

019-A-001-001

1-1 India St, Portland, ME

The Longfellow at Ocean Gateway

Riverwalk, LLC

**ARTICLE I
OPTION TO PURCHASE**

1.1 **Grant of Option.** The Optionee shall have and is hereby granted the option to purchase the entire fee simple interest of the Optionor in and to the Property (the "Option"), free and clear of any and all liens and encumbrances whatsoever, except for those encumbrances which would not unreasonably interfere with Optionee's intended use of the Property, for the purchase price listed on **EXHIBIT C** attached hereto (the "Purchase Price") equal to any and all costs incurred by Optionor to acquire such Real Property plus other valuable consideration, which Option shall remain in full force and effect until that date (the "Original Option Expiry Date") which is thirty (30) days from and after the date (the "Effective Date") on which the Optionor obtains title to the entire Real Property.

1.2 **Extension of Option.** The Optionee shall have and is hereby granted the right to extend the Original Option Expiry Date for three (3) consecutive periods of thirty (30) days each by furnishing written notice (each such notice is herein an "Option Extension Notice") to the Optionor on or before the Original Option Expiry Date, or if previously validly extended, before the then current extended Option Expiry Date. Each such Option Extension Notice, if furnished, shall establish the then applicable date (the "Option Expiry Date") for expiration of the Option and each Option Extension Notice shall be accompanied by an extension fee ("Extension Fee") in the amount of \$1.00 for each 30 day extension. The Option shall be rendered void *ab initio* if the Real Property that is the subject of this Option Agreement is not acquired by Optionor, provided, however, that any payments previously made by Optionee to Optionor shall be retained by Optionor as its sole property.

1.3 **Option Exercise and Closing.** The Option shall be deemed to have been absolutely and unconditionally exercised by the Optionee only if the Optionee furnishes written notice (the "Exercise Notice") of the exercise of the Option to the Optionor to the address for the Optionor set forth in the preamble to this Agreement (or to such other address as the Optionor shall designate by written notice to the Optionee given to the Optionee in accordance with the terms and provisions governing the giving of notice set forth in this Agreement) at any time prior to the Original Option Expiry Date or the then-applicable Option Expiry Date, as applicable. In the event that Optionee fails to timely furnish an Exercise Notice to the Optionor, then the Option shall terminate. In the event Optionee timely furnishes an Exercise Notice to the Optionor, the Option shall be automatically deemed extended for an additional period of sixty (60) days (the "60-Day Period") from the Original Option Expiry Date or the then applicable Option Expiry Date, as applicable. Prior to that date which is ten (10) days from and after the first day of the 60-Day Period, Optionor shall furnish to the Optionee the following items: (a) a proposed form of deed by virtue of which the Optionor shall convey the fee simple title to the Real Property to the Optionee or its assignee or designee, subject only to encumbrances of record and (b) the proposed form of such other closing documents as may be necessary or desirable to consummate the sale and purchase of the Property pursuant to the customs and practices then prevailing within Cumberland County, Maine, with respect to the sale and purchase of parcels of real property similar to the Real Property. The closing of the sale of the Property from the Optionor to the Optionee shall be held on or before that date (the "Closing Date") which is the last day of the 60-Day Period, which closing shall be held at the law offices of Bernstein, Shur, Sawyer & Nelson at 100 Middle Street, Portland, Maine 04101, or such other location to which the parties agree and the Purchase Price shall be paid by Optionee in the manner described on **EXHIBIT C** attached hereto.

**ARTICLE II
MISCELLANEOUS**

2.1 **Entire Agreement.** This Agreement contains the entire agreement between the Optionor and the Optionee and no representations or agreements, either oral or written, between them other than those contained in this Agreement shall survive the execution of this Agreement, and the parties acknowledge that no representations made to the other and not contained in this Agreement as covenants or warranties have been relied upon by any party hereto in the execution of this Agreement.

2.2 **Construction.** Words of any gender used in this Agreement shall be construed to include all genders and words in the singular shall be construed to include the plural, where the context so requires. The words "herein", "hereof", and "hereunder" when used in this Agreement shall be construed to refer to this Agreement in its entirety and not to any particular section or provision thereof. In addition, the parties acknowledge that they were represented by counsel in connection with the drafting of this Agreement, and that the parties participated in the drafting of this Agreement, and no provision of this Agreement shall be construed more strongly against one party or another.

2.3 **Partial Invalidity.** In any term, covenant, or condition of this Agreement, or the application thereof to any person or circumstance, shall be determined to be unenforceable by a court of competent jurisdiction (the "Offending Provision"), then the remainder of this Agreement, or the application of such term, covenant or condition to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby and each term, covenant, and condition of this Agreement shall be valid and enforced to the fullest extent permitted by law; provided, however, that the parties affected by the Offending Provision shall endeavor in good faith, within sixty (60) days after the date such determination is made, to agree upon alternative provisions which shall have the same practical effect as the Offending Provision and upon any agreement being reached, the new provision shall be incorporated into and form a part of this Agreement.

2.4 **Notices.** All notices, demands, requests or other communications required or permitted under the term of this Agreement shall be in writing and, unless and until otherwise specified in a written notice by the party to whom notice is intended to be given, shall be sent to the parties at the respective addresses set forth in the preamble to this Agreement.

Notices may be given on behalf of any party by its legal counsel.

Each such notice, demand, request, or other communication shall be deemed to have been properly given for all purposes if (i) delivered against a written receipt of delivery, (ii) mailed by certified mail of the United States Postal Service, return receipt requested, postage prepaid, or (iii) delivered to a nationally recognized overnight courier service for next business day delivery, to its addressee at such party's address as set forth above.

Each such notice, demand or request, shall be deemed to have been given upon actual receipt or first refusal of the addressee to accept delivery.

Delivery of funds shall not be deemed to have occurred until physical delivery or transfer of check, certified check, wire transfer or money order occurs.

2.5 **Governance.** This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Maine without reference to the conflicts of law principles of the State.

2.6 **Successors and Assigns.** Subject to the conditions and terms specifically set forth in this Agreement, all the terms and conditions of this Agreement shall be binding on any successors and assigns of the parties hereto.

2.7 **Non-Waiver.** The parties acknowledge and agree that their waiver of any default under the terms of this Agreement at any time on certain circumstances shall not be construed or deemed to be a waiver of any subsequent or other default occurring either before or after the waived default, and that such parties shall be entitled to enforce their rights in the event of default regardless of any prior waivers thereof.

2.8 **Modification and Amendment.** This Agreement may only be amended, altered, or modified by a written instrument signed by each of the parties.

2.9 **Execution of Additional Instruments.** Each party hereby agrees to execute such other or further instruments of whatsoever kind or nature necessary to comply with any applicable laws, rules or regulations or to comply with the stipulations, agreements, conditions, and covenants contained and set forth in this Agreement.

2.10 **Third Parties.** None of the provisions of this Agreement shall be for the benefit of or enforceable by any third party.

2.11 **Recordation.** The Optionee shall have and is hereby granted the absolute and unconditional right to record this Agreement or memorandum of this Agreement in all applicable public records in order to place third parties on notice of the rights, interests, and options of the Optionee contained and set forth herein and the Optionor agrees to fully cooperate with the Optionee in connection therewith including, without limitation, the agreement of the Optionor to execute a memorandum of this Agreement in recordable form (without payment to the Optionor of additional consideration therefore) which memorandum shall provide, without limitation, that the Optionor may record an affidavit executed by the Optionor which states, if true: (a) that the Optionor fully complied with the stipulations, agreements, conditions, and covenants contained and set forth in this Agreement, and (b) notwithstanding such performance by the Optionor, the Optionee failed to purchase the Property on or before the Closing Date. It is specifically understood and agreed that the recordation of such affidavit by the Optionor shall, as to third parties, render this Agreement null and void and of no further force and effect.

2.12 **Counterparts.** This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which constitute one and the same instrument. Counterparts of this Agreement with facsimile signatures shall be deemed original counterparts for all purposes; however, each party shall promptly furnish counterparts with original signatures upon request

2.13 **Contingency.** This Option is subject to and contingent upon the acquisition of the Real Property by Optionor pursuant to the agreements described in **EXHIBIT A.**

2.14 **Permits, etc.** Optionee and Optionor agree that the Real Property that is the subject of this option shall be conveyed subject to any and all permits and approvals, terms, conditions and covenants issued or set forth by any municipal or governmental authority, including the City of Portland and that Optionee shall assume and be obligated to comply in full with all terms, conditions of approval and other provisions and any and all permits and approvals and any requirements of such governmental authority to show technical and financial ability as a precondition for such transfer.

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109.15

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed.

OPTIONOR:
RIVERWALK, LLC

By: 
Drew Swenson, Its Manager

OPTIONEE:
HANCOCK & MIDDLE, LLC
By: RIVERWALK, LLC, Its Manager

By: 
Drew Swenson, Its Manager

10a.16

EXHIBIT A

Option to Purchase dated April 5, 2004, by and between Shipyard Brewing Company, LLC, and Riverwalk, LLC, relating to certain real property at or near Fore Street in Portland, Maine.

H+U
10a.17

EXHIBIT B

Proposed Lot 2 shown on Plan entitled Subdivision/Recording Plat on India Street and Fore Street, Portland, Maine, made for Riverwalk, LLC, 25 India Street LLC, Ocean Gateway Garage LLC, and Hancock & Middle LLC by Owen Haskell, Inc., dated March 22, 2005, as last revised April 13, 2006. Proposed Lot 2 will be conveyed subject to a 50-foot access easement for the benefit of Lot 3 shown on said Plan to provide access from Middle Street to the Ocean Gateway Garage.

10.9.18

25 India Street LLC

OPTION TO PURCHASE

THIS AGREEMENT ("Agreement"), effective as of the 14th day of April, 2006 (the "Original Option Date") by and between, Riverwalk, LLC, whose address is 2 Market Street, Suite 500, Portland, Maine 04101 (the "Optionor"), and 25 India Street LLC, or its designee or assignee, whose address is 2 Market Street, Suite 500, Portland, Maine 04101 (the "Optionee").

WITNESSETH:

WHEREAS, the Optionor is the owner of certain Option and/or contract rights by virtue of the agreement or agreements listed on **EXHIBIT A** affecting Real Property described on **EXHIBIT B** attached hereto; and

WHEREAS, the Optionee is a wholly owned subsidiary of Optionor formed for the purpose of creating a single purpose entity to own the land and development rights for the 25 India Street portion of the so-called Riverwalk, LLC development project; and

WHEREAS, the Optionee desires to obtain an option to purchase all of the Real Property (the "Property"); and

WHEREAS, this Option is subject to and contingent upon the acquisition of the Real Property by Optionor pursuant to the agreements described in **EXHIBIT A**; and

WHEREAS, Optionee and Optionor agree that the Real Property that is the subject of this option shall be conveyed subject to any and all permits and approvals, terms, conditions and covenants issued or set forth by any municipal or governmental authority, including the City of Portland and that Optionee shall assume and be obligated to comply in full with all terms, conditions of approval and other provisions and all requirements of such governmental authority to show technical and financial ability as a precondition for such transfer; and

WHEREAS, the Optionor is willing to grant to the Optionee the option to purchase all of the Property pursuant to the stipulations, agreements, conditions, and covenants contained and set forth herein.

NOW, THEREFORE, in consideration of the premises, the payment by the Optionee to the Optionor of a non-refundable option fee in the amount of One Dollar and Zero Cents (US\$ 1.00) Dollar (the "Option Fee") and for other good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereby agree as follows:

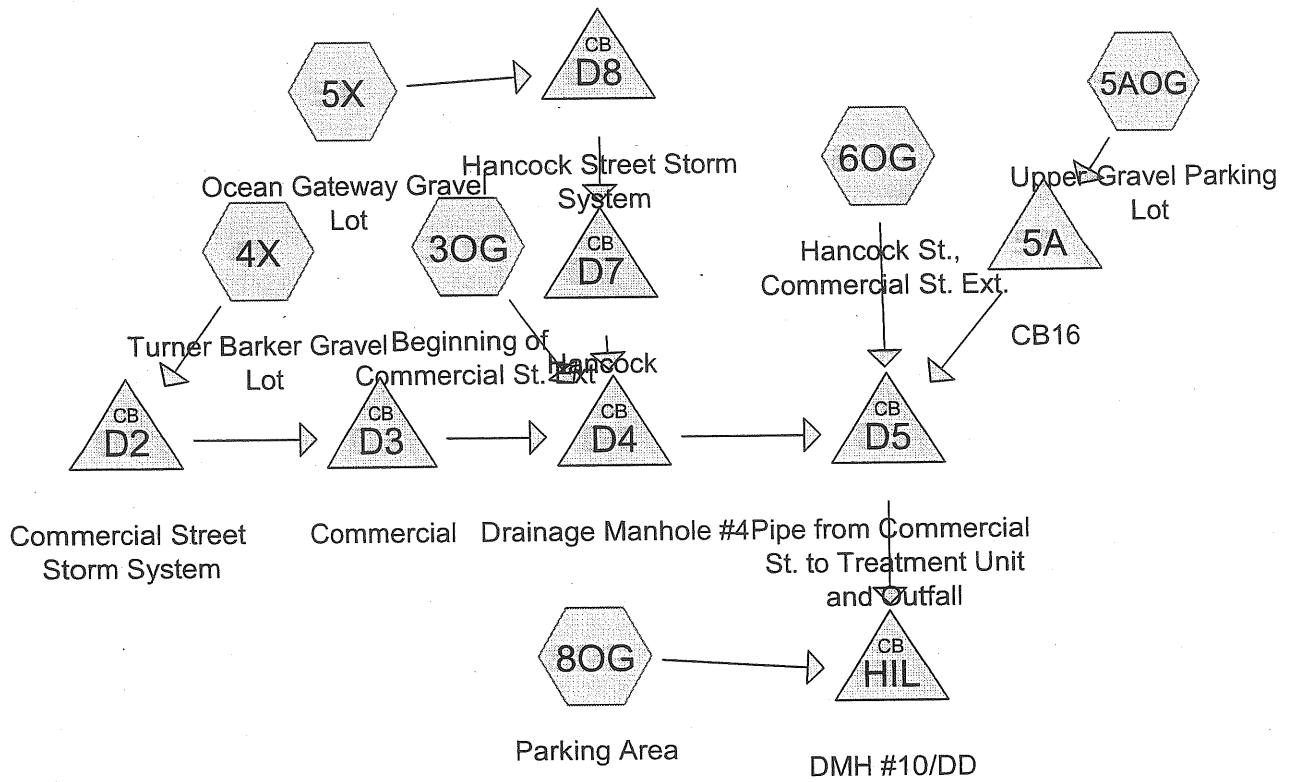
10a.19

**ARTICLE I
OPTION TO PURCHASE**

1.1 **Grant of Option.** The Optionee shall have and is hereby granted the option to purchase the entire fee simple interest of the Optionor in and to the Property (the "Option"), free and clear of any and all liens and encumbrances whatsoever, except for those encumbrances which would not unreasonably interfere with Optionee's intended use of the Property, for the purchase price listed on **EXHIBIT C** attached hereto (the "Purchase Price") equal to any and all costs incurred by Optionor to acquire such Real Property plus other valuable consideration, which Option shall remain in full force and effect until that date (the "Original Option Expiry Date") which is thirty (30) days from and after the date (the "Effective Date") on which the Optionor obtains title to the entire Real Property.

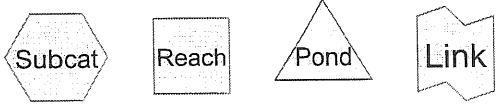
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Commercial Street Storm System Commercial Drainage Manhole #4 Pipe from Commercial St. to Treatment Unit and Outfall

Parking Area DMH #10/DD



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3OG: Beginning of Commercial St. Ext Runoff Area=0.600 ac Runoff Depth>1.68"
Flow Length=456' Tc=4.8 min CN=93 Runoff=1.25 cfs 0.084 af

Subcatchment 4X: Turner Barker Gravel Lot Runoff Area=18,745 sf Runoff Depth>1.95"
Flow Length=210' Tc=4.2 min CN=96 Runoff=1.02 cfs 0.070 af

Subcatchment 5AOG: Upper Gravel Parking Lot Runoff Area=1.950 ac Runoff Depth>2.13"
Flow Length=445' Tc=13.2 min CN=98 Runoff=3.73 cfs 0.346 af

Subcatchment 5X: Ocean Gateway Gravel Lot Runoff Area=44,245 sf Runoff Depth>2.13"
Flow Length=250' Tc=5.5 min CN=98 Runoff=2.41 cfs 0.180 af

Subcatchment 6OG: Hancock St., Commercial St. Ext. Runoff Area=1.350 ac Runoff Depth>1.86"
Flow Length=550' Tc=2.8 min CN=95 Runoff=3.25 cfs 0.209 af

Subcatchment 8OG: Parking Area Runoff Area=0.800 ac Runoff Depth>0.62"
Flow Length=125' Tc=27.5 min CN=76 Runoff=0.35 cfs 0.042 af

Pond 5A: CB16 Peak Elev=13.19' Storage=1,170 cf Inflow=3.73 cfs 0.346 af
Outflow=3.40 cfs 0.344 af

Pond D2: Commercial Street Storm System Peak Elev=9.39' Inflow=1.02 cfs 0.070 af
15.0" x 192.0' Culvert Outflow=1.02 cfs 0.070 af

Pond D3: Commercial Peak Elev=9.14' Inflow=1.02 cfs 0.070 af
15.0" x 192.0' Culvert Outflow=1.02 cfs 0.070 af

Pond D4: Drainage Manhole #4 Peak Elev=9.02' Inflow=4.67 cfs 0.334 af
36.0" x 250.0' Culvert Outflow=4.67 cfs 0.334 af

Pond D5: Pipe from Commercial St. to Treatment Unit and Outf Peak Elev=8.50' Inflow=9.72 cfs 0.887 af
36.0" x 137.0' Culvert Outflow=9.72 cfs 0.887 af

Pond D7: Hancock Peak Elev=9.10' Inflow=2.41 cfs 0.180 af
30.0" x 36.0' Culvert Outflow=2.41 cfs 0.180 af

Pond D8: Hancock Street Storm System Peak Elev=10.43' Inflow=2.41 cfs 0.180 af
24.0" x 196.0' Culvert Outflow=2.41 cfs 0.180 af

Pond HIL: DMH #10/DD Peak Elev=8.09' Inflow=9.80 cfs 0.928 af
36.0" x 102.0' Culvert Outflow=9.80 cfs 0.928 af

Total Runoff Area = 6.146 ac Runoff Volume = 0.930 af Average Runoff Depth = 1.82"
9.69% Pervious Area = 0.596 ac 90.31% Impervious Area = 5.550 ac

Ocean Gateway and The Longfellow-Existing

Prepared by Woodard & Curran

HydroCAD® 8.00 s/n 001204 © 2006 HydroCAD Software Solutions LLC

Existing Condition

Type III 24-hr 25-Year Storm Rainfall=5.50"

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10/30/2006

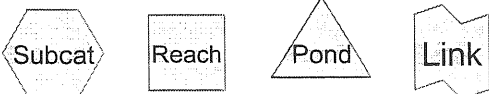
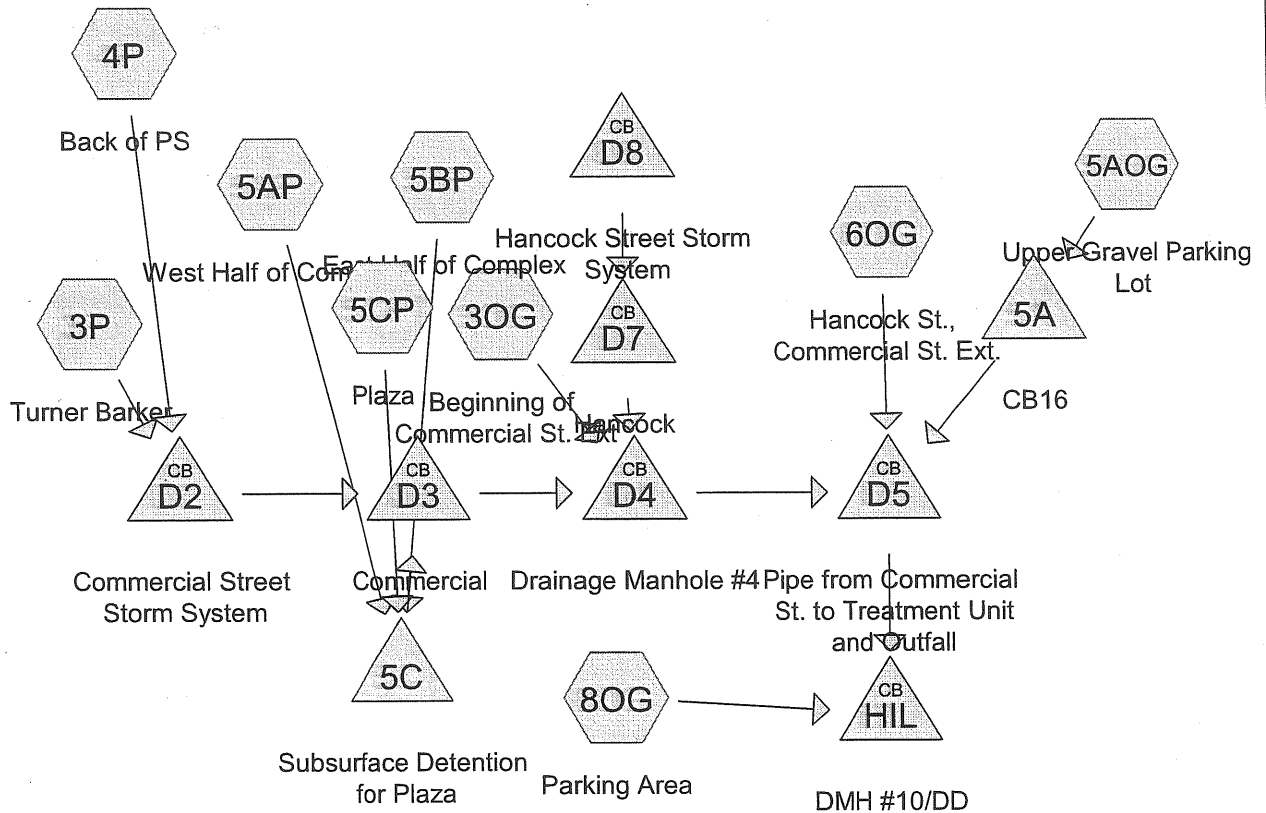
Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac	Runoff Depth>4.43"
	Flow Length=456'	Tc=4.8 min CN=93 Runoff=3.13 cfs 0.221 af
Subcatchment 4X: Turner Barker Gravel Lot	Runoff Area=18,745 sf	Runoff Depth>4.71"
	Flow Length=210'	Tc=4.2 min CN=96 Runoff=2.38 cfs 0.169 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac	Runoff Depth>4.87"
	Flow Length=445'	Tc=13.2 min CN=98 Runoff=8.35 cfs 0.792 af
Subcatchment 5X: Ocean Gateway Gravel Lot	Runoff Area=44,245 sf	Runoff Depth>4.87"
	Flow Length=250'	Tc=5.5 min CN=98 Runoff=5.40 cfs 0.413 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac	Runoff Depth>4.62"
	Flow Length=550'	Tc=2.8 min CN=95 Runoff=7.70 cfs 0.520 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac	Runoff Depth>2.73"
	Flow Length=125'	Tc=27.5 min CN=76 Runoff=1.62 cfs 0.182 af
Pond 5A: CB16	Peak Elev=13.39'	Storage=2,048 cf Inflow=8.35 cfs 0.792 af
		Outflow=7.87 cfs 0.789 af
Pond D2: Commercial Street Storm System	Peak Elev=10.03'	Inflow=2.38 cfs 0.169 af
	15.0" x 192.0' Culvert	Outflow=2.38 cfs 0.169 af
Pond D3: Commercial	Peak Elev=9.97'	Inflow=2.38 cfs 0.169 af
	15.0" x 192.0' Culvert	Outflow=2.38 cfs 0.169 af
Pond D4: Drainage Manhole #4	Peak Elev=9.90'	Inflow=10.86 cfs 0.803 af
	36.0" x 250.0' Culvert	Outflow=10.86 cfs 0.803 af
Pond D5: Pipe from Commercial St. to Treatment Unit and Out	Peak Elev=9.61'	Inflow=22.89 cfs 2.112 af
	36.0" x 137.0' Culvert	Outflow=22.89 cfs 2.112 af
Pond D7: Hancock	Peak Elev=9.95'	Inflow=5.40 cfs 0.413 af
	30.0" x 36.0' Culvert	Outflow=5.40 cfs 0.413 af
Pond D8: Hancock Street Storm System	Peak Elev=10.81'	Inflow=5.40 cfs 0.413 af
	24.0" x 196.0' Culvert	Outflow=5.40 cfs 0.413 af
Pond HIL: DMH #10/DD	Peak Elev=9.05'	Inflow=23.52 cfs 2.294 af
	36.0" x 102.0' Culvert	Outflow=23.52 cfs 2.294 af

Total Runoff Area = 6.146 ac Runoff Volume = 2.297 af Average Runoff Depth = 4.48"
9.69% Pervious Area = 0.596 ac 90.31% Impervious Area = 5.550 ac



Drainage Diagram for Ocean Gateway and The Longfellow-Residences-SC
 Prepared by Woodard & Curran 11/22/2006
 HydroCAD® 8.00 s/n 001204 © 2006 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
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

- | | | |
|---|-----------------------------------|--|
| Subcatchment 3OG: Beginning of Commercial St. Ext | Runoff Area=0.600 ac | Runoff Depth>1.68" |
| | Flow Length=456' | Tc=4.8 min CN=93 Runoff=1.25 cfs 0.084 af |
| Subcatchment 3P: Turner Barker | Runoff Area=9,230 sf | Runoff Depth>1.68" |
| | Flow Length=100' Slope=0.0100 '/' | Tc=1.7 min CN=93 Runoff=0.47 cfs 0.030 af |
| Subcatchment 4P: Back of PS | Runoff Area=3,655 sf | Runoff Depth=0.00" |
| | Flow Length=110' Slope=0.0300 '/' | Tc=8.7 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 5AOG: Upper Gravel Parking Lot | Runoff Area=1.950 ac | Runoff Depth>2.13" |
| | Flow Length=445' | Tc=13.2 min CN=98 Runoff=3.73 cfs 0.346 af |
| Subcatchment 5AP: West Half of Complex | Runoff Area=14,410 sf | Runoff Depth>2.13" |
| | | Tc=6.0 min CN=98 Runoff=0.78 cfs 0.059 af |
| Subcatchment 5BP: East Half of Complex | Runoff Area=38,510 sf | Runoff Depth>2.13" |
| | | Tc=6.0 min CN=98 Runoff=2.08 cfs 0.157 af |
| Subcatchment 5CP: Plaza | Runoff Area=4,995 sf | Runoff Depth>2.13" |
| | Flow Length=75' Slope=0.0125 '/' | Tc=1.2 min CN=98 Runoff=0.31 cfs 0.020 af |
| Subcatchment 6OG: Hancock St., Commercial St. Ext. | Runoff Area=1.350 ac | Runoff Depth>1.86" |
| | Flow Length=550' | Tc=2.8 min CN=95 Runoff=3.25 cfs 0.209 af |
| Subcatchment 8OG: Parking Area | Runoff Area=0.800 ac | Runoff Depth>0.62" |
| | Flow Length=125' | Tc=27.5 min CN=76 Runoff=0.35 cfs 0.042 af |
| Pond 5A: CB16 | Peak Elev=13.19' | Storage=1,170 cf Inflow=3.73 cfs 0.346 af |
| | | Outflow=3.40 cfs 0.344 af |
| Pond 5C: Subsurface Detention for Plaza | Peak Elev=11.05' | Storage=682 cf Inflow=3.06 cfs 0.236 af |
| | | Outflow=2.64 cfs 0.235 af |
| Pond D2: Commercial Street Storm System | Peak Elev=9.52' | Inflow=0.47 cfs 0.030 af |
| | 15.0" x 192.0' Culvert | Outflow=0.47 cfs 0.030 af |
| Pond D3: Commercial | Peak Elev=9.51' | Inflow=2.89 cfs 0.265 af |
| | 15.0" x 192.0' Culvert | Outflow=2.89 cfs 0.265 af |
| Pond D4: Drainage Manhole #4 | Peak Elev=8.97' | Inflow=4.02 cfs 0.349 af |
| | 36.0" x 250.0' Culvert | Outflow=4.02 cfs 0.349 af |
| Pond D5: Pipe from Commercial St. to Treatment Unit and Outf | Peak Elev=8.44' | Inflow=8.78 cfs 0.902 af |
| | 36.0" x 137.0' Culvert | Outflow=8.78 cfs 0.902 af |

Pond D7: Hancock

Peak Elev=8.85' Inflow=0.00 cfs 0.000 af
30.0" x 36.0' Culvert Outflow=0.00 cfs 0.000 af

Pond D8: Hancock Street Storm System

Peak Elev=0.00'
24.0" x 196.0' Culvert Primary=0.00 cfs 0.000 af

Pond HIL: DMH #10/DD

Peak Elev=8.01' Inflow=8.88 cfs 0.943 af
36.0" x 102.0' Culvert Outflow=8.88 cfs 0.943 af

Total Runoff Area = 6.325 ac Runoff Volume = 0.946 af Average Runoff Depth = 1.79"
10.33% Pervious Area = 0.653 ac 89.67% Impervious Area = 5.672 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac Runoff Depth>4.43" Flow Length=456' Tc=4.8 min CN=93 Runoff=3.13 cfs 0.221 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf Runoff Depth>4.43" Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=93 Runoff=1.18 cfs 0.078 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf Runoff Depth>0.25" Flow Length=110' Slope=0.0300 '/' Tc=8.7 min CN=39 Runoff=0.01 cfs 0.002 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac Runoff Depth>4.87" Flow Length=445' Tc=13.2 min CN=98 Runoff=8.35 cfs 0.792 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf Runoff Depth>4.87" Tc=6.0 min CN=98 Runoff=1.74 cfs 0.134 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf Runoff Depth>4.87" Tc=6.0 min CN=98 Runoff=4.65 cfs 0.359 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf Runoff Depth>4.87" Flow Length=75' Slope=0.0125 '/' Tc=1.2 min CN=98 Runoff=0.68 cfs 0.047 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac Runoff Depth>4.62" Flow Length=550' Tc=2.8 min CN=95 Runoff=7.70 cfs 0.520 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac Runoff Depth>2.73" Flow Length=125' Tc=27.5 min CN=76 Runoff=1.62 cfs 0.182 af
Pond 5A: CB16	Peak Elev=13.39' Storage=2,048 cf Inflow=8.35 cfs 0.792 af Outflow=7.87 cfs 0.789 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=13.01' Storage=1,780 cf Inflow=6.84 cfs 0.540 af Outflow=5.44 cfs 0.539 af
Pond D2: Commercial Street Storm System	Peak Elev=11.25' Inflow=1.18 cfs 0.080 af 15.0" x 192.0' Culvert Outflow=1.18 cfs 0.080 af
Pond D3: Commercial	Peak Elev=11.24' Inflow=5.99 cfs 0.619 af 15.0" x 192.0' Culvert Outflow=5.99 cfs 0.619 af
Pond D4: Drainage Manhole #4	Peak Elev=9.78' Inflow=8.67 cfs 0.840 af 36.0" x 250.0' Culvert Outflow=8.67 cfs 0.840 af
Pond D5: Pipe from Commercial St. to Treatment Unit and Out	Peak Elev=9.45' Inflow=20.59 cfs 2.149 af 36.0" x 137.0' Culvert Outflow=20.59 cfs 2.149 af

Pond D7: Hancock

Peak Elev=9.37' Inflow=0.00 cfs 0.000 af
30.0" x 36.0' Culvert Outflow=0.00 cfs 0.000 af

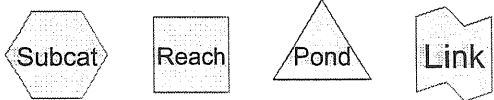
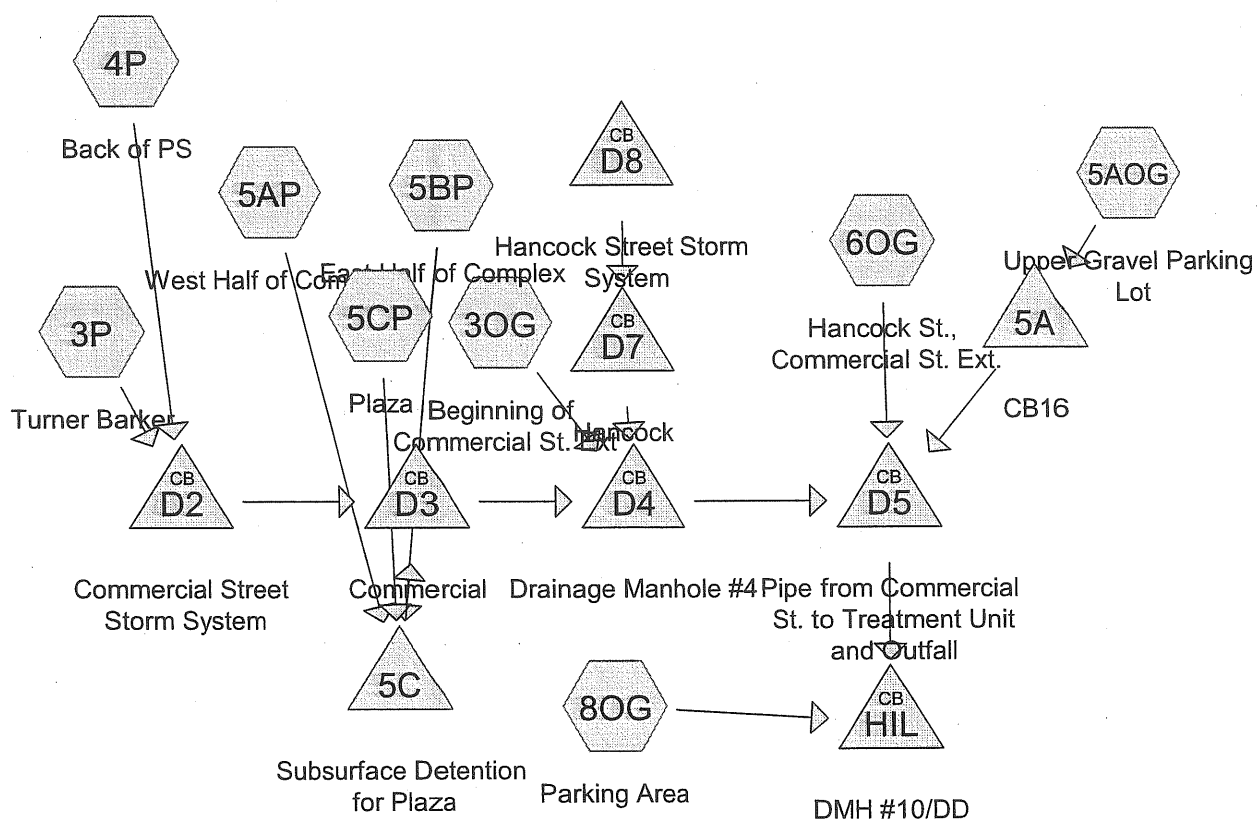
Pond D8: Hancock Street Storm System

Peak Elev=0.00'
24.0" x 196.0' Culvert Primary=0.00 cfs 0.000 af

Pond HIL: DMH #10/DD

Peak Elev=8.90' Inflow=21.24 cfs 2.331 af
36.0" x 102.0' Culvert Outflow=21.24 cfs 2.331 af

Total Runoff Area = 6.325 ac Runoff Volume = 2.335 af Average Runoff Depth = 4.43"
10.33% Pervious Area = 0.653 ac 89.67% Impervious Area = 5.672 ac



Drainage Diagram for Ocean Gateway and The Longfellow-Residences-ST
 Prepared by Woodard & Curran 11/22/2006
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac Flow Length=456'	Runoff Depth>1.68" Tc=4.8 min CN=93	Runoff=1.25 cfs 0.084 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf Flow Length=100' Slope=0.0100 '/'	Runoff Depth>1.68" Tc=1.7 min CN=93	Runoff=0.47 cfs 0.030 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf Flow Length=110' Slope=0.0300 '/'	Runoff Depth=0.00" Tc=8.7 min CN=39	Runoff=0.00 cfs 0.000 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac Flow Length=445'	Runoff Depth>2.13" Tc=13.2 min CN=98	Runoff=3.73 cfs 0.346 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf	Runoff Depth>2.13" Tc=6.0 min CN=98	Runoff=0.78 cfs 0.059 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf	Runoff Depth>2.13" Tc=6.0 min CN=98	Runoff=2.08 cfs 0.157 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf Flow Length=75' Slope=0.0125 '/'	Runoff Depth>2.13" Tc=1.2 min CN=98	Runoff=0.31 cfs 0.020 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac Flow Length=550'	Runoff Depth>1.86" Tc=2.8 min CN=95	Runoff=3.25 cfs 0.209 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac Flow Length=125'	Runoff Depth>0.62" Tc=27.5 min CN=76	Runoff=0.35 cfs 0.042 af
Pond 5A: CB16	Peak Elev=13.19'	Storage=1,170 cf	Inflow=3.73 cfs 0.346 af Outflow=3.40 cfs 0.344 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=11.00'	Storage=806 cf	Inflow=3.06 cfs 0.236 af Outflow=2.50 cfs 0.235 af
Pond D2: Commercial Street Storm System	Peak Elev=9.48'	Inflow=0.47 cfs 0.030 af	15.0" x 192.0' Culvert Outflow=0.47 cfs 0.030 af
Pond D3: Commercial	Peak Elev=9.48'	Inflow=2.73 cfs 0.265 af	15.0" x 192.0' Culvert Outflow=2.73 cfs 0.265 af
Pond D4: Drainage Manhole #4	Peak Elev=8.95'	Inflow=3.82 cfs 0.349 af	36.0" x 250.0' Culvert Outflow=3.82 cfs 0.349 af
Pond D5: Pipe from Commercial St. to Treatment Unit and Outf	Peak Elev=8.42'	Inflow=8.59 cfs 0.901 af	36.0" x 137.0' Culvert Outflow=8.59 cfs 0.901 af

Ocean Gateway and The Longfellow-Residences- Type III 24-hr 1-Year Storm Rainfall=2.50"

Prepared by Woodard & Curran

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11/22/2006

Pond D7: Hancock

Peak Elev=8.85' Inflow=0.00 cfs 0.000 af
30.0" x 36.0' Culvert Outflow=0.00 cfs 0.000 af

Pond D8: Hancock Street Storm System

Peak Elev=0.00'
24.0" x 196.0' Culvert Primary=0.00 cfs 0.000 af

Pond HIL: DMH #10/DD

Peak Elev=7.99' Inflow=8.68 cfs 0.943 af
36.0" x 102.0' Culvert Outflow=8.68 cfs 0.943 af

Total Runoff Area = 6.325 ac Runoff Volume = 0.946 af Average Runoff Depth = 1.79"
10.33% Pervious Area = 0.653 ac 89.67% Impervious Area = 5.672 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

- Subcatchment 3OG: Beginning of Commercial St. Ext** Runoff Area=0.600 ac Runoff Depth>4.43"
 Flow Length=456' Tc=4.8 min CN=93 Runoff=3.13 cfs 0.221 af
- Subcatchment 3P: Turner Barker** Runoff Area=9,230 sf Runoff Depth>4.43"
 Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=93 Runoff=1.18 cfs 0.078 af
- Subcatchment 4P: Back of PS** Runoff Area=3,655 sf Runoff Depth>0.25"
 Flow Length=110' Slope=0.0300 '/' Tc=8.7 min CN=39 Runoff=0.01 cfs 0.002 af
- Subcatchment 5AOG: Upper Gravel Parking Lot** Runoff Area=1.950 ac Runoff Depth>4.87"
 Flow Length=445' Tc=13.2 min CN=98 Runoff=8.35 cfs 0.792 af
- Subcatchment 5AP: West Half of Complex** Runoff Area=14,410 sf Runoff Depth>4.87"
 Tc=6.0 min CN=98 Runoff=1.74 cfs 0.134 af
- Subcatchment 5BP: East Half of Complex** Runoff Area=38,510 sf Runoff Depth>4.87"
 Tc=6.0 min CN=98 Runoff=4.65 cfs 0.359 af
- Subcatchment 5CP: Plaza** Runoff Area=4,995 sf Runoff Depth>4.87"
 Flow Length=75' Slope=0.0125 '/' Tc=1.2 min CN=98 Runoff=0.68 cfs 0.047 af
- Subcatchment 6OG: Hancock St., Commercial St. Ext.** Runoff Area=1.350 ac Runoff Depth>4.62"
 Flow Length=550' Tc=2.8 min CN=95 Runoff=7.70 cfs 0.520 af
- Subcatchment 8OG: Parking Area** Runoff Area=0.800 ac Runoff Depth>2.73"
 Flow Length=125' Tc=27.5 min CN=76 Runoff=1.62 cfs 0.182 af
- Pond 5A: CB16** Peak Elev=13.39' Storage=2,048 cf Inflow=8.35 cfs 0.792 af
 Outflow=7.87 cfs 0.789 af
- Pond 5C: Subsurface Detention for Plaza** Peak Elev=12.72' Storage=2,006 cf Inflow=6.84 cfs 0.540 af
 Outflow=5.25 cfs 0.539 af
- Pond D2: Commercial Street Storm System** Peak Elev=11.09' Inflow=1.18 cfs 0.080 af
 15.0" x 192.0' Culvert Outflow=1.18 cfs 0.080 af
- Pond D3: Commercial** Peak Elev=11.09' Inflow=5.93 cfs 0.619 af
 15.0" x 192.0' Culvert Outflow=5.93 cfs 0.619 af
- Pond D4: Drainage Manhole #4** Peak Elev=9.76' Inflow=8.86 cfs 0.840 af
 36.0" x 250.0' Culvert Outflow=8.86 cfs 0.840 af
- Pond D5: Pipe from Commercial St. to Treatment Unit and Out** Peak Elev=9.45' Inflow=20.51 cfs 2.149 af
 36.0" x 137.0' Culvert Outflow=20.51 cfs 2.149 af

Pond D7: Hancock

Peak Elev=9.37' Inflow=0.00 cfs 0.000 af
30.0" x 36.0' Culvert Outflow=0.00 cfs 0.000 af

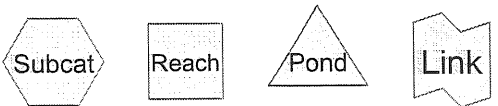
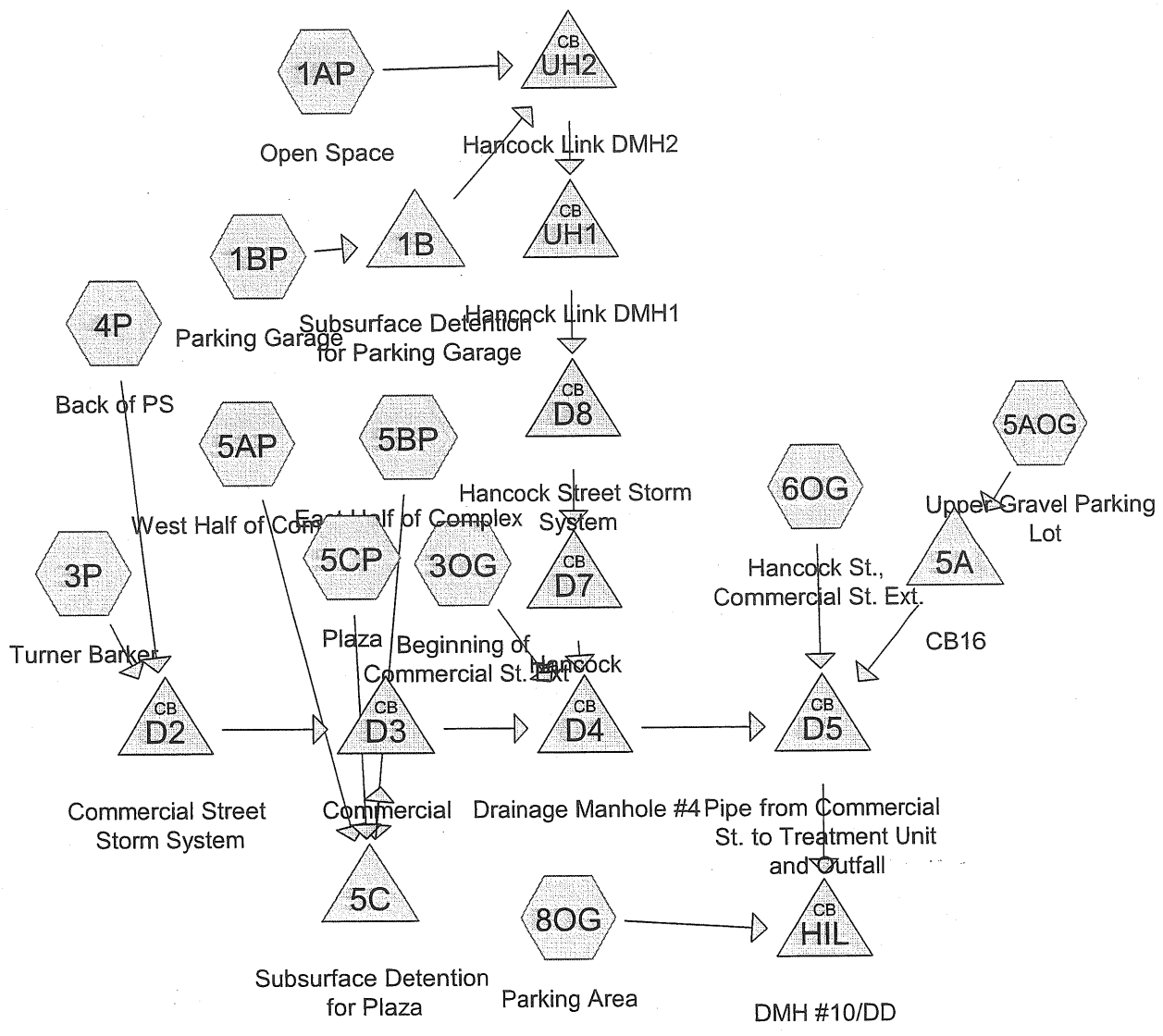
Pond D8: Hancock Street Storm System

Peak Elev=0.00'
24.0" x 196.0' Culvert Primary=0.00 cfs 0.000 af

Pond HIL: DMH #10/DD

Peak Elev=8.89' Inflow=20.97 cfs 2.331 af
36.0" x 102.0' Culvert Outflow=20.97 cfs 2.331 af

Total Runoff Area = 6.325 ac Runoff Volume = 2.335 af Average Runoff Depth = 4.43"
10.33% Pervious Area = 0.653 ac 89.67% Impervious Area = 5.672 ac



Drainage Diagram for Ocean Gateway and The Longfellow-Residences and Garage-SC
 Prepared by Woodard & Curran 11/22/2006
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1AP: Open Space	Runoff Area=13,340 sf Flow Length=165' Tc=6.1 min CN=52	Runoff Depth>0.03" Runoff=0.00 cfs 0.001 af
Subcatchment 1BP: Parking Garage	Runoff Area=33,985 sf Tc=6.0 min CN=98	Runoff Depth>2.13" Runoff=1.83 cfs 0.139 af
Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac Flow Length=456' Tc=4.8 min CN=93	Runoff Depth>1.68" Runoff=1.25 cfs 0.084 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf Flow Length=100' Slope=0.0100 '/' Tc=1.7 min CN=93	Runoff Depth>1.68" Runoff=0.47 cfs 0.030 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf Flow Length=110' Slope=0.0300 '/' Tc=8.7 min CN=39	Runoff Depth=0.00" Runoff=0.00 cfs 0.000 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac Flow Length=445' Tc=13.2 min CN=98	Runoff Depth>2.13" Runoff=3.73 cfs 0.346 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf Tc=6.0 min CN=98	Runoff Depth>2.13" Runoff=0.78 cfs 0.059 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf Tc=6.0 min CN=98	Runoff Depth>2.13" Runoff=2.08 cfs 0.157 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf Flow Length=75' Slope=0.0125 '/' Tc=1.2 min CN=98	Runoff Depth>2.13" Runoff=0.31 cfs 0.020 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac Flow Length=550' Tc=2.8 min CN=95	Runoff Depth>1.86" Runoff=3.25 cfs 0.209 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac Flow Length=125' Tc=27.5 min CN=76	Runoff Depth>0.62" Runoff=0.35 cfs 0.042 af
Pond 1B: Subsurface Detention for Parking Ga	Peak Elev=20.22' Storage=917 cf	Inflow=1.83 cfs 0.139 af Outflow=1.06 cfs 0.137 af
Pond 5A: CB16	Peak Elev=13.19' Storage=1,170 cf	Inflow=3.73 cfs 0.346 af Outflow=3.40 cfs 0.344 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=11.05' Storage=682 cf	Inflow=3.06 cfs 0.236 af Outflow=2.64 cfs 0.235 af
Pond D2: Commercial Street Storm System	Peak Elev=9.56' 15.0" x 192.0' Culvert	Inflow=0.47 cfs 0.030 af Outflow=0.47 cfs 0.030 af

Pond D3: Commercial	Peak Elev=9.56' Inflow=2.89 cfs 0.265 af 15.0" x 192.0' Culvert Outflow=2.89 cfs 0.265 af
Pond D4: Drainage Manhole #4	Peak Elev=9.08' Inflow=4.93 cfs 0.487 af 36.0" x 250.0' Culvert Outflow=4.93 cfs 0.487 af
Pond D5: Pipe from Commercial St. to Treatment Unit and Outf	Peak Elev=8.53' Inflow=9.64 cfs 1.039 af 36.0" x 137.0' Culvert Outflow=9.64 cfs 1.039 af
Pond D7: Hancock	Peak Elev=9.10' Inflow=1.06 cfs 0.138 af 30.0" x 36.0' Culvert Outflow=1.06 cfs 0.138 af
Pond D8: Hancock Street Storm System	Peak Elev=10.22' Inflow=1.06 cfs 0.138 af 24.0" x 196.0' Culvert Outflow=1.06 cfs 0.138 af
Pond HIL: DMH #10/DD	Peak Elev=8.08' Inflow=9.74 cfs 1.081 af 36.0" x 102.0' Culvert Outflow=9.74 cfs 1.081 af
Pond UH1: Hancock Link DMH1	Peak Elev=12.05' Inflow=1.06 cfs 0.138 af 24.0" x 125.0' Culvert Outflow=1.06 cfs 0.138 af
Pond UH2: Hancock Link DMH2	Peak Elev=16.81' Inflow=1.06 cfs 0.138 af 24.0" x 106.0' Culvert Outflow=1.06 cfs 0.138 af

Total Runoff Area = 7.412 ac Runoff Volume = 1.085 af Average Runoff Depth = 1.76"
12.05% Pervious Area = 0.893 ac 87.95% Impervious Area = 6.519 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1AP: Open Space	Runoff Area=13,340 sf Flow Length=165'	Runoff Depth>0.92" Tc=6.1 min CN=52	Runoff=0.29 cfs 0.024 af
Subcatchment 1BP: Parking Garage		Runoff Area=33,985 sf Tc=6.0 min CN=98	Runoff Depth>4.87" Runoff=4.10 cfs 0.317 af
Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac Flow Length=456'	Runoff Depth>4.43" Tc=4.8 min CN=93	Runoff=3.13 cfs 0.221 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf Flow Length=100' Slope=0.0100 '/'	Runoff Depth>4.43" Tc=1.7 min CN=93	Runoff=1.18 cfs 0.078 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf Flow Length=110' Slope=0.0300 '/'	Runoff Depth>0.25" Tc=8.7 min CN=39	Runoff=0.01 cfs 0.002 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac Flow Length=445'	Runoff Depth>4.87" Tc=13.2 min CN=98	Runoff=8.35 cfs 0.792 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf	Runoff Depth>4.87" Tc=6.0 min CN=98	Runoff=1.74 cfs 0.134 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf	Runoff Depth>4.87" Tc=6.0 min CN=98	Runoff=4.65 cfs 0.359 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf Flow Length=75' Slope=0.0125 '/'	Runoff Depth>4.87" Tc=1.2 min CN=98	Runoff=0.68 cfs 0.047 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac Flow Length=550'	Runoff Depth>4.62" Tc=2.8 min CN=95	Runoff=7.70 cfs 0.520 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac Flow Length=125'	Runoff Depth>2.73" Tc=27.5 min CN=76	Runoff=1.62 cfs 0.182 af
Pond 1B: Subsurface Detention for Parking G	Peak Elev=21.24'	Storage=2,187 cf	Inflow=4.10 cfs 0.317 af Outflow=2.28 cfs 0.315 af
Pond 5A: CB16	Peak Elev=13.39'	Storage=2,048 cf	Inflow=8.35 cfs 0.792 af Outflow=7.87 cfs 0.789 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=13.06'	Storage=1,801 cf	Inflow=6.84 cfs 0.540 af Outflow=5.31 cfs 0.539 af
Pond D2: Commercial Street Storm System	Peak Elev=11.38'		Inflow=1.18 cfs 0.080 af 15.0" x 192.0' Culvert Outflow=1.18 cfs 0.080 af

Pond D3: Commercial

Peak Elev=11.37' Inflow=5.87 cfs 0.619 af
15.0" x 192.0' Culvert Outflow=5.87 cfs 0.619 af

Pond D4: Drainage Manhole #4

Peak Elev=10.00' Inflow=10.91 cfs 1.178 af
36.0" x 250.0' Culvert Outflow=10.91 cfs 1.178 af

Pond D5: Pipe from Commercial St. to Treatment Unit and Out

Peak Elev=9.62' Inflow=22.66 cfs 2.487 af
36.0" x 137.0' Culvert Outflow=22.66 cfs 2.487 af

Pond D7: Hancock

Peak Elev=10.02' Inflow=2.49 cfs 0.338 af
30.0" x 36.0' Culvert Outflow=2.49 cfs 0.338 af

Pond D8: Hancock Street Storm System

Peak Elev=10.61' Inflow=2.49 cfs 0.338 af
24.0" x 196.0' Culvert Outflow=2.49 cfs 0.338 af

Pond HIL: DMH #10/DD

Peak Elev=9.01' Inflow=22.95 cfs 2.669 af
36.0" x 102.0' Culvert Outflow=22.95 cfs 2.669 af

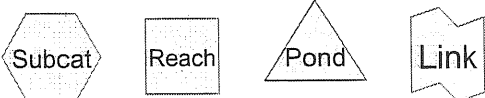
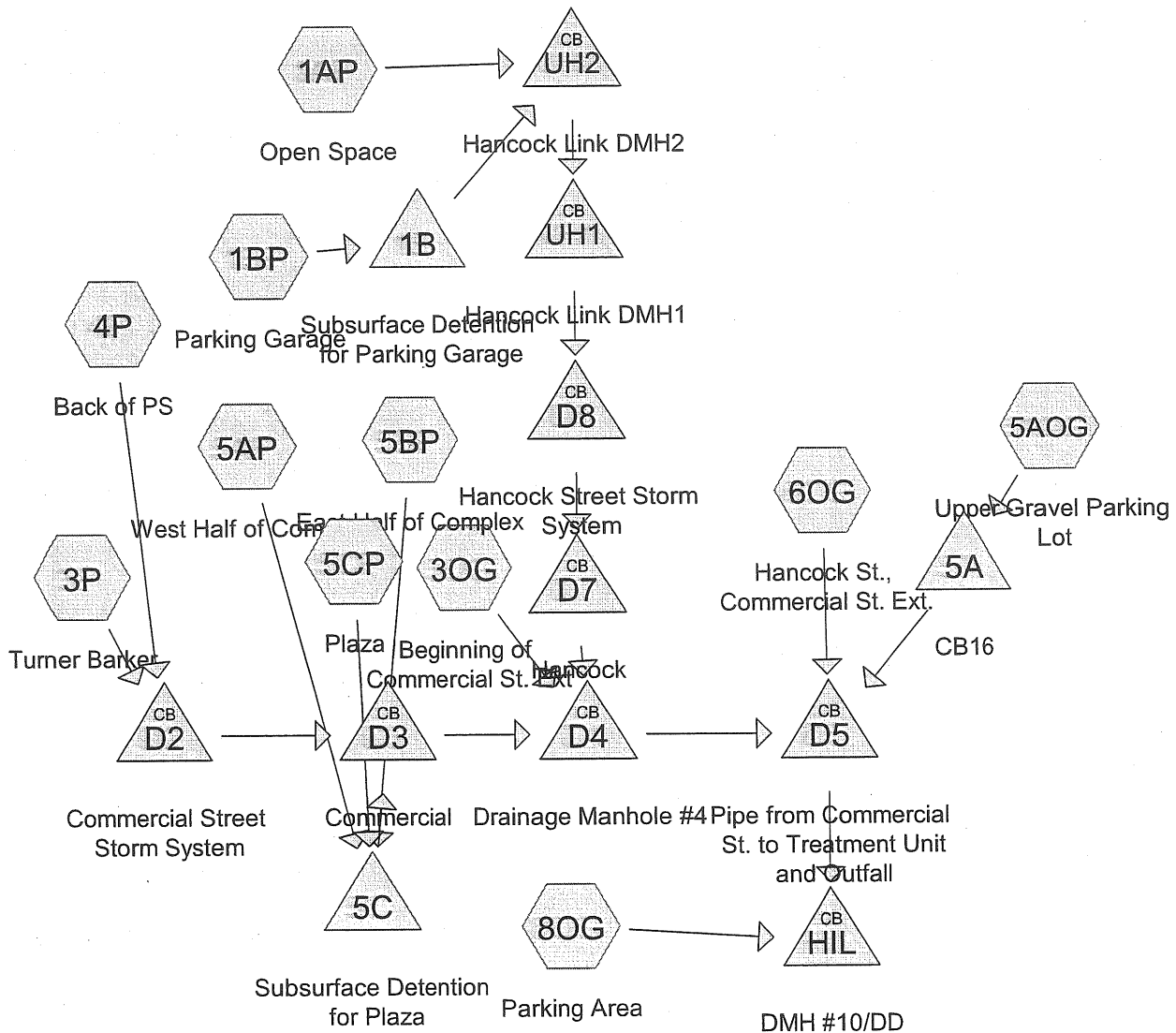
Pond UH1: Hancock Link DMH1

Peak Elev=12.29' Inflow=2.49 cfs 0.338 af
24.0" x 125.0' Culvert Outflow=2.49 cfs 0.338 af

Pond UH2: Hancock Link DMH2

Peak Elev=17.05' Inflow=2.49 cfs 0.338 af
24.0" x 106.0' Culvert Outflow=2.49 cfs 0.338 af

Total Runoff Area = 7.412 ac Runoff Volume = 2.676 af Average Runoff Depth = 4.33"
12.05% Pervious Area = 0.893 ac 87.95% Impervious Area = 6.519 ac



Drainage Diagram for Ocean Gateway and The Longfellow-Residences and Garage-ST
 Prepared by Woodard & Curran 11/22/2006
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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1AP: Open Space	Runoff Area=13,340 sf	Runoff Depth>0.03"
	Flow Length=165'	Tc=6.1 min CN=52 Runoff=0.00 cfs 0.001 af
Subcatchment 1BP: Parking Garage	Runoff Area=33,985 sf	Runoff Depth>2.13"
		Tc=6.0 min CN=98 Runoff=1.83 cfs 0.139 af
Subcatchment 3OG: Beginning of Commercial St. Ext.	Runoff Area=0.600 ac	Runoff Depth>1.68"
	Flow Length=456'	Tc=4.8 min CN=93 Runoff=1.25 cfs 0.084 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf	Runoff Depth>1.68"
	Flow Length=100' Slope=0.0100 '/'	Tc=1.7 min CN=93 Runoff=0.47 cfs 0.030 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf	Runoff Depth=0.00"
	Flow Length=110' Slope=0.0300 '/'	Tc=8.7 min CN=39 Runoff=0.00 cfs 0.000 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac	Runoff Depth>2.13"
	Flow Length=445'	Tc=13.2 min CN=98 Runoff=3.73 cfs 0.346 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf	Runoff Depth>2.13"
		Tc=6.0 min CN=98 Runoff=0.78 cfs 0.059 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf	Runoff Depth>2.13"
		Tc=6.0 min CN=98 Runoff=2.08 cfs 0.157 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf	Runoff Depth>2.13"
	Flow Length=75' Slope=0.0125 '/'	Tc=1.2 min CN=98 Runoff=0.31 cfs 0.020 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac	Runoff Depth>1.86"
	Flow Length=550'	Tc=2.8 min CN=95 Runoff=3.25 cfs 0.209 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac	Runoff Depth>0.62"
	Flow Length=125'	Tc=27.5 min CN=76 Runoff=0.35 cfs 0.042 af
Pond 1B: Subsurface Detention for Parking Ga	Peak Elev=20.18'	Storage=979 cf Inflow=1.83 cfs 0.139 af
		Outflow=1.01 cfs 0.137 af
Pond 5A: CB16	Peak Elev=13.19'	Storage=1,170 cf Inflow=3.73 cfs 0.346 af
		Outflow=3.40 cfs 0.344 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=11.00'	Storage=806 cf Inflow=3.06 cfs 0.236 af
		Outflow=2.50 cfs 0.235 af
Pond D2: Commercial Street Storm System	Peak Elev=9.53'	Inflow=0.47 cfs 0.030 af
	15.0" x 192.0' Culvert	Outflow=0.47 cfs 0.030 af

Pond D3: Commercial

Peak Elev=9.53' Inflow=2.73 cfs 0.265 af
15.0" x 192.0' Culvert Outflow=2.73 cfs 0.265 af

Pond D4: Drainage Manhole #4

Peak Elev=9.06' Inflow=4.70 cfs 0.486 af
36.0" x 250.0' Culvert Outflow=4.70 cfs 0.486 af

Pond D5: Pipe from Commercial St. to Treatment Unit and Outf

Peak Elev=8.51' Inflow=9.42 cfs 1.039 af
36.0" x 137.0' Culvert Outflow=9.42 cfs 1.039 af

Pond D7: Hancock

Peak Elev=9.08' Inflow=1.01 cfs 0.138 af
30.0" x 36.0' Culvert Outflow=1.01 cfs 0.138 af

Pond D8: Hancock Street Storm System

Peak Elev=10.21' Inflow=1.01 cfs 0.138 af
24.0" x 196.0' Culvert Outflow=1.01 cfs 0.138 af

Pond HIL: DMH #10/DD

Peak Elev=8.06' Inflow=9.52 cfs 1.081 af
36.0" x 102.0' Culvert Outflow=9.52 cfs 1.081 af

Pond UH1: Hancock Link DMH1

Peak Elev=12.04' Inflow=1.01 cfs 0.138 af
24.0" x 125.0' Culvert Outflow=1.01 cfs 0.138 af

Pond UH2: Hancock Link DMH2

Peak Elev=16.80' Inflow=1.01 cfs 0.138 af
24.0" x 106.0' Culvert Outflow=1.01 cfs 0.138 af

Total Runoff Area = 7.412 ac Runoff Volume = 1.085 af Average Runoff Depth = 1.76"
12.05% Pervious Area = 0.893 ac 87.95% Impervious Area = 6.519 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
 Runoff by SCS TR-20 method, UH=SCS
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1AP: Open Space	Runoff Area=13,340 sf	Runoff Depth>0.92"
	Flow Length=165'	Tc=6.1 min CN=52 Runoff=0.29 cfs 0.024 af
Subcatchment 1BP: Parking Garage	Runoff Area=33,985 sf	Runoff Depth>4.87"
		Tc=6.0 min CN=98 Runoff=4.10 cfs 0.317 af
Subcatchment 3OG: Beginning of Commercial St. Ext	Runoff Area=0.600 ac	Runoff Depth>4.43"
	Flow Length=456'	Tc=4.8 min CN=93 Runoff=3.13 cfs 0.221 af
Subcatchment 3P: Turner Barker	Runoff Area=9,230 sf	Runoff Depth>4.43"
	Flow Length=100' Slope=0.0100 '/'	Tc=1.7 min CN=93 Runoff=1.18 cfs 0.078 af
Subcatchment 4P: Back of PS	Runoff Area=3,655 sf	Runoff Depth>0.25"
	Flow Length=110' Slope=0.0300 '/'	Tc=8.7 min CN=39 Runoff=0.01 cfs 0.002 af
Subcatchment 5AOG: Upper Gravel Parking Lot	Runoff Area=1.950 ac	Runoff Depth>4.87"
	Flow Length=445'	Tc=13.2 min CN=98 Runoff=8.35 cfs 0.792 af
Subcatchment 5AP: West Half of Complex	Runoff Area=14,410 sf	Runoff Depth>4.87"
		Tc=6.0 min CN=98 Runoff=1.74 cfs 0.134 af
Subcatchment 5BP: East Half of Complex	Runoff Area=38,510 sf	Runoff Depth>4.87"
		Tc=6.0 min CN=98 Runoff=4.65 cfs 0.359 af
Subcatchment 5CP: Plaza	Runoff Area=4,995 sf	Runoff Depth>4.87"
	Flow Length=75' Slope=0.0125 '/'	Tc=1.2 min CN=98 Runoff=0.68 cfs 0.047 af
Subcatchment 6OG: Hancock St., Commercial St. Ext.	Runoff Area=1.350 ac	Runoff Depth>4.62"
	Flow Length=550'	Tc=2.8 min CN=95 Runoff=7.70 cfs 0.520 af
Subcatchment 8OG: Parking Area	Runoff Area=0.800 ac	Runoff Depth>2.73"
	Flow Length=125'	Tc=27.5 min CN=76 Runoff=1.62 cfs 0.182 af
Pond 1B: Subsurface Detention for Parking G	Peak Elev=21.14'	Storage=2,325 cf Inflow=4.10 cfs 0.317 af
		Outflow=2.19 cfs 0.315 af
Pond 5A: CB16	Peak Elev=13.39'	Storage=2,048 cf Inflow=8.35 cfs 0.792 af
		Outflow=7.87 cfs 0.789 af
Pond 5C: Subsurface Detention for Plaza	Peak Elev=12.77'	Storage=2,030 cf Inflow=6.84 cfs 0.540 af
		Outflow=5.19 cfs 0.539 af
Pond D2: Commercial Street Storm System	Peak Elev=11.16'	Inflow=1.18 cfs 0.080 af
	15.0" x 192.0' Culvert	Outflow=1.18 cfs 0.080 af

Pond D3: Commercial

Peak Elev=11.15' Inflow=5.89 cfs 0.619 af
15.0" x 192.0' Culvert Outflow=5.89 cfs 0.619 af

Pond D4: Drainage Manhole #4

Peak Elev=9.96' Inflow=11.01 cfs 1.178 af
36.0" x 250.0' Culvert Outflow=11.01 cfs 1.178 af

Pond D5: Pipe from Commercial St. to Treatment Unit and Out Peak Elev=9.61' Inflow=22.35 cfs 2.487 af
36.0" x 137.0' Culvert Outflow=22.35 cfs 2.487 af

Pond D7: Hancock

Peak Elev=9.98' Inflow=2.40 cfs 0.338 af
30.0" x 36.0' Culvert Outflow=2.40 cfs 0.338 af

Pond D8: Hancock Street Storm System

Peak Elev=10.59' Inflow=2.40 cfs 0.338 af
24.0" x 196.0' Culvert Outflow=2.40 cfs 0.338 af

Pond HIL: DMH #10/DD

Peak Elev=9.02' Inflow=23.05 cfs 2.669 af
36.0" x 102.0' Culvert Outflow=23.05 cfs 2.669 af

Pond UH1: Hancock Link DMH1

Peak Elev=12.28' Inflow=2.40 cfs 0.338 af
24.0" x 125.0' Culvert Outflow=2.40 cfs 0.338 af

Pond UH2: Hancock Link DMH2

Peak Elev=17.04' Inflow=2.40 cfs 0.338 af
24.0" x 106.0' Culvert Outflow=2.40 cfs 0.338 af

Total Runoff Area = 7.412 ac Runoff Volume = 2.676 af Average Runoff Depth = 4.33"
12.05% Pervious Area = 0.893 ac 87.95% Impervious Area = 6.519 ac

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Post-Development w/ StormChamber
Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond UH2: Hancock Link DMH2

Inflow Area = 1.086 ac, Inflow Depth > 3.74" for 25-Year Storm event
Inflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af
Outflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af

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

Peak Elev= 17.05' @ 12.19 hrs

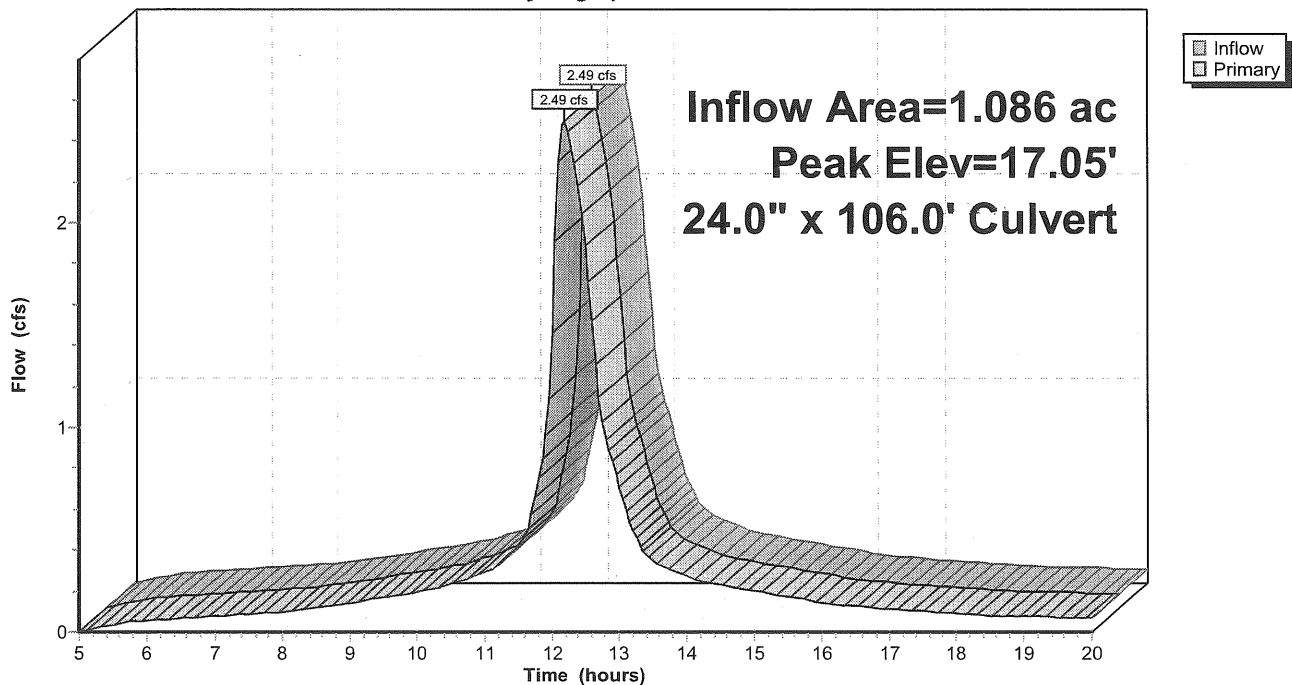
Flood Elev= 22.41'

Device	Routing	Invert	Outlet Devices
#1	Primary	16.39'	24.0" x 106.0' long Culvert RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 11.73' S= 0.0440 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=2.49 cfs @ 12.19 hrs HW=17.05' TW=12.29' (Dynamic Tailwater)
↑ **1=Culvert** (Inlet Controls 2.49 cfs @ 2.76 fps)

Pond UH2: Hancock Link DMH2

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond UH1: Hancock Link DMH1

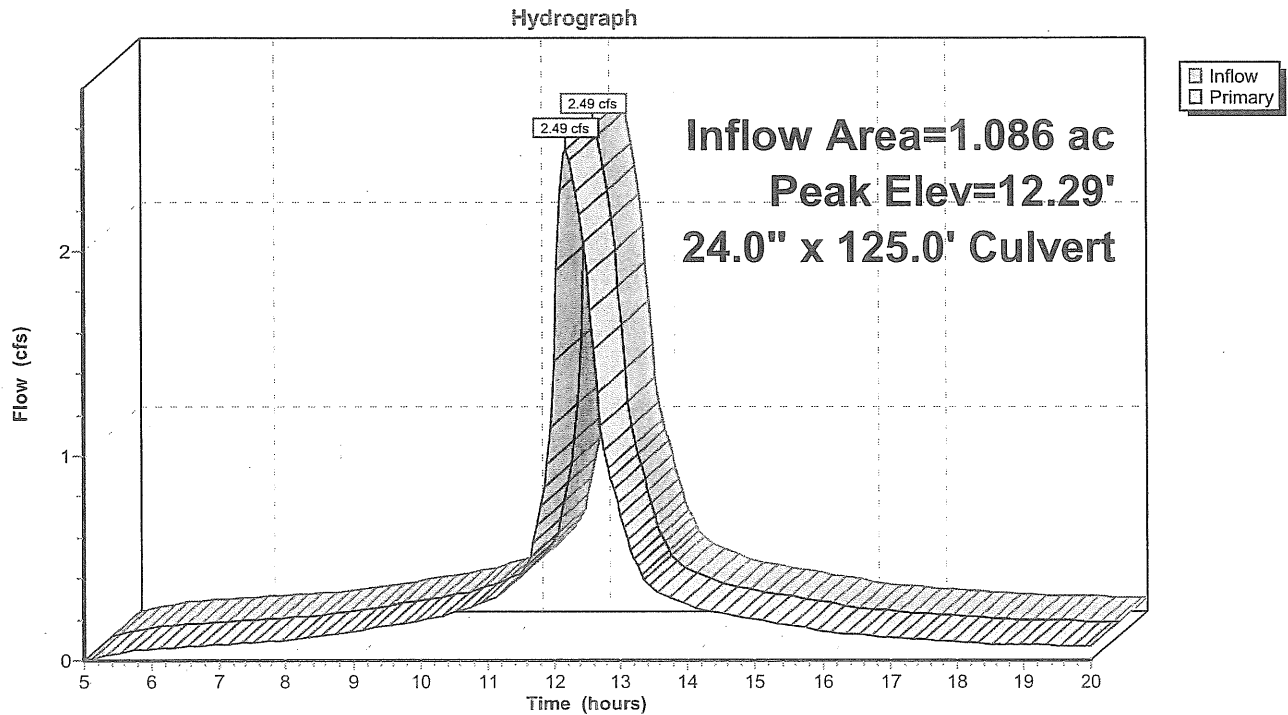
Inflow Area = 1.086 ac, Inflow Depth > 3.74" for 25-Year Storm event
Inflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af
Outflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 12.29' @ 12.19 hrs
Flood Elev= 16.51'

Device	Routing	Invert	Outlet Devices
#1	Primary	11.63'	24.0" x 125.0' long Culvert RCP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 9.88' S= 0.0140 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=2.49 cfs @ 12.19 hrs HW=12.29' TW=10.44' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.49 cfs @ 2.76 fps)

Pond UH1: Hancock Link DMH1



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond D8: Hancock Street Storm System

Inflow Area = 1.086 ac, Inflow Depth > 3.74" for 25-Year Storm event
Inflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af
Outflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af

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

Peak Elev= 10.44' @ 12.19 hrs

Flood Elev= 15.38'

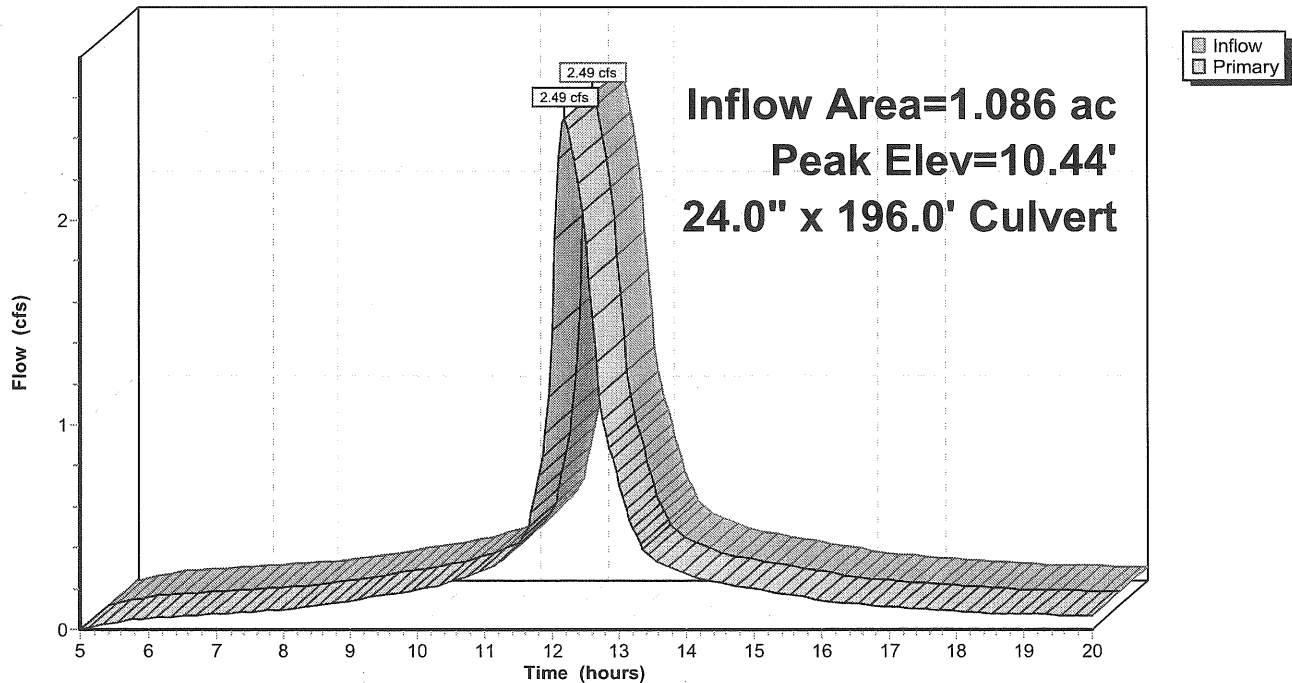
Device	Routing	Invert	Outlet Devices
#1	Primary	9.78'	24.0" x 196.0' long Culvert Ke= 0.500 Outlet Invert= 8.18' S= 0.0082 '/' Cc= 0.900 n= 0.011

Primary OutFlow Max=2.49 cfs @ 12.19 hrs HW=10.44' TW=8.91' (Dynamic Tailwater)

↳ **1=Culvert** (Inlet Controls 2.49 cfs @ 2.76 fps)

Pond D8: Hancock Street Storm System

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond D7: Hancock

Inflow Area = 1.086 ac, Inflow Depth > 3.74" for 25-Year Storm event
Inflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af
Outflow = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Primary = 2.49 cfs @ 12.19 hrs, Volume= 0.338 af

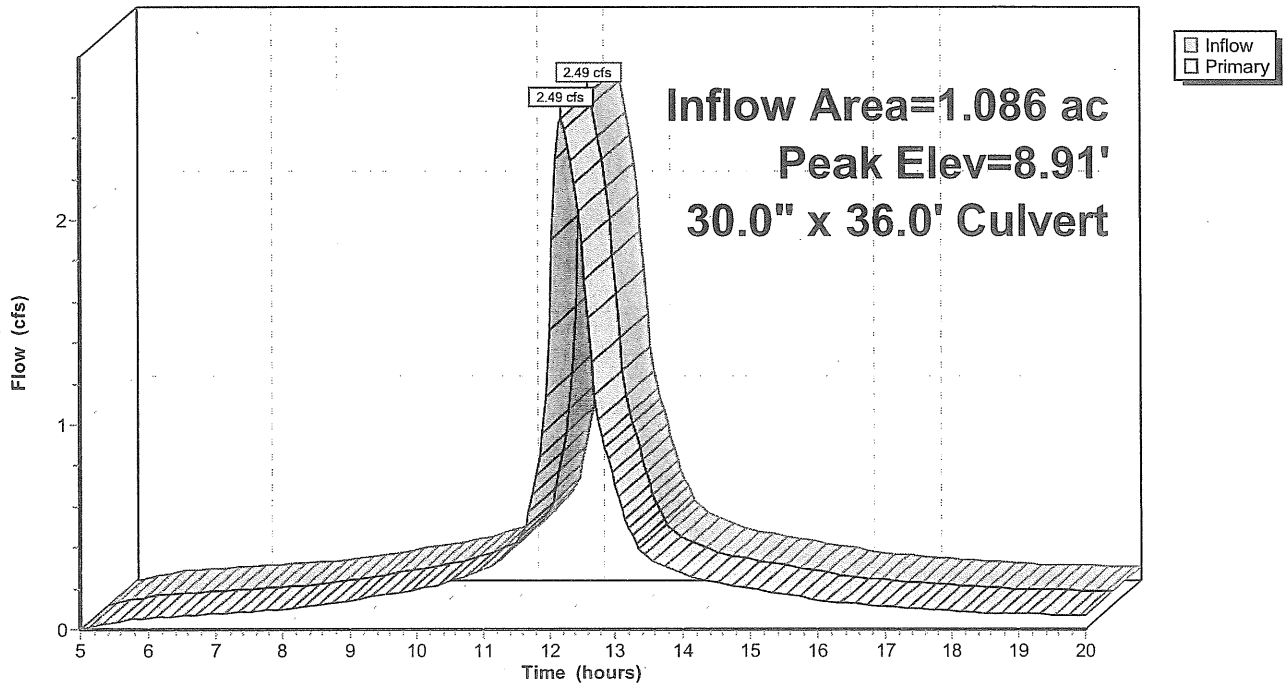
Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 8.91' @ 12.19 hrs
Flood Elev= 13.91'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.08'	30.0" x 36.0' long Culvert Ke= 0.500 Outlet Invert= 8.07' S= 0.0003 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=2.49 cfs @ 12.19 hrs HW=8.91' TW=0.00' (Dynamic Tailwater)
↑1=Culvert (Barrel Controls 2.49 cfs @ 2.60 fps)

Pond D7: Hancock

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond D3: Commercial

Inflow Area = 1.625 ac, Inflow Depth > 4.57" for 25-Year Storm event
Inflow = 6.27 cfs @ 12.14 hrs, Volume= 0.619 af
Outflow = 6.27 cfs @ 12.14 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min
Primary = 6.27 cfs @ 12.14 hrs, Volume= 0.619 af

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

Peak Elev= 10.99' @ 12.14 hrs

Flood Elev= 13.91'

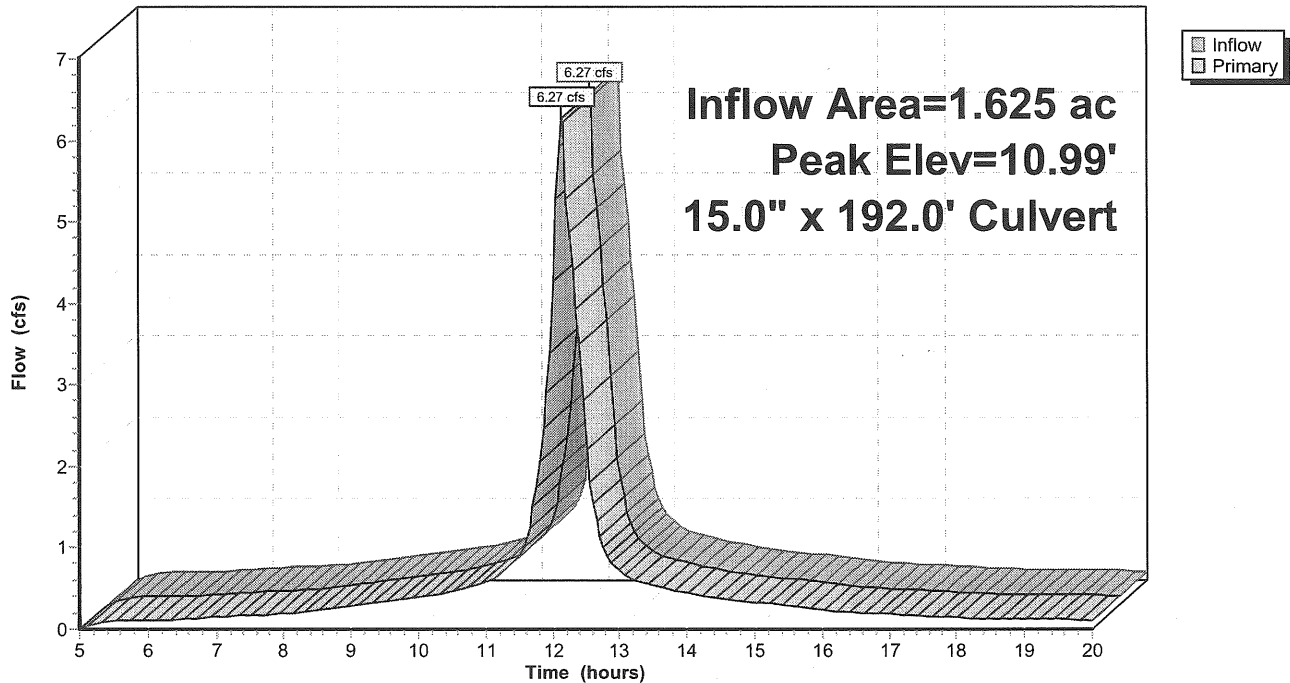
Device	Routing	Invert	Outlet Devices
#1	Primary	8.35'	15.0" x 192.0' long Culvert Ke= 0.500 Outlet Invert= 8.06' S= 0.0015 '/' Cc= 0.900 n= 0.010

Primary OutFlow Max=6.15 cfs @ 12.14 hrs HW=10.93' TW=0.00' (Dynamic Tailwater)

1=Culvert (Barrel Controls 6.15 cfs @ 5.01 fps)

Pond D3: Commercial

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond D2: Commercial Street Storm System

Inflow Area = 0.296 ac, Inflow Depth > 3.24" for 25-Year Storm event
Inflow = 1.14 cfs @ 12.06 hrs, Volume= 0.080 af
Outflow = 1.14 cfs @ 12.06 hrs, Volume= 0.080 af, Atten= 0%, Lag= 0.0 min
Primary = 1.14 cfs @ 12.06 hrs, Volume= 0.080 af

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

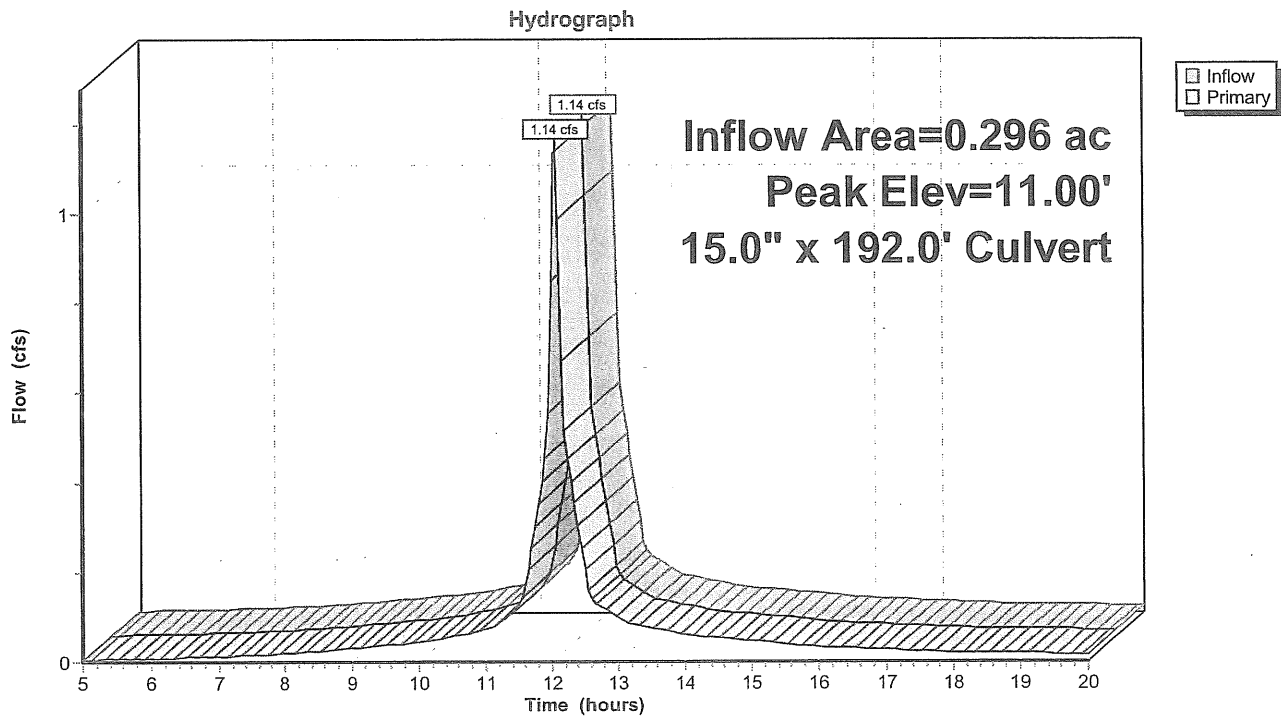
Peak Elev= 11.00' @ 12.19 hrs

Flood Elev= 14.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	8.74'	15.0" x 192.0' long Culvert Ke= 0.500 Outlet Invert= 8.45' S= 0.0015 '/' Cc= 0.900 n= 0.010

Primary OutFlow Max=0.00 cfs @ 12.06 hrs HW=10.21' TW=10.55' (Dynamic Tailwater)
↑1=Culvert (Controls 0.00 cfs)

Pond D2: Commercial Street Storm System



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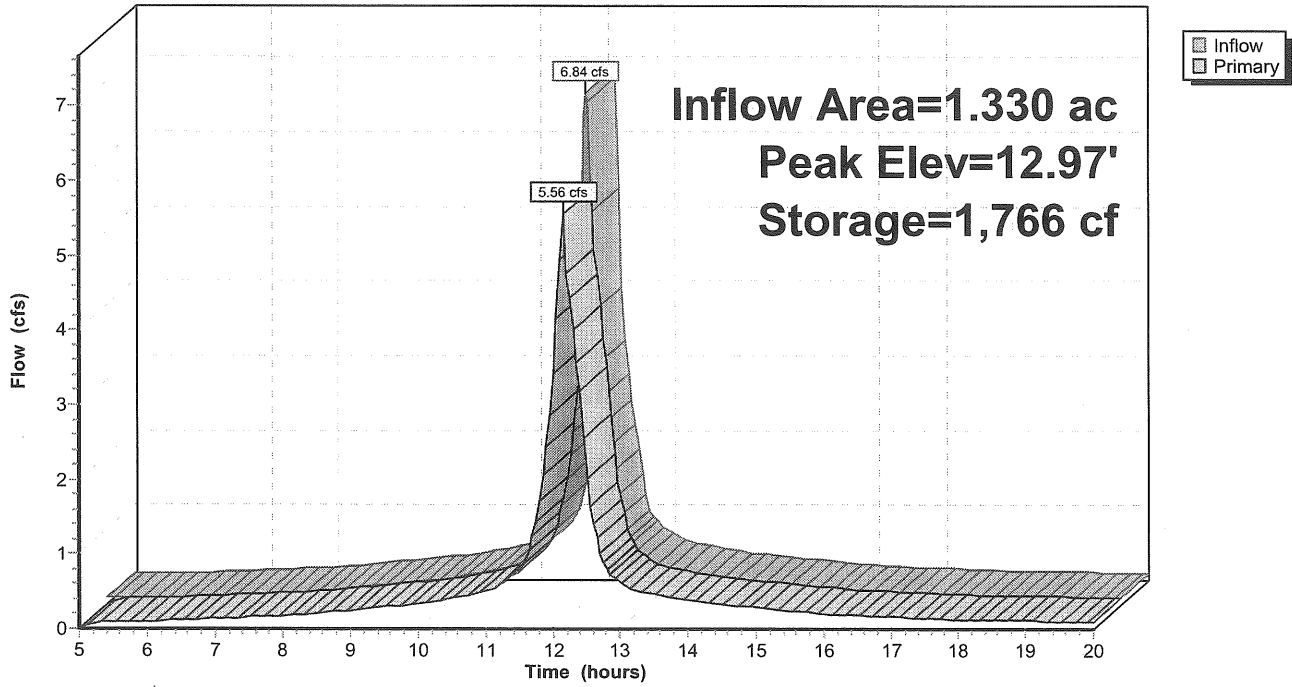
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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond 5C: Subsurface Detention for Plaza

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond 5C: Subsurface Detention for Plaza

Inflow Area = 1.330 ac, Inflow Depth > 4.87" for 25-Year Storm event
 Inflow = 6.84 cfs @ 12.08 hrs, Volume= 0.540 af
 Outflow = 5.56 cfs @ 12.15 hrs, Volume= 0.539 af, Atten= 19%, Lag= 4.0 min
 Primary = 5.56 cfs @ 12.15 hrs, Volume= 0.539 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 12.97' @ 12.15 hrs Surf.Area= 835 sf Storage= 1,766 cf

Plug-Flow detention time= 5.7 min calculated for 0.537 af (99% of inflow)
 Center-of-Mass det. time= 4.3 min (738.6 - 734.3)

Volume	Invert	Avail.Storage	Storage Description
#1	9.50'	1,086 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 3,758 cf Overall - 1,044 cf Embedded = 2,714 cf x 40.0% Voids
#2	10.50'	1,044 cf	58.4"W x 34.8"H x 7.60'L StormChamber x 14 Inside #1
		2,129 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
9.50	835	0	0
14.00	835	3,758	3,758

Device	Routing	Invert	Outlet Devices
#1	Primary	9.50'	12.0" x 50.0' long Culvert CMP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 9.00' S= 0.0100 1' Cc= 0.900 n= 0.011
#2	Device 1	9.50'	8.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	10.50'	8.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	12.50'	12.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=5.34 cfs @ 12.15 hrs HW=12.96' TW=10.96' (Dynamic Tailwater)

- ↑ 1=Culvert (Inlet Controls 5.34 cfs @ 6.80 fps)
- ↑ 2=Orifice/Grate (Passes < 2.37 cfs potential flow)
- ↑ 3=Orifice/Grate (Passes < 2.37 cfs potential flow)
- ↑ 4=Orifice/Grate (Passes < 0.80 cfs potential flow)

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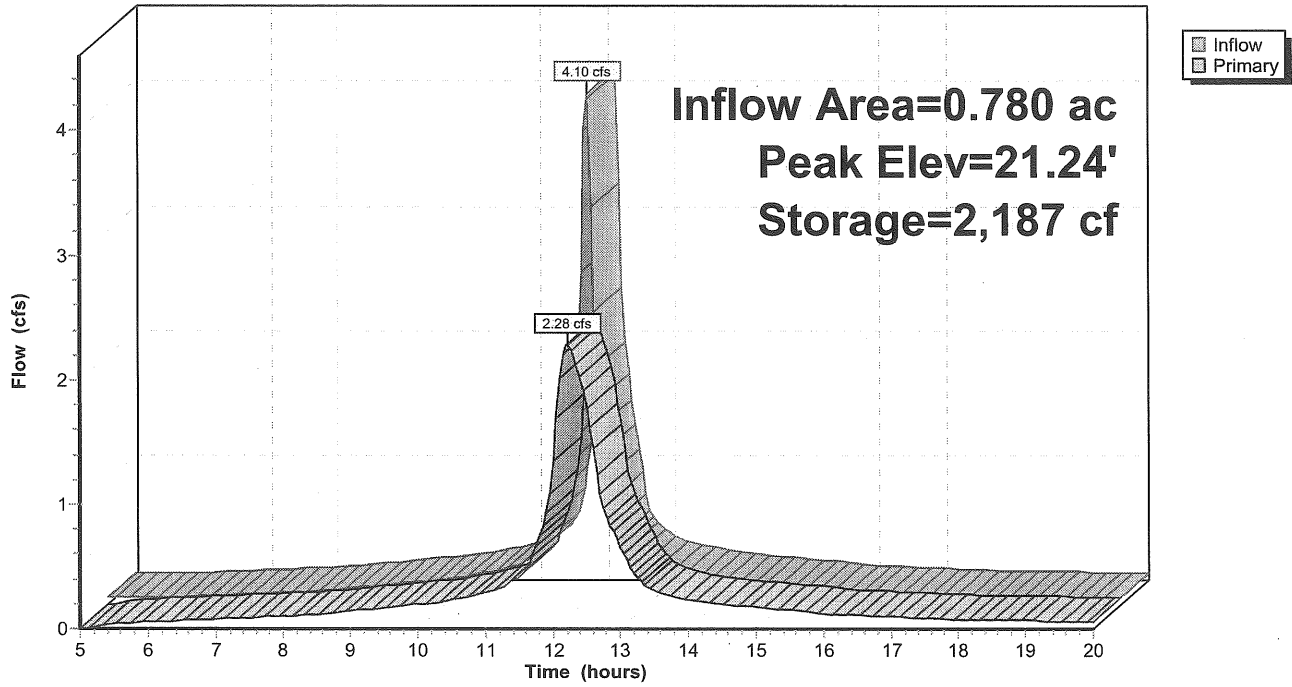
Post-Development w/ StormChamber
Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond 1B: Subsurface Detention for Parking Garage

Hydrograph



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Type III 24-hr 25-Year Storm Rainfall=5.50"

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Pond 1B: Subsurface Detention for Parking Garage

Inflow Area = 0.780 ac, Inflow Depth > 4.87" for 25-Year Storm event
 Inflow = 4.10 cfs @ 12.09 hrs, Volume= 0.317 af
 Outflow = 2.28 cfs @ 12.22 hrs, Volume= 0.315 af, Atten= 45%, Lag= 7.7 min
 Primary = 2.28 cfs @ 12.22 hrs, Volume= 0.315 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 21.24' @ 12.22 hrs Surf.Area= 1,590 sf Storage= 2,187 cf

Plug-Flow detention time= 15.6 min calculated for 0.315 af (99% of inflow)
 Center-of-Mass det. time= 12.4 min (747.0 - 734.6)

Volume	Invert	Avail.Storage	Storage Description
#1	19.00'	1,967 cf	Custom Stage Data (Prismatic) Listed below (Recalc) 7,155 cf Overall - 2,236 cf Embedded = 4,919 cf x 40.0% Voids
#2	20.00'	2,236 cf	58.4"W x 34.8"H x 7.60'L StormChamber x 30 Inside #1
		4,204 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
19.00	1,590	0	0
23.50	1,590	7,155	7,155

Device	Routing	Invert	Outlet Devices
#1	Primary	19.00'	12.0" x 150.0' long Culvert CMP, end-section conforming to fill, Ke= 0.500 Outlet Invert= 18.00' S= 0.0067 '/' Cc= 0.900 n= 0.011
#2	Device 1	20.00'	6.0" Vert. Orifice/Grate C= 0.600
#3	Device 1	19.00'	6.0" Vert. Orifice/Grate C= 0.600
#4	Device 1	22.00'	12.0" Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=2.27 cfs @ 12.22 hrs HW=21.23' TW=17.05' (Dynamic Tailwater)

- 1=Culvert (Passes 2.27 cfs of 4.27 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.94 cfs @ 4.77 fps)
- 3=Orifice/Grate (Orifice Controls 1.33 cfs @ 6.78 fps)
- 4=Orifice/Grate (Controls 0.00 cfs)

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Post-Development w/ StormChamber
Type III 24-hr 25-Year Storm Rainfall=5.50"

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Reach TOT: (new node)

Inflow Area = 3.110 ac, Inflow Depth > 4.23" for 25-Year Storm event
Inflow = 10.13 cfs @ 12.12 hrs, Volume= 1.097 af
Outflow = 10.13 cfs @ 12.12 hrs, Volume= 1.097 af, Atten= 0%, Lag= 0.0 min

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

Reach TOT: (new node)

