

MORRIS PLANNING & ZONING COMMISSION
COMMUNITY HALL • 3 EAST STREET • MORRIS, CONNECTICUT 06763

Regular Meeting Morris Town Hall and Live on Zoom

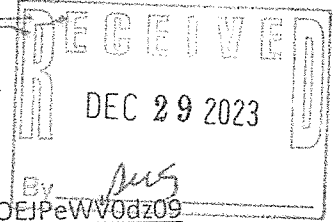
January 3rd, 2024 at 7:00 pm

Call in # 1-929-205-6099

<https://us02web.zoom.us/j/85920958912?pwd=MzVMeHhodEhuejZk5OEjPeWV0dz09>

Meeting ID: 859 2095 8912

Passcode: 027946



Barbara Bongolotti
Helen White
Veronica Florio
Douglas Barnes (Secretary)

David Wiig Chairman

Dylan Hovey
William Ayles Jr. (Vice-Chairman)
David Geremia Jr.
Kim Dore
Staff: ZEO Tony Adili
Planner Janell Mullen

Alternates:
Marc Petzold
Geoff Paletsky
Erika Leone

Agenda

1. Call to Order
2. Agenda Review
3. New Business
4. Old Business

a. Application for Special Exception MHA-23-01 for Town Sponsored Multi-family Housing at 103 East Street (17/380/103).

5. Complaints

- a. 95 Thomaston Rd
- b. 7 Benton Rd
- c. 150 Bantam Lake Rd
- d. 198 East Street (PDD ACB)

6. Other Business

a. General Discussion with Richard Van Ness and Ian MacRae in reference to 200 Bantam Lake Rd.

7. Communications and Bills

- a. ZEO Report

8. Adjourn

EAST STREET HOUSING 8 UNIT RESIDENTIAL DEVELOPMENT

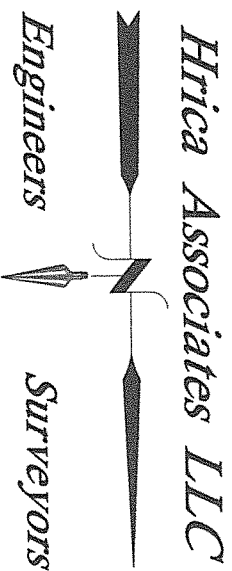


PREPARED FOR

MORRIS HOUSING AUTHORITY 103 EAST STREET MORRIS, CONNECTICUT

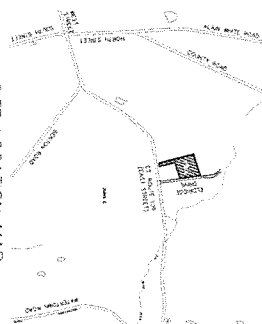
OF DRAWINGS

- TITLE**
EXISTING CONDITIONS
SITE PLAN
DRAINAGE PLAN
SEPTIC SYSTEM DESIGN PLAN
CONSTRUCTION NOTES & DETAILS
EROSION & SEDIMENT CONTROL PLAN
LANDSCAPING PLAN
PHOTOMETRIC LIGHTING PLAN



Kenneth S. Hrica, P.E., R.L.S.
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759
860-567-2112 (business)
860-567-0491 (residential)
e-mail: hricassociates@optonline.net

JUNE 23, 2023
Date
DECEMBER
Late
EAST STREET
HOUSING
PREPARED FOR
MORRIS HOUSING AUTH.
103 EAST STREET
MORRIS, CONNECTICUT



- | | |
|-------------------------|--------------------------|
| PROJECT NAME | EXISTING WINDMILL |
| EXISTING FOUNDATION | EXISTING IRON PILE ON SP |
| DRILL HOLE | |
| STONE PILE | |
| UTILITY POLE W/AND-OR | |
| WELL | |
| STONE WALL | |
| CATCH BASIN | |
| BACK W/BACK LINE | |
| WATERCOURSE | |
| EXISTING CONDUIT | |
| EXISTING SPOT ELEVATION | |
| PROPOSED CONDUIT | |
| PROPOSED SPOT ELEVATION | |
| DEP HOLE | |
| PERCESSION TEST | |
| LOT NUMBER | |
| STREET NUMBER | |
| TREE LINE | |

5:02:16.55

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IT IS REQUESTED THAT IN ANY KNOWLEDGE AND BELIEF THIS
BUREAU HAS, THAT THE INFORMATION CONTAINED HEREIN IS
TRUE AND CORRECT, AND THAT THE INFORMATION IS NOT
FALSE, MISLEADING, OR IN VIOLATION OF ANY FEDERAL
LAW, STATE LAW, OR LOCAL ORDINANCE. THE INFORMATION
IS NOT BEING PROVIDED FOR THE PURPOSE OF OBTAINING
ANY BENEFIT OR ADVANTAGE, OR FOR THE PURPOSE OF
OBTAINING ANY INFORMATION FROM ANY OTHER SOURCE.
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THE PURPOSE OF OBTAINING ANY INFORMATION FROM
ANY OTHER SOURCE.

[illegible]



EX. BUILDING

N/F
STEVEN COOK
BOOK 100 / PG. 101

EX. BARN

EX. BARN

ELDRIDGE DRIVE

EX. PAVEMENT

N/F
TOWN OF MORRIS
BOOK 54 / PG. 56

PAVING TABLE

ITEM	QUANTITY	UNIT
1. ASPHALT PAVING	11,897.4	SF
2. ASPHALT CURB	11,897.4	LF
3. ASPHALT GUTTER	11,897.4	LF
4. ASPHALT DRIVE	11,897.4	LF
5. ASPHALT SIDEWALK	11,897.4	LF
6. ASPHALT BIKEWAY	11,897.4	LF
7. ASPHALT TRAIL	11,897.4	LF
8. ASPHALT TOTAL	11,897.4	SF

TONS OF HOTTER TACKING TABLE

ITEM	QUANTITY	UNIT
1. ASPHALT TACKING	11,897.4	SF
2. ASPHALT TACKING	11,897.4	LF
3. ASPHALT TACKING	11,897.4	LF
4. ASPHALT TACKING	11,897.4	LF
5. ASPHALT TACKING	11,897.4	LF
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6. ASPHALT BIKEWAY	11,897.4	LF
7. ASPHALT TRAIL	11,897.4	LF
8. ASPHALT TOTAL	11,897.4	SF



DATE: 06/27/2023
DRAWING: 120901
PROJECT: 23-0001

Engineers
Hrica Assoc.
103 EAST STR
MORRIS, CONNECTICUT

SITE PLAN
EAST STR
HOUSE

103 EAST STR
MORRIS, CONNECTICUT

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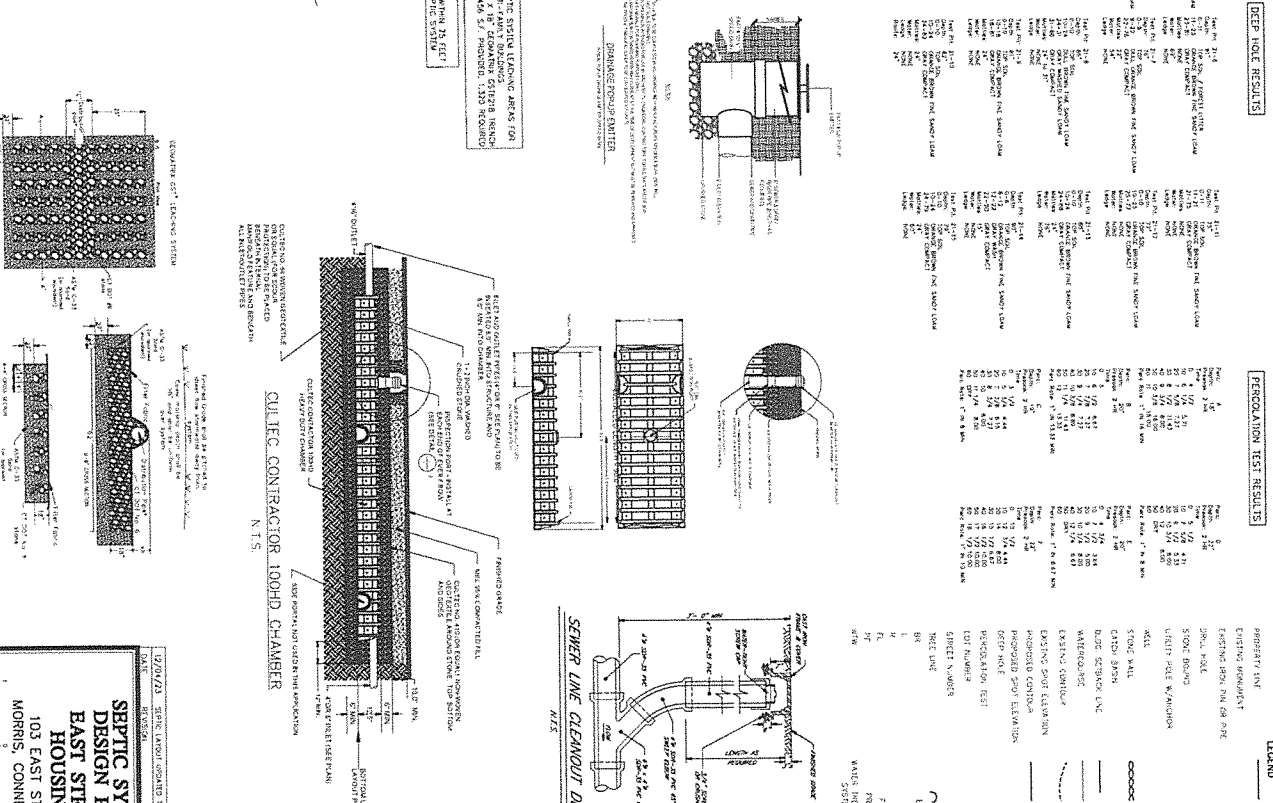
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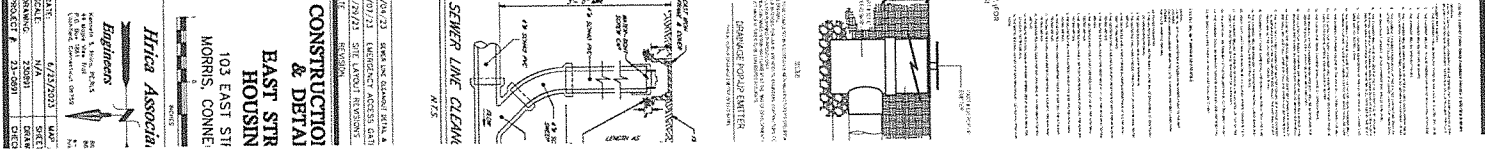
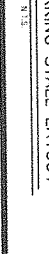
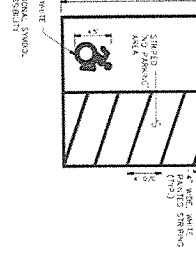
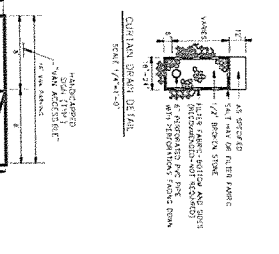
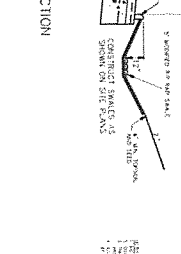
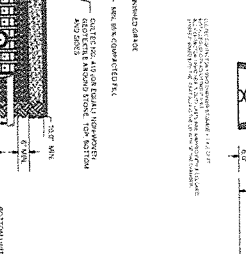
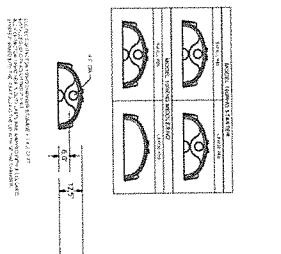
Hita Associ.

Engineers

44-45, 1st floor, 47, 48, 49
 P.O. Box, 1001,
 Colaba, (Bombay) 400 006

DATE:	6/23/2023	UNIT
SCALE:	1"=20 ft	SH
DRAWING:	2308H	NO

LEGEND



ANT LEGEND:

- TOPSOIL & HYDROSEED LAWN
- PROPOSED GROUND COVER
- PROPOSED LOW SHRUB/
COLUMNAR PLANTING
- PROPOSED MED. LARGE
SHRUB OR SMALL
ORNAMENTAL TREE
- PROPOSED ORNAMENTAL/
MULTI-STEM TREE
- PROPOSED MEDIUM
ORNAMENTAL / SHADE TREE
- EXISTING TREE TO REMAIN

PLANTING LEGEND

SIZE	SAMPLE	QUANTITY
12"		20
18"		10
24"		5
36"		3
48"		2

ELDRIDGE DRIVE



EX. PAVEMENT

LANDSCAPING
PLANTING OVERLAY

SITE PL.
EAST ST.
HOUSIN

Hydra Associa
Engineers

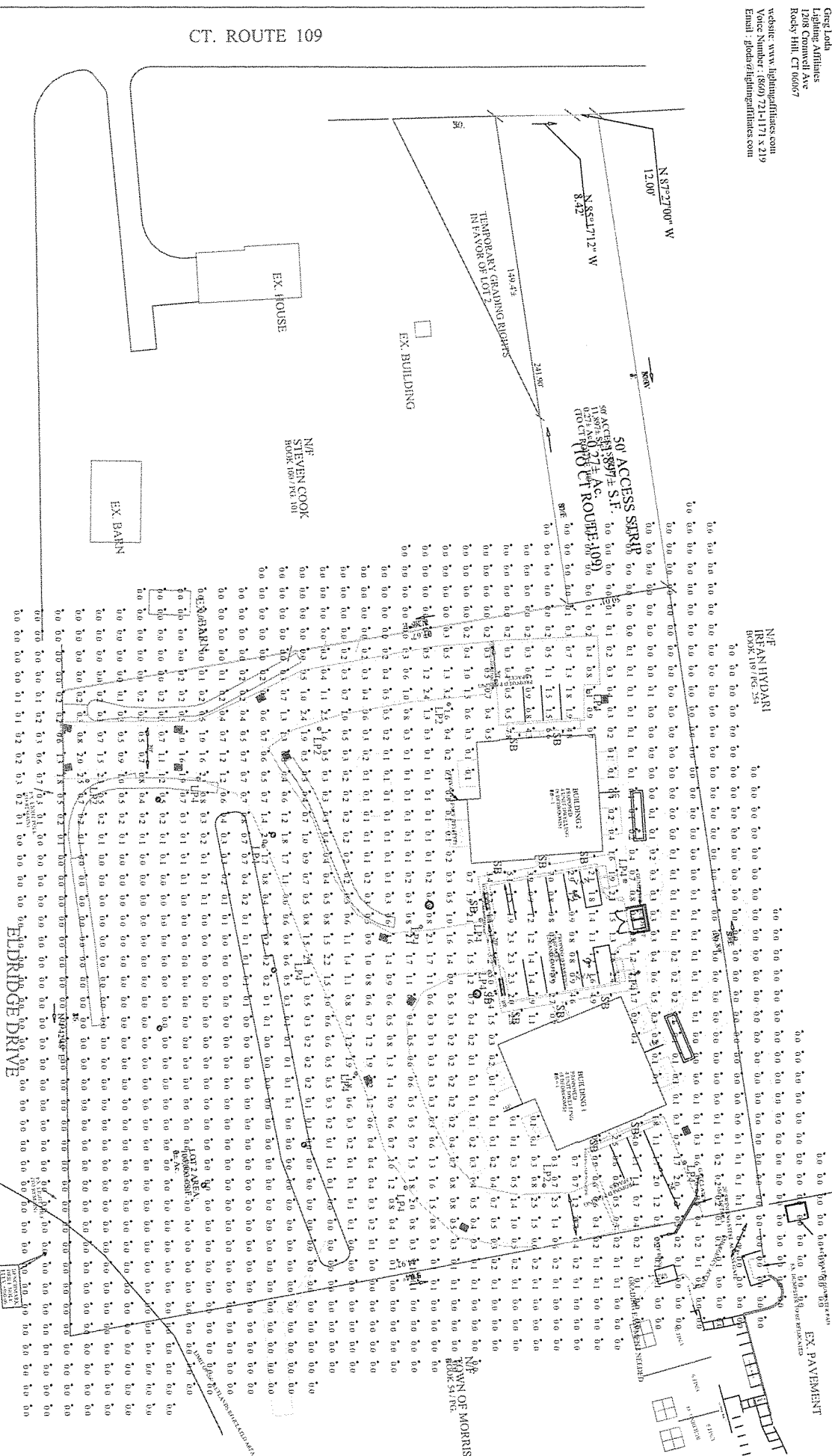
DATE	02/01/2023
BY	HYDRA ASSOCIATES
CHECKED	HYDRA ASSOCIATES
PROJECT #	21-0001

Filename: East Street Housing - 103 East Street Site Lighting - Morris AGI

Luminaire Schedule				Luminaire Schedule			
Symbol	ON	Label	Luminaire Luminaires	Luminaire Watts	L.F.F	BIG Rating	Mounting Height
1	4	LP1	3069	33	0.300	B1-0-0-01	14.4
2	12	LP3	3135	33	0.300	B1-0-0-01	14.4
3	12	SB	1076	10	0.300	B1-0-0-01	16

Calculation Summary				Calculation Summary			
Label	Units	Avg	Max	Min	Avg/Min	Max/Min	
Site Illuminance	Footcandle	15.4	0.0	N/A	N/A	N/A	
Green Building Parking Illuminance	Footcandle	1.61	0.8	0.8	2.01	3.38	
Building 1 North Parking Illuminance	Footcandle	1.14	4.0	0.3	3.80	13.33	
Building 2 South Parking Illuminance	Footcandle	0.88	1.9	0.3	2.91	6.33	
Driveways Illuminance	Footcandle	1.08	3.2	0.3	3.60	10.67	

Greg Loh
Lighting Affiliates
1208 Cromwell Ave
Rocky Hill, CT 06067
website: www.lightingaffiliates.com
Voice Number: (860) 721-1171 x219
Email: glode@lightingaffiliates.com



CT. ROUTE 109

N/F
CORINNE E. HOULE
BOOK 109 / PG. 998

Greg Loda
Lighting Affiliates
1208 Cromwell Ave
Rocky Hill, CT 06067

N/F
CORINNE E. HOULÉ
BOOK 109 / PG. 998



NT LEGEND:

TOPSOIL & HYDROSEED LAWN
SINCE 10/1/00

PROPOSED GROUND COVER

PROPOSED LOW SHRUB/
COLUMNAR PLANTING

PROPOSED MED/LARGE
SHRUB OR SMALL
ORNAMENTAL TREE

PROPOSED ORNAMENTAL/
MULTI-STEM TREE

PROPOSED MEDIUM
ORNAMENTAL / SHADE TREE

EXISTING TREE TO REMAIN

PLANTING LEGEND

SPEC. QUANTITY

100 100 100 100

100 100 100 100

100 100 100 100

100 100 100 100

100 100 100 100

100 100 100 100

ELDRIDGE DRIVE

EX. PAVEMENT

10' WIDE

**LANDSCAPING
PLANTING OVERLAY**

SITE PL

EAST ST

HOUSIN

101 EAST ST

MORRIS, CORNE

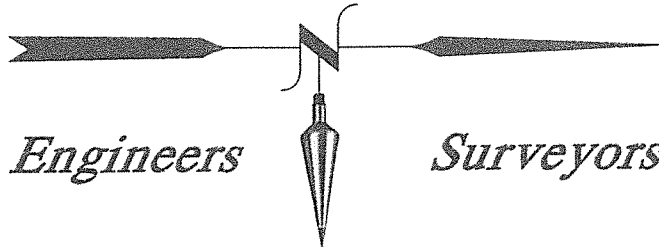
06/10/2013

06/10/2013

06/10/2013

Hrica Associates LLC

Kenneth S. Hrica, PE, RLS
44 Maple View Trail
P.O. Box 1861
Litchfield, Connecticut 06759



860-567-2112 (business)
860-567-0491 (faximile)
e-mail:
hricaassociates@optonline.net

STORM WATER MANANGEMENT PLAN

DRAINAGE CALCULATIONS

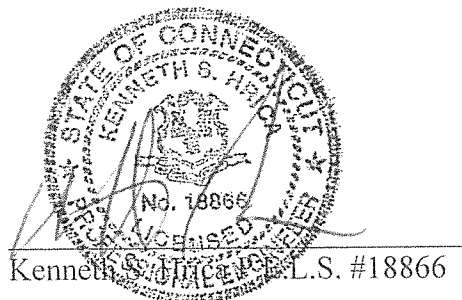
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SEDIMENT & EROSION CONTROL REPORT SHORT & LONG TERM MAINTENANCE FOR STORMWATER QUALITY

ELDRIDGE DRIVE
MORRIS, CONNECTICUT

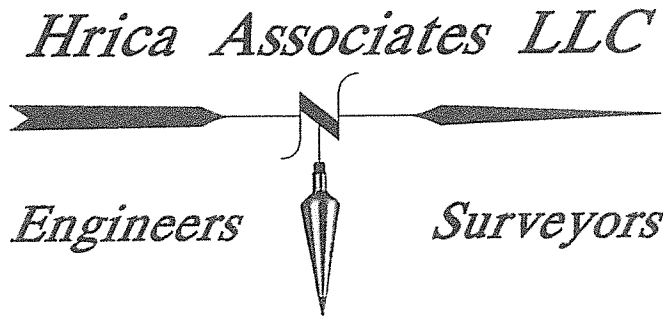
PREPARED FOR:
MORRIS HOUSING AUTHORITY

DECEMBER 19, 2023



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**SEDIMENT & EROSION CONTROL REPORT
SHORT & LONG TERM MAINTENANCE FOR STORMWATER QUALITY**

MORRIS HOUSING AUTHORITY

EAST STREET HOUSING
103 East Street
Morris, Connecticut

During Construction – Sediment and Erosion Control Measures:

Silt Fence:

1. The silt fence shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediments shall be removed when the sediments reach $\frac{1}{2}$ the height of the fence. Sediment is to be spread and seeded immediately. Silt fence to be reinstalled and replaced as necessary.
3. Silt fence shall be installed with a woven wire backing or orange construction fencing to maintain stability.
4. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Coir Logs / Woodchip Wattles:

1. Coir Logs / Woodchip Wattles shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediment captured by the Coir Logs / Woodchip Wattles shall be removed when the sediment reaches 0.5 feet in depth. Sediment is to be spread on site and seeded immediately, or hauled to an approved, non- wetland site. New Coir Logs / Woodchip Wattles are to be installed if at any time during construction, the Coir Logs / Woodchip Wattles fiber membrane is torn or damaged.
3. Coir Logs / Woodchip Wattles shall be kept and maintained in place until the site is stabilized and removal is authorized by the Town of Morris.

Construction Entrance:

1. The construction entrance shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. The entrance shall be maintained in a condition that will prevent tracking of sediments on to the public right-of-way or streets. This may require periodic top dressing with additional aggregate.
3. All sediment tracked or spilled onto the roadway will be cleaned up and the roadway swept by the end of the working day.
4. If washing is required, it shall be done on an area stabilized with aggregate, which drain to an approved sediment-trapping device.
5. All sediment shall be prevented from entering storm drains, swales, or watercourses.
6. A log is to be kept and submitted to the Town of Morris indicated inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Pipe Inlets:

1. Pipe inlets are to be protected with staked geotextile silt fence installed in a "U" shape, approximately six feet from the pipe inlet in the direction of the incoming flow. Silt fence is to be embedded a minimum of six inches.
2. Sediment shall be cleared from silt fence when it reaches a maximum of $\frac{1}{2}$ the height of the fence.
3. The silt fence shall be inspected for stability and operation within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater, but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
4. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Catch Basin / Lawn Drain Inlet Structures:

1. Catch basins are to be protected with staked geotextile silt fence on all four sides. Silt fence is to be embedded a minimum of six inches.
2. Sediment shall be cleared from silt fence when it reaches a maximum of $\frac{1}{2}$ the height of the fence.
3. Catch basin stumps are to be inspected weekly and sediment removed when it reaches a depth of twelve inches.
4. The silt fence shall be inspected for stability and operation within 24 hours of the end of a storm with a rainfall amount of 0.5 inches or greater, but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.

5. A log is to be kept and submitted monthly to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Water Treatment Wastewater Infiltration Units:

1. Water Treatment Wastewater Infiltration Units and the associated pop-up emitter overflow structure shall be installed prior to final grade stabilization.
2. Infiltration Unit Inspection Ports shall be checked after rainfall amounts of 0.5 inches or greater, and at weekly intervals during construction. Accumulation of silt and debris shall be removed from the chambers when it reaches a maximum of 0.5 feet.
3. A log is to be kept and submitted monthly to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Rain Barrels:

4. Water Treatment Wastewater Infiltration Units and the associated stormwater outlet piping overflow shall be installed prior to installation of building roof gutters.
5. Rain Barrels shall be checked after rainfall amounts of 0.5 inches or greater, and at weekly intervals during construction. Accumulation of silt and debris shall be cleaned / flushed from the Barrel when it reaches a maximum of 0.17 feet (2").
6. A log is to be kept and submitted monthly to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Slope Inspection:

1. All erosion control blankets shall be installed per the manufacturer's requirements.
2. Slopes shall be seeded immediately after rough grading. If rill erosion occurs, it will be repaired immediately, and erosion control blankets installed.
3. All seeded areas will be fertilized, reseeded as necessary, and mulched according to specifications to maintain a vigorous, dense vegetative cover. Rilling will be repaired and reseeded prior to final stabilization.

Water Quality Forebay Dam:

1. The forebay dam shall be inspected for stability and operation prior to and after runoff producing events but in no case less than once per week. Repairs shall be made within one working day to maintain the practice as designed.
2. Sediment shall be removed, and original volume restored when sediment accumulates to one half the design volume.
3. The forebay dam shall be inspected weekly to check for erosion, piping, and rock displacement before and after each runoff-producing event. Repairs are to be made immediately.

4. Structure is to be restored to its original condition prior to final stabilization of the detention pond.
5. Stones are to be replaced as needed to maintain the design cross section of the measure.

Long Term Maintenance of Stormwater Quality Structures:

Roads and Pavement:

1. Impervious surfaces shall be vacuum swept annually between April 1st and May 1st.
2. Grass shoulders shall be repaired in springtime if damaged by snow plowing.

Roof Drainage System:

1. The roof drainages system including Rain Barrels shall be cleaned of leaves and debris, inspected and repaired biannually (April and October) and as needed.

Storm Drainage System:

1. The storm drainage system shall be inspected monthly during the first year after construction of all phases.
2. Debris, leaves, and sediment are to be cleaned out when sediment reaches one half the design depth and at minimum, annually.

Open Channels and Swales:

1. Sediment shall be removed when twenty-five percent of the original volume has been exceeded and at minimum, annually.
2. Grass height of four inches to six inches shall be maintained.
3. Swales shall be inspected for erosion damage on a quarterly basis. All damage shall be repaired immediately with suitable organic growing medium, erosion control blankets and reseeded.

Water Quality Basins:

1. Water quality Basins provide additional water quality improvements to the stormwater after discharge from the vegetated swales. Maintenance of the basins will include removing by vacuum truck and/or hand shoveling of any visible accumulated sediment existing in the forebay of the basin. The main bay of the basin will have a stone bottom and planted embankments. The embankments will not require maintenance other than replacing any plantings that have not taken. The bottom of the basin will require biannual visual inspection for accumulation of foreign matter such as leaves, branches, grass clippings and trash. As specified in the erosion control plan temporary silt fences are to remain in place to protect the main bay of the basin until the site is fully vegetated.

- a. The basin shall be inspected monthly during the first year after construction of all phases.
 - b. Sediment and debris shall be removed from the basin and the weir area when six inches (0.5 feet) deep.
 - c. Vegetation shall be replaced, and area reseeded annually or after a storm event to maintain fifty percent plant coverage.
 - d. All berms and riprap outlets are to be inspected and repaired annually or if damaged by a storm event.
2. Outlet riprap shall be inspected for condition and repaired or replaced as needed.
 3. Minor erosion shall be repaired, and the area replanted in accordance with the plans. Should major erosion occur within the basin the inspector (representative of the Homeowners Association) shall notify the Town of Morris Inland Wetland Enforcement Officer. Repairs shall be performed as specified thereafter.
 4. The requirements for disposal of materials removed from the detention basins are similar to that of any other BMP. Disposal should be by a Connecticut licensed waste management company and discharged to a Connecticut DEP approved location.
 5. A log is to be kept and submitted Annually to the Town of Morris indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Water Treatment Wastewater Infiltration Units:

1. Infiltration Unit Inspection Ports and the associated pop-up emitter overflow structure shall be checked at 6-month intervals. Accumulation of silt and debris shall be removed from the chambers when it reaches a maximum of 0.5 feet.
2. A log is to be kept and submitted Annually to the Town of Morris Inland Wetland Officer indicating inspections and repairs made. The measure shall be kept and maintained in place until removal is authorized by the Town of Morris.

Hydrograph Return Period Recap..... 1

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 Hydrograph No. 1, Rational, POST DEVELOPEMENT (TO CCB)..... 3

 Hydrograph No. 4, Rational, POST DEVELOPEMENT (TO FOREBAY)..... 4

 Hydrograph No. 5, Rational, POST DEVELOPEMENT (TO CCB)..... 5

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 Hydrograph No. 9, Reservoir, FOREBAY AND POND..... 7

 Hydrograph No. 12, Combine, TOTAL POST DEVELOPEMENT..... 8

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	-----	-----	1.487	-----	1.757	2.019	2.427	2.795	3.238	POST DEVELOPEMENT (TO CCB)
4	Rational	-----	-----	4.682	-----	5.531	6.356	7.640	8.798	10.19	POST DEVELOPEMENT (TO FOR
5	Rational	-----	-----	0.213	-----	0.252	0.289	0.348	0.401	0.464	POST DEVELOPEMENT (TO CCB)
6	Rational	-----	-----	0.208	-----	0.246	0.283	0.340	0.391	0.453	POST DEVELOPEMENT (OFF SIT
9	Reservoir(i)	4	-----	0.000	-----	0.000	0.017	0.042	0.093	0.314	FOREBAY AND POND
12	Combine	5, 6, 9,	-----	0.421	-----	0.498	0.572	0.688	0.792	0.918	TOTAL POST DEVELOPEMENT
<div> <div>Proj. file: DRAINAGE CALCS 12-19-23.gpw</div> <div>Wednesday, 12 / 20 / 2023</div> </div>											

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	3.238	1	5	972	----	----	----	POST DEVELOPEMENT (TO CCB)
4	Rational	10.19	1	5	3,058	----	----	----	POST DEVELOPEMENT (TO FOR
5	Rational	0.464	1	5	139	----	----	----	POST DEVELOPEMENT (TO CCB)
6	Rational	0.453	1	5	136	----	----	----	POST DEVELOPEMENT (OFF SIT
9	Reservoir(i)	0.314	1	27	1,305	4	104.19	3,267	FOREBAY AND POND
12	Combine	0.918	1	5	1,580	5, 6, 9,	----	----	TOTAL POST DEVELOPEMENT

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hyd. No. 1

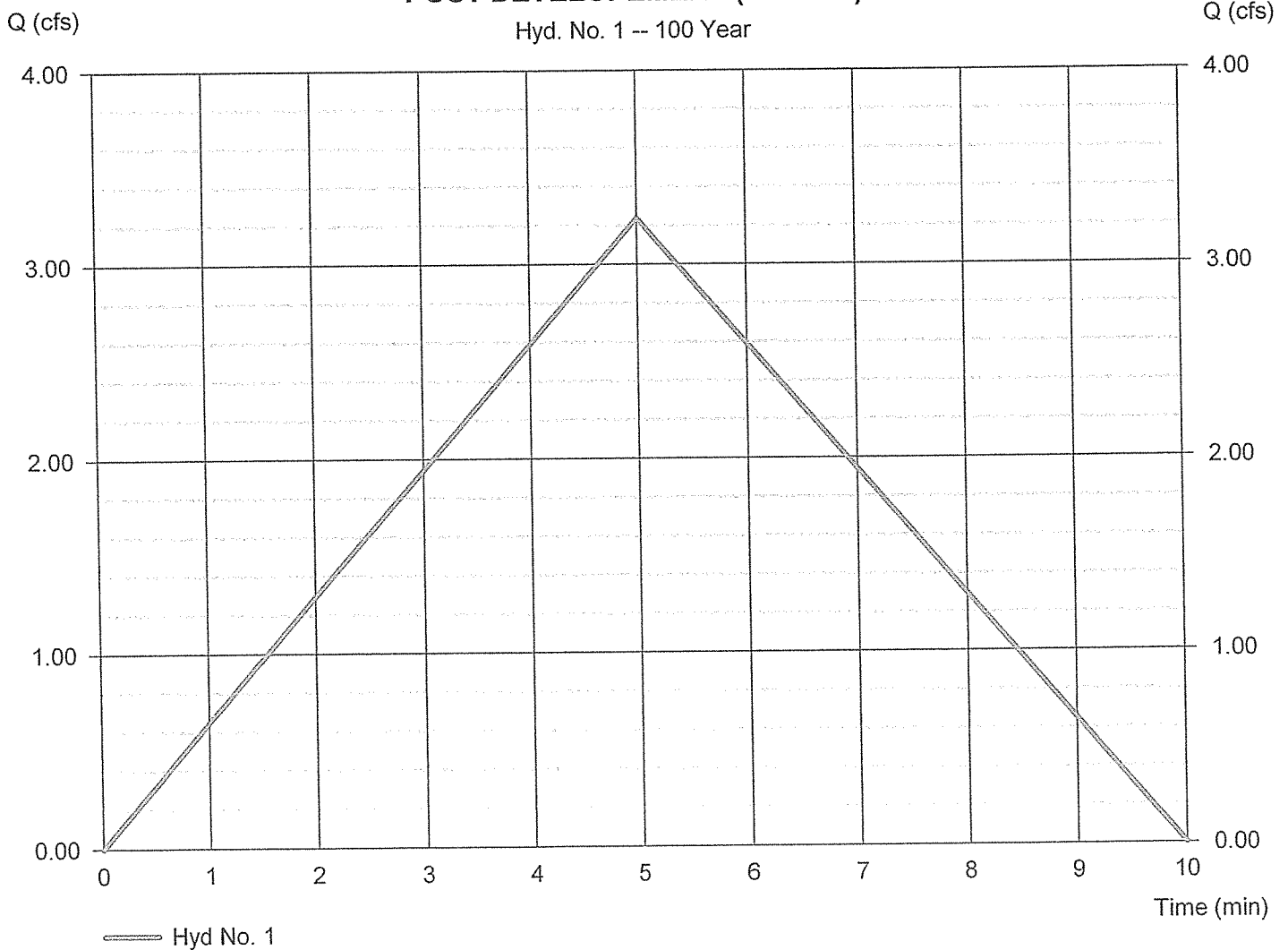
POST DEVELOPEMENT (TO CCB)

Hydrograph type	= Rational	Peak discharge	= 3.238 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 972 cuft
Drainage area	= 2.200 ac	Runoff coeff.	= 0.15*
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = $[(2.300 \times 0.15)] / 2.200$

POST DEVELOPEMENT (TO CCB)

Hyd. No. 1 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

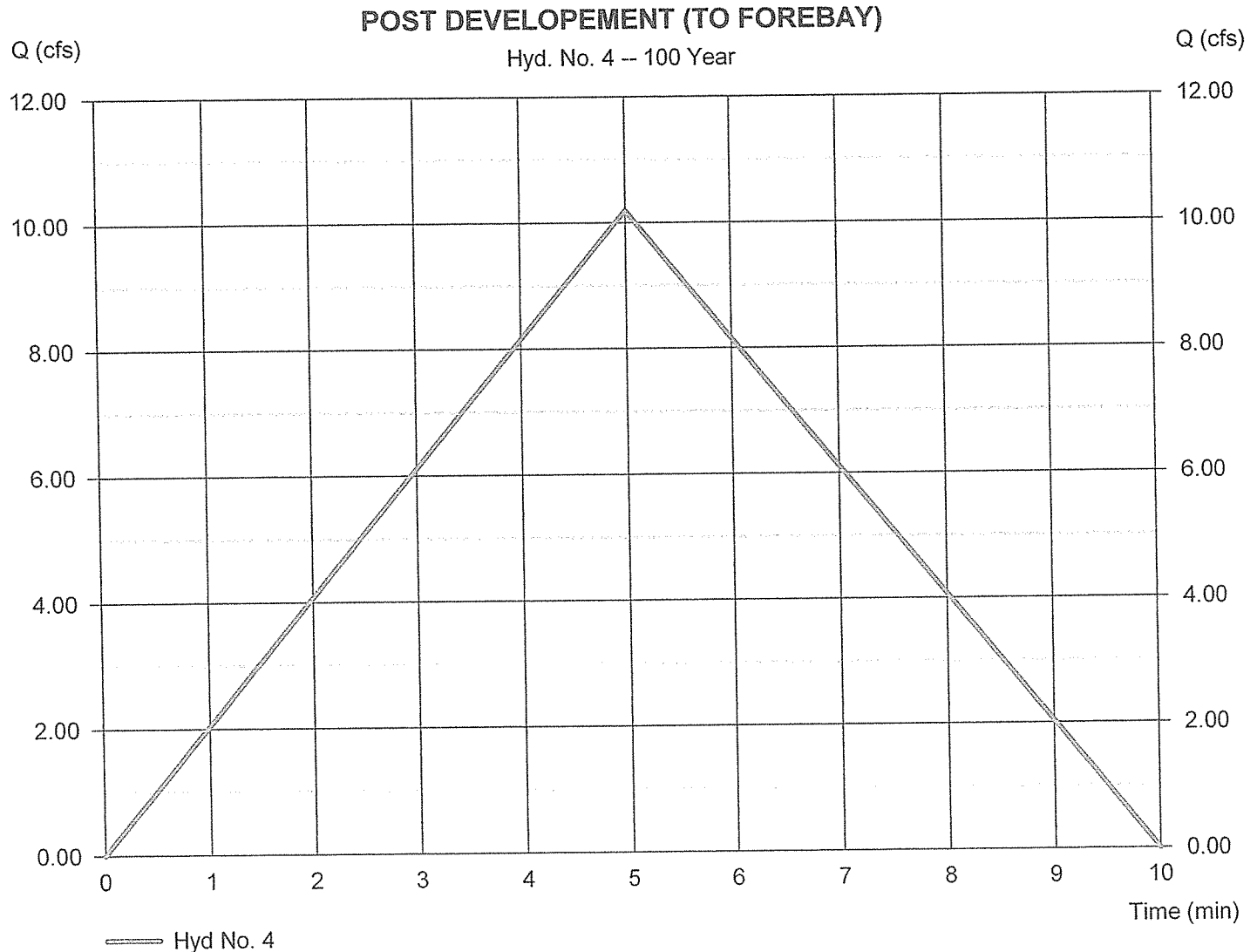
Wednesday, 12 / 20 / 2023

Hyd. No. 4

POST DEVELOPEMENT (TO FOREBAY)

Hydrograph type	= Rational	Peak discharge	= 10.19 cfs
Storm frequency	= 100 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 3,058 cuft
Drainage area	= 2.120 ac	Runoff coeff.	= 0.49*
Intensity	= 9.814 in/hr	Tc by User	= 5.00 min
IDF Curve	= litch-co.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = $[(1.460 \times 0.30) + (0.660 \times 0.90)] / 2.120$



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hyd. No. 5

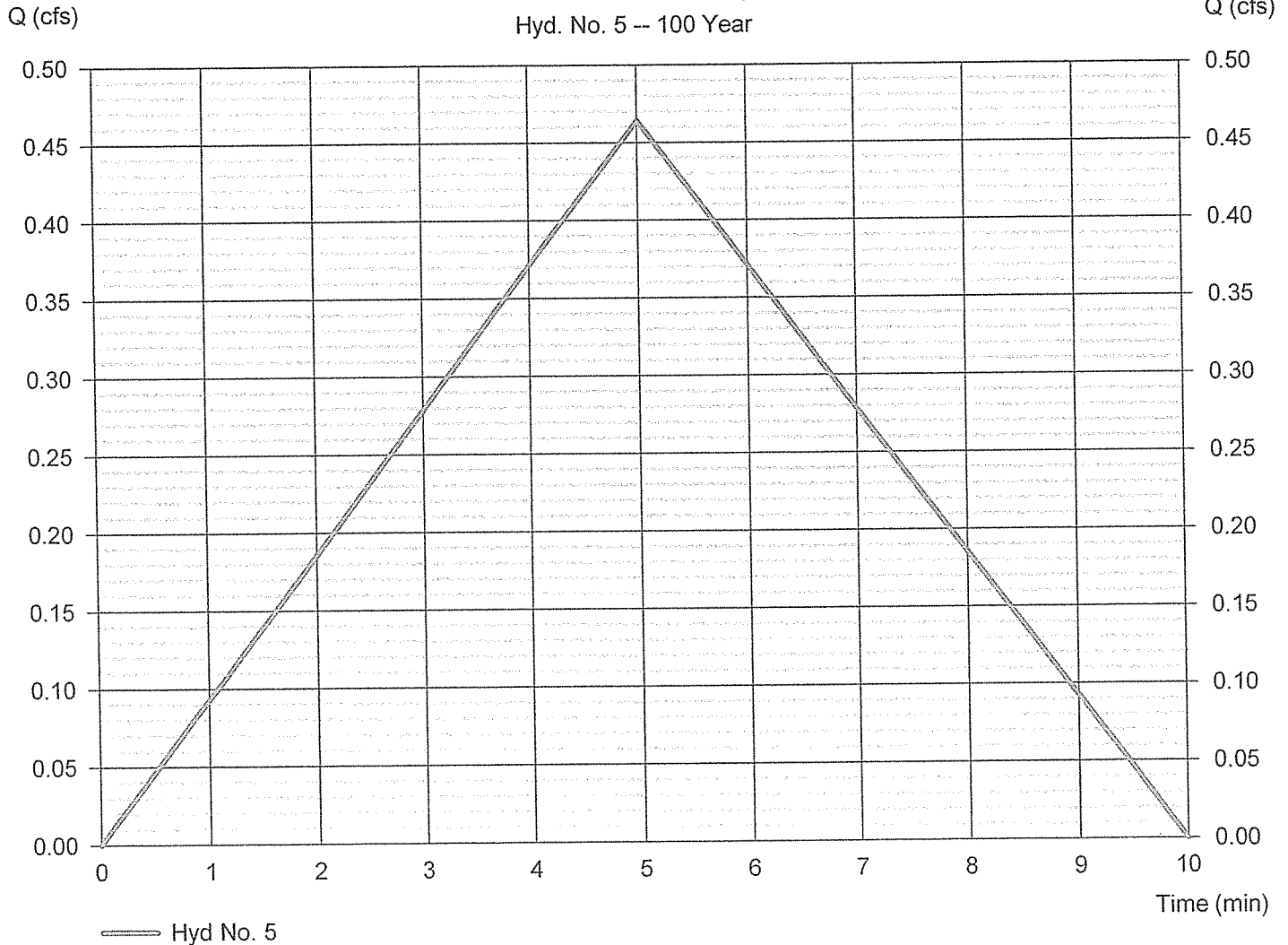
POST DEVELOPEMENT (TO CCB)

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.110 ac
 Intensity = 9.814 in/hr
 IDF Curve = litch-co.IDF

Peak discharge = 0.464 cfs
 Time to peak = 5 min
 Hyd. volume = 139 cuft
 Runoff coeff. = 0.43*
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

* Composite (Area/C) = $[(0.030 \times 0.90) + (0.080 \times 0.25)] / 0.110$

POST DEVELOPEMENT (TO CCB)



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hyd. No. 6

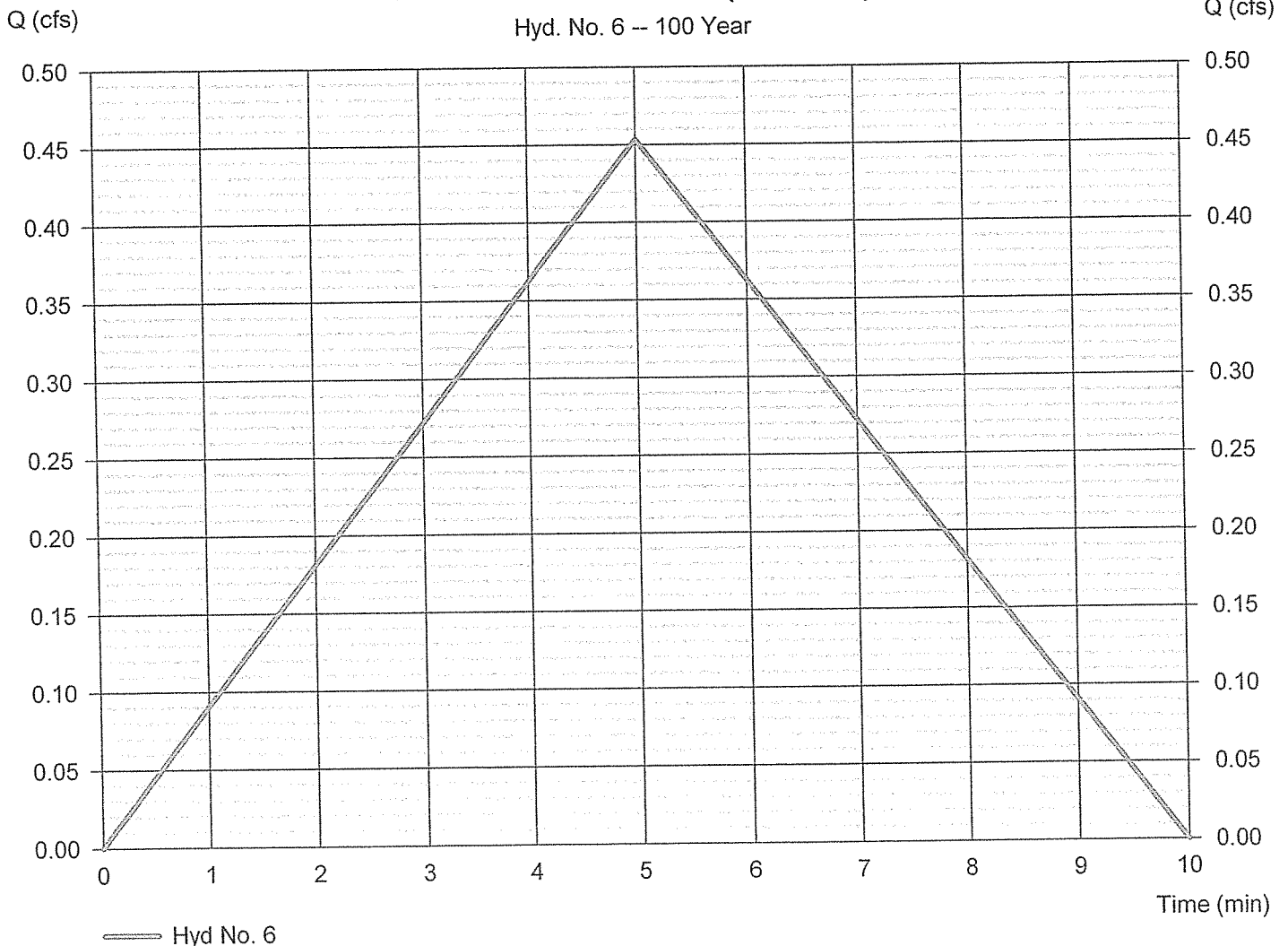
POST DEVELOPEMENT (OFF SITE)

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.154 ac
 Intensity = 9.814 in/hr
 IDF Curve = litch-co.IDF

Peak discharge = 0.453 cfs
 Time to peak = 5 min
 Hyd. volume = 136 cuft
 Runoff coeff. = 0.3
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1

POST DEVELOPEMENT (OFF SITE)

Hyd. No. 6 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hyd. No. 9

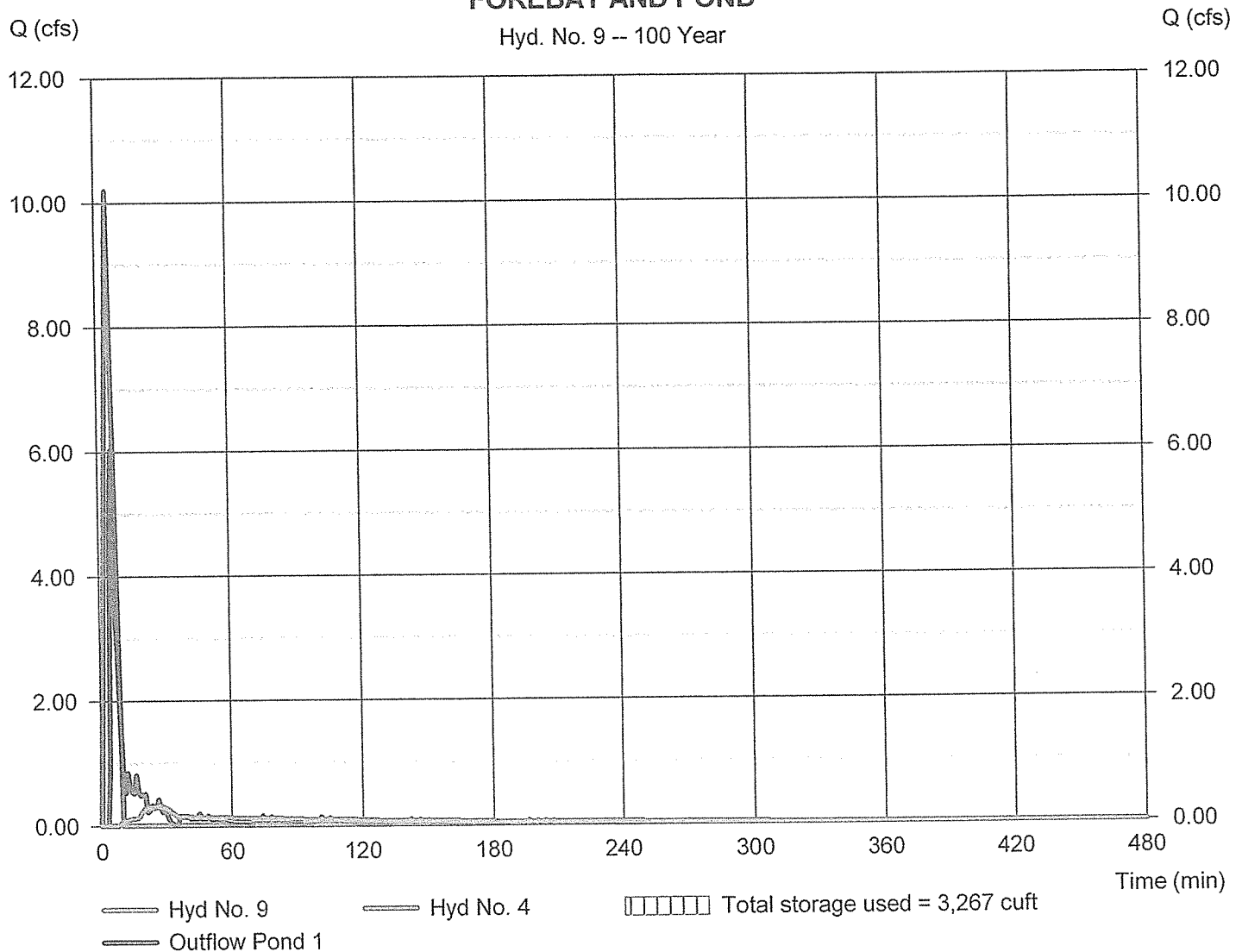
FOREBAY AND POND

Hydrograph type	= Reservoir (Interconnected)	Peak discharge	= 0.314 cfs
Storm frequency	= 100 yrs	Time to peak	= 27 min
Time interval	= 1 min	Hyd. volume	= 1,305 cuft
Upper Pond	= FOREBAY	Lower Pond	= POND
Inflow hyd.	= 4 - POST DEVELOPEMENT (no FOREBAY)		= None
Max. Elevation	= 104.19 ft	Max. Elevation	= 104.16 ft
Max. Storage	= 1,781 cuft	Max. Storage	= 1,486 cuft

Interconnected Pond Routing. Storage Indication method used.

FOREBAY AND POND

Hyd. No. 9 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Wednesday, 12 / 20 / 2023

Hyd. No. 12

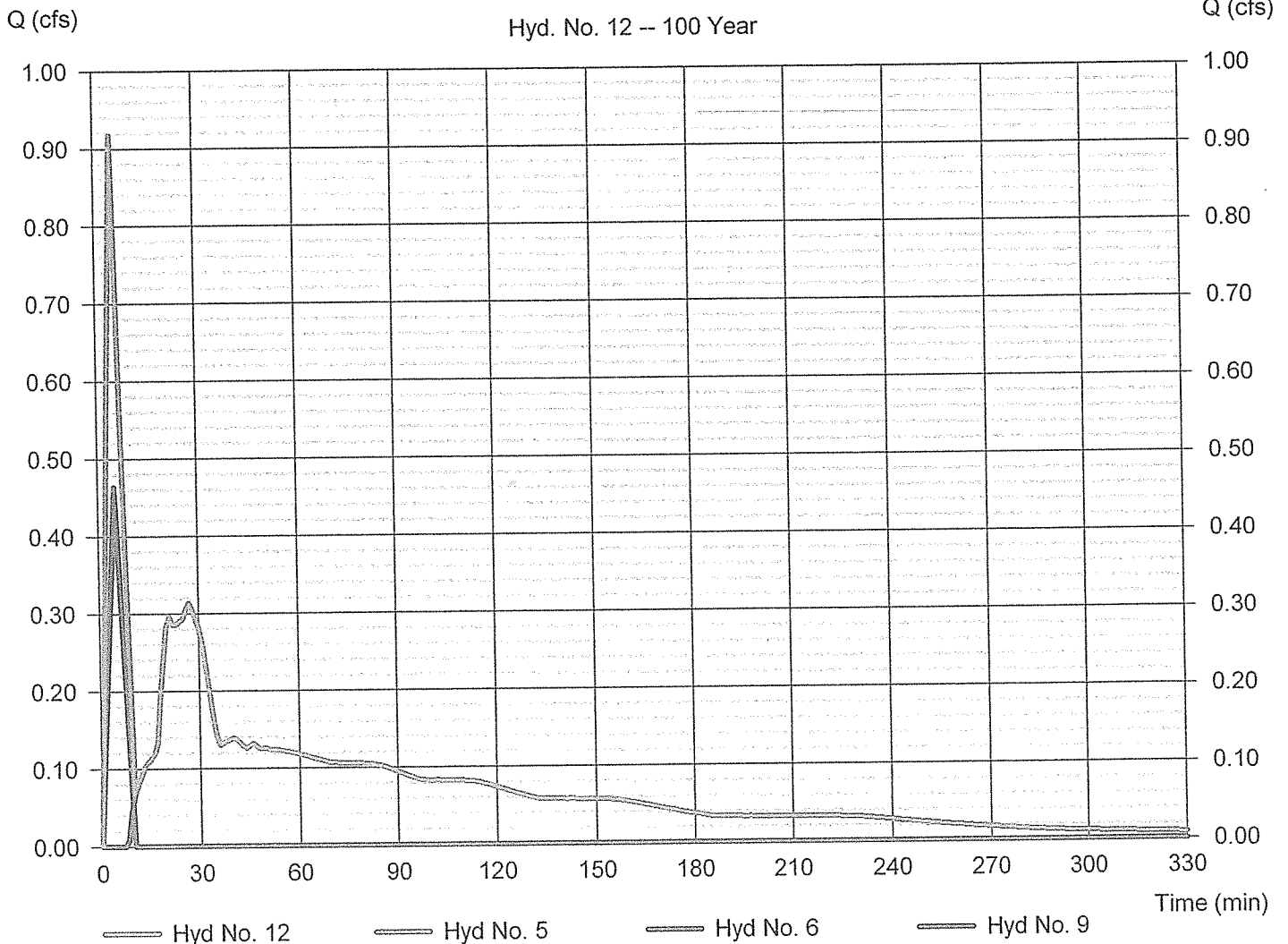
TOTAL POST DEVELOPEMENT

Hydrograph type = Combine
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hyds. = 5, 6, 9

Peak discharge = 0.918 cfs
 Time to peak = 5 min
 Hyd. volume = 1,580 cuft
 Contrib. drain. area = 0.264 ac

TOTAL POST DEVELOPEMENT

Hyd. No. 12 -- 100 Year



WATER QUALITY VOLUME ANALYSIS

PROJECT: East Street Housing
 PROJ. #: 23-0891
 LOCATION: 103 East Street
 Morris, Connecticut

$$WQV = \frac{1" (R) (A)}{12}$$

R = VOLUMETRIC RUNOFF COEFFICIENT
 = 0.05 + 0.009(I)

I = PERCENT IMPERVIOUS COVER

A = CONTRIBUTING AREA IN ACRES

BASIN IDENTIFICATION: WQ Forebay

SITE AREA (ACRES): 2.300
 IMPERVIOUS AREA: 0.497

$$R = 0.2445$$

$$I = 21.609$$

WATER QUALITY VOLUME (WQV) =	0.0469	AC.-FT.
FOREBAY WQV REQUIRED (10%) =	0.0047	AC.-FT.

DEPTH OF POOL ft.: 1.5
 DEPTH OF STORAGE PROVIDED ft.: 0.5
 AVAILABLE STORAGE VOL. cu.ft.: 655

(0.5' SEDIMENT STORAGE)

WATER QUALITY VOLUME PROVIDED =	0.0150	AC.-FT.
32.1 %		

WATER QUALITY VOLUME ANALYSIS

PROJECT: East Street Housing
PROJ. #: 23-0891
LOCATION: 103 East Street
Morris, Connecticut

$$WQV = \frac{"1" (R) (A)}{12}$$

R = VOLUMETRIC RUNOFF COEFFICIENT
= $0.05 + 0.009(I)$

I = PERCENT IMPERVIOUS COVER

A = CONTRIBUTING AREA IN ACRES

BASIN IDENTIFICATION: WQ Basin

SITE AREA (ACRES): 2.300
IMPERVIOUS AREA: 0.497

$$R = \underline{0.2445}$$

$$I = \underline{21.609}$$

WATER QUALITY VOLUME (WQV) =	0.0469	AC.-FT.
FOREBAY WQV REQUIRED (10%) =	0.0047	AC.-FT.

DEPTH OF POOL ft.: 1.5
DEPTH OF STORAGE PROVIDED ft.: 1.5
AVAILABLE STORAGE VOL. cu.ft.: 915

(1.5' SEDIMENT STORAGE)

WATER QUALITY VOLUME PROVIDED =	0.0210	AC.-FT.
	44.8 %	

The Del Mar is the perfect luminaire designed to replace existing post top fixtures saving seventy five percent energy while meeting IES minimum foot candle levels while improving light distribution and uniformity. The Del Mar luminaire features LEDs recessed deep into the luminaire eliminating any direct glare. The fixture is Full Cutoff Dark Sky. The Del Mar also features a clear tempered safety glass lens with silicone gasket which improves fixture reliability.

Del Mar is available from 18 to 104 watts and its scale is perfect to replace any wattage between 70-400 watt HID. The Del Mar throws light four to five mounting heights in all directions which is a major improvement to existing optical technology. The Del Mar features the Star Power Reflector system, a diffused 95 percent reflective low glare optical material.

Del Mar is available in Kelvin temperatures of Amber, 2700K, 3000K, 3500K, 4000K and 5000K in Types 3, and 5 light distributions.

BUY AMERICAN

To ensure the latest BAA/TAA/BABA Standards are being met, please select BAA, TAA, or BABA in the options section. Please contact the factory before placing an order for any NLS products requesting BAA (Buy American Act), TAA (Trade American Act), or BABA (Build America, Buy America).



STAR POWER™ OPTICAL SYSTEM

The Star Power™ reflector is an excellent system which provides great value and performance. Star Power Patent number: 10168023



LED WATTAGE CHART

	16L	32L	48L	64L
350 milliamps	-	33w	51w	66w
400 milliamps	21w	-	-	-
530 milliamps	28w	54w	80w	102w
700 milliamps	36w	71w	104w	-

Project Name:

Type:

Cat#	Light Dist.	# of LEDs	Milliamps	Kelvin	Volts	Mounting	Color	Options
DEL MAR 1 (DMR-1)	Type 3 (T3)	16 (16L)	350 (35) ^①	Amber 585-600nm (AMBER) ^{②③}	120-277 (UNV)	Post Top Over 2-3/8" OD (PT2)	Bronze Textured (BRZ)	Marine Grade Finish (MGF)
	Type 4 (T4)	32 (32L)	400 (40)	2700K, 70 CRI (27K7) ^④	347-480 (HV)	Post Top Over 3" OD (PT3)	White Textured (WHT)	Button Photocell (PC) ^⑤
	Type 5 (T5)	48 (48L)	530 (53)	2700K, 80 CRI (27K8) ^{④⑥}		Post Top Over 3.5" OD (PT35)	Smooth White Gloss (SWT)	FSP-211 with Motion Sensor (FSP-8) ^⑦ 8' and Below (FSP-20) ^⑦ 9'-20' Heights (FSP-40) ^⑦ 21'-40' Heights
		64 (64L) ^①	700 (7) ^②	3000K, 70 CRI (30K7) ^④			Silver (SVR)	
				3000K, 80 CRI (30K8) ^{④⑥}			Black Textured (BLK)	House Side Shield (HSS)
				3500K, 80 CRI (35K8) ^④			Smooth Black Gloss (SBK)	Buy American (BAA) ^⑧
				4000K, 70 CRI (40K7)			Graphite Textured (GPH)	Trade American (TAA) ^⑧
				4000K, 80 CRI (40K8) ^④			Grey Textured (GRY)	Build America Buy American (BABA) ^⑧
				5000K, 70 CRI (50K7)			Green (GRN)	Custom Controls Integration (CCI) ^⑨
				5000K, 80 CRI (50K8) ^④			Custom (CS)	

Notes:

- ① 530mA Max
- ② 48L Max
- ③ Consult Factory for Lead Time. Consult Factory for 90 CRI Requests.
- ④ Universal Voltage 120-277
- ⑤ 3000K or lower must be selected to meet International Dark-Sky Association certification.
- ⑥ Please contact Factory for Custom Control Integration requests (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, Dali II, Avi-On, or other control systems)
- ⑦ Turtle Safe
- ⑧ Consult factory for all BAA/TAA/BABA requests
- ⑨ 350mA not available in 16L

PRODUCT SPECIFICATIONS

ELECTRICAL

- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver
- Driver power factor at maximum load is $\geq .95$, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All internal wiring UL certified for 600 VAC and 105°C
- CRI 70, 80 or 90
- Color temperatures: Amber, 2700, 3000K, 3500K, 4000K, 5000K
- Surge Protection: 20KA supplied as standard.

CONSTRUCTION

- Cast Aluminum, Spun Aluminum

OPTIONS

- MARINE GRADE FINISH (MGF) - A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.

House Side Shield (HSS) is designed for full property line cut-off.

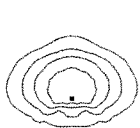
CONTROL OPTIONS

- FSP-211 (FSP-X)—Passive infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
 - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
 - FSP-20 mounting heights 9-20 feet
 - FSP-40 mounting heights 21-40 feet.
 - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, re-programmable in the field.
 - FSIR-100 commissioning remote is required to change sensor settings. Please contact factory for ordering.
- PHOTOCELL - Button type photocell.
- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

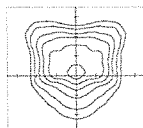
OPTICS

Recessed Star Power Optical System is 95% reflective material. Utilizes a linear diffused pattern, softening the light distribution and eliminating any dark shadows or striations.

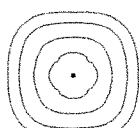
- IES Types



TYPE III (T3)



TYPE IV (T4)



TYPE V (T5)



The information and specifications on this document are subject to change without any notification. All values are design, nominal, or typical or prorated values when measured under internal and external laboratory conditions.



701 Kingshill Place, Carson, CA 90746
Call Us Today (310) 341-2037

nslighting.com

FINISH

- 3-5 mils electrostatic powder coat.
- NLS Lighting standard high-quality finishes prevent corrosion and protects against extreme environmental conditions

WARRANTY

Five-year limited warranty for drivers and LEDs.

LISTINGS

- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0

BUY AMERICAN OPTION

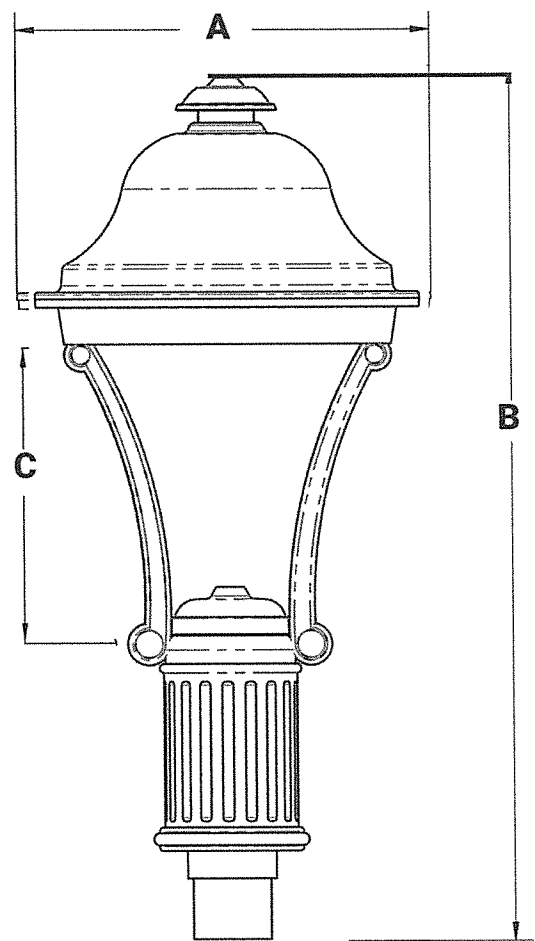
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[https://nslighting.com/wp-content/uploads/cs/NLS_BuyAmerica\(n\).pdf](https://nslighting.com/wp-content/uploads/cs/NLS_BuyAmerica(n).pdf)

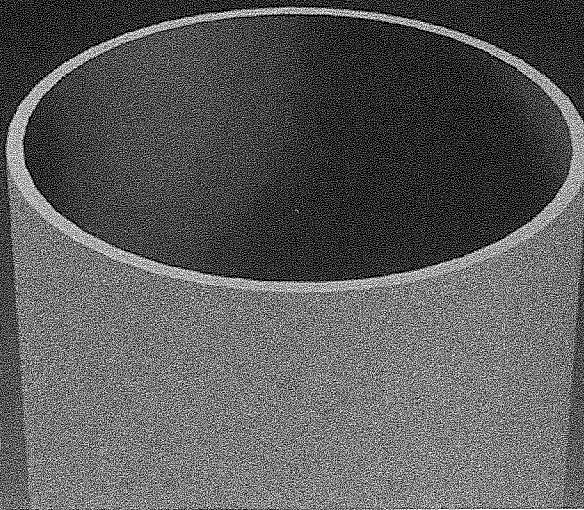
PRODUCT SPECIFICATIONS



OVER 2-3/8" TO 3.5" OD Ø

EPA	
SINGLE	1.82

DIMENSION	DMR-1
A	17.5 in
B	37.8 in
C	14 in



Height
10' - 30'

Pole Shaft

The pole shaft material is a weldable grade hot rolled commercial quality steel tubing with a minimum yield of 46,000 psi. Conforms to ASTM A500 Grade B Standards. Poles have ground lug welded inside hand-hole opposite side of the hand-hole. Pole shaft is welded to base plate on top and bottom of base plate.

Base Plate

The Base Plate is manufactured from structural hot rolled steel that meets or exceeds a minimum yield strength of 36,000 psi, conforms the ASTM-A36 standards. Base Plate vary in size from 1" thick for poles 21 feet and over, 3/4" thick for poles 10 to 20 feet.

Anchor Bolts

All anchor bolts are hot dipped galvanized steel and come with two galvanized nuts and washers per bolt. Minimum yield strength 50,000 psi. Anchor bolts are not included for Custom Bolt Circle.

Base Cover

All base covers are fabricated two-piece 6063 aluminum and powder coated to match the pole. Square base cover comes standard, Round base cover optional.

Hand-Hole

A reinforced hand-hole is 12" on center from the base plate and is constructed of 3"x 5" rectangular steel tubing which is welded to pole shaft for added strength. The hand-hole covers are provided with internal bridge support and powder coated to match pole finish.

Pole Cap

All poles come with a removable polymer pole cap installed. All pole caps are black finish. Aluminum Pole Cap option is painted to match pole.

Finish

All poles are treated with shot blast media for a near white finish, power blasted with 100 psi prior to powder coat application. Electrostatically applied polyester powder coat with a 3 to 5 mil thickness for maximum adherence.

Marine Grade Finish

All poles are washed through a 5-stage cleaning system with a deionized rinse, a 3 to 5 mils zinc rich durable polyester primer powder coat, followed by a 3 to 5 mils super durable polyester powder coat finish.

Galvanized Finish

All poles are Hot Dipped Galvanized in a multi stage process. Galvanizing Specification, Zinc (Hot Dipped Galvanized) per ASTM A 123/A 123M - 02

Zinc coatings on threaded materials shall conform to specification A 153 / A 153M. The coating shall be continuous and reasonably smooth and uniform in thickness and in weight.

Galvanizing Adherence - The Zinc coating shall withstand handling consistent with the nature and thickness of the coating and normal use of the article without peeling or flaking.

Galvanized Under Powder

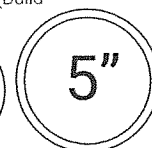
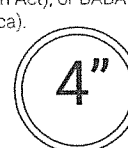
Galvanized Under Powder (GUP) adheres to above galvanized specification, and the second stage is a light sand blast on the outside of the pole, third stage is a 3-5 mils polyester powder coat finish for maximum adherence.

Vibration Dampener

The Vibration Dampener is factory installed. The Vibration Dampener consists of a rugged galvanized chain coated with heavy duty polyester tubing that is factory secured at the bottom 2-3rds of the pole and field secured by contractor at the base during installation.

Buy American

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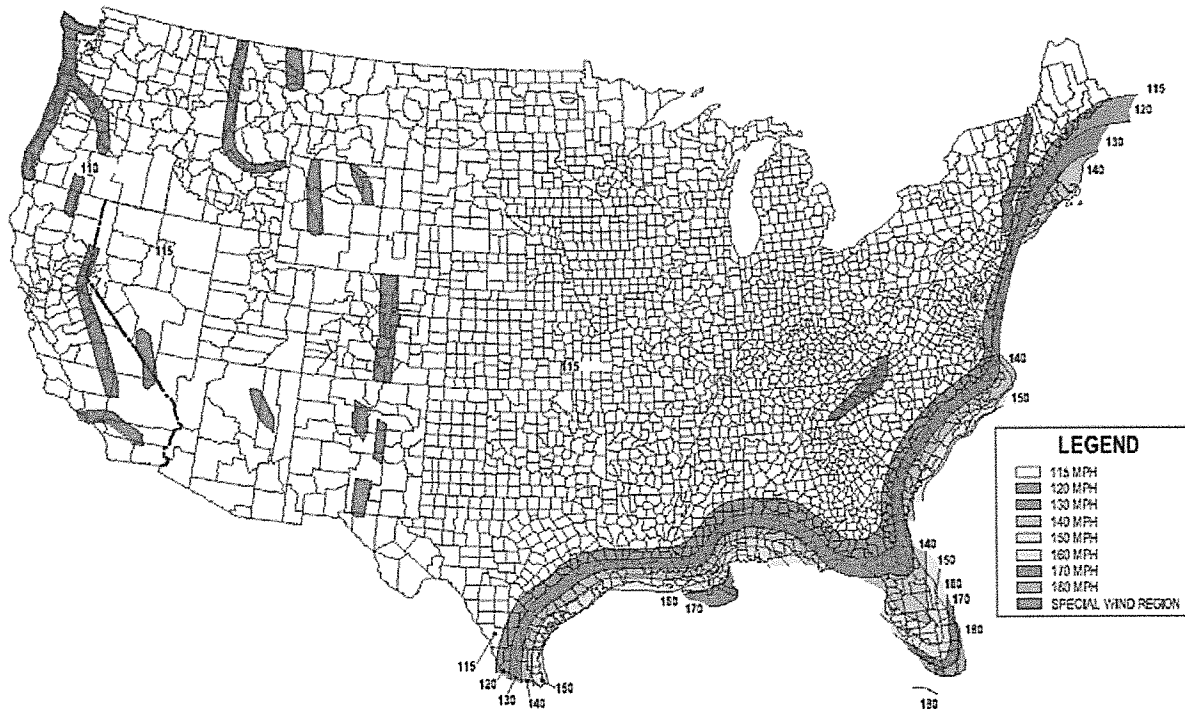


FIG. 3.8-1b - 700-Year MRI Basic Wind Speed, mph (AASHTO LRFDLTS-1)

- 1) All wind load calculations are based on sustained wind force plus and additional 1.3 gust
- 2) Wind Map is to be used as a reference only. Please coordinate with local agencies for further review.
- 3) Wind Map values are based on a 50 year mean recurrence. These values do not account for severe conditions, such as hurricanes, tornadoes, etc...
- 4) For review of poles with additional configurations (arms, banners, shorter/longer pole lengths, etc...), please contact factory.

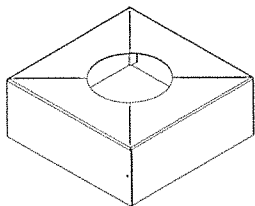
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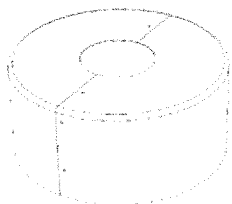
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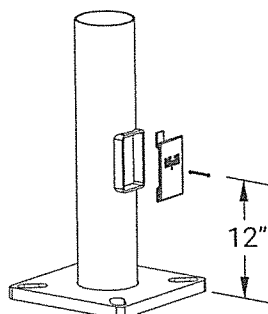
[https://nlsighting.com/wp-content/uploads/cs/NLS_BuyAmerica\(n\).pdf](https://nlsighting.com/wp-content/uploads/cs/NLS_BuyAmerica(n).pdf)



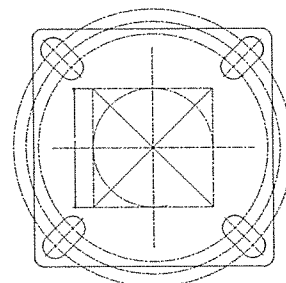
Base Cover



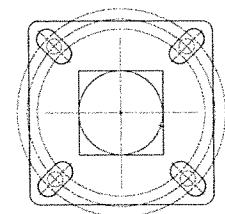
**Optional Round
Base Cover**



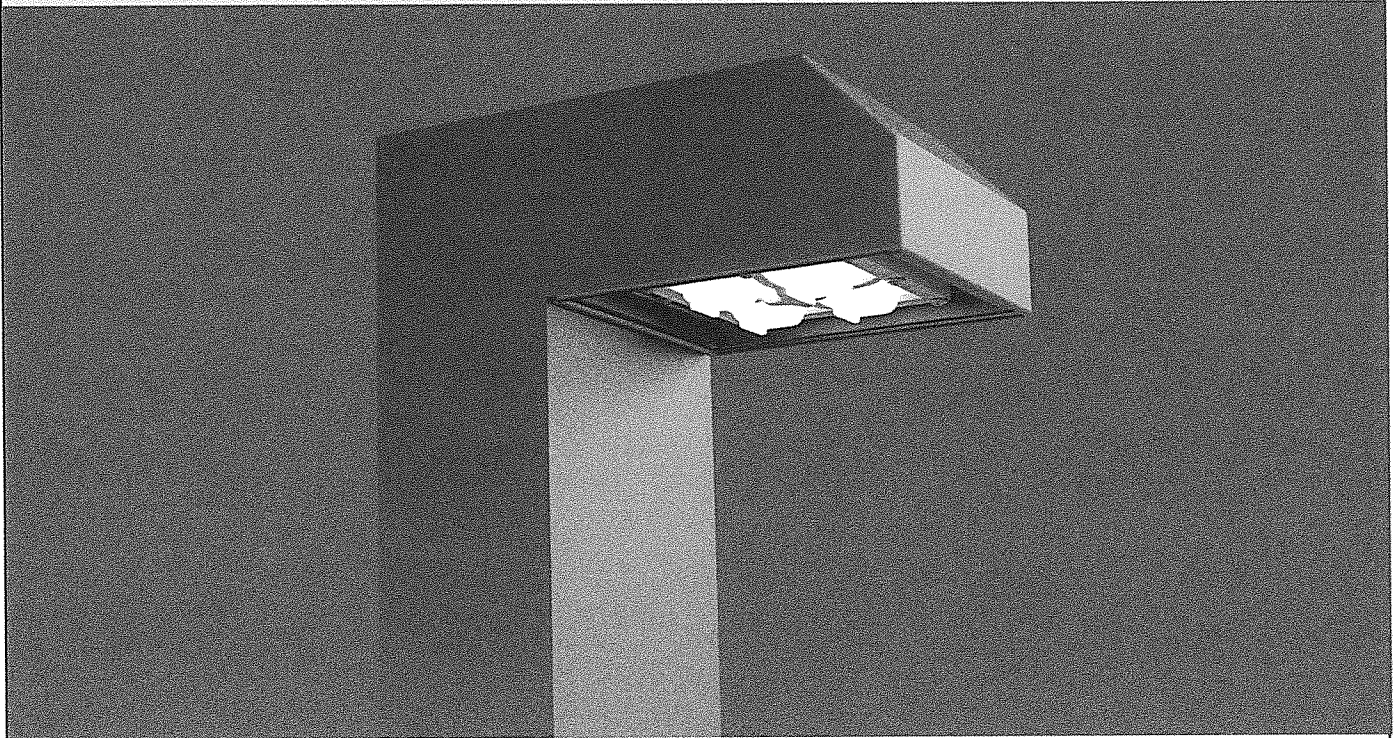
Base Detail



12" Base Detail



9" Base Detail



LED WATTAGE CHART

	16L
175 milliamps	10w (765-850 Lumens)
400 milliamps	21w (2478-2911 Lumens)
530 milliamps	28w (2940-3584 Lumens)
700 milliamps	36w (3636-4428 Lumens)
1050 milliamps	56w (5408-6496 Lumens)

Form

- Elegant Rectilinear Extruded Aluminum Housing
- Corrosion Resistant Stainless Steel External Hardware
- Sleek, Low Profile Housing
- Spec Grade Performance
- Engineered For Optimum Thermal Management
- Anchor Base Plate For Easy Installation
- 8 Architectural Finishes
Standard, RAL Colors Available

Function

- Micro Optics IES Distributions T2, T3, T4
- 0-10V Dimming Drivers
THD @ Max Load < 15%
Power factor @ Max Load < 0.95
- Amber, 2700K, 3000K, 3500K, 4000K, or 5000K
- 16L LED Configuration
- 10-56 Watts (Single Head Wattage)
- CRI 70, 80, or 90
- Extruded Aluminum Heat Sink
- 5 Mils Powder Coat

Reliability

- Silicone Micro Optics
- 5 Year Standard Warranty
- IP67 Optics
- Reduces Energy Consumption And Costs Up To 65%

BUY AMERICAN

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PRODUCT SPECIFICATIONS

ELECTRICAL

- 120-277 Volts (UNV)
- 0-10V dimming driver
- Driver power factor at maximum load is $\geq .95$, THD maximum load is 15%
- LED Drivers Ambient Temp. Min is -40°C and Ambient Temp. Max ranges from 50°C to 55°C and, in some cases, even higher. Consult the factory for revalidation by providing the fixture catalog string before quoting and specifying it.
- All drivers, controls, and sensors housed in enclosed compartment
- CRI 70, 80, or 90
- Color temperatures: Amber, 2700K, 3000K, 3500K, 4000K, or 5000K
- Surge Protection: 20KA optional.

OPTIONS

- MARINE GRADE FINISH (MGF)—A multi-step process creating protective finishing coat against harsh environments. Chemically washed in a 5 stage cleaning system. Pre-baked, Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer. Oven Baked. Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- DUAL HEAD (DH)
- SHIELD (HSS)—House Side Shield is designed for full property line cut-off.
- 20KA SURGE PROTECTOR (20KA)

CONSTRUCTION

- Extruded Aluminum
- Internal cooling fins
- Corrosion resistant external hardware
- One-piece silicone gasket ensures water tight seal for electronics compartment
- Two-piece silicone Micro Optic system ensures IP67 seal around each PCB
- Controls Agnostic: Please contact factory for your preferred controls option. (nLight, NX, WaveLinx, Crestron, DMX/RDM, Synapse, Casambi, DALI II, Avi-On, or other control systems)

FINISH

- 3-5 mils electrostatic powder coat.
- NLS Lighting standard high-quality finishes prevent corrosion and protects against extreme environmental conditions

WARRANTY

Five-year limited warranty for drivers and LEDs.

OPTICS

Silicone optics high thermal stability and light output provide higher powered LEDs with minimized lumen depreciation. UV stability with scratch resistance increases exterior application durability. Silicone optics do not yellow, crack or brittle over time

LISTINGS

- Certified to UL 1598
- UL 8750
- CSA C22.2 No. 250.0
- IP65/ IP67 Rated
- IK10 Rated

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<https://nlsighting.com/buy-american/>



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NLS
LIGHTING

701 Kingshill Place, Carson, CA 90746
P: (310) 341-2037

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PRODUCT SPECIFICATIONS

TBA LUMEN CHART

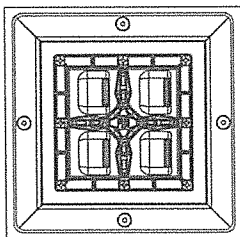
TRAC LUMEN CHART							
PART NUMBER	T2	LM/W	T3	LM/W	T4	LM/W	WATTS
TBA-16L-175-30K7	774	77	765	77	799	80	10
TBA-16L-175-40K7	799	80	791	79	825	83	10
TBA-16L-175-50K7	833	73	816	82	850	85	10
TBA-16L-40-27K7	2196	105	2209	105	2158	103	21
TBA-16L-40-27K8	2057	98	2069	99	2021	96	21
TBA-16L-40-30K8	2205	105	2218	106	2166	103	21
TBA-16L-40-30K7	2375	113	2389	114	2333	111	21
TBA-16L-40-35K8	2205	105	2218	106	2166	103	21
TBA-16L-40-40K8	2375	113	2389	114	2333	111	21
TBA-16L-40-40K7	2566	122	2581	123	2521	120	21
TBA-16L-40-50K8	2375	113	2389	114	2333	111	21
TBA-16L-40-50K7	2566	122	2581	123	2521	120	21
TBA-16L-53-30K7	2968	106	2940	105	3080	110	28
TBA-16L-53-40K7	3220	115	3192	114	3332	119	28
TBA-16L-53-50K7	3472	124	3416	122	3584	128	28
TBA-16L-7-30K7	3672	102	3636	101	3816	106	36
TBA-16L-7-40K7	3996	111	3924	109	4104	114	36
TBA-16L-7-50K7	4284	119	4248	118	4428	123	36
TBA-16L-1-30K7	5544	99	5488	98	5408	96	56
TBA-16L-1-40K7	6048	108	5936	106	5992	107	56
TBA-16L-1-50K7	6496	116	6384	114	6440	115	56

Lumen Maintenance Data							
Ambient Temperature	Drive Current	L90 Hours*	L70 Hours**	30,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours**
25°C	Up to 700mA	58,000	173,000	95.7%	91.6%	89.6%	82.1%
	1050mA	48,000	143,000	94.3%	89.5%	87.2%	78.5%
*Reported extrapolations per IESNA TM-21				**Projected extrapolations per IESNA TM-21			

OPTICAL CONFIGURATIONS

Rotatable Optics (ROR) Rotated Right, (ROL) Rotated Left options available. Optics field and factory rotatable.

TBA / 16L



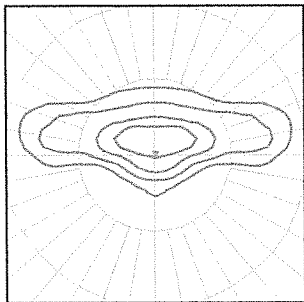
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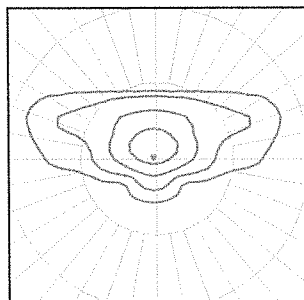
PRODUCT SPECIFICATIONS

IES DISTRIBUTIONS



T2 Optic

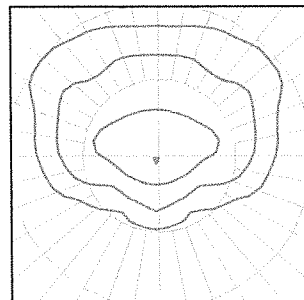
The Type II distribution is used for narrow pathways and trails, narrow entrances of shopping centers, parking lots and office complex's.



T3 Optic

The type III distribution is meant for roadway lighting, general parking areas and other areas where a larger area of lighting is required. Type III lighting needs to be placed to the side of the area, allowing the light to project outward and fill the area. This produces a filling light flow.

Type III light distributions have a preferred lateral width of 40 degrees. This distribution is intended for luminaires mounted at or near the side of medium width roadways or areas, where the width of the roadway or area does not exceed 2.75 times the mounting height.



T4 Optic

The type IV distribution produces a semicircular light meant for mounting on the sides of buildings and walls. It's best for illuminating the perimeter of parking areas and businesses. The intensity of the Type IV lighting has the same intensity at angles from 90 degrees to 270 degrees.

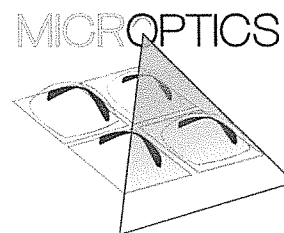
Type IV light distributions have a preferred lateral width of 60 degrees. This distribution is intended for side-of-road mounting and is generally used on wide roadways where the roadway width does not exceed 3.7 times the mounting height.

SILICONE OPTICS

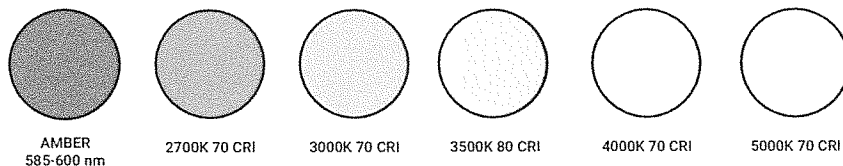
NLS Lighting Silicone Micro Optical System technology takes quality and performance to the highest level. Vandal resistant, superior clarity—Micro Optics have become the best and lasting solution in the industry.

BENEFITS

- Produces superior 96% clarity
- Heat resistant to 150° C, 50% higher than acrylic
- Ecologically friendly—no glare
- Vandal-resistant
- Does not brittle, crack, or yellow over time



LED KELVIN RANGE



Color	Dominant or Peak Wavelength Range (nm)	
	Minimum	Maximum
Amber	585	600

NLS
LIGHTING

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nlsighting.com

PRODUCT SPECIFICATIONS

MODEL	WEIGHT
TBA	13.5

