.9	22.6	14.2	8.9	5.6
65	83.7	52.6	33.1	20.8	13.1	8.2	5.2
70	77.7	48.9	30.7	19.3	12.2	7.6	4.8
75	72.5	45.6	28.7	18.0	11.3	7.1	4.5
80	68.0	42.8	26.9	16.9	10.6	6.7	4.2
85	64.0	40.3	25.3	15.9	10.0	6.3	4.0
90	60.5	38.0	23.9	15.0	9.5	5.9	3.7
96	56.7	35.6	22.4	14.1	8.9	5.6	3.5

Bosca - Dynamic Color | Linear Illumination System

luminii

Power Supplies

See fixture and power supply instructions & spec sheet for wiring information. Dimming possible in select models - view Luminii website for list of compatible dimmers.

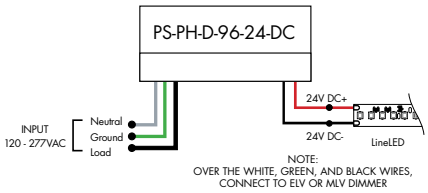
For use with Warm Dim, WD68

Ordering Code Phase Dimming Power Supply 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	OUTPUT CONTROL
PS-Power Supply, 120-277VAC	PH-Phase Dimming (Triac, ELV, MLV)	D-Dry	96-96 Watts	24-24 VDC	DC-Direct Current

MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart (Link)

MODELS	96W
Length	8.25"
Width	4.10"
Depth	1.56"

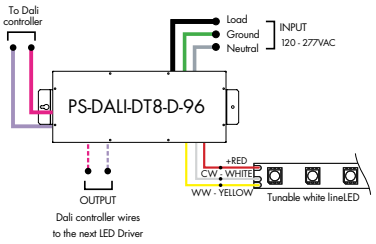


For use with Tunable White, TW68

Ordering Code DALI2 Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	OUTPUT CONTROL
PS-Power Supply, 120-277VAC	DALI-DT8-DALI DT8 Tunable White (0.1%)	D-Dry	96-96 Watts	24-24 VDC	PWM-Pulse Width Modulation

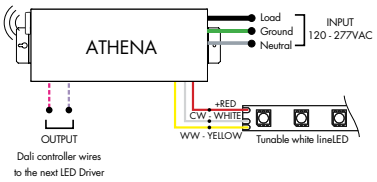
MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"



Athena DALI2-DT8 LED Driver

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS-Power Supply, 120-277VAC	DALI-DT8-DALI DT8 Tunable White	D-Dry	96-96 W	24-24 VDC	AWNR-Athena

MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"



Bosca - Dynamic Color | Linear Illumination System

luminii

Power Supplies

See fixture and power supply instructions & spec sheet for wiring information. Dimming possible in select models - view Luminii website for list of compatible dimmers.

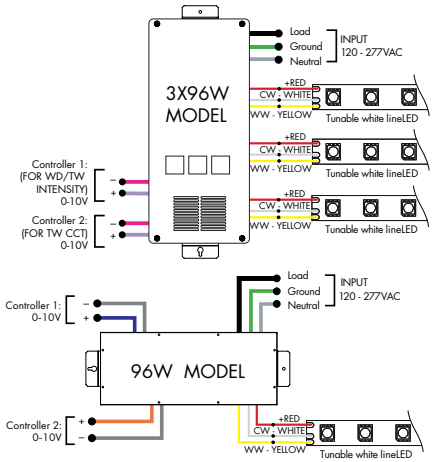
For use with Tunable White, TW68

Ordering Code VintageDim® 0 - 10V Dimming Power Supplies 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	010V-WD - 0 -10V Dimming, Standard Warm Dim Curve (with Tunable White LED) 010V-TW - 0 -10V Dimming, Two Channel Control, Brightness and CCT1-CCT2 Ratio 010V-2CH - 0 -10V Dimming, Two Channel Control, LED1 Brightness and LED2 Brightness 010V-WDX - 0 -10V Dimming, Customizable Warm Dim Curve (with Tunable White LED) 010V-2CHX - 0 -10V Dimming, Two Channel Control, Customizable Brightness and CCT1-CCT2 Ratio	D - Dry	96 - 96 Watts 3X96 - 3x96 Watts[1]	24 - 24 VDC

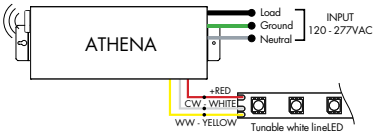
1 - 3x96 is only available with input control options 010V-WD and 010V-TW
2 - Athena only available on 96 watts option

MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"



Athena 0-10V Warm Dim LED Driver

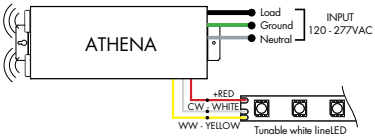
MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-WD - 0-10V Dimming, Standard Warm Dim Curve (with Dynamic White LED)	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena



MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

Athena 0-10V Two Channel LED Driver

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT	FEATURE
PS - Power Supply, 120-277VAC	010V-2CH - 0-10V Dimming Two Channel Control, LED1 Brightness and LED2 Brightness	D - Dry	96 - 96 W	24 - 24 VDC	AWNR - Athena



MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Bosca - Dynamic Color | Linear Illumination System

luminii

Power Supplies

See fixture and power supply instructions & spec sheet for wiring information. Dimming possible in select models - view Luminii website for list of compatible dimmers.

For use with RGB/RGBW, RGB42/RGBW36 or with Tunable White, TW68

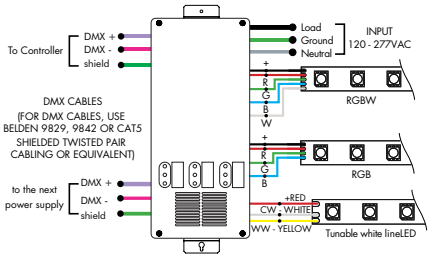
Requires Controller

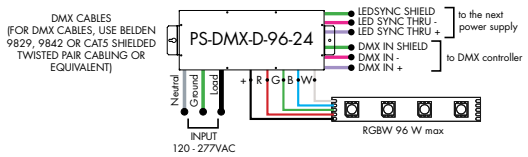
Ordering Code DMX Dimming Power Supplies 0.1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	DMX - DMX (0.1%)	D - Dry	96 - 96 Watts 3X96 - 3X96 Watts	24 - 24 VDC

MODELS	96W	3X96
Length	14.40"	15.00"
Width	5.20"	6.62"
Depth	2.60"	4.56"

PS-DMX-D-3X96-24





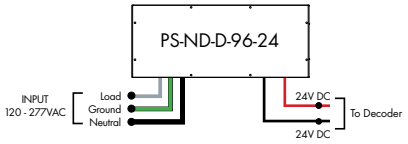
For use with RGB/RGBW/Pixel, RGB42/RGBW36/RGBX18/RGBWX18

Requires Controller and Decoder

Ordering Code Non-Dimming Power Supply 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	ND - Non Dimming	D - Dry	96 - 96 Watts	24 - 24 VDC

MODELS	96W
Length	14.40"
Width	5.20"
Depth	2.60"



For use with RGB/RGBW/Pixel, RGB42/RGBW36/RGBX18/RGBWX18

Requires Controller and Decoder

Ordering Code Universal Dimming Power Supplies 1% 120VAC - 277VAC

MODEL	INPUT CONTROL	ENVIRONMENT	WATTAGE	OUTPUT
PS - Power Supply, 120-277VAC	UNI - 0-10V Dimming, Phase Dimming	D - Dry W - Wet	30 - 30 Watts 60 - 60 Watts 96 - 96 Watts 3x96 - 3x96 Watts	24 - 24 VDC

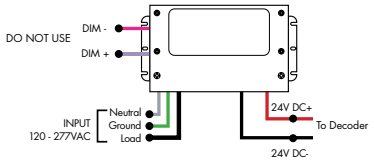
Compatibility: View a complete list of compatible dimmers on product page (Link)

0-10V - 1% dimming
MLV/ELV/TRIAC - 1% dimming, consult dimming compatibility chart

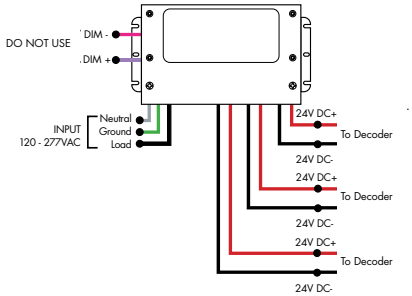
MODELS	PS-UNI-W-30W	PS-UNI-W-60W	PS-UNI-W-96W	PS-UNI-W-3X96W
Length	6.50"	7.40"	8.66"	11.85"
Width	3.73"	3.73"	3.73"	4.32"
Depth	1.61"	1.61"	1.61"	1.81"

MODELS	PS-UNI-D-30W	PS-UNI-D-60W	PS-UNI-D-96W	PS-UNI-D-3X96W
Length	8.77"	8.77"	8.11"	9.94"
Width	4.27"	4.27"	5.60"	7.61"
Depth	1.83"	1.83"	1.83"	2.02"

PS-UNI-D-96 / PS-UNI-W-96



PS-UNI-D-3X96 / PS-UNI-W-3X96



Controllers and Decoders

For use with Tunable White Power Supplies

MODEL

DTW-MC

DTW-MC - Tunable White controller

Tunable White wall-mount controller controls lighting fixtures, wireless control of TW lighting fixture. Fits in any standard US switch box. Includes all the outputs in the back of the controller.

Features

- Switch & dimming control function, control range > 20M.
- Smooth transition between light levels.
- Separately operate dimming and color temperature functions.
- Able to control 1 zone with endless receivers. Each receiver can maximally be controlled by 8 remotes.
- Power, temperature color and dimming functions operated by push button after receivers are connected.

Operating Voltage

3V DC battery

Color Parameters

- Brightness
- Saturation
- Fading

MODEL

TW-DMX

TW-DMX - DMX controller

Tunable White DMX wall-mount controller is a fully touch sensitive controller designed in accordance with standard protocol DMX512. Offers fast and accurate color temperature adjustment and brightness dimming of natural white, warm white and cold white. Designed with a touch color wheel, the DMX512 controller can adjust color temperature and brightness for all white LEDs smoothly and accurately. The DMX controller can control 1 zone with endless decoders.

Features

- 1 zone
- 6 color scenes
- DMX Control
- Touch Sensitive Glass Surface
- Dimming and Speed Control
- Memory Function
- Easily Fits Standard US Switch Boxes

Operating Voltage

12 - 24V DC

Color Parameters

- Brightness
- Saturation
- Primary colors
- Fading
- Color changing speed

MODEL

SLD-DIMTW

SLD-DIMTW - Tunable white LED dimming module

The SLD DimTW is a constant voltage warm dimming LED dimming module. The unique dimming module accepts 0-10V control and mimics a smooth, incandescent dimming curve.

Features

- Flicker free 0-100% dimming
- High efficiency up to 97%
- High precision dimming ratio:>1:1000
- Fully isolated plastic housing
- Comply with EN55015 and FCC part 15 without additional input filter and capacitors
- compact size, high reliability
- 3 years warranty

Operating Voltage

8-48 VDC

Controllers and Decoders

For use with Tunable White, RGB/RGBW Power Supplies

MODEL

RGBW-RC-R

RGBW-RC-R - RGBW receiver

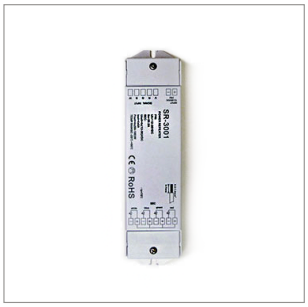
The RGBW receiver is easily paired with controller by the click of a button. Receiver can be reset to factory settings at any time.

Each receiver can store one static RGB color, one color sequence, and one brightness setting for the white LED strip. Receivers assigned to the same scene within the same zone will have the same LED static color and color sequence.

Operating Voltage
12-36 VDC

Power Capacity
up to 96W at 24V

Operating Temperature Range
from -4°F to +122°F in case



MODEL

RGBW-SR

RGBW-SR - RGBW signal repeater

Extends identical signal when connected in series to an RGBW LED control system. The RGBW signal repeater works with Luminii RGB and RGBW controllers, receivers, and decoders.

RGBW signal can be extended indefinitely when adequate power supply (not included) is connected to the system.

Operating Voltage
12-36 VDC

Power Capacity
up to 96W at 24V

Operating Temperature Range
from -4°F to +122°F in case

MODEL

DDMX-RGBW

DDMX-RGBW - DMX decoder

Translates controller DMX512 programs for RGB and white LED strips.

Unique DMX address for the decoder can be set easily and displayed by the numeric display on the case. Changing and resetting the DMX address requires manual input.

Use power repeater to expand output.

Operating Voltage
12-36 VDC

Power Capacity
up to 96W at 24V

Operating Temperature Range
from -4°F to +122°F in case

Bosca - Dynamic Color | Linear Illumination System

luminii

Controllers and Decoders

For use with RGB/RGBW Power Supplies

MODEL

RGBW-MC3

RGBW-MC3 - 4-zone RGBW controller

Easy to operate wireless interface suitable for static or color changing scenes. Control 4 different color zones separately or at the same time. RGBW receiver (RGBW-RC-R) required for operation. Assign multiple receivers per zone to cover a large area.

Color wheel enables highly stable and sensitive color control functionality. Create your own color changing sequences with ease and flexibility.

Power
qty 3 AAA batteries

Scenes
up to 4 unique zones

Signal
Wireless (RF)

Energy Saving
Deactivates after 10 seconds of inactivity

Color Parameters
- Brightness
- Saturation
- Primary colors
- Speed of color changing sequence
- Fading

MODEL | ZONES | COLOR

DMX - DMX Controller

3Z - Three Zone
1Z - One Zone

RGBW - Red, Green, Blue,& White

DMX /Wireless RGB-W wall-mount controller controls DMX lighting fixtures, wireless control of RGB-W lighting fixture or use both simultaneously. Fits in any standard US switch box. Includes all the outputs in the back of the controller.

Control brightness levels with a single touch, personalize and memorize 3 different scenes, and even create 3 variations of white.

Features
- 2 in 1 in-Wall Controller: DMX Control or Wireless RGB-W
- 65,000 Color Options, Dimming and Speed Control
- Memory Function
- 50 Foot Wireless Range
- Easily Fits Standard US Switch Boxes
- Touch Sensitive Glass Surface
- Includes 10 Built in Programs, or Create and Play Your Own

Operating Voltage
12 - 24V DC

Color Parameters
- Brightness
- Saturation
- Primary colors
- Fading
- Color changing speed

For use with Tunable White, RGB/RGBW, Pixel Power Supplies

MODEL

TSDMX-E

TSDMX-E - Touchscreen DMX controller

Programmable advanced DMX512 lighting controller featuring a touch-screen interface. Operates as stand alone controller or integrated with most architectural lighting control systems. Can controller endless DMX512 enabled devices.

Mounts to standard single or dual gang wall box with the included power supply inside the junction box. Terminal block design for power and data connections.

Features
- Sleek glass design which sits 0.43" from the wall
- Graphical color display to show selected environment
- Color/dimmer/speed palette
- Color temperature mixing
- Touch sensitive buttons. No mechanical parts
- Touch sensitive wheel allows for accurate color selection
- Multi-zone microSD memory
- Multi-room control with 500 scenes, 10 zones
- 1024 DMX channels. Control 340 RGB fixtures
- USB & Ethernet connectivity for programming and control

Power Supply
7 VDC (included)

Programmability
PC, Mac, Tablet, Smartphone

Output Signal
DMX512 (1024 channels)

Color Parameters
- Brightness
- Saturation
- Speed of color changing sequence
- Fading / dimming / brightness

*LUMINII RESERVES THE RIGHTS TO CHANGE SPECIFICATION & INSTRUCTION WITHOUT NOTICE

Controllers and Decoders

For use with Pixel Power Supplies

MODEL

SR-DMX-SPI

SR-DMX-SPI - Smart Pixel Decoder

The SR-DMX-SPI is a smart LED pixel decoder that controls RGB/RGBW pixel LED strips with SPI signal. Designed with an OLED backlit panel, the pixel controller allows for easy configuration of most settings. Four push buttons are available for control of the LED functions. *For pixel only.

Features

- 2 in 1 in-Wall Controller: DMX Control or Wireless RGB-W
- SPI signal output for RGB/RGBW pixel light control
- DMX512 controllable and RF/WIFI remote controllable
- Capable of addressing up to 1020 RGB pixels & 765 RGBW pixels
- OLED panel allows for easy configuration

Operating Voltage
12 - 36V DC

Power capacity
up to 96W at 24V

Operating temperature range
from -4°F to +122°F in case

For use with Tunable White, RGB/RGBW Power Supplies

MODEL

DDMX-5CH-RDM-PRO

DDMX-5CH-RDM-PRO-DMX512 Decoder

DMX512 decoder with RDM functionality features 5 PWM output channels with common anode. High PWM output frequency range allows the product to be used in HD video conferencing spaces.
All DMX products to be installed per DMX512 Standard.

Power
96 Watt

Inputs
RJ45, XLR-5Pin, Terminal Block

DMX Channels
1 to 5 settable

PWM Output Resolution Ratio
8 or 16 bit

PWM Output Frequency
500Hz - 30KHz

Output Dimming Curve Gamma Value
0.1 ~ 9.9

MODEL

RGBW-WI-R

RGBW-WI-R - WIFI generator

RGBW-WI-R creates a local network that enables any electronic device (phone, tablet, etc.) to control the RGB/W strip connected to a RGBW-RC-R receiver.

The control functions are achieved through a free application download for Android and iOS devices called REALCOLOR.

Operating Voltage
12-36 VDC

Power Supply
PI-130-24 (included)

Operating Temperature Range
from -4°F to +122°F in case

Exhibit E

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS

Dedicated to Service…Committed to Excellence

2024125

April 1, 2026

Sean Howard, P.E.
County Engineer
Columbia County Department of Health
325 Columbia Street
Hudson, New York 12534
sean.howard@columbiacountyny.gov

RE: Tilden Project LLC
538 US route 20, New Lebanon
Water and Sanitary System Engineer's Report - REVISED

Dear Mr. Howard:

Lamont Engineers, P.C. is pleased to submit this letter report summarizing the design/installation of the water system and wastewater system for the proposed Tilden Commons development at 538 US Route 20 in the Town of New Lebanon, Columbia County, New York. This is a revision to address the changes in project scope and modifications of the report previously submitted in July 2025 with other revisions and additions. Below is a summary of the anticipated water and sanitary needs for this project:

I. Introduction

It is our understanding that the proposed construction will include a three-story building located approximately as indicated on the site drawing in Attachment A. The building is proposed as a mixed-use building with approximately 10,000 SF commercial space on the 1st floor of the south side of the building and 41 residential apartments and community space in the remainder of the building, for a total square footage of 60,000 SF. The building will be required to have a sprinkler system to comply with current NYS adopted IBC codes. The building sprinkler system will be supplied with a below grade waters storage tank. Because the project involves the construction of 41 residential units, the water system for this building will be considered a community water system regulated by the Department of Health and to comply with the NYS DOH Part 5 regulations.

The site currently has an existing well that served the commercial building currently on the site, to be demolished. This well will be evaluated for use at the supply source for the proposed water system.

II. Projected Water System Demand

The projected water demand of the site is summarized in Table I below. The average daily flow amounts were developed using the NYSDEC intermediate wastewater system design standards. Detailed water demand calculations are provided in Attachment B.

Table I – Water System Demand

	Average Daily Demand (gpd)	Maximum Daily Demand (gpd) 1.5x
Residential Space	6,710	10,065
Commercial Space	2,000	3,000
Total =	8,710	13,065

Based on these figures, the following can be deduced:

1. In accordance with NYSDOH requirements, a water source must have a capacity equal to or greater than the estimated Maximum Daily Demand. The average daily demand is 8,710 GPD, which equated to about 6 gpm. The maximum daily demand of 13,065 gpd equates to 9 gpm. This site has an existing well that was evaluated for capacity for the proposed use as described above. A 72-hour pump test was completed on the well showing that the well has a safe long-term draw down capacity of 13 gpm, so it is suitable to meet the system demand. Results of this test will be provided in a separate hydrogeological report. The well is still awaking the full water quality results to determine if treatment is required.. Utilizing the fixture count as show in Attachment C, we should design the system to supply a maximum water supply demand of 101 gpm.

III. Water Sources

The existing Groundwater Well #1 has been on the site for several years, long enough that the DOH office does not have any records on file regarding the construction but we were able to obtain notes and records from the local well driller. The pump was pulled to verify the depth to compare the notes provided by the well driller. Pertinent well information, including drawdown test information for the well based on the investigations to date is presented in the well detail drawing the Attachment C and in Table II below:

Table II – Summary of Groundwater Supply

	Production Well
Well Depth	352 ft.
Pump Setting Depth	90 ft.

Casing Depth	124 ft.
Rated Yield	13 gpm
Drawdown (feet) @ Rated Yield	80 ft. @ 13 gpm

A 72-hour pump test performed on June 29 – July 2 of the existing well indicated that this well has a yield of 13 gallons per minute (gpm) with 80 ft. of drawdown.

The initial basic water quality results were pulled from the well prior to the pump test. The results of these tests showed the water to be very turbid and high in iron. This is most likely a result of the well sitting for such a long period (At least 1 year) being out of service with no flow. Upon initial start of the pump test, the water turbidity exceeded 200 NTU, toward the end of the pump test the turbidity was approaching 20 NTU so we are confident that once the well has been flowed for an extended period of time the turbidity and likely the iron levels will improve. Following the completion of the well recovery after the July 2 completion of the pump test, a full Part-5 water quality sample will be pulled for laboratory testing. This information will be provided to amend this report once able. If water quality still shows concerns with the existing well, treatment will need to be considered.

The well location on the site has been considered for the majority of the other components on the site. The well is located on the opposite side of the proposed wastewater treatment system and it is currently close to the middle of the site. The development parcel is only about 200’ in width. The property contains most of the area to be within the required 100’ well projection area but there would be no location on this property able to meet the 200’ well control area as suggested by the DOH requirements. The 72-hour pump test included monitoring of several other wells within a 500’ radius of the site to ensure the draw down of this well does not affect nearby property owners. That data will also be used to evaluate the suspected cone of influence for this well to determine if that 200’ protection area for this well is a major concern or if some consideration can be given for a narrow cone of influence on a lower flow production well of this size regarding well setback restrictions.

IV. Well Pump and Supply Pump

Well #1 is already equipped with a Goulds 10GS10422C submersible well pump with 1.5 HP motor that will convey water from the well to the proposed facility. The well pump will pump to an underground clearwell tank located within the building foundation. The pump will operated by floats located within the clear well tank. The proposed pumping rate for the well pump is 11 GPM. This pump can pump 15 GPM with a pump depth of 100’ against 30 psi system head. This will

be sufficient to pump the proposed 11 GPM at 164 TDH estimated head from the pump to the clearwell.

Water will be pumped from the clearwell tank to the building plumbing distribution system. Water supply and system pressure will be provided by a constant pressure style booster pump. The proposed pumping system is a Goulds 125MS1G2G2 pump with an AQUAVAR e-AB2 variable speed pump controller. The pump will be adjust drive speed based on system pressure to maintain a constant system pressure as long as there is system demand. This pump it capable of pumping 101 GPM at 47 psi, and a range of lower flow rates as it ramps down. Three (3) 120-gallon hydro-pneumatic pressure tank will be installed to serve as a buffer during low demand periods. A pressure transducer will relay system pressure information to the pump's controller which will adjust the operating capacities of the pump to maintain system flows and pressures. A pressure of 55 psi will be maintained in the water treatment facility. Distribution pressures will vary throughout the system from 70 psi to 30 psi.

V. Water Quality Treatment

Due to the well sitting unused for several years, water quality testing was done several times over the design development of the project. Initial testing showed concerns with Iron and Turbidity levels being of the NYSDOH Maximum Contaminate Limit (MCL). We attributed much of these issues due to the lack of consistent use of the well. After completion of the 72-hour pump test and some sporadic pumping, those levels significantly decreased. Turbidity in the well dropped below 1 NTU but the Total Dissolved Solids remains at 623, over the 500 mg/L limit. Iron Dropped to 0.22 and Manganese dropped to 0.61, with manganese still being over the 0.3 mg/L limit, the combined value of both being over the 0.5 mg/L recommended limit. Total coliform was still positive in the re-testing but this would be addressed with the system chlorination. It is our suspicion that these levels may continue to drop as the well is pumped more frequently, possibly even under the recommended limits for all contaminates. However, at this time we are proposing the installation of a 16 GPM reverse osmosis (RO) treatment system to address any contamination concerns. A Polar RO PRO XL-24000 treatment skid with a 5 micro pre-filter still be installed at the service line coming from the well, rated for 16.66 GPM with a 75% recovery range. Following the RO system, the water will be chlorinate and storage in a clearwell for distribution.

VI. Chemical Treatment & Water Storage

In accordance with current groundwater treatment standards as set forth by the NYSDOH, adequate disinfection must be provided to achieve 4-log (99.99%) inactivation of viruses.

Disinfection will be achieved by injecting Sodium Hypochlorite (NaOCl) prior to the clearwell/contact tank. CT calculations were completed to determine the contact volume required to achieve 4.0-log virus inactivation at the anticipated peak flow rate of 13 gpm with a minimum free chlorine residual of 0.5 ppm based on a tank configuration, inlet/outlet baffling, and intra-basin baffling, corresponding to a baffling factor of 0.9. Based on this baffling factor, a flow rate

of 13 gpm, and an average pH of 7 at a temperature of 10°C, the volume of water required to achieve 4-log inactivation is approximately 320 gallons. The system should be designed to meet the maximum fixture demand flow in the building of 101 GPM during peak demand for a 2-hour period and also provide a buffer of at least 320 gallons to ensure the contact time is still provided of the full demand volume is used. 101 GPM x 2 hours x 60 mins/hours = 12,120 gallons. Therefore, we recommend a clearwell tank of at least 3 - 5,000 gallon tank for a storage of 15,000 gallons be provided with additional capacity storage provided in the system piping to meet the system demand flow and ensure contact time is provided. Refer to Attachment C for CT storage volume calculations.

Chemical Feed Rate & Equipment

12.5% Sodium Hypochlorite (NaOCl) solution will be injected prior to the clearwell. The well pump is capable of a long-term draw down rate of 13 GPM but we intend to set the flow to 11 GPM for long-term use to provide some buffer. The chemical feed pump will operate simultaneously with the well pump by means of a dry contact in the simplex well pump control panel and will be capable of providing a free residual of 0.5 ppm to 2 ppm. Assuming a free chlorine residual of 0.5 ppm, a flow of 11 gpm and a dilution ratio of 9 parts H_2O to 1 part chlorine, the required chemical feed rate is 0.53 gpd or 0.02 gph. Assuming a free chlorine residual of 2.0 ppm, and the same flow and dilution ratio, the required chemical feed rate is 2.13 gpd or 0.09 gph. A Stenner Peristaltic Adjustable-Rate Feed Pump, Model 45MHP2, with a max. capacity of 10 gpd at a maximum working pressure of 100 psi and a turndown ratio of 20:1 is provided. Refer to Attachment C for chemical feed calculations and chemical feed pump information.

The treated water will be supplied to a 5,000 gallon clearwell tank capable of providing a flow of 101 GPM for 120 minutes during peak demand. A booster pump will draw water from the clearwell and supply the domestic water system with pressurized water throughout the building. A variable speed booster pump in conjunction with a 120 gallon hydropneumatics tank and pressure switch will ensure 40 – 60 psi of pressure is supplied to the building at all times. A Goulds 5AVN315HM03 booster pump system with variable speed controller or similar will be provided.

VII. Sprinkler System

It is anticipated that a 30,000 Gallon water storage tank will need to be provided below grade to serve as the storage supply for the sprinkler system. This would be capable of providing 500 GPM for 60 minutes through the use of a fire pump to be designed with the sprinkler system. This tank and piping for the fire system will be separated from the domestic water system using a double check backflow preventer as it will likely sit unused for long periods of time.

VIII. Wastewater System

The proposed wastewater treatment system for the facility will be as follows:

- Primary Treatment: Standard septic tank settling – PER NYSDEC standards
- Secondary Treatment – Orenco AX MAX treatment system with pre-anoxic tank.
- UV Treatment system
- Surface Water Discharge Capable (Discharging to Stormtech unground dispersal system)

As mentioned above, primary treatment will be provided by conventional septic tanks. Residential waste has been separated from the commercial waste portion of the building. The total residential flow is estimated at 6,710 gallons. Using the NYSDEC design standards, the required tank sizing for this treatment would be 1.5 x 6,710= 10,065 gallons. Rather than provide this in one tank, and for the ease of connecting plumbing in the building, we have proposed separating the building sewers to collect in 5 separate septic tanks with effluent lines connected together. 4 of the tanks for the residential side are 2,500 gallon, a separate 3,000 gallon tank will be provided for the commercial flow requirements of 2,000 gal x 1.5 = 3,000.

From the septic tanks the effluent will flow by gravity to a pump station which will pump the wastewater to the northern area of the site for secondary treatment. Secondary treatment will be provide with a pre-anoxic tank of the Orenco treatment system. This tank will aid the removal of nitrogen from the wastewater. From there, wastewater flows by gravity to the Orenco AX-MAX treatment units. This is separated into 3 units, the first two being part of the 1-stage of treatment and the 3rd the 2nd stage. Wastewater sits within these tanks and the hanging biomedia within them. Pumps will recirculate the wastewater within the tanks to header pipes and spray nozzles to coat the media, and aerate. Blowers will feed air to these treatment units to support the aeration process. In the final stage, a portion of the flow will be sent back to the pre-anoxic tank and a portion will be pumped to the UV Treatment system. The UV treatment system will provide disinfection prior to the discharge of the wastewater to a subsurface stormwater dispersal structure to allow the wastewater to percolate into the existing site soils. The entire treatment system is intended to meet the anticipated intermittent stream discharge limits as shown below, even though being dispersed subsurface similar to a leach field:

Table B-4B Typical Effluent Limits for Intermittent Streams[32]

Parameter	Type	Limitation	Units
BOD_5	Daily Maximum	5	mg/L
TSS	Daily Maximum	10	mg/L
Settleable Solids	Daily Maximum	0.1	ml/L
Total Residual Chlorine	Daily Maximum	0.02	mg/L
Ammonia[33]	Daily Maximum or Average	2.2 in winter 1.5 in summer	mg/L as NH_3
Dissolved Oxygen	Daily Minimum	≥ 7.0	mg/L
pH	Range	6.0 – 9.0	SU
Total Phosphorus	Site-specific	Site-specific	mg/L as P
Coliform, fecal, when disinfecting	30-day geometric mean	200	Number of colonies per 100 ml
Coliform, fecal, when disinfecting	7 consecutive-day geometric mean	400	Number of colonies per 100 ml

These treatment limits will need to be confirmed following the processing of the attached SPDES permit application.

If you have any questions or comments, please feel free to contact me at your convenience.

Sincerely,

Brendon Becker

Brendon Becker, P.E.
Project Engineer
Lamont Engineers, P.C.

Attachments:

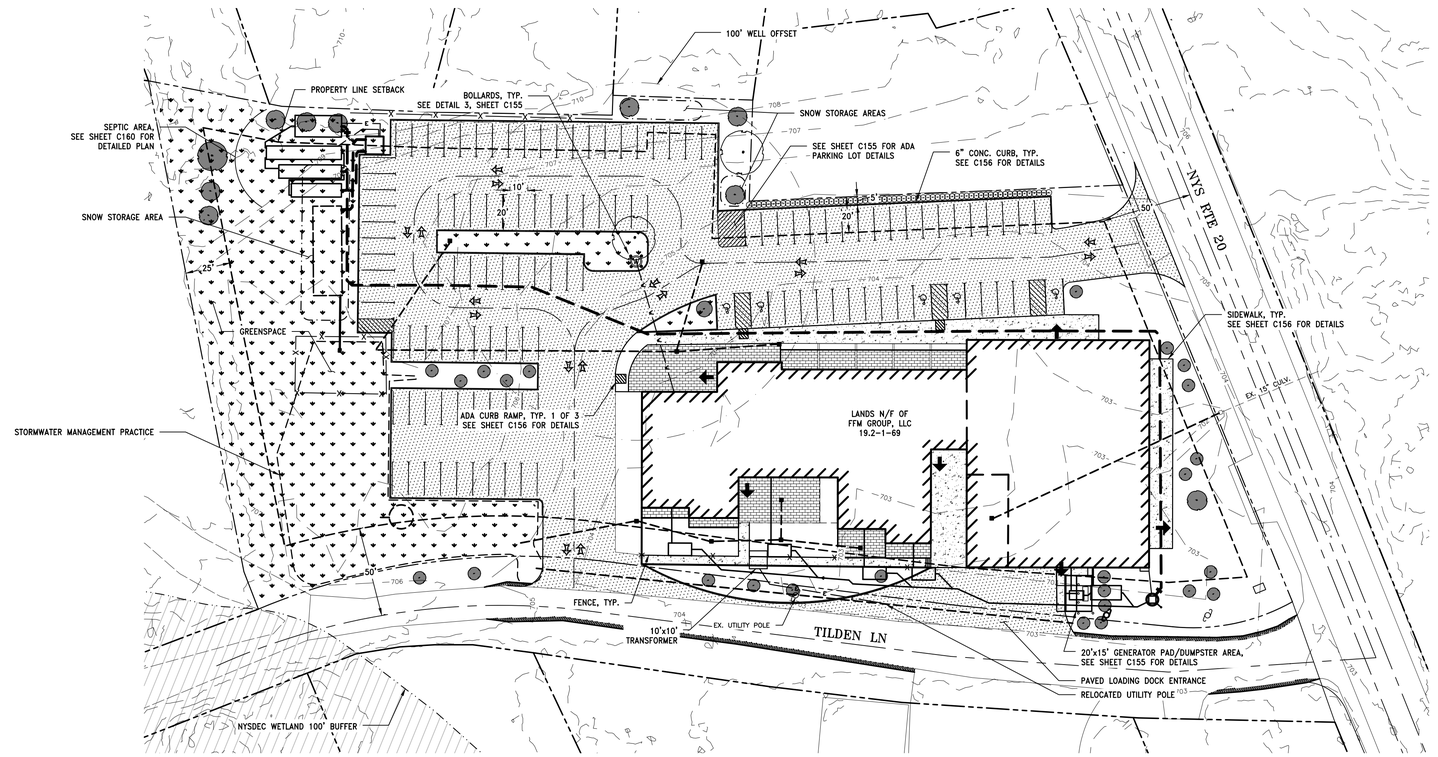
A. Site Plans and Details
B. Demand Calculations
C. Chemical Disinfection Calcs & Information
D. Water Treatment Equipment Information
E. SPDES Permit
F. Hydrogeological Report

Cc: Town of New Lebanon Planning Board
Tilden Commons LLC.

ATTACHMENT A

SITE PLANS & DETAILS

WATER SYSTEM SCHEMATIC



OVERALL SITE PLAN
1"=40'

GRAPHIC SCALE

40 20 0 20 40 80 160

1 INCH = 40 FEET

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- EX. CULVERT & CATCH BASIN
- PROPOSED CONTOURS
- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPOSED CULVERT & CATCH BASIN
- PROPOSED DRAINAGE DITCH
- PROPOSED ELECTRICAL
- SILT FENCE

SITE PLAN NOTES:

1. SEE SHEET C100 AND SECTION 02100 FOR CLEARING AND GRUBBING REQUIREMENTS AND LIMITATIONS.
2. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS.
3. PERFORM EXCAVATION AND GRADING WORK IN ACCORDANCE WITH SECTIONS 02218, 02222, 02223 & 02225.
4. ALL DISTURBED AREAS NOT RECEIVING ASPHALT OR CRUSHED STONE WEARING SURFACES SHALL BE TOPSOILED AND SEEDED. ADDITIONALLY, SOME AREAS REQUIRE PREPARATORY SOIL RESTORATION.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS. PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING, OF ANY ERRORS OR DISCREPANCIES.
6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING, OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED WRITTEN APPROVAL OF THE OWNER.
7. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EX. SUBSURFACE UTILITIES AT THE SITE PRIOR TO SETTING HEAVY EQUIPMENT (E.G. CRANES) AND MATERIALS ON THE SITE.
8. PRIOR TO CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING DIG SAFE NEW YORK AND ANY REGIONAL UTILITIES TO LOCATE ALL RELATED UTILITIES.
9. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATIONS, ETC.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINE AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE AS-BUILT PLANS WILL BE ACCEPTED.
12. CONTRACTOR SHALL FIELD VERIFY ALL LAYOUT DIMENSIONS AND ELEVATIONS WITH ENGINEER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE A FIELD VISIT WITH ENGINEER TO REVIEW LAYOUT AND DIMENSIONS. CONTRACTOR SHALL SCHEDULE FIELD VISIT WITH ENGINEER TO CONFIRM FINISHED FLOOR ELEVATION.
13. ALL SUITABLE TOPSOIL TO BE TEMPORARILY STOCKPILED (AS APPLICABLE) FOR REUSE.
14. ALL MATERIALS TRANSPORTED OFF-SITE SHALL BE HANDLED IN SUCH A MANNER AS TO PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR DE-WATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK, IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN.
16. BUILDING DIMENSIONS TO BE TAKEN FROM BUILDING CONSTRUCTION PLANS.
17. ALL AREAS WITHIN THE LIMIT OF DISTURBANCE (SEE SHEET C100) MAY BE USED FOR STOCKPILING, EQUIPMENT STORAGE, AND FIELD OFFICES. ADDITIONAL SEDIMENT AND EROSION CONTROL PRACTICES MAY BE NEEDED TO PROTECT SENSITIVE AREAS. COORDINATE WITH ENGINEER.
18. SEE ELECTRICAL DRAWINGS FOR ON-SITE ELECTRICAL, CONTROLS, AND INTERNET WIRING.

PARKING:

TOTAL SPACES: 116
GROCERY: 37
APARTMENTS: 79
ACCESSIBLE: 5

DIMENSIONS: 9'x20'

REFUGE CALCULATIONS:

RESIDENTIAL:
41 APTS x 2 x 30GAL. / 7.48 / 27 = 12 YARDS
GROCERY:
8 YARDS
TOTAL AREA NEEDED: 20 YARDS

20'x15' REFUGE AREA WILL FIT 3 - 8 YARD DUMPSTERS
TOTAL AREA PROVIDED: 24 YARDS

REQUIRED AREA								
	MIN. LOT REQUIREMENTS		MINIMUM YARD DIMENSIONS			MAX. STORIES	MAX. BUILDING HEIGHT	MIN. ROAD FOOTAGE
DISTRICT	AREA	MAX. BLDG COVERAGE	SETBACK CL	REAR	SIDE			
GENERAL COMMERICAL	30,000 SQ. FT.	75% OF LOT	50'	25'	20'	3	40'	100'

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
NEW LEBANON DEVELOPMENT, LLC.
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BROWN · 291603 · LICENSED PROFESSIONAL ENGINEER

Issue Rev.	Date	Remarks
A	6/3/25	FOR ZBA REVIEW
B	7/1/25	PLANNING BOARD
1	9/3/25	PER PLANNING BOARD COMMENTS
2	10/1/25	PER PLANNING BOARD
C	10/31/25	PLANNING BOARD
D	12/2/25	PLANNING BOARD
3	1/7/26	PLANNING BOARD
4	3/4/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=40'
File Name	BM_TILDEN

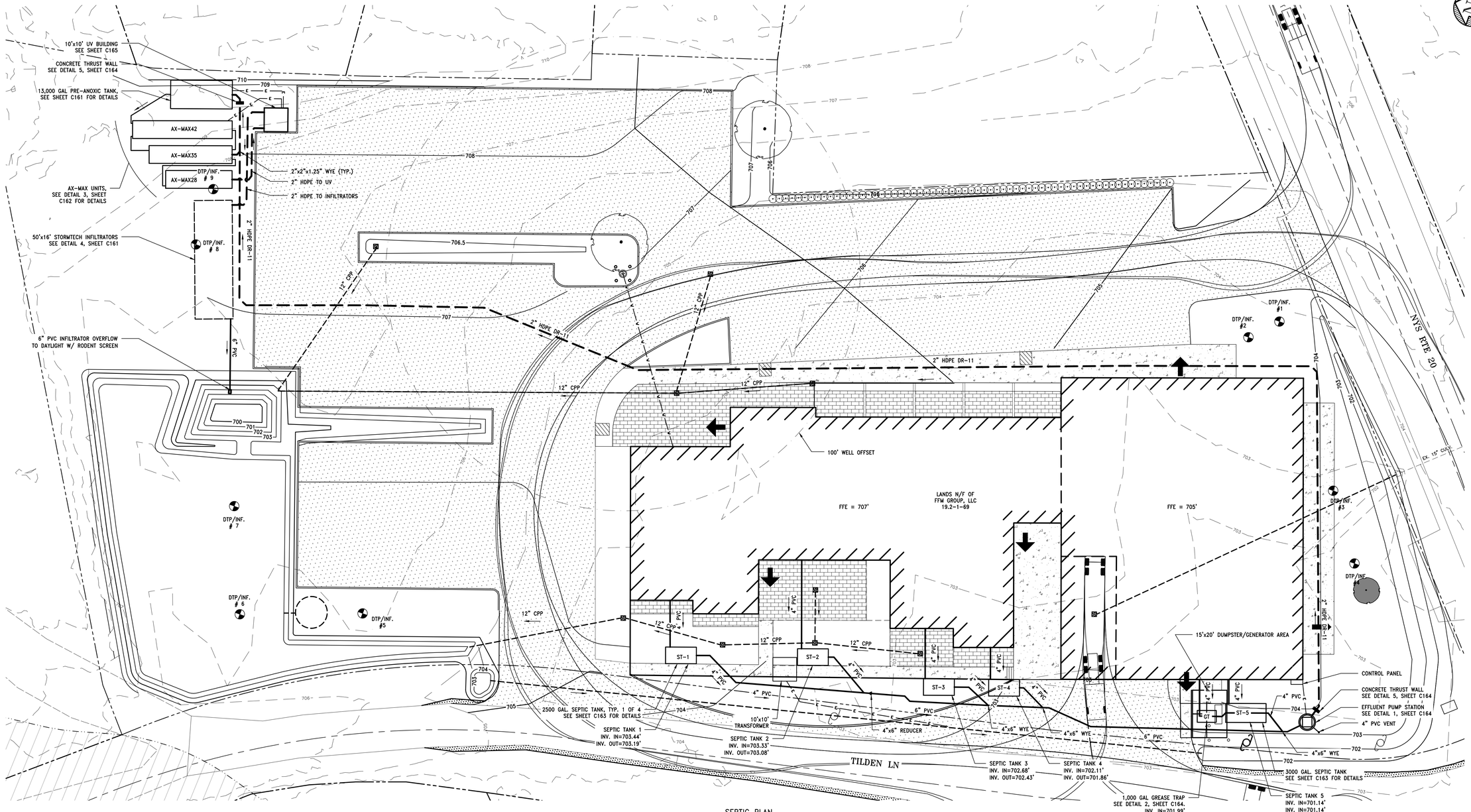
Sheet Title

SITE PLAN

Sheet No.

C110

K:\PROJECTS\2024\2024125\BM_Tilden.dwg, 3/4/2026 14:14:15, AutoCAD PDF (General Documentation).pc3



SEPTIC PLAN
1"=20'

LEGEND

- PROPERTY LINE
- EX. CONTOURS
- EX. WELL
- PROPOSED WATER LINE
- PROPOSED CONTOURS
- PROPOSED CULVERT & CATCH BASIN
- PROPOSED GRAVITY SEWER
- PROPOSED SEWER FORCEMAIN
- PROPOSED ELECTRICAL
- DTP/INF. #1 DEEP TEST PIT/INFILTRATION SOIL TEST SITE

GRAPHIC SCALE

20 10 0 10 20 40 80

1 INCH = 20 FEET

UTILITY NOTES:

1. CONTRACTOR SHALL INSTALL ALL GRAVITY SEWER LINES WITH A MINIMUM 1.0% SLOPE POSITIVE DRAINAGE.
2. CONTRACTOR SHALL MAINTAIN ALL MINIMUM WELL OFFSETS TO NYSDOH & NYSDEC STANDARDS.
3. ALL NEW MANHOLES CONSTRUCTED WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH THE EXISTING PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.
4. PROVIDE TWO (2) 45° BENDS INSTEAD OF ONE (1) 90° BEND AT ALL "RIGHT-ANGLE" BENDS IN GRAVITY FLOW PIPING (UNLESS OTHERWISE NOTED) -- PROVIDE WYES WITH 45° BENDS AT ALL "T-TYPE" JUNCTIONS IN GRAVITY FLOW PIPING.
5. AT LEAST 2 DAYS PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL CONTACT ENGINEER IN ORDER TO SCHEDULE INSPECTIONS. IF CONSTRUCTION CEASES FOR MORE THAN 7 DAYS ENGINEER WILL BE RE-CONTACTED AT LEAST 2 DAYS PRIOR TO RESTART OF CONSTRUCTION. ENGINEER SHALL BE NOTIFIED 1 BUSINESS DAY BEFORE BURYING ANY COMPONENT OF THE APPROVED DESIGN.
6. SEE SHEET C110 FOR STORMTECH INFILTRATOR SYSTEM LOCATION. SEE DETAIL 2, SHEET C161 FOR DETAILS.
7. SEE SHEET C161 FOR SEWER PROFILE.
8. TABLE OF SEPTIC TANK VOLUMES ON TABLE C163.

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TILDEN COMMONS
NEW LEBANON DEVELOPMENT, LLC.
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

STATE OF NEW YORK · BRENDON J. BUSH · 091605 · LICENSED PROFESSIONAL ENGINEER

Issue Rev.	Date	Remarks
B	7/1/25	PLANNING BOARD
C	8/4/25	PER PLANNING BOARD COMMENTS
1	9/12/25	PER PLANNING BOARD COMMENTS
2	10/17/25	FOR DOCKING REVIEW
D	10/20/25	PLANNING BOARD
E	10/29/25	PLANNING BOARD
F	12/2/25	PLANNING BOARD
3	1/7/26	PLANNING BOARD
4	3/4/26	PLANNING BOARD

Project Number	2024125
Drawn By	SK
Designed By	BJB
Checked By	BJB
Date	6/30/25
Scale	AS SHOWN
File Name	BM_TILDEN

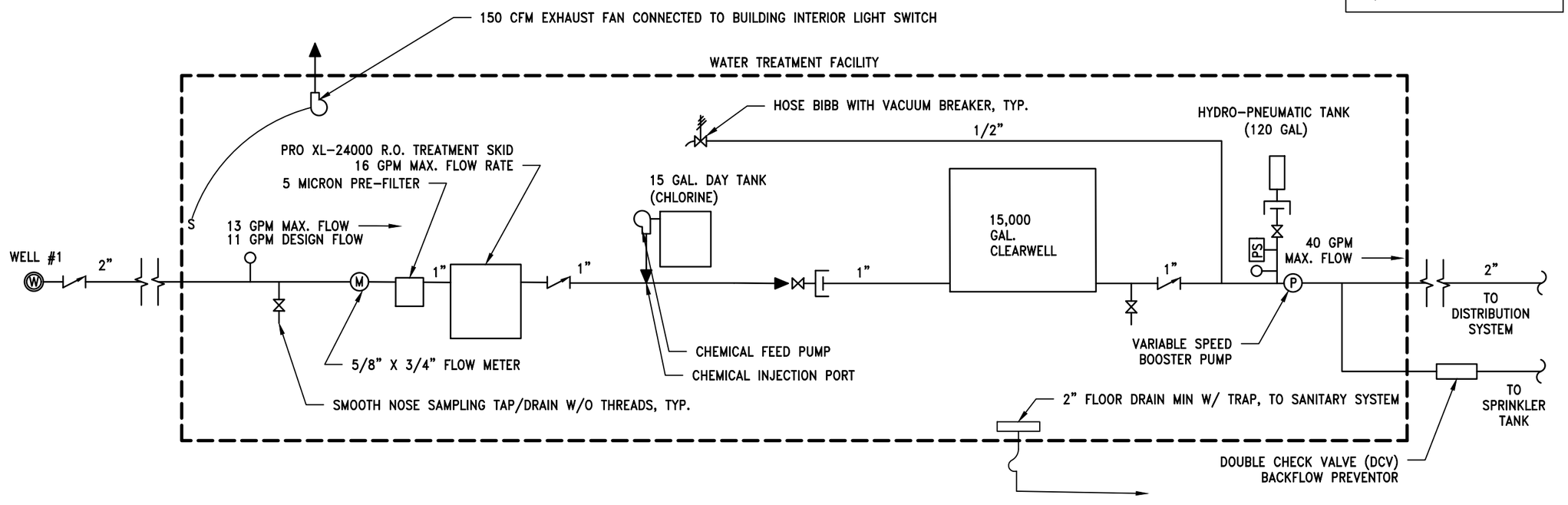
Sheet Title

SEPTIC PLAN

Sheet No.

C160

K:\APPS\SDSKPRO\2024125\BM_Tilden.dwg, 3/4/2026 14:14:35, AutoCAD PDF (General Documentation).pc3



LEGEND

- FLOW METER
- BALL VALVE
- PRESSURE GAUGE
- CHECK VALVE
- PRESSURE SWTICH

EQUIPMENT LIST:

1. CONTACT TANK – FLEXCON MODEL FLU120
2. HYDRO-PNEUMATIC TANK – FLEXCON, FLEXLITE FL28
3. CHEMICAL FEED PUMP – STENNER 45MHP2
4. DAY TANK – CLACK CST35 WITH H-4036 SPILL CONTAINMENT PALLET
5. PRESSURE SWITCH – SQUARE D FSG – 50/70

Lamont Engineers
COBLESKILL NEW YORK
(518) 234-4028

TILDEN COMMONS
NEW LEBANON
DEVELOPMENT, LLC.
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Project Number	2024125
Drawn By	LM
Designed By	BJB
Checked By	BJB
Date	7/2/2025
Scale	NTS
File Name	WSS

Sheet Title

PROPOSED WATER SYSTEM SCHEMATIC

Sheet No.

ATT-A

K:\APPS\SDSKPRO\J\2024125\WATER SYSTEM SCHEMATIC.dwg, PROPOSED WSS, 4/1/2026 1:56:30 PM, MChristman, DWG To PDF.pc3, 1:1

ATTACHMENT B

WATER SYSTEM DEMAND CALCULATIONS

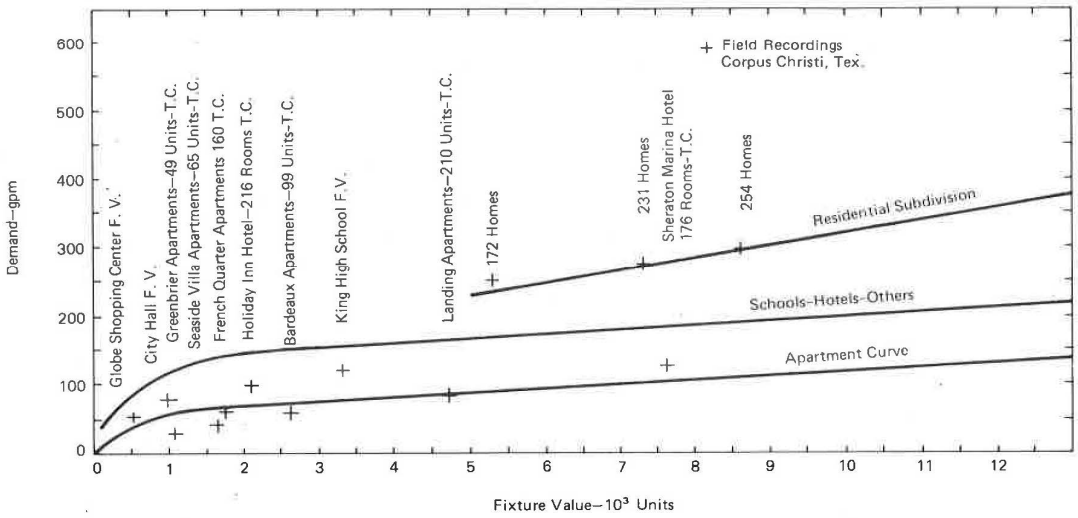


Fig. 4.3. Peak Flow Demand of Typical Utility Customers

fixtures operating at one time diminishes as the number of units increases. The peak rate of water used by fixtures of a residence and the combining of several units are shown in Fig. 4.2. As units are added, the average peak flow rate increases at a lower rate, as shown in Fig. 4.3.

The following is an example of estimating the probable domestic demand for a small apartment complex:

Customer: 160-unit apartment
Pressure at meter outlet: 35 psi
Fixtures:

		Factor		Fixture Value
205 Tank Water Closets	x	3	=	615
259 Lavatories: 3/8-in.	x	2	=	518
138 Dishwashers: 1/2-in.	x	4	=	552
10 Washing Machines: 1/2-in.	x	5	=	50
165 Kitchen Sinks: 1/2-in.	x	3	=	495
162 Bathtubs	x	8	=	1 296
Total				3 526

Fixture Value: 3 526
From Fig. 4.5, probable demand = 80 gpm
Adjust to utility delivery pressure, from Table 4.2: 80 x 1 = 80 gpm

Irrigation has not been included in the example since the demand curves in Fig. 4.2 and 4.3 cover only domestic use. The example is taken from an actual case where the demand was 67 gpm, which is slightly lower than the theoretical demand of 80 gpm. Wash-down demand when garden hoses are used can be obtained from Fig. 4.1 for three sizes of hose and for pressures at the house piping from 10 to 100 psi.

The number and type of fixtures in a small residence are usually known; however, surveys for large estate-type homes and public and commercial buildings require

ATTACHMENT B
Tilden Project LLC

AVERAGE & MAX. DAILY DEMAND

Area	Item [1]	Unit	Flow (Gal./Day)	Total Average Daily Flow (Gal./Day)	Maximum Day Demand Factor (1.5)	Maximum Day Demand (Gal./Day)		
Residential	1 Bedroom Apartment	21	110	2310	1.5	3465		
Residential	2 Bedroom Apartment	20	220	4400	1.5	6600		
Residential	3 Bedroom Apartment	0	330	0	1.5	0		
							6710	10065
commercial	Grocery (0.1 gpd/SF)	10000	0.1	1000	1.5	1500		
commercial	Food Service (2 Seats Per table)	10	70	700	1.5	1050		
commercial	Employees	20	15	300	1.5	450		
1) Design Wastewater Flows taken from NYSDEC Design Standards for Intermediate Wastewater System			TOTALS =	8710		13065		
				6	gpm	9	2000	3000
							8710	13065

ESTIMATED PEAK DEMAND

Area	Item	Qty.	Fixture Unit	Fixture Value
Residential				
	Lavatory	41	2	82
	Water Closet	41	3	123
	Combo Shower/Bathtub	41	8	328
	Kitchen Sink	41	3	123
	Washing Machine	5	5	25
	Mop/Service Sink	3	3	9
	Hose Bibbs	6	10	60
	Dishwasher	41	7	287
		Total Fixture Value, Residential =		1037
		Estimated Peak Demand, GPM =		61
Commercial				
	Lavatory	2	2	4
	Water Closet	2	3	6
	Service Sink	3	4	12
	Kitchen Sink	2	3	6
		Total Fixture Value, Commercial =		28
		Estimated Peak Demand, GPM =		40

1) Based on AWWA Figure 4.4, Water Flow Demand per Fixture Unit Value
2) Fixture Unit Values taken from AWWA Table 4.3, Plumbing Fixture Unit Values

Total Peak Demand = **101** GPM

ATTACHMENT C

CHEMICAL DISINFECTION CALCS & INFORMATION

Tilden Development LLC

CT provided by Clearwell Tank

Baffling Factor (BF)	0.5

1	2	3	4	5	6	7	8	9	10	11
Cl Conc	**pH**	**Temp**	**Peak Flow**	**Storage**	**Total Detention**	**Contact Time**	**CT calc**	**CT req**	**Inactivation Ratio**	**Log Removal**
mg/L		°C	GPM	**Volume**	**Time (TDT)**	min	Cl Conc x	table B-2	CT calc/CT req	4 X Inact. Ratio
				Gallons	Vol/Peak Flow	TDT x BF	Contact Time			
0.5	7	10	13	320	24.62	12.31	6.15	6	1.03	4.10

Table 4-2

Baffling Factors

Factor	Description
0.1	None, agitated basin, very low length to width ratio, high inlet/outlet velocities
0.3	Single or multiple unbaffled inlets or outlets, no intra-basin baffles
0.5	Baffled inlet/outlet with some intra-basin baffling
0.7	Perforated inlet baffle, serpentine or perforated intra-basin baffles, outlet weir or perforated launders
1	Very high length to width ratio (pipeline flow) perforated inlet, outlet and intra-basin baffles

TABLE B-2

CT VALUES* FOR

4- LOG INACTIVATION OF VIRUSES BY FREE CHLORINE

T (°C)	pH	
	6-9	10
0.5	12	90
5	8	60
10	6	45
15	4	30
20	3	22
25	2	15

ATTACHMENT D

WATER SYSTEM TREATMENT EQUIPMENT DETAILS

TECHNICAL BROCHURE
BAQUAeABII

** Available up to 100 GPM systems*

Aquavar e-ABII

VARIABLE SPEED CONSTANT PRESSURE SYSTEMS

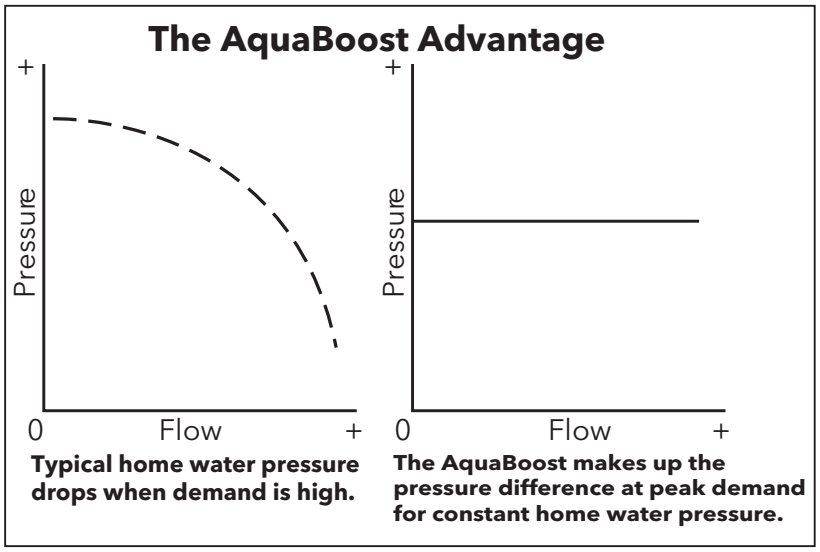
- 1 HP thru 5 HP - Pressure Booster Packages
- 1AB2 and 2AB2 Prewired Pump/Controller Kits

CentriPro
a xylem brand

FEATURES

The e-AB2 variable speed pump controller and complete booster package kits, provide an economical answer for municipal water district customers with low water pressure. Both domestic and light commercial applications can benefit. As water use increases, the controller changes pump speed to maintain pressure. Large supply tanks are eliminated and less wear and tear on your pump and motor.

Think of it as "Cruise Control" for your pump! The e-AB2 is available with a range of flow rates to handle homes with up to four baths, irrigation, filtration and fire suppression systems. Light commercial applications up to 100 GPM at 55 PSI boost. The e-AB2 is available as either a separate controller or as part of a complete pump package with everything you need to plumb it to a domestic water line.



1 HP and 2 HP Controller

3 HP and 5 HP Controller

AQUAVAR IPC CONTROLLER PROVIDES CONSTANT PRESSURE CONTROL PLUS MORE FOR THE 3 HP AND 5 HP MOTOR SIZES (REPLACES 3AB2 AND 5AB2 CONTROLLER)

NEW FEATURES

- Programmed to motor electrical characteristics; just select set pressure.
- Application specific *"Start-Up Genie"* guides you through quick and easy commissioning
- Removable, graphical control panel with display
- Alarm Log records the last 5 alarms
- Hand on, Auto on, and Off buttons for easy pump operation at the keypad – No toggling between local and remote operation!
- Capable of controlling up to 2 fixed speed pumps, with one standard drive
- Duplex variable speed pumping control with auto lead/lag and alternate

e-AB2 HYDRAULIC SELECTION

FEET	PSI BOOST	GPM									
		5-10	20	30	40	50	60	70	80	90	100
46	**20**	1	4	4	9	9	9	9	9	14	14
58	**25**	1	4	4	9	9	9	9	14	14	14
69	**30**	1	4	4	10	10	14	14	14	14	14
81	**35**	1	4	4	10	10	14	14	14	14	14
92	**40**	2	4	5	11	11	14	14	14	14	14
104	**45**	2	5	5	11	11	14	14	14	14	14
116	**50**	2	5	5	11	11	14	14	14	14	15
127	**55**	2	5	6	11	11	14	14	15	15	15
139	**60**	3	6	6	12	12	15	15	15	15	
150	**65**	3	6	7	12	12	15	15	15		
162	**70**	3	6	7	12	12	15	15	15		
173	**75**	3	7	8	12	12	13				
185	**80**	3	7	8	12	13	13				

e-AB2 CONFIGURATIONS

Selection	Part Number	Description
1	1151AB21HM04	115v 1HP 1" disch, 1" suct V6P N3R wired
	1AB21HM04	230v 1HP 1" disch, 1" suct V6P N3R wired
2	1151AB21HM06	115v 1HP 1" disch, 1" suct V6P N3R wired
	1AB21HM06	230v 1HP 1" disch, 1" suct V6P N3R wired
3	2AB23HM06	230v 2HP 1" disch, 1" suct V6P N3R wired
4	1151AB25HM03	115v 1HP 1" disch, 1.25" suct V15P N3R wired
	1AB25HM03	230v 1HP 1" disch, 1.25" suct V15P N3R wired
5	2AB25HM04	230v 2HP 1" disch, 1.25" suct V15P N3R wired
6	2AB25HM05	230v 2HP 1" disch, 1.25" suct V15P N3R wired
7	2AB25HM06	230v 2HP 1" disch, 1.25" suct V15P N3R wired
8	3AVN35HM07	230v 3HP 1" disch, 1.25" suct IPC-N3R
	3AVN15HM07	230v 3HP 1" disch, 1.25" suct IPC-N1
9	2AB22MS1G2D2	230v 2HP 1.25" disch, 1.5" suct V15P N3R wired
10	2AB210HM02	230v 2HP 1.25" disch, 1.5" suct V15P N3R wired
11	3AVN310HM03	230v 3HP 1.25" disch, 1.5" suct IPC-N3R
	3AVN110HM03	230v 3HP 1.25" disch, 1.5" suct IPC-N1
12	5AVN310HM04	230v 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN110HM04	230v 5HP 1.25" disch, 1.5" suct IPC-N1
13	5AVN310HM05	230v 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN110HM05	230v 5HP 1.25" disch, 1.5" suct IPC-N1
14	5AVN32MS1J2K2	230v 5HP 1.25" disch, 1.5" suct IPC-N3R
	5AVN12MS1J2K2	230v 5HP 1.25" disch, 1.5" suct IPC-N1
15	5AVN315HM03	230v 5HP 1.5" disch, 2" suct IPC-N3R
	5AVN115HM03	230v 5HP 1.5" disch, 2" suct IPC-N1

** 1 HP available in 115 volt input models. Items 8, 11 thru 15 do not include tank. Recommend bladder tank, sized to 20% of pump flow (gpm). Pressure Transducer supplied with all configurations.*

NOTE: *PSI is boosting pressure, NOT total system pressure.*

INPUT AND OUTPUT POWER (VOLTAGE AND PHASE)

- All 1AB2 and 2AB2 require single-phase input power
  - o All will work on 1Ø, 208-230V input power
  - o 1151AB2's will work on 1Ø, 115V input power
- All controllers output three-phase, 230 Volt power
- All pumps are equipped with three-phase motors

1151AB21HM04
- 115v SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 4 stg) and Tank (V6P) included
- Wall mount set; Transducer; pre-wired

1AB21HM04
- 230v SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 4 stg) and Tank (V6P) included
- Wall mount set; Transducer; pre-wired

1151AB21HM06
- 115V SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 6 stg) and Tank (V6P) included
- Wall mount set; Transducer; pre-wired

1AB21HM06
- 230v SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 6 stg) and Tank (V6P) included
- Wall mount set; Transducer; pre-wired

2AB23HM06
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (e-HM 6 stg) and Tank (V6P) included
- Wall mount set; Transducer; pre-wired

1151AB25HM03
- 115V SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 3 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

1AB25HM03
- 230v SINGLE PHASE INPUT
- 1 HP variable speed controller (1AB2); Nema 3R
- Pump (e-HM 3 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

2AB25HM04
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (e-HM 4 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

2AB25HM05
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (e-HM 5 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

2AB25HM06
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (e-HM 6 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

3AVN35HM07
- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (e-HM 7 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

3AVN15HM07
- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (e-HM 7 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

2AB22MS1G2D2
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (MCS) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

2AB210HM02
- 230v SINGLE PHASE INPUT
- 2 HP variable speed controller (2AB2); Nema 3R
- Pump (e-HM 2 stg) and Tank (V15P) included
- Wall mount set; Transducer; pre-wired

3AVN310HM03
- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

INPUT AND OUTPUT POWER (VOLTAGE AND PHASE) *continued*

3AVN110HM03
- 230v SINGLE PHASE INPUT
- 3 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN310HM04
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (e-HM 4 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN110HM04
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (e-HM 4 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN310HM05
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (e-HM 5 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN110HM05
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (e-HM 5 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN32MS1J2K2
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (MCS) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN12MS1J2K2
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (MCS) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN315HM03
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 3R
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

5AVN115HM03
- 230v SINGLE PHASE INPUT
- 5 HP variable speed controller (Aquavar IPC); Nema 1
- Pump (e-HM 3 stg) and Transducer (included)
- Tank (not included) and wiring (by others)

CONTROLLERS ONLY

1AB2
- 4.2 Amp, 230v 1HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

1151AB2
- 4.2 Amp, 115v 1HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

2AB2
- 6.9 Amp, 230v 2HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

AVB10030C0X0X0X1
- 10.6 Amp, 230v 3HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

AVB10030A0X0X0X1
- 10.6 Amp, 230v 3HP Nema 1, transducer & cable
- Single phase Input; Three phase Output

AVB10050C0X0X0X1
- 16.7 Amp, 230v 3HP Nema 3R, transducer & cable
- Single phase Input; Three phase Output

AVB10050A0X0X0X1
- 16.7 Amp, 230v 3HP Nema 1, transducer & cable
- Single phase Input; Three phase Output

SUGGESTED AB2 INSTALLATION FOR MUNICIPAL WATER SYSTEM

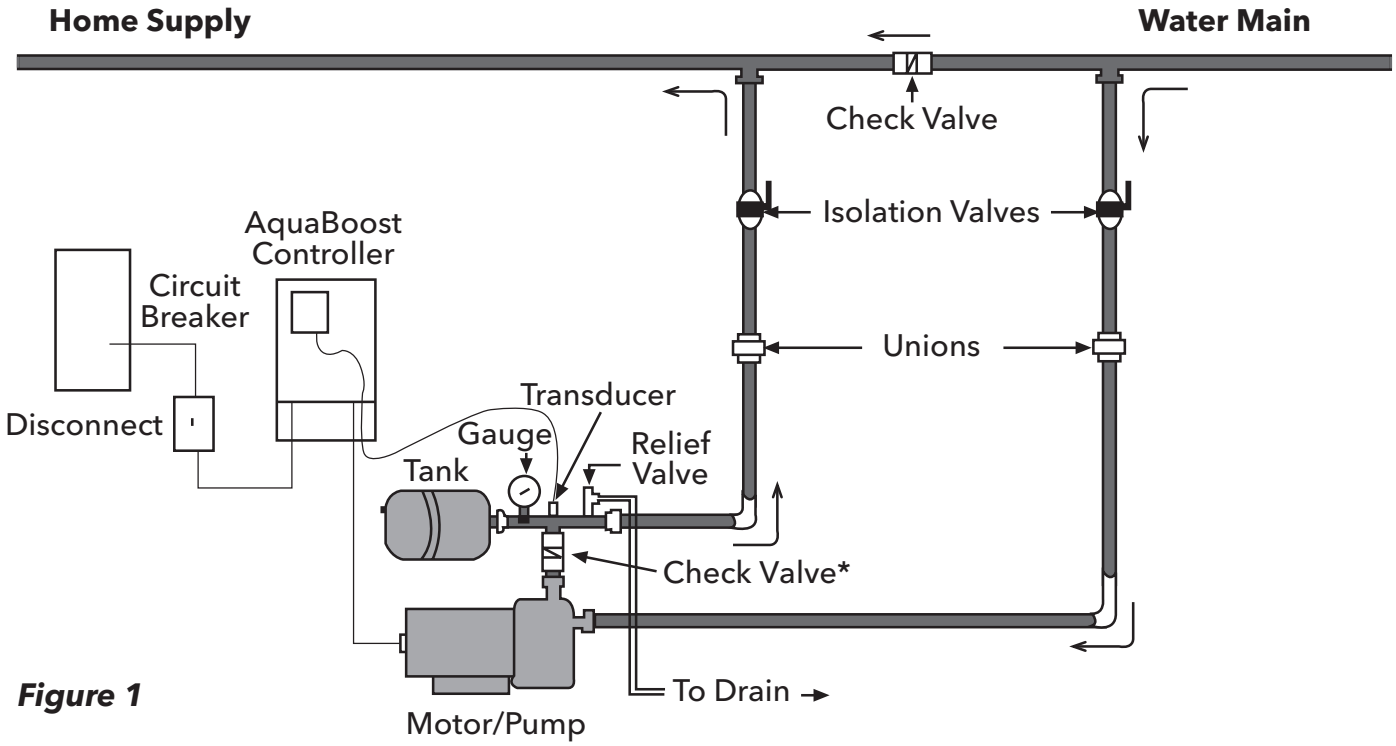


Figure 1

*Check valve - provided by installer

SUGGESTED AQUABOOST INSTALLATION FOR WELL PUMP SYSTEM

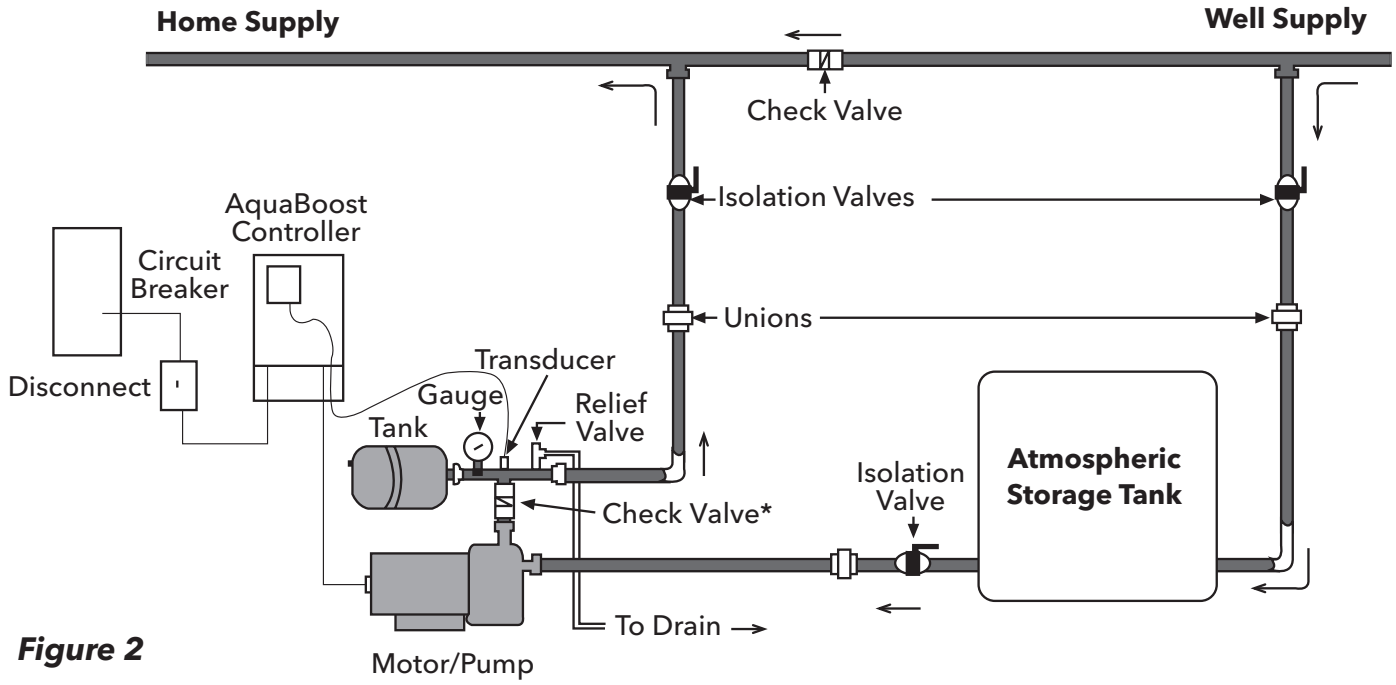
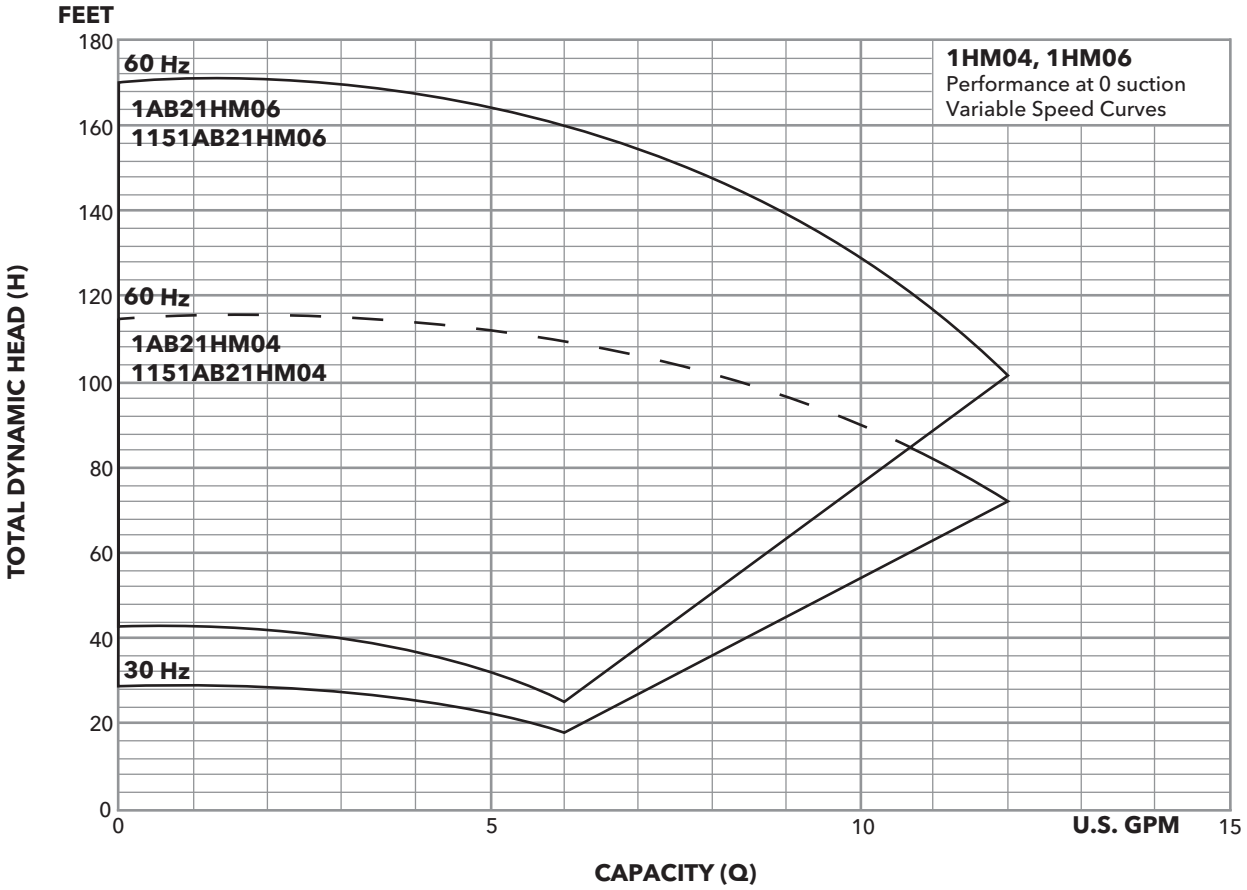
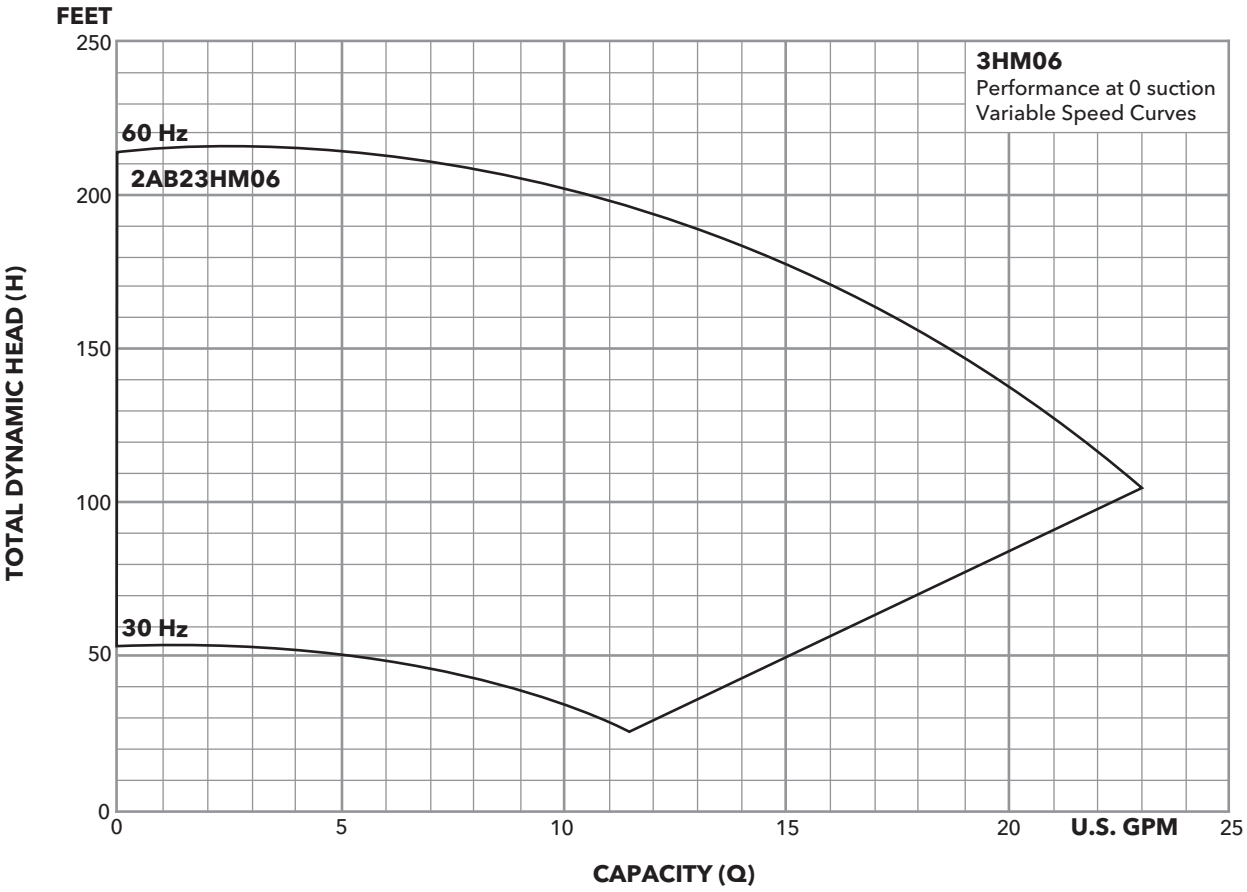
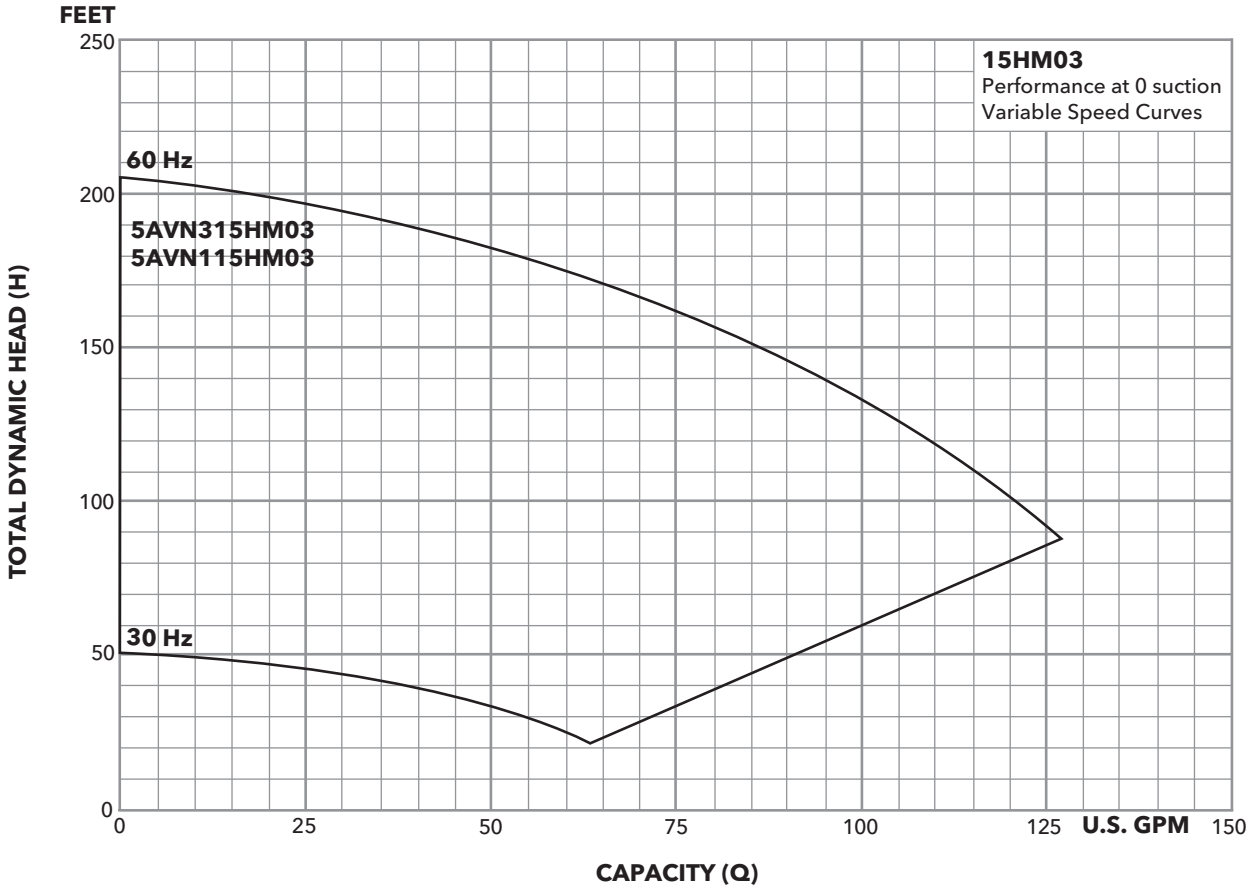


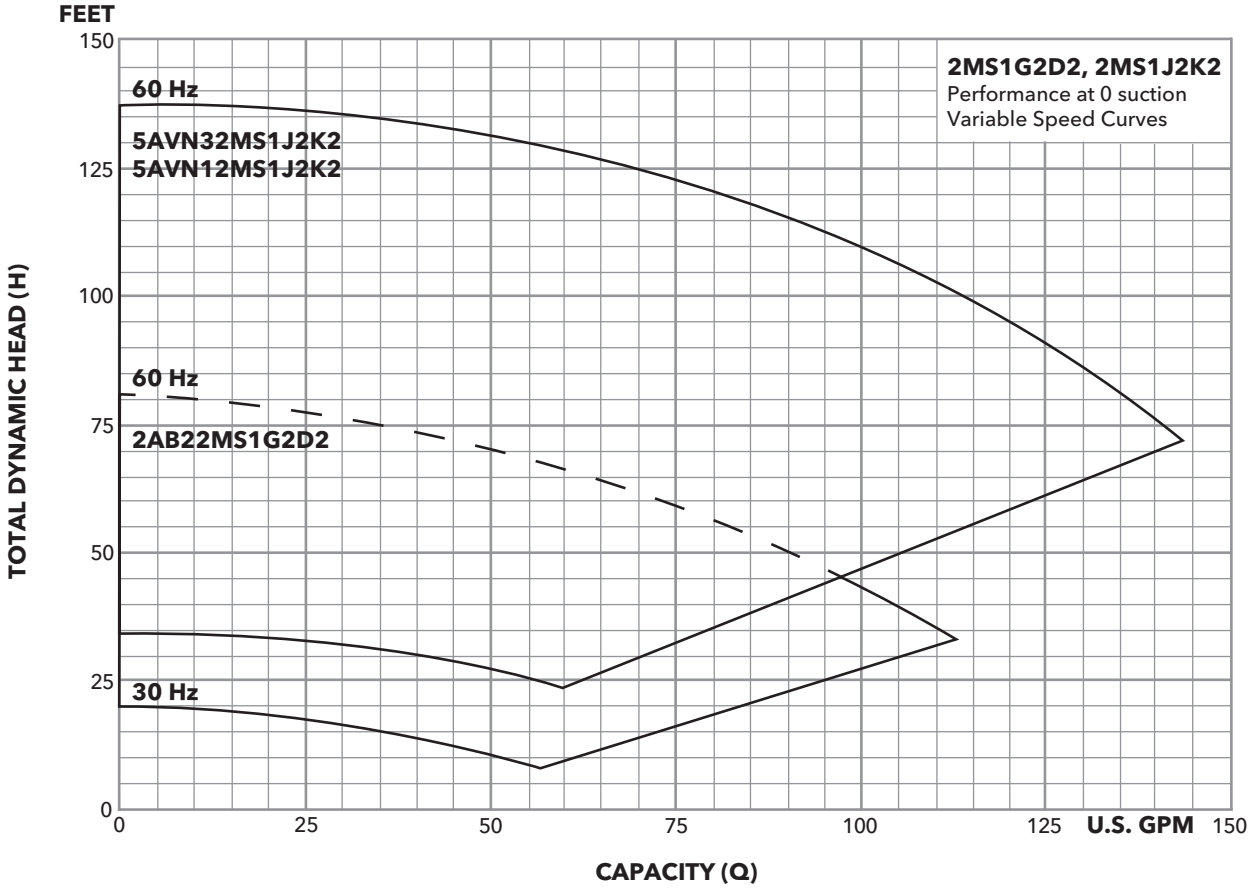
Figure 2

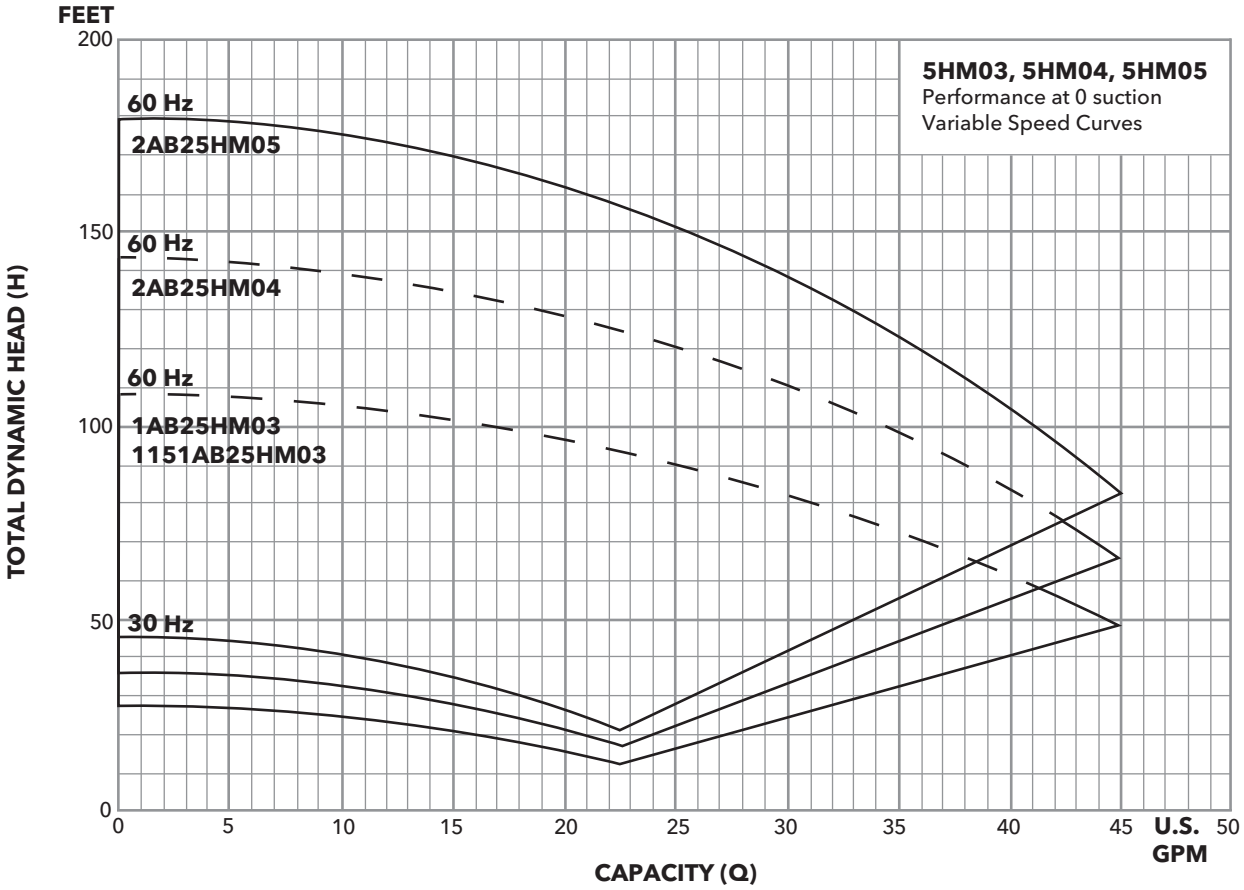
*Check valve - provided by installer

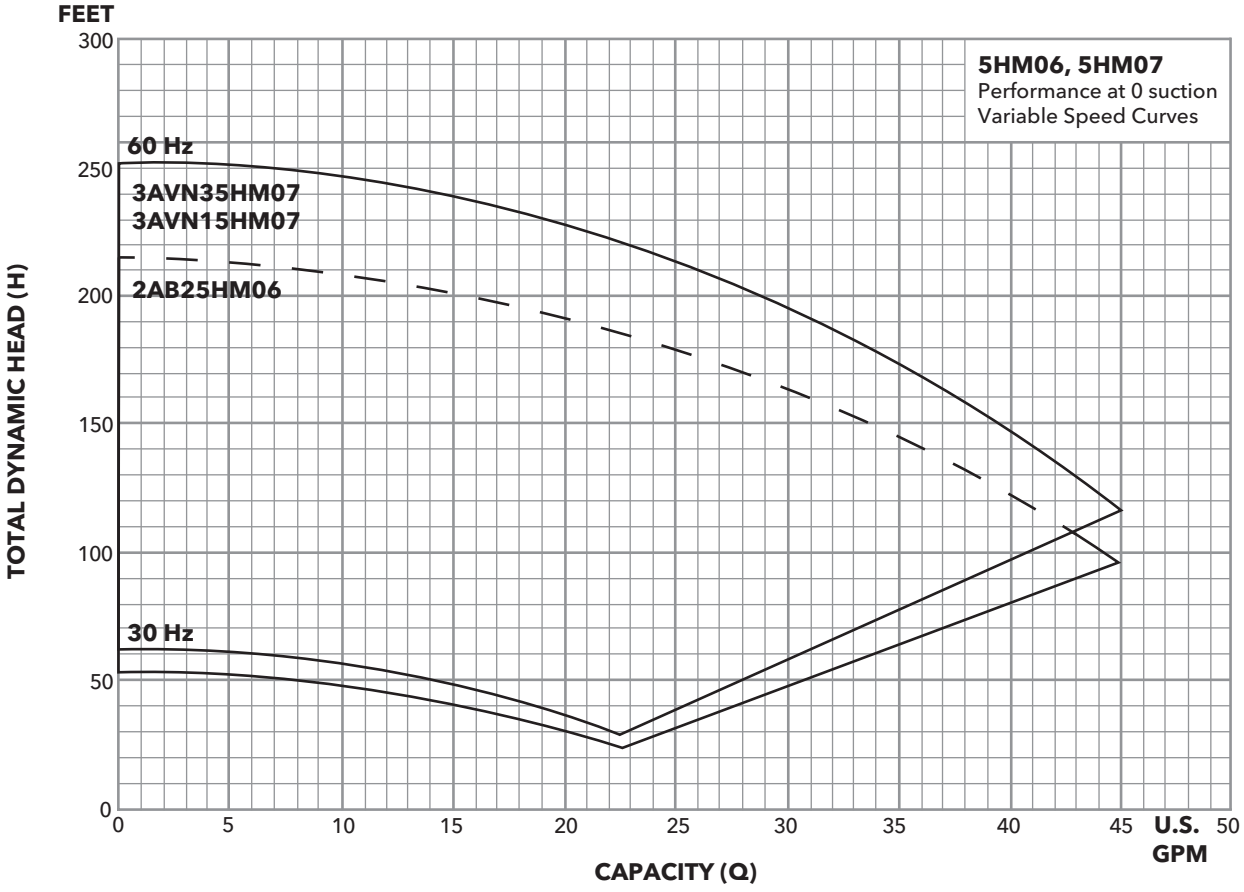

FEET
180
160
140
120
100
80
60
40
20
0
TOTAL DYNAMIC HEAD (H)
60 Hz
1AB21HM06
1151AB21HM06
60 Hz
1AB21HM04
1151AB21HM04
30 Hz
1HM04, 1HM06
Performance at 0 suction
Variable Speed Curves
0
5
10
U.S. GPM
15
CAPACITY (Q)

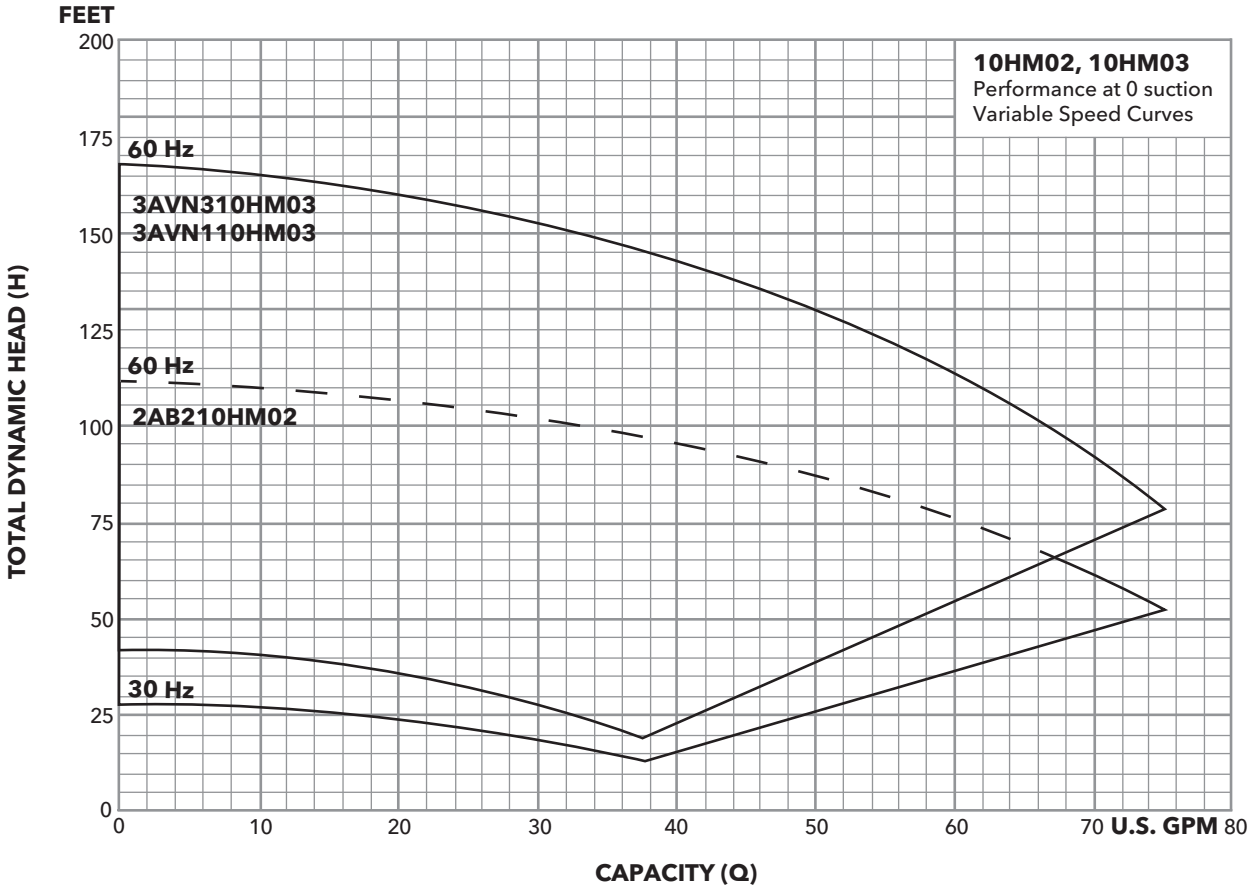

FEET
250
200
150
100
50
0
TOTAL DYNAMIC HEAD (H)
60 Hz
2AB23HM06
30 Hz
3HM06
Performance at 0 suction
Variable Speed Curves
0
5
10
15
20
U.S. GPM
25
CAPACITY (Q)

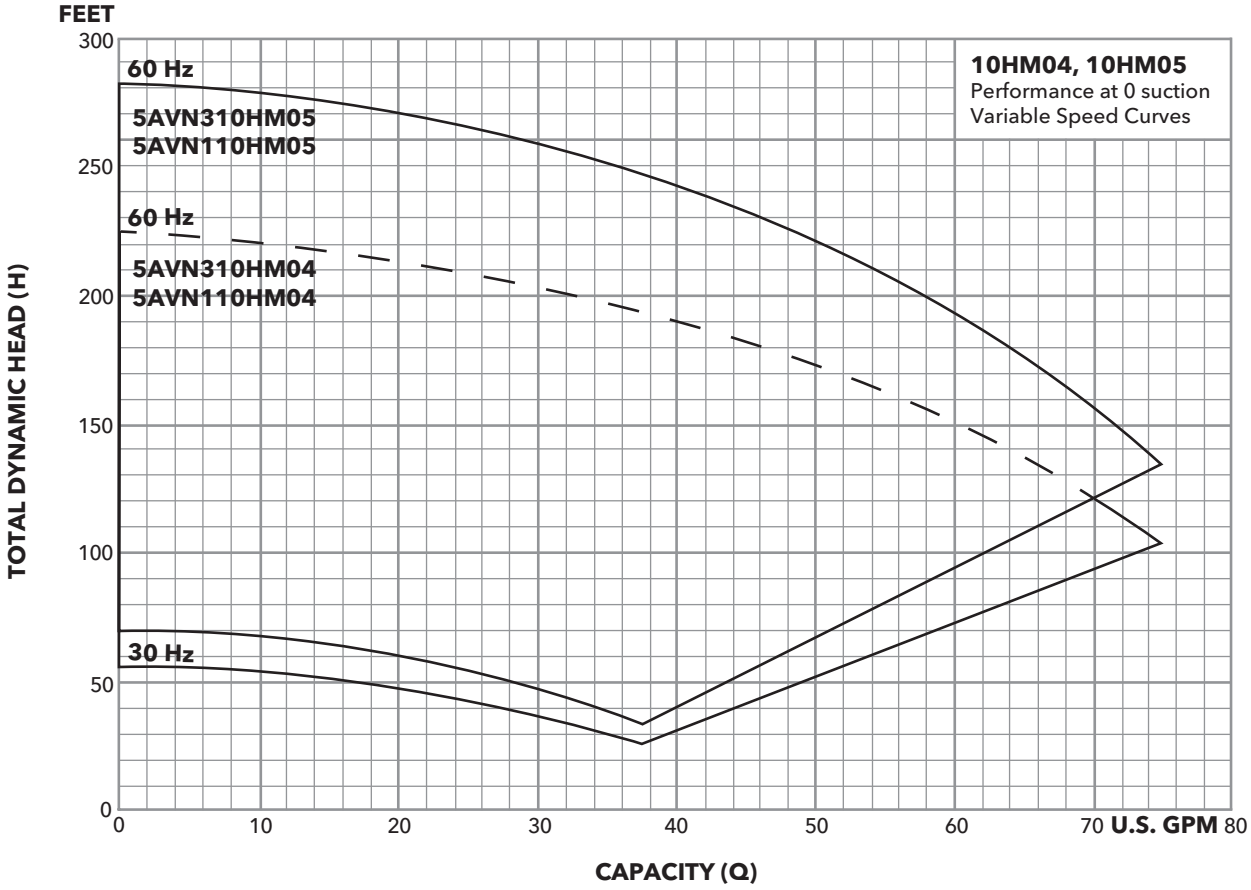

FEET
250
200
150
100
50
0
TOTAL DYNAMIC HEAD (H)
15HM03
Performance at 0 suction
Variable Speed Curves
60 Hz
5AVN315HM03
5AVN115HM03
30 Hz
0
25
50
75
100
125
U.S. GPM
150
CAPACITY (Q)


FEET
150
125
100
75
50
25
0
TOTAL DYNAMIC HEAD (H)
2MS1G2D2, 2MS1J2K2
Performance at 0 suction
Variable Speed Curves
60 Hz
5AVN32MS1J2K2
5AVN12MS1J2K2
60 Hz
2AB22MS1G2D2
30 Hz
0
25
50
75
100
125
U.S. GPM
150
CAPACITY (Q)


FEET
200
150
100
50
0
TOTAL DYNAMIC HEAD (H)
5HM03, 5HM04, 5HM05
Performance at 0 suction
Variable Speed Curves
60 Hz
2AB25HM05
60 Hz
2AB25HM04
60 Hz
1AB25HM03
1151AB25HM03
30 Hz
0
5
10
15
20
25
30
35
40
45
50
U.S. GPM
CAPACITY (Q)


FEET
300
250
200
150
100
50
0
TOTAL DYNAMIC HEAD (H)
5HM06, 5HM07
Performance at 0 suction
Variable Speed Curves
60 Hz
3AVN35HM07
3AVN15HM07
2AB25HM06
30 Hz
0
5
10
15
20
25
30
35
40
45
50
U.S. GPM
CAPACITY (Q)


FEET
TOTAL DYNAMIC HEAD (H)
200
175
150
125
100
75
50
25
0
10HM02, 10HM03
Performance at 0 suction
Variable Speed Curves
60 Hz
3AVN310HM03
3AVN110HM03
60 Hz
2AB210HM02
30 Hz
0
10
20
30
40
50
60
70
U.S. GPM
80
CAPACITY (Q)


FEET
TOTAL DYNAMIC HEAD (H)
300
250
200
150
100
50
0
10HM04, 10HM05
Performance at 0 suction
Variable Speed Curves
60 Hz
5AVN310HM05
5AVN110HM05
60 Hz
5AVN310HM04
5AVN110HM04
30 Hz
0
10
20
30
40
50
60
70
U.S. GPM
80
CAPACITY (Q)

AQUAVAR ABII CONTROLLER FEATURES

Input Power* – 208-230V ±15%, single phase (controller only)

Output Power – Up to 230V three phase (based on input voltage). Motor rated for 208-230V, ±10%.

Maximum Output Current – 4.2 amps – 1AB2 (1 HP)
– 6.9 amps – 2AB2 (2 HP)

Input Controls – Up and down buttons to set pressure.

Signal Lights – Power on, pump running, inverter stopped, pump stopped, standby, faults/errors.

Electrical Efficiency – Over 95% at full load

Protection Against – Short circuit, under voltage, overload, motor temperature, dead heading, run out, suction loss, sensor fault, bound pump, over voltage, static discharge. **Note:** Suction loss/run out is set for minimum 10 psi at discharge!

Ambient Temperature – 34° F to 104° F

Maximum Humidity – 95% at 104° F, non-condensing

Air Pollution – Avoid mounting in areas with excessive dust, acids, corrosives and salts.

Approvals – (Listing on Controller Only)

Controller Enclosure – Outdoor, NEMA 3R, IP 43 (Rain-tight)

Mounting – Wall mount with mounting hardware.

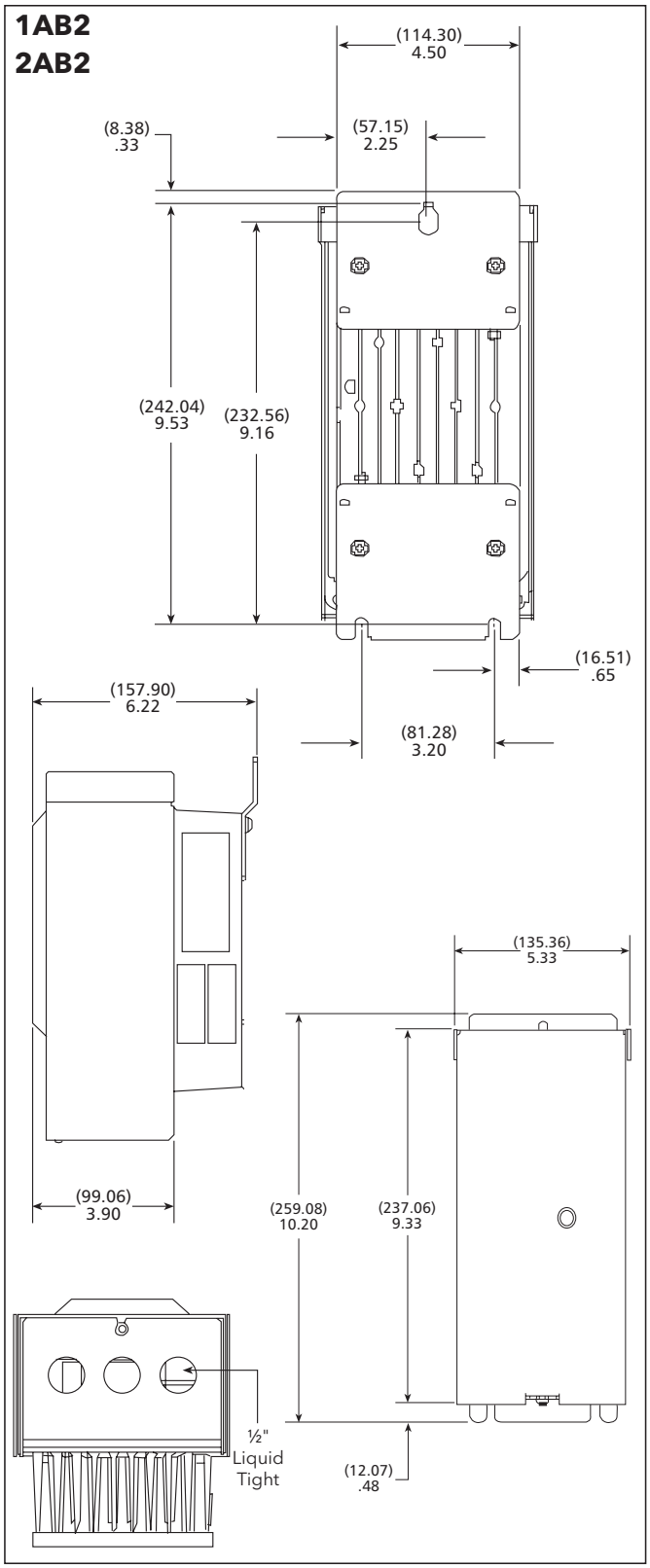
Cooling – Convection with cast aluminum heat sink.
– 3 HP, 5 HP with temperature fan

Transducer – 0.5 - 4.5 VDC with 5 VDC power supply, 100 psi range, 10-foot 3-wire shielded cable.

Input Wire – 5 feet of 14, 10 or 8 gauge cable. Depending on size, cable is pre-wired to controller and motor conduit box.

Output Wire – 10 feet of 14 gauge cable. Cable is pre-wired to controller and pump motor (when provided).

*Low input voltage may affect motor operation.



PRESSURE RANGE

Nominal Range – Field adjustable from 20 - 85 psi, total system pressure.

WARNING **DO NOT SET REQUIRED SYSTEM PRESSURE ABOVE 85 PSI. SEVERE DAMAGE TO PLUMBING COULD RESULT. PLUMB RELIEF VALVE OUTSIDE OR TO A DRAIN.**

AQUAVAR IPC FEATURES

Input Power* – 200V to 240V ±10%, single phase (controller only)

Output Power – Up to 230V three phase (based on input voltage).

Maximum Output Current – 10.6 amps (3 HP)
– 16.7 amps (5 HP)

Input Controls – Keypad; LCD graphical display

Signal Lights – Power on, inverter stopped, standby, warning/alarms; auto ON.

Electrical Efficiency – Over 95% at full load

Protection Against – MOTOR: Ground Fault, Motor Stall, Motor Over Temperature, Motor Condensation, Motor Overload. PUMP: Pump No-Flow, Under Pressure, No Water / Loss of Prime, Short-Cycle.

Ambient Temperature – 34° F to 114° F

Maximum Humidity – 93% at 114° F, non-condensing

Air Pollution – Avoid mounting in areas with excessive dust, acids, corrosives and salts.

Approvals – (Listing on Controller Only)

Controller Enclosure – Outdoor, NEMA 3R, IP 43 (Rain-tight); Indoor, NEMA 1, IP 21

Mounting – Wall mount

Cooling – Convection with cast aluminum heat sink.
– With temperature fan

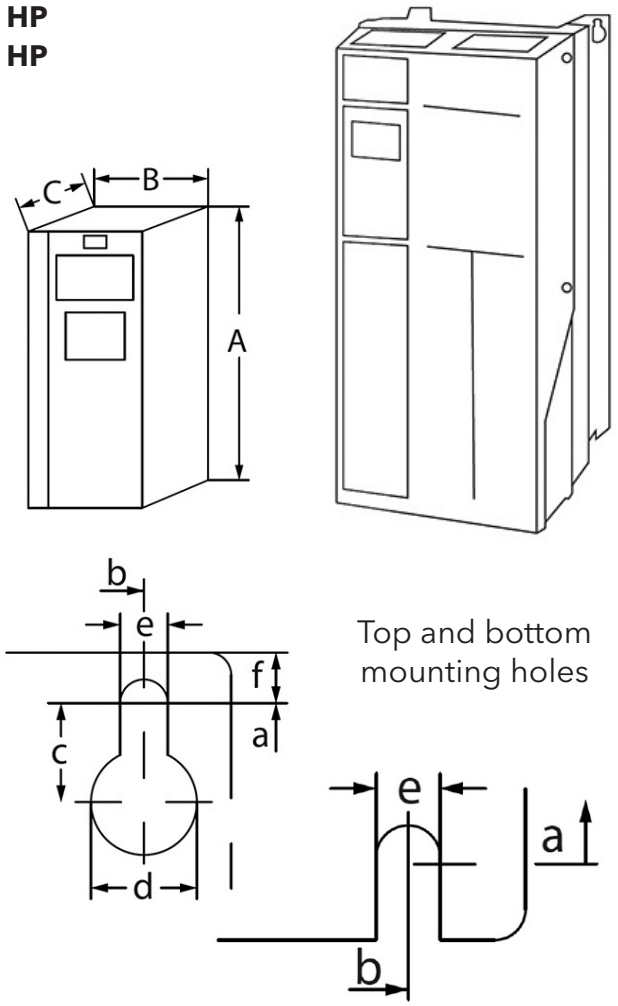
Transducer – 4-20 mA power supply, 300 psi range, 16-foot shielded cable.

Input Wire – Supplied by installer, refer to instruction manual

Output Wire – Supplied by installer, refer to instruction manual

*Low input voltage may affect motor operation.

3 HP
5 HP



Top and bottom mounting holes

HEIGHT

Enclosure:
18.90 in (480 mm)

Distance Between Mounting Holes (a):
17.87 in (454 mm)

WIDTH

Enclosure:
9.53 in (242 mm)

Distance Between Mounting Holes (b):
8.27 in (210 mm)

DEPTH

Without A/B Option Card*:
10.24 in (260 mm)

SCREW HOLES

c: 0.47 in (12 mm)

d: 0.75 in (19 mm)

e: 0.35 in (9 mm)

f: 0.35 in (9 mm)

Maximum Weight:
51 lbs (23.1 kg)

* Depth of enclosure will vary with different options installed.

PRESSURE RANGE

Nominal Range – Field adjustable through 300 psi, total system pressure.

WARNING **DO NOT SET REQUIRED SYSTEM PRESSURE ABOVE 85 PSI. SEVERE DAMAGE TO PLUMBING COULD RESULT. PLUMB RELIEF VALVE OUTSIDE OR TO A DRAIN.**

DIMENSIONS (For Reference Only - Do not use for construction purposes)

MCS PUMP WITH TANK AND TEE

Capacities – to 120 GPM

Rotation – Right hand clockwise, viewed from motor end

Materials – 316L stainless steel casing
316L impeller

Motor – 1 HP, ODP, Three Phase, 208-230/460V

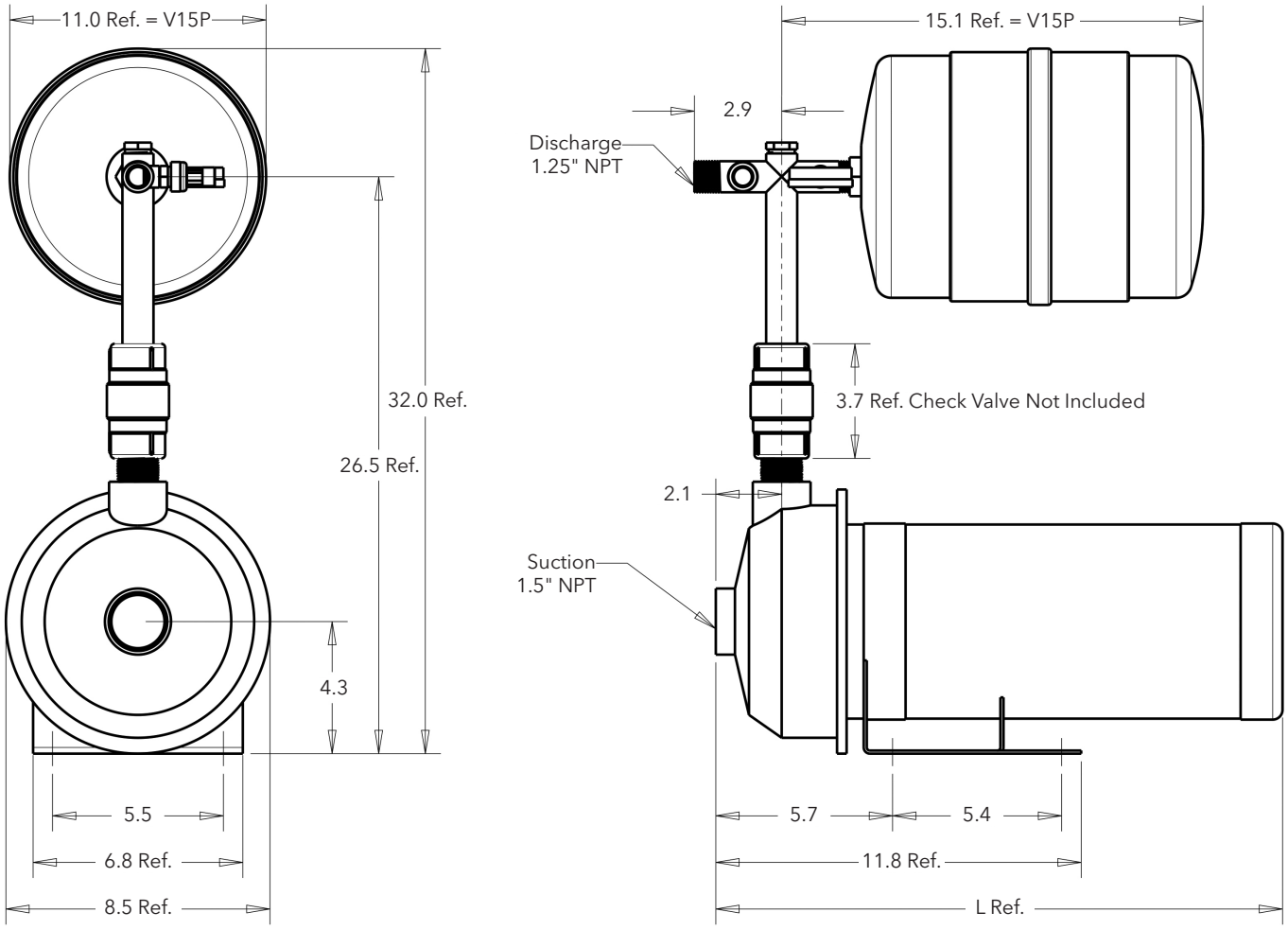
Pump Connections – 1¼ x 1½ NPT

Maximum Temperature of Water – 120° F
NOTE: Tank Liquid Temperature Limit is 120° F
Pump Liquid Temperature Limit is 140° F

Maximum System Working Pressure – 125 psi

Seal – Carbon / Silicon Carbide / EPR

Overload protection, starters, heaters not required.
Dimensions are in inches.



DIMENSIONS (For Reference Only - Do not use for construction purposes)

e-HM PUMPS

Capacities – to 12 GPM (1HM)
to 23 GPM (3HM)
to 45 GPM (5HM)

Rotation – Right hand clockwise, viewed from motor end

Materials – 316L stainless steel for all liquid handling components

Motor – 1 HP, TEFC, Three Phase,208-230/460V
– 1.5 HP, TEFC, Three Phase,208-230/460V
– 2 HP, TEFC, Three Phase,208-230/460V

Pipe Connections – 1 x 1 NPT (1HM/3HM)
– 1 x 1¼ NPT (5HM)

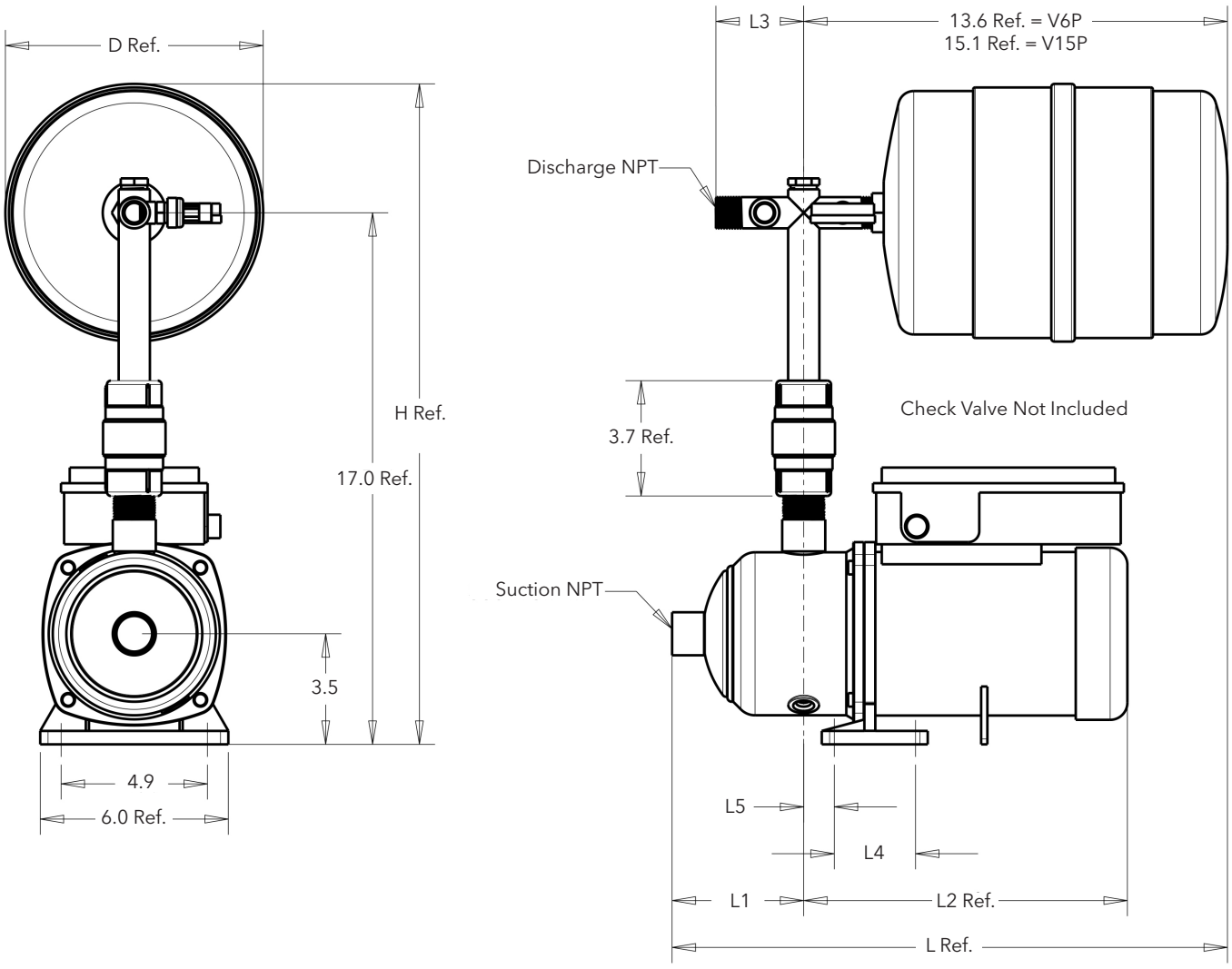
Maximum Temperature of Water – 120° F

NOTE: Tank Liquid Temperature Limit is 120° F
Pump Liquid Temperature Limit is 212° F

Maximum System Working Pressure – 145 psi

Seal – Carbon / Silicon Carbide / EPR

Overload protection, starters, heaters not required. Dimensions are in inches.



DIMENSIONS (For Reference Only - Do not use for construction purposes)

e-HM PUMPS

Capacities – to 45 GPM (5HM)
to 75 GPM (10HM)
to 127 GPM (15HM)

Rotation – Right hand clockwise, viewed from motor end

Materials – 316L stainless steel for all liquid handling components

Motor – 2 HP, TEFC, Three Phase,208-230/460V (5HM/10HM)
– 3 HP, TEFC, Three Phase,208-230/460V (10HM)
– 4 HP, TEFC, Three Phase,208-230/460V (10HM)
– 5.5 HP, TEFC, Three Phase,208-230/460V (10HM/15HM)

Pipe Connections – 1 x 1¼ NPT (5HM)
– 1¼ x 1½ NPT (10HM)
– 1½ x 2 NPT (15HM)

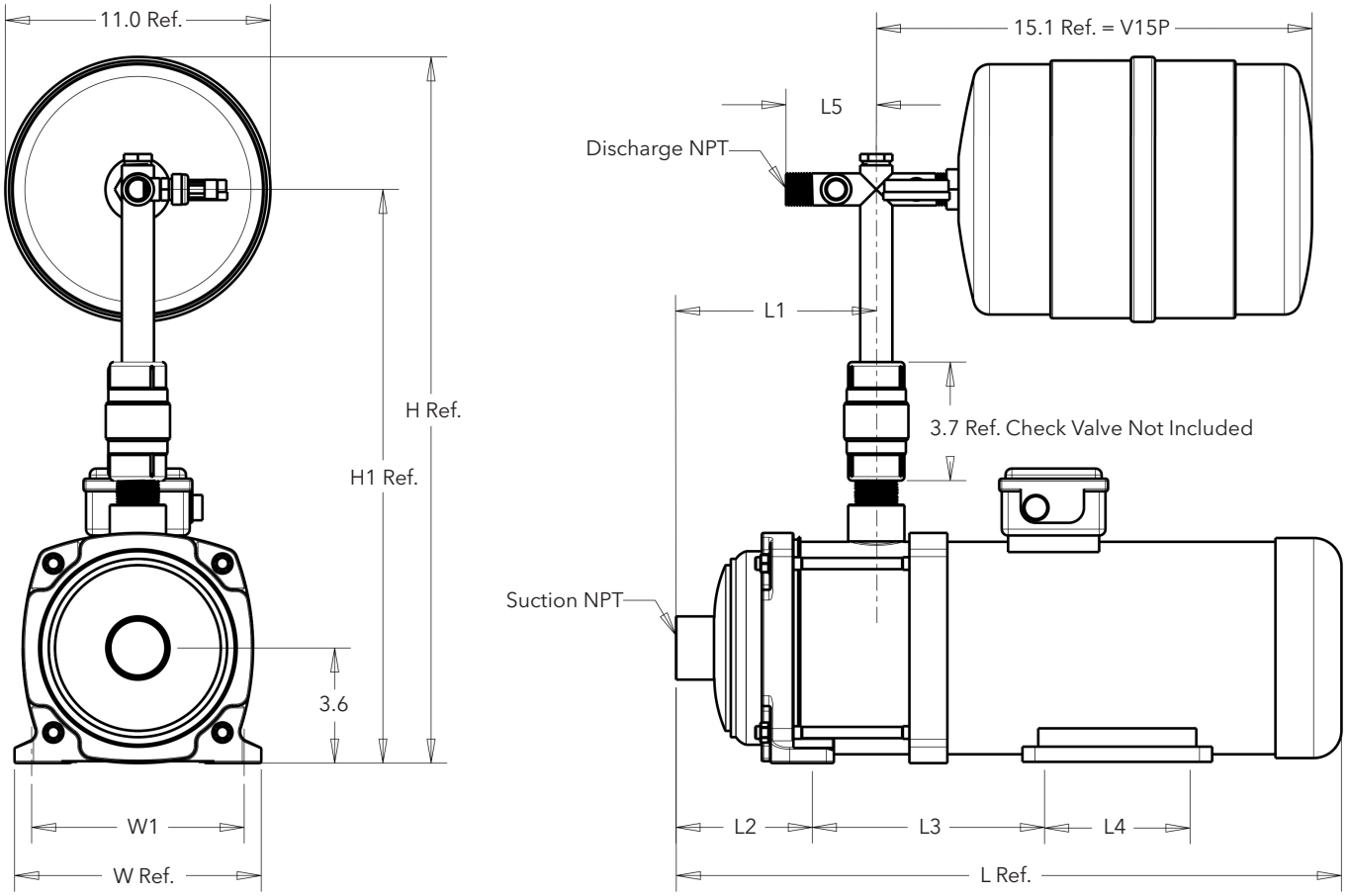
Maximum Temperature of Water – 120° F

NOTE: Tank Liquid Temperature Limit is 120° F
Pump Liquid Temperature Limit is 212° F

Maximum System Working Pressure – 85 psi

Seal – Carbon / Silicon Carbide / EPR

Overload protection, starters, heaters not required. Dimensions are in inches.



ELEVATION DIMENSIONS - REFERENCES PAGES 13 - 15

	Tank and Tee assembly incl.	L	L1	L2	L3	L4	L5	D	H			Suction NPT	Discharge NPT	Page
2MS1G2D2BP	Yes	15.9												13
2MS1J2K2BP	No	18.3												13
1HM04N05T6PBQEBP	Yes	17.8	4.2	10.4	2.8	2.2	1.0	8.25"	21.1			1"	1"	14
1HM06N05T6PBQEBP	Yes	20.9	5.8	11.9	2.8	2.2	1.0	8.25"	21.1			1"	1"	14
3HM06N11T6PBQEBP	Yes	20.9	5.8	11.9	2.8	2.2	1.0	8.25"	21.1			1"	1"	14
5HM03N07T6PBQEBP	Yes	19.2	4.1	11.9	2.8	3.9	3.7	11"	22.5			1.25"	1"	14
5HM04N11T6PBQEBP	Yes	20.2	5.1	11.9	2.8	3.9	3.7	11"	22.5			1.25"	1"	14
5HM05N15T6PBQEBP	Yes	21.2	6.1	11.9	2.8	3.9	3.7	11"	22.5			1.25"	1"	14
		L	**L1**	**L2**	**L3**	**L4**	**L5**	**H**	**H1**	**W**	**W1**	**Suction NPT**	**Discharge NPT**	**Page**
5HM06N15T6PBQEBP	Yes	22.0	6.2	4.2	11.9	3.9	2.8	23.4	17.9	6.5	5.5	1.25"	1"	15
5HM07N22T6PBQEBP	No	25.1	7.2	4.2	14.7	4.9	2.8	23.4	17.9	6.5	5.5	1.25"	1"	15
10HM02N15T6PBQEBP	Yes	17.5	4.9	4.3	4.8	3.9	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	15
10HM03N22T6PBQEBP	No	19.5	4.9	4.3	5.7	4.9	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	15
10HM04N30T6PBQEBP	No	20.8	6.2	4.3	6.9	4.9	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	15
10HM05N40T6PBQEBP	No	23.3	7.5	4.3	9.0	5.5	2.9	30.7	25.2	7.7	6.6	1.5"	1.25"	15
15HM03N40T6PBQEBP	No	22.2	5.8	4.3	6.9	5.5	2.9	30.7	25.2	7.7	6.6	2"	1.5"	15

ALTERNATE PUMP MODELS FOR USE WITH 1AB2 CONTROLLER

MCC – ½, ¾, 1 HP, 3 ph, ODP or TEFC motor versions
3642 – ⅓, ½, 1 HP, 3 ph, ODP or TEFC motor versions
GT073, GT103 – 3 ph, ODP or TEFC motor versions
HSC07, HSC10 – 3 ph, ODP or TEFC motor versions
5GB, 7GB – ½, ¾, 1 HP, 3 ph, ODP or TEFC motor versions
NPE – ½, ¾, 1 HP, 3 ph, ODP or TEFC motor versions
NPO – ½, ¾, 1 HP, 3 ph, ODP or TEFC motor versions
ICS – ½, ¾, 1 HP, 3 ph, ODP or TEFC motor versions
LB – ½ and ¾ HP, 3 ph, ODP or TEFC motor versions

ALTERNATE PUMP MODELS FOR USE WITH 2AB2 CONTROLLER

3642 – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
GT – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
HSC – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
10GB – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
NPE – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
NPO – 1½, 2 HP, 3 ph, ODP or TEFC motor versions
ICS – 1½, 2 HP, 3 ph, ODP or TEFC motor versions

Note: These pumps are not currently offered as a packaged kit. All units require three phase motors. Size pumps and controllers according to service factor amps of the motor.

SUBMERSIBLE PUMPS

Use Aquavar SOLO or S-Drive controllers for submersible applications, they have filters built-in and are programmed for submersibles; alternatively Aquavar IPC with use with DV/DT filter can be used for submersible applications.

PACKAGED HARDWARE WITHOUT PUMP AND MOTOR (SEE PRICING PAGE)

Part Number 15K40

KIT INCLUDES:

1) Tank – V6P (2 gallons)
2) 1" Bronze Discharge Tee – AV20-6
3) Pipe Plug – ½", 6K68
4) Pressure Gauge

Part Number 15K108

KIT INCLUDES:

1) Tank – V15P
2) 1¼" Bronze Discharge Tee – AV20-12
3) Pipe Plug – ½", 6K68
4) Pressure Gauge

xylem
Let's Solve Water

Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.centripro.com

CentriPro and AquaBoost are trademarks of Xylem Inc. or one of its subsidiaries.
© 2016 Xylem Inc. BAQUAeABII May 2016

POLAR RO

PRO XL SERIES

Reverse Osmosis Systems

World Class Manufacturing Facility

Advance Membrane Technology

Precision Manufacturing Tolerances

Made in the USA

Features

- Powder Coated Aluminum Frame
- SS Concentrate and Conc Recirculate Flow Meters with Integrated Needle Valves
- 100psi TFC 4040 Cold Water Membranes
- FRP Membrane Housings
- 40psi / 60psi Tank Pressure Switch
- Stainless Steel, IP65 Rated Inlet Solenoid Valve
- Dual 0-100psi Pre-Filter Pressure Gauges
- 0-300psi Pump Pressure and Concentrate Pressure Gauges
- Franklin TEFC Motor with Stainless Steel Pump
- Digital Computer Controller w/ LCD Display
- Dual TDS Meter, Hour Meter, % Membrane Rejection
- 4.5” X 20” Filter Housing (Made in the USA)

www.polarwatertreatment.com | 509.606.2083 | polarhelp@Headwaterco.com

H2O ESSENTIAL.

POLAR RO

MODEL	PRO XL-12000	PRO XL-16000	PRO XL-20000	PRO XL-24000
220V 1Ph	PROXL1200011	PROXL1600011	PROXL2000011	PROXL2400011
208-230V 3Ph	PROXL1200012	PROXL1600012	PROXL2000012	PROXL2400012
460V 3Ph	PROXL1200013	PROXL1600013	PROXL2000013	PROXL2400013
FLOW SPECIFICATIONS				
Production (gpm)	8.33	11.11	13.88	16.66
Recovery Range	75%	75%	75%	75%
Max Feed T.D.S.	2000	2000	2000	2000
MEMBRANES AND VESSELS				
Membrane Quantity	6	8	10	12
Membrane Size	4040	4040	4040	4040
Nominal Rejection	98.5%	98.5%	98.5%	98.5%
Vessel Material	FRP	FRP	FRP	FRP
Vessels	6	8	10	12
Array	2:2:2	2:2:2:2	2:2:2:2:2	2:2:2:2:2:2
PRE-FILTERS				
Size	4.5” X 20”	4.5” X 20”	4.5” X 20”	4.5” X 20”
Type	Melt Blown	Melt Blown	Melt Blown	Melt Blown
Micron	5	5	5	5
Material	Polypropylene	Polypropylene	Polypropylene	Polypropylene
PUMP AND MOTOR				
Pump Type	Multi-Stage	Multi-Stage	Multi-Stage	Multi-Stage
Pump Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Motor HP (60Hz)	3	3	3	3
Motor Type	TEFC	TEFC	TEFC	TEFC
ELECTRICAL				
V / Freq / Ph / Amp	220V, 60Hz, 1 Ph, 16A	220V, 60Hz, 1 Ph, 16A	220V, 60Hz, 1 Ph, 16A	220V, 60Hz, 1 Ph, 16A
V / Freq / Ph / Amp	208-230V, 60Hz, 3Ph, 9.6-9.2A	208-230V, 60Hz, 3Ph, 9.6-9.2A	208-230V, 60Hz, 3Ph, 9.6-9.2A	208-230V, 60Hz, 3Ph, 9.6-9.2A
V / Freq / Ph / Amp	460V, 60Hz, 3Ph, 5.1A	460V, 60Hz, 3Ph, 5.1A	460V, 60Hz, 3Ph, 5.1A	460V, 60Hz, 3Ph, 5.1A
CONNECTIONS				
Feed	1” FNPT	1” FNPT	1” FNPT	1” FNPT
Permeate	¾” FNPT	¾” FNTP	¾” FNTP	¾” FNTP
Concentrate	¾” FNPT	¾” FNPT	¾” FNPT	¾” FNPT
DIMENSIONS				
L” X W” X H”	26 X 26 X 60	40 X 26 X 60	40 X 26 X 60	40 X 26 X 60
Weights (lbs)	490	520	550	600

Systems production and recovery based on 500TDS, 77°F softened feed water.

Computer projections should be run to optimize the systems recovery and membrane life.

ATTACHMENT E

SPDES Permit Application

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

State Pollutant Discharge Elimination System (SPDES) Application Form: Private, Commercial & Institutional (P/C/I) Discharge of Treated Sanitary Sewage

(•) New Application ( ) Renewal Application ( ) Modification Application

SPDES Number [ ] NY######## **DEC Authorization** [ ] #-####-#####

Applicant/Owner Information

Type of Ownership: (•) Corporate ( ) Individual ( ) Partnership ( ) Public

Name: Tilden Project LLC
Taxpayer ID: 33-4506787
Mailing Address: 58 Pool Hill Rd
City: New Lebanon
State: NY
Zip: 12125
Phone: 9174881061
Email: joshuanyoung@gmail.com

Contact/Agent Information

Name: Brendon Becker
Title: Engineer
Mailing Address: PO Box 610
City: Cobleskill
State: NY
Zip: 12043
Phone: 518-234-4028
Email: bbecker@lamontengineers.com

Facility Information

Facility Name: Tilden Commons
Nature of Business or Facility: Mixed Use
Population Served: 100
Street Address: 538 US Route 20
City: New Lebanon
State: NY
Zip: 12125

Municipality: (•) Town ( ) Village ( ) City
Municipality Name: New Lebanon
County: COLUMBIA

Additional Facility Location Information (if needed): Intersection of US Route 20 and Tilden Road

Tax Map Information: Section 19.2 Block 1 Lot 69

Certification: I hereby affirm under penalty of perjury that the information provided on this form and any attached supplemental forms is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to section 210.45 of the Penal Law.

Signature of Applicant/Owner | JOSH YOUNG Printed Name | MANAGING MEMBER Title | 10/8/2025 Date

Applicable discharge data on the following pages must be completed. Discharges from this facility are not authorized until this application form is attached to the permit signed and authorized by the New York State Department of Environmental Conservation or its designated agency.

Please Indicate Whether Your Facility 'Discharges To Groundwater', 'Discharges To Surface Water', or both.

☒ Discharges To Groundwater

☒ Discharges To Surface Water

SPDES Application for P/C/I Discharge of Treated Sanitary Sewage

Discharges To Groundwater - 1 of 1

Facility Name Tilden Commons

SPDES Number _____ **DEC Authorization** _____

To Add or Remove outfalls, click on the Green + or the Red X respectively. + X

Complete this page of the application if your facility has any discharges to groundwater. Use additional copies of this page to list additional groundwater outfalls. Sampling information is only required if the disposal system is designed to discharge, or discharges 30,000 GPD or more.

Outfall Information:

Outfall No. _____

Outfall Status ◉ Proposed ○ Replacement ○ Existing ○ Expansion

Design Flow _____ Gal/Day

Outfall Location (if subsurface system, indicate center of disposal system area)

Latitude _____ ° _____ ' _____ "

Longitude _____ ° _____ ' _____ "

Treatment:

Standard On Site Treatment: Septic Tanks with:		Alternative On Site Treatment: Septic Tanks with:	
☐ Absorption Trenches	☐ Cut and Fill Systems	☐ Absorption Trenches Using An Alternative Aggregate	☐ Single-Pass Sand Filters & Pressurized Shallow Narrow Drainfields
☐ Shallow Absorption Trenches	☐ Raised Systems	☐ Shallow Absorption Trenches Using An Alternate Aggregate	☐ Mound Systems
☐ Absorption Beds	☐ Seepage Pits	☐ Absorption Beds Using An Alternate Aggregate	☐ Drip Dispersal or Other Low Profile Dispersal System

☐ Other (describe) _____

Frequency of Discharge Months/Year _____ Days/Week _____

Name of Nearest Surface Waters	Distance	Soil Type	Depth To Water Table
	_____ Ft.		_____ Ft.

SPDES Application for P/C/I Discharge of Treated Sanitary Sewage

Discharges to Groundwater

Facility Name Tilden Commons

SPDES Number _____ **DEC Authorization** _____

Outfall No. _____

Sampling Information

Include the following sampling information if the disposal system is designed to discharge, or discharges, 30,000 GPD or more. Please indicate whether the values listed are from sampling results (include the date), estimated from the treatment system design as installed, or estimated from the proposed treatment system design.

Plant Design Pollutant Information	Influent		Effluent		Number of Samples or Source of Estimate
	mg/l	lbs/day	mg/l	lbs/day	
BOD5					
Percent removal, BOD5					
pH, Range					
Nitrate, as N					
Nitrite, as N					
Ammonia, as N					
Nitrogen, Total, as N					
Phosphorus, Total, as P					
Total Residual Chlorine, if used					
Solids, Total Dissolved (Nassau/Suffolk only)					

SPDES Application for P/C/I Discharge of Treated Sanitary Sewage

Discharges To Surfacewater - 1 of 1

Facility Name Tilden Commons

SPDES Number | **DEC Authorization**

To Add or Remove outfalls, click on the Green + or the Red X respectively.

Complete this page of the application if your facility has any discharges to surface water. Complete this form for each surface water outfall.

Discharge Data

Outfall No.	Outfall Status	Design Flow
1	(•) Proposed ( ) Replacement ( ) Existing ( ) Expansion	8710 Gal/Day

Outfall Location (end of pipe or conveyance)

Latitude 42 ° 27 ' 57.8 "

Longitude 73 ° 23 ' 37.6 "

Type of Treatment

Primary treatment provided by conventional septic tank settling, secondary provided by an Orenco filter and UV disinfection

Frequency of Discharge Months/Year 12 Days/Week 7

Name of Receiving Water	Classification	Water Index Number
Wyomanock Creek	C(TS)	H-204- 2-25

SPDES Application for P/C/I Discharge of Treated Sanitary Sewage

Discharges to Surface Water

Facility Name Tilden Commons

SPDES Number | **DEC Authorization**

Outfall No. 1

Sampling Information

Include the following sampling information. Please indicate whether the values listed are from sampling results (include the date), estimated from the treatment system design as installed, or estimated from the proposed treatment system design.

Plant Design Pollutant Information	Influent		Effluent		Number of Samples or Source of Estimate
	mg/l	lbs/day	mg/l	lbs/day	
BOD5	250		5		Estimate on similar resi system
Suspended solids	250		10		Estimate on similar resi system
Percent removal, BOD/TSS	-		98%		Estimate on similar resi system
pH, Range	7-8		6-9		Estimate on similar resi system
Settleable solids, ml/l	10		0.1		Estimate on similar resi system
Solids, total dissolved	500		500		Metcalf & Eddy
Dissolved oxygen	1		7		Estimate on similar resi system
Ammonia, as N	45		1.5/2.2		Estimate on similar resi system
Nitrogen, Total, as N	90		10		Estimate on similar resi system
Phosphorus, Total, as P	8				Assuming not in permit
Fecal Coliform, MPN	10,000		200/400		
Total Residual Chlorine (if used)	-	-	-	-	Not Used
Temperature, Degrees F, Summer	50		50		Degree F, similar system
Temperature, Degrees F, Winter	50		50		Degree F, similar system

ATTACHMENT F

HYDROGEOLIGICAL REPORT

HANSON VAN VLEET
est. 2004
Hydrogeologic Consultants, PLLC

HYDROGEOLOGIC EVALUATION REPORT

Production Well PW-1
Tilden Road Development
Town of New Lebanon, New York

Prepared for:

Lamont Engineers
197 Elm Street
Cobleskill, New York 12043

Prepared By:

Hanson Van Vleet, PLLC
902 Route 146, Suite 2
Clifton Park, New York 12065

March 3, 2026

TABLE OF CONTENTS

1.0 CONCLUSIONS 4
2.0 RECOMMENDATIONS 4
3.0 INTRODUCTION 4
4.0 PURPOSE 5
5.0 METHODS OF STUDY 5
5.1 Introduction 5
5.2 Solicitation of Surrounding Private Water Well Users 5
5.3 Well Construction Information 6
5.3.1 Production Well PW-1 6
5.3.2 528 Route 20 8
5.3.2 550 Route 20 8
5.3.3 4 County Route 5A 8
5.3.4 13 County Route 5A 8
5.3.5 17 County Route 5A 8
5.3.6 43 Tilden Road 8
5.4 Aquifer Pumping Test of PW-1 8
5.4.1 Background Monitoring Period 8
5.4.2 Drawdown Monitoring Period 9
5.4.3 Recovery Monitoring Period 10
5.5 Water Quality Sampling 10
5.6 Precipitation 10
5.7 Data Analysis 10
6.0 PUMPING TEST RESULTS 11
6.1 Background Data 11
6.2 Drawdown Data 12
6.3 Recovery Data 15
6.4 Surface Water Level 15
6.5 Precipitation 15
7.0 WATER QUALITY 16
8.0 WELL PREDICTIONS 16
8.1 Production Well PW-1 16
8.2 Off-site Water Users 17

ATTACHMENTS LIST PROVIDED ON THE FOLLOWING PAGE

FIGURES

Figure 1 – Site Location Map
Figure 2 – Pumping Test Schematic

APPENDICES

Appendix A:	**Private Water Well Documentation**
Appendix B:	**Surrounding NYSDEC Well Completion Reports and Soil Boring Information**
Appendix C:	**Background Graphs**
Appendix D:	**Surface Water Level Graphs**
Appendix E:	**Drawdown Graphs**
Appendix F:	**Drawdown Data**
Appendix G:	**Recovery Graphs**
Appendix H:	**Recovery Data**
Appendix I:	**Water Quality Data**
Appendix J:	**180-Day Projection Graphs**

1.0 CONCLUSIONS

1.1 A 72-hour constant rate pumping test was performed on production well PW-1 at a discharge rate of 13 gallons per minute (gpm).

1.2 A NYSDEC Well Completion Report was not available for PW-1. The well construction information for PW-1 was provided by the drilling firm that installed the well in 1963, Goold Well & Pumps of Valatie, New York. The reported well construction of PW-1 consists of 6-inch diameter casing to 123 feet below grade, and an open rock bore to 352 feet.

1.3 Based on the data evaluated, PW-1 is capable of a long-term yield of at least 13 gpm.

1.4 Based on the data evaluated, the proposed use of PW-1 at 13 gpm will not adversely impact normal use of the surrounding private water wells.

1.5 The initial analytical results of the sample collected from PW-1 indicated the water is in compliance with the 10 NYCRR Subpart 5-1 Drinking Water requirements for all parameters included in the required laboratory analysis, except iron, manganese, chloride, turbidity, and total coliform.

Follow-up analytical results collected from PW-1 indicate the water is in compliance with the 10 NYCRR Subpart 5-1 Drinking Water requirements for all parameters included in the required laboratory analysis, except manganese, combined iron and manganese, and total coliform.

2.0 RECOMMENDATIONS

2.1 Based on the data collected during the constant rate pumping test of production well PW-1, Hanson Van Vleet Hydrogeologic Consultants, PLLC (HVV) recommends that production well PW-1 be put on line at a pumping rate of 13 gpm after it has been properly chlorinated, purged of residual chlorine and has a negative total coliform sample result.

2.2 In order to satisfy the 10 NYCRR Subpart 5-1 Drinking Water requirements, treatment options to decrease the individual concentration of manganese and the combined concentration of iron and manganese should be considered.

2.3 The 6-inch diameter permanent well casing at production well PW-1 was measured at 0.30 feet above grade. The current New York State Department of Health (NYSDOH) regulations require that the permanent casing for all groundwater sources shall project at least 12 inches above the pumphouse, well platform floor or concrete apron surface and at least 18 inches above final ground surface. Therefore, the permanent 6-inch casing should be extended in accordance with NYSDOH regulations.

3.0 INTRODUCTION

This report presents data, evaluations, and conclusions from the performance of the 72-hour constant rate pumping test of production well PW-1. Production well PW-1 is owned by Tilden Road Development. This hydrogeologic investigation, completed by

HVV, was performed to determine the long-term sustainable yield of PW-1, as well as to provide data and analysis needed to evaluate the wells' current compliance with the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) requirements.

The subject property containing the pre-existing production well PW-1 is located north of US Route 20, between Tilden Road and Route 5A, in the Town of New Lebanon, Columbia County, New York (Figure 1). Mr. Michael Augello, Field Technician of HVV, performed the test data collection. Mr. Steven Catalano, P.G., Senior Hydrogeologist of HVV, completed the data analysis and report preparation. Mr. James Gironda, P.G., Partner/Senior Hydrogeologist of HVV, provided supervision and guidance throughout testing and analysis, and reviewed the report for quality and content. O'Connor Water Pumps (NYRD10948), of Richmondville, New York, performed all pump-related work to facilitate the pumping test.

4.0 PURPOSE

The evaluation was performed to determine the long-term yield of PW-1 and to collect the necessary drinking water samples to meet the 10 NYCRR Subpart 5-1 Drinking Water regulations.

5.0 METHODS OF STUDY

5.1 Introduction

The investigation consisted of four phases:

Phase 1: Constant Rate Pumping Test;

Phase 2: Water Quality Sample Collection and Analysis;

Phase 3: Data Evaluation; and

Phase 4: Reporting

5.2 Solicitation of Surrounding Private Water Well Users

Attempts were made to contact all property owners with a private water source located within 500 feet of production well PW-1, except at 43 Tilden Road which extended the radius to approximately 770 feet, to solicit their participation in the groundwater monitoring network during testing activities. An attempt was made to contact the owners of properties located at the addresses listed below. A summary of the outreach results is provided in Table 1 below.

Table 1
Surrounding Private Water Well User Outreach

Property Address	Contact Method	Access Agreement Returned	Well Survey Returned	Monitored During Testing	Notes
7, 9, 11 and 17 Tilden Road	(1)	No	No	No	--

21 Tilden Road	(2)	No	No	No	Well located in building unsafe for entry
36 Tilden Road	(1)	No	No	No	Declined to participate in-person
43 Tilden Road	(1)	Yes	Yes	Yes	Well and pond monitored.
516 Route 20	(1) + (2)	No	No	No	--
523 Route 20	(1)	No	No	No	Well was inaccessible.
528 Route 20	(1)	Yes	Yes	Yes	--
531 Route 20	(1)	No	No	No	Declined to participate in-person
536C Route 20	(1)	No	No	No	--
550 Route 20	(1)	Yes	Yes	Yes	--
614 Route 20	(1)	No	No	No	--
4 County Route 5A	(1)	Yes	Yes	Yes	--
7A County Route 5A	(1) + (2)	No	No	No	Declined to participate in-person
9 County Route 5A	(1)	No	No	No	--
13 County Route 5A	(1)	Yes	Yes	Yes	--
17 County Route 5A	(2)	Yes	Yes	Yes	--

(1) In-person
(2) USPS certified mail

Details regarding the well construction information provided by the property owners are provided in Section 5.3 of this report. The monitored off-site wells consisted of active residential or commercial wells, except 550 Route 20, which is an inactive well on the property for the Town library.

The signed access agreement forms, completed water well survey forms and USPS Certified Mail Receipts are attached in Appendix A.

5.3 Well Construction Information

5.3.1 Production Well PW-1

An original NYSDEC Well Completion Report (WCR) was not available for PW-1. The well construction information for PW-1 was provided by the drilling firm that installed the

well in 1963, Goold Well & Pumps of Valatie, New York. The reported well construction of PW-1 consists of 6-inch diameter casing to 123 feet below grade, and an open rock bore to 352 feet. The 6-inch diameter casing was measured at 0.30 feet above grade at the time of the pumping test.

A geologic log from the installation of PW-1 was not available. NYSDEC WCRs available on the online DECinfo Locator database were reviewed for the area within approximately 1,500 feet of PW-1. Two NYDEC WCRs are terminated in the surficial outwash sand and gravel at depths ranging from 42 to 68 feet below grade. Several other NYSDEC WCRs note a lacustrine clay layer and/or glacial till layer, ranging from 20 to 90 feet thick, overlying bedrock. Bedrock was logged at depths beginning from 50 to 98 feet below grade. NYSDEC WCRs located within 1,500 feet of PW-1 that extend below the surficial outwash sand and gravel are provided in Appendix B.

Due to the limited geologic information available in the area immediately surrounding PW-1, the project engineer directed the installation of two soil borings logged in the field by the drilling contractor, Cascade Drilling of Schenectady, New York. Soil boring SB-1 was installed approximately 375 feet southwest of PW-1 and soil boring SB-2 was installed approximately 75 feet west of PW-1 on February 3, 2026. The soil boring log for SB-1 indicates the boring encountered gravel from 0 to 9 feet below grade, a mixture of clay and gravel from 9 to 10 feet below grade, and clay from 10 feet below grade to the total borehole depth of 50 feet below grade. The soil boring log for SB-2 indicates the boring encountered gravel from 0 to 9 feet below grade, a mixture of clay and gravel from 9 to 16 feet below grade, clay from 16 to 21 feet below grade, sand from 21 to 26 feet below grade, a mixture of sand and silt from 26 to 34 feet below grade, tight, fine sand from 34 to 36 feet below grade and hardpan from 36 feet below grade until refusal was encountered at 37.5 feet below grade. The findings from boring SB-1 and SB-2 verify the information provided in the available surrounding DEC WCRs. The boring location map, including soil boring information, is provided in Appendix B.

The available NYSDEC WCRs and boring information provided by the project engineer indicate that the area surrounding PW-1 contains lacustrine silt and clay, overlying basal glacial till clay that directly overlies bedrock. The lacustrine silt and clay and underlying glacial till range in thickness from 20 to 90 feet. The thick layer of clay and/or till serves as an aquitard due to its low permeability, which restricts the flow of water. The 20- to 90-foot-thick aquitard in the area of PW-1 limits a direct vertical pathway for surficial contamination through this fine-grained unit.

The permanent casing at PW-1 set at a depth of 123 feet below grade with a static water level measured at 7.29 feet btoc indicates significant artesian pressure in the bedrock aquifer at PW-1. The artesian pressure is indicative of a confined aquifer with an upland recharge area. The hydrogeologic data suggests that recharge to PW-1 is not provided by the area immediately surrounding the well, but rather originates from upland areas where exposed bedrock and or thin permeable soils are exposed to direct precipitation.

5.3.2 528 Route 20

The property owner of 528 Route 20 did not provide any information on the well construction of the well at the property. However, a NYSDEC WCR was located on the online DECinfo Locator database. The NYSDEC WCR indicates the well drilled at 528 State Route 20 consisted of 107 feet of 6-inch diameter casing and a total well depth of 220 feet below grade. The NYSEC WCR indicates the lithology encountered at the well consisted of sand and gravel to 25 feet below grade, hard pan from 25 to 80 feet below grade, clay from 80 to 94 feet below grade and limestone from 94 to 220 feet below grade. At the surface, the well consisted of 1.13 feet of 6-inch diameter steel casing above grade.

The NYSDEC WCR is included in Appendix B.

5.3.2 550 Route 20

The property owner of 550 Route 20 did not provide any information on the well construction of the well at the property. At the surface, the well consisted of 1.21 feet of 6-inch diameter steel casing above grade.

5.3.3 4 County Route 5A

The property owner indicated the well was installed by Goold Wells, Inc. to 200 feet below grade in 1968 with a yield of 20 gpm. No other well construction information was provided by the property owner. At the surface, the well consisted of 1.13 feet of 6-inch diameter steel casing above grade.

However, a weighted 200-foot measuring tape was extended to its full length and the bottom of the well was not encountered. Therefore, the well depth is known to be greater than 200 feet btoc.

5.3.4 13 County Route 5A

The property owner indicated the well was installed by Hanson Well Drilling. No other well construction information was provided by the property owner. At the surface, the well consisted of 0.67 feet of 6-inch diameter steel casing above grade.

5.3.5 17 County Route 5A

The property owner indicated the well was installed by Hanson Well Drilling to 360 feet below grade. No other well construction information was provided by the property owner. At the surface, the well consisted of 1.58 feet of 6-inch diameter steel casing above grade.

5.3.6 43 Tilden Road

The property owner indicated the well was installed by Goold Wells, Inc. to 180 feet below grade. No other well construction information was provided by the property owner. At the surface, the well consisted of 1.38 feet of 6-inch diameter steel casing above grade.

5.4 Aquifer Pumping Test of PW-1

5.4.1 Background Monitoring Period

Background data collection was initiated on June 17, 2025, which is 12 days before the start of the constant rate pumping test at PW-1. A preliminary aquifer pumping test on

PW-1 was completed from June 24 through 25, 2025, which was prematurely terminated due to pump issues. The pump issues were remedied, and then the 72-hour pumping test presented in this report was completed. An In-Situ brand Level TROLL data logging pressure transducer collected water level measurements in production well PW-1 from June 17 through 29, 2025. A Global Water brand manual sonic water level meter was utilized to monitor water levels at all off-site observation wells, except 550 US Route 20, for several hours prior to the constant rate pumping test of PW-1. Since the primary well servicing the property at 550 US Route 20 was inaccessible for water level monitoring, the inactive well that did not contain any downhole pump equipment was monitored manually with a Solinst brand water level meter during the background monitoring period.

Graphs of the background water level monitoring data are included in Appendix C.

5.4.2 Drawdown Monitoring Period

The constant rate pumping test of PW-1 was performed from June 29 through July 2, 2025. A temporary submersible test pump capable of approximately 30 gpm was used for the pumping test of PW-1. Water level data was collected with an In-situ Level TROLL data logging pressure transducer and manually with a Solinst brand water level meter from production well PW-1 for the duration of the pumping test. A Global Water brand manual sonic water level meter was utilized to monitor water levels at all off-site observation wells, except 550 US Route 20, for the duration of the pumping test due to the elevated risk of entanglement with downhole equipment. Since the primary well servicing the property at 550 US Route 20 was inaccessible for water level monitoring, the inactive well that did not contain any downhole pump equipment was monitored manually with a Solinst brand water level meter.

Discharge rates were measured and monitored with a totalizing flowmeter and regularly verified with a timed bucket test. The pumping rate was controlled by an in-line ball valve. The initial flow rate for production well PW-1 was selected based on the results from an initial pumping test that was prematurely terminated due to pump issues. The pump issues were remedied, and then the pumping test presented in this report was completed. Discharge water from PW-1 was directed downgradient of the pumping well via approximately 300 feet of discharge hose onto the ground surface that flows further away from the pumping well and eventually into a stormwater catch basin located adjacent to US Route 20.

The surface water levels at Wyomanock Creek and an unnamed pond on the property of 43 Tilden Road were measured at least once immediately prior to the start of the pumping test, at regular intervals throughout the 72-hour pumping test and during the recovery period at staff gauges SG-1 and SG-2, respectively. The surface water level graphs are included in Appendix D.

A site schematic depicting the well locations and pumping test discharge location is included in Figure 2. The pumping test drawdown graphs and data are included in Appendix E and Appendix F, respectively.

5.4.3 Recovery Monitoring Period

Upon completion of the drawdown portion of the pumping test, recovery measurements were collected from production well PW-1 at one-minute intervals. Recovery measurements continued at production well PW-1 for 24 hours after the cessation of pumping. A Global Water brand manual sonic water level meter was utilized to monitor water levels at all off-site observation wells, except 550 US Route 20, during the recovery monitoring period. Since the primary well servicing the property at 550 US Route 20 was inaccessible for water level monitoring, the inactive well that did not contain any downhole pump equipment was monitored manually with a Solinst brand water level meter during the recovery monitoring period.

The recovery graphs and data are included in Appendix G and Appendix H, respectively.

5.5 Water Quality Sampling

Due to elevated turbidity at the conclusion of the constant rate pumping test, water quality samples were not collected during the constant rate pumping test. Additional development was completed at PW-1 via extended-duration pumping. The initial water quality sample was collected by Lamont on July 8, 2025. The sample was placed on ice and delivered to Capital Region Environmental Laboratory, an Environmental Laboratory Approval Program (ELAP)-accredited laboratory of Rensselaer, New York, under formal chain-of-custody procedures.

Based on the results of the initial water quality sample, a follow-up water quality sample was collected from PW-1 by Lamont after additional extended-duration pumping was completed. The follow-up sample was placed on ice and delivered to Capital Region Environmental Laboratory on October 30, 2025.

5.6 Precipitation

Precipitation data during the background and recovery monitoring periods for the individual pumping tests of PW-1 were collected from a U.S. Cooperative Network weather station identified as “Pittsield 2.8 W” with the station identification of GHCND: US1MABE0031, and located approximately four miles east of production well PW-1. The precipitation data during the drawdown period were collected using an on-site manual rain gauge with an accuracy of 0.01 inches.

5.7 Data Analysis

The water level data collected during the pumping portion of the test were converted to drawdown measurements. The drawdown data were plotted graphically on linear plots, with elapsed time on the x-axis and drawdown on the y-axis.

Water level data at PW-1 during the drawdown period of the constant rate pumping test was analyzed to verify if it attained stabilized drawdown per the requirements described in the NYSDEC Recommended Pumping Test Procedures for Water Withdrawal Permit Applications, Section 3.A. The recommendations indicate the stabilized water level shall not:

1. Fluctuate more than plus or minus 0.5 foot (i.e., within a vertical tolerance of one foot) for each 100 feet of water in the well (i.e., pre-test static water level to the top of the deepest water bearing fracture that contributes at least 10% of total well yield) over at least a six-hour period of constant pumping flow rate.
2. Show a trend of decreasing water level

Additionally, graphical 180-day semi-log projections of the drawdown data were used to predict long-term well yield. The semi-log projection was prepared in accordance with and met the criteria prescribed in the NYSDEC Recommended Pumping Test Procedures, Section 3.B.ii. The use of logarithmic prediction for drawdown assumes the aquifer is of uniform thickness, isotropic and of infinite areal extent. All aquifer modeling methods considered valid by the NYSDEC and NYSDOH make similar assumptions of aquifer conditions. The available drawdown predicted at the end of the 180-day semi-log projections for the production well in the pumping scenarios modeled, provides adequate margin for error typically exhibited by the analytical model employed. The lack of precipitation recharge for 180 days included in the semi-log projection method is effective in creating a conservative prediction of the long-term yield capabilities of the well.

Total drawdown from simultaneously pumping the production well and regular use of each homeowner well was estimated by utilizing the principle of superposition. The principle of superposition states that linear systems governed by linear differential equations can be algebraically added together to obtain composite solutions. Total drawdown from simultaneously pumping the proposed production well and regular use of each homeowner well was estimated by algebraically combining the total measured drawdown during each pumping test and from regular use of the homeowner wells.

The water level data collected during the recovery portion of the test were converted to residual drawdown measurements. The residual drawdown data was plotted graphically on linear plots as T' (time since the cessation of pumping) versus residual drawdown. The recovery data was analyzed mathematically by verifying that the water levels recover to 90 percent of static water levels within 24 hours of cessation of pumping.

6.0 PUMPING TEST RESULTS

6.1 Background Data

On June 17, 2025, the water level at PW-1 was measured at 6.54 feet btoc. The water level declined to approximately 79.5 feet btoc during the first failed pumping test. After the first failed pumping test, the water level at PW-1 recovered to 7.29 feet btoc immediately prior to the 72-hour pumping test of PW-1. Off-site pumping appears to influence the water level at PW-1 approximately 0.5 feet during approximately 4 to 6-hour off-site pumping cycles.

Background water level measurements at 550 Route 20 were collected 1 hour and 49 minutes prior to the constant rate pumping test of PW-1. The static water level at 550 Route 20 was stable between 6.74 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025.

Background water level measurements at 43 Tilden Road were collected 1 hour and 44 minutes prior to the constant rate pumping test of PW-1. The water level at 43 Tilden Road rose from 4.06 to 3.08 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025.

Background water level measurements at 4 West Street were collected 1 hour and 30 minutes prior to the constant rate pumping test of PW-1. The water level at 4 West Street declined from 18.5 to 19.1 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025.

Background water level measurements at 528 Route 20 were collected 1 hour and 23 minutes prior to the constant rate pumping test of PW-1. The water level at 528 Route 20 declined from 20.4 to 21.0 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025.

Background water level measurements at 13 West Street were collected 1 hour and 16 minutes prior to the constant rate pumping test of PW-1. The water level at 13 West Street declined from 12.1 to 12.7 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025

Background water level measurements at 17 West Street were collected 1 hour and 10 minutes prior to the constant rate pumping test of PW-1. The water level at 17 West Street declined from 11.0 to 12.6 feet btoc, then rose to 12.0 feet btoc leading up to the start of the constant rate pumping test of PW-1 on June 29, 2025.

Graphs of the background water level monitoring data are included in Appendix C. The estimated distance of the observation wells in relation to the pumping well is provided in Table 2 below.

6.2 Drawdown Data

The 72-hour constant rate pumping test of PW-1 was initiated at 12:00 p.m. on June 29, 2025, when PW-1 was turned on at a pumping rate of 13 gpm. The rate was maintained at 13 gpm for 72 hours.

The static water level at PW-1 was measured at 7.29 feet btoc prior to initiating the pumping test. The pumping water level at PW-3 declined to 75.07 feet btoc during the initial six hours of pumping, then continued to gradually decline to 79.72 feet btoc during the initial 24 hours of pumping. During the final 48 hours of pumping, the water level fluctuated between 79.70 to 80.93 feet btoc, with a final pumping water level of 80.72 feet btoc at the conclusion of the 72-hour pumping test. There were three events that caused a slight decline in water level during the final 48 hours of pumping, including: 1) approximately 0.7 feet between 2,130 and 2,490 minutes of pumping (6-hour period), 2) approximately 0.45 feet between 3,360 and 3,600 minutes of pumping (4-hour period), and 3) approximately 0.7 feet between 3,970 and 4,250 minutes of pumping (4.67-hour period). The three events that resulted in a decline in water level are attributed to off-site pumping influence. Off-site pumping negatively affected the ability of PW-1 to attain stabilized drawdown criteria without interference from off-site pumping.

After approximately seven hours of pumping, the turbidity at PW-1 was measured at 101 NTU and steadily declined throughout the 72-hour pumping test. After 44, 60 and 68.5 hours of pumping at PW-1, the turbidity measured declined to 51, 45 and 33 NTU. Due to the elevated turbidity measurements, a water quality sample was not collected for laboratory analysis at the conclusion of the 72-hour pumping test.

The initial water level during the drawdown period at 550 Route 20 was measured at 6.74 feet btoc. The water level at 550 Route 20 declined 0.63 feet during the 72-hour pumping test. However, the water level at 550 Route 20 continued to decline 0.04 feet for approximately 3.5 hours after the cessation of pumping, then rose 0.02 feet over the next approximately 1.5 hours. The continued decline in water level after the cessation of pumping at PW-1 indicates that an off-site pumping source is influencing the water level at 550 Route 20. The final water level at 550 Route 20 during the drawdown period was measured at 7.37 feet btoc.

The initial water level during the drawdown period at 43 Tilden Road was measured at 3.08 feet btoc, but was recovering from a recent pumping cycle. Due to frequent pumping cycles observed at 43 Tilden Road during testing activities, direct pumping influence from PW-1 was challenging to quantify. The final water level at 43 Tilden Road during the drawdown period was measured at 9.53 feet btoc, but was recovering from a recent pumping cycle. The water level at 43 Tilden Road declined up to 11.89 feet due to typical pumping at 43 Tilden Road. The water level at 43 Tilden Road was influenced less than 1.79 feet during the 72-hour pumping test of PW-1.

The initial water level during the drawdown period at 4 West Street was declining slightly leading up to the start of the drawdown period of testing. The initial water level at 4 West Street during the drawdown period was measured at 19.1 feet btoc. The water level at 4 West Street declined 10.4 feet during the 72-hour pumping test. However, the water level at 4 West Street continued to decline 0.9 feet for 26 minutes after the cessation of pumping, then generally rose 5.7 feet over the next approximately 4.5 hours. The continued decline in water level after the cessation of pumping at PW-1 indicates that an off-site pumping source is influencing the water level at 4 West Street. The final water level at 4 West Street during the drawdown period was measured at 28.9 feet btoc. The water level at 4 West Street declined up to 5.7 feet due to typical pumping at 4 West Street.

The initial water level during the drawdown period at 528 Route 20 was declining slightly, leading up to the start of the drawdown period of testing. The initial water level at 528 Route 20 during the drawdown period was measured at 21.0 feet btoc. The water level during the drawdown period at 528 Route 20 declined 5.3 feet during the 72-hour pumping test. However, the 72-hour pumping test was concluded after recent pumping at 528 Route 20. The water level at 528 Route 20 declined up to 1.9 feet due to typical pump cycles at 528 Route 20.

The initial water level at 13 West Street during the drawdown period was measured at 12.7 feet btoc. The water level at 13 West Street declined 3.3 feet during the 72-hour pumping test with a final water level measurement of 15.7 feet btoc. However, the 72-hour pumping test was concluded after recent pumping at 13 West Street. The water level declined up to 10.7 feet due to typical pump cycles at 13 West Street.

The initial water level at 17 West Street during the drawdown period was measured at 12.0 feet btoc. The water level at 17 West Street declined 4.5 feet during the 72-hour pumping test with a final water level measurement of 15.5 feet btoc. However, the 72-hour pumping test was concluded after recent pumping at 17 West Street. The water level declined up to 6.1 feet due to typical pump cycles at 17 West Street.

The maximum drawdown observed at the pumping well and observation wells is summarized in Table 2. Maximum drawdown listed in Table 2 represents the maximum drawdown observed at each well while pumping production well PW-1 at the pumping rate of 13 gpm.

Table 2
Maximum Drawdown Observed During 72-Hour Pumping Test of PW-1
PW-1 Pumping Rate = 13 gpm

Well ID	Distance from Pumping Well PW-1 (ft)	Static Water Level (ft btoc)	Maximum Drawdown[1] (ft)
PW-1	0	7.29	73.43
550 Route 20	515	6.74	0.63[2]
43 Tilden Road	770	2.42[3]	1.79[4]
4 West Street	330	18.5[3]	10.2[2][4]
528 Route 20	290	20.4[3]	4.2[4]
13 West Street	320	10.9[3]	3.3[4]
17 West Street	430	11.0[3]	3.6[4]

[1] The maximum drawdown reported is the maximum drawdown observed based on correlation with the start of pumping at PW-1 and excludes drawdown directly corresponding to active pumping at the off-site well.

[2] The water level continues to gradually decline after the pump at PW-1 turns off, which indicates the decline in water level is partially attributed to a source other than PW-1.

[3] Due to the recovering or declining water level at the start of pumping at PW-1, the static water level utilized during the data analysis was the shallowest water level during testing activities.

[4] Due to frequent pumping cycles at the off-site well, direct pumping influence from PW-1 was challenging to quantify. The best estimation of influence was provided based on the data collected.

6.3 Recovery Data

Pumping at PW-1 was terminated at 12:30 p.m. on July 2, 2025. The water level at PW-1 recovered to approximately 90 percent of its pre-test static water level within 4 hours and 20 minutes after the cessation of pumping at PW-1.

The recovery graphs and data are included in Appendix G and Appendix H, respectively.

6.4 Surface Water Level

The surface water level at SG-1 in the Wyomanock Creek was stable during the 2 hours and 35 minutes leading to the start of the constant rate pumping test. The surface water level at SG-1 in the Wyomanock Creek gradually declined 0.06 feet during the initial approximately 34 hours of pumping, then gradually rose 0.04 feet until the conclusion of the 72-hour pumping test. After the cessation of pumping at PW-1, the water level continued to rise 0.02 feet over approximately four hours. No apparent influence from pumping at PW-1 was observed at SG-1.

The surface water level at SG-2 in the unnamed pond at 43 Tilden Road gradually declined 0.02 feet during the 1 hour and 44 minutes leading to the start of the constant rate pumping test. The surface water level at SG-2 in the unnamed pond at 43 Tilden Road gradually declined 0.06 feet during the initial approximately 65.5 hours of pumping, then generally rose 0.01 feet until the conclusion of the 72-hour pumping test. After the cessation of pumping at PW-1, the water level remained at the same elevation over approximately five hours. No apparent influence from pumping at PW-1 was observed at SG-2.

The maximum drawdown observed at surface water monitoring locations is summarized in Table 3 below. The surface water level data is included in Appendix D.

Table 3
Maximum Drawdown Observed During 72-Hour Pumping Test of PW-1
PW-1 Pumping Rate = 13 gpm

Monitoring Location	Distance from Pumping Well PW-1 (ft)	Static Water Level (ft btoc)	Maximum Drawdown[(1)] (ft)
SG-1	1,330	3.66	0.00
SG-2	530	3.15	0.00

6.5 Precipitation

Two precipitation events occurred during the background monitoring period and one precipitation event occurred during the drawdown monitoring period of testing. The precipitation events are summarized in Table 4 below. The precipitation observed did not negatively impact the analysis of the pumping test data.

Table 4
Precipitation Summary during the Constant Rate Pumping Test of PW-1

Phase of Testing	Date	Precipitation Measurement (inches)	Precipitation Type
Background	June 23, 2025	0.17	Rain
Background	June 27, 2025	0.03	Rain
Drawdown	July 1, 2025	0.26	Rain

7.0 WATER QUALITY

The discharge water was identified with elevated turbidity at the conclusion of the 72-hour pumping test. Additional pumping of the well was initiated to decrease the turbidity at PW-1 after completion of the recovery monitoring period. The initial analytical results of the sample collected from PW-1 indicated the water is in compliance with the 10 NYCRR Subpart 5-1 Drinking Water requirements for all parameters included in the required laboratory analysis, except iron, manganese, chloride, turbidity, and total coliform.

Follow-up analytical results collected from PW-1 indicate the water is in compliance with the 10 NYCRR Subpart 5-1 Drinking Water requirements for all parameters included in the required laboratory analysis, except manganese, combined iron and manganese, and total coliform.

A follow-up water quality sample should be collected from PW-1 for total coliform and submitted to an ELAP-accredited laboratory after the well has been properly chlorinated and purged of residual chlorine.

In order to satisfy the 10 NYCRR Subpart 5-1 Drinking Water requirements, treatment options to decrease the individual concentration of manganese and the combined concentration of iron and manganese should be considered.

8.0 WELL PREDICTIONS

8.1 Production Well PW-1

The water level at PW-1 likely would have attained stabilized drawdown criteria during the final 48 hours of pumping if it were not for three off-site pumping events causing additional drawdown in the water level at PW-1. The off-site pumping influence resulted in the following declining water levels: 1) approximately 0.7 feet between 2,130 and 2,490 minutes of pumping (6-hour period), 2) approximately 0.45 feet between 3,360 and 3,600 minutes of pumping (4-hour period), and 3) approximately 0.7 feet between 3,970 and 4,250 minutes of pumping (4.67-hour period).

Between 1,440 and 2,100 minutes of pumping, the water level started and ended at 79.72 and 79.89 feet btoc, respectively. The shallowest and deepest water levels during that time period were recorded at 79.70 and 80.04 feet btoc, respectively, which is up to 0.34 feet of fluctuation during the 11-hour period.

Between 2,760 and 3,360 minutes of pumping, the water level started and ended at 80.16 to 80.15 feet btoc, respectively. The shallowest and deepest water levels during that time period were recorded at 80.00 and 80.23 feet btoc, which is up to 0.23 feet of fluctuation during the 10-hour period.

If the pump intake is set 10 feet off the bottom of the well, at a depth of 342 feet below grade, the available water column would be 334.41 feet (342 feet below grade minus the static water level of 7.29 feet btoc and 0.30 feet of stickup), this would estimate 1.67 feet of allowable water level fluctuation during a six-hour stabilized drawdown period in accordance with NYSDOH regulations. There was an 11-hour and 10-hour period during the 72-hour pumping test that resulted in up to 0.34 and 0.23 feet of fluctuation, which were interrupted due to off-site pumping influence. Based on the NYSDOH stabilized drawdown criteria, PW-1 attained stabilized drawdown and is capable of a long-term withdrawal rate of 13 gpm.

Additionally, the long-term predictions of well yield were made by extending the semi-log time versus drawdown graph at the end of pumping PW-1 at 13 gpm. Extending the drawdown data from the end of the 72-hour pumping test at PW-1 to a point on the graph representing 180 days of continuous pumping, estimates the water level would decline to approximately 81.5 feet btoc when pumping PW-1 at a discharge rate of 13 gpm. With an assumed pump intake setting at 342.30 feet btoc, this would provide approximately 260.8 feet before the 180-day drawdown prediction reaches the depth of the pump intake. The 180-day projected drawdown graph of PW-1 is included in Appendix J.

8.2 Off-site Water Users

Production well PW-1 appeared to have the most influence on the water level at the off-site well located at 4 West Street. The maximum drawdown observed at 4 West Street was approximately 10.4 feet at the conclusion of the 72-hour pumping test. During the final 12 hours of the 72-hour pumping test, the water level at 4 West Street declined between 0.2 to 0.4 feet (the water level influence from PW-1 during the final 1 hour and 40 minutes of pumping was obscured by pumping at 4 West Street). Extending the drawdown data at 4 West Street to a point on the semi-log graph representing 180 days of continuous pumping estimates the water level would decline to approximately 35.5 feet btoc or 22.7 feet from static conditions. Since PW-1 attained stabilized drawdown, the water level at 4 West Street can be expected to attain stabilized drawdown in a reasonable timeframe. The 180-day stabilized drawdown is a conservative estimate of the long-term pumping impacts at 4 West Street.

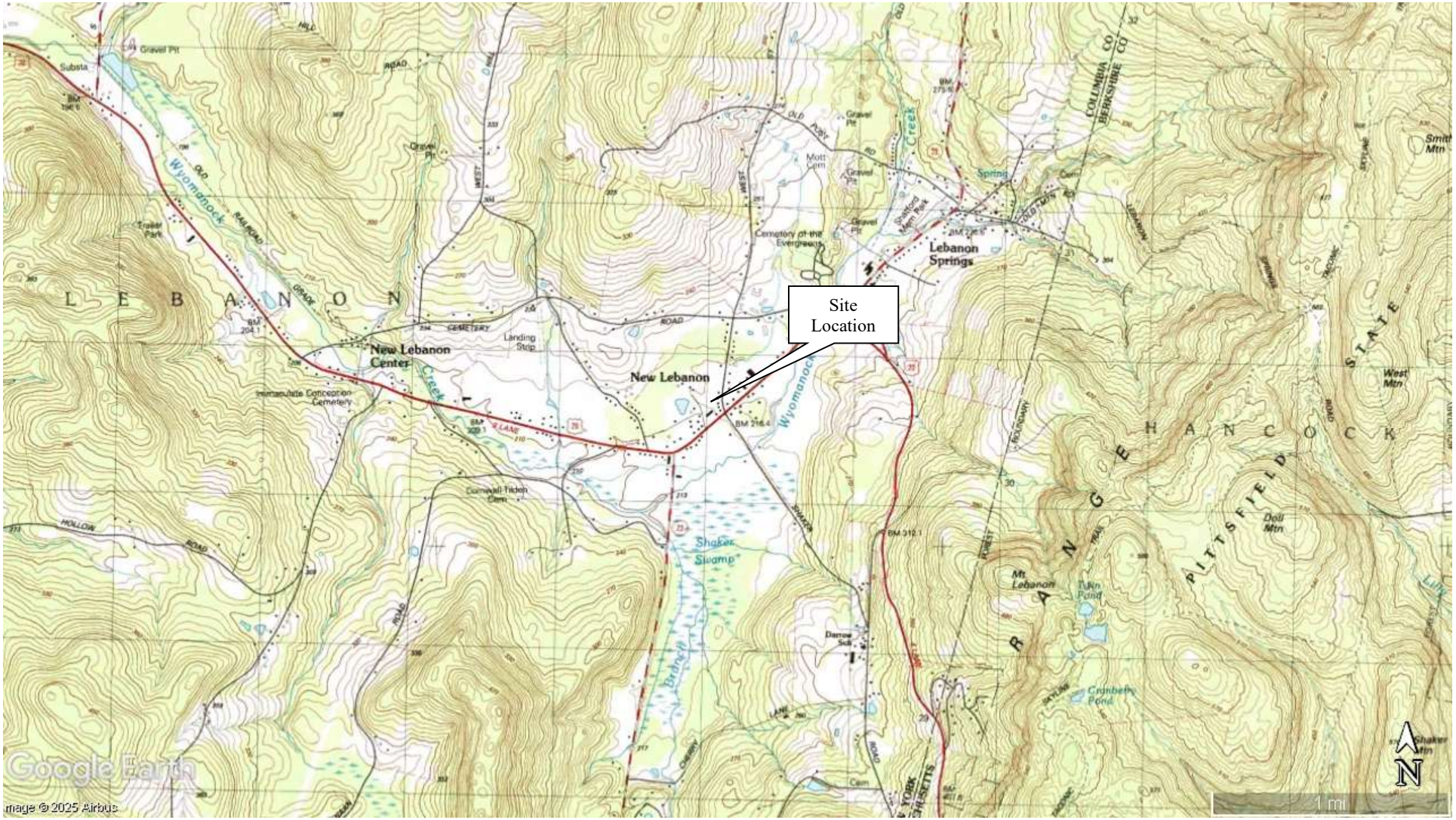
The water level at 4 West Street declined up to 5.7 feet during typical pumping cycles at 4 West Street. The estimated cumulative drawdown at 4 West Street from typical pumping at 4 West Street, and continuous pumping of PW-1 at 13 gpm, would result in an estimated decline of the water level to approximately 41.2 feet btoc after 180-days. The total well depth at 4 West Street is unknown. However, the well depth is greater than 200 feet btoc because a 200-foot measuring tape was extended in the well without any obstruction. With a conservative estimate of the total well depth of 200 feet below grade at 4 West Street and the static water level of 18.5 feet btoc, the 22.7-foot decline in water level from the 180-day projection represents approximately 12.5 percent of the available water column. The

5.7-foot decline in water level from typical pumping at 4 West Street represents approximately 3 percent of the available water column. The estimated 15.5 percent utilization of the available water column at 4 West Street from the combined use of 4 West Street and PW-1 leaves sufficient available water column for normal use of the well considering seasonal fluctuations. The estimated pumping interference at the 4 West Street well from the proposed use of PW-1 is not anticipated to adversely impact the long-term use of the well.

Frequent use of the off-site monitoring wells caused difficulty in quantifying the influence of pumping at PW-1 on the off-site wells. However, the water level at many of the off-site wells stabilized or had a very slightly declining water level during the later portion of the 72-hour pumping test, which suggests limited to no additional drawdown would be expected at the off-site wells from additional pumping from PW-1 if its pumping duration at 13 gpm was extended beyond 72-hours.

Based on the data collected during the 72-hour pumping test of PW-1, all off-site wells monitored during testing activities observed less drawdown than at 4 West Street. The well with the next most water level influence was located at 528 Route 20, which resulted in 4.2 feet of drawdown at the conclusion of the 72-hour pumping test. Well construction information was not available for many of the off-site monitoring wells. However, based on the available data, it can be reasonably assumed that a total well depth of 200 feet btoc at the off-site wells is a conservative estimate. Given the data collected during testing activities and assumed total well depths, it can be reasonably assumed that pumping PW-1 at 13 gpm will not adversely impact the long-term use of the wells located at the off-site properties.

FIGURES

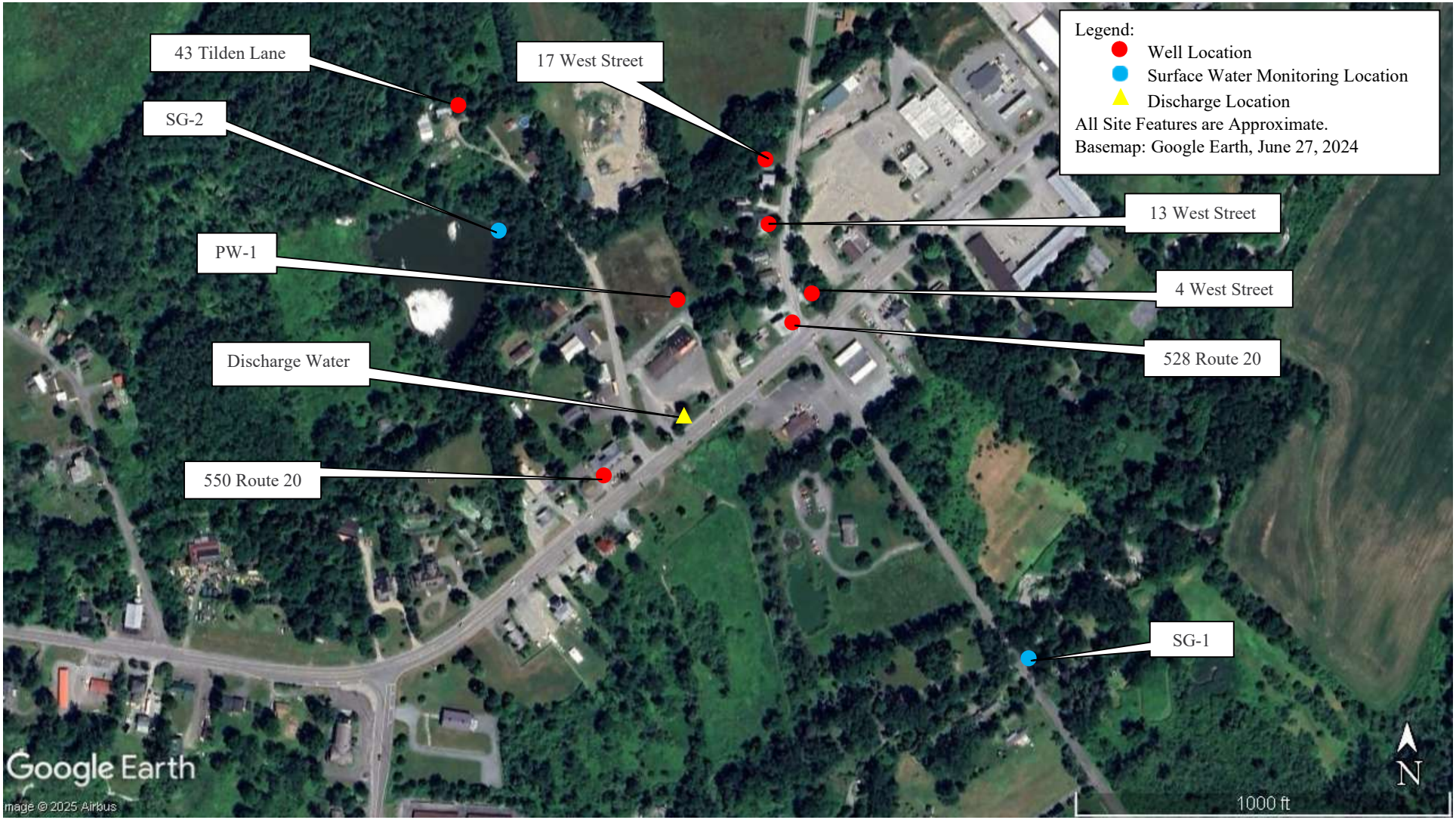


HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

Figure 1
Site Location Map
Tilden Road Development
Pumping Test of Production Well PW-1
New Lebanon, New York



HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

Figure 2
Pumping Test Site Schematic
Tilden Road Development
Production Well PW-1
New Lebanon, New York

FIGURES

Figure 1 – Site Location Map
Figure 2 – Pumping Test Schematic

APPENDICES

Appendix A: Private Water Well Documentation
Appendix B: Surrounding NYSDEC Well Completion Reports and Soil Boring Information
Appendix C: Background Graphs
Appendix D: Surface Water Level Graphs
Appendix E: Drawdown Graphs
Appendix F: Drawdown Data
Appendix G: Recovery Graphs
Appendix H: Recovery Data
Appendix I: Water Quality Data
Appendix J: 180-Day Projection Graphs

Appendix A
Surrounding Private Water Well Documentation

PROPERTY ACCESS CONSENT FORM

I, Michelle Hoffman, do hereby attest that I am the owner or authorized agent of the owner of the property as described below. I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

Address: 550 State RT 20, New Lebanon, NY 12125

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

Date: 06/20/2025

Signature: Michelle Hoffman Print Name: Michelle Hoffman

Date: _____

Signature: _____ Print Name: _____

Phone/ Email: librarydirector@newlebanonlibrary.org 518-794-8844

HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: New Lebanon Library

Address: 550 State RT 20, New Lebanon, NY 12125

Date: 06/20/2025

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point Drilled Well ? Dug Well

Formation: Bedrock Sand & Gravel unsure

Depth of Well: unknown **Date Drilled:** unknown

Well Driller: unknown **Yield of Well:** unknown gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? (YES) NO

   If yes, was this during a drought period? (YES) NO

2) Have you ever had cloudy water? (YES) NO

3) Has your water ever had any noticeable color? (YES) NO

4) Has your water ever had any noticeable odor? (YES) NO

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? rotten egg

5) Do you have a water treatment system? (YES) NO

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? sediment & taste filtering, water softener, UV filter, and use iron-removing pellets in softener

6) Do you have any water quality testing data? (YES) NO

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

Claverack WELL & PUMP SERVICE

8960 State Route 22
Hillsdale, NY 12529-5001
(518) 325-4679
www.claverackpumpservice.com

Estimate Date 7/9/2024

Billing Address
New Lebanon Library
550 U.S. 20
New Lebanon, NY 12125 USA

Job Address
New Lebanon Library
550 U.S. 20
New Lebanon, NY 12125 USA

Description of work

Estimate for water filtration

Service #	Description	Quantity	Your Price	Total
MRD	**Mineral Description**: **Hardness:** Wastes soap, forms scale, clogs hot water heater and pipes. /0-3 gpg soft, 3-6 gpg moderately hard, 6-9 gpg hard water, 9+ gpg extremely hard. (1 gpg = 17.1 ppm) **Iron:** The E.P.A. recommends under 0.3 ppm. Over 0.3 ppm may cause red /Staining on plumbing fixtures and clothes. **pH:** 7.0 indicates water is neutral, under 7.0 is acidic, over 7.0 is alkaline, /6.8 or under is corrosive to fixtures and piping. **Manganese:** The E.P.A. recommends under .05 ppm. Over .05 ppm can cause /Brown/black stains on plumbing fixtures and clothes. **Sulfur:** Rotten egg odor corrodes pipes. Cause blackish stains on plumbing & fixtures and clothes. **TDS:** Total of minerals dissolved in water.	1.00	$0.00	$0.00
MRB	Mineral Report Before Filtration: Hardness: 15 Iron: Trace pH: 7.5 Manganese: Trace Sulfur: 0 TDS: 311	1.00	$0.00	$0.00

Thank you for choosing Claverack Well and Pump Service, LLC. We appreciate your business!

THIS IS AN ESTIMATE, NOT A CONTRACT FOR SERVICES. The summary above is furnished by Claverack Well & Pump Service, LLC as a good faith estimate of work to be performed at the location described above and is based on our evaluation and does not include material price increases or additional labor and materials which may be required. Should unforeseen problems arise after the work has started, I understand that the final cost of the work may differ from the estimate, perhaps materially. THIS IS NOT A GUARANTEE OF THE FINAL PRICE OF WORK TO BE PERFORMED. I agree and authorize the work as summarized on these estimated terms, and I agree to pay the full amount for all work performed.

Sign/Date Here_____

ACCEPTANCE OF THIS ESTIMATE REQUIRES A SIGNED COPY RETURNED ALONG WITH A 50% DEPOSIT, BEFORE ANY WORK CAN BEGIN. IF THIS JOB IS CONSIDERED A CAPITAL IMPROVEMENT AND TAX EXEMPT, PLEASE SIGN AND RETURN THE CAPITAL IMPROVEMENT FORM PRIOR TO OUR BILLING.

The manufacturer(s) recommends annual servicing on all filtration installations. We also offer a salt delivery service (if applicable) if you are interested, please inquire.

PROPERTY ACCESS CONSENT FORM

I, Anna Duhon, do hereby attest that I am the owner or authorized agent of the property as described below (address).

Address: 43 Tilden Rd. New Lebanon, NY 12125

X I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well in order to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

_____ I respectively decline, for the above mentioned property, to participate in any of the described water well/water testing surveillance.

Date: 6/23/25

Signature: Anna Duhon Print Name: Anna Duhon

Date: _____

Signature: _____ Print Name: _____

Phone/ Email: 518-794-0021 annaduhon@gmail.com

HANSON VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: Anna Duhon + Paul Rix

Address: 43 Tilden Rd. New Lebanon, NY 12125

Date: 6/20/25

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point (Drilled Well) Dug Well

Formation: Bedrock Sand & Gravel

Depth of Well: 180 ft. **Date Drilled:** ?

Well Driller: Gould **Yield of Well:** 5? gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? YES (NO)

   If yes, was this during a drought period? YES (NO)

2) Have you ever had cloudy water? YES (NO)

3) Has your water ever had any noticeable color? YES (NO)

4) Has your water ever had any noticeable odor? (YES) NO

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? Antiseptic/chemical

5) Do you have a water treatment system? (YES) NO

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? Carbon

6) Do you have any water quality testing data? (YES) NO

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

PROPERTY ACCESS CONSENT FORM

I, Linda Hursa, do hereby attest that I am the owner or authorized agent of the owner of the property as described below. I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

Address: 4 County Route 5A New Lebanon NY 12125

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

Date: 06/20/25

Signature: Linda Hursa Print Name: Linda Hursa

Date: 06/20/25

Signature: Ashley Savage Print Name: Ashley Savage

Phone/ Email: 518-410-8396 - Linda - lindahursa@gmail.com

578-794-8800 - Ashley - angelstrumpetflowers.nl@gmail.com

HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: Linda Hursa

Address: 4 West Street

Date: 6/20/25

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point ~~Drilled Well~~ Dug Well

Formation: Bedrock Sand & Gravel

Depth of Well: 200 ft **Date Drilled:** 1968

Well Driller: Gould Wells Inc. **Yield of Well:** 20 gall gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? YES (NO)

   If yes, was this during a drought period? YES NO

2) Have you ever had cloudy water? YES (NO)

3) Has your water ever had any noticeable color? YES (NO)

4) Has your water ever had any noticeable odor? YES (NO)

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? _____

5) Do you have a water treatment system? YES (NO)

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? _____

6) Do you have any water quality testing data? (YES) NO

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

PROPERTY ACCESS CONSENT FORM

I, Phoebe Young, do hereby attest that I am the owner or authorized agent of the owner of the property as described below. I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

Address: 528 Route 20, New Lebanon, NY 12125

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

Date: June 17, 2025

Signature: Phoebe S Young Print Name: Phoebe Young

Date: _____

Signature: _____ Print Name: _____

Phone/ Email: 608-234-2620 / phoebe.young@gmail.com

HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: Phoebe Young

Address: 528 Route 20, New Lebanon, NY 12125

Date: June 17, 2025

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point (Drilled Well) Dug Well

Formation: (Bedrock) Sand & Gravel

Depth of Well: Unsure **Date Drilled**: Unsure

Well Driller: Unsure **Yield of Well**: 20?? gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? YES (NO)

   If yes, was this during a drought period? YES NO

2) Have you ever had cloudy water? (YES) NO

3) Has your water ever had any noticeable color? (YES) NO

4) Has your water ever had any noticeable odor? (YES) NO

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? Rotten egg

5) Do you have a water treatment system? (YES) NO

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? Unsure

6) Do you have any water quality testing data? YES (NO)

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: Margaret Brueckmann / Amy Brueckmann

Address: 13 County Route 5A, New Lebanon NY 12125

Date: 6/23/2025

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point (Drilled Well) Dug Well

Formation: Bedrock Sand & Gravel

Hanson Well Drilling

Depth of Well: _____ **Date Drilled:** _____

Well Driller: Hanson Well Drilling **Yield of Well:** _____ gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? YES (NO)

   If yes, was this during a drought period? YES (NO)

2) Have you ever had cloudy water? YES (NO)

3) Has your water ever had any noticeable color? (YES) NO Sometimes a rusty color

4) Has your water ever had any noticeable odor? YES (NO)

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? _____

5) Do you have a water treatment system? YES (NO)

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? _____

6) Do you have any water quality testing data? YES (NO)

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

PROPERTY ACCESS CONSENT FORM

I, Margaret Brueckmann do hereby attest that I am the owner or authorized agent of the owner of the property as described below. I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

Address: 13 County Route 5A, New Lebanon, NY 12125

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

Date: 6/23/2025

Signature: Margaret Brueckmann Print Name: MARGARET BRUECKMANN

Date: _____

Signature: _____ Print Name: _____

Phone/ Email: (413) 281-0197 cell _____

PROPERTY ACCESS CONSENT FORM

I, William Hayes do hereby attest that I am the owner or authorized agent of the owner of the property as described below. I consent to provide the authorized personnel of Hanson Van Vleet, PLLC, with offices at 902 NY-146, Clifton Park, New York 12065, access to this property, at reasonable times and under reasonable conditions, for the purpose of completing well testing activities.

Address: 17 County Route 5a, New Lebanon, NY

I understand that this activity may involve several visits to the site. I do hereby consent to allow, at reasonable times, access to this property for well testing activities, including removing the well cap to measure the water level in the well with a sonic meter. The sonic meter measures the water level by way of a soundwave projected down the well bore. Nothing will be physically inserted down the well to measure the water level.

I agree to hold harmless Hanson Van Vleet, PLLC in the event any damage is caused to my well equipment due to the age or condition of the equipment. I understand that Hanson Van Vleet, PLLC is not responsible for replacement of pumps or other equipment that may fail during the testing period for reasons unrelated to the water level monitoring activities described above.

Date: 6-23-2025

Signature: _____ Print Name: William Hayes Jr

Date: _____

Signature: _____ Print Name: _____

Phone/ Email: 518-524-5341 / hayesw2@RPI.EDU

HANSON

VAN VLEET, PLLC

HYDROGEOLOGIC CONSULTANTS

WATER WELL SURVEY

Name: William Hayes Jr

Address: 17 County Route 5a, New Lebanon, NY

Date: 6-23-2025

Do you presently have a water well? (YES) NO

If "YES", please answer the following:

Type of Well: Well Point (Drilled Well) Dug Well

Formation: Bedrock Sand & Gravel

Depth of Well: 360' **Date Drilled:** _____

Well Driller: Hanson **Yield of Well:** _____ gallons per minute

***Please attach well log if available.**

1) Have you ever lost well yield? YES (NO)

   If yes, was this during a drought period? YES NO

2) Have you ever had cloudy water? YES (NO)

3) Has your water ever had any noticeable color? YES (NO)

4) Has your water ever had any noticeable odor? (YES) NO

   If yes, describe the type of odor (i.e. rotten egg smell, effervescence)? _____

5) Do you have a water treatment system? YES (NO)

   If yes, what type of treatment system do you have (i.e. sediment filter, chlorination, water softener, RO, Iron Removal, De-gas, etc.)? _____

6) Do you have any water quality testing data? YES (NO)

   If yes, please provide a copy of the laboratory report.

Please use the space below and on the back to describe any "yes" answers and any additional information you feel is relevant.

Appendix B
NYSDEC Well Completion Reports
and
Soil Boring Information

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(1) County Columbia

(2) Township New Lebanon

(3) DEC Well Number CB 1292

WELL COMPLETION REPORT

(4) OWNER
John Homich

(5) ADDRESS
P.O. Box 371 New Lebanon NY 12125

(6) LOCATION OF WELL (Also see reverse) 46 Shaker Lane New Lebanon

(7) DEPTH OF WELL BELOW LAND SURFACE (Feet) 322'

(8) DEPTH TO GROUNDWATER BELOW LAND SURFACE (Feet) 54'

CASINGS

(9) DIAMETER	(10) LENGTH
6" Steel in.	89 A. ft.
in.	ft.
in.	ft.
in.	in.

(11) GROUT TYPE: bentonite grout

(12) GROUT INTERVAL (Feet) FROM 89' TO 10'

SCREENS

(13) MAKE & MATERIAL

(14) OPENINGS

(15) DIAMETER in. | in. | in. | in.

(16) LENGTH ft. | ft. | ft. | in.

(17) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)

YIELD TEST

(18) DATE 8/10/00

(19) DURATION OF TEST 4 hrs with Rig

(20) LIFT METHOD ☐ Pump ☒ Air Lift ☐ Bail

(21) STABILIZED DISCHARGE (GPM) 4 GPM

(22) STATIC LEVEL PRIOR TO TEST (feet/inches below top of casing) 50'

(23) MAXIMUM DRAWDOWN (Stabilized) (feet/inches below top of casing) 250'

(24) RECOVERY (Time in hours/minutes) 2 hours

(25) Was the water produced during test discharged away from immediate area? Yes X No ___

PUMP INSTALLATION

(26) DATE	(27) PUMP INSTALLED?	(28) PUMP INSTALLER
	YES ___ NO X	
(29) TYPE	(30) MAKE	(31) MODEL

(32) MAXIMUM CAPACITY (GPM)

(33) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet)

(34) METHOD OF DRILLING ☒ Rotary ☐ Cable Tool ☐ Other ___

(35) USE OF WATER (see instructions for choices) Domestic Watersystem

(36) DATE DRILLING WORK STARTED 8/10/00

(37) DATE DRILLING WORK COMPLETED 8/10/00

(38) DATE	(39) DRILLER & COMPANY	(40) DEC REGISTRATION NO.
8/31/00	Carl C Schmidt Jr. Hanson Well Drilling & Pump	10005

* Show log of geologic materials encountered with depth below ground surface, water bearing beds and water levels in each; casings; screens; pump; additional pumping tests and other matters of interest, e.g., water quality (sulphur, salt, methane). Describe repair work.

See further instructions titled "Instructions for New York State Well Completion Report".

LOG *

Ground Surface EL. 661 ft. above sea level

Top Of Casing is located +24" ft.above (+) or below (-) ground surface

TOP OF WELL

0' to fine	23' SAND
23' to blue	67' CLAY
67' to hard PAN	86'
86' to Gray	322' Shale

322' BOTTOM OF HOLE

ORIGINAL – DEC COPY

LOCATION OF WELL

DEC WELL #: CB 1292

(USE ONE OR MORE OF THE FOLLOWING METHODS)

Method 1: Enter coordinates of latitude and longitude in the area provided below. If driller has on-line capability, use DEC's on-line map coordinate assistant found on DEC's web site (www.dec.state.ny.us). This feature gives coordinates of latitude and longitude that can be entered in the area indicated. NOTE: The method of determining coordinates MUST be shown. The use of global positioning system (GPS) equipment is highly recommended to determine the latitude and longitude of the well. If a GPS is used, include information on the manufacturer and model of the unit.

Method 2: If method 1 is not used, photocopy a section of a 1:24,000 scale United States Geologic Survey (USGS) map or a 1:24,000 New York State Department of Transportation (NYSDOT) map and locate the well on the map. ***Write the map name on the photocopy and attach to log completion.***

Method 3: If USGS or NYSDOT maps are not available, photocopy a pertinent section of a detailed county road map and locate the well on the map. ***Write the map name on the photocopy and attach to log completion.***

Method 4: Sketch location of well in the area provided at bottom of page. Locate the well with respect to at least two roads. Indicate north direction.

Latitude (degrees minutes seconds) Longitude (degrees minutes seconds)

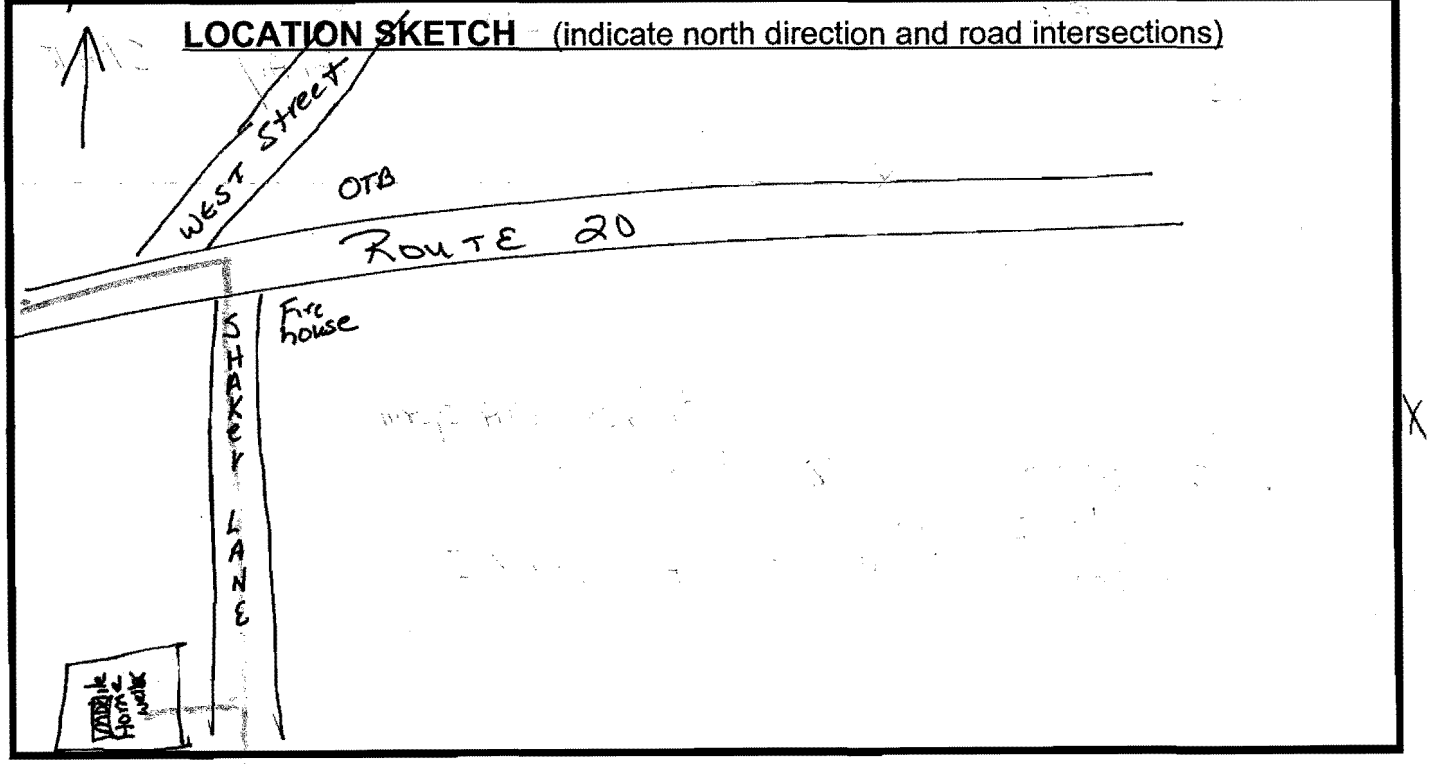
N 42° 27.824 W 073° 23.391

Example: 42 36 01.7 N 73 24 51.1 W

How were coordinates determined?

- ☐ DEC on-line map coordinate assistant
- ☒ GPS Manufacturer GARMIN Model _____
- ☐ Map interpolation

LOCATION SKETCH (indicate north direction and road intersections)



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(1) COUNTY Columbia

(2) TOWN New Lebanon

WATER WELL COMPLETION REPORT

(3) DEC Well Number CB4302

(4) OWNER The Phoenix Project of Eastern NY Inc

(5) ADDRESS P.O. Bx 768 New Lebanon NY 12125

(6) LOCATION OF WELL (See Instructions On Reverse) (Check here ☐ if address is same as above)
528 State Route 20 New Lebanon

(7) LATITUDE/LONGITUDE AND METHOD USED ☒ GPS ☐ Map N42° 28.003 W 73° 23.561

(8) TAX MAP NO.

(9) DEPTH OF WELL BELOW LAND SURFACE (feet) 220'

(10) DEPTH TO GROUNDWATER BELOW LAND SURFACE (feet) 20ft DATE MEASURED 1/7/16

CASINGS

(11) DIAMETER	6 in.	in.	in.	in.
(12) LENGTH	107 ft.	ft.	ft.	ft.

(13) GROUT TYPE / SEALING Bentonite/Drive Shoe

(14) GROUT / SEALING INTERVAL (feet) FROM 107 TO 0

SCREENS

(15) MAKE & MATERIAL		(16) OPENINGS		
(17) DIAMETER	in.	in.	in.	in.
(18) LENGTH	ft.	ft.	ft.	ft.

(19) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)

YIELD TEST

(20) DATE 1/7/16

(21) DURATION OF TEST 4 hrs.

(22) LIFT METHOD ☐ Pump ☑ Air Lift ☐ Bailer

(23) STABILIZED DISCHARGE (GPM) 20±

(24) STATIC LEVEL PRIOR TO TEST (feet/inches below top of casing) 20ft

(25) MAXIMUM DRAWDOWN (Stabilized) (feet/inches below top of casing) 220ft

(26) RECOVERY (Time in hours/minutes) 15 MIN

(27) Was the water produced during the test discharged away from immediate area? Yes ✓ No ___

PUMP INSTALLATION

(28) PUMP INSTALLED? YES ___ NO ✓	(29) DATE	(30) CERTIFIED PUMP INSTALLER
(31) TYPE	(32) MAKE	(33) MODEL
(34) MAXIMUM CAPACITY (GPM)	(35) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet)	

DRILLER INFORMATION

(36) METHOD OF DRILLING ☒ Rotary ☐ Cable Tool ☐ Other

(37) USE OF WATER (See instructions for choices) Domestic

(38) DATE DRILLING WORK STARTED 1-6-2016

(39) DATE DRILLING WORK COMPLETED 1-7-2016

(40) DATE REPORT FILED 1-8-16	(41) REGISTERED COMPANY W. Gordon Goold Inc	(42) DEC REGISTRATION NO. NYRD 10055
(43) CERTIFIED DRILLER (Print name) Brent Roberts	(44) CERTIFIED DRILLER SIGNATURE Brent Roberts	

* By signing this document I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; (3) under the penalty of perjury the information provided in this Well Completion Report is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45.

10/2013

(45) WELL LOG

Depth to Bedrock 94 (ft. below land surface)

Ground Elevation ___ (ft. above sea level)

Top of Casing 1 (ft. above ~~(-)~~ or below (-) land surface)

TOP OF WELL

0-25	Sand + Gravel
25-80	Hard pan
80-94	Clay
94-220	Limestone

220'

BOTTOM OF HOLE

NYSDEC

LOCATION SKETCH - Indicate north

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

WATER WELL COMPLETION REPORT

(1) COUNTY Columbia

(2) TOWN New Lebanon

(3) DEC Well Number: CB 4713

(4) OWNER: Stewart's Shops Corp.

(5) ADDRESS: P O Box 435, Saratoga Springs, NY 12866

(6) LOCATION OF WELL (See Instructions On Reverse) (Check here ☐ if address is same as above): 492 US Route 20, New Lebanon, NY 12125

(7) LATITUDE/LONGITUDE AND METHOD USED: XX GPS ☐ Map N42° 28.0969' W073° 23.4264'

(8) TAX MAP NO.:

(9) DEPTH OF WELL BELOW LAND SURFACE (feet): 482'

(10) DEPTH TO GROUNDWATER BELOW LAND SURFACE (feet): 28' 5" DATE MEASURED: 8/8/18

CASINGS

(11) DIAMETER	6" steel casing in.	in.	in.	in.
(12) LENGTH	100 ft.	ft.	ft.	ft.

(13) GROUT TYPE / SEALING: Bentonite grout & & 6" forged steel drive shoe Grout seal 10" oversize

(14) GROUT / SEALING INTERVAL (feet) FROM 100' TO 10'

SCREENS

(15) MAKE & MATERIAL				
(16) OPENINGS				
(17) DIAMETER	in.	in.	in.	in.
(18) LENGTH	ft.	ft.	ft.	ft.

(19) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet):

YIELD TEST

(20) DATE: 8/9/18

(21) DURATION OF TEST: 24 Hours

(22) LIFT METHOD: XX Pump ☐ Air Lift ☐ Bailer

(23) STABILIZED DISCHARGE (GPM): 6 GPM

(24) STATIC LEVEL PRIOR TO TEST (feet/inches below top of casing): 28' 5"

(25) MAXIMUM DRAWDOWN (Stabilized) (feet/inches below top of casing): 40'

(26) RECOVERY (Time in hours/minutes): 10 minutes

(27) Was the water produced during the test discharged away from immediate area? Yes X No ____

PUMP INSTALLATION

(28) PUMP INSTALLED? YES X NO ____

(29) DATE: 8/8/18

(30) CERTIFIED PUMP INSTALLER: Hanson Well Drilling & Pump Co., Inc.

(31) TYPE: Submersible

(32) MAKE: Gould

(33) MODEL: 7 GPM 1 HP

(34) MAXIMUM CAPACITY (GPM): 12 GPM

(35) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet): 440'

DRILLER INFORMATION

(36) METHOD OF DRILLING: XX Rotary ☐ Cable Tool ☐ Other

(37) USE OF WATER (See instructions for choices): Domestic

(38) DATE DRILLING WORK STARTED: 8/3/18

(39) DATE DRILLING WORK COMPLETED: 8/6/18

(40) DATE REPORT FILED: 8/9/18

(41) REGISTERED COMPANY: Hanson Well Drilling & Pump Co., Inc.

(42) DEC REGISTRATION NO.: NYRD 10005

(43) CERTIFIED DRILLER (Print name): Thomas M. Hanson

(44) CERTIFIED DRILLER SIGNATURE *: Thomas Hanson

* By signing this document I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; (3) under the penalty of perjury the information provided in this Well Completion Report is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45.

06/2016

(45) WELL LOG

Depth to Bedrock 90 (ft. below land surface)

Ground Elevation _____ (ft. above sea level)

Top of Casing +2' (ft. above (+) or below (-) land surface)

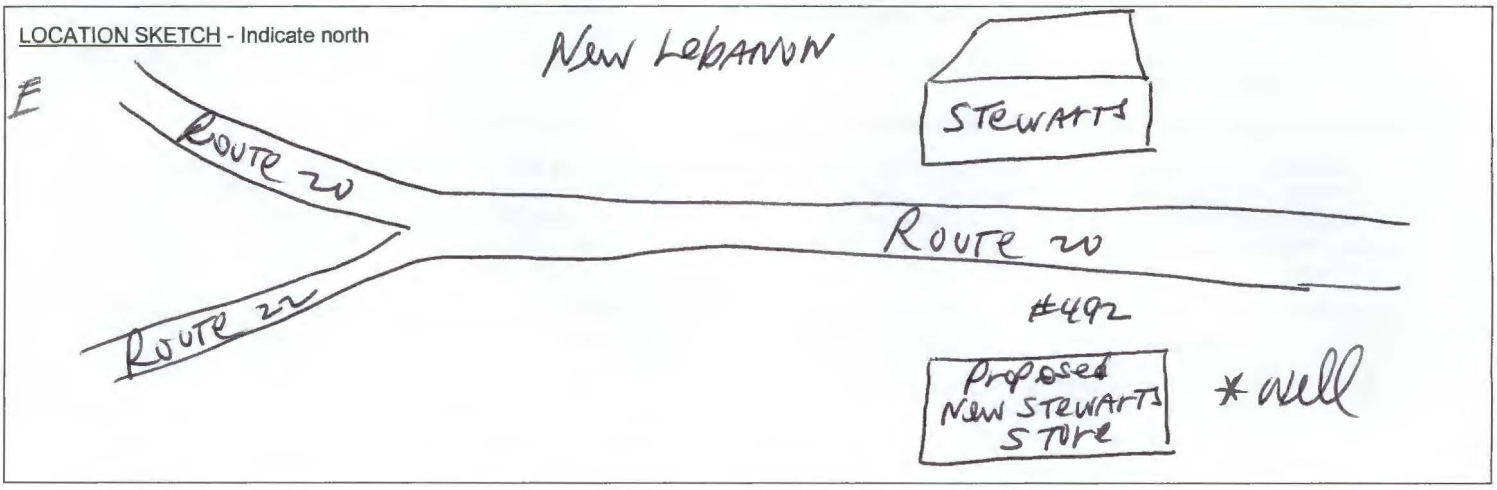
TOP OF WELL

0'to 23'	Gravel
23'to 90'	Silty gray hardpan & cobbles
90'to350'	Black shale
350'to482'	Gray shale with Quartz seams

482'
BOTTOM OF HOLE

NYSDEC COPY

LOCATION SKETCH - Indicate north



(1) COUNTY COLUMBIA

(2) TOWN NEW LEBANON

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

WATER WELL COMPLETION REPORT

(3) DEC Well Number: CB5473

(4) OWNER NAME: ROBERT WEBER

(5) OWNER ADDRESS: 53 DUNHAM RD EAST CHATHAM, NY 12060

(6) WELL ADDRESS (Also provide sketch or map, see instructions on reverse)
☐ Same as owner address 7A WEST ST NEW LEBANON

(7) LATITUDE/LONGITUDE AND METHOD USED
■ GPS ☐ Map N 42' 46694 W 073' 39281

(8) TAX MAP NO.

(9) DEPTH OF WELL (Feet): 280

(10) DEPTH TO GROUNDWATER (Feet): 20

(11) DATE MEASURED: 10/4/22

(12) FLOWING? ☐ Yes ■ No

CASINGS

(13) DIAMETER	6 in.	in.	in.	in.
(14) LENGTH	120 ft.	ft.	ft.	ft.

(15) GROUT TYPE / SEALING: BENTONITE / DRIVE SHOE

(16) GROUT / SEALING INTERVAL (Feet) From 0 To 120

SCREENS

(17A) MAKE (17B) MATERIAL

(18) SLOT SIZE

(19) DIAMETER	in.	in.	in.	in.
(20) LENGTH	ft.	ft.	ft.	ft.

(21) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet)

YIELD TEST

(22) DATE: 10/4/22

(23) DURATION OF TEST (Hours:Minutes): 04:00

(24) LIFT METHOD ☐ Pump ■ Air Lift ☐ Bailer

(25) STABILIZED DISCHARGE (GPM): 5

(26) STATIC LEVEL PRIOR TO TEST (Feet below top of casing): 20

(27) MAXIMUM DRAWDOWN (Stabilized) (Feet below top of casing): 280

(28) RECOVERY TIME (Hours:Minutes): 02:00

(29) Was the water produced during the test discharged away from immediate area? ■ Yes ☐ No

DRILLER INFORMATION

(30) METHOD OF DRILLING ■ Rotary ☐ Cable Tool ☐ Other

(31) USE OF WATER: DOMESTIC

(32) DATE DRILLING WORK STARTED: 10/3/22

(33) DATE DRILLING WORK COMPLETED: 10/4/22

(34) DATE REPORT COMPLETED: 11/4/22

(35) REGISTERED COMPANY NAME: W GORDON GOOLD INC

(36) DEC REGISTRATION NO.: NYRD 10055

(37) REGISTERED COMPANY ADDRESS: 17 GOOLD RD VALATIE NY 12184

(38) CERTIFIED DRILLER (Print name): BRENT ROBERTS

(39) CERTIFIED DRILLER INITIALS (ELECTRONIC SIGNATURE) *: BR

PUMP INSTALLATION

(40) PUMP INSTALLED? ■ Yes ☐ No

(41) DATE: 11/18/22

(42) TYPE

(43) MAKE

(44) MODEL

(45) MAXIMUM CAPACITY (GPM): 5

(46) PUMP INSTALLATION LEVEL (Feet below top of casing): 240

(47) DATE REPORT COMPLETED: 11/4/22

(48) REGISTERED COMPANY NAME: W GORDON GOOLD INC

(49) DEC REGISTRATION NO.: NYRD 1005

(50) REGISTERED COMPANY ADDRESS: 17 GOOLD RD VALATIE NY 12184

(51) CERTIFIED PUMP INSTALLER (Print Name): DOUG HESSS

(52) CERTIFIED PUMP INSTALLER INITIALS (ELECTRONIC SIGNATURE)*: DH

* I agree, and it is my intent, to electronically sign this Water Well Completion Report (WWCR) by typing my initials in this signature box and electronically submitting it to the New York State Department of Environmental Conservation. I understand that my electronic signature is the legal equivalent of having placed my handwritten signature on a WWCR. I understand and agree that by electronically signing this WWCR, I hereby affirm that: (1) I am certified to supervise water well drilling activities as defined by Environmental Conservation Law 15-1502; (2) this water well was constructed in accordance with water well standards promulgated by the New York State Department of Health; and (3) under the penalty of perjury the information provided in this WWCR is true, accurate and complete, and I understand that any false statement made herein is punishable as a Class A Misdemeanor under Penal Law §210.45. 02/2020

WELL LOG

DEPTH TO BEDROCK (Feet below land surface): 98

GROUND ELEVATION (Feet above sea level):

TOP OF CASING (Feet above (+) or below (-) land surface): 1+

TOP OF WELL

DEPTH (Feet)	DESCRIPTION
0-20	Sand
90-98	Hardpan
98-280	Limestone

BOTTOM OF HOLE

Provide a copy of this report to DEC and the well owner.

LOCATION SKETCH - Indicate north. Insert here or attach to this file.

INSTRUCTIONS FOR NYS DEC WATER WELL COMPLETION REPORT

1. ***County***: Record the county in which the well is located.
2. ***Town***: Record the town in which the well is located.
3. ***DEC Well Number***: Record the well number assigned to the driller by NYSDEC.
4. ***Owner Name***: Record the full name of well owner. If the well is owned by a builder, indicate the builder's name.
5. ***Owner Address***: Record the current mailing address of the well owner.
6. ***Well Address***: Record the physical address of the property on which the well is located. Provide a map of the well location using one the following methods:

   Method 1: Using a copy of the appropriate section of a 1:24,000 scale United States Geologic Survey (USGS) map or New York State Department of Transportation (NYSDOT) map, record the map name, DEC Well Number, and well location.

   Method 2: Obtain the appropriate section of a detailed county road map. Record the DEC Well Number and well location on the copy of the map.

   Method 3: Sketch a map that depicts the well location. Locate the well with respect to at least two streets or roads. Include a north arrow.
7. ***Latitude/Longitude and Method Used***: Record the latitude and longitude of the well, as determined by one of the following:

   GPS: The use of global positioning system (GPS) equipment is highly recommended.

   Map: Coordinates may also be determined from an online mapping program.
8. ***Tax Map No.***: Record the Section, Block and Lot from local Real Property Services.
9. ***Depth of Well***: Record the total well depth in feet below land surface.
10. ***Depth to Groundwater***: Measure the static water level in feet below land surface.
11. ***Date Measured***: Record the date of the water level measurement.
12. ***Flowing?***: Record if water is flowing out of the well at the time of installation.

CASINGS

13. ***Diameter***: Record the diameter of casing in inches.
14. ***Length***: Record the length of casing in feet.
15. ***Grout Type / Sealing***: Record the type of grout or sealing used (e.g. bentonite, cement, drive shoe).
16. ***Grout / Sealing Interval***: Record the interval of grout or sealing in feet below land surface.

SCREENS

17. ***Make & Material***: Record the manufacturer name and material (e.g. PVC, steel) of the screen.
18. ***Slot Size***: Record the slot size of the screen in thousandths of an inch.
19. ***Diameter***: Record the diameter of the screen in inches.
20. ***Length***: Record the length of the screen in feet.
21. ***Depth to Top of Screen, From Top of Casing***: Record the total length of casing from top of screen to top of casing in feet.

YIELD TEST

22. ***Date***: Record the start date of the yield test.
23. ***Duration of Test***: Record the duration of the test in hours and minutes.
24. ***Lift Method***: Indicate how water was produced (pump, air lift, bailer).
25. ***Stabilized Discharge***: Record the discharge rate that resulted in stabilized drawdown in gallons per minute (gpm).
26. ***Static Level Prior to Test***: Record the static water level prior to the start of the yield test in feet.
27. ***Maximum Drawdown***: Record the difference between the static water level and the lowest stabilized water level in feet.
28. ***Recovery Time***: Record the time it takes for the water level to return to the static water level after cessation of pumping in hours and minutes.
29. ***Was the water produced during test discharged away from immediate area?***: Indicate yes or no.

DRILLER INFORMATION

30. ***Method of Drilling***: Indicate rotary, cable tool, or other. If other, please describe.
31. ***Use of Water***: Commercial; Dewatering; Domestic; Fire Protection; Geothermal; Industrial; Institutional; Irrigation; Municipal; Public Water Supply; Stock Supply; Test. *For geothermal wells, reports are only required for open loop or standing column wells up to 500 feet deep.*
32. ***Date Drilling Work Started***: Record the date drilling activities started.
33. ***Date Drilling Work Completed***: Record the date drilling activities were completed.
34. ***Date Report Completed***: Record the date that the well drilling sections of the completion report form were completed.
35. ***Registered Company Name***: Record the name of the registered drilling company.
36. ***NYSDEC Registration No.***: Record the NYSDEC registration number.
37. ***Registered Company Address***: Record the address of the registered drilling company.
38. ***Certified Driller***: Record the name of the exam-certified well driller responsible for providing on-site supervision of well drilling installation activities for the well reported on this form.
39. ***Certified Driller Initials (Electronic Signature)***: The certified well driller, recorded in Box 36 of this form, must provide his/her electronic signature.

PUMP INSTALLATION

40. ***Pump Installed?***: Indicate yes or no. If no pump was installed, leave the rest of this section blank.
41. ***Date***: Record the date of pump installation.
42. ***Type***: Record the pump type (e.g. jet pump, submersible).
43. ***Make***: Record the pump's manufacturer name.
44. ***Model***: Record the manufacturer's model number. If unavailable, indicate pump horsepower.
45. ***Maximum Capacity***: Report the maximum capacity of the pump at the installed depth in gallons per minute.
46. ***Pump Installation Level***: Report the depth at which the pump was installed, in feet below the top of casing.
47. ***Date Report Completed***: Record the date that the pump installation section of the completion report form was completed.
48. ***Registered Company Name***: Record the name of the registered pump installation company.
49. ***NYSDEC Registration No.***: Record the NYSDEC registration number.
50. ***Registered Company Address***: Record the address of the registered pump installation company.
51. ***Certified Pump Installer***: Record the name of the exam-certified pump installer responsible for providing on-site supervision of pump installation activities for the well reported on this form.
52. ***Certified Pump Installer Initials (Electronic Signature)***: The certified pump installer, recorded in Box 48 of this form, must provide his/her electronic signature.

WELL LOG

- Record the depth to bedrock in feet below land surface.
- Record the ground elevation in feet above sea level.
- Record the top of casing in feet above or below land surface. Use a plus sign (+) if casing is above land surface; use a negative sign (-) if casing is below land surface.
- Describe the geologic materials encountered during drilling; indicate the depth below land surface of each change in material.
- Describe all bedrock and unconsolidated materials in detail, regardless of the depth to which the well is to be installed.
- For unconsolidated materials, indicate whether silt, sand, clay, gravel, boulders, or mixtures thereof are encountered. Describe the grain size of the unconsolidated material encountered as either clay, fine, medium, or coarse. Indicate density and color of material (e.g., soft, gray clay).
- For bedrock, describe the rock type and color (e.g. black shale, gray limestone).
- Show depth of water bearing strata.
- Show casing (including stick-up), screens, pump, additional drilling tests (e.g., hammer blows), and other items of interest (e.g., hydrofracturing information, water quality issues (e.g. sulphur, salt, methane)).
- Describe any repair work. Attach a separate sheet if necessary.

ADDITIONAL INFORMATION

Email the completed well log to NYSWaterWells@dec.ny.gov
If necessary, print and mail the completed well log to:
NYSDEC Water Well Program
625 Broadway, 4th Floor
Albany, NY, 12233-3508

For more information about the Water Well Program, visit http://www.dec.ny.gov/lands/4997.html or contact program staff at 877-472-2619.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

(1) County REnsselaer

(2) Township Stephentown

(3) DEC Well Number RE2471

WELL COMPLETION REPORT

(4) OWNER: Robert Bellard Jr.

(5) ADDRESS: 172 Houghton St. N. Adams, Ma. 01247

(6) LOCATION OF WELL (See Instructions On Reverse)
Show Lat/Long if available and method used: ☒ GPS ☐ DEC Website ☐ Map Interpolation
Lot # 5 East Rd. Stephentown
42° 27.966 N 073° 23.659 W

(7) DEPTH OF WELL BELOW LAND SURFACE (Feet): 263'

(8) DEPTH TO GROUNDWATER BELOW LAND SURFACE (Feet): 55' DATE MEASURED: 8/11/03

CASINGS

(9) DIAMETER: 6" (in. | in. | in. | in.)

(10) LENGTH: 60' (ft. | ft. | ft. | in.)

(11) GROUT TYPE / SEALING: bentonite/ drive shoe

(12) GROUT / SEALING INTERVAL (Feet) FROM 50 TO 10

SCREENS

(13) MAKE & MATERIAL:

(14) OPENINGS:

(15) DIAMETER (in. | in. | in. | in.):

(16) LENGTH (ft. | ft. | ft. | in.):

(17) DEPTH TO TOP OF SCREEN, FROM TOP OF CASING (Feet):

YIELD TEST

(18) DATE: 8/11/03

(19) DURATION OF TEST: 4 hrs

(20) LIFT METHOD: ☐ Pump ☒ Air Lift ☐ Bail

(21) STABILIZED DISCHARGE (GPM): 30 GPM

(22) STATIC LEVEL PRIOR TO TEST (feet/inches below top of casing): 95'

(23) MAXIMUM DRAWDOWN (Stabilized) (feet/inches below top of casing): 240'

(24) RECOVERY (Time in hours/minutes): 1 hrs

(25) Was the water produced during test discharged away from immediate area? Yes X No ___

PUMP INSTALLATION

(26) PUMP INSTALLED? YES X NO ___

(27) DATE: 8/12/03

(28) PUMP INSTALLER: Hanson Well Drilling & Pump

(29) TYPE: Submersible

(30) MAKE: Aermotor

(31) MODEL: A8B-75

(32) MAXIMUM CAPACITY (GPM): 10 gpm

(33) PUMP INSTALLATION LEVEL FROM TOP OF CASING (Feet): 200'

(34) METHOD OF DRILLING: ☒ Rotary ☐ Cable Tool ☐ Other ___

(35) USE OF WATER (see instructions for choices): domestic

(36) DATE DRILLING WORK STARTED: 8/9/03

(37) DATE DRILLING WORK COMPLETED: 8/11/03

(38) DATE REPORT FILED: 8/13/03

(39) DRILLER & COMPANY: Thomas M. Hanson, Hanson Well Drilling & Pump Co., INC

(40) DEC REGISTRATION NO.: 10005

* Show log of geologic materials encountered with depth below ground surface, water bearing beds and water levels in each; casings; screens; pump; additional pumping tests and other matters of interest, e.g., water quality (sulphur, salt, methane). Describe repair work. Attach separate sheet if necessary.

See further instructions titled "Instructions for New York State Well Completion Report".

LOG *

Ground Surface EL. 325' ft. above sea level

Top Of Casing is located 2± ft.above (+) or below (-) ground surface

TOP OF WELL

0' to 20' clay

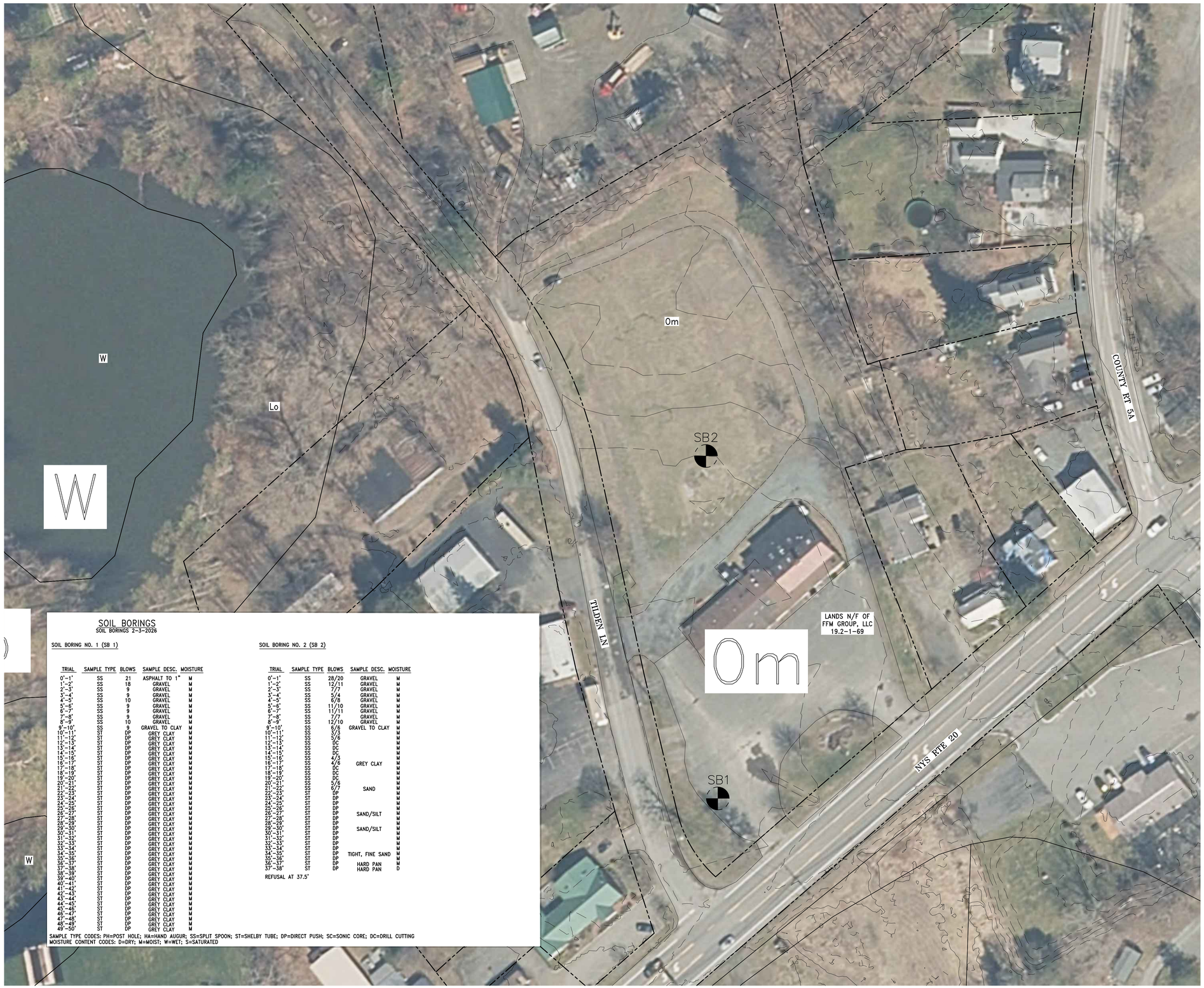
20' to 50' hardpan

50' to 263' layers of light brown and gray limestone

263' BOTTOM OF HOLE

NYSDEC COPY

LOCATION SKETCH - Indicate north



SOIL BORINGS

SOIL BORINGS 2-3-2026

SOIL BORING NO. 1 (SB 1)

TRIAL	SAMPLE TYPE	BLOWS	SAMPLE DESC.	MOISTURE
0'-1'	SS	21	ASPHALT TO 1"	M
1'-2'	SS	18	GRAVEL	M
2'-3'	SS	9	GRAVEL	M
3'-4'	SS	9	GRAVEL	M
4'-5'	SS	10	GRAVEL	M
5'-6'	SS	9	GRAVEL	M
6'-7'	SS	9	GRAVEL	M
7'-8'	SS	9	GRAVEL	M
8'-9'	SS	10	GRAVEL	M
9'-10'	SS	9	GRAVEL TO CLAY	M
10'-11'	ST	DP	GREY CLAY	M
11'-12'	ST	DP	GREY CLAY	M
12'-13'	ST	DP	GREY CLAY	M
13'-14'	ST	DP	GREY CLAY	M
14'-15'	ST	DP	GREY CLAY	M
15'-16'	ST	DP	GREY CLAY	M
16'-17'	ST	DP	GREY CLAY	M
17'-18'	ST	DP	GREY CLAY	M
18'-19'	ST	DP	GREY CLAY	M
19'-20'	ST	DP	GREY CLAY	M
20'-21'	ST	DP	GREY CLAY	M
21'-22'	ST	DP	GREY CLAY	M
22'-23'	ST	DP	GREY CLAY	M
23'-24'	ST	DP	GREY CLAY	M
24'-25'	ST	DP	GREY CLAY	M
25'-26'	ST	DP	GREY CLAY	M
26'-27'	ST	DP	GREY CLAY	M
27'-28'	ST	DP	GREY CLAY	M
28'-29'	ST	DP	GREY CLAY	M
29'-30'	ST	DP	GREY CLAY	M
30'-31'	ST	DP	GREY CLAY	M
31'-32'	ST	DP	GREY CLAY	M
32'-33'	ST	DP	GREY CLAY	M
33'-34'	ST	DP	GREY CLAY	M
34'-35'	ST	DP	GREY CLAY	M
35'-36'	ST	DP	GREY CLAY	M
36'-37'	ST	DP	GREY CLAY	M
37'-38'	ST	DP	GREY CLAY	M
38'-39'	ST	DP	GREY CLAY	M
39'-40'	ST	DP	GREY CLAY	M
40'-41'	ST	DP	GREY CLAY	M
41'-42'	ST	DP	GREY CLAY	M
42'-43'	ST	DP	GREY CLAY	M
43'-44'	ST	DP	GREY CLAY	M
44'-45'	ST	DP	GREY CLAY	M
45'-46'	ST	DP	GREY CLAY	M
46'-47'	ST	DP	GREY CLAY	M
47'-48'	ST	DP	GREY CLAY	M
48'-49'	ST	DP	GREY CLAY	M
49'-50'	ST	DP	GREY CLAY	M

SOIL BORING NO. 2 (SB 2)

TRIAL	SAMPLE TYPE	BLOWS	SAMPLE DESC.	MOISTURE
0'-1'	SS	28/20	GRAVEL	M
1'-2'	SS	12/11	GRAVEL	M
2'-3'	SS	7/7	GRAVEL	M
3'-4'	SS	5/4	GRAVEL	M
4'-5'	SS	6/8	GRAVEL	M
5'-6'	SS	11/10	GRAVEL	M
6'-7'	SS	11/11	GRAVEL	M
7'-8'	SS	7/7	GRAVEL	M
8'-9'	SS	12/10	GRAVEL	M
9'-10'	SS	6/6	GRAVEL TO CLAY	M
10'-11'	SS	3/3		M
11'-12'	SS	5/8		M
12'-13'	SS	DC		M
13'-14'	SS	DC		M
14'-15'	SS	DC		M
15'-16'	SS	4/3		M
16'-17'	SS	4/6	GREY CLAY	M
17'-18'	SS	DC		M
18'-19'	SS	DC		M
19'-20'	SS	DC		M
20'-21'	SS	5/6		M
21'-22'	SS	6/7	SAND	M
22'-23'	ST	DP		M
23'-24'	ST	DP		M
24'-25'	ST	DP		M
25'-26'	ST	DP		M
26'-27'	ST	DP	SAND/SILT	M
27'-28'	ST	DP		M
28'-29'	ST	DP	SAND/SILT	M
29'-30'	ST	DP		M
30'-31'	ST	DP		M
31'-32'	ST	DP		M
32'-33'	ST	DP		M
33'-34'	ST	DP		M
34'-35'	ST	DP	TIGHT, FINE SAND	M
35'-36'	ST	DP		M
36'-37'	ST	DP	HARD PAN	M
37'-38'	ST	DP	HARD PAN	D

REFUSAL AT 37.5'

SAMPLE TYPE CODES: PH=POST HOLE; HA=HAND AUGUR; SS=SPLIT SPOON; ST=SHELBY TUBE; DP=DIRECT PUSH; SC=SONIC CORE; DC=DRILL CUTTING
MOISTURE CONTENT CODES: D=DRY; M=MOIST; W=WET; S=SATURATED

Lamont Engineers
ENGINEERS - PLANNERS
FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

FFM GROUP, LLC
538 US ROUTE 30 NEW LEBANON
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

Stamp

Issue Rev.	Date	Remarks

Project Number	2024125
Drawn By	SK/MVC
Designed By	BJB
Checked By	BJB
Date	6/7/24
Scale	1"=40'
File Name	AERIAL

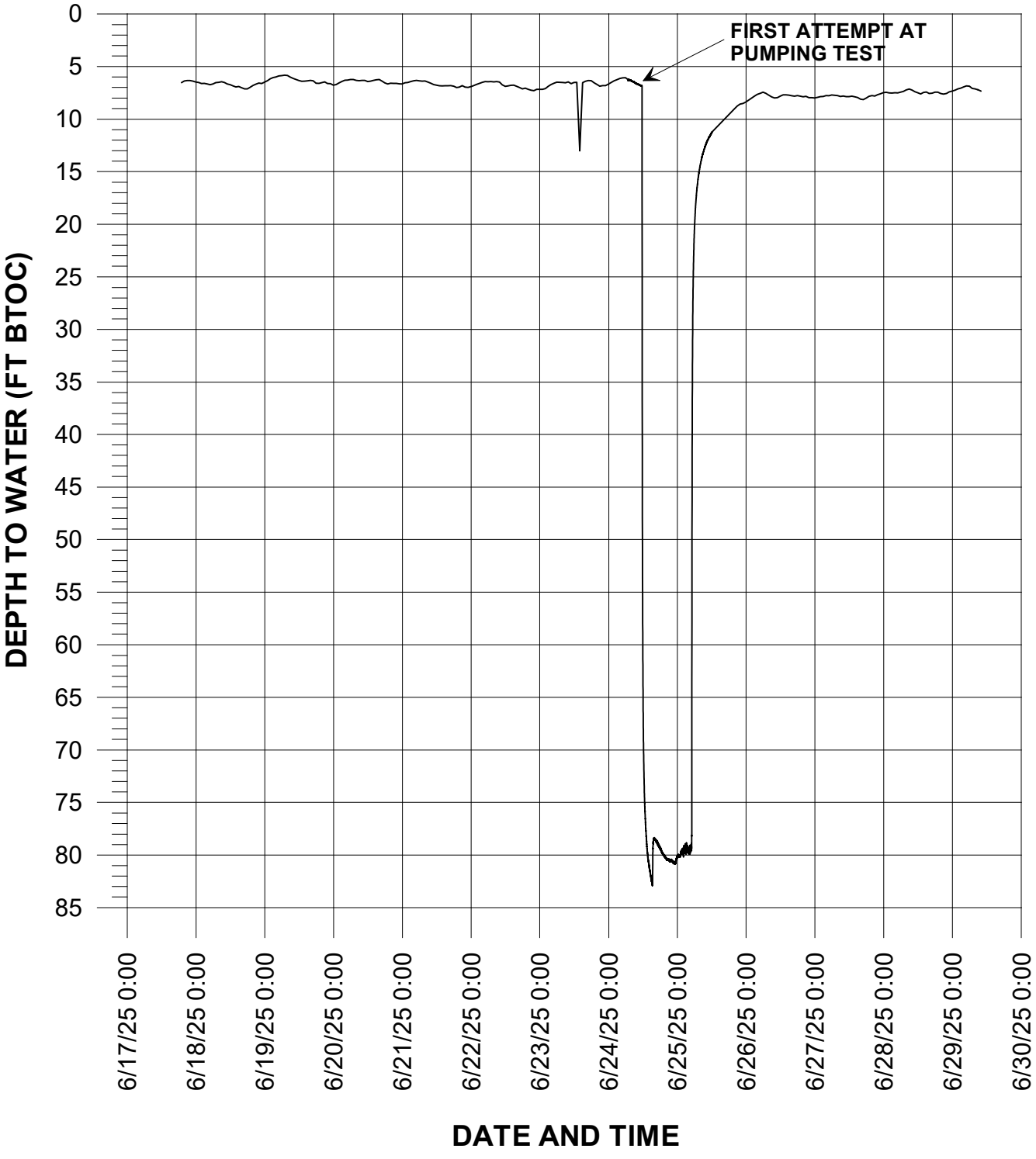
Sheet Title: AERIAL MAP

Sheet No.: SOILS

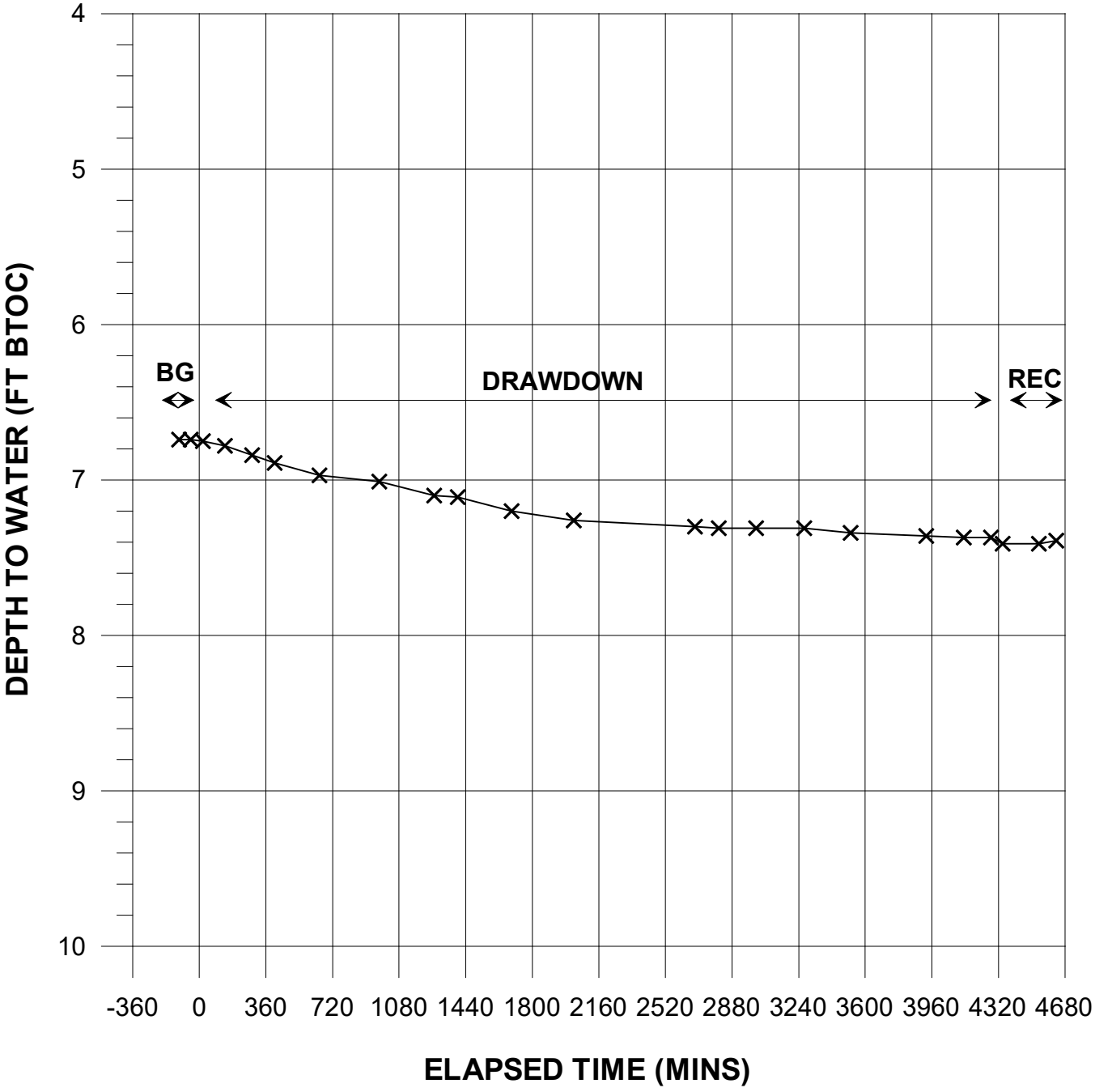
\\LAMONTENGINEERS\Projects\2024\2024125 FFM Bldg, Utils, & Grading, 2-19-2026 1:38:16 PM, SK, MVC

Appendix C
Background Graphs

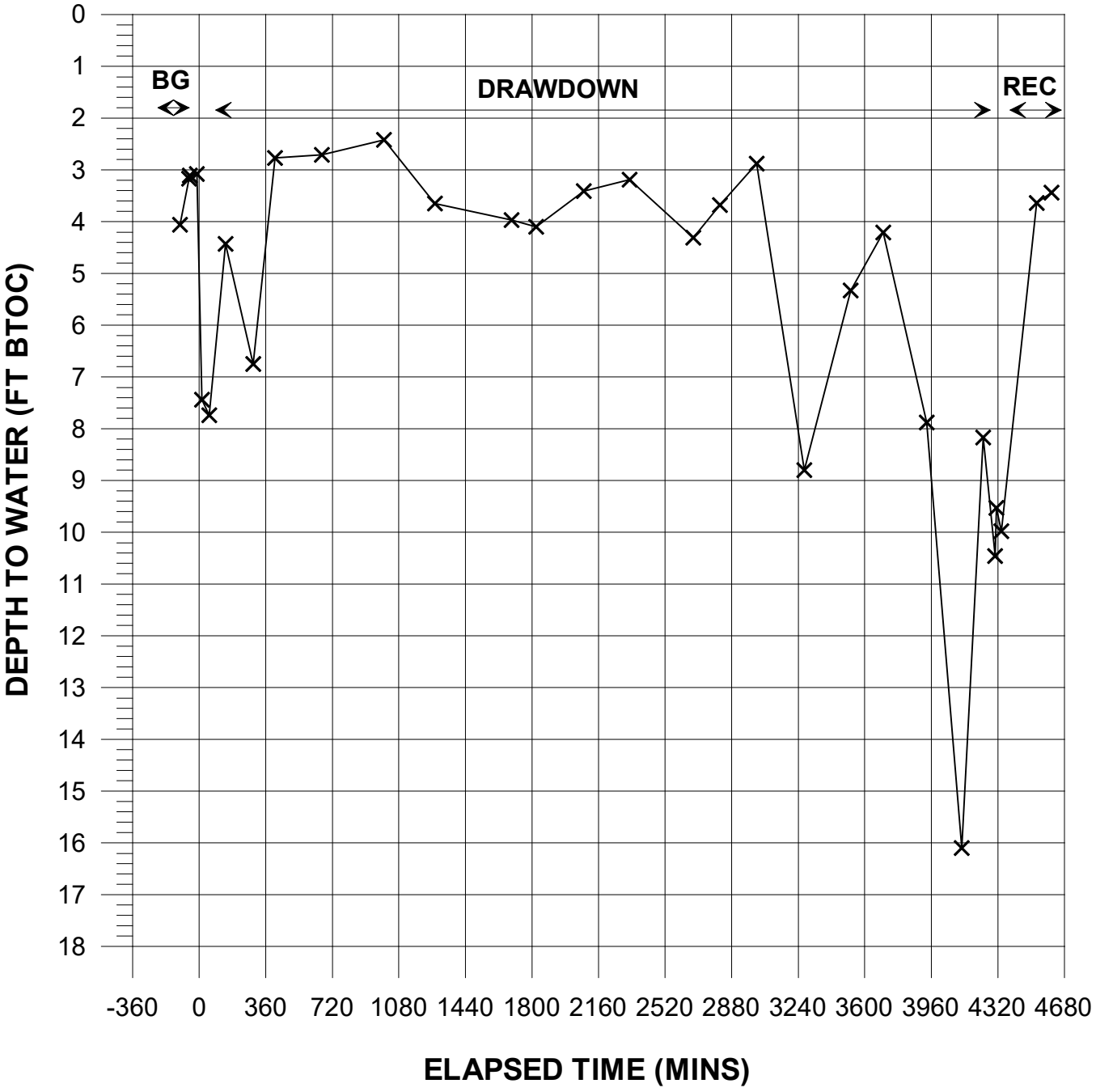
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
BACKGROUND DEPTH TO WATER OBSERVATION AT PW-1
06/17/25 - 06/29/25



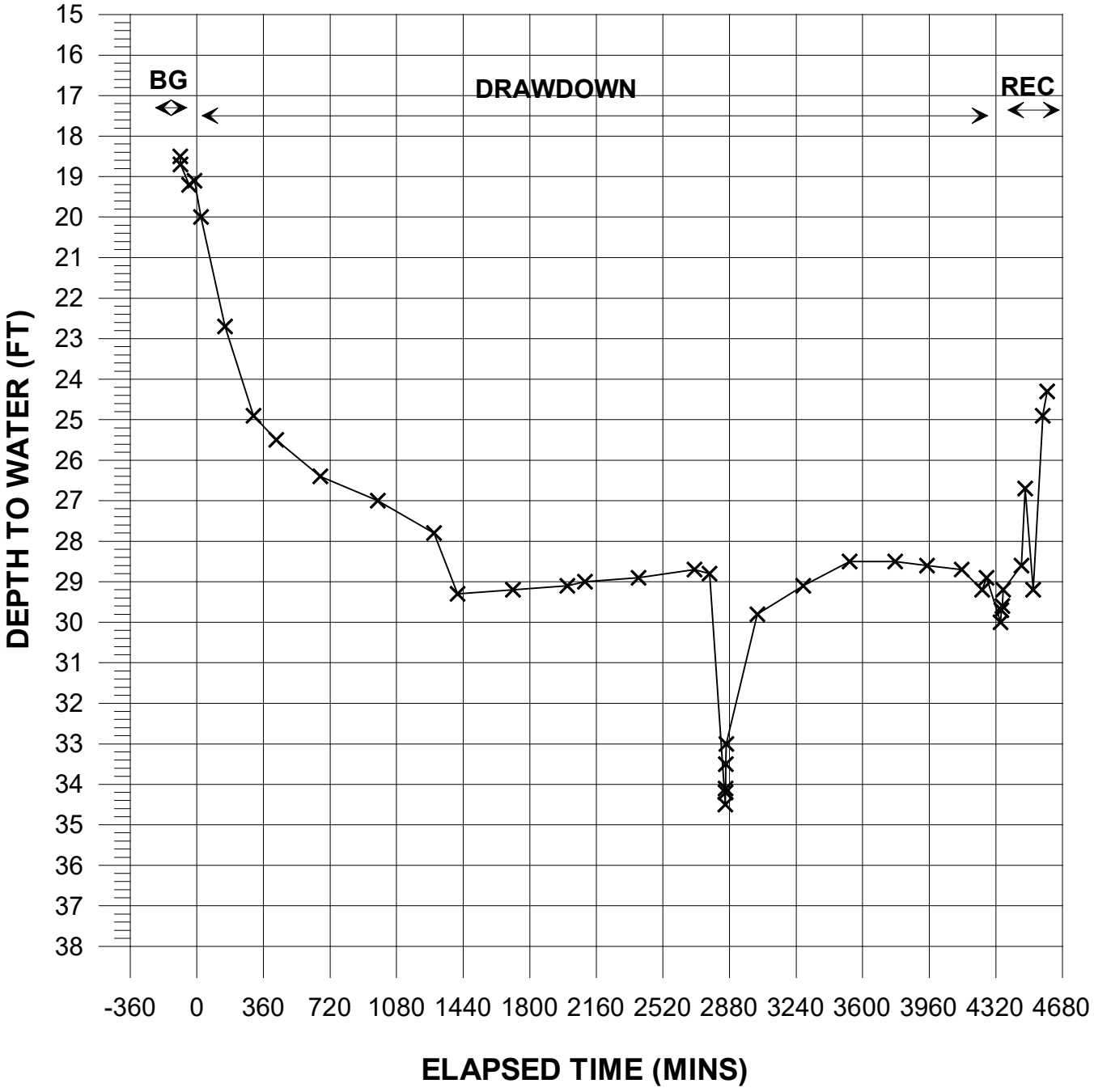
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 550 US ROUTE 20
06/29/25 - 07/02/25



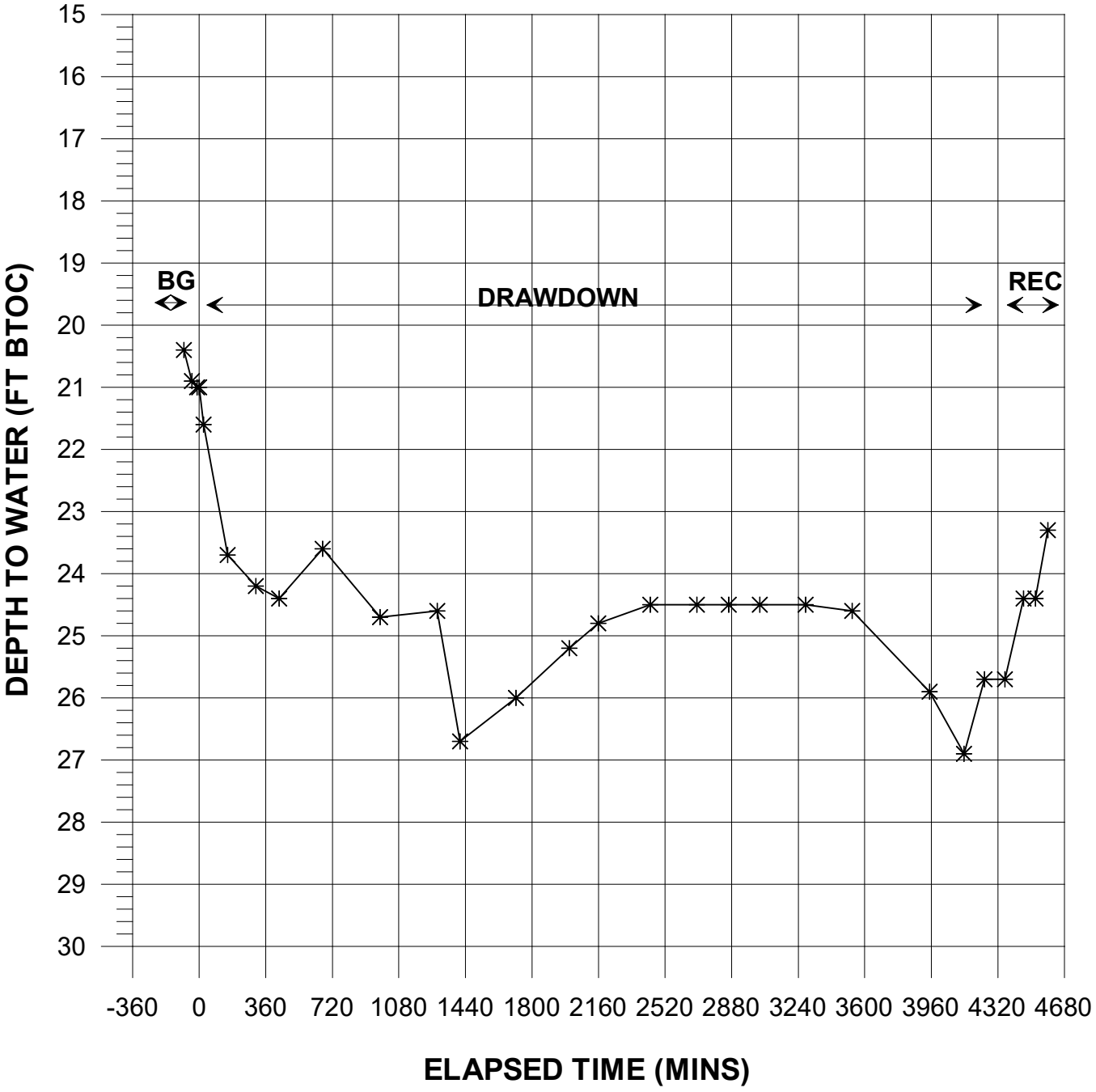
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 43 TILDEN ROAD
06/29/25 - 07/02/25



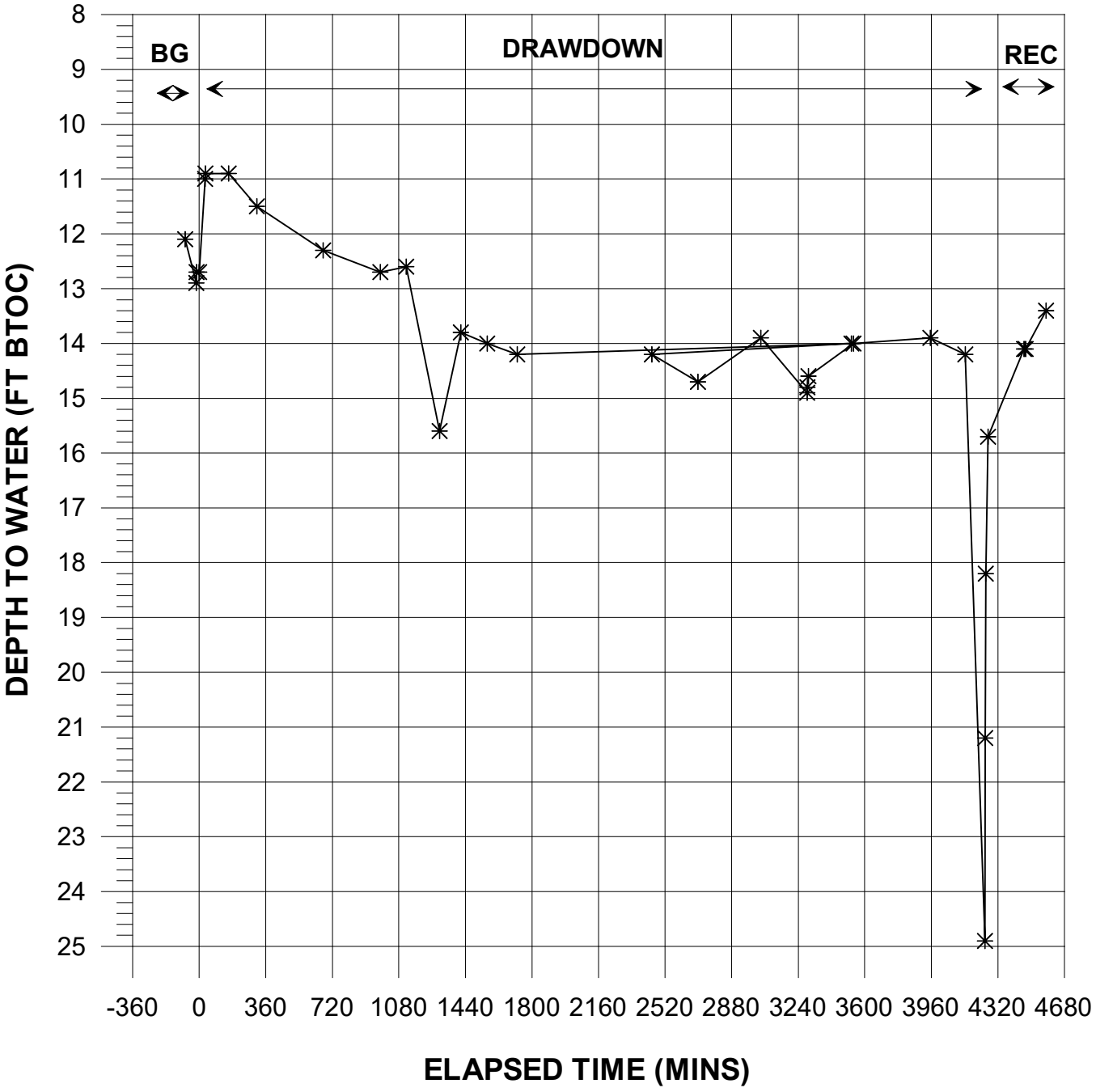
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 4 WEST STREET
06/29/25 - 07/02/25



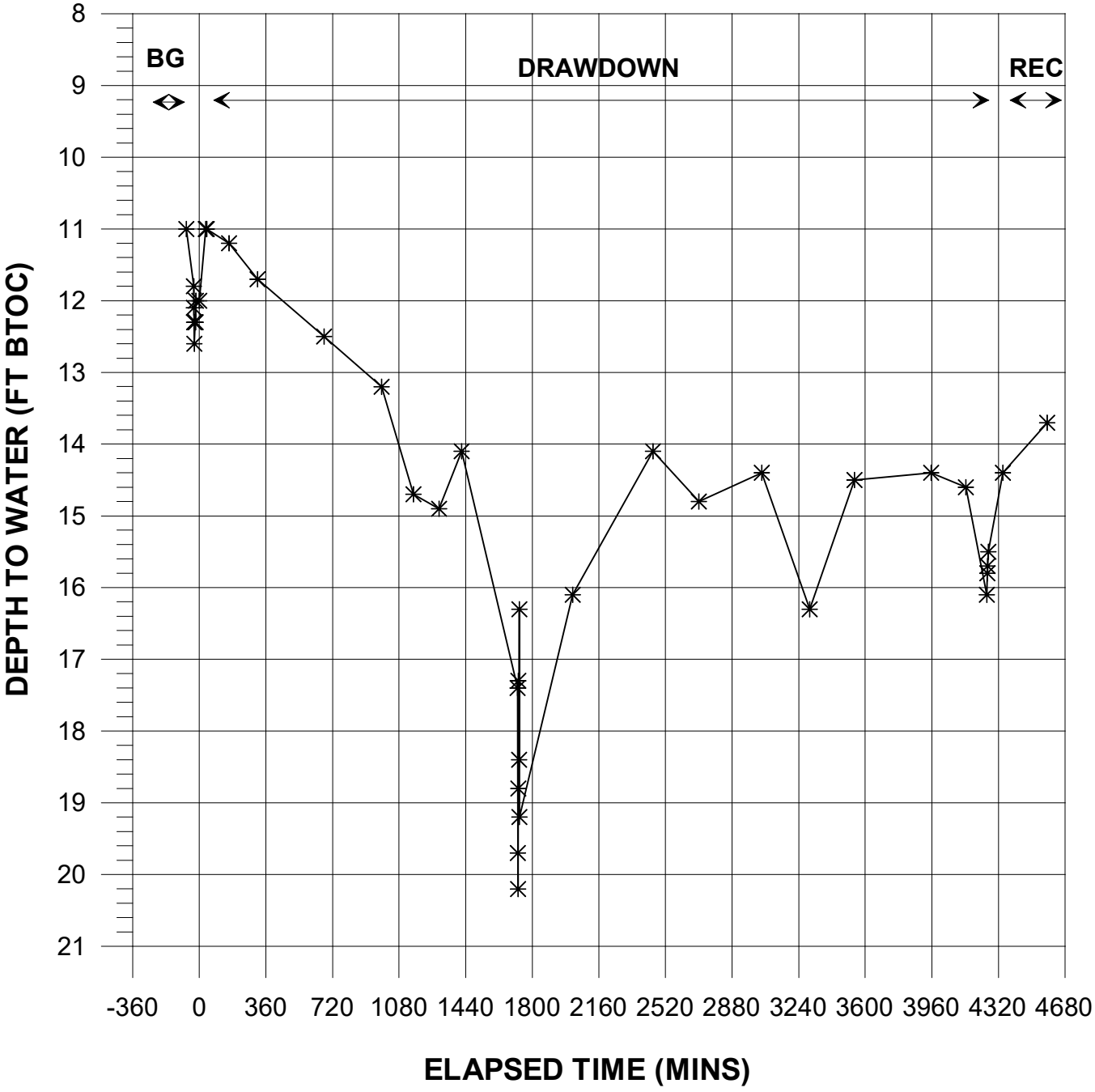
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 528 US ROUTE 20
06/29/25 - 07/02/25



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 13 WEST STREET
06/29/25 - 07/02/25

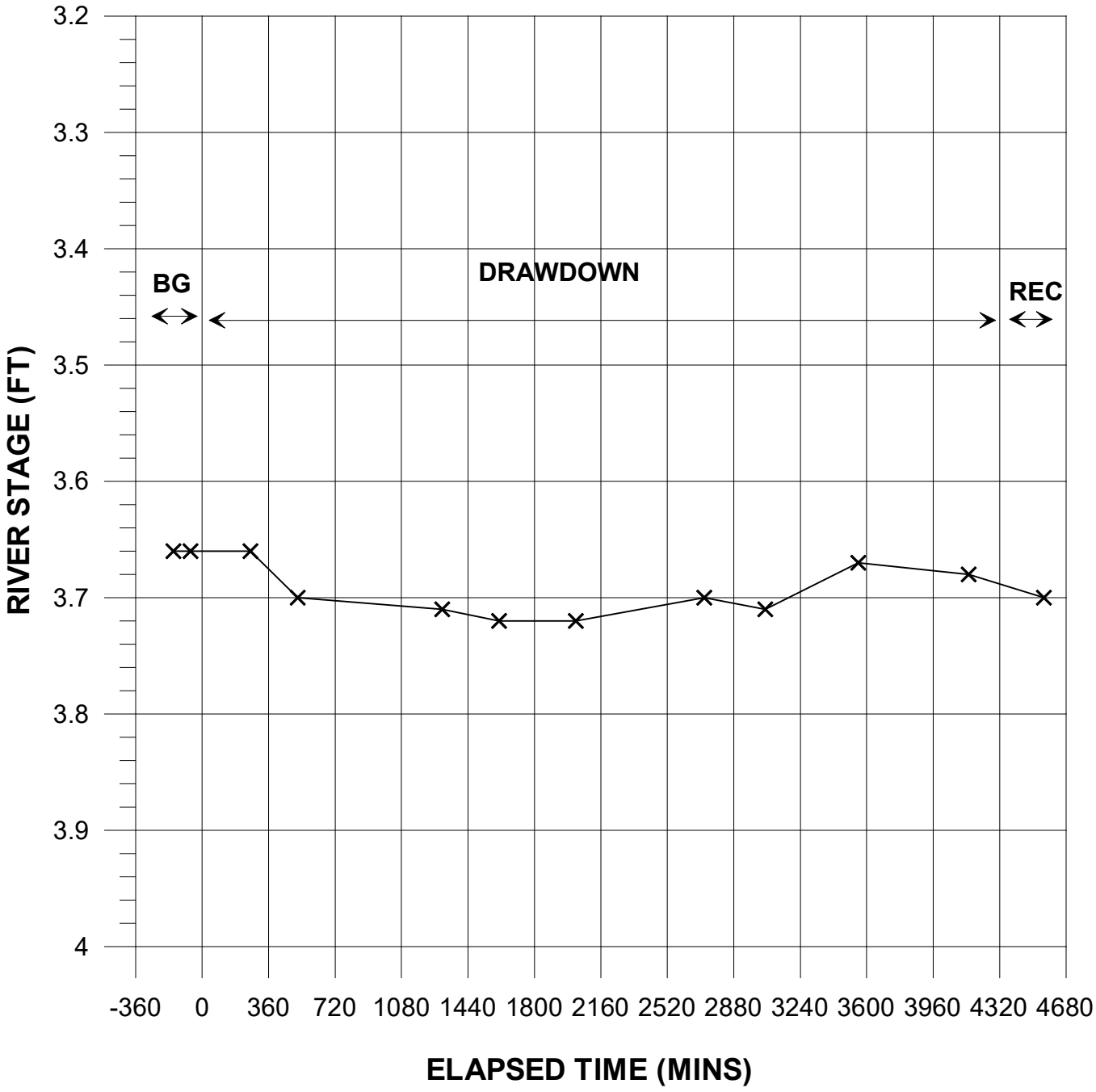


TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 17 WEST STREET
06/29/25 - 07/02/25

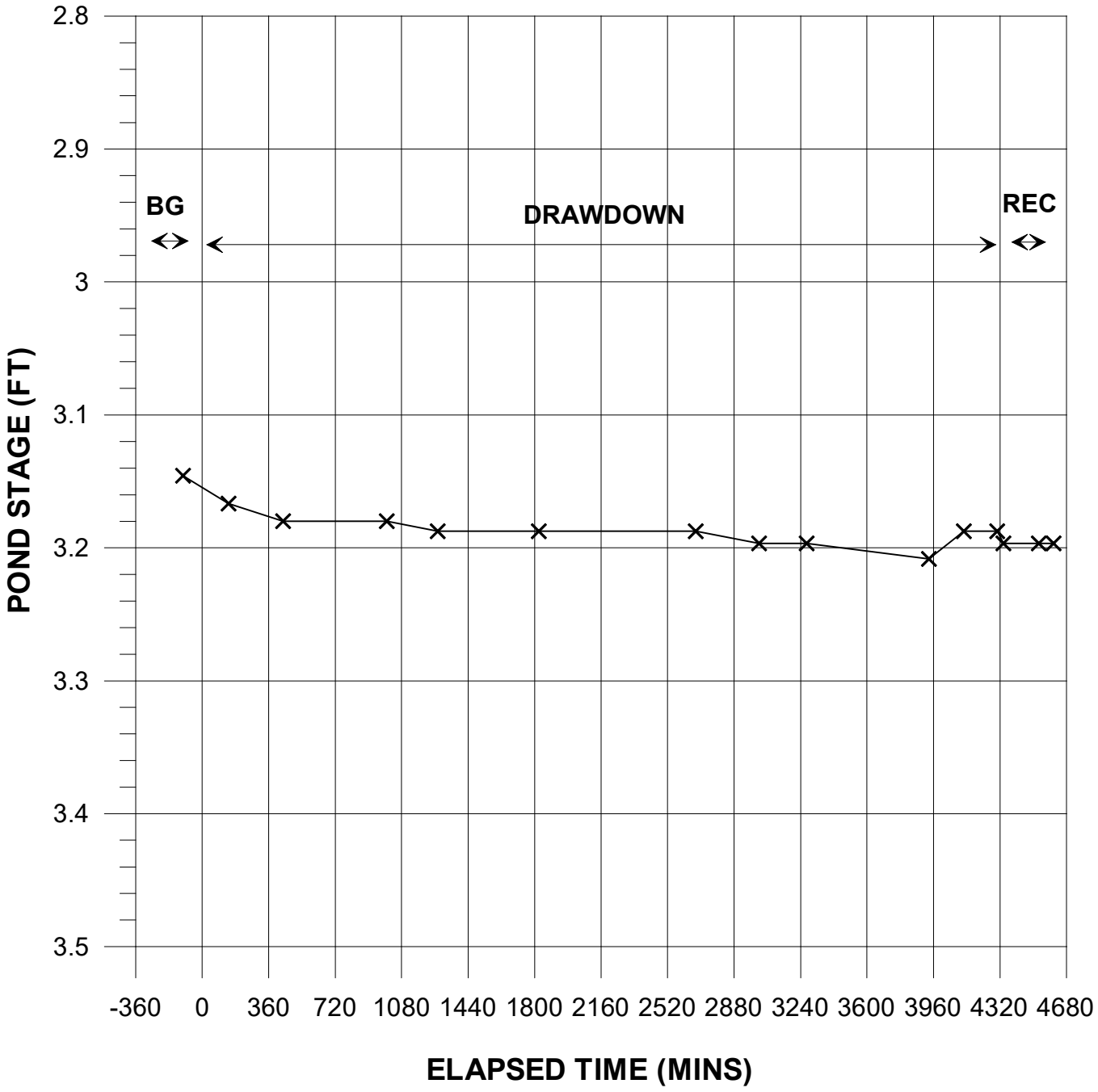


Appendix D
Surface Water Level Graphs

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
SURFACE WATER LEVEL OBSERVATIONS AT WYOMANOCK CREEK
06/29/25 - 07/02/25

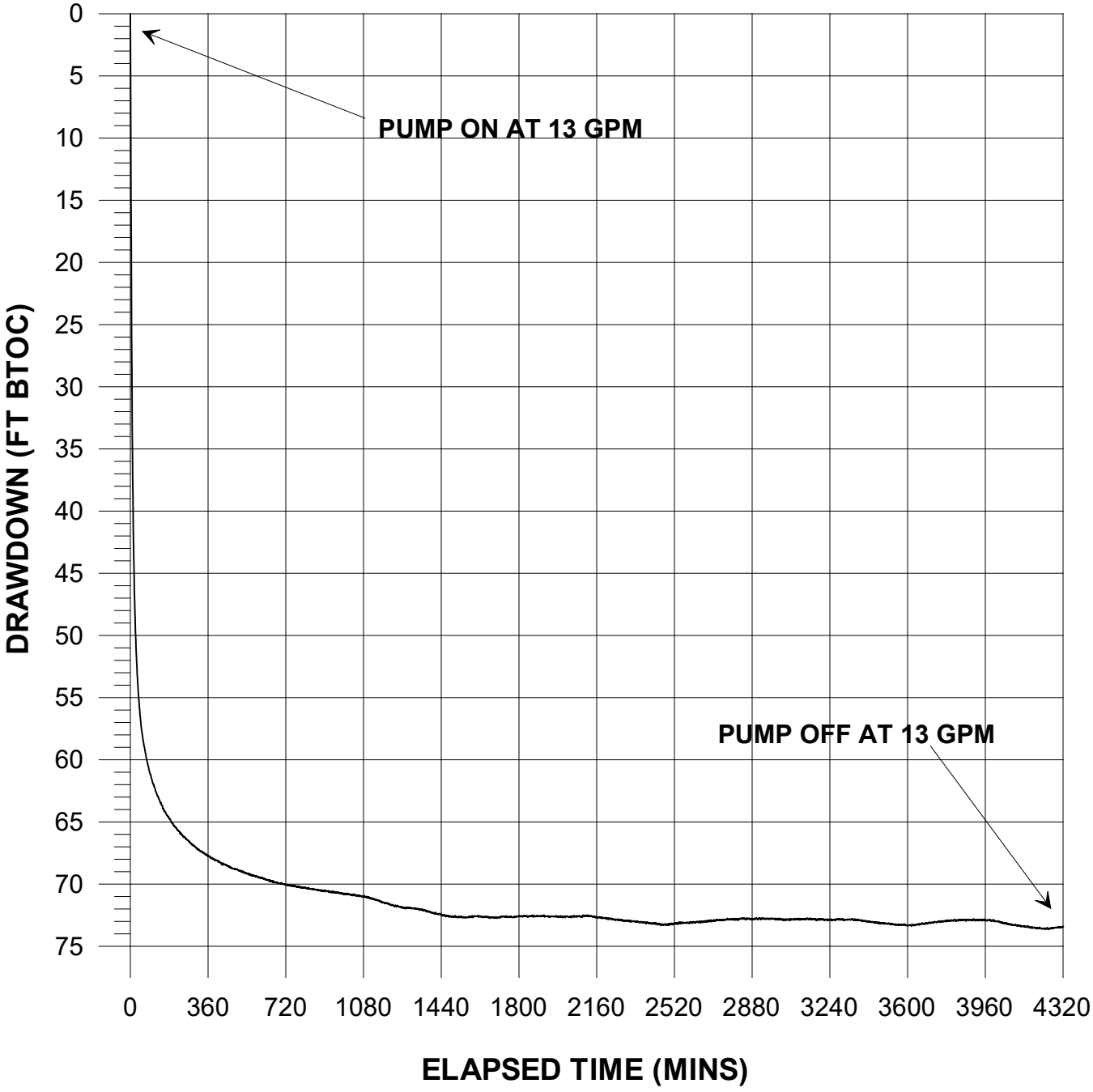


TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
SURFACE WATER LEVEL OBSERVATIONS AT POND
06/29/25 - 07/02/25

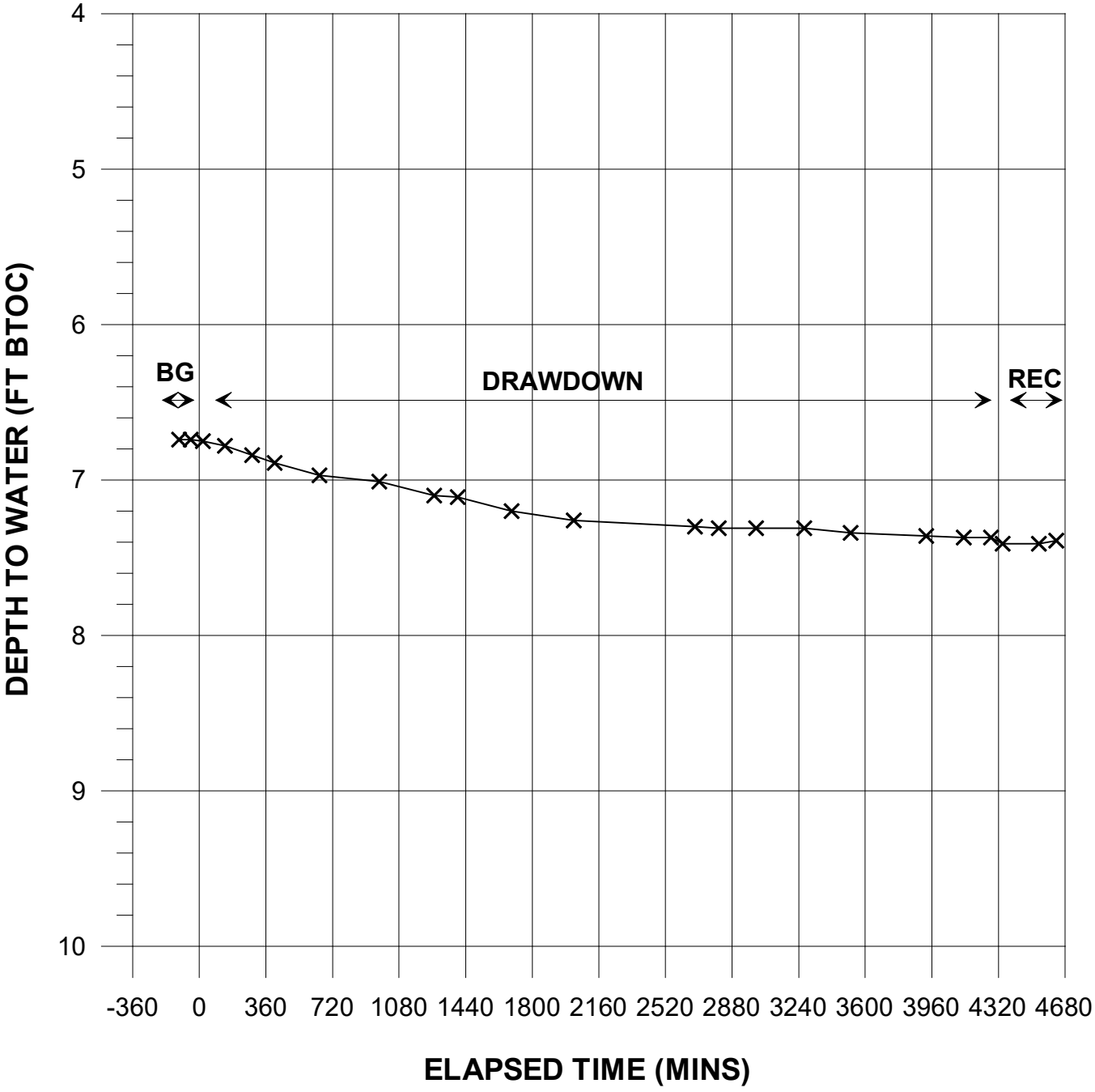


Appendix E
Drawdown Graphs

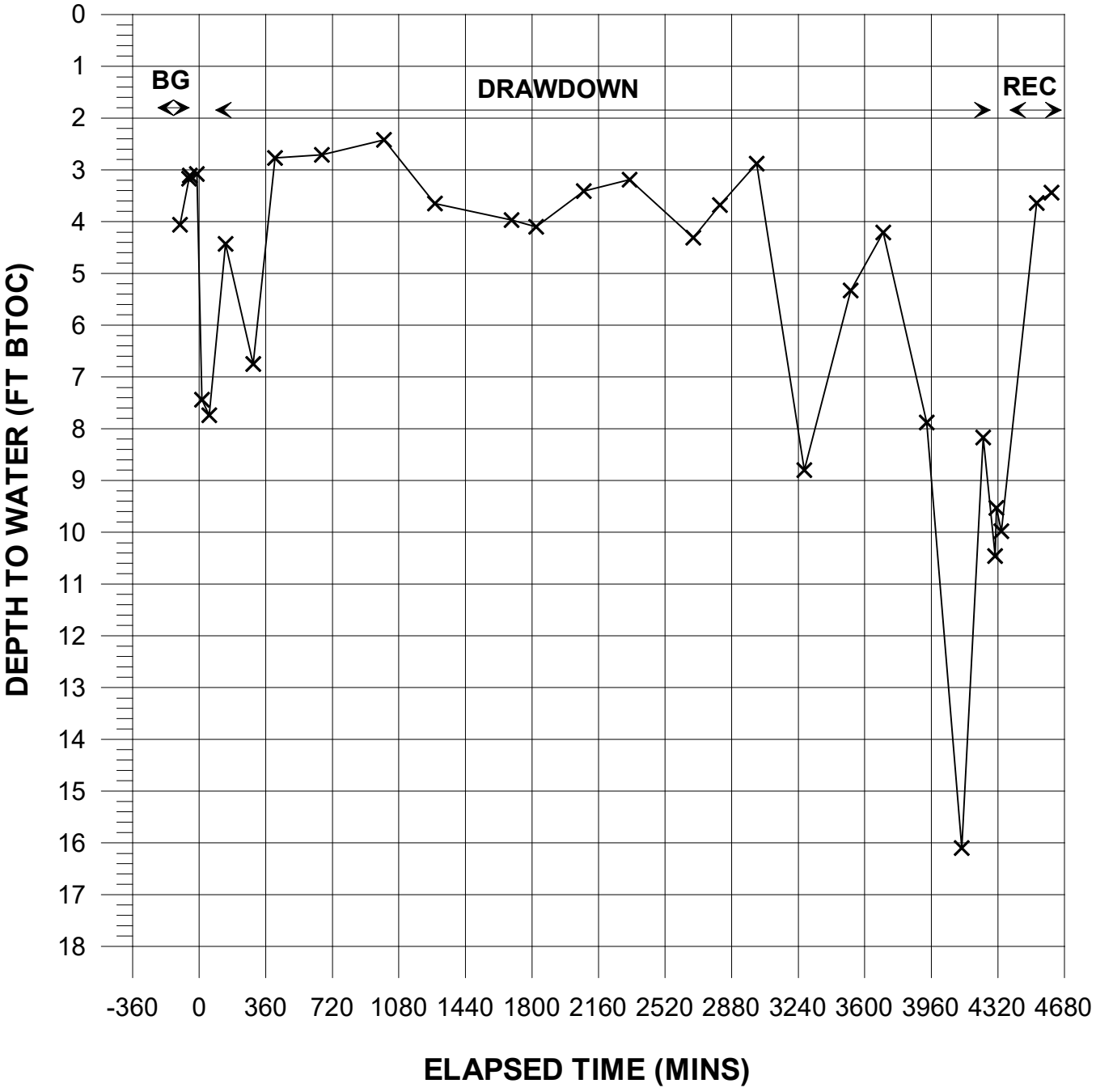
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25



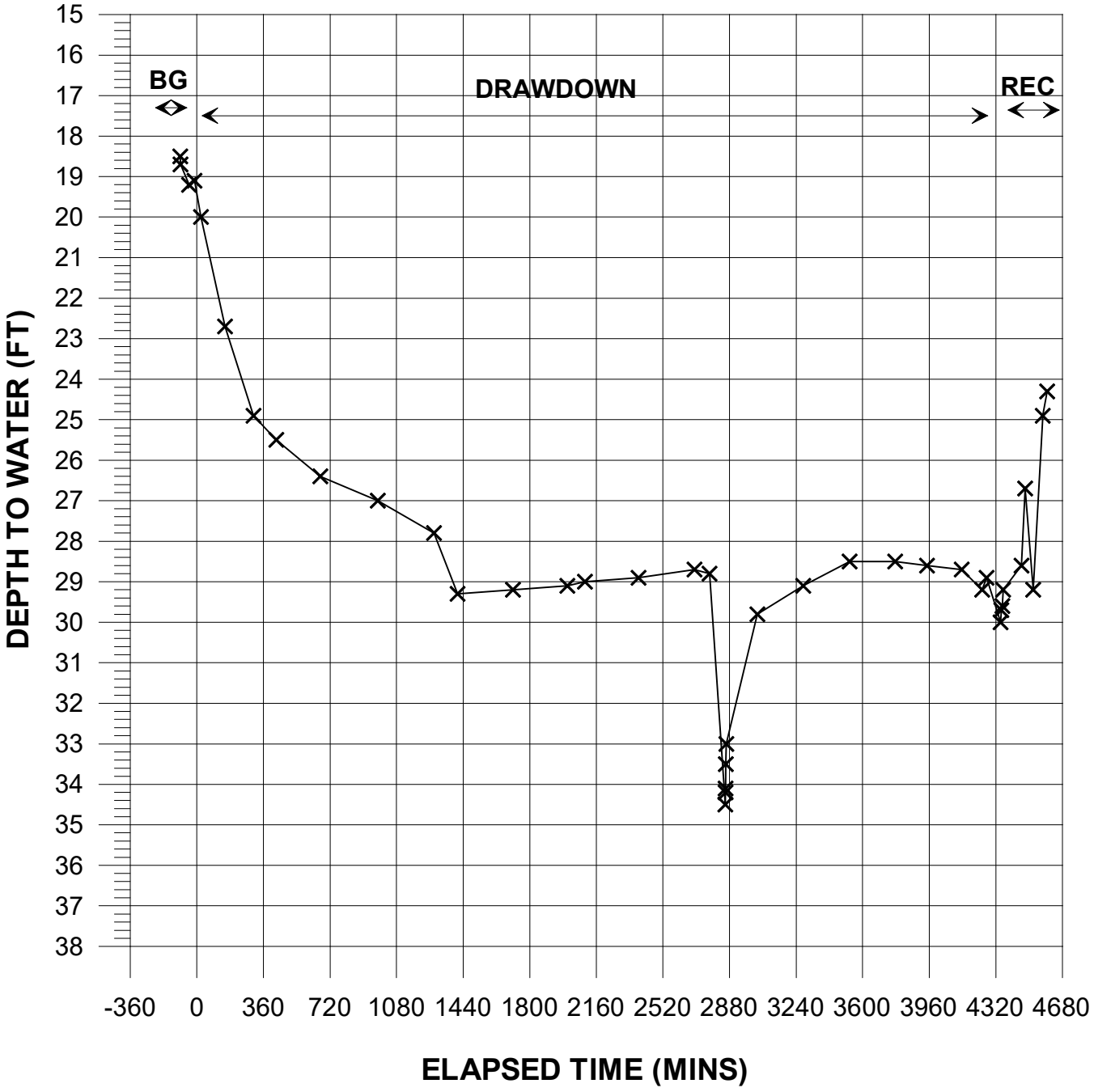
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 550 US ROUTE 20
06/29/25 - 07/02/25



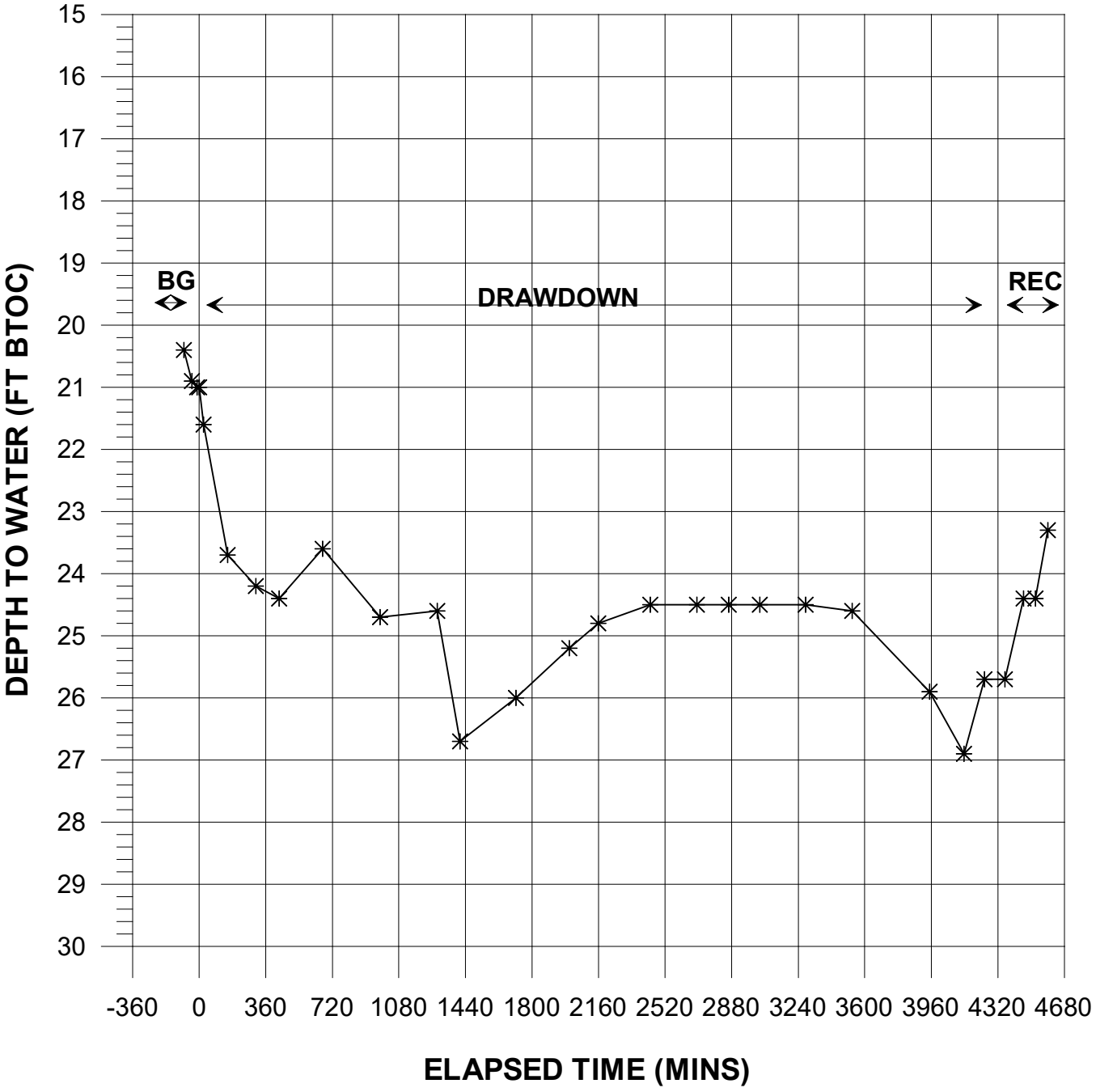
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 43 TILDEN ROAD
06/29/25 - 07/02/25



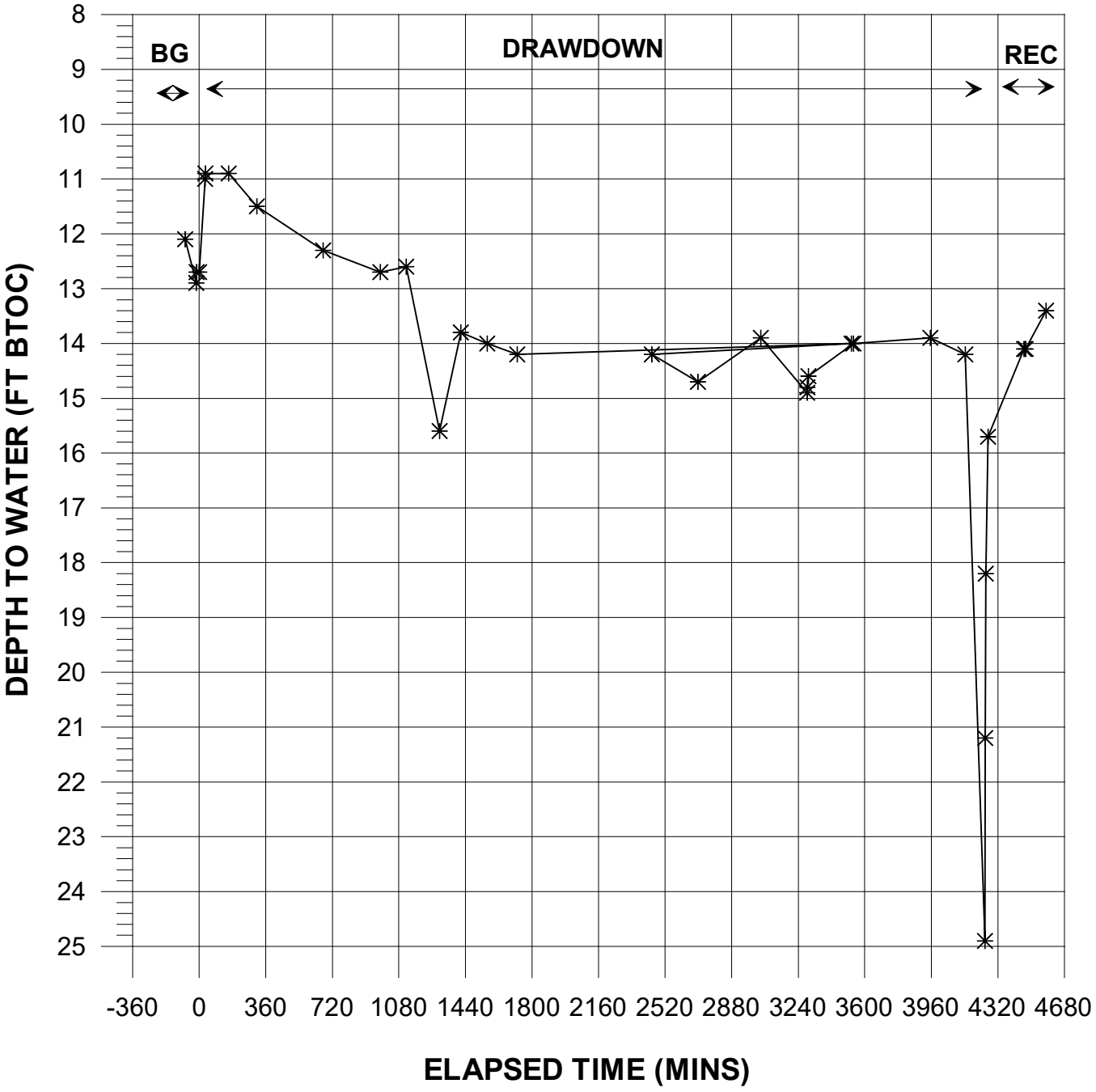
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 4 WEST STREET
06/29/25 - 07/02/25



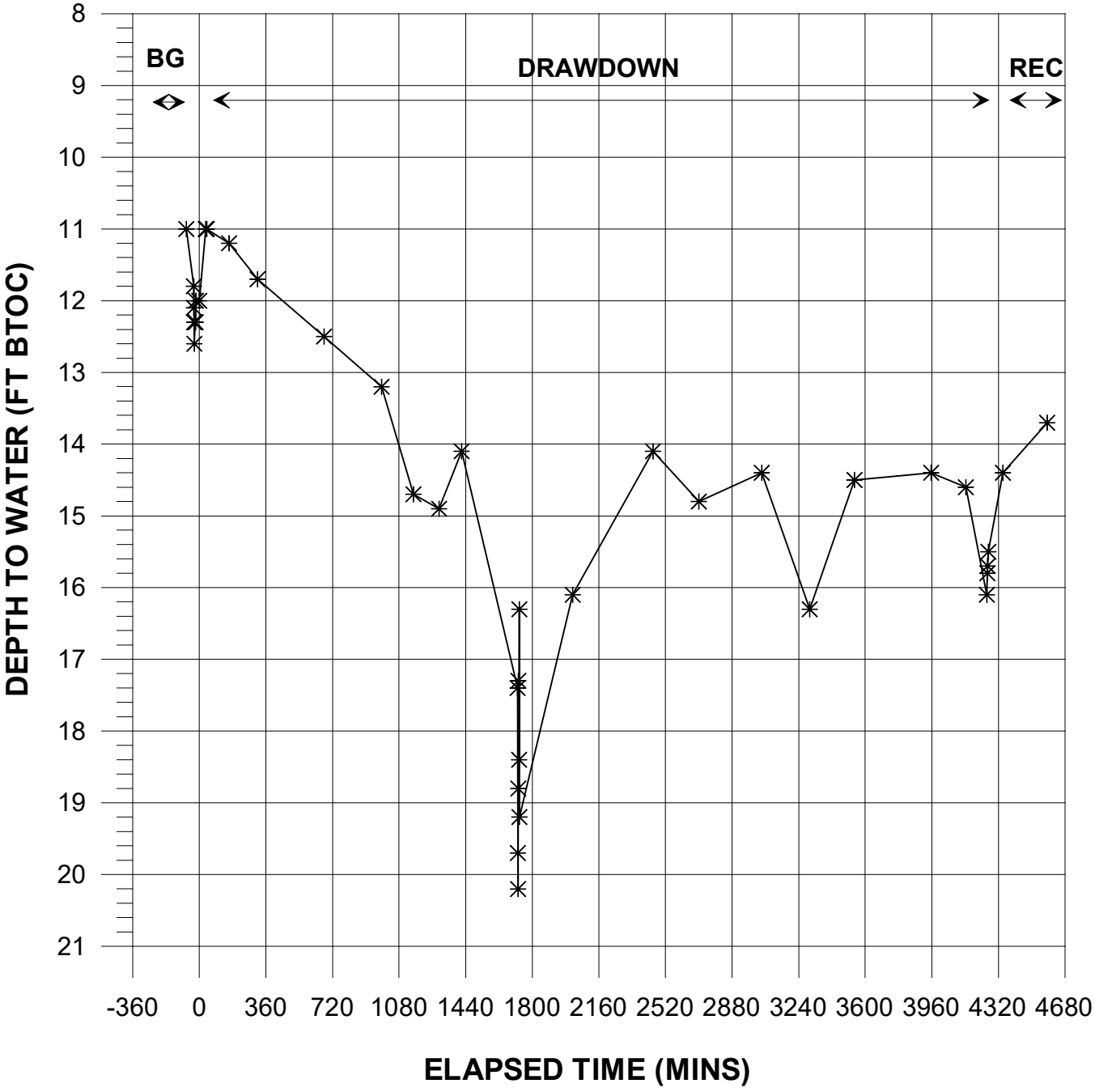
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 528 US ROUTE 20
06/29/25 - 07/02/25



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 13 WEST STREET
06/29/25 - 07/02/25



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 17 WEST STREET
06/29/25 - 07/02/25



Appendix F
Drawdown Data

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
6/29/25 12:30	0	7.29	0.00
6/29/25 12:31	1	9.99	2.70
6/29/25 12:32	2	17.45	10.16
6/29/25 12:33	3	22.07	14.78
6/29/25 12:34	4	25.83	18.54
6/29/25 12:35	5	29.45	22.16
6/29/25 12:36	6	33.09	25.80
6/29/25 12:37	7	35.90	28.61
6/29/25 12:38	8	38.21	30.92
6/29/25 12:39	9	40.71	33.42
6/29/25 12:40	10	42.82	35.53
6/29/25 12:41	11	44.61	37.32
6/29/25 12:42	12	46.20	38.91
6/29/25 12:43	13	47.64	40.35
6/29/25 12:44	14	48.94	41.65
6/29/25 12:45	15	50.14	42.85
6/29/25 12:46	16	51.15	43.86
6/29/25 12:47	17	52.13	44.84
6/29/25 12:48	18	53.04	45.75
6/29/25 12:49	19	53.92	46.63
6/29/25 12:50	20	54.62	47.33
6/29/25 12:51	21	55.31	48.02
6/29/25 12:52	22	56.00	48.71
6/29/25 12:53	23	56.60	49.31
6/29/25 12:54	24	57.08	49.79
6/29/25 12:55	25	57.53	50.24
6/29/25 12:56	26	58.06	50.77
6/29/25 12:57	27	58.45	51.16
6/29/25 12:58	28	58.92	51.63
6/29/25 12:59	29	59.33	52.04
6/29/25 13:00	30	59.68	52.39
6/29/25 13:01	31	60.04	52.75
6/29/25 13:02	32	60.44	53.15
6/29/25 13:03	33	60.69	53.40
6/29/25 13:04	34	61.03	53.74
6/29/25 13:05	35	61.38	54.09
6/29/25 13:06	36	61.64	54.35
6/29/25 13:07	37	61.91	54.62
6/29/25 13:08	38	62.17	54.88
6/29/25 13:09	39	62.34	55.05
6/29/25 13:10	40	62.64	55.35
6/29/25 13:11	41	62.83	55.54
6/29/25 13:12	42	63.10	55.81
6/29/25 13:13	43	63.21	55.92

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
6/29/25 13:14	44	63.48	56.19
6/29/25 13:15	45	63.68	56.39
6/29/25 13:16	46	63.86	56.57
6/29/25 13:17	47	64.02	56.73
6/29/25 13:18	48	64.27	56.98
6/29/25 13:19	49	64.36	57.07
6/29/25 13:20	50	64.60	57.31
6/29/25 13:21	51	64.72	57.43
6/29/25 13:22	52	64.89	57.60
6/29/25 13:23	53	64.96	57.67
6/29/25 13:24	54	65.13	57.84
6/29/25 13:25	55	65.20	57.91
6/29/25 13:26	56	65.37	58.08
6/29/25 13:27	57	65.44	58.15
6/29/25 13:28	58	65.63	58.34
6/29/25 13:29	59	65.69	58.40
6/29/25 13:30	60	65.86	58.57
6/29/25 13:31	61	65.88	58.59
6/29/25 13:32	62	66.03	58.74
6/29/25 13:33	63	66.12	58.83
6/29/25 13:34	64	66.19	58.90
6/29/25 13:35	65	66.26	58.97
6/29/25 13:36	66	66.37	59.08
6/29/25 13:37	67	66.46	59.17
6/29/25 13:38	68	66.55	59.26
6/29/25 13:39	69	66.67	59.38
6/29/25 13:40	70	66.77	59.48
6/29/25 13:41	71	66.81	59.52
6/29/25 13:42	72	66.97	59.68
6/29/25 13:43	73	67.00	59.71
6/29/25 13:44	74	67.18	59.89
6/29/25 13:45	75	67.20	59.91
6/29/25 13:46	76	67.28	59.99
6/29/25 13:47	77	67.36	60.07
6/29/25 13:48	78	67.45	60.16
6/29/25 13:49	79	67.54	60.25
6/29/25 13:50	80	67.58	60.29
6/29/25 13:51	81	67.65	60.36
6/29/25 13:52	82	67.77	60.48
6/29/25 13:53	83	67.80	60.51
6/29/25 13:54	84	67.87	60.58
6/29/25 13:55	85	67.93	60.64
6/29/25 13:56	86	68.08	60.79
6/29/25 13:57	87	68.14	60.85

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
6/29/25 13:58	88	68.18	60.89
6/29/25 13:59	89	68.28	60.99
6/29/25 14:00	90	68.35	61.06
6/29/25 14:01	91	68.38	61.09
6/29/25 14:02	92	68.45	61.16
6/29/25 14:03	93	68.50	61.21
6/29/25 14:04	94	68.49	61.20
6/29/25 14:05	95	68.59	61.30
6/29/25 14:06	96	68.63	61.34
6/29/25 14:07	97	68.73	61.44
6/29/25 14:08	98	68.78	61.49
6/29/25 14:09	99	68.84	61.55
6/29/25 14:10	100	68.88	61.59
6/29/25 14:11	101	68.98	61.69
6/29/25 14:12	102	69.07	61.78
6/29/25 14:13	103	69.12	61.83
6/29/25 14:14	104	69.17	61.88
6/29/25 14:15	105	69.19	61.90
6/29/25 14:16	106	69.23	61.94
6/29/25 14:17	107	69.25	61.96
6/29/25 14:18	108	69.37	62.08
6/29/25 14:19	109	69.35	62.06
6/29/25 14:20	110	69.38	62.09
6/29/25 14:21	111	69.47	62.18
6/29/25 14:22	112	69.54	62.25
6/29/25 14:23	113	69.56	62.27
6/29/25 14:24	114	69.60	62.31
6/29/25 14:25	115	69.67	62.38
6/29/25 14:26	116	69.74	62.45
6/29/25 14:27	117	69.82	62.53
6/29/25 14:28	118	69.81	62.52
6/29/25 14:29	119	69.86	62.57
6/29/25 14:30	120	69.95	62.66
6/29/25 15:00	150	71.12	63.83
6/29/25 15:30	180	72.05	64.76
6/29/25 16:00	210	72.74	65.45
6/29/25 16:30	240	73.36	66.07
6/29/25 17:00	270	73.82	66.53
6/29/25 17:30	300	74.27	66.98
6/29/25 18:00	330	74.67	67.38
6/29/25 18:30	360	75.07	67.78
6/29/25 19:00	390	75.30	68.01
6/29/25 19:30	420	75.62	68.33
6/29/25 20:00	450	75.84	68.55

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
6/29/25 20:30	480	76.07	68.78
6/29/25 21:00	510	76.25	68.96
6/29/25 21:30	540	76.40	69.11
6/29/25 22:00	570	76.58	69.29
6/29/25 22:30	600	76.72	69.43
6/29/25 23:00	630	76.94	69.65
6/29/25 23:30	660	77.01	69.72
6/30/25 0:00	690	77.20	69.91
6/30/25 0:30	720	77.32	70.03
6/30/25 1:00	750	77.42	70.13
6/30/25 1:30	780	77.55	70.26
6/30/25 2:00	810	77.54	70.25
6/30/25 2:30	840	77.69	70.40
6/30/25 3:00	870	77.82	70.53
6/30/25 3:30	900	77.77	70.48
6/30/25 4:00	930	77.95	70.66
6/30/25 4:30	960	77.94	70.65
6/30/25 5:00	990	78.06	70.77
6/30/25 5:30	1020	78.12	70.83
6/30/25 6:00	1050	78.18	70.89
6/30/25 6:30	1080	78.34	71.05
6/30/25 7:00	1110	78.41	71.12
6/30/25 7:30	1140	78.59	71.30
6/30/25 8:00	1170	78.77	71.48
6/30/25 8:30	1200	78.92	71.63
6/30/25 9:00	1230	79.04	71.75
6/30/25 9:30	1260	79.15	71.86
6/30/25 10:00	1290	79.19	71.90
6/30/25 10:30	1320	79.21	71.92
6/30/25 11:00	1350	79.33	72.04
6/30/25 11:30	1380	79.47	72.18
6/30/25 12:00	1410	79.69	72.40
6/30/25 12:30	1440	79.72	72.43
6/30/25 13:00	1470	79.84	72.55
6/30/25 13:30	1500	79.96	72.67
6/30/25 14:00	1530	79.91	72.62
6/30/25 14:30	1560	79.94	72.65
6/30/25 15:00	1590	79.90	72.61
6/30/25 15:30	1620	79.88	72.59
6/30/25 16:00	1650	79.94	72.65
6/30/25 16:30	1680	79.96	72.67
6/30/25 17:00	1710	79.99	72.70
6/30/25 17:30	1740	79.91	72.62
6/30/25 18:00	1770	79.93	72.64

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
6/30/25 18:30	1800	79.88	72.59
6/30/25 19:00	1830	79.91	72.62
6/30/25 19:30	1860	79.86	72.57
6/30/25 20:00	1890	79.88	72.59
6/30/25 20:30	1920	79.89	72.60
6/30/25 21:00	1950	79.90	72.61
6/30/25 21:30	1980	79.92	72.63
6/30/25 22:00	2010	79.91	72.62
6/30/25 22:30	2040	79.95	72.66
6/30/25 23:00	2070	79.93	72.64
6/30/25 23:30	2100	79.89	72.60
7/1/25 0:00	2130	79.89	72.60
7/1/25 0:30	2160	79.94	72.65
7/1/25 1:00	2190	80.02	72.73
7/1/25 1:30	2220	80.11	72.82
7/1/25 2:00	2250	80.18	72.89
7/1/25 2:30	2280	80.18	72.89
7/1/25 3:00	2310	80.25	72.96
7/1/25 3:30	2340	80.34	73.05
7/1/25 4:00	2370	80.35	73.06
7/1/25 4:30	2400	80.44	73.15
7/1/25 5:00	2430	80.42	73.13
7/1/25 5:30	2460	80.51	73.22
7/1/25 6:00	2490	80.55	73.26
7/1/25 6:30	2520	80.47	73.18
7/1/25 7:00	2550	80.37	73.08
7/1/25 7:30	2580	80.38	73.09
7/1/25 8:00	2610	80.35	73.06
7/1/25 8:30	2640	80.35	73.06
7/1/25 9:00	2670	80.30	73.01
7/1/25 9:30	2700	80.20	72.91
7/1/25 10:00	2730	80.16	72.87
7/1/25 10:30	2760	80.16	72.87
7/1/25 11:00	2790	80.13	72.84
7/1/25 11:30	2820	80.08	72.79
7/1/25 12:00	2850	80.13	72.84
7/1/25 12:30	2880	80.09	72.80
7/1/25 13:00	2910	80.09	72.80
7/1/25 13:30	2940	80.08	72.79
7/1/25 14:00	2970	80.08	72.79
7/1/25 14:30	3000	80.06	72.77
7/1/25 15:00	3030	80.17	72.88
7/1/25 15:30	3060	80.09	72.80
7/1/25 16:00	3090	80.12	72.83

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
06/29/25 - 07/02/25

DATE TIME	ET	DTW	DD
7/1/25 16:30	3120	80.12	72.83
7/1/25 17:00	3150	80.14	72.85
7/1/25 17:30	3180	80.17	72.88
7/1/25 18:00	3210	80.16	72.87
7/1/25 18:30	3240	80.19	72.90
7/1/25 19:00	3270	80.18	72.89
7/1/25 19:30	3300	80.10	72.81
7/1/25 20:00	3330	80.15	72.86
7/1/25 20:30	3360	80.15	72.86
7/1/25 21:00	3390	80.27	72.98
7/1/25 21:30	3420	80.35	73.06
7/1/25 22:00	3450	80.40	73.11
7/1/25 22:30	3480	80.41	73.12
7/1/25 23:00	3510	80.48	73.19
7/1/25 23:30	3540	80.51	73.22
7/2/25 0:00	3570	80.58	73.29
7/2/25 0:30	3600	80.61	73.32
7/2/25 1:00	3630	80.59	73.30
7/2/25 1:30	3660	80.52	73.23
7/2/25 2:00	3690	80.44	73.15
7/2/25 2:30	3720	80.35	73.06
7/2/25 3:00	3750	80.30	73.01
7/2/25 3:30	3780	80.31	73.02
7/2/25 4:00	3810	80.24	72.95
7/2/25 4:30	3840	80.21	72.92
7/2/25 5:00	3870	80.27	72.98
7/2/25 5:30	3900	80.17	72.88
7/2/25 6:00	3930	80.24	72.95
7/2/25 6:30	3960	80.19	72.90
7/2/25 7:00	3990	80.23	72.94
7/2/25 7:30	4020	80.29	73.00
7/2/25 8:00	4050	80.45	73.16
7/2/25 8:30	4080	80.58	73.29
7/2/25 9:00	4110	80.66	73.37
7/2/25 9:30	4140	80.67	73.38
7/2/25 10:00	4170	80.76	73.47
7/2/25 10:30	4200	80.84	73.55
7/2/25 11:00	4230	80.85	73.56
7/2/25 11:30	4260	80.84	73.55
7/2/25 12:00	4290	80.79	73.50
7/2/25 12:30	4320	80.72	73.43

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT 550 US ROUTE 20
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	10:41	-109	6.74	0.00
6/29/25	11:44	-46	6.74	0.00
6/29/25	12:49	19	6.75	0.01
6/29/25	14:49	139	6.78	0.04
6/29/25	17:16	286	6.84	0.10
6/29/25	19:18	408	6.89	0.15
6/29/25	23:20	650	6.97	0.23
6/30/25	4:43	973	7.01	0.27
6/30/25	9:40	1270	7.10	0.36
6/30/25	11:47	1397	7.11	0.37
6/30/25	16:38	1688	7.20	0.46
6/30/25	22:14	2024	7.26	0.52
7/1/25	9:10	2680	7.30	0.56
7/1/25	11:18	2808	7.31	0.57
7/1/25	14:40	3010	7.31	0.57
7/1/25	19:00	3270	7.31	0.57
7/1/25	23:11	3521	7.34	0.60
7/2/25	6:00	3930	7.36	0.62
7/2/25	9:22	4132	7.37	0.63
7/2/25	11:50	4280	7.37	0.63
7/2/25	12:52	4342	7.41	0.67
7/2/25	16:08	4538	7.41	0.67
7/2/25	17:42	4632	7.39	0.65

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 43 TILDEN ROAD
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	10:46	-104	4.06	1.64
6/29/25	11:35	-55	3.17	0.75
6/29/25	11:40	-50	3.11	0.69
6/29/25	12:18	-12	3.08	0.66
6/29/25	12:45	15	7.44	5.02
6/29/25	13:24	54	7.74	5.32
6/29/25	14:52	142	4.43	2.01
6/29/25	17:22	292	6.75	4.33
6/29/25	19:20	410	2.77	0.35
6/29/25	23:34	664	2.71	0.29
6/30/25	5:10	1000	2.42	0.00
6/30/25	9:45	1275	3.65	1.23
6/30/25	16:40	1690	3.97	1.55
6/30/25	18:52	1822	4.10	1.68
6/30/25	23:10	2080	3.41	0.99
7/1/25	3:18	2328	3.19	0.77
7/1/25	9:02	2672	4.31	1.89
7/1/25	11:26	2816	3.68	1.26
7/1/25	14:45	3015	2.88	0.46
7/1/25	19:03	3273	8.80	6.38
7/1/25	23:14	3524	5.33	2.91
7/2/25	2:10	3700	4.21	1.79
7/2/25	6:05	3935	7.88	5.46
7/2/25	9:15	4125	16.10	13.68
7/2/25	11:11	4241	8.17	5.75
7/2/25	12:15	4305	10.46	8.04
7/2/25	12:22	4312	9.53	7.11
7/2/25	12:49	4339	9.98	7.56
7/2/25	16:00	4530	3.64	1.22
7/2/25	17:20	4610	3.44	1.02

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 4 WEST STREET
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:00	-90	18.5	0.0
6/29/25	11:02	-88	18.7	0.2
6/29/25	11:48	-42	19.2	0.7
6/29/25	12:18	-12	19.1	0.6
6/29/25	12:52	22	20.0	1.5
6/29/25	15:02	152	22.7	4.2
6/29/25	17:36	306	24.9	6.4
6/29/25	19:40	430	25.5	7.0
6/29/25	23:37	667	26.4	7.9
6/30/25	4:48	978	27.0	8.5
6/30/25	9:52	1282	27.8	9.3
6/30/25	12:00	1410	29.3	10.8
6/30/25	17:00	1710	29.2	10.7
6/30/25	21:54	2004	29.1	10.6
6/30/25	23:28	2098	29.0	10.5
7/1/25	4:18	2388	28.9	10.4
7/1/25	9:20	2690	28.7	10.2
7/1/25	10:42	2772	28.8	10.3
7/1/25	12:07	2857	34.5	16.0
7/1/25	12:08	2858	34.2	15.7
7/1/25	12:09	2859	34.1	15.6
7/1/25	12:10	2860	33.5	15.0
7/1/25	12:12	2862	33.0	14.5
7/1/25	15:00	3030	29.8	11.3
7/1/25	19:08	3278	29.1	10.6
7/1/25	23:19	3529	28.5	10.0
7/2/25	3:25	3775	28.5	10.0
7/2/25	6:18	3948	28.6	10.1
7/2/25	9:25	4135	28.7	10.2
7/2/25	11:16	4246	29.2	10.7
7/2/25	11:40	4270	28.9	10.4
7/2/25	12:56	4346	30.0	11.5
7/2/25	13:00	4350	29.7	11.2
7/2/25	13:05	4355	29.6	11.1
7/2/25	13:10	4360	29.2	10.7
7/2/25	14:48	4458	28.6	10.1
7/2/25	15:08	4478	26.7	8.2
7/2/25	15:52	4522	29.2	10.7
7/2/25	16:44	4574	24.9	6.4
7/2/25	17:08	4598	24.3	5.8

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 528 US ROUTE 20
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:07	-83	20.4	0.0
6/29/25	11:50	-40	20.9	0.5
6/29/25	12:19	-11	21.0	0.6
6/29/25	12:30	0	21.0	0.6
6/29/25	12:54	24	21.6	1.2
6/29/25	15:04	154	23.7	3.3
6/29/25	17:37	307	24.2	3.8
6/29/25	19:42	432	24.4	4.0
6/29/25	23:38	668	23.6	3.2
6/30/25	4:49	979	24.7	4.3
6/30/25	9:57	1287	24.6	4.2
6/30/25	12:01	1411	26.7	6.3
6/30/25	17:03	1713	26.0	5.6
6/30/25	21:52	2002	25.2	4.8
7/1/25	0:28	2158	24.8	4.4
7/1/25	5:10	2440	24.5	4.1
7/1/25	9:22	2692	24.5	4.1
7/1/25	12:15	2865	24.5	4.1
7/1/25	15:02	3032	24.5	4.1
7/1/25	19:10	3280	24.5	4.1
7/1/25	23:22	3532	24.6	4.2
7/2/25	6:20	3950	25.9	5.5
7/2/25	9:27	4137	26.9	6.5
7/2/25	11:17	4247	25.7	5.3
7/2/25	13:08	4358	25.7	5.3
7/2/25	14:49	4459	24.4	4.0
7/2/25	15:54	4524	24.4	4.0
7/2/25	17:00	4590	23.3	2.9

PROPOSED 538 US RT 20 NEW LEBANON COMPLEX
538 US RT 20 - NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 13 WEST STREET
06/29/25 - 07/02/25

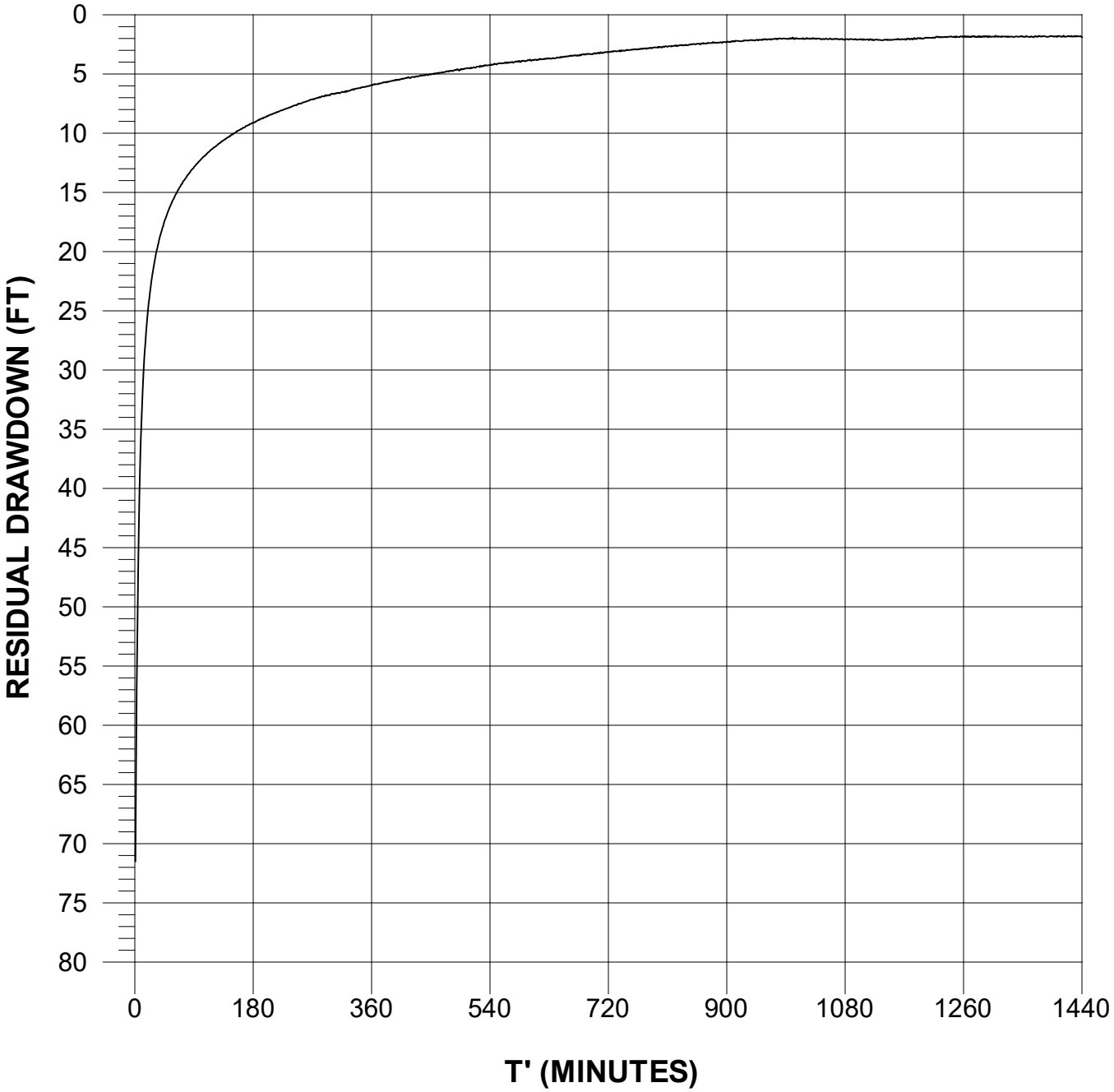
DATE	TIME	ET	DTW	Δ
6/29/25	11:14	-76	12.1	1.2
6/29/25	12:14	-16	12.9	2.0
6/29/25	12:16	-14	12.7	1.8
6/29/25	12:30	0	12.7	1.8
6/29/25	13:02	32	11.0	0.1
6/29/25	13:03	33	10.9	0.0
6/29/25	15:10	160	10.9	0.0
6/29/25	17:42	312	11.5	0.6
6/29/25	23:41	671	12.3	1.4
6/30/25	4:50	980	12.7	1.8
6/30/25	7:10	1120	12.6	1.7
6/30/25	10:10	1300	15.6	4.7
6/30/25	12:06	1416	13.8	2.9
6/30/25	14:28	1558	14.0	3.1
6/30/25	17:10	1720	14.2	3.3
7/1/25	23:18	3528	14.0	3.1
7/1/25	5:18	2448	14.2	3.3
7/1/25	9:28	2698	14.7	3.8
7/1/25	15:08	3038	13.9	3.0
7/1/25	19:18	3288	14.9	4.0
7/1/25	19:20	3290	14.8	3.9
7/1/25	19:25	3295	14.6	3.7
7/1/25	23:29	3539	14.0	3.1
7/2/25	6:24	3954	13.9	3.0
7/2/25	9:33	4143	14.2	3.3
7/2/25	11:20	4250	24.9	14.0
7/2/25	11:22	4252	21.2	10.3
7/2/25	11:25	4255	18.2	7.3
7/2/25	11:37	4267	15.7	4.8
7/2/25	14:52	4462	14.1	3.2
7/2/25	15:00	4470	14.1	3.2
7/2/25	16:50	4580	13.4	2.5

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 17 WEST STREET
06/29/25 - 07/02/25

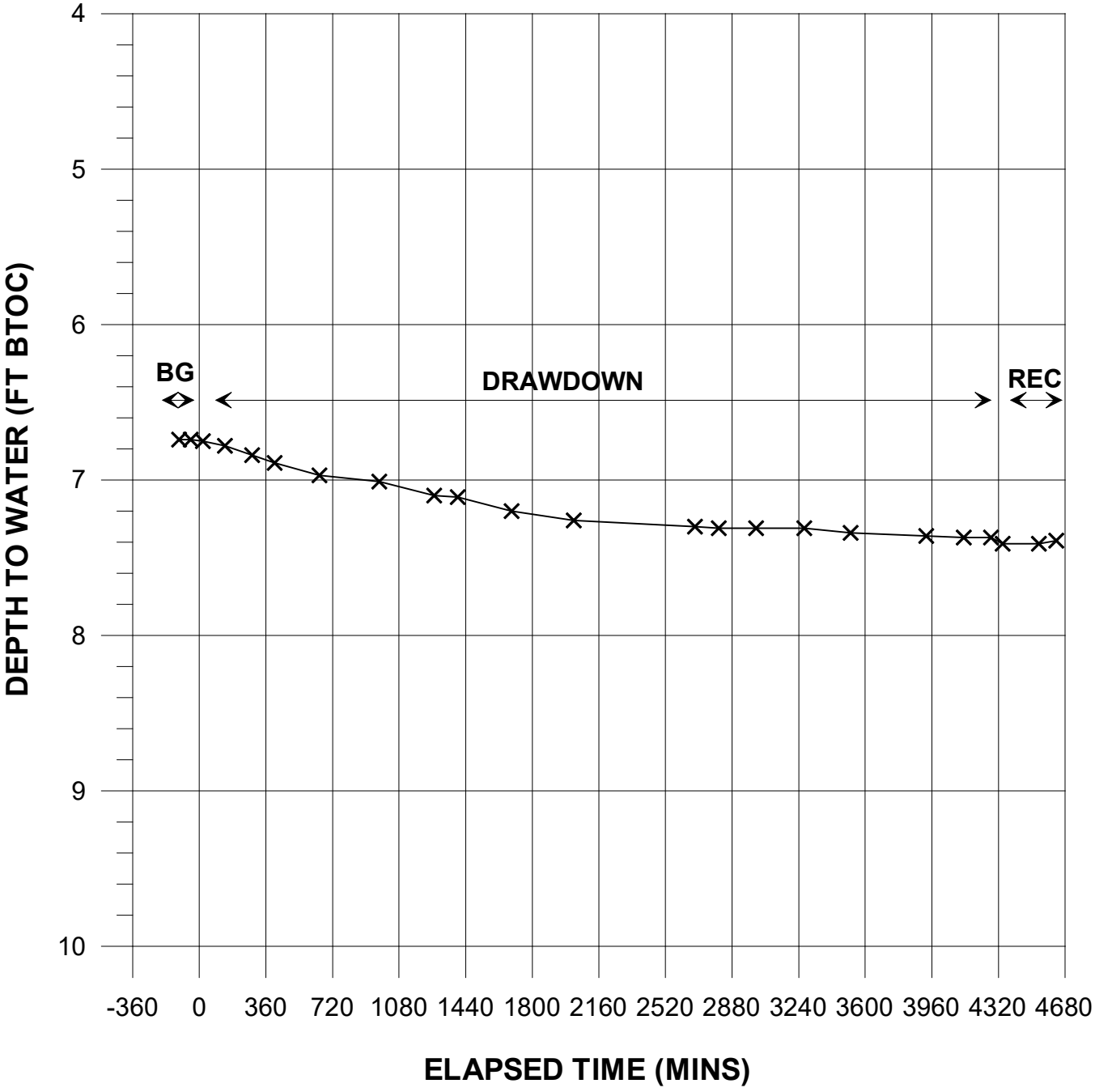
DATE	TIME	ET	DTW	Δ
6/29/25	11:20	-70	11.0	0.0
6/29/25	12:00	-30	11.8	0.8
6/29/25	12:01	-29	12.1	1.1
6/29/25	12:02	-28	12.3	1.3
6/29/25	12:03	-27	12.6	1.6
6/29/25	12:08	-22	12.3	1.3
6/29/25	12:10	-20	12.3	1.3
6/29/25	12:12	-18	12.0	1.0
6/29/25	12:30	0	12.0	1.0
6/29/25	13:05	35	11.0	0.0
6/29/25	13:10	40	11.0	0.0
6/29/25	15:11	161	11.2	0.2
6/29/25	17:45	315	11.7	0.7
6/29/25	23:45	675	12.5	1.5
6/30/25	4:56	986	13.2	2.2
6/30/25	7:48	1158	14.7	3.7
6/30/25	10:06	1296	14.9	3.9
6/30/25	12:08	1418	14.1	3.1
6/30/25	17:11	1721	17.4	6.4
6/30/25	17:12	1722	19.7	8.7
6/30/25	17:13	1723	20.2	9.2
6/30/25	17:14	1724	18.8	7.8
6/30/25	17:15	1725	17.3	6.3
6/30/25	17:18	1728	18.4	7.4
6/30/25	17:20	1730	16.3	5.3
6/30/25	17:21	1731	19.2	8.2
6/30/25	22:08	2018	16.1	5.1
7/1/25	5:22	2452	14.1	3.1
7/1/25	9:31	2701	14.8	3.8
7/1/25	15:10	3040	14.4	3.4
7/1/25	19:30	3300	16.3	5.3
7/1/25	23:32	3542	14.5	3.5
7/2/25	6:26	3956	14.4	3.4
7/2/25	9:34	4144	14.6	3.6
7/2/25	11:27	4257	16.1	5.1
7/2/25	11:30	4260	15.8	4.8
7/2/25	11:32	4262	15.7	4.7
7/2/25	11:35	4265	15.5	4.5
7/2/25	12:54	4344	14.4	3.4
7/2/25	16:53	4583	13.7	2.7

Appendix G
Recovery Graphs

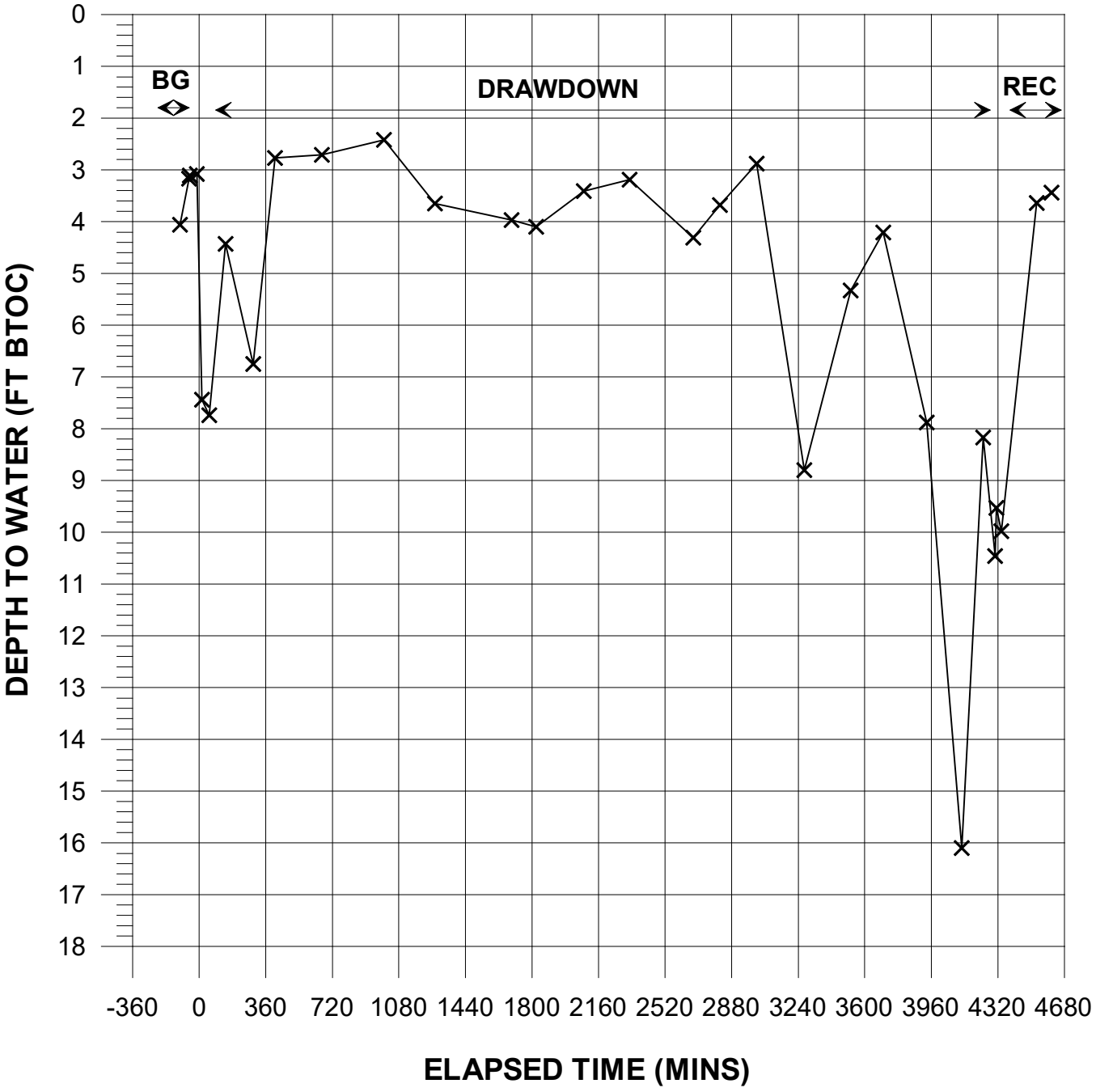
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
RECOVERY OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
07/02/25 - 07/03/25



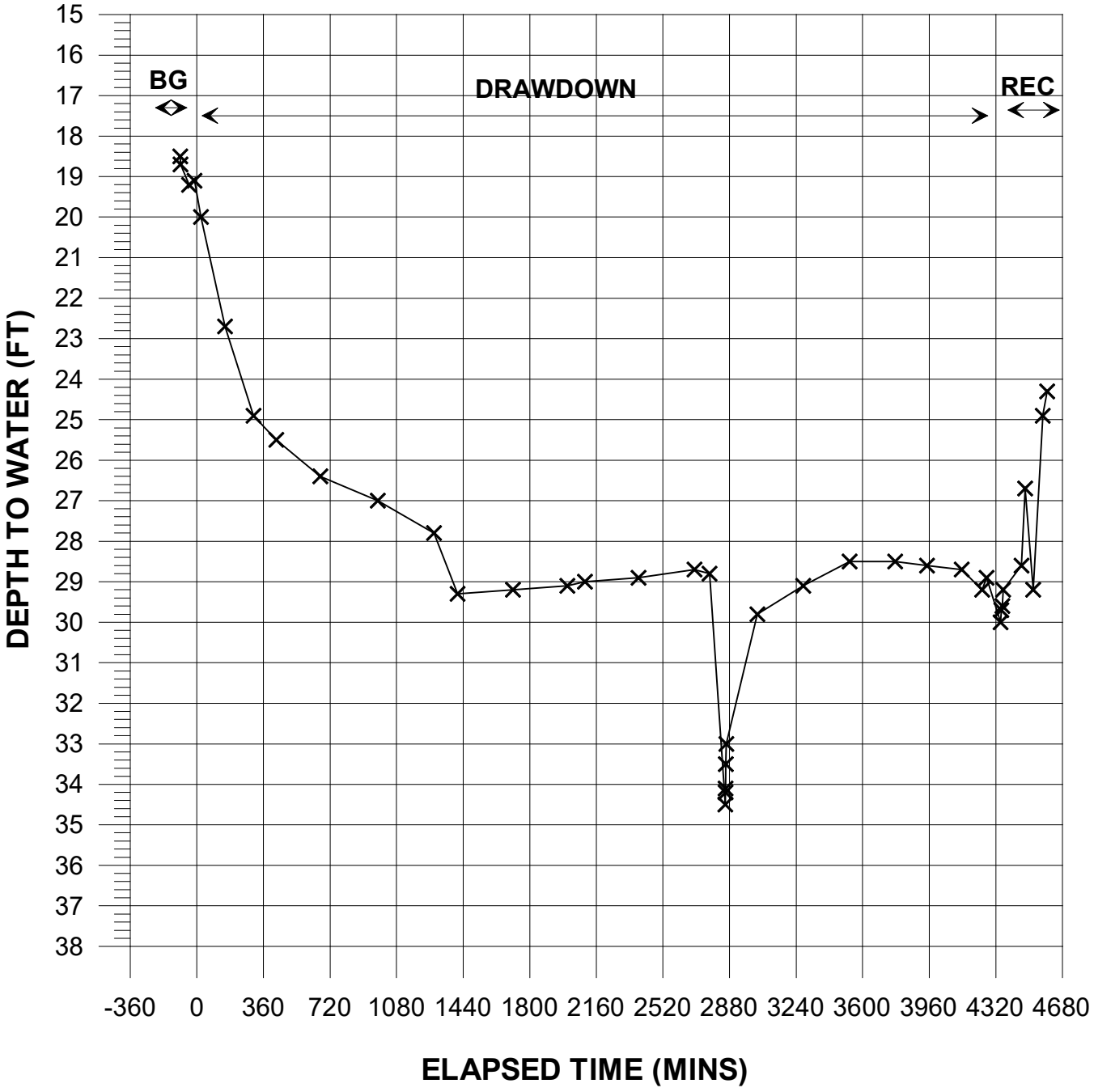
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 550 US ROUTE 20
06/29/25 - 07/02/25



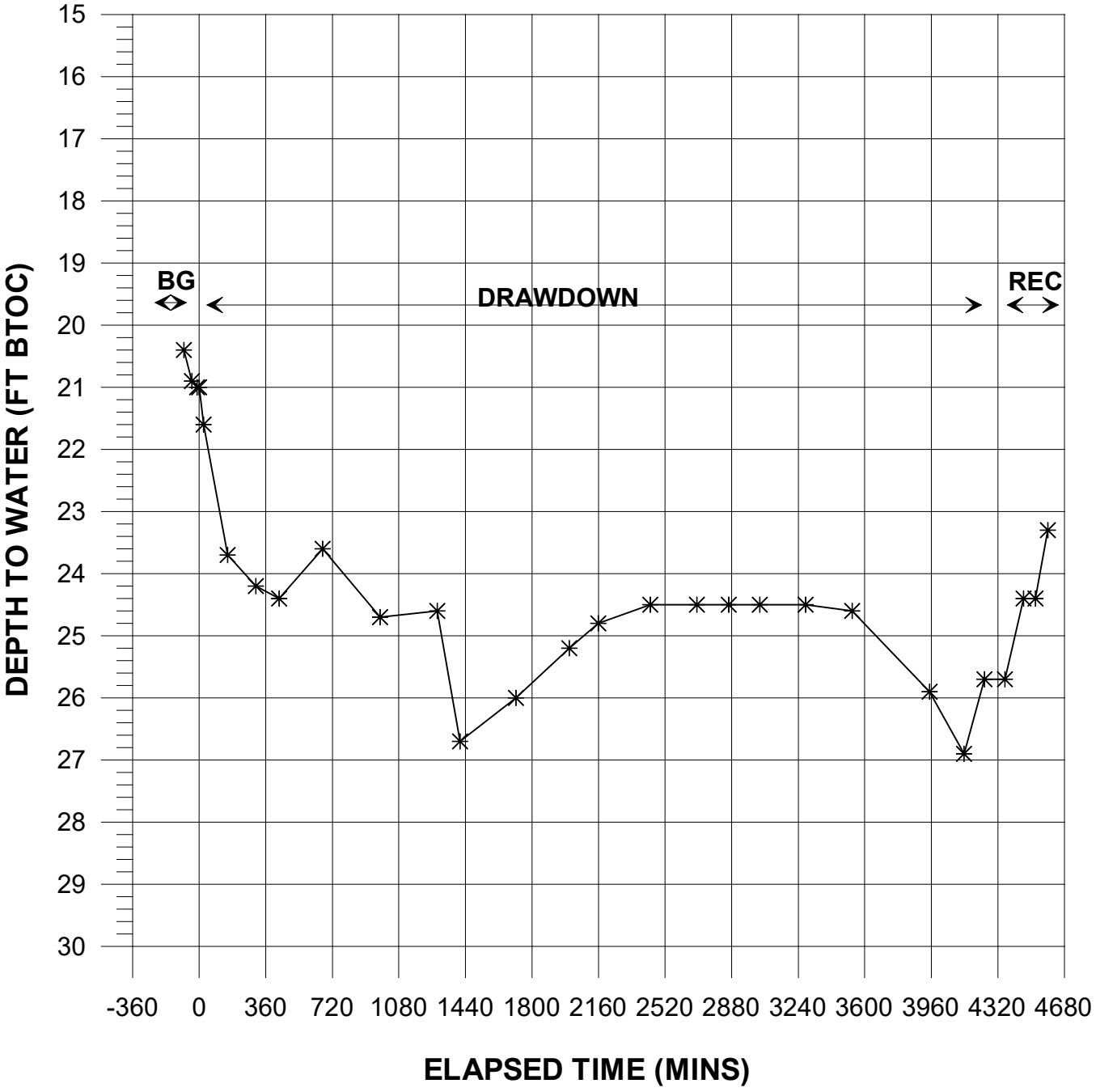
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 43 TILDEN ROAD
06/29/25 - 07/02/25



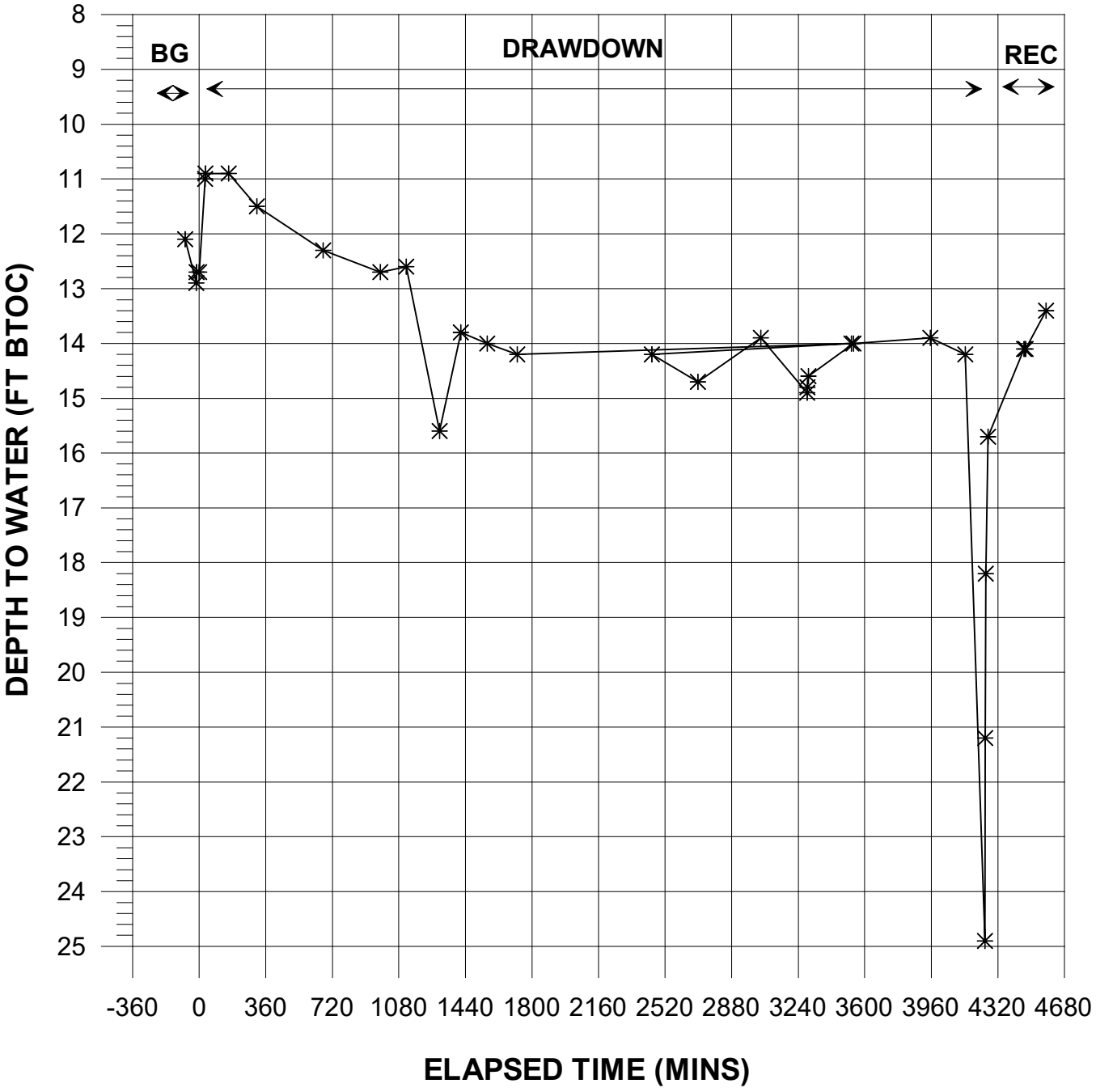
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 4 WEST STREET
06/29/25 - 07/02/25



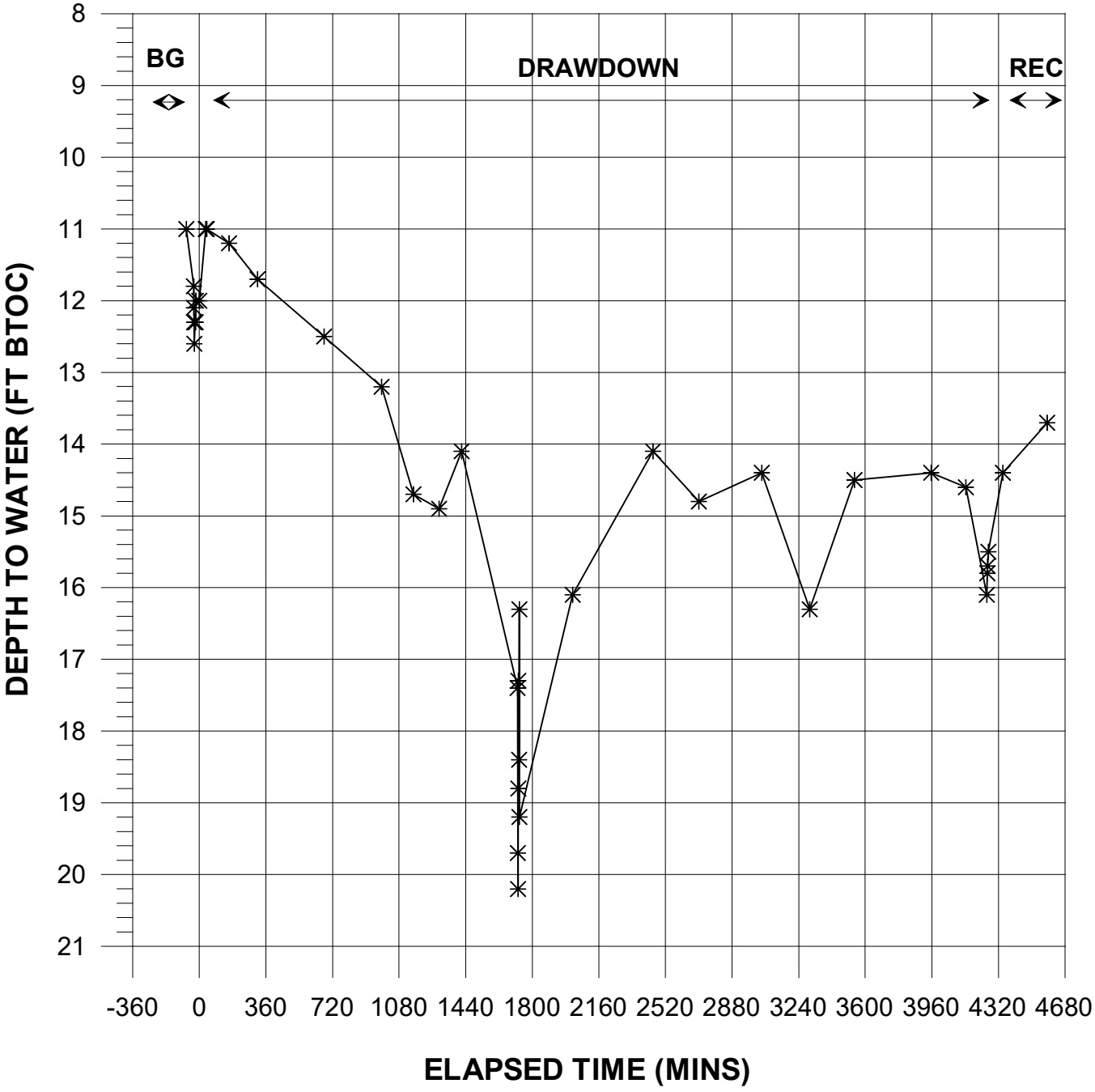
TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 528 US ROUTE 20
06/29/25 - 07/02/25



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 13 WEST STREET
06/29/25 - 07/02/25



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DEPTH TO WATER OBSERVATIONS AT 17 WEST STREET
06/29/25 - 07/02/25



Appendix H
Recovery Data

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
RECOVERY OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
07/02/25 - 07/03/25

DATE	TIME	T	T'	T/T'	DTW	RES DD
7/2/25	12:31	4321	1	4321.00	78.80	71.51
7/2/25	12:32	4322	2	2161.00	70.53	63.24
7/2/25	12:33	4323	3	1441.00	64.01	56.72
7/2/25	12:34	4324	4	1081.00	58.74	51.45
7/2/25	12:35	4325	5	865.00	54.43	47.14
7/2/25	12:36	4326	6	721.00	50.88	43.59
7/2/25	12:37	4327	7	618.14	47.91	40.62
7/2/25	12:38	4328	8	541.00	45.51	38.22
7/2/25	12:39	4329	9	481.00	43.47	36.18
7/2/25	12:40	4330	10	433.00	41.72	34.43
7/2/25	12:41	4331	11	393.73	40.26	32.97
7/2/25	12:42	4332	12	361.00	38.93	31.64
7/2/25	12:43	4333	13	333.31	37.78	30.49
7/2/25	12:44	4334	14	309.57	36.71	29.42
7/2/25	12:45	4335	15	289.00	35.82	28.53
7/2/25	12:46	4336	16	271.00	34.99	27.70
7/2/25	12:47	4337	17	255.12	34.15	26.86
7/2/25	12:48	4338	18	241.00	33.50	26.21
7/2/25	12:49	4339	19	228.37	32.88	25.59
7/2/25	12:50	4340	20	217.00	32.30	25.01
7/2/25	12:51	4341	21	206.71	31.72	24.43
7/2/25	12:52	4342	22	197.36	31.21	23.92
7/2/25	12:53	4343	23	188.83	30.73	23.44
7/2/25	12:54	4344	24	181.00	30.31	23.02
7/2/25	12:55	4345	25	173.80	29.88	22.59
7/2/25	12:56	4346	26	167.15	29.50	22.21
7/2/25	12:57	4347	27	161.00	29.15	21.86
7/2/25	12:58	4348	28	155.29	28.76	21.47
7/2/25	12:59	4349	29	149.97	28.44	21.15
7/2/25	13:00	4350	30	145.00	28.15	20.86
7/2/25	13:01	4351	31	140.35	27.83	20.54
7/2/25	13:02	4352	32	136.00	27.54	20.25
7/2/25	13:03	4353	33	131.91	27.28	19.99
7/2/25	13:04	4354	34	128.06	27.04	19.75
7/2/25	13:05	4355	35	124.43	26.76	19.47
7/2/25	13:06	4356	36	121.00	26.55	19.26
7/2/25	13:07	4357	37	117.76	26.30	19.01
7/2/25	13:08	4358	38	114.68	26.07	18.78
7/2/25	13:09	4359	39	111.77	25.90	18.61
7/2/25	13:10	4360	40	109.00	25.67	18.38
7/2/25	13:11	4361	41	106.37	25.50	18.21
7/2/25	13:12	4362	42	103.86	25.27	17.98
7/2/25	13:13	4363	43	101.47	25.16	17.87

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
RECOVERY OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
07/02/25 - 07/03/25

DATE	TIME	T	T'	T/T'	DTW	RES DD
7/2/25	13:14	4364	44	99.18	24.93	17.64
7/2/25	13:15	4365	45	97.00	24.75	17.46
7/2/25	13:16	4366	46	94.91	24.58	17.29
7/2/25	13:17	4367	47	92.91	24.45	17.16
7/2/25	13:18	4368	48	91.00	24.29	17.00
7/2/25	13:19	4369	49	89.16	24.13	16.84
7/2/25	13:20	4370	50	87.40	23.98	16.69
7/2/25	13:21	4371	51	85.71	23.86	16.57
7/2/25	13:22	4372	52	84.08	23.68	16.39
7/2/25	13:23	4373	53	82.51	23.54	16.25
7/2/25	13:24	4374	54	81.00	23.42	16.13
7/2/25	13:25	4375	55	79.55	23.31	16.02
7/2/25	13:26	4376	56	78.14	23.20	15.91
7/2/25	13:27	4377	57	76.79	23.03	15.74
7/2/25	13:28	4378	58	75.48	22.93	15.64
7/2/25	13:29	4379	59	74.22	22.83	15.54
7/2/25	13:30	4380	60	73.00	22.70	15.41
7/2/25	13:31	4381	61	71.82	22.61	15.32
7/2/25	13:32	4382	62	70.68	22.48	15.19
7/2/25	13:33	4383	63	69.57	22.40	15.11
7/2/25	13:34	4384	64	68.50	22.32	15.03
7/2/25	13:35	4385	65	67.46	22.13	14.84
7/2/25	13:36	4386	66	66.45	22.08	14.79
7/2/25	13:37	4387	67	65.48	21.99	14.70
7/2/25	13:38	4388	68	64.53	21.86	14.57
7/2/25	13:39	4389	69	63.61	21.82	14.53
7/2/25	13:40	4390	70	62.71	21.67	14.38
7/2/25	13:41	4391	71	61.85	21.57	14.28
7/2/25	13:42	4392	72	61.00	21.56	14.27
7/2/25	13:43	4393	73	60.18	21.40	14.11
7/2/25	13:44	4394	74	59.38	21.34	14.05
7/2/25	13:45	4395	75	58.60	21.27	13.98
7/2/25	13:46	4396	76	57.84	21.19	13.90
7/2/25	13:47	4397	77	57.10	21.10	13.81
7/2/25	13:48	4398	78	56.38	21.03	13.74
7/2/25	13:49	4399	79	55.68	20.96	13.67
7/2/25	13:50	4400	80	55.00	20.84	13.55
7/2/25	13:51	4401	81	54.33	20.80	13.51
7/2/25	13:52	4402	82	53.68	20.71	13.42
7/2/25	13:53	4403	83	53.05	20.63	13.34
7/2/25	13:54	4404	84	52.43	20.60	13.31
7/2/25	13:55	4405	85	51.82	20.48	13.19
7/2/25	13:56	4406	86	51.23	20.41	13.12

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
RECOVERY OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
07/02/25 - 07/03/25

DATE	TIME	T	T'	T/T'	DTW	RES DD
7/2/25	13:57	4407	87	50.66	20.34	13.05
7/2/25	13:58	4408	88	50.09	20.30	13.01
7/2/25	13:59	4409	89	49.54	20.23	12.94
7/2/25	14:00	4410	90	49.00	20.16	12.87
7/2/25	14:01	4411	91	48.47	20.07	12.78
7/2/25	14:02	4412	92	47.96	20.04	12.75
7/2/25	14:03	4413	93	47.45	19.97	12.68
7/2/25	14:04	4414	94	46.96	19.87	12.58
7/2/25	14:05	4415	95	46.47	19.85	12.56
7/2/25	14:06	4416	96	46.00	19.79	12.50
7/2/25	14:07	4417	97	45.54	19.70	12.41
7/2/25	14:08	4418	98	45.08	19.66	12.37
7/2/25	14:09	4419	99	44.64	19.61	12.32
7/2/25	14:10	4420	100	44.20	19.53	12.24
7/2/25	14:11	4421	101	43.77	19.48	12.19
7/2/25	14:12	4422	102	43.35	19.41	12.12
7/2/25	14:13	4423	103	42.94	19.35	12.06
7/2/25	14:14	4424	104	42.54	19.31	12.02
7/2/25	14:15	4425	105	42.14	19.26	11.97
7/2/25	14:16	4426	106	41.75	19.21	11.92
7/2/25	14:17	4427	107	41.37	19.19	11.90
7/2/25	14:18	4428	108	41.00	19.10	11.81
7/2/25	14:19	4429	109	40.63	19.07	11.78
7/2/25	14:20	4430	110	40.27	19.00	11.71
7/2/25	14:21	4431	111	39.92	18.93	11.64
7/2/25	14:22	4432	112	39.57	18.89	11.60
7/2/25	14:23	4433	113	39.23	18.85	11.56
7/2/25	14:24	4434	114	38.89	18.78	11.49
7/2/25	14:25	4435	115	38.57	18.75	11.46
7/2/25	14:26	4436	116	38.24	18.68	11.39
7/2/25	14:27	4437	117	37.92	18.65	11.36
7/2/25	14:28	4438	118	37.61	18.61	11.32
7/2/25	14:29	4439	119	37.30	18.54	11.25
7/2/25	14:30	4440	120	37.00	18.50	11.21
7/2/25	15:00	4470	150	29.80	17.32	10.03
7/2/25	15:30	4500	180	25.00	16.39	9.10
7/2/25	16:00	4530	210	21.57	15.65	8.36
7/2/25	16:30	4560	240	19.00	15.02	7.73
7/2/25	17:00	4590	270	17.00	14.43	7.14
7/2/25	17:30	4620	300	15.40	13.95	6.66
7/2/25	18:00	4650	330	14.09	13.60	6.31
7/2/25	18:30	4680	360	13.00	13.19	5.90
7/2/25	19:00	4710	390	12.08	12.87	5.58

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
RECOVERY OBSERVATIONS AT PW-1
FINAL PUMPING RATE = 13 GPM
07/02/25 - 07/03/25

DATE TIME	T	T'	T/T'	DTW	RES DD
7/2/25 19:30	4740	420	11.29	12.59	5.30
7/2/25 20:00	4770	450	10.60	12.34	5.05
7/2/25 20:30	4800	480	10.00	12.01	4.72
7/2/25 21:00	4830	510	9.47	11.83	4.54
7/2/25 21:30	4860	540	9.00	11.53	4.24
7/2/25 22:00	4890	570	8.58	11.34	4.05
7/2/25 22:30	4920	600	8.20	11.13	3.84
7/2/25 23:00	4950	630	7.86	11.00	3.71
7/2/25 23:30	4980	660	7.55	10.80	3.51
7/3/25 0:00	5010	690	7.26	10.60	3.31
7/3/25 0:30	5040	720	7.00	10.42	3.13
7/3/25 1:00	5070	750	6.76	10.29	3.00
7/3/25 1:30	5100	780	6.54	10.10	2.81
7/3/25 2:00	5130	810	6.33	9.98	2.69
7/3/25 2:30	5160	840	6.14	9.88	2.59
7/3/25 3:00	5190	870	5.97	9.71	2.42
7/3/25 3:30	5220	900	5.80	9.56	2.27
7/3/25 4:00	5250	930	5.65	9.47	2.18
7/3/25 4:30	5280	960	5.50	9.35	2.06
7/3/25 5:00	5310	990	5.36	9.32	2.03
7/3/25 5:30	5340	1020	5.24	9.32	2.03
7/3/25 6:00	5370	1050	5.11	9.32	2.03
7/3/25 6:30	5400	1080	5.00	9.34	2.05
7/3/25 7:00	5430	1110	4.89	9.41	2.12
7/3/25 7:30	5460	1140	4.79	9.38	2.09
7/3/25 8:00	5490	1170	4.69	9.35	2.06
7/3/25 8:30	5520	1200	4.60	9.27	1.98
7/3/25 9:00	5550	1230	4.51	9.15	1.86
7/3/25 9:30	5580	1260	4.43	9.12	1.83
7/3/25 10:00	5610	1290	4.35	9.13	1.84
7/3/25 10:30	5640	1320	4.27	9.12	1.83
7/3/25 11:00	5670	1350	4.20	9.15	1.86
7/3/25 11:30	5700	1380	4.13	9.12	1.83
7/3/25 12:00	5730	1410	4.06	9.12	1.83
7/3/25 12:30	5760	1440	4.00	9.18	1.89

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATIONS AT 550 US ROUTE 20
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	10:41	-109	6.74	0.00
6/29/25	11:44	-46	6.74	0.00
6/29/25	12:49	19	6.75	0.01
6/29/25	14:49	139	6.78	0.04
6/29/25	17:16	286	6.84	0.10
6/29/25	19:18	408	6.89	0.15
6/29/25	23:20	650	6.97	0.23
6/30/25	4:43	973	7.01	0.27
6/30/25	9:40	1270	7.10	0.36
6/30/25	11:47	1397	7.11	0.37
6/30/25	16:38	1688	7.20	0.46
6/30/25	22:14	2024	7.26	0.52
7/1/25	9:10	2680	7.30	0.56
7/1/25	11:18	2808	7.31	0.57
7/1/25	14:40	3010	7.31	0.57
7/1/25	19:00	3270	7.31	0.57
7/1/25	23:11	3521	7.34	0.60
7/2/25	6:00	3930	7.36	0.62
7/2/25	9:22	4132	7.37	0.63
7/2/25	11:50	4280	7.37	0.63
7/2/25	12:52	4342	7.41	0.67
7/2/25	16:08	4538	7.41	0.67
7/2/25	17:42	4632	7.39	0.65

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 43 TILDEN ROAD
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	10:46	-104	4.06	1.64
6/29/25	11:35	-55	3.17	0.75
6/29/25	11:40	-50	3.11	0.69
6/29/25	12:18	-12	3.08	0.66
6/29/25	12:45	15	7.44	5.02
6/29/25	13:24	54	7.74	5.32
6/29/25	14:52	142	4.43	2.01
6/29/25	17:22	292	6.75	4.33
6/29/25	19:20	410	2.77	0.35
6/29/25	23:34	664	2.71	0.29
6/30/25	5:10	1000	2.42	0.00
6/30/25	9:45	1275	3.65	1.23
6/30/25	16:40	1690	3.97	1.55
6/30/25	18:52	1822	4.10	1.68
6/30/25	23:10	2080	3.41	0.99
7/1/25	3:18	2328	3.19	0.77
7/1/25	9:02	2672	4.31	1.89
7/1/25	11:26	2816	3.68	1.26
7/1/25	14:45	3015	2.88	0.46
7/1/25	19:03	3273	8.80	6.38
7/1/25	23:14	3524	5.33	2.91
7/2/25	2:10	3700	4.21	1.79
7/2/25	6:05	3935	7.88	5.46
7/2/25	9:15	4125	16.10	13.68
7/2/25	11:11	4241	8.17	5.75
7/2/25	12:15	4305	10.46	8.04
7/2/25	12:22	4312	9.53	7.11
7/2/25	12:49	4339	9.98	7.56
7/2/25	16:00	4530	3.64	1.22
7/2/25	17:20	4610	3.44	1.02

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 4 WEST STREET
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:00	-90	18.5	0.0
6/29/25	11:02	-88	18.7	0.2
6/29/25	11:48	-42	19.2	0.7
6/29/25	12:18	-12	19.1	0.6
6/29/25	12:52	22	20.0	1.5
6/29/25	15:02	152	22.7	4.2
6/29/25	17:36	306	24.9	6.4
6/29/25	19:40	430	25.5	7.0
6/29/25	23:37	667	26.4	7.9
6/30/25	4:48	978	27.0	8.5
6/30/25	9:52	1282	27.8	9.3
6/30/25	12:00	1410	29.3	10.8
6/30/25	17:00	1710	29.2	10.7
6/30/25	21:54	2004	29.1	10.6
6/30/25	23:28	2098	29.0	10.5
7/1/25	4:18	2388	28.9	10.4
7/1/25	9:20	2690	28.7	10.2
7/1/25	10:42	2772	28.8	10.3
7/1/25	12:07	2857	34.5	16.0
7/1/25	12:08	2858	34.2	15.7
7/1/25	12:09	2859	34.1	15.6
7/1/25	12:10	2860	33.5	15.0
7/1/25	12:12	2862	33.0	14.5
7/1/25	15:00	3030	29.8	11.3
7/1/25	19:08	3278	29.1	10.6
7/1/25	23:19	3529	28.5	10.0
7/2/25	3:25	3775	28.5	10.0
7/2/25	6:18	3948	28.6	10.1
7/2/25	9:25	4135	28.7	10.2
7/2/25	11:16	4246	29.2	10.7
7/2/25	11:40	4270	28.9	10.4
7/2/25	12:56	4346	30.0	11.5
7/2/25	13:00	4350	29.7	11.2
7/2/25	13:05	4355	29.6	11.1
7/2/25	13:10	4360	29.2	10.7
7/2/25	14:48	4458	28.6	10.1
7/2/25	15:08	4478	26.7	8.2
7/2/25	15:52	4522	29.2	10.7
7/2/25	16:44	4574	24.9	6.4
7/2/25	17:08	4598	24.3	5.8

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 528 US ROUTE 20
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:07	-83	20.4	0.0
6/29/25	11:50	-40	20.9	0.5
6/29/25	12:19	-11	21.0	0.6
6/29/25	12:30	0	21.0	0.6
6/29/25	12:54	24	21.6	1.2
6/29/25	15:04	154	23.7	3.3
6/29/25	17:37	307	24.2	3.8
6/29/25	19:42	432	24.4	4.0
6/29/25	23:38	668	23.6	3.2
6/30/25	4:49	979	24.7	4.3
6/30/25	9:57	1287	24.6	4.2
6/30/25	12:01	1411	26.7	6.3
6/30/25	17:03	1713	26.0	5.6
6/30/25	21:52	2002	25.2	4.8
7/1/25	0:28	2158	24.8	4.4
7/1/25	5:10	2440	24.5	4.1
7/1/25	9:22	2692	24.5	4.1
7/1/25	12:15	2865	24.5	4.1
7/1/25	15:02	3032	24.5	4.1
7/1/25	19:10	3280	24.5	4.1
7/1/25	23:22	3532	24.6	4.2
7/2/25	6:20	3950	25.9	5.5
7/2/25	9:27	4137	26.9	6.5
7/2/25	11:17	4247	25.7	5.3
7/2/25	13:08	4358	25.7	5.3
7/2/25	14:49	4459	24.4	4.0
7/2/25	15:54	4524	24.4	4.0
7/2/25	17:00	4590	23.3	2.9

PROPOSED 538 US RT 20 NEW LEBANON COMPLEX
538 US RT 20 - NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 13 WEST STREET
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:14	-76	12.1	1.2
6/29/25	12:14	-16	12.9	2.0
6/29/25	12:16	-14	12.7	1.8
6/29/25	12:30	0	12.7	1.8
6/29/25	13:02	32	11.0	0.1
6/29/25	13:03	33	10.9	0.0
6/29/25	15:10	160	10.9	0.0
6/29/25	17:42	312	11.5	0.6
6/29/25	23:41	671	12.3	1.4
6/30/25	4:50	980	12.7	1.8
6/30/25	7:10	1120	12.6	1.7
6/30/25	10:10	1300	15.6	4.7
6/30/25	12:06	1416	13.8	2.9
6/30/25	14:28	1558	14.0	3.1
6/30/25	17:10	1720	14.2	3.3
7/1/25	23:18	3528	14.0	3.1
7/1/25	5:18	2448	14.2	3.3
7/1/25	9:28	2698	14.7	3.8
7/1/25	15:08	3038	13.9	3.0
7/1/25	19:18	3288	14.9	4.0
7/1/25	19:20	3290	14.8	3.9
7/1/25	19:25	3295	14.6	3.7
7/1/25	23:29	3539	14.0	3.1
7/2/25	6:24	3954	13.9	3.0
7/2/25	9:33	4143	14.2	3.3
7/2/25	11:20	4250	24.9	14.0
7/2/25	11:22	4252	21.2	10.3
7/2/25	11:25	4255	18.2	7.3
7/2/25	11:37	4267	15.7	4.8
7/2/25	14:52	4462	14.1	3.2
7/2/25	15:00	4470	14.1	3.2
7/2/25	16:50	4580	13.4	2.5

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
DRAWDOWN OBSERVATION AT 17 WEST STREET
06/29/25 - 07/02/25

DATE	TIME	ET	DTW	Δ
6/29/25	11:20	-70	11.0	0.0
6/29/25	12:00	-30	11.8	0.8
6/29/25	12:01	-29	12.1	1.1
6/29/25	12:02	-28	12.3	1.3
6/29/25	12:03	-27	12.6	1.6
6/29/25	12:08	-22	12.3	1.3
6/29/25	12:10	-20	12.3	1.3
6/29/25	12:12	-18	12.0	1.0
6/29/25	12:30	0	12.0	1.0
6/29/25	13:05	35	11.0	0.0
6/29/25	13:10	40	11.0	0.0
6/29/25	15:11	161	11.2	0.2
6/29/25	17:45	315	11.7	0.7
6/29/25	23:45	675	12.5	1.5
6/30/25	4:56	986	13.2	2.2
6/30/25	7:48	1158	14.7	3.7
6/30/25	10:06	1296	14.9	3.9
6/30/25	12:08	1418	14.1	3.1
6/30/25	17:11	1721	17.4	6.4
6/30/25	17:12	1722	19.7	8.7
6/30/25	17:13	1723	20.2	9.2
6/30/25	17:14	1724	18.8	7.8
6/30/25	17:15	1725	17.3	6.3
6/30/25	17:18	1728	18.4	7.4
6/30/25	17:20	1730	16.3	5.3
6/30/25	17:21	1731	19.2	8.2
6/30/25	22:08	2018	16.1	5.1
7/1/25	5:22	2452	14.1	3.1
7/1/25	9:31	2701	14.8	3.8
7/1/25	15:10	3040	14.4	3.4
7/1/25	19:30	3300	16.3	5.3
7/1/25	23:32	3542	14.5	3.5
7/2/25	6:26	3956	14.4	3.4
7/2/25	9:34	4144	14.6	3.6
7/2/25	11:27	4257	16.1	5.1
7/2/25	11:30	4260	15.8	4.8
7/2/25	11:32	4262	15.7	4.7
7/2/25	11:35	4265	15.5	4.5
7/2/25	12:54	4344	14.4	3.4
7/2/25	16:53	4583	13.7	2.7

Appendix I
Water Quality Data

Capital Region Environmental Laboratory

137 Columbia Turnpike, Rensselaer, NY 12144

(518) 949-2020

Lamont Engineers

PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025

Sample ID: **BG08097**

Date Received: 07/09/2025

Time Received: 09:09

Date Finalized: 8/8/2025

PO Number:

Your Ref:

Customer: Lamont Engineers

Owner: Tilden Development

Sample Loc: 538 US Route 20 New Lebanon

Sample Pt: Tilden Well

Collect Date: 07/08/2025

Collect Time: 19:28

Collected by: BB

Receipt Temp: 6.4 C on ice chilling

Water Source:

Chlorinated: No *Field Residual Chlorine:*

Potable: Yes

Grab/Comp: Grab

Laboratory Report

Test	Result	MCL	Qualifiers	Units	Method Used	Analyst	Analysis Date
1,4-Dioxane	<0.200	1		ug/L	EPA 522	SUB*	7/15/2025
E. coli	Negative			per 100 mL	SM 22 9223B	GG/NW	7/9/2025
Total Coliform	Positive		X	per 100 mL	SM 22 9223B	GG/NW	7/9/2025
Color	<5	15		UNITS	SM 22 2120B	NW	7/9/2025
Turbidity	25	5	X	NTU	EPA180.1 Rev2.0	NW	7/9/2025
Odor	1	3		TON	SM 22 2150B	RM	7/9/2025
pH	7.5		HZ	Std. units	SM 22 4500-H B	NW	7/9/2025
Alkalinity Tot(CaCO3) to pH 4.5	109			mg/L	SM 22 2320B	GG	7/16/2025
Nitrate as N	<0.01	10		mg/L	EPA 300.0 Rev 2.	EL	7/9/2025
Iron	2.70	0.3	X	mg/L	EPA200.7 Rev4.4	MN	7/17/2025
Manganese	0.76	0.3	X	mg/L	EPA200.7 Rev4.4	MN	7/17/2025
Chloride	281	250	X	mg/L	EPA 300.0 Rev 2.	EL	7/10/2025
Sulfate	35	250		mg/L	EPA 300.0 Rev 2.	EL	7/9/2025
Sodium	88.4			mg/L	EPA200.7 Rev4.4	MN	7/15/2025
Fluoride	<0.20	2.2		mg/L	EPA 300.0 Rev 2.	EL	7/9/2025
Antimony	<0.0004	0.006		mg/L	SM 22 3113B	SUB*	7/18/2025
Arsenic	0.0022	0.01		mg/L	SM 22 3113B	MN	7/24/2025
Barium	0.12	2		mg/L	EPA200.7 Rev4.4	MN	7/22/2025
Beryllium	<0.0002	0.004		mg/L	EPA200.7 Rev4.4	MN	7/23/2025
Cadmium	<0.001	0.005		mg/L	EPA200.7 Rev4.4	MN	7/23/2025
Chromium	0.005	0.1		mg/L	EPA200.7 Rev4.4	MN	7/23/2025
Copper	0.01	1.3		mg/L	EPA200.7 Rev4.4	MN	7/22/2025
Lead	0.001	0.015		mg/L	SM 22 3113B	MN	7/11/2025
Mercury	<0.0002	0.002		mg/L	EPA245.1 Rev.3.0	SUB*	7/14/2025
Nickel	0.010	0.1		mg/L	EPA200.7 Rev4.4	MN	7/24/2025
Selenium	<0.0010	0.05		mg/L	SM 22 3113B	SUB*	7/18/2025
Silver	<0.01	0.1		mg/L	EPA200.7 Rev4.4	MN	7/24/2025
Thallium	<0.0003	0.002		mg/L	SM 22 3113B	SUB*	7/18/2025
Zinc	0.02	5		mg/L	EPA200.7 Rev4.4	MN	7/24/2025
Corrosivity Result@20C	0.11			@20C	SM 22 2330	MN	7/29/2025

Capital Region Environmental Laboratory

137 Columbia Turnpike, Rensselaer, NY 12144

(518) 949-2020

Lamont Engineers

PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025

Sample ID: **BG08097**

Date Received: 07/09/2025

Time Received: 09:09

Date Finalized: 8/8/2025

PO Number:

Your Ref:

Customer: Lamont Engineers

Owner: Tilden Development

Sample Loc: 538 US Route 20 New Lebanon

Sample Pt: Tilden Well

Collect Date: 07/08/2025

Collect Time: 19:28

Collected by: BB

Receipt Temp: 6.4 C on ice chilling

Water Source:

Chlorinated: No *Field Residual Chlorine:*

Potable: Yes

Grab/Comp: Grab

Cyanide, Total	<0.010	0.2	S-T	mg/L	EPA 335.4 Rev1.0	SUB*	7/17/2025
Dissolved Solids, Total	647	500	X	mg/L	SM 22 2540C	MN	7/9/2025
Hardness as CaCO3, Total	424	120		mg/L	SM 22 2340C	GG	7/16/2025
Hardness, Ca	289			mg/L	SM 22 2340C	EL	7/21/2025
Nitrite as N	<0.01	1		mg/L	SM 22 4500NO2B	EL	7/10/2025
Sulfide	<0.10		T	mg/L	SM4500S2D-2011	SUB*	7/10/2025
Suspended Solids, Total	397			mg/L	SM 22 2540 D-201	MN	7/11/2025
UV Absorbance at 254	0.030		T	cm-1@254nm	SM5910B-00	SUB*	7/9/2025
Perfluorooctanoic acid PFOA	<2.02	10		ng/L	EPA 537.1	SUB*	7/15/2025
Perfluorooctanesulfonic acid PFOS	<2.02	10		ng/L	EPA 537.1	SUB*	7/15/2025
1,1 Dichloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1 Dichloroethene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1 Dichloropropene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1,1 Trichloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1,1,2 Tetrachloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1,2 Trichloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,1,2,2 Tetrachloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2 Dichlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2 Dichloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2 Dichloropropane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2,3 Trichlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2,3 Trichloropropane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2,4 Trichlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,2,4 Trimethylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,3 Dichlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,3 Dichloropropane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,3,5 Trimethylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
1,4 Dichlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
2 Chlorotoluene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
2,2 Dichloropropane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
4 Chlorotoluene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Benzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Bromobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025

Capital Region Environmental Laboratory

137 Columbia Turnpike, Rensselaer, NY 12144

(518) 949-2020

Lamont Engineers

PO Box 610

Cobleskill ,NY 12043

Sample ID: **BG08097**

Date Received: 07/09/2025

Time Received: 09:09

Date Finalized: 8/8/2025

PO Number:

Your Ref:

Customer: Lamont Engineers

Owner: Tilden Development

Sample Loc: 538 US Route 20 New Lebanon

Sample Pt: Tilden Well

Collect Date: 07/08/2025

Collect Time: 19:28

Collected by: BB

Receipt Temp: 6.4 C on ice chilling

Water Source:

Chlorinated: No *Field Residual Chlorine:*

Potable: Yes

Grab/Comp: Grab

Bromochloromethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Bromomethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Carbon Tetrachloride	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Chlorobenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Chloroethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Chloromethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
cis 1,2 Dichloroethene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
cis 1,3 Dichloropropene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Dibromomethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Dichlorodifluoromethane	<0.5	5	S+	ug/L	EPA 524.2	BC	7/16/2025
Ethylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Hexachlorobutadiene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Isopropylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Methylene Chloride	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Methyltertbutylether (MTBE)	<0.5	10		ug/L	EPA 524.2	BC	7/16/2025
Naphthalene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
n-Butylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
n-Propylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
p-Isopropyltoluene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
sec-Butylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Styrene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
tert-Butylbenzene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Tetrachloroethene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Toluene	1.7	5		ug/L	EPA 524.2	BC	7/16/2025
Total Xylenes	<1.5	5		ug/L	EPA 524.2	BC	7/16/2025
trans 1,2 Dichloroethene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Trans 1,3 Dichloropropene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Trichloroethene	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Trichlorofluoromethane	<0.5	5		ug/L	EPA 524.2	BC	7/16/2025
Vinyl Chloride	<0.5	2		ug/L	EPA 524.2	BC	7/16/2025
1,2 Dibromoethane	<0.00941	0.05		ug/L	EPA 504.1	SUB*	7/16/2025
1,2 Dibromo3chloropropane	<0.00941	0.2		ug/L	EPA 504.1	SUB*	7/16/2025
Aroclor 1221	<20.0			ug/l	EPA 505	SUB*	7/14/2025

Capital Region Environmental Laboratory

137 Columbia Turnpike, Rensselaer, NY 12144

(518) 949-2020

Lamont Engineers

PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025

Sample ID: **BG08097**

Date Received: 07/09/2025

Time Received: 09:09

Date Finalized: 8/8/2025

PO Number:

Your Ref:

Customer: Lamont Engineers

Owner: Tilden Development

Sample Loc: 538 US Route 20 New Lebanon

Sample Pt: Tilden Well

Collect Date: 07/08/2025

Collect Time: 19:28

Collected by: BB

Receipt Temp: 6.4 C on ice chilling

Water Source:

Potable: Yes

Chlorinated: No *Field Residual Chlorine:*

Grab/Comp: Grab

Aroclor 1232	<0.500			ug/l	EPA 505	SUB*	7/14/2025
Aroclor 1242	<0.300			ug/l	EPA 505	SUB*	7/14/2025
Aroclor 1248	<0.100			ug/l	EPA 505	SUB*	7/14/2025
Aroclor 1254	<0.100			ug/l	EPA 505	SUB*	7/14/2025
Aroclor 1260	<0.200			ug/l	EPA 505	SUB*	7/14/2025
Chlordane	<0.200	2		ug/l	EPA 505	SUB*	7/14/2025
Dieldrin	<0.0200			ug/l	EPA 505	SUB*	7/14/2025
Endrin	<0.0100	2		ug/l	EPA 505	SUB*	7/14/2025
Toxaphene	<1.00	3		ug/l	EPA 505	SUB*	7/14/2025
Aroclor 1016	<0.0800			ug/l	EPA 505	SUB*	7/14/2025
Dalapon	<1.00	50		ug/L	EPA 515.3	SUB*	7/18/2025
Dicamba	<0.100	50		ug/L	EPA 515.3	SUB*	7/18/2025
Dinoseb	<0.200	7		ug/L	EPA 515.3	SUB*	7/18/2025
Pentachlorophenol	<0.0400	1		ug/L	EPA 515.3	SUB*	7/18/2025
Picloram	<0.100	50		ug/L	EPA 515.3	SUB*	7/18/2025
Silvex(2,4,5-TP)	<0.200	10		ug/L	EPA 515.3	SUB*	7/18/2025
2,4,D	<0.100	50		ug/L	EPA 515.3	SUB*	7/18/2025
Aldrin	<0.100	5		ug/L	EPA 525.2	SUB*	7/21/2025
Atrazine	<0.100	3		ug/L	EPA 525.2	SUB*	7/21/2025
Benzo(A)pyrene	<0.020	0.2	I-	ug/L	EPA 525.2	SUB*	7/21/2025
Butachlor	<0.100	50		ug/L	EPA 525.2	SUB*	7/21/2025
Di(2-ethylhexyl)adipate	<0.600	50		ug/L	EPA 525.2	SUB*	7/21/2025
Di(2-ethylhexyl)phthalate	<0.600	6	I-	ug/L	EPA 525.2	SUB*	7/21/2025
Heptachlor	<0.040	0.4		ug/L	EPA 525.2	SUB*	7/21/2025
Heptachlor Epoxide	<0.020	0.2		ug/L	EPA 525.2	SUB*	7/21/2025
Hexachlorobenzene	<0.100	1		ug/L	EPA 525.2	SUB*	7/21/2025
Hexachlorocyclopentadiene	<0.100	5		ug/L	EPA 525.2	SUB*	7/21/2025
Lindane	<0.020	0.2		ug/L	EPA 525.2	SUB*	7/21/2025
Methoxychlor	<0.100	40	I-	ug/L	EPA 525.2	SUB*	7/21/2025
Metolachlor	<0.100	50		ug/L	EPA 525.2	SUB*	7/21/2025
Metribuzin	<0.100	50		ug/L	EPA 525.2	SUB*	7/21/2025
Propachlor	<0.100	50		ug/L	EPA 525.2	SUB*	7/21/2025
Simazine	<0.070	4		ug/L	EPA 525.2	SUB*	7/21/2025

Capital Region Environmental Laboratory
137 Columbia Turnpike, Rensselaer, NY 12144
(518) 949-2020

Lamont Engineers
PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025

Sample ID: **BG08097**
Date Received: 07/09/2025
Time Received: 09:09
Date Finalized: 8/8/2025
PO Number:
Your Ref:

Customer: Lamont Engineers
Owner: Tilden Development
Sample Loc: 538 US Route 20 New Lebanon
Sample Pt: Tilden Well

Collect Date: 07/08/2025
Collect Time: 19:28
Collected by: BB
Receipt Temp: 6.4 C on ice chilling

Water Source:
Chlorinated: No *Field Residual Chlorine:*

Potable: Yes
Grab/Comp: Grab

Alachlor	<0.200	2	ug/L	EPA 525.2	SUB*	7/21/2025
Aldicarb	<0.500	3	ug/L	EPA 531.2	SUB*	7/16/2025
Aldicarb sulfone	<0.800	2	ug/L	EPA 531.2	SUB*	7/16/2025
Aldicarb sulfoxide	<0.500	4	ug/L	EPA 531.2	SUB*	7/16/2025
Carbaryl	<0.500	50	ug/L	EPA 531.2	SUB*	7/16/2025
Carbofuran	<0.900	40	ug/L	EPA 531.2	SUB*	7/16/2025
Methomyl	<0.500	50	ug/L	EPA 531.2	SUB*	7/16/2025
Oxamyl	<1.00	50	ug/L	EPA 531.2	SUB*	7/16/2025
3-Hydroxycarbofuran	<0.500		ug/L	EPA 531.2	SUB*	7/16/2025
Radiological -Alpha	9.95	15	pCi/L	EPA900.0	SUB*	7/19/2025
Radium 226	0.431	5	pCi/L	EPA903.1	SUB*	8/5/2025
Radium 228	1.02	5	pCi/L	EPA904.0	SUB*	7/29/2025

Qualifiers Key:

X Exceeds maximum contamination limit
R Duplication outside acceptance limits
H Hold time exceeded
T Temperature outside specifications
A Sample contained air bubble or headspace
B Analyte detected in blank
C(+/-) CCV outside acceptancee limits
Z Analysis is not state-certified
G Incorrect bottle received

Legend: < Less Than, > Greater Than
mg/L=PPM, ug/L=PPB
If no collection time was given, 00:00 is reported

MCL = Maximum Contaminant Level referenced from New York State Subpart 5-1 of the Public Drinking Water Standards and/or National Primary/Secondary Drinking Water Standards.

Note 1: Per ELAP requirements, water analyzed for alkalinity, color, conductivity, nitrate, nitrite, sulfate, organics, UV absorbance, non-potable bacteriological analyses, BOD/CBOD, solids and phosphorus are required to be on ice to indicate the chilling process has begun. Samples must be between 0-6C and not frozen.

Comments:

For drinking water samples, any positive result for total coliform and/or Escherichia coli is unacceptable.

Total Coliform 32.4 MPN/100 mL

Sample was NEGATIVE when screened for total residual chlorine in laboratory.
Bacteriological sample was set up on 07/09/2025 at 11:40.

1,4-DIOXANE: SUB* 1,4-Dioxane analysis was completed by ELAP Lab #12058. Prep done on 07/11/25.
Surrogates:
1,4-Dioxane-d8 72.0% (70-130%)
ANTIMONY, SELENIUM, and THALLIUM: SUB* Metals analyses were completed by NYS DOH Lab. #10709. Method used was EPA 200.8 Rev 5.4. Prep was done on 07/18/25.

Capital Region Environmental Laboratory
137 Columbia Turnpike, Rensselaer, NY 12144
(518) 949-2020

Lamont Engineers
PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025
Sample ID: **BG08097**
Date Received: 07/09/2025
Time Received: 09:09
Date Finalized: 8/8/2025
PO Number:
Your Ref:

Customer: Lamont Engineers
Owner: Tilden Development
Sample Loc: 538 US Route 20 New Lebanon
Sample Pt: Tilden Well

Collect Date: 07/08/2025
Collect Time: 19:28
Collected by: BB
Receipt Temp: 6.4 C on ice chilling

Water Source:
Chlorinated: No *Field Residual Chlorine:*

Potable: Yes
Grab/Comp: Grab

CORROSIVITY: The temperature used in the calculation of corrosivity was 20C. The reference is Standard Method 2330B, 18th Edition. The value of your corrosivity is non-corrosive.
CYANIDE: SUB* Cyanide analysis was completed by NYS DOH Lab. #10709. Prep 335.4 was completed on 07/17/25.
EPA524.2: The surrogate recoveries of BFB and 1,2-dichlorobenzene-d4 were within acceptable limits at 98% and 100%. The acceptable limits are 80-120%. The accompanying trip blank was found to be less than the reporting limit for toluene.
HARDNESS: With your value of greater than 120 mg/L, water softening is an option if mineral scale deposits are noticeable and/or bothersome.
IRON/MANGANESE: The total of the two should not exceed 0.50 mg/L.
MERCURY: SUB* Mercury analysis was completed by NYS DOH Lab. #10709. Prep method EPA 245.1 was completed on 07/14/25.
NITRATE: Nitrate was set up on 07/09/25 at 13:31.
NITRITE: Nitrite was set up on 07/10/25 at 14:00.
PFAS: SUB* PFAS analyses by EPA Method 533 were completed by NYS DOH Lab. #12058. Samples were prepared on 07/10/25.
Surrogates: Surrogate recovery for surrogate MPFBA was below acceptable limits. Isotope dilution applied. All other surrogate recoveries within acceptable limits.
PHYSICAL CHARACTERISTICS: Color, turbidity and pH testing were set up on 07/09/25 at 10:35. Hold time for pH testing per ELAP requirements is 15 minutes for all water samples. pH was tested at 16 degrees Celsius. Odor was set up on 07/09/25 at 11:20. Odor was tested at 59 degrees Celsius. A threshold odor number (TON) of 1 is equivalent to odor not being detected or odor being not detected after diluting with an equal amount of water. Odor results up to 3 TON are within acceptable limits. Color is reported as apparent color.
RADIOLOGICAL: SUB* Radiological analyses were completed by NYS DOH Lab. #11501. The total concentration of Radium 226 and Radium 228 combined is 1.451 pCi/L. The acceptable limit is up to 5 pCi/L.
Additional Information-

Test	Uncertainty	MDC	Units	Barium / Yttrium Tracer Recovery
Gross Alpha	+/-2.18	2.01	pCi/L	
Radium 226	+/-0.301	0.395	pCi/L	
Radium 228	+/-0.399	0.520	pCi/L	113% / 96.2% (25-125%)

SOC: SUB* SOC analyses were completed by NYS DOH Lab. #11549. All surrogate recoveries were within acceptable limits. The acceptable limits are 70-130%.
EPA 504.1 - Tetrachloro-m-xylene 92.5%
EPA 505 - Tetrachloro-m-xylene 87.0%
EPA 515.3 - 2,4-Dichloropenylacetic acid 110% / 2,4-Dichloropenylacetic acid[2C] 102%
EPA 525.2 - 1,3-Dimethyl-2-nitrobenzene 97.0% / Pyrene-d10 94.0% / Triphenyl phosphate 126%
EPA 531.2 - 4-Bromo-3,5-dimethylphenyl-N-methylcarbamate 97.5%
SULFIDE: SUB* Sulfide analysis was completed by NYS DOH Lab. #10709.
UVABS: SUB* UV Absorbance analysis was completed by NYS DOH Lab. #10709 on 07/09/25 at 16:06. UV Transmittance result was 93.4.

Test procedures for all analyses meet NELAC requirements unless noted. If you have any questions, please call the laboratory.

Capital Region Environmental Laboratory
137 Columbia Turnpike, Rensselaer, NY 12144
(518) 949-2020

Lamont Engineers
PO Box 610

Cobleskill ,NY 12043

Printed On : 8/8/2025
Sample ID: **BG08097**
Date Received: 07/09/2025
Time Received: 09:09
Date Finalized: 8/8/2025
PO Number:
Your Ref:

Customer:	Lamont Engineers	*Collect Date:*	07/08/2025
Owner:	Tilden Development	*Collect Time:*	19:28
Sample Loc:	538 US Route 20 New Lebanon	*Collected by:*	BB
Sample Pt:	Tilden Well	*Receipt Temp:*	6.4 C on ice chilling
Water Source:		*Potable:*	Yes
Chlorinated:	No *Field Residual Chlorine:*	*Grab/Comp:*	Grab

Brian Collins
Lead Technical Director Environmental Laboratory
and contact person
If you have questions, please call.

Reviewed by Brian Collins
These results relate to samples as received.

New York State DOH E.L.A.P. # 10350

MassDEP Cert. # M-NY934

The documents accompanying this telecopy transmission contain confidential information, belonging to the sender, that is legally privileged. This information is intended only for the use of the individual or entity named above. The authorized recipient of this information is prohibited from disclosing this information after its stated need is fulfilled. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or action taken in reliance on the contents of these documents is strictly prohibited. If you have received this telecopy in error, please notify the sender immediately to arrange for the return of these documents.

Capital Region Environmental Laboratory
137 Columbia Turnpike, Rensselaer, NY 12144
(518) 949-2020

Lamont Engineers
PO Box 610

Cobleskill ,NY 12043

Sample ID: **BG14014**
Date Received: 10/30/2025
Time Received: 14:55
Date Finalized:
PO Number:
Your Ref:

Customer: Lamont Engineers
Owner: Tilden
Sample Loc: Tilden
Sample Pt: Well Head Hose

Collect Date: 10/30/2025
Collect Time: 14:00
Collected by: MARK CHRISTMAN
Receipt Temp: 8.5 C On Ice Chilling

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potable: Yes
Grab/Comp: Grab

Laboratory Report

Test	Result	MCL	Qualifiers	Units	Method Used	Analyst	Analysis Date
E. coli	Negative			per 100 mL	SM 22 9223B	AJ/RM	10/30/2025
Total Coliform	Positive		X	per 100 mL	SM 22 9223B	AJ/RM	10/30/2025
Iron	0.22	0.3		mg/L	EPA200.7 Rev4.4	MN	11/6/2025
Manganese	0.61	0.3	X	mg/L	EPA200.7 Rev4.4	MN	11/6/2025
Sodium	69.9			mg/L	EPA200.7 Rev4.4	MN	11/3/2025
Chloride	227	250		mg/L	EPA 300.0 Rev 2.	EL	10/30/2025
Dissolved Solids, Total	623	500	X	mg/L	SM 22 2540C (-97	MN	11/3/2025
Hardness as CaCO3, Total	72	120		mg/L	SM 22 2340C	EL	11/4/2025
Suspended Solids, Total	<5			mg/L	SM2540D	MN	11/3/2025
Turbidity	0.60	5		NTU	EPA180.1 Rev2.0	RM	10/30/2025
UV Absorbance at 254	0.009			cm-1@254nm	SM5910B-00	SUB*	10/31/2025

Qualifiers Key:

X	Exceeds maximum contamination limit	R	Duplication outside acceptance limits	H	Hold time exceeded
T	Temperature outside specifications	A	Sample contained air bubble or headspace	B	Analyte detected in blank
C(+/-)	CCV outside acceptancee limits	Z	Analysis is not state-certified	G	Incorrect bottle received
S(+/-)	Lab control sample outside acceptance limits	M(+/-)	Matrix spike recovery outside acceptance limits	P	Sample preserved at lab
J	Analyte detected below quantitation limit	I(+/-)	IS/Surrogate outside acceptance limits		

(+ Result may be biased high / - Result may be biased low)

Legend: < Less Than, > Greater Than mg/L=PPM, ug/L=PPB If no collection time was given, 00:00 is reported

MCL = Maximum Contaminant Level referenced from New York State Subpart 5-1 of the Public Drinking Water Standards and/or National Primary/Secondary Drinking Water Standards.

Note 1: Per ELAP requirements, water analyzed for alkalinity, color, conductivity, nitrate, nitrite, sulfate, organics, UV absorbance, non-potable bacteriological analyses, BOD/CBOD, solids and phosphorus are required to be on ice to indicate the chilling process has begun. Samples must be between 0-6C and not frozen.

Comments:

For drinking water samples, any positive result for total coliform and/or Escherichia coli is unacceptable.

Total Coliform 27.1 MPN/100 mL

Sample was NEGATIVE when screened for total residual chlorine in laboratory.
Bacteriological sample was set up on 10/30/25 at 15:10.

HARDNESS: There are no specific levels set for hardness since excessive levels do not render the water unfit for consumption. However, when the level reaches the 120 mg/L plus range, problems with scale deposition on pipes and utensils and in hot water tanks increase. With a value of less than 120 mg/L, water softening is not necessary.
IRON/MANGANESE: The total of the two should not exceed 0.50 mg/L.

Capital Region Environmental Laboratory
137 Columbia Turnpike, Rensselaer, NY 12144
(518) 949-2020

Lamont Engineers
PO Box 610

Cobleskill ,NY 12043

Printed On 11/18/2025
Sample ID: **BG14014**
Date Received: 10/30/2025
Time Received: 14:55
Date Finalized:
PO Number:
Your Ref:

Customer: Lamont Engineers
Owner: Tilden
Sample Loc: Tilden
Sample Pt: Well Head Hose

Collect Date: 10/30/2025
Collect Time: 14:00
Collected by: MARK CHRISTMAN
Receipt Temp: 8.5 C On Ice Chilling

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potable: Yes
Grab/Comp: Grab

SODIUM: The following are suggested limits for those persons on physician ordered sodium restricted diets: Moderately restricted diet---water should contain less than 270 mg/L; Severely restricted diet---water should contain less than 20 mg/L.
TURBIDITY: Turbidity was set up on 10/30/25 at 16:00.
UVABS: SUB* UV Absorbance analysis was completed by NYS DOH Lab. #10709 on 10/31/25 at 16:07. UV Transmittance was 98.0.

Test procedures for all analyses meet NELAC requirements unless noted.

Brian Collins
Lead Technical Director Environmental Laboratory
and contact person
If you have questions, please call.
(518) 949-2020

These results relate to samples as received.

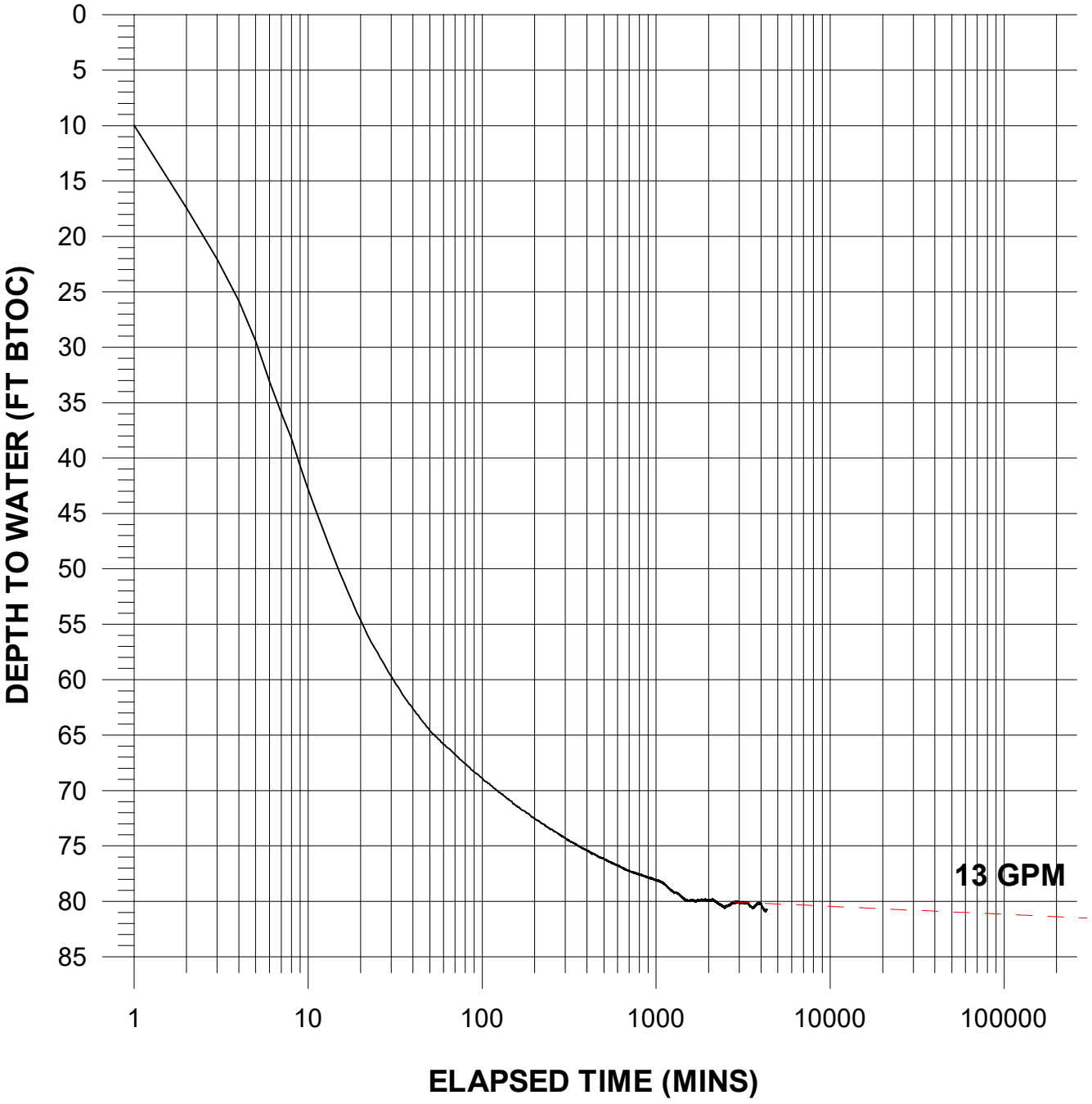
New York State DOH E.L.A.P. # 10350 **MassDEP Cert. # M-NY934**

Preliminary results only, pending final review.

The documents accompanying this telecopy transmission contain confidential information, belonging to the sender, that is legally privileged. This information is intended only for the use of the individual or entity named above. The authorized recipient of this information is prohibited from disclosing this information after its stated need is fulfilled. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or action taken in reliance on the contents of these documents is strictly prohibited. If you have received this telecopy in error, please notify the sender immediately to arrange for the return of these documents.

Appendix J
180-Day Projected Drawdown Graphs

TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
FINAL PUMPING RATE = 13 GPM
180-DAY DRAWDOWN PROJECTION AT PW-1



TILDEN ROAD DEVELOPMENT WATER SUPPLY
NEW LEBANON, NEW YORK
72-HOUR CONSTANT RATE PUMPING TEST OF PW-1
180-DAY PROJECTION AT 4 WEST STREET

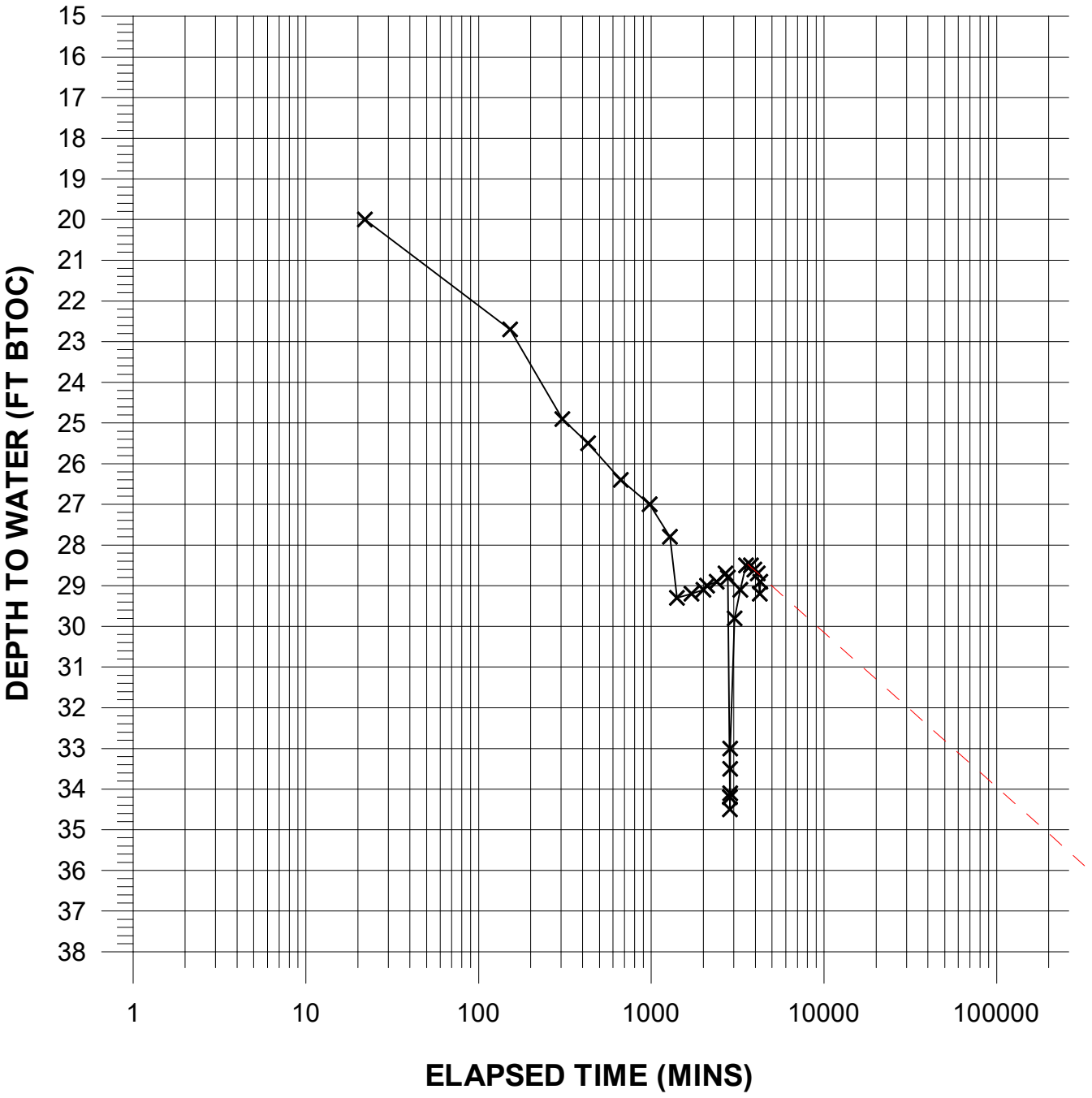


Exhibit F

Barton & Loguidice

DRAFT

December 17, 2025

Elizabeth Brutsch
Planning Board Chairperson
Town of New Lebanon
PO Box 328
New Lebanon, NY 12125

Re: TDE Review
Comments from September 11, 2025 Zoom Meeting and Review of Applicant Materials
Tilden Commons
538 US Route 20
File: 1229.010.001

Dear Chairperson Brutsch,

Barton & Loguidice, D.P.C. (B&L) has completed a third-round technical review of revised materials submitted in support of the site plan and special use permit applications for the proposed Tilden Commons project located at 538 US Route 20 in the Town of New Lebanon, as proposed by Tilden Project LLC (Applicant). This review was conducted following B&L's prior comment letters dated August 13, 2025 (Comment Letter #1) and September 23, 2025 (Comment Letter #2), and focuses on evaluating the Applicant's responses to outstanding comments, revisions to plans and reports, and supplemental materials submitted since the Planning Board's most recent review.
The documents reviewed as part of this third-round submission include, but are not limited to, the following:

- **Exhibit A** – Updated Project Narrative, dated December 4, 2025.
- **Exhibit B** – NYSDEC Letter of No Jurisdiction – Freshwater Wetlands, dated December 1, 2025.
- **Exhibit C** – Hydrogeologic Evaluation Report, prepared by Hanson Van Vleet, PLLC, dated December 3, 2025.
- **Exhibit D** – NYSDEC Email Correspondence regarding SPDES General Permit eligibility.
- **Exhibit E** – Traffic Assessment Report, prepared by Creighton Manning Engineering & Surveying, PLLC.
- **Exhibit F** – NYSDOT Concurrence Letter.
- **Exhibit G** – NYSEG Email Correspondence regarding electrical service.
- **Exhibit H** – Revised Water and Sanitary System Engineer's Report, prepared by Lamont Engineers, dated December 2, 2025.
- **Exhibit I** – Updated Stormwater Pollution Prevention Plan (SWPPP), prepared by Lamont Engineers, revised through October 2025.

- **Exhibit J** – Engineering and Architectural Plans, prepared by Lamont Engineers and Substrate Architecture, dated July 2025 and revised through December 2025.

Based on our review of the above-referenced documents and information, we offer the following comments.

Exhibit A – Updated Project Narrative

1. The Updated Project Narrative (Exhibit A) generally reiterates the proposed program for the Tilden Commons project, including a mixed-use development consisting of 41 residential units and ground-floor commercial space intended for a grocery store use. While the narrative provides additional detail relative to earlier submissions, several statements remain inconsistent with the revised plans and supporting technical reports, as discussed below. *Noted.*

2. The narrative references affordability targets and suggests that a portion of the residential units may be oriented toward senior households. However, the submission does not clearly state whether any units are formally age-restricted, how many such units are proposed, or how any age restriction would be enforced. In the absence of a clear commitment to age-restricted housing, the Planning Board should assume standard multifamily occupancy characteristics when evaluating parking demand, traffic generation, and related impacts. *Noted.*

3. The Project Narrative states that the proposed water supply and wastewater systems will not adversely affect neighboring properties and implies that agency review is substantially complete. These statements are not supported by the technical record. The supporting materials identify outstanding regulatory reviews, unresolved design conditions, and agency determinations that remain pending, including but not limited to those documented in the Hydrogeologic Evaluation Report (Exhibit C), NYSDEC correspondence regarding SPDES General Permit eligibility (Exhibit D), and the Revised Water and Sanitary System Engineer's Report (Exhibit H). The Project Narrative shall be revised to remove conclusory statements, accurately reflect the current status of agency review, and clearly identify all remaining permits, approvals, and conditions required prior to project approval and construction. *Hydrogeologic Evaluation Report provided, Revised Water and Sanitary System Engineer's Report, DEC correspondence indicates no further action will be taking on the project SPDES General Permit until the Town Planning Board has completed SEQR.*

4. The narrative references compliance with applicable zoning, setback, and bulk requirements; however, the narrative does not include a clear summary table or cross-reference to the zoning analysis shown on the plans. The Applicant shall ensure that all zoning compliance statements in the narrative are directly supported by the engineered drawings and zoning data presented in Exhibit J. *Noted.*

Elizabeth Brutsch, Planning Board Chairperson
Town of New Lebanon
December 17, 2025

Exhibit B – NYSDEC Letter of No Jurisdiction (Freshwater Wetlands)

1. Exhibit B includes a New York State Department of Environmental Conservation (NYSDEC) Letter of No Jurisdiction – Freshwater Wetlands dated December 1, 2025, indicating that no DEC-regulated freshwater wetlands or adjacent areas have been identified on the project parcel pursuant to Article 24 of the Environmental Conservation Law. This determination is limited in scope and does not exempt the project from compliance with other applicable environmental regulations or from obtaining additional local, state, or federal permits and approvals. No response is required from the Applicant at this time. *Noted.*

Exhibit C – Hydrogeologic Evaluation Report

1. Exhibit C includes a Hydrogeologic Evaluation Report prepared by Hanson Van Vleet, PLLC documenting a 72-hour constant-rate pumping test conducted on the existing on-site production well (PW-1) at a reported pumping rate of 13 gallons per minute (gpm). The report concludes that PW-1 is capable of supporting the proposed project water demand. No response is required from the Applicant at this time. *Noted.*

2. While the pumping test provides useful short-term performance data, the report identifies limitations affecting the reliability of long-term yield and impact conclusions, including incomplete well construction documentation, interference from off-site pumping during testing, and reliance on analytical assumptions regarding aquifer conditions. These limitations introduce uncertainty that must be acknowledged in evaluating the proposed water supply. No response is required from the Applicant at this time. *Updated well construction details have been provided in the revised Hydrogeologic Evaluation Report.*

3. The report documents exceedances of drinking water standards for multiple parameters, including manganese, combined iron and manganese, turbidity, and total coliform, indicating that water treatment and corrective measures will be required prior to the well being placed into service. These requirements are not consistently or clearly reflected in the Project Narrative and supporting submission materials. The Applicant shall revise the Project Narrative and related documents to accurately identify required treatment, monitoring, and regulatory approvals associated with the proposed water supply. *Information regarding proposed water treatment system has been included in the Water and Sanitary System Engineer's Report.*

4. The report identifies deficiencies relative to current New York State Department of Health requirements, including insufficient permanent well casing height above grade

and the need for additional well modifications. These corrective actions must be completed and approved by the appropriate regulatory agencies prior to use of the well as a project water source. The Applicant shall identify these required modifications on the plans and in the narrative and confirm the status of agency review and approval. *Current site plan drawings note the proposed extension of the existing well casing to 2' above the proposed grade.*

Exhibit D – NYSDEC Correspondence Regarding SPDES General Permit

1. Exhibit D includes email correspondence from the New York State Department of Environmental Conservation (NYSDEC) indicating that, based on the information provided, the proposed wastewater treatment system is eligible for coverage under the SPDES General Permit for Private, Commercial, and Institutional (PCI) discharges to groundwater. Eligibility for coverage does not constitute permit issuance or authorization to discharge. No response is required from the Applicant at this time. *Noted.*

2. The correspondence identifies that a SEQR determination should be issued prior to submission of a Notice of Intent (NOI) for SPDES General Permit coverage and that additional information and approvals will be required as part of the permitting process. The Applicant shall ensure that all plans, narratives, and representations to the Planning Board accurately reflect the status of SPDES review and do not imply that permit coverage has been granted. *Noted.*

Exhibit E – Traffic Assessment Report, prepared by Creighton Manning Engineering & Surveying, PLLC.

Site Plans have been revised to address concerns with traffic movement into the site and loading and unloading of vehicles.

1. The traffic assessment report was completed in accordance with industry accepted practices and methodology.
2. The project includes the construction of a mixed-use development that includes 41 apartment units and an approximate 12,500 square-foot (SF) grocery store located in the northeast quadrant of the US Route 20/Tilden Road intersection.
3. There is a minor typographical error included in Section 1.0 – Project Description (…"existing cub cut"…). This does not impact the analysis and is only noted for adjustment if the document is re-issued in the future.
4. There is a minor typographical error included in Section 2.0 – Study Area Intersections (US Route 20/NY Route 22) (…"the eastbound US Route 20 approach provides an exclusive left-turn lane and a through lane"). This does not impact the analysis and is only noted for adjustment if the document is re-issued in the future. We take further exceptions to the information provided in Section 2.0.

5. Engineering and Architecture Plans provided in Attachment A appear to identify the US Route 20 site driveway accommodating ingress vehicles only, as per pavement directional arrows shown on Sheets C110 and C120. Modifications to Sheets C110 and C120 should be considered by Lamont if the plans are re-issued, for consistency with Section 3.0 – Sight Distance, that identifies the US Route 20 site driveway serving ingress and egress vehicles. Otherwise, we take no exception to the provided sight distance analysis.
6. We take no exception to the analysis that utilized combined Land Use Codes (LUC) 220 – Multi-family Housing (Low-Rise) and 850 – Grocery Store to develop estimated trips generated.
7. Excluding pass-by trips, the proposed development is expected to generate approximately 56 new vehicle trips during the AM peak hour, 133 new vehicle trips during the PM peak hour, and 160 new vehicle trips during the Saturday peak hour. We take no exception to the Trip Generation assessment.
8. We take no exception to the Traffic Operations assessment.
9. Available storage length for the US Route 20/Tilden Road eastbound direction of 100 ft., as identified in Table 6 – 95th Percentile Queueing Summary, should be revised to account for the future mid-block crossing refuge island depicted in Aerial 1 of Section 2.0. The storage space appears like it could accommodate approximately 1 vehicle (25 ft.). Are there any concerns with left turning vehicles, from US Route 20 to Tilden Lane, departing the eastbound traffic stream with no space to decelerate in the two-way left turn lane? The proposed condition has the potential to contribute to rear-end type vehicle crashes. What is the status of the future mid-block crossing implementation (assumed by others), specifically, can its positioning be adjusted farther east or west on US Route 20?
10. The turning movement analysis on Sheet C120 demonstrates that the design delivery vehicle off-tracks into the opposing eastbound travel lane on US Route 20 during turning movements. The Applicant shall revise the site access design to address this conflict, which may include, but is not limited to, evaluating enhanced curb radii at the Tilden Road/US Route 20 intersection. Final entrance geometry shall be coordinated with NYSDOT and demonstrated to accommodate delivery vehicles without encroachment into opposing traffic lanes.
11. The turning movement analysis further indicates that delivery vehicles off-track through the proposed dumpster/refuse area along Tilden Road. The Applicant shall revise the site layout and circulation geometry to eliminate this conflict and demonstrate that delivery vehicles can maneuver to and from the loading area without encroaching into the dumpster area or other site features.

12. The plans do not adequately address how site access and turning movements interact with the proposed mid-block pedestrian crossing on US Route 20 located near the Tilden Road intersection. While the crossing does not appear to accommodate large right-turning vehicle movements from Tilden Road to US Route 20, its proximity may affect vehicle queueing and operational safety. The Applicant shall coordinate the site circulation design with planned pedestrian improvements and confirm that access, turning movements, and queueing conditions function safely and consistently with NYSDOT requirements.

Exhibit F – NYSDOT Concurrence Letter

1. Exhibit F includes a concurrence letter from the New York State Department of Transportation (NYSDOT) indicating acceptance of the general access approach for the project relative to US Route 20, subject to final design, permitting, and compliance with NYSDOT standards. This concurrence does not constitute approval of final driveway geometry, grading, drainage, or construction within the State highway right-of-way, all of which will require a NYSDOT Highway Work Permit and detailed review prior to construction. No response is required from the Applicant at this time. *Noted.*

Exhibit H – Revised Water and Sanitary System Engineer's Report

1. Exhibit H includes a Revised Water and Sanitary System Engineer's Report prepared by Lamont Engineers, dated December 2, 2025, describing the proposed community water system and intermediate wastewater treatment system serving the mixed-use development. The report identifies projected average and maximum daily water demands and concludes that the existing on-site well is capable of meeting anticipated demand based on the completed pumping test. No response is required from the Applicant at this time. *Noted.*

2. The report confirms that the proposed development constitutes a regulated community water system subject to New York State Department of Health (NYSDOH) Part 5 requirements and that final approval of the water system is contingent upon completion of outstanding water quality testing, treatment design (if required), and NYSDOH review and approval. The Applicant shall ensure that all plans and narratives accurately reflect the regulatory status of the proposed water system and clearly identify remaining approvals required prior to construction and operation. *Details regarding the water treatment system have been updated in the report.*

3. The report identifies initial water quality results showing elevated turbidity and iron, with additional Part 5 water quality sampling pending. Any required treatment systems,

monitoring protocols, and operational requirements shall be clearly identified on the plans and in the Project Narrative once final water quality results are available. *Noted.*

4. The report describes the proposed wastewater treatment system as an intermediate system subject to NYSDEC review and SPDES permitting. The Applicant shall ensure consistency between the sanitary system description in this report, the SPDES correspondence included as Exhibit D, and the Project Narrative, and shall avoid implying that regulatory approvals have been granted prior to permit issuance. *Noted.*

Exhibit I – Updated Stormwater Pollution Prevention Plan (SWPPP)

1. Exhibit I includes an Updated Stormwater Pollution Prevention Plan (SWPPP) prepared by Lamont Engineers for the proposed development. While the SWPPP has been revised since prior submissions, several technical deficiencies and inconsistencies identified in earlier reviews have not been fully resolved. *SWPPP has been updated to match the revised site plan drainage and treatment methods.*

2. Infiltration and deep test hole data are provided on Sheet C115 and are acceptable for preliminary design. However, groundwater levels and infiltration capacity can vary seasonally. A note shall be added to the plans requiring that infiltration testing and deep test hole observations be re-evaluated during spring high groundwater conditions to verify depth to seasonal high groundwater and confirm the suitability of the proposed infiltration and bioretention practices prior to construction. All such testing shall be witnessed by the Town or its designated representative. *(Add plan note.) Information has been updated to incorporate the observed seasonal water levels noted on 3/30/26.*

3. The stormwater modeling and plans do not demonstrate adequate freeboard for the proposed stormwater management practices under the 100-year storm event. Based on the submitted materials, basin top elevations are shown at approximately Elevation 705.0, while the modeled 100-year peak water surface elevation is approximately Elevation 704.75, providing only about 0.25 feet of freeboard, which does not meet the minimum requirements of the NYSDEC Stormwater Management Design Manual. In addition, the plans do not clearly illustrate how the 1-, 10-, and 100-year storm water surface elevations relate to the proposed basin grading. The Applicant shall revise the plans to include cross-sections for each stormwater basin clearly depicting basin geometry, outlet structures, and the 1-, 10-, and 100-year storm water surface elevations, and shall revise the design and/or modeling as necessary to demonstrate compliance with applicable freeboard requirements. *The system has been revised to incorporate these measures.*

4. The time of concentration (Tc) assumptions used in the stormwater modeling do not appear to be representative of actual site conditions. Based on the submitted materials, Tc appears to be calculated assuming approximately 85 feet of overland flow across dense grass cover; however, the contributing drainage areas are predominantly shown as paved or impervious surfaces on the site plans. The Applicant shall re-evaluate Tc flow paths and surface assumptions to ensure they accurately reflect proposed site conditions and revise the stormwater modeling as necessary to demonstrate that peak flow rates and basin sizing are based on appropriate and conservative Tc inputs. *Noted and updated.*

5. The SWPPP does not clearly demonstrate that adequate pretreatment is provided for runoff entering the proposed infiltration and bioretention practices, particularly from paved and parking areas. The plans and calculations do not quantify pretreatment volumes, sediment capture capacity, or compliance with NYSDEC Stormwater Management Design Manual pretreatment requirements. The Applicant shall clearly identify all pretreatment measures serving each practice, demonstrate that pretreatment is appropriately sized for the contributing drainage areas, and revise the SWPPP and modeling as necessary to confirm compliance. *Noted and updated.*

6. Drainage area mapping, flow paths, and contributing drainage areas are not consistently or clearly documented across the plans and stormwater modeling outputs. The Applicant shall provide a comprehensive drainage area map that directly corresponds to the HydroCAD model inputs and summary tables to allow verification of stormwater routing and treatment. *Noted and updated.*

7. The SWPPP does not clearly identify or include a dedicated discussion of climate change resiliency as required by current NYSDEC stormwater guidance. The submission does not demonstrate how the proposed stormwater management practices account for projected increases in precipitation intensity, changes in groundwater conditions, or long-term system performance under future climate conditions. The Applicant shall revise the SWPPP to include a clear climate change resiliency evaluation consistent with NYSDEC requirements and demonstrate that the proposed stormwater system remains effective and compliant under future conditions. *Noted and updated.*

8. While the SWPPP includes an operation and maintenance discussion, it does not clearly demonstrate compliance with Section 4.9 of the NYSDEC Construction General Permit. The submission does not provide sufficient, practice-specific detail regarding inspection frequency, maintenance actions, performance criteria, and long-term responsibility for the proposed infiltration and bioretention practices. The Applicant shall revise the

SWPPP to clearly demonstrate compliance with Permit Section 4.9 and identify the responsible party and procedures for long-term operation and maintenance. *Noted and updated.*

9. The SWPPP does not clearly address the performance and maintenance of proposed stormwater management practices under winter conditions. The submission does not demonstrate how infiltration, bioretention, pretreatment measures, and outlet structures will function during periods of frozen ground, snow storage, snowmelt, and application of deicing materials. The Applicant shall revise the SWPPP to address winter operation considerations, including snow storage locations, sediment and salt loading impacts, reduced infiltration capacity during frozen conditions, and maintenance procedures necessary to ensure continued system performance during winter months. *Dry well has been included with the design of the infiltration basin to address this concern during freezing conditions.*

Exhibit J – Engineering and Architectural Plans, prepared by Lamont Engineers and Substrate Architecture, dated July 2025 and revised through December 2025.

C10 – TITLE PAGE, LOCATION MAP AND DRAWING INDEX

1. No comment at this time.

C30 -C31 – WORK ZONE TRAFFIC CONTROL DETAILS.

1. No comment at this time. NYSDOT may provide additional comments as part of its review.

Sheet C35 – Stormwater Pollution Prevention Plan (SWPPP) Notes

Plans have been revised to address concerns.

1. The SWPPP notes reference infiltration-based stormwater management practices but do not include provisions requiring verification of infiltration capacity and groundwater conditions under seasonal high groundwater conditions. Consistent with Exhibit I, the Applicant shall revise the SWPPP notes to require re-evaluation of infiltration testing and deep test hole observations during spring high groundwater conditions, with such testing witnessed by the Town or its designated representative, prior to construction of infiltration or bioretention practices.

2. The SWPPP notes do not address the performance, limitations, or maintenance of stormwater management practices under winter conditions, including frozen ground, snow storage, snowmelt runoff, and the application of deicing materials. The Applicant shall revise the SWPPP notes to include winter operation and maintenance

considerations for all proposed stormwater management practices, consistent with current NYSDEC guidance and the comments provided under Exhibit I.

3. While the SWPPP notes include general references to inspection and certification requirements, they do not clearly identify practice-specific inspection frequencies, maintenance actions, performance criteria, or the party responsible for long-term operation and maintenance of the stormwater management system. The Applicant shall revise the SWPPP notes to clearly demonstrate compliance with Section 4.9 of the NYSDEC Construction General Permit and ensure consistency with the operation and maintenance requirements identified under Exhibit I.

4. The SWPPP notes do not include a clear discussion of climate change resiliency or how projected increases in precipitation intensity, changes in groundwater conditions, or long-term climate trends have been considered in the design of the stormwater management system. The Applicant shall revise the SWPPP notes to incorporate a climate resiliency discussion consistent with NYSDEC stormwater guidance and the comments provided under Exhibit I.

Sheets C36–C37 – Erosion and Sediment Control Details

1. The erosion and sediment control details shown on Sheets C36–C37 are general in nature and do not constitute a site-specific, detailed erosion and sediment control plan. The Applicant shall prepare and submit a detailed erosion and sediment control plan consistent with the New York Standards and Specifications for Erosion and Sediment Control (NYSDEC "Blue Book"), coordinated with the proposed grading, drainage, construction sequencing, and SWPPP.

Sheet C100 – Existing Conditions and Demolition Plan

1. The plans depict an existing on-site septic system within the project limits. Removal, abandonment, or remediation of existing septic systems is subject to oversight and approval by the appropriate regulatory authority, including the New York State Department of Health (NYSDOH) and/or the New York State Department of Environmental Conservation (NYSDEC), as applicable. The Applicant shall coordinate with the appropriate agency to determine the requirements for proper decommissioning and remediation of the existing septic system.

2. A note shall be added to the plans stating that removal, abandonment, and remediation of the existing septic system shall be performed in accordance with NYSDOH and/or NYSDEC requirements and subject to agency approval. *(Add plan note.)*

3. The plans indicate relocation of an existing utility pole within the project limits. Relocation of utility infrastructure is subject to coordination with and approval by the applicable utility provider (e.g., New York State Electric & Gas (NYSEG) and/or National Grid), as well as compliance with any applicable utility company standards and requirements. The Applicant shall coordinate with the appropriate utility provider to determine relocation requirements and obtain all necessary approvals.

   A note shall be added to the plans stating that any relocation of existing utility poles shall be coordinated with and approved by the applicable utility provider prior to construction. (Add plan note.)

Sheet C110 – Site Plan

Comments addressed and Plans updated.

1. Site Plan Completeness and Dimensioning
   The Site Plan does not provide sufficient dimensional information to allow full site plan review. Sidewalk widths, drive aisle widths, parking space dimensions, curb radii, loading areas, and internal circulation widths are not consistently dimensioned. The Applicant shall revise the Site Plan to clearly dimension all site features necessary to verify compliance with Town zoning, accessibility, and circulation standards.

2. Surface Materials and Pavement Types
   Surface materials for site features are not clearly identified on the Site Plan. The Applicant shall clearly label all paved and hardscape areas, including but not limited to asphalt, concrete, brick pavers, or specialty paving, to allow evaluation of constructability, maintenance responsibilities, and ADA compliance.

3. The plan set appears to include more than one site plan depicting proposed site layout and improvements. Multiple site plans within a single submission create ambiguity regarding the controlling design. The Applicant shall consolidate the site plan drawings into a single, coordinated Site Plan that clearly represents the proposed layout and serves as the governing plan for site plan approval.

4. Accessible Parking Configuration
   Accessible parking spaces are shown; however, the required adjacent access aisles are not dimensioned. The Applicant shall dimension all accessible parking access aisles and confirm that they provide a minimum clear width of eight (8) feet and are properly striped in accordance with ADA Standards for Accessible Design.

5. Dumpster Location and Screening
   The Site Plan depicts a dumpster/refuse area; however, screening details are not clearly shown. In accordance with Town of New Lebanon Zoning Code requirements, all refuse and recycling collection areas shall be adequately screened from view. The Applicant shall revise the Site Plan to include fencing and/or vegetative screening for the dumpster area.

6. Transformer Location and Screening
   The Site Plan depicts a transformer along Tilden Road; however, screening details are not clearly shown. The Applicant shall revise the Site Plan to include appropriate fencing and/or vegetative screening to minimize visual impacts.

7. Zoning and Setback Verification
   The Site Plan references zoning compliance; however, setback distances from property lines, rights-of-way, and other regulated features are not consistently dimensioned. The Applicant shall dimension all required setbacks on the Site Plan to demonstrate compliance with Town zoning requirements.

8. Plan Labeling and Feature Identification
   Not all site features are clearly labeled on the Site Plan. The Applicant shall revise the plan to clearly identify all proposed site elements, including parking areas, loading areas, refuse areas, utilities, landscaping areas, and site amenities, to allow complete site plan review.

Sheet C115 – Grading Plan

Comments addressed and Plans updated.

1. The Grading Plan shall be revised to include a note requiring that infiltration testing and deep test hole observations be re-evaluated during spring high groundwater conditions to verify depth to seasonal high groundwater and confirm the suitability of the proposed grading and stormwater management practices prior to construction.

2. The plan note shall further state that all supplemental infiltration testing and groundwater observations shall be witnessed by the Town and/or the Town's designated representative. *(Add plan note.)*

3. Any revisions to grading required as a result of supplemental testing shall be reflected on the Grading Plan and coordinated with the stormwater modeling and stormwater management details.

Sheet C120 – Site Circulation and Turning Movements

Comments addressed and Plans updated.

1. The plan set appears to include more than one site plan depicting proposed site layout and circulation. Multiple site plans within a single submission create ambiguity regarding the controlling design for circulation, access, and turning movements. The Applicant shall consolidate the site plans into a single, coordinated Site Plan that clearly represents the proposed layout and serves as the governing plan for site circulation and turning movement analysis.

Sheets C130–C131 – NYSDOT Entrance Plan

Comments addressed and Plans updated.

1. Sheets C130–C131 depict the proposed site access connection to NYS Route 20. Review and approval of driveway location, geometry, grading, drainage, and construction within the State highway right-of-way are subject to final review and approval by the New York State Department of Transportation (NYSDOT) and issuance of a Highway Work Permit. No work within the NYS Route 20 right-of-way may occur without NYSDOT approval.

2. While the plans generally depict the proposed entrance configuration, final driveway geometry, curb radii, lane widths, and tie-ins to existing pavement are not fully detailed. The Applicant shall ensure that all entrance design elements are finalized in accordance with NYSDOT standards as part of the Highway Work Permit review process.

3. The plans do not clearly demonstrate how drainage within the NYS Route 20 right-of- way will be managed. The Applicant shall confirm that all proposed grading and drainage associated with the entrance will be designed to prevent runoff from the site from discharging onto NYS Route 20, consistent with NYSDOT requirements. Please show detailed grading via spot elevation.

4. The plans do not clearly document available sight distance for the proposed entrance. The Applicant shall either graphically depict the required sight distance triangles on the plans or add a note stating that sight distance has been evaluated, verified to meet NYSDOT standards, and identifying who performed the analysis and when it was completed.'

Sheets C150–C151 – Stormwater Management Details

Comments addressed and Plans updated.

1. The stormwater details do not clearly identify key design elevations, including basin bottom elevations, normal water surface elevations, emergency overflow elevations, and freeboard relative to the 1-, 10-, and 100-year storm events. The Applicant shall

revise the details to clearly label all critical elevations and demonstrate compliance with applicable freeboard requirements.

2. Stormwater basin and practice details do not clearly demonstrate compliance with minimum vertical separation requirements to seasonal high groundwater. Given the documented shallow groundwater conditions on site, the Applicant shall revise the details to clearly identify groundwater separation and ensure consistency with NYSDEC Stormwater Management Design Manual requirements and Exhibit I comments.

Sheets C155–C156 – Site Details

Comments addressed and Plans updated.

1. Curb, sidewalk, and pavement section details do not clearly identify materials, thicknesses, subbase preparation, or cross slopes. The Applicant shall revise the site details to clearly identify construction materials and dimensions and demonstrate compliance with ADA cross-slope and surface requirements.

2. Details related to site furnishings, fencing, screening, or enclosures (including dumpster and transformer screening where applicable) are not clearly identified or coordinated with the Site Plan. The Applicant shall provide or reference appropriate details demonstrating how required screening and enclosures will be constructed.

Sheets C160 – C164 – Septic and Sanitary Details

Comments addressed and Plans updated.

1. Sheets C160–C164 depict proposed septic and sanitary system details associated with an intermediate wastewater treatment system. Final design, construction, and operation of the proposed system are subject to review and approval by the New York State Department of Environmental Conservation (NYSDEC), including coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit, as applicable.

2. The septic and sanitary details shown on these sheets shall be coordinated with NYSDEC requirements and any conditions associated with SPDES permit coverage. The Applicant shall obtain all required NYSDEC approvals and SPDES permit coverage prior to construction of the wastewater treatment system.

3. A note shall be added to the plans stating that construction and operation of the proposed septic and sanitary system are subject to NYSDEC approval and SPDES permit coverage, and that no system components shall be installed or placed into service without such approvals. (Add plan note.)

Elizabeth Brutsch, Planning Board Chairperson
Town of New Lebanon
December 17, 2025

If you have any questions, please feel free to contact our office.
Sincerely,
BARTON & LOGUIDICE, D.P.C.

Christian Bertram, P.E.
Senior Managing Engineer

Exhibit G

Stormwater Pollution Prevention Plan

TILDEN PROJECT LLC
TILDEN COMMONS
538 US ROUTE 20, NEW LEBANON

COLUMBIA COUNTY **NEW YORK STATE**

Prepared: July 2025

Revision A: September 2025

Revision B: October 2025

Revision C: December 2025

Revision D: April 2026

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS
197 Elm Street – PO Box 610
Cobleskill, New York 12043
(518) 234-4028

R:\2024125\swppp\001 SWPPP Z1.docx

Table of Contents

1. PROJECT INFORMATION 1

1.1. Introduction 1
1.2. Project Location, Description and Scope 1
1.3. SWPPP Contacts 2

2. EXISTING AND PROPOSED MAPPING AND PLANS 2

2.1. Vicinity Map and Project Boundary 2
2.2. Existing and Proposed Topography and Land Use 2
2.3. Map and Description of Soils from USDA Soil Survey and On-site soil testing 2
2.4. Boundaries of Existing Vegetation and Proposed Limits of Clearing 3
2.5. Wetlands and Watercourses 3
2.6. Name and Locations of Receiving Waters 3
2.7. Existing and Proposed Utilities (Sewer, Water, Gas, etc) and Easements 3
2.8. Location of Floodplain/Floodway Limits 3
2.9. Other Environmentally Sensitive Areas 3
2.10. Historic Preservation 3
2.11. Climate Change Considerations 4
2.12. Other Permits and Approvals 4

3. CONSTRUCTION EROSION AND SEDIMENT CONTROL 4

3.1. Temporary and Permanent Structural and Vegetative Measures 4
3.2. Dimensions, Installation Details, and Material Specifications for Erosion and Sediment Control Practices 5
3.3. Design Elements not in Conformance with the New York State Standards and Specifications for Erosion and Sediment Control 5
3.4. Inspection Schedule and Operation and Maintenance Schedule of all Erosion and Sediment Control Practices 5
3.5. Staging Areas, Equipment Storage Areas, Borrow Pits, Waste Areas, and Concrete Washout Areas 5
3.6. Construction Phasing and Sequencing Plans 5
3.7. Pollution Prevention Measures 6

4. STORMWATER SITE PLANNING, PRACTICE SELECTION AND DETAILS 9

4.1. Site Planning 9
4.2. Determine Water Quality Treatment Volume (WQv) 9
4.3. Runoff Reduction by Applying Green Infrastructure Techniques and Standard Stormwater Management Practices with RRv Capacity 10
4.4. Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume 10
4.5. Apply Volume Peak Rate Control Practices if Needed to Meet Requirements 10
4.6. Conveyance Criteria 11
4.7. Identification of Design Elements not in Conformance with the New York State Stormwater Management Design Manual 11
4.8. Descriptions, Dimensions, Material Specifications and Installation Details for Post-Construction Stormwater Control Practices 12
4.9. Long Term Operation and Maintenance of Post-Construction Stormwater Management Practices 12

APPENDICES

ENOI 1.1

LOCATION MAP 1.2

CONTRACTOR'S CERTIFICATION FORM 1.3

SOIL MAP & DESCRIPTIONS..... 2.3

DEC ENVIRONMENTAL RESOURCE MAPS 2.6

CONSTRUCTION INSPECTION LOG BOOK 3.9

RUNOFF REDUCTION WORKSHEETS AND WQV..... 4.3

WATERSHED SCHEMATICS AND HYDROLOGIC CALCULATIONS 4.5

OPERATION AND MAINTENANCE MANUAL 4.9

OTHER ITEMS MADE A PART OF THIS REPORT BY REFERENCE BUT PROVIDED UNDER SEPARATE COVER

CONTRACT DRAWINGS ENTITLED "TILDEN COMMONS", BY LAMONT ENGINEERS DATED JUNE 2025.

1. Project Information

1.1. Introduction

The Stormwater Pollution Prevention Plan (SWPPP) is prepared in accordance with the requirements of Article 17, Titles 7, 8 and Article 70 of the New York State Environmental Conservation Law to obtain coverage by the SPDES General Permit for Stormwater Discharge from Construction Activities (GP-0-25-001).

A copy of the electronic Notice of Intent (eNOI) is presented in Appendix 1.1.

The design standards and practices outlined herein are in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016* and the *New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024.*

The report addresses both construction and post-construction measures to control and mitigate stormwater runoff for site preparation and infrastructure construction of the project.

1.2. Project Location, Description and Scope

The project, *Tilden Commons*, is located at 538 US-20 in the Town of New Lebanon in Columbia County. The site is approximately 3.2 acres and currently contains a commercial business.

The project consists of the construction of a single three-story building fronting US Route 20/22 on a 3 acre lot in downtown New Lebanon. The building will house a roughly 10,000 sf grocery store, a 2,000 sf community and space and 41 apartments. The project will also include site grading, the construction of a driveway and parking area, the installation of drainage and storm water practices, drilling a new well and the construction of an on-site wastewater treatment system.

The UTM 18T coordinates of the site are E: 632045, N: 4702801. The work occupies a parcel identified as tax parcel 19.2-1-69. A Location map is provided in Appendix 1.2.

Soil disturbing activities include:

- Building and parking lot demolition
- Clearing and grubbing of existing ground cover within the area to be disturbed for construction.
- Removal and stockpiling of topsoil.

- Excavations for the installation of underground utilities and foundations
- Well drilling
- Paving
- Alteration of drainage patterns and construction of stormwater management facilities.
- Landscaping, topsoiling and seeding of disturbed areas.

1.3. SWPPP Contacts

Owner/Operator
Tilden Project LLC
58 Pool Hill Road
New Lebanon, NY 12125
917-488-1061
joshuanyoung@gmail.com

Engineer
Lamont Engineers
PO Box 610
197 Elm Street
Cobleskill, NY 12043
Brendon Becker, P.E.
Principal Engineer
518-234-4028
bbecker@lamontengineers.com

A copy of the Contractor's Certification Form is provided in Appendix 1.3.

2. EXISTING AND PROPOSED MAPPING AND PLANS

2.1. Vicinity Map and Project Boundary

A general plan of the project is shown on the Contract Drawings, provided under separate cover, where the project boundary is shown in more detail.

2.2. Existing and Proposed Topography and Land Use

The project site consists of an existing commercial building with asphalt and gravel driveways and parking, as well as open lawn space.

The site topography generally slopes to the south at very shallow slopes.

2.3. Map and Description of Soils from USDA Soil Survey and On-site soil testing

Information made available through the US Department of Agriculture Soil and Water Conservation Service and the Columbia County Soil and Water

District identifies that the soils within the project area are Occum Loam (Om), hydrologic soil group B. Soils testing conducted on the site support this information, as the soils are generally well-drained and composed of sandy loam. For the purposes of this report, the entire site was designed as containing hydrologic soil group C soils.

Soil maps and descriptions can be found in Appendix 2.3.

2.4. Boundaries of Existing Vegetation and Proposed Limits of Clearing

A limit of disturbance as well as existing vegetation limits are shown on the Contract Drawings.

2.5. Wetlands and Watercourses

No wetlands or watercourses have been identified on the project site.

2.6. Name and Locations of Receiving Waters

All runoff from the project area leaves the site through an existing drainage conveyance system, which discharges on the south side of US-20. It is believed that all runoff is tributary to the Wyomanock Creek, which is about 1,100 feet south of the project site.

NYSDEC Environmental Resource Maps are included in Appendix 2.6

2.7. Existing and Proposed Utilities (Sewer, Water, Gas, etc) and Easements

There are minimal existing underground utilities at the project site. New utilities for the proposed project will be installed, including sewer, water, and electrical. There are no known existing utility easements; there are no proposed utility easements.

2.8. Location of Floodplain/Floodway Limits

There are no regulated floodplains or floodways within the project site.

2.9. Other Environmentally Sensitive Areas

None. There are no known threatened or endangered species within in the project vicinity, according to the available NYS online resource maps.

2.10. Historic Preservation

The project does not have the potential to affect a property that is listed or determined to be eligible for listing on the National or State Register of Historic Places, according to the available NYS online resource maps. Available online resource maps also indicate that the project site is not located in or adjacent to an area designated as sensitive for archeological

sites on the NY State Historic Preservation Office archaeological site inventory.

2.11. Climate Change Considerations

No areas within the project site are located in a regulated floodway/flood plain and therefore off site run on will not be of concern during flood events.

Consistent with observed increases in extreme rainfall intensity and uncertainty in future precipitation patterns, the stormwater system was designed with added resiliency beyond minimum compliance, with an emphasis on utilizing green infrastructure techniques to promote runoff reduction. The design emphasizes distributed source controls, and adequate storage and controlled release to ensure safe performance even under events exceeding the design basis.

2.12. Other Permits and Approvals

- Town of New Lebanon
  - Highway
  - Planning Board
  - Zoning Board
- Columbia County
  - Columbia County DOH
- New York State
  - NYSDEC
  - NYSHPO
  - Hudson River Housing

3. CONSTRUCTION EROSION AND SEDIMENT CONTROL

3.1. Temporary and Permanent Structural and Vegetative Measures

Immediate stabilization: for areas near wetlands or on steep (>10%) slopes, work area shall be mulched with wood chips hay or straw immediately after rough grading following each soil disturbing operation. Stabilization shall be completed no later than the end of each day.

Temporary stabilization: Topsoil stockpiles and disturbed portions of the site where construction activity temporarily ceases shall be stabilized with temporary seed and mulch immediately after the temporary cessation of construction activity in that area. All areas must be stabilized no later than 7 days after work has ceased. The temporary seed shall be applied at the rate of 30 pounds per acre. Mulch and water shall be applied per table 4.2 of the New York State Standards and Specifications for Erosion and Sediment Control Manual. Slopes over 3H:1V shall be stabilized with

anchored stabilization matting until such time as vegetation has been established. Areas to be paved shall be temporarily stabilized with geotextiles and stone subbase material, as shown on the Contract Drawings, provided under separate cover, until pavement is installed.

Permanent Stabilization: Disturbed portions of the site where construction activities have permanently ceased shall be stabilized with permanent seed no later than 14 days after the last construction activity. Prior to permanent seeding, fertilizer and lime shall be applied to the soil per vegetation specification. Permanent seed shall be installed, mulched, and maintained per the requirements detailed on the Contract Drawings.

3.2. Dimensions, Installation Details, and Material Specifications for Erosion and Sediment Control Practices

All dimensions, installation details and materials specifications are shown on the Contract Drawings, provided under separate cover.

3.3. Design Elements not in Conformance with the New York State Standards and Specifications for Erosion and Sediment Control

All erosion and sediment control practices have been designed in accordance with this reference.

3.4. Inspection Schedule and Operation and Maintenance Schedule of all Erosion and Sediment Control Practices

A schedule of inspection and maintenance of erosion and sediment control practices is shown on the Contract Drawings, provided under separate cover.

3.5. Staging Areas, Equipment Storage Areas, Borrow Pits, Waste Areas, and Concrete Washout Areas

Temporary staging, stockpile, and spoil areas have been located on the Contract Drawings, provided under a separate cover. The contractor will be required to locate any additional staging, stockpile, storage, borrow and waste areas. Staging, stockpile, and waste areas are to be approved by the Engineer and Regulatory Agencies.

3.6. Construction Phasing and Sequencing Plans

A sequence of major construction activities can be found on the Contract Drawings, provided under separate cover.

3.7. Pollution Prevention Measures

A. Spill Prevention Plan

All Contractors are responsible for implementing and enforcing the contents of a Spill Prevention Plan as outlined below:

1. Waste Disposal

All construction wastes, hazardous wastes, and sanitary wastes shall be disposed of according to New York State Department of Environmental Conservation standards and regulations. No burning, burying, or dumping of wastes will be permitted on-site. Transportation and ultimate disposal of wastes off-site shall be done according to all relevant State and local regulations.

2. Material Management Practices

The materials or substances listed below are expected to be present on-site during construction:

- Concrete Products
- Detergents
- Paints
- Structural Steel
- PVC Piping
- Hydraulic Equipment
- Fertilizers
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Metal Building Materials
- HDPE Piping

3. Housekeeping Procedures

- An effort will be made to store only enough products as required to complete the job.
- All materials stored on-site shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or some other enclosure.
- Products will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used-up before disposing of the container.
- Manufacturers' recommendations for proper use, storage, cleaning, and disposal shall be followed if State or local regulations do not apply.
- There shall be daily inspections to ensure proper use, storage, and disposal of all materials on-site during construction.

4. Hazardous Materials

- Products shall be kept in original containers unless they are not re-sealable, in which case re-sealable containers shall be

provided and shall be clearly marked as to contents and potential hazards.

- Original labels and material safety data sheets shall be always retained on the site when such materials are present on the site.
- If surplus products must be disposed, manufacturers' and State and local recommended methods for proper disposal shall be followed.

5. Petroleum Products

- All on-site vehicles shall be monitored for leaks and shall receive regular preventative maintenance to minimize leakage.
- On site fuel storage shall have secondary containment provisions.
- All on site fueling of equipment shall be performed by personnel trained in spill prevention and spill response.
- During on site fueling operations personnel must stay at the pump control, operator shall not rely on automatic shut-offs on fuel pumps.
- Fueling of small equipment shall be performed on non-absorbent surfaces if at all possible.

6. Fertilizers

Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater runoff. Fertilizers shall be stored in a covered area and the contents of any partially used bags shall be transferred to a sealable plastic container to avoid spills or leaks.

7. Paints

All containers shall be tightly sealed and stored in a protected "fire safe" area when not required for use. Containers shall be clearly marked as to their contents. Excess paint shall not be discharged into storm or sanitary sewer systems and shall be properly disposed of according to manufacturers' instructions or State and local regulation.

8. Spill Control Practices

- A Spill Prevention Plan (SPP) shall be prepared by the contractor and shall be based on manufacturers' recommended methods for spill cleanup. The SPP shall be clearly posted, and site personnel shall be made aware of the procedures and the locations of all information and cleanup supplies.
- Materials and equipment necessary for spill cleanup shall be kept in the material storage areas on-site. Equipment and

materials shall include, but not be limited to brooms, dust pans, mops, rags, shovels, gloves, goggles, kitty litter, sand, sawdust, and plastic & metal trash containers specifically for this purpose. Safety equipment such as fire extinguishers and first-aid kits shall be kept on site at all times in case of emergencies.

- All spills shall be cleaned-up immediately after discovery.
- The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous materials shall be reported to the appropriate State and local authorities, regardless of the size.
- The Spill Prevention Plan shall be modified and adjusted as necessary to prevent reoccurrence of spills after they have occurred, and shall include new clean-up procedures when necessary. A description of the spill, what caused it, and clean-up/prevention procedures to be followed in the future shall be included in the SPP and posted on-site after a spill.
- A spill prevention coordinator shall be designated for the Contract. The coordinator shall designate at least three other personnel who will receive spill prevention and clean-up training. These personnel shall become responsible for a particular phase of prevention and clean-up, and their names shall be posted along with the Spill Prevention Plan.

9. Dust Control

- All Contracts shall provide and apply water for the control of dust within the limits of their respective Work. Water application shall be the primary method of dust control.
- When used on roadways, the water shall be applied uniformly over a width of not less than eight (8) feet by means of an approved pressure distributor spray bar.
- When used on areas that will later be sodded or seeded, the water shall be free from oils, acids, alkalies, salts, or any other substances injurious to plant growth.
- Paved areas shall be kept clean by periodic sweeping with approved equipment.

B. Non-Stormwater Discharges

Concrete Trucks

- Concrete trucks shall be allowed to wash-out or discharge surplus concrete only at locations specifically approved by the Engineer.

Dewatering Effluent

- The Contractor shall pump dewatering effluent to geotextile sediment bags, a stable upland vegetated area, or temporary settling basin to remove suspended sediment prior to discharge to any watercourse.

Clearing and Grubbing Spoil

- No dumping shall be allowed in any stream, corridor, wetland, surface area, floodplain, or at unspecified locations or at locations not approved by the Engineer and regulatory agencies.

4. Stormwater Site Planning, Practice Selection and Details

4.1. Site Planning

The first step in developing a comprehensive stormwater management plan using green infrastructure is to avoid or minimize land disturbance by preserving natural resources and utilizing the hydrology of the site.

Implementation of “green” infrastructure practices aid in the reduction of runoff by proactively reducing runoff volume, peak flow and flow duration. It also promotes infiltration and evapotranspiration to improve groundwater recharge and relieve pollutants for the “end of pipe” stormwater treatment practice. The green infrastructure techniques utilized in this SWPPP are detailed in Section 4.3.

4.2. Determine Water Quality Treatment Volume (WQv)

The analysis uses existing conditions = current conditions. Watershed schematics are presented in Appendix 4.5.

Water quality volumes were computed using the NYS Stormwater Design Manual equation of WQv=[P*Rv*A]/12, where:

P= 90% rainfall = 1.1”
A= Site Area
I= % Impervious
Rv=0.05+0.009*I

The project consists of redevelopment and new development activities. The project site is a 3.22 acre parcel which was previously developed with commercial shops, asphalt parking, and gravel driveways. For planning purposes, the previously developed southern portion of the project site (approximately 1.92 acres) is considered redevelopment, and the mostly undeveloped northern portion of the project site is considered new development.

The redevelopment portion of the project site has an existing impervious area of 1.08 acres.

The proposed project will be providing 100% treatment for more than half of the previously developed portion of the site, more than the required 25%.

The minimum calculated WQv is 5,458 cf (0.13 af).

A summary of the minimum required water quality volume is in Appendix 4.3.

4.3. Runoff Reduction by Applying Green Infrastructure Techniques and Standard Stormwater Management Practices with RRv Capacity

100% reduction of the WQv will be achieved by an infiltration basin, tree plantings and stormwater planters. Pre-treatment for runoff entering the infiltration basin is provided by a combination of grass filter strip, a sediment forebay and hoods on catch basin outlet pipes.

The provided RRv is 5,458 cf (0.13 af).

Green Infrastructure Worksheets are presented in Appendix 4.3

4.4. Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

The full WQv is reduced via Green Infrastructure Techniques.

4.5. Apply Volume Peak Rate Control Practices if Needed to Meet Requirements

Channel Protection Volume (CPv) Requirements:
CPv requirements are designed to protect stream channels from erosion. This is typically accomplished by providing 24-hr extended detention of the 1-year, 24-hr design storm that remains after runoff reduction.

As a predominantly redevelopment project, the typical channel protection requirement is relaxed. The hydrologic analysis for the project site shows that the post-construction 1-year 24-hour peak discharge rate and volume is less than pre-construction amounts, therefore the CPv requirement has been satisfied.

CPv Provided: 0.274 acre-ft

Overbank Flood (Qp) & Extreme Storm (Qf) Requirements:
Overbank Flood: Control the peak discharge from the 10-yr storm to 10-yr predevelopment rates.

Extreme Storm: Control the peak discharge from the 100-yr storm to 100-yr predevelopment rates. Safely pass the 100-yr storm event.

Hydrologic DP: Runoff from Site to Existing Culvert			
	1-year (cfs)	10-year (cfs)	100-year (cfs)
Pre-Development	3.08	7.67	16.55
Post-Mitigation	2.29	5.22	10.53
Delta	-0.79	-2.45	-6.02

Watershed Schematics and Hydrologic Calculations are presented in Appendix 4.5.

4.6. Conveyance Criteria

Typically, the targeted storm frequencies for conveyance are the 2-yr and 10-yr storms. The 2-yr event is used to ensure non-erosive flows through roadside swales, overflow channels, pond pilot channels, and over berms within practices. The 10-year storm is typically used as a safe conveyance criterion for open channel practices and overflow channels

2-yr Storm

1. Roadside Swales
    a. All swales are non-erosive during the 2-year storm.
2. Pilot Channels
    a. No pilot channels proposed
3. In-Practice Berms
    a. The sediment forebay berm is not overtopped during the 2-year storm.

10-yr Storm

1. Open Channel Practices
    a. All swales safely convey the 10-yr storm.
2. Overflow Channels
    a. All overflow channels safely convey the 10-yr storm.

4.7. Identification of Design Elements not in Conformance with the New York State Stormwater Management Design Manual

N/A

4.8. Descriptions, Dimensions, Material Specifications and Installation Details for Post-Construction Stormwater Control Practices

Refer to the Contract Drawings, provided under separate cover, for dimensions and installation details of the stormwater management practices.

4.9. Long Term Operation and Maintenance of Post-Construction Stormwater Management Practices

Tilden Project LLC is responsible for long-term operation and maintenance of all post-construction SMPs and their appurtenances. The owner shall prepare a deed covenant in the deed of record to ensure long term operation and maintenance continuation of the post-construction SMPs.

A long-term operation and maintenance manual is presented in Appendix 4.9.

Appendix 1.1

Electronic Notice of Intent (eNOI)

Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.17

(Submission #: HQM-G5HE-RMDQD, version 1)

Details

Originally Started By	Asa Snyder
Alternate Identifier	Tilden Commons—Region 4
Submission ID	HQM-G5HE-RMDQD
Status	Draft

Form Input

Eligibility

Disturbance Threshold

1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?
Yes

1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?
No

1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?
No

1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?
No

Other SPDES Permits

2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?
Yes

Threatened and Endangered Species

3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?
No

State Historic Preservation Act (SHPA)

4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?
No

4.a. Will the construction activity:

a) occur within an archeologically sensitive area indicated on the sensitivity map, or

b) have the potential to affect a property that is listed or determined to be eligible for listing on the National or State Registers of Historic Places, or

c) include a new permanent building on the construction site within the following distances from a building, structure, object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Governmer a qualified preservation professional has determined is a historically/archeologically significant building, structure, or object:

- 1-5 acres of disturbance—20 feet
- 5-20 acres of disturbance—50 feet
- 20+ acres of disturbance—100 feet?

No

4.b. Is there documentation at the construction site demonstrating:

a) that the construction activity is not within an archeologically sensitive area indicated on the sensitivity map, and tha construction activity is not immediately adjacent to a property listed or determined to be eligible for listing on the Natio State Registers of Historic Places, and

b) that there is no new permanent building to be built on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the constru site within those parameters that OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant:

- 1-5 acres of disturbance – 20 feet
- 5-20 acres of disturbance – 50 feet
- 20+ acres of disturbance – 100 feet?

Yes

State Environmental Quality Review (SEQR)

5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?
Yes

5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?
NONE PROVIDED

Uniform Procedures Act (UPA) Permits

6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001? Select "Yes" if no UPA permits, or the equivalent, are required for this construction activity.
NONE PROVIDED

Steep Slope

7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?
No

Owner/Operator Information

8. Owner/Operator Name
Tilden Project LLC

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Joshua Young	9174881061	jsohuayoung@gmail.com

10. Owner/Operator Mailing Address
58 Pool Hill Road
New Lebanon, NY 12125
USA

11. Is the billing contact different from the Owner/Operator Contact?
No

12. What type of organization is the owner/operator?
Corporation

12.b. Is the owner/operator registered with the Department of State to do business in New York State?
NONE PROVIDED

Site Information

13. Project/Site Name
Tilden Commons

14. Site Address
538 US 20
New Lebanon, NY 12125
Columbia

DEC Region
4

15. Site Latitude & Longitude
42.46651700657871,-73.39369960394826

Project Details

16. This eNOI submission is for:
A construction activity not part of a common plan of development or sale in accordance with Part I.D.1.a.

17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".
Table 2

18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.
The site topography generally slopes to the south at very shallow slopes.

The project consists of the construction of a single three-story building fronting US Route 20/22 on a 3acre lot in downtown New Lebanon. The existing building and parking areas will be demolished.

The new building will house a roughly 10,000 sf grocery store, a 2,000 sf community and space and 41apartments. The project will also include site grading, the construction of a driveway and parking area, the installation of drainage and storm water practices, drilling a new well and the construction of an on-site wastewater treatment system.

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

19. Total Site Area (acres)
3.2

20. Total Area to be Disturbed (acres)
3.2

21. Existing Impervious Area to be Disturbed (acres)
1.1

22. Future Impervious Area Within Disturbed Area (acres)
2.3

Nature of the project:
Redevelopment with increase in impervious area

23. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

24. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
NONE PROVIDED

B (%)
100

C (%)
NONE PROVIDED

D (%)
NONE PROVIDED

25. Enter the planned start and end dates of the disturbance activities.

Start Date
06/01/2026

End Date
09/30/2027

26. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Wyomanock Creek and tribs - 1310-0039

27. Type of waterbody identified in question 26?
Stream/Creek Off Site

28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?
No

29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?
No

30. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

31. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

31.a. What is the name of the municipality/entity that owns the separate storm sewer system? If the separate sewer system is owned by an MS4 Operator, enter the MS4 Operator name.
NYSDOT

32. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

33. Is this property owned by a state authority, state agency, federal government or local government?
No

Required SWPPP Components

General SWPPP Requirements

34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?
Yes

35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?
Yes

36. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

37. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the NYS Stormwater Management Design Manual?
Yes

37.a. Which version of the NYS Stormwater Management Design Manual was used to develop the SWPPP?
2024

SWPPP Preparer

39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

40. Name of the person who prepared the SWPPP
Brendon Becker

41. SWPPP Preparer Organization Name
Lamont Engineers

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Brendon Becker	518-234-4028	bbecker@lamontengineers.com

43. SWPPP Preparer Address

PO Box 610
Cobleskill, NY 12043

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Upload the completed form
Download SWPPP Preparer Certification Form

44. Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?
NONE PROVIDED

Erosion & Sediment Control Criteria

45. Has a construction sequence schedule for the planned management practices been prepared?
Yes

Post-Construction Criteria

Site Planning and Soil Restoration

46. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Sidewalk Reduction
Reduction of Clearing and Grading

47. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6 ("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

Water Quality Criteria

49. Water Quality Sizing Criteria

Total WQv required (acre-feet)	Total RRv provided (acre-feet)	Minimum RRv (acre-feet)	Total WQv provided (acre-feet)	Sum of RRv and WQv provided
0.13	0.13			0.13

Water Quantity Criteria

50. Per Section 9.2.1.C.VI and VII of the 2024 Design Manual, is there 0% change to hydrology that increases the discharge rate and volume from the project site?
No

51. Does one of the waiver conditions apply to the channel protection for this construction activity?
No

51.b.i. CPv Required (acre-feet)
0.274

51.b.ii. CPv Provided (acre-feet)
0.274

52. Does one of the waiver conditions apply to the Qp and Qf for this construction activity?
No

Overbank Flood Control Criteria (Qp)

52.b.i. Pre-Development (CFS)
7.67

52.b.ii. Post-Development (CFS)
5.22

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
16.55

52.b.iv. Post-Development (CFS)
10.53

Operation and Maintenance

53. Has a long-term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

53.a. Identify the entity responsible for the long-term Operation and Maintenance.
Tilden Project LLC

Post-Construction SMP Identification

54. Post-Construction RR Techniques and Standard SMPs

RR Techniques and SMPs	Contributing Impervious Area (acres)	Total Contributing Area (acres)
Tree Planting/Tree Pit/Tree Trench (RR-3)	0.04	0.04
Infiltration Basin (I-2)	1.27	
Stormwater Planter (RR-7)	0.06	

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
NONE PROVIDED	*NONE PROVIDED*	*NONE PROVIDED*	*NONE PROVIDED*

Other Permits

56. Identify other permits, existing and new, that are required for this project/facility.
Individual SPDES

57. Is this NOI for a change in owner/operator per Part I.G.?
No

58. Is this eNOI for informational purposes only? An eNOI is submitted for "informational purposes only," when a facility has an Individual SPDES permit that includes discharges from all future construction activities in the special conditions of the Individual SPDES permit.
No

MS4 SWPPP Acceptance

59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?
No

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the Owner/Operator Certification Form by clicking the link below.
Owner/Operator Certification Form

61. Upload Owner/Operator Certification Form
NONE PROVIDED
Comment
NONE PROVIDED

61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?
NONE PROVIDED

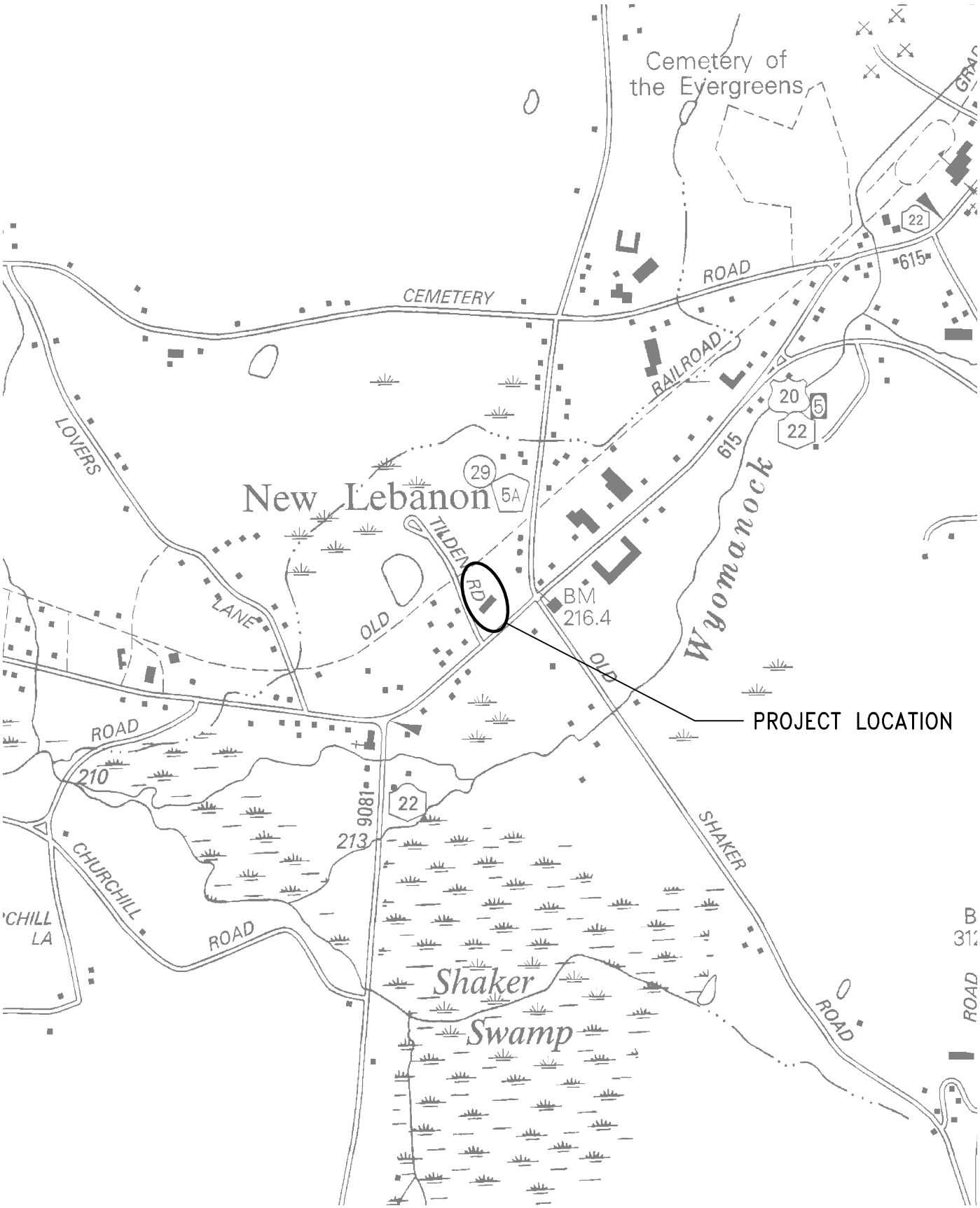
Additional Project Information

62. Enter any additional pertinent project information in the text box below.

NONE PROVIDED

Appendix 1.2

Location Map



DATE	PROJECT NO.	HUDSON RIVER HOUSING INC. PROJECT LOCATION MAP	Lamont Engineers
5/23/25	2024125		ENGINEERS • PLANNERS • FACILITY OPERATIONS
SCALE	DRAWN		
1"=1000'	JW	COLUMBIA COUNTY NEW YORK STATE	

K:\APPS\SDSKPROJ\2024125\Aerial Map.dwg, 5/23/2025 10:04:30, DWG To PDF.pc3

Appendix 1.3

Contractor Certification Form

CONTRACTOR and SUBCONTRACTOR CERTIFICATION STATEMENT

for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-25-001)

As per *Part III.A.6* on page 31 of GP-0-25-001, effective 1/29/2025

'Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and sub-contractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.'

The *owner or operator* shall have each contractor and subcontractor involved in soil disturbance sign a copy of the following certification statement before they commence <u>any</u> *construction activity*:

_____	**NYR** _____	_____
Name of Construction Site	*DEC Permit ID*	*Municipality (MS4)*

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Responsible Corporate Officer/Partner Signature	Date
Name of above Signatory	Name of Company
Title of above Signatory	Mailing Address
Telephone of Company	City, State and Zip

Identify the specific elements of the SWPPP the contractor or subcontractor is responsible for:

***'TRAINED CONTRACTOR'* FOR THE CERTIFIED CONTRACTOR OR SUBCONTRACTOR**

_____	_____	_____
Name of Trained Employee	*Title of Trained Employee*	*NYSDEC SWT #*

A copy of this signed contractor certification statement must be maintained at the SWPPP on site

Appendix 2.3

Soil Map and Descriptions

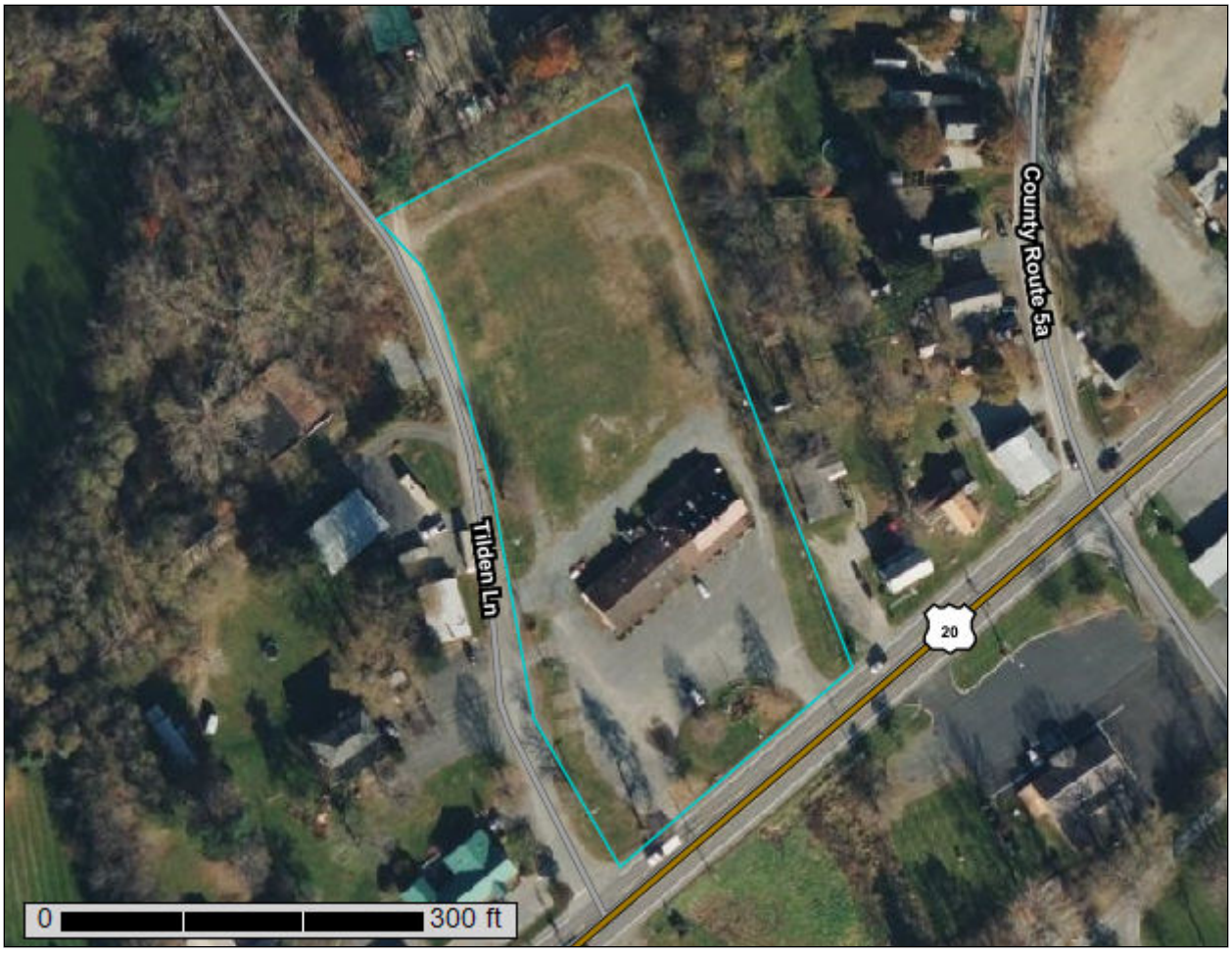
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Columbia County, New York



May 27, 2025

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Columbia County, New York.....13
Om—Occum loam.....13
References.....15

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,150 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: Columbia County, New York
Survey Area Data: Version 20, Aug 29, 2024

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

Date(s) aerial images were photographed: Aug 15, 2021—Nov 8, 2021

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Om	Occum loam	2.9	100.0%
Totals for Area of Interest		**2.9**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

Columbia County, New York

Om—Occum loam

Map Unit Setting

National map unit symbol: 9r1h
Elevation: 0 to 1,030 feet
Mean annual precipitation: 38 to 46 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Occum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Occum

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy alluvium

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 25 inches: fine sandy loam
H3 - 25 to 33 inches: coarse sandy loam
H4 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F144AY010NH - Sandy High Floodplain
Hydric soil rating: No

Minor Components

Linlithgo

Percent of map unit: 8 percent
Hydric soil rating: No

Limerick

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix 2.6

NYSDEC Environmental Resource Maps

Tilden Project

July 1, 2025

1:4,514

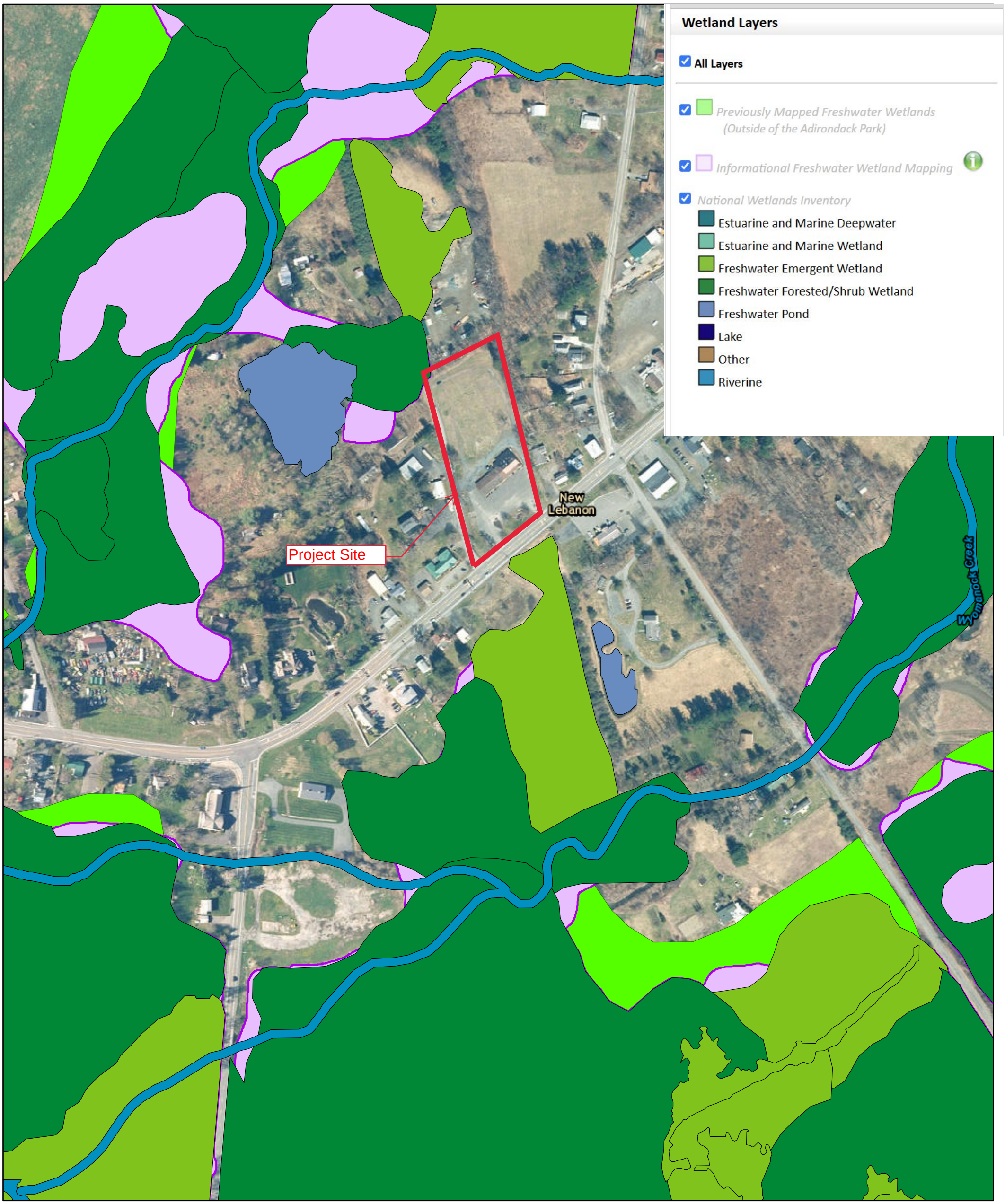
0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

New York State, Maxar, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

Tilden Project



July 1, 2025

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

New York State, Maxar, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

Appendix 3.9

Construction Inspection Log Book

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS
Dedicated to Service…Committed to Excellence

STORMWATER INSPECTION REPORT

Permit No.:	GP-0-25-001
PROJECT NAME:	Tilden Commons
CONTRACT NO.:	1
ENGINEER:	Lamont Engineers
CONTRACTOR:	
PROJECT NO.:	2024125
Date/Time:	
Inspector:	
Title:	

INSTRUCTIONS:

1. Describe all construction not in conformance with SWPPP.
2. Identify all corrective measures to be taken.
3. Identify all corrective measures taken since last inspection.
4. Attach map/sketch of disturbed area.
5. Insert photos.

INSPECTION SCHEDULE:
Inspections to be performed at least once every 7 days. If >5 acres are disturbed, perform inspection twice every 7 days. Perform inspections every 30 days during shutdowns.

WEATHER	
TEMPERATURE	°F

SITE CONDITIONS:

Soil Conditions:
- ☐ Dry
- ☐ Wet
- ☐ Saturated
- ☐ Frozen
- ☐ Snow Covered

Discharge:
- ☐ None
- ☐ Light
- ☐ Moderate
- ☐ Heavy

Offsite Sediment Tracking:
- ☐ None
- ☐ Light
- ☐ Moderate
- ☐ Heavy

Condition of Discharge:
- ☐ N/A
- ☐ Clean
- ☐ Evidence of Turbidity

Contrast to Receiving Water:
- ☐ Yes
- ☐ No
- ☐ N/A

Disturbance:

Y	N	
☐	☐	Within Limits of the approved plans
☐	☐	Impacting adjacent property

Stockpiles and Waste Areas:

Y	N	
☐	☐	Areas Approved
☐	☐	Perimeter Controls in Place
☐	☐	Stabilized within 7 days of last use

COMMENTS:
Describe or show on map: Total area of active disturbance, total area inactive disturbance, total area with temporary stabilization and total area with final stabilization.

STORMWATER INSPECTION REPORT

SITE MANAGEMENT PRACTICES:

- ☐ Stabilized Construction Entrance
- ☐ Construction Road Stabilization
- ☐ Dust Control
- ☐ Concrete Truck Washout
- ☐ Protected Areas
- ☐ Temporary Culverts
- ☐ Winter Stabilization
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

EROSION CONTROL PRACTICES:

- ☐ Check Dams
- ☐ Dewatering Sump Pit
- ☐ Diversions
- ☐ Jute Mesh/RECP
- ☐ Mulch
- ☐ Seeding
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

SEDIMENT CONTROL PRACTICES:

- ☐ Filter Strip
- ☐ Dirt Bag
- ☐ Sediment Basin/Trap
- ☐ Silt Fence
- ☐ Storm Drain Inlet Protection
- ☐ Turbidity Curtain
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

Describe current stage of all SMP's and identify all construction activity not in conformance with SWPPP and technical standards:

Describe corrective action that must be taken to install, repair, replace or maintain E&SC practices and to correct deficiencies with construction of SMP's:

Describe status of all corrective actions that were required by previous inspection:

Photos:

Comments:

Photos:

Comments:

Photos:

Comments:

Photos:

Comments:

Photos:

Comments:

Photos:

Comments:

Signature of
Qualified Inspector: _____

Appendix 4.3

Runoff Reduction Worksheets

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?					No	
What is the nature of this construction project?			Redevelopment with increase in impervious area			
Design Point:	1					
P=	1.10	inches	*Enter 90% Rainfall Event as P*			

Calculate Required WQv

Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**SMP Description**
1	2.51	1.27	51	0.51	5,065	Infiltration Basin
2						
3	0.04	0.04	100	0.95	165	Tree Planting
4	0.06	0.06	100	0.95	228	Stormwater Planter
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	2.61	1.37	53	0.52	**5458**	**Required WQv**

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the site		
Hydrologic Soil Group	Acres	S
A	0.00	55%
B	0.00	40%
C	0.00	30%
D	1.37	20%
Total Area	1.37	

Calculate the Minimum RRv		
S =	**0.20**	
Impervious =	1.37	*acres*
Precipitation	1.10	*inches*
Rv	0.95	
Minimum RRv	**0.024**	***af***
	1045	cf

Tree Planting (RR-3)

Design Point:	1

Enter Site Data For Drainage Area to be Reduced							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
3	0.04	0.04	100	0.95	165	1.10	Tree Planting

Design Criteria		
Does contributing impervious area exceed practice RRv capacity?	No	
Is the contributing area a designated hotspot?	No	
Is another area reduction practice proposed for the same contributing area?	No	
Enter the slope of the contributing area (%)	1	
Are new trees proposed for area reduction?	Yes	
For new tree plantings, enter horizontal separation from contributing impervious area (ft)	10	
Are existing trees proposed for area reduction?	Yes	
For existing trees, enter horizontal separation from contributing impervious area to canopy (ft)	20	
Enter ponding depth (inches)	6	
Enter surface layer depth (inches)	3	
Enter filter media depth (inches)	36	
Enter filter media width (ft)	5	
Enter filter media length (ft)	5	
Enter mature tree canopy (ft)	16	
Area reduction per tree (sf)	100	
Enter number of trees for area reduction	22	
Total area reduction proposed (sf)	2200	

Calculate Runoff Reduction		
RRv Provided	**165**	**cf**

Stormwater Planter (RR-7)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
4	0.06	0.06	100	0.95	228	1.10	Stormwater Planter
Select stormwater planter type			Infiltration Stormwater Planter				

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	5.45	
Is the contributing area a designated hotspot?	No	
Does the contributing area exceed 15,000 sf?	No	
Does contributing area contain parking lot or roadway runoff?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	2	
Enter depth of surface layer (inches)	3	
Enter drainage layer depth (inches)	6	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	228	cf	
Enter Depth of Soil Media	df	1.5	ft	
Permeability Flow Rate	k	1	ft/day	
Enter Average Height of Ponding	hf	0.5	ft	
Filter Time	tf	2	days	
Required Filter Area	Af	86	sf	
Enter Provided Filter Area	Af	182	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	485.3333333	cf	

Calculate Runoff Reduction		
RRv Provided	**228**	**cf**

Infiltration Basin (I-2)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	2.51	1.27	51	0.51	5,065	1.10	Infiltration Basin

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	6	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Maximum contributing area (acres)	25	
Is the contributing area greater than the maximum allowed contributing area?	No	
Enter depth to seasonal high water table (ft)	6	
Enter depth to bedrock (ft)	8	
Enter pretreatment volume provided (cf)	2050	
Enter depth of freeboard (ft)	1	
Enter depth of basin (ft)	1	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	5065	cf	
Basin depth	db	1.0	ft	
Required Surface Area	Ab	5,065	sf	
Enter Surface Area Provided	Ab	7632	sf	

Determine Runoff Reduction		
RRv Provided	**5,065**	***cf***

Appendix 4.5

Watershed Schematics and Hydrologic Calculations

Lamont Engineers

COBLESKILL NEW YORK
(518) 234-4028

TILDEN COMMONS
TILDEN PROJECT, LLC

COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

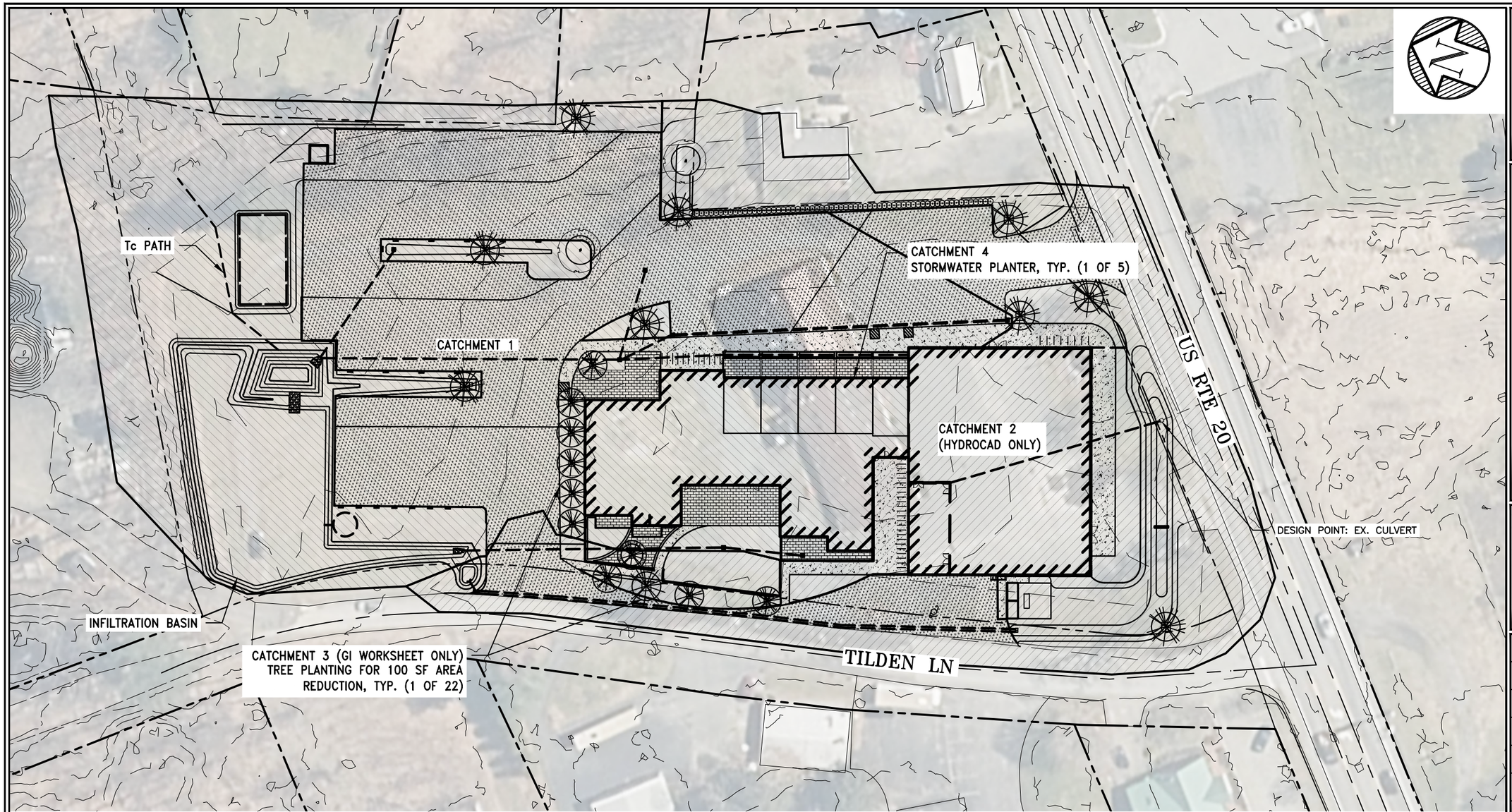
Project Number	2024125
Drawn By	AS
Designed By	AHJ/AS
Checked By	BJB
Date	6/20/25
Scale	1" = 60'
File Name	tilden wshed

Sheet Title

WATERSHED
SCHEMATIC
EXISTING

Sheet No.

4.5



Lamont Engineers

COBLESKILL NEW YORK
(518) 234-4028

TILDEN COMMONS
TILDEN PROJECT, LLC
COLUMBIA COUNTY NEW YORK STATE

UNAUTHORIZED ALTERATION AND/OR ADDITION TO THIS DOCUMENT AND/OR UNAUTHORIZED USE OR REUSE OF THIS DOCUMENT ON A PROJECT OTHER THAN THAT INDICATED ON THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE CONTRACT FOR PROFESSIONAL SERVICES AND IS THEREFORE PROHIBITED.

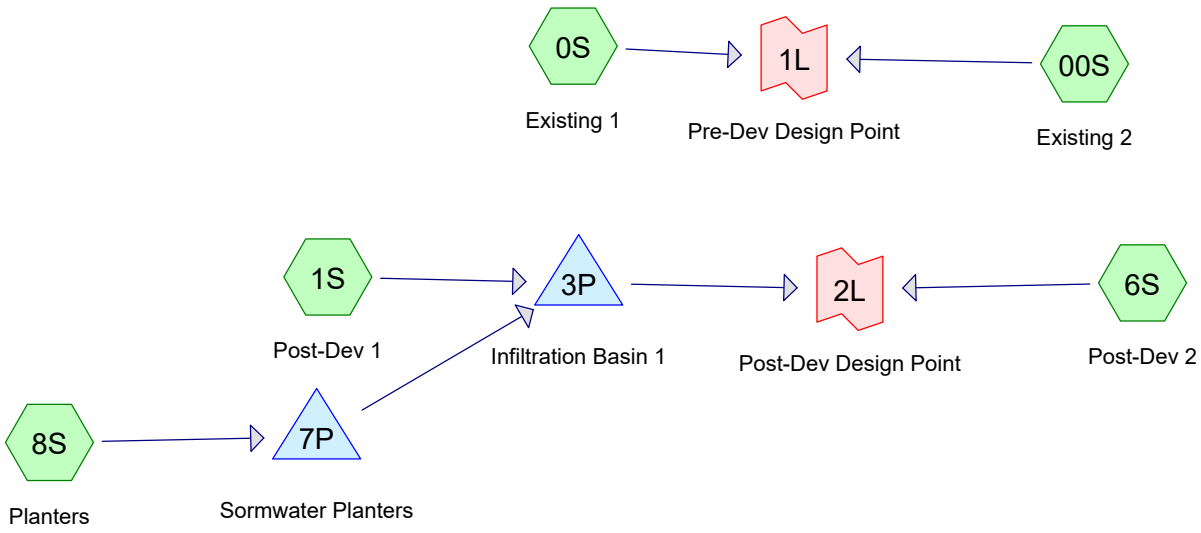
Project Number	2024125
Drawn By	AS
Designed By	AHJ/AS
Checked By	BJB
Date	6/20/25
Scale	1" = 60'
File Name	tilden wshed

Sheet Title

WATERSHED
SCHEMATIC
PROPOSED

Sheet No.

4.5



Subcat Reach Pond Link

Routing Diagram for Tilden Hydrology
Prepared by Lamont Engineers, Printed 4/1/2026
HydroCAD® 10.20-8a s/n 09136 © 2025 HydroCAD Software Solutions LLC

Project Notes

Defined 9 rainfall events from NY-Tilden IDF
Copied 9 events from NY-Tilden 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Tilden 24-hr S1	1-yr	Default	24.00	1	2.37	2
2	10-yr	NY-Tilden 24-hr S1	10-yr	Default	24.00	1	4.09	2
3	100-yr	NY-Tilden 24-hr S1	100-yr	Default	24.00	1	7.14	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.199	79	<50% Grass cover, Poor, HSG B (00S)
2.473	61	>75% Grass cover, Good, HSG B (0S, 1S, 6S)
0.049	98	Ex. Impervious (Off-Site) (00S)
0.105	98	Ex. Impervious (On-Site) (00S)
0.250	98	Existing Impervious (Off-Site) (0S)
1.077	98	Existing Impervious (On-Site) (0S)
1.195	98	Impervious (1S)
1.000	98	Paved parking, HSG A (6S)
0.075	98	Roofs, HSG A (8S)
0.563	58	Woods/grass comb., Good, HSG B (00S)
7.986	**81**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
1.075	HSG A	6S, 8S
4.235	HSG B	0S, 00S, 1S, 6S
0.000	HSG C	
0.000	HSG D	
2.676	Other	0S, 00S, 1S
7.986		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.199	0.000	0.000	0.000	1.199	<50% Grass cover, Poor	00S
0.000	2.473	0.000	0.000	0.000	2.473	>75% Grass cover, Good	0S, 1S, 6S
0.000	0.000	0.000	0.000	0.049	0.049	Ex. Impervious (Off-Site)	00S
0.000	0.000	0.000	0.000	0.105	0.105	Ex. Impervious (On-Site)	00S
0.000	0.000	0.000	0.000	0.250	0.250	Existing Impervious (Off-Site)	0S
0.000	0.000	0.000	0.000	1.077	1.077	Existing Impervious (On-Site)	0S
0.000	0.000	0.000	0.000	1.195	1.195	Impervious	1S
1.000	0.000	0.000	0.000	0.000	1.000	Paved parking	6S
0.075	0.000	0.000	0.000	0.000	0.075	Roofs	8S
0.000	0.563	0.000	0.000	0.000	0.563	Woods/grass comb., Good	00S
1.075	**4.235**	**0.000**	**0.000**	**2.676**	**7.986**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	7P	703.50	702.25	328.0	0.0038	0.012	0.0	12.0	0.0	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 0S: Existing 1 Runoff Area=2.070 ac 64.11% Impervious Runoff Depth>0.97"
Tc=6.0 min CN=85 Runoff=2.99 cfs 0.167 af

Subcatchment 00S: Existing 2 Runoff Area=1.916 ac 8.04% Impervious Runoff Depth>0.46"
Flow Length=675' Tc=29.7 min CN=74 Runoff=0.57 cfs 0.073 af

Subcatchment 1S: Post-Dev 1 Runoff Area=106,073 sf 49.08% Impervious Runoff Depth>0.66"
Flow Length=116' Tc=20.1 min CN=79 Runoff=1.38 cfs 0.134 af

Subcatchment 6S: Post-Dev 2 Runoff Area=1.490 ac 67.11% Impervious Runoff Depth>1.03"
Tc=6.0 min CN=86 Runoff=2.29 cfs 0.128 af

Subcatchment 8S: Planters Runoff Area=3,262 sf 100.00% Impervious Runoff Depth>1.96"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.012 af

Pond 3P: Infiltration Basin 1 Peak Elev=703.05' Storage=389 cf Inflow=1.46 cfs 0.141 af
Discarded=1.08 cfs 0.140 af Primary=0.00 cfs 0.000 af Outflow=1.08 cfs 0.140 af

Pond 7P: Sormwater Planters Peak Elev=707.71' Storage=276 cf Inflow=0.20 cfs 0.012 af
Discarded=0.00 cfs 0.000 af Primary=0.09 cfs 0.007 af Outflow=0.09 cfs 0.007 af

Link 1L: Pre-Dev Design Point Inflow=3.08 cfs 0.241 af
Primary=3.08 cfs 0.241 af

Link 2L: Post-Dev Design Point Inflow=2.29 cfs 0.128 af
Primary=2.29 cfs 0.128 af

Total Runoff Area = 7.986 ac Runoff Volume = 0.514 af Average Runoff Depth = 0.77"
53.03% Pervious = 4.235 ac 46.97% Impervious = 3.751 ac

Summary for Subcatchment 0S: Existing 1

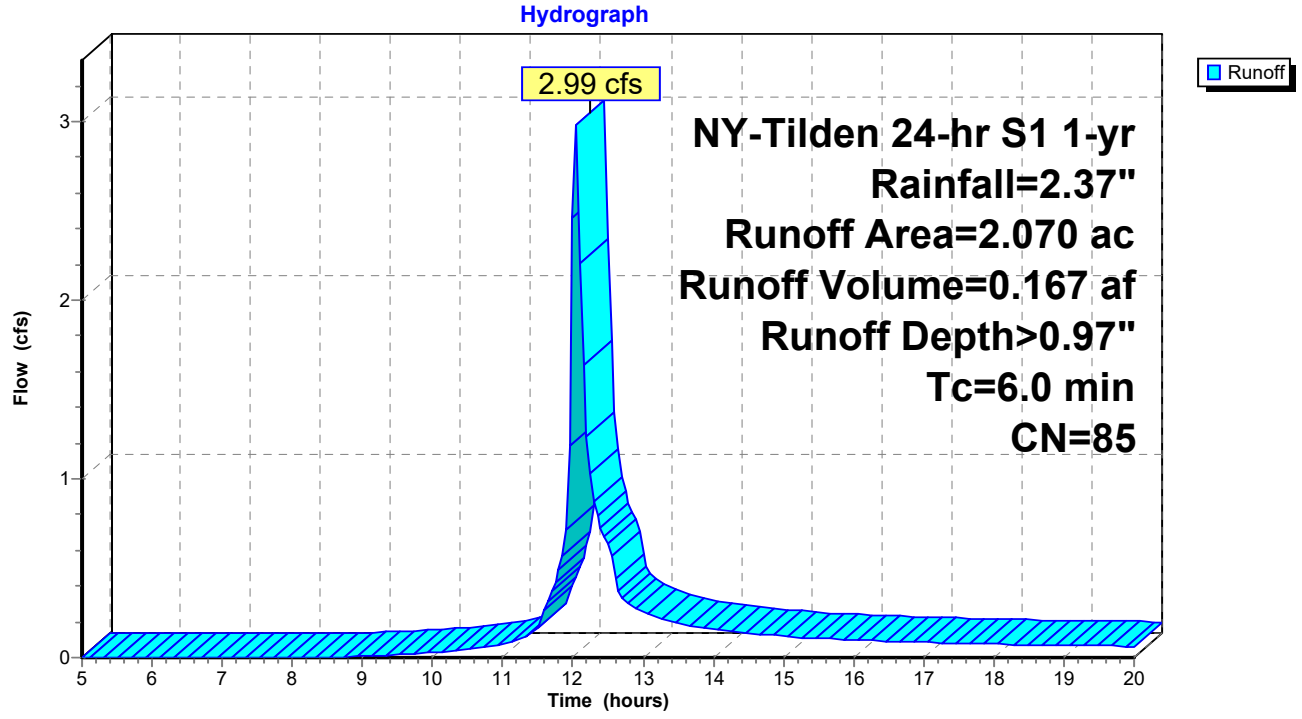
Runoff = 2.99 cfs @ 12.05 hrs, Volume= 0.167 af, Depth> 0.97"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	1.077	98	Existing Impervious (On-Site)
*	0.250	98	Existing Impervious (Off-Site)
	0.743	61	>75% Grass cover, Good, HSG B
	2.070	85	Weighted Average
	0.743		35.89% Pervious Area
	1.327		64.11% Impervious Area

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

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

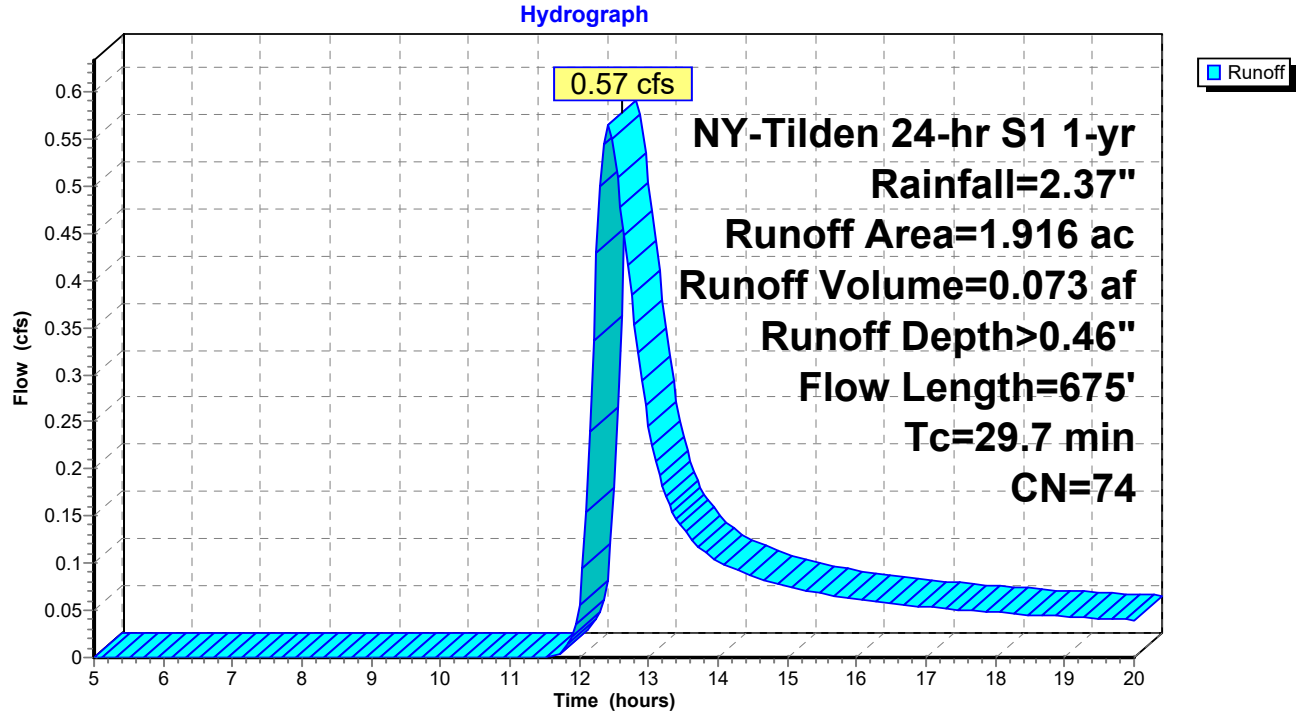
Runoff = 0.57 cfs @ 12.42 hrs, Volume= 0.073 af, Depth> 0.46"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.199	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.916	74	Weighted Average
	1.762		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

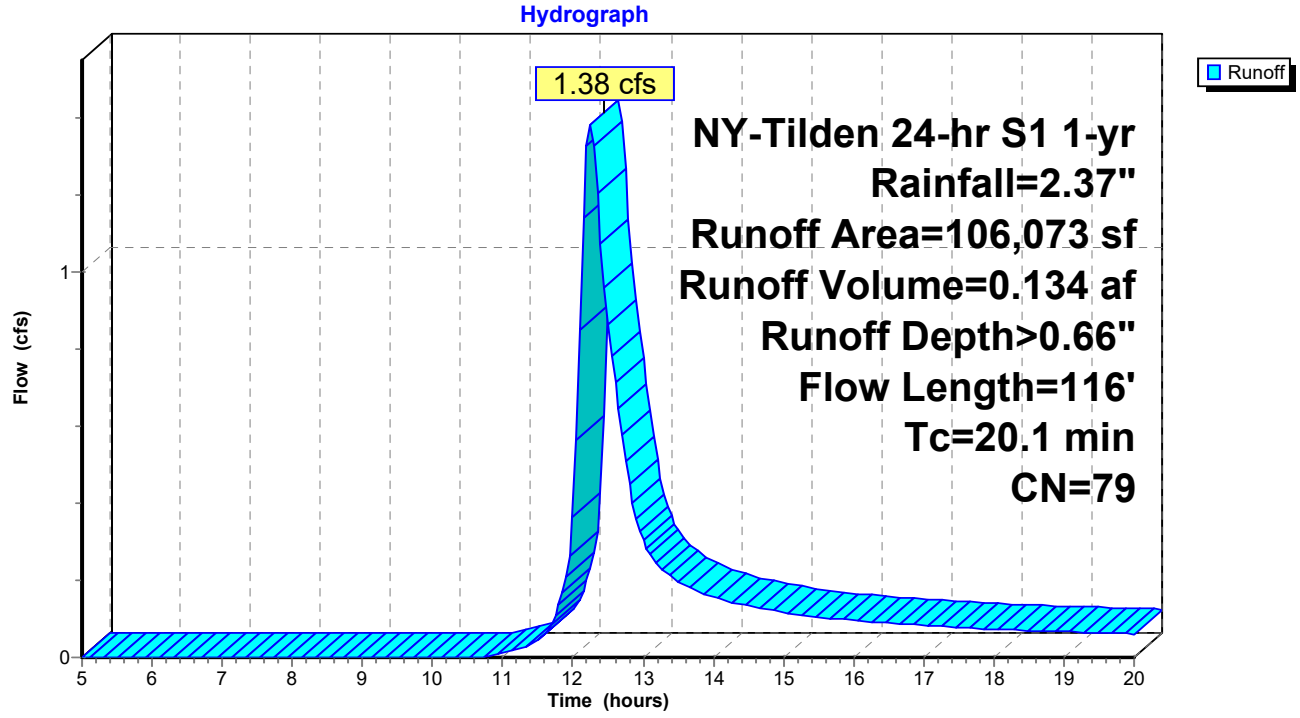
Runoff = 1.38 cfs @ 12.25 hrs, Volume= 0.134 af, Depth> 0.66"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (sf)	CN	Description
*	52,059	98	Impervious
	54,014	61	>75% Grass cover, Good, HSG B
	106,073	79	Weighted Average
	54,014		50.92% Pervious Area
	52,059		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0300	0.08		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.78"
0.1	16	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	116	Total			

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 6S: Post-Dev 2

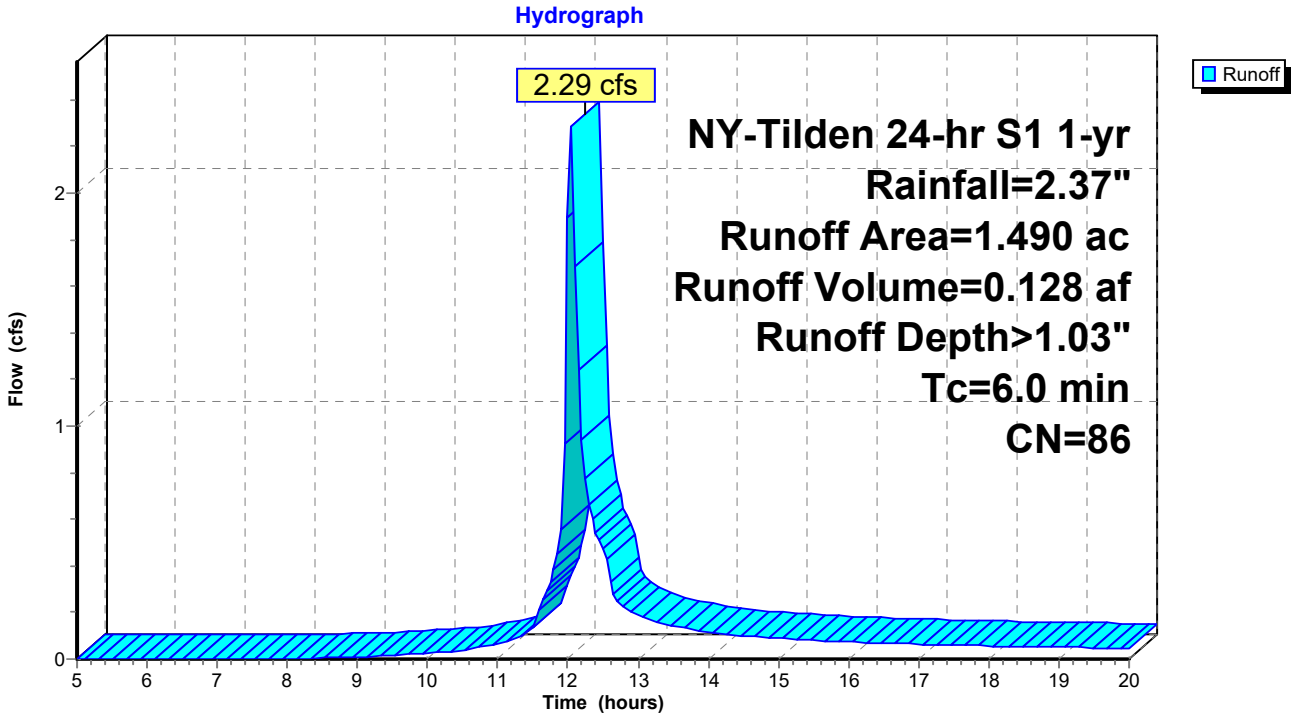
Runoff = 2.29 cfs @ 12.04 hrs, Volume= 0.128 af, Depth> 1.03"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

Area (ac)	CN	Description
1.000	98	Paved parking, HSG A
0.490	61	>75% Grass cover, Good, HSG B
1.490	86	Weighted Average
0.490		32.89% Pervious Area
1.000		67.11% Impervious Area

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

Subcatchment 6S: Post-Dev 2



Summary for Subcatchment 8S: Planters

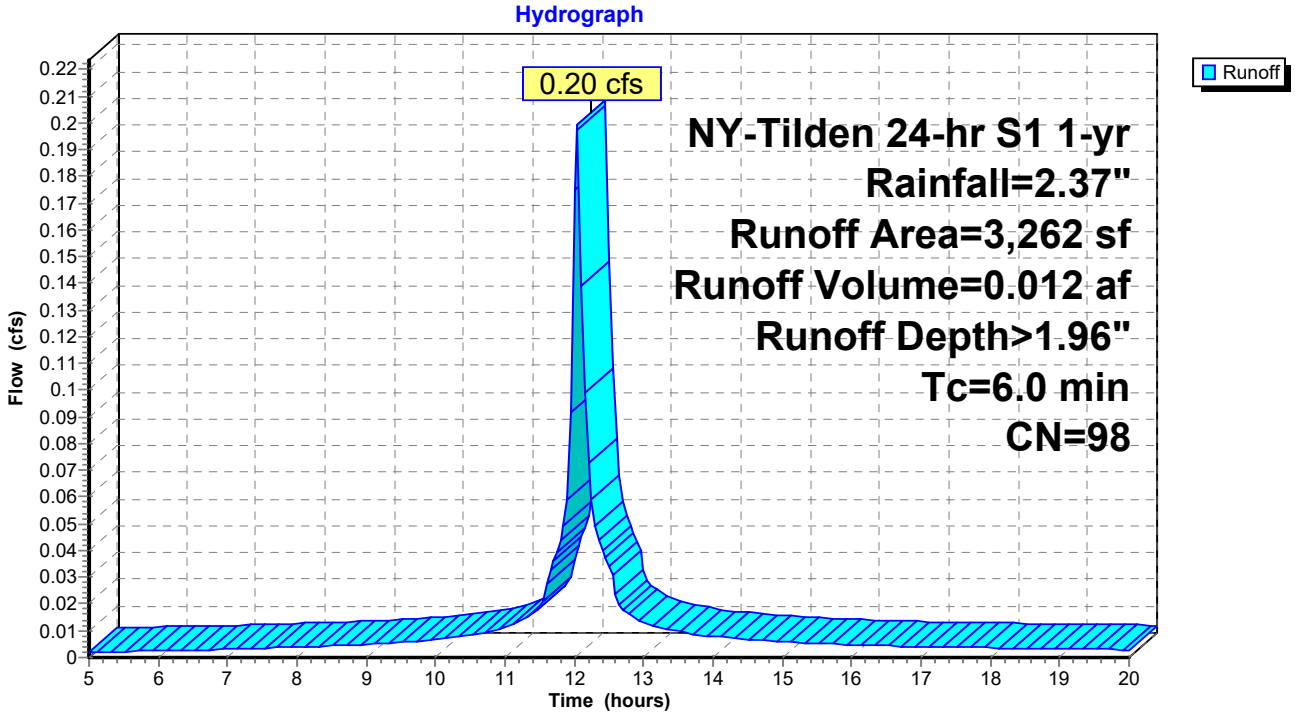
Runoff = 0.20 cfs @ 12.04 hrs, Volume= 0.012 af, Depth> 1.96"
Routed to Pond 7P : Sormwater Planters

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

Area (sf)	CN	Description
3,262	98	Roofs, HSG A
3,262		100.00% Impervious Area

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

Subcatchment 8S: Planters



Summary for Pond 3P: Infiltration Basin 1

[79] Warning: Submerged Pond 7P Primary device # 2 OUTLET by 0.80'

Inflow Area = 2.510 ac, 50.60% Impervious, Inflow Depth > 0.67" for 1-yr event
Inflow = 1.46 cfs @ 12.25 hrs, Volume= 0.141 af
Outflow = 1.08 cfs @ 12.42 hrs, Volume= 0.140 af, Atten= 26%, Lag= 10.4 min
Discarded = 1.08 cfs @ 12.42 hrs, Volume= 0.140 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.05' @ 12.42 hrs Surf.Area= 7,687 sf Storage= 389 cf

Plug-Flow detention time= 3.1 min calculated for 0.140 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (836.9 - 834.3)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	17,432 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

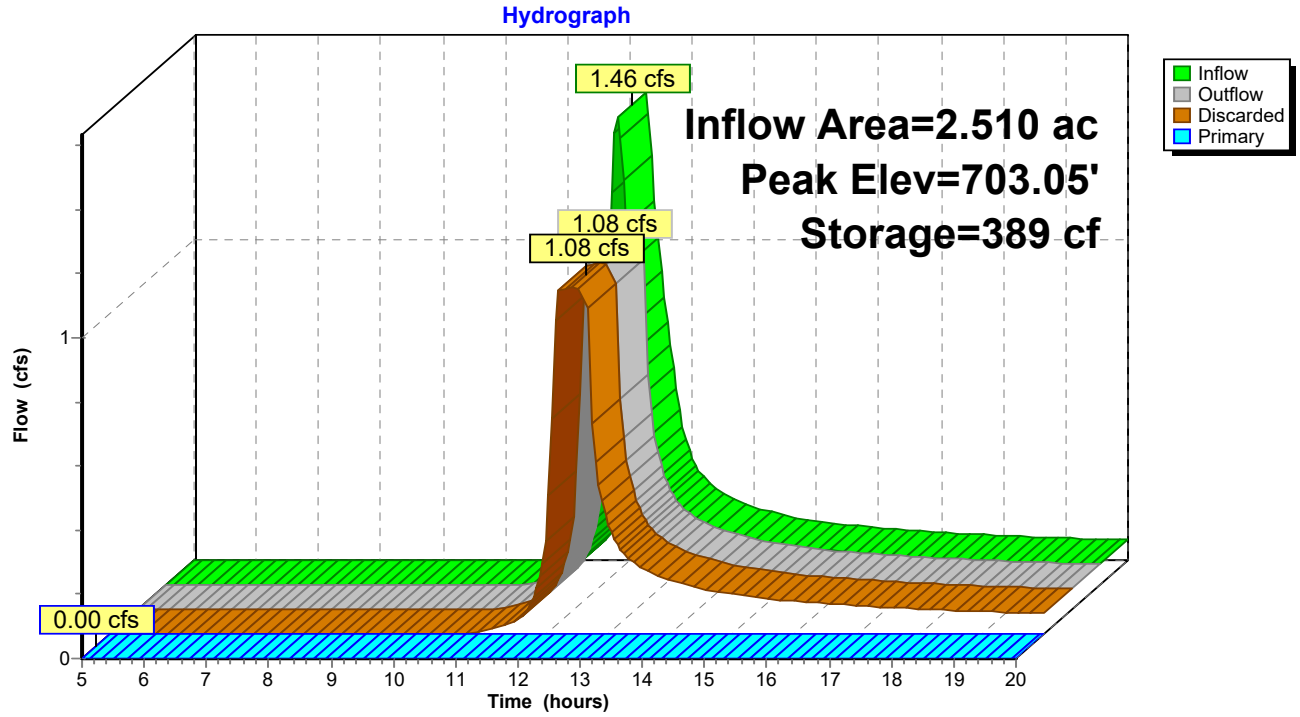
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	7,632	0	0
704.00	8,708	8,170	8,170
705.00	9,815	9,262	17,432

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**6.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 699.00'
#2	Primary	704.25'	**10.0' long + 3.0 '/' SideZ x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=1.08 cfs @ 12.42 hrs HW=703.05' (Free Discharge)
1=Exfiltration (Controls 1.08 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=703.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Infiltration Basin 1



Summary for Pond 7P: Sormwater Planters

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.075 ac,100.00% Impervious, Inflow Depth > 1.96" for 1-yr event
Inflow = 0.20 cfs @ 12.04 hrs, Volume= 0.012 af
Outflow = 0.09 cfs @ 12.17 hrs, Volume= 0.007 af, Atten= 54%, Lag= 7.9 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.09 cfs @ 12.17 hrs, Volume= 0.007 af
Routed to Pond 3P : Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 707.71' @ 12.17 hrs Surf.Area= 228 sf Storage= 276 cf

Plug-Flow detention time= 186.6 min calculated for 0.007 af (55% of inflow)
Center-of-Mass det. time= 96.2 min (837.4 - 741.2)

Volume	Invert	Avail.Storage	Storage Description
#1	706.50'	342 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

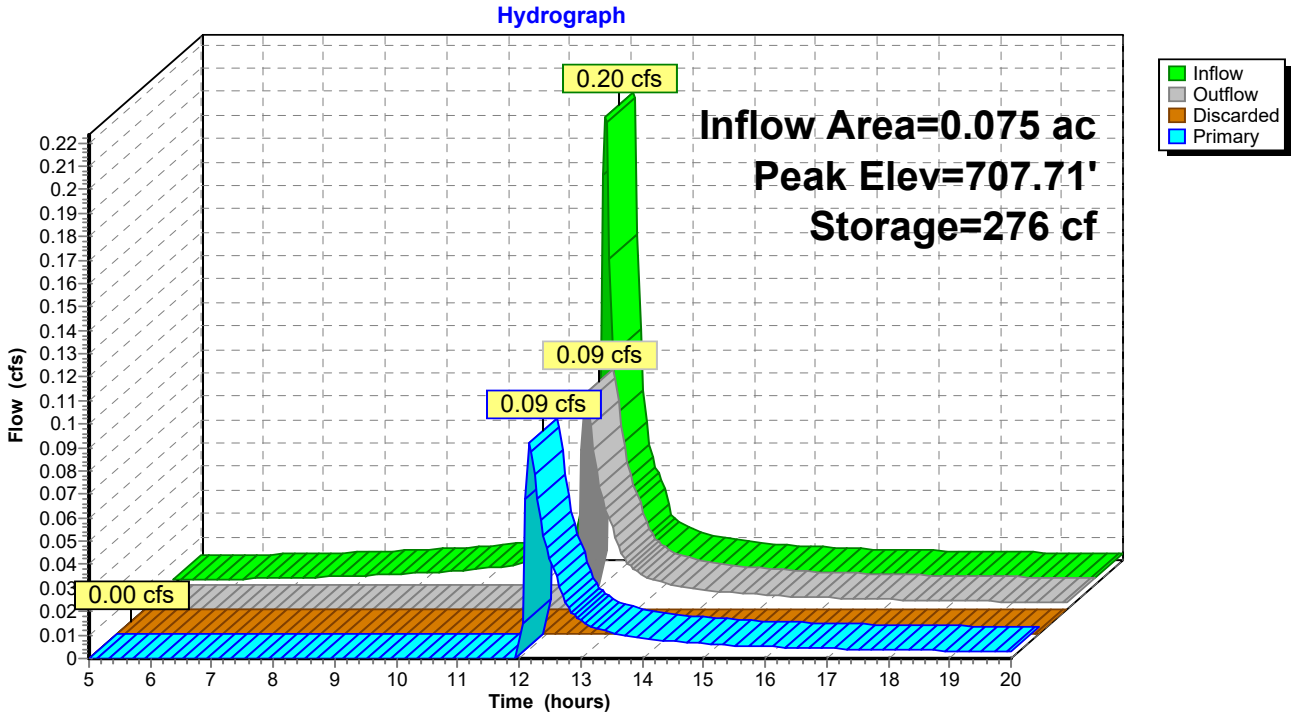
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
706.50	228	0	0
707.50	228	228	228
708.00	228	114	342

Device	Routing	Invert	Outlet Devices
#1	Discarded	706.50'	**6.000 in/hr Exfiltration over Surface area above 706.50'** Conductivity to Groundwater Elevation = 699.00' Excluded Surface area = 228 sf
#2	Primary	703.50'	**12.0" Round Culvert** L= 328.0' Ke= 0.500 Inlet / Outlet Invert= 703.50' / 702.25' S= 0.0038 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	707.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=706.50' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 12.17 hrs HW=707.71' (Free Discharge)
└**2=Culvert** (Passes 0.09 cfs of 4.15 cfs potential flow)
└**3=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.55 fps)

Pond 7P: Sormwater Planters

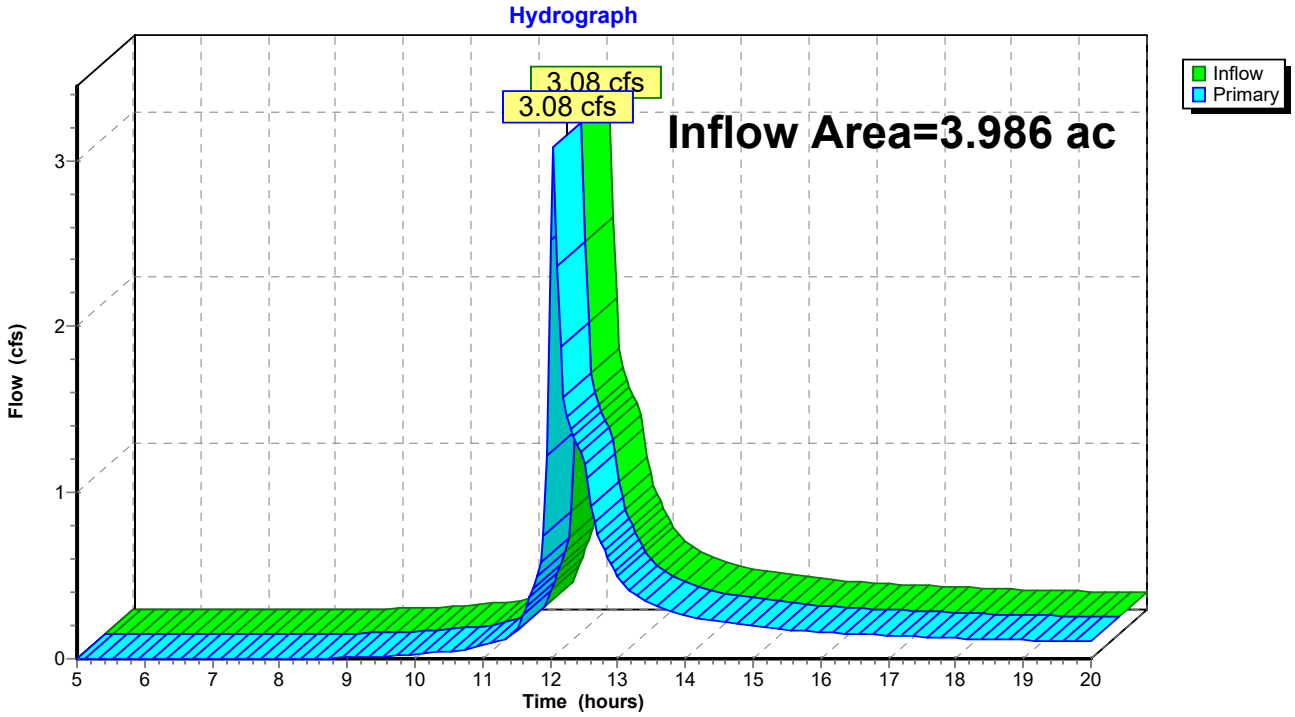


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.986 ac, 37.16% Impervious, Inflow Depth > 0.72" for 1-yr event
Inflow = 3.08 cfs @ 12.05 hrs, Volume= 0.241 af
Primary = 3.08 cfs @ 12.05 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

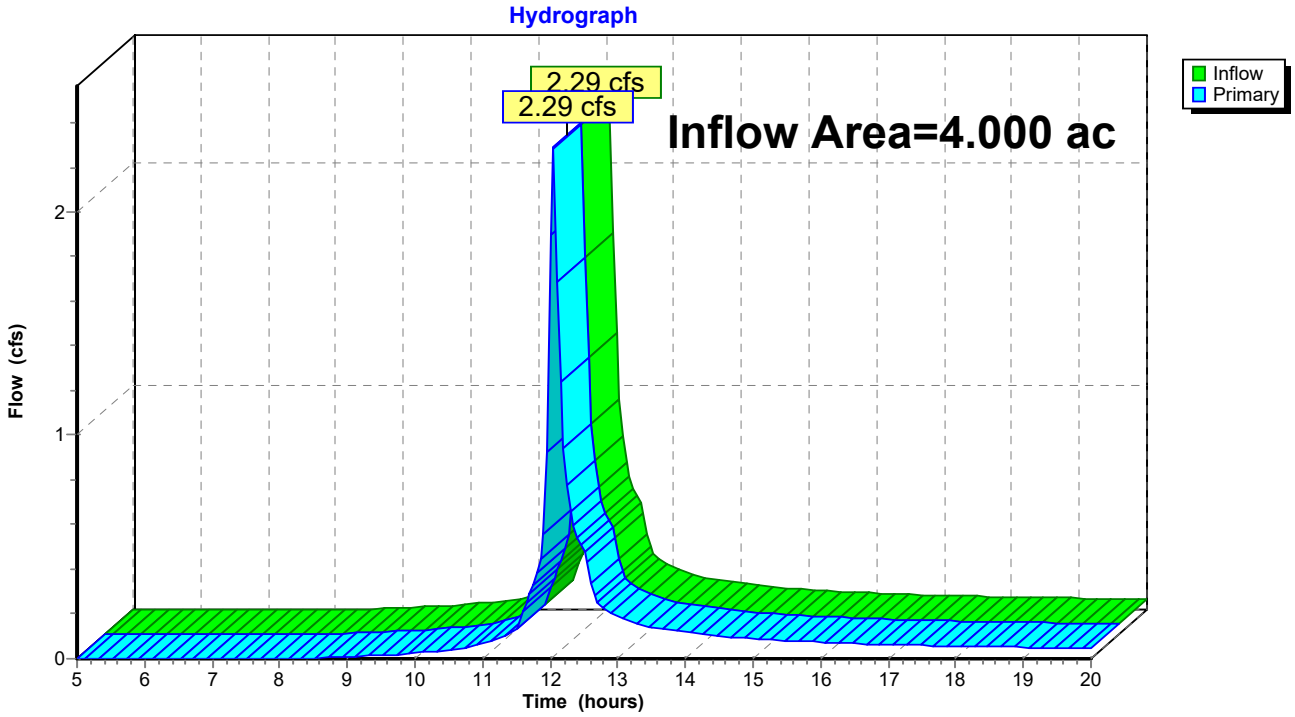


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 4.000 ac, 56.75% Impervious, Inflow Depth > 0.38" for 1-yr event
Inflow = 2.29 cfs @ 12.04 hrs, Volume= 0.128 af
Primary = 2.29 cfs @ 12.04 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 0S: Existing 1 Runoff Area=2.070 ac 64.11% Impervious Runoff Depth>2.35"
Tc=6.0 min CN=85 Runoff=7.02 cfs 0.405 af

Subcatchment 00S: Existing 2 Runoff Area=1.916 ac 8.04% Impervious Runoff Depth>1.49"
Flow Length=675' Tc=29.7 min CN=74 Runoff=2.13 cfs 0.237 af

Subcatchment 1S: Post-Dev 1 Runoff Area=106,073 sf 49.08% Impervious Runoff Depth>1.85"
Flow Length=116' Tc=20.1 min CN=79 Runoff=4.11 cfs 0.375 af

Subcatchment 6S: Post-Dev 2 Runoff Area=1.490 ac 67.11% Impervious Runoff Depth>2.43"
Tc=6.0 min CN=86 Runoff=5.22 cfs 0.302 af

Subcatchment 8S: Planters Runoff Area=3,262 sf 100.00% Impervious Runoff Depth>3.52"
Tc=6.0 min CN=98 Runoff=0.34 cfs 0.022 af

Pond 3P: Infiltration Basin 1 Peak Elev=703.61' Storage=4,825 cf Inflow=4.31 cfs 0.392 af
Discarded=1.32 cfs 0.392 af Primary=0.00 cfs 0.000 af Outflow=1.32 cfs 0.392 af

Pond 7P: Sormwater Planters Peak Elev=707.98' Storage=338 cf Inflow=0.34 cfs 0.022 af
Discarded=0.00 cfs 0.000 af Primary=0.24 cfs 0.016 af Outflow=0.24 cfs 0.016 af

Link 1L: Pre-Dev Design Point Inflow=7.67 cfs 0.642 af
Primary=7.67 cfs 0.642 af

Link 2L: Post-Dev Design Point Inflow=5.22 cfs 0.302 af
Primary=5.22 cfs 0.302 af

Total Runoff Area = 7.986 ac Runoff Volume = 1.341 af Average Runoff Depth = 2.02"
53.03% Pervious = 4.235 ac 46.97% Impervious = 3.751 ac

Summary for Subcatchment 0S: Existing 1

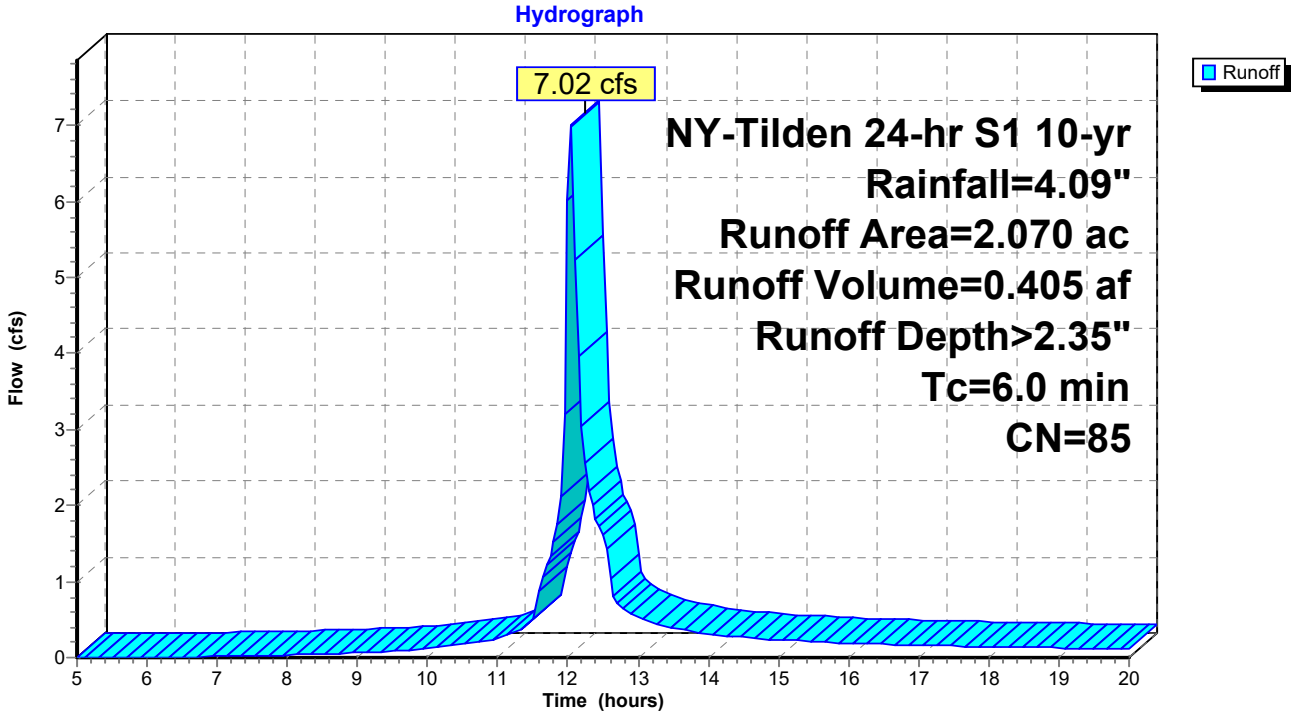
Runoff = 7.02 cfs @ 12.04 hrs, Volume= 0.405 af, Depth> 2.35"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	1.077	98	Existing Impervious (On-Site)
*	0.250	98	Existing Impervious (Off-Site)
	0.743	61	>75% Grass cover, Good, HSG B
	2.070	85	Weighted Average
	0.743		35.89% Pervious Area
	1.327		64.11% Impervious Area

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

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

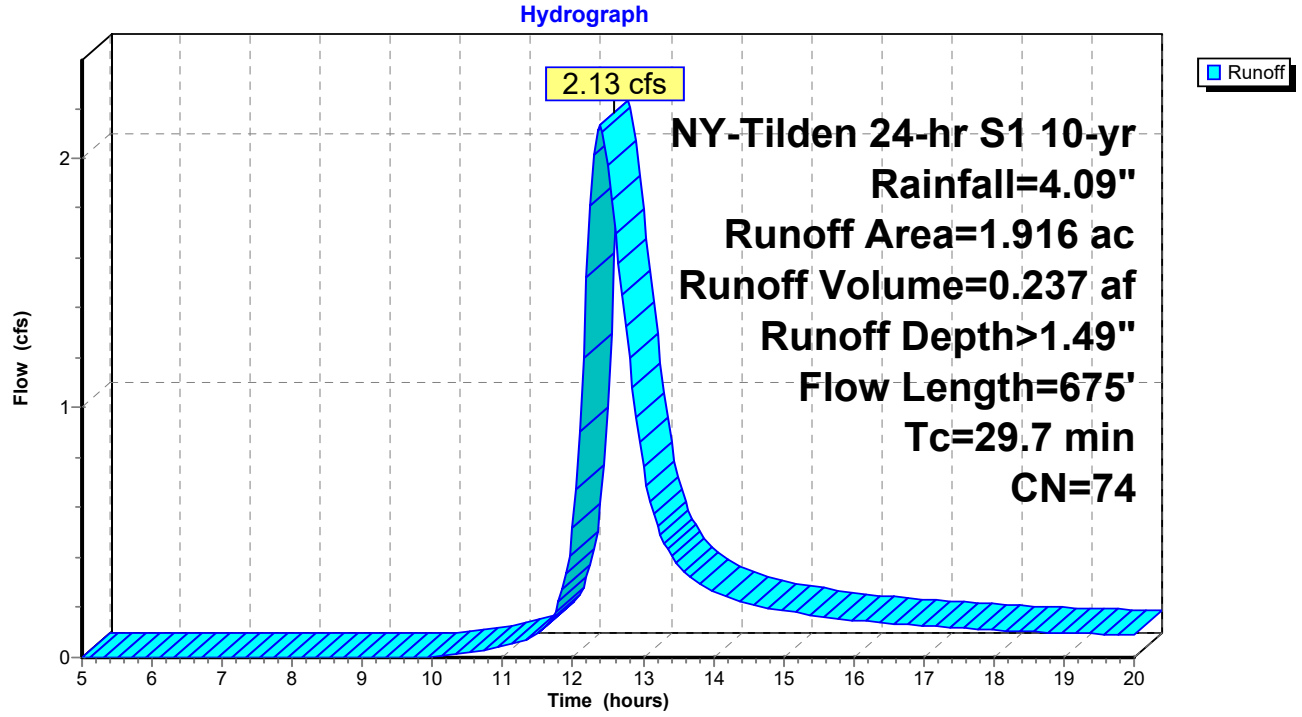
Runoff = 2.13 cfs @ 12.39 hrs, Volume= 0.237 af, Depth> 1.49"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.199	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.916	74	Weighted Average
	1.762		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

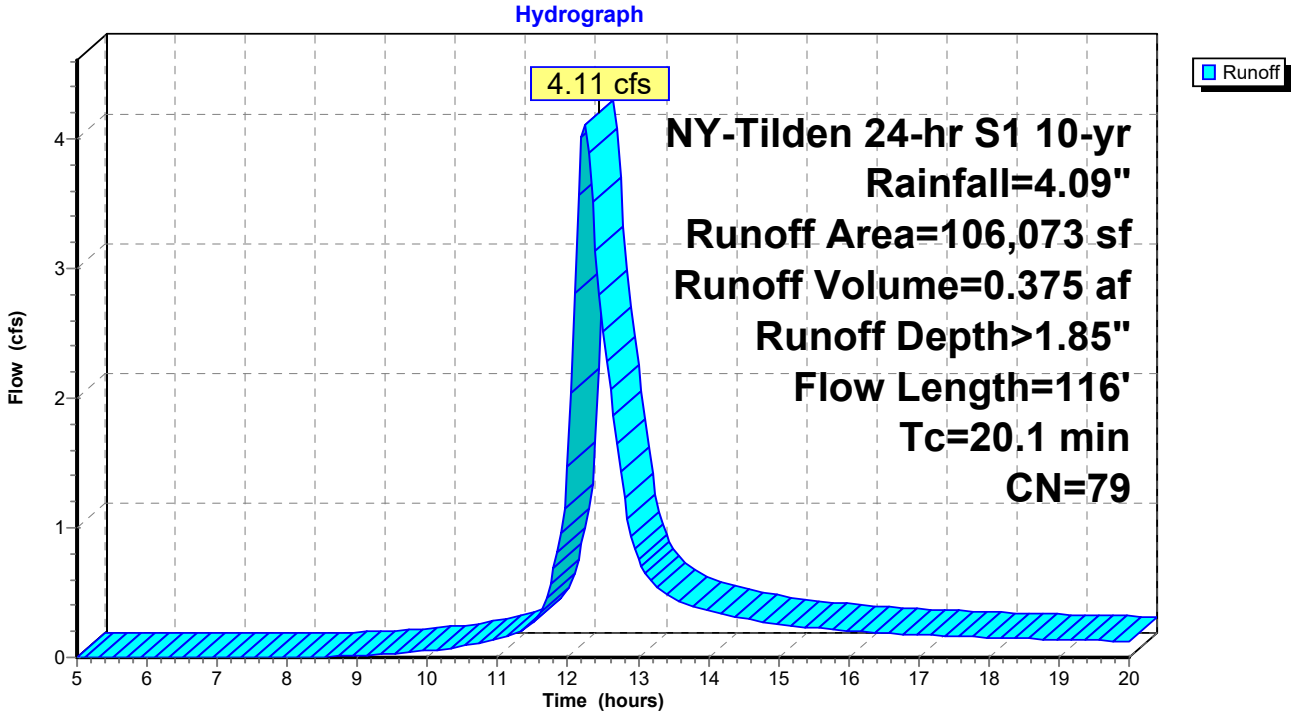
Runoff = 4.11 cfs @ 12.24 hrs, Volume= 0.375 af, Depth> 1.85"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	52,059	98	Impervious
	54,014	61	>75% Grass cover, Good, HSG B
	106,073	79	Weighted Average
	54,014		50.92% Pervious Area
	52,059		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0300	0.08		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.78"
0.1	16	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	116	Total			

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 6S: Post-Dev 2

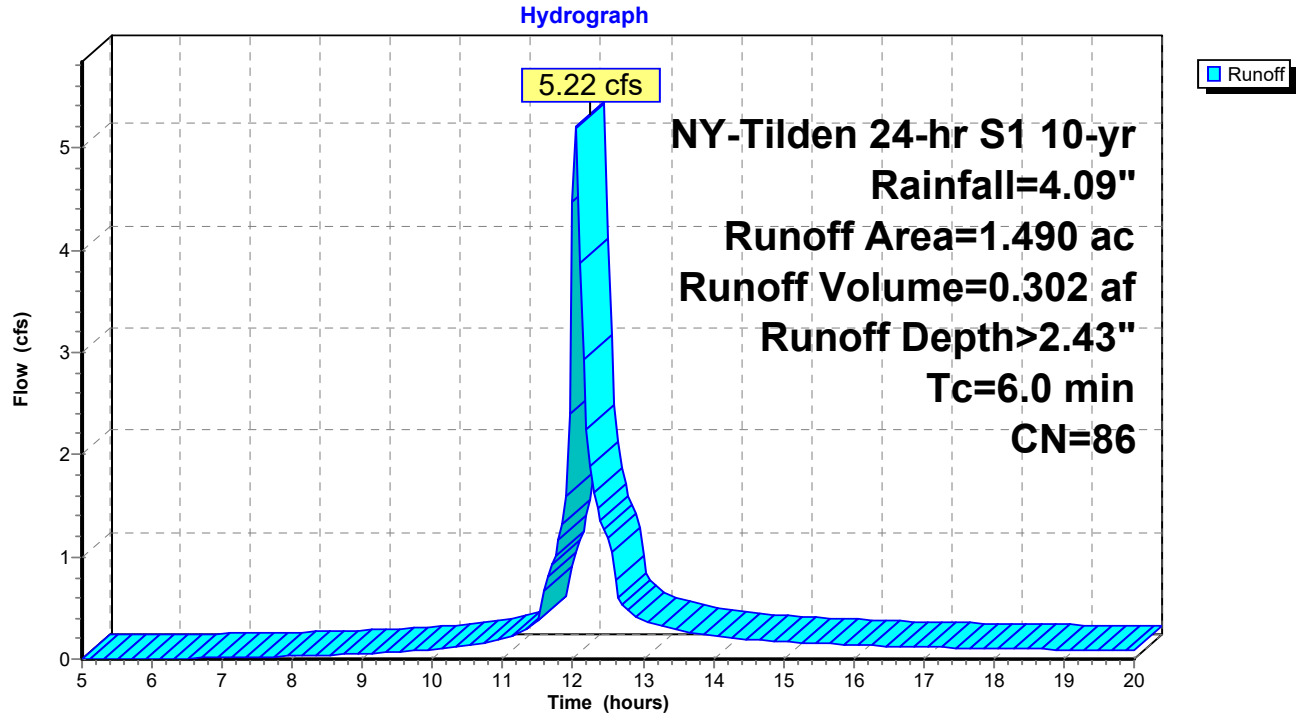
Runoff = 5.22 cfs @ 12.04 hrs, Volume= 0.302 af, Depth> 2.43"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

Area (ac)	CN	Description
1.000	98	Paved parking, HSG A
0.490	61	>75% Grass cover, Good, HSG B
1.490	86	Weighted Average
0.490		32.89% Pervious Area
1.000		67.11% Impervious Area

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

Subcatchment 6S: Post-Dev 2



Summary for Subcatchment 8S: Planters

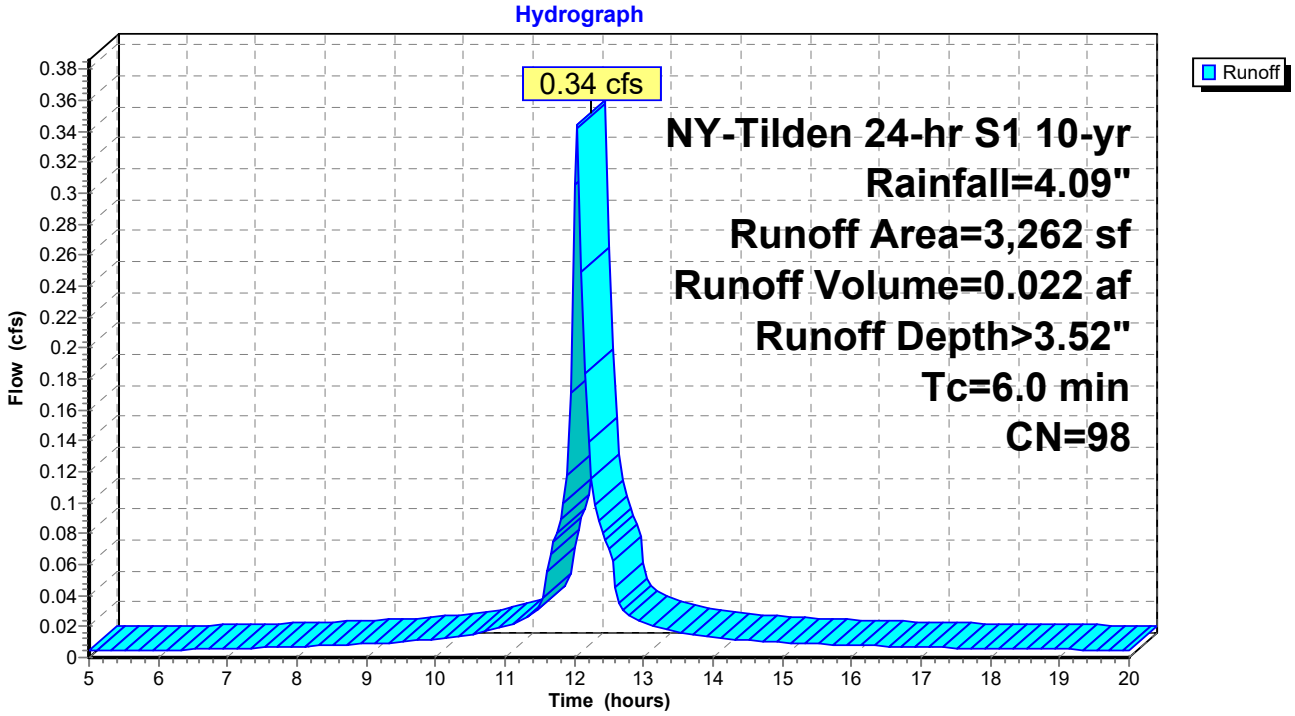
Runoff = 0.34 cfs @ 12.04 hrs, Volume= 0.022 af, Depth> 3.52"
Routed to Pond 7P : Sormwater Planters

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

Area (sf)	CN	Description
3,262	98	Roofs, HSG A
3,262		100.00% Impervious Area

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

Subcatchment 8S: Planters



Summary for Pond 3P: Infiltration Basin 1

[79] Warning: Submerged Pond 7P Primary device # 2 INLET by 0.11'

Inflow Area = 2.510 ac, 50.60% Impervious, Inflow Depth > 1.87" for 10-yr event
Inflow = 4.31 cfs @ 12.24 hrs, Volume= 0.392 af
Outflow = 1.32 cfs @ 12.79 hrs, Volume= 0.392 af, Atten= 69%, Lag= 33.2 min
Discarded = 1.32 cfs @ 12.79 hrs, Volume= 0.392 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.61' @ 12.79 hrs Surf.Area= 8,284 sf Storage= 4,825 cf

Plug-Flow detention time= 26.8 min calculated for 0.392 af (100% of inflow)
Center-of-Mass det. time= 26.4 min (832.6 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	17,432 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

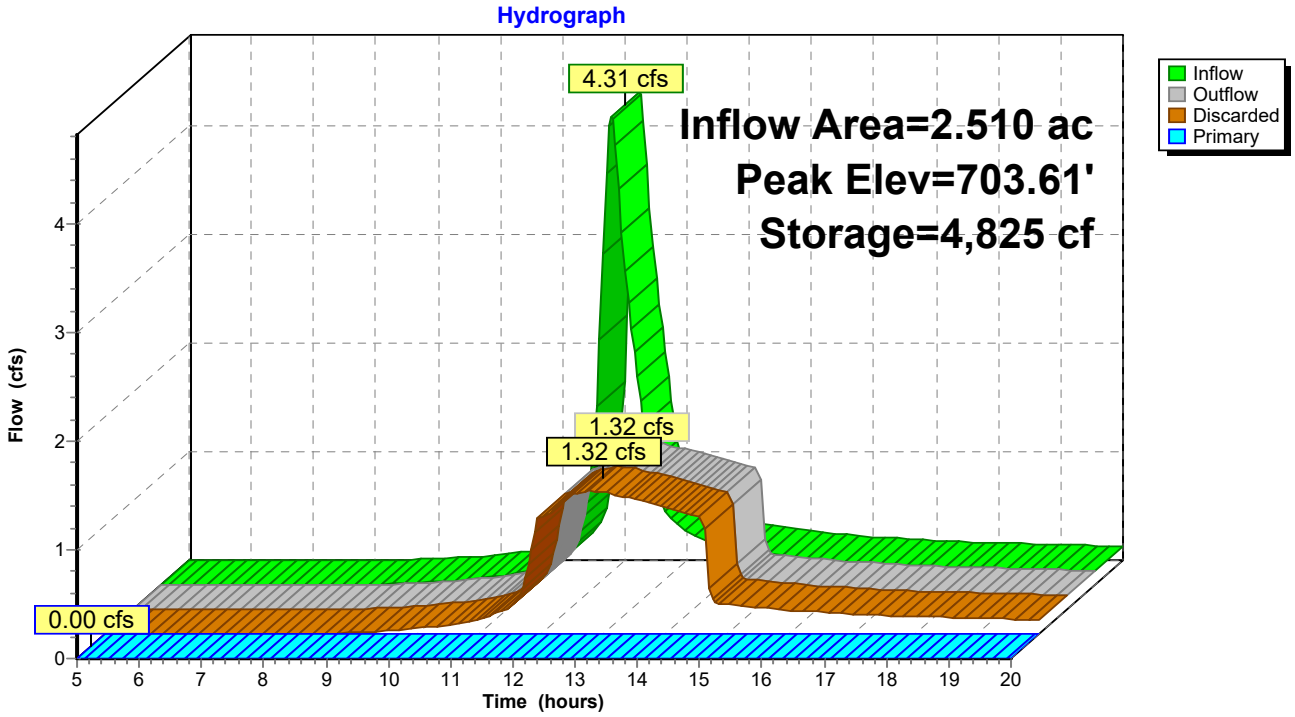
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	7,632	0	0
704.00	8,708	8,170	8,170
705.00	9,815	9,262	17,432

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**6.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 699.00'
#2	Primary	704.25'	**10.0' long + 3.0 '/' SideZ x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=1.32 cfs @ 12.79 hrs HW=703.61' (Free Discharge)
1=Exfiltration (Controls 1.32 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=703.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: Infiltration Basin 1



Summary for Pond 7P: Sormwater Planters

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.075 ac,100.00% Impervious, Inflow Depth > 3.52" for 10-yr event
Inflow = 0.34 cfs @ 12.04 hrs, Volume= 0.022 af
Outflow = 0.24 cfs @ 12.12 hrs, Volume= 0.016 af, Atten= 31%, Lag= 4.6 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.24 cfs @ 12.12 hrs, Volume= 0.016 af
Routed to Pond 3P : Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 707.98' @ 12.12 hrs Surf.Area= 228 sf Storage= 338 cf

Plug-Flow detention time= 127.0 min calculated for 0.016 af (75% of inflow)
Center-of-Mass det. time= 63.8 min (799.6 - 735.8)

Volume	Invert	Avail.Storage	Storage Description
#1	706.50'	342 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

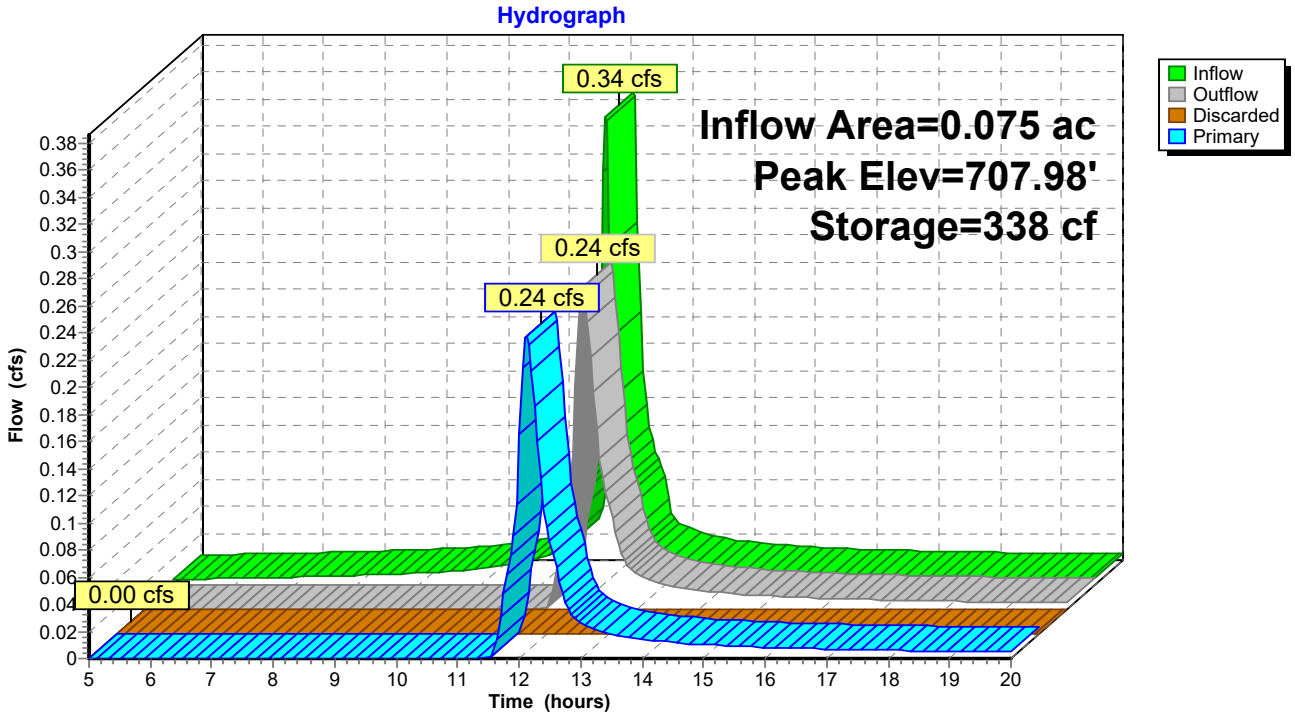
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
706.50	228	0	0
707.50	228	228	228
708.00	228	114	342

Device	Routing	Invert	Outlet Devices
#1	Discarded	706.50'	**6.000 in/hr Exfiltration over Surface area above 706.50'** Conductivity to Groundwater Elevation = 699.00' Excluded Surface area = 228 sf
#2	Primary	703.50'	**12.0" Round Culvert** L= 328.0' Ke= 0.500 Inlet / Outlet Invert= 703.50' / 702.25' S= 0.0038 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	707.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=706.50' (Free Discharge)
└**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.23 cfs @ 12.12 hrs HW=707.98' (Free Discharge)
└**2=Culvert** (Passes 0.23 cfs of 4.27 cfs potential flow)
└**3=Orifice/Grate** (Orifice Controls 0.23 cfs @ 2.68 fps)

Pond 7P: Sormwater Planters

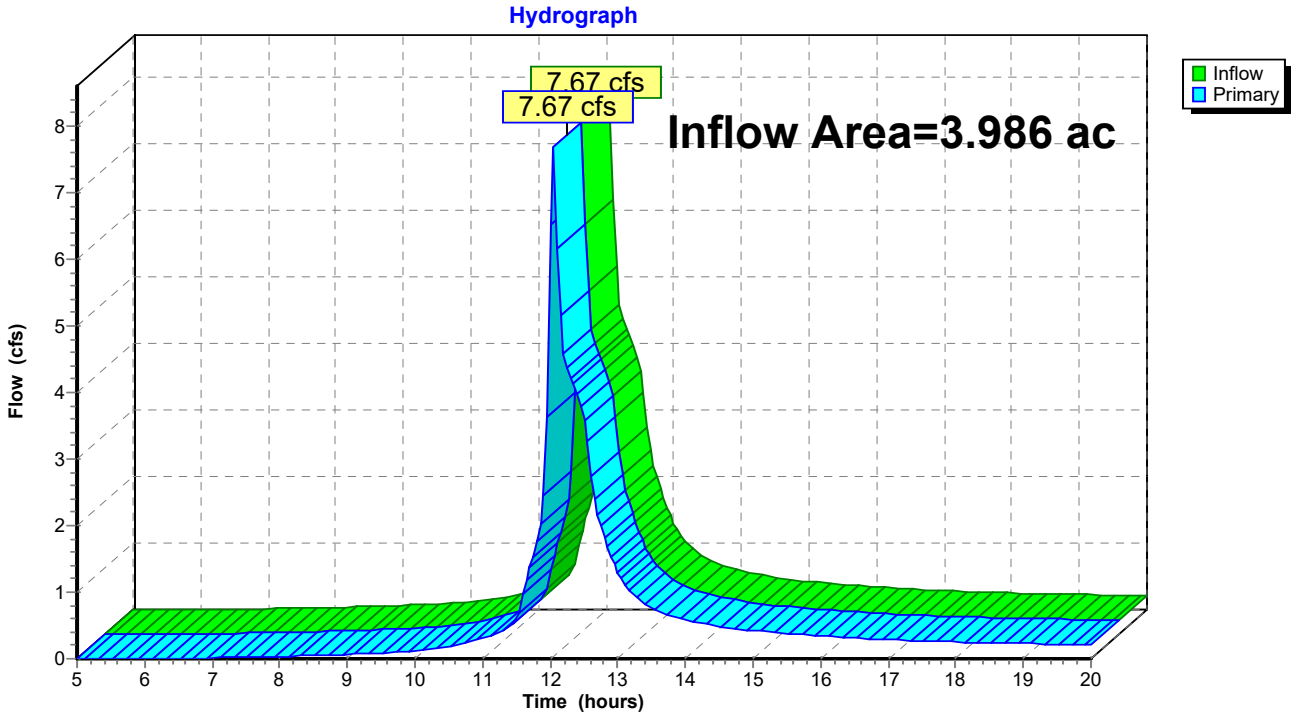


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.986 ac, 37.16% Impervious, Inflow Depth > 1.93" for 10-yr event
Inflow = 7.67 cfs @ 12.05 hrs, Volume= 0.642 af
Primary = 7.67 cfs @ 12.05 hrs, Volume= 0.642 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

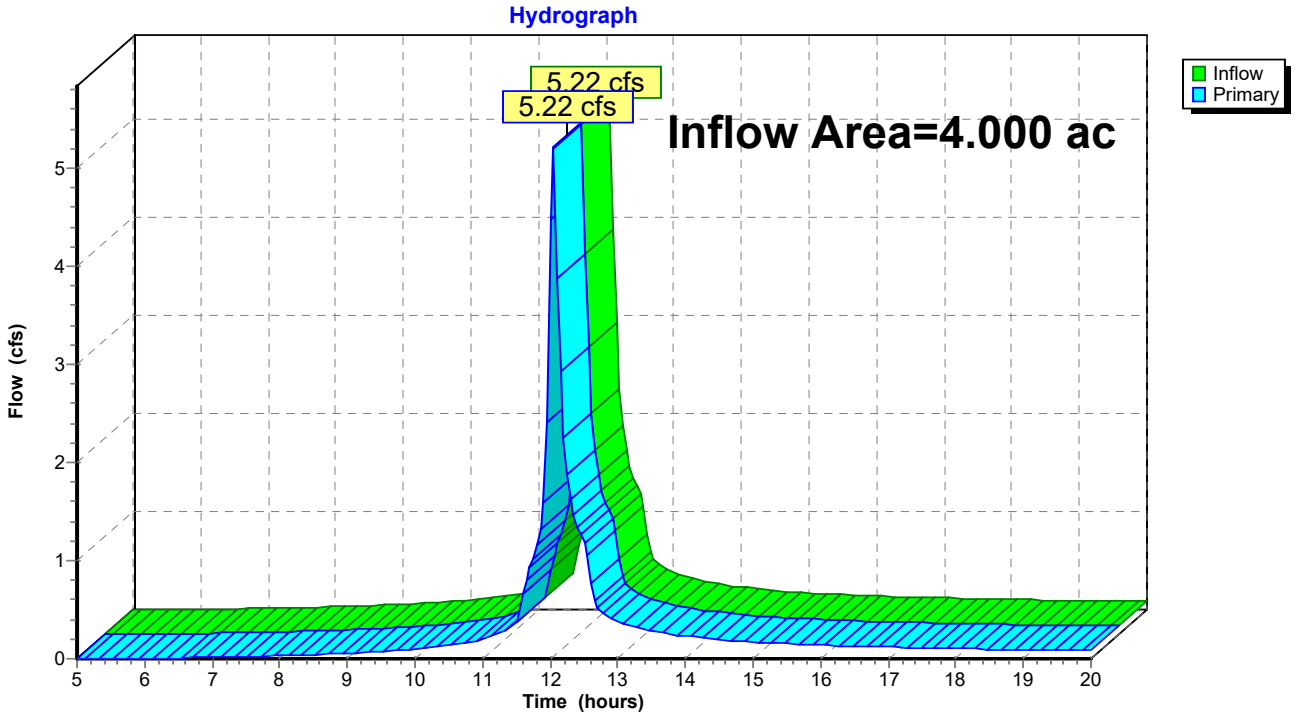


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 4.000 ac, 56.75% Impervious, Inflow Depth > 0.91" for 10-yr event
Inflow = 5.22 cfs @ 12.04 hrs, Volume= 0.302 af
Primary = 5.22 cfs @ 12.04 hrs, Volume= 0.302 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 0S: Existing 1 Runoff Area=2.070 ac 64.11% Impervious Runoff Depth>5.04"
Tc=6.0 min CN=85 Runoff=14.40 cfs 0.870 af

Subcatchment 00S: Existing 2 Runoff Area=1.916 ac 8.04% Impervious Runoff Depth>3.82"
Flow Length=675' Tc=29.7 min CN=74 Runoff=5.65 cfs 0.610 af

Subcatchment 1S: Post-Dev 1 Runoff Area=106,073 sf 49.08% Impervious Runoff Depth>4.37"
Flow Length=116' Tc=20.1 min CN=79 Runoff=9.71 cfs 0.886 af

Subcatchment 6S: Post-Dev 2 Runoff Area=1.490 ac 67.11% Impervious Runoff Depth>5.15"
Tc=6.0 min CN=86 Runoff=10.53 cfs 0.640 af

Subcatchment 8S: Planters Runoff Area=3,262 sf 100.00% Impervious Runoff Depth>6.28"
Tc=6.0 min CN=98 Runoff=0.60 cfs 0.039 af

Pond 3P: Infiltration Basin 1 Peak Elev=704.51' Storage=12,796 cf Inflow=9.94 cfs 0.920 af
Discarded=1.73 cfs 0.781 af Primary=3.52 cfs 0.138 af Outflow=5.25 cfs 0.919 af

Pond 7P: Sormwater Planters Peak Elev=710.69' Storage=342 cf Inflow=0.60 cfs 0.039 af
Discarded=0.00 cfs 0.000 af Primary=0.73 cfs 0.034 af Outflow=0.73 cfs 0.034 af

Link 1L: Pre-Dev Design Point Inflow=16.55 cfs 1.480 af
Primary=16.55 cfs 1.480 af

Link 2L: Post-Dev Design Point Inflow=10.53 cfs 0.777 af
Primary=10.53 cfs 0.777 af

Total Runoff Area = 7.986 ac Runoff Volume = 3.045 af Average Runoff Depth = 4.58"
53.03% Pervious = 4.235 ac 46.97% Impervious = 3.751 ac

Summary for Subcatchment 0S: Existing 1

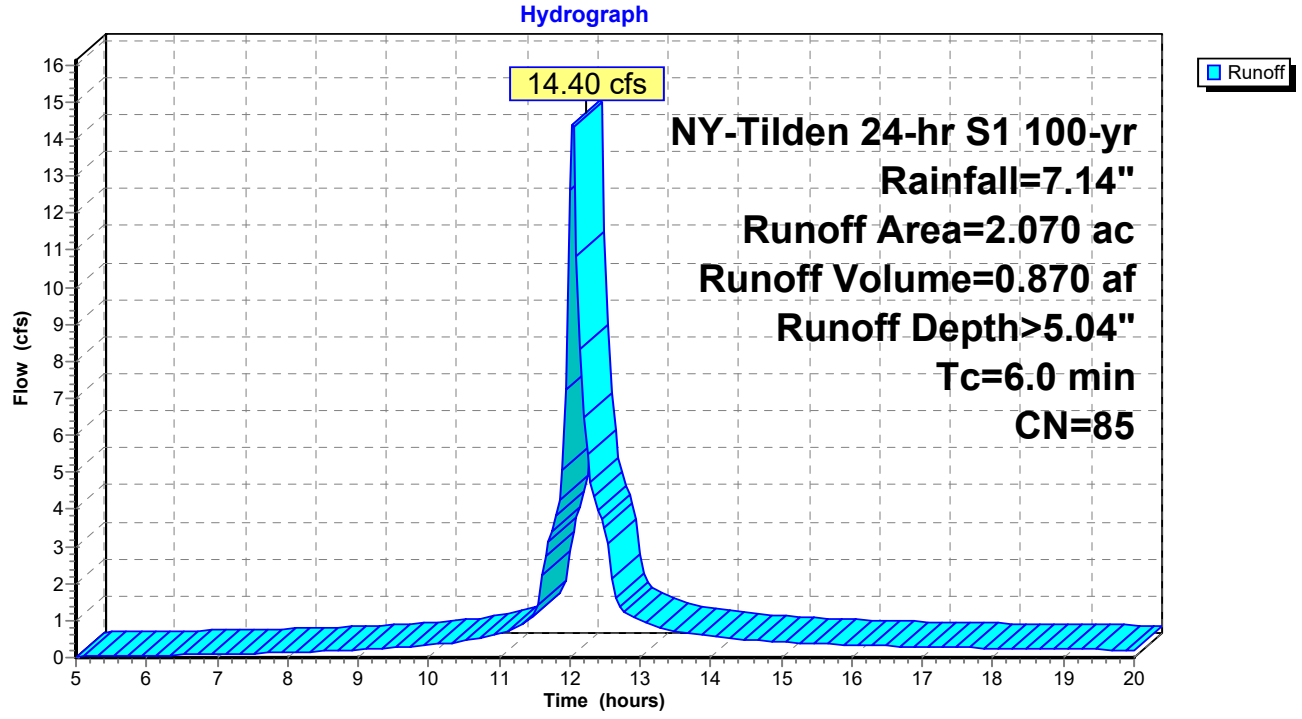
Runoff = 14.40 cfs @ 12.04 hrs, Volume= 0.870 af, Depth> 5.04"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	1.077	98	Existing Impervious (On-Site)
*	0.250	98	Existing Impervious (Off-Site)
	0.743	61	>75% Grass cover, Good, HSG B
	2.070	85	Weighted Average
	0.743		35.89% Pervious Area
	1.327		64.11% Impervious Area

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

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

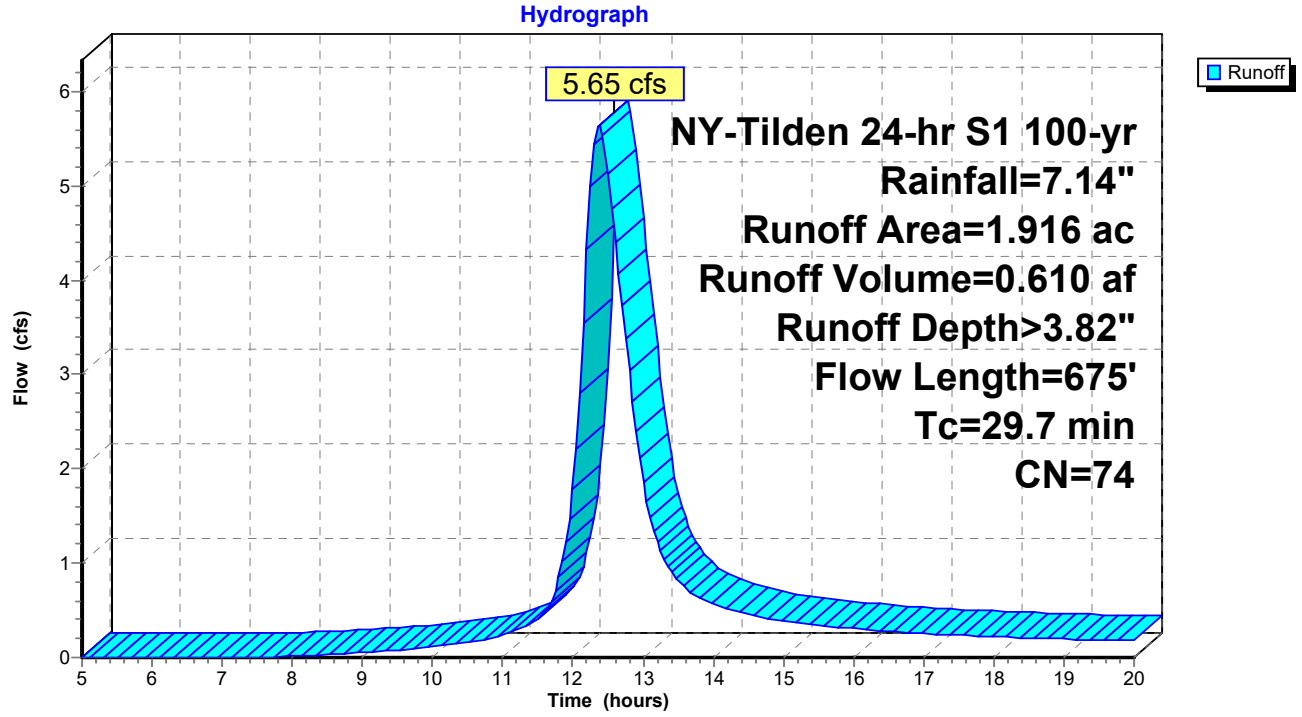
Runoff = 5.65 cfs @ 12.37 hrs, Volume= 0.610 af, Depth> 3.82"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.199	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.916	74	Weighted Average
	1.762		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

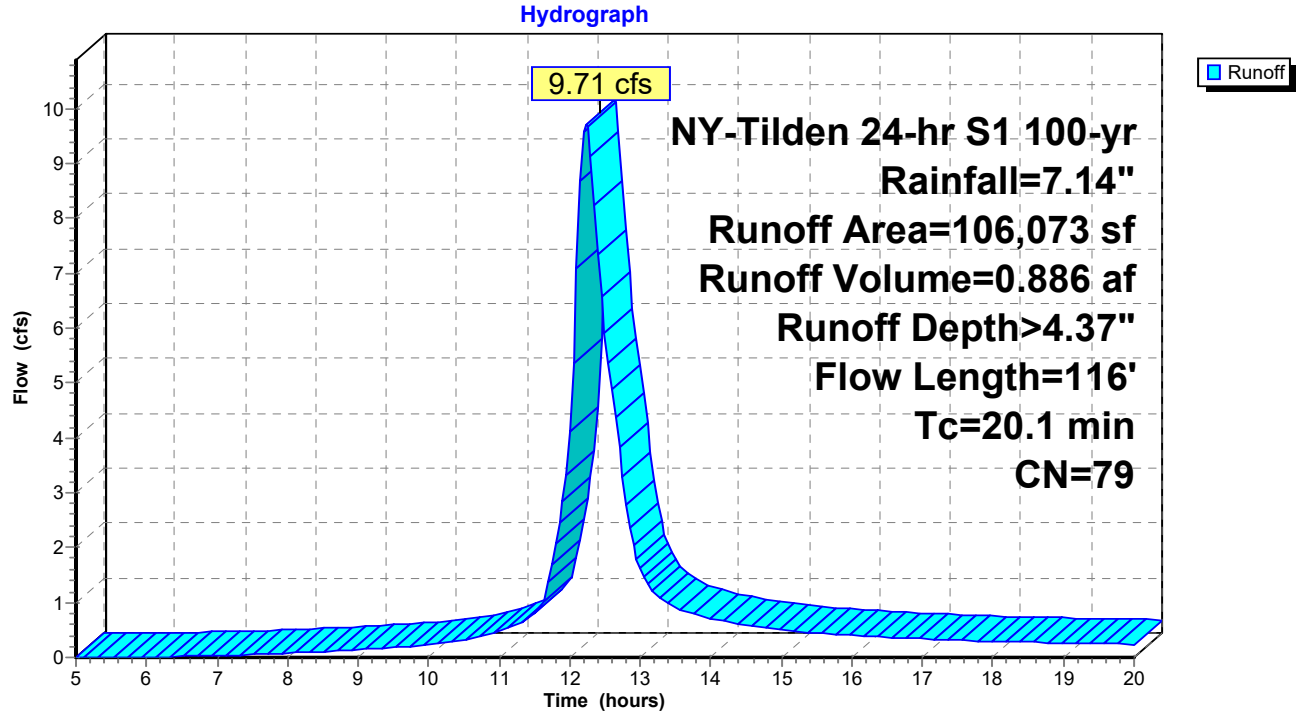
Runoff = 9.71 cfs @ 12.23 hrs, Volume= 0.886 af, Depth> 4.37"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (sf)	CN	Description
*	52,059	98	Impervious
	54,014	61	>75% Grass cover, Good, HSG B
	106,073	79	Weighted Average
	54,014		50.92% Pervious Area
	52,059		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	100	0.0300	0.08		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.78"
0.1	16	0.1500	2.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	116	Total			

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 6S: Post-Dev 2

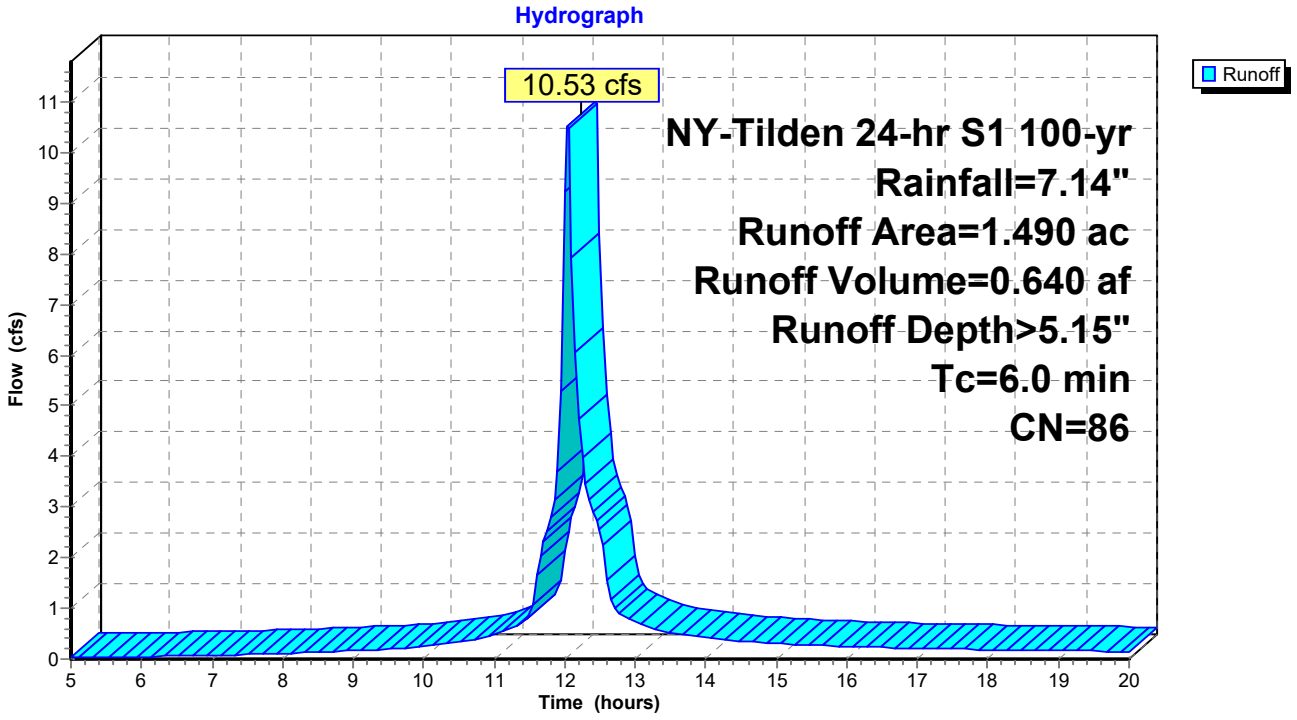
Runoff = 10.53 cfs @ 12.04 hrs, Volume= 0.640 af, Depth> 5.15"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

Area (ac)	CN	Description
1.000	98	Paved parking, HSG A
0.490	61	>75% Grass cover, Good, HSG B
1.490	86	Weighted Average
0.490		32.89% Pervious Area
1.000		67.11% Impervious Area

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

Subcatchment 6S: Post-Dev 2



Summary for Subcatchment 8S: Planters

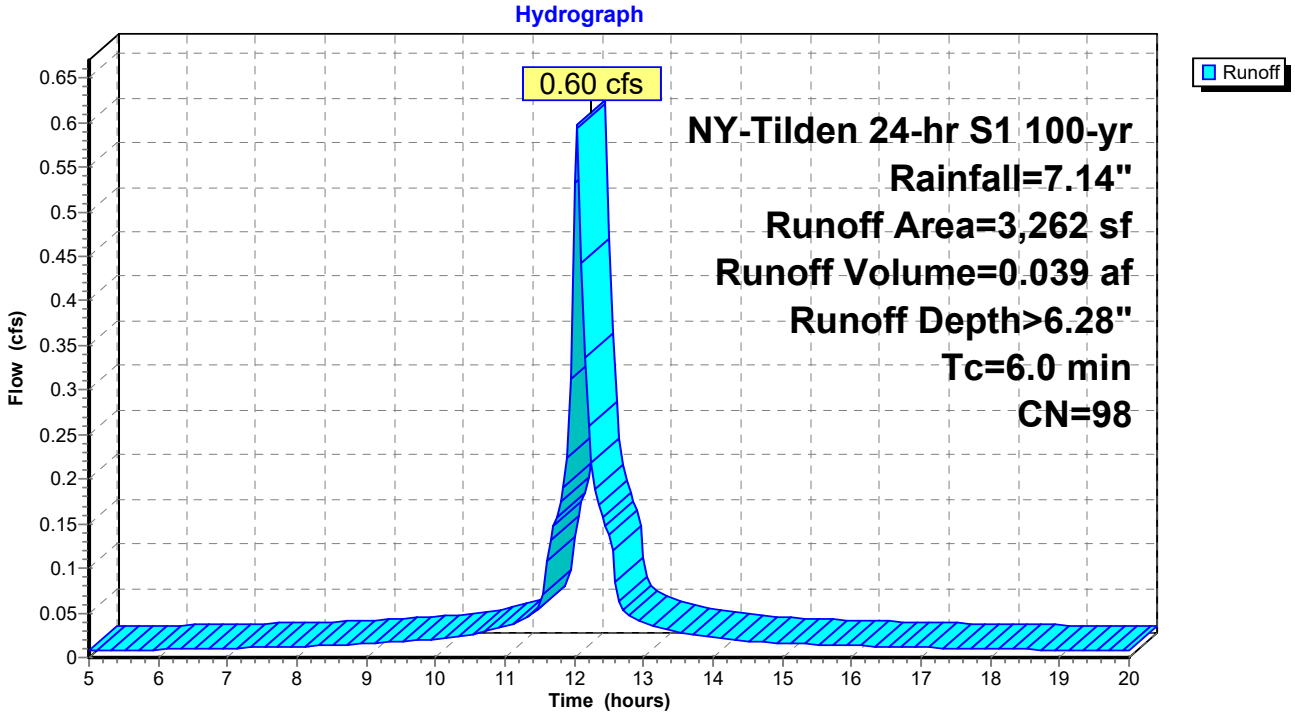
Runoff = 0.60 cfs @ 12.04 hrs, Volume= 0.039 af, Depth> 6.28"
Routed to Pond 7P : Sormwater Planters

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

Area (sf)	CN	Description
3,262	98	Roofs, HSG A
3,262		100.00% Impervious Area

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

Subcatchment 8S: Planters



Summary for Pond 3P: Infiltration Basin 1

[79] Warning: Submerged Pond 7P Primary device # 2 INLET by 1.01'

Inflow Area = 2.510 ac, 50.60% Impervious, Inflow Depth > 4.40" for 100-yr event
Inflow = 9.94 cfs @ 12.23 hrs, Volume= 0.920 af
Outflow = 5.25 cfs @ 12.58 hrs, Volume= 0.919 af, Atten= 47%, Lag= 20.8 min
Discarded = 1.73 cfs @ 12.58 hrs, Volume= 0.781 af
Primary = 3.52 cfs @ 12.58 hrs, Volume= 0.138 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 704.51' @ 12.58 hrs Surf.Area= 9,277 sf Storage= 12,796 cf

Plug-Flow detention time= 50.6 min calculated for 0.919 af (100% of inflow)
Center-of-Mass det. time= 50.3 min (835.2 - 784.9)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	17,432 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

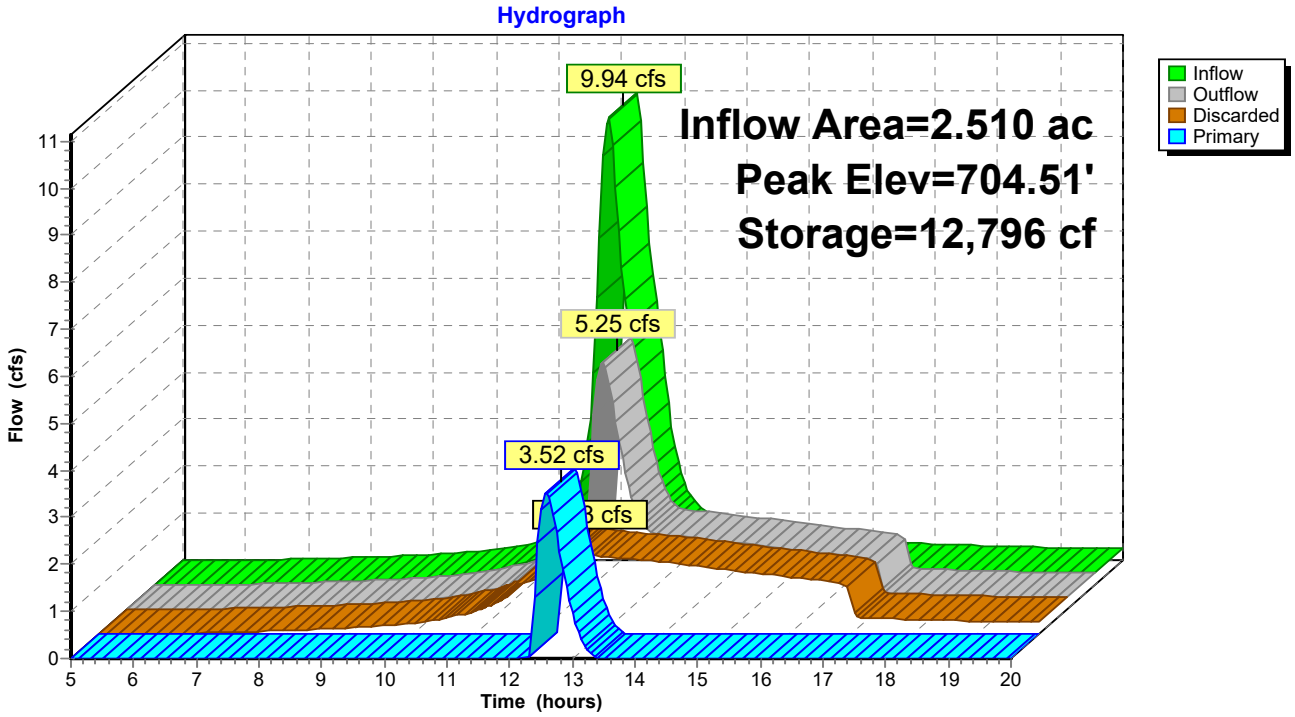
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	7,632	0	0
704.00	8,708	8,170	8,170
705.00	9,815	9,262	17,432

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**6.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 699.00'
#2	Primary	704.25'	**10.0' long + 3.0 '/' SideZ x 4.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Discarded OutFlow Max=1.73 cfs @ 12.58 hrs HW=704.51' (Free Discharge)
1=Exfiltration (Controls 1.73 cfs)

Primary OutFlow Max=3.49 cfs @ 12.58 hrs HW=704.51' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 3.49 cfs @ 1.23 fps)

Pond 3P: Infiltration Basin 1



Summary for Pond 7P: Sormwater Planters

[82] Warning: Early inflow requires earlier time span
[93] Warning: Storage range exceeded by 2.69'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 0.075 ac,100.00% Impervious, Inflow Depth > 6.28" for 100-yr event
Inflow = 0.60 cfs @ 12.04 hrs, Volume= 0.039 af
Outflow = 0.73 cfs @ 12.05 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.5 min
Discarded = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.73 cfs @ 12.05 hrs, Volume= 0.034 af
Routed to Pond 3P : Infiltration Basin 1

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 710.69' @ 12.05 hrs Surf.Area= 228 sf Storage= 342 cf

Plug-Flow detention time= 90.4 min calculated for 0.034 af (86% of inflow)
Center-of-Mass det. time= 45.8 min (778.6 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	706.50'	342 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

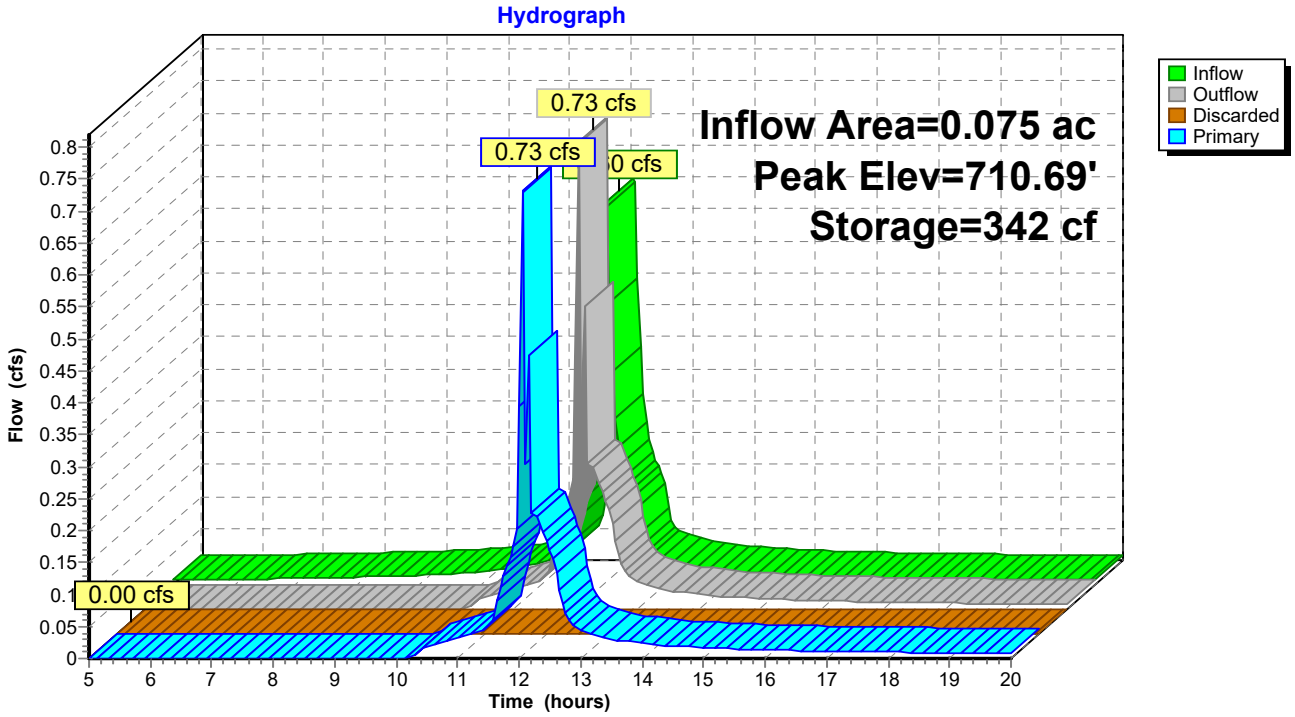
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
706.50	228	0	0
707.50	228	228	228
708.00	228	114	342

Device	Routing	Invert	Outlet Devices
#1	Discarded	706.50'	**6.000 in/hr Exfiltration over Surface area above 706.50'** Conductivity to Groundwater Elevation = 699.00' Excluded Surface area = 228 sf
#2	Primary	703.50'	**12.0" Round Culvert** L= 328.0' Ke= 0.500 Inlet / Outlet Invert= 703.50' / 702.25' S= 0.0038 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	707.50'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 5.00 hrs HW=706.50' (Free Discharge)
↑**1=Exfiltration** (Controls 0.00 cfs)

Primary OutFlow Max=0.72 cfs @ 12.05 hrs HW=710.56' (Free Discharge)
↑**2=Culvert** (Passes 0.72 cfs of 5.32 cfs potential flow)
↑**3=Orifice/Grate** (Orifice Controls 0.72 cfs @ 8.20 fps)

Pond 7P: Sormwater Planters

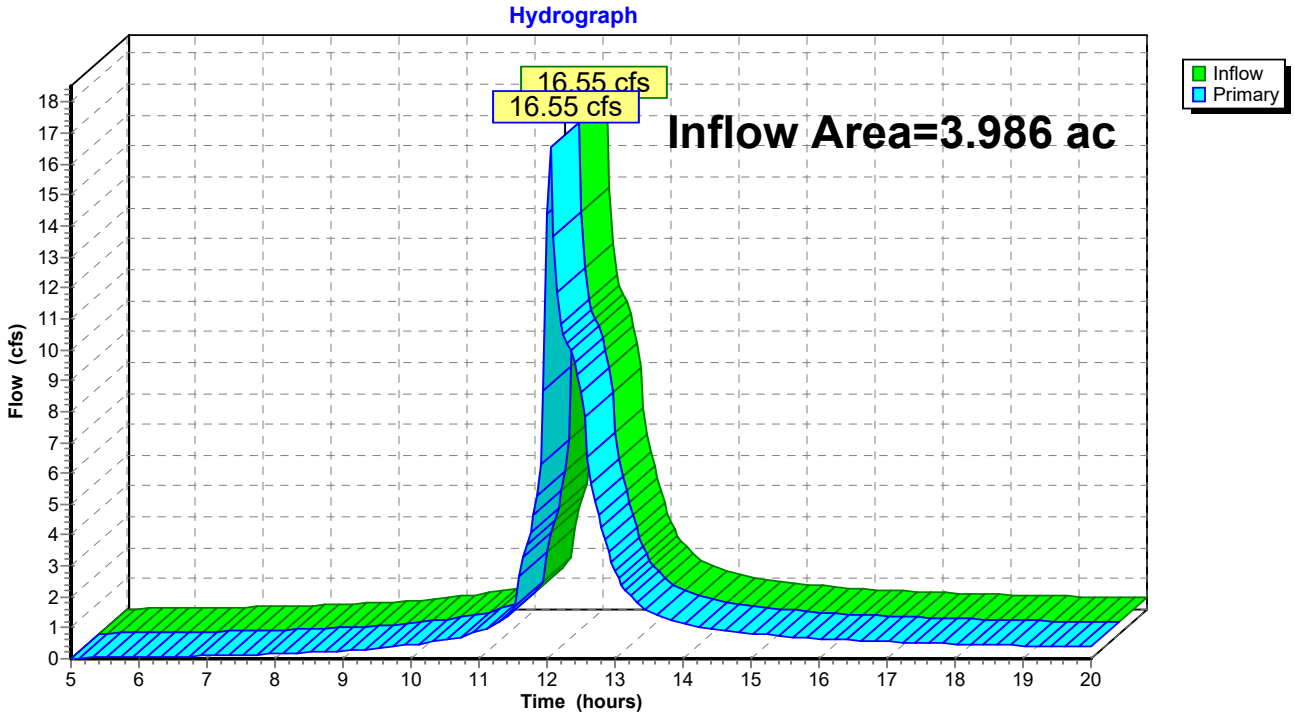


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.986 ac, 37.16% Impervious, Inflow Depth > 4.46" for 100-yr event
Inflow = 16.55 cfs @ 12.05 hrs, Volume= 1.480 af
Primary = 16.55 cfs @ 12.05 hrs, Volume= 1.480 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

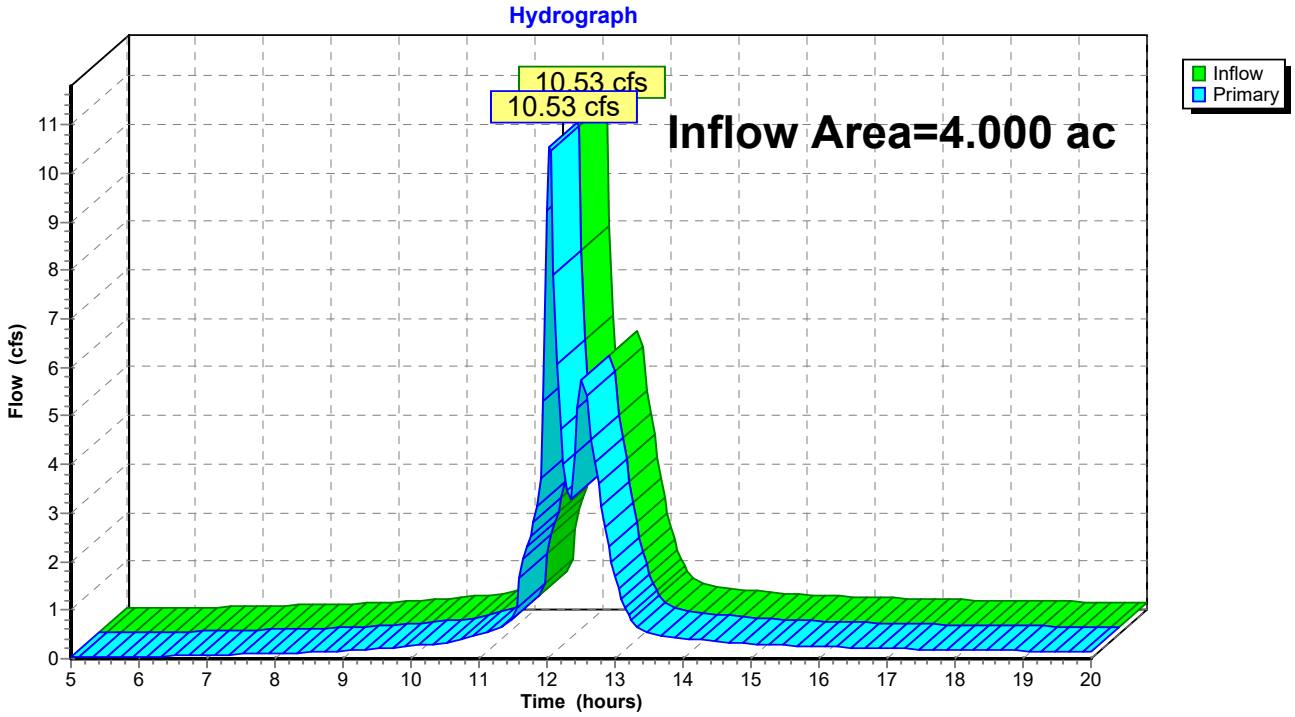


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 4.000 ac, 56.75% Impervious, Inflow Depth > 2.33" for 100-yr event
Inflow = 10.53 cfs @ 12.04 hrs, Volume= 0.777 af
Primary = 10.53 cfs @ 12.04 hrs, Volume= 0.777 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Appendix 4.9

Operation and Maintenance Manual

Swales:

- Clean debris from channel and contributing area monthly and after major storm events
- Mow as needed – monthly or less often
- Remove sediment annually

Sediment basins and Infiltration Basins:

- Clean debris from basin and contributing area monthly and after major storm events
- Mow as needed – monthly or less often
- Remove sediment annually or as sediment markers indicate

Stormwater Planters:

- Clean debris from basin and contributing area monthly and after major storm events
- Replace plants and stone as needed – yearly or less often
- Remove sediment annually or as sediment builds

Outfalls:

- Inspect yearly and after major storm events
- Repair erosion as needed
- Replace stone outfall material as needed

Structures and Piping:

- Monthly and after major storm events, inspect catch basins, inlet pipes, and outlet pipes for sediment and debris.
- Clean all debris and remove sediment when it accumulates to 6" of depth.
- Remove sediment manually or with a vacuum truck.

Disposal:

- Disposal of all material removed from all practices shall be done in accordance with local regulations.

Soil Restoration Maintenance:

- first year maintenance operations includes:

  1. initial inspections for the first six months (once after each storm greater than half- inch)

  2. reseeding to repair bare or eroding areas to assure grass stabilization

  3. water once every three days for first month, and then provide a half inch of water per week during first year. irrigation plan may be adjusted according to the rain event.

  4. fertilization may be needed in the fall after the first growing season to increase plant vigor

  5. keep site free of vehicular and foot traffic or other weight loads.

Supplemental references for stormwater management practice maintenance guidance are attached to this document.

Chapter 12: Maintenance Guidance

SMPs will not function to protect water resources without proper attention to operation and maintenance (O&M). In order to ensure long-term performance, it's critical that O&M tasks and responsibilities are identified, clearly outlined in an inspection and maintenance plan, and assigned to various stakeholders. This Chapter was developed to address the need for maintenance guidance, and is structured in the following sections:

- **Section 12.1** introduces the 10 SMP groups used in this Chapter, establishes the 3 level hierarchy for inspection and maintenance responsibilities and procedures, and provides an overview of planning and budgeting for maintenance.
- **Section 12.2** outlines the key components to be inspected, the Level 1 inspection and maintenance procedures, and common triggers for Level 2 and Level 3 inspections, for each of the 10 SMP groups.
- **Section 12.3** includes diagnostic measures for specific problems, as well as guidance for performing repair activities.

Section 12.1 Introduction

12.1.1 Stormwater Management Practice (SMP) Groups

For the purpose of this Chapter, the standard SMPs and Runoff Reduction Techniques have been clustered into ten SMP groups (**Table 12.1**), containing practices that share common inspection components and maintenance concerns. This grouping has been applied to the detailed inspection guidance provided in **Section 12.2,** as well as the fillable **Level 1 and Level 2 Inspection Checklists** that are available for download on the NYSDEC Construction Stormwater Toolbox website (www.dec.ny.gov). The checklists identify common problems with key components of the SMPs, recommend follow-up actions to correct them, and outline triggers for Level 2 and Level 3 inspections. These checklists have been developed as a guideline to assist responsible parties with efficient and thorough O&M.

Table 12.1 Practices Discussed in this Chapter, by Group

SMP Group	Practices Included	
1. Sheet Flow and Disconnection	• Sheet Flow to Filter Strip • Rooftop Disconnection	• Sheet Flow to Riparian Buffers
2. Tree Planting	• Tree Planting	
3. Swales	• Vegetated Swale	• Wet Swale
4. Bioretention	• Tree Pit • Tree Trench • Rain Garden • Stormwater Planter	• Infiltration Bioretention • Filtration Bioretention • Bioslope • Dry Swale
5. Rainwater Harvesting	• Rain Barrel	• Cistern
6. Porous Pavements	• Porous Asphalt • Porous Paver	• Porous Concrete • Stabilized Grid/Cell
7. Green Roofs	• Extensive Green Roof	• Intensive Green Roof
8. Ponds and Wetlands	• Stormwater Ponds	• Stormwater Wetlands
9. Infiltration	• Infiltration Trench • Infiltration Basin	• Dry Well • Underground Infiltration
10. Sand Filters	• Surface Sand Filters • Perimeter Sand Filters	• Underground Sand Filters

12.1.2 Maintenance Hierarchy

This Chapter is structured around a hierarchy concept, where the severity of the problem directly correlates to the level of experience needed to perform the inspection and identify corrective maintenance measures.

Many SMP maintenance problems start out as minor and can be easily identified by individuals with limited experience (**Level 1**). As long as these issues are detected early, through regular inspections, they can typically be addressed in an expedient and cost-effective manner.

However, in some cases, issues may arise that require additional technical knowledge or capabilities to diagnose the problem and identify the appropriate remedy (**Level 2**). At this point, assistance from an individual with training in SMP inspection, operation and maintenance, may be necessary.

Similarly, some problems escalate to the point where a Qualified Professional or specialized expert is needed to return the SMP to proper functioning condition (**Level 3**).

The step-wise approach of the Maintenance Hierarchy (**Figure 12.1**) was developed to ensure long-term performance of SMPS, through cost-effective implementation of inspection and maintenance.

Figure 12.1 The SMP Maintenance Hierarchy

Level 1: Individuals with Limited or No Training

Level 1 includes routine inspection and maintenance activities conducted by:

- Property owners, property managers, or HOA representatives, for privately owned SMPs.
- Municipal maintenance staff/interns or volunteers, for municipally owned SMPS.

These individuals typically have very limited training in stormwater operation, inspection, and maintenance, but can use available guidance to quickly identify and rectify common or minor issues with SMP performance. For most SMPs, the majority of inspection and maintenance activities can be conducted at this skill level, thus Level 1 forms the base of the Maintenance Hierarchy pyramid. Many well-functioning SMPs can be adequately maintained for long periods of time using Level 1 capabilities.

Some issues may arise that require a higher level of resources and expertise. Such issues are referred to in this Chapter and the Inspection Checklists as “kick-outs to Level 2.”

Level 2: Trained Individuals

Level 2 includes inspection and maintenance activities conducted by municipal employees or landscape contractors who have completed training on SMP operation, inspection, and maintenance. Level 2 inspections can occur in response to two circumstances:

1. As part of an ongoing, municipal inspection program whereby SMPs are visited on a rotating basis at a frequency of once every five years, or a frequency established by the local program; or
2. In response to a “kick-out” from a Level 1 Inspector.

Circumstance #2 requires coordination and communication between the Level 1 and Level 2 Inspectors, with documentation and background provided by the Level 1 Inspector. This is essential to make the hierarchy approach successful.

As with kick-outs from Level 1 to Level 2, the same can exist from Level 2 to Level 3. If the Level 2 Inspector encounters a problem where a Qualified Professional is needed to re-design certain components of the SMP, and/or a Qualified Contractor is needed to undertake a more serious repair, then Level 3 is activated.

Level 3: Qualified Professionals

Level 3 includes inspection and maintenance conducted by Qualified professionals, including professional engineers and landscape architects, that can revisit design issues associated with chronic or serious problems. For repair and maintenance of the SMPs at this level, individuals with specific skills and certifications, such as a certified plumber with experience working with rainwater harvesting systems or a horticulturalist with knowledge on proper plantings, may need to be called in by the Qualified Professional.

Table 12.2 describes how SMP inspection and maintenance activities differ at each level of the Maintenance Hierarchy.

Table 12.2 SMP Inspection and Maintenance Hierarchy Levels

	Level 1: Individuals with Limited or No Training	**Level 2: Trained Individuals**	**Level 3: Qualified Professionals**
Qualifications/ Training of Inspectors	No special training, but person is provided educational materials	On-the-job training and/or workshops	Professional License, such as a PE or RLA
Frequency of Inspection	At least annually	Routine as determined by the local program OR as kick-out from Level 1 inspection	Only as needed from Level 2 inspection
Inspection Guidance	Inspection guidance is included in **Section 12.2.** Refer to the NYSDEC Construction Stormwater Toolbox website (www.dec.ny.gov) for **Level 1 Inspection Checklists**.	Refer to the NYSDEC Construction Stormwater Toolbox website (www.dec.ny.gov) for **Level 2 Inspection Checklists**.	Guidance on diagnosing common problems is included in **Section 12.3.** Refer to the NYSDEC Construction Stormwater Toolbox website (www.dec.ny.gov) for a **Level 3 Inspection Form**.
Typical Maintenance Activities	Routine mowing. Trash removal. Plant care and upkeep. Mulching as needed. Removal of small amounts of sediment from pretreatment areas of the practice.	Removal of larger amounts of sediment. Structural damage repair. Minor regrading and scarification of soil surface to restore permeability.	Redesign an improperly functioning practice, to include: regrading the contributing drainage area, replacing filter media or plantings, modifying conveyance structures, etc.
Triggers for Inspection or Maintenance by this Level	Regular inspection (no trigger)	Common triggers for Level 2 inspection are included in **Section 12.2.**	Common triggers for Level 3 inspection are included in **Section 12.2.**

12.1.3 Level 1, 2 and 3 Inspections

12.1.3.1 General Guidance for Level 1 Inspections

Read through this guidance before performing an inspection and use the specific guidance in **Section 12.2** for the SMP Group that includes the practice being inspected. Refer to **Chapter 11** for guidance on plant maintenance, as well as control of invasive species.

When to Conduct a Level 1 Inspection

Level 1 Inspections are the most common and are intended to identify minor maintenance issues early and keep up with routine maintenance tasks. They should be conducted *at least annually* for all practices and supplemented with additional visits after large storms, winter salting and sanding, or other seasonal changes. In addition, it is recommended that inspections take place more frequently during the first few years after installation of an SMP. Many issues can be identified and corrected during this early period, so that they do not lead to larger problems in subsequent years. Once the SMP is stable and seems to be functioning properly, the inspections can become less frequent.

12.2.2 Tree Plantings

Includes: Tree Plantings (RR-3)

Components

Key components to inspect for tree planting include the following:

- **TP-1 Surface Area:** The tree planting surface area is the mulched area where water accumulates and is absorbed during a storm.
- **TP-2 Vegetation:** The vegetation of a tree planting is comprised of the tree itself. The health of the tree is one of the most critical maintenance items for tree plantings.

Note: This is a simple, "non-structural" practice and, as such, maintenance tasks are similar to any landscape maintenance. Tree planting can involve individual trees or multiple trees, such as reforesting a riparian buffer.

Level 1 Inspections

Frequency: *Annually in early spring. Recommend every 3 months, within 1 week of ice storms and within 1 week of high wind events (>20 mph) until the trees reach maturity.*

Figure 12.5 Key Areas for Level 1 Inspection of Tree Plantings

The Level 1 inspection goes hand in hand with active maintenance and includes inspection of the surface area (TP-1) and Vegetation (TP-2) of the tree planting. Watering, mulching, and pruning are common maintenance activities. During the first three years, mulching, watering, and protection of young trees may be necessary, see **Chapter 11** for additional maintenance guidance. Watering should occur during the growing season. Mulching and pruning occurs once a year in the spring and early spring, respectively.

At a minimum, inspections shall include an assessment of tree health and determination of survival rates. Any dead trees shall be replaced, and remaining trees shall be inspected for evidence of insect, disease, or other physical damage.

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of TP practices are:

- Appearance of fungus or pest damage to vegetation

Triggers for Level 3 Inspection

The most likely triggers for Level 3 Inspection of TP practices are:

- Uncertainty about how to address the infestation or disease

12.2.3 Swales

Includes: Vegetated Swales (RR-5) and Wet Swales (O-2)

Components

Key components to inspect for swales include the following:

- **SW-1 Drainage Area:** The drainage area sends runoff to and is uphill from the swale. When it rains, water runs off and flows to and along the swale.
- **SW-2 Inlets:** The inlets to a swale are where water flows in. Depending on the design, water can flow in through: a ditch, pipe, or curb opening at top of swale or as sheet flow along the entire length of swale.
- **SW-3 Surface Area:** The swale surface area is the vegetated bottom area and side slopes where water flows during a storm. Depending on the design, the swale may also contain check dams, which are small dams of earth, stone, wood, or other materials that slow down and temporarily pond water as it flows down the swale.
- **SW-4 Vegetation:** The health of vegetation within the swale is perhaps the most critical maintenance item for the property owner or responsible party.
- **SW-5 Outlets:** These are where water leaves the swale when it fills up or where water reaches the downstream end of the swale. There may be a small stone apron or rock dam here or even an outlet grate.

Level 1 Inspections

Frequency: *Annually in early Spring. Recommend an additional inspection during the growing season or in the early fall to assess the health of vegetation.*

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of SW practices are:

- Water ponding on the surface for more than 72 hours following a storm event
- Vegetation being replaced by weeds and invasive species
- Erosion of check dams, inlets, swale surface area or side slopes
- Significant sediment accumulation

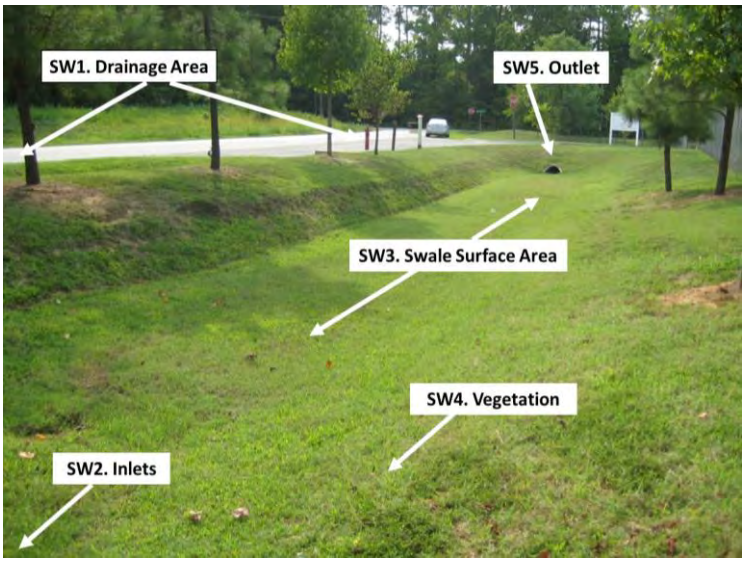


Figure 12.6 Key Areas for Level 1 Inspection of Swales

Triggers for Level 3 Inspection

The most likely triggers for Level 3 Inspection of SW practices are:

- Standing water caused by over compacted or clogged soil media
- Severe erosion around or under check dams
- Large area of vegetation overrun with weeds and/or invasive species
- Problem requires practice redesign or modification to solve
- Severe sediment accumulation that appears to be getting worse over time

12.2.4 Bioretention

Includes: Tree Pits (RR-3), Tree Trench (RR-3), Rain Gardens (RR-6), Stormwater Planters (RR-7), Infiltration Bioretention (F-4), Filtration Bioretention (F-5), Bioslope (F-6), Dry Swales (O-1)

Note: For the purposes of this Chapter, the term "Bioretention" will be used to generally describe all of these practices.

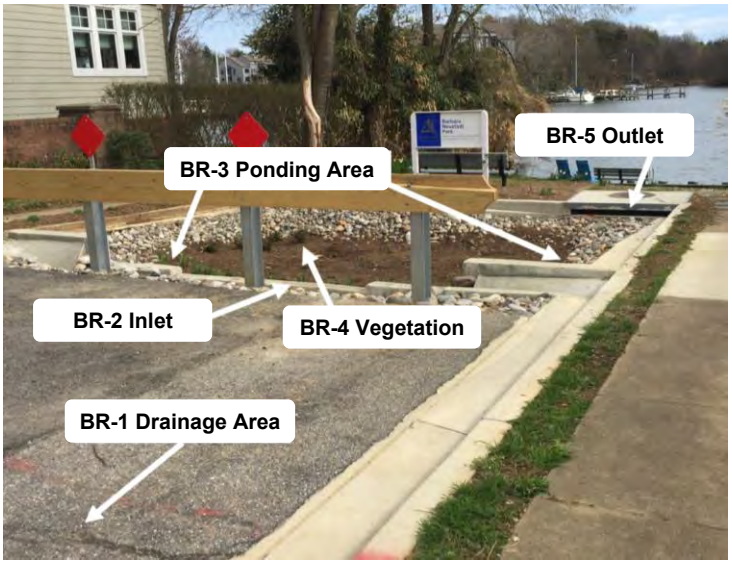


Figure 12.7 Key Areas for Level 1 Inspection of Bioretention

Components

Key components to inspect for Bioretention include the following:

- **BR-1 Drainage Area:** The drainage area sends runoff to and is uphill from the Bioretention. When it rains, water runs off and flows to the Bioretention and ponds within the filter temporarily (usually for no more than 48 hours). Sometimes, the runoff will contain dirt, grit, grass clippings, oil, or other substances that SHOULD NOT be directed to the practice.
- **BR-2 Inlets:** The inlets to a Bioretention are where water flows into the filter. Depending on the design, water can flow in through: curb cuts, pipes, ditches, or sheet flow.
- **BR-3 Ponding Area:** The ponding area fills up with water during a rainstorm. If you picture the Bioretention as a bathtub, there is the *bottom* (usually flat surface), *side slopes* (areas that slope down to the bottom from the surrounding ground), and *berms or structures that control the depth to which water ponds.*
- **BR-4 Vegetation:** The health of vegetation within the Bioretention is perhaps the most critical maintenance item for the Owner/Operator. Many Bioretention become overgrown, and "desirable" vegetation becomes choked out by weeds and invasive plants. Weeding and watering are essential the first year and can be minimized with the use of a weed-free mulch layer. It is important to know what the practice is supposed to look like, and what plants seem to be thriving or doing poorly.
- **BR-5 Outlets:** Outlets are where water leaves the Bioretention when stormwater exceeds the storage capacity.

Level 1 Inspections

Inspection Frequency: *4 times per year during the growing season. During the first 6 months of operation, it is recommended that bioretention practices be inspected at least twice, and after each storm event greater than 0.5".*

Maintenance Frequency: *At least 4 times during the growing season, bioretention should be pruned, weeded, and mowed around; have sediment, trash, and debris removed; and have dead and damaged plants replaced, as needed. In the spring and fall, the practices should have rills, gullies, dead or diseased trees and shrubs repaired or replaced; have bare areas reseeded if applicable; and have mulch replenished to required depth. In the winter months, planting material should be trimmed, and the practice should be inspected for snow accumulation. Once per year, soils should be tested for appropriate pH levels. Finally, every 2 to 3 years, damaged or compromised structures within the practice should be replaced, perennials should be trimmed and divided, and infiltration rates should be checked to ensure proper drainage.*

Maintenance Frequency (Design F-6): In addition to the above, Bioslopes should be inspected after snow events to ensure that the added weight from accumulated snow did not compact the filter media. On a monthly basis, stabilize eroded areas, ensure that flow is not bypassing the facility, and mow the slope using a retractable arm mower to a height of 6 to 15 inches. Recommend performing a flow test on the cleanouts annually to check for clogging, and to remove accumulated sediment that exceeds three inches in depth.

Curb Inlet #1: flow enters through curb channel.

Curb Inlet #2: flow enters through drop curb.

Pea Gravel Diaphragm: sheet flow enters and is evenly distributed along the practice length.

Grass filter strip: sheet flow enters and is evenly distributed along the practice length.

Figure 12.8 Bioretention Filter Inlets

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of BR practices are:

- Water ponding on surface of practice for more than 72 hours after a storm event
- Bioslope does not drain properly
- Sparse or out of control vegetation
- Practice deviates from original design
- Erosion of inlets, filter bed or outlets
- Significant sediment accumulation

Triggers for Level 3 Inspection

The most likely triggers for Level 3 Inspection of BR practices are:

- Standing water caused by clogged or over compacted media
- Vegetation management needed
- Bioretention does not conform to original design plan in surface area or storage.
- Severe erosion especially when caused by subsurface defect
- Widespread significant and persistent sediment accumulation

12.2.9 Infiltration

Includes: Infiltration Trench (I-1), Infiltration Basin (I-2), Dry Well (I-3), Underground Infiltration System (I-4)

Components

Key components to inspect for Infiltration include the following:

- **IN-1 Drainage Area:** The drainage area conveys runoff to and is uphill from the infiltration cell. When it rains, water runs off and flows to the infiltration cell and soaks into its underlying layers.
- **IN-2 Inlets:** The inlets are where water flows into the practice. Depending on the design, inlets can include curb cuts, openings in a parking lot or roadway, downspouts, pipes, or ditches. Water can also enter the practice directly as sheet flow.

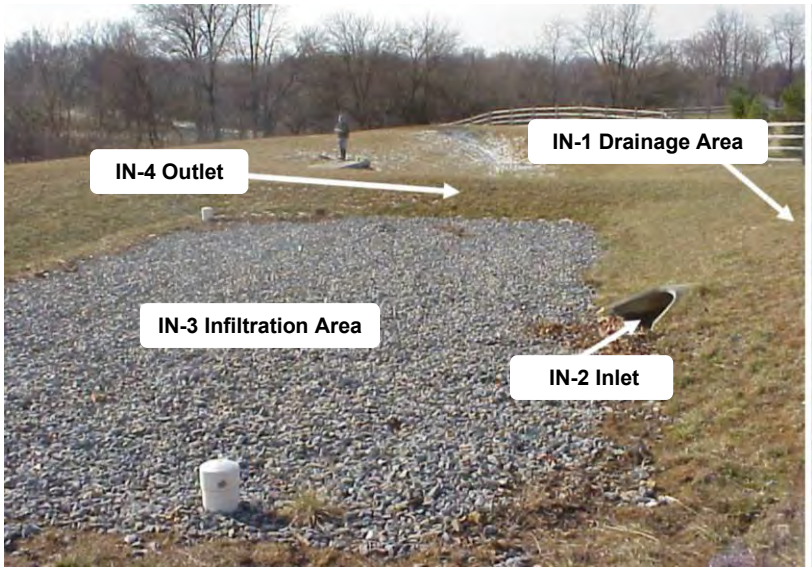


Figure 12.17 Key Areas for Level 1 Inspection of Infiltration Practices

- **IN-3 Infiltration Area:** The area that collects water and allows it to seep into the underlying soil.
- **IN-4 Outlets:** Outlets are where water exits the surface of the infiltration area during larger storms when the underground infiltration reservoir fills up and the excess water needs somewhere to go. Note that not all infiltration practices will have an identifiable outlet if the design is for all the water to infiltrate into the ground. Outlets may be a berm, stone weir, or pipe.

Level 1 Inspections

Frequency: *At least 2 times a year, especially in early spring, to ensure that the practice has survived the winter. Debris cleanout and dewatering inspection should occur monthly. Inspection of sediment traps, forebays, inlets and outlets should occur at least 1 time per year along with sediment cleanout and aggregate repairs.*

Triggers for Level 2 Inspection

The most likely triggers for Level 2 Inspection of IN practices are:

- Water stands on the surface for more than 72 hours after a storm event
- Erosion of inlets, infiltration area or outlets
- Excessive sediment buildup

Triggers for Level 3 Inspection

The most likely triggers for Level 3 Inspection of IN practices are:

- Standing water caused by clogged media
- Severe erosion of infiltration area, inlets, or around outlets
- Reoccurring significant sediment accumulation that is getting worse with time
- Solving the problem would require practice redesign or modification

Section 12.3 Diagnostics and Maintenance Measures

This Section summarizes the most common problems found in SMPs, as well as typical maintenance or repair solutions. The guidance provided in this section has some similarities to **Section 12.2**, but differs in the following ways:

1. The primary audience of this Section is the Level 3 Inspector, who is tasked with diagnosing and repairing SMPs that are not working properly. However, this information may also be useful for a Level 2 Inspector seeking to diagnose a particular problem.
2. The maintenance measures described in this Section are more detailed and focus on repairs to specific problems rather than on routine maintenance, such as weeding or minor sediment removal.
3. Because the problems described in this section can be applied to several different practices, this section is organized by the problem type rather than the practice type.

Common problems addressed during Level 3 inspection/maintenance are summarized in **Table 12.9**. This list is not exhaustive but does address SMP issues that require some advanced knowledge and skill to inspect and diagnose solutions. Each problem category is discussed in a separate subsection.

Table 12.9 Common Level 3 Inspection/Maintenance Issues

Subsection/Category	Description
12.3.1 Contributing Drainage Area – Pollutant Sources	Sediment or pollution sources in the Drainage Area
12.3.2 Physical Obstructions	Physical obstructions to maintenance access, overflow, or emergency spillway
12.3.3 Erosion	Erosion on side slopes, practice bottom, at inlet or outlets. Rills and gullies forming where there should be sheet flow
12.3.4 Departure from Design Dimensions	Practice dimensions have been altered, either due to filling with sediment, redesign or filling in, or improper implementation.
12.3.5 Improper Flow Paths	Flow is short-circuiting the practice, or drainage flow paths have been otherwise modified.
12.3.6 Sediment Buildup	Sediment has accumulated in a pool, practice bottom, pretreatment area, or vault.
12.3.7 Clogging	The filter media or other components are clogged, and there may be standing water for longer than intended.
12.3.8 Vegetation	Excessive, inadequate, and/or unhealthy vegetation to support a practice
12.3.9 Embankment and Overflow Condition	Issues with an embankment or overflow weir or channel
12.3.10 Structural Damage	SMP infrastructure, such as concrete or metal elements, have been damaged.
12.3.11 Pool Stability	Permanent pool of water is at the improper elevation.
12.3.12 Pool Quality	Permanent pool of water suffers from poor quality due to algal growth or other issues.

12.3.1 Contributing Drainage Area – Pollutant Sources

Applies Most Commonly To: Sheet Flow/Disconnection, Swales, Bioretention, Porous Pavement, Ponds/Wetlands, Infiltration, and Sand Filters.

Problem #1: Bare soil washing into SMP from drainage area

General Approach for All Practices:

- Identify the specific source(s) of sediment in the drainage area by tracking sediment flow during a rainfall or looking for a track of sediment staining during dry weather.
- For an active sedimentation event, attempt to filter incoming runoff if conditions allow (e.g., enough space upstream of the practice for temporary ponding). Consider installing a silt fence, silt socks (at curb inlets), staked straw bales, or other filtering material at the inlets of the SMP. This will keep at least some of the sediment from getting into the practice.
- Runoff from active construction should not enter the SMP; divert to a temporary and approved sediment control practice.
- For areas of bare soil *not* due to active construction **(bottom photo)**, prep the soil and re-seed/plant with grass species or other thick ground cover appropriate for the region. May also need starter fertilizer, topsoil, and/or compost.
- For steep slopes with bare soil, consider also installing erosion-control matting to hold soil, seed, and straw in place until the vegetation becomes well established.
- For fill and topsoil stockpiles in the drainage area, provide temporary or permanent cover as soon as possible. Alternatively, surround the base of the stockpile with silt fence, or equivalent, to prevent the transport of sediment-laden runoff.

Helpful Skills:

- Erosion and sediment control knowledge and skills
- Landscaping knowledge to understand appropriate ground cover species for re-vegetating bare areas

Equipment Typically Used for Fixing Sediment Sources:

- Silt fencing and other sediment barriers
- Erosion-control matting and/or straw
- Rakes and shovels
- Light excavation or grading equipment for larger jobs
- Equipment to deliver topsoil or compost as needed
- Plants and/or seed mix, plus a way to move and store plant stock without damaging it or drying it out
- Starter fertilizer, topsoil, and/or compost

Problem #2: Other pollution sources in the drainage area

General Approach for All Practices:

- Pollutants may include: road salt, oils, fuels, food grease, wash water, paints and solvents, trash, and many others.
- Identify the source(s) of pollution.
- For pollutants spilled on the ground, remove by hand or use absorbents to soak up wet material. Absorbents and other waste materials shall be disposed of properly.
- For materials stored outside, move them to a covered area or build/add cover over the materials. Provide secondary containment, if possible.
- Make sure all waste containers have lids and fix any leaks (**see improper practice in photo at right**).
- For sites prone to frequent oil leaks and staining (e.g., vehicle maintenance yards), consider installing an oil/water separator to pre-treat runoff that enters the SMP.
- For routine dumping of wash water, grease, paints, or other pollutants, enforce behavior change and explain good housekeeping practices.
- Develop a pollution prevention plan for the site to ensure that hazardous materials and other potential pollutants are not stored where they are exposed to rainfall.
- For areas that receive a heavy salt and/or sand load during the winter, consider diverting upslope runoff, especially for practices such as porous pavement. Some monitoring of winter road or parking lot clearing activities may also be warranted.

Helpful Skills:

- Knowledge of good housekeeping and pollution prevention practices
- Good communication with employees and managers at site (e.g., for correcting bad site operations)

Equipment Typically Used for Correcting Other Pollutant Sources:

- Tarps to cover stockpiles
- Absorbents to soak up spills
- Secondary containment barriers that will hold back any liquids or solids that may leak out of their primary container
- Storage barns, sheds, pole barns and other permanent cover for potential pollutants

12.3.2 Physical Obstructions

Applies Most Commonly To: Sheet Flow/Disconnection, Swales, Bioretention, Rainwater Harvesting, Green Roofs, Ponds/Wetlands, Infiltration, and Sand Filters

Problem #1: Maintenance access is obstructed

Ground-Level SMPs:

- Where a path for vehicles and construction equipment to access the practice was established during construction but is now overgrown, remove woody vegetation and any other tall vegetation. This path should be bush hogged once or twice a year.
- If the SMP needs a large quantity of trash and/or sediment removed in areas where access is limited due to steep grades, overgrown vegetation, etc., it will be necessary to establish safe vehicular access by clearing and possibly re-grading the area. It is advisable to have a maintained, all-weather surface to critical parts of the SMP.
- It is most important to provide access nearest to parts of the practice where sediment and trash tend to accumulate the most: forebay and outlet control structure.
- For an SMP blocked by fences **(photo at right)**, install a gate that is wide enough for vehicles to enter for any current or future maintenance.
- Sometimes access is blocked by unauthorized structures, such as sheds, property fences, retaining walls, etc. Confer with the local stormwater authority on the presence of any maintenance easements and means to gain access to the practice.
- The solutions above should also provide for safe foot access for routine inspection and maintenance.

Rainwater Harvesting:

- Ensure that no structures are covering the filter or the tank's access/inspection port.

Green Roofs

- Ensure that individuals can safely reach the roof with tools in hand (e.g., buckets, pruners, hoses). If the roof cannot be accessed via a walk-through door, this may require installing a wide ladder or fire escape-style stairs on the inside or outside of the building.
- If there is a concern of getting too close to the roof's edge while doing maintenance, install a railing around the edge for safety. Alternatively, for sloped roofs, workers may need to use harnesses during maintenance activities.

Helpful Skills:

- Use of motorized landscaping equipment
- Chainsaw skills
- Use of grading equipment for larger jobs
- *Note*: OSHA safety requirements and certifications may apply to green roof maintenance.

Equipment Typically Used to Regain Proper Access:

- Mower, trimmer
- For very overgrown areas, chainsaw and/or bush hog
- For areas that need to be regraded, excavator, skid steer, or other grading equipment

Problem #2: Flow is obstructed in or out of the practice

General Approach for All Practices:

- Flow can bypass an SMP when there is too much sediment/debris buildup near the inlets or due to grading changes in the drainage area (e.g., repaving of parking lot). If the cause of blockage or bypass is not obvious, inspect the practice during rainfall to watch the flow paths. (See **Section 12.3.5** for additional guidance.)
- Obstruction of overflow or emergency spillway structures is most often due to buildup of debris, such as trees, sticks, trash. It is *very* important to keep these structures clear of such blockages in order to avoid flooding or a dam breach (**avoid conditions caused by beaver activity - top photo**).
- Where debris cannot easily be cleared by hand, special equipment and skills may be needed. An obstructed outlet control structure in a wet pond may need to be accessed by boat **(bottom photo)**. In cases where large sticks, tree branches, trash, or other debris obstruct the overflow or spillway, they may need to be cut up by chainsaw. Large debris will usually need to be hauled away with a truck.

Helpful Skills:

- Chainsaw skills
- Muscle strength to haul large debris
- Boating capabilities

Equipment Typically Used to Clear Obstructions:

- Gloves, shovels, pruners, rakes, and other hand tools
- Waders for wetlands
- Chainsaw for large sticks and branches
- Cable puller (come-along) to remove large branches that cannot be pulled out by hand
- Boat and personal floatation device for outlet control structures in wet ponds
- Truck to haul away debris

12.3.3 Erosion

Applies Most Commonly To: Sheet Flow/Disconnection, Swales, Bioretention, and Ponds/Wetlands

Problem: Erosion on practice surface, inlets, and/or outlets

General Approach for All Practices:

- See **Section 12.3.9** for how to repair erosion on side-slope embankments.
- Rill and gully erosion occur when runoff flow is concentrated. Deep rills and gully erosion on the practice surface **(top photo)** will require the surface to be regraded to make uniform again. Use the lightest equipment possible in order to minimize soil compaction during excavation.
- After excavation, reseed/plant the area with ground cover that is appropriate for the moisture conditions of the practice. Amend or enhance soil as needed according to a soil test; soil may need more organic material to support plants.
- To prevent further erosion on the surface of the practice, ensure that flow from the inlets can spread out adequately and has enhanced energy dissipation features. This may require installing or enhancing a stone apron outlet protection that flares out and down to the level of the practice to slow and spread out the flow. Other options include check dams, energy dissipation devices, or an armored low-flow channel. A stilling basin **(bottom photo)** can also dissipate flow as it comes out of an inlet or outlet pipe. Apply similar treatments to any outlets that are experiencing erosion.
- Any sloped soils that are disturbed during excavation will likely need erosion-control matting to hold it in place while vegetation becomes established.

Helpful Skills:

- Landscaping/Gardening
- Consult with Cooperative Extension Office or independent laboratory for soil testing
- Skills with excavation equipment
- Knowledge of sediment and erosion control practices and resources appropriate for the area

Equipment Typically Used for Fixing Erosion:

- Rakes, shovels, wheelbarrows, and other “landscaping” equipment
- Light excavation or grading equipment for larger jobs
- Equipment to deliver, unload, and move stone and other materials around
- Plants and/or seed mix, plus a way to move and store plant stock without damaging it or drying it out

12.3.4 Departure from Design Dimensions

Applies Most Commonly To: Swales, Bioretention, Ponds/Wetlands, Infiltration, and Sand Filters

Problem: Practice dimensions have been altered

General Approach for All Practices:

- Once constructed, the dimensions of an SMP may become altered from the original design for a variety of reasons. These reasons can include:
- The SMP was not constructed to the proper dimensions at initial installation.
- Sediment accumulation in the SMP reduces the intended storage volume of the practice **(top photo).**
- Redevelopment or regrading of the site encroaches into the footprint of the SMP.
- Dumping of leaves, trash, or other debris into the SMP reduces the intended storage volume of the practice.
- If it appears that the dimensions of an SMP have been altered, proceed as follows:
- Consult the original design or as-built plans and sizing computations for the SMP to identify the intended dimensions and storage volume of the practice. Measure the length, width, and depth of the practice to estimate the current storage volume. Calculate the difference in volume to determine whether it is significant enough to warrant restoring the practice to its original dimensions. If the loss in volume is greater than about 10%, this likely warrants action.
- If the SMP's original storage volume cannot practically be restored because of current site conditions, an additional SMP may need to be built elsewhere on the site in order to regain adequate storage and treatment volume for the site.
- For problems of dumping by individuals on or near the site, install "No Dumping" or similar signage to inform people that this is not an appropriate place to dispose of debris. Any debris that has already been dumped should be removed from the practice either by hand or with equipment.

Helpful Skills:

- Basic surveying
- Understanding stormwater design plans and sizing computations
- Stormwater management design
- Skills with excavation equipment and erosion and sediment control

Equipment Typically Used to Investigate and Fix Dimensions:

- Simple level or survey equipment, tape measure, and other tools to measure SMP dimensions
- Light excavation or grading equipment for larger jobs
- Rakes, shovels, wheelbarrows, and other "landscaping" equipment for small jobs
- Soil stabilization materials

12.3.5 Improper Flow Paths

Applies Most Commonly To: Sheet Flow/Disconnection, Swales, Bioretention, Rainwater Harvesting, Infiltration, and Sand Filters

Problem #1: Flow intended to go into a practice is diverted by debris or grit buildup or capacity issues at inlets

Bioretention, Swales, Infiltration, Sand Filters:

- Grit, sediment, leaves, and other debris builds up at curb inlets or other inlets, sometimes to the point where flow is diverted completely around the practice (photos above). This is a common issue for practices that rely on curb cuts or other small inlet structures to get water into the practice for treatment. A minor amount of debris may be OK and not affect the ability of water to enter the practice. However, be aware of conditions where flow *that is supposed to be treated* is diverted to a downgradient storm drain or other structures in such a way that the stormwater treatment is entirely or partially bypassed.

- In many cases, correcting the problem may simply involve removing debris or unclogging the inlet.
- However, this problem can be chronic if the inlet design is susceptible to clogging. This can occur if the slope from the inlet into the practice is flat and/or there are controllable sources of sediment and debris in the drainage area.
- For chronic problems, consider redesigning inlets to be more clog proof. One solution is to build in a 2 to 3" drop from the curb inlet onto a gravel or stone diaphragm along the edge of the practice (see example in **photo at right**).
- Inlets that are undersized for the flow coming to them should be enlarged and armored with an appropriate erosion-resistant lining.

Rainwater Harvesting:

- Water intended to be collected in rainwater harvesting systems is sometimes not delivered to the tank or cistern if the system of gutters, downspouts, pipes, etc. is not sized properly or if the first-flush diverter or vortex filter is not functioning correctly and diverting too much water away from the tank.
- As with inlets, this may simply be a matter of routine cleaning of gutters, downspouts, vortex filters, etc.
- It may also be a design or capacity issue, in which case, installing larger gutters or a more robust piping system may be in order.

Source: Rainwater Management Solutions 1

Example of enhancing the gutter and piping system leading to a rainwater harvesting system

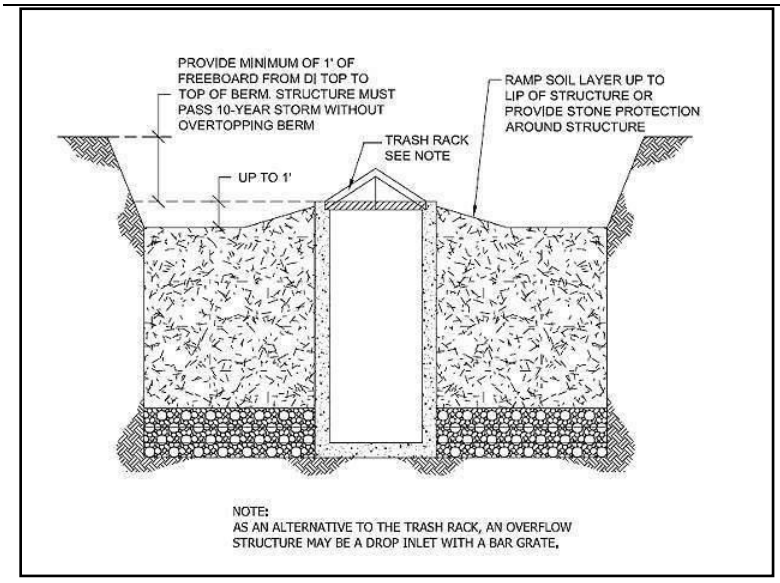
Helpful Skills:

- Basic surveying
- Typical landscaping skills using materials such as soil, rock/stone, edging material, mulch, etc.
- Light construction of gutters, downspouts, piping
- Some knowledge of first-flush diverter and vortex filter products

Problem #2: Flow is not uniformly accessing the entire treatment area

Bioretention, Swales, Infiltration, Sheet Flow and Disconnection, Sand Filters:

Improper flow path issues in this category include:	**These three issues are illustrated below:**
• Water forming channels or rills through the treatment bed of bioretention, swales, infiltration, or surface sand filters, and thus not spreading out across the treatment area surface • Water ponding only at one end of the treatment area because the surface is not level • Water piping through weak spots to an outlet or underdrain, such as where filter media meets a concrete structure • See **Section 12.3.3** for issues of channeling or erosion on the treatment surface. • For uneven treatment area and preferential ponding, assess the severity of the problem. Compare the relative elevations of the "high" part of the treatment area (the area where water does not seem to pond) and any overflow structure or weir where high water flows will leave the practice. If there is still some freeboard (such that the overflow structure is higher than all of the treatment bed surface), then there will still be some ponding for larger rainfall events. Try some minor raking or moving filter media and mulch around to even out the filter bed. • However, the problem is more serious if parts of the treatment area are higher than the overflow structure. These areas will never be valuable for treatment purposes. The treatment area is supposed to fill up like a bathtub, so some regrading is needed to level out the treatment area. • If water is piping or short-circuiting through the soil or filter media, forming sinkholes, or otherwise bypassing the intended treatment mechanism, it will be necessary to repair these spots. Around concrete or metal overflow structures, use soil material right around the structure that can be compacted (bioretention filter media tends to be light, sandy, and fluffy and won't compact very well). Another option is to "ramp up" the soil layer to the lip of the structure so that there won't be a hydraulic jump at this potentially weak point. See the figure below.	 *Water from the inlet at top of photo is channeling through the bioretention area.* *Water is preferentially ponding only at one end of the bioretention because the surface is not flat.* *Water is "piping" down to the underdrain at the weak spot where the filter media meets the concrete overflow structure.*



Ramp up soil layer to the lip of the structure to address this being a weak interface where water can work down and create bypassing. (Source: Virginia 2013 Stormwater BMP Specifications, Specification #9, Bioretention, Figure 9.13.)

Impervious Disconnection:

The most likely flow path issues with Impervious Disconnection are: (1) owners intentionally diverting downspouts away from pervious area and onto impervious area **(left photo below),** and (2) slight grading issues diverting the water away from the intended pervious receiving area **(right photo below).**

Both issues are fairly straightforward to address but involve communicating and working with property owners to explain the purpose of disconnection and how to properly maintain it. The second issue may involve some minor regrading or building low-profile berms to get water to flow to the intended disconnection area.

Helpful Skills:

- Rudimentary surveying
- Typical landscaping skills—using materials such as soil, rock/stone, edging material, mulch, etc.

Equipment Typically Used for Inspecting and Fixing Flow Paths

- Surveying equipment (i.e. Site level or total station) to get relative elevations among different parts of treatment area, inlets, overflow structures, etc.
- Small, simple tools—flat shovels, wheelbarrows, rakes, other common landscape/gardening tools
- Large, more complicated equipment—small excavators to move material around or do regrading. Always work from the side of the practice and NOT within the practice itself.

12.3.6 Sediment Buildup

Applies Most Commonly To: Swales, Bioretention, Porous Pavement, Ponds/Wetlands, Infiltration, and Sand Filters

Problem: Sediment accumulation more than 2" thick covering 25% or more of the practice surface area

Bioretention, Swales:

- Determine the source(s) of sediment. The most likely sources are: (1) premature installation of the practice during the construction process and discharge of construction site sediment loads; (2) erosion in the contributing drainage area *after* construction is complete; and (3) erosion along the practice side slope or within the practice itself. If it is an ongoing source, it must be abated (see **Section 12.3.1**, and **Section 12.3.3).**
- Use a soil auger to auger holes in various places across the Bioretention or Swale surface area, especially in areas where sediment is accumulating. Determine how deep the sediment is penetrating into the filter media layer. Usually, it will be the top 2 to 3" that are most affected. Note that for swales *without* an engineered filter media, the sediment layer will likely be confined to the surface.
- Remove the "fouled" filter media to the affected depth (using flat shovels or small excavators and working from the side) and replace with clean material from an approved vendor (bioretention filter media or equivalent). If no vendors are available in your area, use the filter media specifications from the Design Manual to replicate the right mix of sand, topsoil, and composted organic material.
- Check to ensure that the practice is filtering at the proper rate after the next several storm events.

Infiltration:

- For infiltration practices excavated to a suitable infiltrating soil layer (e.g., not stone reservoir layer), use the same procedures as for Bioretention/Swales above.
- For infiltration trenches and basins that have a stone reservoir layer, use similar procedures, but use a shovel to dig into the stone layer to ascertain how deep the sediment incursion is into the stone. Remove down to this layer and replace with clean material.
- If the infiltration practice is clogged, see **Section 12.3.7.**
- As with Bioretention, check for controllable sources of sediment in the Drainage Area (**Section 12.3.1**).

Porous Pavement:

- NOTE: Routine sweeping with a regenerative air vacuum (max. power 2,500 rpm) is important to avoid more costly repairs that result from deferred maintenance. It is best to sweep the pavement surface in early spring after winter sanding/salting materials or snow piles have led to sediment or winter slag accumulation. If the area is surrounded by tree canopy, fall cleanup is essential, as vegetative debris is broken up by vehicle traffic and ground into the pavement surface.
- Observe the pavement surface during a storm event to see whether the sediment is clogging the pavement (i.e., standing water on the surface after the storm stops). If so, see **Section 12.3.7.**
- Remove several of the paver blocks in different parts of the structure to ascertain how deep the sediment is penetrating into the bedding and reservoir layers. Most of the time, sediment incursion will be limited to the top 1 or 2" of the pavement bedding layer (for porous interlocking concrete pavers and concrete grid pavers).
- Based on the above observations, it may be worthwhile to quantify the infiltration rate using ASTM C-1701 and ASTM C1781. This is most useful in conducting the test in the *same place within the pavement surface through the course of several years* to document reduction in infiltration rates. Repair or restorative sweeping is warranted when infiltration rates drop below around 10" per hour. NOTE: As stated above, this can likely be avoided if routine annual sweeping is conducted.
- If sediment covers more than 25% of the surface, is deeper than 2", or vegetation is starting to grow where sediment has accumulated, consult a street-sweeping vendor about *restorative* sweeping. In this case, it will be necessary to use a higher RPM sweeper or vacuum sweeper to suck out more of the bedding pea gravel that has been fouled, then replace with clean material.
- Vegetation growing in pavement joints should be removed either manually or with a water-safe herbicide (e.g., glysophate without surfactants). It is important to not let weeds proliferate in the pavement surface because pulling them out by the roots may damage the pavement structure. (Note: The application of herbicides within wetlands or other waters of the U.S. may require an Aquatic Pesticide Permit from the NYSDEC)

Infiltration test using ASTM C-1781

Pulling grass and weeds from the joints can damage parking surface if roots are firmly established in the bedding layer.

- Check the pavement surface after a storm event to ensure that it is draining properly.

The North Carolina State University (NCSU) Stormwater Engineering Group has an informative Urban Waterways publication, *Maintaining Permeable Pavements (2011).*

Routine, air-vacuum sweeping in the early spring and fall is the best approach for porous pavement maintenance (Photo source: Toronto and Region Conservation)

Ponds and Wetlands:

- Sedimentation is an inevitable process in ponds and wetlands. NOTE that upstream erosion, especially along stream channels or ditches leading to the practice will accelerate the sedimentation process and lead to more frequent and costly sediment removal operations. Whenever possible, it is important to mitigate any upstream erosion issues.
- Forebays and/or pre-treatment areas should be cleaned out when they reach 50% of their design capacity. Once cleanout is complete, it will be worthwhile to install a graduated rod into the forebay with a clear marking of future sediment clean-out levels.
- The main body of a pond or wetland may need to be dredged on an infrequent basis or when sediment has replaced 50% of the design capacity. There are many dredging methods available. Excavators with long arms can handle most small or moderate-sized ponds. Other methods may be necessary for larger facilities. Dredging can be a complicated operation involving dewatering, storage of wet sediment, and possibly hauling to on-site or off-site disposal or refuse areas. Consult a qualified contractor to explore available methods and costs for the particular application. Once again, installation of a graduated rod can help mark future clean-out levels. Note: The dredging of accumulated sediment within regulated wetlands, ponds or at outlet structure may require permits from NYS DEC and/or USACE. In addition, removed sediment should be properly disposed of in a regulated solid waste management facility or in an upland area that is at least 100 ft from regulated wetlands or streams. Sediment managed in upland disposal areas shall be graded, seeded, and mulched.

Sand Filters:

- See the section above on Bioretention/Swales as some of the procedures will be similar, especially for above-ground filters. It is important to determine whether the drainage area is generating a controllable source of sediment that can be abated.
- Underground trench or vault filters will require routine maintenance to: (1) remove accumulated sediment, trash, and floatables from the sedimentation chamber, usually with a vac truck; and (2) remove sediment, grit, and sludge from the top layer of the filter media and replace with clean material. NOTE: Depending on the configuration of the underground filter, confined-space procedures may apply. For a normally operating practice, these maintenance tasks should be conducted every two to three years. If the filter is treating a stormwater hotspot or a particularly dirty drainage area (e.g., vehicle maintenance, washing, repair), the frequency may increase to annually or more often, as dictated by Level 2 inspections. Also, in these cases, it may be warranted to test the material to ensure proper disposal.
- Some proprietary filters require replacement of special cartridges or filter material. Consult the vendor or manufacturer for special maintenance procedures.

Routine cleaning of a perimeter or "Delaware" sand filter. This can be done from the surface, but deeper, vault-type filters will require confined-space entry procedures.

Helpful Skills:

- Most common contracting skills
- Excavation, dewatering, and sediment disposal in some cases
- Knowledge of maintenance equipment, such as vac trucks, street sweepers, etc.
- Knowledge of preferred conditions for bioretention filter media
- Soil testing in some cases where sediment is being removed from stormwater hotspots

Equipment Typically Used for Sediment Removal Activities:

- Small, simple tools—flat shovels, wheelbarrows, rakes, other common tools
- Larger jobs—small or large excavators, loaders, dewatering equipment (pumps, dirt bags, etc.), trucks to haul material to on-site or off-site disposal or reuse areas, erosion and sediment-control supplies.

12.3.7 Clogging

Applies Most Commonly To: Bioretention, Porous Pavement, Infiltration, and Sand Filters

Problem: Filter media clogged; water standing on practice surface for 48 to 72 hours or longer after a storm

Bioretention:

Standing water on the bioretention surface 48 to 72 hours after a storm event is a sure indication of clogging (top photo). Clogging of bioretention practices can be tricky to diagnose as there are several probable causes:

a. Clogged underdrain
b. Filter fabric between filter media and underdrain stone
c. Sediment/grit buildup at surface
d. Erosion of contributing drainage area
e. Improper filter media

The following procedure can be used to work through diagnosing the most common causes, beginning with the simplest and easiest to fix and progressing through more complex remedies:

1. Look for a thin, crusty layer of sediment that covers some or all of the filter media. It is often grayish in color. This thin layer can sometimes be enough to cause slow drainage. Scrape this crust off and ascertain sources of sediment in the drainage area (see **Section 12.3.1**). Often, this problem can be caused by the bioretention filter media being installed too early in the construction process, but other chronic sediment sources should also be checked.
2. Open the underdrain cleanout and pour water in to verify that the underdrains are functioning and not clogged or otherwise in need of repair. The purpose of this check is to see whether there is standing water all the way down through the soil. If there is standing water on the surface, *but not in the underdrain*, then there is clogging somewhere in the soil layer. If the underdrain and cleanout have standing water and there is not water coming out the other end (outlet) of the underdrain pipe, then the underdrain is clogged and will need to be rooted out.
3. Use a soil auger to auger several holes down through the filter media to the underdrain layer (if present) or underlying soil. Check to see whether there is a layer of filter fabric at the bottom of the soil layer. The auger will pierce through any filter fabric that is present, and pieces of fabric in the auger bucket should be removed. Notice if the fabric is “blinded” or clogged with sediment. This is a common issue with older bioretention practices. If the practice has a clogged the filter fabric layer, go to step #6, install wick drain.
4. While checking for filter fabric in auger holes, also note whether there is a layer of saturated filter media or bad filter media (e.g., too much clay content) that may be on top of a good media layer. This will be fairly obvious as the top 3 or 4” will be mucky and saturated, with dry and sandy media below. If this is the case, it will be necessary to remove the bad material and replace with good, clean bioretention filter media in accordance with the design specifications. Till or incorporate the good material into the underlying existing filter media to establish a good contact.
5. If the entire profile of filter media is bad, has too much clay content, or does not appear to meet the specifications for filter media, it will be worthwhile to test the soil and compare against the recommended specifications (e.g., clay content, particle sizes, etc.). If the soil does not meet specifications, see steps #6 and #9 below.

6. If the problem appears to be filter fabric or bad filter media (steps #3 or #5 above), there is a critical decision to be made. It is an expensive proposition to dig up the entire facility to either remove the filter fabric or replace the entire soil layer. If the clogging problem is not severe in nature, an intermediate (and much cheaper) option may be to install wick drains. Using a 6" auger bucket, auger numerous vertical holes around the practice surface area, making sure to auger all the way down to the underdrain stone or underlying soil (if there is no underdrain). Hammer 6" perforated PVC or other type of pipe into these holes. Perforations should be about 3/8" diameter. Fill the pipes with clean underdrain gravel (#57 stone) mixed in with coarse construction sand. These drains will serve to wick fines from the surrounding filter media and will provide alternative drainage. Check after the next several storm events to see whether the wick drains improve drainage.
7. Sometimes the cause of saturated filter media is springs or some type of baseflow coming into the practice. This is a more difficult problem as bioretention is not supposed to receive this type of constant flow. It will be necessary to identify and reroute springs or baseflow or perhaps replace the bioretention practice with a different type of practice.
8. Another possible source of poor drainage or clogging is that there can be too much water on top of the filter media when the bioretention practice fills up. Most specifications call for a maximum ponding depth of 12", but sometimes the ponding depth can be 18 or even 24". While this increases the amount of head pushing water down through the filter media, it can also lead to compaction or too much sediment building up. If the bioretention practice has a ponding depth greater than 12", consider configuring the outlet or large storm overflow to reduce the ponding depth to 12" or less. Check with the local stormwater authority to ensure that doing this will not compromise the required treatment volume of the practice.

Adding sand to a wick drain. The vertical perforated PVC pipe has already been placed in the auger hole.

9. If clogging is too severe to be fixed with wick drains or other remedies listed above, it may be necessary to rebuild the bioretention practice by digging up the existing soil, taking out any filter fabric that is between the filter media and underdrain stone, and rebuilding and replanting according to the design specifications.
10. Whatever the chosen remedy, check to ensure that the practice is filtering at the proper rate after the next several storm events.

The Chesapeake Stormwater Network (CSN) has produced an excellent reference guide for inspecting and diagnosing Bioretention issues, *Technical Bulletin #10, Bioretention Illustrated.* This tool can be used as an additional reference and can be downloaded using this link: http://chesapeakestormwater.net/category/publications/

Infiltration:

- Clogging of infiltration practices can be simple to resolve or fatal:
- On the *simple* side, clogging (or poor drainage) may arise from sediment, vegetative debris, parking lot grit, or other debris clogging the top few inches of soil or stone.
- With luck, the practice will have an observation well (vertical perforated PVC pipe with cap that extends through the stone reservoir in an infiltration trench or basin). Check the observation well three days after a storm event of ½" or more. If water is standing in the observation well to the surface, then the whole profile may be clogged (see below under *fatal*). If the observation well has only a few inches or no water and there is still water standing on the surface, then surface clogging is a likely culprit.
- For infiltration practices in soil (no stone reservoir), auger several holes around the infiltration surface area. If saturated soil seems to be on top of good, clean, dry soil, then surface clogging seems likely.
- For infiltration trenches and basins with a gravel reservoir, dig several holes around the surface to determine, again, whether there seems to be a layer of gravel clogged with sediment, leaves, vegetative debris, parking lot grit, etc. If possible, dig down to where the gravel meets the underlying soil to see whether a layer of filter fabric is present (which may be common with older practices). If this is the case, blinding of the filter fabric may be a cause of the clogging.
- For surface clogging, remove the affected material down to the level where the soil or gravel seems clean, and replace with clean material. If filter fabric seems to be a problem, it will be necessary to dig up the gravel, remove the filter fabric, and rebuild the reservoir layer in accordance with the current design specifications. In either case, check after a storm event to ensure that this has resolved the issue.
- On the *fatal* side, the underlying soil may not be suitable for infiltration, either due to soil characteristics, compaction during construction, or other causes. Check the original design package to see whether any soil testing was done at the time. It may be worthwhile to auger down to the infiltration interface layer (e.g., where stone reservoir meets the underlying soil and then another several inches below this interface), and take several soil samples for lab analysis to compare to current soil specifications (see information below about infiltration soil analysis).
- It may be that a geotechnical analysis would reveal that there is a good infiltration soil layer, but it is lower than the existing

interface. This would still require a complete rebuild and excavation down to the suitable soil layer. Restoring porosity at the designed elevation would require replacing soil above this suitable layer and avoiding compaction.

- Another option would be to convert the practice to a bioretention practice with an underdrain. Check with the local stormwater authority to see whether this would require any site plan or stormwater plan amendments or other permits.
- Many updated state stormwater manuals and specifications include protocols for infiltration soil testing and analysis that reference various ASTM standards. For example, see: *Virginia 2013 BMP Standards & Specifications, Specification #8: Infiltration, Appendix 8-A, Infiltration and Soil Testing*.

Porous Pavement:

- As noted in **Section 12.3.6,** routine sweeping with a regenerative air vacuum (maximum power 2,500 rpm) is important to avoid more costly repairs that result from deferred maintenance. Preventative maintenance is the best and most cost-effective way to prevent clogging in the first place.
- If there is standing water on the pavement surface 48 to 72 hours after a storm event of ½" or more, then the pavement surface is clogged.
- Check the design plan or as-built plan to see whether the porous pavement design includes an underdrain. There may also be underdrain cleanouts at the edge of the porous pavement.
- If there is an underdrain, the first thing to check is whether the underdrain is clogged, crushed, or broken. Check to see whether there is standing water in the underdrain cleanout 48 to 72 hours after a storm event. If the underdrain is dry, pour water into the underdrain with a hose and see whether it comes out the other end. If the underdrain is clogged, snake it out, as this is the first and easiest thing to try.
- If the underdrain is working, then clogging may be due to: (1) clogged surface or bedding layer; or (2) underlying soil is not suitable for infiltration for designs with no underdrain. First, refer to the guidance in **Section 12.3.6,** and then proceed as follows:
- If there is no underdrain and the design is based on soil infiltration under the pavement, it will be worthwhile to check the soil because unclogging the surface layer will likely not fix the problem. Check the original design package for any soil infiltration testing. It is likely worthwhile to remove the entire pavement section in several places down to the soil layer and to do a geotechnical investigation of the soil profile. See: ASTM C-1701/1701M and/or *Virginia 2013 BMP Standards & Specifications, Specification #8: Infiltration, Appendix 8-A, Infiltration and Soil Testing* for examples of soil infiltration protocols (URL above).
- If the soil is not suitable for an infiltration design, it will probably be necessary to rebuild the pavement using an underdrain design or possibly adding subsurface drainage along the perimeter of the parking area.
- If there is an underdrain or the soil is suitable for infiltration, the best approach to try to unclog the pavement is restorative sweeping with a vacuum sweeper. Regenerative air sweepers may not have enough suction to relieve the clogging.
- If vacuum sweeping is not successful, it may be necessary to rebuild any layers fouled with sediment and fines. It is likely that this will be confined to the bedding layer and gravel used in the paver stone joints, but some clogging can possibly move down into the underlying stone reservoir layer.
- The North Carolina State University (NCSU) Stormwater Engineering Group has an informative Urban Waterways publication, *Maintaining Permeable Pavements (2011).*

Water standing on the parking surface 48 to 72 hours after a storm is an indication of clogging. Snow piles at the edge of the photo point to possible clogging from winter sanding or plowing.

Sand Filters:

- See the section above on Bioretention/Swales as some of the procedures will be similar, especially for above-ground filters.
- Also see **Section 12.3.6** for guidance on routine maintenance of the sedimentation and filter chambers.
- As with Bioretention, there can be various causes for clogged filters:
- Filter fabric layer under the filter media that has blinded or clogged
- Clogging of the surface of the filter layer or filter cartridges
- Bad filter media (e.g., sand media)
- "Plumbing" issues with configuration of overflow and underdrain pipes
- Fortunately, filters are usually confined within concrete vaults or manholes, so diagnosing and rectifying clogging problems should be more straightforward. Check the original design or as-built plans. Some of the following guidance may also be helpful:
- For proprietary cartridge or special filter media structures, consult the vendor or manufacturer for recommended solutions.
- See **Section 12.3.6** for guidance on removing the top layer of filter media and replacing with clean material, as well as vacuuming out any sedimentation chambers.
- If it is suspected that overflow or outlet pipes are not configured correctly, check against the design plans and also standard drawings from the manufacturer.
- Chronic clogging problems are likely due to excessively dirty drainage areas, including uncontrolled sources of sediment, oil and grease wash off, vegetative debris from surrounding trees or shrubs, or other sources. It will be important to check and resolve any controllable sources of clogging in the drainage area (see **Section 12.3.1**).

Standing water on the parking lot is evidence that this perimeter sand filter (under the sidewalk) is clogged.

Helpful Skills:

- Soil infiltration analysis techniques as per ASTM and/or current BMP design specifications
- Excavation, dewatering, and sediment disposal in some cases
- Knowledge of maintenance equipment, such as vac trucks, street sweepers, etc.
- Knowledge of preferred conditions for bioretention, sand filter media, or standard porous pavement types and bedding layers
- General practice of trying easier or less expensive strategies before jumping right to wholesale reconstruction of a practice

Equipment Typically Used for Unclogging Activities:

- Soil infiltration testing or geotechnical equipment
- Small or large excavators, loaders, dewatering equipment (pumps, dirt bags, etc.), trucks to haul material to on-site or off-site disposal or reuse areas, erosion and sediment control supplies
- Pavement demolition and repair equipment
- Mulch, plants, filter media, and other materials needed to rebuild practices

12.3.8 Vegetation

Applies Most Commonly To: Tree Planting, Swales, Bioretention, Green Roofs, and Ponds/Wetlands

Problem #1: Not enough vegetation; vegetation *is unhealthy*

Tree Planting, Swales, Bioretention:

- Test soil/media to ensure proper conditions exist for plant survival.
- Check water drawdown after a storm to make sure that wet/saturated conditions are not the cause of plant failure. If this IS an issue, see **Section 12.3.7.**
- Amend or enhance soil as needed; soil may need more organic material to support plants, but do not use uncomposted organic material or animal waste, as it will likely export undesirable nutrients to the stormwater system.
- If plants have continued to die, consider a different species or entire planting palette or revised planting plan **(photo to right shows the need for a whole new planting plan)**. Also consider using an appropriate bioretention or swale native seed mix to supplement use of plugs or other nursery stock.
- Consult a horticulturalist or plant nursery if there is evidence of disease or pests.
- Replant and add mulch or ground cover as needed.

Ponds and Wetlands:

- See **Section 12.3.12** for general guidance on pond and wetland vegetation maintenance, as well as the following.
- For emergent vegetation, determine whether water depths are too deep or shallow for survival (i.e., depths are different from design depths, or original design included improper vegetation).
- If a small amount of supplemental vegetation is needed, plant wetland plugs per nursery guidance.
- For large-scale plantings, drain the permanent pool and plant during the early spring.

Green Roof:

- Consult with a green roof plant vendor about possible causes of plant failure. Lack of watering during initial establishment could be the main culprit.
- Work with a qualified vendor to develop and install a new planting plan.
- Speak with building facilities maintenance personnel to ensure they understand need for watering and caring for new plants after they are installed.

Helpful Skills:

- Landscaping/gardening
- Consult with Cooperative Extension Office or independent laboratory for soil testing
- If original planting plan is deemed inadequate, consult a landscape architect or horticulturalist to determine whether a revised planting plan is needed.
- Knowledge of native plant and/or wetland plant nurseries in general region

Problem #2: Too much vegetation, overgrown (with invasive species), not maintained

General Approach for All Practices:

- Determine which invasive plants are present. For a list of regulated and prohibited invasive plants in New York State, see *New York State Prohibited and Regulated Plants* (NYS DEC, NYS Agriculture and Markets, 2014) at: http://www.dec.ny.gov/docs/lands_forests_pdf/isprohibitedplants2.pdf . Invasive plants shall be properly disposed of in a manner that renders them non-living and non-viable to prevent the establishment, introduction or spread of disposed species.
- Review whether the original planting plan relied on these plants; for example, some wetland plans may rely on "aggressive colonizers" such as cat tails.
- For more detailed information regarding appropriate control measures for each species, consult the Cornell Cooperative Extension Invasive Species Program at the following link: http://ccetompkins.org/environment/invasive-nuisance-species/invasive-plants. If invasive species have taken over the facility, wholesale removal and replanting with desirable species may be necessary.
- If (non-invasive) plants are overgrown, (**example in photo to right**), remove, thin, or trim back excessive vegetation.
- If an entire new planting plan is deemed necessary, use SMP-Specific Guidance in the remainder of this manual, along with landscaping goals for the site location, to devise a plan that allows for adequate growth over a long period of time. A simple, clear planting design (**example in photo below**) with a long-term plan has the best chance of being maintained through time. Maintenance crews need to know which plants are part of the design versus weeds and how the practice should look from year to year.
- Develop a plan to ensure proper weeding, pruning, trimming, and replanting to maintain the plan over time.
- See **Section 12.3.12** for general guidance on pond and wetland vegetation maintenance, as well as the following.

Helpful Skills:

- Knowledge of exotic and invasive species is needed. Consult a local Cooperative Extension Office.
- Specific measures may include mechanical hand pulling, regrading (requires construction equipment), or herbicide/pesticide application by a certified pesticide applicator. See DEC webpage for "Pesticide Applicator/Technician Guidance".
- Landscape architect
- Knowledge of wetland plants (for ponds/wetlands)
- Knowledge of SMP design (to understand hydrologic regime for plant selection)

Equipment Typically Used for Vegetation Maintenance Activities

- Soil auger to diagnose issues of soil drainage that may affect vegetation health
- Rakes, shovels, wheelbarrows, and other "landscaping" equipment
- Light excavation or grading equipment for larger jobs
- Equipment to deliver, unload, and move filter media, mulch, and other materials
- Plants and/or seed mix, plus a way to move and store plant stock without damaging it or drying it out
- Planting bars, soil drills, etc.
- For planting in standing water (e.g., ponds, wetlands), pumps or pump-around systems and dirt bags or other ways to temporarily dewater planting area

12.3.9 Embankment and Overflow Condition

Applies Most Commonly To: Swales, Bioretention, and especially Ponds/Wetlands

Problem #1: Rill and channel erosion and bare dirt areas of embankments

Swales, Bioretention:

- Erosion and areas of bare dirt indicate two basic issues: 1) soils and moisture levels are not suitable for the plants or turf used; and 2) vegetation cannot take hold because of concentrated flow, physical wear, or poor soil conditions. Address these issues first with a soil/media test to ensure proper conditions exist for plant survival.
- High salt content from winter deicing of pavement is a common culprit of poor soil conditions for roadside plants. If this is the case, restore area with plant species that can tolerate salt levels, or replace edge plants with a stone diaphragm to intercept runoff from road.
- Amend or enhance soil as needed; soil may need more organic material to support dense ground cover.
- For concentrated flow and physical wear, redirect concentrated flow so that it disperses in mulched and vegetated areas. Anchor mulch and replant with vigorous plants recommended through the soils test.
- If plants have continued to die, consider a different species or entire planting palette or a revised planting plan (see **Section 12.3.8** and **photo to right)**. Also consider using an appropriate bioretention or swale native seed mix to supplement use of plugs or other nursery stock.
- Consult a horticulturalist or plant nursery if there is evidence of disease or pests.
- Replant and add mulch or ground cover as needed.

Ponds and Wetlands:

- Where erosion has deposited soil within the pond or wetland water line, remove this material and reshape the slope.
- If a small amount of supplemental vegetation is needed, plant wetland plugs per nursery guidance.
- To address rill and channel erosion, first obtain a soil sample test to get soil amendment recommendations. Undercut the eroded sections and replace with clean amended soil, based on the soil test, and reseed as appropriate for the season.
- It may be necessary to stake in seed blankets or erosion-resistant lining (e.g., erosion-control matting or even rock in extreme situations) to stabilize eroded areas. Again, choose seed types appropriate for the season.
- Based on soil test guidance, reseed bare areas to prevent further erosion.
- For persistent problems, reroute the flow to more stable receiving areas using berms, diversions, etc.

Helpful Skills:

- Landscaping/gardening
- Consult with Cooperative Extension Office or independent laboratory for soil testing.
- If original planting plan is deemed inadequate, consult a landscape architect or horticulturalist to determine whether a revised planting plan is needed.
- Knowledge of sediment and erosion control practices and resources appropriate for the area

Problem #2: Settlement, loss of armoring material, erosion of emergency overflow

General Approach for All Practices:

- Settlement, loss of armoring material, erosion and accumulated debris can affect the dimension, water velocity or capacity of the emergency overflow such that embankment failure could occur in flood events (**photos below**).
- Inspect for exposure of soil or geotextile base material in the overflow and re-armor areas of exposure.
- In cases of settlement, a qualified engineer should be sought to assess its capacity and impact on pond capacity.
- Erosion of spillways should be repaired and revegetated as described for embankments.

Helpful Skills:

- Knowledge of sediment and erosion control practices for the area
- Completion of self-guided training on dam safety through Association of State Dam Safety Officials: http://www.damsafety.org

Problem #3: Impounding structure (embankment or dam) integrity issues due to tunneling or digging animals, woody vegetation, or seepage

Ponds/Wetlands:

- Impounding structure stability is a serious concern, especially where trees have become established on the slopes, or there's evidence of animal burrows or seepage.
- The best approach for trees on the crest, slopes, and adjacent to an impounding structure or embankment is to cut them down before they reach significant size. If large trees have been cut down but their root systems not removed, carefully monitor the area around the remaining stumps for signs of seepage.
- Exercise judgement for trees on the surrounding side slopes that are NOT impounding structures (not designed to hold back water in the pool). Sometimes a forested edge can enhance the appeal of a pond, but access for maintenance must also be available, and some trees can drop debris into ponds, leading to quality issues.
- Animal burrows can be dangerous to the structural integrity of the embankment because they weaken it and can create pathways for seepage. Professional exterminators may be needed to trap and remove animal pests.
- Seepage as water flow or boiling sand on the lower portion of the exterior slope or toe area of an impounding structure should be brought to the attention of a qualified engineer.
- Leakage around conveyance structures such as barrel pipes or spillways should be monitored for increase since the last inspection. A qualified engineer is needed to resolve issues of piping or seepage along the barrel pipe through a dam.
- Turbidity or cloudiness in seepage should also be brought to the attention of a qualified engineer.

Helpful Skills:

- Completion of self-guided training on dam safety through the Association of State Dam Safety Officials: http://www.damsafety.org

Equipment Typically Used for Embankment and Overflow Maintenance Activities

- Excavation or grading equipment for larger jobs
- Equipment to deliver, unload, and move filter media, mulch, and other materials
- Plants and/or seed mix, seed blanket and erosion control materials
- Rod and level for settlement measurements
- Clear glass bottle for seepage visual test

12.3.10 Structural Damage

Applies Most Commonly To: Any Practice

Problem: Structural damage to pipes, headwalls, standpipes, inlet/outlet structures, grates, curbs, and other structural components

- Structural components are necessary for water to flow into and out of stormwater practices as intended. This is a broad category that involves components composed of concrete, metal, plastic, and other materials. Some common examples include:
- Deteriorated or broken curbs that allow water to bypass a practice
- Slumping or sinkholes where soil meets a concrete drop inlet or outlet structure
- Broken or collapsed inlets
- Connections in an inlet or manhole structure that are not parged and are leaky
- Collapsed or crushed pipes (especially corrugated metal)
- Missing or broken steps or other safety features in a manhole or outlet control structure
- Root penetration and clogging of underdrain or other pipes
- Broken check dams
- There are too many particular instances to mention here, but the general idea is to inspect and repair any structural components that are affecting the performance of a practice or leading to a potential health or safety issue.

Helpful Skills:

- General contracting skills—concrete work, metal, proper joint sealing
- Routing out clogged pipes
- Perhaps CCTV experience to look for broken or clogged pipes

Equipment Typically Used for Fixing Erosion:

- General contracting
- CCTV

Maintenance Considerations for SNOUT® Stormwater Quality Systems

Background:

The SNOUT system from Best Management Products, Inc. (BMP, Inc.) is based on a vented hood that can reduce floatable trash and debris, free oils, and other solids from stormwater discharges. In its most basic application, a SNOUT hood is installed over the outlet pipe of a catch basin or other stormwater quality structure with a deep sump (see Installation Drawing). The SNOUT forms a baffle that traps floatable debris and free oils on the surface, while permitting heavier solids and sediment to sink to the bottom of the sump. The clarified intermediate layer is forced out of the structure through the open bottom of the SNOUT by displacement from incoming flow. The resultant discharge contains considerably less unsightly trash and other gross pollutants, and can also offer reductions of free-oils and finer solids. To increase pollutant removal capabilities of the SNOUT system, various accessories are available. The most popular options include: the Bio-Skirt® for higher hydrocarbon capture and retention, the Stainless TrashScreen™ for Full Trash Capture and the Turbo Plate® for turbulence reduction and higher sediment capture.

Maintenance Recommendations:

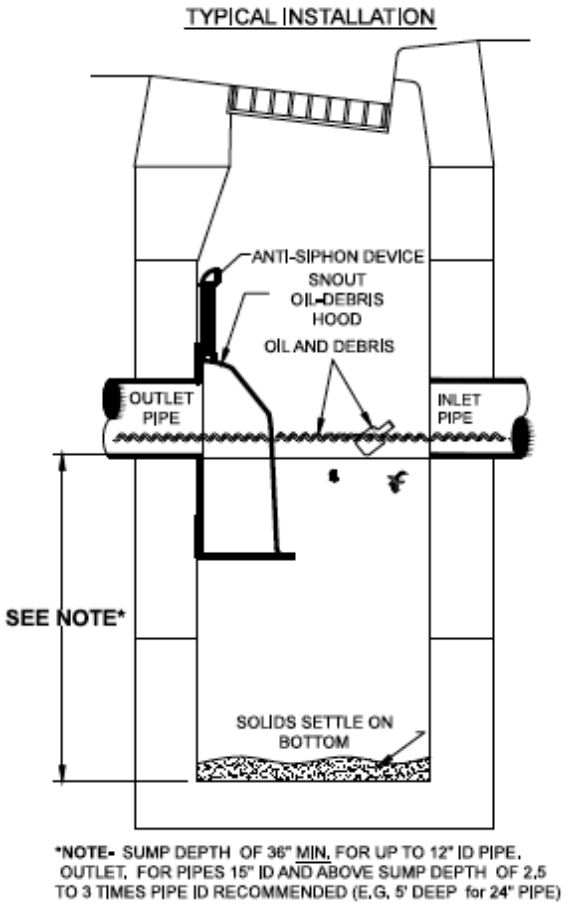
- Monthly monitoring for the first year of a new installation after the site has been stabilized is a recommended practice.
- Measurements should be taken after each rain event of .5 inches or more, or monthly, as determined by local weather conditions.
- Checking sediment depth and noting the surface pollutants in the structure will be helpful in planning maintenance.
- The pollutants collected in SNOUT equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment on the bottom of the structure.
- It is best to schedule maintenance based on the solids collected in the sump.
- Optimally, the structure should be cleaned when the sump is half full (e.g. when 2 feet of material collects in a 4 foot sump, clean it out).
- Structures should also be cleaned if a spill or other incident causes a larger than normal accumulation of pollutants in a structure.
- Maintenance is best done with a vacuum truck.
- If Bio-Skirts are being used in the structure to enhance hydrocarbon capture, they should be checked on a monthly basis for the first year, and serviced or replaced when more than 2/3 of the boom is submerged, indicating a nearly saturated state. Assuming a typical pollutant-loading environment exists, Bio-Skirts should be serviced* annually or replaced as necessary.
- In the case of an oil spill, the structure should be checked and serviced and

Bio-Skirts (if present) replaced or serviced immediately.

- All collected wastes must be handled and disposed of according to local environmental requirements.
- To maintain the SNOUT hoods, an annual inspection of the anti-siphon vent and access hatch are recommended. A simple flushing of the vent, or a gentle rodding with a flexible wire are all that's typically needed to maintain the anti-siphon properties. Opening and closing the access hatch once a year ensures a lifetime of trouble-free service.

*To extend the service life of a Bio-Skirt, the unit may be "wrung out" to remove oils and washed in an industrial washing machine with warm water. The Bio-Skirt may then be re-deployed if the material maintains it's structural integrity. A maintained Bio-Skirt can last for several years. Each Bio-Skirt can hold about on gallon of oils.

SNOUT INSTALLATION:



BIO-SKIRT INSTALLATION: