

Safety Improvement Project
Haverhill Road (Route 110)
Application for Permit to Access State
Highway

Amesbury,
Massachusetts

Prepared for **Amesbury Heights, LLC**
Boston, Massachusetts

Prepared by



Watertown, Massachusetts

- MassDOT Submittal Letter
- Response to 100% Comments
- MassDOT 100% Comments
- Application for Permit to Access State Highway
- Access Permit Authorization Letter
- Items List
- Special Provisions
- Right of Entry Agreement
- Traffic Signal Maintenance Agreement
- Traffic Control Signal Regulation
- Sidewalk Maintenance Letter
- MEPA Certificate
- Planning Board Decision

August 22, 2016

MassDOT Submittal Letter



August 22, 2016

Ref: 09407.04

Mr. Neil Boudreau, P.E.
State Traffic Engineer
MassDOT - Highway Division
10 Park Plaza, Room 710
Boston, MA 02116

Re: MassDOT Application for Permit to Access State Highway for Route 110 in the City of Amesbury,
Massachusetts

Dear Mr. Boudreau,

Vanasse Hangen Brustlin, Inc. (VHB) on behalf of our Client, Amesbury Heights LLC is submitting the final design package requesting a Permit to Access State Highway on Route 110 (Haverhill Road) in Amesbury, Massachusetts.

We have addressed 100% comments from MassDOT Boston Traffic Engineering Section and MassDOT District 4 Projects Section in the attached Response to Comments.

The work is mitigation as associated with the proposed Amesbury Heights mixed use development on Route 110, as agreed upon by the City of Amesbury. The Offsite mitigation is not mandated or required through MassDOT or MEPA. The proposed project includes the construction of approximately 900 feet of bituminous concrete sidewalk and curbing on the south side of Route 110, updates to the traffic signal at the intersection of Route 110 and Route 150, pavement markings and signing modifications along Route 110 and at the intersection of Route 110 and North Martin Road, and the installation of cement concrete wheelchair ramps. Existing cross slopes, curve radii and drainage are proposed to be preserved.

As a part of this application for the proposed site drive VHB has included the following information as a part of the Application for Permit to Access State Highway:

- Response to MassDOT District 4 Projects Section 100% Comments
- Response to MassDOT Boston Traffic Engineering Section 100% Comments
- MassDOT Boston Traffic Engineering Section and District 4 Projects Section Comments
- Application for Permit to Access State Highway (originally submitted February 24, 2015)
- Letter authorizing VHB to act as agent for Corcoran Jennison Associates, Inc.

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770
F 617.924.2286

Engineers | Scientists | Planners | Designers



- Revised design plans, items list and special provisions for proposed Safety Improvements on Haverhill Road (Route 110)
- Revised Traffic Signal Maintenance Agreement
- Revised Traffic Control Signal Regulation
- Sidewalk Maintenance Letter

Additionally we have enclosed:

- 1 original and 3 copies of the final Traffic Control Signal Regulation

Your expedited review of the above material and issuance of any final comments or the Access Permit for this project will be much appreciated.

Please feel free to call me directly at 617-607-1577 if you have any questions or need any further information in order to process this request.

Thank you in advance for your assistance

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

A handwritten signature in blue ink that reads "Wayne P. Amico".

Wayne P. Amico, P.E.
Senior Team Leader

cc: Sean McReynolds, Corcoran Jennison Associates, Inc. smcreynolds@corcoranjennison.com
Conor Nagle, VHB, cnagle@vhb.com



August 22, 2016

Ref: 09407.04

Mr. Paul Stedman
District Highway Director
Massachusetts Department of Transportation
District 4 Office
519 Appleton Street
Arlington, MA 02476

Attn: Mr. Michael Formichella
District Permits Engineer

Re: MassDOT Application for Permit to Access State Highway for Route 110 in the City of Amesbury,
Massachusetts

Dear Mr. Stedman,

Vanasse Hangen Brustlin, Inc. (VHB) on behalf of our Client, Amesbury Heights LLC is submitting the final design package requesting a Permit to Access State Highway on Route 110 (Haverhill Road) in Amesbury, Massachusetts.

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VANASSE HANGEN BRUSTLIN, INC.

A handwritten signature in blue ink that reads "Wayne P. Amico".

Wayne P. Amico, P.E.
Senior Team Leader

cc: Sean McReynolds, Corcoran Jennison Associates, Inc. smcreynolds@corcoranjennison.com
Conor Nagle, VHB, cnagle@vhb.com

Response to 100% Comments

From: [Amico, Wayne](#)
To: [Paris, Timothy \(DOT\)](#)
Cc: [Formichella, Michael \(DOT\)](#); [Ciampi, Peter \(DOT\)](#); [Fuller, Heather](#); [Kremer, Susan](#)
Subject: RE: Amesbury Heights Comments
Date: Friday, August 12, 2016 11:20:42 AM

Tim, thank you very much for your timely review of the information we provided. We will revise this detail in our final submittal – we are just waiting for any final comments from Boston and we will submit back to Mike with a request that the permit be issued. Thank you all for your help.

Wayne P. Amico, P.E.

Senior Team Leader
Transportation

Licensed in MA

P 617.607.1577
www.vhb.com

From: Paris, Timothy (DOT) [mailto:Timothy.Paris@dot.state.ma.us]
Sent: Friday, August 12, 2016 11:06 AM
To: Amico, Wayne <WAmico@VHB.com>
Cc: Formichella, Michael (DOT) <michael.formichella@state.ma.us>; Ciampi, Peter (DOT) <peter.ciampi@state.ma.us>; Fuller, Heather <HFuller@VHB.com>; Kremer, Susan <SKremer@VHB.com>
Subject: RE: Amesbury Heights Comments

I am okay with the design shown in the sketches (with a 10% driveway slope). The detail will have to be revised because it shows a max. 8.3% slope for the driveway. I would be happy with that part of the driveway labelled as “10% to 15% varies”. It is only 2’ long so it won’t be an obstacle for vehicles.

Timothy D. Paris, P.E.

massDOT Highway Division | Assistant Projects Engineer
519 Appleton St. Arlington MA 02476 | Office (781) 641-8325 | Cell (508) 330-5274
timothy.paris@dot.state.ma.us

From: Amico, Wayne [mailto:WAmico@VHB.com]
Sent: Wednesday, August 10, 2016 7:13 PM
To: Paris, Timothy (DOT)
Cc: Formichella, Michael (DOT); Ciampi, Peter (DOT); Fuller, Heather; Kremer, Susan
Subject: RE: Amesbury Heights Comments

Good evening Tim, Mike and Peter,
Thank you for sending along Districts comments via email on the final plan submittal for our Amesbury Permit Project.
I am hoping the below response satisfies and addresses your comment and concerns:

VHB Response:

We have reviewed the driveway grading in response to the comment we received on Thursday August 4th from District Projects Sections.

If we assume a 10% entrance ramp grade for 2 feet (as designed) the grade of the wing ramps on both driveways is less than 5%; actually the grade of three of the ramps is less than 3% (please see attached sketch – I have also attached the design plans for quick reference). The 7.5% max. grade in the detail is included for the contractor, in case the field conditions are different from the survey so that the ramps will be designed to meet ADA/AAB.

We evaluated moving the sidewalk away from the road as recommended in the comment but due to grading behind the sidewalk and ROW restrictions we would not be able to maintain an offset sidewalk especially around Sta. 108+00 so the sidewalk path would be circuitous and more difficult to navigate. Additionally, we do not recommend that a sidewalk constructed adjacent to the edge of road and Vertical granite curb, veer away from the edge of road. This may confuse and disorient a blind or otherwise handicapped person.

Therefore, we recommend keeping the sidewalk against the curb at designed.

Please feel free to call me with any other questions.
Thank you.

Wayne P. Amico, P.E.

Senior Team Leader
Transportation

Licensed in MA

P 617.607.1577
www.vhb.com

From: Ciampi, Peter (DOT) [<mailto:Peter.Ciampi@dot.state.ma.us>]
Sent: Tuesday, August 09, 2016 9:32 AM
To: Amico, Wayne <WAmico@VHB.com>
Cc: Formichella, Michael (DOT) <michael.formichella@state.ma.us>; Paris, Timothy (DOT) <timothy.paris@state.ma.us>
Subject: Amesbury Heights Comments

Good morning Wayne,

Mike Formichella informed me about your questions about the Amesbury Heights comments. The reviewer from our Projects Section is Tim Paris, I will include his number in this email and he is cc'd on this email.

Tim Paris's number: 781-641-8325.

If you have any other concerns you can contact Mike Formichella or myself.

Thanks,

Peter M. Ciampi, Jr., EIT
MassDOT-Highway Division

District 4 – Permits
Tel: 781-641-8351
Peter.ciampi@dot.state.ma.us
519 Appleton Street
Arlington, MA 02476

Good Morning Wayne,

The District has completed its review for the mitigation permit application, please revise and resubmit based on the comments below:

District Projects Section

- Although compliant with MassDOT Construction Standards, the driveway openings as designed create an unnecessary barrier to accessibility. Additional effort should be made to minimize the number of ramps exceeding the general slope of the roadway. Two of the driveways do not appear to connect to existing paved driveways and have additional right-of-way available, but are being designed to force users to negotiate two 7.5% ramps at each driveway. The driveway entrance ramps could be lengthened, and the slope increased to 15%, pushing the sidewalk a bit further from the road, but maintaining a smooth slope along the accessible route. See the FHWA document, Designing Sidewalks and Trails for Access, Part II of II, Best Practices Design Guide, Chapter 5.

If you have any questions, you can contact Michael Formichella or myself.

Peter M. Ciampi, Jr., EIT

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RIM 92.7
INV. IN. 89.2
INV. OUT. 89.1

94

105

R=550.00

DMH

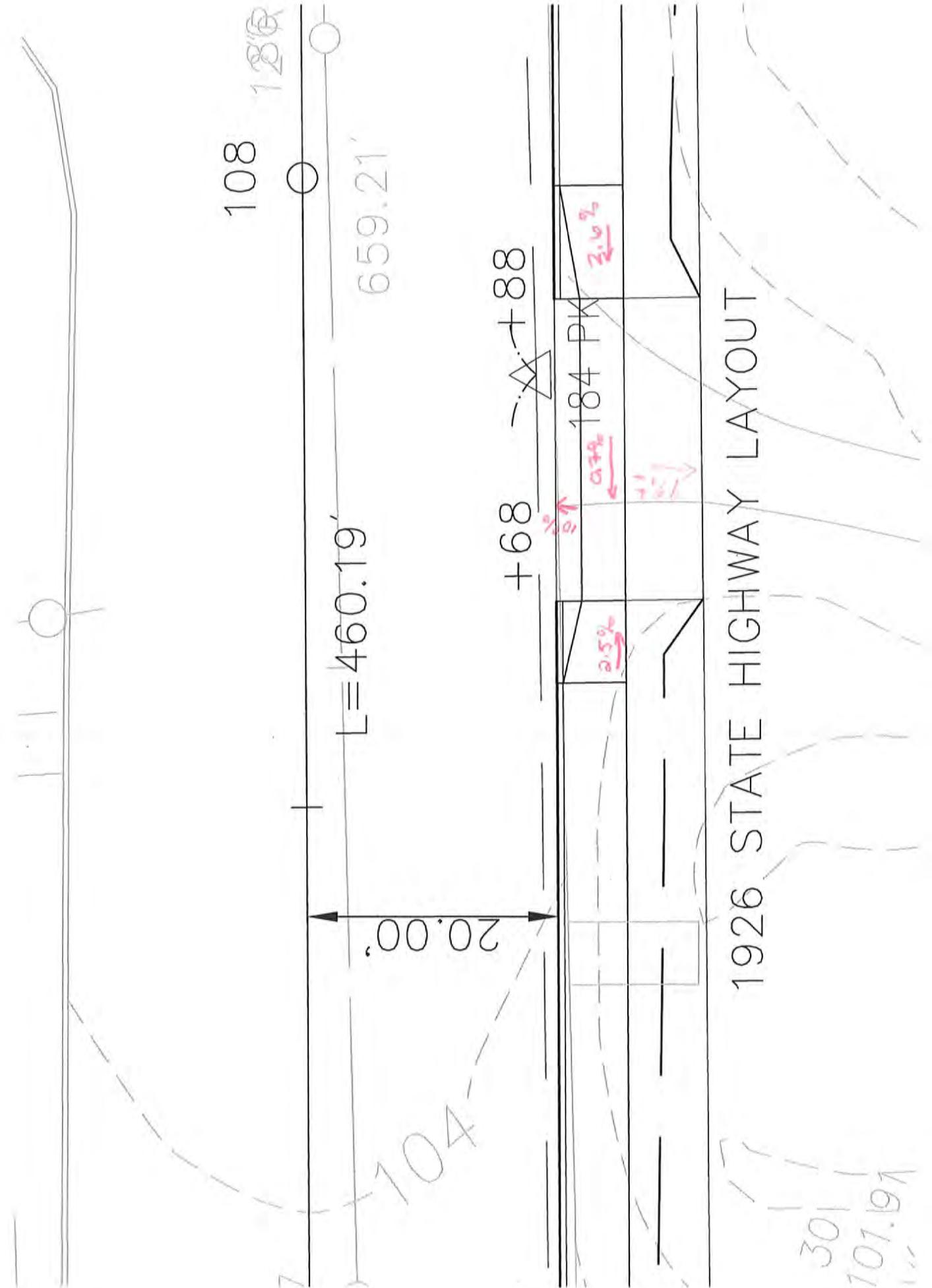
RIM 95.7
SURVEY TRAVERSE

INV. OUT 90.0

4

2.1%
2.8%
4.5%

926 STATE HIGHWAY 1 ALIGN



108

128

L = 460.19'

659.21'

20.00'

+68

+88

184 PK

104

1926 STATE HIGHWAY LAYOUT

30

101.97

2.6%

2.5%

1.2%

MassDOT 100% Comments

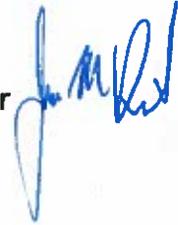
TO: Mike Formichella, Project Manager

Through: Jim Danila, PE, PTOE; Assistant State Traffic Engineer

From: Robert Tong, Traffic Engineering *RST*

DATE: August 15, 2016

SUBJECT: 14005, 100% Boston Traffic Review
Amesbury – Haverhill Road
Project Designer: VHB



The Boston Traffic and Safety Engineering Section has completed the design review for the above noted project. There are minor comments that summarized on the attached MassDOT Review Comment and Resolution Sheet. However, No further review is necessary. Designer shall submit the Traffic Signal Maintenance Agreement and Traffic Control Signal Regulation for Final Processing.

If you have any questions regarding this design review, please contact Robert Tong at Robert.Tong@state.ma.us or by telephone at 857-368-9625.

Consultant Evaluation: Traffic Operations, 100% Highway Plans: Score: N/A

(0 = Unacceptable; 5 = Average; 10 = Exceptional)



DRAFT

massDOT

Massachusetts Department of Transportation

TRAFFIC CONTROL SIGNAL REGULATION

| | | | |
|-----------------|-----------------------------------|-----------|-----------|
| City or Town: | AMESBURY | Route 110 | Route 150 |
| Location: | HAVERHILL ROAD AT HILLSIDE AVENUE | | |
| Regulation No.: | _____ | Date: | _____ |

Pursuant to MASS. GEN. LAWS c. 85, § 2 the Massachusetts Department of Transportation ("MassDOT") hereby approves the following described traffic control signal installation and auxiliary signs and surface markings for the above captioned location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

This Regulation is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the MassDOT. The details for any materials, alterations, or any continued or substantial departure from the provisions of this Regulation must be submitted to the MassDOT for approval with data sufficient to justify such modification. Failure to comply with the requirements and standards set forth by the MassDOT shall automatically void this Regulation during such time as non-compliance exists.

I. STANDARDS OF INSTALLATION

The traffic control signal installation and all auxiliary sign and surface markings which are used in conjunction with such installation shall conform with the requirements of the MassDOT and with the attached sketch.

II. OPERATION OF SIGNALS

1. Traffic Control..... Fully Actuated
2. Coordination..... None
3. Special Connections..... Emergency Vehicle Pre-emption System
4. Timing for Automatic Operations.... *See Attached*
5. Hours for Automatic Operation..... Signals shall be operated in stop and go mode continuously unless unusual or emergency conditions arise which temporarily justify flashing operations or manual override.
6. Flashing Operation..... Whenever a signal is not operating as traffic control device (stop and go), it must Flash Yellow or Flash Red as set forth in the accompanying timing and sequence chart for emergency operation. The flashing rate must conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
7. Manual Operation..... Signals may be operated manually at any time irrespective of the hours designated in Part II (5) of this Regulation.
8. Discontinuance..... Upon proper justification signals can be discontinued. If required and justified, appropriate alternate traffic controls must be installed prior to discontinuance of signals. Discontinued signal faces must be turned away from traffic, taken down or covered and the District Highway Director notified.

| | |
|---|-----------------------------------|
| <i>Issuance of this Regulation Supersedes and Terminates:</i> | |
| State Permit No.: | _____ issued to this intersection |
| State Layout No.: | 5-694 |
| Dated: | March 4, 1980 |

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

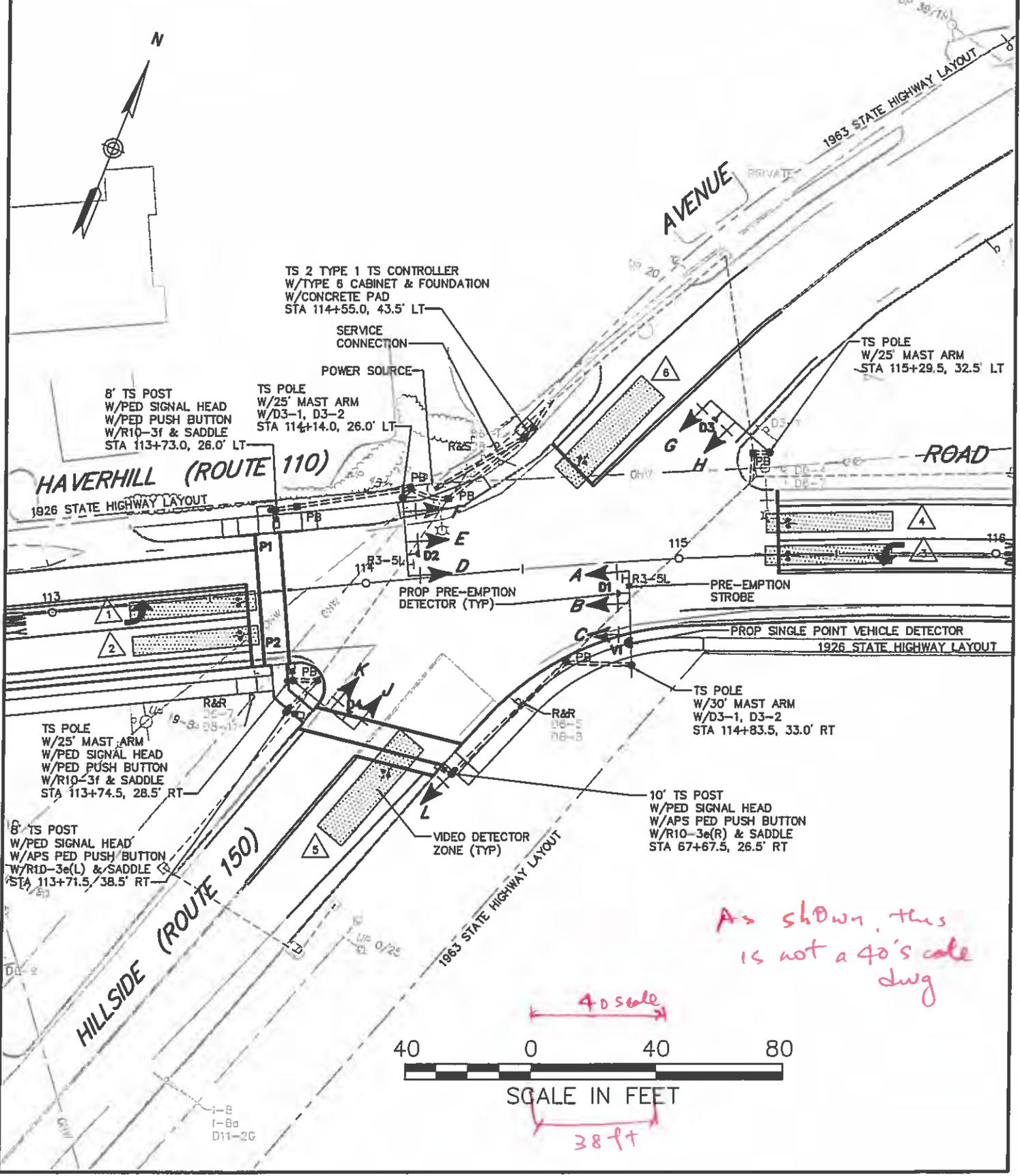
BY _____

Neil E. Boudreau
State Traffic Engineer

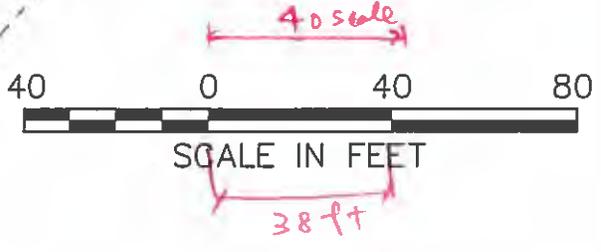
Timing and Sequence Chart
to be on the back page of
the application form

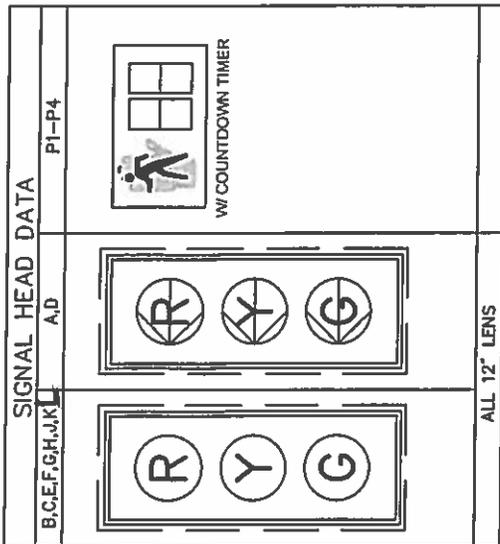
COMMONWEALTH OF MASSACHUSETTS
 MASSACHUSETTS DEPARTMENT OF
 TRANSPORTATION - HIGHWAY DIVISION
 10 PARK PLAZA BOSTON MASS.

CITY: AMESBURY
 LOCATION: HAVERHILL ROAD (ROUTE 110)
 AT HILLSIDE AVENUE (ROUTE 150)
 Date: Permit:



As shown, this is not a 40's scale dwg





- NOTES: 1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED AND EQUIPPED WITH 5"± LOUVERED BACKPLATES.
 2. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED W/LED MODULES.

SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

| PRE-EMPTION PHASING & PRIORITY | | | |
|---|---------------------------|----------|--------------------------|
| DETECTOR & PRIORITY | PRE-EMPT PHASE ASSIGNMENT | MOVEMENT | VEHICLE PHASE ASSIGNMENT |
| D1 | 1 | | ø2&ø5 |
| D2 | 2 | | ø1&ø6 |
| D3 | 3 | | ø4 |
| D4 | 4 | | ø5 |

| DETECTOR DATA | | | | | |
|----------------------|----------------------|--------|------------|------------|--|
| DETECTOR NO. | ZONE SIZE | CAMERA | DELAY /EXT | CALL PHASE | |
| 1 | TO BE FIELD ADJUSTED | V1 | 0 | ø5 | |
| 2 | TO BE FIELD ADJUSTED | V1 | 0 | ø2 | |
| 3 | TO BE FIELD ADJUSTED | V1 | 0 | ø1 | |
| 4 | TO BE FIELD ADJUSTED | V1 | 0 | ø6 | |
| 5 | TO BE FIELD ADJUSTED | V1 | 0 | ø4 | |
| 6 | TO BE FIELD ADJUSTED | V1 | 0 | ø7 | |

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

EMERGENCY VEHICLE PRE-EMPTION OPERATION:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A FIRST COME, FIRST SERVE BASIS.
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION PHASES AS NECESSARY.
4. UNLESS OTHERWISE STATED, ONCE A PRE-EMPTION CALL HAS BEEN RECEIVED BY THE TRAFFIC SIGNAL CONTROLLER AND THE PRE-EMPTION PHASE IS BEING SERVICED, IT SHALL REMAIN IN THAT PHASE AS LONG AS THE CALL IS PRESENT.
5. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
6. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.

Traffic Signal Clearance Intervals

Yellow Times

$$Y = t + v / (2a + 2Gg)$$

Where

Y = Length of Yellow Time (sec), 3 second minimum

t = Driver Perception Reaction Time (1.0sec)

v = Speed of Vehicle (fps)

Thru Movement: 85th percentile speed OR posted plus 7 mph

Left Turn: Posted minus 5 mph

a = Driver Acceleration (10 ft/sec)

G = Acceleration due to Gravity (32.2 f/sec²)

g = Grade of Approach (percent/ 100), measured about 5.0 seconds upstream

All Red Times

$$R = [(L + w)/v] - 1$$

Where

R = Length of Red Clearance Interval (sec), 1 second minimum

L = Length of Vehicle (20 ft)

w = Width of Intersection (ft)

Thru Movement: Stop Line to Outside Edge of Furthest Travel Lane or Nearest Farside Crosswalk Line

Exclusive Left Turn: Along Vehicle Path from Stop Line to No-conflict Point

v = Speed of Vehicle, Same Methodology as for Yellow Interval

** See MASSDOT Guidance dated 1/8/2013 for info on reducing EXCESSIVELY LONG clearances for PERMISSIVE or PROT/PERM LEFT turns

Location: Haverhill Rd at Hillside Ave

| Phase | Movement | Posted or 85th Speed (mph) | Speed Adjustment (if required) (mph) | v (ft/sec) | g | w (ft) | YELLOW TIME (sec) | RED TIME (sec) |
|-------|--------------------|----------------------------|--------------------------------------|------------|--------|--------|-------------------|----------------|
| 2 | Haverhill Rd EB | 35 mph | 7 mph | 61.7 | -0.012 | 125 | 4.2 | 1.3 |
| 5 | Haverhill Rd EB LT | 35 mph | -5 mph | 44.1 | -0.012 | 125 | 3.3 | 2.3 |
| 6 | Haverhill Rd WB | 35 mph | 7 mph | 61.7 | 0.035 | 120 | 3.8 | 1.3 |
| 1 | Haverhill Rd WB LT | 35 mph | -5 mph | 44.1 | 0.035 | 125 | 3.0 | 2.3 |
| 8 | Hillside Ave NB | 40 mph | 7 mph | 69.1 | 0.028 | 115 | 4.2 | 1.0 |
| 4 | Hillside Ave SB | 40 mph | 7 mph | 69.1 | 0.000 | 80 | 4.5 | 1.0 |

Rounding: n.0 to n.1 equals n.0, n.2 to n.6 equals n.5, n.7 to n.9 equals next whole number

AGREEMENT
BETWEEN THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
AND AMESBURY HEIGHTS LLC

AGREEMENT NO. _____
(to be completed by MassDOT)

AGREEMENT, made this ___ day of _____, 2016 by and between the Massachusetts Department of Transportation – Highway Division, hereinafter called "MassDOT," and AMESBURY HEIGHTS LLC, hereinafter called "DEVELOPER."

WHEREAS, the DEVELOPER desires to construct traffic signal system upgrades and minor roadway improvements on Haverhill Road (Route 110) at the intersection of Hillside Avenue (Route 150) as shown on:

MassDOT's Traffic Control Signal Regulation No. _____
(to be completed by MassDOT)

Dated: _____
(to be completed by MassDOT)

In the Municipality of Amesbury, County of Essex, in said Commonwealth as shown on a set of plans consisting of 26 sheets dated 07/05/2016 entitled: _____

SAFETY IMPROVEMENT PROJECT
HAVERHILL ROAD (ROUTE 110)
IN THE CITY OF
AMESBURY
ESSEX COUNTY

Dedic of the dwg that have PE stamped on the cover sheet.

prepared by Vanasse Hangen Brustlin, Inc. of 101 Walnut Street, Watertown, MA, said plans and regulation are attached hereto and made a part thereof; and

Said plans being subject to review and approval by MassDOT before installation, said plans and regulation are made a part thereof; and in accordance with:

Highway Access Permit No.: _____
(to be completed by MassDOT)

Dated: _____
(to be completed by MassDOT)

Issued by District 4 to perform work on a State Highway and made part of this Agreement; and WHEREAS, the parties hereto have reached an agreement as to the apportionment of work to be performed, the expense of carrying out this work, and the ownership and future maintenance thereof;

NOW THEREFORE, in consideration thereof, MassDOT and DEVELOPER hereby agree, each with the other as follows:

DIVISION OF WORK

The DEVELOPER will furnish through its own contractor, all necessary, labor, materials, equipment and other services necessary for the reconstruction of the traffic control signal and roadway improvements as indicated above and as shown on the attached plan(s) and regulation(s).

The DEVELOPER agrees that all work done under this Agreement will be in accordance with the *Standard Specifications for Highways and Bridges* issued by the Commonwealth of Massachusetts, Massachusetts Highway Department, 1988 Edition, as amended, and the *2009 Manual on Uniform Traffic Control Devices* and amendments as adopted by MassDOT.

The DEVELOPER agrees to require its Contractor to provide and cause to be maintained Public Liability Insurance and Property Damage Liability Insurance, and also, Contractor's Protective Public Liability and Property Damage Liability Insurance on behalf of MassDOT and, in conformance with Section 7.05B of the hereinbefore defined *Standard Specifications for Highways and Bridges* and to furnish such evidence to MassDOT.

The DEVELOPER agrees to require its Contractor a Performance and Payment Bond on behalf of MassDOT in conformance with Section 3.04 of the hereinbefore defined *Standard Specifications for Highways and Bridges*. The performance and payment bond shall be for the full amount of work within the State Highway Layout.

The DEVELOPER may solicit bids and award a contract prior to the completion of the MassDOT review process with the understanding that the DEVELOPER shall be responsible for any and all adjustments to the contract documents and/or change orders that are made as a result of the MassDOT review comments.

The DEVELOPER agrees that work will not commence without written permission from the District Highway Director of MassDOT, District 4. Prior to the commencement of any work, a pre-construction conference may be required by MassDOT. If required, it shall be held at MassDOT's Highway Division District 4 Administrative Office.

All Contractors and sub-contractors working on this project must be pre-qualified by MassDOT in the area of work that they are performing. All traffic signal equipment and components utilized

and installed on this project shall be included on the MassDOT Qualified Traffic Control Equipment List.

The DEVELOPER, at its sole cost and expense, will furnish an engineer for proper inspection services necessary during the prosecution of work, and in turn, MassDOT will make periodic inspections for compliance with MassDOT standards.

Upon completion of the work, the DEVELOPER, or its Engineer, will be responsible for the final inspection, certification of compliance with the specifications, and as-built drawings. Construction of new traffic signals or modifications to existing traffic signals or signal systems shall comply with MassDOT SOP No. HMD-60-03-3-00, issued on 12/12/2008.

The DEVELOPER shall complete all work covered by this agreement within one year of the date thereof unless an authorized time extension is granted by MassDOT.

DIVISION OF EXPENSE

The entire cost of the modifications of said constructed traffic control signal and roadway improvements as hereinbefore stated as shown on said plans and regulation will be borne by the DEVELOPER.

OWNERSHIP AND FUTURE MAINTENANCE

TRAFFIC SIGNALS:

Upon completion of the modifications of said traffic control signal and appurtenances to the satisfaction of MassDOT, title to said traffic control signals and appurtenances shall vest with MassDOT and MassDOT shall have the obligation and authority to operate and maintain said traffic control signals and appurtenances as installed.

All future maintenance and power costs for the traffic control signals and appurtenances shall reside with MassDOT.

EMERGENCY PRE-EMPTION SYSTEM:

Ownership of the emergency pre-emption system installed at the intersections of:

LOCATION NO. 1 – Haverhill Road (Route 110) at Hillside Avenue (Route 150)

in Amesbury shall vest with the City of Amesbury and shall thereafter have the obligation and authority to operate and maintain the emergency pre-emption system, as installed. The City agrees to contact the District 4 Traffic Operations Engineer at least one business day in advance of any maintenance operation that is to be performed to the emergency pre-emption system.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

AMESBURY HEIGHTS LLC

Joseph J. Corcoran
Signature

Joseph J. Corcoran
Printed Name

Managing Member
Title

July 7th, 2016
Date

CERTIFICATE OF SIGNATORY

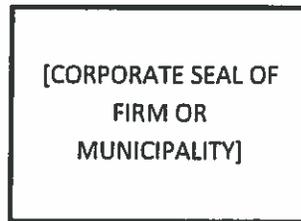
This will attest that the above-named individual is duly authorized and empowered to execute and deliver this Agreement on behalf of AMESBURY HEIGHTS LLC.

John A. Masten
Signature

John A. Masten
Printed Name

General Counsel
Title

7/7/16
Date



MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION

Chief Engineer

*Application for Permit to Access State
Highway*



Application for Permit to Access State Highway

This Access Permit Application, including the attached Access Permit Submittal Checklist, must be completed in full by the Applicant. Instructions for this page are located on page 2. Descriptions of the two types of access permits and related categories are located on page 6. MassDOT will make the final determination regarding Access Permit Application type and category.

1. Town/City: City of Amesbury
2. State Highway route number and/or name: Haverhill Road (Route 110)

3. Locus/Property Address: 36 Haverhill Road

4. Description of property and/or facility for which access is sought (attach additional sheets if necessary):
 Access is requested onto State Highway for permission to construct a driveway opening to service a proposed 240 unit housing/condominium development. The proposed drive will be located at approximately station 90+45 +/- on the State Highway Baseline. See attached plans entitled "Transportation Improvement Project Haverhill Road (Route 110), Amesbury, Massachusetts", prepared by Vanasse Hangen Brustlin, Inc.

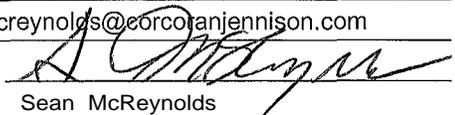
5. Description of work to be performed within State Highway Layout (attach additional sheets if necessary):
 (See attached)

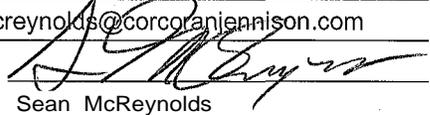
Telecommunications (wireless or wireline) or **Renewable Energy** (Solar, Wind, etc) - Agreement Process and OREAD*
 coordination required. [*see pg 2 Instruction]

6. DigSafe number: (To be provided at a later date)

7. Applicant Information ¹ (See footnote below.)
 Name Sean McReynolds
Amesbury Heights LLC
 Mailing Address 150 Mount Vernon Street, Suite 500
Boston, MA 02125
 Telephone 617-822-7382

8. Property Owner
 Name Sean McReynolds
Amesbury Heights LLC
 Mailing address 150 Mount Vernon Street, Suite 500
Boston, MA 02125
 Telephone 617-822-7382

smcreynolds@corcoranjenkinson.com
 Signature 
 Print Name Sean McReynolds
 Date May 2nd, 2016

Fax _____
 E-Mail smcreynolds@corcoranjenkinson.com
 Signature 
 Print Name Sean McReynolds
 Date May 2nd, 2016

Return completed application, including Submittal Checklist to the District Highway Director for your town/city. Refer to reverse side for appropriate address.

For office use only. Do not write below this line.

- | | |
|--|--|
| <p>1. Application number: _____</p> <p>2. Date received: _____</p> <p>3. Fee amount (non-refundable) : _____</p> <p>4. Completeness Pre-Review date: _____</p> <p>5. MEPA required (yes or no): _____</p> <p>ENF-EOEEA Cert. # _____</p> <p>EIR-EOEEA Cert. # _____</p> <p>Other-EOEEA Cert. # _____</p> | <p>6. Section 6 I Finding date: _____</p> <p>7. Mass. Historic Action (yes or no): _____</p> <p>8. Plans returned to DHD: _____</p> <p>9. Permit Type/Category: _____</p> <p>10. Application complete date: _____</p> <p>11. Permit written date: _____</p> <p>12. Permit issued date: _____</p> <p>13. Permit denied: _____</p> <p>14. Permit Recording date at Registry of Deeds _____</p> |
|--|--|

If an agent is representing an Applicant, the application must include a notarized letter from the Applicant outlining the specified duties and responsibilities of the agent. Where work is proposed on a utility, the utility department must sign the application as the Applicant(s).

Instructions for Completing Application for Permit to Access State Highway

General Instructions

MassDOT's Highway Division is granted authority to issue State Highway Access Permits by M.G.L. Chapter 81, Sec. 21. MassDOT adopted 720 CMR 13.00 under the authority of M.G.L. c. 81, § 21 and M.G.L. c.85 §2. 720 CMR 13.00 supersedes the Standard Operating Procedures for Review of State Highway Access Permits dated November 30, 1971, and board vote of September 17, 1991.

ACCESS is generally defined, but not limited to:
Any physical work performed within the State Highway Layout.

This Application governs issuance of the two types of access permit Applications, Non-Vehicular and Vehicular, which are issued under three categories:

- Category I Minor Vehicle Access Permits
- Category II Major Vehicular Access Permits
- Category III Complex Vehicular Access Permits

Please refer to the **MassDOT Highway Access Permit Submittal Checklist** for details regarding permit types and submittals required.

FEES:

A Check payable to MassDOT for the appropriate permit application fee must accompany the permit application. Fees are non-refundable.

Fee schedule for access and Utility Payments:

| | |
|-----------------------------------|-----------|
| Residential Access Permits | |
| 5 Units or less | \$25.00 |
| From 6 to 49 Units | \$100.00 |
| Greater than 49 Units | \$2000.00 |

| | |
|---|-----------|
| Non-Residential Access Permits | |
| Less than 25,000 square feet | \$500.00 |
| From 25,000 to 300,000 square feet | \$1000.00 |
| From 300,000 to 750,000 square feet | \$2000.00 |
| Greater than 750,000 square feet | \$3000.00 |

Non-Municipal Utility Permits not in conjunction With Access Permits:

| | |
|---|----------|
| Annual blanket utility permit | \$500.00 |
| Capital improvements to a utility | \$500.00 |

Specific Instructions (print or type)

Line 1:
List name of municipality in which access is sought.

Line 2:
List name or number of State Highway Route(s) to which access is sought.

Line 3:
List Locus/Property address.

Line 4:
Describe property and/or facility. If access is sought under Category II above, briefly describe facility for which access is sought,

Example 1: Private single family residence at 100 State Road. Approximate size of proposed building 2,500 s.f. Approximate lot size 0.75 acres.

Example 2: 500,000 s.f. enclosed shopping mall adjacent to State Route I-290 and Route 20. Approx. lot size 67 acres.

Line 5:
Briefly describe the proposed work to be performed within the State Highway Layout.

*Office of Real Estate and Development (OREAD)

Example 1: Remove 50 feet of existing granite curb on south side of highway in order to construct driveway access and modify the roadway geometry to accommodate left-hand turn.

Example 2: Excavate 10 foot x 10 foot section of roadway at Station 100+00 in westbound lane in order to install water service to residence at 100 State Street.

Line 6:
A Dig Safe number must be provided if the work will commence within 30 days of the filing of the permit. **NOTE:** A Dig Safe number must be obtained by calling **1-888-DIG-SAFE** (1-888-344-7233). If construction within the State Highway Layout does not commence within the period allowed by Dig Safe, a new number must be obtained prior to beginning construction. (www.digsafe.com)

Line 7:
Individual or business making application must complete the required information, including application date and signature.

Line 8:
Complete this section only if the individual or business making application is other than the property owner of the land for which the permit applies.

Return completed application, submittal checklist and fee to appropriate District Office listed below. Please contact the Permit Engineer at this address if additional information is required.

District One
270 Main Street
Lenox, MA 01240
Tel. (413) 637-5700
Fax. (413) 637-0309

District Four
519 Appleton Street
Arlington, MA 02174
Tel. (781) 641-8300
Fax. (781) 646-5115

District Two
811 North King Street
Northampton, MA 01060
Tel. (413) 582-0599
Fax. (413) 582-0596

District Five
1000 County Street
Taunton, MA 02780
Tel. (508) 824-6633
Fax. (508) 880-6102

District Three
403 Belmont Street
Worcester, MA 01604
Tel. (508) 929-3800
Fax. (508) 799-9763

District Six
185 Kneeland Street
Boston, MA 02111
Tel. (857) 368-6100
Fax. (857) 368-0106

Highway Division Website:

www.massdot.state.ma.us/highway

Access Permit Submittal Checklist

GREY:
DOT
USE
ONLY

This checklist provides the Applicant with a list of required submittals to obtain an Access Permit. However, additional submittals may be required to issue an Access Permit. All Applicants must fill out Part A and one additional part that correlates to the selected application type. To help identify the application type, please see the descriptions on page 6. Check each box that pertains to your application. MassDOT will make the final determination regarding Access Permit Application type and category.

PART A: ALL APPLICANTS MUST FILL OUT

1. APPLICATION TYPE – CHECK ONE

NON-VEHICULAR:

Non-Vehicular – Fill out Part B

VEHICULAR

Category I – Minor Vehicle Access Permits: Fill out Part C-1

Category II – Major Vehicle Access Permits: Fill out Part C-1 and Part C-II

Category III – Complex Vehicle Access Permits: Fill out Part C-1 and Part C-III

2. APPLICATION TYPE (Check all applicable boxes)

Application Complete

Permit corresponds to appropriate MassDOT District

Non-refundable check or money order on correct amount payable to: **MassDOT**

Evidence certifying property owner(s) consent

Notarized Applicant Letter outlining agent's duties and responsibilities (if applicable)

Utility department sign-off as the Applicant(s) (if applicable)

PART B: NON-VEHICULAR PERMITS

IF NO PHYSICAL MODIFICATION to state highway layout – i.e. parade, road race, traffic counts, etc.

Required submittals:

Map of route

Traffic Management Plan (designed in accordance with the Road Flagger & Police Regulations: 701 CMR 7.00)

Detour Plan(s) with municipal approval (if applicable)

IF DRAINAGE:

If requesting connection or discharge to any MassDOT drainage system, contact District Personnel for additional information regarding required submittals.

IF CONSTRUCTION, RELOCATION OR REPAIR OF UTILITIES:

Required submittals:

EXISTING PROJECT: reference(s) to the documents and plans already filed with MassDOT for the affected project

NEW PROJECT/UTILITY WORK:

Required submittals:

Engineered Plan(s) including method of crossing Highway

Traffic Management Plan (if applicable)

(Designed in accordance with the Road Flagger & Police Regulations: 701 CMR 7.00)

Detour Plan(s) with municipal approval (if applicable)

Tree Cutting or Landscaping Plan (if applicable)

Vegetative Plan including plant species and maturity size (if applicable)

Blasting Plan (contact District Personnel for additional information)

PART C-I: VEHICULAR PERMITS

CATEGORY I – Minor Vehicular Access Permits

Required submittals:

- Engineering Plans
- ENF - (Environmental Notification Form) Certificate (if applicable)

IF RESIDENTIAL DRIVEWAY:

- Detailed plan/sketch showing the drive location in relation to the property lines, MassDOT baselines, distance from nearest mile marker, and an easily identifiable fixed object (distance from telephone poles, mail boxes, other drives, etc.).
- If severe topographic conditions exist, an engineered plan showing the driveway layout, profile and storm water management may be necessary to show that the edge of the proposed drive is protected during and after construction to prevent sediment and debris from entering upon the State Highway Layout (SHLO).

IF COMMERCIAL DRIVEWAY: (where no MEPA review is required)

Required submittals:

- Two (2) 40 scale plans that include:**
 - A. Route Number, Road Name, Property Address
 - B. Property Corners and Bounds
 - C. Lot Line Dimensions, Bearings and Distances
 - D. State Highway Layout Lines (both sides) and Nearest Massachusetts Highway Bounds (if found).
 - E. State Highway Baseline and both edges of roadway including any sidewalks and type of edging, if any, and shoulder information (grass, gravel etc.).
 - F. Any existing drive to be altered or closed shall be indicated. Existing and proposed dimensions should be included for altered drives.
 - G. Information on all proposed drives including radii, widths, handicap ramps, etc. must be shown.
 - H. All existing and proposed buildings, utilities, trees, stonewalls, fences etc., should be labeled and shown in their correct location.
 - I. It is required that all stands, buildings, gasoline pumps and structures of any kind be placed at least 12 feet back from the State Highway Layout Line, since conducting of business within a State Highway Layout is forbidden.
 - J. Complete detail on drainage; all drives should be constructed on a downgrade from the edge of the highway surface or shoulder to the State Highway Layout Line.
 - K. Engineered plans will be required to show that storm flows are not directed into the SHLO, using contour lines, where applicant/owner property elevations are raised from the edge of the highway.
 - L. The plans should identify measures to protect the edge of the proposed drive during and after construction to prevent sediment and debris from entering upon the SHLO.

IF NEW STREET / SUBDIVISION ROAD:

Minor Intersection and Roadway Reconstruction (where no MEPA review is required)

Required submittals:

- All Commercial Driveway requirements (above) apply in addition to the following: Evidence of acceptance, including its line, grade and proposed drainage, by a local planning board, or other City of Town official with such authority.
- A street/road profile from its nearest high point and plan of drainage.

Please be advised:

- It will be required that all such future street approaches be constructed on a downgrade, where possible, from the edge of highway surface or shoulder to the State Highway Layout Line.
- Common driveway criteria may apply and must be shown on plans as mentioned above.

PART C-II: VEHICULAR PERMITS

CATEGORY II – Major Vehicular Access Permits

Required submittals:

- Engineering Plans based on the standards in the Manual On Uniform Traffic Control Devices (MUTCD), MassDOT's Project Development & Design Guide or its successor, MassDOT's Standard Specifications for Highway and Bridges, and any current technical policies or engineering directives Issued by MassDOT. All PS&E design submissions must be both in hard copy (one set) and electronic format. Electronic format includes PDF files transmitted to DHD or designee via USB Flash Drive, CD or posted to a FTP site.
- In cases where a proposed access is to be shared by multiple development sites, the Applicant(s) will provide evidence of the rights of access between the parties involved prior to the issuance of the Access Permit.
- MEPA Certificate
- Section 61 Finding

PART C-III: VEHICULAR PERMITS

CATEGORY III – Complex Vehicular Permits

Required submittals:

- Engineering Plans based on the standards in the Manual On Uniform Traffic Control Devices (MUTCD), MassDOT's Project Development & Design Guide or its successor, MassDOT's Standard Specifications for Highway and Bridges, and any current technical policies or engineering directives Issued by MassDOT. All PS&E design submissions must be both in hard copy (one set) and electronic format. Electronic format includes PDF files transmitted to DHD or designee via USB Flash Drive, CD or posted to a FTP site.
- In cases where a proposed access is to be shared by multiple development sites, the Applicant(s) will provide evidence of the rights of access between the parties involved prior to the issuance of the Access Permit.
- MEPA Certificate
- Section 61 Finding

Recording of Access Permits

Applicants must record any Vehicular Access Permit and plans or any Non-Vehicular Access Permit and plans involving drainage at the appropriate Registry of Deeds. Any Permit issued by MassDOT that requires recording will not be effective until recorded at the appropriate Registry of Deeds and a notice of recording is submitted to the District Highway Director (DHD). Changes may require the re-recording of permits and related documents. In those cases, permits will not be effective until re-recorded at the Registry of Deeds and a notice of recording is submitted to the DHD.

THERE ARE TWO TYPES OF ACCESS PERMIT APPLICATIONS: VEHICULAR, ISSUED UNDER THREE CATEGORIES & NON-VEHICULAR:

1. VEHICULAR ACCESS PERMITS:

Category I – Minor Vehicular Access Permits:

Access Permits for Projects that require entry to the State Highway Layout (SHLO), require little to no non-signalized modifications, and do not significantly alter the operating characteristics of traffic. These Projects ordinarily do not exceed the Massachusetts Environmental Policy Act (MEPA) transportation thresholds beyond the filing of an Environmental Notification Form (ENF).

Category II - Major Vehicular Access Permits:

Access Permits for Projects that require significant non-signalized modifications that may alter the operating characteristics of traffic at residential or commercial driveway intersecting with the SHLO; that require significant non-signalized modifications that may alter the operating characteristics of traffic at or upon any other intersection or roadway under the jurisdiction of MassDOT; that require the installation of a new traffic signal at a residential or commercial driveway intersecting with the SHLO or at any other intersection or roadway under the jurisdiction of MassDOT; or that require modification of structures, equipment, or hardware at an existing traffic signal at a residential or commercial driveway and its intersection with the SHLO or at any other intersection or roadway under the jurisdiction of MassDOT.

Category III – Complex Vehicular Permits

Access Permits for Complex Projects requiring actions similar to major Projects, but which require a new or altered SHLO; that require significant non-signalized and/or signalized modification within the SHLO over an extended distance or at a number of intersections that significantly alters the operating characteristics of traffic along a corridor; or that require the construction of a new, or modifications to an existing, bridge. These Projects generally require MEPA review and may require Federal review.

2. NON-VEHICULAR ACCESS PERMITS:

Access Permits for Projects that require access to the SHLO that do not involve physical modifications such as a parade or road race; construction, relocation or repair of utilities within the SHLO; tree cutting or landscaping within the SHLO; the use of explosives to remove material from within 250 feet of the SHLO; or connection to or discharge to any MassDOT drainage system (in cases where it can be shown that no practical alternative exists).

CONDITIONS REQUIRING AN ACCESS PERMIT

Vehicular Access Permits are required for:

- New residential or commercial driveways or streets intersecting the SHLO; or,
- Physical modifications to existing residential or commercial driveways or streets at their intersection with the SHLO; or,
- Change in use of an existing residential or commercial driveway onto SHLO that results in a **Substantial Increase in or Impact on Traffic** (as defined below) over the current use; or
- Construction of new or change in use of existing, residential or commercial driveway from properties that abut the SHLO to serve a building or facility, or expansion of a building or facility, that generates a Substantial Increase in or Impact on Traffic.

Substantial Increase in, or Impact on, Traffic as referenced above is defined as:

A Project that meets or exceeds any of the following thresholds:

- (i) Generation of 2,000 or more new ADT on roadways providing access to a single location; or,
- (ii) Generation of 1,000 or more new ADT on roadways providing access to a single location and construction of 150 or more new parking spaces at a single location; or,
- (iii) Construction of 300 or more new parking spaces at a single location; or
- (iv) Creation of a change in the type, pattern, or timing of traffic that is determined by MassDOT to generate a significant impact on traffic flow and safety.

Non-vehicular Access Permits are required for:

- Access to the SHLO for Projects that do not involve physical modifications; or
- Connection to or discharge to any MassDOT drainage system (in cases where it can be shown that no practical alternative exists); or
- Construction, relocation or repair of utilities within the SHLO; or
- Tree cutting or landscaping within the SHLO; or
- The use of explosives to remove material from within 250 feet of the SHLO.

In cases where a particular Project or activity may seek both vehicular and non-vehicular access, separate and distinct Permit Applications must be filed.

Access Permit Authorization Letter

February 11, 2015

Ref: 09407.03

Mr. Paul Stedman, P.E.
Acting District Highway Director
Massachusetts Dept. of Transportation - District 4 Office
519 Appleton Street
Arlington, MA 02476

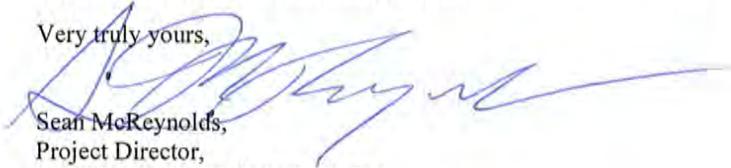
Attn: Mr. Michael Formichella
District Permits Engineer

Re: MassDOT Application for Permit to Access State Highway for Haverhill Road (Route 110)
Amesbury, Massachusetts

Dear Mr. Stedman:

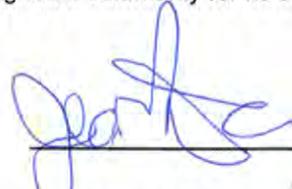
Please accept this letter as our authorization for Vanasse Hangen Brustlin, Inc. (VHB) to act as Agent for Corcoran Jennison Associates, Inc., in all matters relating to the Application for Permit to Access State Highway for the above referenced project.

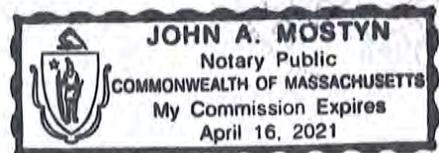
Very truly yours,


Sean McReynolds,
Project Director,
Corcoran Jennison Associates, Inc.

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF Suffolk SS:

On this 11th day of February, 2015, before me, the undersigned notary public, personally appeared Sean McReynolds as representative for Corcoran Jennison Associates, Inc.; proved to me through satisfactory evidence of identification, to be the person whose name is signed on the preceding document, and acknowledged to me that he signed it voluntarily for its stated purpose.


_____, Notary Public
My Commission Expires: 5/10/21



Items List

SAFETY IMPROVEMENTS ON ROUTE 110- AMESUBURY
Amesbury Massachusetts
July 12, 2016

| Item No. | Description | Unit of Measure |
|----------|--|-----------------|
| 102.1 | TREE TRIMMING | FT |
| 120.1 | UNCLASSIFIED EXCAVATION | CY |
| 129 | PAVEMENT MILLING | SY |
| 144 | CLASS B ROCK EXCAVATION | CY |
| 150 | ORDINARY BORROW | CY |
| 151 | GRAVEL BORROW | CY |
| 170 | FINE GRADING AND COMPACTING | SY |
| 220.5 | DRAINAGE STRUCTURE REMODELED | EA |
| 223 | FRAME AND GRATE (OR COVER) REMOVED AND RESET | EA |
| 376.2 | HYDRANT - REMOVED AND RESET | EA |
| 460 | HOT MIX ASPHALT | TON |
| 464 | ASPHALT EMULSION FOR TACK COAT | GAL |
| 464.5 | HOT POURED RUBBERIZED ASPHALT SEALER | FT |
| 472 | HOT MIX ASPHALT FOR MISCELLANEOUS WORK | TON |
| 482.3 | SAWCUTTING ASPHALT PAVEMENT | FT |
| * 504.2 | GRANITE CURB TYPE VA4 - SPLAYED END | EA |
| 506 | GRANITE CURB TYPE VB - STRAIGHT | FT |
| 506.1 | GRANITE CURB TYPE VB - CURVED | FT |
| 509 | GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - STRAIGHT | FT |
| 509.1 | GRANITE TRANSITION CURB FOR WHEELCHAIR RAMPS - CURVED | FT |
| 511.1 | GRANITE EDGING TYPE SB - STRAIGHT | FT |
| 512.1 | GRANITE EDGING TYPE SB (RADIUS 10 FEET OR LESS) | FT |
| 581 | CURB INLET REMOVED AND RESET | EA |
| 583 | EDGING REMOVED AND RESET | FT |
| 594 | CURB REMOVED AND DISCARDED | FT |
| 597 | EDGING REMOVED AND DISCARDED | FT |

| | | |
|---------|--|-----|
| 644.148 | 48 INCH CHAIN LINK FENCE (STW) VINYL COATED (LINE POST OPT.) | FT |
| 697 | SEDIMENTATION FENCE | FT |
| * 697.1 | SILT SACK | EA |
| 701.2 | CEMENT CONCRETE WHEELCHAIR RAMP | SY |
| 702 | HOT MIX ASPHALT WALK SURFACE | TON |
| 703 | HOT MIX ASPHALT DRIVEWAY | TON |
| 715 | RURAL MAIL BOX REMOVED AND RESET | EA |
| 748 | MOBILIZATION | LS |
| 751 | LOAM BORROW | CY |
| 765 | SEEDING | SY |
| 767.8 | BALES OF HAY FOR EROSION CONTROL | EA |
| 804.3 | 3 INCH ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL) | FT |
| 816.01 | TRAFFIC SIGNAL RECONSTRUCTION | LS |
| 827.21 | 24 INCH WARNING CLUSTER (H1-2) - ALUMINUM PANEL (TYPE A) | EA |
| 832 | WARNING-REGULATORY AND ROUTE MARKER - ALUM. PANEL (TYPE A) | SF |
| 847.1 | SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY - STEEL | EA |
| 852 | SAFETY SIGNING FOR TRAFFIC MANAGEMENT | SF |
| 853.1 | PORTABLE BREAKAWAY BARRICADE TYPE III | EA |
| 859 | REFLECTORIZED DRUM | DAY |
| 864.04 | PAVEMENT ARROWS AND LEGENDS REFL. WHITE (THERMOPLASTIC) | SF |
| 866.06 | 6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) | FT |
| 866.12 | 12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC) | FT |
| 867.06 | 6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC) | FT |
| 867.12 | 12 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC) | FT |
| 874 | STREET NAME SIGN | EA |
| * 874.2 | TRAFFIC SIGN REMOVED AND RESET | EA |
| * 874.4 | TRAFFIC SIGN REMOVED AND STACKED | EA |
| 983.1 | RIPRAP | TON |
| * 999 | CONSTRUCTION STAKING | ALL |
| * 999.1 | POLICE SERVICES | ALL |

Special Provisions

**SPECIAL PROVISIONS
SAFETY IMPROVEMENT PROJECT
HAVERHILL ROAD (ROUTE 110)
AMESBURY, MASSACHUSETTS**

SCOPE OF WORK

The work under this Contract consists of improvements to approximately 1,100 linear feet of Haverhill Road (Route 110) including improvements to the intersection of Haverhill Road (Route 110) and Hillside Avenue (Route 150) in Amesbury, Massachusetts. The proposed improvements include reconstruction of the traffic signal system at the intersection, and installation of granite curb and construction of a new sidewalk along Haverhill Road (Route 110).

The work includes unclassified excavation, milling, hot mix asphalt overlay, granite curb and edging, hot mix asphalt walk, highway guard, pavement markings, signs, reconstruction of the traffic signal system, landscaping and other incidental work.

All work done under this Contract shall be in conformance with the Massachusetts Highway Department Standard Specifications for Highways and Bridges dated 1988; the Interim Supplemental Specifications Dated January 23, 2015; the 2014 Construction Standards; the current version of the Manual on Uniform Traffic Control Devices for Streets and Highways; the 1990 Standard Drawings for Signs and Supports; the 2015 MassDOT Overhead Signal Structure and Foundation Standard Drawings; the 1968 Standard Drawings for Traffic Signals and Highway Lighting; the American Standards for Nursery Stock (ANSI-Z60.1-2004), all as amended, the Plans, and these Special Provisions.

The General Conditions, Supplementary Conditions and Special Provisions shall take precedence over the General Requirements of Division I of the Standard Specifications.

THIS WORK SHALL BE BID ON A LUMP SUM BASIS. THE CONTRACT LUMP SUM PRICE SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL COSTS REQUIRED TO COMPLETE THIS WORK, EXCEPT FOR POLICE SERVICES, WHICH WILL BE PAID FOR ON A REIMBURSABLE BASIS.

THE PAYMENT CLAUSES CONTAINED IN THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DO NOT APPLY TO THIS CONTRACT.

WORK SCHEDULE

No work that will disrupt travel on the existing roadways (lane closures, lane shifts, trenching, etc.) shall be done from 6:00AM to 9:00AM and from 3:00PM to 6:00PM. However the final hours of operation will be dictated through the permit. Normal hours of operation shall be dictated by the MassDOT District 4 office in the access permit issued for this project. A written request shall be issued by the contractor for any deviations to hours of operation indicated in the permit.

PLANS (Supplementing Subsection 5.02)

The Contractor shall furnish Mylar "AS BUILT" plans of the completed project to the Engineer and MassDOT for their records. These "AS BUILT" plans shall be furnished prior to the date of final acceptance. Full compensation for these plans shall be included in the prices bid for the various Contract items of work and no additional compensation will be allowed therefore.

The Engineer will make the original drawings available to the Contractor for use in preparing the as-built drawings. However, the Contractor may request a CADD version of the contract drawings as an alternative method for preparing the "AS BUILT" plans. In either case, final "AS BUILT" plans shall contain all information shown on the contract drawings and shall clearly indicate areas where changes were made during construction.

The "AS BUILT" plans shall be titled "AS BUILT" and stamped and dated by a Professional Engineer registered in the Commonwealth of Massachusetts. The Professional Engineer's stamp is required to certify any changes made to the contract drawings and shall not dictate responsibility for the original design drawings.

The "AS BUILT" plans will provide a record of constructed improvements for future reference, therefore partial plan sets will not be accepted. The Contractor may elect to use a combination of reproducible duplicates of the design drawings and revised CAD drawings to provide a complete set of "AS BUILT" plans.

These "AS BUILT" plans shall be provided to the Engineer so that the Engineer may submit them to the MassDOT District office along with the required project close out paperwork.

COOPERATION OF THE CONTRACTOR
(Supplementing Subsections 5.05 and 5.06)

Agents of various public service agencies, municipal and State Departments, and private site contractors may be entering on the work site to remove existing utilities, to construct or place new facilities or to make alterations to existing facilities.

The Contractor shall perform the work in cooperation with the various agencies in a manner which causes the least interference with the operations of the aforementioned agencies and shall have no claim for delay which may be due, or result, from said work of these agents.

The Contractor shall perform all coordination necessary to facilitate relocation of any utilities by any affected agencies.

CONSTRUCTION STAKING

(Supplementing Subsection 5.07)

The Contractor will be furnished information and ties for the survey baseline and benchmarks. The Contractor shall perform all survey required for the work.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

FILE NUMBER SIGN

(Supplementing Subsection 7.01)

This project is subject to Massachusetts General Laws, Chapter 131, Section 40 as amended.

Signs shall be in accordance with the latest MHD Construction Standards. No separate payment will be made for the signs, but all costs for the manufacture, erection, maintenance, moving, and removal of the signs shall be included in the prices bid for the various Contract items.

For this project the Massachusetts Department of Environmental Protection File Number is **002-0936**.

PUBLIC SAFETY AND CONVENIENCE

(Supplementing Subsection 7.09)

The Contractor shall provide necessary access for fire apparatus and other emergency vehicles through the work zones to abutting properties at all times.

Sweeping and cleaning of surfaces beyond the limits of the project required to clean up material caused by spillage or vehicular tracking during the various phases of the work shall be considered as incidental to the work being performed under the Contract and there will be no additional compensation.

NOTICE TO OWNERS OF UTILITIES

(Supplementing Subsection 7.13)

Written notice shall be given by the Contractor to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities at least one week in advance of the commencement of operations that will affect the utilities. The Contractor shall, at the same time, file a copy of such notice with the Engineer.

Before commencing work on service connections, the Contractor shall be responsible for contacting the Electric Company servicing the area to obtain construction requirements, standards, and to give adequate notice of commencement of work. The Contractor's attention is further directed to the requirements of Work in the Immediate Vicinity of Certain Underground Structures and Poles herein included in these Special Provisions.

The following are the names of owners and representatives of the principal utilities affected, but completeness of this list is not guaranteed by the Department:

CITY OF AMESBURY

Engineering Department
39 South Hunt Road
Amesbury, MA 01913

Peter Manor
City Engineer
Phone: (978) 388-8116

Amesbury Fire Department
17 School Street
Amesbury, MA 01913

Chief Jon Brickett
Phone: (978) 388-1333

Amesbury Police Department
19 School Street
Amesbury, MA 01913

Chief Kevin Ouellet
Phone: (978) 388-1212

Department of Public Works
39 South Hunt Road
Amesbury, MA 01913

Robert Desmarais
Director of Public Works
Phone: (978) 388-8116

ELECTRIC

National Grid
40 Sylvan Road 3rd FL E3.726
Waltham, MA 02451

Jonathon Estes
Phone: (781) 907-3303

TELEPHONE

Verizon
385 Myles Standish Blvd
Taunton, MA 02780

Karen Mealey
Phone: (508) 828-6437

GAS

National Grid Gas
40 Sylvan Road 3rd FL W3.244
Waltham, MA 02451

Melissa Owens
Phone: (781) 907-2845

CABLE

Comcast
PO Box 6505
Chelmsford, MA 01824

Wendy Brown
Phone: (978) 848-5183

OTHER AFFECTED PARTIES ARE:

Massachusetts Department of Transportation
District 4
519 Appleton Street
Arlington, MA 02476

Paul Stedman
Acting District Highway Director
(781) 641-8300

Vanasse Hangen Brustlin, Inc.
101 Walnut Street
Watertown, MA 02471-9151

Wayne Amico
Project Manager
Phone: (617) 924-1770

The Contractor shall make his own investigation to assure that no damage to existing structures, drainage lines, traffic signal conduits, and other utilities will occur as a result of construction operations.

The Contractor shall notify "Mass. DIG SAFE" and procure a DIG SAFE number of each location prior to disturbing ground in any way.

"DIG-SAFE" Call Center: Telephone 1-888-344-7233

PROTECTION OF UTILITIES AND PROPERTY
(Supplementing Subsection 7.13)

The Contractor, in constructing or installing facilities alongside or near sewers, drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults or other structures shall sustain them securely in place. The Contractor shall coordinate with the officers and agents of the various utility companies and municipal departments to assure that the services of these structures are maintained. The Contractor shall also be responsible for the repair or replacement, at no additional cost to the Owner (Department), of any damage to such structures caused by construction operations. The Contractor is responsible to leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall promptly notify the utility owner and shall, if requested by the Engineer, furnish labor and equipment to work temporarily under the utility owner's direction. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Department or by the utility owner which suffers the loss. The cost of such repairs shall be borne by the Contractor, without compensation therefor.

If during construction there is an existing utility and/ or structure found to be in conflict with the proposed work under this Contract, the Contractor shall protect and maintain the services to the utilities and structures. The Engineer will, as soon as possible identify the utilities to be relocated or other such activities deemed suitable for resolution.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in protecting or repairing property as specified in this Section, shall be considered included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

WORK IN THE IMMEDIATE VICINITY OF CERTAIN UNDERGROUND STRUCTURES AND UTILITY POLES

For overhead connections, the Electric Company servicing the area will make the connection from the top of the riser on the utility pole to the power source. The Contractor shall supply all labor, materials and equipment to

install the service connection, complete in place and in accordance with the Electric Company procedures, from the controller to and including the riser with enough wire coiled above the riser to permit the Electric Company servicing the area to make the final connection.

For underground connections, the Electric Company servicing the area will perform the actual wiring of the service connections from its power source to the sweep at the local controllers, but all steel sweeps, ducts, entrance holes into manholes, patching and all other necessary labor, materials and equipment required to install the electric service, complete in place, shall be furnished by the Contractor.

The Contractor shall pay the Electric Company servicing the area for their services rendered for the connection of overhead and underground service connections.

Before starting work at existing manholes, the Contractor shall test for gas and blow out the manholes.

TEMPORARY ACCESS TO AREA MERCHANTS AND BUSINESSES
(Supplementing Subsections 8.02 and 8.06)

Access to all properties must be maintained at all times. The Contractor shall provide safe and ready means of ingress and egress to all stores and shops, public and private and professional offices and any other businesses or residences in the project area, both day and night, for the duration of the project.

SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS
(Supplementing Subsection 850.21)

Safety controls for construction operations shall be done in accordance with the relevant provisions of Section 850 of the Standard Specifications, the Manual on Uniform Traffic Control Devices, and the project's Traffic Management Plan.

WORK DONE BY OTHERS

Relocation and/or resetting to new grades of all private utilities, including utility poles, made necessary by the construction of this project, will be accomplished by the respective utility companies.

The Contractor is responsible for all coordination for the relocation of any utility required by the proposed work.

DISPOSAL OF SURPLUS MATERIALS

Surplus materials obtained from any type of excavation, and not needed for further use as determined by the Engineer shall become the property of the Contractor and shall be removed from the site during the construction period

and legally disposed of. The removal and disposal of surplus material shall adhere to the regulations and requirements of local authorities governing the disposal of such materials, at no additional compensation.

CONCRETE FOUNDATIONS

Concrete foundations of items to be removed, if not interfering with the proposed construction, may be abandoned in place with approval of the Engineer. Foundations left in place surface shall be removed to a depth of 3 feet below finished grade.

SAWCUTS

Existing pavements to remain shall be sawcut at all openings for utility work, for new or reset curb and at all joints with proposed full-depth hot mix asphalt pavement, as shown on the plans and as directed by the Engineer.

MAINTENANCE OF TRAFFIC SIGNALS

It shall be the responsibility of the Contractor to provide all labor, equipment and material required for the total maintenance and repair of all existing and proposed traffic signal control equipment, including damage by automobile accidents until final completion and acceptance of the project, unless otherwise specified under Subsection 7.17 "Traffic Accommodation: of the Standard Specifications as amended, in which case Subsection 7.17 will govern. These provisions will apply to the signalized location included as part of this construction Contract from the date of written notice given to the Engineer that the Contractor will work on or adjacent to an existing signal until the date when the Town accepts the complete project. This written notice must be given before the Contractor may proceed with any work on a specified traffic signal location. For the purpose of these Special Provisions, the phrase "Traffic Signal Control Equipment" is intended to include, but is not limited to, controllers, signal housings, supporting structures, cabinet accessories and panels, wires, conduit and all other ancillary electrical equipment used for traffic control.

The cost of the maintenance of signals shall be deemed to be included in the various traffic signal Contract items and no additional payments will be made except as provided by Subsection 7.17 of the Supplemental Specifications as amended.

FINE TUNING, ADJUSTMENT, AND TESTING PERIOD

After the Contractor has finished installing the controller and all other associated signal equipment and after the Contractor has set the signal equipment to operate as specified in the Contract documents, the fine tuning, adjusting and testing period shall begin. The Contractor shall advise the Engineer, in writing, of the date of the beginning of the fine tuning and testing period. This period shall not start until the work at the intersection is complete. During this period, the Contractor, under the direction of

the Engineer, shall make necessary adjustments and tests to insure safe and efficient operation of the equipment. This period shall not last for more than 30 days and the Contract completion date has taken this testing period into consideration. No request for final acceptance will be considered until successful completion of the testing period.

The Contractor shall notify the Engineer in writing of the starting date of the fine tuning period prior to the starting date.

The cost of electrical energy consumed by the operation of traffic signal systems during the construction, fine tuning and testing of the signals will (shall) be paid by the contractor.

FINAL INSPECTION AND ACCEPTANCE

Upon successful completion of the 30 day testing period wherein the traffic signal has operated for 30 days without failure, the Contractor shall notify the Department. The Engineer will make a final inspection of the installation in the presence of MassDOT and the Contractor. An inspection check will be made to ensure that all equipment, materials, installations and operations are in accordance with the construction contract, plans and specifications. Items to be checked will include, but not be limited to, traffic signal system operation, cabinet equipment, documents (wiring diagrams, as-built plans, instruction manuals, parts list, warranties, grounding resistivity test report, etc.), signs, and pavement markings, and street hardware (posts, bases, housings, brackets, etc.).

The Engineer will notify the Contractor in writing of any items in which the inspection reveals that the work is incomplete, defective, or does not otherwise meet the project specifications. The Contractor shall perform the corrective actions necessary to achieve final acceptance by MassDOT. These corrective actions shall be done by and at the expense of the contractor and within 15 days of the date of the inspection report, unless otherwise approved in writing by the Department.

GUARANTEE AFTER FINAL ACCEPTANCE

The Contractor shall diagnose (troubleshoot) the system and replace any part of the traffic signal systems found to be defective in workmanship, material or manner of functioning within six months from date of final acceptance of all the installations under this Contract. This requirement does not affect the one-year warranty period on equipment specified in Subsection 815.20 of the Standard Specifications.

Upon the date of acceptance of the project by the Department, the Contractor shall turn over all guarantees and warranties to MassDOT.

PROPERTY BOUNDS

The Contractor shall exercise due care when working around all property bounds which are to remain. Should any damage to a bound result from the actions of

the Contractor, the bound shall be replaced and/or realigned by the Contractor as directed by the Engineer at no cost to the Owner.

ORDER OF CONDITIONS

The Contractor is advised that the Order of Conditions, (002-0936) issued by the Town of Amesbury on August 13, 2007, is part of this contract. A copy of this order is included within these special provisions.

The Contractor shall be responsible for meeting all the orders for conditions attached. No separate payment will be made for complying with the orders of conditions, except as noted in the special provisions, but all costs in connection therewith shall be included in the lump sum bid price.

ARCHITECTURAL ACCESS BOARD TOLERANCES

The Contractor is hereby notified that they are ultimately responsible for constructing all project elements in strict compliance with the current AAB/ADA rules, regulations and standards.

All construction elements in this project associated with sidewalks, walkways, wheelchair ramps and curb cuts are controlled by 521CMR - Rules and Regulations of the Architectural Access Board.

The AAB Rules and Regulations specify maximum slopes and minimum dimensions required for construction acceptance. There is no tolerance allowed for slopes greater than the maximum slope nor for dimensions less than the minimum dimensions.

Contractors shall establish grade elevations at all wheelchair ramp locations, and shall set transition lengths according to the appropriate table in the Construction Standards (or to the details shown on the plans).

All wheelchair ramp joints and transition sections which define grade changes shall be formed, staked and checked prior to placing cement concrete. All grade changes are to be made at joints.

MassDOT Access Permit

The Contractor is advised that a MassDOT Access Permit is currently pending for this project. Once the MassDOT Access permit is issued it will become part of this contract and the contractor will be required to adhere to all of its stipulations, work hours and conditions.

ITEM 102.1

TREE TRIMMING

The work under this item shall conform to the relevant provisions of section 101 of the Standard Specifications and the following:

The work includes, but is not limited to thinning out the trees along the widened area along the north side of Haverhill Road (Route 110) Station 102+40 through Station 103+40 as directed by the engineer.

Item 120.1

UNCLASSIFIED EXCAVATION

The work under this item shall conform to the relevant provisions of Section 120 of the Standard Specifications and the following:

The work shall include the excavation of material of every description regardless of the type encountered, including concrete steps, from within the project limits as shown on the drawings and as directed by the Engineer.

The work shall also include the removal of any temporary pavements placed for the maintenance and protection of vehicular and pedestrian traffic.

The work shall also include the disposal of existing materials shown on the drawings to be removed and reset, but which in the judgment of the Engineer are unsuitable for reuse in the proposed work.

ITEM 191

DRIVE SAMPLE BORING

ITEM 191.10

HOLLOW STEM AUGER BORING

ITEM 191.11

CORE BORING

ITEM 193

**MOBILIZATION AND DISMANTLING OF
BORING EQUIPMENT**

The work under these items shall conform to the relevant provisions of Section 190 of the Standard Specifications and the following:

The work under these items shall include mobilization and set-up of boring equipment, the drilling of hollow stem auger borings, drive sample borings and rock core borings, the retrieval of soil samples, the visual classification of the soil, the recording of boring logs and samples, and the dismantling and transporting of the equipment to and from each site.

Hollow stem auger borings shall be taken at the locations of the proposed traffic signal foundations as shown on the plans and as directed by the Engineer. The Engineer shall be notified a minimum of 72 hours before borings are taken.

Two types of samples will be required in vertical soil borings:

1. Standard Sample. A standard penetration test using a split spoon sampler shall be made at the ground surface and at every change in soil stratum, but the sampling intervals shall not exceed 5 feet in a continuous stratum. The auger hole shall terminate at the required bottom elevation and a split spoon sample shall be taken at the bottom of the hole.
2. Supplement Sample. A volume sample shall be taken at 5-foot intervals in order to classify the subsurface soils with respect to grain size and visual classification as required. Each sample shall consist of the remainder of the spoon sample and shall be contained in quart jars appropriately labeled.

The purpose of this method along with its sampling procedure is to determine the visual properties, arrangement and thickness of the various soil strata as they exist in the ground. The elevations/depths at which any change in stratification occurs shall be located and recorded on the log by the driller. Detection of stratum changes should be made by careful observation of the soil as it exists in the augered hole and by the rate of penetration of the auger during drilling.

The auger casing I.D. shall be a minimum of 2-3/4 inches for all holes in which split spoon samples are required. The O.D. shall be a maximum of 7 inches to limit the size of the resulting hole.

ITEMS 191 THROUGH 193 (Continued)

Supplement Samples

The quart jar samples shall have positive identification of the contents by typewritten glued-on label.

The following information shall be shown:

1. Name and address of boring contractor
2. Date sample was taken
3. Location and name of project.
4. Location of borehole by station and offset or identifying number of borehole, if so identified on the plan.
5. Depth below ground surface at which sample was obtained and recorded blow counts of 6 inches of penetration of the sampler.

Upon completion of all borings, the Contractor shall submit two copies of the typewritten boring logs to the Engineer and deliver the jarred samples plus two copies of the typewritten logs to Vanasse Hangen Brustlin, Inc., Watertown, Massachusetts.

Obstructions

Obstructions other than ledge shall be considered in accordance with Sub-section 190.60E of the Standard Specifications. The actual location of the additional boring will be specified by the Engineer. When ledge is encountered, a rock core boring will be made in accordance with Sub-section 190.63 of the Standard Specifications.

Rock Core

If rock is encountered at an elevation above the specified highest bottom elevation, then a rock core boring will be made in accordance with Sub-section 190.63 of the Standard Specification. The core hole shall be large enough to accommodate the required auger casing so that sampling may be continued past the rock obstruction. The minimum cored depth shall be 10 feet.

Practical Refusal

Practical refusal of the sample spoon or "refusal" is as defined by Sub-section 190.60F of the Standard Specifications.

Due to the size of the resulting auger hole, it is particularly important that upon completion, all borings shall be backfilled with clean, well-graded sand and tamped to fill all voids created during the augering procedure.

ITEMS 191 THROUGH 193 (Continued)

Advancing the Boring for Soil Sampling

As the boring is advanced, care shall be taken to note and record the depth where wet soil is encountered if this should occur.

If groundwater is encountered then the water level in the hollow stem shall be maintained at the top of the casing at all times during the sampling operation to avoid unequal hydrostatic pressure that could result in blow-in of fine-granular soils and inaccurate blow counts.

In each boring the driller shall record the water level prior to backfilling and whenever possible, prior to the start of each day's work.

Each boring shall be advanced by using a hollow stem auger with cutting head and center rod and plug assembly. The hollow stem auger will advance and case the hole simultaneously to the required sampling levels. The center rod and plug assembly is held in place by the cap and inside drill rod connecting the auger and its assembly to the rotating spindle on the drilling machine to prevent soil from entering the mouth of the auger. Upon reaching the sampling level, the plug is to be retreated by withdrawing the center rod to permit lowering of the sampler through the auger.

The sample shall be obtained by driving the sampler 18 inches into the undisturbed material below the bottom of the auger. The sampling and handling procedure shall be as specified under Sub-section 190.61 of the Standard Specifications.

After the sampling operations are completed and the sampler has been retracted, the plug is re-inserted and held in place by the center rod; another auger section is connected to the first, together with one additional center rod section to secure the plug to the cap and the hole is advanced.

This procedure shall be repeated until the required bottom elevation is reached. The auger shall be stopped at any depth level to allow normal sampling practices upon request by the Engineer.

If, in the judgment of the Engineer, the borehole cannot be advanced by the hollow stem auger method due to the material encountered (with the exception of bedrock) and every attempt has been made by the driller to complete the boring using the conventionally cased, drive sample, wash boring method as specified in Section 190 of the Standard Specifications, then the borehole shall be cored.

ITEM 431.1

HIGH EARLY STRENGTH CEMENT CONCRETE
BASE COURSE

The work under this item shall conform to the relevant provisions of Section 430 of the Standard Specifications and the following:

The work shall include the furnishing and placing of high early strength cement concrete for pavement base as shown on the plans and as directed by the Engineer. High early strength cement concrete base course shall be placed at a minimum depth of 6 inches.

ITEM 460**HOT MIX ASPHALT**

The work under these items shall conform to the relevant provisions of Section 460 of the Standard Specifications and the following:

The work under Item 460 shall also include the furnishing and placement of leveling courses of top or binder material, as directed by the Engineer, prior to the placement of the pavement overlay on existing pavements.

The pavers shall operate while the asphalt pavement is being spread at a speed that will produce a uniform surface texture free of any rippling or unevenness. Paving speeds shall in no case exceed 60 feet per minute. The Engineer may reduce the speed of paving and rolling when, in his opinion, the finished surface appears open in texture.

A minimum of one roller for each 500 tons of mixture spread in one day of eight hours working time shall be required.

Existing Pavement Overlay

As directed by the Engineer, areas of existing pavement and pavement patches that are settled, loose, rocking or excessively deteriorated shall be removed and replaced with an equivalent depth of hot mix asphalt, binder or top course, before placement of the pavement overlay.

After removal of the existing pavement or pavement patch, the underlying subbase material shall be graded to provide a uniform pavement replacement depth and compacted to not less than 95 percent of the maximum dry density of the material before placement of the new hot mix asphalt material.

The edges of existing pavement in removal areas shall be cut to provide a vertical uniform face and shall be sprayed or painted with a uniform thin coat of RS-1 asphalt emulsion immediately before placement of the new hot mix asphalt material.

ITEM 472

HOT MIX ASPHALT FOR MISCELLANEOUS WORK

The work under this item shall conform to the relevant provisions of Section 420, 460 and 470 of the Standard Specifications and the following:

The work shall include the furnishing and placing of various Hot mix asphalt mixtures to provide temporary pavements for temporary access to and egress from properties abutting the work area, for temporary patching and for temporary berms at limits of cold plane, and for permanent patching in pavement overlay areas.

Asphalt mixtures under this Item shall be placed only where and as directed by the Engineer.

The Contractor is advised that this material will have to be placed primarily by hand methods.

The mixture selected shall determine the applicable specification section and the relevant provisions therein.

ITEM 482.3

SAWING ASPHALT PAVEMENT

The work under these items shall conform to the relevant provisions of Section 120 of the Standard Specifications and the following:

The work shall include the sawcutting of existing asphalt and cement concrete pavements where shown on the plans, and as directed by the Engineer.

Sawcut equipment shall be approved by the Engineer prior to commencing work.

The existing pavement shall be sawcut through its full depth, or to the elevation of the abutting proposed pavement subgrade, whichever is lesser, at all joints between existing and proposed pavements, and at all utility trenches through existing pavement to remain, to provide a uniform, vertical surface for the proposed pavement joint with the existing pavement.

Sawcut edges which become broken, ragged or undermined as a result of the Contractor's operations shall be re-sawcut prior to the placement of abutting proposed pavement at no additional cost to the Owner.

Sawcut surfaces in asphalt pavement shall be sprayed or painted with a uniform, thin coat of RS-1 asphalt emulsion immediately before placement of hot mix asphalt material against the surfaces. Sawcut surfaces abutting the proposed pavement top course shall be coated with hot-poured rubberized asphalt sealer.

ITEM 504.2

GRANITE CURB TYPE VA4 - SPLAYED END

The work under this item shall conform to the relevant provisions of Section 500 of the Standard Specifications and relevant details on the design drawings.

ITEM 594

EDGING REMOVED AND DISCARDED

The work under this item shall conform to the relevant provisions of Section 580 of the Standard Specifications and the following:

Existing edging shall become the property of the Contractor and shall be removed from the site during the construction period and legally disposed of.

ITEM 804.3

3-INCH ELECTRICAL CONDUIT
TYPE NM PLASTIC (UL)

The work under this Item shall conform to the relevant provisions of Section 801 of the Standard Specifications and the following:

The work shall include the furnishing and installation of 3-inch non-metallic conduit for traffic signal systems in accordance with the plans and as directed by the Engineer.

The conduit material shall be Schedule 80 polyvinyl chloride (PVC) plastic conduit.

The length of conduit estimated under this Item is not guaranteed by the Engineer; it may be increased or decreased by the Engineer depending upon actual conditions encountered as provided for in Section 4.06 of the Standard Specifications.

Where new conduits are installed in existing grass areas outside the limits of grading, the work shall include the placement of a minimum of 4 inches of topsoil and sod to restore the disturbed areas to their original condition. No separate payment will be made for this work, but all costs in connection therewith shall be included in the Lump Sum price bid.

Where conduit is installed in existing sidewalk or paved median areas to remain, the work shall include replacement of the gravel base material and the surface pavement to match preconstruction conditions. No separate payment will be made for this work, but all costs in connection therewith shall be included in the Lump Sum price bid.

ITEM 816.01

TRAFFIC SIGNAL RECONSTRUCTION

LOCATION NO. 1

The work under this Item shall conform to the relevant provisions of Section 800 of the Standard Specifications, the 2009 Manual on Uniform Traffic Control Devices (MUTCD), and the following:

The work shall include the furnishing and installation of part or all of the following items: local traffic signal controller; cabinet and foundation; mast arm assemblies with anchor bolts and foundations; signal posts and foundations; signal heads; backplates; pedestrian signals with countdown timers; accessible pedestrian signal (APS) push buttons; emergency preemption; all cable and wiring; ground rods, equipment grounding and bonding; pullboxes; single-point vehicle detection; and all other equipment, materials and incidental costs necessary to provide complete, fully operational traffic control signal system as specific herein and as shown on the plans. The location is as follows:

- Location 1 - Haverhill Road(Route 110) at Hillside Avenue(Route 150)

A list of major traffic signal items required at this location is included on the plans.

Shop Drawings

Within 30 days following execution of the Contract, the Contractor shall submit shop drawings for signal supports, a list of equipment, and manufacturer's equipment specifications to the Engineer in accordance with the relevant provisions of Section 815.20.

No work shall be commenced by the Contractor until approval of the shop drawings and manufacturer's data has been received in writing from the Engineer. Approval of these drawings will be general in character and shall not relieve the Contractor from the responsibility of, or the necessity of, furnishing materials and workmanship conforming to the plans and specifications.

The Contractor shall deliver to the Engineer a certificate of compliance with the manufacturer for all materials purchased from the manufacturer.

Existing Installation

Some of the existing traffic signal conduit and pullboxes shall be retained under this Item and in accordance with the relevant provision of Section 815.65.

Existing signal installation to be modified under this Item shall be maintained in operation throughout the construction period and until the new signal is ready for operation. The Contractor may use temporary supports for signal heads as necessary to allow construction activities.

Any temporary installations shall be in conformance with the MUTCD at all times. If an existing signal is to be turned off temporarily to allow

controllers switch covers or rewiring, police detail shall be used to control traffic at the intersection.

Item 816.01 (Cont.)

Once construction is completed and the new signal is in operation, unused items of the old signals shall be completely removed and delivered to MassDOT District 4 office as directed by the District 4 Permits Engineer and, in accordance with Section 815.65 of the Standard Specifications. The Contractor shall dispose of old cable and unusable materials.

Service Connection

Service connection shown on the plans is approximate only. The Contractor shall determine exact location from the servicing utility, arrange to complete the service connection, and be responsible for all charges incidental thereto.

Testing of Grounding System

The Contractor shall perform testing of the equipment grounding system in the presence of the Engineer in accordance with MassDOT Standard Specifications.

Flashing Operation

Changes from automatic flashing to stop-and-go operation and from stop-and-go to automatic flashing operation shall occur as set forth in the MUTCD.

Traffic Signal Equipment

The traffic signal controller unit (CU), malfunction management unit (MMU), cabinet power supply, bus interface units (BIU), and all other ancillary traffic signal control components included in the traffic control cabinet shall comply with the National Electrical Manufacturers Association (NEMA) Standard No. TS 2-1998, Traffic Controller Assemblies with National Transportation Communications for ITS Protocol (NTCIP) Requirements.

Traffic Signal Controller

The traffic controller supplied shall conform to Section 3 "Controller Units" of the NEMA TS 2 Standard. The traffic controller shall be supplied in a TS 2 Type 1 Configuration as required in the list of major traffic signal items included on the plans for this intersection location. Specifically, the controller unit (CU) shall be supplied as an actuated controller with NTCIP capabilities; defined as Type A1N in Subsection 3.2 of the NEMA TS 2 Standard.

The TS 2 Type 1 cabinet shall, at a minimum, meet the requirements of configuration 3 as defined in Table 5-2, "Type 1 Configurations" of the NEMA TS 2 Standard and according to the Item number listed above and on the traffic signal plans.

Item 816.01 (Cont.)

The controller unit shall utilize an interface conforming to Subsection 3.3 of the NEMA TS 2 Standard. The controller unit shall utilize an input/output interface conforming to the requirements of Paragraph 3.3.1 for all input/output functions with the Terminals and Facilities (TF), Malfunction Management Unit (MMU), detector rack assembly and auxiliary devices. The controller unit shall also meet the requirements of Paragraph 3.3.6 of the NEMA TS 2 Standard.

The controller unit shall be supplied with Port 1, Port 2, and Port 3 as defined by the requirements of Subsections 3.3.1, 3.3.2, and 3.3.3, respectively.

The controller unit shall be keyboard-entry menu-driven unit and conforming to the standard specifications, with internal time base coordination (future use), emergency preemption, and programmatic capability. The controller shall be complete with a module for future closed loop system functions.

Malfunction Management Unit

The malfunction management unit (MMU) shall comply with Section 4 of the NEMA TS 2 standard. The MMU shall be capable of operating as either a Type 16 with 16 channels (8 vehicle, 4 pedestrian and 4 overlap) or a Type 12 with 12 channels (8 vehicle, 4 overlap). The MMU supplied shall be configured to operate as a Type 16 unit.

The MMU in either the Type 16 or Type 12 configuration shall be capable of operating in a NEMA TS 2 Type 1 cabinet, a NEMA TS 2 Type 2 cabinet, or a NEMA TS 1 cabinet without loss of functionality.

Detector Rack Assembly

The detector rack assembly shall conform to Paragraph 5.3.4 of the NEMA TS 2 Standard. The detector rack assembly shall be supplied in a Type 2 configuration as defined in Table 5-9 of the NEMA TS 2 Standard.

Pictorial Diagram

The cabinet shall also be supplied with a laminated pictorial diagram of the intersection layout. This diagram shall include vehicle and pedestrian signal head layout, intersection geometry, vehicle detection zones, street names and north arrow.

Item 816.01 (Cont.)

Single-Point Vehicle Detection

The Contractor shall provide and install a Single-Point Video Detection (SPVD) System, as shown on the plans and these special provisions. The SPVD system shall include a single ultra wide angle lens camera, video processor unit, detection algorithms, all cables, connections, mounting hardware, application software, and accessories required by the manufacturer for proper operation of the system, including but not limited to surge protection devices.

The SPVD system shall detect and monitor vehicles on approach roadways utilizing advanced, omni-directional, vehicle tracking algorithms along with three-dimensional vehicle modeling to supply accurate and consistent stop line detection.

The SPVD system shall include all necessary software and hardware to allow the end user to program, setup, and/or modify detection zones within the video camera image.

One pointing device and one color monitor within the controller cabinet for future viewing of the detection camera images shall be supplied by the Contractor. The Contractor shall also supply any necessary cables, interface devices and software for monitoring video detection via laptop computers.

The camera shall be mounted at the intersection, as shown on the plan or as directed by The Engineer,

At a minimum, the SPVD shall meet the following requirements:

Camera

- Power: 48 VDC, single burial grade CAT 5e cable
- Operating Temp: -35C to +60C
- Humidity: Up to 100%
- Dimensions: 10'' diameter x 9''
- Weight: less than 11 lbs.
- The camera shall include an ultra-wide-angle lens.
- The camera shall include a heater to prevent the formation of ice and condensation.
- The camera, when properly installed and configured, shall be able to concurrently observe at least 5 lanes of traffic per approach.
- The camera shall be able to concurrently observe more than one approach.

Video Processor Unit

- Power: 120-240 VAC, requiring 150 watts or less.
- Operating Temp: -34C to +74C
- Humidity: Up to 95% non-condensing
- Dimensions: 12.25'' wide x 11.25'' depth x 5'' high
- Weight: 12 lbs.
- Enclosure: Rack mount in traffic cabinet
- The video processor unit shall save configurations and zone plans locally to maintain operation with or without monitoring equipment connected.

ITEM 816.01(Cont.)

- The video processor unit shall be designed to function dependably in the adverse environment found in the typical roadside traffic cabinet.
- The video processor unit shall include at least 24 detector outputs.
- The video processor unit shall include an SDLC connection for TS2 type controllers
- The video processor unit shall include a USB on the front surface for simple data collection on non-networked systems.
- The video processor unit shall include both LAN and WAN RJ-45 interface ports on the front surface of the unit.

Application Software

- The application software shall support the creation and modification of at least twenty-four (24) polygonal detection zones within the graphical user interface.
- The application software will show images of the detection zones superimposed on the video image of traffic.
- The application software shall support the assignment of a detector output(s) to each zone. These assignments can be modified at any time through the software.
- The application software shall support direction of travel assignment within detection zones. The vehicle detection zone shall not activate for objects traveling any direction other than the one specified for detection. Cross-street and wrong way traffic shall not cause detection.
- The application software shall change the color of the zone within the graphical user interface as vehicles enter or exit a detection zone, changing its occupancy status. This will be required for real-time or historical monitoring, and may be turned on or off by the user at any time.
- The application software shall provide visual indication of the light state for each zone within the graphical user interface.
- The application software shall feature the ability to digitally pan, tilt, and zoom within the camera's field of view without movement of the camera.
- The application software shall maintain a database of current and historical traffic data, and allow for the user to run reports against this data to include traffic counts, turn movements, speed, and classification at a minimum.
- The application software shall feature the ability to mask objects that occlude the camera field of view and/or disrupt the camera automatic gain and exposure control.
- The application software shall feature an optional reporting interface offering point and click reporting for turning movement counts and vehicle classification.

The Contractor shall provide software that enables a technician to test all features and functions of the SPVD system, and to perform all set-up procedures. This software shall be delivered on a CD so that it can be installed on other laptops.

The SPVD system shall be installed in accordance with the manufacturer's recommended procedure for installation.

ITEM 816.01(Cont.)

The SPVD system shall be installed by factory certified installers and as recommended by the manufacturer and documented in installation materials provided by the manufacturer. Proof of the factory certification shall be provided. Installation includes connecting the SPVD to the traffic signal controller and power supply in the associated controller cabinet assembly. When the setup is complete and the SPVD system is ready for operation, the values of all parameters that were set during the process shall be delivered to the Engineer in printed and computer-readable form. All equipment, such as software, laptop computer, tools and cables, needed for setup work shall be provided by the Contractor.

The Contractor shall be responsible for the proper programming of the SPVD, orientation of the SPVD, and all other work necessary to provide a complete vehicle detection system. The Contractor may be required to field adjust the location of the SPVD system in the presence of the Engineer to properly detect approaching vehicles.

The cabinet documentation (box prints) shall show all wiring between the SPVD system and the controller cabinet.

Warranty: The supplier shall provide a three-year warranty on the SPVD system following installation and warranty registration. The camera shall include an additional warranty to require no aiming or focusing for a period of five years. During the warranty period, technical support shall be available from the supplier via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel or factory-certified installers. During the warranty period, updates to SPVD software shall be available from the supplier without charge.

Data Stick/ Drive

The Contractor shall supply A USB stick or drive used for collecting and synchronizing data and site configurations from the video processor unit. The USB stick or drive must be NTFS-formatted and have enough available space to allow data to be synchronized.

Surge Suppression

The Contractor shall supply and install surge suppression in the traffic controller cabinet in accordance with MassDOT Standards. Contractor shall contact MassDOT Electrical Systems Unit directly for requirements and/or questions. At a minimum surge suppression shall be provided for video detection, power service, and emergency preemption.

ITEM 816.01(Cont.)

Cabinet Power Supply

Separate power supply shall be supplied and installed in the TS 2 cabinet. As a minimum, the power supply shall meet all requirements of Paragraph 5.3.5 of the NEMA TS 2 Standard. The unit shall be AC line powered and provide regulated DC power, unregulated AC power, a line frequency reference for the load switches and other auxiliary cabinet equipment as required.

The power supply shall be either shelf or rack mounted.

The unit shall contain four LED indicators on the front panel to indicate the four outputs;

1. + 12 VDC +/- 1 VDC @ 2.0 amps,
2. + 24 VDC +/- 2 VDC @ 2.0 amps,
3. 12 VAC @ 250 milliamps, and
4. 60 Hz line frequency reference.

A test point terminal shall also be located on the unit front panel for + 24VDC and logic ground testing.

Load Switches

Load switches shall comply with Subsection 6.2 of the NEMA TS 2 standard. All load switches shall utilize optically isolated encapsulated modular solid state relays. Discrete components on circuit boards are not acceptable.

Load switch indicator lights shall be LED-type and wired on the input side of the device.

Flasher

Flashers shall comply with Subsection 6.3 of the NEMA TS 2 standard and be equipped with two output indicator lights which will show flashing power out to the cabinet assembly.

Flash Transfer Relays

Flash transfer relays shall comply with Subsection 6.4 of the NEMA TS 2 standard.

The field electrical loading for flash operation shall be wired through the transfer relays such that the load on the 2-circuit flasher is as balanced as possible within the limitations of the signal phasing.

ITEM 816.01(Cont.)

Traffic Controller Cabinet

Controller cabinet shall conform to the NEMA TS 2 Standards, Section 7. Cabinet size shall be as indicated on the plans and as shown below.

TS 2 Type 1 Configuration Table

| Item Number | NEMA TS 2 Cabinet Size | Nominal Cabinet Size (HxWxD)* | Config-uration Type Table 5-2 | Load Switch Positions | Flash Transfer Relays | BIUs Required | Detector Rack Type Table 5-9 | MMU (Channels) |
|-------------|------------------------|-------------------------------|-------------------------------|-----------------------|-----------------------|---------------|------------------------------|----------------|
| 816.01 | 6 | 52x44x24 | 3 | 12 | 6 | 3 | 2 | 16 Channel |

* Approximate cabinet dimensions are provided in inches.

Cabinet shall be made of aluminum and painted aluminum.

The cabinet shall also be wired with a normally closed switch connected to a user defined input to the controller for remote monitoring of the control cabinet's door open status (for future use).

Where applicable, the cabinet shall be installed with the door opening positioned in order to allow general observation of the flow of traffic and the inside of the cabinet at the same time.

Bus Interface Units

The Bus Interface Units (BIU) shall comply with Section 8 of the NEMA TS 2 Standard. The BIU shall be fully interchangeable with any other manufacturer's unit and interchangeable in a NEMA TS 2 Type 2 cabinet assembly.

At a minimum the BIU shall perform the interface function between port 1 at the controller unit, the malfunction management unit (MMU), the detector rack assembly (video detection), and the terminal facilities. The cabinets shall be supplied with the appropriate number of BIUs required to provide an operating traffic control signal according to the plans and these specifications.

As a minimum, two LED indicators shall be provided on the BIU front panel. One indicator shall serve a dual use; as a power on indication and as a diagnostic indicator for proper operation of the device. The second indicator shall serve as a transmit indicator illuminating each time data is transmitted.

Item 816.01 (Cont.)

Spare Equipment

The Contractor shall provide the following spare signal equipment in the proposed traffic signal controller cabinet:

- A full complement of load switches to accommodate each available position of the back panel.
- A full complement of flash transfer relays to accommodate each available position of the back panel.
- Two (2) Bus Interface Units.
- A 25 foot RS-232 cable for communication function with a laptop computer.

Emergency Preemption

The emergency vehicle preemption system shall be installed in the same cabinet as the controller. The make and model of the preemption system for this project shall meet the approval of MassDOT, including coding requirements.

The emergency vehicle preemption control system shall consist of a data-encoded phase selector to be installed within the traffic control cabinet in the detector rack. This unit will serve to validate, identify, classify, and record the signal from the optical detectors located on support structures at the intersection.

Upon receiving a valid signal from the detector, the phase selector shall generate a preempt call to the controller initiating a preemption operation as shown on the plans.

The optical detectors shall be single input, single output units used to control one approach. All traffic signal installations shall be supplied with a minimum of two optical detectors unless otherwise noted in the major items list.

The phase selector shall be a rack-mounted plug-in four channel, dual priority device. The phase selector shall plug into an empty slot in the detector rack. Programming the phase selector shall be via a PC-based computer utilizing unit specific software. One copy of software on a CD shall be supplied and licensed to MassDOT. A hard copy of final programming data shall be left in the control cabinet. A complete set of interface cables for phase selector to laptop connection shall be supplied in the cabinet.

The Contractor shall install a confirmation strobe at the traffic signal locations as shown on the plans. The confirmation strobe shall serve to validate to the driver of the emergency vehicle that the traffic signal has recognized the preemption call and will initiate the proper preemption sequence. The confirmation strobe shall be a white lens.

The Contractor shall be responsible for the proper programming of the phase selector, orientation of the optical detectors, and all other work necessary to provide a complete and operating emergency vehicle preemption systems. The Contractor may be required to field adjust the location of the optical detectors in the presence of the Engineer to properly detect preemption calls from approaching vehicles. Upon final inspection and testing, any discrepancies or failures to properly preempt the traffic signals will necessitate a complete replacement on any non-compatible equipment.

ITEM 816.01(Cont.)

Mast Arms, Poles and Foundations

Mast arms and poles shall be fabricated and constructed in conformance with the *2015 MassDOT Overhead Signal Structure and Foundation Standard Drawings* and as stated below.

All mast arms and poles shall be Type 2 galvanized steel monolevers with shoe bases.

Acceptance of Type 2 mast arms and poles will be contingent upon review and approval of shop drawings submitted by the Contractor. Longhand design calculations shall be submitted by the Contractor with the shop drawings for all Type 2 mast arms and poles.

The Contractor shall provide a set of calculations, stamped by a Structural Engineer registered in the Commonwealth of Massachusetts, along with plans and specifications for review by the Design Engineer.

The Contractor shall be responsible for performing all soil borings and soil classifications associated with the mast arms and poles. Reference is made to Items 191, 191.10, 191.11, and 193 for more information.

All foundations associated with the mast arms and poles shall be cored pier foundations and constructed in conformance with *2015 MassDOT Overhead Signal Structure and Foundation Standard Drawings*. Foundation sizes and depths shall be selected from the foundation design charts shown in MassDOT's Standard Drawings.

Prior to installation, the Contractor shall notify the Engineer in writing of his selection of all foundation footing sizes.

The Contractor is wholly responsible for the design of all foundations regardless of soil conditions and/or ledge found at the proposed foundation locations. In the event that unforeseen soil conditions are encountered that prevent the use of MassDOT standard foundation type, the Contractor is responsible to select and design alternative foundation types. Alternative foundation types could include spread footings, coring and socketing into rock or other foundations previously used to support similar loads, within reason. The Contractor shall submit the alternative foundation type to the Engineer for review. The alternative foundation type shall be stamped by a Structural Engineer registered in the Commonwealth of Massachusetts.

No separate payment will be made for work considered incidental to the excavation, including but not limited to, mast arm foundations, dewatering, etc. but all costs in connection therewith shall be included in the contract bid price.

Foundations shall not obstruct a sidewalk or crosswalk so that passage by physically-challenged persons is not impaired.

ITEM 816.01(Cont.)

Signal Heads

Proposed signal heads mounted on mast arms shall be rigidly attached to the mast arms. All signal heads mounted overhead on mast arms shall be installed, with the bottom of the signals at the same height. All traffic signal lenses shall be 12 inches in diameter. All signal heads shall be equipped with ball and/or arrow light emitting diode (LED) modules. Five (5) inches louvered backplates and tunnel visors shall be provided on all signal heads, unless otherwise noted on the plans.

All backplates shall include 2-inch wide, yellow reflective micro-prismatic retroreflective sheeting conforming to ASTM D4956 Type VIII or better on the outside edge of the backplates.

Red, Yellow, And Green LED Vehicle Signal Module

Any equipment that has been type-tested and approved according to Section 815.21 of the Standard specifications prior to the date of award of this contract will be considered as meeting these specifications.

All Red, Yellow, and Green signal displays shall conform to the following:

All Red and Green Light Emitting Diode (LED) signal module shall conform to "Interim LED Purchase Specification of the Institute of Transportation Engineers, Vehicle Traffic Control Signal Heads - Part 2: Light Emitting Diode (LED) Vehicle Traffic Signal Modules", July 1998 Version or most current version, Institute of Transportation Engineers (ITE), 1627 Eye Street NW, Suite 600, Washington, DC 20006, Telephone: (202) 785-0060, FAX: (202) 785-0609.

Yellow LED signal modules shall conform to the above specifications with the exception that yellow modules shall meet maintained Minimum Luminous Intensity values of Table 1, Section 4 of the above referenced ITE specification of compliant green signal modules at 77 degrees Fahrenheit at 120 volts AC, throughout the useful life based on normal use in traffic signal operation over the operating temperature range.

All signal modules shall conform to the following: (In case of a conflict, the following special provision shall overrule.)

An independent laboratory shall certify that the LED signal module complies with Section 6 Quality Assurance of the above stated ITE LED Purchase Specification.

LED signal modules must be type tested and approved by the Department according to the requirements of Subsection 815.21 of the Standard Specifications for Highways and Bridges.

ITEM 816.01(Cont.)

On the backside of the LED signal module there shall be a permanently marked "up" arrow to aid in the proper orientation of the module during installation.

The manufacturer's name, trademark, serial number and other necessary identification shall be permanently marked on the backside of the LED signal module.

Physical and Mechanical Requirement: LED signal modules shall fit without modifications into existing traffic signal housings conforming to "Vehicle Traffic Control Signal Heads" (VTC SH) published in the Equipment and Materials Standards of the Institute of Transportation Engineers. The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation. The LED signal assembly construction shall conform to the applicable ASTM specifications for the materials used to fabricate the module. Each LED signal module shall comprise a smooth surfaced Red, Yellow, or Green UV stabilized polycarbonate outer shell, multiple LED light sources, a power supply and a polycarbonate back cover assembled in a gasketed or silicon sealed unit.

Optical and Light Output Requirement: The minimum luminous intensity values and light output shall be maintained within the rated input voltage of 117 Volts AC. LED signal modules shall not be allowed to fall short of the minimum intensity values at any of the 44 measuring points of the standard when lamp is turned on cold for measurements and after a 30 minute warm-up time period at 100% duty cycle.

Electrical: The maximum wattage for 12 inch ball shall be 20 Watts and 10 Watts for the 12 inch arrow. The LED sources shall not be powered above 70% of the manufacturer's specified rated load. This shall be clearly shown in layman's terms through calculations, schematics, catalogue cuts, etc.

The LED sources shall be made of the AlInGap type shown clearly in a catalogue cut or similar literature.

Warranty: The LED signal module will be replaced or repaired by the manufacturer if it exhibits a failure due to workmanship or material defects within the first 60 months of field operation.

The LED signal module will be replaced or repaired by the manufacturer if it exhibits either a greater than 40 percent light output degradation or a fall below the minimum intensity levels within the first 36 months of field operation.

ITEM 816.01(Cont.)

Pedestrian Heads with Countdown Timers

All pedestrian heads shall be 16 inch, single units, with countdown timers. Pedestrian head indications shall be illuminated L.E.D. type displaying solid graphical symbols of a walking person and/or upraised hand. The countdown module shall display the number of seconds remaining only at the beginning of the flashing "DON'T WALK" interval, continue counting down through the flashing "DON'T WALK" interval, and blank out during the steady "DON'T WALK" interval. The countdown module shall be automatically set by the intersection controller based upon the "WALK" and "DON'T WALK" signal intervals only. The countdown module shall continuously monitor the intersection controller for any changes to the pedestrian phase timing, and reprogram itself automatically. All LED indications on the pedestrian signal shall have an automatic dimming circuit for night illumination to reduce long-term degradation to the LEDs.

Accessible Pedestrian Signal Pushbuttons

The Accessible Pedestrian Signal (APS) pushbuttons shall provide information in non-visual formats (such as audible tones, speech messages, and/or vibrating surfaces). The APS pushbuttons shall be compliant with the 2009 MUTCD. At a minimum the APS pushbuttons shall be provide with the following features:

- Pushbutton locator tone
- A visible and audible indicator that the button press has occurred
- A vibro-tactile arrow
- A speech walk message for the "WALKING PERSON" indication

The APS pushbuttons shall provide visually disabled pedestrians with a locator tone that will allow them to find the pushbutton to activate the walk signal. Once the pushbutton call has been placed, the signal will provide both an audible and tactile response during the related "WALK" portion of the cycle. A sunlight visible LED latches "ON" to confirm the button has been pushed. The audible response shall be a speech message, indicating the name of the street crossing, and when the phase is started.

Housing and Pushbutton Unit - Shall meet the following minimum requirements:

- Constructed of cast aluminum with a powder coated finish.
- Highly vandal resistant and pressure activated with essentially no moving parts.
- Pushbutton must be able to withstand an impact from a baseball bat or hammer.
- Operating temperature range -34 degrees Celsius to 65 degrees Celsius.
- Operating voltage range 12 to 36 VDC.
- Button cap must be made of solid 316 stainless steel.
- Pushbutton must activate with 5 lbs of force or less.
- Unit must have an LED display to give indication that of pushbutton being pushed.

ITEM 816.01(Cont.)

- Pushbutton must fully operate immediately after being completely immersed in water for 5 minutes (electrical terminals isolated from water).
- Pushbutton must not allow ice to form such that it would impede function of pushbutton or pushbutton cap.
- All switch electronics must be sealed within the housing.
- All sounds shall emanate from the back of the of the APS pushbutton unit via a weatherproof speaker that is protected by a vandal resistant screen.

Tactile Arrows and Locator Tones - Shall meet the following minimum requirements:

- APS pushbuttons shall incorporate a locator tone at the pushbutton the locator tone, measured at 3 feet from the APS pushbutton, shall be 2dB minimum and 5dB maximum above ambient noise level in standard operation and shall be responsive to ambient noise level changes. Tones shall consist of multiple frequencies with a dominant component of 880Hz. The duration of the locator tone shall be 0.15s and shall repeat at intervals of 0.15s.
- APS pushbuttons shall be a minimum of 2 inches across in diameter and shall contrast visually with their housing and mounting.
- APS pushbuttons shall include a vibro-tactile arrow aligned parallel to the crosswalk direction. The arrow shall be raised 0.03 inches minimum and shall be 1.5 inches minimum in length. The arrow head shall be open at 45 degrees to the shaft and shall be 33 percent of the length of the shaft. Stroke width shall be 10 percent minimum and 15 percent maximum of arrow length. The arrow shall contrast with the background.
- The arrow shall vibrate during the "WALK" portion of the cycle.

Speech Walk Message - The speech walk message shall be audible from the beginning of the associated crosswalk. The speech walk message and associate APS pushbuttons shall be as follows:

TABLE 1

| | |
|---------------------------|---------------------------------|
| PEDESTRIAN PUSHBUTTONS | SPEECH WALK MESSAGE |
| ALL | Walk sign is on to cross street |

Mounting Requirements - A maximum mounting height of 42 inches above the finish sidewalk grade shall be used for APS pedestrian pushbuttons.

The Contractor is hereby notified that they are ultimately responsible for constructing all pedestrian push button elements (clear ground space, forward and side arm reaches) in strict compliance with the current AAB rules, regulations and standards.

All construction elements in this project associated with pedestrian push buttons are controlled by 521CMR - Rules and Regulations of the Architectural Access Board. The Contractor shall establish clear ground space at all pedestrian push button locations, and shall set arm reach lengths according to the AAB rules (or to the details shown on the plans).

The project has been designed to conform to all AAB rules, and the Engineer is not aware of any required variances for the work presented on the design plans. The Contractor shall notify the Engineer of any project element related to the pedestrian push buttons that will not comply with 521 CMR prior to constructing said pedestrian push button elements.

Installation - The APS pushbuttons shall be installed by Contractor and as recommended by the manufacturer and documented in installation materials provided by the manufacturer. The Contractor shall be responsible for the proper programming of the APS pushbuttons, orientation of the pushbuttons, and all other work necessary to provide a complete and operational APS pushbutton system. The Contractor may be required to adjust volume levels as directed by the Engineer. When the setup is complete and the APS pushbuttons are ready for operation, the values of all parameters that were set during the process shall be delivered to the Engineer in printed and computer-readable form.

Warranty - Each APS pushbutton shall be warranted free from defects in material and workmanship for a period of at least 2 years from the date of installation by the Contractor and acceptance from MassDOT.

During the warranty period, technical support shall be available from the supplier to owner via telephone within 4 hours of the time a call is made by a user, and this support shall be available from factory-certified personnel without charge.

Posts and Bases

Signal posts and bases shall be aluminum shafts with cast aluminum transformer bases.

Signal base foundations shall not obstruct a sidewalk or crosswalk so that passage by physically-challenged persons is impaired.

Software

The local controller, malfunction management unit, and amplifier software shall be supplied with the latest available revision. Any software upgrades released by the manufacturer shall be supplied at no charge to MassDOT for a period of five years after acceptance of the traffic signal installation.

ITEM 816.01(Cont.)

Data Base Programming & Documentation

Each programmable local hardware component (controller, malfunction management unit, preemption unit, and camera unit) shall be initially programmed by the Contractor based on information contained on the plans. Three sets of hard copy programming per device shall be supplied by the Contractor.

Layout Plans

The Contractor shall furnish "As Built" layout plans of the completed traffic signal systems as AutoCAD Version 2002 files, with standard MassDOT signal inventory format. Copies of the standard format may be obtained from the District Traffic Engineer. These "As Built" plans shall be furnished to MassDOT District 4 Office prior to the date of final acceptance. Full compensation for these plans shall be included in the Contract lump sum price of work and no additional compensation will be allowed therefore.

All Layout Plans shall conform to the MassDOT Traffic Signal Layout Drawing Control. See Attachment 1 at the end of these Special Provisions for more information.

Attachment 1
to
Special Provisions for
Items 816.01

Massachusetts Department of Transportation Traffic Signal Layout Drawing Control

The Massachusetts Department of Transportation has established a computer database system, to maintain its traffic signal layouts and records. Consultants working on MassDOT projects that require the preparation of traffic signal layouts are asked to provide files in AutoCAD format, that is in addition to the regularly submitted Mylar version. The AutoCAD files must follow the following guidelines.

Photographs (if required by your contract):

Photographs should be taken at all approaches to an intersection. Photographs must be taken after the project construction is complete. Photographs must be submitted in electronic (*.JPG) format, low resolution (300dpi=150kb minimum file size) is preferred.

Photograph filename should follow this convention XXXXYZZKK.JPG, where:

XXXX = Four digit signal identification number (assigned by MHD)
YY = Two letter direction (EB, WB, NB, SB)
ZZ = Picture number (01, 02, 03, etc.)
KK = Revision number (01, 02, 03, etc.)

Example: 0842NB0101.JPG

Plans (copies of standard title sheet, layout plan, and data plan are available for distribution):

Drawing plans shall be generated in AutoCAD Version 2002 (*.DWG file format) or later version.

Plan filename should follow this convention XXXXPZZKK.DWG

Where,

XXXX = Four digit signal identification number (assigned by MHD)

P = P for layout plan, C for closed loop system, M for miscellaneous plans, etc.

ZZ = Plan number (01, 02, 03, etc.)

KK = Revision number (01, 02, 03, etc.)

Examples: 0842P0101.DWG, 0842C0101.DWG, 0842M0101.DWG

For Title and Sequence and Timing data plan, filename should follow the following convention: XXXXTKK.DWG

Where,

XXXX = Four digit signal identification number (assigned by MHD)

T = **T** for title sheet and **D** for sequence and timing data plan.

KK = Revision number (01, 02, 03, etc.)

Examples: 0842T0101.DWG, 0842D0101.DWG

Layering Convention

| Layer Name | Color | Line Type | Notes |
|-------------|------------------|----------------|---|
| BASLN | 1 - Red | BASEL | Baseline |
| BORDER | 7 - White | Continuou s | Outer border line |
| | | Continuou s | Middle border line |
| | | Continuou s | Inner border line |
| CONDUIT | 4 - Cyan | Hidden2 | Signal conduit only |
| CURBLN | 9 - Gray | Continuou s | Roadway edges, Islands, and back of sidewalk, wheel chair ramps, etc and related text |
| DIM | 7 - White | Continuou s | All dimensions and leaders for signal equipment, and pavement markings |
| MATCHL N | 7 - White | MATCH | Match line between multiple sheets |
| OTHER | 7 - White | Continuou s | Anything that doesn't fall under any other layer |
| PVMARK | 5 - Blue | Continuou s | All pavement markings including stop lines, crosswalks, lane lines, gore lines, legends, etc. and related text |
| SHLL | 3 - Green | PROPLN | Right-of-way (state highway layout line) |
| SIGNAL | 4 - Cyan | Continuou s | All signal equipment including: control boxes, signal heads, junction boxes, roadway detectors, power source, and related text |
| SIGNS | 4 - Cyan | Continuou s | All signs, related dimensions and text, (typically this layer is frozen) |
| STN | 4 - Cyan | Continuou s | Baseline symbols and text |
| TB | 7 - White | Continuou s | Title block, bar scale, north arrow and related text |
| TEXT | 7 - White | Continuou s | All other text |
| TITLES | 7 - White | Continuou s | All titles and street names with large text |
| X-FEAT | 14 - Dark Red | Continuou s | All existing features; trees, buildings, dimensions, etc. and related text, (typically this layer is frozen) |
| X-UTIL | 14 - Dark Red | Continuou s | All existing utilities, related dimensions and text, except current traffic signal conduit and power source utility pole or manhole, (typically this layer is frozen) |

Line Type

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All line types should follow the MHD Design Manual guidelines.

Scale

Drawings, bar scale, dimension, etc. should follow MHD standards for English and Metric units.

Units

Use Decimal units.

Text

Title text and street name text shall be font Romans.shx, style L175.

All other text shall be font Romans.shx, style L120.

All text must be upper case.

Symbols

All symbols (pull boxes, signal heads, control boxes, etc.) should be inserted on Layer 0.

Border sheet

A border sheet is available for distribution. The filename, city/town, street/road and signal ID number needs to be filled in.

North Arrow should be placed at the top left corner of the sheet per MHD standards. Bar scale should be placed at the bottom center of the sheet, per MHD standards.

Pavement Markings

1. Crosswalk and stop lines shall be polylines type and width = 1 foot (300mm)
2. Spacing between double yellow center lines = 1 foot (330 mm)

Traffic Signal Conduit

All traffic signal conduits are to be shown as 2 dashed lines spaced 0.66 feet (200 mm) apart.

ITEM 874.2

TRAFFIC SIGN REMOVED AND RESET

The work under these items shall conform to the relevant provisions of Section 828 of the Standard Specifications and the following:

The Contractor shall carefully remove and reset at new locations all existing signs, attachment hardware and sign support posts not included under other sign items as shown on the drawings and as directed by the Engineer.

Signs, attachment hardware and sign support posts shall be satisfactorily stored and protected until reset in the proposed work.

Signs, attachment hardware and sign support posts lost, damaged or otherwise made unsuitable for reuse while being removed, transported, stored or reset shall be replaced with new materials at no additional cost to the Owner. New attachment hardware shall be furnished and installed as necessary to replace any missing or unusable existing hardware.

Included under Item 874.2 are Warning-Regulatory and Route Marker signs, and miscellaneous directional signs.

ITEM 874.4

TRAFFIC SIGNS REMOVED AND STACKED

The work under this item shall conform to the relevant provisions of Section 828 of the Standard Specifications and the following:

The work shall include the careful removal and delivery of signs, attached hardware and supports from locations shown on the plans and as directed by the Engineer. The signs, attached hardware and supports within the town layout shall be removed and stacked in the town Department of Public Works yard.

Any signs and posts damaged or lost either directly or indirectly as a result of the Contractor's operations shall be replaced by the Contractor at no additional cost to the Owner. Existing signs shall remain in place until proposed new signs are in place.

ITEM 999

CONSTRUCTION STAKING

Under this item, the Contractor shall layout and set all lines, grades, and measurements necessary for construction of the work. The Engineer shall provide information on the baseline system and elevation control available.

All staking shall be directed and performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout of the type required under this Contract. The Contractor shall submit the qualifications of the survey personnel to the Owner for review and approval. The Owner reserves the right to reject any personnel which, in the Owner's judgment, are not adequately qualified. The Owner also reserves the right to evaluate the performance of the survey personnel during the course of the work and to require the replacement of any personnel whose work, in the judgment of the Owner, is unsatisfactory.

The Engineer may check the layout as established by the Contractor at any time as the work progresses. The Contractor shall be informed of the results of these checks, but the Engineer by doing so in no way relieves the Contractor of his responsibility for the accuracy of the layout work. The Contractor shall correct or replace any deficient layout and construction work which may be the result of inaccuracies in the Contractor's layout at no additional cost to the Owner.

ITEM 999.1**POLICE SERVICES****ALLOWANCE**

The Contractor shall furnish police services required to direct traffic on existing roadways where traffic is maintained.

The Contractor shall provide such police officers as may be deemed necessary by either the Engineer or the Town for the direction and control of all traffic traveling within and through the project area. The police officers shall be obtained from the Town Police Department as applicable. The police officers shall be paid by the Contractor at the prevailing rate of wages established by the Town.

Police employed by the Contractor on a temporary basis are considered to be employees of the Contractor, and the Contractor shall issue W-2 "Statements of Earnings and Taxes Withheld" to the employees and must submit copies thereof to the Massachusetts Department of Taxation and Corporations in the usual manner prescribed by law.

Allowance for Police Services

An allowance of Sixteen Thousand Dollars (\$16,000.00) for the furnishing of police services has been included in all bids. This allowance is determined by multiplying the number of hours estimated as necessary by the prevailing hourly rate of wages established for such services. The Contractor shall submit certified copies of itemized bills of services rendered for review and approval by the Engineer. The allowance will be adjusted to the actual amount paid for authorized and approved police services as stipulated and shall include other payments due to any legal requirements of the State and Federal governments.

Payment

The quantity to be paid for under this item shall be the actual amount paid by the Contractor to provide satisfactory police services as stipulated and required. Any overhead costs shall be considered to be included in the prices bid for the other items of the Contract.

Right Of Entry Agreement

AMESBURY
MASSACHUSETTS

RIGHT OF ENTRY - WITHOUT PREJUDICE

TEMPORARY ACCESS AGREEMENT

Owner(s) of Record: Cynthia Wojcicki

Address: 26 Haverhill Road Amesbury, MA

Stations: 110+50 to 111+50 +/- Haverhill Road Construction Baseline

Parcel Number & Square Footage(s): Map 76/Lot 2 & approx. 53,579 SF

Projects: Haverhill Road (Route 110)

Permission is hereby given to the above municipality(s) and the Massachusetts Department of Transportation, Highway Division or its duly authorized agents (Corcoran Jennison Associates, Inc.) to enter upon my property in connection with the reconstruction of a roadway on the above named project. A set of design plans for this project will be made available upon request. **A Sketch Plan showing the impacts to my property are attached.** The purpose of this Right of Entry is to allow for changes and to carry out the work on my property.

1. Hot Mix Asphalt sidewalk construction
2. Driveway re-construction.
3. Minor sloping and grading changes, as necessary, to perform the sidewalk and driveway installation
4. Loam and seed area between edge of pavement and proposed front of sidewalk and between the proposed back of sidewalk and proposed limit of grading.
5. Replanting of landscaped area.

This Right of Entry is made of my/our free will. I/we waive my/our right(s) to an appraisal and compensation. I/we have been advised of our rights for just compensation under the provisions of Title III, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

This entry to be made without prejudice to my rights in settlement of any claims for damages that may hereafter appear.

Granted by: _____
Owner(s) or Authorized Representative

1 9-28-15
Date

Traffic Signal Maintenance Agreement

AGREEMENT
BETWEEN THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
AND AMESBURY HEIGHTS LLC

AGREEMENT NO. _____
(to be completed by MassDOT)

AGREEMENT, made this ___ day of _____, 2016 by and between the Massachusetts Department of Transportation – Highway Division, hereinafter called “MassDOT,” and AMESBURY HEIGHTS LLC, hereinafter called “DEVELOPER.”

WHEREAS, the DEVELOPER desires to construct traffic signal system upgrades and minor roadway improvements on Haverhill Road (Route 110) at the intersection of Hillside Avenue (Route 150) as shown on:

MassDOT’s Traffic Control Signal Regulation No. _____
(to be completed by MassDOT)

Dated: _____
(to be completed by MassDOT)

In the Municipality of Amesbury, County of Essex, in said Commonwealth as shown on a set of plans consisting of 26 sheets dated 08/22/2016 entitled:

SAFETY IMPROVEMENT PROJECT
HAVERHILL ROAD (ROUTE 110)
IN THE CITY OF
AMESBURY
ESSEX COUNTY

prepared by Vanasse Hangen Brustlin, Inc. of 101 Walnut Street, Watertown, MA, said plans and regulation are attached hereto and made a part thereof; and

Said plans being subject to review and approval by MassDOT before installation, said plans and regulation are made a part thereof; and in accordance with:

Highway Access Permit No.: _____
(to be completed by MassDOT)

Dated: _____
(to be completed by MassDOT)

Issued by District 4 to perform work on a State Highway and made part of this Agreement; and

WHEREAS, the parties hereto have reached an agreement as to the apportionment of work to be performed, the expense of carrying out this work, and the ownership and future maintenance thereof;

NOW THEREFORE, in consideration thereof, MassDOT and DEVELOPER hereby agree, each with the other as follows:

DIVISION OF WORK

The DEVELOPER will furnish through its own contractor, all necessary, labor, materials, equipment and other services necessary for the reconstruction of the traffic control signal and roadway improvements as indicated above and as shown on the attached plan(s) and regulation(s).

The DEVELOPER agrees that all work done under this Agreement will be in accordance with the *Standard Specifications for Highways and Bridges* issued by the Commonwealth of Massachusetts, Massachusetts Highway Department, 1988 Edition, as amended, and the *2009 Manual on Uniform Traffic Control Devices* and amendments as adopted by MassDOT.

The DEVELOPER agrees to require its Contractor to provide and cause to be maintained Public Liability Insurance and Property Damage Liability Insurance, and also, Contractor's Protective Public Liability and Property Damage Liability Insurance on behalf of MassDOT and, in conformance with Section 7.05B of the hereinbefore defined *Standard Specifications for Highways and Bridges* and to furnish such evidence to MassDOT.

The DEVELOPER agrees to require its Contractor a Performance and Payment Bond on behalf of MassDOT in conformance with Section 3.04 of the hereinbefore defined *Standard Specifications for Highways and Bridges*. The performance and payment bond shall be for the full amount of work within the State Highway Layout.

The DEVELOPER may solicit bids and award a contract prior to the completion of the MassDOT review process with the understanding that the DEVELOPER shall be responsible for any and all adjustments to the contract documents and/or change orders that are made as a result of the MassDOT review comments.

The DEVELOPER agrees that work will not commence without written permission from the District Highway Director of MassDOT, District 4. Prior to the commencement of any work, a pre-construction conference may be required by MassDOT. If required, it shall be held at MassDOT's Highway Division District 4 Administrative Office.

All Contractors and sub-contractors working on this project must be pre-qualified by MassDOT in the area of work that they are performing. All traffic signal equipment and components utilized

and installed on this project shall be included on the MassDOT Qualified Traffic Control Equipment List.

The DEVELOPER, at its sole cost and expense, will furnish an engineer for proper inspection services necessary during the prosecution of work, and in turn, MassDOT will make periodic inspections for compliance with MassDOT standards.

Upon completion of the work, the DEVELOPER, or its Engineer, will be responsible for the final inspection, certification of compliance with the specifications, and as-built drawings. Construction of new traffic signals or modifications to existing traffic signals or signal systems shall comply with MassDOT SOP No. HMD-60-03-3-00, issued on 12/12/2008.

The DEVELOPER shall complete all work covered by this agreement within one year of the date thereof unless an authorized time extension is granted by MassDOT.

DIVISION OF EXPENSE

The entire cost of the modifications of said constructed traffic control signal and roadway improvements as hereinbefore stated as shown on said plans and regulation will be borne by the DEVELOPER.

OWNERSHIP AND FUTURE MAINTENANCE

TRAFFIC SIGNALS:

Upon completion of the modifications of said traffic control signal and appurtenances to the satisfaction of MassDOT, title to said traffic control signals and appurtenances shall vest with MassDOT and MassDOT shall have the obligation and authority to operate and maintain said traffic control signals and appurtenances as installed.

All future maintenance and power costs for the traffic control signals and appurtenances shall reside with MassDOT.

EMERGENCY PRE-EMPTION SYSTEM:

Ownership of the emergency pre-emption system installed at the intersections of:

LOCATION NO. 1 – Haverhill Road (Route 110) at Hillside Avenue (Route 150)

in Amesbury shall vest with the City of Amesbury and shall thereafter have the obligation and authority to operate and maintain the emergency pre-emption system, as installed. The City agrees to contact the District 4 Traffic Operations Engineer at least one business day in advance of any maintenance operation that is to be performed to the emergency pre-emption system.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

AMESBURY HEIGHTS LLC

Joseph J. Corcoran

Signature

Joseph J. Corcoran

Printed Name

Managing Member

Title

July 7th, 2016

Date

CERTIFICATE OF SIGNATORY

This will attest that the above-named individual is duly authorized and empowered to execute and deliver this Agreement on behalf of AMESBURY HEIGHTS LLC.

John A. Mastys

Signature

John A. Mastys

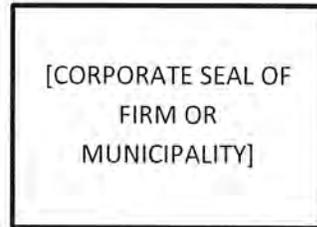
Printed Name

General Counsel

Title

7/7/16

Date



MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION

Chief Engineer

Traffic Control Signal Regulation



DRAFT

massDOT
Massachusetts Department of Transportation

TRAFFIC CONTROL SIGNAL REGULATION

City or Town: AMESBURY
Location: HAVERHILL RD (RTE 110) AT HILLSIDE AVE (RTE 150)
Regulation No.: _____ **Date:** _____

Pursuant to MASS. GEN. LAWS c. 85, § 2 the Massachusetts Department of Transportation (“MassDOT”) hereby approves the following described traffic control signal installation and auxiliary signs and surface markings for the above captioned location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

This Regulation is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the MassDOT. The details for any materials, alterations, or any continued* or substantial departure from the provisions of this Regulation must be submitted to the MassDOT for approval with data sufficient to justify such modification. Failure to comply with the requirements and standards set forth by the MassDOT shall automatically void this Regulation during such time as non-compliance exists.

I. STANDARDS OF INSTALLATION

The traffic control signal installation and all auxiliary sign and surface markings which are used in conjunction with such installation shall conform with the requirements of the MassDOT and with the attached sketch.

II. OPERATION OF SIGNALS

- 1. Traffic Control..... Fully Actuated
- 2. Coordination..... None
- 3. Special Connections..... Emergency Vehicle Pre-emption System
- 4. Timing for Automatic Operations.... *See Attached*
- 5. Hours for Automatic Operation..... Signals shall be operated in stop and go mode continuously unless unusual or emergency conditions arise which temporarily justify flashing operations or manual override.
- 6. Flashing Operation..... Whenever a signal is not operating as traffic control device (stop and go), it must Flash Yellow or Flash Red as set forth in the accompanying timing and sequence chart for emergency operation. The flashing rate must conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- 7. Manual Operation..... Signals may be operated manually at any time irrespective of the hours designated in Part II (5) of this Regulation.
- 8. Discontinuance..... Upon proper justification signals can be discontinued. If required and justified, appropriate alternate traffic controls must be installed prior to discontinuance of signals. Discontinued signal faces must be turned away from traffic, taken down or covered and the District Highway Director notified.

Issuance of this Regulation Supersedes and Terminates:
State Permit No.: _____ issued to this intersection
State Layout No.: 5-694
Dated: March 4, 1980

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

BY _____

Neil E. Boudreau
State Traffic Engineer

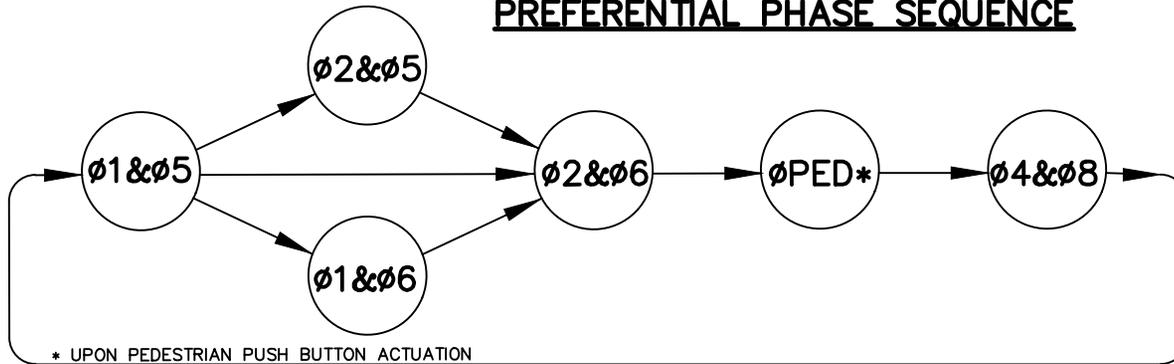
* A period of seven consecutive days or more in any given month.

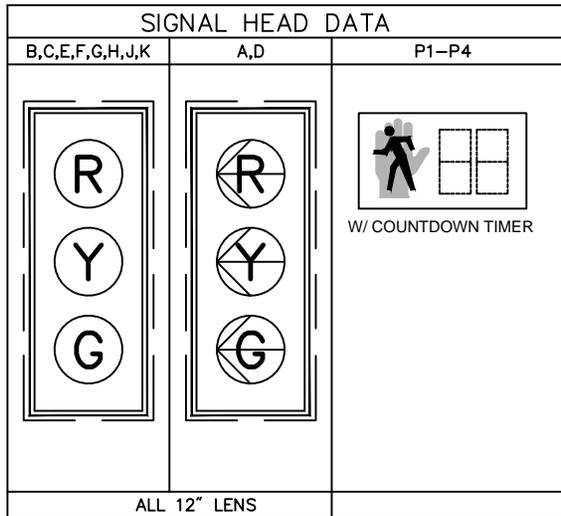
| SEQUENCE AND TIMING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----------|---------|----------|-----|-----|----------|-----|-----|----------|-----|-----|----------|-----|-----|----------|-----|-----|----------|-----|-----|------|-----|-----|----------|-----|-----|--------------------|------|
| APPROACH | DIRECTION | HOUSING | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | FLASHING OPERATION | |
| MINIMUM INTERVAL | | | 6 | | | 10 | | | 6 | | | 6 | | | 10 | | | 6 | | | | | | | | | | |
| VEHICLE EXTENSION | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | 2 | | | | | | | | | | |
| MAXIMUM 1 | | | 15 | | | 40 | | | 40 | | | 15 | | | 40 | | | 40 | | | | | | | | | | |
| MAXIMUM 2 | | | 15 | | | 40 | | | 40 | | | 15 | | | 40 | | | 40 | | | | | | | | | | |
| DYNAMIC MAXIMUM LIMIT | | | 20 | | | 55 | | | 50 | | | 25 | | | 55 | | | 50 | | | | | | | | | | |
| YELLOW CLEARANCE | | | | 3 | | | 4 | | | 4 | | | 3 | | | 4 | | | 4 | | | 3 | | | | | | |
| RED CLEARANCE | | | | | 2.5 | | | 1.5 | | | 1 | | | 2.5 | | | 1.5 | | | 1 | | | 1 | | | | | |
| PEDESTRIAN INTERVAL | | | | | | | | | | | | | | | | | | | | | 7 | 10 | | | | | | |
| HAVEHILL ROAD | EB | A | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←G- | ←Y- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←FR- |
| HAVEHILL ROAD | EB | B,C | R | R | R | G | Y | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | FY |
| HAVEHILL ROAD | WB | D | ←G- | ←Y- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←R- | ←FR- |
| HAVEHILL ROAD | WB | E,F | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y | R | R | R | R | R | R | R | R | R | R | FY |
| HILLSIDE AVENUE | NB | G,H,L | R | R | R | R | R | R | G | Y | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | FR |
| HILLSIDE AVENUE | SB | J,K | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | Y | R | R | R | R | R | R | R | R | FR |
| PEDESTRIAN X-ING | P1-P4 | ALL | DW | DW | DW | DW | DW | W | FDW | DW | | | OUT |
| DETECTOR | | | NON-LOCK | | | NON-LOCK | | | NON-LOCK | | | NON-LOCK | | | NON-LOCK | | | NON-LOCK | | | - | | | | | | | |
| RECALL | | | OFF | | | SOFT | | | OFF | | | OFF | | | SOFT | | | OFF | | | - | | | | | | | |
| | | | ø1 | | | ø2 | | | ø4 | | | ø5 | | | ø6 | | | ø8 | | | øPED | | | ø3 & ø7 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | NOT USED | | | | |

NOTES:

1. AUTOMATIC FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12.
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. PERM = PERMISSIVE
4. ø4 & ø8 DUAL ENTRY
5. MAXIMUM 1 = NORMAL OPERATION
6. MAXIMUM 2 = NOT USED
7. DYNAMIC (MAX) STEP SHALL BE 5 SECONDS.
8. DYNAMIC (MAX) SHALL BE USED ALL TIMES OF THE DAY.
9. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.

PREFERENTIAL PHASE SEQUENCE





SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

- NOTES: 1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED AND EQUIPPED WITH 5"± LOUVERED BACKPLATES.
 2. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED W/L.E.D. MODULES.

| PRE-EMPTION PHASING & PRIORITY | | | |
|---|---------------------------|---|--------------------------|
| DETECTOR & PRIORITY | PRE-EMPT PHASE ASSIGNMENT | MOVEMENT | VEHICLE PHASE ASSIGNMENT |
| D1 | 1 |  | ø2&ø5 |
| D2 | 2 |  | ø1&ø6 |
| D3 | 3 |  | ø4 |
| D4 | 4 |  | ø8 |

| DETECTOR DATA | | | | |
|---------------|----------------------|--------|------------|------------|
| DETECTOR NO. | ZONE SIZE | CAMERA | DELAY /EXT | CALL PHASE |
| 1 | TO BE FIELD ADJUSTED | V1 | 0 | ø5 |
| 2 | TO BE FIELD ADJUSTED | V1 | 0 | ø2 |
| 3 | TO BE FIELD ADJUSTED | V1 | 0 | ø1 |
| 4 | TO BE FIELD ADJUSTED | V1 | 0 | ø6 |
| 5 | TO BE FIELD ADJUSTED | V1 | 0 | ø4 |
| 6 | TO BE FIELD ADJUSTED | V1 | 0 | ø8 |

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

EMERGENCY VEHICLE PRE-EMPTION OPERATION.

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A FIRST COME, FIRST SERVE BASIS.
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION PHASES AS NECESSARY.
4. UNLESS OTHERWISE STATED, ONCE A PRE-EMPTION CALL HAS BEEN RECEIVED BY THE TRAFFIC SIGNAL CONTROLLER AND THE PRE-EMPTION PHASE IS BEING SERVICED, IT SHALL REMAIN IN THAT PHASE AS LONG AS THE CALL IS PRESENT.
5. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
6. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ON.

Traffic Signal Clearance Intervals

Yellow Times

$$Y = t + v/(2a + 2Gg)$$

- Where
- Y = Length of Yellow Time (sec), 3 second minimum
 - t = Driver Perception Reaction Time (1.0sec)
 - v = Speed of Vehicle (fps)
 - Thru Movement: 85th percentile speed OR posted plus 7mph
 - Left Turn: Posted minus 5 mph
 - a = Driver Acceleration(10 ft/sec)
 - G = Acceleration due to Gravity (32.2 f/sec^2)
 - g = Grade of Approach (percent/ 100), measured about 5.0 seconds upstream

All Red Times

$$R = [(L + w)/v] - 1$$

- Where
- R = Length of Red Clearance Interval (sec), 1 second minimum
 - L = Length of Vehicle (20 ft)
 - w = Width of Intersection (ft)
 - Thru Movement: Stop Line to Outside Edge of Furthest Travel Lane or Nearest Farside Crosswalk ILne
 - Exclusive Left Turn: Along Vehicle Path from Stop Line to No-conflict Point
 - v = Speed of Vehicle, Same Methodology as for Yellow Interval

** See MASSDOT Guidance dated 1/8/2013for info on reducing EXCESSIVELY LONG clearances for PERMISSIVE or PROT/PERM LEFT turns

Location: Haverhill Rd at Hillside Ave

| Phase | Movement | Posted or 85th Speed (mph) | Speed Adjustment (if required) (mph) | v (ft/sec) | g | w (ft) | YELLOW TIME (sec) | RED TIME (sec) |
|-------|--------------------|----------------------------|--------------------------------------|------------|--------|--------|-------------------|----------------|
| 2 | Haverhill Rd EB | 35 mph | 7 mph | 61.7 | -0.012 | 125 | 4.2 | 1.3 |
| 5 | Haverhill Rd EB LT | 35 mph | -5 mph | 44.1 | -0.012 | 125 | 3.3 | 2.3 |
| 6 | Haverhill Rd WB | 35 mph | 7 mph | 61.7 | 0.035 | 120 | 3.8 | 1.3 |
| 1 | Haverhill Rd WB LT | 35 mph | -5 mph | 44.1 | 0.035 | 125 | 3.0 | 2.3 |
| 8 | Hillside Ave NB | 40 mph | 7 mph | 69.1 | 0.028 | 115 | 4.2 | 1.0 |
| 4 | Hillside Ave SB | 40 mph | 7 mph | 69.1 | 0.000 | 80 | 4.5 | 1.0 |

Rounding: n.0 to n.1 equals n.0, n.2 to n.6 equals n.5, n.7 to n.9 equals next whole number

Sidewalk Maintenance Letter

MAINTENANCE AGREEMENT
CITY OF AMESBURY AND AMESBURY HEIGHTS LLC

THIS AGREEMENT made this _____ day of April, 2016 by and between the City of Amesbury, Massachusetts, a municipal corporation duly organized under the laws of Massachusetts and having a usual place of business at 62 Friend Street, Amesbury, Massachusetts, hereinafter referred to as the "City", and Amesbury Heights LLC, a Massachusetts limited liability company having a usual place of business at 150 Mount Vernon Street, Suite 500, Boston, Massachusetts 02125, hereinafter referred to as the "Developer".

WHEREAS, the Developer proposes to construct a 240 unit multi-family apartment project at 36 Haverhill Road in Amesbury, MA (the "Project") and has been granted Site Plan approval by the Amesbury Planning Board in the approval dated April 13, 2015 (the "Decision") recorded at the Southern Essex Registry of Deeds, Book 34386, Page 250, along with set of Plans containing 10 sheets and entitled "Site Plans"; prepared by Vanasse Hangen Bruslin, Inc. 101 Walnut Street, PO Box 9151, Watertown, MA 02471, dated June 5, 2015 and last revised September 2, 2015 attached hereto by reference and made a part hereof;

WHEREAS, the Developer and the City desire to construct traffic sign system upgrades and appurtenant roadway improvements (the "Work") at one location along Haverhill Road (Route 110); at the intersection of Haverhill Road (Route 110) at Hillside Avenue (Route 150) in the City of Amesbury, Essex County, in said Commonwealth as shown on a set of plans of 31 sheets prepared by Vanasse Hangen Brustlin, Inc., 101 Walnut Street, PO Box 9151, Watertown, MA 02471, dated September 3rd, 2015 attached hereto as Exhibit A and made a part hereof, entitled:

Safety Improvement Project
Haverhill Road (Route 110)
In the City of Amesbury Essex County
Access Permit Project,

Hereinafter referred to as the "Plans"; and

WHEREAS, the Plans are subject to review and approval by the Massachusetts Department of Transportation Highway Division (MassDOT) before installation and in accordance with the provisions of Permit No. _____ dated _____, to perform work on a State highway; and

WHEREAS, the parties hereto have reached an agreement as to the apportionment of the responsibility for performing the work, the expense of carrying out said work, and the future maintenance thereof.

NOW THEREFORE, in consideration of the mutual promises and benefits provided herein, the City and the Developer hereby agree, each with the other as follows:

DIVISION OF WORK

The Developer will furnish through its own contractor, all necessary labor, materials, equipment, and other services necessary, including but not limited to all permits, approvals, and plans necessary to undertake the Work as shown on the Plans.

The Developer agrees that the Work will be performed in accordance with MassDOT's "Standard Specifications for Highways and Bridges," dated 1988, as amended, the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD)¹ and amendments as adopted by MassDOT; and the current rules and regulations of the Massachusetts Architectural Access Board (AAB) and the requirements of the Americans with Disabilities Act (ADA), and MassDOT's Notes on Walks and Wheelchair Ramps for Designers and Construction Engineers, dated March 12, 2012.

Upon completion of the Work, the Developer or its Engineer will be responsible for the final inspection and certification of compliance with specifications.

The Developer and City acknowledge and agree that the Work shall be completed to the reasonable satisfaction of MassDOT.

DIVISION OF EXPENSE

The entire cost of the construction of the Work will be borne by the City and paid for with the Massworks Grant funds.

FUTURE MAINTENANCE

1. The City and the Developer acknowledge that upon the completion of the Work to the reasonable satisfaction of MassDOT and the City, MassDOT shall thereafter have the obligation and authority to maintain said signal and appurtenances within the Haverhill Road (Route 110) State Highway Layout (_____) as installed.

2. Upon the completion of the Work to the reasonable satisfaction of MassDOT and the City, the Developer shall be responsible for all maintenance and snow removal on that portion of the sidewalks approximately 1,300 feet in length from the entrance to the Project up to the intersection of Haverhill Road (Route 110) at Hillside Avenue (Route 150) (the "Developer Maintenance"), as depicted on the plan attached hereto as Exhibit B.

3. The Developer will be responsible for obtaining any required slope or construction easements from abutting property owners and will be responsible for any and all grade damage claims by abutters.

INDEMNIFICATION

The Developer shall indemnify, defend, and hold the City and MassDOT harmless from and against any and all claims, demands, liabilities, actions, causes of actions, costs and expenses, including attorney's fees, arising out of the Developer's material breach of this Agreement or the negligence or willful misconduct of the Developer, or the Developer's agents or employees in connection with the Work or the performance of the Developer Maintenance. The Developer's indemnification shall not extend to any such claims, demands, liabilities, actions, causes of actions, costs and expenses, including attorney's fees, arising out of any willful misconduct of the City or MassDOT, or anyone acting by, through, or for the City or MassDOT.

¹[Manual on Uniform Traffic Control Devices](#): Federal Highway Administration: Washington, DC: 2009.

MISCELLANEOUS PROVISIONS

This Agreement is binding upon the parties hereto, their successors, assigns and legal representatives. Neither the City nor the Developer shall assign or transfer any interest in the Agreement without the written consent of the other, which should not be unreasonably withheld.

The Developer shall comply with all Federal, State and local laws, rules, regulations permits, approvals and orders applicable to the work provided pursuant to this Agreement, such provisions being incorporated herein by reference, and shall be responsible for obtaining all necessary licenses, permits, and approvals required for the performance of such work.

Any and all notices, or other communications required or permitted under this Agreement, shall be in writing and delivered by hand or mailed postage prepaid, return receipt requested, by registered or certified mail or by other reputable delivery service, to the parties at the addresses set forth on Page 1 or furnished from time to time in writing hereafter by one party to the other party. Any such notice or correspondence shall be deemed given when so delivered by hand, if so mailed, when deposited with the U.S. Postal Service or, if sent by private overnight or other delivery service, when deposited with such delivery service.

If any term or condition of this Agreement or any application thereof shall to any extent be held invalid, illegal or unenforceable by the court of competent jurisdiction, the validity, legality, and enforceability of the remaining terms and conditions of this Agreement shall not be deemed affected thereby unless one or both parties would be substantially or materially prejudiced.

This Agreement shall be governed by, construed and enforced in accordance with the laws of the Commonwealth of Massachusetts and the parties hereto submit to the jurisdiction of any of its appropriate courts for the adjudication of disputes arising out of this Agreement.

This Agreement, including all documents incorporated herein by reference, constitutes the entire integrated agreement between the parties with respect to the matters described. This Agreement supersedes all prior agreements, negotiations and representations, either written or oral, and it shall not be modified or amended except by a written document executed by the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

AMESBURY HEIGHTS LLC

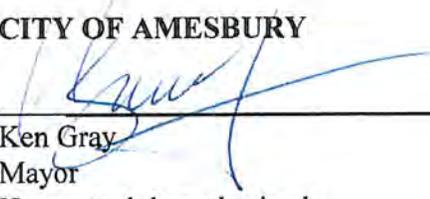
By: 

Name: *Joseph J. Capron*

Title: *Manager Member*

Hereunto duly authorized

CITY OF AMESBURY



Ken Gray

Mayor

Hereunto duly authorized

Exhibit A

Safety Improvement Project
Haverhill Road (Route 110)
In the City of Amesbury Essex County
Access Permit Project

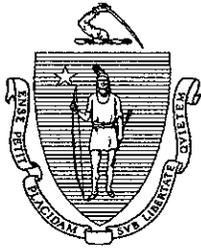
[Attached behind]

Exhibit B

Developer Maintenance Plan

[Attached behind]

MEPA Certificate



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
 100 Cambridge Street, Suite 900
 Boston, MA 02114

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

IAN A. BOWLES
SECRETARY

May 25, 2007

Tel: (617) 626-1000
 Fax: (617) 626-1181
<http://www.mass.gov/envir>

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
 ON THE
 EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Amesbury Heights Mixed Use Development
 PROJECT MUNICIPALITY : Amesbury
 PROJECT WATERSHED : Merrimack
 EOE A NUMBER : 14005
 PROJECT PROPONENT : Boston North Properties LLC
 DATE NOTICED IN MONITOR : April 25, 2007

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** the preparation of an Environmental Impact Report.

As described in the Environmental Notification Form (ENF), the project involves development of a mixed use project consisting of about 257 housing units (apartments and 17 condominiums), 21,000 square feet of office and retail space, 514 parking spaces, and infrastructure on a 34.2-acre site in Amesbury.

The project is undergoing review pursuant to Section 11.03 (1)(b)2., Section 11.03 (3)(b)(1)b., Section 11.03 (6)(b)13 and Section 11.03 (6)(b)15 of the MEPA regulations, because the project will create five or more acres of impervious area, alter 500 or more linear feet of inland bank, generate 2,000 or more New additional trips per day on roadways providing access to a single location and construct 300 or more New parking spaces at a single location. The project requires an Access Permit from the Massachusetts Highway Department (MHD) for access onto Route 110 and a National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit from the U.S. Environmental Protection Agency (EPA). The project will also require 401 Water Quality Certification and a Sewer Extension/Connection Permit from the Department of Environmental Protection's (MassDEP). The project will require a Chapter 40B Comprehensive Permit from the Town of Amesbury, which is subject to appellate jurisdiction of the Massachusetts Housing Appeals Committee (HAC). The proponent is requesting financial assistance from the Commonwealth for the project. MEPA jurisdiction therefore extends to all aspects of the project that that have the potential to cause significant Damage to the Environment as defined in the MEPA statute.

The ENF indicated that the project would generate approximately 2,341 vehicle trips per day. In its comment letter, the Executive Office of Transportation (EOT) has determined that traffic impacts associated with the project will not have a significant impact on the Route 110 (Haverhill Road) corridor. As part of Phase 1 of the project, the proponent has committed to constructing a sidewalk from the site driveway on Route 110 to the intersection of Route 150, as well as improving the Route 110/Route 150 intersection. These improvements will consist of restriping, crosswalks, equipment upgrades, and signal timing and phasing adjustments. In addition, as recommended by EOT, the proponent should implement Transportation Demand Management (TDM) measures aimed at offering alternative modes of travel. I advise the proponent to continue to work with EOT and to consult with the Merrimack Valley Transit Authority to evaluate the feasibility of providing a bus stop for the #51 bus route.

The project would alter 1,170 linear feet of bank, 1,527 square feet of bordering vegetated wetland (BVW), 41,599 square feet of riverfront, and 5,385 square feet of isolated vegetated wetland. I remind the proponent that a MassDEP will require a full replication plan for the inland bank alteration as part of the Notice of Intent (NOI). As currently proposed the proponent proposes to use the eastern end of the intermittent stream channel replication for stormwater management, which cannot be authorized under the wetlands regulations. I strongly encourage the proponent to maximize the retention and infiltration of storm water runoff on site. The proponent should avoid any connections to the State Highway drainage system if possible.

I remind the proponent that MassDEP will require an alternatives analysis as part of the 401 Water Quality Certification process. As part of the certification process, the proponent will need to prepare an alternatives analysis for all wetland impacts to BVW and isolated vegetated wetlands for the entire project. I strongly encourage the proponent to consider designing a narrower road width alternative in the area of the wetland impact. In addition, the proponent will be required to provide drainage information on both phases of the project and develop an alternative stormwater system design to avoid any discharge of stormwater to a wetland resource area, which is not an acceptable practice.

The ENF indicates that the proponent plans to file a certification statement with MassDEP for wastewater flows less than 50,000 gallons per day. However, the proposed project would generate about 52,683 gallons of wastewater per day. Therefore, I advise the proponent that a MassDEP sewer extension/connection permit is required because the entire project would generate more than 50,000 gallons per day.

I note that the project is designed to fulfill an important public policy goal of the Commonwealth (see Executive Order 418), and that there is a clear need for affordable housing in Amesbury. The City of Amesbury's Community and Economic Development office has stated in their comment letter their support for the project and that the proponent has been very responsive to the City of Amesbury's concerns. I strongly encourage the proponent to evaluate sustainable design alternatives such as Low Impact Development (LID) and High-Performance/Green buildings that can serve to avoid or minimize potential environmental

impacts. Such alternatives may also reduce project development and long-term operational costs.

Specifically, I encourage the proponent to consider LID techniques in site design and storm water management plans. The project must comply with DEP's Stormwater Management Guidelines. This review for compliance with DEP's Stormwater guidelines will be part of the variance application variance of the Watershed Protection Act process. The LID techniques can incorporate stormwater best management practices (BMPs) and can reduce impacts to land and water resources by conserving natural systems and hydrologic functions. The primary tools of LID are landscaping features and naturally vegetated areas, which encourage detention, infiltration and filtration of stormwater on-site. Other tools include water conservation and use of pervious surfaces. Clustering of buildings is an example of how LID can preserve open space and minimize land disturbance. LID can also protect natural resources by incorporating wetlands, stream buffers, and mature forests as project design features. For more information on LID, visit <http://www.mass.gov/envir/lid/>. Other LID resources include the national LID manual (Low Impact Development Design Strategies: An Integrated Design Approach), which can be found on the EPA website at: <http://www.epa.gov/owow/nps/lid/>.

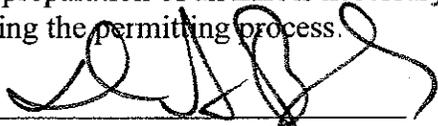
I also strongly encourage the proponent to consider high-performance/green building and other sustainable design measures to avoid and minimize environmental impacts. Such measures may include:

- Leadership in Energy and Environmental Design (LEED) certification;
- water conservation and reuse of wastewater and stormwater;
- use of renewable energy;
- ecological landscaping;
- optimization of natural day lighting, passive solar gain, and natural cooling;
- an annual audit program for energy and water use, and waste generation;
- energy-efficient Heating, Ventilation and Air Conditioning (HVAC), lighting systems, and appliances, and use of solar preheating of makeup air;
- use of building supplies and materials that are non-toxic, made from recycled materials, and made with low embodied energy;
- incorporation of an easily accessible and user-friendly recycling system infrastructure into building design; and
- implementation of a solid waste minimization and recycling plan.

I conclude that no further MEPA review is required. While the project will have some negative environmental impacts, the review of the ENF has served to demonstrate that the potential impacts do not rise to the level where preparation of an EIR is necessary. The proponent can resolve the remaining issues during the permitting process.

May 25, 2007

Date



Ian A. Bowles

Comments Received:

05/15/07 Department of Environmental Protection, NERO
05/15/07 Executive Office of Transportation, MassHighway
05/15/07 Community and Economic Development, City of Amesbury

IAB/ACC/acc



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF TRANSPORTATION

EOT

DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

BERNARD COHEN
SECRETARY

May 15, 2007

Ian A. Bowles, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Amesbury – Amesbury Heights - ENF
(EOEA #14005)

ATTN: MEPA Unit
Anne Canaday

Dear Secretary Bowles:

On behalf of the Executive Office of Transportation and Public Works, I am submitting comments regarding the proposed Amesbury Heights Mixed-Use development project in Amesbury, as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please call J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit, at (617) 973-7341.

Sincerely,

David J. Mohler
Acting Deputy Secretary for Planning

DJM/jll

cc: Luisa Paiewonsky, Commissioner
David Anderson, P.E., Acting Chief Engineer
Patricia Leavenworth, P.E., District 4 Highway Director
Neil Boudreau, State Traffic Engineer
PPDU files
MPO Activities files
Planning Board, Town of Amesbury
Merrimack Valley Planning Commission

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF TRANSPORTATION
OFFICE OF TRANSPORTATION PLANNING
MEMORANDUM

TO: David Mohler, Acting Deputy Secretary for Planning

FROM: J. Lionel Lucken, P.E., Manager
Public/Private Development Unit

DATE: May 15, 2007

RE: Amesbury – Amesbury Heights Mixed-Use Development - ENF
(EOEA #14005)

The Public/Private Development Unit has reviewed the Environmental Notification Form (ENF) for the Amesbury Heights Mixed-Use Development project in Amesbury. The project is located on a 34-acre parcel, on Route 110 (Haverhill Road), west of its intersection with Route 150. The site is bounded by Haverhill Road to the north, Interstate 495 to the south, wetlands to the east, and single family residential dwellings to the east. The project is expected to be developed in two phases. Phase I will consist of a residential development with 240 units, a centrally located clubhouse, a village green and associated amenities. Phase II is still in the conceptual stage, but would most likely include a mixed used development, consisting of 17 residential units and a 21,000 square foot commercial component. A total of 514 parking spaces will be provided on-site. Based on the information provided in the ENF, the project is expected to generate 2,445 average vehicle trips on an average weekday. The project will require a MassHighway permit for direct access to Route 110.

We believe that project-related traffic will not significantly impact the state highway system, and therefore recommend that no further review be required based on traffic. The project proponent has committed to constructing a sidewalk from the site driveway on Route 110 to the intersection of Route 150, as well as improving the Route 110/Route 150 intersection. These improvements will consist of restriping, crosswalks, equipment upgrades, and signal timing and phasing adjustments. We will require that they be consistent with the MassHighway Project Development and Design Guidebook and include handicap accessible ramps and pedestrian signals as needed. The above improvements must be implemented as part of Phase I of the development since they will provide an important connection to the City center and the rest of the community. In addition, the project proponent should provide Transportation Demand Management (TDM) measures aimed at offering alternative modes of travel. We recommend that the proponent work with the Merrimack Valley Transit Authority to evaluate the feasibility of providing a bus stop for the 51 bus route. If feasible, the proponent should provide a bus shelter, post transit schedules, and provide incentives to encourage bus usage.

The stormwater management report included in the ENF appears to only address the Phase I development. The project proponent should be reminded that every effort should be made to maximize the retention and infiltration of storm water runoff on site. Connections to the State Highway drainage system should be avoided if possible.

The proponent should work with the MassHighway District 4 Office during the permitting process to finalize any access related issues. If you have any questions regarding these comments, please contact me at (617) 973-7341.

Canaday, Anne (EEA)

From: prvs=CNagle=647a4aed0@vhb.com on behalf of Nagle, Conor [CNagle@vhb.com]
Sent: Monday, May 14, 2007 10:46 AM
To: Baker, Nancy (DEP)
Cc: Canaday, Anne (EEA); Bill Buckley
Subject: 09407.00 - Amesbury Heights - Sewer Capacity
Attachments: Proposed Conditions.pdf

Nancy,

Our response to your question concerning sewer extension/connection permitting asked during the MEPA site visit last Thursday (5/10/07) for Amesbury Heights is as follows:

It has been our experience that DEP's preference is to eliminate "sewage system capacity reservation" in sewage systems. Reservation of capacity is generated when a multiple phase project obtains one sewer permit to cover all phases but for whatever reason a phase does not get built. The capacity reservation within the sewage system based on potential flow from an un-built phase reduces the system availability for other projects.

Or conversely a sewer treatment plant may be operating at full capacity when a previously permitted project is set to come online. This causes an issue of the proponent having obtained the permit and paid mitigation for the design flow but due to current conditions the project previously permitted is not able to connect to the system.

It is our understanding in talking to DEP Municipal Services and Wastewater Management that the preference, or policy, is to require projects on individual lots to be permitted individually to prevent any build-up of capacity reservation in sewer systems.

As you are aware Amesbury Heights is a two phase development. Phase 1 is a residential development which will generate approximately 45,000gpd. Phase 2 is a mixed use development which will generate approximately 6,000gpd.

While both projects are on what is currently one property, it is a condition of the Comprehensive Permit issued by the Town of Amesbury Zoning Board of Appeals for Phase 1 that the property be subdivided. The proposed subdivision line is shown as the 'Limit of Phase 1' line in the attached figure. It is intended that the property will be subdivided in August or September of this year and the phase 1 component will be sold in Feb 2008, prior to construction.

It is our intention, in compliance with DEP regulations, to pursue a Compliance certification for the Phase 1 project in accordance with BRP WP 72, 73 - Compliance Certification for Sewer Extensions less than 1000 ft or Sanitary & Industrial Connections 15,000-50,000gpd. The Compliance certification requires the approval of the Town of Amesbury prior to approval by DEP.

For the Phase 2 project a local permit will be sought from the Town of Amesbury as the project will not generate the minimum gallons-per-day flow to require the Compliance certification.

If you need any more information in regard to this matter or any other please let me know.

Thanks,

Conor Nagle, PE
VHB/ Vanasse Hangen Brustlin, Inc
101 Walnut Street,
P.O. Box 9151,
Watertown, MA 02471-9151
tel: (617) 924-1770
fax: (617) 924-2286

5/18/2007

www.vhb.com

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Watertown MA 02472
617-924-1770



Amesbury

Joseph W. Fahey
Director, Community and Economic Development
Tel: (978) 388-8110
Fax: (978) 388-6727
joe@ci.amesbury.ma.us

62 Friend Street
Second Floor
Amesbury, MA 01913

May 15, 2007

Secretary Jan A. Bowles
EOEA, Attn: MEPA Office
Anne Canaday, EOEA No. 14005
100 Cambridge Street, Suite 900
Boston MA 02114

Dear Secretary Bowles,

This office has been working with Boston North, developers of the Amesbury Heights project currently under MEPA review. The proposed plan is the result of numerous reviews by local agencies, departments and the City's consultant engineers.

The project has been redesigned on several occasions to reflect the concerns raised during those reviews. The number and placement of buildings has been reduced and changed to minimize impact on the disturbed area and abutters.

The entrance roadway was modified to utilize the existing access roadway and consequently avoiding dramatic cut and fill along the hillside. This relocation also afforded safer access and egress to the site. Currently, the City is reviewing a 40R Zoning Amendment for the site. The development reflects the proposed zoning density and principles of Smart Growth incorporated into that amendment.

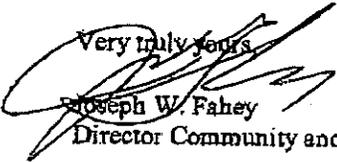
A single issue that has been raised by the City and neighbors concerns traffic to and from the site. Although the City did make certain suggestions, we understand the final improvements will result from Mass Highway's review and recommendations.

The City has requested the project provide pedestrian access from the site to meet sidewalks at the Route 110/ 150 intersection, traffic improvements at that location to accommodate vehicles utilizing Route 495, deceleration and turning lanes at the site entrance and finally Route 110 improvements that will take into account the concerns of Floyt Avenue residents as far as exiting that roadway onto Route 110. The increasing traffic on Route 110 has made this action treacherous for those residents and there is concern that additional traffic will exacerbate the situation.

Amesbury Heights and the developer, Boston North, have been very responsive to the City of Amesbury and addressed our concerns in an attempt to propose a project that will be of benefit to the City while also providing much needed affordable housing.

I ask that you note our support for the project and its design.

Very truly yours,


Joseph W. Fahey
Director Community and Economic Development

JWF/jh



COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 NORTHEAST REGIONAL OFFICE

205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

AC

DEVAL L. PATRICK
 Governor

IAN A. BOWLES
 Secretary

TIMOTHY P. MURRAY
 Lieutenant Governor

ARLEEN O'DONNELL
 Commissioner

May 15, 2007

RECEIVED
 MAY 22 2007
 MEPA

Ian A. Bowles, Secretary
 Executive Office of
 Energy & Environmental Affairs
 100 Cambridge Street
 Boston MA, 02114

RE: Amesbury
 Amesbury Heights
 42 Haverhill Road
 EOEEA # 14005

Attn: MEPA Unit

Dear Secretary Bowles:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Environmental Notification Form (ENF) submitted by Boston North Properties LLC to construct a mixed use project consisting of about 257 housing units (apartments and 17 condominiums), 21,000 square feet of office and retail space, 514 parking spaces, and infrastructure on a 34.2-acre site in Amesbury (EOEEA #14005). The Department provides the following comments.

Wetlands

According to the ENF, the project would alter 1,170 linear feet of bank, 1,527 square feet of bordering vegetated wetland (BVW), 41,599 square feet of riverfront, and 5,385 square feet of isolated vegetated wetland. A Notice of Intent (NOI) has been filed for this project, DEP File # 002-0936, and these wetlands comments reflect comments submitted previously by MassDEP during the review of the NOI.

The Department requires a full replication plan for the inland bank alteration. The eastern end of the intermittent stream channel replication is being used for stormwater management, which cannot be authorized under the wetlands regulations.

The Layout Plans with the Notice of Intent (Sheet C-4.1 and C-4.2), depicting existing conditions do not show a connection between two separate wetland areas (Wetland M and C), on the northeast portion of the site. Why are two pipes shown connecting these wetlands in post-development beneath the access driveway, on the NOI Grading and Drainage Plan, (Sheet C-

5.2)? There also is a small detention area in the vicinity of these wetlands, which is identified as a replacement for channel volume. What channel volume is being replaced? The placement of pipe appears to be draining wetland series N.

401 Water Quality Certification

An alternatives analysis is required as part of the 401 water quality certification process, and if an environmental impact report is required, the information in the EIR on alternatives that consider measures to avoid, minimize, and mitigation wetlands impacts will be considered by MassDEP in permitting. The Department will need an alternatives analysis for all wetland impacts to BVW and isolated vegetated wetlands. In addition, MassDEP asks for consideration of a narrower road width alternative in the area of the wetland impact, if municipal regulation has allowable minimums that are less than the proposed road width. Practicable alternatives that are applicable to 401 permitting are those that can be done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.

The wetlands impacts appear to be described for only Phase I. The 401 Water Quality Certification requires an application for the wetlands impacts associated with the entire project.

Stormwater

The drainage information in the ENF is applicable only to the Phase I area.

The performance ratings given for total suspended solids (TSS) removal for the proposed Stormceptor units (450i and 900) are higher than accepted in the Strategic Envirotechnology Partnership (STEP) evaluation, which is used for compliance with the TSS removal Standard 4 in the Stormwater Management Policy. A summary of the STEP evaluation is available in a fact sheet on the STEP website: http://www.mass.gov/envir/lean_green/documents/factsheets.htm. Data in that fact sheet should be used in the TSS removal calculations for this project, unless it can be demonstrated that the higher removal ratings used in the drainage calculations are applicable to this project, consistent with the *Volume 2, Stormwater Technical Handbook, Appendix D*. In addition, the Stormceptor 450i unit is an insert for a storm drain inlet. Since it has not been evaluated by STEP, the proponent is obligated to demonstrate that this particle separator is capable of achieving the very high TSS removal rates that were used. Otherwise, it may be appropriate to substitute a previously evaluated unit.

Although direct discharge of stormwater to a wetland resource area is not an acceptable practice, it appears that detention Basin X, in the northwest area of the site would alter a wetland resource area in order to collect stormwater. Consideration should be given to an alternative stormwater system design to avoid this alteration in 401 Water Quality Certification.

The drainage plans do not show emergency spillways for the detention basins, and the *Long Term Stormwater Maintenance Plan* in Appendix E has not identified any maintenance for the Stormceptor particle separators. These omissions must be corrected.

The NOI Grading and Drainage Plan (C-5.1) should be reviewed carefully. It appears that catchbasin (CB) 11 requires a manhole and that CB 14 is sited incorrectly. As shown, it is being used as an overflow, such that wastewater from the upstream swale could bypass treatment and be discharged toward the wetland. Why not enlarge the swale or the pipe from the swale, or

otherwise redirect the overflow from the catchbasin back into the swale to ensure compliance with the Stormwater Management Policy?

Wastewater

The proposed project, including Phase I and II would generate about 52,683 gallons of wastewater per day. Although the ENF indicates that the proponent plans to file a certification statement with MassDEP for wastewater flows less than 50,000 gallons per day, MassDEP advises the proponent that a sewer extension/connection permit is required, because the entire project would generate more than 50,000 gallons per day.

In accordance with the revised sewer extension and connection regulations in 314 CMR 7.00, which went into effect on January 12, 2007, project proponents are now required to file a certification statement with MassDEP for a wastewater discharge greater than 15,000 gallons per day, and less than or equal to, 50,000 gallons per day. Wastewater flows in excess of 50,000 gallons per day still require a sewer extension/connection permit from MassDEP. Additional information on the changes in the sewer extension and connection regulations is available on the MassDEP website: <http://www.mass.gov/dep/water/laws/regulati.htm#iww>.

In the event that the proponent does not require the full flow initially, the sewer extension/connection permit would be conditioned to allow phasing of the project and incremental completion of infiltration and inflow mitigation. When ready, the proponent could seek approval for the total wastewater flow, or an incremental increase, when the appropriate infiltration and inflow (I/I) mitigation is done.

Removal of (I/I), at a rate of five gallons of I/I removed for every gallon of wastewater added, is a MassDEP requirement in an Administrative Consent Order, No. ACOP-NE-98-1003, issued to the town of Amesbury. Given that the town increases the I/I removal ratio to ten gallons of wastewater removed for every gallon of wastewater added to the municipal system, the proponent will need to identify I/I removal projects to eliminate 526,830 gallons of wastewater, and/or consult with the town and MassDEP to make equivalent arrangements for the elimination of the required infiltration and inflow from the municipal sewer system.

Construction Period Air Quality Impacts

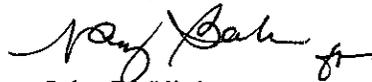
Participation in the MassDEP Diesel Retrofit Program is a way to mitigate adverse construction-period impacts from diesel emissions. Based on the density of development and close proximity to public facilities, the Department believes it is appropriate and necessary to mitigate construction-period impacts to the maximum extent feasible, including diesel emissions. Therefore, MassDEP recommends that the project proponent work with MassDEP to implement construction-period diesel emission mitigation, which could include the addition of after-engine emission controls such as oxidation catalysts or particulate filters. Additional information is available on the following MassDEP Web site: <http://www.mass.gov/dep/water/wastewater/diesel.pdf>. In addition, MassDEP recommends that project proponents require their contractors to use on-road low sulfur diesel (LSD) fuel in their off-road construction equipment; LSD fuel having a sulfur content of approximately 500 ppm versus the lower grade off-road diesel fuel with a sulfur content of 3,000 ppm. The use of LSD fuel, in conjunction with after-engine emission controls, can increase particulate matter (PM) removals by an additional 25 percent beyond that obtainable with after-engine controls only.

Massachusetts Contingency Plan (MCP)/21E

The ENF indicates that reportable concentrations of arsenic and chromium were found in the Phase II area, and that information from the Phase I Environmental Assessment and Limited Subsurface Investigation would be submitted to MassDEP by April 30, 2007, at the latest. To date, the Department has received a Release Notification Form and a Notice of Responsibility. The site has been assigned Release Tracking Number (RTN) 3-0026795.

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Jack Zajac at (978) 694-3240 for further information on the wastewater issues and Nancy White at (978) 694-3359 for additional information on wetlands and 401 Water Quality Certification. If you have any general questions regarding these comments, please contact Nancy Baker, MEPA Review Coordinator at (978) 694-3338.

Sincerely,



John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Kevin Brander, Jack Zajac, Jill Provencal, Nancy White, Iris Davis MassDEP-NERO

Planning Board Decision



RECEIVED
15 APR 17 AM 11:57
AMESBURY CITY CLERK

PLANNING BOARD DECISION

Property Ownership: **Boston North Properties, LLC**
98 Elm Street, Salisbury, MA 01952

Applicant: **Corcoran Jennison Associates, LLC**
150 Mount Vernon Street, Suite 500 Boston, MA 02125

Application Type: **SITE PLAN REVIEW**

Project: **Amesbury Heights – 240 Multi-family Residential Apartments**

Location: **36 Haverhill Road, Amesbury, MA 01913**

Date: **April 13, 2015**

A. GENERAL

On or about November 04, 2014 the Amesbury Planning Board (the “Board”) received application for Site Plan Review for Amesbury Heights, a proposed 240 residential apartment complex consisting of five buildings (“Project”) at 36 Haverhill Road in Amesbury MA. The application was submitted along with a Site Plan (the “Plan”) drawn by Vanasse Hangen Brustlin, Inc., Watertown MA 02471 on October 28, 2014 and last revised on March 15, 2015. The application and supporting documents were submitted by Conor Nagle, P.E. on behalf of Sean McReynolds, Project Director, Corcoran Jennison Companies, Inc., (the “Applicant”). The set of plans includes 27 sheets.

The Board also received supplemental information for review with the application, including plans and documents pertaining to stormwater and drainage, erosion control, water and sewer, elevations and landscaping plans. Some of these documents are attached as Exhibits:

- Exhibit 1 – Project Narrative – Letter dated Oct 30, 2014
- Exhibit 2 – 40R Plan Set (Sheets C-1 through C-18)
- Exhibit 3 – Off-Site Traffic Improvements – Amesbury Haverhill Road (Sheets 1, 8, 9 and 14)
- Exhibit 4 - Architectural Rendering
- Exhibit 5 - Concept Architectural Exterior Elevations

The Board held the initial public hearing on December 8, 2014 and subsequent public hearings on 1/12/2015, 2/23/2015, and 3/9/2015. The public hearing was closed on March 23, 2015 and a decision was rendered on April 13, 2015. By mutual consent and Applicant's requests dated 03/09/2015, 03/23/2015 and 4/15/2015, the time to file the Board's Decision was extended to April 17, 2015.

This is the Final Action of the Board ("Decision") on the application for Site Plan Review.

B. FINDINGS: General Findings XI.Q

1. **Application received by Board** – The Applicant has made a Site Plan Review application for Plan Approval pursuant to the provisions of Section XI.Q of the Amesbury Zoning Bylaw. The Property is predominantly located in the Amesbury Gateway Village Smart Growth Overlay Zoning District (AGVSGOD), as established in the City and fully described in Section XI.Q;
2. **Project Site:** The subject Property is located at 36 Haverhill Road and as shown on the Site Plan;
3. **Existing Conditions and Project Description:** The Applicant provided a Project Narrative dated October 30, 2014 that describes the existing conditions and project description. The same narrative is attached as Exhibit 1.
4. **Proposed Use:** The Project, as proposed by the Applicant, will consist of two hundred forty (240) apartment units on the Property in five (5) multifamily residential structures, and a clubhouse, with the following mix of bedrooms:

| | |
|----------------------|----------|
| One bedroom units: | 99 |
| Two bedroom units | 136 |
| Three bedroom units: | <u>5</u> |
| Total | 240 |
5. **Site Layout, Grading and Building Location:** The proposed site plan is in substantial compliance with the conceptual layout envisioned for the 40R District. The details are described in the project narrative in Exhibit 1;
6. **Off – Street Parking, Traffic and Vehicular Circulation:** The Board heard testimony from abutters regarding traffic concerns along Rte 110 in the vicinity of Hoyt Avenue and Merrill Avenue and Jacqueline Drive. Since Rte 110 is a Mass DOT right of way, any and all improvements are subject to their final approval. The Applicant has submitted 75% design plans for proposed off-site improvements and those plans are being reviewed by the

- State Agency. The Board will require Final Plans to determine compliance with the final approval before any occupancy can be issued.
7. **Storm water Management:** The drainage and stormwater plans will need to be finalized and reviewed along with Final Plans before full compliance with the performance standards can be made;
 8. **Environmental Resource Protection:** The Project received an Order of Conditions under Massachusetts Wetlands Protection Act and related regulations, G. L. c. 131, § 40-40A, 310 CMR 10.00. No other determination was made by the Board. The Applicant has indicated that the remaining peer review comments and documents or applications under any other regulatory requirements will be submitted for review and approval with the Final Plans per this Decision.
 9. **Architectural Design:** Architectural elevation drawings were reviewed by the Board. The Club house plans are still being developed. The Board has made comments on the color scheme and varying the building facades across buildings. The Board will review final architectural drawings to determine compliance with its recommendations and building designs standards under Section XI.Q.10. The Board decided to review the application on the basis that it will review the detailed architectural elevations and floor plans at a later date before commencement of any construction related activity;
 10. **Landscaping** A landscaping plan has been submitted to the Board that generally satisfies the submission requirement. Upon submission of Final Plans, the Board will review for full compliance with the development performance standards.
 11. **Technical and Legal Review:** The Applicant requested that the Board incorporate the peer review reports and technical assessment from the Comprehensive Permit application filed for the same project with the Zoning Board of Appeals, said Permit issued on March 15, 2007. The Board did not review any new engineering information but determined that

for review of Final Plans and accompanying documents it shall retain the following consultants to assist in the review of those documents:

Legal: Attorney Jonathan D. Witten, Duxbury, MA
Engineering: Horsley Witten Group, Newburyport, MA
Traffic: Conley Associates, Boston, MA

12. **Utilities**: The utility locations are shown as approximate and the plans indicate that others are responsible for a) verifying the location of existing utilities, and b) to coordinate with utility companies and the City departments for final location. All off-site improvements to public infrastructure shall be submitted for review and approval; and
13. **Affordable Documents**: The Board acknowledges the receipt of a draft Affordable Housing Restriction and sample Marketing Plan. The Board did not receive sufficient information to make a determination of full compliance with the provisions of Section XI.Q.6.

Based on the findings noted above, the Board determines that Special Conditions are required before the Project would meet the relevant permit criteria as well as any and all Development and Performance Standards of the Amesbury Zoning Bylaw (the "Bylaw").

C. WAIVERS

By letter dated January 16, 2015 the Applicant provided the Board with a list of waivers sought from the specific provisions of Amesbury's Subdivision Rules and Regulations and the Zoning Bylaw (see list below in Table 1). The Board has endeavored to grant waivers from those rules and regulations, only to the extent necessary, where the waivers are consistent with the purpose and intent of the regulations and would not threaten public health, safety or welfare and to minimize harm and disruption to the locus and real property abutting the locus. In the event that further waivers are required, the Applicant shall submit a written request for such waiver(s) to the Board and the Board may grant or deny such additional waivers in accordance with applicable rules and regulations in effect at that time. The following waivers are granted to the extent necessary to construct the approved plan as submitted and revised:

TABLE 1:

| Section(s) of Amesbury Zoning Bylaw | Requested Waiver | Decision of the Board |
|--|---|---|
| Section XI.Q - 10.5.a.5 | to use bituminous concrete curbing in place of the sloped granite or concrete requirement. | Granted to the extent necessary and as per approved Final Plans |
| Section XI.Q - 10.5.c.2 | retaining wall greater than 6 feet in height (approximately 10 feet at the highest exposed height on the main entrance drive) and proposes to use a modular block system rather than natural stone finish | Granted to the extent necessary and as per approved Final Plans |
| Section XI.Q - 10.5.a.4 | to install bituminous concrete sidewalks along the main access driveway | Granted to the extent necessary and as per approved Final Plans |

D. APPROVAL OF THE SITE PLAN AND CONDITIONS THERETO

After public hearing, upon notice in accordance with the statute (General Laws, Chapter 40A, section 11) and the Amesbury Zoning Bylaw, and after full consideration of the evidence presented, and upon the findings made in Section B of this Decision, the Board determined that the Project and hereinafter set forth a conditional Plan Approval for **Amesbury Heights**, a proposed 240 residential apartment complex consisting of five buildings (“Project”) at 36 Haverhill Road in Amesbury MA as shown on the approved Plan. Said Plan Approval is granted to the Applicant for the Premises described in the Application, further upon the conditions that follow:

I. COMPLIANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS:

The Project and all construction, utilities, roads, drainage, earth removal and filling and all related appurtenances with respect to the Project, shall comply with all applicable local, state and federal regulations except as waived specifically by this Decision. The Applicant shall be responsible for acquiring all other local, state and federal permits and approvals as necessary to construct the Project as approved by the Board. Final action on all other permits shall be submitted to the Board for record prior to start of any construction activity on the site. The Board notes that the following are some of the permits that may be needed for this Project prior to start of any construction activity:

1. Massachusetts Endangered Species Act, G. L. c. 131, § 23, 321 CMR 10.00.
2. Massachusetts Wetlands Protection Act and related regulations, G. L. c. 131, § 40-40A, 310 CMR 10.00, and the Amesbury Wetlands Ordinance and Regulations;
3. Massachusetts Department of Environmental Protection with respect to wastewater disposal, storm water disposal, resource protection, and water supply;
4. Environmental Notification Form or Notice of Project Change with Executive Office of Environmental Affairs under the Massachusetts Environmental Policy Act (G. L. c. 30, § 61-62H);
5. Commonwealth of Massachusetts Department of Transportation;

6. Commonwealth of Massachusetts State Sanitary Code.
7. U.S. Army Corps of Engineers, Section 404 of the Clean Water Act and, as applicable, Section 404(b)(1) guidelines that are established by the U.S. EPA;
8. NPDES Notice of Intent addressing NPDES Storm Water Pollution Prevention Plan, erosion control plan and stormwater management systems operations and maintenance plan under 310 CMR 10.00;
9. Massachusetts Public Shade Tree Act (G. L. c. 87);
10. Massachusetts Scenic Roads Act as adopted by the City of Amesbury, G. L. c. 40, §15c.
11. Massachusetts Historical Commission.

II. GENERAL AND IN PERPETUITY CONDITONS

The Permit for the Project is granted subject to the following General Conditions:

1. **Allowed Use:** This Decision allows five (5) residential structures in the locations shown on the approved Plan. The Project shall be limited to two hundred forty (240) dwelling units, each of which shall be rental dwelling units, in five (5) residential buildings (Numbers 1 through 5) and a clubhouse as shown on the Plans. All dwelling units shall be used, and offered, for rental purposes only except as described herein. No dwelling unit shall at any time be made available for sale. The Project shall provide no less than 1.7 parking spaces per dwelling unit as shown on the Plans.
2. **Wetlands/Riverfront Construction Activity & Approvals:** This approval is contingent upon the issuance of an Order of Conditions by the Amesbury Conservation Commission ("Commission") and its continuous validity until all improvements are complete per the Final Plans. The Decision of the Commission and all the conditions stated therein shall be included in this Decision by reference. In order to effectively coordinate and integrate the required observation and inspection reports for this project, the Board recognizes that the Plan(s) shown under the Notice of Intent Application (as revised) and the Order of Conditions, issued by the Commission, shall also be carried out to the satisfaction of the Commission or its agents. Also,

- a. Except as waived by a decision of the Commission, the construction of this project shall comply with the Amesbury Wetlands Ordinance and Amesbury Conservation Commission Regulations in effect at the time any building permit is sought for the project or for any jurisdiction for roadway-associated construction, and with all rules, regulations, filing and permit requirements and certifications of the Commission with respect to natural resource protection, construction of storm water management structures within the Buffer zone and their disposal, construction of other structures including retaining walls within the Buffer Zone, and wastewater disposal;
 - b. Any request for alteration to the Order of Conditions made by the Applicant to the Commission (or to Massachusetts Department of Environmental Protection (Mass DEP), upon appeal) shall be simultaneously provided to the Board. The proposed work shall comply with the "Order of Conditions" issued by the Commission upon the said premises;
 - c. The Order of Conditions from the Commission shall be carried out to the satisfaction of the Commission. Any violation of the Order of Conditions issued by the Commission shall be deemed to be a violation of this Approval, with all remedies to the City of Amesbury or the Board as provided by law.
3. **Project Plans:** The Project shall be constructed in substantial conformance with the following plans submitted to the Board (hereinafter collectively referred to as the "Plans"):
- a. 40R Approval Plans, consisting of fifteen (15) sheets, prepared by VHB, Inc., dated October 28, 2014, and revised plan sheet C-4.1, revision date March 30, 2015.
 - b. Plan of Land, consisting of one (1) sheet, prepared by Millenium Engineering, Inc., dated December 28, 2005;
 - c. Traffic Improvement Plans, consisting of thirty (30) sheets, prepared by VHB, Inc., dated October 28, 2014
 - d. Architectural Plans, consisting of twenty seven (27) sheets, prepared by David M. White, Architect, dated November 1, 2014; and revised plan sheets A.2 & A.13, revision date February 21, 2015

4. **Project Affordability:** This Permit shall satisfy the following:
- a. This Permit is conditional upon the final approval of an Affordable Housing Restriction. The Project shall be subject to the provisions of Section XI.Q.6. All draft documents included in the Application per Section XI.Q.6 shall be revised in content as required for consistency with this Decision. The draft Affordable Housing Restriction shall be subject to review and approval by the Board and its legal counsel as to form and consistency with this Decision, said approval not to be unreasonably withheld;
 - b. Not less than twenty (25%) percent of the total number of dwelling units approved, i.e., no fewer than sixty (60) units (the "Affordable Units"), shall be reserved for rental to households earning no more than eighty percent (80%) of the area median household income of the Boston MSA as published by the Department of Housing and Community Development (DHCD), as revised;
 - c. No fewer than twenty-five (25) one bedroom, thirty-four (34) two bedroom and one (1) three bedroom units shall be deemed as affordable units. The affordable units shall be evenly distributed within the buildings and locus and shall be indistinguishable in architectural style, interior finish materials, and exterior appearance from market units. If the Project is phased, approximately 25% of the units in each phase will be Affordable Units; and
 - d. Each affordable unit shall be rented pursuant to a restriction ensuring that only income-qualified tenants are occupying the dwelling unit. An affordable housing restriction, enforceable by the City of Amesbury, requiring that the affordable units remain affordable in perpetuity and in a form approved by counsel for the City and DHCD, shall be recorded senior to any liens on any land or dwelling unit within the limits of the Project to protect the requirement for the affordable units in the event of any foreclosure, bankruptcy, refinancing or sale.
5. The Project, and all construction, dwelling units, utilities, roads, drainage, earth removal or relocation of structures and all related appurtenances with respect to the Project, shall comply with all applicable state and federal regulations. The Applicant shall promptly

provide the Board with copies of all permitting requests directed to any applicable state or federal agency and of all approvals or disapprovals received from any such agency.

6. Except as waived by this Decision:
 - a. The development of this Project, including the construction of all dwelling units, utilities, roads, drainage structures and other appurtenances, shall comply with the Amesbury Zoning By-Law in effect at the time of this Decision and Permit.
 - b. The development of this Project, to the extent applicable, including the construction of all dwelling units, utilities, roads, drainage structures, and other appurtenances, shall comply with the Amesbury Subdivision Rules and Regulations in effect at the time of this Decision and Permit.
 - c. The development of this Project, including the construction of all dwelling units, utilities, roads, drainage structures, and other appurtenances with respect to natural resource protection, construction of storm water management structures within the Buffer zone and their disposal, construction of other structures including retaining walls within the Buffer Zone, and wastewater disposal, shall comply with the Amesbury Wetlands By-Law in effect at the time of this Decision and Permit.
 - d. The development of this Project, including the construction of all dwelling units, utilities, roads, drainage structures, and other appurtenances, shall comply with the Amesbury Board of Health Rules and Regulations in effect at the time of this Decision and Permit.

7. **Inspections** - The Planning Board shall require the inspection of drainage, stormwater management structures, roadway, parking and other site improvements to ensure that the work is carried out in accordance with the Final Plans and to ensure that all improvements are in compliance with the conditions stated in this Decision. The Board shall require the establishment of a construction observation account and the Applicant shall provide the funds necessary for inspection by the Board's consultant prior to start of any construction activity. To the extent feasible, the Board will coordinate with the Commission to retain the same consulting group for construction observations;

8. **As-Built Plans and Repairs** - To ensure compliance with the terms and conditions of this Decision and any approval or order by any federal, state-agency, the Applicant shall submit plans with a certification from a Professional Engineer or Architect registered in the Commonwealth of Massachusetts that the Project "As-Built Plan" complies in all substantive respects with this Decision and any other approval or order by any federal, state or local agency. At the completion of each phase, an interim as-built plan shall be submitted for review and approval by the Board's agents. Any damage to public roads and walkways shall be promptly repaired and/or replaced to the satisfaction of the DPW Director and City Engineer;

9. **Final Release of the Performance Bond** - The request for final release of funds shall be submitted along with a report from the Board's construction observation consultant indicating that all work has been completed as per the Board's Decision and as shown on the Final Plans. Partial releases shall be allowed in amounts not less than fifty percent (50%) of the total initial surety bond amount held by the Board only after completion of all on and off-site improvements, except interior fit-out of units, as shown on the Final Plan. Final release of performance bond shall be made when all the following conditions have been met;
 - a) Memo from DPW that all off-site infrastructure improvements have been completed to the satisfaction of the City;
 - b) All City Department and the Board's inspectional engineer have recommended release of bond funds;
 - c) A copy of the Final Certificate of Compliance (CoC) from the Commission has been provided to the Board along with a final As-Built plan;
 - d) Upon completion of all off-site improvements and stormwater management system, submission of an "As-Built Plan" to the Board along with a written confirmation from a Registered Professional Engineer (P.E.), indicating that construction complies with the approved site plans and conditions of approval, including drainage and utility plans; and
 - e) All landscaping plant materials (trees, shrubs, etc) have survived two (2) growing season and that dead plants have been replaced as per Final Plans;

10. **Release of the Sedimentation and Erosion Control Bond:** Prior to release of any portion of the Sedimentation and Erosion Control bond, the Board shall verify with its construction observation Consultant and the Commission that the soils and slopes have stabilized and that there is evidence of healthy mature grass growing on slopes and lawns, and that all planting materials have survived two (2) growing season. Additionally, the Applicant shall request the Board's consulting engineer to verify that all work associated with the mitigation plan approved by the ACC has been complied on site to the satisfaction of the Commission.

11. **Post Construction Stormwater Maintenance:** There are several storm water management structures that need to function properly during construction and post construction phases. The operator of the stormwater management system shall submit monitoring and maintenance logs and reports for a period of two (2) years after issuance of Certificate of Compliance (CoC) from the Commission. The submission of these reports shall be made as per schedule identified in the final OM plan or at a minimum of two times in any twelve month period. The reports shall be submitted to the Board and the Commission within 10 days of the issuance of the inspection report by the operator or their agents;

12. **Police Detail** - The Applicant shall, if needed, pay for any police details along Haverhill Road for truck traffic and other activities associated with construction on the site and off-site improvements that require detours or re-direction of traffic for public safety;

13. **Certificate of Occupancy Permits:** Occupancy Permits may be requested only upon completion of all units located within one building/structure. Partially completed buildings shall not be eligible for any occupancy permits. Provided all applicable conditions stated in the Decision are satisfied, the first request for an occupancy permit shall only be accepted after the off-site Traffic Improvements as approved and required by the final MassDOT access permit have started. Occupancy Permit requests for only two buildings may be issued as these off-site traffic improvements are being made. No further occupancy permit requests shall be accepted or issued until written evidence is provided by the Applicant that all off-site improvements required by said MassDOT access permit have been completed

and to the satisfaction of that state agency. Temporary certificates of occupancy will not be permitted. The Fire Department will not accept requests for the occupancy permit until all required fire prevention and detection systems are installed and operating, carbon monoxide detectors are installed and operating, street signs and house numbers are in place and all required inspections have been completed by the Amesbury Building Inspections and Fire Departments.

14. **Maintenance of roadways and infrastructure** – The Applicant or his successor shall assume responsibility to maintain and repair the dwelling units and all common areas and associated on site infrastructure, including the stormwater management system, landscaping, ways, and other improvements within the Property. The City of Amesbury or its agents shall never have any legal or financial responsibility for operation or maintenance of driveways, parking areas, storm water management systems, snow plowing, landscaping, trash disposal or pick up, street lighting or other illumination, or other street infrastructure (excluding the connection to the water system and connection to the wastewater treatment system). This shall be noted in the Management documents as well as other legal documents associated with the project.
15. **Changes in Project Density or Design** - No further extension of the structures or change in the footprint or creation of any new dwelling units shall be allowed without further review and approval by the Board. Any change to the site plan or any of these conditions of approval, including, but not limited to, the building location, driveway locations, landscaping plans, architectural design criteria and the approved building construction materials, site improvements and finishes or to any recorded legal documents shall only be allowed after review and approval by the Board. Request for substantive revisions to the Final Plans shall be made as required under conditions pertaining to Site Plan Modifications in this Decision.
16. **Site Plan Modifications**: Substantive revisions to the Project or the Plans, such as relocation (except relocation within the building “envelopes” as proposed) or deletion of dwellings (except as specified in this Decision), material changes in unit architecture, style

or materials, relocations of more than one property line, relocation of the right of way, emergency access, changes that impact the Performance Standards under Section XI.Q or other substantive changes from the approved Plans shall not be permitted without the written approval of the Board. Prior to making such changes, the Applicant shall provide detailed information and plans along with a formal written request for modification to the approved Site Plan for determination of minor or major modification and approval by the Board. The Board shall, if it determines that any such changes are substantial, require the applicant to submit a new application for modification to the approved Site Plan and hold a new public hearing for review of the requested modifications;

17. **Validity:** This permit is contingent upon the issuance of an Order of Conditions from the Amesbury Conservation Commission in compliance with the Massachusetts Wetlands Protection Act and related regulations, G. L. c. 131, § 40-40A, and the Amesbury Wetlands Ordinance and Regulations or if said permit(s) is appealed, a subsequent issuance of a Super-ceding Order of Conditions from the Massachusetts Department of Environmental Protection (Mass DEP). Except for final approval of the access permit by MassDOT, this permit shall become final only upon the issuance of all other state and federal permits required to start any construction activity allowed per this permit. The Site Plan Approval shall expire upon the expiration of the final environmental permit, unless said permit(s) is extended by the permit granting authority.
18. **Environmental Compliance:** The Project shall comply with the provisions of Section XI.Q. 10.5.f – *Stormwater Management, Wetlands and Riverfront Areas* and the Order of Conditions as issued by the Amesbury Conservation Commission.
19. **Project Completion:** The Applicant shall complete construction, including but not limited to, all on-site and off-site improvements within five (5) years from the date this Permit becomes final, unless such time shall be extended in writing by the Board.
20. **Supplemental Document Review:** Where this Decision provides for the submission of plans or other documents to the Board, the Board shall review and provide a written

response as to whether such plans or other documents are consistent with this Decision within forty-five (45) days of the Board's receipt of such plans or other documents. The approval of the Board for such plans or documents shall not be unreasonably withheld. The Board may designate an agent or agents to review and approve such plans or other documents.

21. **Peer Review Services:** The Applicant shall pay peer review and legal expenses incurred by the Board and the City in evaluating the legal documents, plans or engineering documents required to be submitted by this Decision. The legal services or peer review shall be limited to the review of the submitted plans or documents to ensure conformance with this Decision and applicable state and federal permit decisions. These expenses will be deducted from the special account established by the City Treasurer for the Applicant on behalf of the Planning Board. Prior to any clearing, grading or construction, the Applicant must pay to the City, by certified check, \$12,000 as an advance deposit to cover at least a portion of these expenses. This estimated initial payment is based on 240 units at \$50 per unit. Applicant will pay any additional costs to the City as required; and if at any time the amount of the advance deposit is reduced below \$5,000, the Applicant, upon request, shall within five (5) business days pay to the City an amount sufficient to increase the amount of the deposit to \$5,000, and if the Applicant fails to pay such amount within such period all work on the project shall cease until such amount has been paid. Any excess remaining at the completion of the Project will be returned to Applicant.

22. **Inspection Services:** The Applicant shall pay inspection fees for inspections and testing during the construction of ways and installation of utilities and the stormwater management system in accordance with the inspection schedule set forth in the Amesbury Planning Board Subdivision Rules and Regulations Section 8.02 (A). The Board may appoint, in consultation with the Applicant, a third party consulting engineer to conduct such inspections. Further, except for building inspection, the Applicant shall pay for inspection of all site improvements, on the Final Plan as recorded. Prior to the commencement of work by a particular consultant, the Applicant shall pay the estimated

fees for the required work. No ground disturbance or clearing shall commence until all outstanding fees are paid and current.

23. **Earth Removal:** Nothing in this Decision permits the removal of sand or gravel from the locus as a sole commercial purpose or waives or modifies any local by-laws, rules, regulations or requirements with respect to the removal of sand or gravel from the locus as a sole commercial purpose not incidental to the development of the Project. The removal of sand and gravel necessary to construct the Project as shown on the Plans is allowed by this Decision.
24. **Emergency Access - Maintenance:** The emergency access to the development from Haverhill Road as approved by the Board on the Final Plans shall be gated and the Applicant or his assignees or successors shall be responsible for ensuring that it is always maintained, plowed and sanded through its entire length and upto Haverhill Road, including easement area on adjoining property to allow access by public safety officials.
25. **Architectural Design:** A design theme with a description of building features and materials has been submitted to the Board for approval per letter dated March 01, 2007 from the Project Architect, David White. The following elements shall be incorporated into the building designs and final architectural drawings to be submitted to the Board:
- a. A base coursing of cultured stone will be installed on the Community building/club house below the siding.
 - b. Two over two double hung windows with Eastern casings. Building entry doors that echo the grillwork for the windows;
 - c. Wide overhangs with Victorian brackets at the corners;
 - d. 6" PVC corner-boards and a wide PVC horizontal band separating the shingles from the clapboards;
 - e. 12/12 roof pitch for the balconies and front gables;
 - f. A large PVC frieze band at the top of the building;
 - g. A two board PVC fascia detail which is not only on all the building eaves but extends around the rakes at all the gables;

- h. The use of varied exterior vinyl siding materials, shingles on the first floor to give the building a base, clapboards on the second and third floor, bead board siding at the fourth floor over the low roof, and fish-scale shingles in the gables over the balconies and entryways. The use of these different materials will be further highlighted by using different, but compatible, earth-tone colors for each material, as indicated on the rendered elevation;
 - i. Craftsman-style columns at the entryways;
 - j. Arched openings at the entryways and at the balconies to soften the building;
 - k. Architectural asphalt roof shingles;
 - l. The addition of the low roof between the third and fourth floors to soften the overall heights of the building and to give the illusion that the fourth floor is a dormer extending over the third floor;
26. The Applicant agrees that the City of Amesbury shall be free of any liability for any negligent acts or omissions by or of the Applicant, its employees, agents, subcontractors, beneficiaries or trustees with relation to this Project. The Applicant, on behalf of itself and its successors and assigns, further agrees to indemnify and hold harmless the Town of Amesbury, its employees and officials for any harm, damage, injury or loss caused by negligent acts or omissions of the Applicant, its employees, agents, subcontractors, beneficiaries or trustees with regard to the construction of this Project.
27. **As-built Plans:** To ensure compliance with the terms and conditions of this Decision and any approval or order by any federal or state agency, the Applicant shall submit to the Board complete and detailed Progress "As-Built" Plans with its request for a Certificate of Occupancy for any of the structures approved in this Decision, for the extent of roadway and associated infrastructure serving those dwellings for which certificates of occupancy are sought. Before release of the performance guarantee, the Applicant shall have prepared and submitted Final As-Built Plans, which shall indicate the actual locations of street line; traveled way edges; path locations; permanent monuments; inverts and location of required utilities and drainage; location of all underground utilities; and all building locations. The accuracy of such Final As-Built Plans shall be certified by a Land Surveyor or a

Professional Engineer, Registered in the Commonwealth of Massachusetts, retained by the Applicant. Any damage to public roads and walkways shall be repaired and/or replaced to the satisfaction of the Director of Public Works.

28. Normal water service pressure within the Project shall be a minimum thirty-five (35) psi under all conditions except fire flow. Available service pressure under peak water demand and fire flow conditions, including any additional development currently anticipated in the vicinity shall be demonstrated by use of the City's computerized hydraulic model.
29. Water system design and construction shall meet the requirements, standards and regulations of the Massachusetts Department of Environmental Protection's Guidelines and Policies for Public Water Supplies and as reviewed by Amesbury Department of Public Works.

II. PRIOR TO ENDORSEMENT OF PLANS

The Applicant shall file with the Board and all other relevant public agencies for review and for consistency with this Decision any documents and shall have completed the following actions:

1. **Other Non-local Permits:** Final action on all other non-local permits, approvals, extensions, as necessary, shall be complete and authorize/allow the proposed activity and associated improvements as shown on the approved Plans. If modifications were made to the approved Plans by other Agencies, these modifications shall be clearly indicated on plans and described in detail for the Board's review and approval.

III. PRIOR TO START OF ANY CONSTRUCTION ACTIVITY

The Applicant shall file with the Board for review and for consistency with this Decision any documents and shall have completed the following actions:

1. The Applicant shall have received all necessary permits/approvals and provide copies of all applicable permits and approvals from local, state and federal agencies, departments or commissions to the Board, including but not limited to, those listed under Section D.1 of

this Decision, if applicable. The issuance of a MassDOT temporary access permit shall be acceptable to start construction activity on site pursuant to Final Plans approved by the Board;

2. The Applicant shall submit to the Board for review and final acknowledgement of consistency with this Decision, final and detailed site development plans (“Final Plans”) to the detail required for use as on-site construction drawings. All proposed roadway and utility construction; grading and appurtenant work shall be described in complete detail to readily enable peer review and construction. The Applicant shall file three (3) full-scale sets and fourteen (14) half-scale sets with the Board. Once the Final Plans are approved by the Board, the Applicant shall provide copies of the Final Plans in, both, paper and digital form to the Board, the Planning Department, and the Building Department. The Final Plans shall, at a minimum, include the following:
 - a. Final set of the Plans prepared by Registered P.E. and incorporating the conditions of this Decision and the conditions of relevant permits from applicable state or federal agencies;
 - b. Final and detailed landscaping plans prepared by a landscape architect registered in the Commonwealth of Massachusetts. Such plans shall include shade trees along streets, and shall specify the types, number, size and location of all proposed landscaping plants, trees and shrubs at the time of planting, the location and type of fence or other screening materials, plans and profiles of all planting and screening materials and details of any and all other proposed landscape materials. Such plans shall indicate the specific types of active/passive recreational equipment to be installed within the open space and recreational areas located on the approved plans. Slow release or organic nitrogen lawn fertilizers shall be used by the Applicant throughout the project to help limit the inputs of nitrogen to the groundwater;
 - c. A plan depicting the area subject to a Conservation Restriction as noted in Condition #6 below and walking trails. Trail networks shall be laid out along existing trails

allowing public access only to permanently protected open space and connecting to abutting conservation areas;

- d. A site-grading plan such that re-grading of the site shall not result in any finished slope exceeding 50 percent in cut and fill (2:1) as shown on the plans approved by the Board. Slope stabilization methods in addition to grass shall be utilized to the extent feasible. Design of the development shall preserve existing natural features to the maximum extent practical;
- e. A final and detailed Operation and Maintenance Plan for the storm water management system, as fully described in Condition #3 below;
- f. A plan showing the final roadway design plans and construction details. Complete development roadway profiles shall be provided for existing centerline and sideline grades, and proposed centerline grade. Roadway layout and profiles shall include properly labeled horizontal and vertical curves and stationing. The location of these facilities shall be identified in the layout plans;
- g. A plan showing final and detailed utilities plans and profiles including properly labeled drainage components and all site utilities including electric, gas, water supply lines, wastewater disposal connections and appurtenances and connections to the buildings indicating that all utilities servicing this Project shall be underground within the locus of the Project and to the detail required for use as on-site construction drawings and/or to obtain a building permit in accordance with the State Building Code, whichever requirement is more detailed. Proposed underground gas, electric, cable, and telephone service, shall be shown in cross-section on the way; utilities plan and construction details shall be provided;
- h. A detailed plan showing open areas, limit of construction activity, edge of clearing, sedimentation and erosion controls, a soil stockpiling area, snow storage area and construction staging, refueling and storage area(s);

- i. A plan showing all local zoning lines for reference purposes;
- j. A plan showing all necessary easements;
- k. A plan showing the location and design (including materials to be used) of all retaining walls to be used within the Project;
- l. A plan showing the location of all guard rails to be constructed within the proposed road system. All guard rails shall be constructed of timber. If required to meet safety standards that are not possible using timber, Corten "weathering" steel may be used;
- m. A plan showing the location and types of all street lighting fixtures. Street and parking lot lighting shall be allowed on free-standing poles not exceeding fourteen (14) feet in height from finished grade and light from these poles provided with cut-off shields along the facade when abutting buildings, if necessary and as determined by the Applicant;
- n. A plan showing the elevations of all proposed signs, including the entranceway sign. Only one (1) sign identifying the project shall be allowed on the site. The ground sign shall be located at entrance from Haverhill Road to not exceed the allowable square feet in area and installed in a landscaping stone wall, no more than 52 inches in height from finished grade and including total height of wall. Sign shall be set back no less than fifteen (15) feet from the property line along Haverhill Road. Sign shall be made of natural materials and lit indirectly. Final approval of the sign shall be subject to the Board's approval;
- o. A snow storage and management plan protective of the resource areas as approved by the Commission;

- p. **Traffic Improvements Plan:** All traffic improvements shown on plan prepared by VHB dated October 28, 2014 shall be incorporated subject to final design approval by state and federal agencies. The City of Amesbury reserves the right to make comments on the proposed improvements, including widening of Haverhill Road in the vicinity of the project, signal timing, additional left turn lanes on Haverhill Road, traffic signs and the layout of the Rte 110 and Rte 150 intersection during the MEPA and Mass Highway review process.
3. **Stormwater Operation and Management Plan:** The Applicant shall provide the Board with a copy of the detailed Stormwater Operation and Management Plan for review and final acknowledgement of consistency with this Decision by the Board. The Plan shall include and, at a minimum, meet the following requirements:
- a. The Stormwater Management system and improvements shall be in accordance with the design performance requirements of the DEP Storm Water Management Policy and Handbook (Vols. 1 & 2) and Standards to the detail required for use as on-site construction drawings and to obtain approval under the Massachusetts Wetlands Act and the Amesbury Wetlands Protection Bylaw and Regulations except as waived by this Decision.. These plans and improvements shall be designed to show that there will be no increase in the rate of run-off from pre-development conditions or erosion impact on the abutting properties;
 - b. The Plan shall include, at a minimum, maintenance during and post construction as well as perpetual maintenance and monitoring of the roadway, roadway infrastructure and drainage systems (routine and seasonal). The Stormwater Operation and Maintenance Plan shall include specific tasks and timelines associated with inspection and maintenance of all proposed stormwater management structural and non-structural measures, as well as identify the owner and party responsible for inspection, operation, maintenance, repair, and replacement including certification of acceptance of legal responsibility for the afore mentioned. The Operation and Maintenance Plan shall bind the Applicant.

4. **Subdivision Plan:** The Applicant shall submit a recorded copy of the Form A - Application for APPROVAL NOT REQUIRED - Subdivision Plan to the Amesbury Planning Board showing the subject Property as shown on the Plans. This Decision shall not substitute for compliance with the Subdivision Control Law, G.L.c. 41, s. 81-L, et. seq. regarding the division of land into two or more lots nor shall this Decision substitute for the recording requirement of the Subdivision Control Law found at G.L. c.41, s.81-X.

5. **Emergency Access:** The emergency access road shall be constructed prior to the occupancy of any dwelling unit. The applicant shall provide the a final set of plans indicating the location and final design of the emergency access road, including storm water management design and a limit of grading and clearing, for review and final acknowledgement of consistency with this Decision. The proposed emergency access road shall serve only as an emergency access road and not as a primary access road. The road shall be designed to meet public health and safety requirements of the Fire Department, to minimize clearing and grading impacts to the hillside, and to manage stormwater runoff and erosion and sedimentation in accordance with the MA Stormwater Policy. The width of pavement on the emergency access road shall be no less than sixteen (16) feet and no more than 8% in slope. Any significant deviation from that alignment or in the width of pavement or clearing and grading may constitute a major project change.

6. **Conservation Restriction:** The Board shall review and approve, as to form and consistency with this Decision, a permanent Conservation Restriction with public access easement, and the Applicant shall record the same, clearly identifying the land areas noted on the Final Plans to be left in their current natural, undisturbed vegetative state for the maximum period allowed by law, with no provisions for site alteration, including but not limited to a prohibition on tree removal, land clearing and site grading of these areas. Documentation and proof of recording of the approved conservation restriction shall be provided to the Board.

7. **Easements:** A written submission shall be submitted to the Board describing all easements and covenants affecting the use of the subject Amesbury site, referring to such covenants and locating such easements on a site plan. The Applicant shall also submit to the Board any written or recorded instruments granting or agreeing to such easements and covenants. Easements shall be granted to the City of Amesbury over water and sewer infrastructure and appurtenances except for the watermain being installed by the Applicant.
8. The Applicant shall provide soil examination and testing as needed to ascertain the suitability of the design of the development, prior to the Board's approval of Final Plans.
9. **Construction Schedule:** The Applicant shall submit a detailed construction schedule identifying the sequence and timetable of all key stages of construction to the Board. This submission will include:
 - a. Identification of all contractors, field engineers, construction managers, surveyors, wetland and biology specialists, and other professionals that will be involved in the implementation of the Project;
 - b. Staking of driveways, dwelling foundations, parking areas, drainage basins and other drainage structures, and well(s) location(s);
 - c. Placement of sediment and erosion controls and limit of construction fencing;
 - d. Removal of vegetation and top soil;
 - e. Wetland mitigation installation;
 - f. Drainage system construction;
 - g. Major stages of roadway construction;
 - h. Excavating dates for building foundations;
 - i. Sewer line, water line and private utility installation;
 - j. Landscape installation and other site amenities; and
 - k. Proposed Inspection dates.
10. **Affordable Housing Restriction:** Two (2) copies of the recorded copy of the Affordable Housing Restriction, approved by the Board and fully executed shall be

submitted to the Board no later than December 31, 2015 or request for occupancy of any dwelling unit in the Project, whichever is earlier;

11. **Performance Surety:** The Applicant shall post with the Board, a bond or surety in an amount needed to stabilize the Property in the unlikely event that construction has ceased on the property prior to site clearing and grading being fully stabilized. Said bond or surety amount shall be based on an estimate of the cost, as approved by the Board or its authorized agent, to fully stabilize the site, assuming all proposed areas of alteration and grading have been disturbed. The bond or surety shall contain the following provision: "If the principal shall fully and satisfactorily observe and perform in accordance with the qualifications and time schedule set forth herein, as specified in all the covenants, agreements, terms and provisions as set forth in the Decision of the Board in this matter, as attached hereto, then this obligation shall be void, otherwise it shall remain in full force and effect, and, in the absence of completion of the work, the aforesaid sum shall be paid to the City of Amesbury in order to complete the construction in accordance with the plans and specifications." Alternatively, prior to the issuance of any Certificate of Occupancy permit, the Applicant, after approval of the Final Plans, may construct and install the ways, utilities, pedestrian/bike paths, drainage, shade trees, hydrants and lights, and submit as-built plans for same, in accordance with the inspection and testing schedules and standards set forth in the Planning Board Rules and Regulations. Such construction and installation may be done in phases, subject to the prior approval of the Board, or may be completed in part and bonded in part as approved by the Board. The City of Amesbury agrees to partially release the performance bond in increments of \$50,000.00 or more upon completion of work required as approved by the Board. Prior to full surety release, satisfactory As-Built Plans showing completion of all site work, roadways and improvements as per plans of record shall be provided to the Board.
12. **Legal Documents:** The following documents shall be submitted to the Board and the Building Inspector:
 - a) **Documents Recorded at the Southern Essex Registry of Deeds:**
 - i. Planning Board Decision and Plan Set - A copy of this Decision and Approved Plan Set;

- b) Covenants and Restrictions: Legal Documents describing the following shall be submitted for review and approval:
 - i) On-site improvements: The approved light fixtures on the building and light poles in the parking areas, quantity and type of landscaping shrubs and plants, benches, property and dumpster fences, street furniture and other on-site improvements shall be maintained in perpetuity and no major changes shall be made without prior written approval of the Board. Repairs and replacement of any of these components shall be made in accordance with approved plans and as per the Board's Decision.
 - c) Covenant: A covenant shall be placed on the development or building(s) or other structures erected or placed on, or application for a building permit made with respect to any building/structure, until a Performance Guarantee and the Erosion Control and Sedimentation Bond have been established with the Board. This covenant is to be received by the Board prior to the commencement of any of the improvements approved and shown on the Plan and will remain in place until the Applicant posts a Performance Guarantee, which will be reviewed and approved by the Board, as stated in this Decision. The form of the Performance Guarantee, adequacy and or amount shall be reviewed and approved by the Board;
13. CAD Drawings - Three copies of all drawings and site plans as approved by Board shall be provided as Computer Assisted Drawings (CAD) on Compact Disks to the Board;
14. Final Plans: The final plans shall be amended to show the twenty (20) foot wide public access easement. The lighting plan shall be amended to include cut off- shield or use different light fixtures to maintain the photometric performance standard of 0.2 foot candles at the property line of the subject Parcel. Also a detail shall be added to the plan set showing that the pole height is no greater than fifteen (15) feet from the finished grade of the parking lot;

15. **Submission of Architectural Drawings:** A copy of the complete set of Final architectural elevations and floor plans shall be submitted to the Board for review and approval;
16. **Retaining Walls:** All retaining walls over four (4) feet shall be designed by a structural engineer and accompanied by supporting documentation indicating that the existing soils and fill are appropriate for the proposed design. Additional test pits and accompanying data shall be supplied with the retaining wall design and details, if necessary and requested by the City for review by the Board's Agent to establish consistency with Final Plans;
17. **Sedimentation and Erosion Control Bond** – The Applicant shall be required to post Surety with the Board for Sedimentation and Erosion to ensure that stormwater runoff management and erosion control measures are implemented on site as per Final Plans and other engineering drawings and to ensure that remedial actions can be taken to address any detrimental impacts from erosion and sedimentation during construction and until the stormwater management system is fully operational;
18. **Pre-Construction Conference** - At least five (5) business days prior to any initial site work, a Pre-Construction conference shall be held with the Applicant, Applicant's contractor, a representative of the Board, its consulting engineer, and representatives of the City Departments having an interest in the Plan. Said meeting shall be for the purpose of familiarization with the project, the conditions of approval, and the project's construction sequence and timetable;
19. **Request for Pre-construction Conference:** The request for a Pre-construction Conference shall be acted upon by the Board only AFTER the Board has received and reviewed ALL of the documents required per this Decision before start of any construction activity and has determined that the Project is ready to proceed to the construction phase. Upon authorization by the Board, its representatives shall schedule the Pre-construction Conference; and
20. The Final Plans shall be reviewed and accepted by the Fire Department and the Department of Public Works. Said approval shall not be unreasonably withheld. Hydrant

locations shall provide a 10-foot minimum separation from storm drains or other approved means of protecting the water supply from storm drains.

21. Prior to the commencement of any work at the site, an erosion control barrier (hay bales staked end to end and siltation fence firmly anchored with six (6) inches of soil on the uphill side) shall be installed in a location reasonably acceptable to the Commission or its representative. The erosion control barrier shall be inspected by the Commission or its representative prior to work commencing on the site and shall be maintained until all disturbed areas have been stabilized to the satisfaction of the Commission or its representative.
22. Limit-of-work construction fencing shall be installed in accordance with the Final Plan locations for the particular building lot.
23. The Applicant shall explicitly address, through the supplemental review and approval process and as part of submission of Final Plans to the Board any outstanding comments from the peer review consultants retained by the Board.

IV. PRIOR TO MAKING REQUEST FOR A BUILDING PERMIT

The Building Department shall not issue any Building Permit until receipt of an affirmative report from the Board stating that all conditions precedent to making application for Building Permit have been fulfilled, as per this Decision and to the satisfaction of the Board. Not later than the date on which the first request for a building permit is filed, and before any building permit is issued, the Applicant shall file with the Board for review and consistency with this Decision:

1. The Applicant shall provide proof that the Final Plans, as approved by the Board, have been recorded at the Registry of Deeds and three (3) copies of the Final Plan, exactly as it is recorded, shall be provided to the Board. At a minimum, the following sheets from the final set of approved plans shall be recorded - overall site plan, layout plan, grading and drainage plan, and utility plan.

2. The Applicant shall submit to the Board, the Building Department and the Fire Department, for review and final acknowledgement of consistency with this Decision, a complete set of final and detailed scaled architectural drawings ("Building Plans"), mechanical engineering drawings, plans and specifications, for all structures as approved by this Decision, including interior floor plans, current and finished elevations, construction type and exterior finishes to the detail required for use as on-site construction drawings and/or to obtain a building permit in accordance with the State Building Code. No structures (as defined by the Amesbury Zoning Bylaw) other than those shown on the Final Plans and approved by the Board are allowed on the Site. A Registered Architect or Professional Engineer shall stamp the Building Plans, as appropriate, licensed in the Commonwealth of Massachusetts.
3. The Building Plans shall include a Building Code Review prepared by a qualified third-party consultant who may be the Project Architect or a professional architect licensed in Commonwealth of Massachusetts to confirm the Building Plans meet the State Building Code.
4. The Building Plans shall identify the initial locations of the Affordable Units. The Applicant shall notify the Board of the change in location of these units, if and as it occurs, within two weeks of such change.
5. All dwelling units shall contain automatic fire detection sprinklers, installed in accordance with the State Building Code.
6. **Final Private Utility Layout:** The Applicant shall obtain all necessary private utility permits, including but not limited to gas pipeline, electric, telephone and cable service required by the respective utilities prior to the commencement of building construction. Documentation of all Permits/approvals issued by private utilities pertaining to the development of the Project shall be provided to the Board prior to any building construction.

7. The Applicant shall submit to the Board and for review and final acknowledgment of consistency with this Decision a Marketing Plan for the Affordable Units, such plan to conform to all affirmative action requirements or other requirements as imposed by federal or state regulations. Said plan shall give a preference to residents of the City of Amesbury to the maximum extent allowed by law for the rental of the Affordable Units.

IV. DURING CONSTRUCTION

The Permit for the Project is granted subject to the following Conditions:

1. **Stockpiles** - All earth stockpiles shall be established in locations as approved by the ACC or at a distance no less than fifty (50') feet from the edge of flagged wetlands boundary, whichever is greater. Earth material stockpiles shall not be allowed immediately adjacent to perimeter siltation barriers or drain inlets. Long term stockpiles over 30 days shall be shaped stabilized and circled by siltation fence and haybales and shall be stabilized by temporary seeding, sheeting or netting;
2. **Utility Trenches** - Utility trenches within the public Right of Way shall be saw-cut prior to excavation. Open trenches shall be backfilled with bank gravel and compacted to 95%. Trenches shall be paved with asphalt binder to a minimum depth of three (3) inches and overlaid curb to curb, on local roads maintained by DPW, to a minimum depth of one and half (1.5) inches. Water service trenches shall be infrared joint paved. The Director of DPW and the City Engineer shall have the final signoff on the right of way improvements and any change to these standards or those shown on approved plans shall be subject to their review and approval;
3. **Erosion Control and Stormwater Maintenance Requirement**: The Applicant's designee or assignee shall on a quarterly basis submit interim reports and supporting documents to the Board showing that requirements for stormwater system maintenance are being adhered according to the approved SWPPP. Submissions shall be made no later than 10 days from the date of issuance of said reports.

4. **Construction Activities** - During construction, the following conditions shall be met:
- a. The Applicant and its agents and employees shall conform to all local, state and federal laws regarding noise, vibration, dust and use of City roads and utilities. The Applicant shall at all times use all reasonable means to minimize inconvenience to residents in the general area and maintain safe and adequate vehicular access on Haverhill Road. Construction shall not commence on any day Monday through Saturday before 7:00 AM. Construction activities shall cease by 6:00 PM Monday through Friday and by Noon on Saturday. No construction or activity whatsoever (except for interior finishing) shall take place on Sunday;
 - b. With the exception of land clearing, grading and site disturbances minimally necessary to construct the proposed entranceway and the emergency access to the Project, no land clearing, grading or site disturbance of any kind shall occur within 50 feet of any property boundary of land not owned by the Applicant or existing dwelling unit on any adjacent property, whichever is farther.
 - c. All dwelling units shall be built by the Applicant, and its agents or contractors who shall exercise supervision and control over said construction and be responsible for the Project to be built in accordance with this Permit and the Affordable Housing Restriction. During construction, the name and mobile telephone number of the site manager or clerk of works employed by the Applicant shall be filed with the Building Department, the Board, and the Amesbury Police Department, and such name and mobile telephone number shall be kept current.
 - d. All stumps, brush, and other debris resulting from any clearing or grading shall be removed from the locus. No stumps or other debris shall be buried on the Property;
 - e. The Applicant shall keep the site and the adjoining existing roadway area clean during construction. Upon completion of all work on the Site and prior to Final As-Built approval, all debris and construction materials shall be removed and disposed of in accordance with state laws and regulations.
 - f. Construction, once commenced, shall progress through to completion as continuously and expeditiously as practical and in accordance with the construction sequence and timetable approved subject to delay incurred as a result of conditions beyond the control of the Applicant or acts of God and *force majeure*.

- g. Construction equipment shall not be parked or stored within fifty feet (50') of any drainage channel, drainage inlet, or wetland area. Maintenance of construction equipment involving transfer of fluids and fuels shall be conducted in areas away from drainage channels and inlets and wetland buffer areas. Contractor's on-site personnel shall immediately notify the City of any hazardous material spill, regardless of size.
- h. All areas to be protected from encroachment from construction shall be marked on the ground as shown on the Final Plans and the Applicant throughout the construction phase of the project shall maintain these barriers.
- i. Excavation dewatering shall be in a workman-like manner and such water shall be free of suspended solids before being discharged into either a wetland or any storm water drainage system. This condition applies to all forms of dewatering including pumping and trenching. No direct discharge to the wetlands is allowed. Such discharge shall be consistent with the Applicant's Notice of Intent.

V. PRIOR TO MAKING REQUEST FOR AN OCCUPANCY PERMIT

The Building Department shall require the applicant to submit a letter from the Board and as-built plans along with a request for Certificate of Occupancy for any unit stating that all conditions precedent to making application for Occupancy Permit have been met. The Building Department shall not issue any Occupancy Permit for any unit or structure shown on the plan until receipt of an affirmative report from the Board stating that all conditions have been fulfilled as per this Decision and to the satisfaction of the Board. The Permit for the Project is granted subject to the following Conditions Prior to Occupancy Permit:

1. The Applicant shall prepare management documents in a form that conforms to this Decision and applicable law, designed to manage the Project and ensure that the terms and conditions of this Decision are enforced and submit them to the Board for review. The Board requires that the management documents identify, at a minimum, who the day-to-day responsible parties will be, in case of an on-site emergency, and plans for day-to-day and periodic on-site maintenance. The Management documents, which shall be on file with

the Amesbury Planning Department and the on-site Property Management and Leasing office, shall, at a minimum, contain the following:

- a. A specific plan for operation and maintenance of the dwelling units, common areas and all other improvements shown on the recorded plans;
 - b. A specific plan to maintain drainage facilities, storm water basins and appurtenances. This plan should incorporate provisions of the Storm water Operation and Maintenance (O&M) Plan as approved by the Board and a certification shall be provided by the Management company or agent(s) acknowledging their responsibility to implement the Storm water O&M Plan as approved;
 - c. A specific plan to maintain roads, including snow removal, spring clean- up, repair of road surface and resurfacing as needed. The road and roadway infrastructure excluding the water system and private-utility-company systems, are to be privately owned and maintained by the Project in perpetuity;
 - d. A specific plan to maintain, and periodically replace, any dead or unhealthy plants, shrubs and other landscaping proposed within the Project;
 - e. Such documents shall provide for and include a comprehensive set of rules and regulations governing conduct of tenants, residents, and their invitees upon the site, without limitation, a) noise control rules, b) prohibition on parking of resident or visitor-owned commercial vehicles, c) prohibition on i) parking or storing of motor vehicles, boats, trailers, or other property on the main roadway and ii) on parking or storing such vehicles, boats, trailers, or other property in any other parking space, unless fully contained within such space.
2. No certificate of occupancy for any building shall be issued until the improvements specified in this Decision and set forth in the plans of record are constructed and installed as per this Decision and to adequately serve said building, or adequate security has been provided, reasonably acceptable to the Board, to ensure such completion.
 3. **Certification of Improvements** – The Applicant shall submit a letter and As-built plans as required by this Decision to the Building Inspector from the Board verifying that

conditions of approval have been met and that construction to date is per the approved plans; and

4. **Landscape Installation** - All site improvements, including landscaping and street trees shall be completed and installed as per Final Plans. The Landscaped Architect for the project shall submit a certification that the trees, shrubs and screening plants have been installed as per approved Final plans;

Chair, Amesbury Planning Board

EXHIBITS:



Memorandum

To: City of Amesbury Planning Board

Date: October 30, 2014

Project No.: 09407.02

From: Conor Nagle, PE

Re: Project Narrative & Performance Standards
40-R application – Amesbury Heights
36 Haverhill Rd, Amesbury, MA

PROJECT NARRATIVE

Corcoran Jennison Associates, Inc. (the “Proponent”) is proposing to construct Amesbury Heights Multi-family Residential Development (the “Project”), located on a 26.4-acre site on Route 110 (Haverhill Road) approximately 1,000 feet west of the intersection with Route 150 in Amesbury, Massachusetts (the “Project Site”). See Figure 1 for the site location. The Project will consist of a residential development with 240 units including 25% affordable units (60 affordable units), a centrally located clubhouse, “village green” and associated amenities.

The Project Site is bounded by Haverhill Road and abutting commercial properties to the north, Interstate 495 to the south, wetlands to the east, and single family residential dwellings to the west. The majority of the Site is currently zoned Office Park with a small portion zoned residential. The entire site is within the Amesbury Gateway Village 40R Smart Growth Overlay District (AGVSGOD). A large portion of the Project Site was formerly occupied by a gravel mining operation and currently is unused, disturbed and underutilized. The Project Site centers on a large hill, the apex of which has been excavated during the former gravel mining operations. See Figure 2 Aerial Photograph. The primary site access sweeps down the east side of the hill toward Route 110. The Project Site is a varied mix of grass, brush, and woods including a significant amount of invasive species of shrubs. Figure 3 shows the existing conditions site plan.

The proposed residential development would consist of five (5) four-story buildings with 48 apartments each totaling 240 units, a centrally located clubhouse, a “village green” and associated amenities. The clubhouse and amenity center houses the management and maintenance offices, a show unit, fitness facility and outdoor swimming pool. In addition, a sidewalk will provide connectivity and pedestrian access to downtown Amesbury. The proponent proposes to provide 60 affordable units. This amounts to 25% of the total and exceeds the minimum requirements of Chapter 40B, and the Decision of the Amesbury Zoning Board in relation to the Project, which require no less than 20% of the total number of units will be affordable units as defined by M.G.L. Chapter 40B, Section 20 (Regional Planning – Low and Moderate Income Housing). The apartments will include a mix of 1-, 2- and 3-bedroom units. The buildings are arrayed around the edges of parking lots, landscaped areas, and the clubhouse facility and associated “village green”. The main access roadway follows the alignment of the former gravel haul road to the intersection with Route 110 to the north. An emergency access to Route 110 would be provided approximately 750-feet west of the main access.

The City of Amesbury, on its own initiative, has developed a M.G.L. Chapter 40R (Smart Growth Zoning and Housing Production) district that includes the Project Site. In accordance with the guidelines set forth in Chapter 40R, the 40R Ordinance has established target densities for the individual areas represented within the project area. The current concept is consistent with the zoning overlay map. Figure 4 shows the proposed site conditions for the Project.

In 2007 the Project underwent a thorough local and state review process and received the permits listed below. Each of these permits has been extended by application to the appropriate issuing authority and is still valid.

| Permit | Permit Authority | Issue date |
|----------------------|-------------------------|------------|
| Comprehensive Permit | ZBA | 15-Mar-07 |
| Order of Conditions | Conservation Commission | 14-Aug-07 |
| Sewer Connection | DEP | 12-Feb-07 |
| MEPA Certificate | EOEA | 15-May-07 |

40R DEVELOPMENT AND PERFORMANCE STANDARDS

The AGVSGOD statute includes a number of Development and Performance Standards for projects seeking approval under 40R. During the initial municipal review, the development plans were significantly revised. The initial alternative of nine (9) buildings and all parking at grade was set aside in favor of the current five (5) building concept to preserve open space by reducing the total area of site alteration and impervious area. This was further enhanced by providing parking garages beneath three (3) of the buildings. The remainder of the parking would be surface parking on the Project Site. In addition, building footprints were reduced by adding to the building heights, thereby allowing the preservation of a significant portion of the existing open space and vegetative buffers to adjacent neighbors.

It is our belief that the current proposal, having undergone a detailed municipal review, including peer review of both traffic and stormwater design, meets the standards set forth in the statute, as outlined below:

a. Access and Traffic Impacts

As mentioned previously, the Project will consist of a residential development with 240 units (60 affordable), a centrally located clubhouse, "village green", and associated amenities. The main access roadway follows the alignment of the former gravel haul road to the intersection with Route 110 to the north. An emergency access to Route 110 would be provided approximately 750-feet west of the main access. The Project Site is well positioned with convenient access to the regional highway system. While the Project traffic will result in minimal impacts to the surrounding roadways, significant improvements and mitigation measures are proposed.

The following narrative has been prepared to address standards outlined in the Amesbury Zoning Bylaw – 2012, specifically section 10.5(a)(2) Traffic Impact Statement, which states: *"In each case where more than 15 residential units are being proposed or a new commercial building(s) of more than 3,000 square feet total floor area is proposed, or where any proposed enlargement of a building would result in a building have more than 3,000 square feet total floor area, a traffic impact statement shall be prepared containing the following information:*

a. A detailed assessment for the traffic impacts of the proposed project or use on the carrying capacity of any adjacent highway or road(s) and associated intersection;

Response: VHB evaluated the traffic impacts associated with the Project in a detailed traffic impact and access study (TIAS) prepared in March 2006 as part of the local permitting process. The TIAS was

reviewed by the City of Amesbury, a peer review consultant (Conley Associates, Inc.), as well as MassDOT, and is attached to this document for reference.

Based on VHB's knowledge of the area and the development of typical traffic impact and access evaluations, the following intersections were included in this assessment:

- Route 110 (Haverhill Road)/Middle Road – unsignalized
- Route 110 (Haverhill Road)/North Martin Road – unsignalized
- Route 110 (Haverhill Road)/Route 150 (Hillside Avenue) –signalized
- Route 150 (Hillside Avenue)/I-495 Southbound Ramps – unsignalized
- Route 150 (Hillside Avenue)/Hunt Road– unsignalized
- Route 150 (Hillside Avenue)/I-495 Northbound Ramps – unsignalized

The existing conditions evaluation consisted of an inventory of the traffic control; roadway, driveway, and intersection geometry in the study area; the collection of daily and peak period traffic volumes; and a review of recent vehicular crash history.

The proposed development is estimated to generate approximately 125 trips (25 entering/100 exiting) during the morning peak hour and 150 trips (100 entering/50 exiting) during the weekday evening peak hour. These vehicle trips were distributed based on the year 2000 US Census journey-to-work data for the Town of Amesbury. Based on the analysis, it is estimated that approximately 57 percent of the site-generated trips are expected to use Route 110/Haverhill Road to/from the east. An estimated 12 percent would use Route 150/Hillside Avenue to/from the north. Approximately 20 percent would use I-495 to/from the south while 5 percent would use I-495 to/from the north. Approximately 6 percent would use local roadways including Route 110 to/from the east, Middle Road and Route 150 Extension to/from the south.

Capacity analysis indicates that the site generated traffic would not have a significant impact at a majority of the study area intersections. The analysis also shows that at the intersection of Route 110 and Route 150, there is adequate capacity to accommodate the site traffic. However, the Proponent is proposing improvement measures, as appropriate, in the area to improve on existing deficiencies that have not been addressed over the years. These improvements, as well as other proposed mitigation are outlined in response to section (b) below.

Overall, the TIAS concluded that the proposed residential development will not result in a significant traffic impact through the study area. With the addition of the proposed enhancement measures, traffic flow within the area will be improved.

b. A plan to minimize traffic and safety impacts through such means as physical design and layout concepts, promoting use of public transportation, or other appropriate means; and,

Response: While the existing roadways and intersections can accommodate the expected site-generated traffic, mitigation measures have been developed to allow Project-generated traffic to move to and from the Project Site more safely and efficiently while minimizing impact to the study area and improving some of the existing deficiencies. Proposed mitigation measures include:

- Provide a sidewalk from the main entrance to the Project Site to the intersection of Routes 110 and 150.
- Restripe the eastbound and westbound approaches to provide a left-turn lane in each direction at the Route 110 at Route 150 intersection. Restriping will also include crosswalks to connect existing and proposed pedestrian facilities.
- Modify the traffic signal timing and phasing to optimize flow at the Route 110 at Route 150 intersection. Upgrades to traffic signal equipment will be made as necessary to implement the proposed changes.

- Providing stop control pavement markings and signage at the intersection of Route 110 and Martin Road. Striping will also be added to more clearly delineate the travel way at this intersection.

These potential mitigation measures were discussed with the Massachusetts Department of Transportation in a meeting with project representatives in September 2006 as well as discussions with the City of Amesbury during the local review process. The plans currently at the 75% design level. Comments from MassDOT on the 75% design plans are currently being addressed and the plans are progressing to 100% design level.

c. *An interior traffic and pedestrian circulation plan designed to minimize conflicts and safety problems.*

Response: As shown on the Site Layout Plan, two-way vehicular circulation is provided via 24-foot drive aisles throughout the site. In addition, an extensive sidewalk network is proposed for the site. Sidewalks are provided to connect each of the five residential buildings and the clubhouse. In addition, crosswalks have been provided throughout the parking area. The on-site sidewalk network also travels along the site driveway all the way up to Route 110, where it connects to the proposed sidewalk from the site to Route 150. This will provide a connection between the site and existing pedestrian/bicycle facilities used to access the downtown area and available public transit opportunities.

b. **Parking**

The Project will provide a parking ratio of 1.71 parking spaces per residential unit, within the min/max range required by zoning. The spaces meet the dimensional criteria, both for size and setbacks.

c. **Landscaping**

The site landscape design, sheets C-7.1 – C-7.3, meets the intentions of the performance standard by:

- providing buffers to property lines;
- maintaining large areas of existing vegetation;
- providing visual screening, including fencing of storage areas;
- All planting materials will be native drought-tolerant species.

d. **Open Space**

Greater than the required 30% of the Project Site will remain as open space. Approximately 10.9 acres will be deeded as a conservation restriction.

e. **Building Design**

The proposed apartment buildings and club house have been designed to meet the performance standards. See Architectural plans by David M. White included in this application.

f. **Stormwater Management, Wetlands and Riverfront Areas**

During the initial municipal review the project received an Order of Conditions from the City of Amesbury Conservation Commission, and underwent a detailed peer review of the stormwater and environmental resource design.

Wetland resources within the Project Site include Riverfront Area, Bordering Vegetated Wetlands, Intermittent Stream Bank and Isolated Freshwater Wetlands. The Bordering Vegetated Wetlands that will be impacted by the Project were created during the gravel pit operation apparently to help control drainage on the site. The Bank to be relocated is associated with a constructed ditch that was once used to drain stormwater from the top of the site to the natural wetland areas along the eastern property boundary. Soils within and along the bank of the entire ditch are devoid of topsoil and are not currently stabilized, thus resulting in erosion problems in downgradient wetland resource areas. Soils within the federally regulated wetlands have typically been disturbed by activities associated with the gravel mining operation, are devoid of topsoil and contain sedimentation deposits which restrict permeability. The

Project was designed to minimize potential impacts related to the surrounding natural resources by developing mostly within previously altered areas while preserving the natural wooded buffers along the perimeter. Consideration was also given to eliminating historic impacts associated with stormwater runoff tributary to the abutting properties. The existing intermittent stream channel (ditch) would be relocated, or replicated, around the development footprint within the Project Site. Other wetland impacts will be replicated on the Project Site using a proposed minimum of 2:1 area replication.

In compliance with the Massachusetts Stormwater Management Policy, The Project was designed to minimize potential impacts related to the surrounding neighbors, natural resources and stormwater runoff by developing mostly within previously altered areas while preserving the natural wooded buffers along the perimeter. This Project would mimic the existing stormwater patterns at the Project Site integrating a variety of both traditional and low impact development stormwater best management practices into the design. These features would include bioretention basins and swirl separators to remove sediments and extended detention basins to reduce peak discharges. Stormwater runoff will be recharged to the extent feasible. The stormwater management report has been completed for Phase 1 and is included in Appendix B. A comprehensive Stormwater Management Plan will also be developed for Phase 2 to control the peak rate of runoff, enhance water quality and control soil erosion and sediment migration.

g. Erosion Control

Both construction phase and long term erosion controls will be employed to protect the surrounding natural resources. A detailed Erosion Control plan is included in the plan set provided. Additionally, as the Project is greater than one acre, both the Owner and Contractor will be required to file a Notice of Intent for Construction Activities with the EPA and put in place and adhere to a Stormwater Pollution Prevention Plan (SWPPP). As required in the Order of Conditions, the construction will be overseen by a Professional Engineer to observe compliance and prepare weekly reports for the Conservation Commission.

h. Water Quality

The stormwater design, as approved by the Conservation Commission, includes several low impact Best Management Practices (BMPs) to promote groundwater recharge. These include bioretention basins and vegetated swales in addition to more traditional structural BMPs such as sediment forebays and detention basins. Each BMP includes stormwater treatment prior to recharge to groundwater.

i. Hazardous Material and Explosive Materials

The storage, use, transportation or removal of hazardous waste is not anticipated from the Project. Should such activities be required they will be completed in a manner consistent with the specifications of the City of Amesbury Fire Department and all state and federal regulations.

j. Lighting

Lighting will be in accordance with the requirements of the 40R ordinance. Light poles shall not exceed 18ft for parking areas and 12 feet for pedestrian walkways. Off-site illumination is not anticipated and in no instance shall exceed 0.2 foot candles, as required.

k. Environmental Performance Standards

No emissions, vibrations or odors as outlined in the performance standard are anticipated as a result of this Project.

l. Noise

As a residential development noise in excess of the standards outlined in the performance standard are not anticipated as a result of this Project.

m. Utilities

The Project will be served by municipal water and wastewater services. Mitigation for the sewer flow added to the municipal system will be made in accordance with the Town's and DEP requirements and Inflow/Infiltration policies. A DEP sewer connection permit was issued in 2007.

Electric, telephone, cable TV and other such utilities will service the project underground from existing roadway utilities.

n. Signs

Signage will comply with the performance standard. A signage detail is included in the plan set, sheet C-8.5

o. Shadows

The project is situated such that it will not cast shadows on existing buildings between 9:00am and 3:00pm (EST) from February 21st to October 21st.

p. Universal Access

It is the Proponent's intention to comply with all applicable universal access codes.

Design plans, a traffic report and a stormwater report are included in this application, and illustrate the Project's compliance with the performance standards as outlined above.

Site Plans

Issued for: 40R Approval

Date Issued: October 28, 2014

Latest Issue: October 28, 2014

| No. | Drawing Title | Latest Issue |
|-----------|---|--------------|
| C-1 | Legend and General Notes | 10/28/2014 |
| C-2 | Overall Site Plan | 10/28/2014 |
| C-3 | Wetland Impacts and Erosion Control Plan | 10/28/2014 |
| C-4.1-4.2 | Layout Plan | 10/28/2014 |
| C-5.1-5.2 | Grading and Drainage Plan | 10/28/2014 |
| C-6.1-6.2 | Utility Plan | 10/28/2014 |
| C-7.1-7.2 | Landscape Plan | 10/28/2014 |
| C-8.1-8.5 | Site Details | 10/28/2014 |
| C-9 | Detention Basin Profiles | 10/28/2014 |
| C-10 | Entrance Drive Profile | 10/28/2014 |
| C-11 | Emergency Access Drive Profile | 10/28/2014 |
| C-12 | Utility Profiles | 10/28/2014 |
| C-13 | Utility Profiles | 10/28/2014 |
| C-14 | Typical Utility Sections | 10/22/2014 |
| C-15 | Basements Plan | 10/28/2014 |
| C-16 | Snow Storage Plan | 10/28/2014 |
| C-17 | Construction Staging Plan | 10/28/2014 |
| C-18 | Wetland Replication Planting Plan | 10/28/2014 |
| S-1 | Reference Drawings | 10/29/2007 |
| | A. Subdivision of Land | 6/25/2006 |
| | Plan of Land by Millennium Engineering, Inc. | 10/28/2014 |
| | Haverhill Road Offsite Improvements (17 Sheets) | |

Amesbury Heights

36 Haverhill Road
Amesbury, Massachusetts



Site Location Map

Property Information

Owner:
Boston North Properties, LLC
98 Elm Street
Salisbury, MA 01952
978-462-6543 (t) 978-499-0760 (f)

Applicant:
Corcoran & Jennison Companies
150 Mount Vernon Street
Boston, MA 02125
617-822-7303 (t)

Assessor's Map: 86
Lot: 25 and 47

Environmental Consultant:
Wetlands Preservation, Inc.
47 Newton Rd.
Plainfield, NH 03065
603-382-3435 (t) 603-382-3492 (f)

Architect:
David M. White
403 Tibbets Hill Road
Goffstown, NH 03045
603-497-3405 (t) 603-497-2783 (f)

Surveyor:
Millennium Engineering, Inc.
60 Elm Street, 01952
Salisbury, MA
978-462-6580 (t) 978-499-0029 (f)

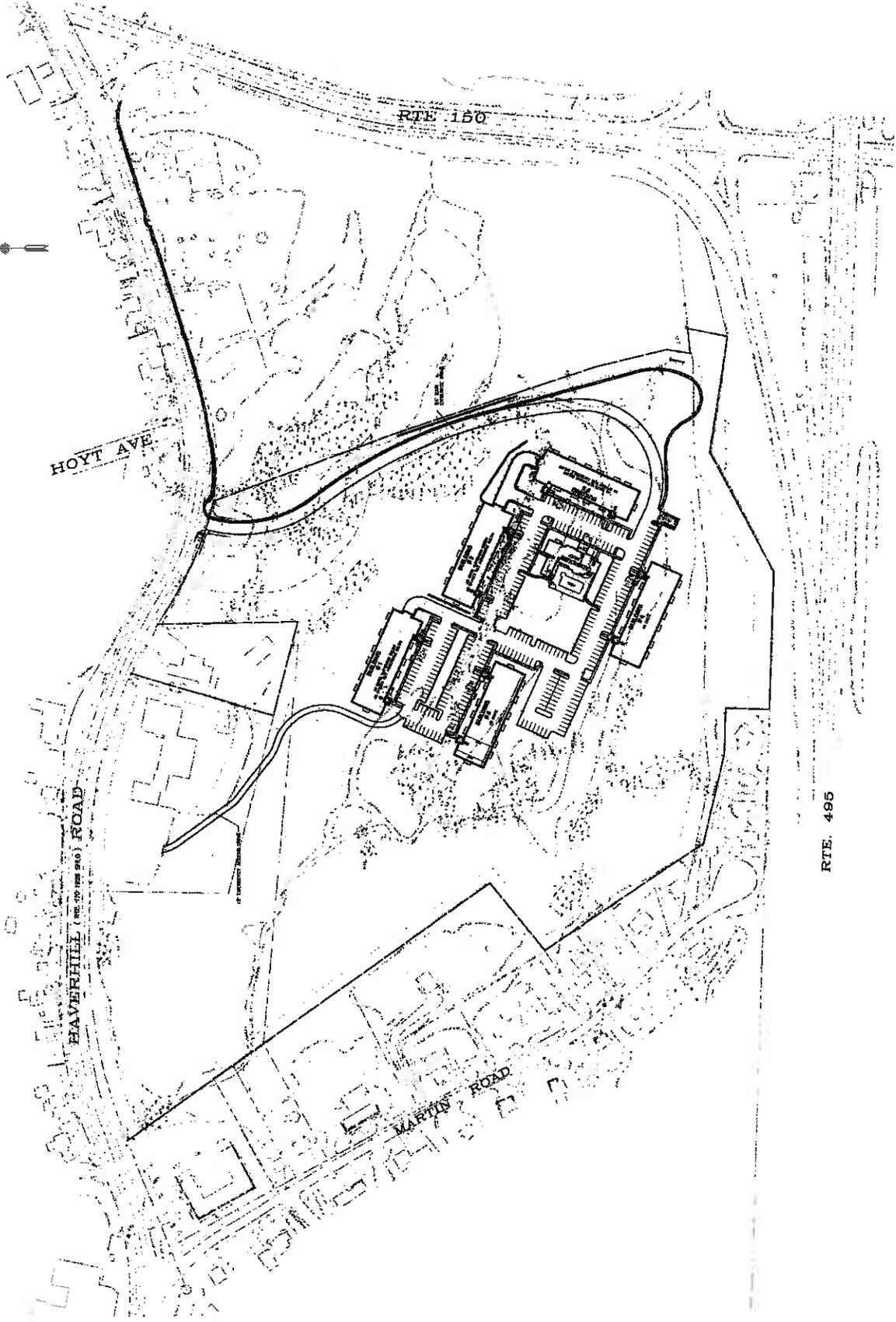
Management Company:
Corcoran & Jennison Companies
150 Mount Vernon Street
Boston, MA 02125
617-822-7300 (t)



Vernon Hengen Brustlin, Inc.

Transportation
Land Development
Environmental Services
101 Wilson Street, P.O. Box 9157
Worcester, Massachusetts 01607
617.924.1770 - FAX 617.924.2266





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Annabury Heights
 26 Elmhill Road and
 North Road North PER
 Annabury, Massachusetts
 400' Approval

Not approved for construction.

Overall
 Site Plan



RTE. 495

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| 271 | 2/15/22 | REVISED |
| 272 | 3/15/22 | REVISED |
| 273 | 4/15/22 | REVISED |
| 274 | 5/15/22 | REVISED |
| 275 | 6/15/22 | REVISED |
| 276 | 7/15/22 | REVISED |
| 277 | 8/15/22 | REVISED |
| 278 | 9/15/22 | REVISED |
| 279 | 10/15/22 | REVISED |
| 280 | 11/15/22 | REVISED |
| 281 | 12/15/22 | REVISED |
| 282 | 1/15/23 | REVISED |
| 283 | 2/15/23 | REVISED |
| 284 | 3/15/23 | REVISED |
| 285 | 4/15/23 | REVISED |
| 286 | 5/15/23 | REVISED |
| 287 | 6/15/23 | REVISED |
| 288 | 7/15/23 | REVISED |
| 289 | 8/15/23 | REVISED |
| 290 | 9/15/23 | REVISED |
| 291 | 10/15/23 | REVISED |
| 292 | 11/15/23 | REVISED |
| 293 | 12/15/23 | REVISED |
| 294 | 1/15/24 | REVISED |
| 295 | 2/15/24 | REVISED |
| 296 | 3/15/24 | REVISED |
| 297 | 4/15/24 | REVISED |
| 298 | 5/15/24 | REVISED |
| 299 | 6/15/24 | REVISED |
| 300 | 7/15/24 | REVISED |
| 301 | 8/15/24 | REVISED |
| 302 | 9/15/24 | REVISED |
| 303 | 10/15/24 | REVISED |
| 304 | 11/15/24 | REVISED |
| 305 | 12/15/24 | REVISED |
| 306 | 1/15/25 | REVISED |
| 307 | 2/15/25 | REVISED |
| 308 | 3/15/25 | REVISED |
| 309 | 4/15/25 | REVISED |
| 310 | 5/15/25 | REVISED |
| 311 | 6/15/25 | REVISED |
| 312 | 7/15/25 | REVISED |
| 313 | 8/15/25 | REVISED |
| 314 | 9/15/25 | REVISED |
| 315 | 10/15/25 | REVISED |
| 316 | 11/15/25 | REVISED |
| 317 | 12/15/25 | REVISED |
| 318 | 1/15/26 | REVISED |
| 319 | 2/15/26 | REVISED |
| 320 | 3/15/26 | REVISED |
| 321 | 4/15/26 | REVISED |
| 322 | 5/15/26 | REVISED |
| 323 | 6/15/26 | REVISED |
| 324 | 7/15/26 | REVISED |
| 325 | 8/15/26 | REVISED |
| 326 | 9/15/26 | REVISED |
| 327 | 10/15/26 | REVISED |
| 328 | 11/15/26 | REVISED |
| 329 | 12/15/26</ | |

Site Summary

| Item | Value |
|----------------|-----------|
| Area (Acres) | 10.00 |
| Volume (cu yd) | 100,000 |
| Weight (tons) | 10,000 |
| Cost (\$) | 1,000,000 |
| Permit No. | 123456 |
| Scale | 1" = 100' |
| Date | 10/1/2023 |

Zoning Summary Chart

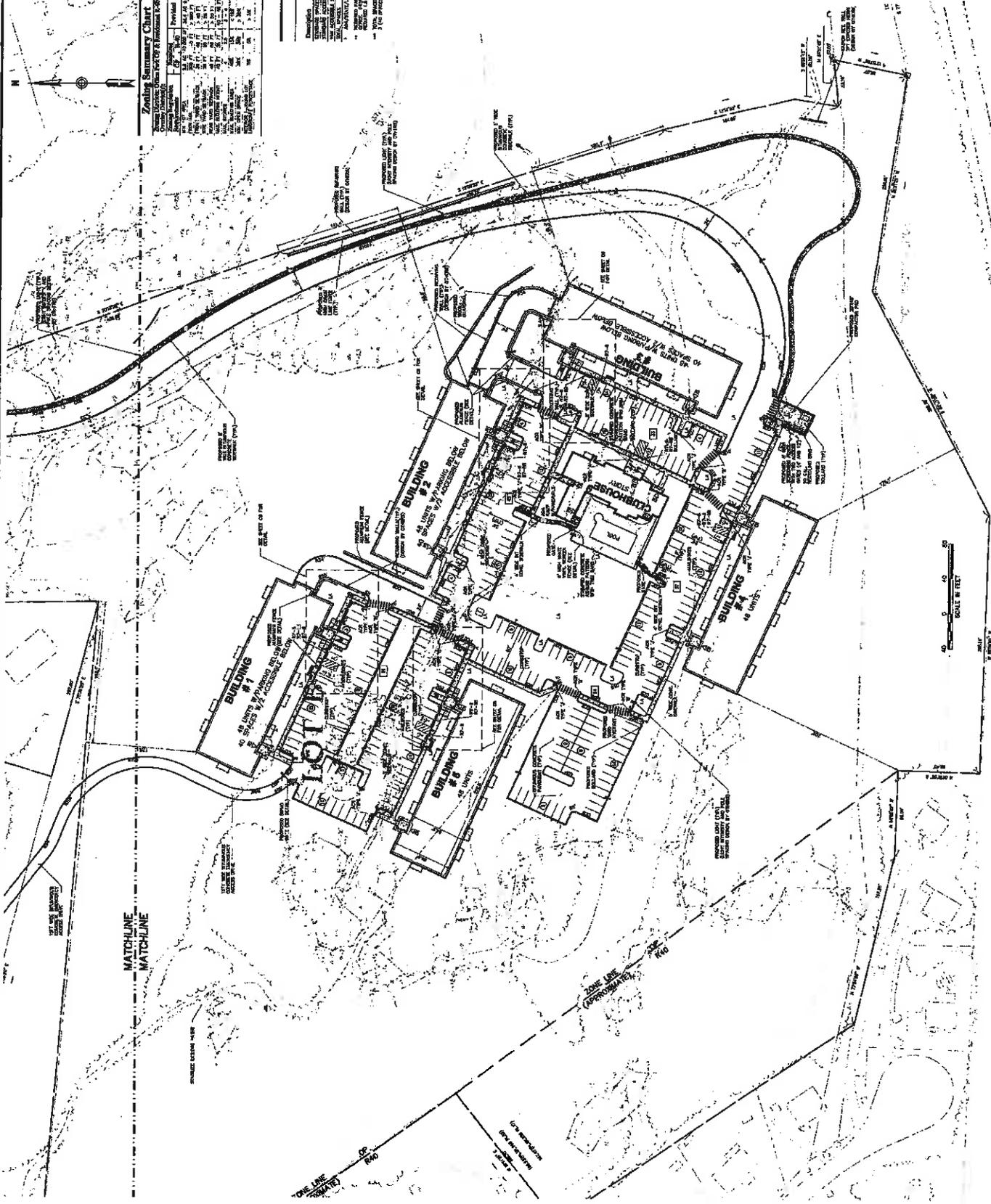
| Code | Area (Acres) | Volume (cu yd) | Weight (tons) | Cost (\$) |
|------|--------------|----------------|---------------|-----------|
| R-1 | 1.00 | 10,000 | 1,000 | 100,000 |
| R-2 | 2.00 | 20,000 | 2,000 | 200,000 |
| R-3 | 3.00 | 30,000 | 3,000 | 300,000 |
| R-4 | 4.00 | 40,000 | 4,000 | 400,000 |
| R-5 | 5.00 | 50,000 | 5,000 | 500,000 |
| R-6 | 6.00 | 60,000 | 6,000 | 600,000 |
| R-7 | 7.00 | 70,000 | 7,000 | 700,000 |
| R-8 | 8.00 | 80,000 | 8,000 | 800,000 |
| R-9 | 9.00 | 90,000 | 9,000 | 900,000 |
| R-10 | 10.00 | 100,000 | 10,000 | 1,000,000 |

Parking Summary Chart

| Category | Count | Area (sq ft) | Volume (cu yd) | Weight (tons) | Cost (\$) |
|--------------|------------|---------------|----------------|---------------|------------------|
| Surface | 100 | 10,000 | 100,000 | 10,000 | 1,000,000 |
| Structural | 50 | 5,000 | 50,000 | 5,000 | 500,000 |
| Other | 20 | 2,000 | 20,000 | 2,000 | 200,000 |
| Total | 170 | 17,000 | 170,000 | 17,000 | 1,700,000 |

| Item | Value |
|----------------|-----------|
| Area (Acres) | 10.00 |
| Volume (cu yd) | 100,000 |
| Weight (tons) | 10,000 |
| Cost (\$) | 1,000,000 |
| Permit No. | 123456 |
| Scale | 1" = 100' |
| Date | 10/1/2023 |

Amesbury Heights
 56 Harvard Blvd and
 Martin Road from Rte.
 Amesbury, Massachusetts
 40R Approval
 Not Approved for Construction





HAYERHILL ROAD
 (P.L.E. 110-1994-5H16)

MATCHLINE
 MATCHLINE

MARTIN ROAD



| NO. | DATE | DESCRIPTION | BY | CHECKED |
|-----|------|-------------|----|---------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Approved for Construction
 Grading and
 Drainage Plan

Project No. 110-1994-5H16
 Date: 12/15/04
 Scale: AS SHOWN
 1" = 40'

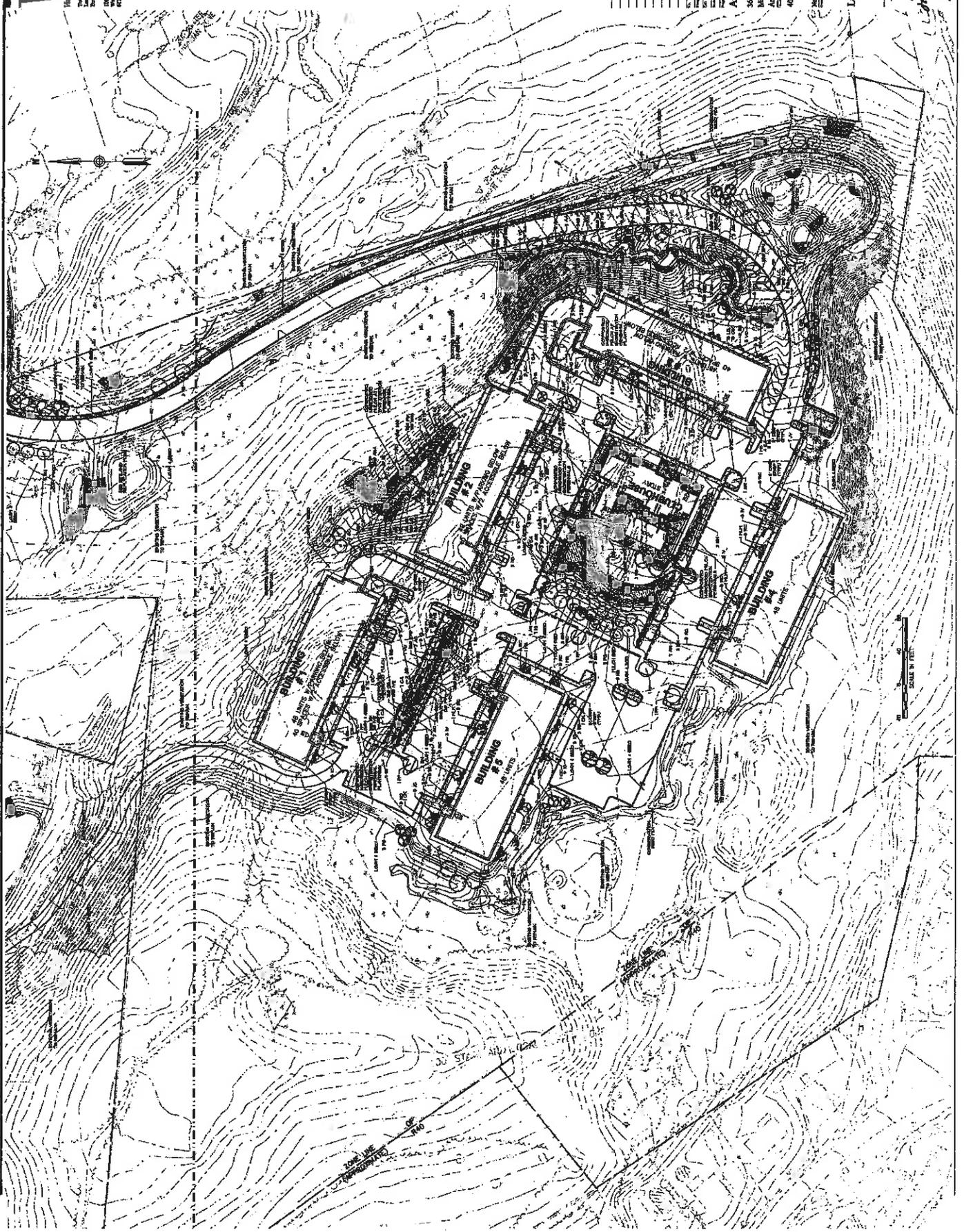
C-52
 179 MPH
 179 MPH

| NO. | DATE | DESCRIPTION |
|-----|----------|-------------------|
| 1 | 10/10/01 | ISSUED FOR PERMIT |
| 2 | 10/10/01 | ISSUED FOR PERMIT |
| 3 | 10/10/01 | ISSUED FOR PERMIT |
| 4 | 10/10/01 | ISSUED FOR PERMIT |
| 5 | 10/10/01 | ISSUED FOR PERMIT |
| 6 | 10/10/01 | ISSUED FOR PERMIT |
| 7 | 10/10/01 | ISSUED FOR PERMIT |
| 8 | 10/10/01 | ISSUED FOR PERMIT |
| 9 | 10/10/01 | ISSUED FOR PERMIT |
| 10 | 10/10/01 | ISSUED FOR PERMIT |

Annexbury Heights
 35 Birchhill Road and
 Merritt Road North RR,
 Annexbury, Massachusetts
 40% Approval

Not Approved for Construction
 10/10/01

C-7.1
 Landscape Plan

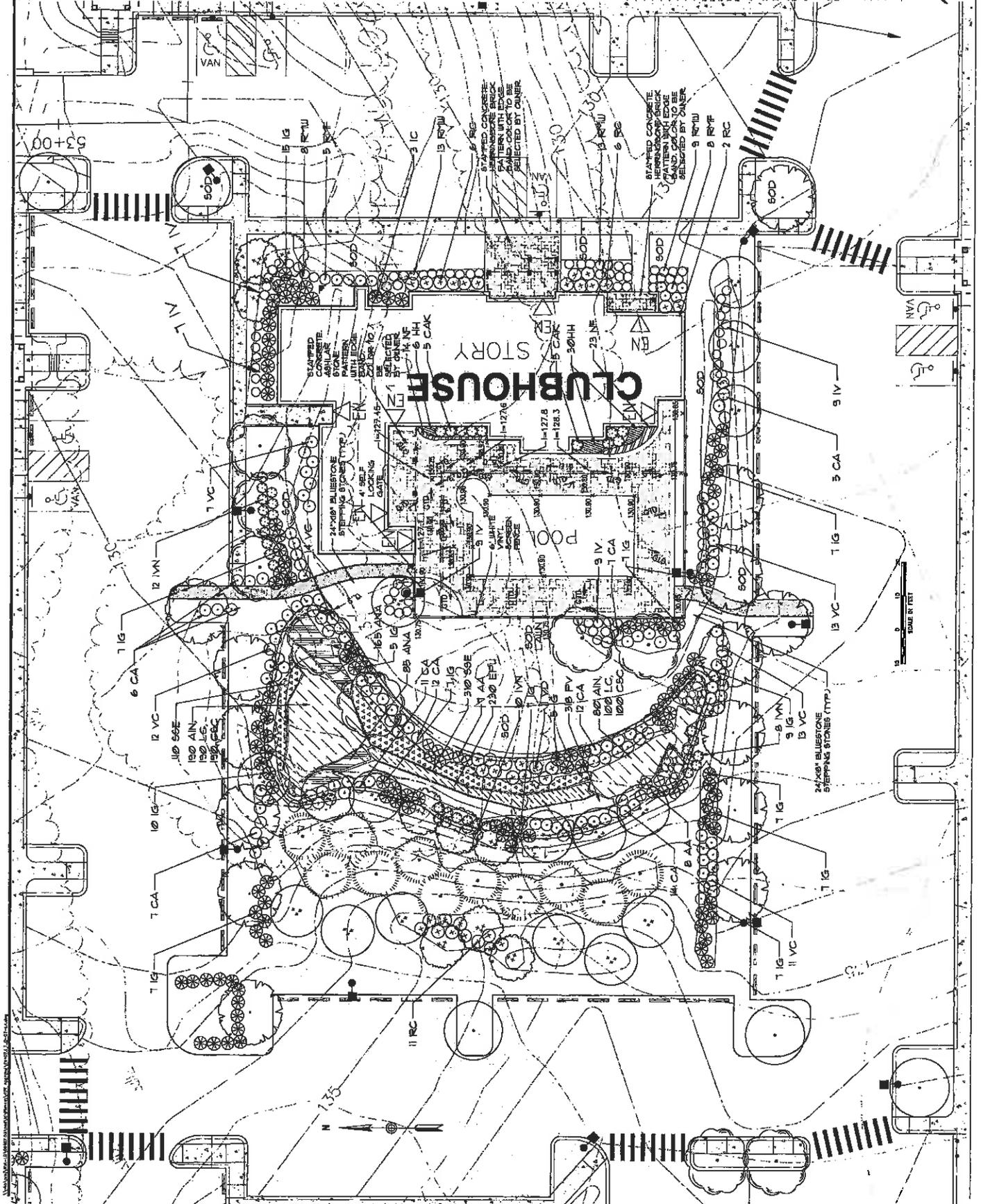


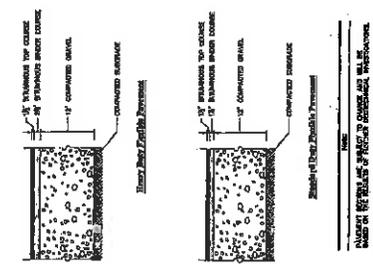
| NO. | DATE | DESCRIPTION |
|-----|----------|-------------------|
| 1 | 10/18/11 | ISSUED FOR PERMIT |
| 2 | 10/18/11 | ISSUED FOR PERMIT |
| 3 | 10/18/11 | ISSUED FOR PERMIT |
| 4 | 10/18/11 | ISSUED FOR PERMIT |
| 5 | 10/18/11 | ISSUED FOR PERMIT |
| 6 | 10/18/11 | ISSUED FOR PERMIT |
| 7 | 10/18/11 | ISSUED FOR PERMIT |
| 8 | 10/18/11 | ISSUED FOR PERMIT |
| 9 | 10/18/11 | ISSUED FOR PERMIT |
| 10 | 10/18/11 | ISSUED FOR PERMIT |

Annexbury Heights
 36 Haverhill Road and
 Martin Road North RR
 Amesbury, Massachusetts
 48% Approval

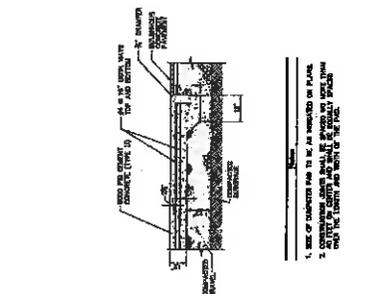
Not Approval for Construction
 10/18/11

**Landscaping
 Enhancement Plan**

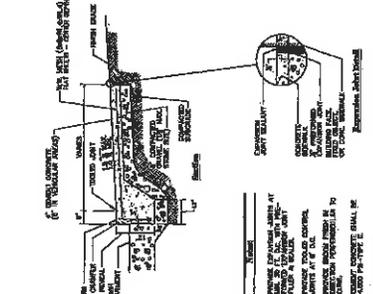




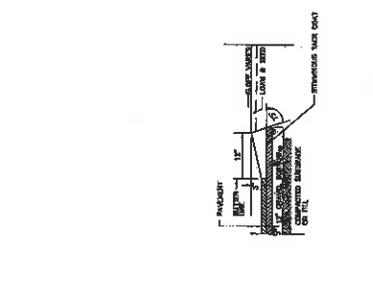
Retention Wall
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



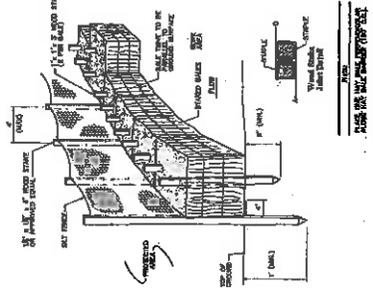
Concrete Pad
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



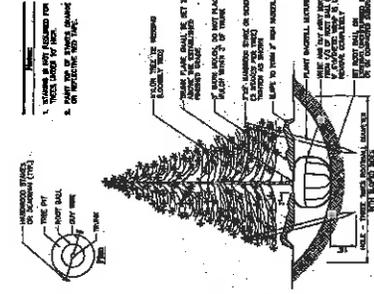
Manhole Concrete Curb (MCC) A Sidewalk
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



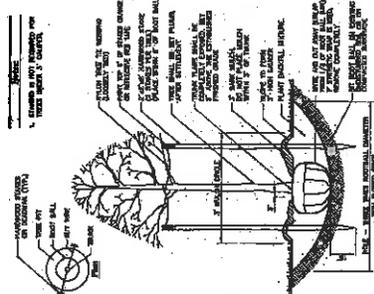
Catch Basin
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



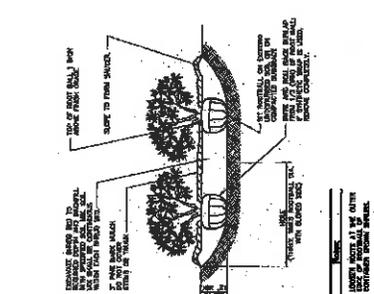
Silt Fence / Key Stake Barrier
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



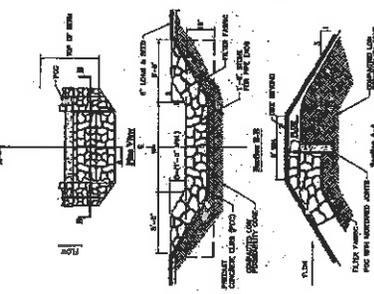
Evergreen Tree Planting
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



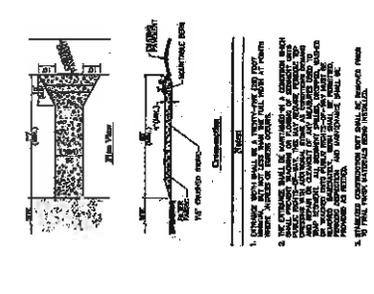
Tree Planting (Deciduous Tree)
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



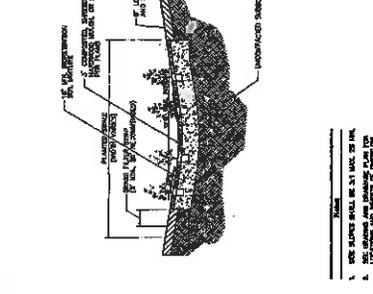
Street Bed Planting
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



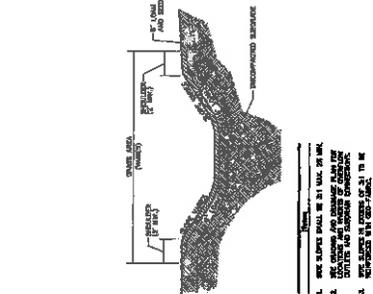
Level Spreader
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



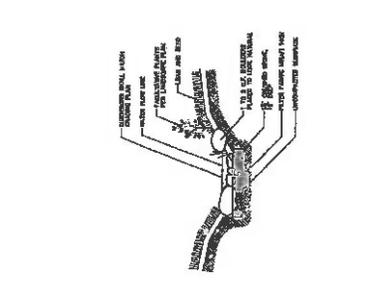
SkidBed Construction Exit
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



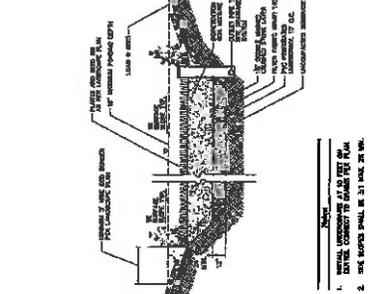
Armchairs Heights
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



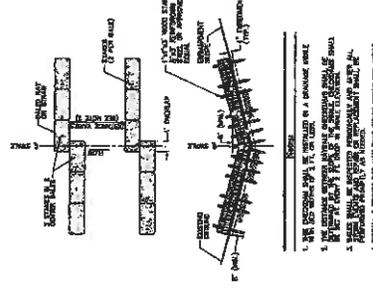
Stone Curb
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



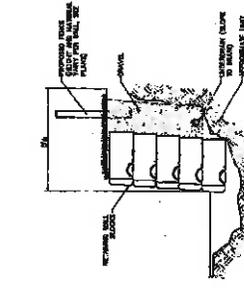
Representation Basin
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



Key Stake Checkdam (Narrow Swale)
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE

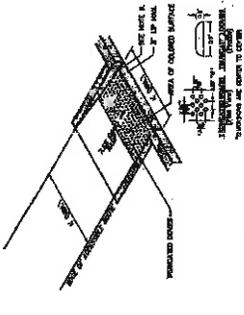


Key Stake Checkdam (Wide Swale)
 12" DIA. PIPE
 12" CONCRETE
 12" DIA. PIPE



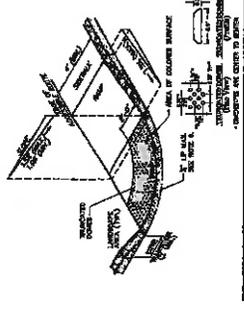
- Notes:**
1. SEE GENERAL NOTES FOR WALL CONSTRUCTION.
 2. SEE GENERAL NOTES FOR WALL CONSTRUCTION.
 3. SEE GENERAL NOTES FOR WALL CONSTRUCTION.

Modular Block Retaining Wall
 Sheet No. 10
 1/2" = 1'-0"



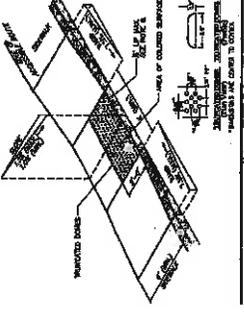
- Notes:**
1. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Accessible Curb Ramp (ACR) Type 'T'
 Sheet No. 11
 1/2" = 1'-0"



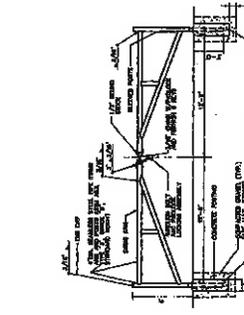
- Notes:**
1. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Accessible Curb Ramp (ACR) Type 'B'
 Sheet No. 12
 1/2" = 1'-0"



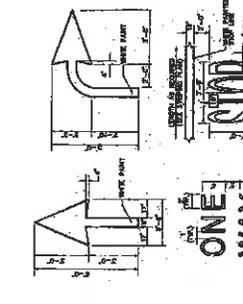
- Notes:**
1. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE CURB SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Accessible Curb Ramp (ACR) Type 'A'
 Sheet No. 13
 1/2" = 1'-0"



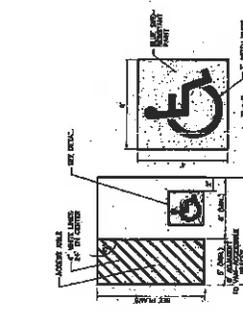
- Notes:**
1. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE GATE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Swing Gate (Dovetail)
 Sheet No. 14
 1/2" = 1'-0"



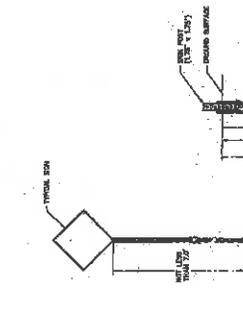
- Notes:**
1. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE SIGN SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

One Way
 Sheet No. 15
 1/2" = 1'-0"



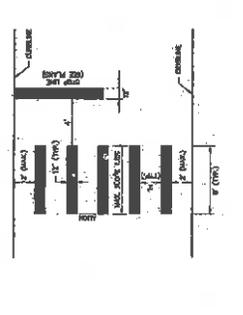
- Notes:**
1. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 9'6" AND A MINIMUM LENGTH OF 18'0".
 2. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 3. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 4. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Accessible Parking Space
 Sheet No. 16
 1/2" = 1'-0"



- Notes:**
1. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Sign Post - Type 'B'
 Sheet No. 17
 1/2" = 1'-0"



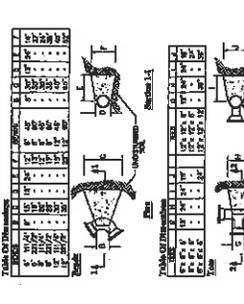
- Notes:**
1. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Sign Post - Type 'A'
 Sheet No. 18
 1/2" = 1'-0"



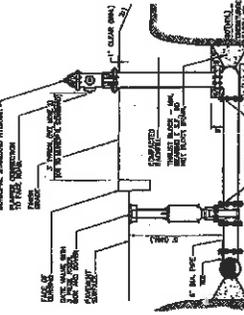
- Notes:**
1. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Concrete Post - Type 'B'
 Sheet No. 19
 1/2" = 1'-0"



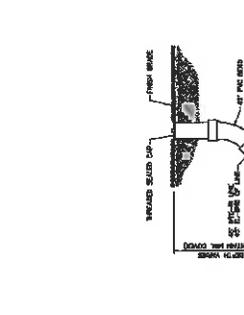
- Notes:**
1. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE PAINTED PAVEMENT MARKING SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Painted Pavement Marking - On Side
 Sheet No. 20
 1/2" = 1'-0"



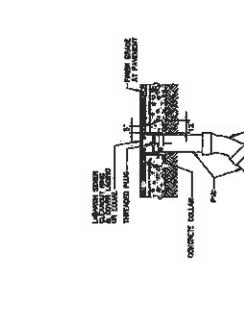
- Notes:**
1. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 9'6" AND A MINIMUM LENGTH OF 18'0".
 2. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 3. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 4. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
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 7. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE PARKING SPACE SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Accessible Parking Space
 Sheet No. 21
 1/2" = 1'-0"



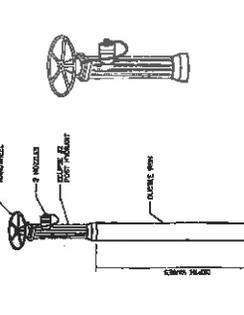
- Notes:**
1. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Sign Post - Type 'B'
 Sheet No. 22
 1/2" = 1'-0"



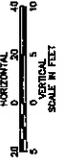
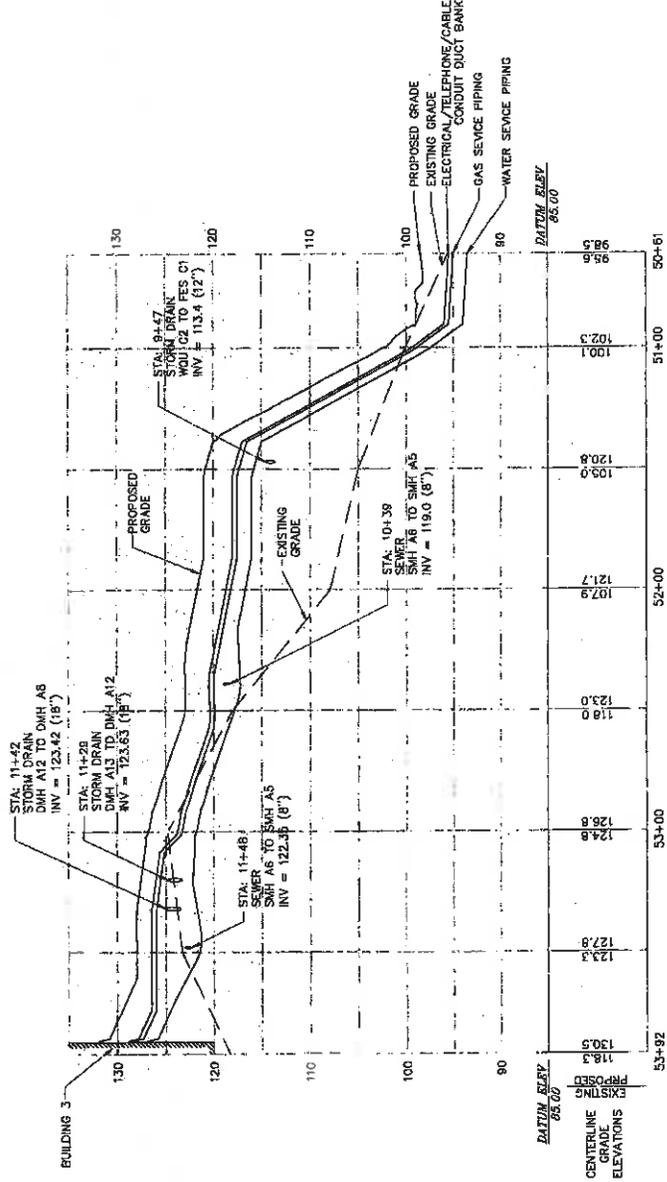
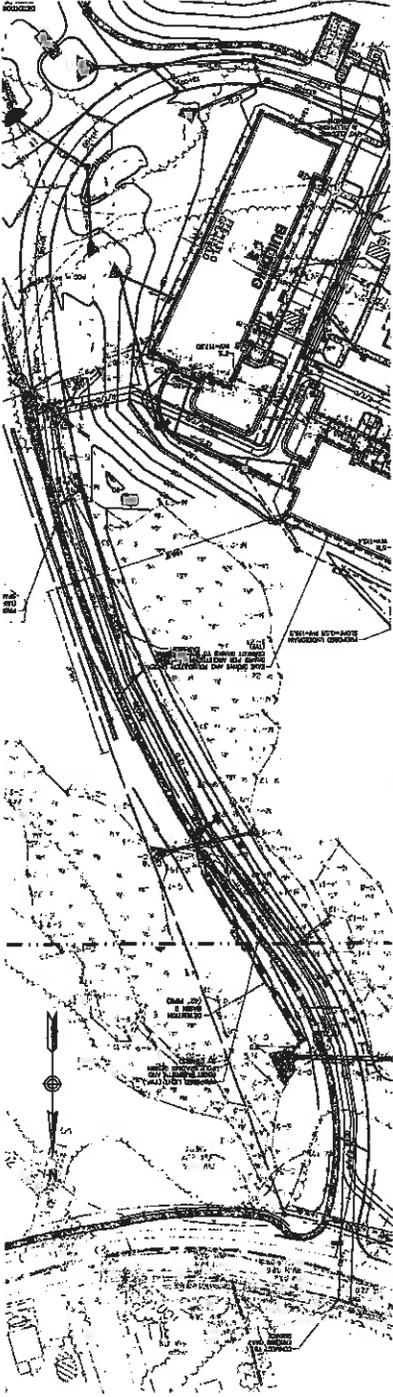
- Notes:**
1. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
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 6. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 7. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 8. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 9. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE CONCRETE POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Concrete Post - Type 'B'
 Sheet No. 23
 1/2" = 1'-0"



- Notes:**
1. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM HEIGHT OF 4" ABOVE THE FINISHED SURFACE.
 2. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM WIDTH OF 18" AT THE TOP AND 12" AT THE BOTTOM.
 3. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM SLOPE OF 1:1.
 4. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 5. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 6. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
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 9. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.
 10. THE SIGN POST SHALL BE CONSTRUCTED WITH A MINIMUM FINISH TO MATCH THE FINISH OF THE ADJACENT SURFACE.

Sign Post - Type 'A'
 Sheet No. 24
 1/2" = 1'-0"



| Station | Proposed | Existing |
|---------|----------|----------|
| 53+92 | 130.5 | 130.5 |
| 53+92 | 129.3 | 129.3 |
| 53+92 | 128.8 | 128.8 |
| 53+92 | 128.6 | 128.6 |
| 53+92 | 128.0 | 128.0 |
| 53+92 | 127.9 | 127.9 |
| 53+92 | 127.3 | 127.3 |
| 53+92 | 123.3 | 123.3 |
| 53+92 | 123.0 | 123.0 |
| 53+92 | 121.9 | 121.9 |
| 53+92 | 121.7 | 121.7 |
| 53+92 | 120.8 | 120.8 |
| 53+92 | 103.0 | 103.0 |
| 53+92 | 102.8 | 102.8 |
| 53+92 | 102.3 | 102.3 |
| 53+92 | 102.1 | 102.1 |
| 53+92 | 101.1 | 101.1 |
| 53+92 | 99.6 | 99.6 |
| 53+92 | 96.0 | 96.0 |

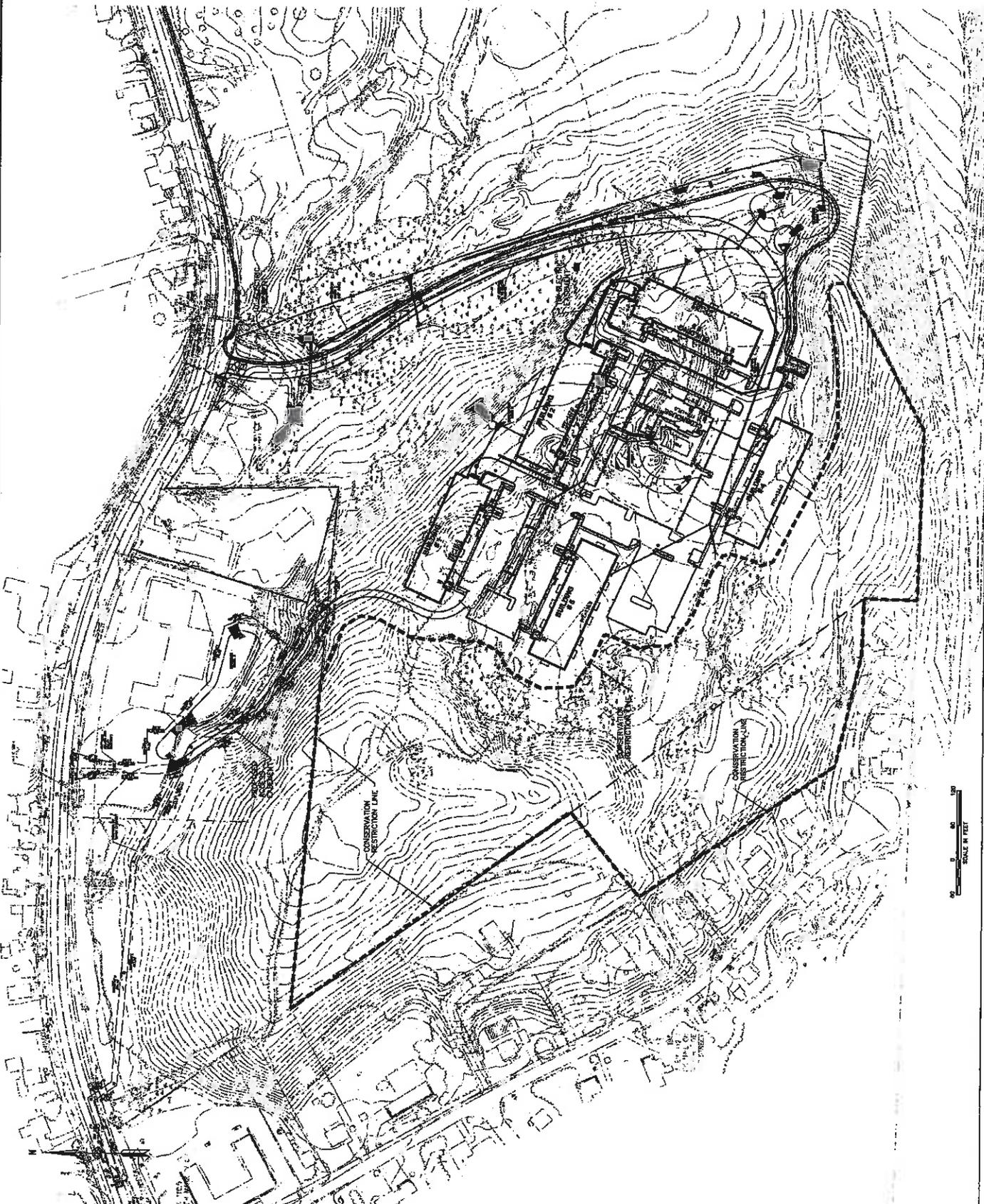
Amesbury Heights
 36 Everett Road and
 North Road North PER
 Amesbury, Massachusetts
 40x Approval

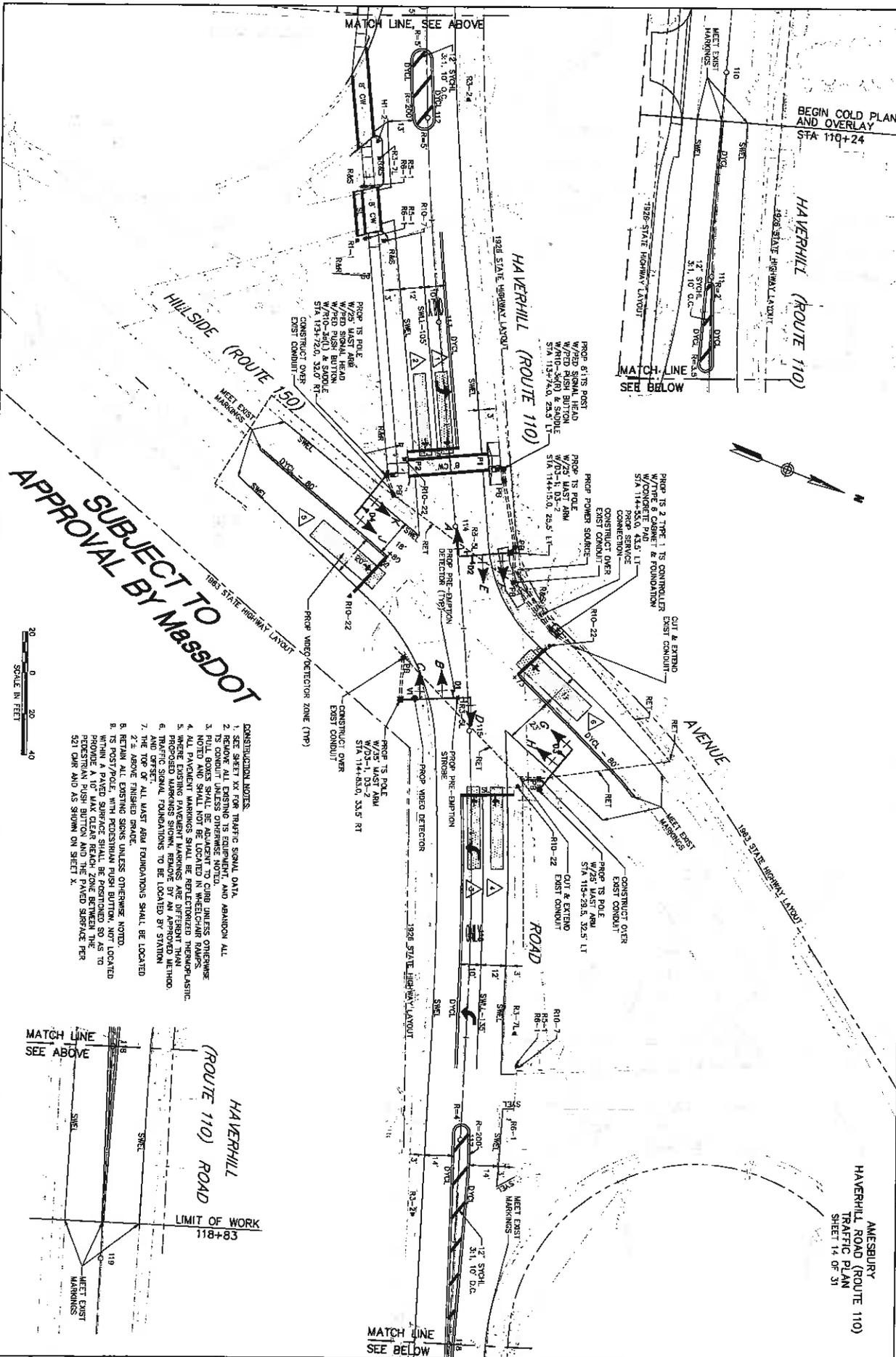
Not Approval for Construction
 Utility Profiles

| NO. | DATE | DESCRIPTION | BY | CHKD. |
|-----|------|-------------|----|-------|
| | | | | |
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| | | | | |

Project: **Amesbury Heights**
 36 Emerald Hill Road
 North East North Hill
 Amesbury, Massachusetts
 40% Approval

Not Approved for Construction
 Plans No. _____
 Easements Plan

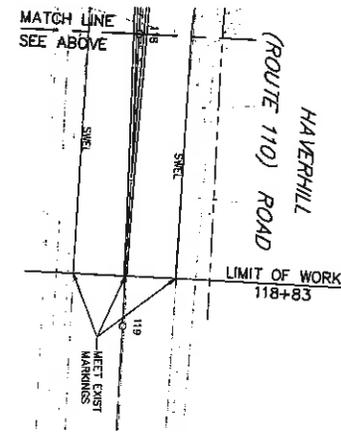




SUBJECT TO APPROVAL BY MASSDOT



- CONSTRUCTION NOTES:**
1. SEE SHEET XX FOR TRAFFIC SIGNAL DATA.
 2. REMOVE ALL EXISTING TRAFFIC SIGNAL EQUIPMENT, AND ABANDON ALL.
 3. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR PATHS.
 4. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
 5. PREPARE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN INDICATED ON THIS PLAN, THEY SHALL BE LOCATED BY STATION AND OFFSET.
 6. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
 7. THE TOP OF ALL MAST ARM FOUNDATIONS SHALL BE LOCATED 2.2' ABOVE FINISHED GRADE.
 8. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.
 9. REMOVE ALL EXISTING PEDESTRIAN PUSH BUTTONS NOT LOCATED WITHIN PAVED SURFACE. PROVIDE NEW PEDESTRIAN PUSH BUTTONS TO PROVIDE A 10' MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN ON SHEET X.



HAVERHILL ROAD (ROUTE 110)
 TRAFFIC PLAN
 SHEET 14 OF 31

\\\ms\proj\110-119\110-119.dwg (11/11/2011 11:00:00 AM)





DAVID M. WHITE, ARCHITECT
 54 East Freetown Lane
 P.O. Box 67
 New Bedford, Massachusetts 02745
 (508) 738-3333

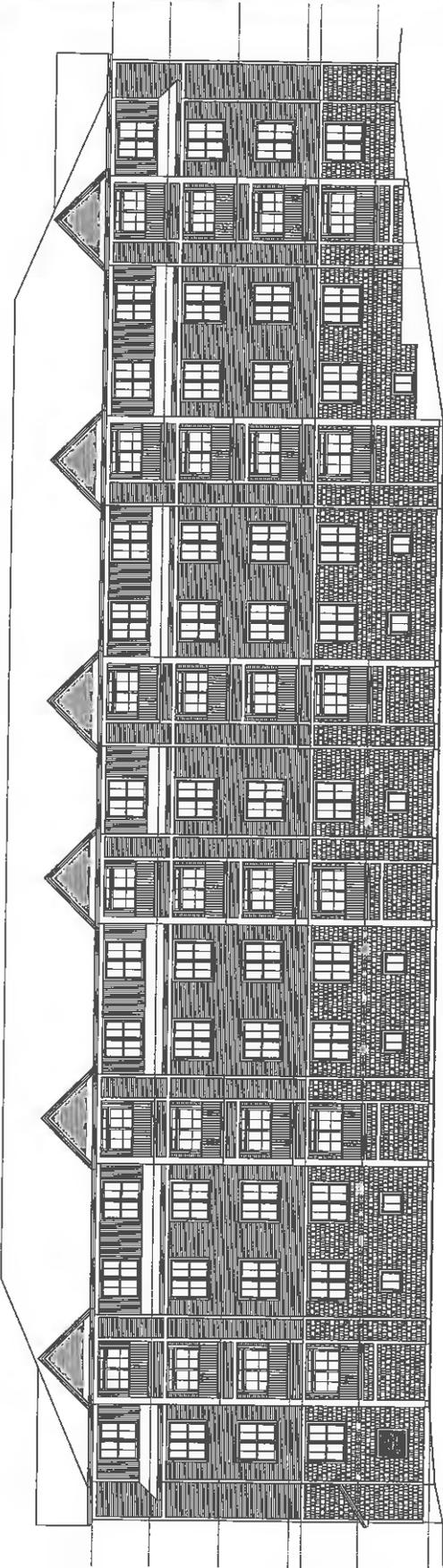
CONORAN THOMSON ASSOCIATES, LLC
 50 West Street, Suite 500
 Boston, MA 02105

AMBURST HEIGHTS
 Project Name
 Amburst, Massachusetts

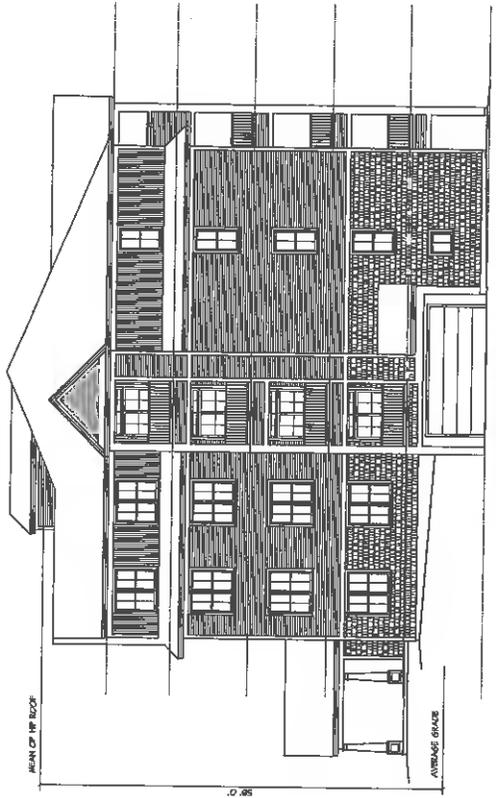
ELEVATIONS
 Building # 2
 Scale: 1/8" = 1'-0"
 Drawing No. 11003
 Date: 11/10/11

SHOWN

0800 11/11
 A.7



REAR ELEVATION



RIGHT SIDE ELEVATION

PLAN OF THE ROOF

AVERAGE GRADE



DAVID W. WHITE, ARCHITECT
 54 Todd Farm Lane
 P.O. Box 87
 New London, New Hampshire 05257
 License No. 1000102125

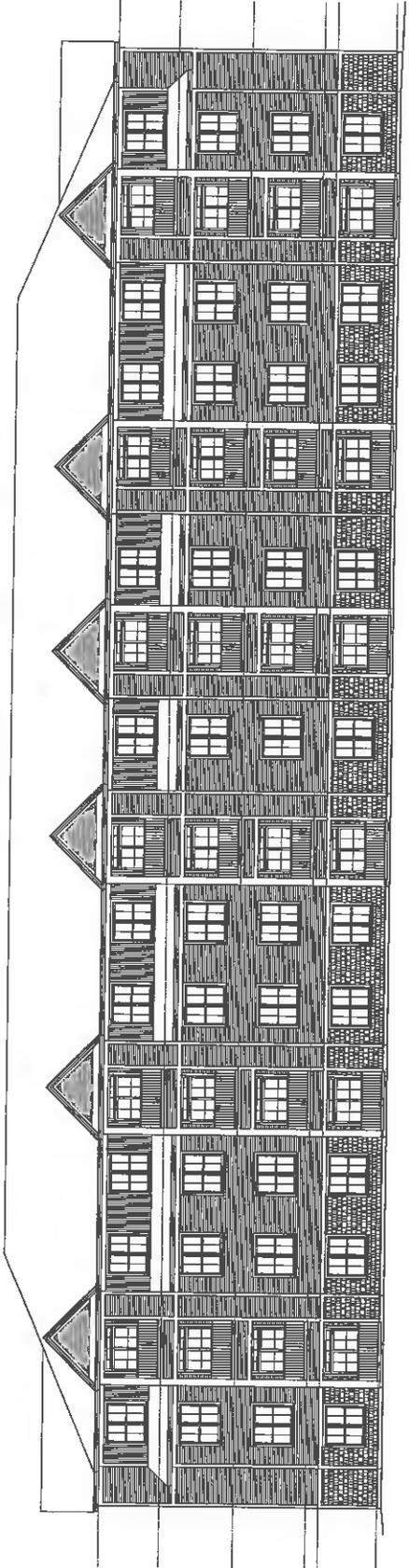
CORCORAN SIMON ASSOCIATES, LLC
 50 Mt. Water Street, Suite 200
 Dover, NH 03824

AMSBURY HEIGHTS
 125 West Road
 Amburyk, Massachusetts

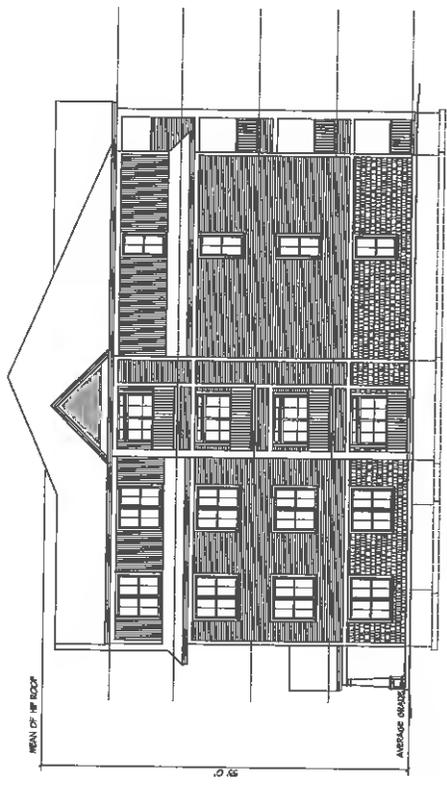
ELEVATIONS
 BUILDING 4 & 5
 SCALE: 1/8" = 1'-0"
 DRAWING NO. 18-025
 DATE: JANUARY 1, 2018

EXHIBIT

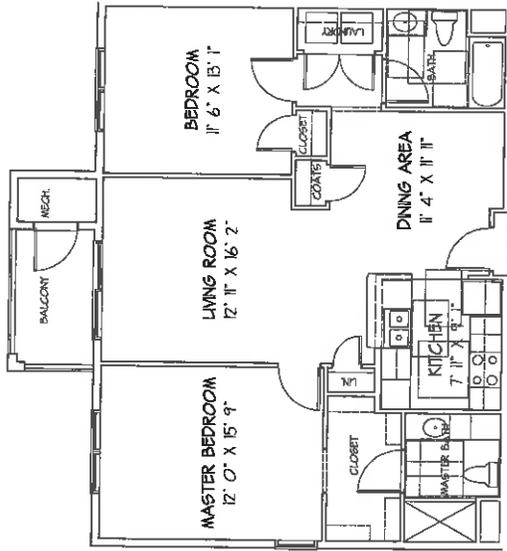
FIG. NO.
A.20



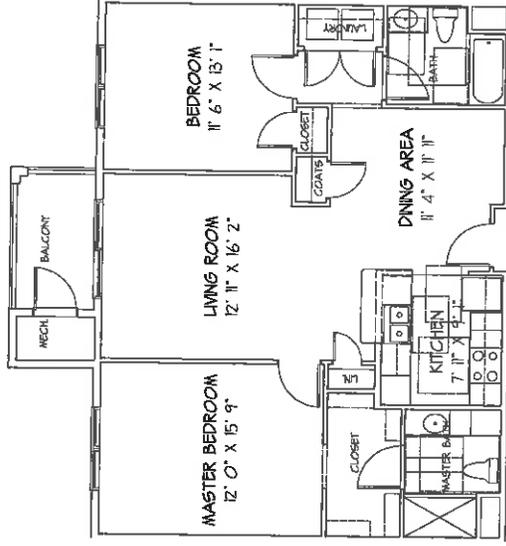
REAR ELEVATION



RIGHT SIDE ELEVATION



TWO BEDROOM UNIT B
 SCALE: 1/4" = 1' 0"
 81 GROSS SQUARE FEET



TWO BEDROOM UNIT A
 SCALE: 1/4" = 1' 0"
 82 GROSS SQUARE FEET



DAVID M. WHITE, ARCHITECT
 54 Trid Farm Lane
 P. O. Box 87
 New London, New Hampshire 03251
 603-763-535

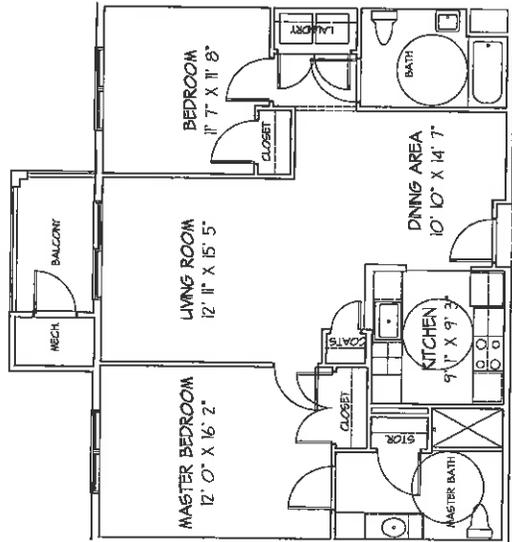
CORCORAN JENNISON ASSOCIATES, LLC
 50 Mount Vernon Street Suite 500
 Boston, Massachusetts 02125

AMESBURY HEIGHTS
 Hawhill Road
 Amesbury, Massachusetts

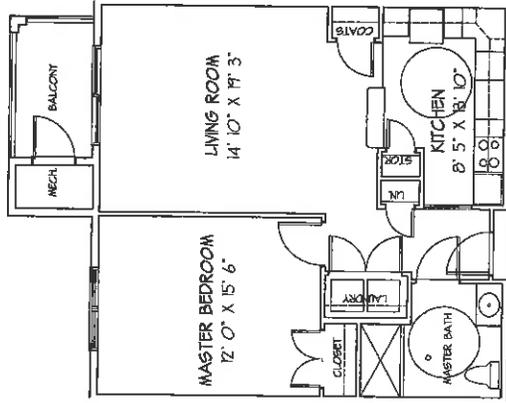
UNIT A & B PLANS
 Scale: 1/4" = 1' 0"
 Commission No. 14-03
 Date: November 1, 2016

REVISIONS:

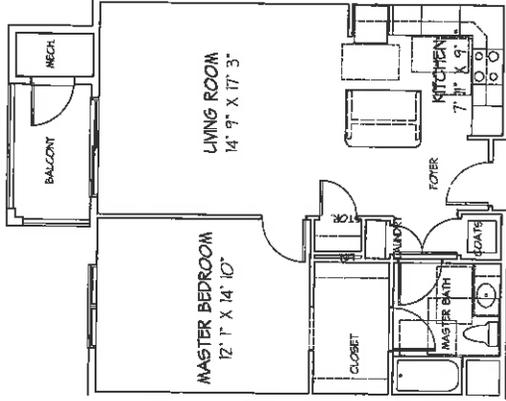
DRG. NO.
 U.I



TWO BEDROOM UNIT H2
 SCALE: 1/4" = 1' 0"
 831 GROSS SQUARE FEET



ONE BEDROOM UNIT HI
 SCALE: 1/4" = 1' 0"
 830 GROSS SQUARE FEET



ONE BEDROOM UNIT D
 SCALE: 1/4" = 1' 0"
 830 GROSS SQUARE FEET



DAVID M. WHITE, ARCHITECT
 54 Trull Farm Lane
 P. O. Box 87
 New London, New Hampshire 03251
 (603) 765-5335

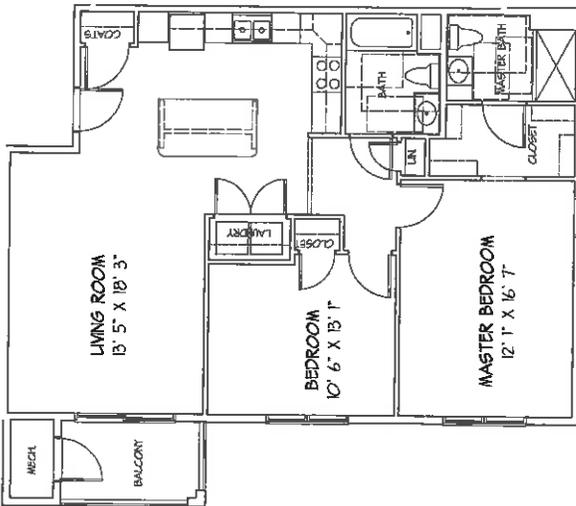
CORCORAN JENNISON ASSOCIATES, LLC
 50 Mount Vernon Street Suite 500
 Boston, Massachusetts 02125

ANESBURY HEIGHTS
 Havenhill Road
 Amesbury, Massachusetts

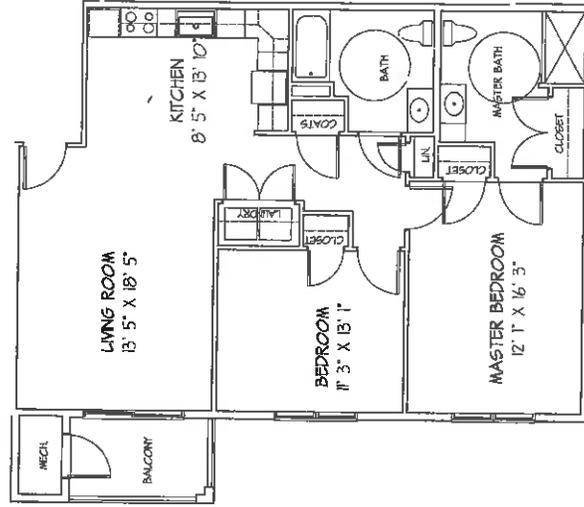
UNIT D, HI & H2 PLANS
 Scale: 1/4" = 1' 0"
 Commission No. 14-C3
 Date: November 1, 2014

REVISIONS:

DRG. NO.
 U.2



TWO BEDROOM UNIT C
 SCALE: 1/4" = 1' 0"
 150 GROSS SQUARE FOOTAGE



TWO BEDROOM UNIT H4
 SCALE: 1/4" = 1' 0"
 150 GROSS SQUARE FOOTAGE



DAVID M. WHITE, ARCHITECT
 SA Todd Fern Lane
 P. O. Box 87
 New London, New Hampshire 03257
 (603) 763-8355

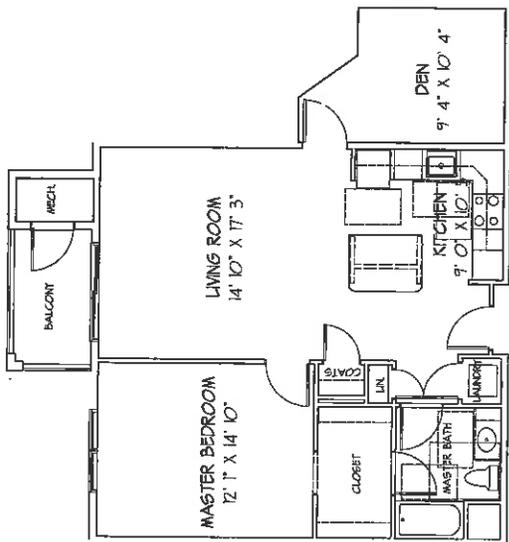
CORCORAN JENNEON ASSOCIATES, LLC
 80 Mount Vernon Street Suite 500
 Boston, Massachusetts 02125

AMESBURY HEIGHTS
 Hawthill Road
 Amesbury, Massachusetts

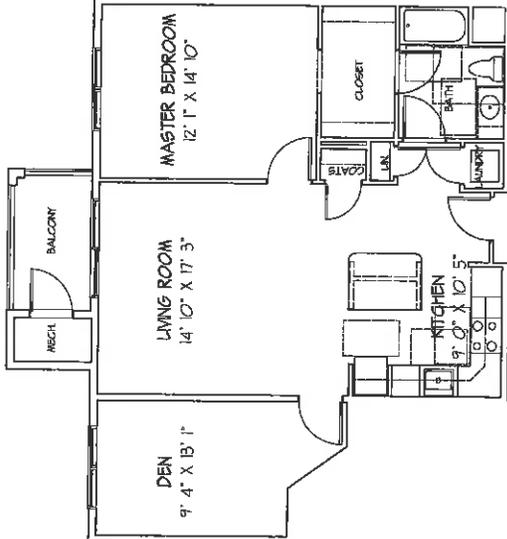
UNIT C & H4 PLANS
 Scale: 1/4" = 1' 0"
 Commission No. 14-03
 Date: November 1, 2014

REVISIONS:

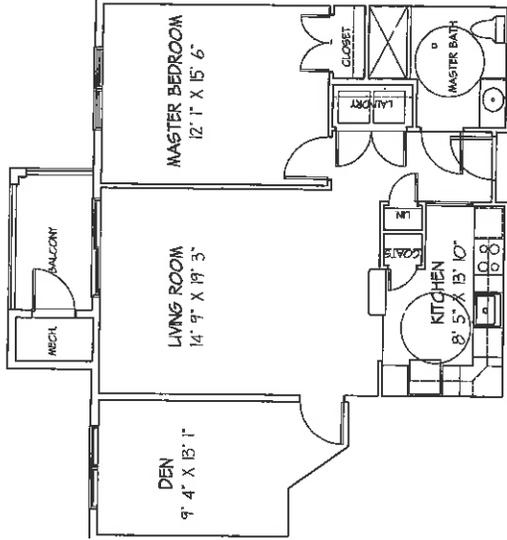
DRG. NO.
 U.3



ONE BEDROOM PLUS DEN UNIT F
 SCALE: 1/4" = 1' 0"
 160 GROSS SQUARE FEET



ONE BEDROOM PLUS DEN UNIT G
 SCALE: 1/4" = 1' 0"
 170 GROSS SQUARE FEET



ONE BEDROOM UNIT H3
 SCALE: 1/4" = 1' 0"
 170 GROSS SQUARE FEET



DAVID M. WHITE, ARCHITECT
 54 Todd Farm Lane
 P. O. Box 87
 New London, New Hampshire 03251
 (603) 763-2335

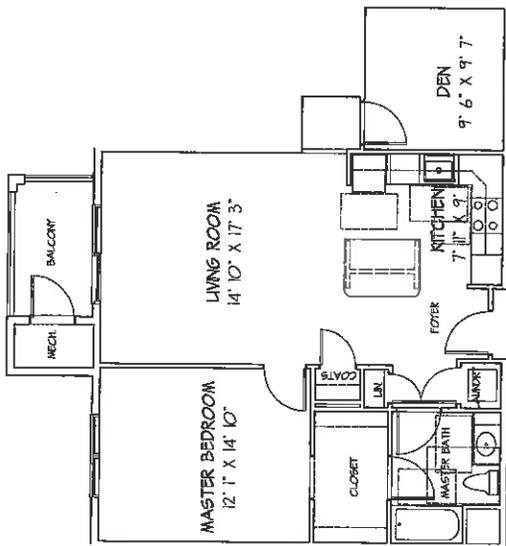
CORCORAN JENNECON ASSOCIATES, LLC
 50 Mount Vernon Street Suite 500
 Boston, Massachusetts 02125

ANESBURY HEIGHTS
 Howland Road
 Amesbury, Massachusetts

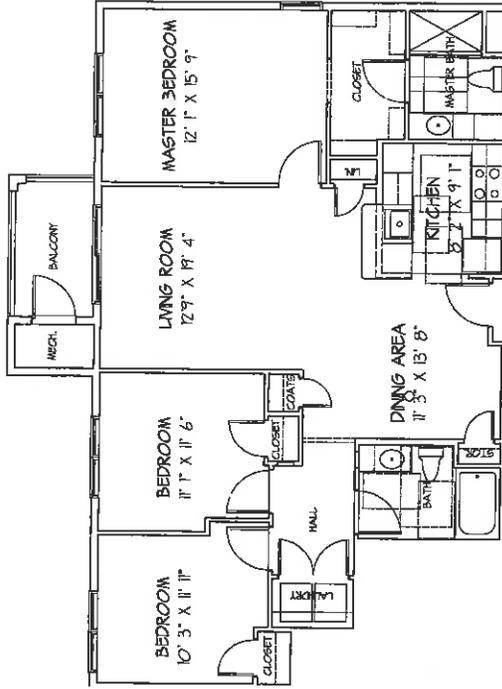
UNIT F, G & H3 P-ANS
 Scale: 1/4" = 1' 0"
 Commission No: H-03
 Date: November 1, 2014

REVISIONS:

DRG. NO.
 U.4



ONE BEDROOM PLUS DEN UNIT J
SCALE: 1/4" = 1'-0"
193 GROSS SQUARE FEET



THREE BEDROOM UNIT K
SCALE: 1/4" = 1'-0"
1719 GROSS SQUARE FEET



DAVID M. WHITE, ARCHITECT
54 Todd Farm Lane
P. O. Box 817
New London, New Hampshire 03251
(603) 765-8335

CORCORAN JENNIFER ASSOCIATES, LLC

150 Mount Vernon Street Suite 500
Boston, Massachusetts 02125

AMESBURY HEIGHTS

Howland Road
Amesbury, Massachusetts

UNIT J & K PLANS

Scale: 1/4" = 1'-0"
Commission No: 14-03
Date: November 1, 2014

REVISIONS:

DRG. NO.

U.5

TO:

Owner:

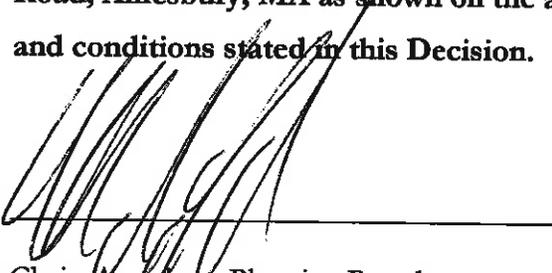
Boston North Properties, LLC
98 Elm Street, Salisbury, MA 01952

Applicant:

Corcoran & Jennison Associates, Inc
150 Mount Vernon Street, Suite 500
Boston, MA 02125

PLANNING BOARD VOTE:

On 4/13/2015, the Amesbury Planning Board voted 6-0 in favor of the approval of the Site Plan, as amended, for a 240 unit multi-family residential development at 36 Haverhill Road, Amesbury, MA as shown on the approved Site Plan subject to the findings, waivers and conditions stated in this Decision.



Chair, Amesbury Planning Board

Filed with the City Clerk on _____

City Clerk

A Building Permit is required for any construction or remodeling. It is your responsibility to file Decision with the Registry of Deeds and to record the plans after endorsement; forms may be obtained from the City Clerk's Office.

Any appeal shall be made pursuant to Mass. General Laws, Section 17, Chapter 40A, and shall be filed within twenty (20) days after the date of filing of such notice in the City Clerk's Office.

Amesbury Gateway Village
Smart Growth Overlay District - Plan Approval
36 Haverhill Road, Amesbury, MA 01913

Compliance with Conditions Set Forth by the Amesbury Planning Board Decision prior to Issuance of a Building Permit

SIGN-OFF FORM (PB200601-BUILDING)

(IMPORTANT: IT IS THE RESPONSIBILITY OF THE PERSON SEEKING BUILDING PERMIT TO GET THE SIGN OFF FROM EACH OF THE DEPARTMENTS LISTED BELOW. THE TOWN WILL NOT BE HELD RESPONSIBLE FOR LACK OF ACTION ON THE APPLICANT'S BEHALF. BEFORE SIGNOFF, COPIES OF THE RECORDED DECISION AND THE APPROVED PLAN SET SHOULD BE SUBMITTED TO THE PLANNING OFFICE.)

By signing below, the following Town Department/Town Officials, agree that the conditions of this permit prior to making application for building permit have been completed and recommend that an application for a building permit for the units indicated below may be granted:

Engineering Department/Town Engineer _____

Department of Public Works/DPW Director _____

Planning Office/City Planner _____

Conservation Commission/Agent _____

Police Department _____

Fire Department _____

Compliance with Conditions of the Amesbury Planning Board Decision prior to Issue of Certificate of Occupancy

SIGN-OFF FORM (PB200602-OCCUPANCY)

(IMPORTANT: IT IS THE RESPONSIBILITY OF THE PERSON SEEKING CERTIFICATE OF OCCUPANCY TO GET THE SIGN OFF FROM EACH OF THESE DEPARTMENTS. THE TOWN WILL NOT BE HELD RESPONSIBLE FOR LACK OF ACTION ON THAT PERSON'S BEHALF)

The following Town Department/Town Officials, by signing below, agree that the conditions of this permit from the start of construction to prior to issue of occupancy permit have been completed and recommend that the Certificate of Occupancy be granted for the units indicated on this form.

Engineering Department/Town Engineer _____

Department of Public Works/DPW Director _____

Planning Office/City Planner _____

Conservation Commission/Agent _____

Police Department _____

Fire Department _____