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February 21, 2018

Planning Board of the City of Newburyport
Attn: Bonnie Sontag, Chair
Newburyport City Hall
60 Pleasant Street
Newburyport, MA 01950

Re: Modification of Approved Special Permit and Definitive Subdivision Plan at Donahue Court

Dear Chair and Members of the Board:

This office is counsel to Stephen J. McConnell (the "Applicant"), who is the owner in his capacity as Trustee of the Stephen J. McConnell Revocable Trust of Lot 4B on Donahue Court (the "Property"). This letter constitutes a request by the Applicant for modification of a special permit and definitive subdivision plan concerning the Property, each of which has been previously approved by the Planning Board of the City of Newburyport (the "Board") and is discussed *infra*. Enclosed herewith, please find the following documents:

1. "Special Permit Findings & Decision" on application by 13 North Adams LLC, approved May 20, 2015;

2. "Definitive Subdivision Plan Application and Decision Summary" on application by 13 North Adams LLC, approved May 20, 2015;

3. "Residential Development, Definitive Subdivision, Donahue Court (26 Toppans Lane – Lot 4), Newburyport, Massachusetts, Prepared For: 13 North Adams LLC" prepared by Millennium Engineering, Inc., dated March 18, 2015 (the "Definitive Subdivision Plan");

4. "Application for Plan Examination and Building Permit – Foundation Only" approved November 17, 2016 (the "Foundation-Only Permit");

5. December 1, 2016 Letter of Lisa A. Mead, Esq. to City of Newburyport Building Commissioner, without enclosures;

6. City of Newburyport Building Commissioner Stop Work Order Letter of December 8, 2016 (the "Stop Work Order");

7. City of Newburyport Department of Public Services Stormwater Permitting Violation Notice of December 20, 2016 (the "Stormwater Violation Notice");

8. "Stormwater Management Report for a Proposed Residential Subdivision, Donahue Land, Newburyport, Massachusetts" prepared by Design Consultants, Inc., revised through April 28, 2015 (the "Original Stormwater Report");

9. Stormwater Management Permit Application, approved February 8, 2017 (the "Stormwater Application");

10. February 12, 2018 Photographs;

11. Site Plan: "Plan of Land in Newburyport, MA Showing Proposed Single-Family Dwelling at Lot 4B Donahue Court" prepared by Millennium Engineering Inc., dated February 6, 2018 (the "Site Plan"); and

12. "Stormwater Calculations For: Steve McConnell, Proposed Single Family Dwelling, Lot 4B Donahue Court, Newburyport, MA" prepared by Millennium Engineering Inc., dated February 6, 2018 (the "Stormwater Calculations").

On May 20, 2015, the Board approved a special permit for the development of a private court for a proposed two lot residential subdivision, the private way of which proposes to serve the Property from the public Toppans Lane. On May 20, 2015, the Board approved a definitive subdivision plan for the development of a two lot residential subdivision consistent with the Definitive Subdivision Plan, which was later approved by the Newburyport Building Department on November 17, 2016.

In mid-November, 2016, the Applicant engaged Mark A. DePiero and his limited liability company DePiero, LLC (collectively, "DePiero) to perform the following site work at the Property in conformity with the approved special permit and definitive subdivision plan: removal of trees from the site, grading of the site, excavation for perimeter walls, and clearing of the site. On November 17, 2016, the Newburyport Building Department approved and issued the Foundation-Only Permit for the Property. Soon thereafter, DePiero immediately commenced site work at the Property.

On December 1, 2016, Lisa A. Mead, counsel to Virginia and Thomas Eramo (the "Eramos"), requested from the Newburyport Building Commissioner "appropriate enforcement action(s)" for the Property being developed purportedly in violation of the approved Definitive Subdivision Plan. The Eramos' property shares its northern boundary line with the Property. In support of her request, Attorney Mead alleged that the clear cutting and the cutting of significant grades, together with the removal of soils from the Property, near the shared boundary line created hazardous conditions for her clients and their property.

On December 8, 2016, the Newburyport Building Commissioner issued to the Applicant the Stop Work Order to cease all site work at the Property, because, according to the Building Commissioner, "the site work underway at the [Property] may not comply with the recorded site plan approved by the Newburyport Planning Board, dated 5/20/2015." Without waiving any rights under the existing approved special permit and definitive subdivision plan, the Applicant substantially complied with the Stop Work Order.

On December 20, 2016, the City of Newburyport Department of Public Services issued to the Applicant the Stormwater Violation Notice, which, *inter alia*, commanded that the Applicant cease all work at the Property until a permit has been issued and the conditions complied with. Without waiving any rights under the existing approved special permit and definitive subdivision plan, the Applicant substantially complied with the Stormwater Violation Notice. On February 7, 2017, the Department of Public Services of the City of Newburyport approved the Applicant's Stormwater Application.

On June 26 and 27, 2017, Gatchell & Sons Excavation Inc. ("Gatchell") performed excavation and remedial site work at the Property to address the concerns raised by the Eramos. Over the two days at the Property, Gatchell, which was monitored by Scott Frary of Country Road Landscaping, moved, graded, and compacted three hundred (300) yards of fill, two-hundred and forty (240) yards of which was brought in from off-site. The site work leveled and reinforced the area adjacent to the shared boundary, including, but not limited to, the Eramos' asphalt driveway and adjoining land, all as shown on the February 12, 2018 photographs enclosed herewith.

On January 25, 2018, in light of the active Stop Work Order at the Property and recent regrading of the Property by Gatchell, Alexander F. Parker, a Massachusetts Title V Certified Soil Evaluator, conducted soil testing at the Property. Following that testing, Christopher M. York, a Massachusetts registered civil engineer with Millennium Engineering, Inc., produced the Stormwater Calculations and the Site Plan submitted herewith. The Stormwater Calculations authored by Mr. York supplements and updates the Original Stormwater Report for the Property, which was previously approved by the Board.

The Site Plan modifies and improves on those plans included in the Definitive Subdivision Plan as follows: enlargement of the house footprint from approximately 2,230 square feet to 3,818 square feet; enlargement of the driveway area from 1,720 square feet to 3,440 square feet; inclusion of stone walls; enlargement of basketball court; inclusion of stone trench to infiltrate stormwater runoff from enlarged basketball court; enlargement in area of detention basin from 233 square feet to 440 square feet due to enlargement of house footprint and driveway area; and more detailed site grading. Prior to the March 21, 2018 Board hearing, the Applicant will submit to the Board a supplemental site plan for the Property showing, *inter alia*, his proposed tree implants and other screening mechanisms for the shared boundary line with the Eramos discussed *supra*.

For the reasons discussed above, the Applicant respectfully requests that the Board modify the previously approved special permit and definitive subdivision plan consistent with the Stormwater Calculations and Site Plan enclosed herewith.

This request does not constitute an acknowledgement or admission that the Applicant is in any way in breach of his obligations under the special permit and definitive subdivision plan or the Applicant's agreement with the propriety of the Stop Work Order or Stormwater Violation Notice. This request is made at the suggestion of Newburyport officials and the Applicant reserves all rights under the previously approved special permit and definitive subdivision plan.

Thank you for your attention.

Very truly yours,

William H. Sheehan III

Enc.

cc: Stephen J. McConnell
Andrew R. Port, Planning Director
Peter Binette, Building Commissioner
planning@cityofnewburyport.com


EXHIBIT
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TO7

CITY OF NEWBURYPORT
PLANNING BOARD
60 PLEASANT STREET • P.O. BOX 550
NEWBURYPORT, MA 01950
(978) 465-4400 • (978) 465-4452 (FAX)

& PLAN

10

SPECIAL PERMIT FINDINGS & DECISION

ORIGINAL REFERENCE REQUESTED
BK 33791 PAGE 202

DECISION DATE:	5/20/2015
APPLICATION DATE:	3/19/2015
FILE NO:	2015-SP-02
APPLICANT/OWNER:	13 North Adams LLC
APPLICANT ADDRESS:	9 Pasture Road, Bedford, NH 03110
SITE ADDRESS:	**26 Toppans Lane**
MAP/LOT:	39-40
BK/PAGE:	33791-202
ZONING DISTRICT:	R2
SECTION:	XXIII Courts and Lanes
BRIEF DESCRIPTION:	allow a private Court for a two lot residential subdivision
NEWSPAPER NOTICE:	3/31/2015 and 4/7/2015
PUBLIC HEARING:	A public hearing was held on the above application on 4/15/2015 and continued to 5/6/15, 5/20/15
DECISION:	After the close of the public hearing the Planning Board, upon a motion made by member Doug Locy and seconded by Andrew Shapiro, the Board voted to APPROVE the application for a Special Permit. The motion having received the necessary two-thirds super majority vote of all the members of the Planning Board, in accordance with M.G.L. Chapter 40A Section 9, as amended, the petition for the Special Permit was therefore granted.
RECORD OF VOTE:	The following members of the Planning Board voted as follows with respect to the petition for a Special Permit subject to the below-stated terms and conditions:

SO.ESSEX #583 Bk:34898 Pg:268
05/04/2016 03:52 PERMIT Pg 1/6

Jim McCarthy	Yes	Susan Grolnic	Yes	Leah McGavern	Absent
Bonnie Sontag	Absent	Noah Luskin	Absent	James Brugger	Abstain
Don Walters	Yes	Doug Locy	Yes	Andrew Shapiro	Yes

A TRUE COPY ATTEST

, *City Clerk*
Newburyport, Massachusetts

«strYear»-«strCase»

PLANS AND MATERIALS INCORPORATED INTO DECISION

1. This Special Permit application is accompanied and augmented by the following plans, drawings and submittals:

- Plan set entitled "Residential Development - Definitive Subdivision - Donahue Court (26 Toppans Lane-Lot 4) Newburyport, Massachusetts prepared for: 13 North Adams, LLC, 9 Pasture Road, Bedford, NH" dated March 18, 2015 and revised 4/28/15 consisting of pages T1, S1, S2, C1 through C4, and D1 through D3.

2. The plans and other submission material were reviewed by the Planning Board, its legal counsel and consulting engineer as follows:

- "Stormwater Management Report for a Proposed Residential Subdivision Donahue Lane, Newburyport, Massachusetts" prepared by Design Consultants, Inc. dated March 18, 2015 and revised April 28, 2015.

- Comments from the following City departments: Molly Ettenborough, Recycling and Energy Manager, dated 4/30/15; Bob Bracey, Health Director, dated 4/7/15; Julia Godtfredsen, Conservation Adminstrator, dated 3/30/15, Steve Bradbury, Fire Deputy, dated 3/30/15

- "Technical Review #1" comments, dated 4/7/15 and email communication, dated 5/20/15 from reviewing engineer Phil Christiansen.

3 Throughout its deliberations the Planning Board has been mindful of the statements of the applicants and their representatives, and the comments of the general public, all as made at the public hearing.

FINDINGS

General:

This project involves a total of 1.28 acres, which will be subdivided into two lots, Lot 4A and Lot 4B, with 0.46 acres and 0.82 acres, respectively. The lots will meet all of the dimensional standards set forth in Section VI-A of the Newburyport Zoning Ordinance. An existing single-family home shall be demolished and replaced with a new, single-family home. The project will add only one, additional single-family residence to the neighborhood.

A new roadway, Donahue Court, will be constructed to provide common access to the two lots in the subdivision. It shall be constructed consistent with the conditions and waivers granted in this Board's Definitive Subdivision Plan Approval dated 5/26/15.

Special Permit Criteria:

Section XXIII of the Newburyport Zoning Ordinance states that the Planning Board may grant a Special Permit for a Court or a Lane to:

- enhance the public safety through reduced number and frequency of vehicle entry points to ways used by the public, particularly arterial streets;

- preserve, protect and enhance environmentally sensitive land; and
- encourage the protection and preservation of significant features.

Per Section X-H.7 and X-H.8, before granting an application for a Special Permit, the Board, with due regard to the nature and condition of all adjacent structures and uses, and the district within which the same is located, shall find all of the following general conditions to be fulfilled:

1. The use requested is listed in the table of use regulations or elsewhere as in the ordinances requiring a special permit in the district for which application is made or is similar in character to permitted uses in a particular district but is not specifically mentioned.
2. The requested use is essential and/or desirable to the public convenience or welfare.
3. The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.
4. The requested use will not overload any public water, drainage or sewer system or any other municipal system to such an extent that the requested use or any developed use in the immediate area or in any other area of the city will be unduly subjected to hazards affecting health, safety or the general welfare.
5. Any special regulations for the use, set forth in the special permit table are fulfilled.
6. The requested use will not impair the integrity or character of the district or adjoining districts, nor be detrimental to the health or welfare.
7. The requested use will not, by its addition to a neighborhood, cause an excess of that particular use that could be detrimental to the character of said neighborhood.
8. The proposed use is in harmony with the purpose and intent of this ordinance.
9. The proposed use shall not be conducted in a manner so as to emit any dangerous, noxious, injurious or otherwise objectionable fire, explosion, radioactive or other hazard, noise or vibration, smoke, dust, odor or other form of environmental pollution.

Specific Findings:

- Donahue Court will not be used to satisfy zoning frontage requirements except as provided by the Definitive Subdivision Plan Approval dated 5/26/15.
- The court shall serve two (2) single-family dwelling units/lots.

DECISION

In view of the foregoing, the Planning Board hereby decides to grant a XXIII Courts and Lanes Special Permit in accordance with the terms and conditions stated below:

General Conditions:

1. The applicant shall file this Special Permit Decision with the Southern Essex County Registry of Deeds or registry of the Land Court if registered land and a copy of the decision stamped with the recording information (Book/Page or Land Court document number) shall be included with the application for a Building Permit. The final site/construction plans shall also make reference to the decision date and conditions of approval. This Special Permit shall run with the land and be binding on all future owners of the property.

2. Prior to the granting of a Building Permit, the applicant shall submit the written certification of a registered Architect or Civil Engineer to the Building Commissioner that the project will be constructed in accordance with the approved plans and conditions.

3. No building permit shall be issued unless all public utilities have been reviewed and approved by the respective utility departments and that the proposed utilities will be installed in accordance with plans submitted with the application.

4. Record plans stamped by a professional engineer showing new construction, renovation or expansion shall be submitted to the Building Commissioner and the Planning Board. Said plans shall contain a certification, made by a registered architect or civil engineer, that what was constructed is consistent with approved plans and conditions set forth by the Planning Board as part of this Special Permit.

5. The Planning Board requires the developer to submit all drawings and plans in computer aided drafting (CAD) format. Specific file format shall be .dxf unless otherwise determined by the Office of Planning and Development.

6. All design and construction of all water utilities must meet Federal, State and local standards and the latest version of Newburyport Water Works Construction Guidelines and Construction Policies, which are available at the Water Division Business Office in City Hall. Contractors are prohibited from operating or connecting to any part of the existing water system without written authorization and field oversight by the Department of Public Services Water Division.

7. All design and construction of all sewer utilities must meet Federal, State and Local standards and the latest version of Newburyport Sewer Department Construction Guidelines and Construction Policies, which are available at the Wastewater Treatment Plant located at 115 Water Street. Contractors are prohibited from operating or connecting to any part of the existing sewer system without written authorization and field oversight by the Department of Public Services Sewer Division.

8. This Special Permit is valid for two years from the date from filing with the City Clerk.

Special Conditions:

1. Prior to requesting building permits within the project, the applicant shall provide to the Planning Board (through the Office of Planning & Development) Homeowner's Association or Trust documents. Said documents shall ensure sufficient provisions are in place to ensure proper monitoring and implementation of the proposed "Operation and Maintenance Plan" for the proposed drainage system design. Proof of recording (for the final approved documents) shall be provided to the Planning Board (through the Office of Planning & Development) prior to requesting release of the performance guarantee.
2. The applicant, developer and/or successors in interest shall plow the strip of land along the edge of the road so that it is clear of snow during the winter season.
3. The home on Lot 4A shall be oriented toward Toppans Lane. There shall be no garage facing Toppans Lane.
4. The applicant shall install residential fire suppression systems in both hoes.
5. The structures on Lots 4A and 4B shall be single-family residences
6. The applicant shall grant to the Newburyport Department of Public Services an easement over Donahue Court for the purposes of accessing the utilities in emergency situations.

DATE OF FILING OF DECISION

Filed with the Newburyport City Clerk on 5/26/2015 and sent registered mail to the applicant. Notice of decision is also sent by regular mail to the Parties in Interest and the abutting municipalities.

SIGNATURE OF THE BOARD

Jim McCarthy, Chair, Newburyport Planning Board

5/26/2015
Date

NOTICE OF APPELLATE RIGHTS

Appeals shall be made pursuant to M.G.L. Chapter 40A Section 17 and filed within twenty (20) days after the date of filing this decision in the Office of City Clerk.

CITY CLERK CERTIFICATION OF APPEAL PERIOD EXPIRATION

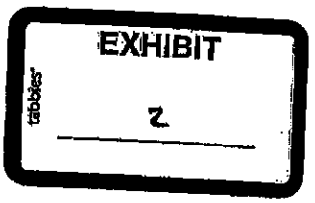
Certification of the City Clerk: I, _____, City Clerk of the City of Newburyport, hereby certify pursuant to M.G.L. Chapter 40A Section 17, that the decision for the property known as: was filed in the Office of the City Clerk on 5/26/2015

Pursuant to M.G.L. Chapter 40A Section 11, this decision was also filed in the Office of Planning and Development on 5/26/2015 and twenty days have elapsed after the decision was filed and no appeal has been filed. Appeals shall be made pursuant to M.G.L. Chapter 40A Section 17 and made within twenty (20) days after the date of filing of this decision in the Office of the City Clerk.

Newburyport City Clerk

MAY 04 2016

Date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CITY OF NEWBURYPORT
PLANNING BOARD
60 PLEASANT STREET • P.O. BOX 550
NEWBURYPORT, MA 01950
(978) 465-4400 • (978) 465-4452 (FAX)

DEFINITIVE SUBDIVISION PLAN
APPLICATION AND DECISION SUMMARY

DECISION DATE:	5/20/2015
APPLICATION DATE:	03/19/2015
FILE NO:	2015-DEF-01
APPLICANT:	13 North Adams LLC
APPLICANT ADDRESS:	9 Pasture Road, Bedford, NH 03110
PARCEL(S) ADDRESS:	26 Toppans Lane
MAP/LOT:	39-40
BK/PAGE:	33791-202
ZONING DISTRICT:	R2
BRIEF DESCRIPTION:	2 lot residential subdivision
NEWSPAPER NOTICE:	03/31/2015 and 04/07/2015
PUBLIC HEARING:	A public hearing was held on the above application on 04/15/2015 and continued to 5/20/2015.
DECISION:	After the close of the public hearing, upon a motion made by member Doug Locy and seconded by Don Walters, the Planning Board voted to approve the definitive subdivision plan. The motion having received a majority vote of all the members of the Planning Board, in accordance with M.G.L. Chapter 41 Section 81, as amended, the petition for the Definitive Subdivision Plan was therefore APPROVED.
RECORD OF VOTE:	The following members of the Planning Board voted as follows with respect to the petition for a Definitive Subdivision Plan approval to the below-stated terms and conditions:

Jim McCarthy Yes	Bonnie Sontag Absent	Sue Grolnic Yes
Don Walters Yes	Noah Luskin Absent	Douglas Locy Yes
Leah McGavern Absent	James Brugger Abstain	Andrew Shapiro Yes

A TRUE COPY ATTEST

, *City Clerk*
Newburyport, Massachusetts

PLANS AND MATERIALS INCORPORATED INTO DECISION

1) This Definitive Subdivision Application is accompanied and augmented by the following plans and drawings:

- Plan set entitled "Residential Development - Definitive Subdivision - Donahue Court (26 Toppans Lane-Lot 4) Newburyport, Massachusetts prepared for: 13 North Adams, LLC, 9 Pasture Road, Bedford, NH" dated March 18, 2015 and revised 4/28/15 consisting of pages T1, S1, S2, C1 through C4, and D1 through D3.

2) Other submission materials include:

- "Stormwater Management Report for a Proposed Residential Subdivision Donahue Lane, Newburyport, Massachusetts" prepared by Design Consultants, Inc. dated March 18, 2015 and revised April 28, 2015.
- Comments from the following City departments: Molly Ettenborough, Recycling and Energy Manager, dated 4/30/15; Bob Bracey, Health Director, dated 4/7/15; Julia Godtfredsen, Conservation Adminstrator, dated 3/30/15, Steve Bradbury, Fire Deputy, dated 3/30/15
- "Technical Review #1" comments, dated 4/7/15 and email communication, dated 4/20/15 from reviewing engineer Phil Christiansen.

3) Throughout its deliberations the Planning Board has been mindful of the statements of the applicants and their representatives, and the comments of the general public, all as made at the public hearing.

FINDINGS

Pursuant to Section 5.7 of the Rules and Regulations Governing the Subdivision of Land in Newburyport, the Board generally finds the following to be credible statements about the proposed Subdivision:

1. Complete and technically adequate plans and supporting material;
2. Adequate access to all of the lots in the subdivision by ways that will be safe and convenient for travel;
3. Lessened congestion in such ways and in the adjacent public ways;
4. Reduced danger to the life and limb in the operation of motor vehicles;
5. Secured safety in the case of fire, flood, panic and other emergencies;
6. Compliance with applicable zoning ordinances;
7. Adequate provisions for water, sewerage, drainage, underground utility services, fire, police, and other similar municipal equipment, and street lighting and other requirements where necessary in a subdivision;
8. Coordination of the ways in neighboring subdivisions;
9. Conformance with the design and construction standards described in the Rules and Regulations Governing the Subdivision of Land and in the attached Appendices; and
10. Conformance with all applicable zoning requirements.

WAIVERS

In accordance with M.G.L. Chapter 41 Section 81-R Waiver of Compliance and in consideration of the above referenced findings, the following waivers are granted as such actions are in the public interest and not inconsistent with the intent and purpose of the subdivision control law.

- Waiver of requirements of Sections 1.3.3 and 5.4.2(d): Vertical Datum

  Waiver is granted. The applicant shall utilize NAVD 1988 rather than NGVD 1929

- Waiver of requirements of Section 5.4.2(a): Plan Scale

  Waiver is granted. The plans shall have a scale of 1" = 20' rather than 1" = 40'

- Waiver of requirements of Section 5.6: Environmental and Community Impact Analysis

  Waiver is granted. The applicant shall not be required to submit (1) an Alternatives Analysis, (2) a Traffic Impacts Analysis, or (3) a Cost Benefit Analysis due to the negligible impact of one, additional single family home on City services and on the surrounding neighborhood.

- Waiver of requirements of Section 6.8.1: Minimum Design Standards for Courts

  Waiver is granted. The applicant shall construct a curb radius of 15' rather than the required 25' at the intersection of Donahue Court and Toppans Lane.

- Waiver of requirements of Section 6.9: Curbing and Section 6.11.1: Sidewalks

  Waiver is granted. Due to the relatively small size of this subdivision (one additional single-family home, for a total of two, single-family homes), there shall be no curbing or sidewalks installed along Donahue Court.

CONDITIONS

This Definitive Subdivision Plan approval is conditioned upon the following:

General Conditions:

1. After expiration of the appeal period yet before its endorsement of the plan, the Board shall require a performance guarantee pursuant to Section 5.8 to insure the construction of ways and the installation of municipal services.
2. In accordance with Section 5.9, the Definitive Plan must receive endorsement by a majority of Planning Board members and be stamped by the City Clerk. Endorsement follows expiration of the twenty (20) day appeal period.
3. Per Section 4 of the Planning Board's Regulations Governing Fees and Fee Schedules, Project Review Fees shall be paid in full prior to endorsement of the plan.
4. As per Section 5.9.2, the applicant/developer shall record this Definitive Plan approval, subject to its waivers and conditions, along with plans, covenants, and easements, at the Essex South Registry of Deeds and notify the Planning Board of such recording. If the endorsement on the plan or the certificate which accompanies the plan is not dated within six (6) months of the date of recording, the applicant shall apply to the Planning Board or City Clerk for a certificate which shall be endorsed on the plan or referred to on the plan and recorded with the plan. The certificate must be dated within thirty (30) days of the recording. The certificate shall state: "that the approval has not been modified, amended, or rescinded, nor the plan changed."

5. Section 5.10 requires that the applicant shall send by registered mail to the City Clerk and to the Planning Board a written statement that said construction or installation has been completed in accordance with the Rules and Regulations upon the completion of such construction and installation to serve any lot or lots. The statement shall include the address of the applicant.

6. Approval by the Board of a Definitive Subdivision Plan shall not constitute acceptance by the City of Newburyport of any street, sidewalk, or other municipal service within the subdivision as per Section 5.14.1.

7. Pursuant to Section 5.15, plan approval shall automatically lapse if the applicant/developer fails to complete construction of all ways and installation of municipal services in a subdivision within three (3) years of the date of approval.

8. The Board, its officers, and agents may enter upon any lands and there make examinations and surveys or to place and maintain monuments and marks as far as they deem necessary in carrying out the subdivision control law, pursuant to Section 5.16.

9. The developer shall provide the Planning Office and Department of Public Services with both hard copies and digital copies (AutoCAD and .pdf) of As-Built drawings upon completion of the project. Shop drawings shall be submitted to the Department of Public Services at least two weeks prior to construction to allow for proper departmental review.

10. Approval by the Planning Board of this Plan shall not be treated as, nor deemed to be, approval by the Board of Health for a permit for the construction and use on any lot. No building or structure shall be placed on any lot without the consent of the Board of Health, if required.

11. There shall be no construction other than that shown on approved plans or additions to any structures or any new use of a structure or land in the subdivision unless the Planning Board shall have reviewed and approved such change.

12. Developer shall take reasonable care not to disturb surrounding properties and property owners during construction. Construction work shall be limited to the hours between 7 a.m. and 6 p.m., unless a specific waiver is requested. The Planning Board and the City Marshal shall approve such waiver.

13. The installation of all drainage and water service and utilities shall meet all requirements of the Department of Public Services. The applicant shall request and obtain proper visual inspection from the Department of Public Services prior to backfill of any pipes, gates, catch basins, curbing, and other utility structures.

14. Prior to any construction, the applicant shall provide the Office of Planning & Development with one (1) copy of the entire approved plan set in both AutoCAD and .pdf formats.

15. Prior to any construction, the applicant shall provide to the Office of Planning & Development an estimated Construction Schedule and Contact List for the General Contractor and any emergency contacts during construction.

16. Before any lots are released for building purposes, the necessary drainage (including retention or detention basins) shall be installed, water mains and water services to lot lines shall be installed, rough and finished grading shall be at proper grades and the first or base course of bituminous concrete shall be installed, all to the satisfaction of the Planning Board and to its delegated inspection agent, the Department of Services.

17. Lots shall be released upon deposit of suitable financial security against the completion of the subdivision. Whenever the applicant seeks approval for the issuance of Lot Releases or

whenever the applicants seek to alter the amount of financial security being held by the board, the applicant shall submit a written request to the Office of Planning & Development to initiate the requisite inspectional services.

Specific Conditions:

1. The proposed construction will require regular inspection by the Planning Board's consultant engineer as well as the Department of Public Services (DPS). Such inspections are necessary to ensure that the proposed project is constructed in accordance with the approved plans, to summarize and estimate the cost of remaining work, and to immediately address any issues which may arise during the construction of the project. The cost of such review and inspections shall be borne by the applicant. To cover the cost of these services the applicant shall replenish and maintain a Project Review Fee of $2,500. Such funds shall be held by the Planning Board in an escrow account. Whenever notified that the funds in said escrow account have depleted to less than twenty-five (25) percent of the initial Project Review Fee, the applicant shall immediately thereupon deposit sufficient funds to return the account to the initial balance. The balance of said peer review account shall be replenished to the initial Project Review Fee prior to any construction on site. Upon completion of the project, any remaining funds shall be returned to the applicant.
2. The applicant shall grant to the Newburyport Department of Public Services an easement over Donahue Court for the purposes of accessing the utilities in emergency situations.

DATE OF FILING OF DECISION

Filed with the Newburyport City Clerk on 5/26/2015 and sent registered mail to the applicant.

SIGNATURE OF THE BOARD

Jim McCarthy, Chair, Newburyport Planning Board

5/26/2015
Date

NOTICE OF APPELLATE RIGHTS

Appeals shall be made pursuant to M.G.L. Chapter 41 Section 81BB and filed within twenty (20) days after the date of filing this decision in the Office of City Clerk.

CITY CLERK CERTIFICATION

I, Richard B. Jones, City Clerk of the City of Newburyport, Massachusetts, hereby certify that this Definitive Subdivision Plan approval has been received and recorded at this office and no appeal was received during the twenty (20) days after such receipt and recording of such notice.

Richard B. Jones — MAY 04 2016

City Clerk — Date


EXHIBIT
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SITE PLANS

APPROVED
Date 11-12-16
BUILDING DEPT.
CITY OF NEWBURYPORT
James Bone
Local Inspector

55/453 (10 pls)

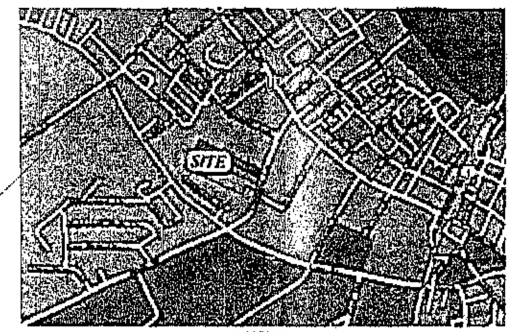
PLAN BOOK 453 PLAN 55
Issued May 4, 2016 with Permit
13 North Adams LLC
Book 34898 p.268
(10 pls)

RESIDENTIAL DEVELOPMENT
DEFINITIVE SUBDIVISION
DONAHUE COURT
(26 TOPPANS LANE-LOT4)

NEWBURYPORT, MASSACHUSETTS
PREPARED FOR:
13 NORTH ADAMS LLC
9 PASTURE ROAD
BEDFORD, NH

LEGEND OF SYMBOLS & ABBREVIATIONS

OWNER REFERENCES
OWNER: 13 NORTH ADAMS LLC
ASSESSORS MAP 36, PARCEL 40



LOCUS PLAN
SCALE: 1"=1000'±

ZONING MATRIX (RESIDENCE 2)

SHEET INDEX

SHEET No.	DESCRIPTION
T1	COVER SHEET
S1	DEFINITIVE SUBDIVISION PLAN OF LAND
E1	EXISTING CONDITIONS PLAN OF LAND
C1	DEFINITIVE SUBDIVISION SITE LAYOUT PLAN
C2	DEFINITIVE SUBDIVISION GRADING & DRAINAGE PLAN
C3	DEFINITIVE SUBDIVISION SITE UTILITIES PLAN
C4	DEFINITIVE SUBDIVISION ROADWAY & UTILITIES PROFILE
D1	DEFINITIVE SUBDIVISION ROADWAY AND GENERAL CONSTRUCTION DETAILS
D2	DEFINITIVE SUBDIVISION DRAINAGE & UTILITY DETAILS
D3	DEFINITIVE SUBDIVISION EROSION CONTROL NOTES & DETAILS

ROADWAY CONSTRUCTION WAIVERS

6.7.3 TOPOGRAPHY AND LOCATION: PROHIBITION OF PROPOSED STREETS WITHIN 300' OF AN EXISTING STREET. PROPOSED STREET IS 130' FROM SUMMIT STREET.

6.8.2 MINIMUM PAVEMENT WIDTH OF 20' REQUIRED. 18' IS PROPOSED ONLY AT THE END OF THE HAMMERHEAD TURN-AROUND. 20' PAVEMENT WIDTH IS MAINTAINED ALONG MAIN TRAVEL WAY.

6.8.2 MINIMUM CURB RADIUS OF 25 FEET AT INTERSECTION. 15 FEET IS PROPOSED AT INTERSECTION WITH TOPPANS LANE.

6.8 CURBING: 6" VERTICAL GRANITE REQUIRED. NO CURBING IS PROPOSED.

6.11.1 SIDEWALKS: SIDEWALK REQUIRED ON ONE SIDE OF ROAD. NO SIDEWALKS PROPOSED.

FIGURE 1: PROVIDE A CROWNED CENTERLINE WITH 2% CROSS SLOPE. A SUPERELEVATED ROADWAY IS PROPOSED WITH 2% CROSS SLOPE TO FACILITATE LOW IMPACT DRAINAGE DESIGN.

PRIVATE MAINTENANCE NOTE: THE ROADWAY, UTILITIES AND DRAINAGE FACILITIES TO BE PRIVATELY MAINTAINED IN ACCORDANCE WITH THE HOMEOWNERS ASSOCIATION AGREEMENT AND STORMWATER OPERATION AND MAINTENANCE MANUAL ON RECORD WITH THE SOUTHERN ESSEX REGISTRY OF DEEDS.

STARTING BENCHMARK
TOP BOLT OF FRONT FLANGE - FIRE HYDRANT IN TOPPANS LANE.

WATER DISTRICT
THE SUBJECT PROPERTY RESIDES IN THE CITY OF NEWBURYPORT WATER DISTRICT.

"I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS."

EVERETT CHANDLER, PLS — MAY 29, 2015 DATE

STEPHEN B. SAWYER PE — 05.29.2015 DATE

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

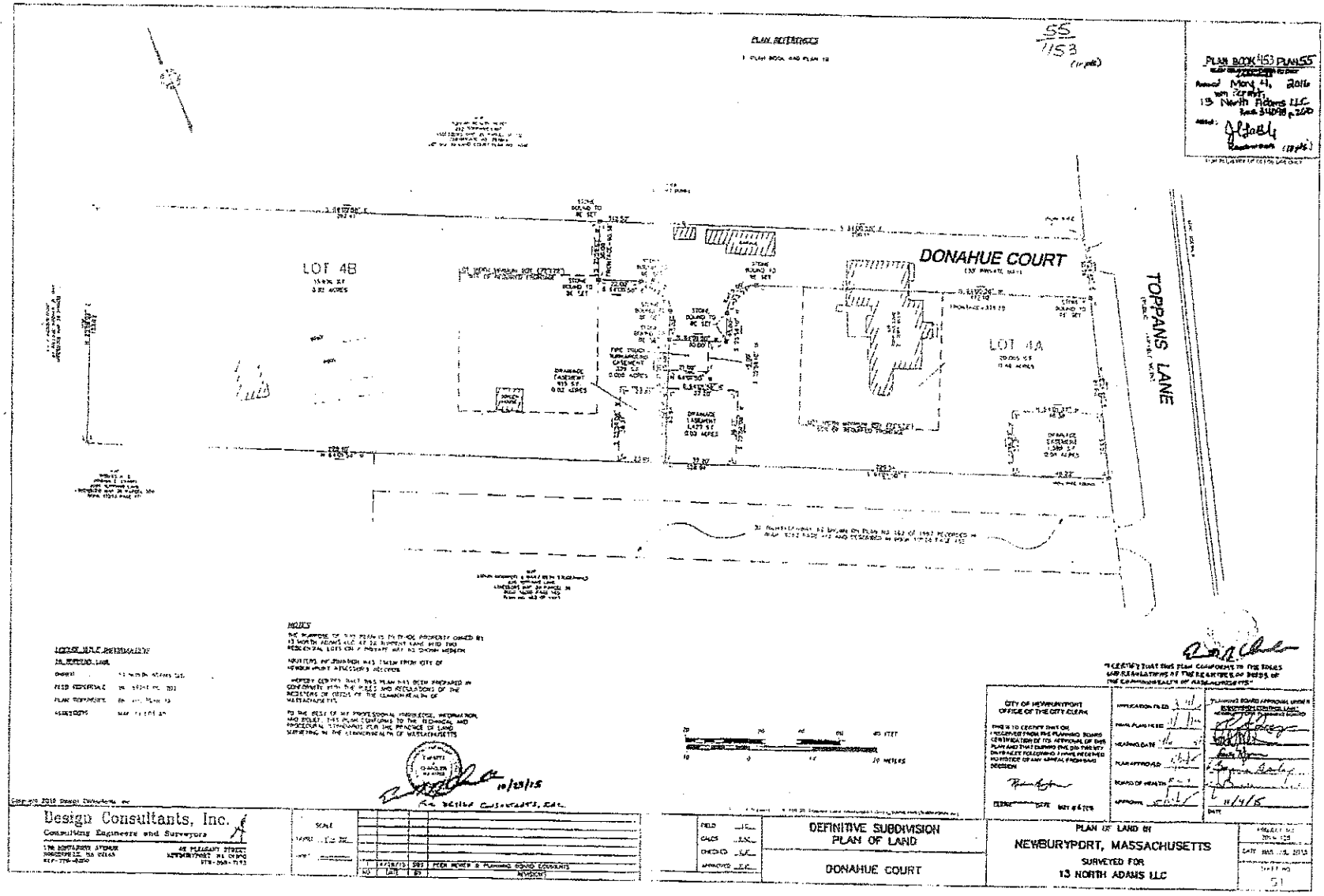
CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

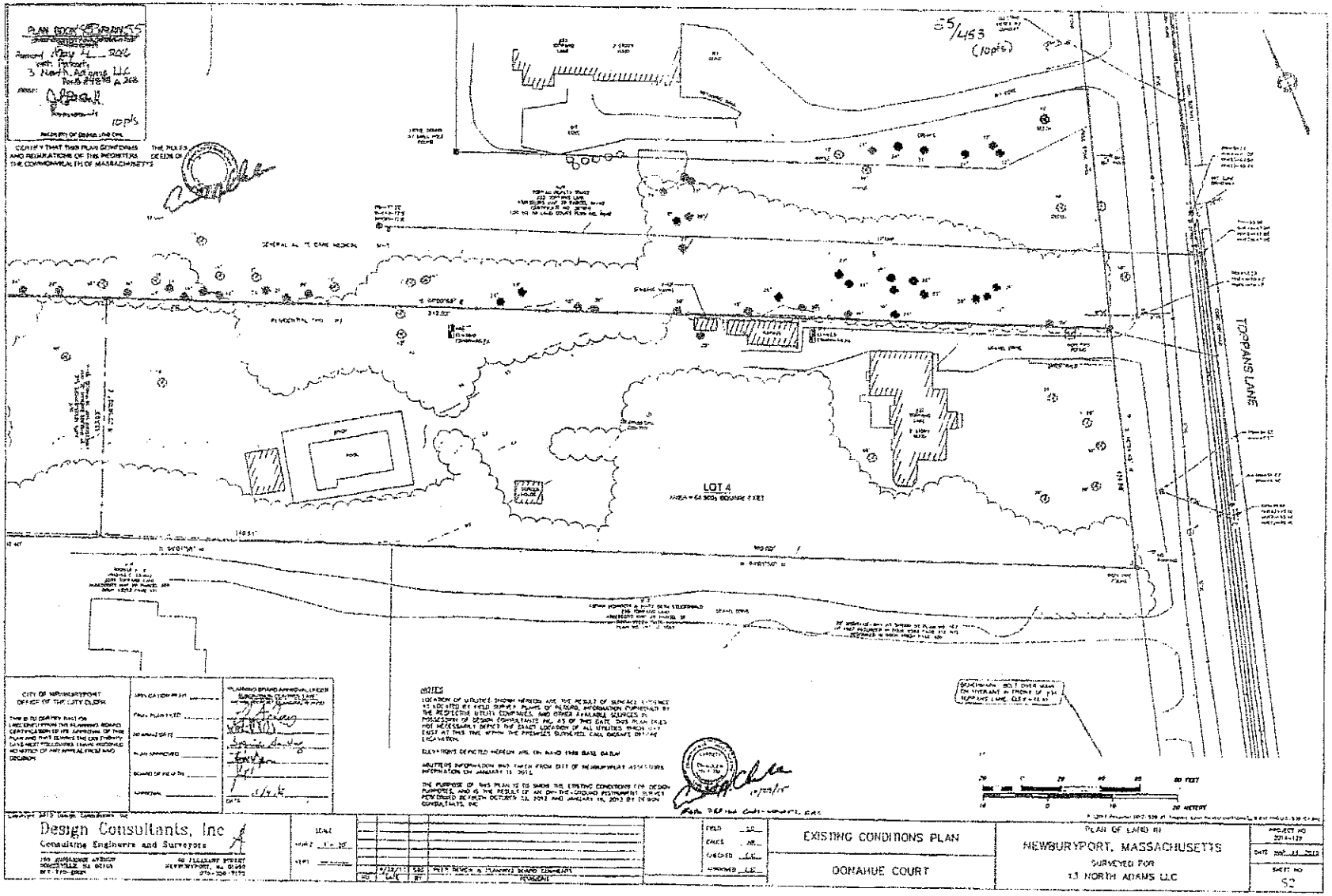
PLANNING BOARD APPROVAL UNDER SUBDIVISION CONTROL LAW
NEWBURYPORT PLANNING BOARD

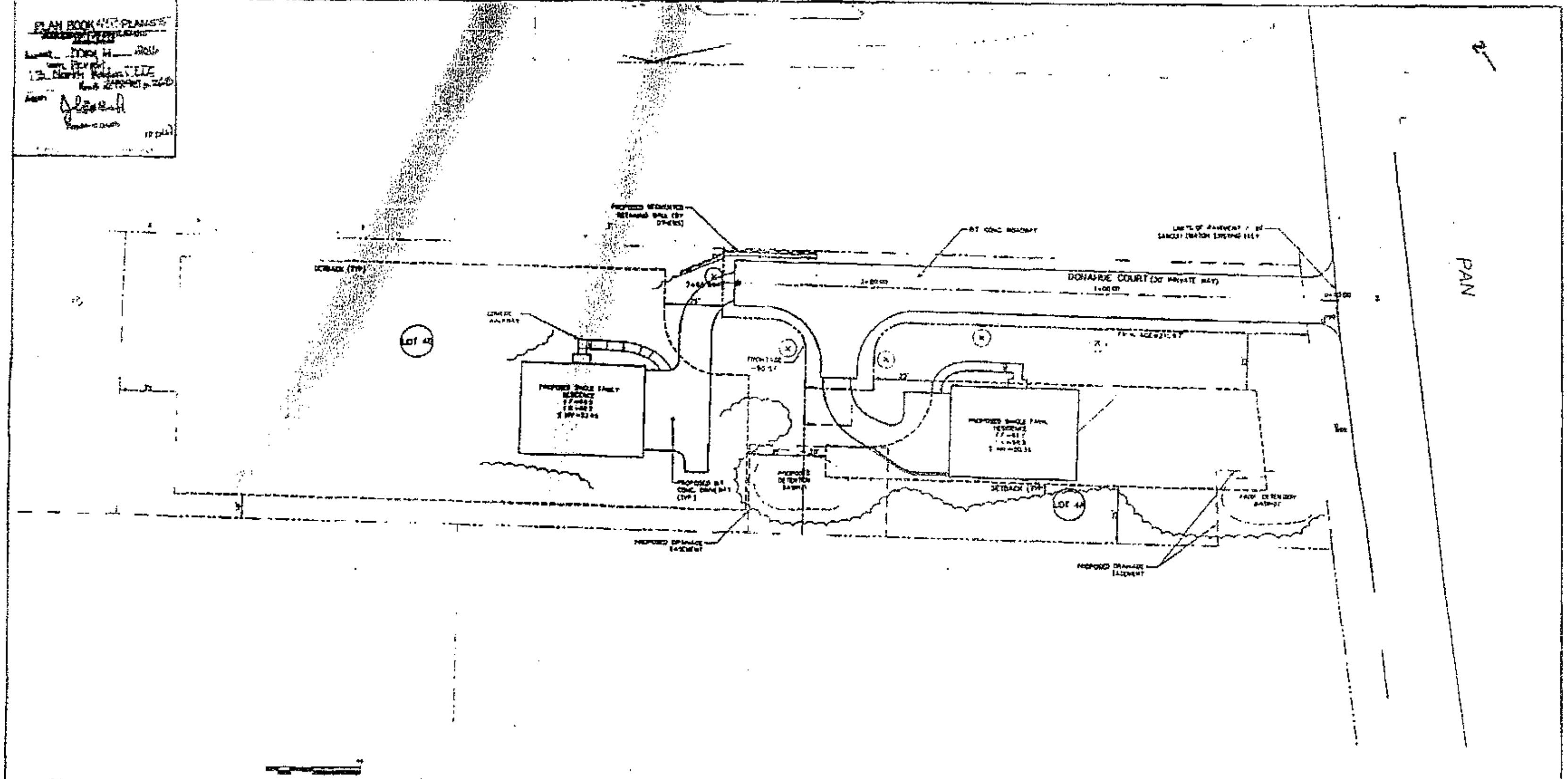
Copyright 2015 Design Consultants, Inc.

Design Consultants, Inc.
Consulting Engineers and Surveyors

TITLE SHEET	PLAN OF LAND IN NEWBURYPORT, MASSACHUSETTS PREPARED FOR 13 NORTH ADAMS LLC	SHEET T1
DONAHUE COURT		


55
1153
PLAN BOOK 453 PLAN 55
Recd May 4, 2016
with Deed:
13 North Adams LLC
Book 34098 p.200
DONAHUE COURT
TOPPANS LANE
LOT 4B
LOT 4A
NOTES
I CERTIFY THAT THIS PLAN COMPLIES TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS
CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK
Design Consultants, Inc.
Consulting Engineers and Surveyors
DEFINITIVE SUBDIVISION
PLAN OF LAND
DONAHUE COURT
PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
SURVEYED FOR
13 NORTH ADAMS LLC
SCALE
DATE MAY 04, 2016
SHEET NO
51


LOT 4
TOPPANS LANE
NOTES
DESIGN CONSULTANTS, INC.
EXISTING CONDITIONS PLAN
DONAHUE COURT
NEWBURYPORT, MASSACHUSETTS
SURVEYED FOR
13 NORTH ADAMS LLC
SHEET NO
S2



CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

APPLICATION FILED
FINAL PLAN FILED
HEARING DATE
PLAN APPROVED
BOARD DECISION
APPROVED

PLANNING BOARD APPROVAL UNDER SUBDIVISION CONTROL LAW

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

Design Consultants Inc
Consulting Engineers and Surveyors

SCALE:
HORZ. 1"=20'
VERT. ___

NO	DATE	BY	REVISIONS
1	4/28/15	SRC	PEER REVIEW & PLANNING BOARD COMMENTS

DESIGN: SRC
DRAFTING: SSK
CHECKED: DG
APPROVED: SRC

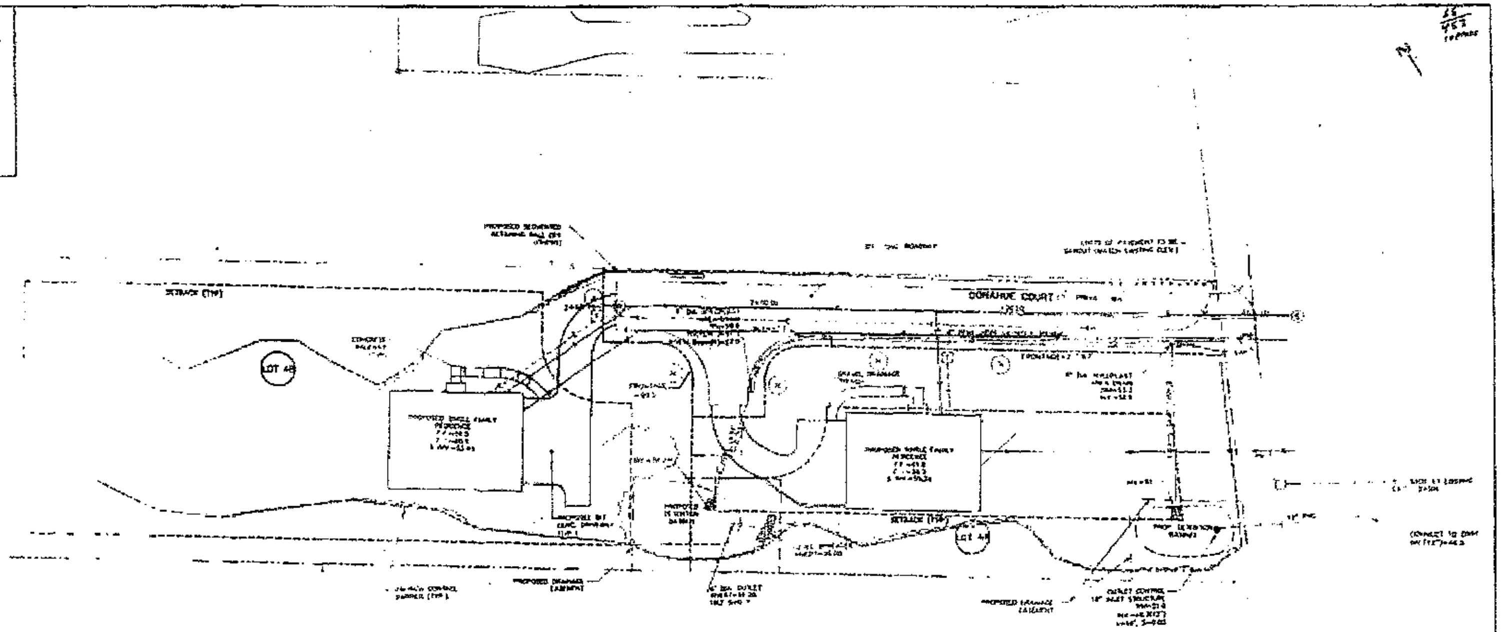
DEFINITIVE SUBDIVISION
SITE LAYOUT PLAN

DONAHUE COURT

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

PROJECT NO. 2014-126
DATE: JAN. 30, 2015
SHEET NO.
C1

PLAN BOOK 453 PLAN 55



NOTES
1. NO GRAVEL OR SAND WILL BE REMOVED FROM SITE.
2. NO STUMPS SHALL BE BURNED ON SITE. ALL TREE AND SHRUB STUMPS TO BE REMOVED FROM SITE.
3. NO BUILDING OR STRUCTURE SHALL BE BUILT OR PLACED ON ANY LOT WITHOUT A PERMIT FROM THE HEALTH DEPARTMENT, IF SUCH A PERMIT IS REQUIRED.
4. GUTTERS AND DOWNSPOUTS SHALL BE INSTALLED ON ALL NEW HOUSES AND PIPED TO THE LOCATIONS INDICATED ON THE PLANS.

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

APPLICATION FILED
FINAL PLAN FILED

PLANNING BOARD APPROVAL UNDER SUBDIVISION CONTROL LAW
NEWBURYPORT PLANNING BOARD

DATE 11/4/15

Design Consultants Inc.
Consulting Engineers and Surveyors

SCALE HORIZ. 1"=20'

NO.	DATE	BY	REVISIONS
1	4/29/15	SES	PEER REVIEW & PLANNING BOARD COMMENTS

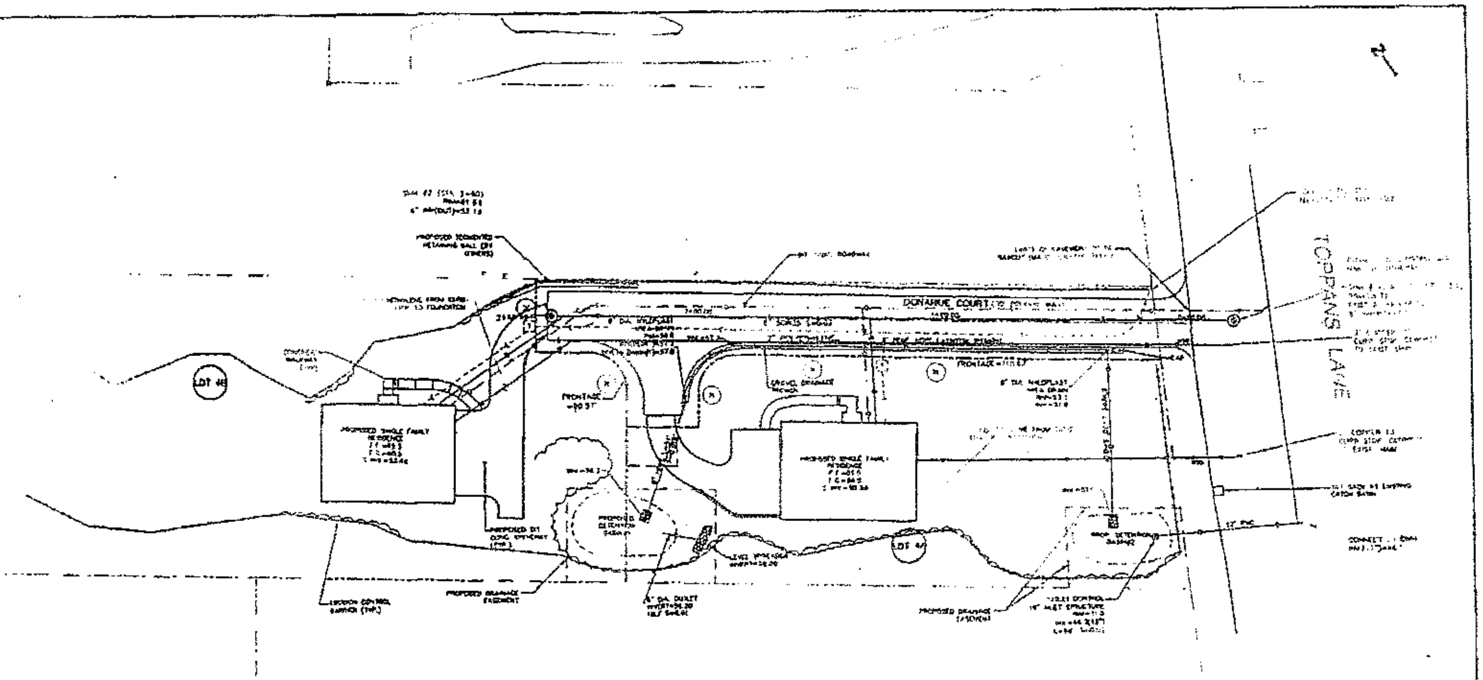
DEFINITIVE SUBDIVISION PLAN
GRADING & DRAINAGE PLAN

DONAHUE COURT

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

SHEET NO. C2

PLAN BOOK 453 PLAN 55



UTILITY NOTES

CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

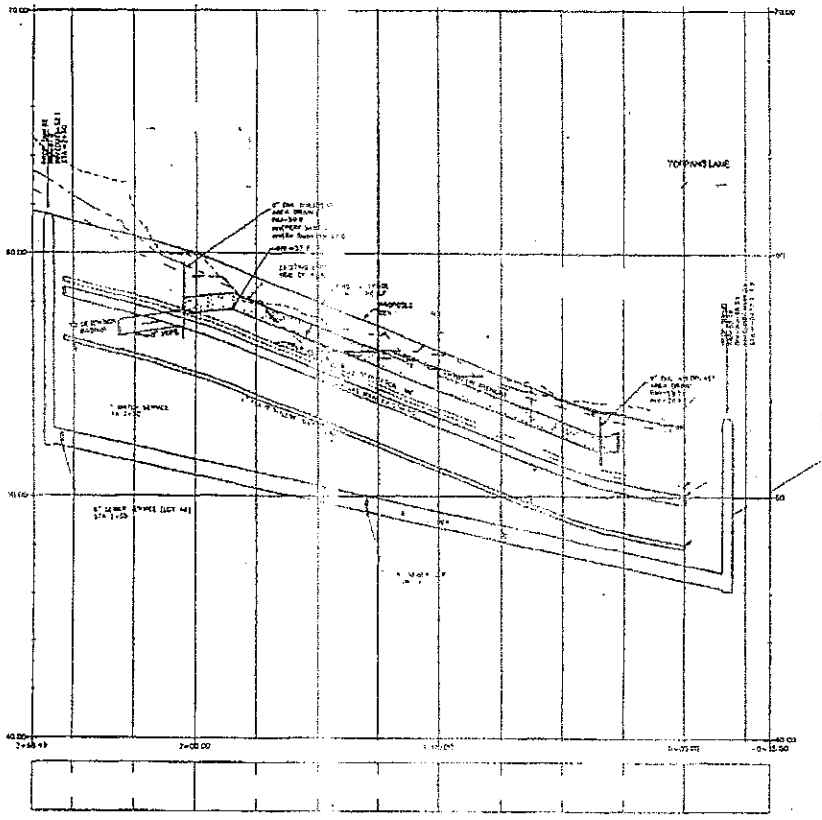
Design Consultants, Inc.
Consulting Engineers and Surveyors

DEFINITIVE SUBDIVISION
UTILITIES PLAN

DONAHUE COURT

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

SHEET NO.
C3



PROPOSED ROADWAY PROFILE

55
453
(18pk)

PLAN BOOK 453 PLAN 55
Recorded May 4 2016
Owner 13 North Adams LLC
Deed 31978 p. 348
(18pk)

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS

CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

THIS IS TO CERTIFY THAT NO APPEAL HAS BEEN RECEIVED FROM THE PLANNING BOARD GRANTING APPROVAL OF THE PLAN AND THAT DURING THE 20 DAYS NEXT FOLLOWING SAID DECISION, I HAVE RECEIVED NO NOTICE OF ANY APPEAL FROM SAID DECISION

CLERK DATE

APPLICATION FILED
ENDORSEMENT DATE
HEARING DATE
PLAN APPROVED
NOTICE OF DECISION
APPROVAL

PLANNING BOARD APPROVAL UNDER SUBDIVISION CONTROL LAW NOT REQUIRED

5/4/16
DATE

Design Consultants, Inc.
Consulting Engineers and Surveyors
100 NEWBURY STREET, SUITE 101
DANVERS, MA 01923
978-774-0786
99 PLEASANT STREET
NEWBURYPORT, MA 01950
978-358-7570

SCALE:
HORZ 1"=30'
VERT

NO	DATE	BY	
1	4/28/16	SDH	FILE REVIEW & PLANNING BOARD COMMENTS

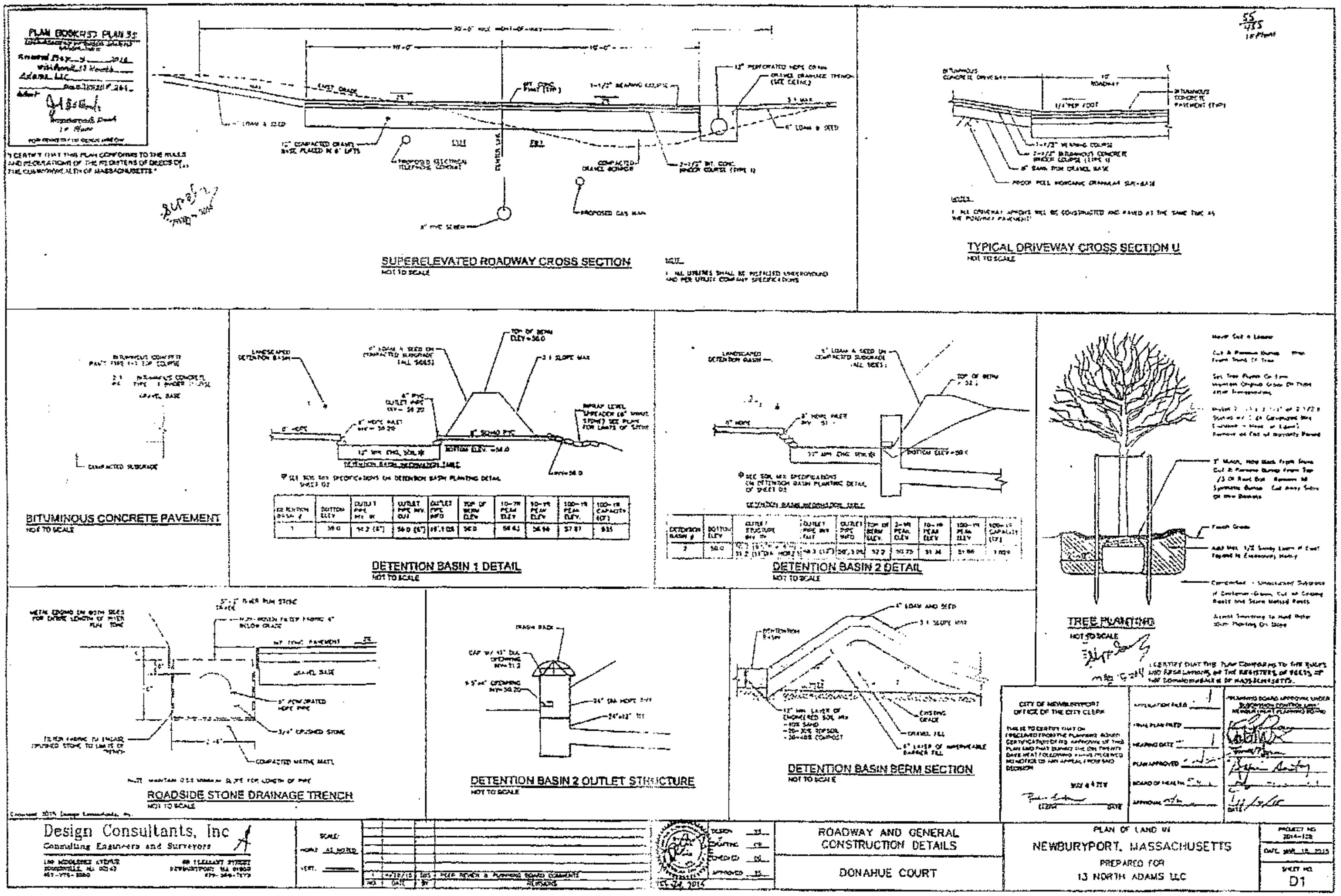
DESIGN SDH
DRAFTING SDH
CHECKED JHC
APPROVED JHC

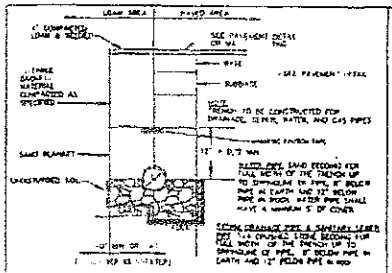
DEFINITIVE SUBDIVISION
ROADWAY PROFILE

DONAHUE COURT

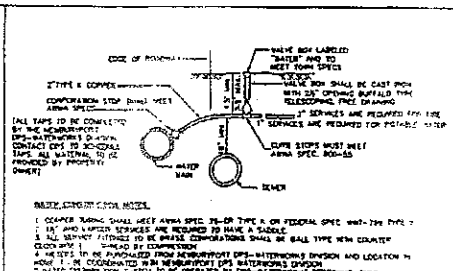
PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

DATE: SEPTEMBER 28, 2015
SHEET NO.
C4


SUPERELEVATED ROADWAY CROSS SECTION
NOT TO SCALE
TYPICAL DRIVEWAY CROSS SECTION U
NOT TO SCALE
BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE
DETENTION BASIN 1 DETAIL
NOT TO SCALE
DETENTION BASIN 2 DETAIL
NOT TO SCALE
TREE PLANTING
NOT TO SCALE
ROADSIDE STONE DRAINAGE TRENCH
NOT TO SCALE
DETENTION BASIN 2 OUTLET STRUCTURE
NOT TO SCALE
DETENTION BASIN BERM SECTION
NOT TO SCALE
Design Consultants, Inc
Consulting Engineers and Surveyors
ROADWAY AND GENERAL CONSTRUCTION DETAILS
DONAHUE COURT
PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC
D1



UTILITY TRENCH
NOT TO SCALE



TYPICAL SERVICE CONNECTION
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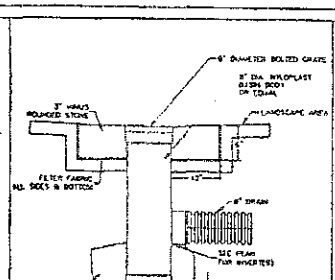
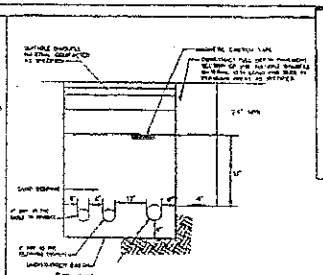
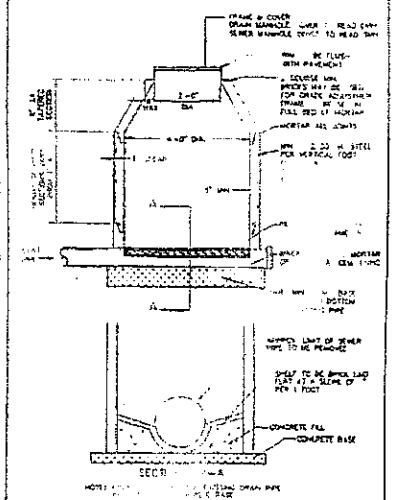


NYLOPLAST AREA DRAIN
NOT TO SCALE

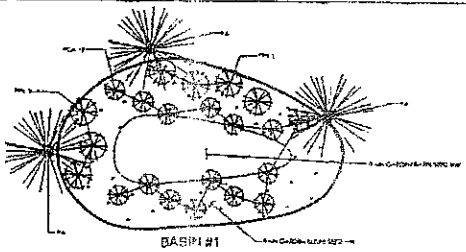


TYPICAL ELECTRIC & COMMUNICATION TRENCH
NOT TO SCALE

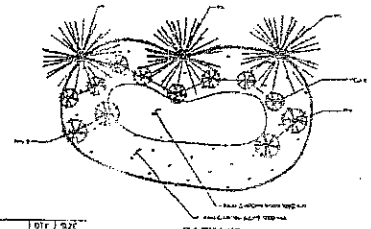
PLAN BOOK 453 PLAN 55



PRECAST CONCRETE DRAIN MANHOLE OVER EXISTING PIPE
NOT TO SCALE



BASIN #1



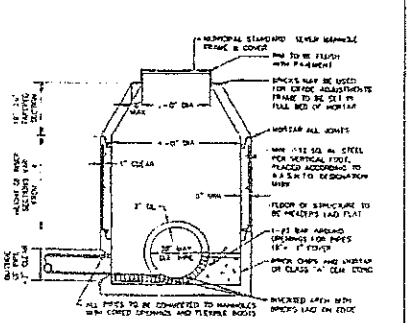
BASIN #2

PLANTING SCHEDULE

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY	SIZE
	ILEX OPACA	AMERICAN HOLLY	4	5-6' HT

SYMBOL	BOTANICAL NAME	COMMON NAME	QTY	SIZE
	[illegible]	[illegible]	2.5	1" MINIMUM
	[illegible]	[illegible]	2.5	1" MINIMUM
	[illegible]	[illegible]	10	1" MINIMUM

DETENTION BASIN PLANTING DETAIL
NOT TO SCALE



PRECAST CONCRETE SEWER MANHOLE
NOT TO SCALE

CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

APPLICATION FILED
FINAL PLAN FILED
HEARING DATE
PLAN APPROVED
BOARD OF HEALTH
ENDORSED

PLANNING BOARD ENDORSEMENT UNDER PROVISIONS OF SUBDIVISION CONTROL LAW

Design Consultants Inc
Consulting Engineers and Surveyors

NO	DATE	BY	REVISIONS
4	12/1	SPS	PETER PEYNCE & PLANNING BOARD COMMENTS

DESIGN
DRAFTING
CHECKED
APPROVED

DRAINAGE AND UTILITY DETAILS

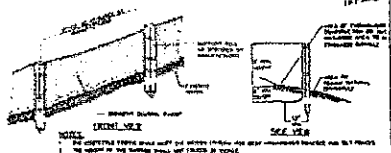
DONAHUE COURT

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

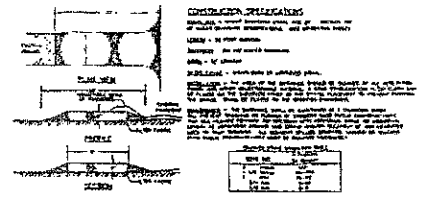
PROJECT NO 2014-139

DATE

SHEET NO D2



SILT FENCE
NOT TO SCALE



STABILIZED CONSTRUCTION ENTRANCE
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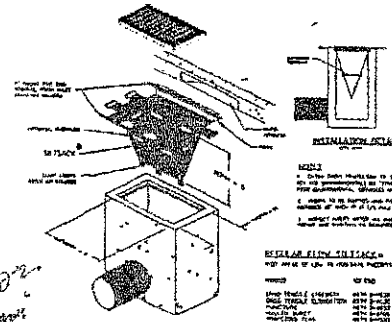


SILT SACK
NOT TO SCALE

PLAN BOOKMARKS PLANSET

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS

CITY OF NEWBURYPORT
OFFICE OF THE CITY CLERK

PLANNING BOARD APPROVAL UNDER SUBDIVISION CONTROL LAW

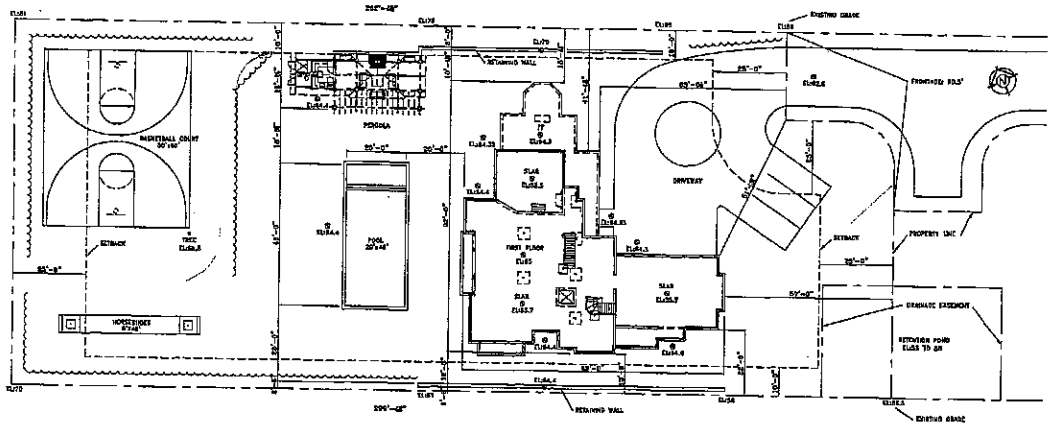
Design Consultants Inc
Consulting Engineers and Surveyors

EROSION CONTROL NOTES & DETAILS

DONAHUE COURT

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

SHEET NO 03



SITE PLAN
SCALE: 1"=20'-0"

0 4' 8' 12' 16' 20' 24' 28' 32' 36' 40'

9 NOVEMBER 2016

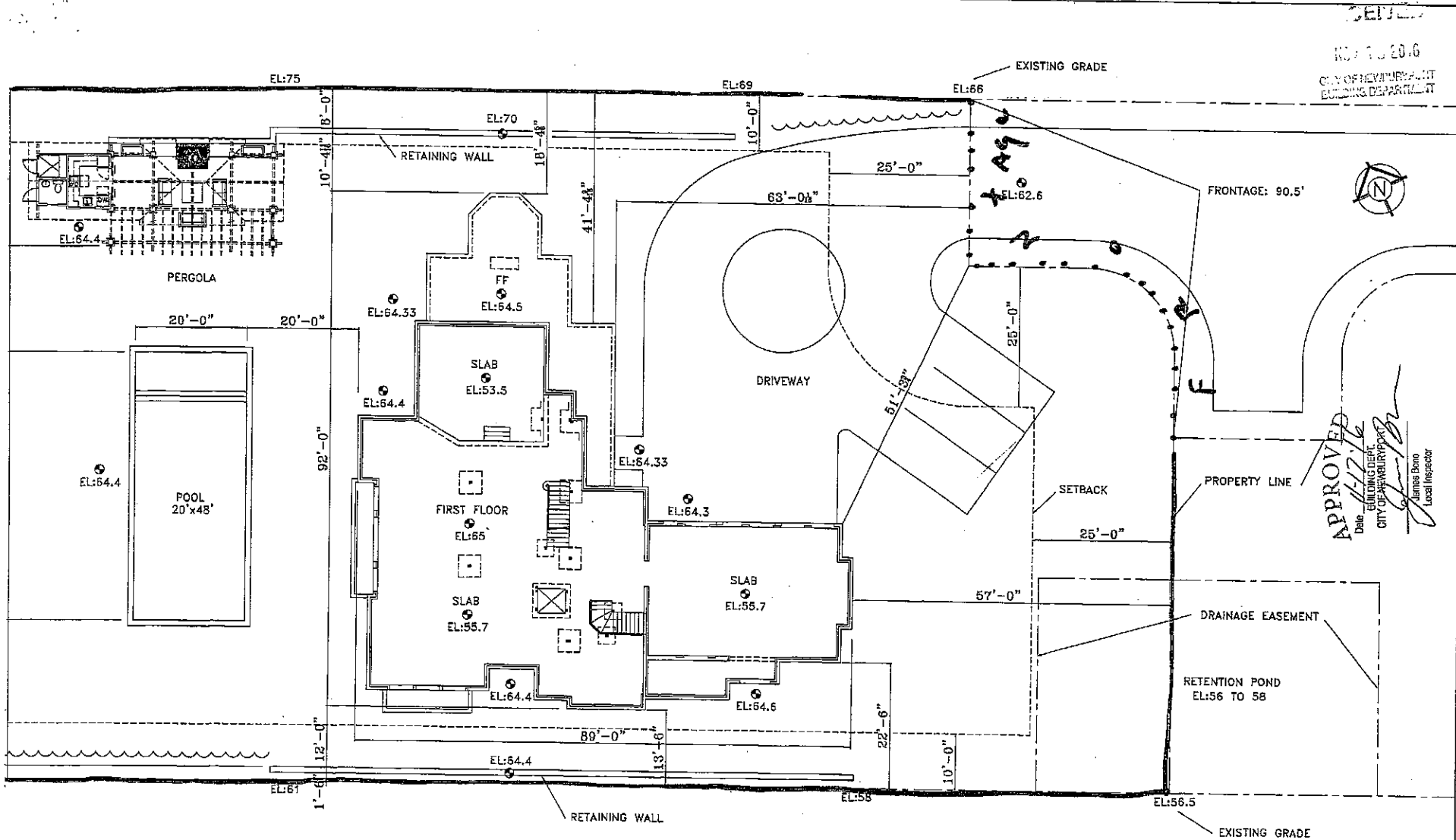
PROPERTY LINES, SETBACKS, ELEVATIONS, DRAINAGE EASEMENT AND PROPOSED ROAD TAKEN FROM 'RESIDENTIAL DEVELOPMENT DEFINITIVE SUBDIVISION DONAHUE LANE'

← Topo as 1 ave →

ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

McCONNELL RESIDENCE
LOT 5 WILSHIRE ROAD, NEWBURY, MA 01951

JOB NUMBER 1116.09



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

0 4' 8' 12' 15' 20' 24' 28' 32' 36' 40'

9 NOVEMBER 2016

PROPERTY LINES, SETBACKS, ELEVATIONS, DRAINAGE EASEMENT AND PROPOSED ROAD TAKEN FROM 'RESIDENTIAL DEVELOPMENT DEFINITIVE SUBDIVISION DONAHUE LANE'

ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

McCONNELL RESIDENCE
LOT 5 WILSHIRE ROAD, NEWBURY, MA 01951

JOB NUMBER 1615

File Copy

eral Notes:
rdinate these General Notes with General Notes on all drawings. In cases of discrepancy, General Notes on this sheet govern for Structural issues.
eral Notes are part of this design document. The General Contractor (GC) and Owner shall review and coordinate appropriately.
thods and Means of Construction" is the responsibility of the General Contractor (GC). Temporary shoring, if required, is the responsibility of the GC.
governing building code for this design is the IRC 2009 as amended by the Massachusetts Residential State Building Code 8th Edition [MSBC] Addendum
General Contractor (GC) shall:
rify in Field (V.I.F) all dimensions and conditions, underground utilities, "DIG-SAFE" coordination, etc.
rform all work per the governing building code above and Local Codes
ordinate Structural Drawings with all drawing, all shop drawings if applicable, all trades, etc.
Discrepancies are encountered (In Dimensional or Physical Conditions) notify the Engineer Prior to proceeding with that Portion of the work
General Contractor shall provide a continuous load path from upper level posts/columns/framing to the foundation. If platform framing is utilized, block as required between floor levels, etc. Do not use "Platform Framing" at Great Rooms with no ceiling at wall plates, that is, open to above,
use full height continuous wall studs
s, Owner and General Contractor to Verify in Field existing soil strata is suitable for shallow spread footings ans shallow strip footings capable to support 4,000 psf soil bearing pressure. If concerns hire and coordinate with a Geo-technical Engineer

ber/Wood:
ardware, fasteners, connectors, nails, screws, etc. used with Pressure Treated Lumber (P.T.) shall be, as recommended by the Pressure Treated Wood Industry for use with treated wood:
ot-dipped galvanized (HDG) or Stainless Steel Types 304 or 316 (SS).
Do not mix and match SS and with HDG fasteners, they are considered dis-similar materials
Electroplated / electro galvanized and mechanically galvanized coatings should not be considered to be hot-dip galvanized (HDG) unless mechanically galvanized per ASTM B695, Class 55 or greater. Note however
DG or SS is preferred
raming lumber to be minimum, Unless Noted Otherwise (U.N.O.) on drawings:
awn Lumber, [SPF] Spruce Pine Fir No. 2, E = 1,400,000 psi
Pressure Treated Lumber [PT] Southern Pine No. 2, E = 1,600,000 psi
VL's (Laminated Veneer Lumber),E= 2,000,000 psi; Fb=3,100 psi; Fv=285 psi
Parallam (Beams) and PSL (Posts) [Parallel Strand Lumber] or [Versa Lam by Boise Cascade]), :
i.Wolmanized (pressure treated):
1. PSL Columns/Posts (PSL [Parallel Strand Lumber]):
a. E = 1,566,000 psi; Fb = 1,728 psi; Fc⊥ = 1,450 psi
2. Beams (Parallams, Service Level 2 Wolmanized):w
a. E = 1,740,000 psi; Fb = 2,090 psi; Fv = 175 psi
r Sheathing U.N.O minimum roof sheathing 3/4" [23/32] OSB sheathing nailed with 8d [penny] at 6" o.c. perimeter of sheet and 12" o.c. field/intermediate
l Sheathing U.N.O. minimum roof sheathing 1/2" [15/32] OSB sheathing nailed with 8d [penny] at 6" o.c. perimeter of sheet and 12" o.c. field intermediate deck:
ks
i. All lumber pressure treated Southern Pine No. 2; All connections galvanized or stainless steel, provide positive connection at all framing members example joist hangers or Simpson H2.5A or
ii. Handrails by Owner and Contractor
iii. The General Contractors shall provide a continuous load path from upper level posts/columns/ framing to the foundation. If platform framing is utilized, block as required

ncrete:
Concrete, [Foundation Walls and Footings, Slabs, Piers, Big Foots, Etc.] Minimum 4,000 psi f'c at 28 days
reinforcing steel shall be deformed bars conforming to ASTM A615 Grade 60, fy = 60,000 psi
einforcing Continuity:
l Horizontal Reinforcing Bars in the foundation walls and footings Shall be Continuous At Corners/Skewed Angles/Terminal Ends with Matching Corner Dowels Lap splice length 50 bar diameters U. N. O., Bend/Hook Down or Up at Terminal Ends
4" thick Minimum Concrete 4,000 psi f 'c at 28 days with 1.5 # / cubic yard fiber mesh in mix over 6 mil Polyeth. Vapor Barrier, Typical
provide Control Joints 25 ft. o.c. and at re-entrant corners within 8 hours of pour
hor Bolt Placement U.N.O. on Plans: 1' off corners, 4' o.c. Remainder :1/2" Diameter 12" long 8"embedment 4" projection with nut and washer at top and bottom
NOT BACKFILL AGAINST FOUNDATION WALLS UNTIL THE FIRST FLOOR FRAMING IS IN PLACE WITH SHEATHING AND ANCHOR BOLTS AND BASE SLAB IS IN PLACE OR UNTIL WALLS ARE BRACED TO WITHSTAND THE
ESSURES OF BACKFILLING OPERATIONS.

undations / Soil Bearing Additional Notes:
wner / Contractor shall Verify in Field Soils capable to support 4,000 psf soil bearing pressure on shallow spread foundations on free draining soil
oncerns suggest a Geo-technical Engineer be Consulted
pped foundations shall be one vertical to three horizontal with additional reinforcing see detail
undations shall bear on all Soil or all Ledge and not a mix of each. If Ledge encountered remove for minimum one foot of compacted granular fill above ledge in 6" lifts
tionally, Remove soil down to ledge, thus all ledge bearing and backfill with 100 psi Lean Concrete mix above Ledge
acing footings / foundation walls partially on Ledge and partially on Soil will cause cracking and is not recommended
esign Criteria :
Building Code IRC 2009 with Massachusetts Residential Code 8th Edition Addendum
Wind 100 mph Exposure C
Pg 50 psf Ground Snow,
Soil Conditions assumed free draining soil capable to support 4,000 psf shallow foundation system, Contractor & Owner to Verify in Field, if there
are concerns consult with a Geo-technical Engineer for direction & Contact Engineering to notify

ructural Steel (U.N.O. on drawings):
is recommended the General Contractor (GC) and steel supplier shall field verify dimensions and conditions after foundations, walls, etc, are placed but before steel is cut to length, punched, coped, drilled, etc.
at is, steel supplier and steel detailing professional to verify in field site dimensions, conditions, etc. Field dimensional changes may affect beam fit ups/bolting alignments, etc. Beam details such as over the
framing, side framing, etc. affect fit up and fabrication dimensions.
Steel Shop Drawings submittal for review prior to steel fabrication is recommended
eel materials shall conform to the following (minimum):

Structural W Shapes	ASTM A992	(Fy 50 ksi)	: Plates, Channels, Angles	ASTM A36	(Fy 36 ksi)
Structural Tubing (Tube Steel = TS or HSS)	ASTM A500 Grade C	(Fy 46 ksi)			

:
(steel to steel connections) A325N :: ii. (anchor bolts) (A307 or A36) ::
. (expansion bolts) UNO, @ solid concrete, provide drilled 2 part epoxy resin, Hilti HY-200 : @ CMU walls (hollow block) or into masonry brick walls
with cavities, provide drilled 2 part epoxy resin, Hilti Hit HY-70 with screen tube if into CMU/masonry wall cavities
l shop connections shall be bolted or welded. All field connections shall be bolted to the extent practical unless noted otherwise (U.O.N.) on the design drawings.
ordination of shop drilled holes is required in the webs and/or flanges due to wood framing details, steel to steel clip angles, etc. Coordinate with details and field verify/coordinate.
l structural steel work shall conform to the specifications for the design, fabrication, and erection of structural steel for building of the AISC.

Gallinas Structural ENGINEERING LLC
ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

PROJECT: McCONNELL RESIDENCE
LOT 5 WILSHIRE ROAD
NEWBURY, MA 01951

REV	DATE	DESCRIPTION
0	8.19.16	RELEASED FOR CONSTRUCTION

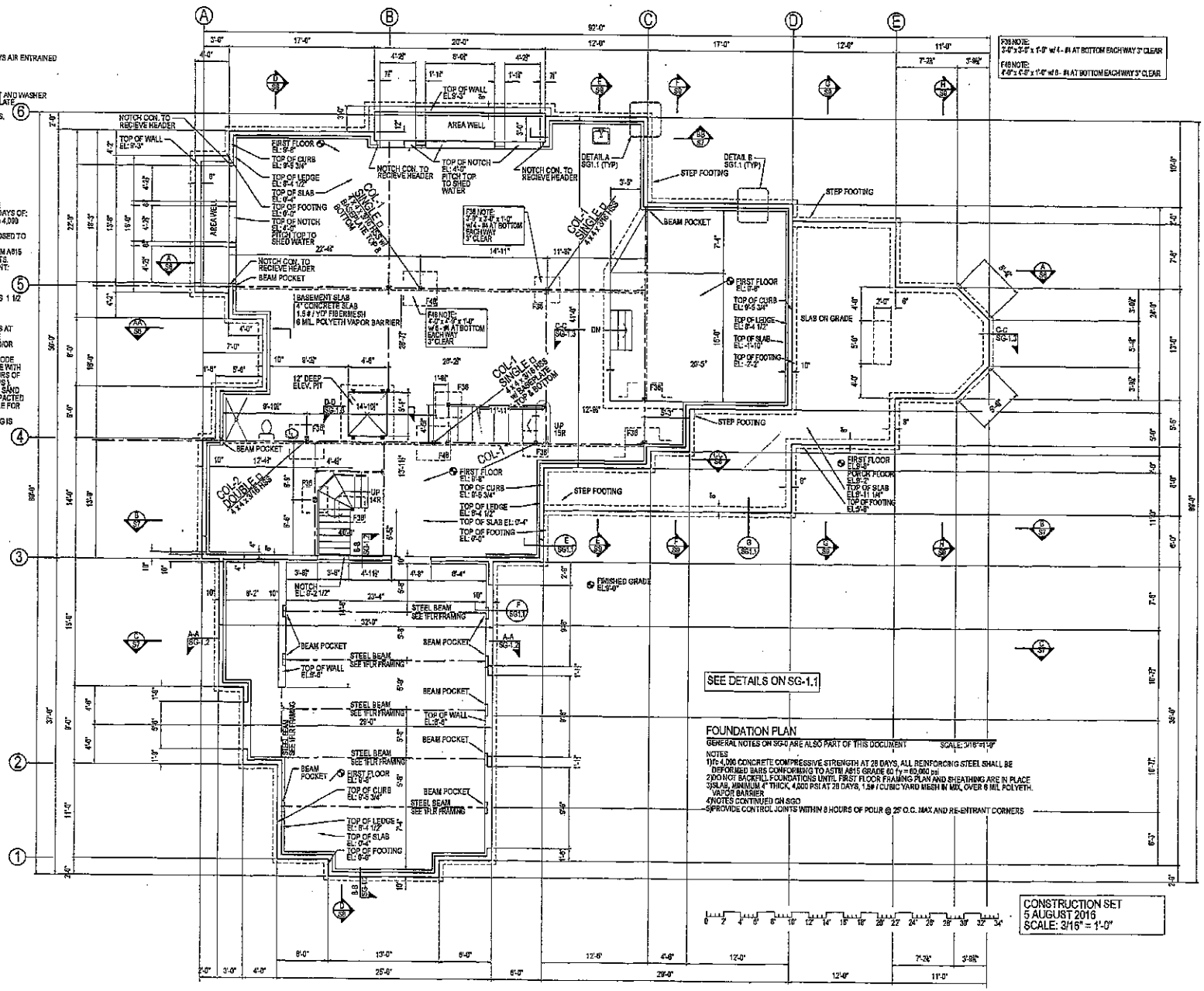
FOUNDATION NOTES

1. THE FOUNDATION CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO POURING CONCRETE.
2. ALL FOOTINGS SHALL BE PLACED ON UNDISTURBED SOIL MINIMUM 4'-0" BELOW GRADE.
3. CONCRETE FOR FOOTINGS, WALLS AND SLABS SHALL BE 4000 PSI @ 28 DAYS AIR ENTRAINED INSTALLED IN STRICT ACCORDANCE WITH ACI STANDARDS.
   CONCRETE SLABS (MIN. 4" THICK) USE 1.5#/CUBIC YARD FIBERMESH IN MIX OVER 6 MIL POLY VAPOR BARRIER
4. ALL FOOTINGS SHALL BE FORMED TO SIZES SHOWN ON THE DRAWINGS.
5. INSTALL 1/2" DIA. X 12" LONG ANCHOR BOLTS W/2" EMBED AND BOTTOM NUT AND WASHER W/2" PROJECTION, MAXIMUM 4'-0" O.C., MIN. 3.5" & MAX. 12" FROM END OF EACH PLATE AND MIN. 2 BOLTS PER PLATE.
6. COORDINATE WALL SLEEVE LOCATIONS FOR ALL UNDERGROUND SERVICES.

FOUNDATION GENERAL NOTES:

1) EXTERIOR FOOTINGS TO BE PLACED MINIMUM 4'-0" BELOW FINISHED GRADE
2) ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF:
   A. WALLS, FOOTINGS, INTERIOR BASEMENT SLABS (NOT GARAGE SLABS) 4,000 PSI
   B. GARAGE SLABS AND PORCHES / DECKS / STEPS / SLABS / WALLS EXPOSED TO WEATHER 4,000 PSI
3) ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60. WELDED WIRE FABRIC (WWF) IF USED SHALL BE FLAT FLAT SHEETS.
4) THE FOLLOWING MINIMUM COVER SHALL BE PROVIDED FOR REINFORCEMENT:
   A. CONCRETE AGAINST THE EARTH 3"
   B. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
      I. #6 OR SMALLER 1 1/2" II. #6 OR LARGER 2"
   C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER, SLABS, OR WALLS 1 1/2
   D. BEAMS AND COLUMN 1 1/2"
5) ALL CONCRETE WORK AND DETAILING SHALL COMPLY WITH THE LATEST SPECIFICATIONS AND RECOMMENDATIONS OF THE ACI.
6) ALL CONTINUOUS REINFORCING BARS SHALL BE LAPPED 59 BAR DIAMETERS AT SPLICES AND AT CORNERS UNLESS OTHERWISE NOTED (U.O.N.). TERMINATE CONTINUOUS BARS AT NON-CONTINUOUS ENDS WITH STANDARD HOOKS AND/OR PROVIDE L-SHAPED DOWELS AT CORNERS.
7) SLABS ON GRADE SHALL HAVE CRACK CONTROL JOINTS AS REQUIRED BY CODE (BUT MINIMUM 25 ON CENTER, AT RE-ENTRANT CORNERS, ETC.) COORDINATE WITH CODE REQUIREMENTS. CONTROL JOINTS SHALL BE PLACED WITHIN 24 HOURS OF SLAB PLACEMENT OR SET INTO SLAB AT TIME OF POUR (EXAMPLE, ZIP-STRIPS).
8) SLABS ON GRADE UNDER LIVING SPACES SHALL BE PLACED OVER 1" CLEAN SAND (FOR DRAINAGE) OVER 6 MIL POLYETHYLENE VAPOR BARRIER OVER 6" COMPACTED GRAVEL OR CRUSHED STONE OVER COMPACTED IN-SITU SUB-BASE SUITABLE FOR BEARING.
9) DO NOT BACKFILL UNTIL AT EXTERIOR WALLS - FIRST FLOOR WOOD FRAMING IS FULLY INSTALLED WITH FLOOR SHEATHING.

HIGHLIGHTED BEAM SCHEDULE
DENOTES: STEEL BEAM
DENOTES: LVL BEAM
DENOTES: 2x_ BEAM



FOUNDATION PLAN

GENERAL NOTES ON SG-0 ARE ALSO PART OF THIS DOCUMENT SCALE: 3/16"=1'-0"

NOTES
1) f'c = 4,000 CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS, ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60 fy = 60,000 psi
2) DO NOT BACKFILL FOUNDATIONS UNTIL FIRST FLOOR FRAMING PLAN AND SHEATHING ARE IN PLACE
3) SLAB, MINIMUM 4" THICK, 4,000 PSI AT 28 DAYS, 1.5# / CUBIC YARD MESH IN MIX, OVER 6 MIL POLYETH. VAPOR BARRIER
4) NOTES CONTINUED ON SG0
5) PROVIDE CONTROL JOINTS WITHIN 8 HOURS OF POUR @ 25' O.C. MAX AND RE-ENTRANT CORNERS

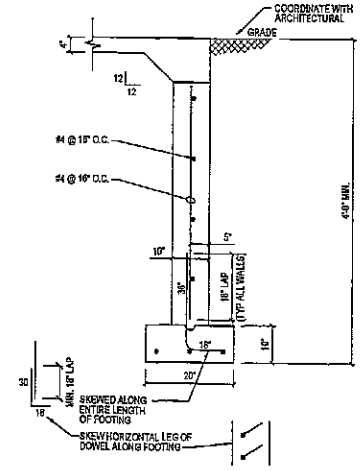
CONSTRUCTION SET
5 AUGUST 2016
SCALE: 3/16" = 1'-0"

Hastings Structural

ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

PROJECT NAME
MACONNELL RESIDENCE
LOT 3 WILSHIRE ROAD
NEWBURY, MA 01951

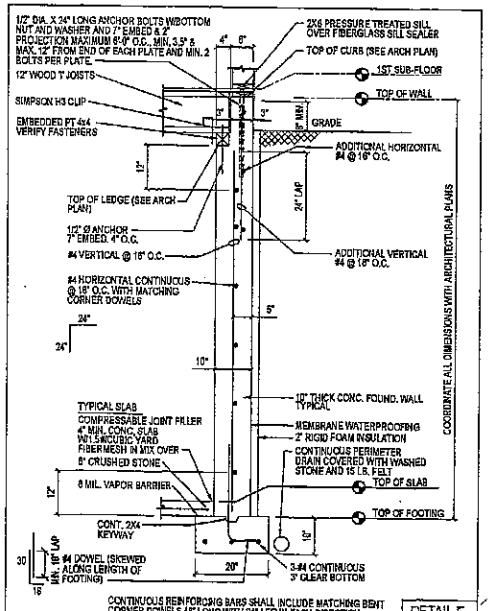
REV	DATE	DESCRIPTION
1	8/5/16	RELEASED FOR CONSTRUCTION



DETAIL G

FOUNDATION SECTION 3

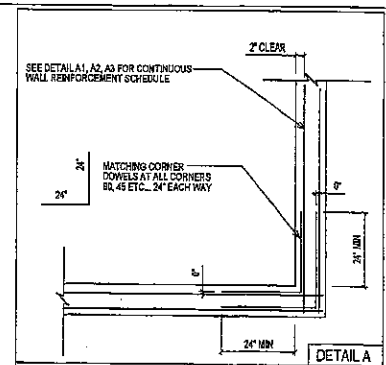
SCALE: 3/4"=1'-0"



DETAIL E

FOUNDATION SECTION 1

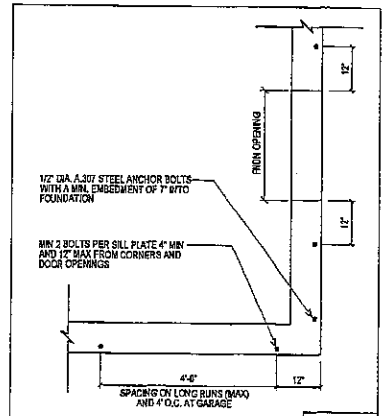
SCALE: 3/4"=1'-0"



DETAIL A

TYPICAL FOUNDATION MATCHING CORNER DOWELS

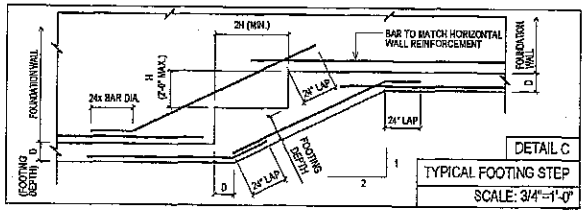
SCALE: 3/4"=1'-0"



DETAIL B

TYPICAL ANCHOR BOLT PLACEMENT

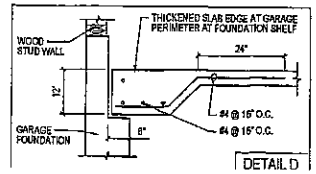
SCALE: 3/4"=1'-0"



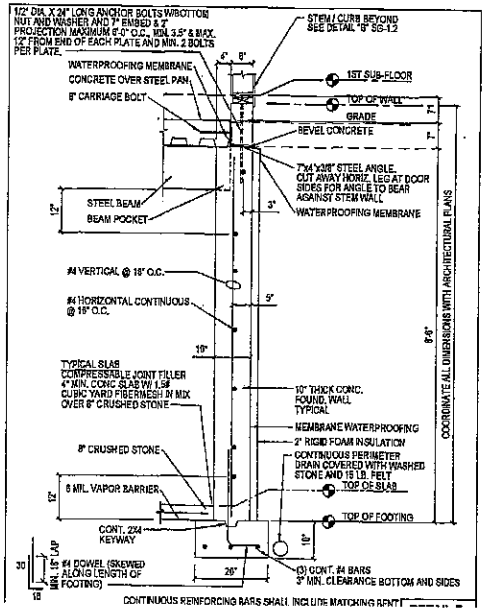
DETAIL C

TYPICAL FOOTING STEP

SCALE: 3/4"=1'-0"



DETAIL D

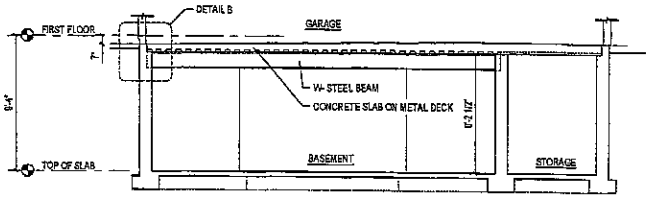


CONSTRUCTION SET
5 AUGUST 2016
SCALE: SEE DRAWING'S

Bellmas Structural
ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #5, AMESBURY, MA 01913 978 388 1551

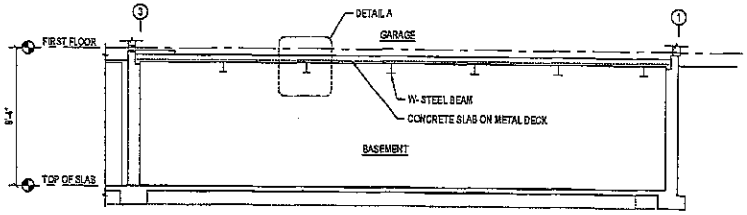
PROJECT/USE
McCONNELL RESIDENCE
LOT 5 WILSHIRE ROAD
NEWBURY, MA 01951

REVISIONS/DESCRIPTION
8/5/16 RELEASED FOR CONSTRUCTION



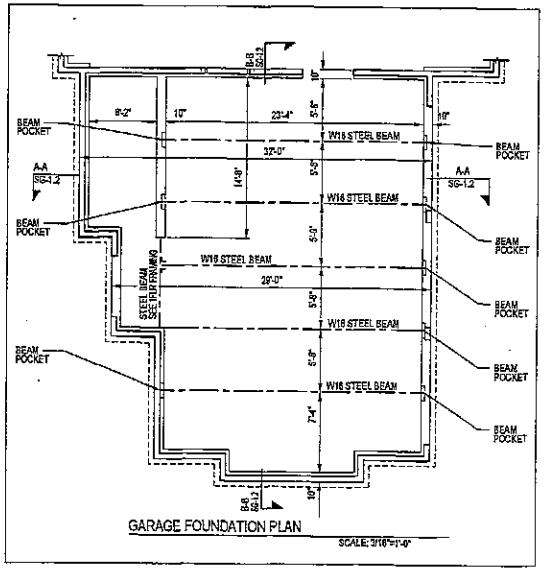
GARAGE FLOOR SECTION A-A

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



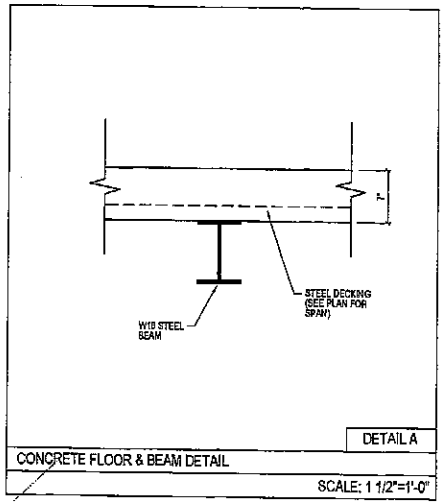
GARAGE FLOOR SECTION B-B

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



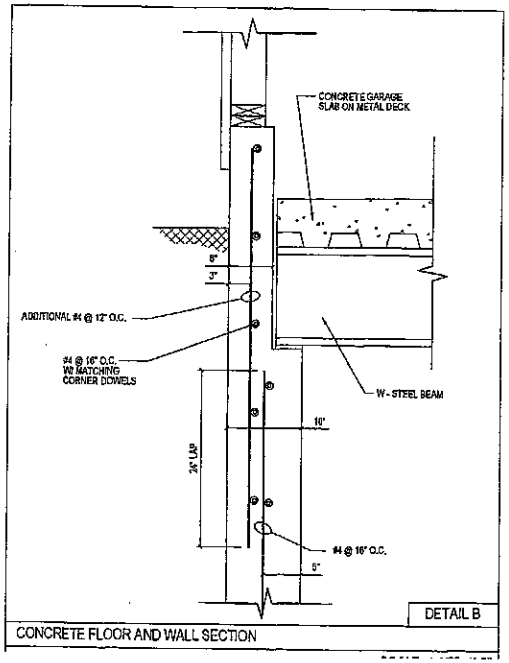
GARAGE FOUNDATION PLAN

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



CONCRETE FLOOR & BEAM DETAIL

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



CONCRETE FLOOR AND WALL SECTION

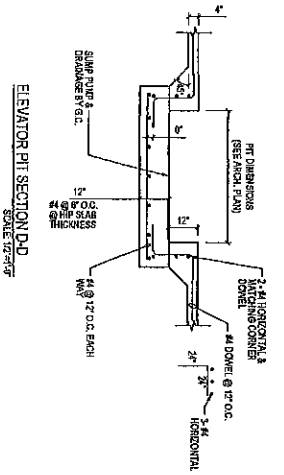
CONSTRUCTION SET
5 AUGUST 2016
SCALE: SEE DRAWINGS

Galinas Structural

ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

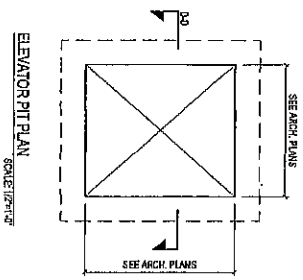
PROJECT Name:
McCONNELL RESIDENCE
LOT 3 WILSHIRE ROAD
NEWBURY, MA 01951

REV	DATE	DESCRIPTION
	8/5/16	RELEASED FOR CONSTRUCTION



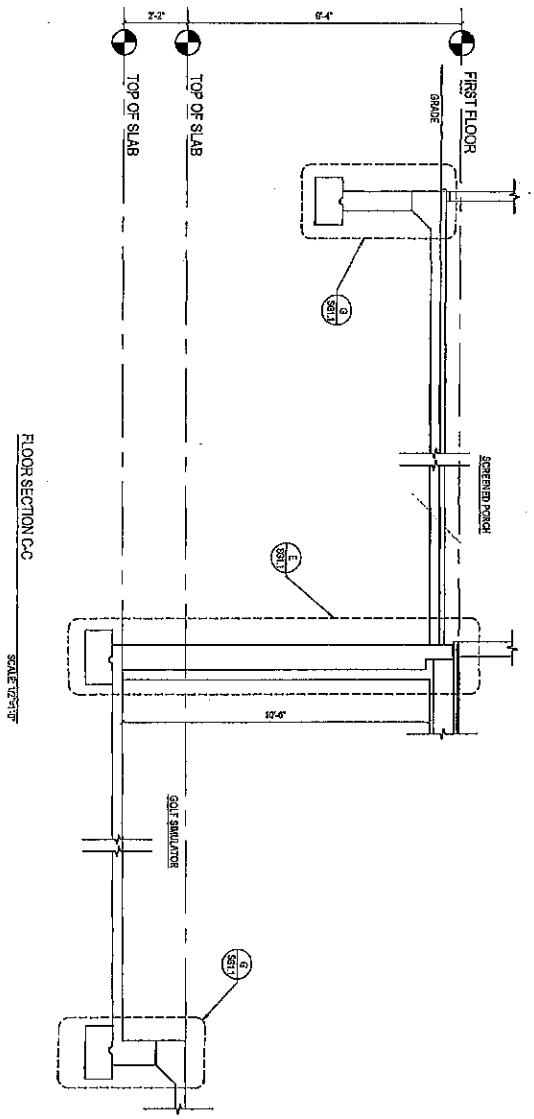
ELEVATOR PIT SECTION D-D

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



ELEVATOR PIT PLAN

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



FLOOR SECTION C-C

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

REV	DATE	DESCRIPTION
1	9/5/14	RELEASED FOR CONSTRUCTION

McCONNELL RESIDENCE
LOT 5 WILSHIRE ROAD
NEWBURY, MA 01951

ALFRED J. DIBIASO, ARCHITECT
25 CEDAR STREET #9, AMESBURY, MA 01913 978 388 1551

Gallinas Structural ENGINEERING LLC


EXHIBIT
4

FOUNDATION ONLY

CITY OF NEWBURYPORT
BUILDING DEPARTMENT
P.O. BOX 550
NEWBURYPORT, MA. 01950
978-465-4405

Permit No: B-57 4/16
Zoning District: _____
Fee: #320.00

eter Binette
ilding Commissioner/Codes Administrator

Jason 978-423-8502
26 Toppans Lane

APPLICATION FOR PLAN EXAMINATION AND BUILDING PERMIT

uilding Permit...

THE MUNICIPAL BUILDING CODE prohibits the erection, conversion, repair, alteration, or enlargement of any building or structure -- or the installation, alteration, or enlargement of any of the mechanical service equipment (electrical, plumbing, heating, gas systems) without first obtaining the necessary and required permits.

uilding Plans...

THE MUNICIPAL BUILDING CODE requires that application for permits be accompanied by at least two (2) complete sets of dimensioned plans and specification showing all necessary details to enable the BUILDING OFFICIAL to determine if the proposed work will be in compliance with the code.

uilding Permit Fees...

SCHEDULE OF PERMIT FEES:

$50.00 for the first $1,000.00 of the cost estimate.
$10.00 for each additional $1,000.00 of the cost estimate or part thereof.

uilding Inspections...

THE MUNICIPAL BUILDING CODE requires one (1) copy of the approved plans and specifications together with the work or building permit to be kept at the site/work area of operation at all times during progress of the work as authorized by the Building Commissioner. It is the of the person obtaining the permit to notify the Building Commissioner when the work is ready for inspection and no work should be covered before it has been inspected and approved. REQUESTS FOR INSPECTION are usually required in accordance with the following schedule:

1st -- Footings after forms are set and prior to placement of concrete materials.

2nd -- Foundation walls prior to backfilling.

3rd -- Rough framing prior to application of insulation or interior wall coverings. All service equipment (electrical, plumbing, heating, and gas systems rough-in) prior to cover or concealment.

4th -- Final inspection by the Building Commissioner prior to a permitted use and occupancy.

5th -- And on such special occasions as the Building Commissioner may designate.

APPROVED
Date 11-17-16
BUILDING DEPT.
CITY OF NEWBURYPORT
James Bone
Local Inspector

RECEIVED
NOV 15 2016
CITY OF NEWBURYPORT
BUILDING DEPARTMENT

I. LOCATION OF BUILDING

ADDRESS * ZONING DISTRICT _____

BETWEEN High (cross street) AND Low (cross street)

SUBDIVISION _____ MAP _____ LOT * LOT SIZE * _____

II. TYPE AND COST OF BUILDING – All applicants complete parts A - D

A. TYPE OF IMPROVEMENT

- [X] New Building
- [ ] Addition (If residential, enter number of new housing units added, if any in Part D, #13.)
- [ ] Alteration (see 2 above)
- [ ] Repair, replacement
- [ ] Wrecking (If multifamily residential, enter number of units in building in Part D, #13.)
  - Releases IV & III.
  - Releases IV & III & J
- [ ] Moving (relocation)
- [X] Foundation only

B. OWNERSHIP

- [ ] Private (individual, corporation, nonprofit, etc.)
- [ ] Public (Federal, State, or local government)

D. PROPOSED USE – For "wrecking", most recent use. N/A

Residential
- 12 [X] One Family
- 13 [ ] Two or more family Enter # of units _____
- 14 [ ] Transient hotel, motel Enter # of units _____
- 15 [ ] Garage
- 16 [ ] Carport
- 17 [ ] Other – specify _____

Non-Residential
- 18 [ ] Amusement, recreational
- 19 [ ] Church, other religious
- 20 [ ] Industrial
- 21 [ ] Parking garage
- 22 [ ] Service station, repair garage
- 23 [ ] Hospital, institutional
- 24 [ ] Office, bank, professional
- 25 [ ] Public utility
- 26 [ ] School, library, other educational
- 27 [ ] Stores, mercantile
- 28 [ ] Tanks, towers
- 29 [ ] Other – specify _____

C. COST

ost of improvement $ $27,300

To be installed but not included in the above cost.

a. Electrical $ _____

b. Plumbing $ _____

c. Heating, air conditioning $ _____

d. Other (elevator, etc.) $ _____

TOTAL COST OF IMPROVEMENT $ $27,300

Describe in detail, the proposed use of buildings, e.g. machine shop, school, department store, rental office building, office building at industrial park, manufacturing, or processing plant, etc. If USE of existing building is being changed, enter below the proposed change of use.

Foundation only For A Single Family

III. SELECTED CHARACTERISTICS OF BUILDING – For new buildings and additions, complete parts E – L. For wrecking, complete only part J. For all others, skip to VI.

E. PRINCIPAL TYPE OF FRAME

- [ ] Masonry (wall bearing)
- [X] Wood Frame
- [ ] Structural steel
- [ ] Reinforced concrete
- [ ] Other – specify _____

F. PRINCIPAL TYPE OF HEATING FUEL

- [X] Gas
- [ ] Oil
- [ ] Electricity
- [ ] Coal
- [ ] Other – specify _____

G. TYPE OF SEWAGE DISPOSAL

- 40 [X] Public or private company
- 41 [ ] Private (septic tank, etc.)

H. TYPE OF WATER SUPPLY

- 42 [X] Public or private company
- 43 [ ] Private (well, cistern)

I. TYPE OF MECHANICAL

Will there be central air conditioning?
44 [X] Yes 45 [ ] No

Will there be an elevator?
46 [ ] Yes 47 [X] No

J. DIMENSIONS

48 Number of stories 2

49 Total square feet of floor area, all floors based on exterior dimensions _____

50 Total land area, s.f. See Plan

K. NUMBER OF OFF STREET PARKING SPACES

51 Enclosed 3

52 Outdoors 3

L. RESIDENTIAL BUILDINGS ONLY

53 Number of bedrooms 5

Size of bedrooms See Plan

54 Number of bathrooms – Full 4 1/2

(2)

CITY OF NEWBURYPORT
BUILDING DEPARTMENT
P.O. BOX 550
NEWBURYPORT, MA 01950
978-465-4405

Peter Binette
Building Commissioner/Codes Administrator

AFFIDAVIT
Home Improvement Contractor Law
Supplement to Permit Application

MGL c. 142A requires that the "reconstruction, alteration, renovation, repair, modernization, conversion, improvement, removal, demolition, or construction of an addition to any pre-existing owner-occupied building containing at least one but not more than four dwelling units... or to structures which are adjacent to such residence or building be done by registered contractors, with certain exceptions, along with other requirements.

Type of Work: Foundation only Est. Cost: 27,300

Address of Work: _____

Owner Name: * Stephen J McConnell

D of Permit Application: 11-14-2016

I hereby certify that:

Registration is not required for the following reason(s):

___ Work excluded by law
___ Job under $1,000
___ Building not owner-occupied
X Owner pulling own permit
___ other (specify): _____

Notice is hereby given that:

OWNERS PULLING THEIR OWN PERMIT OR DEALING WITH UNREGISTERED CONTRACTORS FOR APPLICABLE HOME IMPROVEMENT WORK DO NOT HAVE ACCESS TO THE ARBITRATION PROGRAM OR GUARANTEE FUND UNDER MGL c. 142A.

Signed under penalties of perjury:

I hereby apply for a permit as the agent of the owner:

Date	Contractor Name	Registration No.

OR

Notwithstanding the above notice, I hereby apply for a permit as the owner of the above property:

Date	Owner Name
	* 11-14-2016

(3)

Pursuant to Chapter 9 of the Code of Ordinances for the City of Newburyport, prior to the issuance of any permit or license, the applicant must obtain sign-offs from the following Departments indicating that all local taxes, fees, assessments, betterments, or other municipal charges payable to the City are not delinquent:

Treasurer/Collector: X _____ Date: 11-15-16

DPS Sewer Division: X _____ Date: 11-15-16

DPS Water Division: X _____ Date: 11-15-16

2 to Topsoil Foundation

REQUIRED: Pursuant to the Newburyport Zoning Ordinance, Section X.D. entitled "Permits" all applications for Building Permits must be include a list of all decisions or permits issued by any City official, Board, Commission, or Department relevant to this permit application. This includes decisions and/or approvals from the Planning Board, Conservation Commission, Historical Commission and Zoning Board of Appeals. The following permits, decisions, or approvals have been issued relative to this application:

Board/Department & Permit/Decision Type:	Approval Date:	File # (if applicable)
* Deep Hole		

The Commonwealth of Massachusetts
Department of Industrial Accidents
Office of Investigations
1 Congress Street, Suite 100
Boston, MA 02114-2017
www.mass.gov/dia

Workers' Compensation Insurance Affidavit: Builders/Contractors/Electricians/Plumbers

Applicant Information — Please Print Legibly

Name (Business/Organization/Individual): Steve McConnel

Address: 3 Blueberry Lane

City/State/Zip: Georgetown MA. 01833 Phone #: 978-912-1783

Are you an employer? Check the appropriate box:

1. ☐ I am a employer with _____ employees (full and/or part-time).*
2. ☐ I am a sole proprietor or partnership and have no employees working for me in any capacity. [No workers' comp. insurance required.]
3. ☒ I am a homeowner doing all work myself. [No workers' comp. insurance required.] †
4. ☐ I am a general contractor and I have hired the sub-contractors listed on the attached sheet. These sub-contractors have employees and have workers' comp. insurance.‡
5. ☐ We are a corporation and its officers have exercised their right of exemption per MGL c. 152, §1(4), and we have no employees. [No workers' comp. insurance required.]

Type of project (required):

6. ☒ New construction
7. ☐ Remodeling
8. ☐ Demolition
9. ☐ Building addition
10. ☐ Electrical repairs or additions
11. ☐ Plumbing repairs or additions
12. ☐ Roof repairs
13. ☐ Other _____

*Any applicant that checks box #1 must also fill out the section below showing their workers' compensation policy information.
† Homeowners who submit this affidavit indicating they are doing all work and then hire outside contractors must submit a new affidavit indicating such.
‡ Contractors that check this box must attached an additional sheet showing the name of the sub-contractors and state whether or not those entities have employees. If the sub-contractors have employees, they must provide their workers' comp. policy number.

I am an employer that is providing workers' compensation insurance for my employees. Below is the policy and job site information.

Insurance Company Name: _____

Policy # or Self-ins. Lic. #: _____ Expiration Date: _____

Job Site Address: _____ City/State/Zip: _____

Attach a copy of the workers' compensation policy declaration page (showing the policy number and expiration date). Failure to secure coverage as required under Section 25A of MGL c. 152 can lead to the imposition of criminal penalties of a fine up to $1,500.00 and/or one-year imprisonment, as well as civil penalties in the form of a STOP WORK ORDER and a fine of up to $250.00 a day against the violator. Be advised that a copy of this statement may be forwarded to the Office of Investigations of the DIA for insurance coverage verification.

I do hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature: [signature] Date: 11-15-2016

Phone #: 978-912-1783

Official use only. Do not write in this area, to be completed by city or town official.

City or Town: _____ Permit/License #: _____

Issuing Authority (circle one):

1. Board of Health 2. Building Department 3. City/Town Clerk 4. Electrical Inspector 5. Plumbing Inspector 6. Other _____

Contact Person: _____ Phone #: _____

5

CITY OF NEWBURYPORT
BUILDING DEPARTMENT
P.O. BOX 550
NEWBURYPORT, MA 01950
978-465-4405

ter Binette
ilding Commissioner/Codes Administrator

DEBRIS DISPOSAL CERTIFICATE

AFFIDAVIT

In accordance with the provisions of MGL c. 40, S 54, a condition of Building Permit Number _____ is that the debris resulting from this work shall be disposed of in a properly licenses solid waste disposal facility as defined by MGL c. 111, S 150A.

The debris will be disposed of in: Pearson Bayfield

(Location of Facility)

Signature of Permit Applicant

11-14-2016

Date

RESTRICTIONS ON ISSUANCE OF BUILDING PERMITS
MGL c. 40, S 54, Added by c. 584, S 9 of the Acts of 1987

Every city or town shall require, as a condition of issuing a building permit or license for the demolition, renovation, rehabilitation, or other alteration of a building or structure, that the debris resulting from such demolition, renovation, rehabilitation, or alteration be disposed of in a properly licensed solid waste disposal facility, as defined by section one hundred and fifty A of chapter one hundred and eleven. Any such permit or license shall indicate the location of the facility at which the debris is to be disposed. If for any reason, the debris will not be disposed of as indicated, the permitee or licensee shall notify the issuing authority as to the location where the debris will be disposed. The issuing authority shall amend the permit or license to so indicate.

THIS REQUIREMENT DOES NOT APPLY TO NEW CONSTRUCTION

In case of municipal, commercial, industrial, or multi-unit housing construction, the contractor may not know the dumpster subcontractor at the time of the building permit application. In such cases, the attached copy of an Affidavit can be used.

(6)

AFFIDAVIT

As a result of the provisions of MGL c. 40, S 54, I acknowledge that as a condition of a Building Permit, all debris resulting from the construction activity governed by this Building Permit shall be disposed of in a properly licensed solid waste disposal facility, as defined by MGL c. 111, S 150A.

I certify that I will notify the Building Commissioner by _____ (two months maximum) of the location of the solid waste disposal facility where the debris resulting from the said construction activity shall be disposed of, and I shall submit the appropriate form for attachment to the Building Permit.

_____ Date

* _____ Signature of Permit Applicant

(Print or type the following information)

* Stephen J McConnell Name of Permit Applicant

NA Firm Name, if any

3 Blueberry Lane, Georgetown, MA 01833 Address

CITY OF NEWBURYPORT
BUILDING DEPARTMENT
P.O. BOX 550
NEWBURYPORT, MA 01950
978-465-4405

'eter Binette
uilding Commissioner/Codes Administrator

HOMEOWNER LICENSE EXEMPTION

Please Print

Date: 11-14-2016

Job Location: 26 Toppans Lane, Lot 46
Number Street Address Section of Land

Homeowner: Steve McConnell 978-912-1783
Name Home Phone # Work Phone #

Present Mailing Address: 3 Blueberry Lane

Georgetown MA 01833
City/Town State Zip Code

The current exemption for "homeowners" was extended to include owner-occupied dwellings of two units or less and to allow such homeowners to engage an individual for hire that does not possess a license, provided that the owner acts as supervisor. (State Building Code Section 108.3.5)

DEFINITION OF HOMEOWNER: 108.3.5.1 Exception
Any homeowner performing work for which a building permit is required shall be exempt from the licensing provisions of 780 CMR 108.3.5; provided that if a homeowner engages a person(s) for hire to do such work, that such homeowner shall act as supervisor. This exception shall not apply to the field erection of a manufactured building constructed pursuant to 780 CMR 35 and 780 CMR R3. For the purposes of 780 CMR 108.3.5, a "homeowner" is defined as follows: Person(s) who owns a parcel of land on which he/she resides or intends to reside, on which there is, or is intended to be, a one or two family dwelling, attached or detached structures accessory to such use and/or farm structures. A person who constructs more than one home in a two-year period shall not be considered a homeowner.

The undersigned "homeowner" assumes responsibility for compliance with the State Building Code and other applicable codes, by-laws, rules, and regulations.

The undersigned "homeowner" certifies that he/she understands the City of Newburyport Building Department will require minimum inspection procedures and requirements and that he/she will comply with said procedures and requirements.

HOMEOWNER'S SIGNATURE: [signature]

APPROVAL OF BUILDING COMMISSIONER: _____

Note: Three family dwellings 35,000 cubic feet, or larger, will be required to comply with State Building Code Section 116.1 Construction Control.

(9)

Information and Instructions

Massachusetts General Laws chapter 152 requires all employers to provide workers' compensation for their employees. Pursuant to this statute, an ***employee*** is defined as "...every person in the service of another under any contract of hire, express or implied, oral or written."

An *employer* is defined as "an individual, partnership, association, corporation or other legal entity, or any two or more of the foregoing engaged in a joint enterprise, and including the legal representatives of a deceased employer, or the receiver or trustee of an individual, partnership, association or other legal entity, employing employees. However the owner of a dwelling house having not more than three apartments and who resides therein, or the occupant of the dwelling house of another who employs persons to do maintenance, construction or repair work on such dwelling house or on the grounds or building appurtenant thereto shall not because of such employment be deemed to be an employer."

MGL chapter 152, §25C(6) also states that **"every state or local licensing agency shall withhold the issuance or renewal of a license or permit to operate a business or to construct buildings in the commonwealth for any applicant who has not produced acceptable evidence of compliance with the insurance coverage required."** Additionally, MGL chapter 152, §25C(7) states "Neither the commonwealth nor any of its political subdivisions shall enter into any contract for the performance of public work until acceptable evidence of compliance with the insurance requirements of this chapter have been presented to the contracting authority."

Applicants

Please fill out the workers' compensation affidavit completely, by checking the boxes that apply to your situation and, if necessary, supply sub-contractor(s) name(s), address(es) and phone number(s) along with their certificate(s) of insurance. Limited Liability Companies (LLC) or Limited Liability Partnerships (LLP) with no employees other than the members or partners, are not required to carry workers' compensation insurance. If an LLC or LLP does have employees, a policy is required. Be advised that this affidavit may be submitted to the Department of Industrial Accidents for confirmation of insurance coverage. **Also be sure to sign and date the affidavit.** The affidavit should be returned to the city or town that the application for the permit or license is being requested, **not** the Department of Industrial Accidents. Should you have any questions regarding the law or if you are required to obtain a workers' compensation policy, please call the Department at the number listed below. Self-insured companies should enter their self-insurance license number on the appropriate line.

City or Town Officials

Please be sure that the affidavit is complete and printed legibly. The Department has provided a space at the bottom of the affidavit for you to fill out in the event the Office of Investigations has to contact you regarding the applicant. Please be sure to fill in the permit/license number which will be used as a reference number. In addition, an applicant that must submit multiple permit/license applications in any given year, need only submit one affidavit indicating current policy information (if necessary) and under "Job Site Address" the applicant should write "all locations in _____(city or town)." A copy of the affidavit that has been officially stamped or marked by the city or town may be provided to the applicant as proof that a valid affidavit is on file for future permits or licenses. A new affidavit must be filled out each year. Where a home owner or citizen is obtaining a license or permit not related to any business or commercial venture (i.e. a dog license or permit to burn leaves etc.) said person is NOT required to complete this affidavit.

The Office of Investigations would like to thank you in advance for your cooperation and should you have any questions, please do not hesitate to give us a call.

The Department's address, telephone and fax number:

The Commonwealth of Massachusetts
Department of Industrial Accidents Office of Investigations
1 Congress Street, Suite 100
Boston, MA 02114-2017
Tel. # 617-727-4900 ext. 7406 or 1-877-MASSAFE Fax # 617-727-7749
Revised 7-2013
www.mass.gov/dia

(10)

IV. WRECKING – REMOVAL BY DEMOLITION – Before any building or portion thereof can be removed/demolished, the owner or his authorized agent shall notify all utilities having service connections within the building or structure, e.g. water, gas, sewer, electrical, etc.

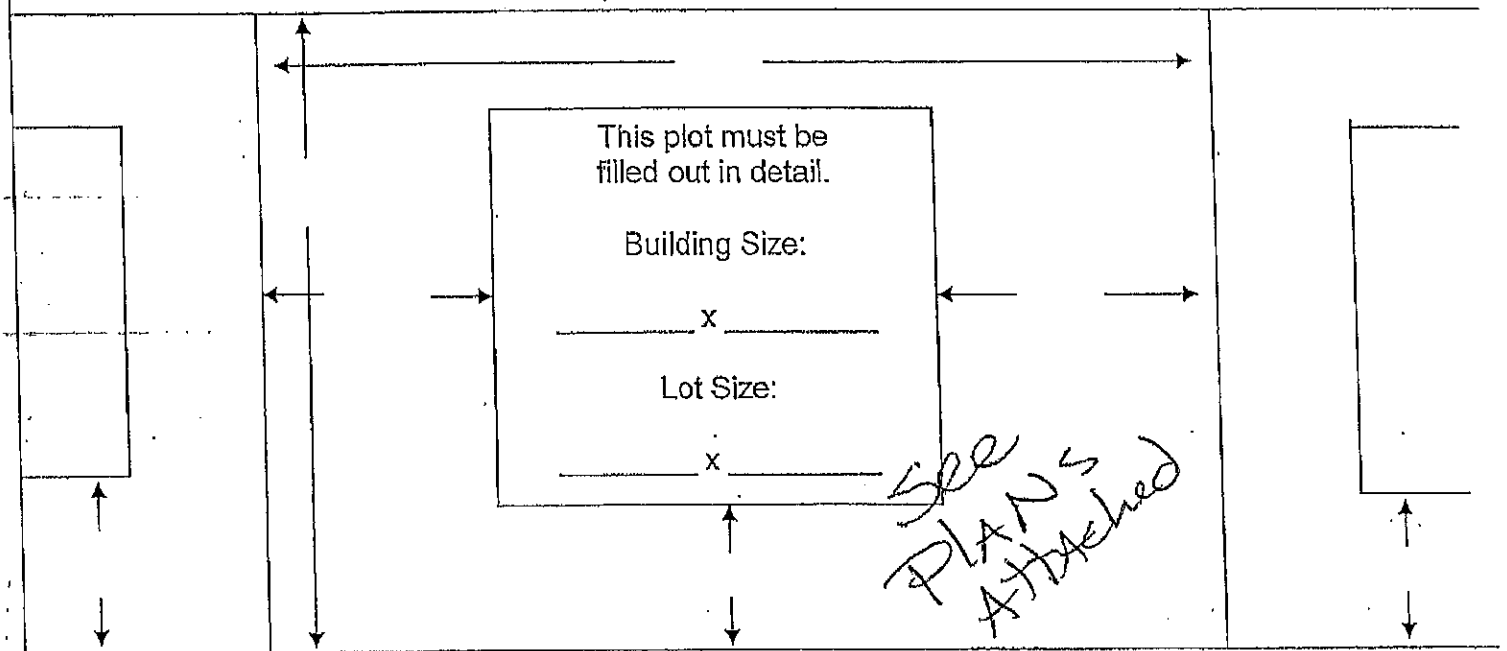
The following releases have been obtained for the demolition/removal of building or structure situated at:

N/A

(No.) (Street)

Date	Utility Company	Released by:
_____	Electric Company	by _____
_____	Gas Company	by _____
_____	City Water Department	by _____
_____	City Sewer Department	by _____
_____	Board of Health	by _____

V. SITE OR PLOT PLAN - (for applicant use)



VI. IDENTIFICATION -- to be completed by all applicants

	Name	Mailing address- Number, street, city, state, and zip	Phone
1. Owner or Lessee	*Stephen J McConnell	3 Blueberry Lane, Georgetown, MA 01833	978-918-1783
2. Contractor			
License #:			
3. Architect or Engineer:	A.L. DiBiaso	25 Cedar St Amesbury	978-388-1551

See ATTACHED PLANS

The owner of this building and the undersigned agree to conform to all applicable laws of this jurisdiction.

Signature of Applicant	Address	Date
*	3 Blueberry Lane Georgetown, MA 01833	11-14-16

VII. ZONING PLAN EXAMINERS NOTES — AT RISK PENDING WATER/SEWER AND FIRE. (13)

District: R2

Use: SFR - 101

Front Yard:

Side Yard: Side Yard:

Rear Yard:

Notes: SEE PLANS APPROVED - NEW SINGLE FAMILY RESIDENCE FOUNDATION ONLY — AT RISK PENDING WATER/SEWER/FIRE SIGN-OFFS, IN ACCORDANCE WITH SPECIAL PERMIT AND DEFINITIVE SUBDIVISION PLAN.

VIII. PLAN REVIEW RECORD – For office use.

Plan Review Required	Check	Date Plans Started	By	Date Plans Approved	By	Notes
Building						
Plumbing						
Mechanical						
Electrical						
Other						

IX. ADDITIONAL PERMITS REQUIRED OR OTHER JURISDICTION APPROVALS

Permit or Approval	Check	Date Obtained	Number	By	Permit or Approval	Check	Date Obtained	Number	By
Conservation Commission					Plumbing				
Curb or Sidewalk Cut					Roofing				
Planning Dept.					Sewer (Permit Issued)				
Electrical					Sign or Billboard				
Furnace					Street Grades				
Grading					Use of Public Areas				
Gas Burner					Water Department				
Fire Inspection					Board of Health		11/16/16		

X. VALIDATION

Date permit issued: 11-17, 2016

Approved by:

Peter Binette
Building Commissioner/Codes Administrator

(12)


EXHIBIT
tabbies
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BLATMAN, BOBROWSKI, MEAD & TALERMAN, LLC
ATTORNEYS AT LAW

30 GREEN STREET
NEWBURYPORT, MA 01950
PHONE 978.463.7700
FAX 978.463.7747

Concord Office
9 DAMONMILL SQUARE, SUITE 4A-1
CONCORD, MA 01742
PHONE 978.371.2226
FAX 978.371.2296

Millis Office
730 MAIN STREET, SUITE 2B
MILLIS, MA 02054
PHONE 508.376.8400
FAX 508.376.8440

LISA L. MEAD
Lisa@bbmatlaw.com

December 1, 2016

HAND DELIVERED
Peter Binette
Building Commissioner
City of Newburyport
Pleasant Street
Newburyport MA 01950

RE: Zoning Enforcement Request / 26 Toppans Lane, Donahue Court Definitive Subdivision

Dear Peter;

Reference is made to the above captioned matter. In that connection, this firm represent Virginia and Thomas Eramo (the "Eramo's") the owners of the abutting property at 28R Toppans Lane. Immediately adjacent to the Eramo's property is the approved Definitive Subdivision entitled Donahue Court and in particular Lot 4B (the "Subject Property"). The Subject Property is being developed in violation of the Definitive Subdivision Plan Decision and Plan dated May 20, 2015 said plans being dated March 28, 2015 and recorded in Plan Book 453 Plan 55 in the South Essex Registry of Deeds . (the "Definitive Plan"). On behalf of the Eramo's, we are hereby requesting, pursuant to G.L. c. 40A, § 7, that appropriate enforcement action(s) be undertaken by you.

Specifically, the current owner of the Subject Property, Steven J. McConnell, Trustee of the Stephen J. McConnell Revocable Trust, through its agents and contractors has clear cut the rear of the Subject Property and cut significant grades contrary to sheet C-2 of the Definitive Plan. Further, and contrary to note 1 on Sheet 2 of the Definitive Plan, I am informed that numerous truckloads of soils have been removed from the site. The Subject Property owner's actions have created hazardous conditions for the Eramo's in using their own property as the cut line appears to be immediately along the shared property line of the Subject Property and the Eramo's property. Further, given the significant change in grade from the rear of the Subject Property to the front of the Subject Property, the illegal cuts will likely result in significant erosion along the Eramo's property line and likely including the Eramo property. (Please see attached photographs taken from the Eramo's property)

The Definitive Decision was based upon a Stormwater Management Report which reflects the Definitive Plans. The Definitive Plans do not show complete cutting and regrading of the Subject Property which is what has occurred. To the contrary the plans show a small amount of grading around the proposed structure. Further the Stormwater Management report presumably sized the approved detention basins based upon the amount of vegetation removed and cut and fill proposed which is significantly different than what has occurred. As you can see from paragraph 11 of the General

Conditions of the Subdivision Approval (Attached hereto) "there shall be no construction other than what is shown on approved plans...unless the Planning Board shall have reviewed and approved such change." To our knowledge, no such approval has been granted. Further, paragraph 12 requires that the Developer shall take reasonable care not to disturb surrounding properties. No effort has been made to shore up the exposed edge of the cut which includes an approximate 2-4-foot vertical drop from the Eramo's property.

The Eramo's hereby request that you issue, if you have not already, a cease and desist order and an enforcement order requiring the Owner and its agents to comply with the Definitive Plan Decision and to take all necessary actions to shore up, support and make safe to life and property any exposed excavation during such time as a public hearing can be held on this matter.

Thank you in advance for your assistance. Please inform us of your enforcement action(s), or your determination that enforcement is not required and the reason(s) therefor, within the fourteen (14) days stipulated by G.L. c. 40A, § 7.

Sincerely,

Lisa L. Mead

cc: Client
Steven J. McConnell, Trustee
Mark Depeiro


EXHIBIT
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CITY OF NEWBURYPORT
Building Department
PETER BINETTE/BUILDING INSPECTOR
NEWBURYPORT CITY HALL
60 PLEASANT STREET P. O. BOX 550
NEWBURYPORT MA. 01950
Tel: 978-465-4405 – Fax: 978465-4452

12/8/2016

Steve McConnell
3 Blueberry Lane
Georgetown, MA 01833

RE: Site plan modification/Stop work order, 26 Toppans Lane, Lot 4b

Dear Mr. McConnell;

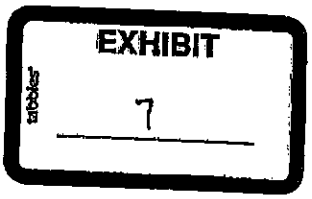
It has come to my attention that the site work underway at the above mentioned site may not comply with the recorded site plan approved by the Newburyport Planning Board, dated 5/20/2015. It is imperative that you contact the Newburyport Planning Office to request a modification to this site plan.

In the meantime, please consider this a stop work order at the site until The Building Department receives a release from the Planning Office/Board as it pertains to the site conditions and elevation /drainage plan. Thank you for your anticipated cooperation in this matter. Please feel free to call me at 978 465-4405 if you have any questions.

Sincerely;

Peter Binette
Newburyport Building Commissioner

cc.
Attorney Lisa Mead
Planning Director Andy Port



EXHIBIT
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CITY OF NEWBURYPORT
DEPARTMENT OF PUBLIC SERVICES
16A PERRY WAY
NEWBURYPORT, MA 01950

ANTHONY J. FURNARI, DIRECTOR
WAYNE S. AMARAL, DEPUTY DIRECTOR/DIRECTOR OF OPERATIONS

PHONE: 978-465-4463/4464
FAX : 978-465-1623

VIA CERTIFIED MAIL

December 20, 2016

Steve McConnell
3 Blueberry Lane
Georgetown, MA 01833

Subject: 26 Toppans Lane – Lot 42B
STORMWATER PERMITTING VIOLATION NOTICE

Dear Mr. McConnell:

Please be advised that you are in violation with our local Stormwater Management Ordinance which requires that a Stormwater Permit be pulled for all work that disturbs 10,000 square feet or more of earth. The main purpose of this Permit is to ensure that contractors perform earthwork activities in a way that prevents erosion and degradation of our waterways. **You must cease all sitework on the property until a permit has been issued and the conditions complied with.**

The Stormwater Ordinance and Rules and Regulations are on our website: http://www.cityofnewburyport.com/businesses . I highly recommend that you meet with me prior to submitting the Application so we can discuss what Plans and support documents are required. This can save you valuable time. The Engineering Department issues the permit and our office is located at the address above. Once the permit is issued, fees paid, and conditions have been met, you can continue with the site work.

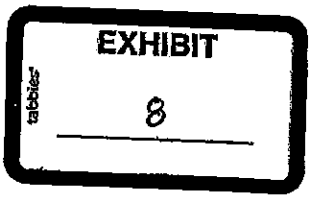
If you have any questions, I can be reached at 978-465-4464, x1710.

Sincerely,

NEWBURYPORT DEPARTMENT OF PUBLIC SERVICES

Jon-Eric White, P.E.
City Engineer

CC: Tony Furnari, DPS Director
Peter Binette, Building Commissioner
Kate Newhall-Smith, Planner



EXHIBIT
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STORMWATER MANAGEMENT REPORT

FOR

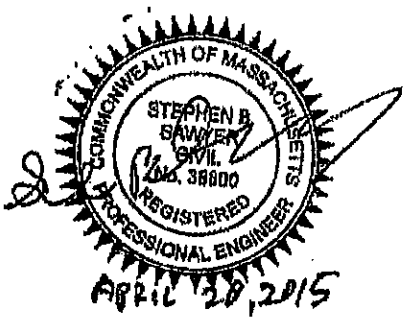
A PROPOSED RESIDENTIAL SUBDIVISION
Donahue Lane
NEWBURYPORT, MASSACHUSETTS

Prepared for:
13 North Adams, LLC
9 Pasture Lane
Bedford, NH 03110

Prepared by:

Design Consultants, Inc.
120 Middlesex Avenue, Suite 20
Somerville, Massachusetts 02145-1104

Project 2014-128
March 18, 2015
Rev. April 28, 2015



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FIGURES

APPENDICES

1.0 PROJECT DESCRIPTION

The proposed project consists of two new single-family homes, cul-de-sac (hammerhead) roadway, storm water management measures, and associated utilities.

The proposed homes will be served by new underground electric, water, gas and sewer originating from Toppans Lane.

The project will disturb approximately 0.9 acres of land and construction is expected to begin in the fall of 2015 and take approximately 1 year to build.

2.0 EXISTING CONDITIONS:

The existing site condition is primarily a wooded/grass combination in fair condition, with a home and in-ground swimming pool. A single family home with impervious and gravel areas occupies the southeastern corner. An in-ground swimming pool and sheds are also on the property to the west of the home. Some wooded areas also follow along the northern and southern site boundaries. Soils on the land appear to be mostly class C, with an area of class A soils in the northern corner of the study area. Curve numbers and infiltrations rates for C soils were primarily used in this analysis.

Total parcel area is 64,500 ft^2, with approximately 26,000 ft^2 of that area being at least partially wooded. The site is bounded to the west by the Avita nursing facility, and to the east by Toppans Lane. Colonial Heights condominiums are located to the south of the site, and Anna Jaques Hospital lies to the north/northeast.

The entire site drains in a southeasterly direction, with slopes increasing from approximately 2% to 10% at the southeast end of the site. There is approx. thirty (30) feet of topographic relief across the site.

Field test pits conducted in the general area during the permitting process for the Avita nursing facility just north of the boundary of Lot 4. These locations are shown on the existing conditions plan, along with groundwater elevations. Further soil testing will need to be performed on the project property. The previous tests found that the underlying soils consisted of silt loam with indication of seasonal high groundwater within 2.3 feet of surface grade.

3.0 PROPOSED CONDITIONS:

The project consists of the construction of two (2) single family homes with a hammerhead cul-de-sac roadway and associated utilities and landscaping. Bituminous concrete will be used for the roadway and driveways. The existing home, swimming pool, and sheds on the property will be removed, and storm water management measures will be incorporated into the site to mitigate the runoff from the 2, 10, and 100-year rainfall events. Ground cover will be lawn, with some street trees proposed.

Stormwater management will be handled by the use of 2 surface detention basins and a roadside infiltration trench with a perforated HDPE pipe, eventually connecting into the municipal stormwater system in Toppans Lane. Runoff from a large portion of the property will be routed into these basins

mostly overland, with the proposed roadway being routed into the infiltration trench which is connected to the detention basins. The proposed roadway will be superelevated to drain into the trench, avoiding the need for catch basin structures in the roadway. The detention basins will have outlet pipes to mitigate the smaller storm events and allow the basins to slowly drain after rainfall ends. Exfiltration will occur in the shallow trench only, but due to the poor soils encountered on the site, an exfiltration rate of only 0.27 in/hr was factored into the calculations. Due to the relatively high groundwater elevations, surface ponds were used in place of subsurface measures. This should make maintenance simpler for the future home owners.

The drainage system has been designed so there will be no increase in runoff peak rates from the subject site once the project is complete. Runoff towards the Design Point will be below the current rates.

4.0 ANALYSIS:

The proposed drainage system was analyzed for the 2, 10, & 100-year storm events (see included calculations) to ensure that with even the most extreme storm, the proposed project would not have a negative impact on the surrounding area. The project area was analyzed in both the pre-development and the post-development conditions at the southern property limits (Design Point #1). The tables below summarize the pre and post-development runoff rates and volumes at the Design Point:

Design Point #1

2-Year Storm / 3.10" rainfall event

	Rate of Runoff (cfs)	Volume of Runoff (AF)
Pre-development	**2.28**	**0.208**
Post-development	**2.27**	**0.208**
Percent Change	**0.4%**	**0%**

10-Year Storm / 4.7" rainfall event

	Rate of Runoff (cfs)	Volume of Runoff (AF)
Pre-development	**5.31**	**0.450**
Post-development	**5.23**	**0.442**
Percent Change	**1.5%**	**3.5%**

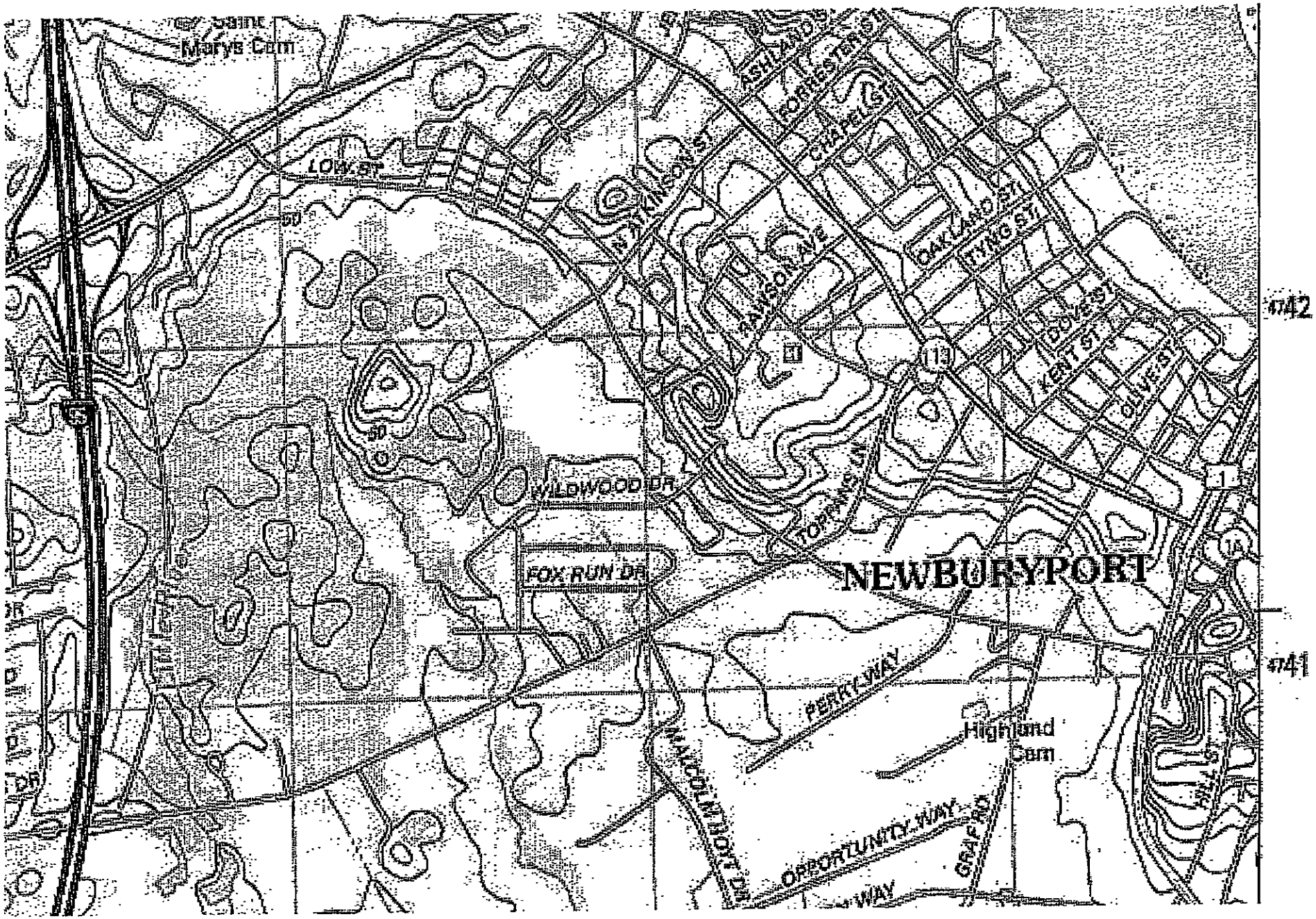
100-Year Storm / 8.3" rainfall event

	Rate of Runoff (cfs)	Volume of Runoff (AF)
Pre-development	**13.21**	**1.101**
Post-development	**13.03**	**1.078**
Percent Change	**4.1%**	**2.9%**

5.0 CONCLUSION:

The proposed project will disturb approximately 1.0 acres of land and result in two single-family homes being constructed. This drainage analysis examined the extreme 100 year flood storm to ensure that there would be no flooding caused downstream by the project. Existing soil conditions were examined by field inspection and previously-performed test pits in the area.

The design and analysis of the project and stormwater management plan has been consistent with MassDEP stormwater treatment and groundwater recharge techniques and guidelines. By reducing runoff through the use of surface detention basins, drainage trench, and improved ground cover, this drainage design will help to ensure that the project will not be detrimental to the environment and the surrounding properties.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N ATKINSON ST
ASHLAND ST
FORRESTER ST
CHAPEL ST
OAKLAND ST
TYNG ST
ATKINSON AVE
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KENT ST
OLIVER ST
WILDWOOD DR
FOX RUN DR
TORRENCE LN
NEWBURYPORT
PERKY WAY
MALCOLM HOYT DR
OPPORTUNITY WAY
GRAFTON
WAY
Highland
Cem
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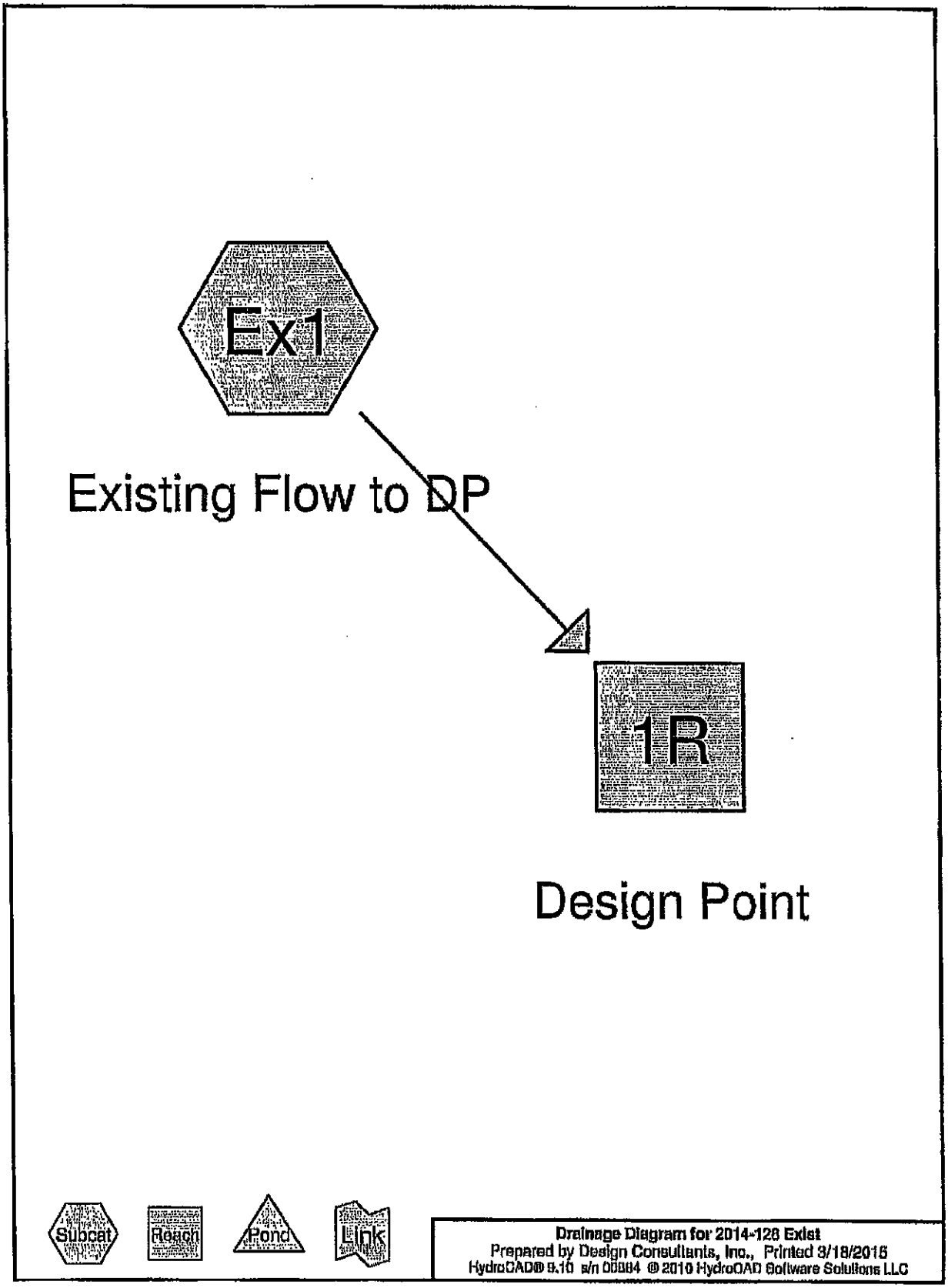
4741

Appendix A - Calculations


Ex1
Existing Flow to DP
1R
Design Point
Subcat
Reach
Pond
Link
Drainage Diagram for 2014-128 Exist
Prepared by Design Consultants, Inc., Printed 3/18/2015
HydroCAD® 9.10 s/n 00884 © 2010 HydroCAD Software Solutions LLC

Summary for Subcatchment Ex1: Existing Flow to DP

Runoff = 2.28 cfs @ 12.16 hrs, Volume= 0.208 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.10"

	Area (sf)	CN	Description
*	5,314	98	Bldgs & pool
*	105	98	Brick walk
*	2,633	90	Gravel roads, HSG C/D
*	51,836	76	Woods, Fair, HSG C/D
	5,480	36	Woods, Fair, HSG A
	12,187	49	50-75% Grass cover, Fair, HSG A
	35,420	79	50-75% Grass cover, Fair, HSG C
	112,975	73	Weighted Average
	107,556	72	95.20% Pervious Area
	5,419	98	4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Summary for Reach 1R: Design Point

Inflow Area = 2.594 ac, 4.80% Impervious, Inflow Depth > 0.96" for 2-year event
Inflow = 2.28 cfs @ 12.16 hrs, Volume= 0.208 af
Outflow = 2.28 cfs @ 12.16 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Summary for Subcatchment Ex1: Existing Flow to DP

Runoff = 5.31 cfs @ 12.15 hrs, Volume= 0.450 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=4.70"

	Area (sf)	CN	Description
*	5,314	98	Bldgs & pool
*	105	98	Brick walk
*	2,639	90	Gravel roads, HSG C/D
*	51,836	76	Woods, Fair, HSG C/D
	5,480	36	Woods, Fair, HSG A
	12,187	49	50-75% Grass cover, Fair, HSG A
	35,420	79	50-75% Grass cover, Fair, HSG C
	112,975	73	Weighted Average
	107,556	72	95.20% Pervious Area
	5,419	98	4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Summary for Reach 1R: Design Point

Inflow Area = 2.594 ac, 4.80% Impervious, Inflow Depth > 2.08" for 10-year event
Inflow = 5.31 cfs @ 12.15 hrs, Volume= 0.450 af
Outflow = 5.31 cfs @ 12.15 hrs, Volume= 0.450 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Summary for Subcatchment Ex1: Existing Flow to DP

Runoff = 13.21 cfs @ 12.15 hrs, Volume= 1.101 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.30"

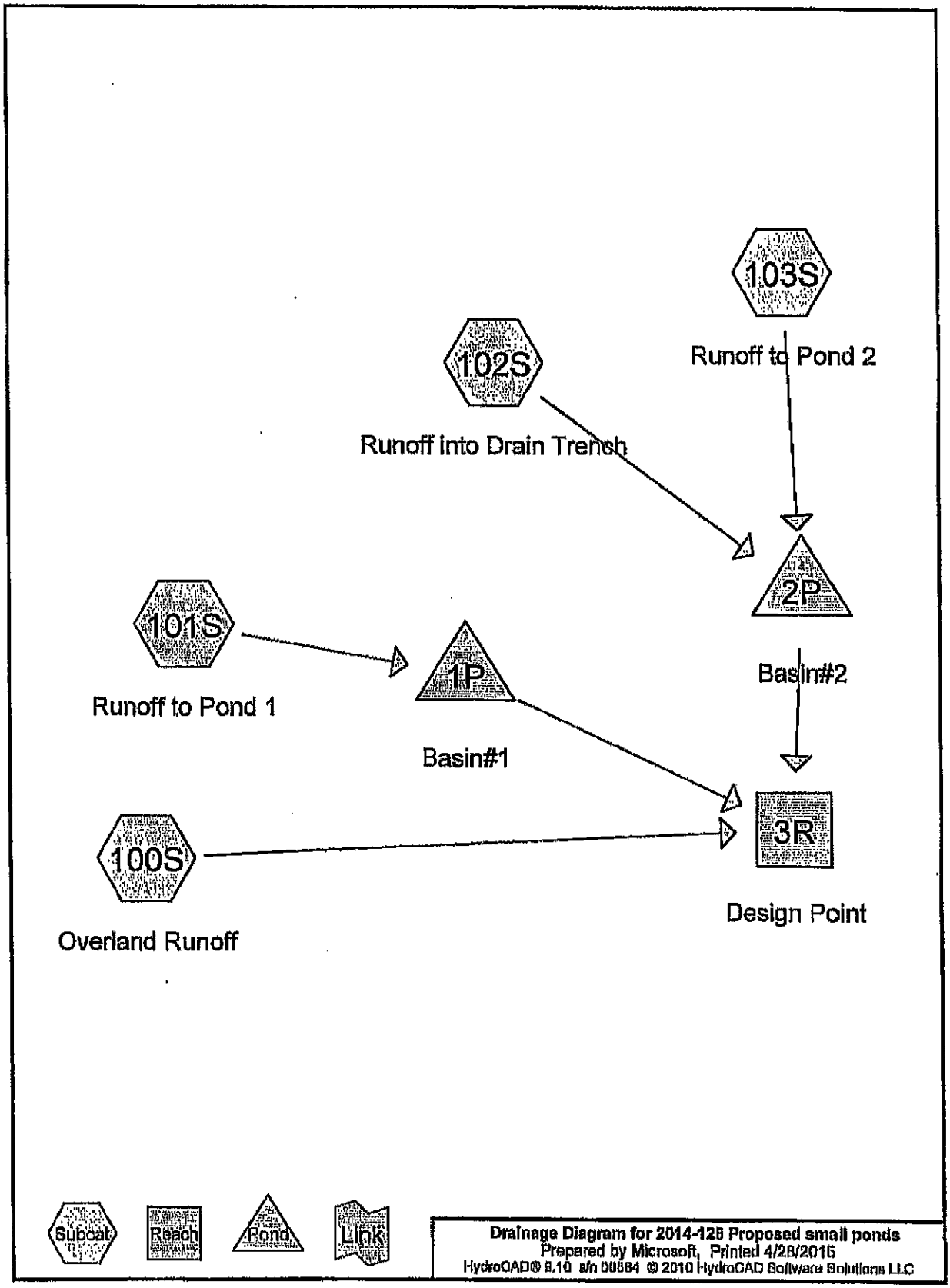
	Area (sf)	CN	Description
*	5,314	98	Bldgs & pool
*	105	98	Brick walk
*	2,633	90	Gravel roads, HSG C/D
*	51,836	76	Woods, Fair, HSG C/D
	5,460	36	Woods, Fair, HSG A
	12,187	49	50-75% Grass cover, Fair, HSG A
	35,420	79	50-75% Grass cover, Fair, HSG C
	112,975	73	Weighted Average
	107,556	72	95.20% Pervious Area
	5,419	98	4.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Summary for Reach 1R: Design Point

Inflow Area = 2.594 ac, 4.80% Impervious, Inflow Depth > 5.10" for 100-Year event
Inflow = 13.21 cfs @ 12.15 hrs, Volume= 1.101 af
Outflow = 13.21 cfs @ 12.15 hrs, Volume= 1.101 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs


103S
Runoff to Pond 2
102S
Runoff into Drain Trench
2P
101S
Runoff to Pond 1
1P
Basin#2
Basin#1
3R
100S
Design Point
Overland Runoff
Subcat
Reach
Pond
Link
Drainage Diagram for 2014-128 Proposed small ponds
Prepared by Microsoft, Printed 4/28/2015
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.123	36	Woods, Fair, HSG A (100S)
0.281	49	50-75% Grass cover, Fair, HSG A (100S, 102S)
0.642	73	Woods, Fair, HSG C (100S, 101S, 102S)
0.974	74	>75% Grass cover, Good, HSG C (100S, 101S, 102S, 103S)
0.276	79	50-75% Grass cover, Fair, HSG C (102S)
0.210	98	Impervious Areas (100S, 102S)
0.087	98	Impervious areas (101S, 103S)

Summary for Subcatchment 100S: Overland Runoff

Runoff = 1.25 cfs @ 12.10 hrs, Volume= 0.104 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
	4,982	49	50-75% Grass cover, Fair, HSG A
	5,379	36	Woods, Fair, HSG A
	17,398	73	Woods, Fair, HSG C
	30,267	74	>75% Grass cover, Good, HSG C
*	5,302	98	Impervious Areas
	63,328	71	Weighted Average
	58,026	68	91.63% Pervious Area
	5,302	98	8.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 MIN. MINIMUM**

Summary for Subcatchment 101S: Runoff to Pond 1

Runoff = 0.40 cfs @ 12.09 hrs, Volume= 0.031 af, Depth> 1.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
	5,166	74	>75% Grass cover, Good, HSG C
	3,733	73	Woods, Fair, HSG C
*	2,687	98	Impervious areas
	11,586	79	Weighted Average
	8,899	74	76.81% Pervious Area
	2,687	98	23.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 min. minimum**

Summary for Subcatchment 102S: Runoff into Drain Trench

Runoff = 0.74 cfs @ 12.10 hrs, Volume= 0.060 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
	7,276	49	50-75% Grass cover, Fair, HSG A
	12,022	79	50-75% Grass cover, Fair, HSG C
	2,220	74	>75% Grass cover, Good, HSG C
	6,817	73	Woods, Fair, HSG C
*	3,850	98	Impervious Areas
	32,185	73	Weighted Average
	28,335	69	88.04% Pervious Area
	3,850	98	11.96% Impervious Area

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

Summary for Subcatchment 103S: Runoff to Pond 2

Runoff = 0.19 cfs @ 12.09 hrs, Volume= 0.015 af, Depth> 1.33"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
	4,776	74	>75% Grass cover, Good, HSG C
*	1,100	98	Impervious areas
	5,876	78	Weighted Average
	4,776	74	81.28% Pervious Area
	1,100	98	18.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 min. minimum**

Summary for Reach 3R: Design Point

Inflow Area = 2.594 ac, 11.45% Impervious, Inflow Depth > 0.96" for 2-yr event
Inflow = 2.27 cfs @ 12.11 hrs, Volume= 0.208 af
Outflow = 2.27 cfs @ 12.11 hrs, Volume= 0.208 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Basin#1

Inflow Area = 0.266 ac, 23.19% Impervious, Inflow Depth > 1.41" for 2-yr event
Inflow = 0.40 cfs @ 12.09 hrs, Volume= 0.031 af
Outflow = 0.32 cfs @ 12.15 hrs, Volume= 0.030 af, Atten= 22%, Lag= 3.9 min
Primary = 0.32 cfs @ 12.15 hrs, Volume= 0.030 af

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.63' @ 12.15 hrs Surf.Area= 367 sf Storage= 187 cf

Plug-Flow detention time= 63.7 min calculated for 0.030 af (95% of inflow)

Center-of-Mass det. time= 27.6 min (840.6 - 813.1)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	935 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	233	0	0	233
57.00	460	340	340	469
58.00	740	594	935	762

Device	Routing	Invert	Outlet Devices
#1	Primary	56.20'	**6.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.20' / 56.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.32 cfs @ 12.15 hrs HW=56.63' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 0.32 cfs @ 1.76 fps)

Summary for Pond 2P: Basin#2

Inflow Area =	0.874 ac, 13.01% Impervious, Inflow Depth >	1.03"	for 2-yr event	
Inflow =	0.93 cfs @	12.09 hrs, Volume=	0.075 af	
Outflow =	0.78 cfs @	12.15 hrs, Volume=	0.074 af, Atten= 17%, Lag= 3.3 min	
Primary =	0.78 cfs @	12.15 hrs, Volume=	0.074 af	

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 50.75' @ 12.15 hrs Surf.Area= 381 sf Storage= 219 cf

Plug-Flow detention time= 21.5 min calculated for 0.074 af (98% of inflow)
Center-of-Mass det. time= 11.7 min (845.8 - 834.1)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,029 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	214	0	0	214
51.00	448	324	324	456
52.20	740	706	1,029	766

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	**9.5" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#2	Primary	51.20'	**11.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.78 cfs @ 12.15 hrs HW=50.75' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 0.78 cfs @ 2.94 fps)
└—**2=Orifice/Grate** (Controls 0.00 cfs)

Summary for Subcatchment 100S: Overland Runoff

Runoff = 3.07 cfs @ 12.09 hrs, Volume= 0.230 af, Depth> 1.90"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
	4,982	49	50-75% Grass cover, Fair, HSG A
	5,379	36	Woods, Fair, HSG A
	17,398	73	Woods, Fair, HSG C
	30,267	74	>75% Grass cover, Good, HSG C
*	5,302	98	Impervious Areas
	63,328	71	Weighted Average
	58,026	68	91.63% Pervious Area
	5,302	98	8.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 MIN. MINIMUM**

Summary for Subcatchment 101S: Runoff to Pond 1

Runoff = 0.79 cfs @ 12.09 hrs, Volume= 0.059 af, Depth> 2.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
	5,166	74	>75% Grass cover, Good, HSG C
	3,733	73	Woods, Fair, HSG C
*	2,687	98	Impervious areas
	11,586	79	Weighted Average
	8,899	74	76.81% Pervious Area
	2,687	98	23.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 min. minimum**

Summary for Subcatchment 102S: Runoff into Drain Trench

Runoff = 1.69 cfs @ 12.09 hrs, Volume= 0.127 af, Depth> 2.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
	7,276	49	50-75% Grass cover, Fair, HSG A
	12,022	79	50-75% Grass cover, Fair, HSG C
	2,220	74	>75% Grass cover, Good, HSG C
	6,817	73	Woods, Fair, HSG C
*	3,850	98	Impervious Areas
	32,185	73	Weighted Average
	28,335	69	88.04% Pervious Area
	3,850	98	11.96% Impervious Area

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

Summary for Subcatchment 103S: Runoff to Pond 2

Runoff = 0.39 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.56"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=4.70"

	Area (sf)	CN	Description
	4,776	74	>75% Grass cover, Good, HSG C
*	1,100	98	Impervious areas
	5,876	78	Weighted Average
	4,776	74	81.28% Pervious Area
	1,100	98	18.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 min. minimum**

Summary for Reach 3R: Design Point

Inflow Area = 2.594 ac, 11.45% Impervious, Inflow Depth > 2.05" for 10-yr event
Inflow = 5.23 cfs @ 12.12 hrs, Volume= 0.442 af
Outflow = 5.23 cfs @ 12.12 hrs, Volume= 0.442 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Basin#1

Inflow Area = 0.266 ac, 23.19% Impervious, Inflow Depth > 2.66" for 10-yr event
Inflow = 0.79 cfs @ 12.09 hrs, Volume= 0.059 af
Outflow = 0.53 cfs @ 12.18 hrs, Volume= 0.057 af, Atten= 32%, Lag= 5.2 min
Primary = 0.53 cfs @ 12.18 hrs, Volume= 0.057 af

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.96' @ 12.18 hrs Surf.Area= 450 sf Storage= 322 cf

Plug-Flow detention time= 35.1 min calculated for 0.057 af (97% of inflow)

Center-of-Mass det. time= 19.6 min (824.5 - 804.9)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	935 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	233	0	0	233
57.00	460	340	340	469
58.00	740	594	935	762

Device	Routing	Invert	Outlet Devices
#1	Primary	56.20'	**6.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.20' / 56.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.53 cfs @ 12.18 hrs HW=56.96' TW=0.00' (Dynamic Tailwater)
└─1=**Culvert** (Inlet Controls 0.53 cfs @ 2.72 fps)

Summary for Pond 2P: Basin#2

Inflow Area =	0.874 ac, 13.01% Impervious, Inflow Depth > 2.14"	for 10-yr event		
Inflow =	2.08 cfs @ 12.09 hrs, Volume=	0.156 af		
Outflow =	1.85 cfs @ 12.13 hrs, Volume=	0.155 af, Atten= 11%, Lag= 2.5 min		
Primary =	1.85 cfs @ 12.13 hrs, Volume=	0.155 af		

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.36' @ 12.13 hrs Surf.Area= 527 sf Storage= 498 cf

Plug-Flow detention time= 13.3 min calculated for 0.154 af (99% of inflow)
Center-of-Mass det. time= 8.0 min (831.4 - 823.4)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,029 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	214	0	0	214
51.00	448	324	324	456
52.20	740	706	1,029	766

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	**9.5" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#2	Primary	51.20'	**11.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.85 cfs @ 12.13 hrs HW=51.36' TW=0.00' (Dynamic Tailwater)
└─1=**Orifice/Grate** (Orifice Controls 1.26 cfs @ 4.78 fps)
└─2=**Orifice/Grate** (Weir Controls 0.58 cfs @ 1.29 fps)

Summary for Subcatchment 100S: Overland Runoff

Runoff = 8.00 cfs @ 12.09 hrs, Volume= 0.579 af, Depth> 4.76"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.30"

	Area (sf)	CN	Description
	4,982	49	50-75% Grass cover, Fair, HSG A
	5,379	36	Woods, Fair, HSG A
	17,398	73	Woods, Fair, HSG C
	30,267	74	>75% Grass cover, Good, HSG C
*	5,302	98	Impervious Areas
	63,328	71	Weighted Average
	58,026	68	91.63% Pervious Area
	5,302	98	8.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 MIN. MINIMUM**

Summary for Subcatchment 101S: Runoff to Pond 1

Runoff = 1.74 cfs @ 12.09 hrs, Volume= 0.130 af, Depth> 5.84"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.30"

	Area (sf)	CN	Description
	5,166	74	>75% Grass cover, Good, HSG C
	3,733	73	Woods, Fair, HSG C
*	2,687	98	Impervious areas
	11,586	79	Weighted Average
	8,899	74	76.81% Pervious Area
	2,687	98	23.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, 6 min. minimum**

Summary for Subcatchment 102S: Runoff into Drain Trench

Runoff = 4.23 cfs @ 12.09 hrs, Volume= 0.308 af, Depth> 5.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.30"

	Area (sf)	CN	Description
	7,276	49	50-75% Grass cover, Fair, HSG A
	12,022	79	50-75% Grass cover, Fair, HSG C
	2,220	74	>75% Grass cover, Good, HSG C
	6,817	73	Woods, Fair, HSG C
*	3,850	98	Impervious Areas
	32,185	73	Weighted Average
	28,335	69	88.04% Pervious Area
	3,850	98	11.96% Impervious Area

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

Summary for Subcatchment 103S: Runoff to Pond 2

Runoff = 0.87 cfs @ 12.09 hrs, Volume= 0.064 af, Depth> 5.72"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.30"

	Area (sf)	CN	Description
	4,776	74	>75% Grass cover, Good, HSG C
*	1,100	98	Impervious areas
	5,876	78	Weighted Average
	4,776	74	81.28% Pervious Area
	1,100	98	18.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 6 min. minimum

Summary for Reach 3R: Design Point

Inflow Area = 2.594 ac, 11.45% Impervious, Inflow Depth > 4.99" for 100-yr event
Inflow = 13.03 cfs @ 12.10 hrs, Volume= 1.078 af
Outflow = 13.03 cfs @ 12.10 hrs, Volume= 1.078 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Summary for Pond 1P: Basin#1

Inflow Area = 0.266 ac, 23.19% Impervious, Inflow Depth > 5.84" for 100-yr event
Inflow = 1.74 cfs @ 12.09 hrs, Volume= 0.130 af
Outflow = 0.89 cfs @ 12.23 hrs, Volume= 0.128 af, Atten= 49%, Lag= 8.6 min
Primary = 0.89 cfs @ 12.23 hrs, Volume= 0.128 af

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 57.87' @ 12.23 hrs Surf.Area= 699 sf Storage= 838 cf

Plug-Flow detention time= 23.3 min calculated for 0.128 af (99% of inflow)

Center-of-Mass det. time= 15.0 min (806.7 - 791.7)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	935 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	233	0	0	233
57.00	460	340	340	469
58.00	740	594	935	762

Device	Routing	Invert	Outlet Devices
#1	Primary	56.20'	**6.0" Round Culvert** L= 15.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 56.20' / 56.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Primary OutFlow Max=0.89 cfs @ 12.23 hrs HW=57.87' TW=0.00' (Dynamic Tailwater)
└─1=**Culvert** (Inlet Controls 0.89 cfs @ 4.52 fps)

Summary for Pond 2P: Basin#2

Inflow Area =	0.874 ac,	13.01% Impervious,	Inflow Depth >	5.12" for 100-yr event
Inflow =	5.10 cfs @	12.09 hrs, Volume=	0.373 af	
Outflow =	4.46 cfs @	12.13 hrs, Volume=	0.371 af,	Atten= 13%, Lag= 2.7 min
Primary =	4.46 cfs @	12.13 hrs, Volume=	0.371 af	

Routing by Dyn-Stor-Ind method, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 52.00' @ 12.13 hrs Surf.Area= 686 sf Storage= 886 cf

Plug-Flow detention time= 7.7 min calculated for 0.371 af (100% of inflow)
Center-of-Mass det. time= 5.1 min (811.9 - 806.8)

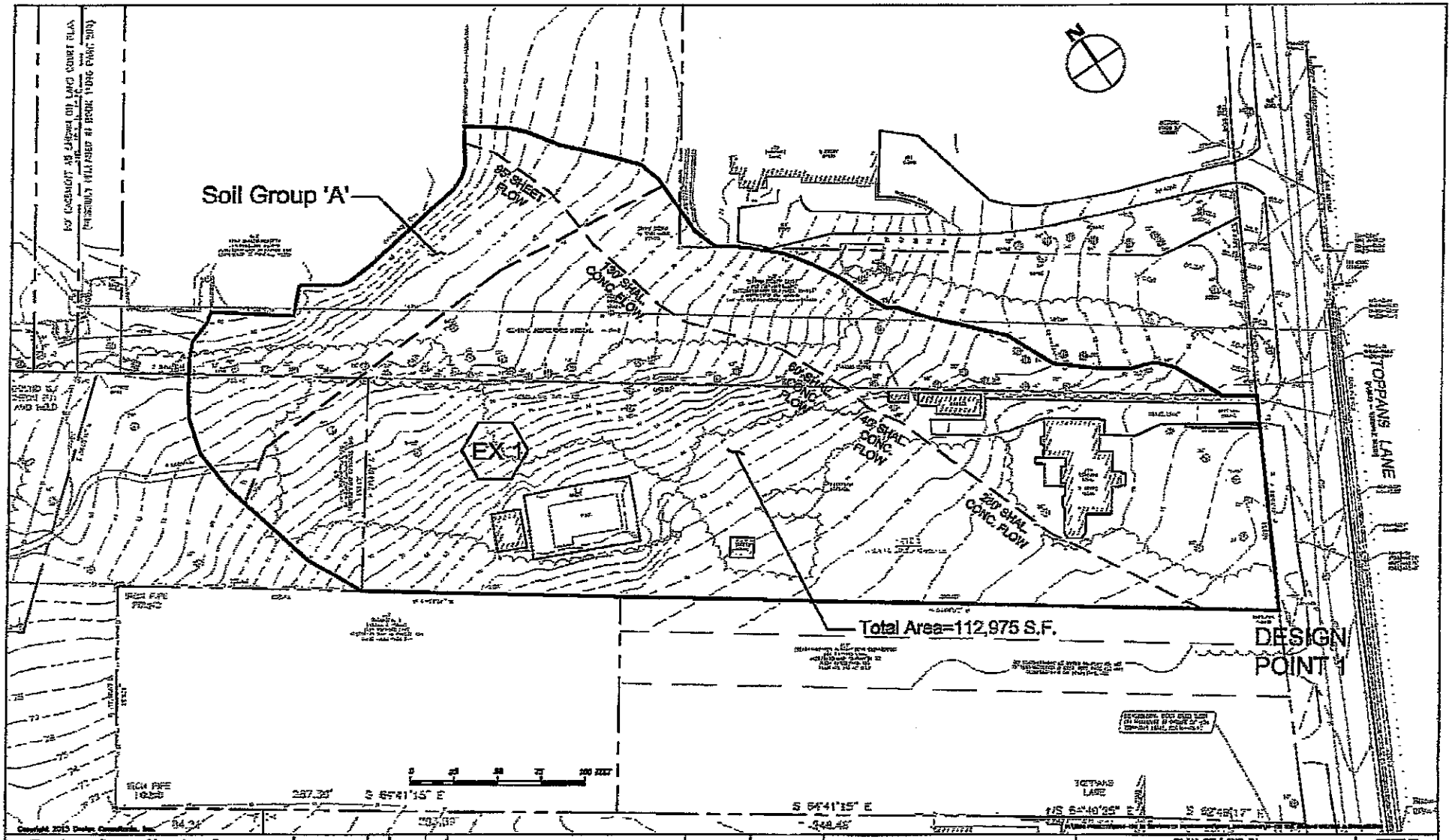
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,029 cf	**Custom Stage Data (Conic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	214	0	0	214
51.00	448	324	324	456
52.20	740	706	1,029	766

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	**9.5" W x 4.0" H Vert. Orifice/Grate** C= 0.600
#2	Primary	51.20'	**11.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.46 cfs @ 12.13 hrs HW=52.00' TW=0.00' (Dynamic Tailwater)
├─1=**Orifice/Grate** (Orifice Controls 1.62 cfs @ 6.15 fps)
└─2=**Orifice/Grate** (Orifice Controls 2.84 cfs @ 4.30 fps)

Appendix B - Drawings



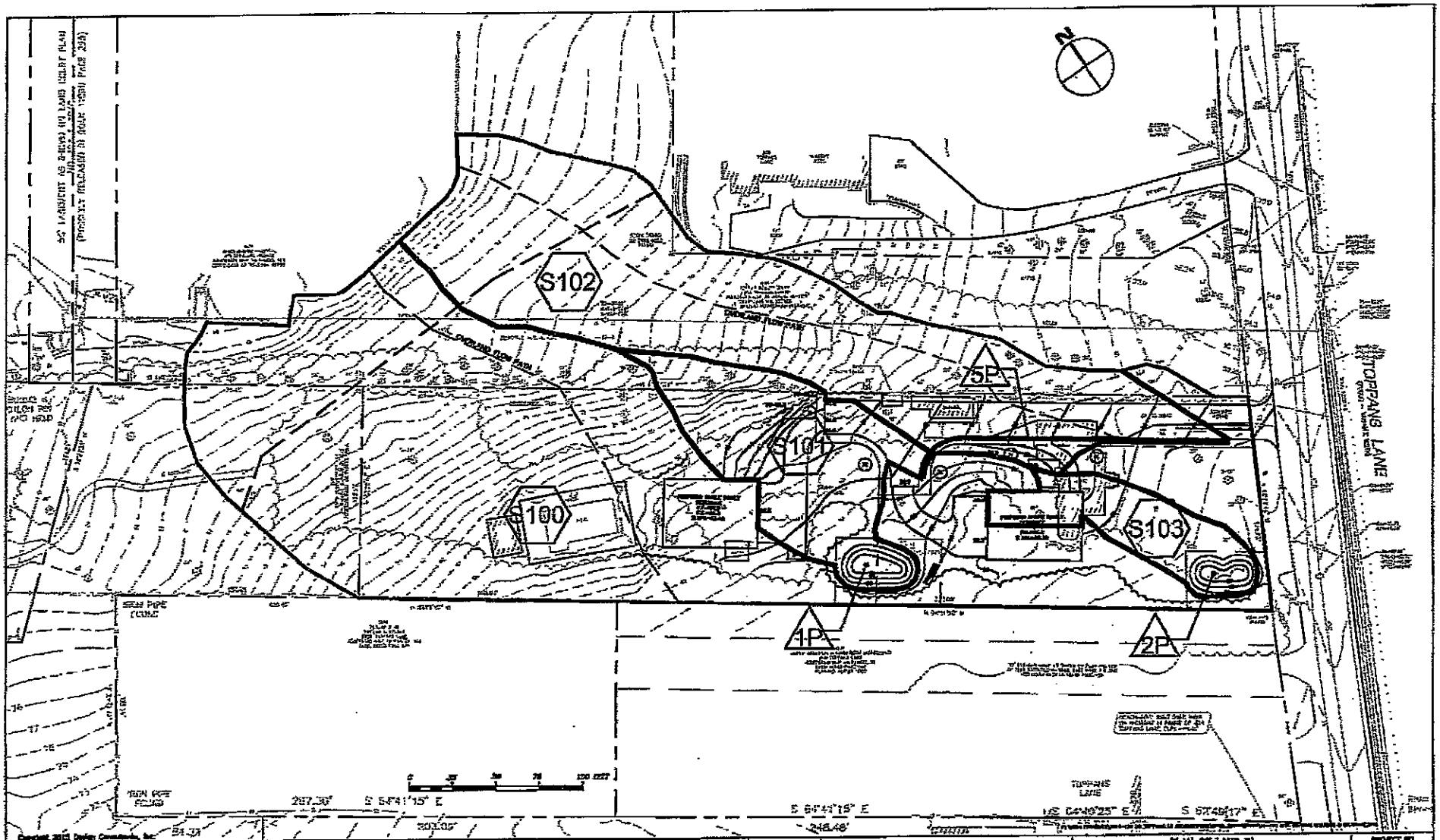
Design Consultants, Inc.
Consulting Engineers and Surveyors

EXISTING DRAINAGE AREAS

26 TOPPANS LANE (Lot 4)

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

FIGURE 1



Design Consultants, Inc.
Consulting Engineers and Surveyors

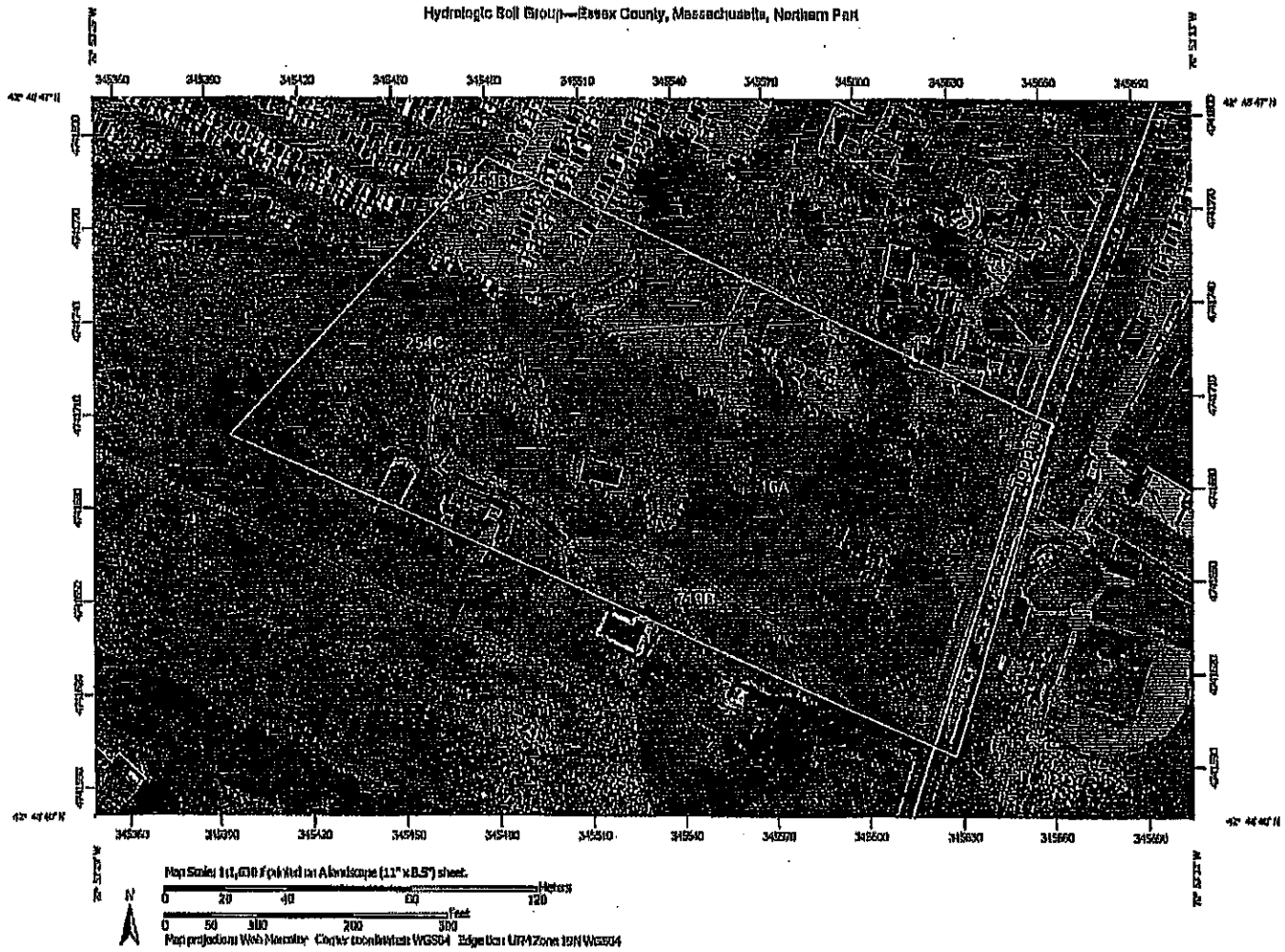
PROPOSED DRAINAGE AREAS

28 TOPPANS LANE (Lot 4)

PLAN OF LAND IN
NEWBURYPORT, MASSACHUSETTS
PREPARED FOR
13 NORTH ADAMS LLC

FIGURE 2

Appendix C - Soils Data


254B
254C
16A
749B
345360
345390
345420
345450
345480
345510
345540
345570
345600
345630
345660
345690
42° 44' 47" N
42° 44' 41" N
70° 53' 23" W
Map Scale: 1:1,030 if printed on A landscape (11" x 8.5") sheet.
Meters
0 20 40 80 120
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Essex County, Massachusetts, Northern Part
Survey Area Data: Version 10, Sep 19, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2010—May 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Essex County, Massachusetts, Northern Part (MA606)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
16A	Scantic silt loam, 0 to 3 percent slopes	C/D	4.0	61.7%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	0.0	0.7%
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	A	2.0	31.2%
719B	Suffield silt loam, 3 to 8 percent slopes	C	0.4	6.4%
Totals for Area of Interest			6.4	100.0%

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Appendix D - Operation & Maintenance Plan

STORMWATER MANAGEMENT
OPERATION AND MAINTENANCE PLAN

Donahue Lane
Newburyport, Massachusetts

The following Stormwater Management Operation and Maintenance (O&M) Plan has been prepared to operate and maintain the stormwater management system for Donahue Lane.

Owner/Operator: 13 North Adams, LLC
9 Pasture Lane
Bedford, NH 03110

Inspection and Maintenance Schedule

Facility personnel will inspect the storm water management system on a routine basis not less than once per month for the first 6 months of operation and annually thereafter. Refer to Sheet C-2, Grading & Drainage Plan, for drainage structure locations. Inspection and maintenance shall be performed as follows:

1. Roadside Gravel Infiltration Trench shall be inspected for accumulation of silt, sediment, standing water, or debris on a semi-annual basis at a minimum, and after every rainfall event of 2-inch or more. Observations shall be made via the observation well built into the system to ensure that the pipe has completely drained 24 hours after the storm event has ended. If standing water is observed more than 24 hours after any sized rain event that infiltration system is deemed failed and requires replacement. In the event of an infiltration system failure, the crushed stone and pipe will need to be removed and replaced. The non-woven filter fabric that surrounds the trench will need to be disposed of and replaced.

2. Landscaped Areas shall be inspected and maintained on a regular basis. Areas which may be subject to erosion will be stabilized and reseeded immediately. These operations will be performed as part of ongoing routine grounds maintenance operations.

3. Street Sweeping of drives and roadway shall be conducted bimonthly between the months of April and November. Removed sediment will be disposed off site by a qualified waste disposal contractor in accordance with state and federal regulations.

4. Detention Areas : Vegetation shall be inspected monthly for disease or pest problems. If treatment is warranted, use the least toxic approach. Promptly replace any vegetation that is beyond treatment. During times of extended drought, inspect vegetation for signs of stress including wilting or spotted or brown leaves. Water as required. Detention areas shall be weeded at least once a year as required.
   Inspect soil and repair eroded areas monthly. Re-plant void areas as needed. Remove litter and debris monthly. Remove and replace dead vegetation twice per year in spring and fall.
   Replace soil media if ponding is witnessed more than 48 hours after rainfall event within the surface ponding area.

Inspection and Maintenance Procedures for Outlet Control Structure (Flat Top Precast Manhole)

Sump shall be inspected quarterly during the first year to determine sediment collection. Sump shall be cleaned annually at a minimum, or when sediment and debris are within 1-feet deep. Additionally there should be periodic inspections of the structure and surrounding areas for pollutants such as leaks from dumpsters, minor spills, and dumping and litter. If pollutants are found, action should be taken immediately to have the pollutant source removed.

All sediments removed from the outlet control structure sump shall be disposed of properly, and in accordance with all applicable local and state regulations.

Stormwater System Inspection Report

General Information			
Location: Donahue Lane, Newburyport			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Purpose of Inspection			
Weather Information			
Has it rained since the last inspection? ☐Yes ☐No			
Weather at time of this inspection?			

Construction Phase Erosion/Sedimentation Control Measures

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
1	Stabilized Construction Entrance	☐Yes ☐No		
2	Silt Sacks in stormwater inlets	☐Yes ☐No		
3	Erosion Control Barriers	☐Yes ☐No		
4	Sediment tracking in roadway(s)	☐Yes ☐No		
5	Vehicle wash area	☐Yes ☐No		
6	Concrete washout area	☐Yes ☐No		

Permanent Site-Specific Stormwater Devices

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
1		☐Yes ☐No		
2		☐Yes ☐No		
3		☐Yes ☐No		
4		☐Yes ☐No		
5		☐Yes ☐No		
6		☐Yes ☐No		
7		☐Yes ☐No		
8		☐Yes ☐No		
9		☐Yes ☐No		
10		☐Yes ☐No		

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
11		☐Yes ☐No		
12		☐Yes ☐No		
13		☐Yes ☐No		
14		☐Yes ☐No		
15		☐Yes ☐No		
16		☐Yes ☐No		
17		☐Yes ☐No		

	Description	Installed and Operating Properly?	Corrective Action Needed	Date for Corrective Action/Responsible Person
18		☐Yes ☐No		
19		☐Yes ☐No		
20		☐Yes ☐No		
21		☐Yes ☐No		
22		☐Yes ☐No		
23		☐Yes ☐No		
24		☐Yes ☐No		
25		☐Yes ☐No		
26		☐Yes ☐No		
27		☐Yes ☐No		
28		☐Yes ☐No		
29		☐Yes ☐No		
30		☐Yes ☐No		

Overall Site Issues

	Description		Corrective Action	Date for Corrective Action/Responsible Person
1	Are all slopes properly stabilized?	☐Yes ☐No		
2	Are natural resource areas (e.g., streams, wetlands, etc.) being subjected to erosion?	☐Yes ☐No		
3	Are discharge points free of sediment deposits?	☐Yes ☐No		

Certification Statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name: _____

Signature: _____

Date: _____


EXHIBIT
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9

STORMWATER MANAGEMENT PERMIT

APPLICATION

Department of Public Services
Engineering Department
16A Perry Way
Newburyport, MA 01950
Telephone: 978-465-4464 x1711

Revised 05/15/14

Received Date: 2/6/17
Fee Paid: 227.00
Date Paid: 2/6/17
Permit #: SMP-003
Approved By: JEW
Approval Date: 2/8/17
(For DPS use only)

1. Project / Site Information

Is site less than 10,000 sq ft of land disturbance? If 'no', then no permit required. If 'yes', continue below.

Project / Site Name: Donahue Court

Project Street / Location: 26 Toppans Lane, Lot 46 Newburyport, MA 01950

Assessor's Map: _____ Parcel(s): _____

Applicant Type (Check One) ☒ Single-Family ☐ Commercial and Other Non-Single-Family

Application Fee Structure		Proposed Project Land Disturbance (sq. ft.)	Application Fee (Non-Refundable)
Land disturbance less than 10,000 square feet	No permit required	27,000	$227
Land disturbance 10,000 square feet and greater	$200.00 base fee plus $1.00 for every 1,000 square feet of land disturbance		

Total Area of Impervious Surfaces:	Existing	Proposed	Net
(Paved, parking, decks, roofs, etc.) (sq. ft.)	2873	12,171	9,298

2. Applicant Information

Name: Steve McConnell
Address: 3 Blueberry Lane, Georgetown, MA 01833
Phone: 978-918-1783
E-mail: flutie3@gmail.com

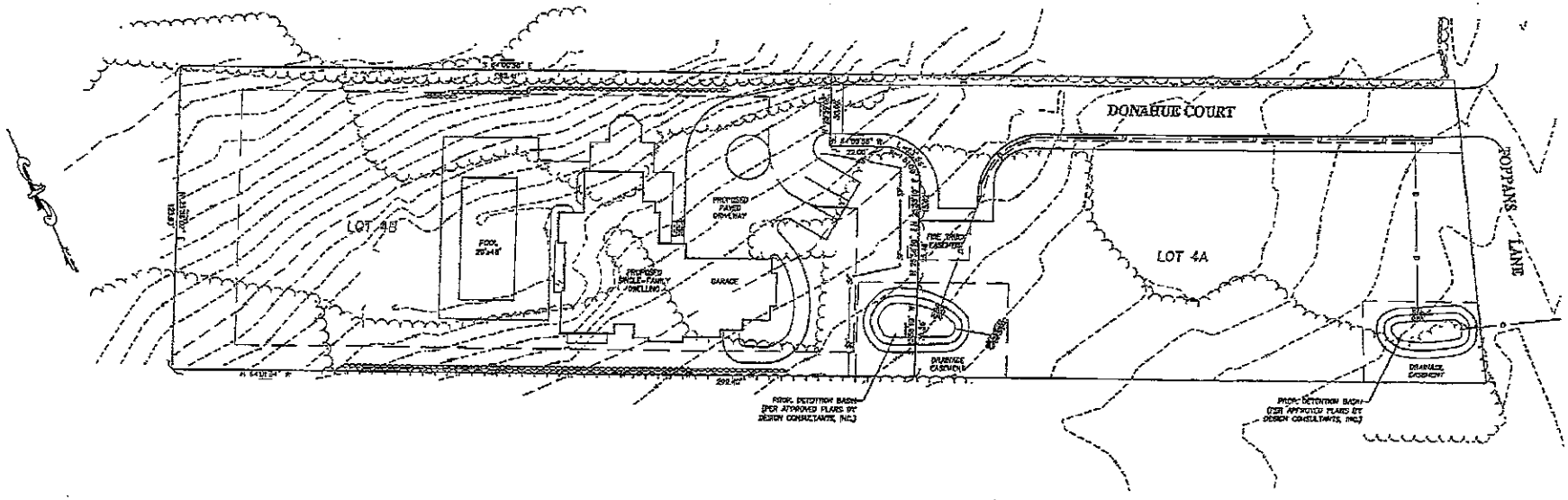
3. Owner Information

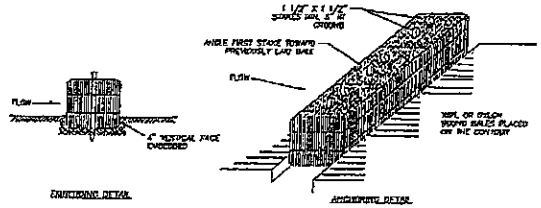
☒ *Check box if Owner is also the Applicant*

4. Application Waiver

The project described above is exempt from meeting the stormwater management standards as outlined in the Newburyport Stormwater Management Ordinances (Chapter 17) for the following reason:

☐ Land disturbance is less than 10,000 square feet.





STRAW OR HAY BALE BARRIER
N.T.S.

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING ADJACENT BALES.
2. BALED HAY AND STRAW SHALL BE TYPICALLY EMBEDDED 4" TO 6" USING EXISTING GRADE OR FINISHED GRADE. ADDITIONALLY, FLAG 4" TO 8" OF LOOSE HAY BELOW ALL BALES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

HAY BALE INSTALLATION N.T.S.

LEGEND

- EXIST. CONTOUR
- 37 PROP. CONTOUR
- PROP. RETAINING WALL
- SF PROP. HAY BALES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20'

PREPARED FOR

STEVE McCONNELL
3 BLUEBERRY LANE
GEORGETOWN, MA 01833

NO.	DATE	DESCRIPTION	BY

MEI MILLENNIUM ENGINEERING, INC.
ENGINEERING AND LAND SURVEYING
45 ELM ST. SALISBURY, MA 01952 (978) 462-6060
13 HAMPTON RD. EXETER, NH 03833 (603) 778-0528

SCALE: 1"=20' DESG. BY: C.M.T.
DATE: APR. 27, 2017 CHKD. BY: E.W.S. PROJECT: M173080

PLAN OF LAND
IN
NEWBURYPORT, MA
SHOWING
PROPOSED SINGLE-FAMILY DWELLING
AT
LOT 4B DONAHUE COURT

SITE PLAN

SHEET 1 OF 1

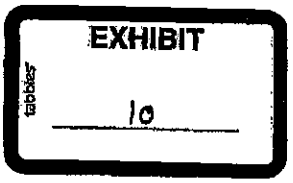

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EXHIBIT
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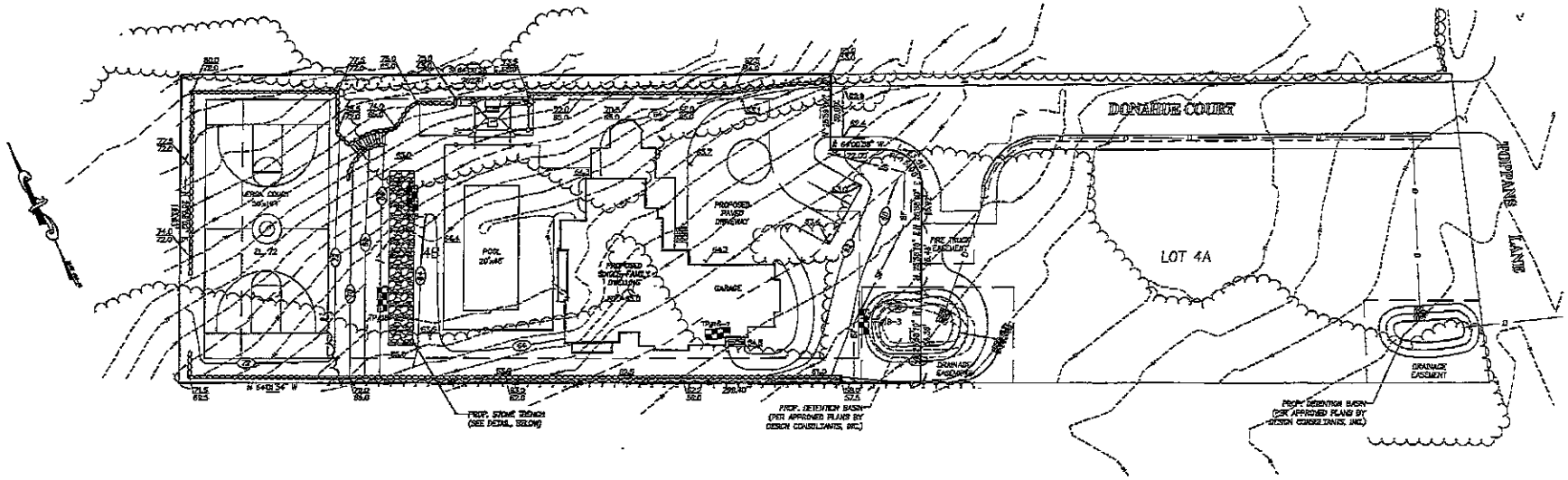
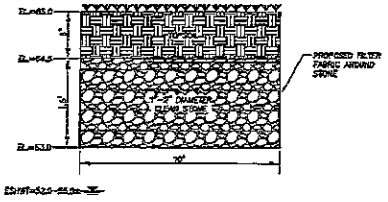
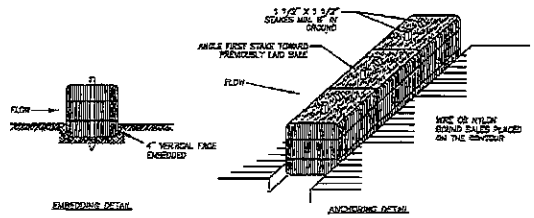




** ANY FILL ENCOUNTERED DURING CONSTRUCTION OF TRENCH SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL (i.e. SAND)

STONE TRENCH DETAIL

N.T.S.



STRAW OR HAY BALE BARRIER

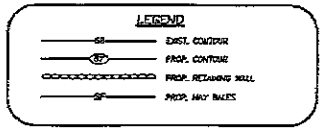
N.T.S.

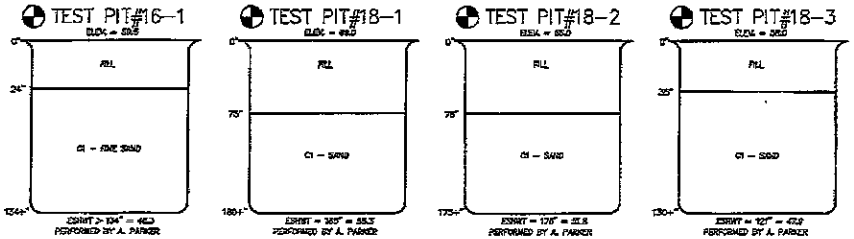
CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING ADJACENT BALES.
2. BALED HAY AND STRAW SHALL BE TYPICALLY EMBEDDED 4" TO 6" BELOW EXISTING GRADE OR FINISHED GRADE. ADDITIONALLY, PLACE 4" TO 6" OF LOOSE HAY BELOW ALL BALES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTIONS SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

HAY BALE INSTALLATION

N.T.S.





GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20'

PREPARED FOR
STEVE McCONNELL
3 BLUEBERRY LANE
GEORGETOWN, MA 01833

NO.	DATE	DESCRIPTION	BY

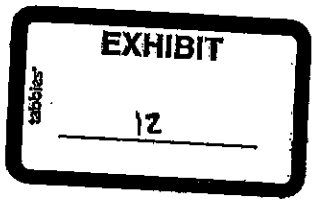
MILLENNIUM ENGINEERING, INC.
ENGINEERING AND LAND SURVEYING
92 ELM ST. SALISBURY, MA 01952 (978) 463-8588
13 HAMPTON RD. EXETER, NH 03833 (603) 778-0528

SCALE: 1"=20' | DESN. BY: C.M.Y.
DATED: JAN. 30, 2018 | CHKD. BY: K.W.R. | PROJECT: M172083

PLAN OF LAND
IN
NEWBURYPORT, MA
SHOWING
PROPOSED SINGLE-FAMILY DWELLING
AT
LOT 4B DONAHUE COURT

SITE PLAN

SHEET: 1 OF 1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12

STORMWATER CALCULATIONS

FOR: STEVE McCONNELL

PROPOSED SINGLE FAMILY DWELLING

LOT 4B DONAHUE COURT

NEWBURYPORT, MA

PREPARED BY:

MILLENNIUM ENGINEERING, INC.
62 ELM STREET
SALISBURY, MA 01952
(978) 463-8980

FEBRUARY 6, 2018

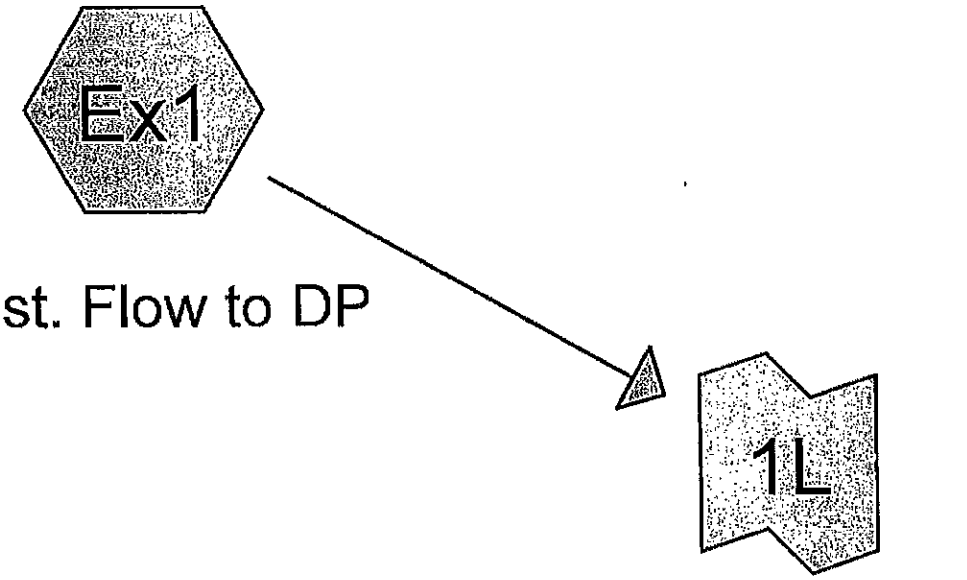
CONCLUSIONS

The results of these calculations indicate the proposed stormwater management systems for the proposed development are capable of storing and treating the runoff for the 2-year, 10-year and 100-year storm events.

The peak flow rates in this analysis have been conservatively estimated for both the pre- and post-development conditions. Based on the results of the analyses described herein, the proposed development will not increase the runoff rate leaving the site. The proposed storm water management facilities shown on the Site Plan will produce no adverse storm water runoff impacts under the storms analyzed.

Condition	2-year	10-year	100-year
Pre-Development	2.2	5.2	13.0
Post Development	1.7	4.5	11.1

PRE-DEVELOPMENT DRAINAGE CALCULATIONS



Subcat Reach Pond Link

Drainage Diagram for M173263-Existing
Prepared by Millennium Engineering, Inc. 2/6/2018

Subcatchment Ex1: Exist. Flow to DP

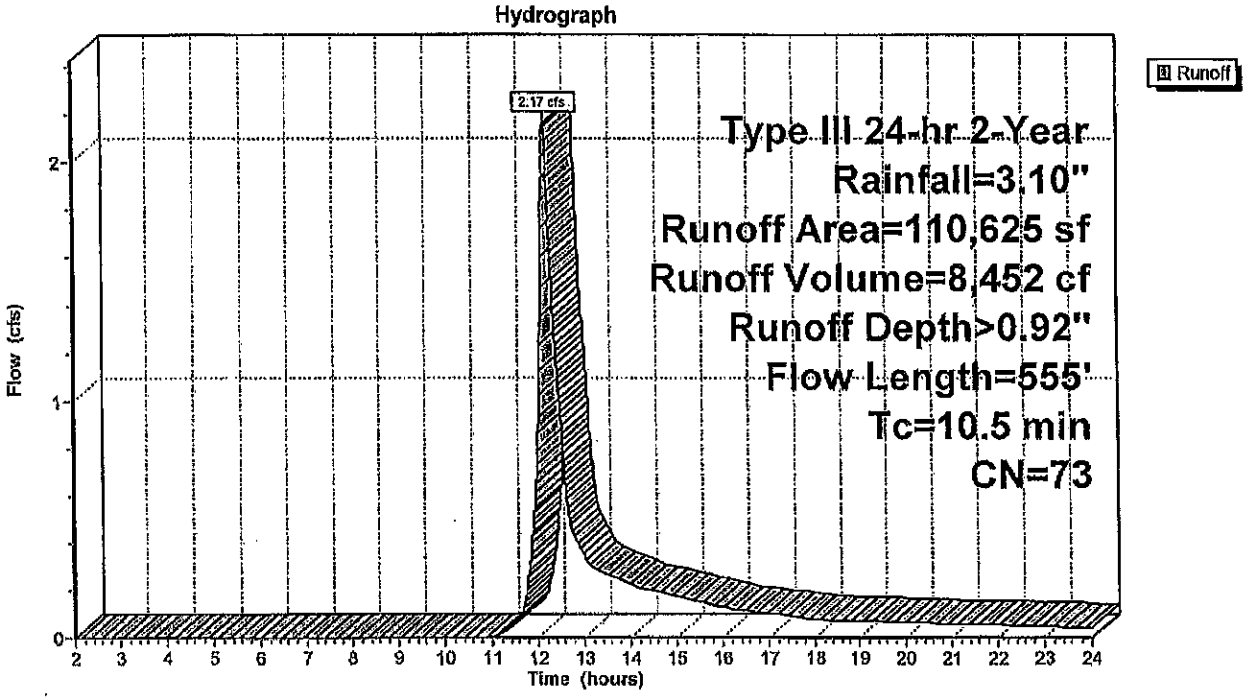
Runoff = 2.17 cfs @ 12.16 hrs, Volume= 8,452 cf, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
2,964	98	Buildings
105	98	Brick Walk
2,633	90	Gravel roads, HSG C/D
51,836	76	Woods, Fair, HSG C/D
5,480	36	Woods, Fair, HSG A
12,187	49	50-75% Grass cover, Fair, HSG A
35,420	79	50-75% Grass cover, Fair, HSG C
110,625	73	Weighted Average
107,556		Pervious Area
3,069		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Subcatchment Ex1: Exist. Flow to DP

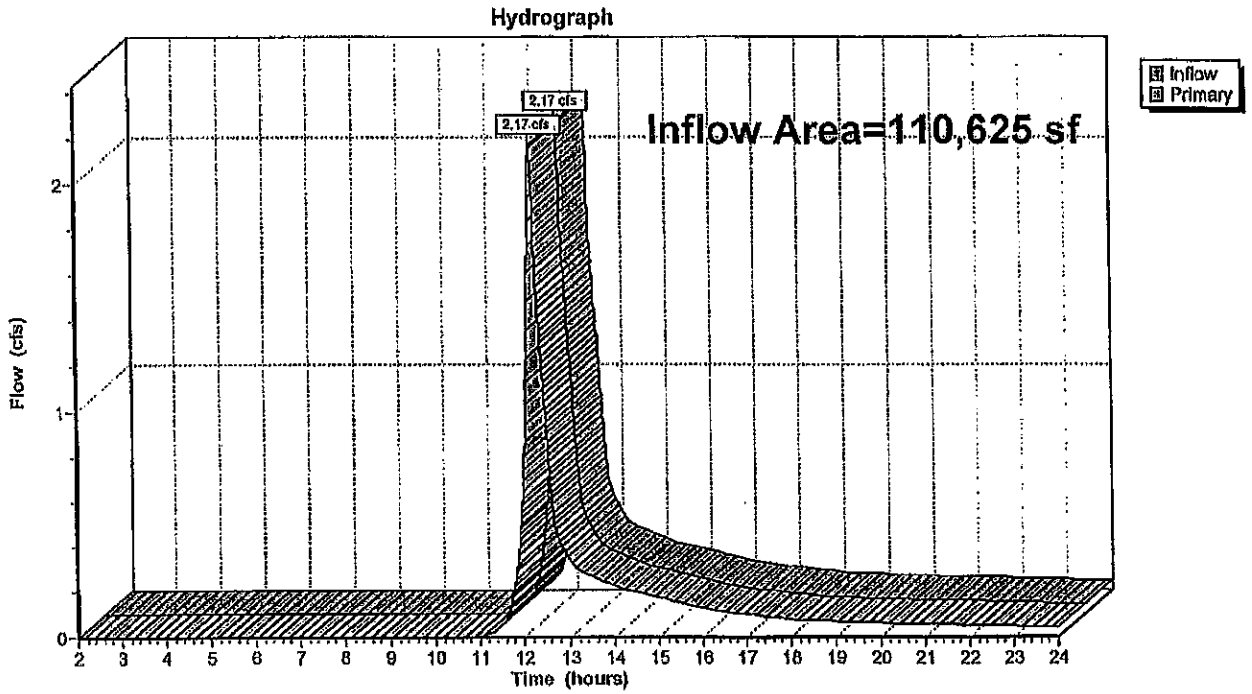


Link 1L: Design Point

Inflow Area = 110,625 sf, Inflow Depth > 0.92" for 2-Year event
Inflow = 2.17 cfs @ 12.16 hrs, Volume= 8,452 cf
Primary = 2.17 cfs @ 12.16 hrs, Volume= 8,452 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Design Point



Subcatchment Ex1: Exist. Flow to DP

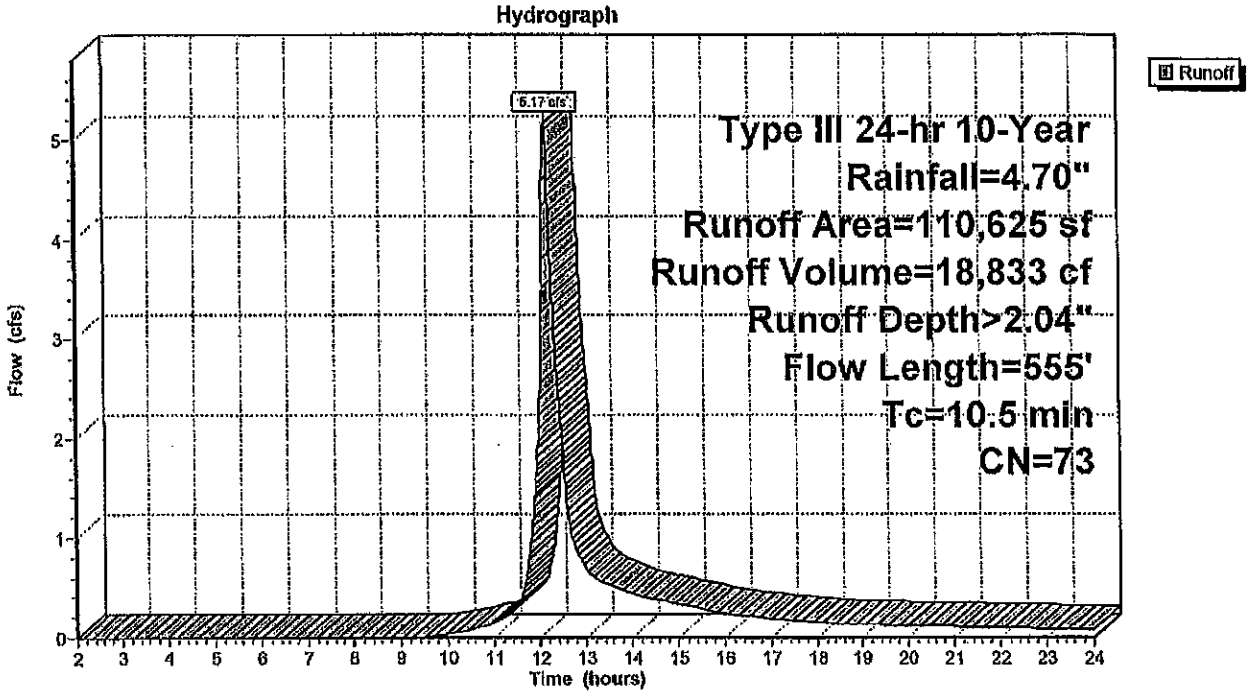
Runoff = 5.17 cfs @ 12.15 hrs, Volume= 18,833 cf, Depth> 2.04"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
2,964	98	Buildings
105	98	Brick Walk
2,633	90	Gravel roads, HSG C/D
51,836	76	Woods, Fair, HSG C/D
5,480	36	Woods, Fair, HSG A
12,187	49	50-75% Grass cover, Fair, HSG A
35,420	79	50-75% Grass cover, Fair, HSG C
110,625	73	Weighted Average
107,556		Pervious Area
3,069		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Subcatchment Ex1: Exist. Flow to DP

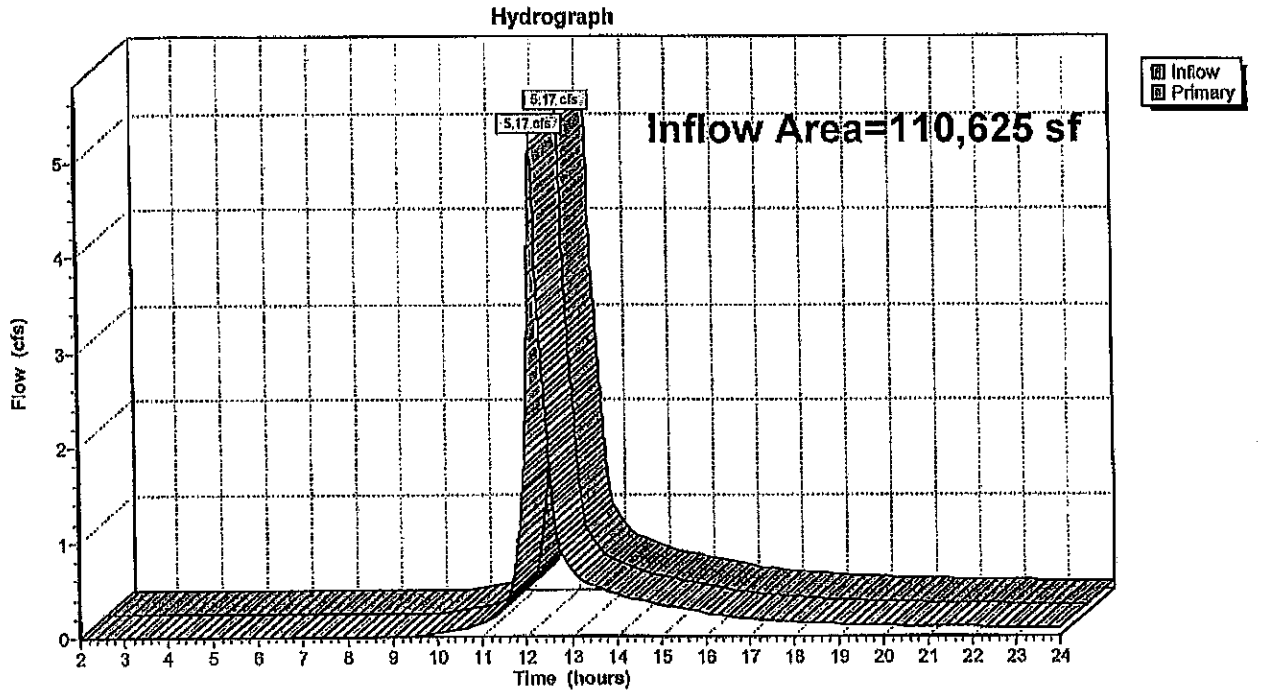


Link 1L: Design Point

Inflow Area = 110,625 sf, Inflow Depth > 2.04" for 10-Year event
Inflow = 5.17 cfs @ 12.15 hrs, Volume= 18,833 cf
Primary = 5.17 cfs @ 12.15 hrs, Volume= 18,833 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Design Point



Subcatchment Ex1: Exist. Flow to DP

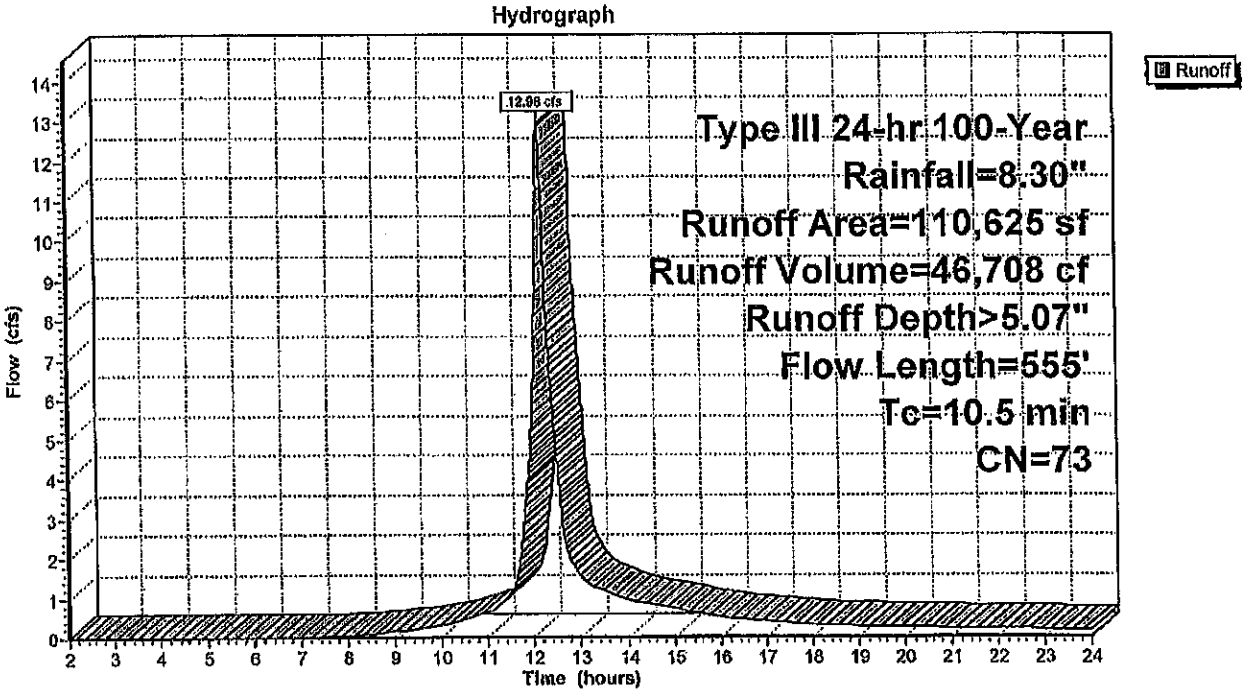
Runoff = 12.98 cfs @ 12.15 hrs, Volume= 46,708 cf, Depth> 5.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.30"

Area (sf)	CN	Description
2,964	98	Buildings
105	98	Brick Walk
2,633	90	Gravel roads, HSG C/D
51,836	76	Woods, Fair, HSG C/D
5,480	36	Woods, Fair, HSG A
12,187	49	50-75% Grass cover, Fair, HSG A
35,420	79	50-75% Grass cover, Fair, HSG C
110,625	73	Weighted Average
107,556		Pervious Area
3,069		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	95	0.0830	0.29		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.10"
0.5	130	0.0830	4.64		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	60	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	40	0.0830	1.44		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.4	230	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.5	555	Total			

Subcatchment Ex1: Exist. Flow to DP

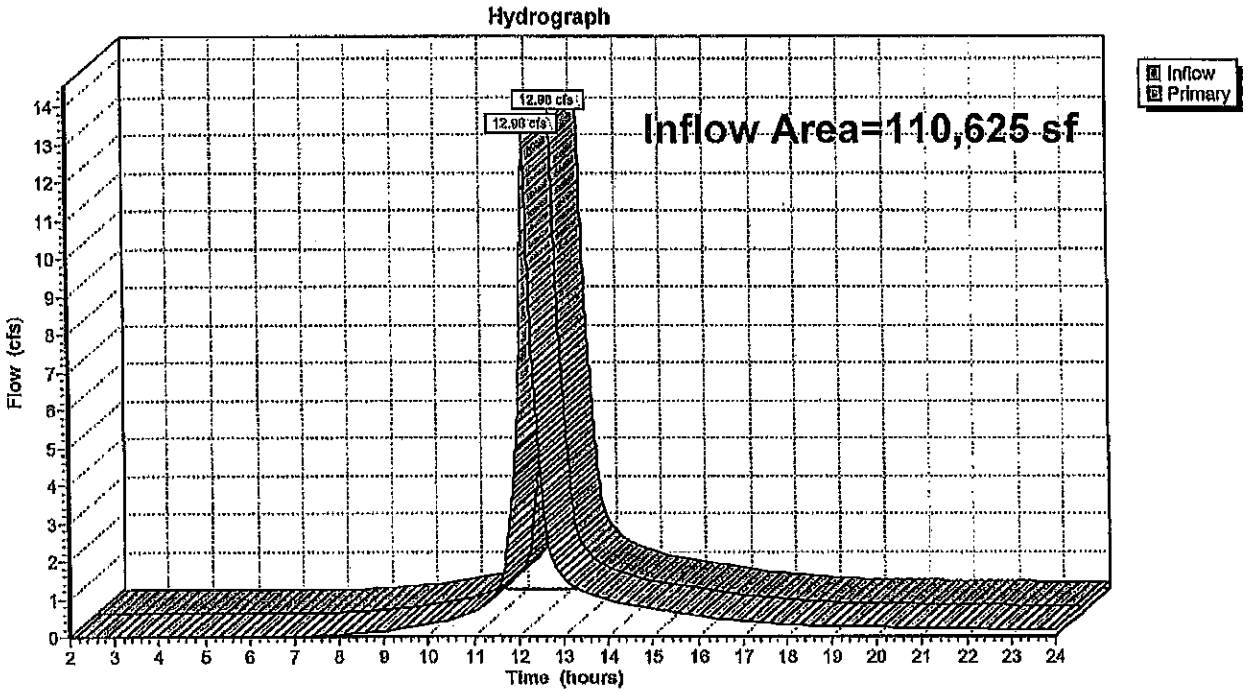


Link 1L: Design Point

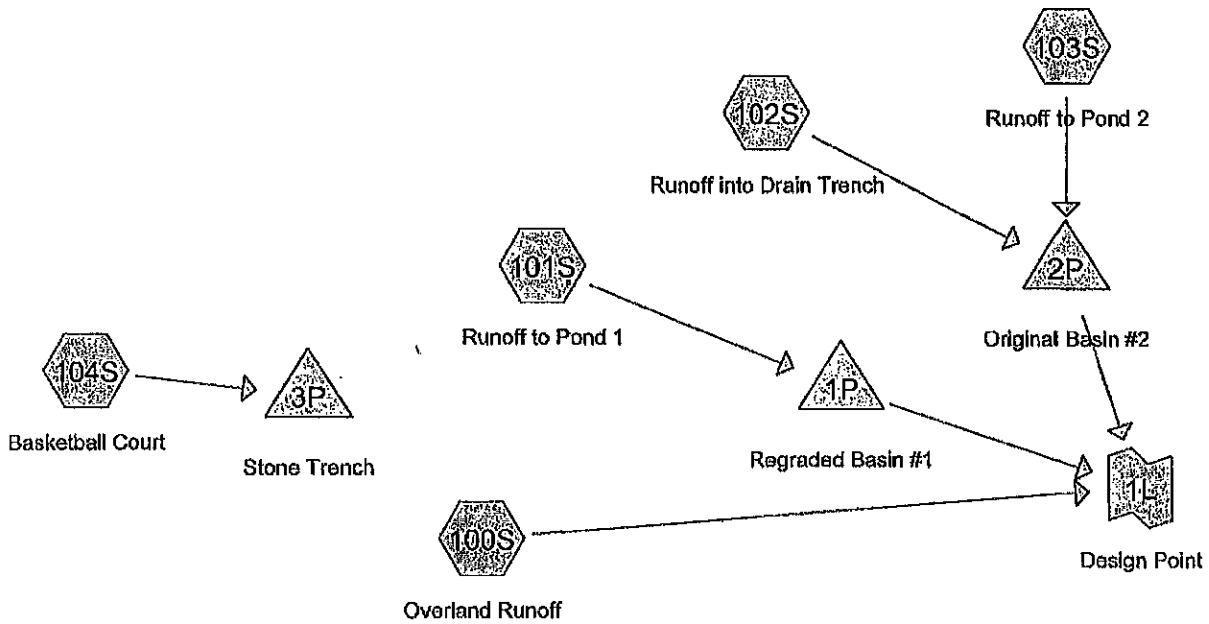
Inflow Area = 110,625 sf, Inflow Depth > 5.07" for 100-Year event
Inflow = 12.98 cfs @ 12.15 hrs, Volume= 46,708 cf
Primary = 12.98 cfs @ 12.15 hrs, Volume= 46,708 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 2.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Design Point



POST-DEVELOPMENT DRAINAGE CALCULATIONS



Subcat Reach Pond Link

Drainage Diagram for M173263-Proposed
Prepared by Millennium Engineering, Inc. 2/6/2018
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Subcatchment 100S: Overland Runoff

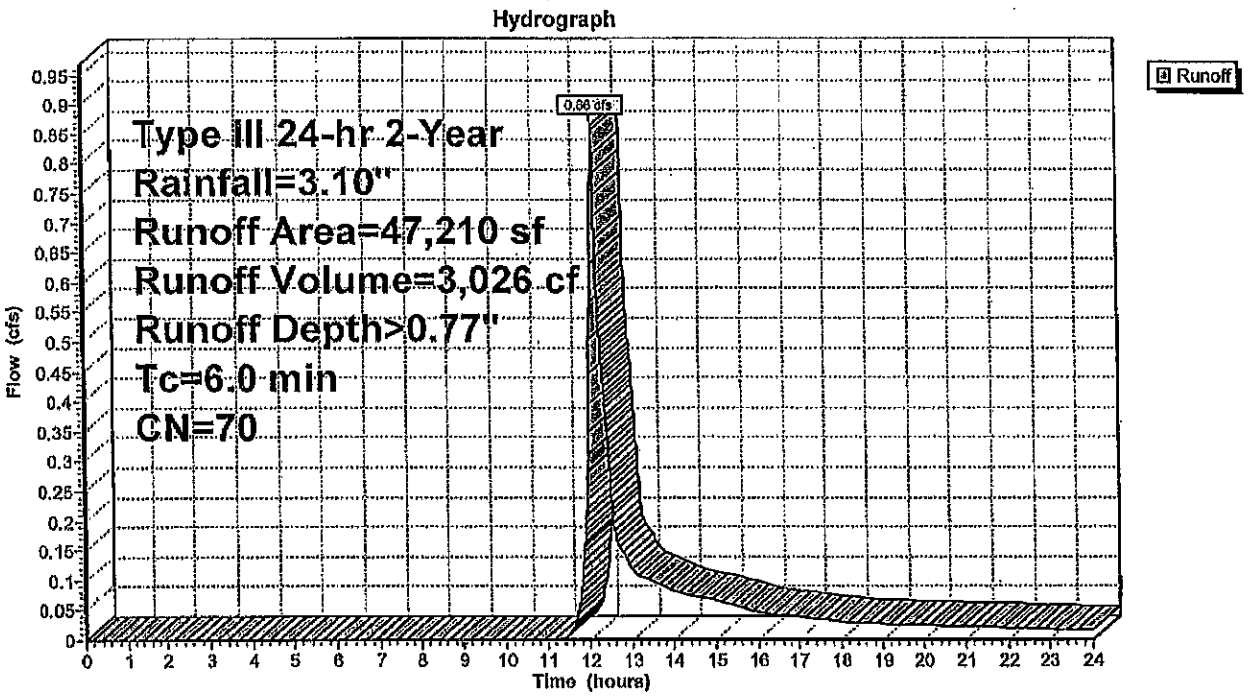
Runoff = 0.86 cfs @ 12.10 hrs, Volume= 3,026 cf, Depth> 0.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,982	49	50-75% Grass cover, Fair, HSG A
5,379	36	Woods, Fair, HSG A
15,910	73	Woods, Fair, HSG C
14,217	74	>75% Grass cover, Good, HSG C
6,722	98	Impervious Areas
47,210	70	Weighted Average
40,488		Pervious Area
6,722		Impervious Area

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

Subcatchment 100S: Overland Runoff



Subcatchment 101S: Runoff to Pond 1

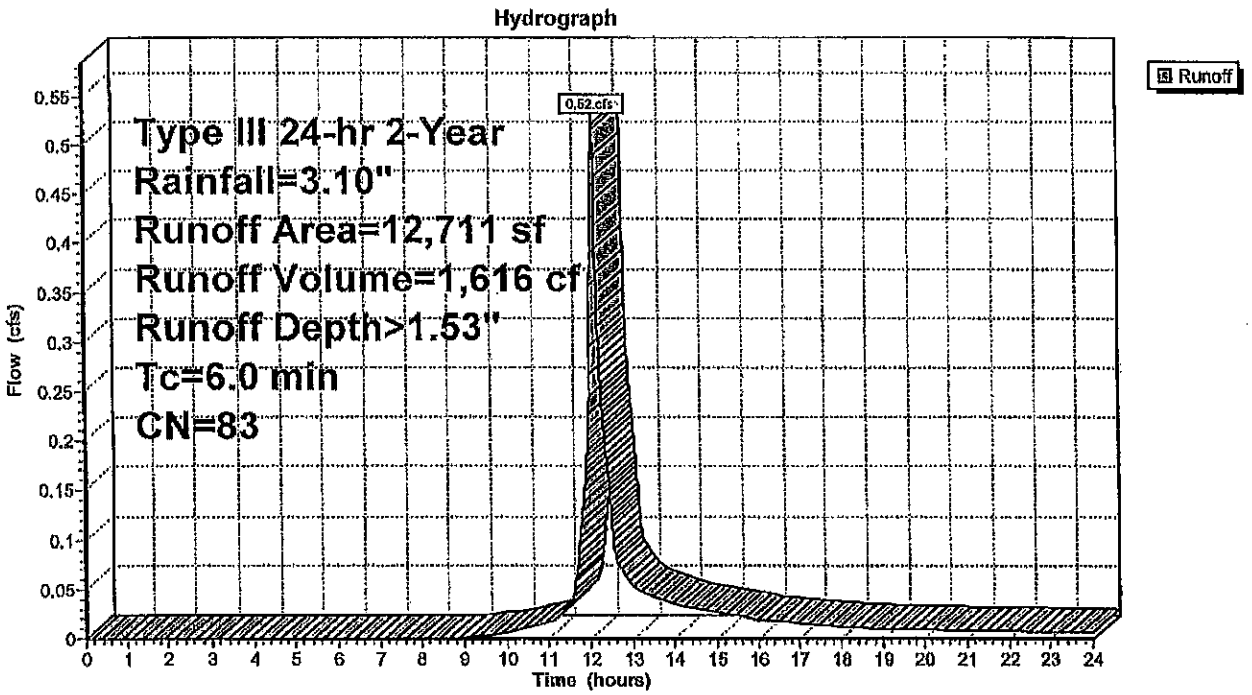
Runoff = 0.52 cfs @ 12.09 hrs, Volume= 1,616 cf, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
6,298	74	>75% Grass cover, Good, HSG C
1,413	73	Woods, Fair, HSG C
5,000	98	Impervious Areas
12,711	83	Weighted Average
7,711		Pervious Area
5,000		Impervious Area

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

Subcatchment 101S: Runoff to Pond 1



Pond 1P: Regraded Basin #1

Inflow Area = 12,711 sf, Inflow Depth > 1.53" for 2-Year event
Inflow = 0.52 cfs @ 12.09 hrs, Volume= 1,616 cf
Outflow = 0.29 cfs @ 12.22 hrs, Volume= 1,615 cf, Atten= 44%, Lag= 7.9 min
Discarded = 0.11 cfs @ 12.22 hrs, Volume= 1,339 cf
Primary = 0.18 cfs @ 12.22 hrs, Volume= 277 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.50' @ 12.22 hrs Surf.Area= 569 sf Storage= 252 cf
Flood Elev= 58.00' Surf.Area= 1,040 sf Storage= 1,444 cf

Plug-Flow detention time= 8.9 min calculated for 1,615 cf (100% of inflow)
Center-of-Mass det. time= 8.6 min (842.3 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	1,444 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

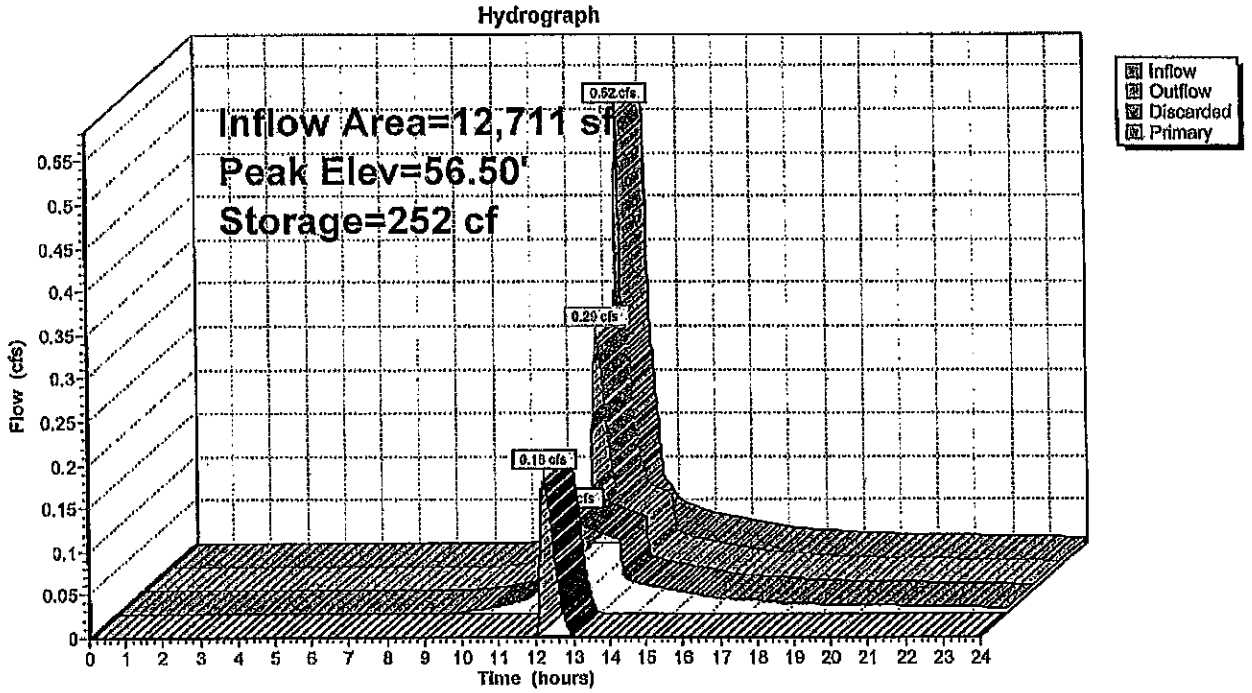
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	440	0	0	440
57.00	715	572	572	728
58.00	1,040	872	1,444	1,069

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Surface area**
#2	Primary	56.20'	**6.0" x 15.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 56.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Discarded OutFlow Max=0.11 cfs @ 12.22 hrs HW=56.50' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.18 cfs @ 12.22 hrs HW=56.50' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.18 cfs @ 1.47 fps)

Pond 1P: Regraded Basin #1



Subcatchment 102S: Runoff into Drain Trench

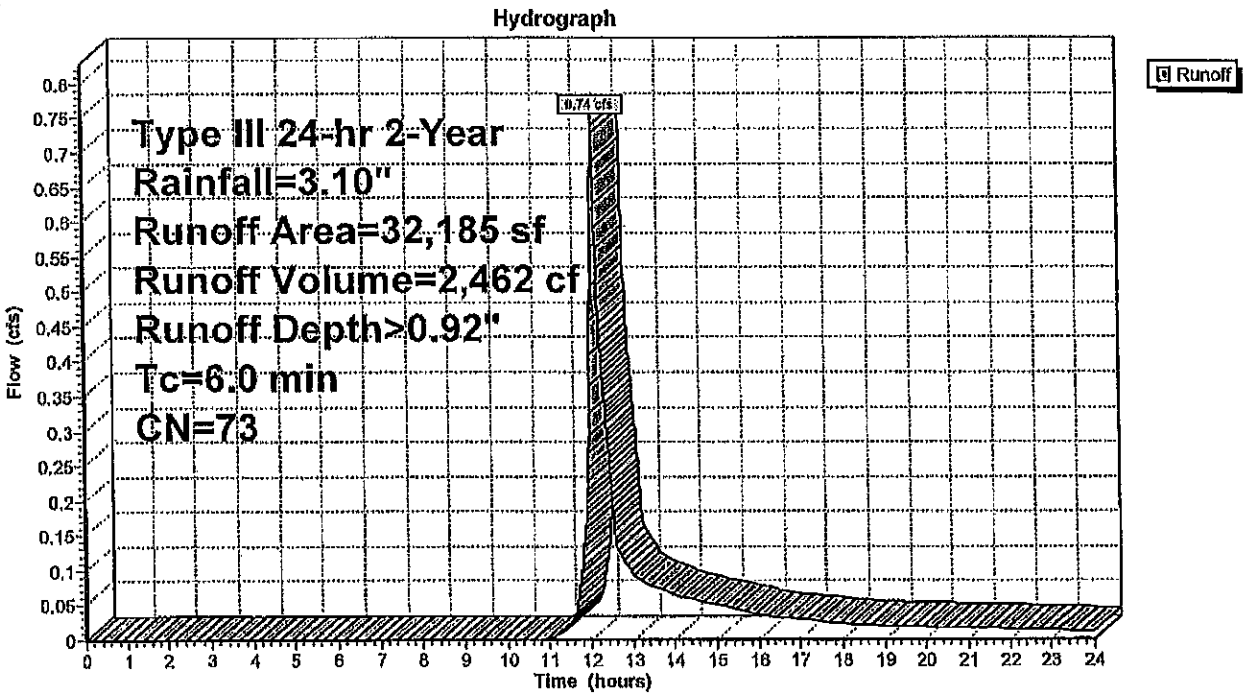
Runoff = 0.74 cfs @ 12.10 hrs, Volume= 2,462 cf, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
7,276	49	50-75% Grass cover, Fair, HSG A
12,022	79	50-75% Grass cover, Fair, HSG C
2,220	74	>75% Grass cover, Good, HSG C
6,817	73	Woods, Fair, HSG C
3,850	98	Impervious Areas
32,185	73	Weighted Average
28,335		Pervious Area
3,850		Impervious Area

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

Subcatchment 102S: Runoff into Drain Trench



Subcatchment 103S: Runoff to Pond 2

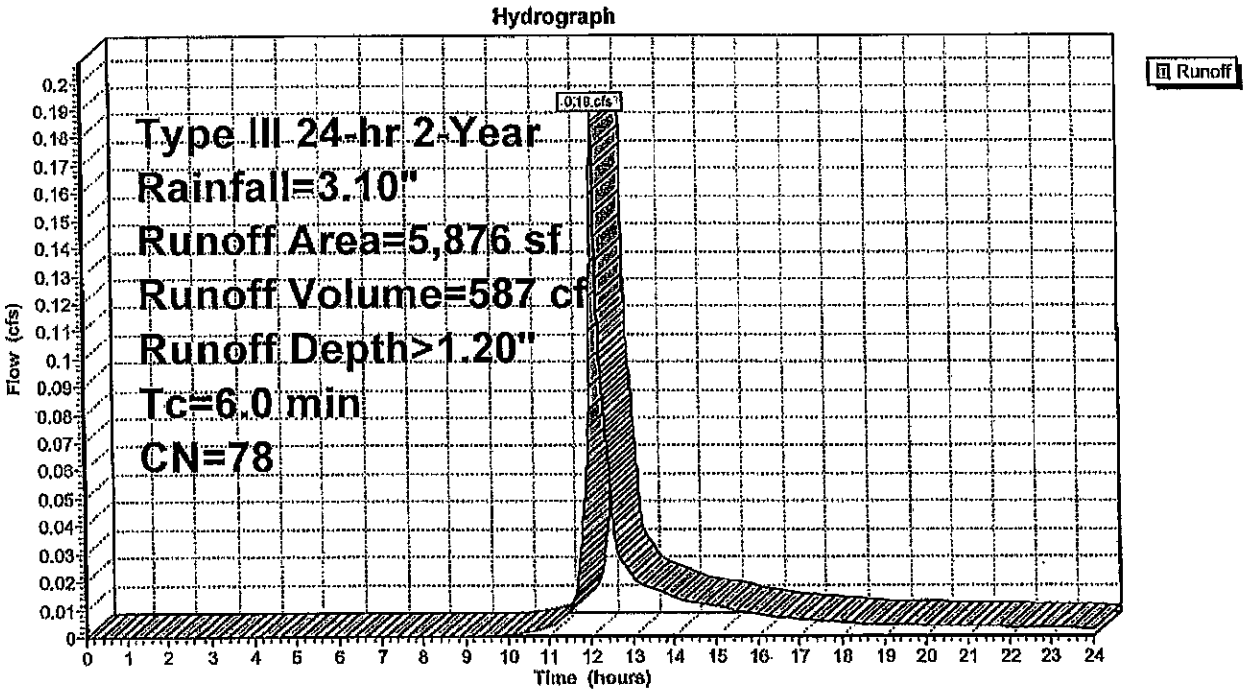
Runoff = 0.19 cfs @ 12.09 hrs, Volume= 587 cf, Depth> 1.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
4,776	74	>75% Grass cover, Good, HSG C
1,100	98	Impervious Areas
5,876	78	Weighted Average
4,776		Pervious Area
1,100		Impervious Area

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

Subcatchment 103S: Runoff to Pond 2



Pond 2P: Original Basin #2

Inflow Area = 38,061 sf, Inflow Depth > 0.96" for 2-Year event
Inflow = 0.93 cfs @ 12.10 hrs, Volume= 3,049 cf
Outflow = 0.77 cfs @ 12.15 hrs, Volume= 2,994 cf, Atten= 17%, Lag= 3.3 min
Primary = 0.77 cfs @ 12.15 hrs, Volume= 2,994 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 50.75' @ 12.15 hrs Surf.Area= 381 sf Storage= 219 cf
Flood Elev= 52.20' Surf.Area= 740 sf Storage= 1,029 cf

Plug-Flow detention time= 16.6 min calculated for 2,994 cf (98% of inflow)
Center-of-Mass det. time= 6.5 min (869.9 - 863.4)

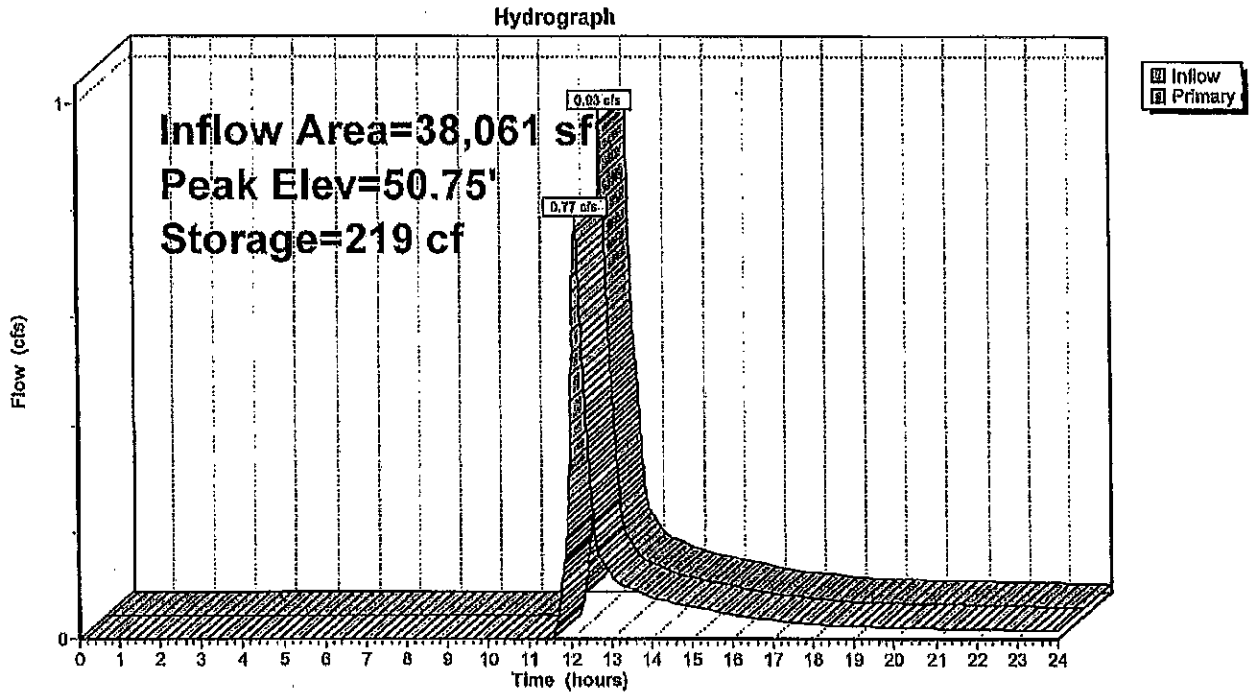
Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,029 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	214	0	0	214
51.00	448	324	324	456
52.20	740	706	1,029	766

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	**12.0" x 59.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 46.50' S= 0.0305 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior
#2	Device 1	50.20'	**0.79' W x 0.33' H Vert. Orifice/Grate** C= 0.600
#3	Device 1	51.20'	**11.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Primary OutFlow Max=0.77 cfs @ 12.15 hrs HW=50.75' (Free Discharge)
└**1=Culvert** (Passes 0.77 cfs of 5.28 cfs potential flow)
  └**2=Orifice/Grate** (Orifice Controls 0.77 cfs @ 2.95 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Original Basin #2

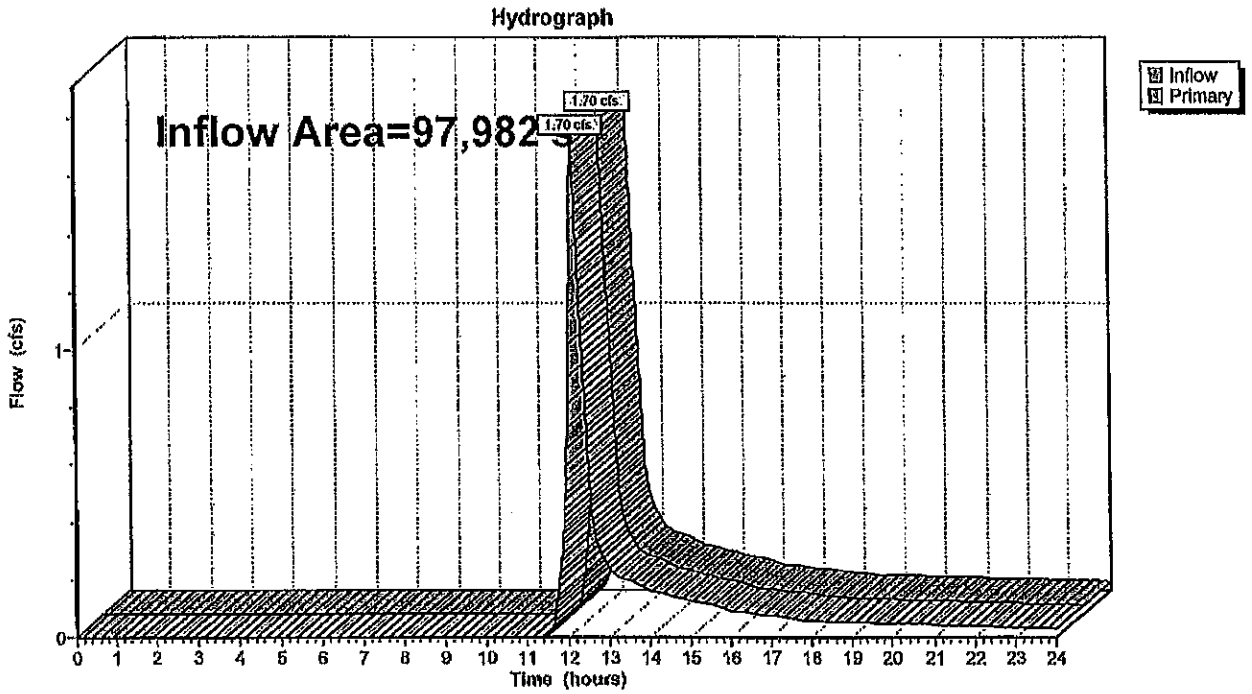


Link 1L: Design Point

Inflow Area = 97,982 sf, Inflow Depth > 0.77" for 2-Year event
Inflow = 1.70 cfs @ 12.13 hrs, Volume= 6,297 cf
Primary = 1.70 cfs @ 12.13 hrs, Volume= 6,297 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Design Point



Subcatchment 104S: Basketball Court

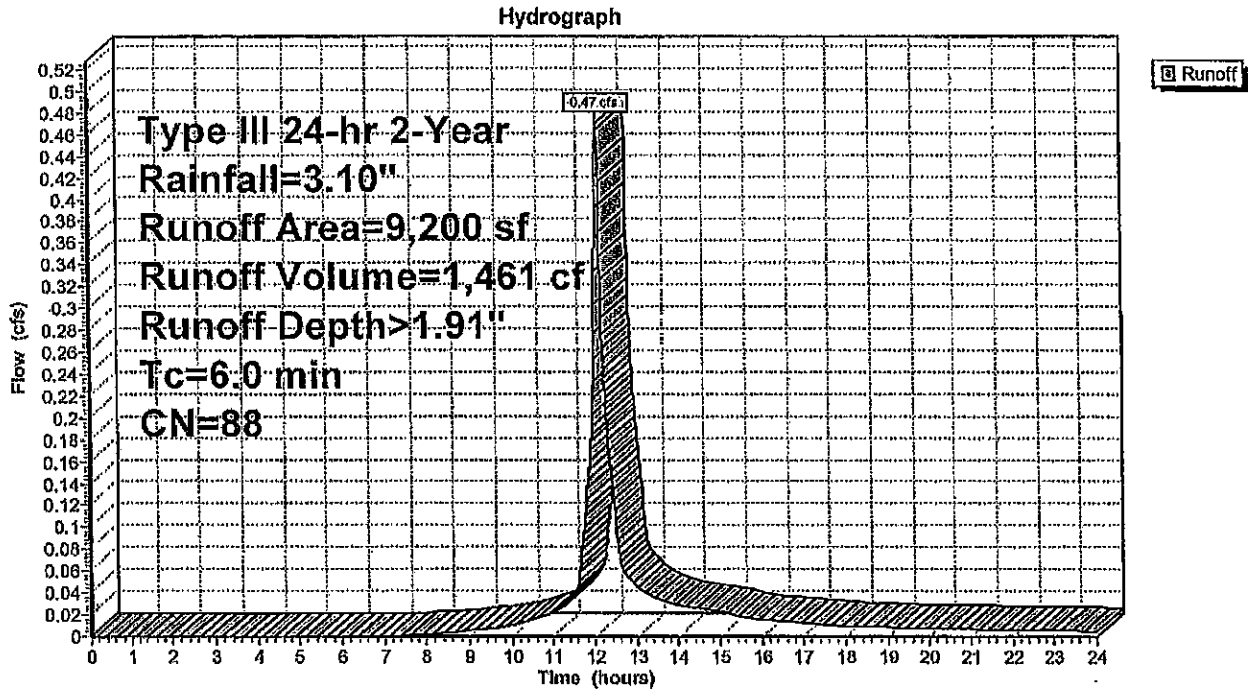
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 1,461 cf, Depth> 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.10"

Area (sf)	CN	Description
5,200	98	Impervious Area
4,000	74	>75% Grass cover, Good, HSG C
9,200	88	Weighted Average
4,000		Pervious Area
5,200		Impervious Area

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

Subcatchment 104S: Basketball Court



Pond 3P: Stone Trench

Inflow Area = 9,200 sf, Inflow Depth > 1.91" for 2-Year event
Inflow = 0.47 cfs @ 12.09 hrs, Volume= 1,461 cf
Outflow = 0.25 cfs @ 12.01 hrs, Volume= 1,460 cf, Atten= 48%, Lag= 0.0 min
Discarded = 0.25 cfs @ 12.01 hrs, Volume= 1,460 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 0.23' @ 12.23 hrs Surf.Area= 1,280 sf Storage= 119 cf
Flood Elev= 3.00' Surf.Area= 1,280 sf Storage= 1,536 cf

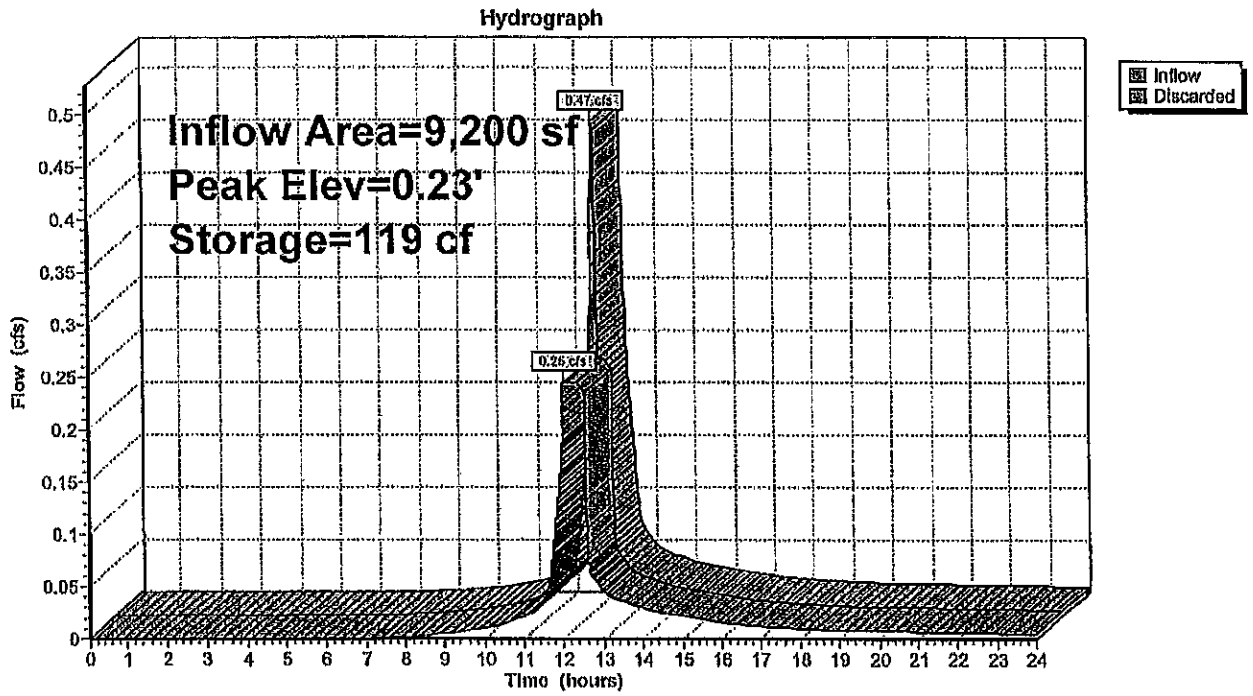
Plug-Flow detention time= 2.5 min calculated for 1,460 cf (100% of inflow)
Center-of-Mass det. time= 2.4 min (818.1 - 815.7)

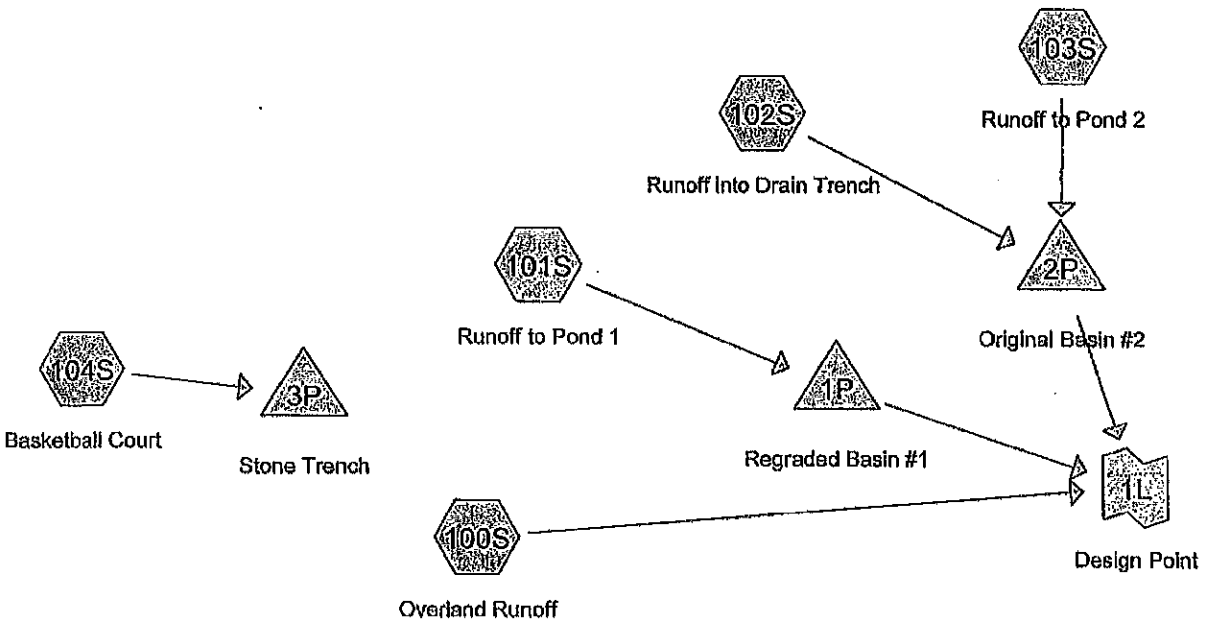
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,536 cf	**16.00'W x 80.00'L x 3.00'H Prismatoid** 3,840 cf Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.25 cfs @ 12.01 hrs HW=0.03' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.25 cfs)

Pond 3P: Stone Trench





Subcat Reach Pond Link

Drainage Diagram for M173263-Proposed
Prepared by Millennium Engineering, Inc. 2/6/2018
HydroCAD® 8.00 s/n 002736 © 2006 HydroCAD Software Solutions LLC

Subcatchment 100S: Overland Runoff

Runoff = 2.25 cfs @ 12.09 hrs, Volume= 7,137 cf, Depth> 1.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
4,982	49	50-75% Grass cover, Fair, HSG A
5,379	36	Woods, Fair, HSG A
15,910	73	Woods, Fair, HSG C
14,217	74	>75% Grass cover, Good, HSG C
6,722	98	Impervious Areas
47,210	70	Weighted Average
40,488		Pervious Area
6,722		Impervious Area

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

Subcatchment 101S: Runoff to Pond 1

Runoff = 0.99 cfs @ 12.09 hrs, Volume= 3,073 cf, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
6,298	74	>75% Grass cover, Good, HSG C
1,413	73	Woods, Fair, HSG C
5,000	98	Impervious Areas
12,711	83	Weighted Average
7,711		Pervious Area
5,000		Impervious Area

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

Subcatchment 102S: Runoff into Drain Trench

Runoff = 1.76 cfs @ 12.09 hrs, Volume= 5,485 cf, Depth> 2.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
7,276	49	50-75% Grass cover, Fair, HSG A
12,022	79	50-75% Grass cover, Fair, HSG C
2,220	74	>75% Grass cover, Good, HSG C
6,817	73	Woods, Fair, HSG C
3,850	98	Impervious Areas
32,185	73	Weighted Average
28,335		Pervious Area
3,850		Impervious Area

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

Subcatchment 103S: Runoff to Pond 2

Runoff = 0.39 cfs @ 12.09 hrs, Volume= 1,203 cf, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
4,776	74	>75% Grass cover, Good, HSG C
1,100	98	Impervious Areas
5,876	78	Weighted Average
4,776		Pervious Area
1,100		Impervious Area

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

Subcatchment 104S: Basketball Court

Runoff = 0.82 cfs @ 12.09 hrs, Volume= 2,592 cf, Depth> 3.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
5,200	98	Impervious Area
4,000	74	>75% Grass cover, Good, HSG C
9,200	88	Weighted Average
4,000		Pervious Area
5,200		Impervious Area

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

Pond 1P: Regraded Basin #1

Inflow Area = 12,711 sf, Inflow Depth > 2.90" for 10-Year event
Inflow = 0.99 cfs @ 12.09 hrs, Volume= 3,073 cf
Outflow = 0.60 cfs @ 12.19 hrs, Volume= 3,072 cf, Atten= 39%, Lag= 6.3 min
Discarded = 0.13 cfs @ 12.19 hrs, Volume= 2,119 cf
Primary = 0.47 cfs @ 12.19 hrs, Volume= 953 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 56.85' @ 12.19 hrs Surf.Area= 670 sf Storage= 469 cf
Flood Elev= 58.00' Surf.Area= 1,040 sf Storage= 1,444 cf

Plug-Flow detention time= 9.5 min calculated for 3,072 cf (100% of inflow)
Center-of-Mass det. time= 9.3 min (824.6 - 815.3)

Volume	Invert	Avail.Storage	Storage Description
#1	56.00'	1,444 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
56.00	440	0	0	440
57.00	715	572	572	728
58.00	1,040	872	1,444	1,069

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Surface area**
#2	Primary	56.20'	**6.0" x 15.0' long Culvert** CPP, projecting, no headwall, Ke= 0.900 Outlet Invert= 56.00' S= 0.0133 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior

Discarded OutFlow Max=0.13 cfs @ 12.19 hrs HW=56.85' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.13 cfs)

Primary OutFlow Max=0.47 cfs @ 12.19 hrs HW=56.85' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 0.47 cfs @ 2.41 fps)

Pond 2P: Original Basin #2

Inflow Area = 38,061 sf, Inflow Depth > 2.11" for 10-Year event
Inflow = 2.14 cfs @ 12.09 hrs, Volume= 6,688 cf
Outflow = 1.93 cfs @ 12.13 hrs, Volume= 6,628 cf, Atten= 10%, Lag= 2.4 min
Primary = 1.93 cfs @ 12.13 hrs, Volume= 6,628 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 51.37' @ 12.13 hrs Surf.Area= 531 sf Storage= 506 cf
Flood Elev= 52.20' Surf.Area= 740 sf Storage= 1,029 cf

Plug-Flow detention time= 10.7 min calculated for 6,628 cf (99% of inflow)
Center-of-Mass det. time= 5.4 min (845.4 - 840.0)

Volume	Invert	Avail.Storage	Storage Description
#1	50.00'	1,029 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
50.00	214	0	0	214
51.00	448	324	324	456
52.20	740	706	1,029	766

Device	Routing	Invert	Outlet Devices
#1	Primary	48.30'	**12.0" x 59.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 46.50' S= 0.0305 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior
#2	Device 1	50.20'	**0.79' W x 0.33' H Vert. Orifice/Grate** C= 0.600
#3	Device 1	51.20'	**11.0" Horiz. Orifice/Grate** Limited to weir flow C= 0.600

Primary OutFlow Max=1.93 cfs @ 12.13 hrs HW=51.37' (Free Discharge)
↑—**1=Culvert** (Passes 1.93 cfs of 6.06 cfs potential flow)
↑—**2=Orifice/Grate** (Orifice Controls 1.26 cfs @ 4.83 fps)
↑—**3=Orifice/Grate** (Weir Controls 0.67 cfs @ 1.36 fps)

Pond 3P: Stone Trench

Inflow Area = 9,200 sf, Inflow Depth > 3.38" for 10-Year event
Inflow = 0.82 cfs @ 12.09 hrs, Volume= 2,592 cf
Outflow = 0.25 cfs @ 11.85 hrs, Volume= 2,592 cf, Atten= 70%, Lag= 0.0 min
Discarded = 0.25 cfs @ 11.85 hrs, Volume= 2,592 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 0.88' @ 12.42 hrs Surf.Area= 1,280 sf Storage= 449 cf
Flood Elev= 3.00' Surf.Area= 1,280 sf Storage= 1,536 cf

Plug-Flow detention time= 9.0 min calculated for 2,592 cf (100% of inflow)
Center-of-Mass det. time= 8.9 min (808.4 - 799.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,536 cf	**16.00'W x 80.00'L x 3.00'H Prismatoid** 3,840 cf Overall x 40.0% Voids

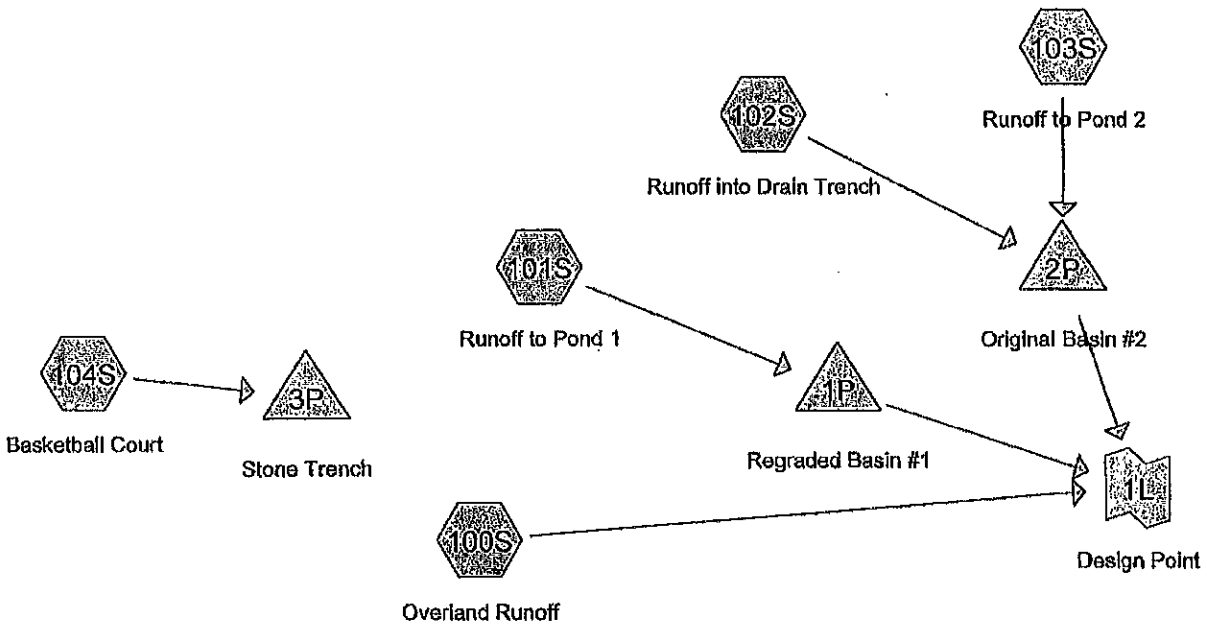
Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**8.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.25 cfs @ 11.85 hrs HW=0.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.25 cfs)

Link 1L: Design Point

Inflow Area = 97,982 sf, Inflow Depth > 1.80" for 10-Year event
Inflow = 4.48 cfs @ 12.12 hrs, Volume= 14,718 cf
Primary = 4.48 cfs @ 12.12 hrs, Volume= 14,718 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Drainage Diagram for M173263-Proposed
Prepared by Millennium Engineering, Inc. 2/6/2018

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcats)
5,379	36	Woods, Fair, HSG A (100S)
12,258	49	50-75% Grass cover, Fair, HSG A (100S,102S)
24,140	73	Woods, Fair, HSG C (100S,101S,102S)
31,511	74	>75% Grass cover, Good, HSG C (100S,101S,102S,103S,104S)
12,022	79	50-75% Grass cover, Fair, HSG C (102S)
5,200	98	Impervious Area (104S)
16,672	98	Impervious Areas (100S,101S,102S,103S)
107,182		

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 100S: Overland Runoff Runoff Area=47,210 sf Runoff Depth>4.72"
Tc=6.0 min CN=70 Runoff=6.00 cfs 18,561 cf

Subcatchment 101S: Runoff to Pond 1 Runoff Area=12,711 sf Runoff Depth>6.26"
Tc=6.0 min CN=83 Runoff=2.08 cfs 6,629 cf

Subcatchment 102S: Runoff into Drain Trench Runoff Area=32,186 sf Runoff Depth>5.07"
Tc=6.0 min CN=73 Runoff=4.39 cfs 13,601 cf

Subcatchment 103S: Runoff to Pond 2 Runoff Area=5,876 sf Runoff Depth>5.66"
Tc=6.0 min CN=78 Runoff=0.89 cfs 2,773 cf

Subcatchment 104S: Basketball Court Runoff Area=9,200 sf Runoff Depth>6.86"
Tc=6.0 min CN=88 Runoff=1.61 cfs 5,256 cf

Pond 1P: Regraded Basin #1 Peak Elev=57.68' Storage=1,134 cf Inflow=2.08 cfs 6,629 cf
Discarded=0.18 cfs 3,684 cf Primary=0.83 cfs 2,943 cf Outflow=1.01 cfs 6,627 cf

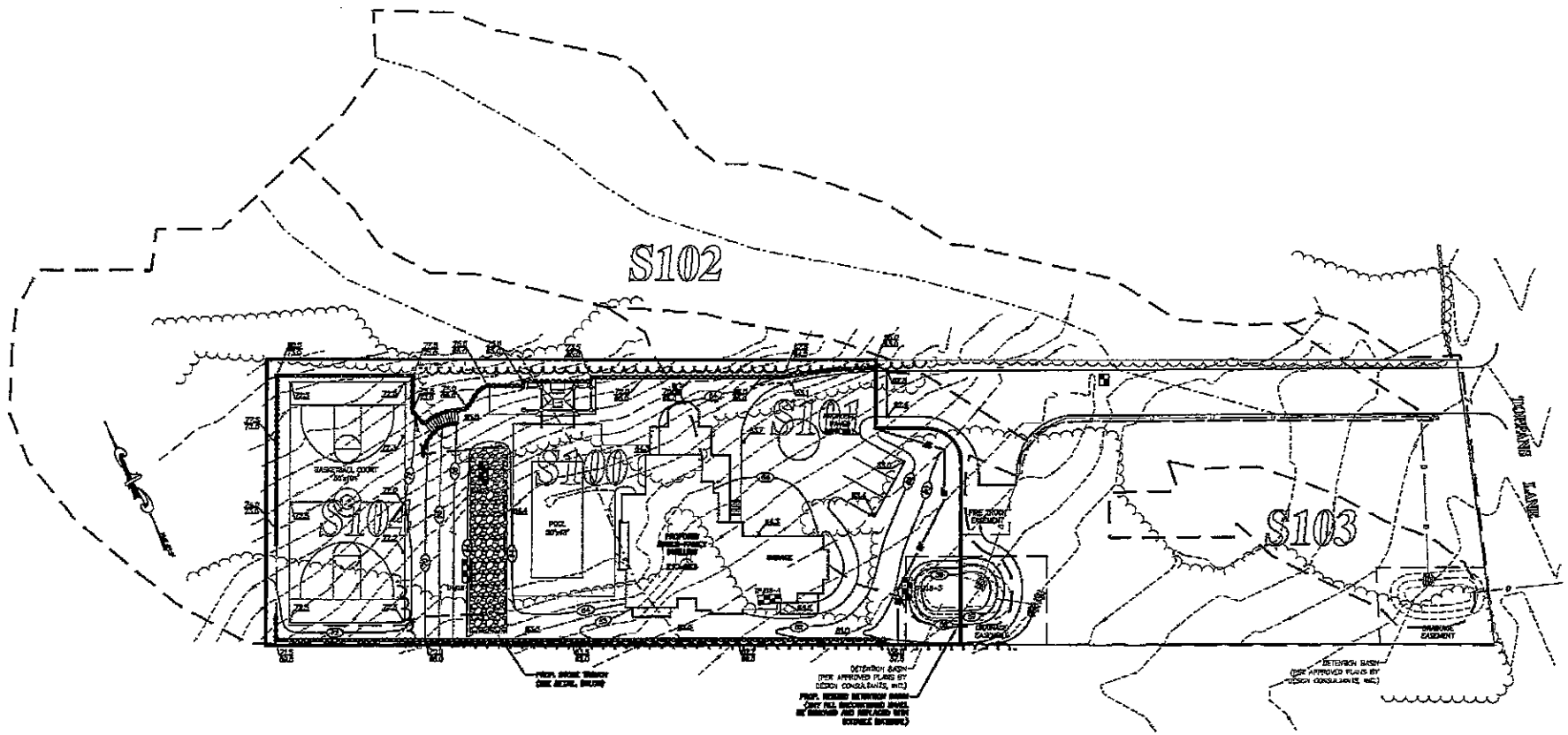
Pond 2P: Original Basin #2 Peak Elev=52.06' Storage=925 cf Inflow=5.28 cfs 16,374 cf
Outflow=4.57 cfs 16,307 cf

Pond 3P: Stone Trench Peak Elev=2.95' Storage=1,508 cf Inflow=1.61 cfs 5,256 cf
Outflow=0.25 cfs 5,255 cf

Link 1L: Design Point Inflow=11.08 cfs 37,810 cf
Primary=11.08 cfs 37,810 cf

Total Runoff Area = 107,182 sf Runoff Volume = 46,820 cf Average Runoff Depth = 5.24"
79.59% Pervious Area = 85,310 sf 20.41% Impervious Area = 21,872 sf

WATERSHED PLANS



GRAPHIC SCALE

(IN FEET)

1 inch = 20'

PREPARED FOR:

STEVE McCONNELL
3 BLUEBERRY LANE
GEORGETOWN, MA 01833

NO.	DATE	DESCRIPTION	BY

MILLENNIUM ENGINEERING, INC.
ENGINEERING AND LAND SURVEYING
62 ELM ST. SALISBURY, MA 01952 (978) 463-6980
73 HAMPTON RD. EXETER, NH 03833 (603) 775-0333

SCALE: 1"=20' | DESIGN: BD CHK.
DATE: FEB. 6, 2018 | CHKD. BY: E.W.S. | PROJECT: M173263

PLAN OF LAND

IN

NEWBURYPORT, MA.

SHOWING

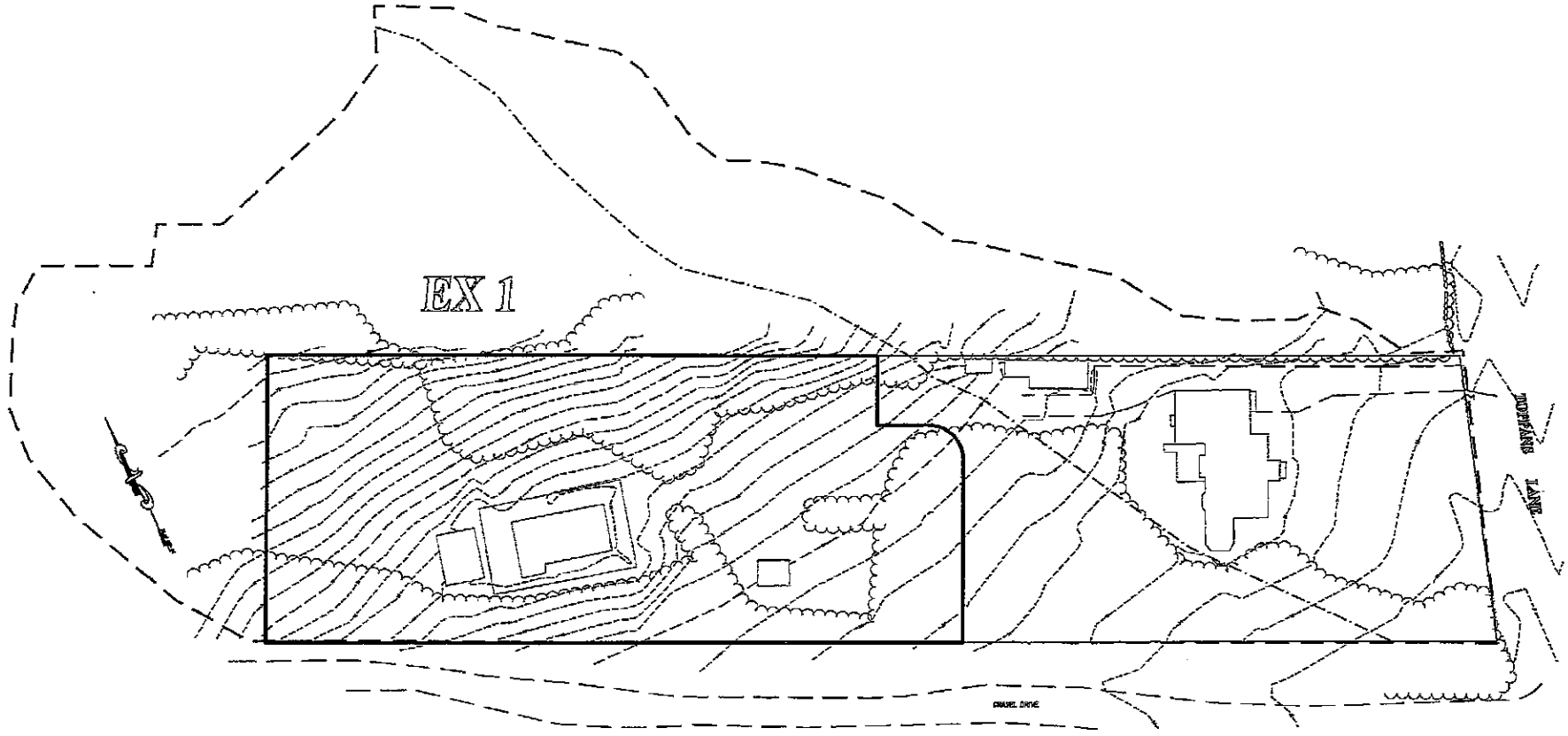
PROPOSED SINGLE-FAMILY DWELLING

AT

LOT 48 DONAHUE COURT

PROPOSED DRAINAGE AREAS

SHEET 2 OF 2



GRAPHIC SCALE

(IN FEET)

1 inch = 20'

PREPARED FOR

STEVE McCONNELL

3 BLUEBERRY LANE

GEORGETOWN, MA 01833

NO.	DATE	DESCRIPTION	BY

MILLENNIUM ENGINEERING, INC.

ENGINEERING AND LAND SURVEYING

62 ELM ST. SALISBURY, MA 01952 (978) 463-8990

13 HAMPTON RD. EXETER, NH 03833 (603) 778-0528

SCALE: 1"=20' | DESIGN: BTC E.M.K.

DATE: FEB. 8, 2018 | CHKD: BTC E.M.K.

PROJECT: M173263

PLAN OF LAND

IN

NEWBURYPORT, MA.

SHOWING

PROPOSED SINGLE-FAMILY DWELLING

AT

LOT 49 DONAHUE COURT

EXISTING DRAINAGE AREAS

SHEET 1 OF 2