WALSH
ENGINEERING ASSOCIATES, INC.

File: 422

March 1, 2018

Ms. Renee' Carter
15 Village Green Lane
PO Box 1757
Naples, ME 04055

RE: Stone Surface Site Plan Application

Dear Renee',

On behalf of Greg Smith, owner of Stone Surface we are pleased to submit the attached application for Site Plan approval of a new 10,021 sq. ft. facility to be located adjacent the new shopping center. Greg is planning to relocate his business from Bridgton in December and January of this year. Any assistance you can provide to help our schedule would be appreciated.

Stone Surface manufactures and sells solid surface materials to be used in construction of counter tops and facing materials. The products will be delivered to the site and stored outdoors on the gravel pads as well as indoors. The front of the building will be customer sales and office space, the middle of the building is the manufacturing area and the back of the building will be the storage and shipping area.

We have included a Photometric Plan for your review.

The attached Stormwater Management Report details the phosphorus control and compliance with the Town's Standards and the current DEP Standards. This has been sent to the Cumberland County Soil and Water Conservation District for their review.

We have provided sign details as well. The project will have a pylon sign with a reader board out front and a sign on the building. This move is motivated to make the business more visible to the public; the signs help with that goal.

Hopefully you find our plans complete and ready for approval.

Respectfully,

Thomas S. Greer, P.E.
Walsh Engineering Associates, Inc.

cc. Adam Sellick, Greg Smith, File
Enc.
TSG/rjs

TOWN OF NAPLES
PLANNING BOARD APPLICATION

P.O. Box 1757, Naples, Maine 04055
Phone: (207) 693-6364 / Fax: (207) 693-3667
www.townofnaples.org

Major Site Plan Review Application

Date: February 28, 2018

Owner/Applicant Name: Stone Surface, Greg Smith

Mailing Address: 247 Main Street, Bridgton, ME 04009

Telephone: (207) 647-3611 Email: greg@stonesurface.net

Property Owner: Wakeman Land Holdings, LLC, PO Box 315, Raymond, ME 04071

Property Location: Route 302 (Roosevelt Trl) & Lakes Plaza Drive Map & Lot: U4/1A

Any easements, covenants, or deed restrictions related to the property? Stormwater Buffer

Zoning District: Commercial - 1st 500' Residential - after 500' Waivers requested: None

A list must be submitted for waivers

Name, address, & phone # of applicants engineer, land surveyor or planner:
Thomas S. Greer, P.E. Walsh Engineering Associates, Inc.
One Karen Drive, Suite 2A, Westbrook, ME 04092, (tel) 207-781-5242

The undersigned, being the applicant, owner or legally authorized representatives, states that all information contained in this application is true and correct to the best of his/her knowledge and hereby does submit the information for review by the Town and in accordance with applicable ordinances, statues, and regulation of the Town, State and Federal governments.

Date: 3/1/18 Signature: Thomas S Greer

Fee Schedule:
Advertising: $50.00
Fee per abutter: $7.00
Under 1,000 sq. ft. gross floor area: $300.00
1,000 – 10,000 sq. ft. gross floor area: $400.00
Over 10,000 sq. ft. gross floor area: $400.00
**Plus $25.00 for each 1,000 sq. ft. over 10,000
Development without building: $400.00
Modification of approved plan: $100.00
Commercial Initial permit: $100.00
Commercial Annual Renewal: $50.00
Aquatic Structure (non commercial): $50.00
Review Escrow: TBD

Applicants Total: $ 655.00

Please include 9 copies of all supporting documents, including a letter of intent, when submitting your application to the Town Secretary. Completed applications should be received 21 days before the meeting date.

GDS Services, Inc. dba Stone Surface
247 Main St
Bridgton, ME 04009

To Whom It May Concern,

By this letter, the undersigned authorizes Walsh Engineering Associates, Inc. to act as the agent for the undersigned in the preparation and submission of all Federal, State, and Local City permit applications and relevant documents and correspondence for all necessary permits for the construction on the property at the corner of Route 302 (Roosevelt Trail) and Lakes Plaza Drive in Naples to attend meetings and site visits; to appear before all boards, commissions, and committees, and to provide such other services as are necessary and appropriate in furtherance of the aforementioned project.

Sincerely,

Signature(s)

2/26/18
Date

Greg Smith
Owner(s)

CONTRACT
FOR THE SALE OF REAL ESTATE

Date: January 3, 2018

RECEIVED OF: **Greg Smith dba Stone Surface** whose mailing address is 247 Main Street, Bridgton, ME 04009, hereinafter called the Purchaser(s), the sum of Twenty Five Hundred Dollars ($2,500.00) as earnest money deposit and in part payment towards the purchase price of the following described real estate, situated in the municipality of **Naples**, County of **Cumberland**, State of Maine and located at 12 Lakes Plaza Drive "Lot A" and described in Naples Assessor's Office as Map U04 lot 0001-A and further described as: **2.00 +/- acres located on the corner of Lakes Plaza Drive and Roosevelt Trail,** upon the terms and conditions indicated below:

1. PERSONAL PROPERTY: N/A
2. PURCHASE PRICE: The TOTAL purchase price being **Two Hundred and Sixty Thousand Dollars ($260,000.00)** to be paid as follows: **K.P. Gagnon Co., LLC shall hold said earnest money deposit, balance to be paid in cash or certified bank funds at closing**.
3. ACCEPTANCE: This offer shall be valid until **January 9, 2018** at **5:00 P.M.**
4. TITLE: That a deed conveying good and merchantable title in accordance with standards adopted by the Maine Bar Association shall be delivered to the Purchaser(s) and this transaction shall be closed and the Purchaser(s) shall pay the balance due and execute all necessary papers on or before **April 30, 2018** If Seller(s) is unable to convey in accordance with the provisions of this paragraph, then the Seller(s) shall have a reasonable time period, not to exceed thirty (30) days, from the time the Seller(s) receives written notice of the defect, unless otherwise agreed to by both parties, to remedy the title, after which time, if such defect is not corrected so that there is merchantable title, the Purchaser(s) may, within fifteen (15) days thereafter, at Purchaser's option, and neither party shall have any further obligation hereunder. If the Purchaser(s) does not declare the contract void within the period set forth above, the Purchaser(s) shall have waived the right to object to title. The Seller(s) hereby agrees to make a good-faith effort to cure any title defect during such period.
5. DEED: That the property shall be conveyed by a Maine Short Form Deeds Act insurable Quitclaim Deed, and shall be free and clear of all liens and encumbrances except building and zoning restrictions of record, restrictive covenants and conditions of record and usual public utilities servicing the property and shall be subject to applicable land use and building laws and regulations.
6. POSSESSION /OCCUPANCY: Possession/occupancy of premises shall be given to Purchaser(s) immediately at closing, subject to any leases, unless otherwise agreed by both parties in writing.
7. LEASES/TENANT SECURITY DEPOSITS: N/A
8. RISK OF LOSS: Until the transfer of title, the risk of loss or damage to said premises by fire or otherwise, is assumed by the Seller(s) unless otherwise agreed in writing. Said premises shall then be in substantially the same condition as at present, excepting reasonable use and wear.

Seen and agreed to: GDS
Purchaser(s)

Seller(s)

9. PRORATIONS: The following items shall be prorated as of the date of closing:

a. Real Estate Taxes based on the municipality's tax year. Seller is responsible for any unpaid taxes for prior years.

b. Rents

c. Metered utilities, such as water and sewer, shall be paid by Seller(s) through the date of closing.

f. Purchaser(s) and Seller(s) shall each pay its transfer tax as required by the State of Maine.

10. INSPECTIONS: The Purchaser(s) is encouraged to seek information from professionals regarding any specific issue of concern. Purchaser(s) acknowledges receipt of disclosure form attached hereto. The Agent makes no warranties regarding the condition, permitted use or value of the Seller's real or personal property. This Contract is subject to the following inspections, with the results being satisfactory to the Purchaser(s):

TYPE OF INSPECTION	YES	NO	RESULTS
a. General Building			Within _____ days
b. Sewage Disposal			Within _____ days
c. Water Quality			Within _____ days
d. Radon Air Quality			Within _____ days
e. Radon Water Quality			Within _____ days
f. Asbestos Air Quality			Within _____ days
g. Lead Paint			Within _____ days
h. Pests			Within _____ days
i. ADA			Within _____ days
j. Wetlands			Within _____ days
k. Environmental Scan			Within _____ days
l. Other:_____			Within _____ days

The use of days is intended to mean from the effective date of this Contract. All inspections will be done by inspectors chosen and paid for by the Purchaser(s). If the result of any inspection or other condition specified herein is unsatisfactory to the Purchaser(s), Purchaser(s) may declare the Contract null and void by notifying Seller(s) in writing within the specified number of days. If the Purchaser(s) does not notify the Seller(s) that an inspection is unsatisfactory within the time period set forth above, this contingency is waived by the Purchaser(s). In the absence of inspection(s) mentioned above, the Purchaser(s) is relying completely upon Purchaser's own opinion as to the condition of the property.

11. FINANCING: This contract is not subject to a financing condition.

Seen and agreed to: GDS
Purchaser(s)

Seller(s)

13. DEFAULT: If Purchaser fails to perform any of the terms of this Contract or is otherwise in default of any of its obligations, this Contract shall terminate and neither party shall be under any further obligation hereunder.

14. MEDIATION: Any dispute or claim arising out of or relating to this Contract or the premises addressed in this Contract shall be submitted to mediation in accordance with the Maine Residential Real Estate Mediation Rules of the American Arbitration Association. This clause shall survive the closing of this transaction.

15. PRIOR STATEMENTS: Any verbal presentations, statements and agreements are not valid unless contained herein. This Contract completely expresses the obligations of the parties. This is a Maine contract and shall be construed according to the laws of Maine.

16. HEIRS/ASSIGNS: This Contract is assignable Yes No. This Contract shall extend to and be obligatory upon heirs, personal representatives, successors, and assigns (if assignment is allowed by the terms of this Contract), of the respective parties.

17. COUNTERPARTS: This Contract may be signed on any number of identical counterparts, including telefacsimilie copies, with the same binding effect as if the signatures were on one instrument. Original or telefacsimilied signatures are binding.

18. BINDING CONTRACT: This Contract is a binding contract when signed by both Seller(s) and Purchaser(s) and when that fact has been communicated to all parties or to their agents. The Effective Date of the Contract is noted below.

19. REVIEW OF LEASES AND INCOME AND EXPENSE INFORMATION: The Seller shall provide the Purchaser with copies of all leases and income & expense information regarding the subject property within **N/A** days of the effective date of this contract. Purchaser(s) shall have **N/A** days from such delivery to review leases and income & expense information regarding the property. If the result of the review is unsatisfactory to the Purchaser, Purchaser may declare the Contract null and void by notifying the Seller in writing within the specified number of days set forth above. If the Purchaser does not notify the Seller that the review is unsatisfactory within the time period set forth above, this contingency is waived by the Purchaser.

20. ~~Seller(s) and Purchaser(s) acknowledge receipt of the Maine Real Estate Commission Disclosure of Agency Relationship Form (Form #2), *if the property is, or has a component of, one to four residential dwelling units.*~~

21. ESTOPPEL and SNDA: N/A

22. CONTINGENCIES: This contract is subject to Purchaser receiving Local and State approvals for the construction of a 9,100 SF building with in 90 days. If Purchaser experiences delays do to the approval process yet Purchaser is diligent in pursuing the approvals, than upon written request made by Purchaser to Seller, Seller shall grant a 30 day extension. Seller at Sellers option can grant a 2nd 30 day extension upon written request from Purchaser.

The Building Location and the building architecture shall require the approval of the Seller to Sellers satisfaction prior to sale.

Purchaser and Seller shall share in the access drive maintenance and utility cost to the entry point of Purchasers Drive off the access road.

23. EFFECTIVE DATE: The effective date of this Agreement shall be the day on which Seller(s) evidences its acceptance by delivery to Buyer(s) of a fully executed copy hereof.

Seen and agreed to: GDS
Purchaser(s) Seller(s)

A COPY OF THIS CONTRACT IS TO BE RECEIVED BY ALL PARTIES AND, BY SIGNATURE, RECEIPT OF A COPY IS HEREBY ACKNOWLEDGED. IF NOT FULLY UNDERSTOOD CONSULT AN ATTORNEY.

Seller(s) acknowledges that the laws of the State of Maine provide that every buyer of real property located in Maine must withhold a withholding tax equal to 2 1/2% of the consideration unless the Seller(s) furnishes to the Buyer(s) a certificate by the Seller(s) stating, under penalty of perjury, that Seller(s) is/are a resident of Maine or the transfer is otherwise exempt from withholding.

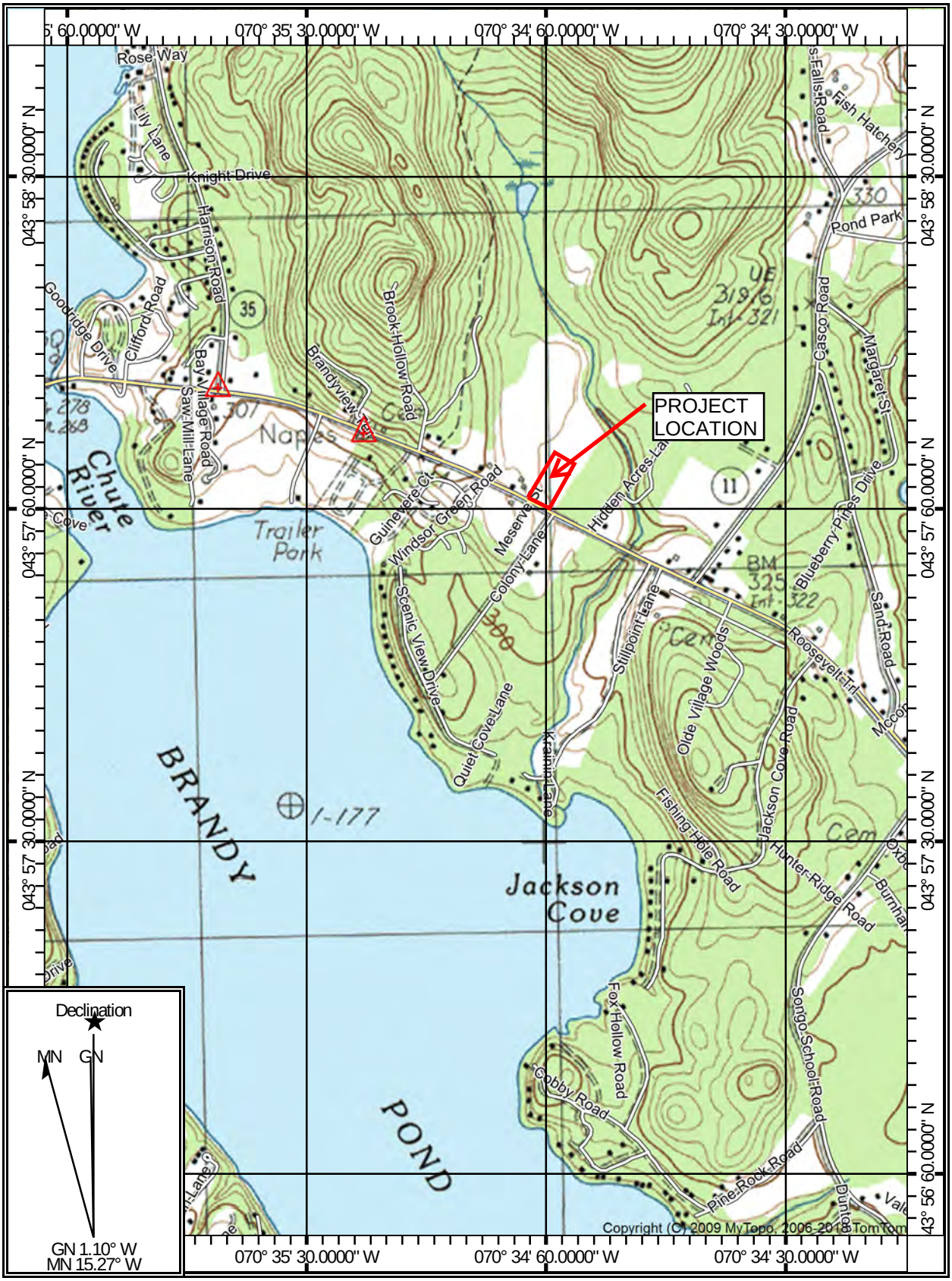
Wakeman Landholdings, LLC

Seller — *Date* 1/9/18

Stone Surface

Greg Smith — Greg Smith, president

Purchaser — *Date* 1/5/2018

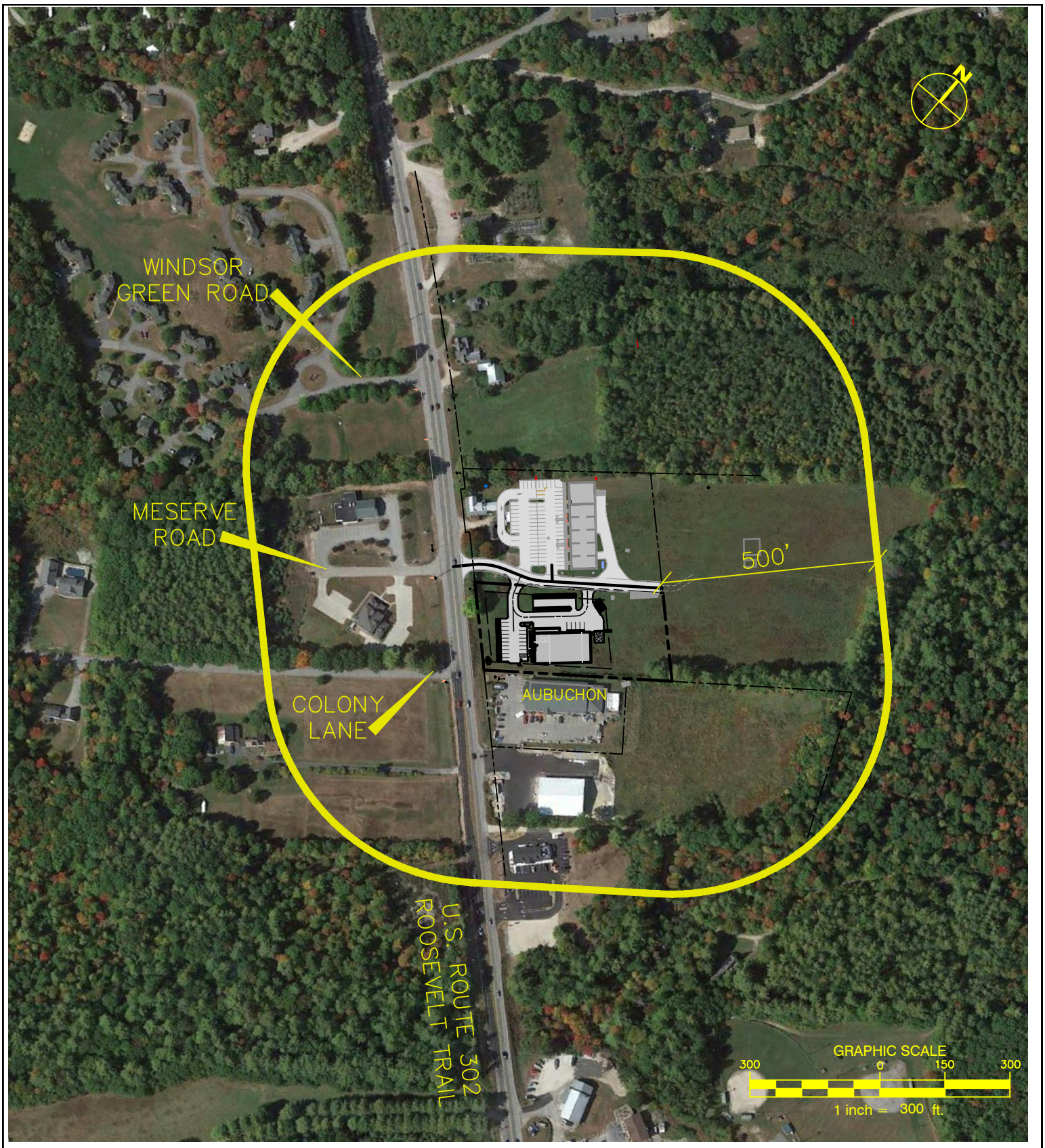


SCALE 1:16000

0 1000 2000 3000 4000

Feet

422- Stone Surface, Naples
February 27, 2018



WALSH
ENGINEERING ASSOCIATES, INC.
One Karen Dr., Suite 2A | Westbrook, Maine 04092
ph: 207.553.9898 | www.walsh-eng.com

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STONE SURFACE

NEIGHBORHOOD PLAN
447 ROOSEVELT TRAIL
NAPLES, MAINE

Sheet Title:
NEIGHBORHOOD PLAN

Job No.:	422
Date:	2/26/18
Scale:	1" = 300'
Drawn:	JWG
Checked:	TSG

P:\422 – Stone Surface – Naples\3. CAD\422 BASE.dwg plot date: 2/26/2018 4:05 PM

U3/19
Jane & Lance Croteau
PO Box 365
Naples, ME 04055

U3/20/22
Christina Hale
PO Box 414
Naples, ME 04055

U3/20/23
Tyler Eads
PO Box 446
Belfast, ME 04915

U4/1
K.P Gagnon Company LLC
PO Box 445
Naples, ME 04055

U4/1B
Carolyn & John Meserve
PO Box 25
Naples, ME 04055

U4/2
Robert Fogg
PO Box 4096
Naples, ME 04055

U4/2A
Daniel Craffey
PO Box 177
Naples, ME 04055

U4/2/B
Aubuchon Realty Co. Inc.
W.e. Aubuchon, Inc Attn: Greg Moran
23 West Main Street
Westminster, MA 01473

U4/2C
41 Walker Road, LLC
PO Box 285
Kents Hill, ME 04349

U4/3
Rootrail LLC
3 Pluff Ave
No. Reading, MA 01080

U4/10/B
Lynn Capen & Gary Theriault
305 Harrison Road
Naples, ME 04055

U10/1
Beatrice B. Graham
c/o Robert E Graham
PO Box 1537
Naples, ME 04055

U10/45/1 & U10/45/3
Lds Inc.
PO Box 1515
Naples, ME 04055

U10/45/2
Central Maine Healthcare Corp
PO Box 98
Lewiston, ME 04243

U4/1A
Wakeman Land Holdings LLC
PO Box 315
Naples, ME 04055
(Subject Parcel)

5225

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Maine Dept. Health & Human Services
Div. Environmental Health, 11SHS
(207) 287-2070 Fax: (207) 287-4172

PROPERTY LOCATION

City, Town, or Plantation	Naples
Street or Road	Route 302
Subdivision, Lot #	

>> CAUTION: LPI APPROVAL REQUIRED <<

Town/City _____ Permit # _____

Date Permit Issued ___/___/___ Fee: $_____ Double Fee Charged [ ]

_____ L.P.I. # _____
Local Plumbing Inspector Signature

Fee: $_____ state min fee $_____ Locally adopted fee
Copy: [ ] Owner [ ] Town [ ] State

The Subsurface Wastewater Disposal System shall not be installed until a Permit is issued by the Local Plumbing Inspector. The Permit shall authorize the owner or installer to install the disposal system in accordance with this application and the Maine Subsurface Wastewater Disposal Rules.

Municipal Tax Map # _____ Lot # _____

OWNER/APPLICANT INFORMATION

Name (last, first, MI)	Stone Surface (Owner / Applicant)
Mailing Address of Owner/Applicant	247 Main Street Bridgton 04009
Daytime Tel. #	

OWNER OR APPLICANT STATEMENT
I state and acknowledge that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department and/or Local Plumbing Inspector to deny a Permit.

_____ _____
Signature of Owner or Applicant Date

CAUTION: INSPECTION REQUIRED
I have inspected the installation authoirzed above and found it to be in compliance with the Subsurface Wastewater Disposal Rules Application. _____ (1st) date approved

_____ _____
Local Plumbing Inspector Signature (2nd) date approved

PERMIT INFORMATION

TYPE OF APPLICATION
1. First Time System
2. Replacement System
Type replaced: _____
Year installed: _____
3. Expanded System
a. <25% Expansion
b. ≥25% Expansion
4. Experimental System
5. Seasonal Conversion

THIS APPLICATION REQUIRES
1. No Rule Variance
2. First Time System Variance
a. Local Plumbing Inspector Approval
b. State & Local Plumbing Inspector Approval
3. Replacement System Variance
a. Local Plumbing Inspector Approval
b. State & Local Plumbing Inspector Approval
4. Minimum Lot Size Variance
5. Seasonal Conversion Permit

DISPOSAL SYSTEM COMPONENTS
1. Complete Non-engineered System
2. Primitive System (graywater & alt. toilet)
3. Alternative Toilet, specify: _____
4. Non-engineered Treatment Tank (only)
5. Holding Tank, _____ gallons
6. Non-engineered Disposal Field (only)
7. Separated Laundry System
8. Complete Engineered System (2000 gpd or more)
9. Engineered Treatment Tank (only)
10. Engineered Disposal Field (only)
11. Pre-treatment, specify: _____
12. Miscellaneous Components

SIZE OF PROPERTY
2.00 Ac SQ. FT. ACRES

SHORELAND ZONING
Yes No

DISPOSAL SYSTEM TO SERVE
1. Single Family Dwelling Unit, No. of Bedrooms: ____
2. Multiple Family Dwelling, No. of Units: _____
3. Other: 15 employees (specify)
Current Use Seasonal Year Round Undeveloped

TYPE OF WATER SUPPLY
1. Drilled Well 2. Dug Well 3. Private
4. Public 5. Other

DESIGN DETAILS (SYSTEM LAYOUT SHOWN ON PAGE 3)

TREATMENT TANK
1. Concrete
a. Regular
b. Low Profile
2. Plastic
3. Other: _____
CAPACITY: 1000 GAL.

DISPOSAL FIELD TYPE & SIZE
1. Stone Bed 2. Stone Trench
3. Proprietary Device
a. cluster array c. Linear
b. regular load d. H-20 load
4. Other: _____
SIZE: 768 sq. ft. lin. ft.

GARBAGE DISPOSAL UNIT
1. No 2. Yes 3. Maybe
If Yes or Maybe, specify one below:
a. multi-compartment tank
b. ___ tanks in series
c. increase in tank capacity
d. Filter on Tank Outlet

DESIGN FLOW
180 gallons per day
BASED ON:
1. Table 4A (dwelling unit(s))
2. Table 4C(other facilities)
SHOW CALCULATIONS for other facilites
15 employees @ 12 gpd = 180
3. Section 4G (meter readings)
ATTACH WATER METER DATA

SOIL DATA & DESIGN CLASS
PROFILE CONDITION
B / C
at Observation Hole # 701
Depth 15 "
of Most Limiting Soil Factor

DISPOSAL FIELD SIZING
1. Medium---2.6 sq. ft. / gpd
2. Medium---Large 3.3 sq. f.t / gpd
3. Large---4.1 sq. ft. / gpd
4. Extra Large---5.0 sq. ft. / gpd

EFFLUENT/EJECTOR PUMP
1. Not Required
2. May Be Required
3. Required
Specify only for engineered systems:
DOSE: _____ gallons

LATITUDE AND LONGITUDE
at center of disposal area
Lat. 43 d 58 m 02 s
Lon. 70 d 34 m 56 s
if g.p.s, state margin of error: 15

SITE EVALUATOR STATEMENT

I certify that on 1/22/18 (date) I completed a site evaluation on this property and state that the data reported are accurate and that the proposed system is in compliance with the State of Maine Subsurface Wastewater Disposal Rules (10-144A CMR 241).

Marc J. Hampton — Site Evaluator Signature
263 — SE #
1/22/18 — Date

MARC J. Hampton — Site Evaluator Name Printed
756-2900 — Telephone Number
_____ — E-mail Address

Note : Changes to or deviations from the design should be confirmed with the Site Evaluator.

5225

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

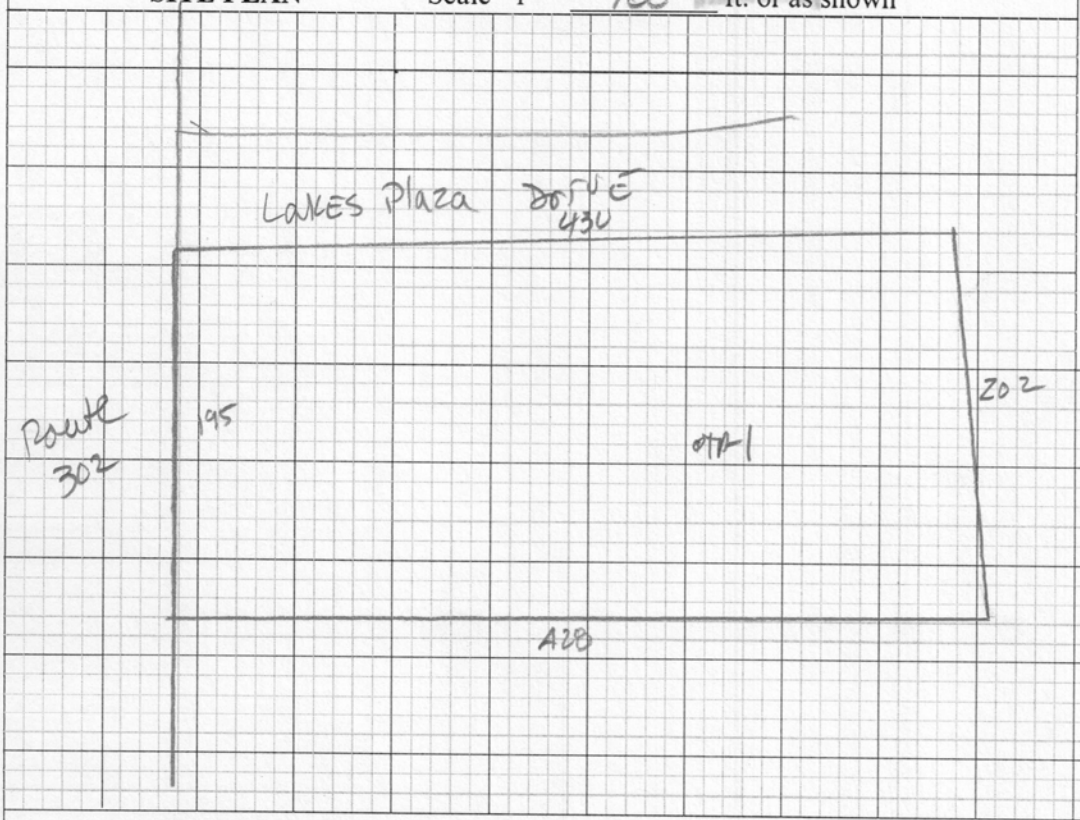
Department of Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: Naples

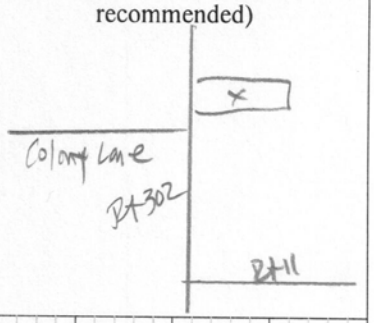
Street, Road, Subdivision: Route 302

Owner's Name: Stone Surface

SITE PLAN Scale 1" = 100 ft. or as shown



SITE LOCATION PLAN
(map from Maine Atlas recommended)



SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP1 ■ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–10	Sandy loam	Friable	Dark Brown	
10–20	Sandy loam	Friable	Brown	
20–50	Silty Clay loam	Firm	Olive	common & distinct

Soil Classification	Slope	Limiting Factor	
Profile: B; Condition: C	2 %	15 "	■ Ground Water; ■ Restrictive Layer; [ ] Bedrock; [ ] Pit Depth

Observation Hole _____ ☐ Test Pit ☐ Boring

_____ " Depth of Organic Horizon Above Mineral Soil

Depth Below Mineral Soil Surface (inches)	Texture	Consistency	Color	Mottling
0–50				

Soil Classification	Slope	Limiting Factor	
Profile: ____ Condition: ____	____ %	____ "	[ ] Ground Water; [ ] Restrictive Layer; [ ] Bedrock; [ ] Pit Depth

Michael J. Haughn — Site Evaluator Signature

243 — SE #

1/22/18 — Date

5225

SUBSURFACE WASTEWATER DISPOSAL SYSTEM APPLICATION

Department of Health & Human Services
Division of Environmental Health
(207) 287-5672 Fax: (207) 287-3165

Town, City, Plantation: Naples

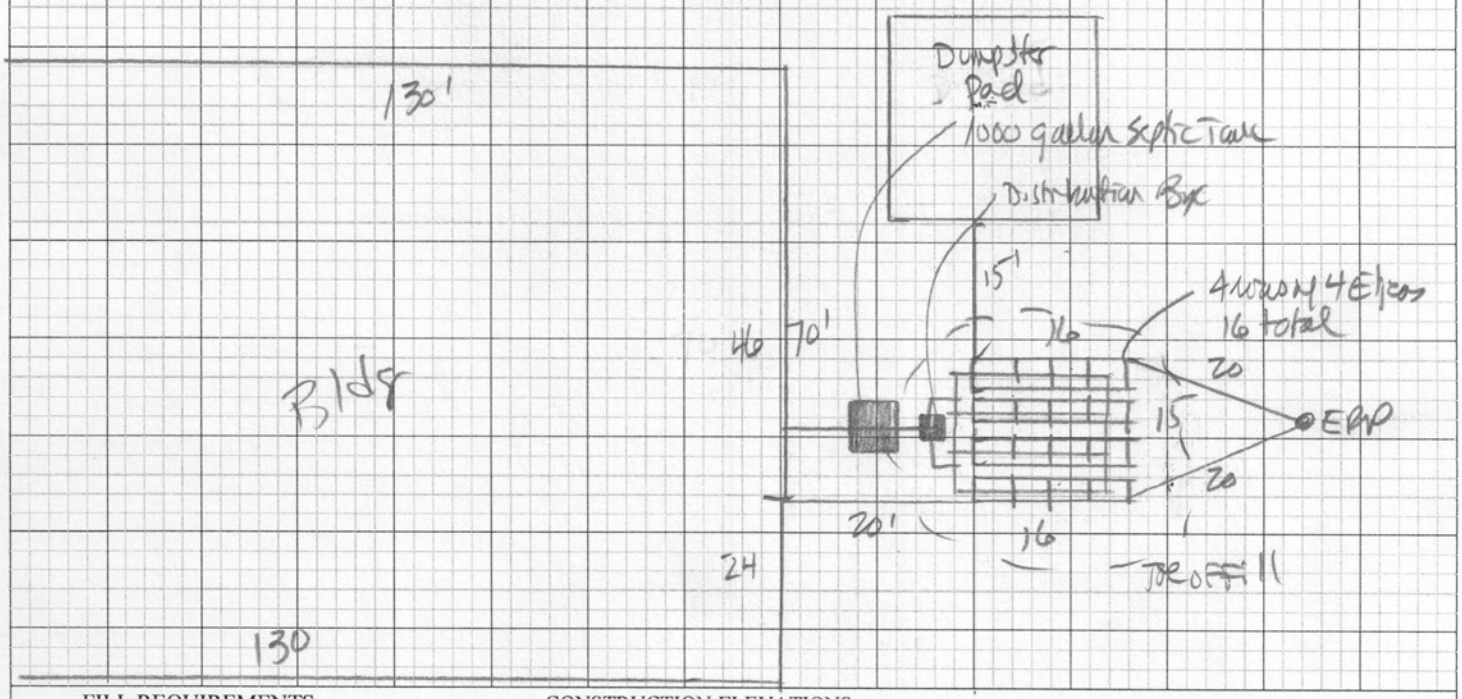
Street, Road, Subdivision: Route 302

Owner's Name: Stone Surface

SUBSURFACE WASTEWATER DISPOSAL PLAN

0 _____ _____

SCALE: 1" = 20 FT.

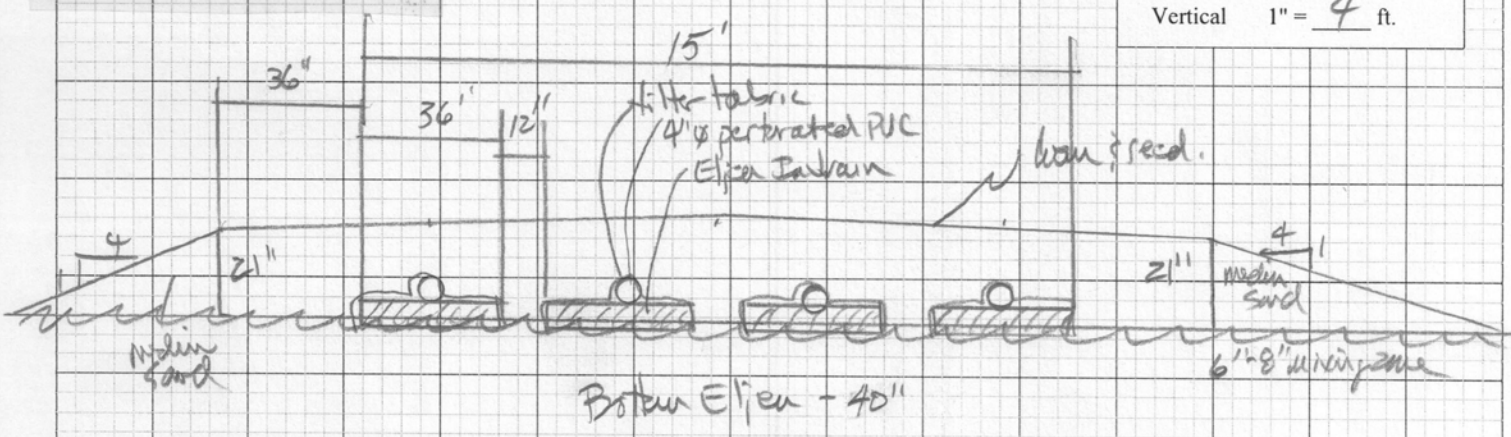


FILL REQUIREMENTS		CONSTRUCTION ELEVATIONS		ELEVATION REFERENCE POINT
Depth of Fill (Upslope)	21	Finished Grade Elevation	-19	Location & Description: Topsoil grade stake 40" up
		Top of Distribution Pipe or Proprietary Device	-29	
Depth of Fill (Downslope)	21	Bottom of Disposal Area	-40	Reference Elevation: 0"

Note: Materials and installation shall be in accordance with Maine Subsurface Wastewater Disposal Rules dated 08/15 as amended.

DISPOSAL AREA CROSS SECTION

Scale
Horizontal 1" = 4 ft.
Vertical 1" = 4 ft.



NOTE: All ground to be tilled must be scarified

Marc J. Hampton — Site Evaluator Signature

2603 — SE #

1/22/18 — Date

Stone Surface
GRANITE & MARBLE
CABINETS ~ COUNTERTOPS

Stone Surface
GRANITE & MARBLE
CABINETS ~ COUNTERTOPS
ELECTRONIC
MESSAGE
BOARD

WALSH
ENGINEERING ASSOCIATES, INC.

STORMWATER MANAGEMENT REPORT
447 ROOSEVELT TRAIL
NAPLES, MAINE
August 12, 2015
(Revised August 24, 2015)
(Revised September 22, 2015)
(Revised April 28, 2016)
(Revised February 28, 2018)

Project Description:

2015 Permit

This project is the construction of a 9,000 sq. ft. structure for use as a retail center in Naples Maine, ½ mile from the village center on Roosevelt Trail, Route 302. It includes a 380 foot access drive, service area and parking for 37 cars, 4 per 1,000 sq. ft. of building. The remaining area of the 2.7 acre site will be lawn area. The site is located in the Brandy Pond watershed. This pond is listed as a most at risk water shed by DEP, requiring treatment of stormwater for phosphorus control.

2016 Permit

This application modifies the existing permit to show a potential full buildout of the two lots. Lot 1 will have a 12,000 sq. ft. shopping center and a 1,500 sq. ft. drive through bank, with parking for 82 cars. Lot 2 is assumed to have 28,800 sq. ft. of impervious cover comprising of building and parking lot. The final use is unknown at this time.

2018 Permit

This application, for Stone Surface, modifies the existing permit to show a potential full buildout of the two lots. Lot 1 will have a 12,000 sq. ft. shopping center and a 1,500 sq. ft. drive through bank, with parking for 82 cars. Lot 2 is will have a 10,021 sq. ft. showroom, shop, and storage building and 24,064 sq. ft. of impervious area comprising parking, material storage and display. The use will be Stone Surface, a stone counter retailer and manufacturer.

Existing Conditions:

The existing site has a farm house and small barn in the northwest corner. These have been removed as part of this project. The remainder of the site is open fields. The site slopes at about 8% at the back of the farm house and ½ % across the field. The soils in the area of the farm house are hydrologic Class B and the remainder of the field is Class C.

Existing Drainage:

The site currently sheet flows drainage from the farm house area to the back of the lot, the southeast corner. Some concentrated flow occurs in some small areas, but due to the flat slopes it is minor.

Developed Conditions:

The site will be graded to accommodate the parking and buildings shown on the plans. Phase one will be the shopping center. That will have a shed roof that will flow water in a sheet flow fashion to Buffer #2.

The parking lot in front will have a storm drain system that will convey water to Buffer #1. The buffer will use stone berms to ensure sheet flow across it. This buffer is very flat and should be effective as stormwater treatment.

Both buffers will be maintained as meadow buffers.

Buffer #1 will receive the bulk of the runoff from the site. It is 21,000 sq. ft. in size. Based on the meadow buffer standards, it is required to be 21,578 sq. ft. in size. Buffer #2 will receive the building and service area. The area required is 4,765 sq. ft. The area provided is 13,100 sq. ft., meeting the buffer standards.

The allowable export of phosphorus is 0.491 #/yr. This project, when complete with the full buildout will export 1.123 #/yr. This is offset with a credit for not developing 65 acres behind the site. This has a credit of 2.4 #/yr., leaving the site with an additional export of 1.277 #/yr.

The stormwater infrastructure must be built to the specifications detailed on the plans and in supporting documentation.

Peak Flows:

Peak flows are controlled by the stone berm buffers. Below is a chart showing the peak flows:

Peak Flows 2018 Cubic Feet Per Second			
	Existing	Phase 1	Full Buildout
2 Year	4.38	4.71	7.14
10 Year	11.45	10.7	13.49
25 Year	14.71	13.25	16.12

Stormwater Treatment:

The use of stormwater buffers reduces the export of phosphorus from the site from 2.854 #/yr. to 1.123#/yr. The set aside of 65 acres in the watershed provide a credit of 2.4 #/yr., leaving a balance of 1.277 #/yr. plus an allowable export of 0.4912#/yr.

Conclusions:

The use of stormwater buffers and the set aside of 65 acres provides adequate stormwater treatment for the fully developed site.

Thomas S. Greer, P.E.
2/28/18

Phosphorus Treatment Chart Phase 2
447 Roosevelt Trail - Naples
April 15, 2016
(Revised February 28, 2018)
File: 422

Subcatchment		Area Sq. Ft.	Area Acres	Runoff Coefficient Pc	lbs of Ph Untreated	Treatment Factor Buffer	lbs of Ph Exported
110S	B	1,223	0.028	0.50	0.014	1.00	0.014
	P	6,882	0.158	1.25	0.197	1.00	0.197
	L	23,126	0.531	0.30	0.159	1.00	0.159
200S	B	10,021	0.230	0.50	0.115	0.30	0.035
	P	24,064	0.552	1.25	0.691	0.30	0.207
	L	35,998	0.826	0.30	0.248	0.30	0.074
121S	B	47	0.001	0.50	0.001	0.30	0.000
	P	23,361	0.536	1.25	0.670	0.30	0.201
	L	14,171	0.325	0.30	0.098	0.30	0.029
220S	P	10,644	0.244	1.25	0.305	0.30	0.092
	L	7,511	0.172	0.3	0.052	0.30	0.016
223S	B	10,777	0.247	0.50	0.124	0.30	0.037
	P	4,940	0.113	1.25	0.142	0.30	0.043
	L	9,213	0.212	0.30	0.063	0.30	0.019
				TOTAL:	2.879		1.123 Export**

* Treatment factor for underdrained soil filters assumes that 2' of sandy soils under the basins is not possible.

** Allowable Export based on small project site 0.5 x 42,800/43,560 = .4912 lbs/yr

P = Paved L = Landscaped B = Building

Worksheet 1 - PPB calculations

Project Name: Naples Shopping Center

Lake Watershed: Bay of Naples

Town: Naples

Standard Calculations

Watershed per acre phosphorus budget (Appendix C)	**PAPB**	0.038	lbs P/acre/year
Total acreage of development parcel:	**TA**	69.7	acres
NWI wetland acreage:	**WA**	0	acres
Steep slope acreage:	**SA**	0	acres
Project acreage: A = TA - (WA+ SA)	**A**	69.7	acres
Project Phosphorus Budget: PPB = P x A	**PPB**	2.6486	**lbs P/year**

Small Watershed Adjustment

If Project Acreage (A) is greater than the threshold acreage for the small watershed threshold (SWT, from pertinent lake and town info in the table in Appendix C), calculate an alternative PPB using the analysis below and use this value if it is less than the the Standard Calculation PPB.

Small Watershed Threshold (Appendix C):	**SWT**		acres
Project acreage:	**A**		acres
Allowable increase in town's share of annual phosphorus load to lake (Appendix C):	**FC**		lbs P/year
Area available for development (Appendix C):	**AAD**		acres
Ratio of A to AAD (R=A/AAD)	**R**		

Project Phosphorus Budget

If R < 0.5, PPB = [(FC x R)/2] + [FC/4]	**PPB**		**lbs P/year**
If R> 0.5, PPB = FC x R	**PPB**		**lbs P/year**

Worksheet 2
Pre-PPE and Post-PPE Calculations

Calculate phosphorus export from development for before and after treatment
Use as many sheets as needed for each development type (commercial, roads, residential lots, etc.) 1-15-09

Project name: Naples Shopping Center **Development type**: _____ Sheet # _____

Land Surface Type or Lot #(s) with description	Acres or # of lots	Export Coefficient from Table 3.1 Table 3.2	Pre-treatment Algal Av. P Export (lbs P/year)	Treatment Factor for BMP(s) from Chapter 6	Post-treatment Algal Av. P Export (lbs P/year)	Description of BMPs
Buildings	0.247	0.5	0.1235	0.3	0.03705	Buffer #2
Pavement	0.358	1.25	0.4475	0.3	0.13425	Buffer #2
Landscaping	0.384	0.3	0.1152	0.3	0.03456	Buffer #2
Buildings	0.028	0.5	0.014	1	0.014	No Treatment
Pavement	0.158	1.25	0.1975	1	0.1975	No Treatment
Landscaping	0.531	0.3	0.1593	1	0.1593	No Treatment
Buildings	0.231	0.5	0.1155	0.3	0.03465	Buffer #1
Pavement	1.089	1.25	1.36125	0.3	0.408375	Buffer #1
Landscaping	1.152	0.3	0.3456	0.3	0.10368	Buffer #1
		Total Pre-PPE (lbs P/year)	2.87935	**Total PostPPE (lbs P/year)**	1.123365	

WORKSHEET 4 - PROJECT PHOSPHORUS EXPORT SUMMARY

Summarizing the project's algal available phosphorus export (PPE)

Project Name: Naples Shopping Center

Project Phosphorus Budget - Worksheet 1	**PPB**	2.65	lbs P/year
Total Pre-Treatment Phosphorus Export - Worksheet 2	**Pre-PPE**	2.88	lbs P/year
Total Post-Treatment Phosphorus Export - Worksheet 2	**Post-PPE**	1.12	lbs P/year
Total Phosphorus Mitigation Credit - Worksheet 3	**TMC**		lbs P/year
Project Phosphorus Export (Post-PPE - TMC)	**PPE**	1.12	lbs P/year

Is the Project Phosphorus Export ≤ the Project Phosphorus Budget? (PPE≤PPB)

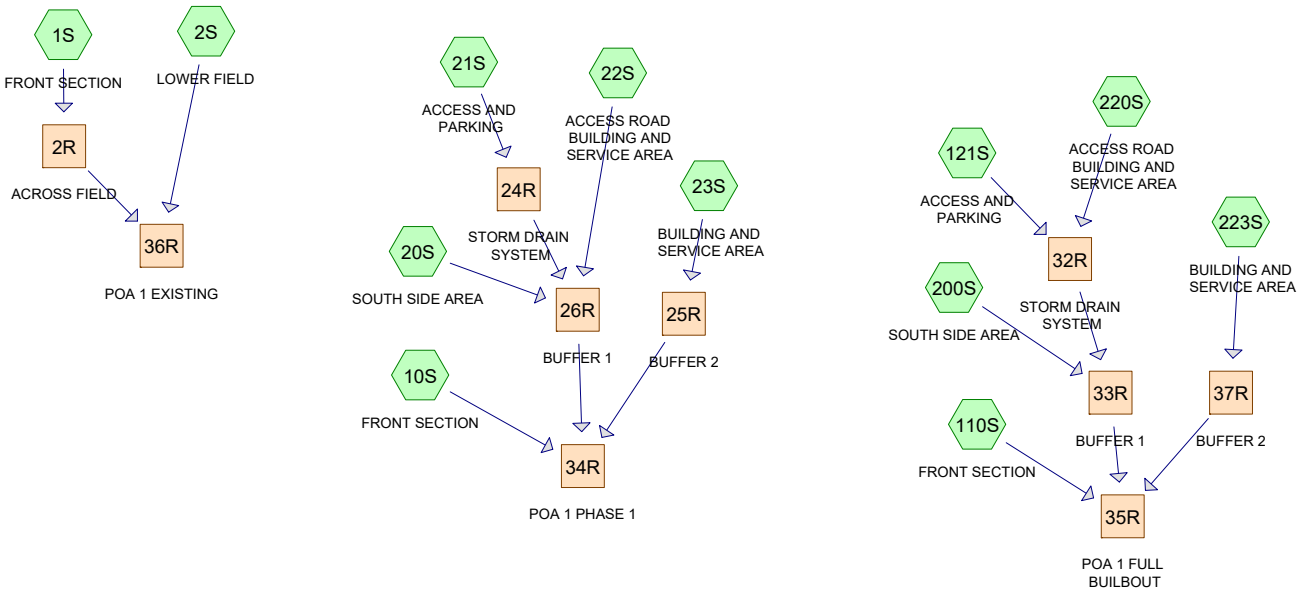
*If **YES**, PPE is less than or equal to PPB and the project meets its phosphorus budget .* *If **NO,** PPE is greater than PPB, more reduction in phosphorus export is required or the payment of a compensation fee may be an option*	YES
The amount of phosphorus that needs further treatment or compensation	lbs P/year

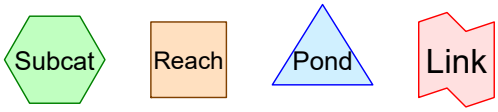
Has Project Phosphorus Export been sufficiently reduced?
Is (Pre-PPE - Post-PPE)/Pre-PPE greater than 0.60?

*If **YES**, in some watersheds the compensation fee is an available option.* *If **NO**, more treatment must be provided. PPE must be further reduced.*	
*The post-treatment phosphorus export must be less than 40% of the pre-treatment export (Post-PPE < 0.4*Pre-PPE)*	%

If the project is located in a watershed that is eligible for a compensation fee (or is a residential subdivision with buffers), a compensation fee may be appropriate as follows:

If Project Export has been reduced by greater than 60% and less than 75%, $25,000 per pound minus $833 per 1% Percent Export	
If Project Export has been reduced by greater than 75%, $12,500 per pound minus $500 per 1% Project Export	





Routing Diagram for SHOPPING CENTER NAPLES TSG 021618
Prepared by {enter your company name here}, Printed 2/27/2018
HydroCAD® 10.00-20 s/n 02135 © 2017 HydroCAD Software Solutions LLC

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 1S: FRONT SECTION Runoff Area=86,229 sf 16.61% Impervious Runoff Depth>1.04"
Tc=5.0 min CN=78 Runoff=2.56 cfs 0.171 af

Subcatchment 2S: LOWER FIELD Runoff Area=139,036 sf 0.00% Impervious Runoff Depth>0.83"
Tc=8.0 min CN=74 Runoff=2.88 cfs 0.219 af

Subcatchment 10S: FRONT SECTION Runoff Area=26,106 sf 17.50% Impervious Runoff Depth>0.52"
Tc=7.0 min CN=67 Runoff=0.31 cfs 0.026 af

Subcatchment 20S: SOUTH SIDE AREA Runoff Area=70,093 sf 0.01% Impervious Runoff Depth>0.83"
Tc=8.0 min CN=74 Runoff=1.45 cfs 0.111 af

Subcatchment 21S: ACCESS AND Runoff Area=42,698 sf 31.98% Impervious Runoff Depth>1.28"
Tc=5.0 min CN=82 Runoff=1.58 cfs 0.104 af

Subcatchment 22S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>1.70"
Tc=5.0 min CN=88 Runoff=0.89 cfs 0.059 af

Subcatchment 23S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>1.78"
Tc=5.0 min CN=89 Runoff=1.27 cfs 0.085 af

Subcatchment 110S: FRONT SECTION Runoff Area=31,231 sf 25.95% Impervious Runoff Depth>1.15"
Tc=7.0 min CN=80 Runoff=0.99 cfs 0.069 af

Subcatchment 121S: ACCESS AND Runoff Area=37,579 sf 62.29% Impervious Runoff Depth>1.78"
Tc=8.0 min CN=89 Runoff=1.76 cfs 0.128 af

Subcatchment 200S: SOUTH SIDE AREA Runoff Area=70,083 sf 48.64% Impervious Runoff Depth>1.55"
Tc=8.0 min CN=86 Runoff=2.89 cfs 0.208 af

Subcatchment 220S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>1.70"
Tc=5.0 min CN=88 Runoff=0.89 cfs 0.059 af

Subcatchment 223S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>1.78"
Tc=5.0 min CN=89 Runoff=1.27 cfs 0.085 af

Reach 2R: ACROSS FIELD Avg. Flow Depth=0.17' Max Vel=0.63 fps Inflow=2.56 cfs 0.171 af
n=0.050 L=220.0' S=0.0050 '/' Capacity=44.17 cfs Outflow=2.14 cfs 0.169 af

Reach 24R: STORM DRAIN SYSTEM Avg. Flow Depth=0.34' Max Vel=6.86 fps Inflow=1.58 cfs 0.104 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=1.54 cfs 0.104 af

Reach 25R: BUFFER 2 Avg. Flow Depth=0.04' Max Vel=0.33 fps Inflow=1.27 cfs 0.085 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=1.20 cfs 0.085 af

Reach 26R: BUFFER 1 Avg. Flow Depth=0.07' Max Vel=0.51 fps Inflow=3.83 cfs 0.274 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=3.42 cfs 0.272 af

Reach 32R: STORM DRAIN SYSTEM Avg. Flow Depth=0.44' Max Vel=7.86 fps Inflow=2.61 cfs 0.187 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=2.54 cfs 0.187 af

Reach 33R: BUFFER 1 Avg. Flow Depth=0.09' Max Vel=0.59 fps Inflow=5.43 cfs 0.395 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=5.06 cfs 0.392 af

Reach 34R: POA 1 PHASE 1 Avg. Flow Depth=0.22' Max Vel=1.07 fps Inflow=4.73 cfs 0.382 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=4.71 cfs 0.382 af

Reach 35R: POA 1 FULL BUILBOUT Avg. Flow Depth=0.27' Max Vel=1.24 fps Inflow=6.83 cfs 0.546 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=6.81 cfs 0.546 af

Reach 36R: POA 1 EXISTING Avg. Flow Depth=0.34' Max Vel=0.98 fps Inflow=4.39 cfs 0.388 af
n=0.050 L=12.0' S=0.0050 '/' Capacity=27.58 cfs Outflow=4.38 cfs 0.388 af

Reach 37R: BUFFER 2 Avg. Flow Depth=0.04' Max Vel=0.33 fps Inflow=1.27 cfs 0.085 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=1.20 cfs 0.085 af

Total Runoff Area = 13.527 ac Runoff Volume = 1.324 af Average Runoff Depth = 1.17"
74.39% Pervious = 10.063 ac 25.61% Impervious = 3.464 ac

Summary for Subcatchment 1S: FRONT SECTION

Runoff = 2.56 cfs @ 12.08 hrs, Volume= 0.171 af, Depth> 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	14,320	98	IMPERVIOUS
*	71,909	74	LAWN C SOILS
	86,229	78	Weighted Average
	71,909		83.39% Pervious Area
	14,320		16.61% Impervious Area

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

Summary for Subcatchment 2S: LOWER FIELD

Runoff = 2.88 cfs @ 12.13 hrs, Volume= 0.219 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	139,036	74	FIELD
	139,036		100.00% Pervious Area

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

Summary for Subcatchment 10S: FRONT SECTION

Runoff = 0.31 cfs @ 12.12 hrs, Volume= 0.026 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	4,568	98	IMPERVIOUS
*	21,538	61	LAWN B SOILS
	26,106	67	Weighted Average
	21,538		82.50% Pervious Area
	4,568		17.50% Impervious Area

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

Summary for Subcatchment 20S: SOUTH SIDE AREA

Runoff = 1.45 cfs @ 12.13 hrs, Volume= 0.111 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	10	98	IMPERVIOUS
*	70,083	74	LAWN
	70,093	74	Weighted Average
	70,083		99.99% Pervious Area
	10		0.01% Impervious Area

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

Summary for Subcatchment 21S: ACCESS AND PARKING

Runoff = 1.58 cfs @ 12.08 hrs, Volume= 0.104 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	13,655	98	IMPERVIOUS
*	29,043	74	LAWN
	42,698	82	Weighted Average
	29,043		68.02% Pervious Area
	13,655		31.98% Impervious Area

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

Summary for Subcatchment 22S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 23S: BUILDING AND SERVICE AREA

Runoff = 1.27 cfs @ 12.08 hrs, Volume= 0.085 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Subcatchment 110S: FRONT SECTION

Runoff = 0.99 cfs @ 12.11 hrs, Volume= 0.069 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	6,882	98	IMPERVIOUS
*	23,126	74	LAWN B SOILS
*	1,223	98	Roofs
	31,231	80	Weighted Average
	23,126		74.05% Pervious Area
	8,105		25.95% Impervious Area

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

Summary for Subcatchment 121S: ACCESS AND PARKING

Runoff = 1.76 cfs @ 12.11 hrs, Volume= 0.128 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	23,408	98	IMPERVIOUS
*	14,171	74	LAWN
	37,579	89	Weighted Average
	14,171		37.71% Pervious Area
	23,408		62.29% Impervious Area

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

Summary for Subcatchment 200S: SOUTH SIDE AREA

Runoff = 2.89 cfs @ 12.12 hrs, Volume= 0.208 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	34,085	98	IMPERVIOUS
*	35,998	74	LAWN
	70,083	86	Weighted Average
	35,998		51.36% Pervious Area
	34,085		48.64% Impervious Area

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

Summary for Subcatchment 220S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 0.89 cfs @ 12.08 hrs, Volume= 0.059 af, Depth> 1.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 223S: BUILDING AND SERVICE AREA

Runoff = 1.27 cfs @ 12.08 hrs, Volume= 0.085 af, Depth> 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 YEAR Rainfall=3.00"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Reach 2R: ACROSS FIELD

Inflow Area = 1.980 ac, 16.61% Impervious, Inflow Depth > 1.04" for 2 YEAR event
Inflow = 2.56 cfs @ 12.08 hrs, Volume= 0.171 af
Outflow = 2.14 cfs @ 12.24 hrs, Volume= 0.169 af, Atten= 17%, Lag= 9.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.63 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 0.21 fps, Avg. Travel Time= 17.1 min

Peak Storage= 754 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.17'
Bank-Full Depth= 1.00' Flow Area= 23.0 sf, Capacity= 44.17 cfs

20.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 26.00'
Length= 220.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -1.10'

‡

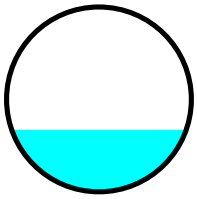
Summary for Reach 24R: STORM DRAIN SYSTEM

Inflow Area = 0.980 ac, 31.98% Impervious, Inflow Depth > 1.28" for 2 YEAR event
Inflow = 1.58 cfs @ 12.08 hrs, Volume= 0.104 af
Outflow = 1.54 cfs @ 12.10 hrs, Volume= 0.104 af, Atten= 2%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.86 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.73 fps, Avg. Travel Time= 1.6 min

Peak Storage= 60 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 25R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 1.78" for 2 YEAR event
Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 1.20 cfs @ 12.16 hrs, Volume= 0.085 af, Atten= 5%, Lag= 5.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.8 min

Peak Storage= 218 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

Summary for Reach 26R: BUFFER 1

Inflow Area = 3.006 ac, 18.56% Impervious, Inflow Depth > 1.09" for 2 YEAR event
Inflow = 3.83 cfs @ 12.10 hrs, Volume= 0.274 af
Outflow = 3.42 cfs @ 12.21 hrs, Volume= 0.272 af, Atten= 11%, Lag= 6.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.51 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 11.6 min

Peak Storage= 830 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.07'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

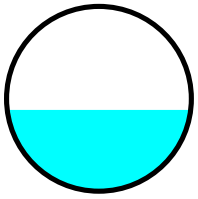
Summary for Reach 32R: STORM DRAIN SYSTEM

Inflow Area = 1.279 ac, 61.10% Impervious, Inflow Depth > 1.75" for 2 YEAR event
Inflow = 2.61 cfs @ 12.10 hrs, Volume= 0.187 af
Outflow = 2.54 cfs @ 12.12 hrs, Volume= 0.187 af, Atten= 2%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.86 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.98 fps, Avg. Travel Time= 1.5 min

Peak Storage= 86 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 33R: BUFFER 1

Inflow Area = 2.888 ac, 54.16% Impervious, Inflow Depth > 1.64" for 2 YEAR event
Inflow = 5.43 cfs @ 12.12 hrs, Volume= 0.395 af
Outflow = 5.06 cfs @ 12.21 hrs, Volume= 0.392 af, Atten= 7%, Lag= 5.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.59 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 10.8 min

Peak Storage= 1,044 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.09'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

Summary for Reach 34R: POA 1 PHASE 1

Inflow Area = 4.178 ac, 24.50% Impervious, Inflow Depth > 1.10" for 2 YEAR event
Inflow = 4.73 cfs @ 12.20 hrs, Volume= 0.382 af
Outflow = 4.71 cfs @ 12.20 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.07 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 0.5 min

Peak Storage= 44 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'

Summary for Reach 35R: POA 1 FULL BUILBOUT

Inflow Area = 4.178 ac, 50.53% Impervious, Inflow Depth > 1.57" for 2 YEAR event
Inflow = 6.83 cfs @ 12.19 hrs, Volume= 0.546 af
Outflow = 6.81 cfs @ 12.20 hrs, Volume= 0.546 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.24 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 0.5 min

Peak Storage= 55 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'

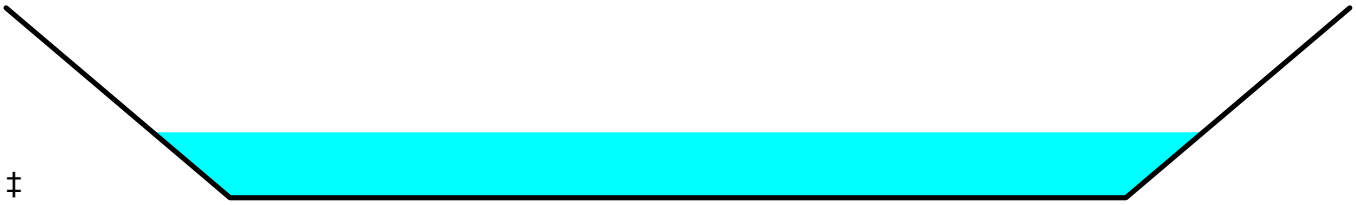
Summary for Reach 36R: POA 1 EXISTING

Inflow Area = 5.171 ac, 6.36% Impervious, Inflow Depth > 0.90" for 2 YEAR event
Inflow = 4.39 cfs @ 12.19 hrs, Volume= 0.388 af
Outflow = 4.38 cfs @ 12.19 hrs, Volume= 0.388 af, Atten= 0%, Lag= 0.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.98 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 0.6 min

Peak Storage= 54 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 27.58 cfs

12.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 12.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.06'



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Summary for Reach 37R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 1.78" for 2 YEAR event
Inflow = 1.27 cfs @ 12.08 hrs, Volume= 0.085 af
Outflow = 1.20 cfs @ 12.16 hrs, Volume= 0.085 af, Atten= 5%, Lag= 5.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.33 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.8 min

Peak Storage= 218 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

‡

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 1S: FRONT SECTION Runoff Area=86,229 sf 16.61% Impervious Runoff Depth>2.29"
Tc=5.0 min CN=78 Runoff=5.71 cfs 0.378 af

Subcatchment 2S: LOWER FIELD Runoff Area=139,036 sf 0.00% Impervious Runoff Depth>1.97"
Tc=8.0 min CN=74 Runoff=7.27 cfs 0.523 af

Subcatchment 10S: FRONT SECTION Runoff Area=26,106 sf 17.50% Impervious Runoff Depth>1.46"
Tc=7.0 min CN=67 Runoff=1.02 cfs 0.073 af

Subcatchment 20S: SOUTH SIDE AREA Runoff Area=70,093 sf 0.01% Impervious Runoff Depth>1.97"
Tc=8.0 min CN=74 Runoff=3.66 cfs 0.264 af

Subcatchment 21S: ACCESS AND Runoff Area=42,698 sf 31.98% Impervious Runoff Depth>2.63"
Tc=5.0 min CN=82 Runoff=3.23 cfs 0.215 af

Subcatchment 22S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>3.19"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.111 af

Subcatchment 23S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>3.29"
Tc=5.0 min CN=89 Runoff=2.29 cfs 0.157 af

Subcatchment 110S: FRONT SECTION Runoff Area=31,231 sf 25.95% Impervious Runoff Depth>2.46"
Tc=7.0 min CN=80 Runoff=2.11 cfs 0.147 af

Subcatchment 121S: ACCESS AND Runoff Area=37,579 sf 62.29% Impervious Runoff Depth>3.29"
Tc=8.0 min CN=89 Runoff=3.17 cfs 0.236 af

Subcatchment 200S: SOUTH SIDE AREA Runoff Area=70,083 sf 48.64% Impervious Runoff Depth>3.00"
Tc=8.0 min CN=86 Runoff=5.49 cfs 0.402 af

Subcatchment 220S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>3.19"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.111 af

Subcatchment 223S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>3.29"
Tc=5.0 min CN=89 Runoff=2.29 cfs 0.157 af

Reach 2R: ACROSS FIELD Avg. Flow Depth=0.28' Max Vel=0.87 fps Inflow=5.71 cfs 0.378 af
n=0.050 L=220.0' S=0.0050 '/' Capacity=44.17 cfs Outflow=4.98 cfs 0.374 af

Reach 24R: STORM DRAIN SYSTEM Avg. Flow Depth=0.50' Max Vel=8.30 fps Inflow=3.23 cfs 0.215 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=3.17 cfs 0.215 af

Reach 25R: BUFFER 2 Avg. Flow Depth=0.05' Max Vel=0.42 fps Inflow=2.29 cfs 0.157 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=2.15 cfs 0.156 af

Reach 26R: BUFFER 1 Avg. Flow Depth=0.11' Max Vel=0.70 fps Inflow=8.33 cfs 0.589 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=7.81 cfs 0.586 af

Reach 32R: STORM DRAIN SYSTEM Avg. Flow Depth=0.63' Max Vel=9.07 fps Inflow=4.71 cfs 0.347 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=4.61 cfs 0.347 af

Reach 33R: BUFFER 1 Avg. Flow Depth=0.13' Max Vel=0.76 fps Inflow=10.10 cfs 0.749 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=9.57 cfs 0.745 af

Reach 34R: POA 1 PHASE 1 Avg. Flow Depth=0.36' Max Vel=1.47 fps Inflow=10.75 cfs 0.815 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=10.70 cfs 0.815 af

Reach 35R: POA 1 FULL BUILBOUT Avg. Flow Depth=0.40' Max Vel=1.59 fps Inflow=13.18 cfs 1.048 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=13.13 cfs 1.048 af

Reach 36R: POA 1 EXISTING Avg. Flow Depth=0.61' Max Vel=1.37 fps Inflow=11.49 cfs 0.897 af
n=0.050 L=12.0' S=0.0050 '/' Capacity=27.58 cfs Outflow=11.45 cfs 0.897 af

Reach 37R: BUFFER 2 Avg. Flow Depth=0.05' Max Vel=0.42 fps Inflow=2.29 cfs 0.157 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=2.15 cfs 0.156 af

Total Runoff Area = 13.527 ac Runoff Volume = 2.772 af Average Runoff Depth = 2.46"
74.39% Pervious = 10.063 ac 25.61% Impervious = 3.464 ac

Summary for Subcatchment 1S: FRONT SECTION

Runoff = 5.71 cfs @ 12.08 hrs, Volume= 0.378 af, Depth> 2.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	14,320	98	IMPERVIOUS
*	71,909	74	LAWN C SOILS
	86,229	78	Weighted Average
	71,909		83.39% Pervious Area
	14,320		16.61% Impervious Area

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

Summary for Subcatchment 2S: LOWER FIELD

Runoff = 7.27 cfs @ 12.12 hrs, Volume= 0.523 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	139,036	74	FIELD
	139,036		100.00% Pervious Area

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

Summary for Subcatchment 10S: FRONT SECTION

Runoff = 1.02 cfs @ 12.11 hrs, Volume= 0.073 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	4,568	98	IMPERVIOUS
*	21,538	61	LAWN B SOILS
	26,106	67	Weighted Average
	21,538		82.50% Pervious Area
	4,568		17.50% Impervious Area

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

Summary for Subcatchment 20S: SOUTH SIDE AREA

Runoff = 3.66 cfs @ 12.12 hrs, Volume= 0.264 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	10	98	IMPERVIOUS
*	70,083	74	LAWN
	70,093	74	Weighted Average
	70,083		99.99% Pervious Area
	10		0.01% Impervious Area

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

Summary for Subcatchment 21S: ACCESS AND PARKING

Runoff = 3.23 cfs @ 12.08 hrs, Volume= 0.215 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	13,655	98	IMPERVIOUS
*	29,043	74	LAWN
	42,698	82	Weighted Average
	29,043		68.02% Pervious Area
	13,655		31.98% Impervious Area

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

Summary for Subcatchment 22S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 1.63 cfs @ 12.07 hrs, Volume= 0.111 af, Depth> 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 23S: BUILDING AND SERVICE AREA

Runoff = 2.29 cfs @ 12.07 hrs, Volume= 0.157 af, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Subcatchment 110S: FRONT SECTION

Runoff = 2.11 cfs @ 12.10 hrs, Volume= 0.147 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	6,882	98	IMPERVIOUS
*	23,126	74	LAWN B SOILS
*	1,223	98	Roofs
	31,231	80	Weighted Average
	23,126		74.05% Pervious Area
	8,105		25.95% Impervious Area

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

Summary for Subcatchment 121S: ACCESS AND PARKING

Runoff = 3.17 cfs @ 12.11 hrs, Volume= 0.236 af, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	23,408	98	IMPERVIOUS
*	14,171	74	LAWN
	37,579	89	Weighted Average
	14,171		37.71% Pervious Area
	23,408		62.29% Impervious Area

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

Summary for Subcatchment 200S: SOUTH SIDE AREA

Runoff = 5.49 cfs @ 12.11 hrs, Volume= 0.402 af, Depth> 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	34,085	98	IMPERVIOUS
*	35,998	74	LAWN
	70,083	86	Weighted Average
	35,998		51.36% Pervious Area
	34,085		48.64% Impervious Area

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

Summary for Subcatchment 220S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 1.63 cfs @ 12.07 hrs, Volume= 0.111 af, Depth> 3.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 223S: BUILDING AND SERVICE AREA

Runoff = 2.29 cfs @ 12.07 hrs, Volume= 0.157 af, Depth> 3.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Reach 2R: ACROSS FIELD

Inflow Area = 1.980 ac, 16.61% Impervious, Inflow Depth > 2.29" for 10 YEAR event
Inflow = 5.71 cfs @ 12.08 hrs, Volume= 0.378 af
Outflow = 4.98 cfs @ 12.20 hrs, Volume= 0.374 af, Atten= 13%, Lag= 7.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.87 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.27 fps, Avg. Travel Time= 13.8 min

Peak Storage= 1,294 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.28'
Bank-Full Depth= 1.00' Flow Area= 23.0 sf, Capacity= 44.17 cfs

20.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 26.00'
Length= 220.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -1.10'

‡

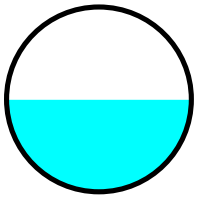
Summary for Reach 24R: STORM DRAIN SYSTEM

Inflow Area = 0.980 ac, 31.98% Impervious, Inflow Depth > 2.63" for 10 YEAR event
Inflow = 3.23 cfs @ 12.08 hrs, Volume= 0.215 af
Outflow = 3.17 cfs @ 12.09 hrs, Volume= 0.215 af, Atten= 2%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.30 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.16 fps, Avg. Travel Time= 1.4 min

Peak Storage= 101 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 25R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 3.29" for 10 YEAR event
Inflow = 2.29 cfs @ 12.07 hrs, Volume= 0.157 af
Outflow = 2.15 cfs @ 12.14 hrs, Volume= 0.156 af, Atten= 6%, Lag= 4.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.42 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.6 min

Peak Storage= 314 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

Summary for Reach 26R: BUFFER 1

Inflow Area = 3.006 ac, 18.56% Impervious, Inflow Depth > 2.35" for 10 YEAR event
Inflow = 8.33 cfs @ 12.10 hrs, Volume= 0.589 af
Outflow = 7.81 cfs @ 12.18 hrs, Volume= 0.586 af, Atten= 6%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.70 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.20 fps, Avg. Travel Time= 9.9 min

Peak Storage= 1,349 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

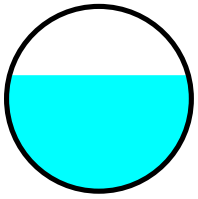
Summary for Reach 32R: STORM DRAIN SYSTEM

Inflow Area = 1.279 ac, 61.10% Impervious, Inflow Depth > 3.26" for 10 YEAR event
Inflow = 4.71 cfs @ 12.10 hrs, Volume= 0.347 af
Outflow = 4.61 cfs @ 12.11 hrs, Volume= 0.347 af, Atten= 2%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.07 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.42 fps, Avg. Travel Time= 1.3 min

Peak Storage= 135 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 33R: BUFFER 1

Inflow Area = 2.888 ac, 54.16% Impervious, Inflow Depth > 3.11" for 10 YEAR event
Inflow = 10.10 cfs @ 12.11 hrs, Volume= 0.749 af
Outflow = 9.57 cfs @ 12.19 hrs, Volume= 0.745 af, Atten= 5%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.76 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 9.2 min

Peak Storage= 1,531 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

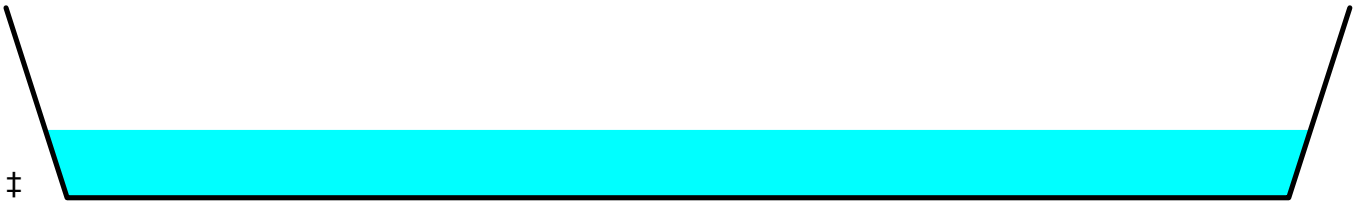
Summary for Reach 34R: POA 1 PHASE 1

Inflow Area = 4.178 ac, 24.50% Impervious, Inflow Depth > 2.34" for 10 YEAR event
Inflow = 10.75 cfs @ 12.17 hrs, Volume= 0.815 af
Outflow = 10.70 cfs @ 12.17 hrs, Volume= 0.815 af, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.47 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 0.4 min

Peak Storage= 73 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'



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Summary for Reach 35R: POA 1 FULL BUILBOUT

Inflow Area = 4.178 ac, 50.53% Impervious, Inflow Depth > 3.01" for 10 YEAR event
Inflow = 13.18 cfs @ 12.17 hrs, Volume= 1.048 af
Outflow = 13.13 cfs @ 12.17 hrs, Volume= 1.048 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.59 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.43 fps, Avg. Travel Time= 0.4 min

Peak Storage= 82 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'

‡

Summary for Reach 36R: POA 1 EXISTING

Inflow Area = 5.171 ac, 6.36% Impervious, Inflow Depth > 2.08" for 10 YEAR event
Inflow = 11.49 cfs @ 12.15 hrs, Volume= 0.897 af
Outflow = 11.45 cfs @ 12.15 hrs, Volume= 0.897 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.37 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.45 fps, Avg. Travel Time= 0.4 min

Peak Storage= 100 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.61'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 27.58 cfs

12.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 12.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.06'

‡

Summary for Reach 37R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 3.29" for 10 YEAR event
Inflow = 2.29 cfs @ 12.07 hrs, Volume= 0.157 af
Outflow = 2.15 cfs @ 12.14 hrs, Volume= 0.156 af, Atten= 6%, Lag= 4.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.42 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.6 min

Peak Storage= 314 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.05'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

‡

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 1S: FRONT SECTION Runoff Area=86,229 sf 16.61% Impervious Runoff Depth>2.85"
Tc=5.0 min CN=78 Runoff=7.09 cfs 0.470 af

Subcatchment 2S: LOWER FIELD Runoff Area=139,036 sf 0.00% Impervious Runoff Depth>2.49"
Tc=8.0 min CN=74 Runoff=9.24 cfs 0.663 af

Subcatchment 10S: FRONT SECTION Runoff Area=26,106 sf 17.50% Impervious Runoff Depth>1.92"
Tc=7.0 min CN=67 Runoff=1.36 cfs 0.096 af

Subcatchment 20S: SOUTH SIDE AREA Runoff Area=70,093 sf 0.01% Impervious Runoff Depth>2.49"
Tc=8.0 min CN=74 Runoff=4.66 cfs 0.334 af

Subcatchment 21S: ACCESS AND Runoff Area=42,698 sf 31.98% Impervious Runoff Depth>3.23"
Tc=5.0 min CN=82 Runoff=3.93 cfs 0.264 af

Subcatchment 22S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>3.82"
Tc=5.0 min CN=88 Runoff=1.94 cfs 0.133 af

Subcatchment 23S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>3.93"
Tc=5.0 min CN=89 Runoff=2.71 cfs 0.187 af

Subcatchment 110S: FRONT SECTION Runoff Area=31,231 sf 25.95% Impervious Runoff Depth>3.03"
Tc=7.0 min CN=80 Runoff=2.60 cfs 0.181 af

Subcatchment 121S: ACCESS AND Runoff Area=37,579 sf 62.29% Impervious Runoff Depth>3.92"
Tc=8.0 min CN=89 Runoff=3.75 cfs 0.282 af

Subcatchment 200S: SOUTH SIDE AREA Runoff Area=70,083 sf 48.64% Impervious Runoff Depth>3.62"
Tc=8.0 min CN=86 Runoff=6.57 cfs 0.485 af

Subcatchment 220S: ACCESS ROAD Runoff Area=18,155 sf 58.63% Impervious Runoff Depth>3.82"
Tc=5.0 min CN=88 Runoff=1.94 cfs 0.133 af

Subcatchment 223S: BUILDING AND Runoff Area=24,930 sf 63.04% Impervious Runoff Depth>3.93"
Tc=5.0 min CN=89 Runoff=2.71 cfs 0.187 af

Reach 2R: ACROSS FIELD Avg. Flow Depth=0.32' Max Vel=0.95 fps Inflow=7.09 cfs 0.470 af
n=0.050 L=220.0' S=0.0050 '/' Capacity=44.17 cfs Outflow=6.26 cfs 0.467 af

Reach 24R: STORM DRAIN SYSTEM Avg. Flow Depth=0.56' Max Vel=8.70 fps Inflow=3.93 cfs 0.264 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=3.87 cfs 0.263 af

Reach 25R: BUFFER 2 Avg. Flow Depth=0.06' Max Vel=0.45 fps Inflow=2.71 cfs 0.187 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=2.53 cfs 0.187 af

Reach 26R: BUFFER 1 Avg. Flow Depth=0.13' Max Vel=0.76 fps Inflow=10.29 cfs 0.731 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=9.71 cfs 0.727 af

Reach 32R: STORM DRAIN SYSTEM Avg. Flow Depth=0.71' Max Vel=9.36 fps Inflow=5.58 cfs 0.415 af
12.0" Round Pipe n=0.010 L=260.0' S=0.0200 '/' Capacity=6.55 cfs Outflow=5.46 cfs 0.415 af

Reach 33R: BUFFER 1 Avg. Flow Depth=0.14' Max Vel=0.81 fps Inflow=12.03 cfs 0.900 af
n=0.035 L=120.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=11.37 cfs 0.896 af

Reach 34R: POA 1 PHASE 1 Avg. Flow Depth=0.41' Max Vel=1.60 fps Inflow=13.31 cfs 1.009 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=13.25 cfs 1.009 af

Reach 35R: POA 1 FULL BUILBOUT Avg. Flow Depth=0.45' Max Vel=1.71 fps Inflow=15.81 cfs 1.264 af
n=0.035 L=10.0' S=0.0050 '/' Capacity=59.63 cfs Outflow=15.76 cfs 1.264 af

Reach 36R: POA 1 EXISTING Avg. Flow Depth=0.70' Max Vel=1.50 fps Inflow=14.76 cfs 1.130 af
n=0.050 L=12.0' S=0.0050 '/' Capacity=27.58 cfs Outflow=14.71 cfs 1.130 af

Reach 37R: BUFFER 2 Avg. Flow Depth=0.06' Max Vel=0.45 fps Inflow=2.71 cfs 0.187 af
n=0.035 L=60.0' S=0.0050 '/' Capacity=299.61 cfs Outflow=2.53 cfs 0.187 af

Total Runoff Area = 13.527 ac Runoff Volume = 3.416 af Average Runoff Depth = 3.03"
74.39% Pervious = 10.063 ac 25.61% Impervious = 3.464 ac

Summary for Subcatchment 1S: FRONT SECTION

Runoff = 7.09 cfs @ 12.08 hrs, Volume= 0.470 af, Depth> 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	14,320	98	IMPERVIOUS
*	71,909	74	LAWN C SOILS
	86,229	78	Weighted Average
	71,909		83.39% Pervious Area
	14,320		16.61% Impervious Area

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

Summary for Subcatchment 2S: LOWER FIELD

Runoff = 9.24 cfs @ 12.12 hrs, Volume= 0.663 af, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	139,036	74	FIELD
	139,036		100.00% Pervious Area

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

Summary for Subcatchment 10S: FRONT SECTION

Runoff = 1.36 cfs @ 12.11 hrs, Volume= 0.096 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	4,568	98	IMPERVIOUS
*	21,538	61	LAWN B SOILS
	26,106	67	Weighted Average
	21,538		82.50% Pervious Area
	4,568		17.50% Impervious Area

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

Summary for Subcatchment 20S: SOUTH SIDE AREA

Runoff = 4.66 cfs @ 12.12 hrs, Volume= 0.334 af, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	10	98	IMPERVIOUS
*	70,083	74	LAWN
	70,093	74	Weighted Average
	70,083		99.99% Pervious Area
	10		0.01% Impervious Area

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

Summary for Subcatchment 21S: ACCESS AND PARKING

Runoff = 3.93 cfs @ 12.08 hrs, Volume= 0.264 af, Depth> 3.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	13,655	98	IMPERVIOUS
*	29,043	74	LAWN
	42,698	82	Weighted Average
	29,043		68.02% Pervious Area
	13,655		31.98% Impervious Area

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

Summary for Subcatchment 22S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 1.94 cfs @ 12.07 hrs, Volume= 0.133 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 23S: BUILDING AND SERVICE AREA

Runoff = 2.71 cfs @ 12.07 hrs, Volume= 0.187 af, Depth> 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Subcatchment 110S: FRONT SECTION

Runoff = 2.60 cfs @ 12.10 hrs, Volume= 0.181 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	6,882	98	IMPERVIOUS
*	23,126	74	LAWN B SOILS
*	1,223	98	Roofs
	31,231	80	Weighted Average
	23,126		74.05% Pervious Area
	8,105		25.95% Impervious Area

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

Summary for Subcatchment 121S: ACCESS AND PARKING

Runoff = 3.75 cfs @ 12.11 hrs, Volume= 0.282 af, Depth> 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	23,408	98	IMPERVIOUS
*	14,171	74	LAWN
	37,579	89	Weighted Average
	14,171		37.71% Pervious Area
	23,408		62.29% Impervious Area

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

Summary for Subcatchment 200S: SOUTH SIDE AREA

Runoff = 6.57 cfs @ 12.11 hrs, Volume= 0.485 af, Depth> 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	34,085	98	IMPERVIOUS
*	35,998	74	LAWN
	70,083	86	Weighted Average
	35,998		51.36% Pervious Area
	34,085		48.64% Impervious Area

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

Summary for Subcatchment 220S: ACCESS ROAD BUILDING AND SERVICE AREA

Runoff = 1.94 cfs @ 12.07 hrs, Volume= 0.133 af, Depth> 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	10,644	98	IMPERVIOUS
*	7,511	74	LAWN
*	0	98	BUILDING
	18,155	88	Weighted Average
	7,511		41.37% Pervious Area
	10,644		58.63% Impervious Area

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

Summary for Subcatchment 223S: BUILDING AND SERVICE AREA

Runoff = 2.71 cfs @ 12.07 hrs, Volume= 0.187 af, Depth> 3.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR Rainfall=5.40"

	Area (sf)	CN	Description
*	10,777	98	BUILDING
*	4,940	98	PAVED
*	9,213	74	BUFER
	24,930	89	Weighted Average
	9,213		36.96% Pervious Area
	15,717		63.04% Impervious Area

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

Summary for Reach 2R: ACROSS FIELD

Inflow Area = 1.980 ac, 16.61% Impervious, Inflow Depth > 2.85" for 25 YEAR event
Inflow = 7.09 cfs @ 12.08 hrs, Volume= 0.470 af
Outflow = 6.26 cfs @ 12.18 hrs, Volume= 0.467 af, Atten= 12%, Lag= 6.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.95 fps, Min. Travel Time= 3.8 min
Avg. Velocity = 0.28 fps, Avg. Travel Time= 13.0 min

Peak Storage= 1,493 cf @ 12.12 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 1.00' Flow Area= 23.0 sf, Capacity= 44.17 cfs

20.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 26.00'
Length= 220.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -1.10'

‡

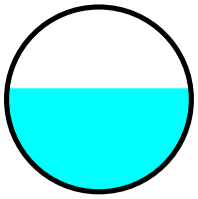
Summary for Reach 24R: STORM DRAIN SYSTEM

Inflow Area = 0.980 ac, 31.98% Impervious, Inflow Depth > 3.23" for 25 YEAR event
Inflow = 3.93 cfs @ 12.08 hrs, Volume= 0.264 af
Outflow = 3.87 cfs @ 12.09 hrs, Volume= 0.263 af, Atten= 2%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.70 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.29 fps, Avg. Travel Time= 1.3 min

Peak Storage= 118 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.56'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 25R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 3.93" for 25 YEAR event
Inflow = 2.71 cfs @ 12.07 hrs, Volume= 0.187 af
Outflow = 2.53 cfs @ 12.14 hrs, Volume= 0.187 af, Atten= 7%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.45 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.5 min

Peak Storage= 349 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

Summary for Reach 26R: BUFFER 1

Inflow Area = 3.006 ac, 18.56% Impervious, Inflow Depth > 2.92" for 25 YEAR event
Inflow = 10.29 cfs @ 12.10 hrs, Volume= 0.731 af
Outflow = 9.71 cfs @ 12.17 hrs, Volume= 0.727 af, Atten= 6%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.76 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.22 fps, Avg. Travel Time= 9.3 min

Peak Storage= 1,537 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

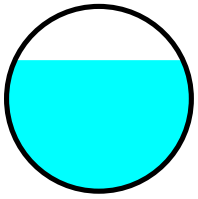
Summary for Reach 32R: STORM DRAIN SYSTEM

Inflow Area = 1.279 ac, 61.10% Impervious, Inflow Depth > 3.89" for 25 YEAR event
Inflow = 5.58 cfs @ 12.10 hrs, Volume= 0.415 af
Outflow = 5.46 cfs @ 12.11 hrs, Volume= 0.415 af, Atten= 2%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.36 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 3.65 fps, Avg. Travel Time= 1.2 min

Peak Storage= 155 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.71'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.55 cfs

12.0" Round Pipe
n= 0.010
Length= 260.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -5.20'



Summary for Reach 33R: BUFFER 1

Inflow Area = 2.888 ac, 54.16% Impervious, Inflow Depth > 3.74" for 25 YEAR event
Inflow = 12.03 cfs @ 12.11 hrs, Volume= 0.900 af
Outflow = 11.37 cfs @ 12.18 hrs, Volume= 0.896 af, Atten= 5%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.81 fps, Min. Travel Time= 2.5 min
Avg. Velocity = 0.23 fps, Avg. Travel Time= 8.7 min

Peak Storage= 1,705 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 120.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.60'

Summary for Reach 34R: POA 1 PHASE 1

Inflow Area = 4.178 ac, 24.50% Impervious, Inflow Depth > 2.90" for 25 YEAR event
Inflow = 13.31 cfs @ 12.16 hrs, Volume= 1.009 af
Outflow = 13.25 cfs @ 12.16 hrs, Volume= 1.009 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.60 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.42 fps, Avg. Travel Time= 0.4 min

Peak Storage= 83 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'

‡

Summary for Reach 35R: POA 1 FULL BUILBOUT

Inflow Area = 4.178 ac, 50.53% Impervious, Inflow Depth > 3.63" for 25 YEAR event
Inflow = 15.81 cfs @ 12.16 hrs, Volume= 1.264 af
Outflow = 15.76 cfs @ 12.17 hrs, Volume= 1.264 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.71 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 0.4 min

Peak Storage= 92 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 1.00' Flow Area= 21.0 sf, Capacity= 59.63 cfs

20.00' x 1.00' deep channel, n= 0.035
Side Slope Z-value= 1.0 '/' Top Width= 22.00'
Length= 10.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.05'

‡

Summary for Reach 36R: POA 1 EXISTING

Inflow Area = 5.171 ac, 6.36% Impervious, Inflow Depth > 2.62" for 25 YEAR event
Inflow = 14.76 cfs @ 12.15 hrs, Volume= 1.130 af
Outflow = 14.71 cfs @ 12.15 hrs, Volume= 1.130 af, Atten= 0%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.50 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 0.4 min

Peak Storage= 118 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.70'
Bank-Full Depth= 1.00' Flow Area= 15.0 sf, Capacity= 27.58 cfs

12.00' x 1.00' deep channel, n= 0.050
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 12.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.06'

‡

Summary for Reach 37R: BUFFER 2

Inflow Area = 0.572 ac, 63.04% Impervious, Inflow Depth > 3.93" for 25 YEAR event
Inflow = 2.71 cfs @ 12.07 hrs, Volume= 0.187 af
Outflow = 2.53 cfs @ 12.14 hrs, Volume= 0.187 af, Atten= 7%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.45 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.15 fps, Avg. Travel Time= 6.5 min

Peak Storage= 349 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.00' Flow Area= 101.0 sf, Capacity= 299.61 cfs

100.00' x 1.00' deep channel, n= 0.035 High grass
Side Slope Z-value= 1.0 '/' Top Width= 102.00'
Length= 60.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.30'

‡

STONE SURFACE
NAPLES, MAINE

February 28, 2018

INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

The Owner will be responsible for the inspection and maintenance of all stormwater management facilities, the establishment of any contract services required to implement the program, and the keeping of records and maintenance log book as described herein. At a minimum, the appropriate and relevant activities for each of the stormwater management facilities should be performed on the prescribed schedule. Periodic inspection and maintenance of these site features and devices is necessary to prevent erosion and remove pollutants from stormwater runoff.

Maintenance of stormwater treatment and control systems must occur regularly. This Stormwater Maintenance Report provides inspection details and time lines for doing the inspections and reporting to the Town and DEP. Keep records available for review by DEP. Recertify DEP permit every 5 years.

Inspections and Reports:

This project is located in the Lake Watershed. The Owner is required to file a five year report to the Department of Environmental Protection (DEP) noting the conditions of the site, including erosion issues and drainage related items, reviewing the stormwater permit.

Documentation. Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Department staff and a copy provided to the Department upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization.

Re-certification. Submit a certification of the following to the Department within three months of the expiration of each five-year interval from the date of issuance of the permit.

1. Identification and repair of erosion problems. All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.

2. Inspection and repair of stormwater control system. All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.

3. Maintenance. The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

SWALES, DITCHES, CURBS AND PAVED AREAS:

Swales, ditches, curbs and paved areas are easily inspected during a site walk or even a ride-by. Since visual inspection is easy, their condition should be assessed during and/or after significant rainfall events such as thunder showers and periods of heavy or extended rainfall and during periods of significant snowmelt. Any damage or unusual condition such as sedimentation of a ditch, erosion, damaged curb or dying vegetation should be recorded, dated and initialed by the inspector when observed. Even if there is no damage, the inspector should make record of these inspections at least twice annually.

Paved areas should be visually inspected monthly during the winter. The inspector should pay particular attention to the buildup of sand around catch basin grates and remove accumulations that block the free flow of surface runoff to the catch basins. The date and initials of the inspector should be recorded on the forms provided as well as a notation of any cleanup effort that was made and the approximate volume of sand that was removed.

MEADOW BUFFERS:

A meadow buffer must have a dense cover of grasses, or a combination of grasses and shrubs or trees. A buffer must be maintained as a meadow with a generally tall stand of grass, not as a lawn.

1. Mowing: Meadow buffers may be mown no more than twice per year. They may not be maintained as a lawn.
2. Inspection Frequency: Buffers should be inspected annually for evidence of erosion or concentrated flows through or around the buffer. All eroded areas should be repaired, seeded and mulched. A shallow stone trench should be installed and maintained as a level spreader to distribute flows evenly in any area showing concentrated flows.
3. Access and Use: Buffers should not be traversed by all-terrain vehicles or other vehicles. Activities within buffers should be conducted so as not to damage vegetation, disturb any organic duff layer, and expose soil.

STONE SURFACE NAPLES, MAINE			
INSPECTION / MAINTENANCE LOG			
SWALES, DITCHES, CURBS AND PAVED AREAS			
I: INSPECTED - C: CLEANED - R: REPAIRED			
DATE	**INITIALS**	**ACTION**	**COMMENT**
5/14/17	ABC	I, C	EXAMPLE: Remove sand deposits and debris as necessary.

STONE SURFACE NAPLES, MAINE			
INSPECTION / MAINTENANCE LOG			
BUFFER AREAS			
I: INSPECTED - C: CLEANED - S: SWEPT - R: REPAIRED			
DATE	**INITIALS**	**ACTION**	**COMMENT**
4/26/17	TSG	I, C	EXAMPLE: No standing water observed. Embankment ok.

STORMWATER MANAGEMENT SYSTEM
MAINTENANCE PROGRAM
SUMMARY CHECKLIST

Item	Commentary	Frequency			
		Month	**Semi-Annual**	**Annual**	**Long-Term**
Open Swale, Ditches & Inlet Structures	Inspect for debris accumulation, erosion and excessive vegetation. Mow monthly, remove debris, repair and revegetate any area of erosion	**X Mow**		**X**	
Pavement	Review for damage and buildup of debris and sand.	**X**	**X Sweep**		
Buffer Areas	Review embankment, check for standing water.		**X**		

HOUSEKEEPNG REPORT

STONE SURFACE
NAPLES, MAINE

February 28, 2018

The Owner is responsible for notifying the contractor of the housekeeping standards.

1. Spill Prevention: The contractor and owners need to take care with construction and waste materials such that contaminates do not enter the stormwater. The storage of materials such as paint, petroleum products, cleaning agents and the like are to be stored in watertight containers. The use of the products should be in accordance with manufacturer recommendations. When fueling equipment, including snowblowers and lawnmowers, have oil absorbent pads available below the fueling.

   Staging areas are noted on the plans for the contractor's use. Refueling of small engines by the owner should occur in the garage or on a paved surface.

   Any spill or release of toxic or hazardous substances must be reported to the Department. For oil spills, call 1-800-482-0777 which is available 24 hours a day. For spills of toxic or hazardous material, call 1-800-452-4664 which is available 24 hours a day. For more information, visit the Department's website at: http:/www.maine.gov/dep/spills/emergspillresp/

2. Groundwater Protection: Protection of the groundwater is required by the contractor and owner. Petroleum products should be stored in manufactured cans designed for the purpose. Spill preventions procedures should be followed.

3. Fugitive Sediment and Dust: The contractor is required to minimize dust from the construction operation. The road should be swept regularly (weekly) and prior to any rain event. The gravel areas are to be watered regularly to minimize dust. Any mud that is tracked off site should be cleaned up prior to it drying and becoming a dust issue.

   Do not use oil to control dust.

   Dewatering a stream without a permit from the Department may violate state water quality standards and the Natural Resources Protection Act.

4. Debris and Other Materials: Construction materials and construction debris should be covered to prevent rainwater from washing contaminants off the site. Any fertilizers, cleaning products, herbicides should be protected from the weather and used in accordance with manufacturers recommendations.

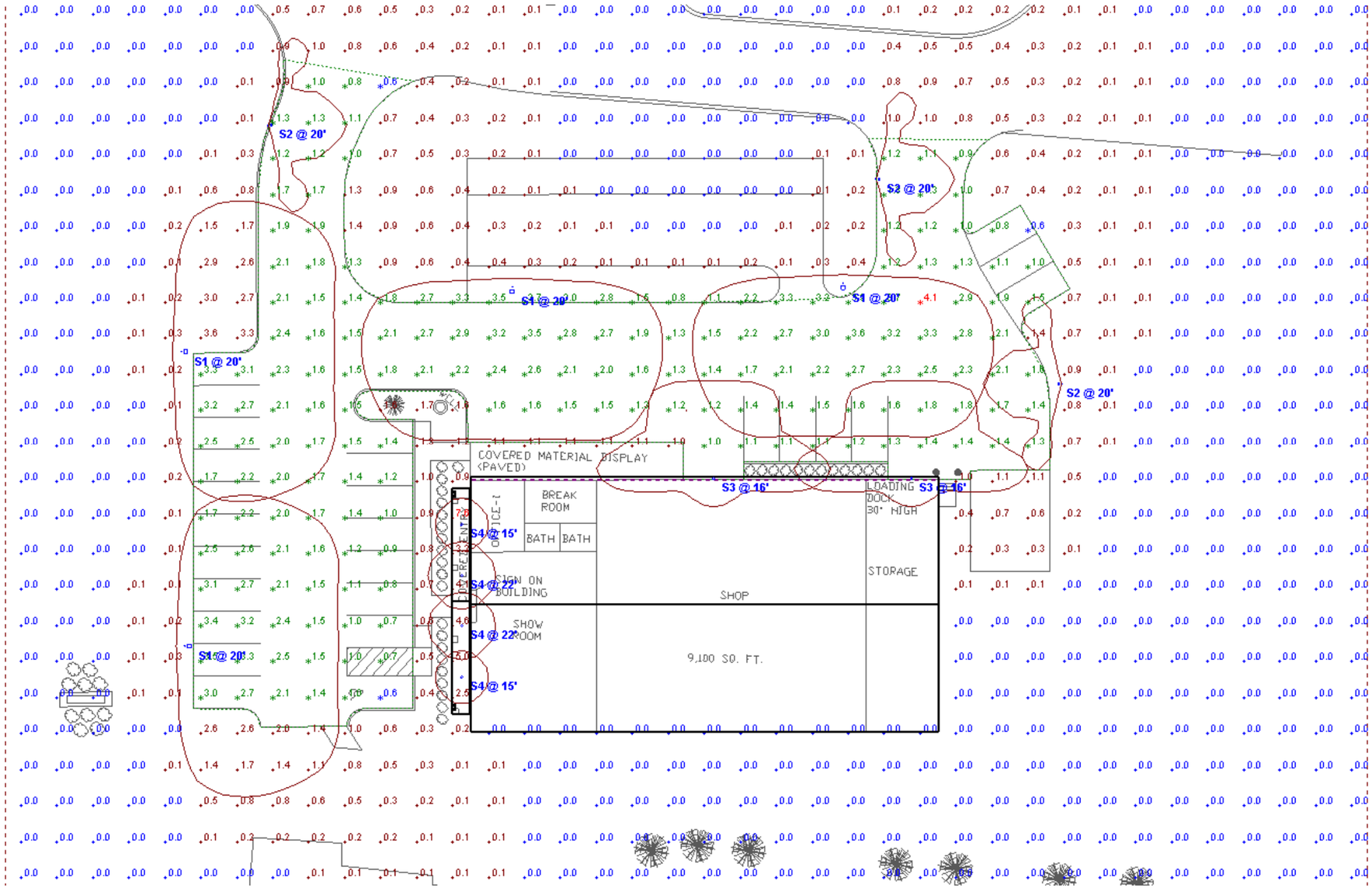
   Note any contaminants that are washed off the site by rainwater is a violation of the Clean Waters Act.

Storage Handling and Disposal of Solid Waste items must comply with Maine's Solid Waste Management Rules. Lack of appropriate pollutant control may result in violations of the Groundwater Quality Standards.

5. Maintenance of stormwater treatment and control systems must occur regularly. The Stormwater Maintenance Report provides inspection details and time lines for doing the inspections and reporting to the Town and DEP. Keep records available for review by DEP. Recertify DEP permit every 5 years.

   The owner is responsible for the permanent erosion control on the site.

6. Any materials that may create a contaminated run off shall be contained by the contractor or owner.



Photometric

Statistics

Description	Symbol	Avg	Max	Min	Max / Min	Avg / Min	Avg / Max
Overall Site	+	0.5 fc	7.6 fc	0.0 fc	N/A	N/A	0.1:1
Parking Area	✳	1.9 fc	4.1 fc	0.6 fc	6.8:1	3.2:1	0.5:1

VISUAL

STONE SURFACE
PHOROMETRIC

Designer
SAJ
Date
2/27/2018
Scale
Not to Scale
Drawing No.
E0
Summary

Luminaire Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	S1	4	EATON - McGRAW-EDISON (FORMER COOPER LIGHTING)	GLEON-AF-03-LED-E1-SL4-8030-HSS	GALLEON AREA AND ROADWAY LUMINAIRE (3) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD Retail, Roadway, Sidewalk, Site, Street, Substation, Security, Corrosion Resistant, Vandal Resistant, Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET		48	GLEON-AF-03-LED-E1-SL4-8030-HSS.ies	250.4623	0.8	166
	S2	3	EATON - McGRAW-EDISON (FORMER COOPER LIGHTING)	GLEON-AF-01-LED-E1-SL4-8030-HSS	GALLEON AREA AND ROADWAY LUMINAIRE (1) 80 CRI, 3000K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD Retail, Roadway, Sidewalk, Site, Street, Substation, Security, Corrosion Resistant, Vandal Resistant, Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET		16	GLEON-AF-01-LED-E1-SL4-8030-HSS.ies	257.7258	0.8	59
	S3	2	EATON - McGRAW-EDISON (FORMER COOPER LIGHTING)	GWC-AF-01-LED-E1-T4W-7030	GALLEON WALL LUMINAIRE (1) 70 CRI, 3000K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS Industrial, Landscape, Library, Office, Parking, Parks, Pathway, Pedestrian, Prison, Recreation, Residential Retail, Roadway, Sidewalk, Site, Street, Substation, Security, Corrosion Resistant, Vandal Resistant, Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET		16	GWC-AF-01-LED-E1-T4W-7030.ies	349.4319	0.8	59
	S4	4	EATON - PORTFOLIO (FORMER COOPER LIGHTING)	LDA6A10835D010TE LAR35FL 6LFC1	PORTFOLIO 6" Flat Cone, Self-flange Trim Ring, 35° Flood Optic, at 0° tilt	(1) HIGH LUMEN LED 80CRI / 3500K CCT ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET	1	LDA6A10835D010TE LAR35FL 6LFC1.ies	929.3613	0.8	13.84

VISUAL

STONE SURFACE
PHOROMETRIC

Designer
SAJ
Date
2/27/2018
Scale
Not to Scale
Drawing No.
E0
Summary

McGraw-Edison

DESCRIPTION

The Galleon™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #		Type
Project		S1 & S2
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge. The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting
STANDARD ARM MOUNT: Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. QUICK MOUNT ARM: Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation. The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2″ to 4-7/8″. Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

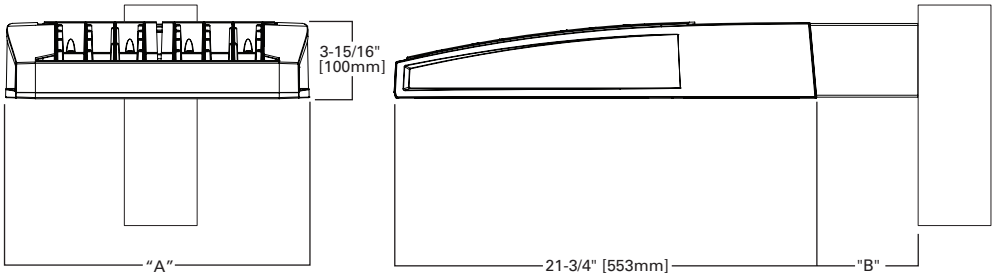
Warranty
Five-year warranty.

GLEON
GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

DIMENSIONS



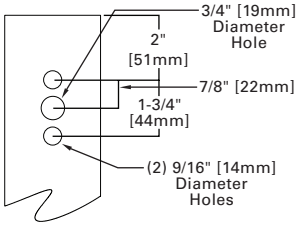
DIMENSION DATA

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Optional Arm Length [1]	Weight with Arm (lbs.)	EPA with Arm [2] (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.96
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. **2.** EPA calculated with optional arm length.

DRILLING PATTERN

TYPE "N"



CERTIFICATION DATA
UL/cUL Wet Location Listed
ISO 9001
LM79 / LM80 Compliant
3G Vibration Rated
IP66 Rated
DesignLights Consortium™ Qualified*

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120V-277V 50/60Hz
347V & 480V 60Hz
-40°C Min. Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

EATON
Powering Business Worldwide

*www.designlights.org

McGraw-Edison

DESCRIPTION

The Galleon™ wall LED luminaire's appearance is complementary with the Galleon area and site luminaire bringing a modern architectural style to lighting applications. Flexible mounting options accommodate wall surfaces in both an upward and downward configuration. The Galleon family of LED products deliver exceptional performance with patented, high-efficiency AccuLED Optics™, providing uniform and energy conscious lighting for parking lots, building and security lighting applications.

		Type
Catalog #		S3
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction
Driver enclosure thermally isolated from optics for optimal thermal performance. Heavy wall aluminum housing die-cast with integral external heat sinks to provide superior structural rigidity and an IP66 rated housing. Overall construction passes a 1.5G vibration test to ensure mechanical integrity. UPLIGHTING: Specify with the UPL option for inverted mount uplight housing with additional protections to maintain IP rating.

Optics
Choice of thirteen patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 6000K CCT. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 1200mA, 800mA, and 600mA drive currents.

Electrical
LED drivers are mounted for ease of maintenance. 120-277V 50/60Hz, 347V or 480V 60Hz operation. 480V is compatible for use with 480V Wye systems only. Drivers are provided standard with 0-10V dimming. An optional Eaton proprietary surge protection module is available and designed to withstand 10kV of transient line surge. The Galleon Wall LED luminaire is suitable for operation in -30°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Emergency egress options for -20°C ambient environments and occupancy sensor available.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Galleon Wall "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws which are concealed but accessible from bottom of fixture.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

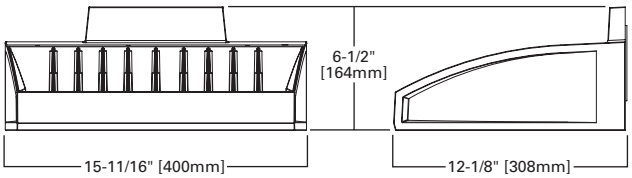
Warranty
Five-year warranty.

GWC GALLEON WALL LUMINAIRE

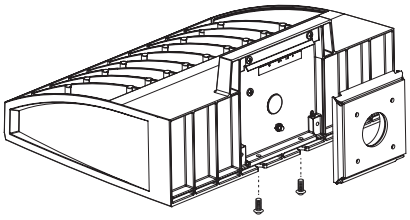
1-2 Light Squares
Solid State LED

WALL MOUNT LUMINAIRE

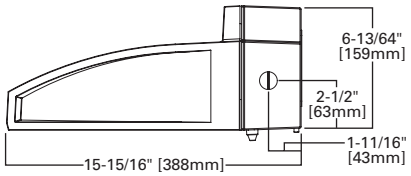
DIMENSIONS



HOOK-N-LOCK MOUNTING



BATTERY BACKUP AND THRU-BRANCH BACK BOX



CERTIFICATION DATA

UL/cUL Listed
LM79 / LM80 Compliant
IP66 Housing
ISO 9001
DesignLights Consortium® Qualified*

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V/50 & 60Hz, 347V/60Hz, 480V/60Hz
-30°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA

Approximate Net Weight:
27 lbs. (12.2 kgs.)

EATON
Powering Business Worldwide

*www.designlights.org

DESCRIPTION

Low brightness 6" aperture LED adjustable accent fixture with choice of distribution. Adjustment mechanism allows LED capsule to pivot about the center of the aperture at the ceiling line, allowing maximum light output with no flashback. Offered with adjustable accent, flat cut downlight and lensed wall wash trims. Available with dim-to-warm technology – similar to halogen at full power, the 3000K LED warms smoothly as dimmed to 1850K creating a rich warm glow within the space.

		Type
Catalog #		S4
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Lower Reflector
Spun 0.050" aluminum. Available in a variety of Alzak® and painted finishes. Two torsion springs pull trim tight to ceiling. Reflector is keyed to prevent improper orientation relative to LED position. Truncated adjustable cut cone allows for full tilt range and flexibility. Lensed wall wash provides even illumination on vertical surfaces.

Upper Reflector
Field interchangeable optics in 15°, 20° or 35° provides smooth beam without color separation. Media holder fits onto upper reflector and holds up to two lens media.

Trim Ring
Self flanged or white polymer trim ring.

Adjustment Mechanism
Stable aiming and locking mechanism allows smooth 362° rotation and 45° elevation adjustment. Aiming scale enables consistent setting across multiple fixtures.

Housing
One piece die cast 1-5/8" deep collar.18 gauge CRS housing is painted matte black to eliminate stray light. Housing is toolless top accessible.

Universal Mounting Bracket
Accepts 1/2" EMT, C-Channel, T bar fasteners and hanger bars. Provides 5" total adjustment.

Thermal
Aluminum heat sink conducts heat away from the LED module for optimal performance and long life.

LED
LED system contains a plurality of high brightness white LED's combined with a high reflectance upper reflector producing even distribution with no pixilation. Rated for 50,000 hours at 70% lumen maintenance. Auto resetting, thermally protected, LED's are turned off when safe operating temperatures are exceeded. Color variation within 3-step MacAdam ellipses. D2W™ – dim-to-warm shifts CCT from 3000K to 1850K as fixture dims mimicking halogen sources.

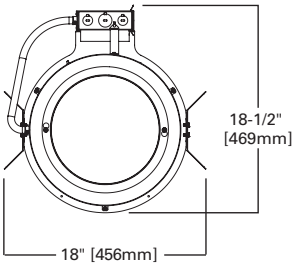
Driver
Combination 120-277V 0-10V or 120V trailing edge phase cut driver provides flicker free dimming from 100% to 10%. Optional 1% 0-10V, Fifth Light, or DMX. Driver can be serviced from above or through the aperture.

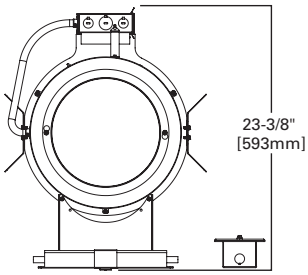
Connected Lighting Systems
WaveLinx tilemount daylight sensor includes control module, sensor and cable allowing use with the comprehensive lighting system.

LumaWatt Pro (powered by Enlighted) wireless tile mount sensor and relay accessory enables wireless control using a tile mount sensor accessory.

Code Compliance
Thermally protected and cULus listed for damp locations with flat cut, pinhole or angle cut and wet location covered ceiling with lensed or lensed wall wash. Optional City of Chicago environmental air (CCEA) marking for plenum applications. EMI/RFI emissions per FCC 47CFR Part 18 Class B consumer limits. 3000 lumen Non-IC rated - Insulation must be kept 3" from top and sides of housing. IC rated up to 2000 lumen. RoHS Compliant. 3000 lumen and above are marked spacing and must follow spacing requirements. Photometric testing completed in accordance with IES LM 79 standards. LED life testing completed in accordance with LM 80 standards.

Warranty
5 year warranty.



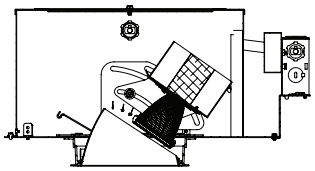


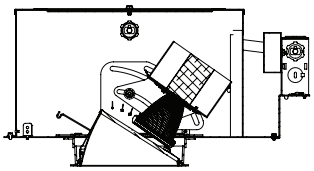
D2W™

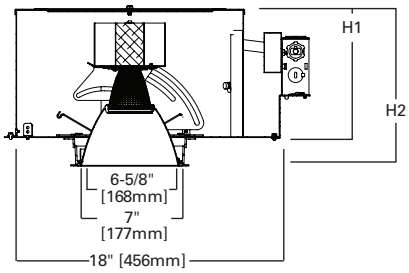
ENERGY STAR RoHS Compliant powered by fifthlight technology

Refer to ENERGY STAR® Qualified Products List.

H1= 7-7/8" [200mm] (1000-3000 lumen)
8-3/8" [213mm] (4500-7000 lumen)
H2= 9-1/2" [241mm] (1000-3000 lumen)
10" [254mm] (4500-7000 lumen)







LDA6A 6L

1000-7000 Lumen LED

6-Inch
Adjustable Slope Wall Wash
New Construction

ENERGY DATA
Sound Rating: Class A standards
T ambient -40 + 40°C
Power Factor: >0.90
THD < 20%

1000 Lumen	120V	277V
Input Power	13.8W	15.0W
Input Current	0.12A	0.06A
Inrush Current	0.49A	0.85A

1500 Lumen	120V	277V
Input Power	22.9W	22.9W
Input Current	0.19A	0.09A
Inrush Current	0.72A	0.53A

2000 Lumen	120V	277V
Input Power	29.1W	29.4W
Input Current	0.24A	0.12A
Inrush Current	0.79A	1.09A

3000 Lumen	120V	277V
Input Power	44.5W	44.2W
Input Current	0.37A	0.17A
Inrush Current	1.09A	1.23A

4500 Lumen	120V	277V
Input Power	54.4W	52.2W
Input Current	0.46A	0.2A
Inrush Current	0.48A	1.316A

5500 Lumen	120V	277V
Input Power	60.8W	60.5W
Input Current	0.51A	0.24A
Inrush Current	1.248A	2.944A

6500 Lumen	120V	277V
Input Power	78.7W	77.5W
Input Current	0.66A	0.3A
Inrush Current	0.224A	0.704A

7500 Lumen	120V	277V
Input Power	78.7W	77.5W
Input Current	0.66A	0.3A
Inrush Current	0.224A	0.704A

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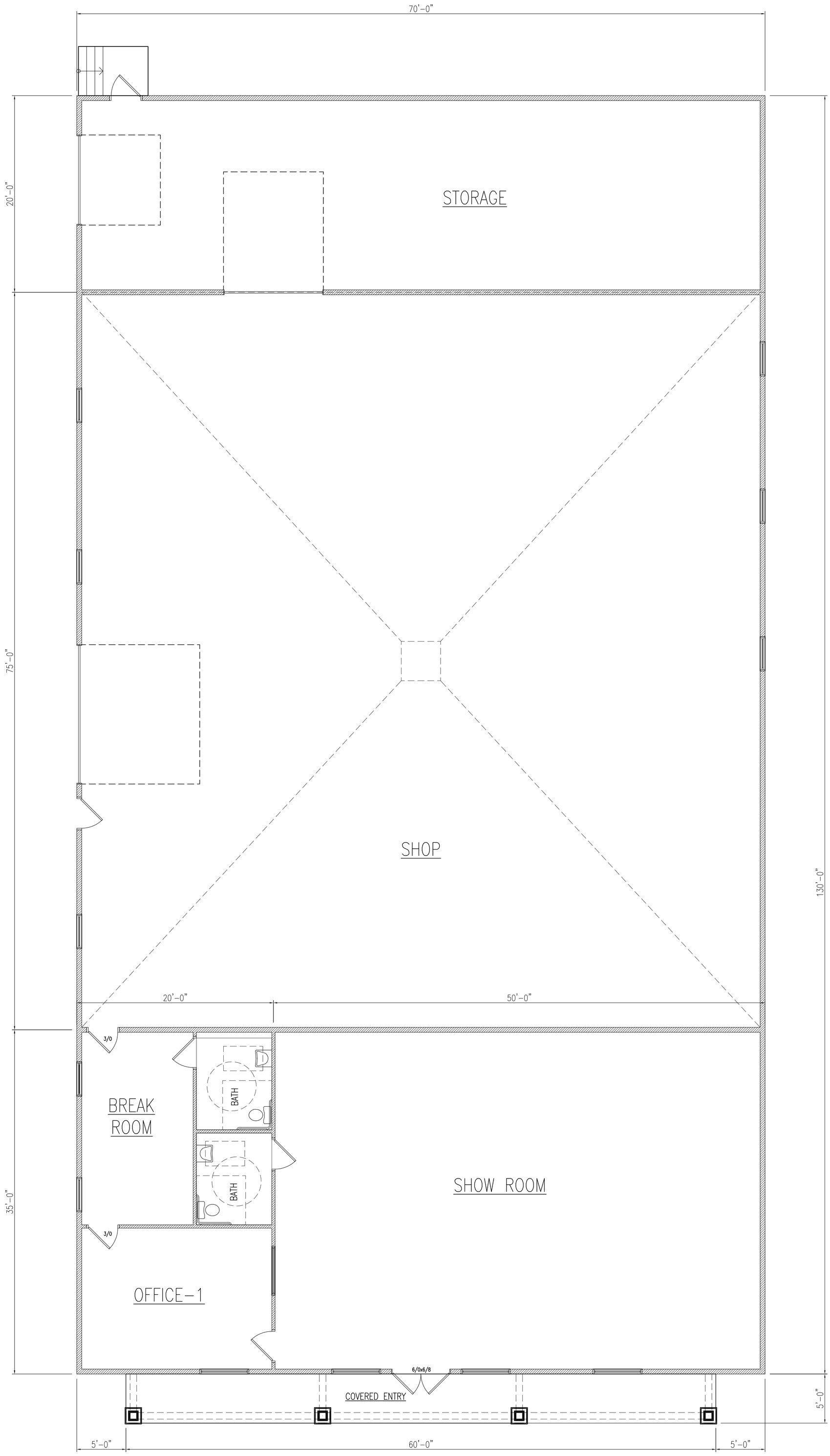

FLOOR PLAN

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PRELIMINARY DESIGN
STONE SURFACE
PROPOSED SHOWROOM AND SHOP

HANCOCK LUMBER
Est.1848

Revisions:
REVISED: 01/10/18

Date : 12/08/17
Scale : 3/16"=1'-0"
Drawn By: MTA
Project: COB120417
Sheet Number:
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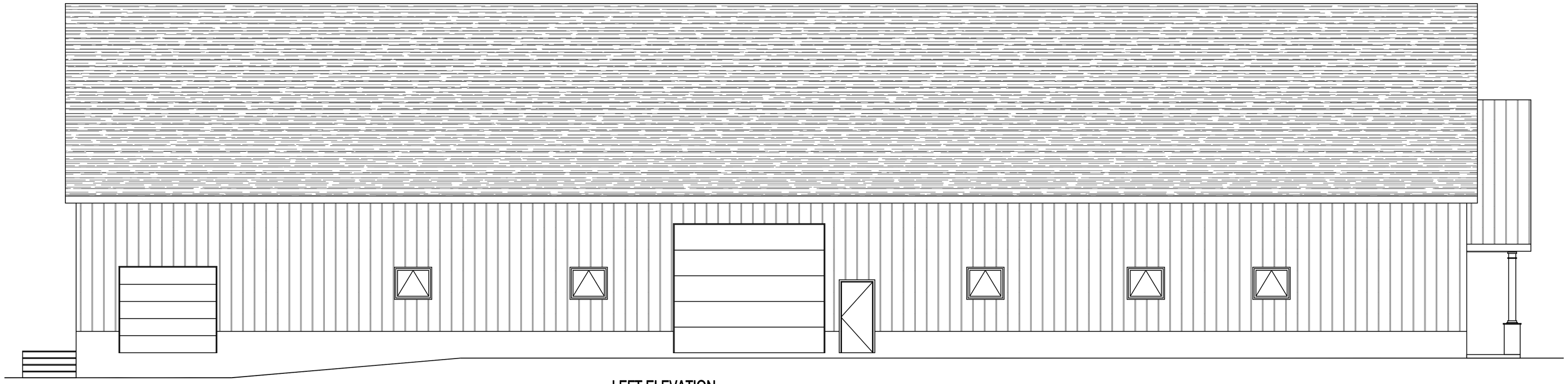
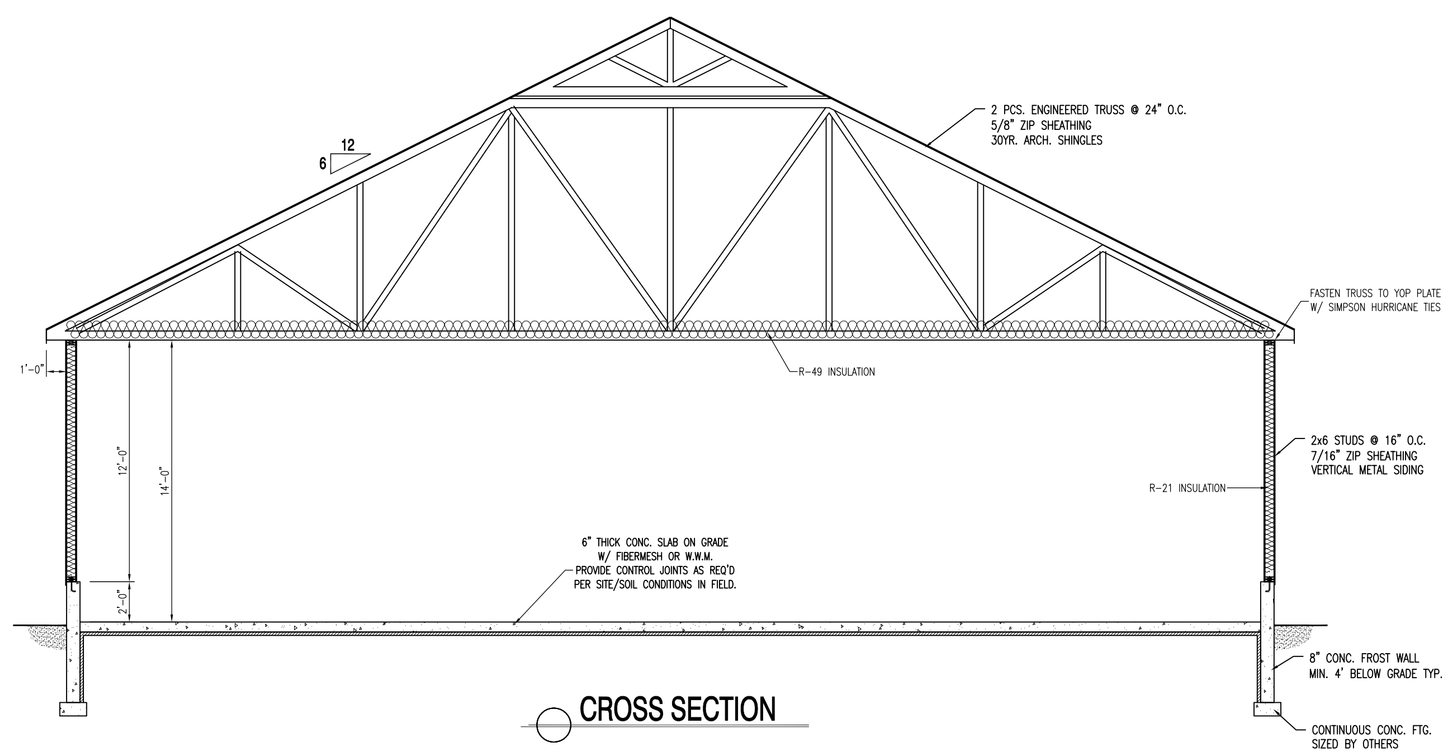


LEFT ELEVATION

FRONT ELEVATION



CROSS SECTION

HANCOCK LUMBER
Est.1848

PRELIMINARY DESIGN
STONE SURFACE
PROPOSED SHOWROOM AND SHOP

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