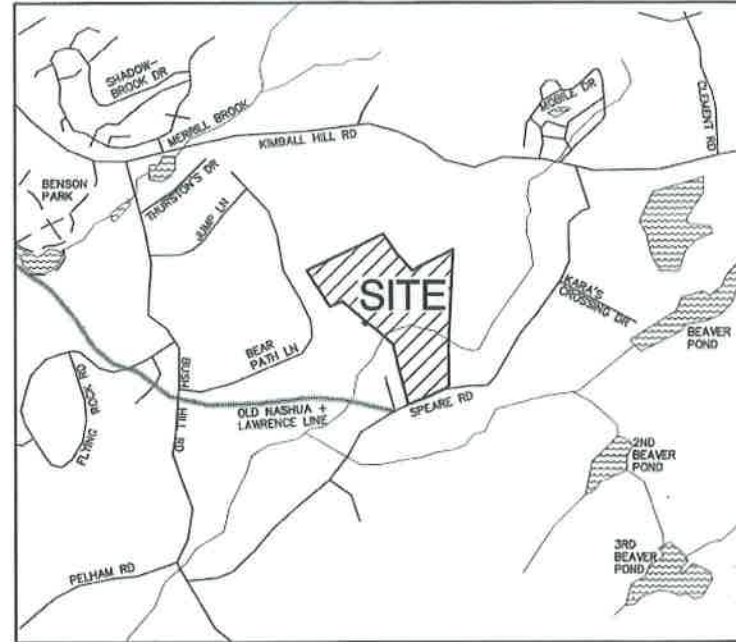




# OPEN SPACE DEVELOPMENT "BROOKVIEW" TAX MAP 186, LOT 13 SPEARE ROAD, HUDSON, NH

## SHEET INDEX

CS	COVER SHEET
Y1-Y2	YIELD PLANS
OV1	OVERVIEW SUBDIVISION PLAN
A1-A3	SUBDIVISION PLAN
C1-C3	EXISTING CONDITIONS PLAN
C4	GRADING, DRAINAGE AND UTILITY PLAN
P1	PLAN AND PROFILE
H1	HIGHWAY PLAN
X1-X2	CROSS SECTIONS
F1	10,000 GALLON FIRE CISTERN DETAILS
D1-D3	DETAIL SHEETS
E1	EROSION AND SEDIMENT CONTROL DETAILS



LOCUS MAP  
SCALE 1" = 1000'

**CIVIL ENGINEER AND SURVEYOR**  
**JONES & BEACH ENGINEERS, INC.**  
 85 PORTSMOUTH AVENUE  
 PO BOX 219  
 STRATHAM, NH 03885  
 (603) 772-4748  
 CONTACT: JOSEPH CORONATI  
 EMAIL: JCORONATI@JONESANDBEACH.COM

**WETLAND CONSULTANT**  
**GOVE ENVIRONMENTAL SERVICES, INC.**  
 8 CONTINENTAL DRIVE, UNIT H  
 EXETER, NH 03833  
 (603) 778-0644  
 CONTACT: JIM GOVE, CSS, CWS  
 JGOVE@GESINC.BIZ

**ELECTRIC**  
 PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE  
 74 OLD DOVER ROAD  
 ROCHESTER, NH 03867  
 (603) 332-4227

**TELEPHONE**  
 FAIRPOINT COMMUNICATIONS  
 1575 GREENLAND ROAD  
 GREENLAND, NH 03840  
 (603) 427-5525  
 CONTACT: JOE CONSIDINE

**TELEPHONE**  
 FAIRPOINT COMMUNICATIONS  
 100 TRI CITY ROAD  
 SOMERWORTH, NH 03878  
 ATTN: DAVE KESTNER  
 (603) 743-1114

**CABLE TV**  
 COMCAST COMMUNICATION CORPORATION  
 334-B CALEF HIGHWAY  
 EPPING, NH 03042-2325  
 (603) 679-5695



## GENERAL LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINES
---	---	SETBACK LINES
---	---	CENTERLINE
---	---	FRESHWATER WETLANDS LINE
---	---	TIDAL WETLANDS LINE
---	---	STREAM CHANNEL
---	---	TREE LINE
---	---	STONEWALL
---	---	BARBED WIRE
---	---	FENCE
---	---	STOCKADE FENCE
---	---	SOIL BOUNDARY
---	---	AQUIFER PROTECTION LINE
---	---	FLOOD PLAIN LINE
---	---	ZONELINE
---	---	EASEMENT
---	---	MAJOR CONTOUR
---	---	MINOR CONTOUR
---	---	EDGE OF PAVEMENT
---	---	VERTICAL GRANITE CURB
---	---	SLOPE GRANITE CURB
---	---	CAPE COD BERM
---	---	POURED CONCRETE CURB
---	---	SILT FENCE
---	---	DRAINAGE LINE
---	---	SEWER LINE
---	---	SEWER FORCE MAIN
---	---	GAS LINE
---	---	WATER LINE
---	---	WATER SERVICE
---	---	OVERHEAD ELECTRIC
---	---	UNDERGROUND ELECTRIC
---	---	GUARDRAIL
---	---	UNDERDRAIN
---	---	FIRE PROTECTION LINE
---	---	THRUST BLOCK
---	---	IRON PIPE/IRON ROD
---	---	DRILL HOLE
---	---	IRON ROD/DRILL HOLE
---	---	STONE/GRANITE BOUND
---	---	PAVEMENT SPOT GRADE
---	---	CURB SPOT GRADE
---	---	BENCHMARK (TBM)
---	---	DOUBLE POST SIGN
---	---	SINGLE POST SIGN
---	---	WELL
---	---	TEST PIT
---	---	FAILED TEST PIT
---	---	MONITORING WELL
---	---	PERC TEST
---	---	PHOTO LOCATION
---	---	TREES AND BUSHES
---	---	UTILITY POLE
---	---	LIGHT POLES
---	---	DRAIN MANHOLE
---	---	SEWER MANHOLE
---	---	HYDRANT
---	---	WATER GATE
---	---	WATER SHUT OFF
---	---	REDUCER
---	---	SINGLE GRATE CATCH BASIN
---	---	DOUBLE GRATE CATCH BASIN
---	---	TRANSFORMER
---	---	CULVERT W/WINGWALLS
---	---	CULVERT W/FLARED END SECTION
---	---	CULVERT W/STRAIGHT HEADWALL
---	---	STONE CHECK DAM
---	---	DRAINAGE FLOW DIRECTION
---	---	4K SEPTIC AREA
---	---	WETLAND IMPACT
---	---	VEGETATED FILTER STRIP
---	---	RIPRAP
---	---	OPEN WATER
---	---	FRESHWATER WETLANDS
---	---	TIDAL WETLANDS
---	---	STABILIZED CONSTRUCTION ENTRANCE
---	---	CONCRETE
---	---	GRAVEL
---	---	SNOW STORAGE
---	---	RETAINING WALL

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**APPLICANT**  
 TUCK REALTY CORP.  
 149 EPPING ROAD, SUITE 2A  
 EXETER, NH 03833

**TOTAL LOT AREA**  
 1,447,050 SQ. FT.  
 33.22 ACRES

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Design: JAC Draft: PSL Date: 7/10/16  
 Checked: JAC Scale: AS NOTED Project No.: 15031  
 Drawing Name: 15031-PLAN.SET.dwg  
 THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.



REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	6/3/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**

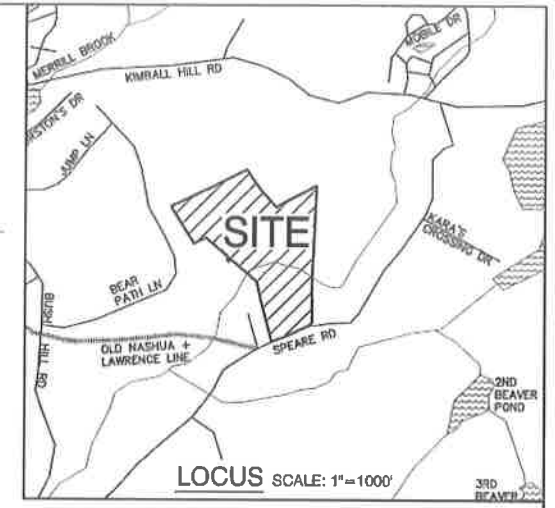
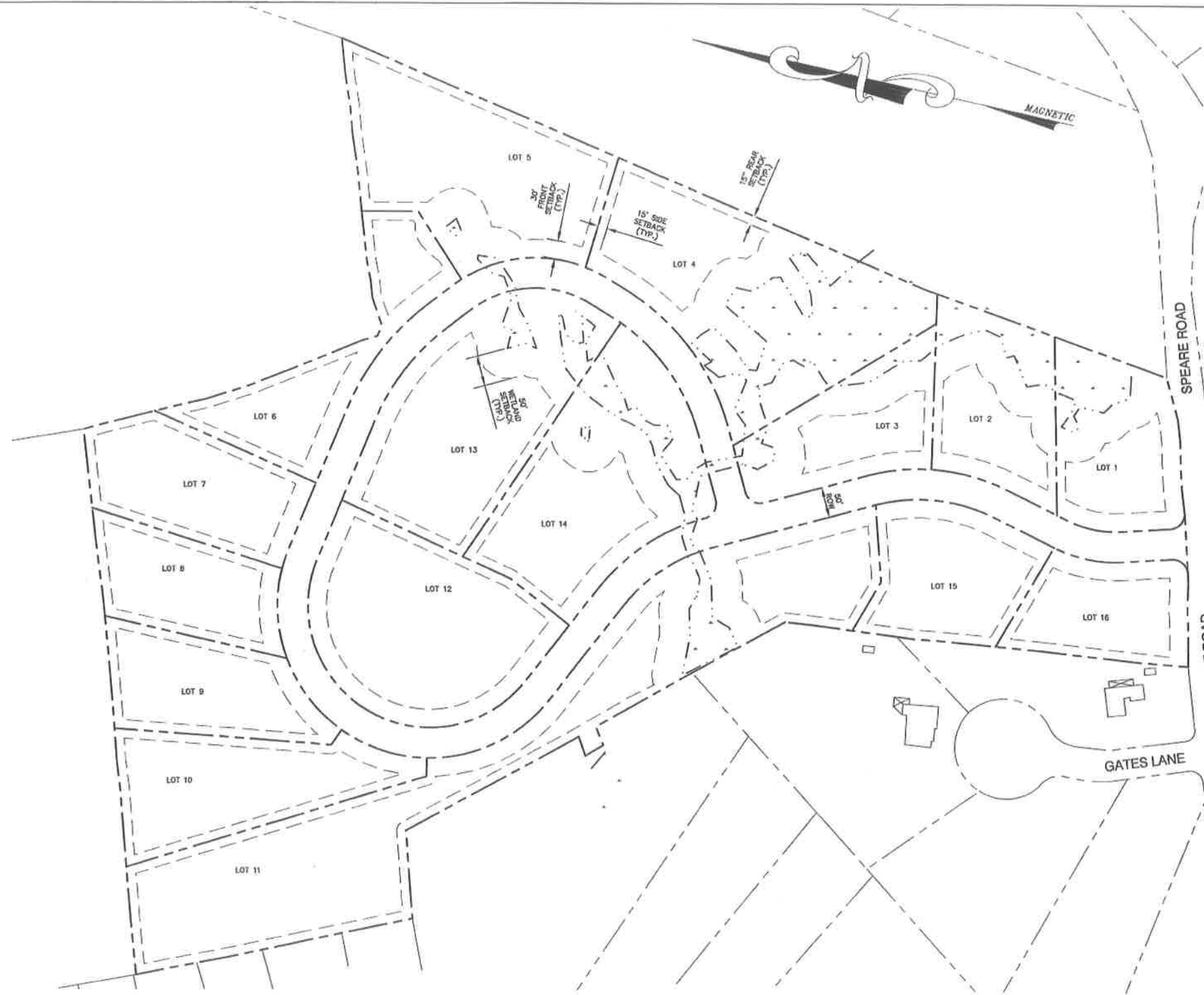
85 Portsmouth Ave. PO Box 219 Stratham, NH 03885  
 Civil Engineering Services  
 603-772-4748 FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **COVER SHEET**  
 Project: **BROOKVIEW SUBDIVISION  
SPEARE ROAD, HUDSON, NH 03051**  
 Owner of Record: **DOUGLAS S. SANDERSON  
11 NERSESIAN WAY, HAMPTON, NH 03842**

DRAWING No. **CS**  
 SHEET 1 OF 20  
 JBE PROJECT NO. 15031

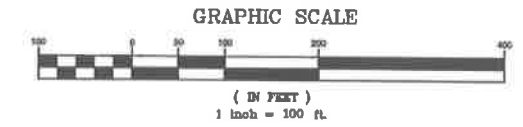
"BROOKVIEW", HUDSON, NH  
 JBE # 15031  
 REVISION 6, 7/6/16

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LOT NO.	GROSS AREA (SF)	WETLANDS (SF)	SLOPES GREATER THAN 25% (SF)	NET AREA (SF)
1	56216	11473	728	44016
2	56672	12326	90	44255
3	53064	7173	912	44979
4	128240	49858	3394	74979
5	101081	793	3108	97180
6	58313	0	5900	52412
7	59524	0	12313	47211
8	47341	0	1219	46122
9	52132	0	1539	50593
10	68048	0	3140	64909
11	202574	7531	56683	138361
12	101488	0	5196	96291
13	107041	5787	5947	95307
14	102790	9604	17063	76123
15	55256	0	4709	50547
16	44779	0	541	44238

- SUBDIVISION NOTES:**
- THE INTENT OF THIS PLAN IS TO PROVIDE A YIELD PLAN TO SHOW A CONVENTIONAL SUBDIVISION OF 16 LOTS ON THIS PROPERTY TO DETERMINE THE BASE DENSITY FOR A CONSERVATION SUBDIVISION.
  - ZONING DISTRICT: GENERAL  
 LOT AREA MINIMUM = 43,560 SF CONTIGUOUS UPLAND WITHOUT WATER AND DISITE SEWAGE DISPOSAL.  
 LOT FRONTAGE MINIMUM = 150'  
 BUILDING SETBACKS (MINIMUM):  
 FRONT SETBACK = 30'  
 SIDE SETBACK = 15'  
 REAR SETBACK = 15'  
 WETLAND SETBACK FOR IMPERVIOUS = 50'  
 WETLAND SETBACK FOR SEPTIC = 100'  
 MAXIMUM BUILDING HEIGHT = 36'
  - SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE.



**APPLICANT**  
 TUCK REALTY CORP.  
 149 EPPING ROAD, SUITE 2A  
 EXETER, NH 03833

**TOTAL LOT AREA**  
 1,447,050 SQ. FT.  
 33.22 ACRES

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING:

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Design: JAC | Draft: PSL | Date: 7/10/16  
 Checked: JAC | Scale: AS SHOWN | Project No.: 15031  
 Drawing Name: 15031-PLAN SET.dwg  
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8	7/5/16	REVISED PER TOWN COMMENTS	PSL
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5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
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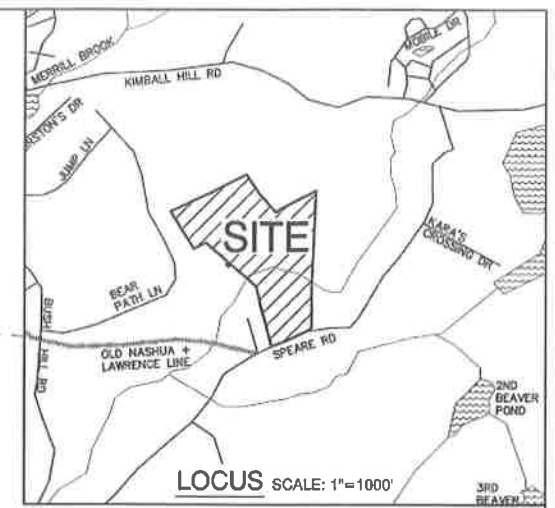
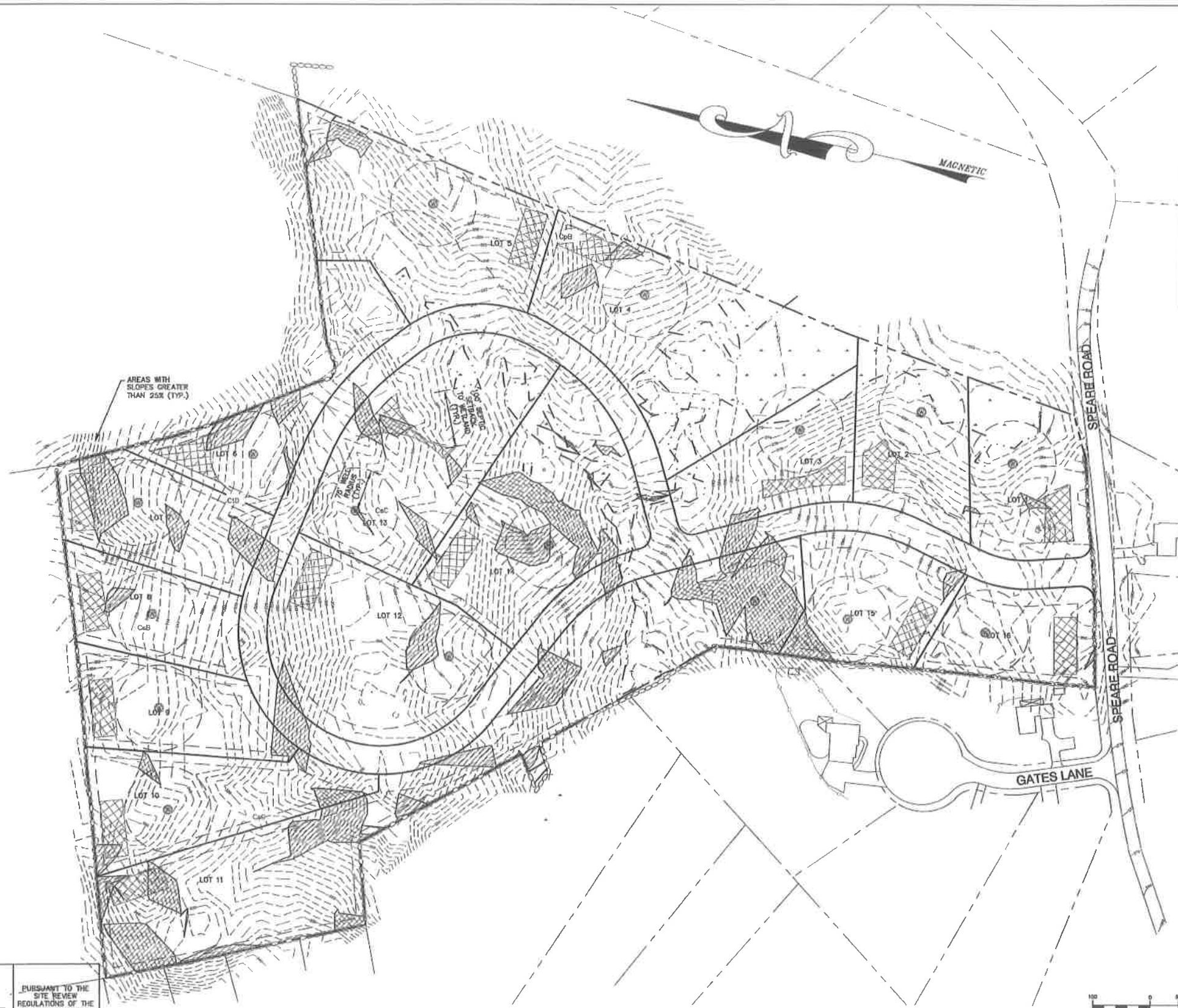
Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**  
 Civil Engineering Services  
 85 Portsmouth Ave. | 603-772-4746  
 PO Box 218 | Stratham, NH 03886 | FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **YIELD PLAN**  
 MAP 186, LOT 13  
 Project: **BROOKVIEW SUBDIVISION**  
 SPEARE ROAD, HUDSON, NH 03051  
 Owner of Record: **DOUGLAS S. SANDERSON**  
 11 NERSESIAN WAY, HAMPTON, NH 03842

DRAWING No. **Y1**  
 SHEET 2 OF 20  
 JBE PROJECT NO. 15031

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**APPLICANT**  
 TUCK REALTY CORP.  
 148 EPPING ROAD, SUITE 2A  
 EXETER, NH 03833

**TOTAL LOT AREA**  
 1,447,050 SQ. FT.  
 33.22 ACRES

APPROVED BY THE HUDSON, NH PLANNING BOARD

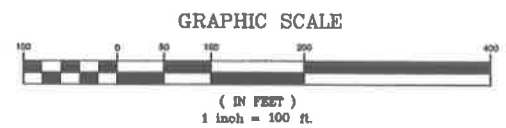
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SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

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7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**

85 Portsmouth Ave. | Civil Engineering Services | 603-772-4746  
 PO Box 216 | Stratham, NH 03886 | FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **YIELD PLAN**  
 MAP 186, LOT 13

Project: **BROOKVIEW SUBDIVISION**  
 SPEARE ROAD, HUDSON, NH 03051

Owner of Record: **DOUGLAS S. SANDERSON**  
 11 NERSESIAN WAY, HAMPTON, NH 03842

DRAWING No. **Y2**

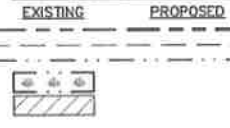
SHEET 3 OF 20  
 JBE PROJECT NO. 15031

LOT NO.	GROSS AREA (SF)	WETLANDS (SF)	SLOPES GREATER THAN 25% (SF)	NET AREA (SF)
13-1	25938	1769	589	23580
13-2	31743	2593	182	28968
13-3	29592	0	0	29592
13-4	30247	351	0	29896
13-5	29600	0	0	29600
13-6	39163	0	17367	21796
13-7	21945	0	0	21945
13-8	22567	0	0	22567

**ABUTTERS NOT SHOWN:**

- TAX MAP 177 LOT 51 KANSTANTON AUSAANKKAI 47 BEAR PATH LANE HUDSON, NH 03051 BK 8009/PG 1795
- TAX MAP 177 LOT 52 TODD J. & KATHRYN H. COPPI 45 BEAR PATH LANE HUDSON, NH 03051 BK 7008/PG 1938
- TAX MAP 165 LOT 66 MATTHEW H. MEDEROS LAURIE SCODRAR 43 BEAR PATH LANE HUDSON, NH 03051 BK 8573/PG 1640
- TAX MAP 165 LOT 67 ROBERT J. FLOIR, SR. JEANNE A. FLOIR 41 BEAR PATH LANE HUDSON, NH 03051 BK 6377/PG 0216
- TAX MAP 165 LOT 68 CHARLES F. & LISA D. ANDERSON 39 BEAR PATH LANE HUDSON, NH 03051 BK 8871/PG 2031
- TAX MAP 186 LOT 69 MICHAEL PATRICK JOHNSTON LARI L. NELSON-JOHNSTON 37 BEAR PATH LANE HUDSON, NH 03051 BK 8660/PG 1747
- TAX MAP 186 LOT 70 LEE A. & JULIE A. SHAPPY 35 BEAR PATH LANE HUDSON, NH 03051 BK 6186/PG 0590
- TAX MAP 186 LOT 28 NORMAN & KENDALL CAILLER 47 SPEARE ROAD HUDSON, NH 03051 BK 8037/PG 0333
- TAX MAP 186 LOT 29 MATTHEW & CHARLENE BROWN 45 SPEARE ROAD HUDSON, NH 03051 BK 8808/PG 0039
- TAX MAP 186 LOT 30 DAVID & KAREN BURNELL 41 SPEARE ROAD HUDSON, NH 03051 BK 2791/PG 0109
- TAX MAP 186 LOT 30-1 DAVID & KAREN BURNELL 41 SPEARE ROAD HUDSON, NH 03051 BK 2791/PG 0105 (09/12/00)
- TAX MAP 178 LOT 30 WALTER S. ABUCIEWICZ TH. MURRAYANN ABUCIEWICZ TR. 63 KIMBALL HILL ROAD HUDSON, NH 03051 BK 8687/PG 1321
- TAX MAP 186 LOT 1 TOWN OF HUDSON 12 SCHOOL STREET HUDSON, NH 03051 BK 6992/PG 0612
- TAX MAP 186 LOT 2 JAME L. WHELAN 145 MEADOWSWEET COURT WINSTON SALEM, NC 27107 BK 6886/PG 0635
- TAX MAP 186 LOT 6 JAMES E. & KIM M. NORMAND 4 GATES LANE HUDSON, NH 03051 BK 7329/PG 0942
- TAX MAP 186 LOT 6 JAMES D. & KRISTIN M. PAQUETTE 2 GATES LANE HUDSON, NH 03051 BK 7303/PG 0439

**GENERAL LEGEND**



**DESCRIPTION**  
 PROPERTY LINES  
 SETBACK LINES  
 FRESHWATER WETLANDS LINE  
 FRESHWATER WETLANDS  
 SLOPES OVER 25%

**CERTIFICATION:**

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 803.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

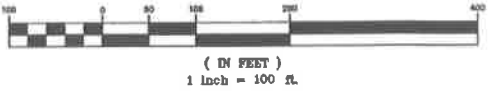
THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.



DAVID M. COLLIER, LLS 892  
 ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 7/5/16

**GRAPHIC SCALE**



**PLAN REFERENCES:**

1. LOT LINE RELOCATION PLAN-SPEARE ROAD, HUDSON, N.H. FOR FIR REALTY DATED JUNE 1985 AND RECORDED AS PLAN #19085 H.C.R.D.
2. NHDOT R.O.W. PLAN - NASHUA - HUDSON CIRCUMFERENTIAL HIGHWAY, N.H. TURNPIKE PROJECT 10625-J, #10644A SOUTHERN SEGMENT, FILE 55139 APPROVAL DATE 5-14-91. PROJECT 10625-J, #10644A SOUTHERN SEGMENT, FILE 55139 APPROVAL DATE 5-14-91.

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING:

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

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PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

Design: JAC Draft: PSL Date: 7/10/16  
 Checked: JAC Scale: AS SHOWN Project No.: 15031  
 Drawing Name: 16031-PLAN SET.dwg  
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REV.	DATE	REVISION	BY
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7	8/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	6/31/16	REVISED PER TOWN COMMENTS	PSL
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4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL
REV.	DATE	REVISION	BY

Designed and Produced in NH  
**J/B Jones & Beach Engineers, Inc.**  
 Civil Engineering Services  
 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885  
 603-772-4746 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **OVERVIEW SUBDIVISION PLAN**  
 MAP 186, LOT 13  
 Project: **BROOKVIEW SUBDIVISION**  
 SPEARE ROAD, HUDSON, NH 03051  
 Owner of Record: **DOUGLAS S. SANDERSON**  
 11 NERSSESIAN WAY, HAMPTON, NH 03842

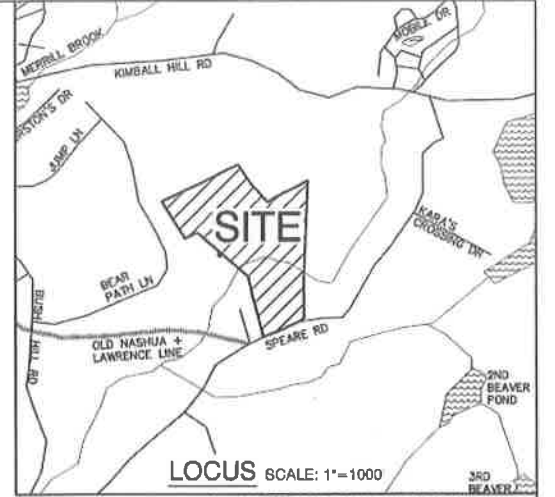
DRAWING No. **OV1**  
 SHEET 4 OF 20  
 JBE PROJECT NO. 15031

OWNER SIGNATURE: \_\_\_\_\_  
 FOR DOUGLAS S. SANDERSON, 11 NERSSESIAN WAY, HAMPTON, NH 03842

APPLICANT  
 TUCK REALTY CORP.  
 149 EPPING ROAD, SUITE 2A  
 EXETER, NH 03833

TOTAL LOT AREA  
 1,447,050 SQ. FT.  
 33.22 ACRES

3. NIDES APPROVAL FOR SUBDIVISION PERMIT NO. DATED \_\_\_\_\_
4. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
5. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33011005160, DATED SEPTEMBER 25, 2009.
6. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.), THIS DOCUMENT IS TO BE KEPT ON-SITE AT ALL TIMES AND UPDATED AS REQUIRED.
7. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
8. ALL CONSTRUCTION WILL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND MINIMUM STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
9. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
10. GRANITE BOUNDS TO BE SET AT ALL ROADWAY POINTS OF CURVATURE AND TANGENCY. IRON RODS WITH SURVEY CAPS TO BE SET AT ALL PROPERTY CORNERS AND ANGLE POINTS, UNLESS OTHERWISE INDICATED. ALL MONUMENTS SET ARE 5/8" IRON RODS WITH ALUMINUM CAPS MARKED "JONES & BEACH ENGINEERS BOUNDARY, DO NOT DISTURB, STRATHAM, N.H." AS SHOWN.
11. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
12. UPON APPROVAL BY THE TOWN, THE PROPOSED ROAD WILL BE CONVEYED TO THE TOWN.
13. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.
14. ALL BOOK AND PAGE NUMBERS REFER TO THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
15. THE TAX MAP AND LOT NUMBERS AND ABUTTING OWNERS ARE BASED ON THE TOWN OF HUDSON TAX RECORDS AND ARE SUBJECT TO CHANGE.
16. RESEARCH WAS PERFORMED AT THE TOWN OF HUDSON ASSESSORS OFFICE AND THE HILLSBOROUGH COUNTY REGISTRY OF DEEDS.
17. THIS SURVEY IS NOT A CERTIFICATION TO OWNERSHIP OR TITLE OF LANDS SHOWN. OWNERSHIP AND ENCUMBRANCES ARE MATTERS OF TITLE EXAMINATION NOT OF A BOUNDARY SURVEY. THE INTENT OF THIS PLAN IS TO RETRACE THE BOUNDARY LINES OF DEEDS REFERENCED HEREON. OWNERSHIP OF ADJOINING PROPERTIES IS ACCORDING TO ASSESSOR'S RECORDS. THIS PLAN MAY OR MAY NOT INDICATE ALL ENCUMBRANCES EXPRESSED, IMPLIED OR PRESCRIPTIVE.
18. ANY USE OF THIS PLAN AND OR ACCOMPANYING DESCRIPTIONS SHOULD BE DONE WITH LEGAL COUNSEL TO BE CERTAIN THAT TITLES ARE CLEAR, THAT INFORMATION IS CURRENT, AND THAT ANY NECESSARY CERTIFICATES ARE IN PLACE FOR A PARTICULAR CONVEYANCE, OR OTHER USES.
19. OPEN SPACE CALCULATION:  
 TOTAL PARCEL = 33.22 ACRES  
 50% OPEN SPACE = 16.61 ACRES REQUIRED  
 TOTAL OPEN SPACE PROVIDED = 27.05 ACRES (81.4%)
20. ALL HOMES TO HAVE A CRUSHED STONE DRIP EDGE FOR INFILTRATION OF STORMWATER. A DETAIL IS PROVIDED ON SHEET D3 OF THIS PLAN SET AND NEEDS TO BE IN PLACE AND FAVORABLY INSPECTED PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
21. A CERTIFICATE OF APPROVAL FROM THE BOARD OF HEALTH OF THE TOWN OF HUDSON AND FROM THE STATE OF NEW HAMPSHIRE SHALL BE REQUIRED FOR THE PROPOSED ON-LOT UTILITIES.
22. WITH APPROVAL OF THIS PLAN BY THE PLANNING BOARD, THE FOLLOWING WAIVERS ARE GRANTED FROM CHAPTER 289 "SUBDIVISION OF LAND" OF THE "TOWN OF HUDSON CODE BOOK" AND THE "TOWN OF HUDSON, NH APPLICATION FOR SUBDIVISION PLAN REVIEW CHECKLIST":  
 A) CHAPTER 289-28.(c). REQUIREMENTS  
 B) CHAPTER 289-18.Y. STREETS  
 C) TOWN OF HUDSON, NH APPLICATION FOR SUBDIVISION PLAN REVIEW CHECKLIST ITEM O.
23. EACH LOT OWNER WITHIN THE OPEN SPACE SUBDIVISION SHALL POSSESS AN EQUAL SHARE OF THE COMMON OPEN SPACE AREA ASSOCIATED WITH THIS DEVELOPMENT. THE STORMWATER MANAGEMENT FUND SHALL BE MAINTAINED BY THE HOMEOWNERS' ASSOCIATION.
24. CONSERVATION MARKERS SHALL BE INSTALLED ALONG THE PERIMETER OF THE CONSERVATION DISTRICT BOUNDARIES OF THE DEVELOPMENT. SAID MARKERS SHOULD BE PERMANENTLY AFFIXED TO TREES, OR 8 FT. SECTIONS OF SPLIT-RAIL FENCING PLACED AT A MAXIMUM DISTANCE OF 200 FT. BETWEEN SECTIONS AND ALONG THE NEAREST PERIMETER OF EACH CONSERVATION DISTRICT AREA AND THE DEVELOPED LOTS.
25. CONSTRUCTION ACTIVITIES INVOLVING THE PROPOSED UNDEVELOPED LOTS SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 A.M. AND 7:00 P.M., MONDAY THRU SATURDAY. NO EXTERIOR CONSTRUCTION ACTIVITIES SHALL OCCUR ON SUNDAY.
26. A COST ALLOCATION PROCEDURE (CAP) AMOUNT OF \$1,664.00, PER SINGLE-FAMILY RESIDENTIAL UNIT SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
27. A PUBLIC SCHOOL IMPACT FEE IN THE AMOUNT OF \$3,578.00, PER RESIDENTIAL UNIT SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
28. A RECREATION CONTRIBUTION IN THE AMOUNT OF \$400.00, PER RESIDENTIAL UNIT SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.



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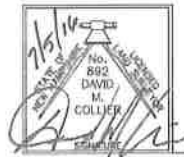
**GENERAL LEGEND**

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINES
---	---	SETBACK LINES
---	---	FRESHWATER WETLANDS LINE
---	---	STONEWALL
●	●	IRON PIPE/IRON ROD
○	○	DRILL HOLE
□	□	IRON ROD/DRILL HOLE
□	□	STONE/GRANITE BOUND
---	---	FRESHWATER WETLANDS

PROPERTY LINES  
SETBACK LINES  
FRESHWATER WETLANDS LINE  
STONEWALL  
IRON PIPE/IRON ROD  
DRILL HOLE  
IRON ROD/DRILL HOLE  
STONE/GRANITE BOUND  
FRESHWATER WETLANDS

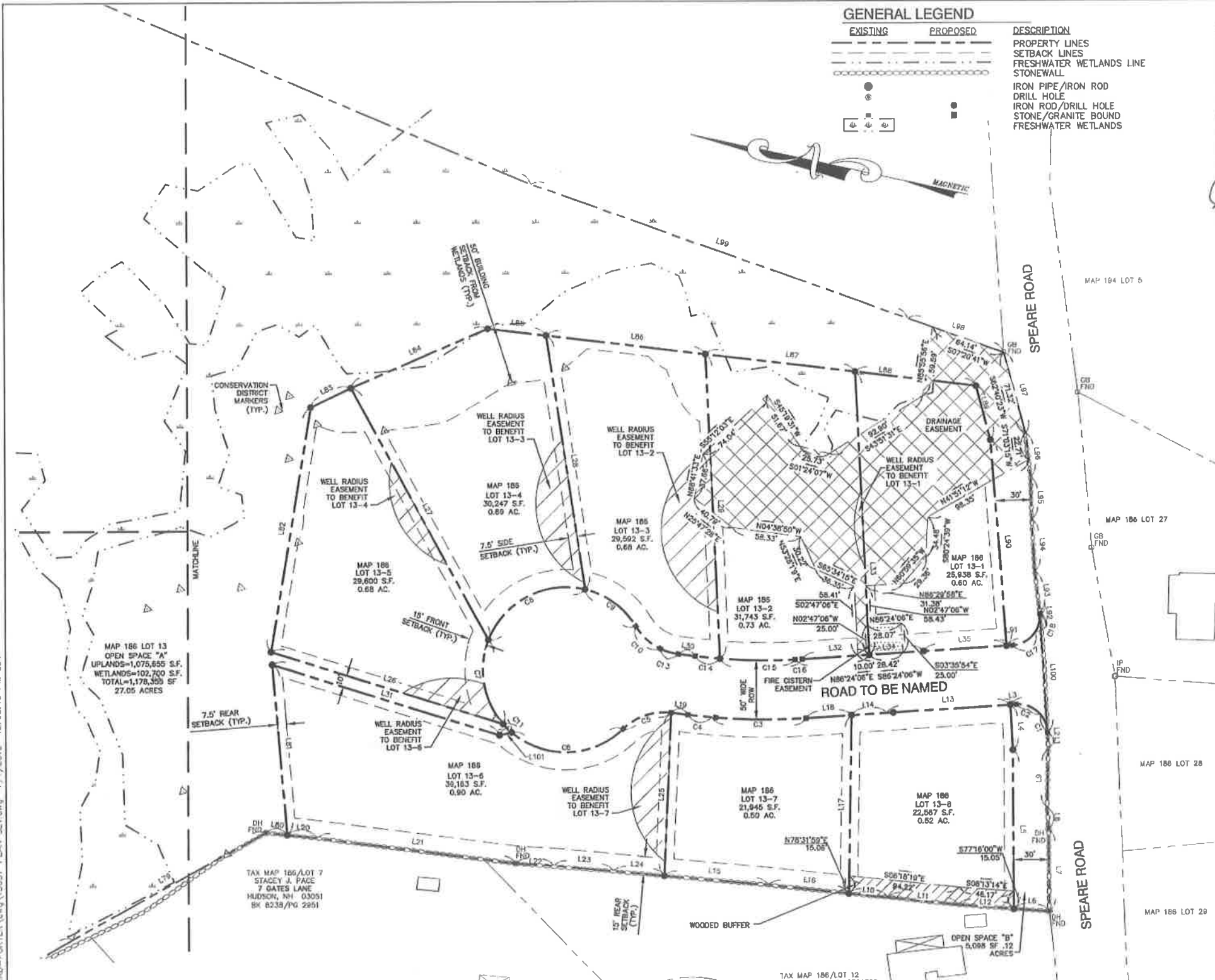
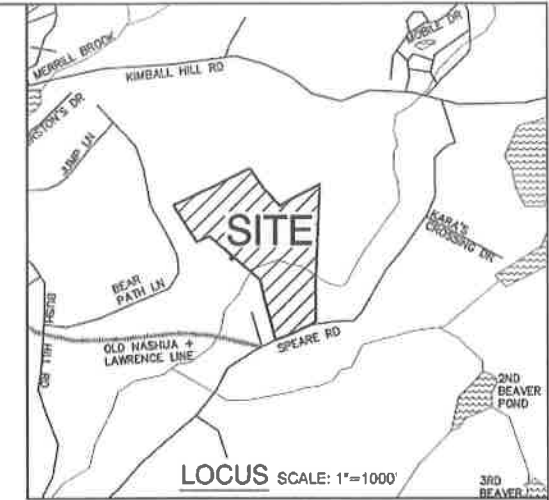
**CERTIFICATION:**

I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.



DAVID M. COLLIER, LLS 892  
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 7/5/16



APPROVED BY THE HUDSON, NH PLANNING BOARD

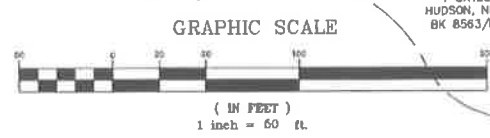
DATE OF MEETING: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.



Design: JAC	Draft: PSL	Date: 7/10/16
Checked: JAC	Scale: AS SHOWN	Project No.: 15031
Drawing Name: 15031-PLAN SET.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		



REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**

65 Portsmouth Ave. Civil Engineering Services 603-772-4746  
PO Box 210 Stratham, NH 03885 FAX: 603-772-0227  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **SUBDIVISION PLAN**  
MAP 186, LOT 13

Project: **BROOKVIEW SUBDIVISION**  
SPEARE ROAD, HUDSON, NH 03051

Owner of Record: **DOUGLAS S. SANDERSON**  
11 NERSESIAN WAY, HAMPTON, NH 03842

DRAWING No. **A1**

SHEET 6 OF 20  
JBE PROJECT NO. 15031

APPLICANT  
**TUCK REALTY CORP.**  
148 EPPING ROAD, SUITE 2A  
EXETER, NH 03833

TOTAL LOT AREA  
1,447,050 SQ. FT.  
33.22 ACRES

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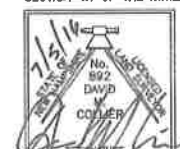
LINE	LENGTH	BEARING
L1	14.08'	N02°28'04"W
L2	0.46'	N03°31'13"W
L3	4.97'	S86°24'06"W
L4	38.36'	S03°02'30"E
L5	135.35'	S00°13'19"E
L6	30.09'	S85°47'00"E
L7	70.11'	N00°17'46"W
L8	18.54'	N03°53'02"W
L9	49.65'	N01°14'47"E
L10	33.28'	S83°52'05"E
L11	59.89'	S83°52'05"E
L12	47.60'	S85°47'00"E
L13	105.01'	S86°24'06"W
L14	30.10'	S86°24'06"W
L15	87.89'	S84°43'09"E
L16	68.60'	S83°52'05"E
L17	151.26'	N00°58'13"E
L18	38.81'	S86°24'06"W
L19	14.31'	N82°42'48"E
L20	26.48'	S72°51'13"W
L21	169.36'	S82°21'57"E
L22	32.13'	S86°25'27"E
L23	50.94'	S84°32'16"E
L24	43.74'	S84°43'09"E
L25	139.01'	N04°11'26"E
L26	205.34'	N72°31'18"W
L27	243.47'	S26°21'03"E
L28	218.36'	N08°34'29"W
L29	252.15'	N00°35'52"W
L30	14.31'	S82°42'48"E
L31	201.25'	S72°31'18"E
L32	57.52'	N86°24'06"E
L33	246.76'	S02°47'08"E
L34	46.03'	N86°24'06"E
L35	70.44'	N86°24'06"E
L36	1039.78'	N86°53'43"W
L37	18.08'	S05°43'05"E
L38	38.89'	S05°49'24"E
L39	30.85'	S08°08'13"E
L40	23.36'	S09°34'05"E
L41	43.01'	S04°51'20"E
L42	68.06'	S07°59'33"E
L43	90.12'	S05°43'28"E
L44	85.02'	S05°20'15"E
L45	31.10'	S10°47'36"E
L46	30.39'	S08°57'45"E
L47	48.26'	S19°10'15"E
L48	16.03'	S23°33'51"W
L49	24.54'	S74°40'43"W
L50	21.33'	S67°20'34"W
L51	72.85'	S67°44'14"W
L52	108.07'	S68°07'53"W
L53	9.99'	S72°27'41"W
L54	84.92'	S72°28'01"W
L55	38.32'	S77°21'13"W
L56	81.54'	S76°00'33"W
L57	58.87'	S76°05'41"W
L58	28.65'	S73°43'18"W
L59	177.38'	S08°12'10"E
L60	107.69'	S07°05'08"E
L61	81.85'	S09°30'07"E
L62	104.98'	S04°59'40"E
L63	76.99'	S04°00'32"E
L64	40.89'	S07°28'48"E
L65	40.39'	S04°51'33"E
L66	41.42'	S04°12'10"E
L67	159.59'	S04°46'27"E
L68	71.30'	S05°50'37"E
L69	53.24'	N78°39'47"E
L70	103.00'	N78°21'50"E
L71	125.53'	N77°43'04"E
L72	189.10'	N76°14'16"E
L73	145.53'	N04°19'43"W
L74	323.66'	N61°21'12"E
L75	32.98'	S19°55'59"E
L76	33.61'	S59°14'33"E
L77	33.00'	N21°04'30"W
L78	168.08'	N60°44'13"E
L79	189.94'	N61°04'02"E
L80	17.96'	S83°55'19"E
L81	105.97'	N04°45'36"W
L82	216.16'	N08°17'20"E
L83	37.88'	N64°19'12"E
L84	128.19'	N66°38'16"E
L85	48.50'	S83°07'07"E
L86	154.45'	S83°07'07"E
L87	108.27'	S83°07'07"E
L88	103.36'	S83°07'07"E
L89	47.66'	S14°33'23"E
L90	176.19'	S04°18'49"E
L91	5.03'	N86°24'06"E
L92	2.78'	N03°31'13"W
L93	35.01'	N07°02'04"W
L94	44.31'	N03°15'36"W
L95	38.00'	N01°16'59"W
L96	37.22'	N06°30'31"W
L97	71.32'	N14°32'23"W
L98	86.47'	N70°13'05"W
L99	338.98'	N79°31'05"W
L100	100.00'	N03°31'13"W
L101	10.35'	N78°16'11"E

CURVE	DELTA	RADIUS	LENGTH
C1	36°52'12"	25.00'	16.00'
C2	53°12'29"	25.00'	23.22'
C3	8°41'43"	523.00'	79.88'
C4	2°11'23"	523.00'	20.06'
C5	8°11'04"	80.00'	44.28'
C6	85°04'19"	70.00'	103.94'
C7	82°58'33"	70.00'	75.82'
C8	82°30'21"	70.00'	100.80'
C9	44°43'58"	70.00'	54.85'
C10	32°44'24"	50.00'	28.57'
C11	8°10'59"	70.00'	10.00'
C13	18°34'40"	50.00'	16.21'
C14	3°37'55"	475.00'	30.11'
C15	8°31'46"	475.00'	84.13'
C16	0°43'29"	475.00'	6.00'
C17	53°03'08"	25.00'	23.10'
C18	33°39'16"	25.32'	14.87'

**CERTIFICATION:**

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 603.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHICS AND STANDARDS.



**DAVID M. COLLIER, LLS 892**  
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

DATE: 7/5/16

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING:

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

Design: JAC    Draft: PSL    Date: 7/10/16  
Checked: JAC    Scale: AS SHOWN    Project No.: 15031  
Drawing Name: 15031-PLAN SET.dwg

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PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.



REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL
REV.	DATE	REVISION	BY

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**  
Civil Engineering Services

65 Portsmouth Ave.    PO Box 218    Stratham, NH 03885

603-772-4746    FAX: 603-772-0227    E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **SUBDIVISION PLAN**  
MAP 186, LOT 13

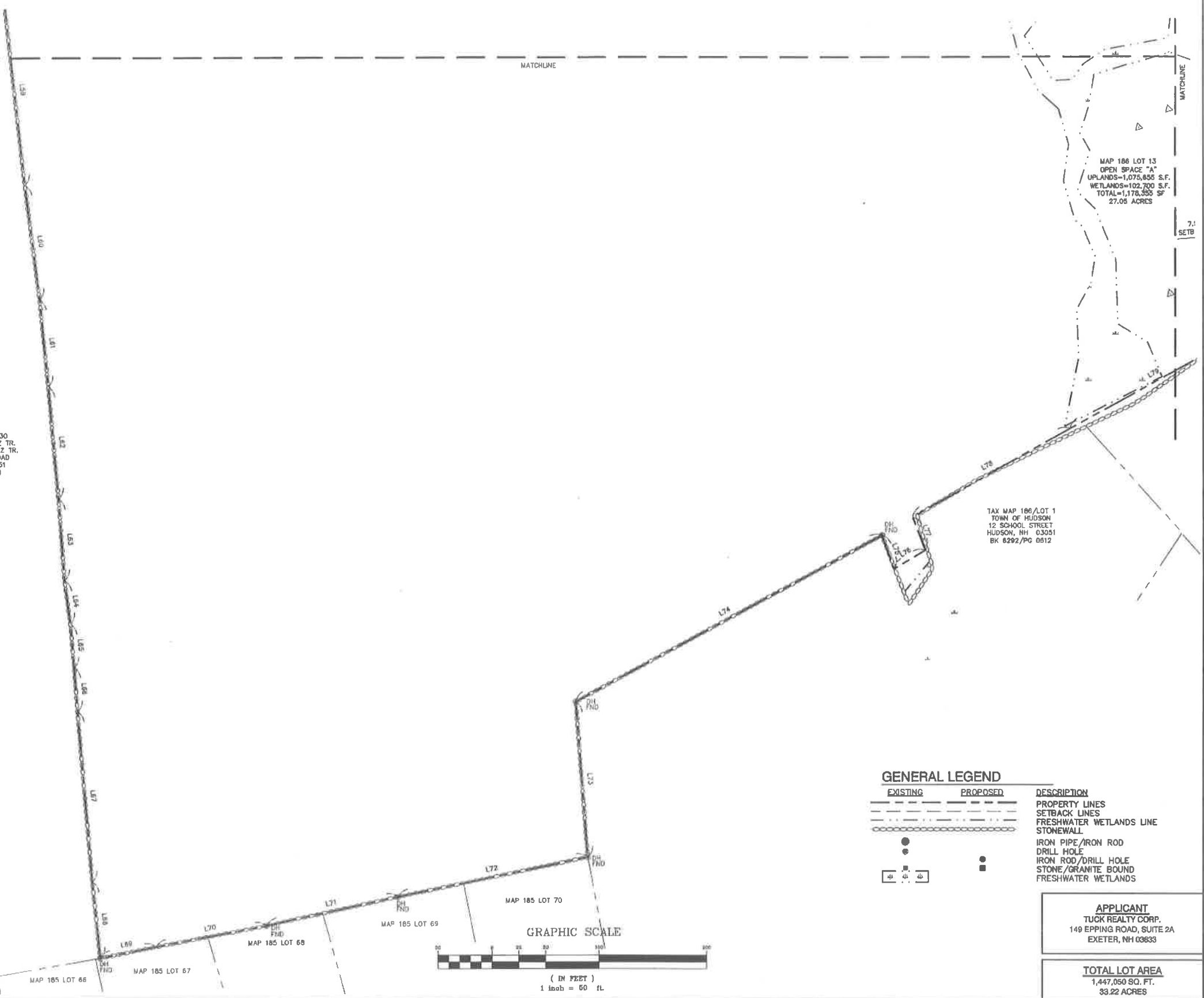
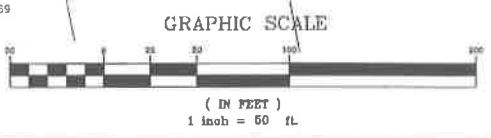
Project: **BROOKVIEW SUBDIVISION**  
SPEARE ROAD, HUDSON, NH 03051

Owner of Record: **DOUGLAS S. SANDERSON**  
11 NERSESIAN WAY, HAMPTON, NH 03842

DRAWING No. **A2**

SHEET 6 OF 20  
JBE PROJECT NO. 15031

GENERAL LEGEND		DESCRIPTION
---	EXISTING	PROPERTY LINES
---	PROPOSED	SETBACK LINES
---		FRESHWATER WETLANDS LINE
---		STONEWALL
●		IRON PIPE/IRON ROD
○		DRILL HOLE
■		IRON ROD/DRILL HOLE
■		STONE/GRANITE BOUND
■		FRESHWATER WETLANDS

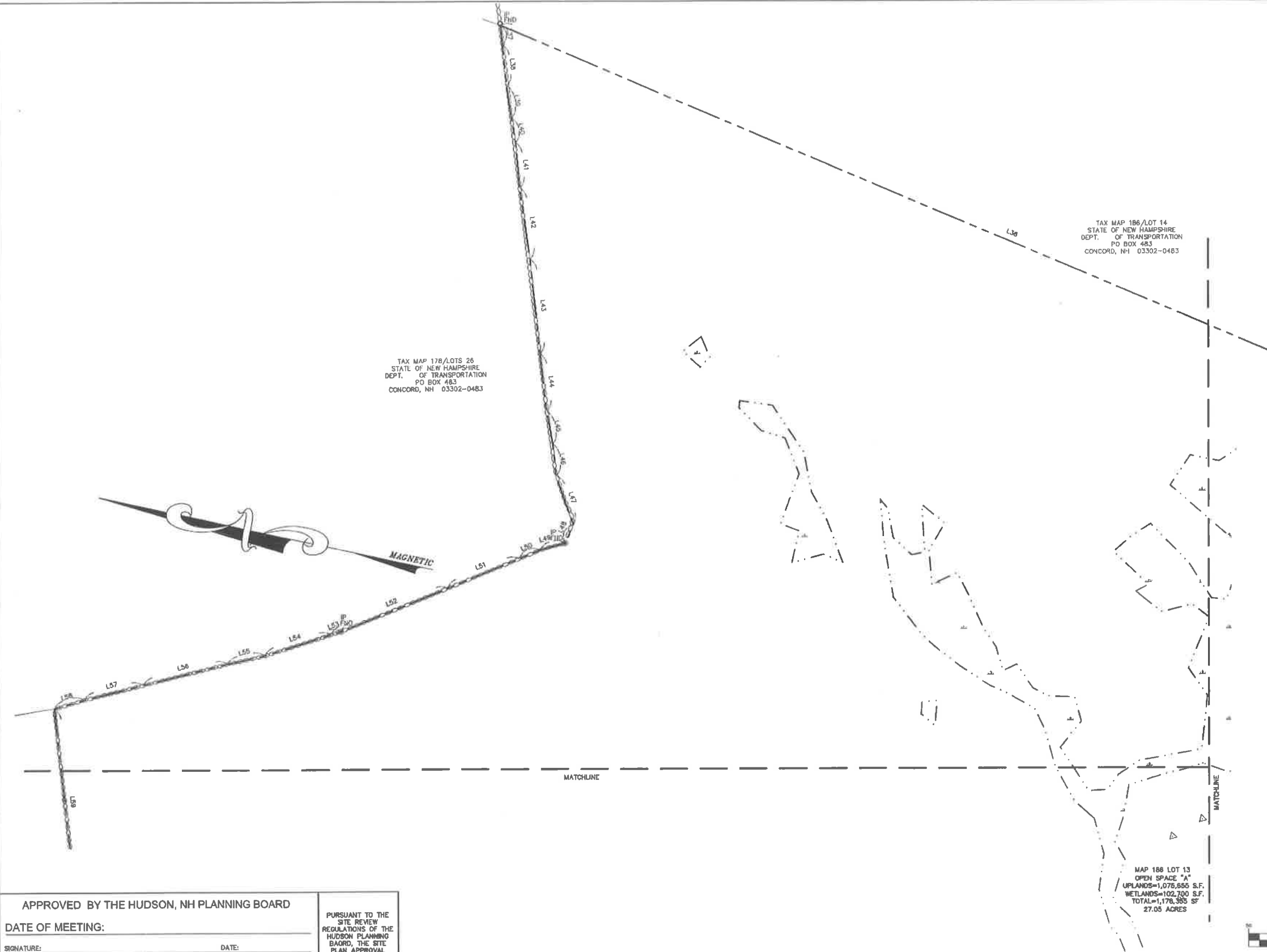


MAP 186 LOT 13  
OPEN SPACE "A"  
WETLANDS=1,075,855 S.F.  
TOTAL=1,178,355 SF  
27.05 ACRES

TAX MAP 186 LOT 1  
TOWN OF HUDSON  
12 SCHOOL STREET  
HUDSON, NH 03051  
BK 8292/PG 0512

TAX MAP 178 LOT 30  
WALTER S. ABUCENICZ TR.  
MURRAYANU ABUCENICZ TR.  
63 KIMBALL HILL ROAD  
HUDSON, NH 03051  
BK 8687/PG 1321

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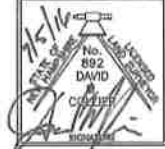
- ABUTTERS NOT SHOWN:**
- TAX MAP 177 LOT 51  
KANSTANTIN AUSANNKAL  
47 BEAR PATH LANE  
HUDSON, NH 03051  
BK 8009/PG 1785
  - TAX MAP 177 LOT 52  
TODD J. & KATHRYN H. COPP  
45 BEAR PATH LANE  
HUDSON, NH 03051  
BK 7008/PG 1938
  - TAX MAP 185/LOT 66  
MATTHEW H. MEDEROS  
LAURIE SCODRAS  
43 BEAR PATH LANE  
HUDSON, NH 03051  
BK 8573/PG 1640
  - TAX MAP 185/LOT 67  
ROBERT J. FLOHR, SR.  
JEANNE A. FLOHR  
41 BEAR PATH LANE  
HUDSON, NH 03051  
BK 8377/PG 0218
  - TAX MAP 185/LOT 68  
CHARLES F. & LISA D. ANDERSON  
39 BEAR PATH LANE  
HUDSON, NH 03051  
BK 8871/PG 2001
  - TAX MAP 185/LOT 69  
MICHAEL PATRICK JOHNSTON  
LANI L. NILSSON-JOHNSTON  
37 BEAR PATH LANE  
HUDSON, NH 03051  
BK 0680/PG 1747
  - TAX MAP 185/LOT 70  
LEE A. & JULIE A. SHAPPY  
35 BEAR PATH LANE  
HUDSON, NH 03051  
BK 8188/PG 0580
  - TAX MAP 186/LOT 2  
JAMIE L. WHITMAN  
145 MEADOWSHEET COURT  
WINSTON SALEM, NC 27107  
BK 8886/PG 0835
  - TAX MAP 186/LOT 5  
JAMES D. & KRISTIN M. PAQUETTE  
2 GATES LANE  
HUDSON, NH 03051  
BK 7305/PG 0438
  - TAX MAP 186/LOT 8  
JAMES E. & NIM M. NORMAND  
4 GATES LANE  
HUDSON, NH 03051  
BK 7328/PG 0942
  - TAX MAP 186/LOT 24  
EAGLES NEST ESTATES LLC  
2 MAJESTIC AVENUE  
PELHAM, NH 03076-5005  
BK 8221/PG 0188
  - TAX MAP 186/LOT 27  
STEVEN A. & TRISHA H. GAGNON  
51 SPEARE ROAD  
HUDSON, NH 03051  
BK 5821/PG 0788
  - TAX MAP 186/LOT 28  
NORMAN & KENDALL CALLER  
47 SPEARE ROAD  
HUDSON, NH 03051  
BK 6007/PG 0333
  - TAX MAP 186/LOT 29  
MATTHEW & CHARLENE BROWN  
45 SPEARE ROAD  
HUDSON, NH 03051  
BK 5808/PG 0039
  - TAX MAP 186/LOT 30  
DAVID & KAREN BURNELL  
41 SPEARE ROAD  
HUDSON, NH 03051  
BK 2791/PG 0105
  - TAX MAP 186/LOT 30-1  
DAVID & KAREN BURNELL  
41 SPEARE ROAD  
HUDSON, NH 03051  
BK 2791/PG 0105 (08/12/80)
  - TAX MAP 194/LOT 5  
STATE OF NEW HAMPSHIRE  
DEPT. OF TRANSPORTATION  
PO BOX 483  
CONCORD, NH 03302-0483  
BK 2100/PG 0002

TAX MAP 186/LOT 14  
STATE OF NEW HAMPSHIRE  
DEPT. OF TRANSPORTATION  
PO BOX 483  
CONCORD, NH 03302-0483

TAX MAP 178/LOTS 26  
STATE OF NEW HAMPSHIRE  
DEPT. OF TRANSPORTATION  
PO BOX 483  
CONCORD, NH 03302-0483

**CERTIFICATION:**  
I CERTIFY THAT THIS PLAT WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

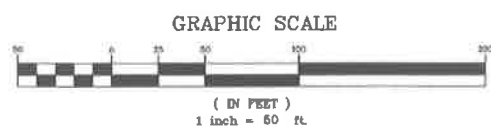
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DAVID M. COLLIER, LLS 892  
ON BEHALF OF JONES & BEACH ENGINEERS, INC. DATE: 7/5/16

**GENERAL LEGEND**

EXISTING	PROPOSED	DESCRIPTION
---	---	PROPERTY LINES
---	---	SETBACK LINES
---	---	FRESHWATER WETLANDS LINE
---	---	STONEWALL
●	●	IRON PIPE/IRON ROD
○	○	DRILL HOLE
■	■	IRON ROD/DRILL HOLE
■	■	STONE/GRANITE BOUND
■	■	FRESHWATER WETLANDS



MAP 186 LOT 13  
OPEN SPACE "A"  
UPLANDS=1,075,555 S.F.  
WETLANDS=102,700 S.F.  
TOTAL=1,178,255 S.F.  
27.05 ACRES

APPROVED BY THE HUDSON, NH PLANNING BOARD

DATE OF MEETING: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

SITE PLANS ARE VALID FOR ONE YEAR FROM THE DATE OF PLANNING BOARD MEETING FINAL APPROVAL. FINAL APPROVAL COMMENCES AT THE PLANNING BOARD MEETING DATE AT WHICH THE PLAN RECEIVES FINAL APPROVAL.

PURSUANT TO THE SITE REVIEW REGULATIONS OF THE HUDSON PLANNING BOARD, THE SITE PLAN APPROVAL GRANTED HEREIN EXPIRES ONE YEAR FROM DATE OF APPROVAL.

**APPLICANT**  
TUCK REALTY CORP.  
149 EPPING ROAD, SUITE 2A  
EXETER, NH 03833

**TOTAL LOT AREA**  
1,447,050 SQ. FT.  
33.22 ACRES

Design: JAC	Draft: PSL	Date: 7/10/15
Checked: JAC	Scale: AS SHOWN	Project No.: 15031
Drawing Name: 15031-PLAN SET.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		



REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**  
Civil Engineering Services

85 Portsmouth Ave. PO Box 219 Stratham, NH 03886

603-772-4748  
FAX: 603-772-0227  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **SUBDIVISION PLAN**  
MAP 186, LOT 13

Project: **BROOKVIEW SUBDIVISION**  
SPEARE ROAD, HUDSON, NH 03051

Owner of Record: **DOUGLAS S. SANDERSON**  
11 NERSESIAN WAY, HAMPTON, NH 03842

DRAWING No. **A3**  
SHEET 7 OF 20  
JBE PROJECT NO. 15031



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**PLAN REFERENCES:**

1. LOT LINE RELOCATION PLAN-SPEARE ROAD, HUDSON, N.H. FOR FIR REALTY DATED JUNE 1985 AND RECORDED AS PLAN #19065 H.C.R.D.
2. NHDOT R.D.W. PLAN - NASHUA - HUDSON CIRCUMFERENTIAL HIGHWAY, N.H. TURNPIKE PROJECT 10625-J, #10644A SOUTHERN SEGMENT, FILE 55139 APPROVAL DATE 5-14-91, PROJECT 10625-J, #10644A SOUTHERN SEGMENT, FILE 55139 APPROVAL DATE 5-14-91.

**CERTIFICATION:**

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHCS AND STANDARDS.

THIS SURVEY CONFORMS TO A CATEGORY 1 CONDITION 1 SURVEY AS DEFINED IN SECTION 4.1 OF THE N.H.L.S.A. ETHCS AND STANDARDS.



DAVID M. COLLIER, LLS 892  
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

7/5/16  
DATE:



**EXISTING CONDITIONS NOTES:**

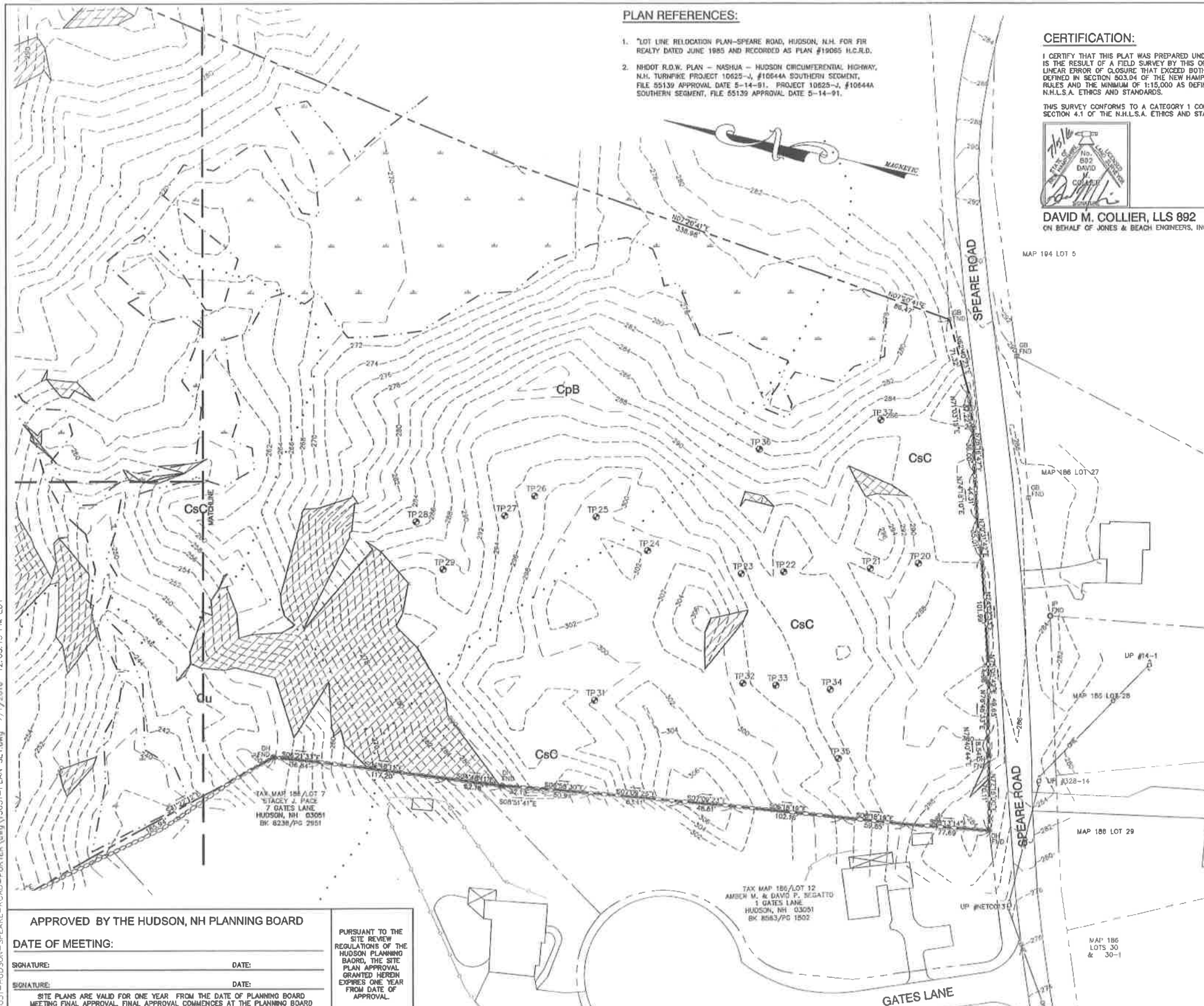
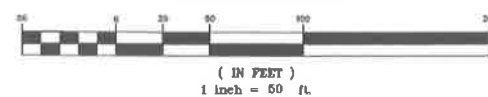
1. UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC., NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 1-888-DIG-SAFE (1-888-344-7233).
2. VERTICAL DATUM: USGS. HORIZONTAL DATUM: MAGNETIC
3. SUBJECT PROPERTY IS NOT LOCATED WITHIN FEDERALLY DESIGNATED 100 YEAR FLOOD HAZARD ZONE. REFERENCE FEMA COMMUNITY PANEL NO. 33011005190, DATED SEPTEMBER 25, 2006.
4. THE LIMITS OF JURISDICTIONAL WETLANDS WERE DELINEATED BY JIM GOVE, CHIEF, CSS OF GOVE ENVIRONMENTAL SERVICES, INC. DURING SUMMER, 2015, IN ACCORDANCE WITH THE FOLLOWING GUIDANCE DOCUMENTS:
  - a. THE CORPS OF ENGINEERS FEDERAL MANUAL FOR IDENTIFYING AND DELINEATING JURISDICTIONAL WETLANDS.
  - b. THE NORTH CENTRAL & NORTHEAST REGIONAL SUPPLEMENT TO THE FEDERAL MANUAL
  - c. THE CURRENT VERSION OF THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, AS PUBLISHED BY THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION AND/OR THE CURRENT VERSION OF THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, AS PUBLISHED BY THE USDA, NRCS, AS APPROPRIATE.
  - d. THE CURRENT NATIONAL LIST OF PLANT SPECIES THAT OCCUR IN WETLANDS, AS PUBLISHED BY THE US FISH AND WILDLIFE SERVICE.
5. TEST PITS PERFORMED BY OFFORD COLBURN, JONES & BEACH ENGINEERS, INC., 4/8/16.
6. WETLAND BOUNDARIES AND CONSTRUCTION LIMITS ARE TO BE CLEARLY MARKED PRIOR TO THE START OF CONSTRUCTION.

**GENERAL LEGEND**

EXISTING	DESCRIPTION
---	PROPERTY LINES
---	SETBACK LINES
---	FRESHWATER WETLANDS LINE
---	TREE LINE
---	STONEWALL
---	SOIL BOUNDARY
---	MAJOR CONTOUR
---	MINOR CONTOUR
---	EDGE OF PAVEMENT
---	OVERHEAD ELECTRIC
---	IRON PIPE/IRON ROD
---	DRILL HOLE
---	STONE/GRANITE BOUND
---	BENCHMARK (TBM)
---	TEST PIT
---	UTILITY POLE
---	FRESHWATER WETLANDS
---	SLOPES OVER 25%

**SCS SOILS:**  
 CpB-CHATFIELD-HOLLIS-CANTON COMPLEX  
 3 TO 8 PERCENT SLOPES  
 CpC-CHATFIELD-HOLLIS-CANTON COMPLEX  
 8 TO 15 PERCENT SLOPES  
 CcC - CHATFIELD-HOLLIS COMPLEX  
 8 TO 15 PERCENT SLOPES  
 Cj- CHOCORUA MUCKY PEAT  
 8 TO 18 PERCENT SLOPES  
 SCS SOILS TAKEN FROM SOIL SURVEY OF HILLSBOROUGH COUNTY EASTERN PLAN, DATED OCT. 81, 1" = 1687'

**GRAPHIC SCALE**



APPROVED BY THE HUDSON, NH PLANNING BOARD  
 DATE OF MEETING: \_\_\_\_\_  
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APPLICANT  
 TUCK REALTY CORP.  
 149 EPPING ROAD, SUITE 2A  
 EXETER, NH 03833

TOTAL LOT AREA  
 1,447,050 SQ. FT.  
 33.22 ACRES

Design: JAC Draft: PSL Date: 7/10/16  
 Checked: JAC Scale: AS SHOWN Project No.: 15031  
 Drawing Name: 15031-PLAN SET.dwg  
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 Civil Engineering Services  
 85 Portsmouth Ave. PO Box 219 Stratham, NH 03885  
 603-772-4746 FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **EXISTING CONDITIONS PLAN**  
 Project: **BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051**  
 Owner of Record: **DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842**

DRAWING No. **C1**  
 SHEET 8 OF 20  
 JBE PROJECT NO. 15031



**CERTIFICATION:**

I CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION, THAT IT IS THE RESULT OF A FIELD SURVEY BY THIS OFFICE AND HAS AN UNADJUSTED LINEAR ERROR OF CLOSURE THAT EXCEEDS BOTH THE MINIMUM OF 1:10,000 AS DEFINED IN SECTION 503.04 OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES AND THE MINIMUM OF 1:15,000 AS DEFINED IN SECTION 4.2 OF THE N.H.L.S.A. ETHICS AND STANDARDS.

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DAVID M. COLLIER, LLS 892  
ON BEHALF OF JONES & BEACH ENGINEERS, INC.

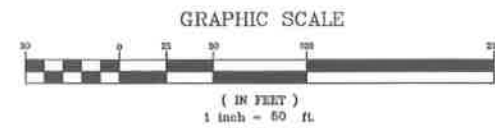
7/5/16  
DATE:

TAX MAP 178/LOT 30  
WALTER S. ABUCEWICZ TR.  
MURRAYANN ABUCEWICZ TR.  
63 KIMBALL HILL ROAD  
HUDSON, NH 03051  
BK 8667/Pg 1321

TAX MAP 186/LOT 1  
TOWN OF HUDSON  
12 SCHOOL STREET  
HUDSON, NH 03051  
BK 6292/Pg 0812

**GENERAL LEGEND**

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---	TREE LINE
---	STONEWALL
---	SOIL BOUNDARY
---	MAJOR CONTOUR
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---	STONE/GRANITE BOUND
---	BENCHMARK (TBM)
---	TEST PIT
---	UTILITY POLE
---	FRESHWATER WETLANDS
---	SLOPES OVER 25%



APPLICANT  
TUCK REALTY CORP.  
140 EPPING ROAD, SUITE 2A  
EXETER, NH 03833

TOTAL LOT AREA  
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33.22 ACRES

APPROVED BY THE HUDSON, NH PLANNING BOARD  
DATE OF MEETING: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
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Plan Name: **EXISTING CONDITIONS PLAN**  
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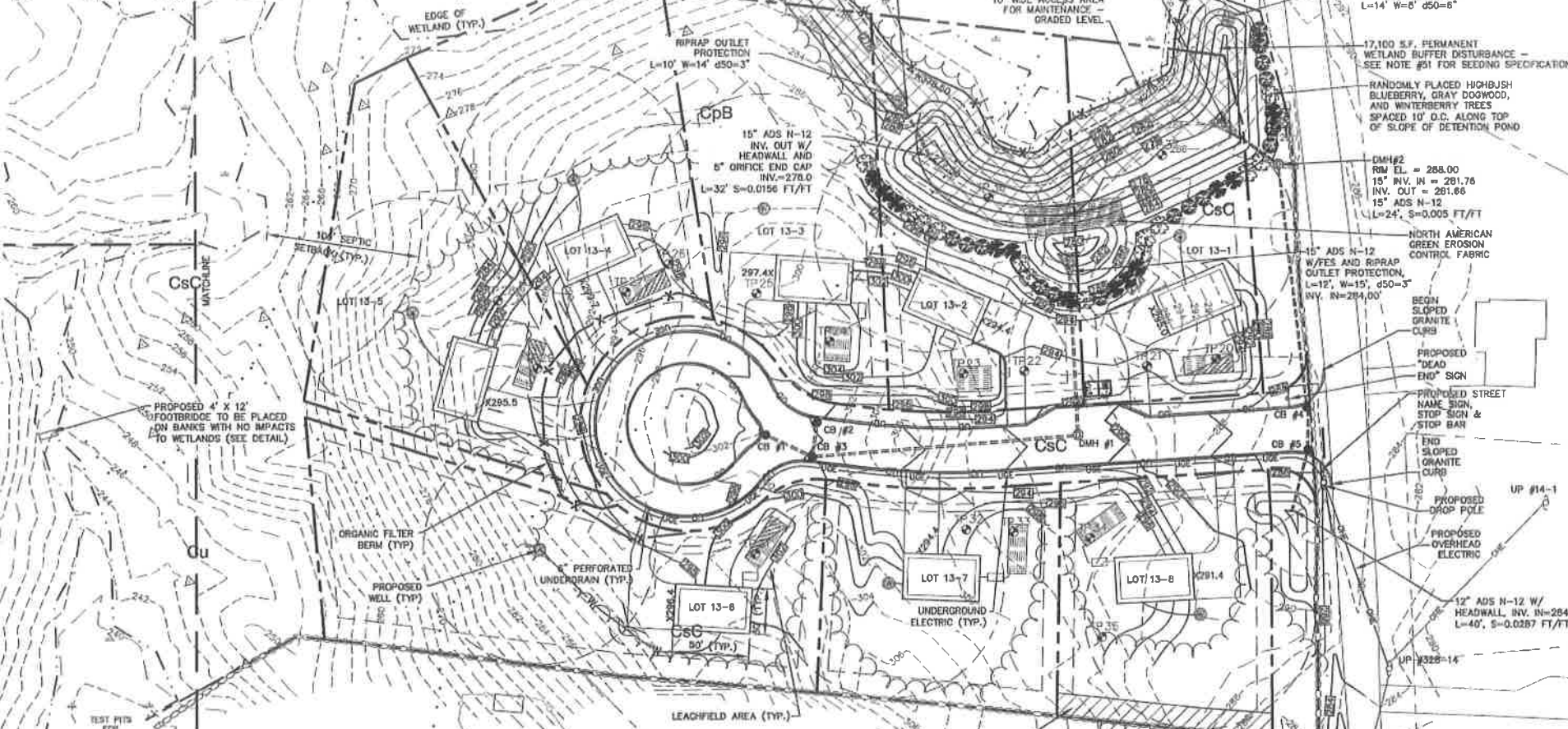
DRAWING No. **C2**  
SHEET 8 OF 20  
JBE PROJECT NO. 15031

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**SLAB/SILL ELEVATIONS:**

LOT	SLAB	SILL
13-1	298.0	295.6
13-2	294.5	302.0
13-3	297.5	306.0
13-4	292.5	300.0
13-5	295.5	296.0
13-6	296.5	304.0
13-7	294.5	302.0
13-8	291.5	299.0



TEST PIT #	DEPTH	SOIL TYPE	PERCENTAGE	PERC RATE	SHWT	ROOTS	NO H2O OBSERVED	REFUSAL	PERC RATE
TEST PIT #20	0'-7"	TOPSOIL	7"-32"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #21	0'-8"	TOPSOIL	7"-32"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #22	0'-8"	TOPSOIL	7"-32"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #23	0'-8"	TOPSOIL	8"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #24	0'-10"	TOPSOIL	10"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-10"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #25	0'-6"	TOPSOIL	6"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-6"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #26	0'-8"	TOPSOIL	8"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #27	0'-6"	TOPSOIL	6"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-6"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #28	0'-8"	TOPSOIL	8"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #29	0'-8"	TOPSOIL	8"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #30	0'-8"	TOPSOIL	8"-24"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 36"	PERC RATE = 8 MIN/INCH
TEST PIT #31	0'-8"	TOPSOIL	8"-14"	5YR 4/6	YELLOWISH RED FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #32	0'-8"	TOPSOIL	8"-16"	5YR 4/6	YELLOWISH RED FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #33	0'-12"	TOPSOIL	12"-24"	2.5Y 5/4	LIGHT OLIVE BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-12"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #34	0'-8"	TOPSOIL	8"-16"	7.5Y 4/6	STRONG BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #35	0'-8"	TOPSOIL	8"-16"	7.5Y 4/6	STRONG BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #36	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #37	0'-8"	TOPSOIL	8"-32"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #38	0'-6"	TOPSOIL	6"-16"	10YR 5/6	YELLOWISH BROWN FINE SANDY LOAM GRANULAR, FRAGILE	0'-6"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #39	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #40	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #41	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #42	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #43	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #44	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #45	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #46	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #47	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #48	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #49	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH
TEST PIT #50	0'-8"	TOPSOIL	8"-16"	10YR 4/4	DARK YELLOWISH BROWN	0'-8"	NO H2O OBSERVED	REFUSAL @ 48"	PERC RATE = 8 MIN/INCH

**GRADING, DRAINAGE AND UTILITY NOTES:**

- UNDERGROUND FACILITIES, UTILITIES AND STRUCTURES HAVE BEEN PLOTTED FROM FIELD OBSERVATION AND THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE ONLY. NEITHER JONES & BEACH ENGINEERS, INC. NOR ANY OF THEIR EMPLOYEES TAKE RESPONSIBILITY FOR THE LOCATION OF ANY UNDERGROUND STRUCTURES AND/OR UTILITIES NOT SHOWN THAT MAY EXIST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL UNDERGROUND STRUCTURES AND/OR UTILITIES LOCATED PRIOR TO EXCAVATION WORK BY CALLING 888-DIG-SAFE (888-344-7233).
- VERTICAL DATUM: USOS. HORIZONTAL DATUM: MAGNETIC.
- ALL BENCHMARKS AND TOPOGRAPHY SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEE CONSTRUCTION SEQUENCE ON SHEET E1.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE THE PROJECT'S LAND SURVEYOR STAKE OR FLAG CLEARING LIMITS. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.
- ALL ROOF DRAINS FROM BUILDING SHALL END 6' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AND WITNESS AT THE END. ALL EXTERIOR ROOF DOWNSPOUTS ARE TO BE INSTALLED WITH OVERFLOW DEVICES.
- THE SWALE AND DETENTION POND ARE TO BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
- PROPOSED RIM ELEVATIONS OF DRAINAGE STRUCTURES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
- ALL SWALES AND ANY SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER), UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4' MIN) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS. CATCH BASINS SHALL HAVE 3' DEEP SUMPS WITH GREASE HOODS, UNLESS OTHERWISE NOTED.
- ALL DRAINAGE STRUCTURES SHALL BE PRECAST, UNLESS OTHERWISE SPECIFIED.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC H2O LOADING AND SHALL BE INSTALLED ACCORDINGLY.
- IMMEDIATELY APPLY AND COMPACT STONE BASE FOR BUILDING PAD TO +/- 1/2" PRIOR TO EXCAVATING INTERIOR AND PERIMETER FOOTINGS.
- IN AREAS WHERE CONSTRUCTION IS PROPOSED ADJACENT TO ABUTTING PROPERTIES, THE CONTRACTOR SHALL INSTALL ORANGE CONSTRUCTION FENCING ALONG PROPERTY LINES IN ALL AREAS WHERE SILT FENCING IS NOT REQUIRED.
- ALL DRAINAGE PIPE SHALL BE NON-PERFORATED ADS N-12 OR APPROVED EQUAL.
- STONE INLET PROTECTION SHALL BE PLACED AT ALL CATCH BASINS. SEE DETAIL WITHIN THE DETAIL SHEETS.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY ALL GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE EPA SWPPP DURING CONSTRUCTION OPERATIONS.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
- ALL EXPOSED AREAS SHALL BE SEED AS SPECIFIED WITHIN 3 DAYS OF FINAL GRADING.
- SHOULD CONSTRUCTION STOP FOR LONGER THAN 3 DAYS, THE SITE SHALL BE SEED AS SPECIFIED.
- MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN EVENT OF 0.5" OR GREATER IN A 24 HOUR PERIOD AND AT LEAST ONCE A WEEK.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE. AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- CONSTRUCTION VEHICLES SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE TO THE EXTENT POSSIBLE THROUGHOUT CONSTRUCTION.
- IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OR NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM ALL SEDIMENT BASINS BEFORE THEY ARE 25% FULL.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH PROJECT SPECIFICATIONS.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED, IF DEEMED NECESSARY BY ON-SITE INSPECTION BY ENGINEER AND/OR REGULATORY OFFICIALS.
- SEE ALSO EROSION AND SEDIMENT CONTROL SPECIFICATIONS ON SHEET E1.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, CONNECTION FEES AND BONDS.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM NOTICE OF FOURTEEN (14) DAYS TO ALL CORPORATIONS, COMPANIES AND/OR LOCAL AUTHORITIES OWNING OR HAVING A JURISDICTION OVER UTILITIES RUNNING TO, THROUGH OR ACROSS PROJECT AREAS PRIOR TO DEMOLITION AND/OR CONSTRUCTION ACTIVITIES.
- THE LOCATION, SIZE, DEPTH AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE TO THE STANDARDS AND REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY (ELECTRIC, TELEPHONE, CABLE TELEVISION, FIRE ALARM, GAS, WATER, AND SEWER).
- A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE OWNER, ENGINEER, ARCHITECT, CONTRACTOR, LOCAL OFFICIALS, AND ALL PROJECT-RELATED UTILITY COMPANIES (PUBLIC AND PRIVATE) PRIOR TO START OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL CONFORM TO THE TOWN STANDARDS AND REGULATIONS, AND MINOS STANDARDS AND SPECIFICATIONS, WHICHEVER ARE MORE STRINGENT, UNLESS OTHERWISE SPECIFIED.
- ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) RULES AND REGULATIONS.
- BUILDING TO BE SERVICED BY UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITY STUBS PRIOR TO CONSTRUCTION AND DISCONNECT ALL EXISTING SERVICE CONNECTIONS AT THEIR RESPECTIVE MAINS IN ACCORDANCE WITH THE RESPECTIVE UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS. ENGINEER TO BE NOTIFIED.
- AS-BUILT PLANS SHALL BE SUBMITTED TO THE HIGHWAY DEPARTMENT AND THE PLANNING BOARD.
- INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT. CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION. THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE THROUGH CHANNEL UNDERLAYMENT OF INVERT, AND SHELF SHALL CONSIST OF BRICK MASONRY.
- FRAMES AND COVERS: MANHOLE FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30 INCH DIA. CLEAR OPENING. THE WORD "SEWER" OR "DRAIN" SHALL BE CAST INTO THE CENTER OF THE UPPER FACE OF EACH COVER WITH RAISED, 3" LETTERS.
- PROPOSED RIM ELEVATIONS OF DRAINAGE AND SANITARY MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL OTHER RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE AS SHOWN ON THE GRADING AND DRAINAGE PLAN.
- CONTRACTOR TO FURNISH SHOP DRAWINGS FOR UTILITY RELATED ITEMS TO ENSURE CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SHOULD BE SENT IN TRIPlicate TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- EXISTING UTILITIES SHALL BE DUGSAFE BEFORE CONSTRUCTION.
- ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
- TOWN OF HUDSON ASSUMES NO RESPONSIBILITY FOR WATER QUALITY FOR ON-SITE WELLS WHICH MAY BE THE RESULT OF ROUTINE MAINTENANCE OF TOWN OR STATE ROADWAYS ADJACENT TO THE PROPERTY, SUCH AS SANDING, SALTING, PAVING, ETC.
- MUNICIPAL WATER SUPPLY IS NOT AVAILABLE IN THE VICINITY OF THIS SUBDIVISION FOR FIRE FIGHTING PURPOSES. TANKER TRUCKS WILL BE USED IN THE EVENT OF AN EMERGENCY SITUATION.
- ALL PROPOSED LOTS ARE TO BE ACCESSED FROM PROPOSED ROADWAY ONLY.
- ALL HOUSE, DRIVEWAY, AND LEACHFIELD LOCATIONS ARE CONCEPTUAL ONLY. THEY HAVE BEEN ADDED TO THE PLAN IN ORDER TO SERVE AS AN AID IN THE PLANNING PROCESS ONLY.
- CONTRACTOR IS TO INSTALL 12" ADS N-12 CULVERTS WITH FLARED END SECTIONS IN THE EXISTING DITCH LINE AT ALL PROPOSED DRIVEWAY LOCATIONS (IF NECESSARY).
- ABUTTING PROPERTIES AND INFRASTRUCTURE WILL FACE MINIMAL ADVERSITY FROM STORMWATER ASSOCIATED WITH THIS PROJECT.
- WETLAND BUFFER IMPACT AREAS TO BE SEED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX TO PROVIDE PERMANENT COVER OF GRASSES, WILDFLOWERS, AND LEGUMES. THIS SEED MIX PROVIDES FOR BOTH EROSION CONTROL AND HABITAT VALUE FOR DISTURBED AREAS. THIS IS A NO MAINTENANCE SEED MIX AND SHOULD BE MOWED ONCE YEARLY IN THE FALL. \*\*APPLICATION RATE: 25LBS/ACRE @ 1750 SQ FT/LB

**GRAPHIC SCALE**



**APPLICANT**  
TUCK REALTY CORP.  
149 EPPING ROAD, SUITE 2A  
EXETER, NH 03833

**TOTAL LOT AREA**  
1,447,060 SQ. FT.  
33.22 ACRES

**APPROVED - HUDSON, NH**  
CONSERVATION COMMISSION

DATE:

Design: JAC Draft: PSL Date: 7/10/16  
Checked: JAC Scale: AS SHOWN Project No.: 15031  
Drawing Name: 15031-PLAN SET.dwg  
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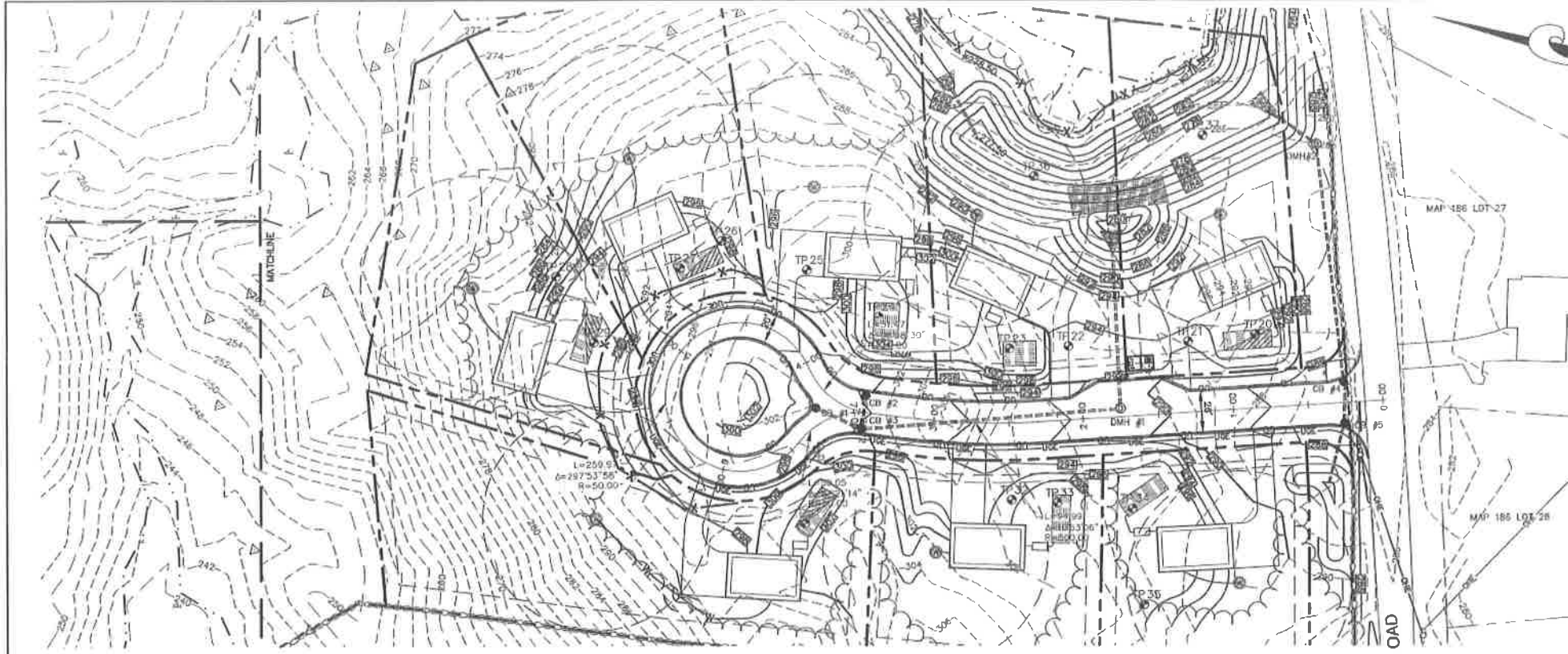


REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/16/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

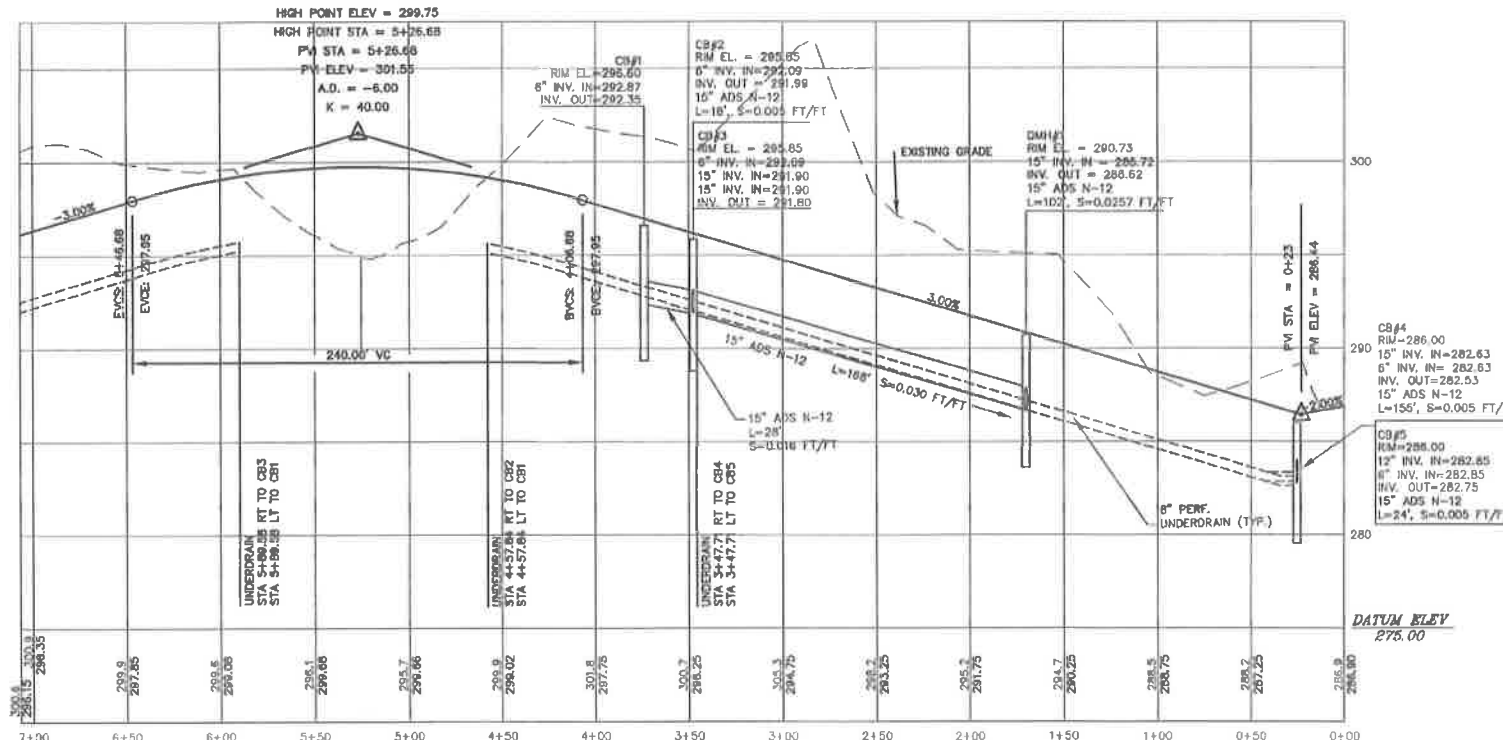
Designed and Produced in NH  
**J/B Jones & Beach Engineers, Inc.**  
65 Portsmouth Ave. Civil Engineering Services 603-772-4746  
PO Box 219 Stratham, NH 03885 FAX: 603-772-0227  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **GRADING, DRAINAGE AND UTILITY PLAN**  
Project: **BROOKVIEW SUBDIVISION**  
**SPEARE ROAD, HUDSON, NH 03051**  
Owner of Record: **DOUGLAS S. SANDERSON**  
**11 NERSESIAN WAY, HAMPTON, NH 03842**

DRAWING No. **C4**  
SHEET 11 OF 20  
JBE PROJECT NO. 15031



- NOTES:**
- THIS SITE WILL REQUIRE A USEPA NPDES PERMIT FOR STORMWATER DISCHARGE FOR THE CONSTRUCTION SITE. THE CONSTRUCTION SITE OPERATOR SHALL DEVELOP AND IMPLEMENT A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WHICH SHALL REMAIN ON SITE AND BE MADE ACCESSIBLE TO THE PUBLIC. THE CONSTRUCTION SITE OPERATOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA REGIONAL OFFICE SEVEN DAYS PRIOR TO COMMENCEMENT OF ANY WORK ON SITE. EPA WILL POST THE NOI AT [HTTP://CFR.PUBLIC.EPA.GOV/NPDES/STORMWATER/NOI/NOISEARCH.CFM](http://CFR.PUBLIC.EPA.GOV/NPDES/STORMWATER/NOI/NOISEARCH.CFM). AUTHORIZATION IS GRANTED UNDER THE PERMIT ONCE THE NOI IS SHOWN IN "ACTIVE" STATUS ON THIS WEBSITE. A COMPLETED NOTICE OF TERMINATION SHALL BE SUBMITTED TO THE NPDES PERMITTING AUTHORITY WITHIN 30 DAYS AFTER EITHER OF THE FOLLOWING CONDITIONS HAVE BEEN MET:
    - FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE; OR
    - ANOTHER OPERATOR/PERMITTEE HAS ASSUMED CONTROL OVER ALL AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED. PROVIDE DPW WITH A COPY OF THE NOTICE OF TERMINATION (NOT).
  - ALL ROAD AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE TOWN AND NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
  - AS-BUILT PLANS TO BE SUBMITTED TO THE TOWN PRIOR TO ACCEPTANCE OF THE ROADWAY.
  - DEVELOPER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
  - CONTRACTOR TO COORDINATE AND COMPLETE ALL WORK REQUIRED FOR THE RELOCATION AND/OR INSTALLATION OF ELECTRIC, CATV, TELEPHONE, AND FIRE ALARM PER UTILITY DESIGN AND STANDARDS. LOCATIONS SHOWN ARE APPROXIMATE. LOW PROFILE STRUCTURES SHALL BE USED TO THE GREATEST EXTENT POSSIBLE.
  - THIS PLAN HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC. FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA SHOWN ON THE DESIGN PLANS. THIS INCLUDES ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS OF THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED.
  - SILTATION AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN UNTIL SITE HAS BEEN STABILIZED WITH PERMANENT VEGETATION. SEE DETAIL SHEET E1 FOR ADDITIONAL NOTES ON EROSION CONTROL.
  - ALL DISTURBED AREAS NOT STABILIZED BY NOVEMBER 1st SHALL BE COVERED WITH AN EROSION CONTROL BLANKET. PRODUCT TO BE SPECIFIED BY THE ENGINEER.
  - FINAL DRAINAGE, GRADING AND EROSION PROTECTION MEASURES SHALL CONFORM TO REGULATIONS OF THE PUBLIC WORKS DEPARTMENT.
  - CONTRACTOR TO VERIFY EXISTING UTILITIES AND TO NOTIFY ENGINEER OF ANY DISCREPANCY IMMEDIATELY.
  - ROADWAY INTERSECTIONS WITH SLOPE GRANITE CURBS SHALL EXTEND AROUND RADIUS WITH 6" STRAIGHT PIECE ALONG TANGENT.
  - 6" PERFORATED ADS UNDER DRAIN PLACEMENT TO BE DETERMINED BY THE ENGINEER DURING TIME OF SUBGRADE INSPECTION. CONTRACTOR TO ADJUST LOCATION IN THE FIELD ONLY WITH PRIOR APPROVAL OF PROJECT ENGINEER OR PUBLIC WORKS DEPARTMENT.
  - ALL DRIVEWAYS TO BE CONSTRUCTED MAXIMUM 10% SLOPE. SEE DETAIL SHEET. ALL DRIVEWAYS TO HAVE CULVERTS UNLESS APPROVED BY THE TOWN ROAD AGENT.
  - ENGINEER TO INSTALL PERMANENT BENCHMARK (REINFORCED GRANITE MARKER) AT LOCATIONS SHOWN ON PLANS. BENCH MARKS TO BE TIED TO STATE PLANE COORDINATE SYSTEM.
  - DRAINAGE INSPECTION AND MAINTENANCE SCHEDULE: SILT FENCING WILL BE INSPECTED DURING AND AFTER STORM EVENTS TO ENSURE THAT THE FENCE STILL HAS INTEGRITY AND IS NOT ALLOWING SEDIMENT TO PASS. SEDIMENT BUILD UP IN SWALES WILL BE REMOVED IF IT IS DEEPER THAN SIX INCHES, AND IS TO BE REMOVED FROM SWALES BELOW THE INLET OF CULVERTS SEMIANNUALLY, AS WELL AS FROM CATCH BASINS, FOLLOWING MAJOR STORM EVENTS, THE STAGE DISCHARGE OUTLET STRUCTURES ARE TO BE INSPECTED AND ANY DEBRIS REMOVED FROM THE ORIFICE, TRASH TRACK AND EMERGENCY SPILL WAY. INFREQUENTLY, SEDIMENT MAY ALSO HAVE TO BE REMOVED FROM THE SUMP OF THE STRUCTURE.
  - CONTRACTOR MUST HAVE A VALID PIPE INSTALLER'S LICENSE FROM THE PUBLIC WORKS DEPARTMENT BEFORE WORKING ON ANY DRAINAGE AND/OR UTILITY CONSTRUCTION.
  - ALL DRAINAGE INFRASTRUCTURE SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING ANY RUNOFF TO IT.
  - THE DETENTION POND REQUIRES TIMELY MAINTENANCE AND SHOULD BE INSPECTED AFTER EVERY MAJOR STORM EVENT, AS WELL AS FREQUENTLY DURING THE FIRST YEAR OF OPERATION, AND ANNUALLY THEREAFTER. EVERY FIVE YEARS, THE SERVICES OF A PROFESSIONAL ENGINEER SHOULD BE RETAINED TO PERFORM A THOROUGH INSPECTION OF THE DETENTION POND AND ITS INFRASTRUCTURE. ANY DEBRIS AND SEDIMENT ACCUMULATIONS SHOULD BE REMOVED FROM THE OUTLET STRUCTURE(S) AND EMERGENCY SPILLWAY(S) AND DISPOSED OF PROPERLY. THE DETENTION POND BERM SHOULD BE MOWED AT LEAST ONCE ANNUALLY SO AS TO PREVENT THE ESTABLISHMENT OF WOODY VEGETATION. TREES SHOULD NEVER BE ALLOWED TO GROW ON A DETENTION POND BERM, AS THEY MAY DESTABILIZE THE STRUCTURE AND INCREASE THE POTENTIAL FOR FAILURE. AREAS SHOWING SIGNS OF EROSION OR THIN OR DYING VEGETATION SHOULD BE REPAIRED IMMEDIATELY BY WHATEVER MEANS NECESSARY, WITH THE EXCEPTION OF FERTILIZER, RODENT BORROWS SHOULD BE REPAIRED IMMEDIATELY AND THE ANIMALS SHOULD BE TRAPPED AND RELOCATED IF THE PROBLEM PERSISTS.
  - THE DETENTION POND IS TO BE CONSTRUCTED PRIMARILY THROUGH EXCAVATION. IN THOSE AREAS WHERE THE BERM MUST BE CONSTRUCTED BY THE PLACEMENT OF FILL, THE EXPOSED EMBANKMENT AREA OF THE DETENTION POND SHALL BE EXCAVATED TO PROPOSED GRADE, STRIPPED OF ALL ORGANIC MATERIALS, COMPACTED TO AT LEAST 95% AND SCARIFIED PRIOR TO THE PLACEMENT OF THE EMBANKMENT MATERIAL. IN THE EVENT THE FOUNDATION MATERIAL EXPOSED DOES NOT ALLOW THE SPECIFIED COMPACTION, AN ADDITIONAL ONE FOOT (1') OF EXCAVATION AND THE PLACEMENT OF A ONE FOOT (1') THICK, TWELVE FOOT (12') WIDE PAD OF THE MATERIAL DESCRIBED IN THE NOTE BELOW, COMPACTED TO 95% OF ASTM D-1557 MAY BE NECESSARY. PLACEMENT AND COMPACTION SHOULD OCCUR AT A MOISTURE CONTENT OF OPTIMUM PLUS OR MINUS 3% AND NO FROZEN OR ORGANIC MATERIAL SHOULD BE PLACED WITHIN FOR ANY REASON.
  - EMBANKMENT MATERIAL FOR THE BERMS SHALL BE CLEAN MINERAL SOIL WITH A CLAY COMPONENT FREE OF ROOTS, ORGANIC MATTER, AND OTHER DELETERIOUS SUBSTANCES, AND SHALL CONTAIN NO ROCKS OR LUMPS OVER FOUR INCHES (4") IN DIAMETER. THIS MATERIAL SHOULD BE INSTALLED IN 6" LIFTS AND COMPACTED TO 95% AS ASTM D-1557, AND SHOULD MEET THE FOLLOWING SPECIFICATIONS: 4" PASSING 100%, #4 SIEVE 25-70%, #200 SIEVE 10-25% (IN TOTAL SAMPLE).
  - EMBANKMENT IS TO HAVE 3:1 SIDE SLOPES (MAX.) AND IS TO BE BROUGHT TO SPECIFIED GRADES PRIOR TO THE ADDITION OF LOAM (4" MINIMUM) SO AS TO ALLOW FOR THE COMPACTION OF THE STRUCTURE OVER TIME WHILE MAINTAINING THE PROPER BERM ELEVATION.
  - COMPACTION TESTING SERVICES (I.E. NUCLEAR DENSITY TESTS) ARE TO BE PERFORMED BY AN INDEPENDENT GEOTECHNICAL ENGINEER RETAINED BY THE CONTRACTOR FOR ROADWAY CONSTRUCTION, AND ON THE FOUNDATION OF THE BERM AND ON EVERY LIFT OF NEWLY PLACED MATERIAL.
  - SLOPED GRANITE CURBS TO BE TYPED DOWN AT ALL DRIVEWAY ENTRANCES BY THE CONTRACTOR. ALL DRIVEWAY LOCATIONS SHALL BE REVIEWED AND APPROVED BY PUBLIC WORKS PRIOR TO ISSUANCE OF BUILDING PERMIT.
  - NO IRRIGATION PIPES OR SPRINKLER HEADS SHALL BE LOCATED WITHIN TOWN RIGHT OF WAY.
  - FILTER STRIP AREAS SHALL HAVE ALL BOULDERS REMOVED FROM THE ENTIRE LENGTH AND WIDTH AND SHALL BE IMMEDIATELY STABILIZED WITH VEGETATION, OR THE CONTRACTOR SHALL ORIENT THE FILTER STRIP AND LEVEL SPREADER SO AS TO ALLOW DRAINAGE FLOW OVER A BOULDER FREE AREA OF EQUAL LENGTH AND WIDTH. ENGINEER SHALL BE NOTIFIED TO INSPECT ALL LEVEL SPREADERS AND FILTER STRIP LOCATIONS AFTER ROAD SUBGRADE IS ESTABLISHED. NO STORMWATER SHALL BE DIRECTED TO THE LEVEL SPREADER AND FILTER STRIP UNTIL THE AREA HAS BEEN STABILIZED WITH VEGETATION.



**DRAINAGE TABLE**

<b>CB#1 - 4' ID</b> RIM EL. = 296.60 6" INV. IN = 292.87 INV. OUT = 292.35 15" ADS N-12 L=26' S=0.016	<b>CB#2 - 4' ID</b> RIM EL. = 295.85 6" INV. IN = 292.09 INV. OUT = 291.99 15" ADS N-12 L=18' S=0.005	<b>CB#3 - 4' ID</b> RIM EL. = 295.85 6" INV. IN = 292.09 15" INV. IN = 291.90 INV. OUT = 291.80 15" ADS N-12 L=168' S=0.030	<b>CB#4 - 4' ID</b> RIM EL. = 286.00 6" INV. IN = 282.63 15" INV. IN = 282.63 INV. OUT = 282.53 15" ADS N-12 L=155' S=0.005
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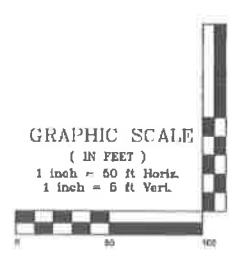
REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
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4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

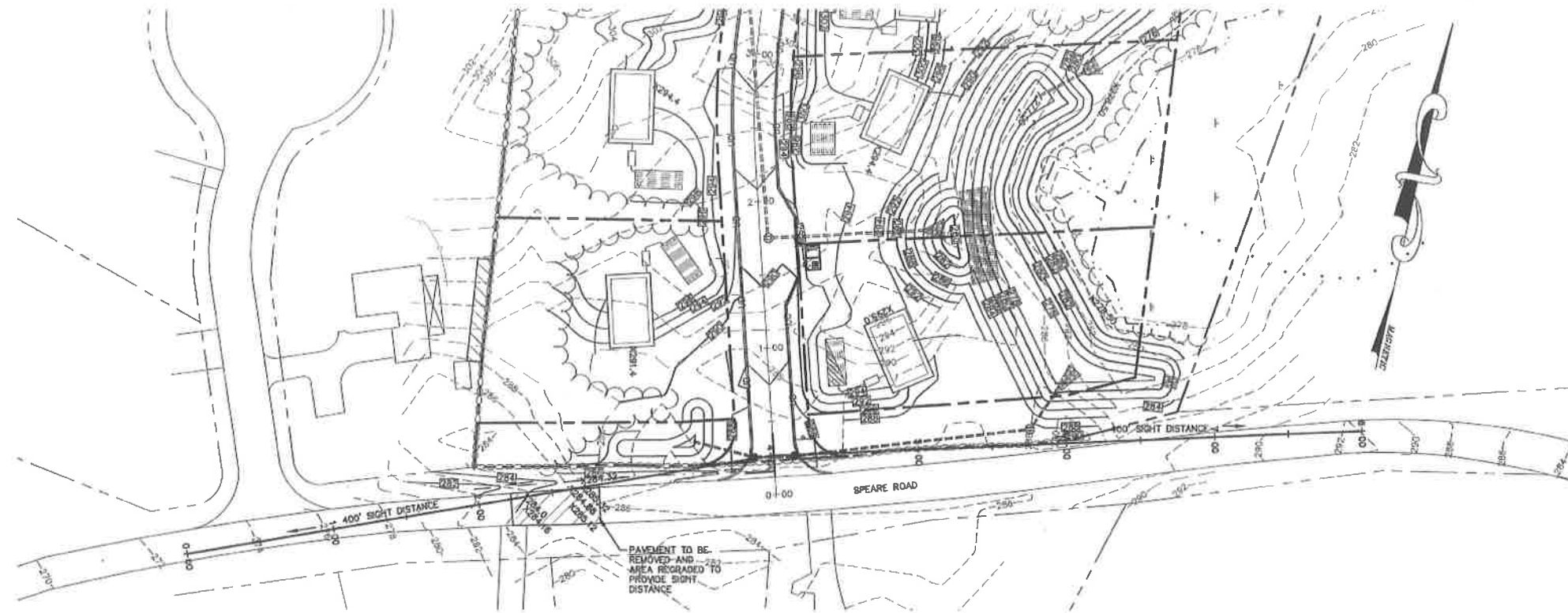
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**J/B Jones & Beach Engineers, Inc.**  
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 85 Portsmouth Ave. PO Box 218  
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 603-772-4746  
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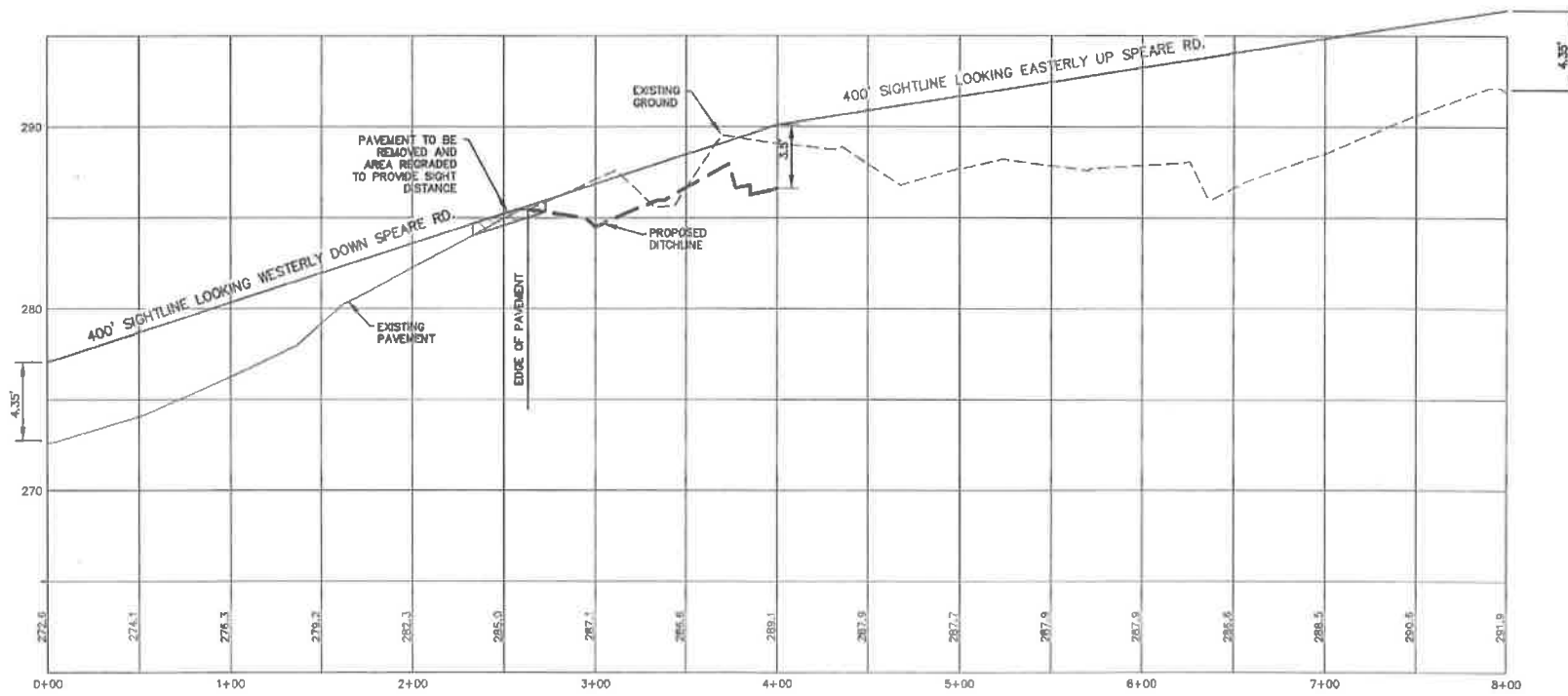
Plan Name: **PLAN AND PROFILE**  
 Project: **BROOKVIEW SUBDIVISION  
 SPEARE ROAD, HUDSON, NH 03051**  
 Owner of Record: **DOUGLAS S. SANDERSON  
 11 NERSESIAN WAY, HAMPTON, NH 03842**

DRAWING No. **P1**  
 SHEET 12 OF 20  
 JBE PROJECT NO. 15031





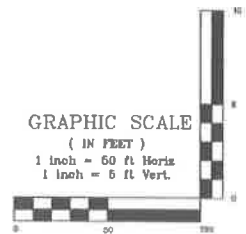
**SITE LINE PLAN**  
SCALE: 1"=50'



**SIGHT LINE PROFILE**  
SCALE: 1"=50' HORIZ.  
SCALE: 1"=5' VERT.

**NOTES:**

- SIGHT DISTANCE MEASURED FROM A HEIGHT OF 3.5' AT THE CENTERLINE OF THE PROPOSED ROAD TO AN OBJECT 4.35' IN HEIGHT 400' IN BOTH DIRECTIONS.



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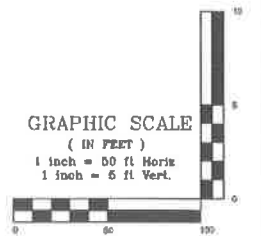
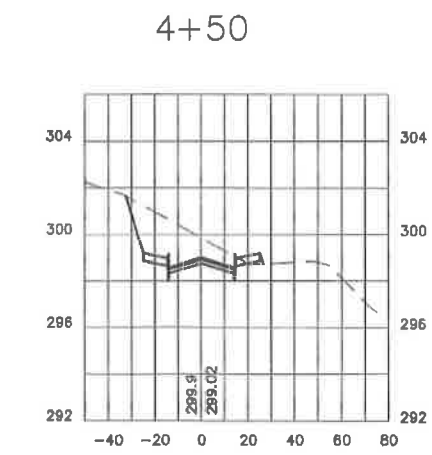
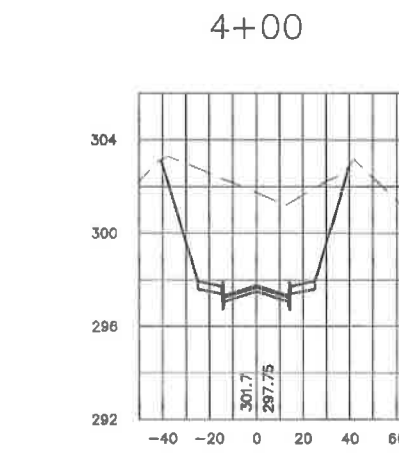
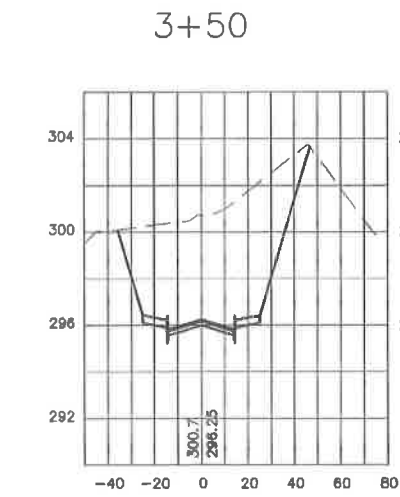
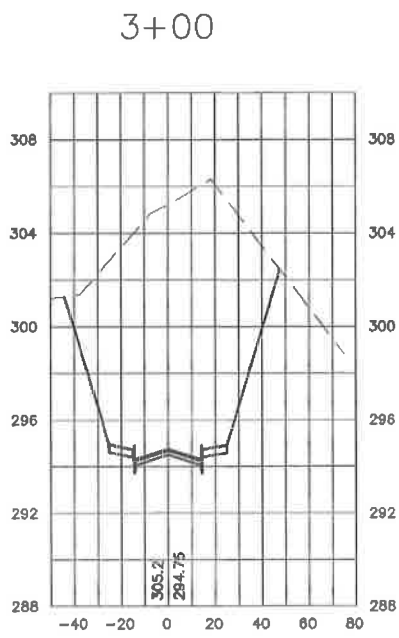
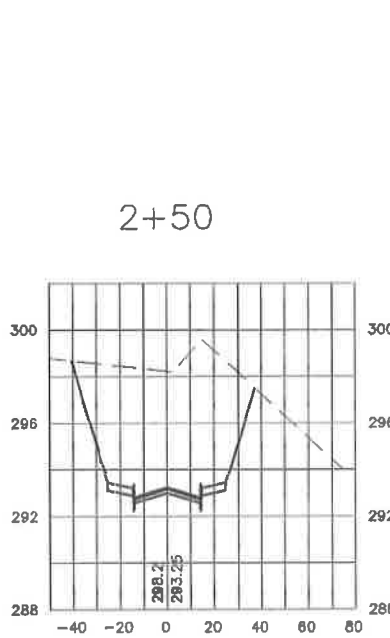
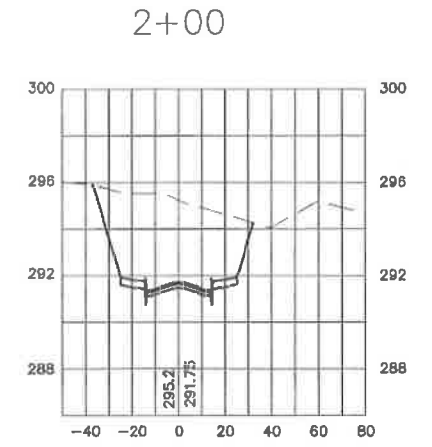
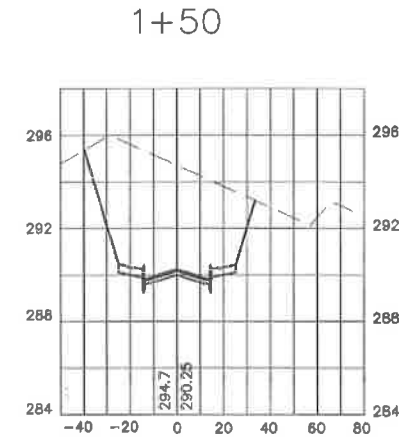
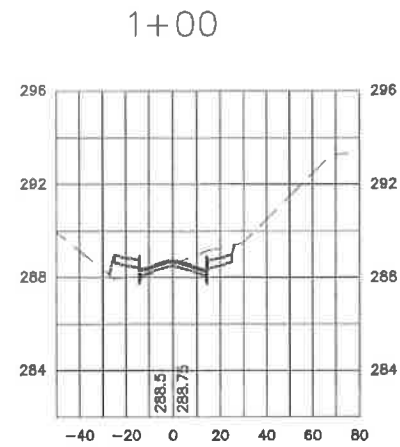
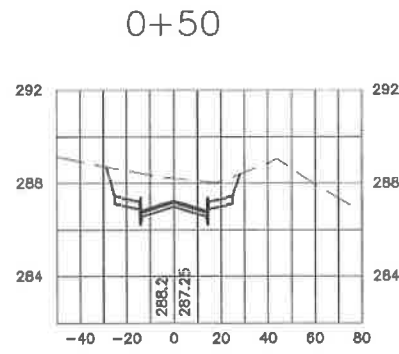
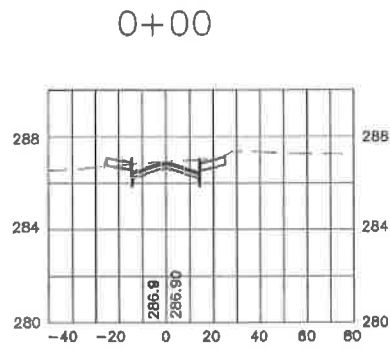
Civil Engineering Services

603-772-4748 FAX: 603-772-0227 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>HIGHWAY ACCESS PLAN</b>
Project:	<b>BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051</b>
Owner of Record:	<b>DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842</b>

DRAWING No.	<b>H1</b>
SHEET 13 OF 20 JBE PROJECT NO. 15031	

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 Checked: JAC    Scale: AS SHOWN    Project No.: 15031  
 Drawing Name: 15031-PLAN SET.dwg

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8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	8/1/16	REVISED LOTS 13-5 AND 13-8	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

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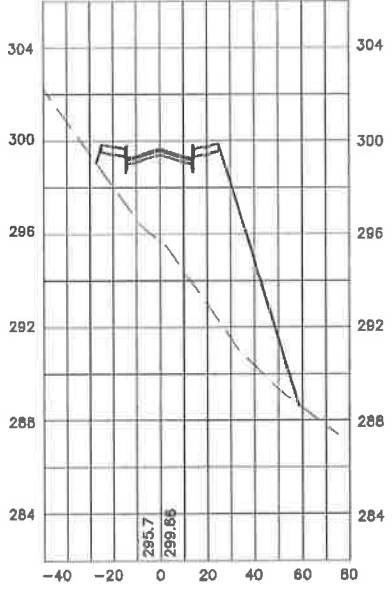
85 Portsmouth Ave.    Civil Engineering Services    603-772-4746  
 PO Box 219    Stratham, NH 03885    FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>CROSS SECTIONS STA 0+00 TO 4+50</b>
Project:	<b>BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051</b>
Owner of Record:	<b>DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842</b>

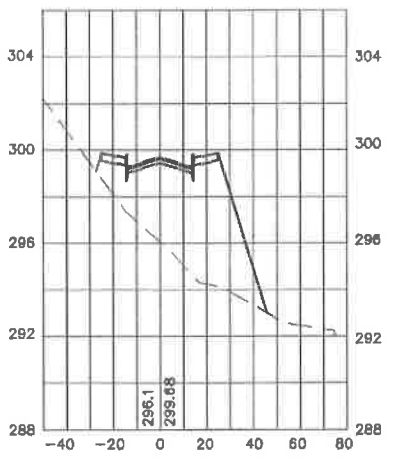
DRAWING No. **X1**  
 SHEET 14 OF 20  
 JBE PROJECT NO. 15031

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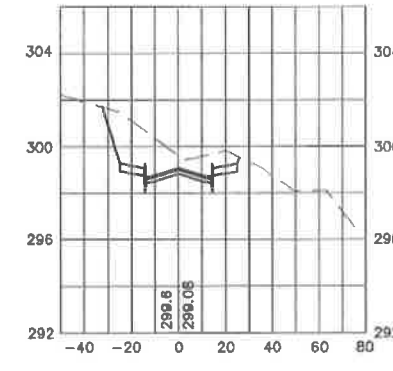
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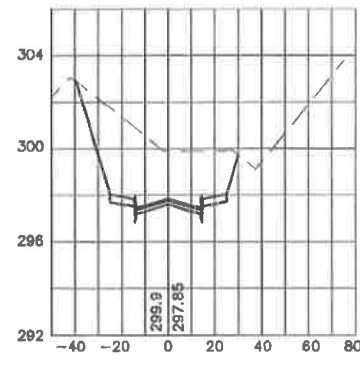
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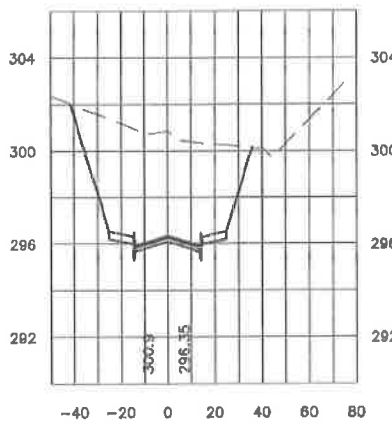
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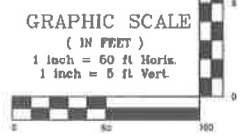
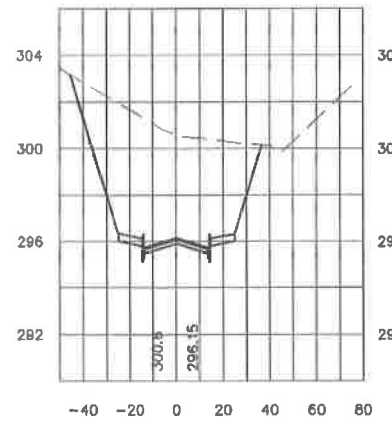
6+50



7+00



7+06.72



Design: JAC    Draft: PSL    Date: 7/10/15  
 Checked: JAC    Scale: AS SHOWN    Project No.: 15031  
 Drawing Name: 15031-PLAN SET.dwg

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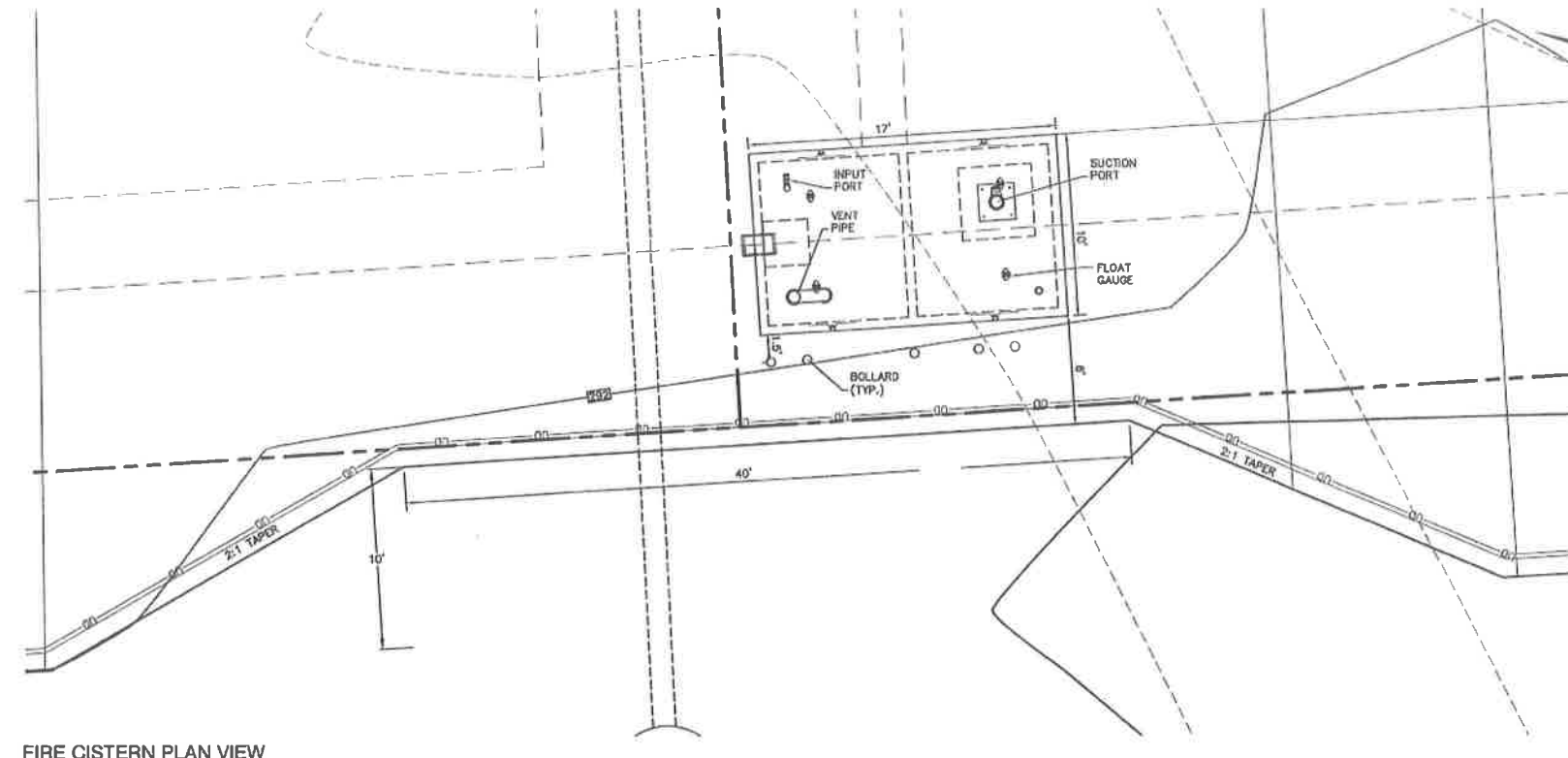
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 Civil Engineering Services

65 Portsmouth Ave.    PO Box 219    Stratham, NH 03886    603-772-4746    FAX: 603-772-0227    E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>CROSS SECTIONS STA 5+00 TO 7+06.72</b>
Project:	<b>BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051</b>
Owner of Record:	<b>DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842</b>

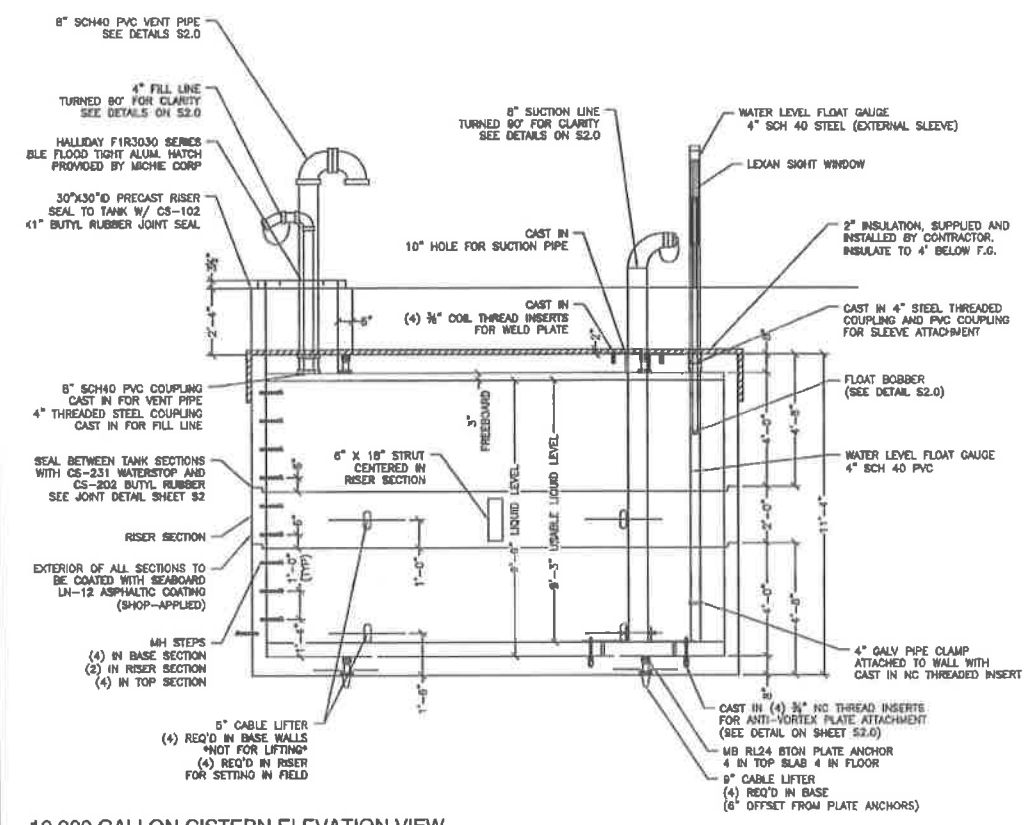
DRAWING No. **X2**  
 SHEET 15 OF 20  
 JBE PROJECT NO. 15031





FIRE CISTERN PLAN VIEW

1"=5'

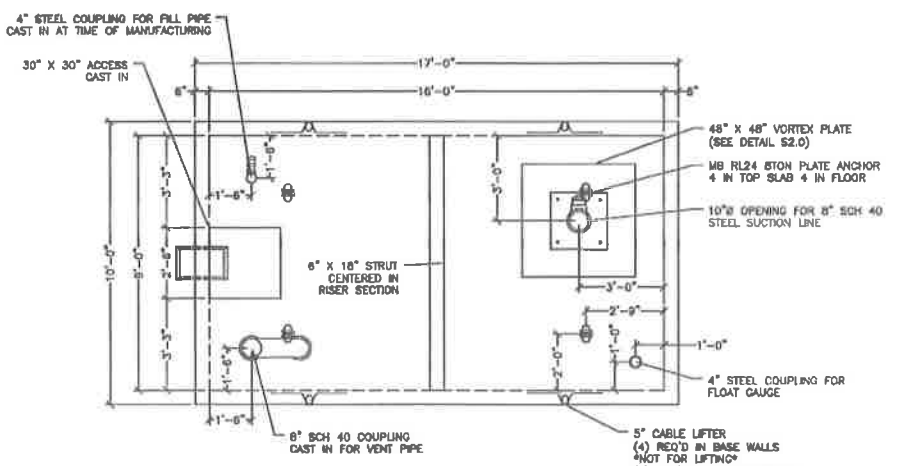


10,000 GALLON CISTERN ELEVATION VIEW

NOT TO SCALE

**PAINING SCHEDULE**

- EXTERIOR FERROUS METALS AND PVC:
  - 1st COAT-EPOLON II MULTI-MIL 3-4 MILS
  - 2nd COAT-EPOLON II MULTI-MIL 3-4 MILS
  - 3rd COAT-HI SOLIDS POLYURETHANE 3-4 MILS
  - SURFACE PREP-55 PC SPG-COMMERCIAL BLAST CLEANING
- SUBMERGED FERROUS METALS:
  - 1st COAT-ZINC CLAD 5 ZINC PAINT 3-4 MILS
  - 2nd COAT-DUROPLATE 235 EPOXY 8 MILS



10,000 GALLON CISTERN PLAN VIEW

NOT TO SCALE

**10K CISTERN - 1 REQ'D**  
 UNIT WEIGHT AND VOLUME:  
 BASE SECTION REQ'D (279056): 8.04CY (33,700#)  
 RISER SECTION REQ'D (279224):  
 RISER 1.93CY STRUT 0.25CY TOTAL WT 6,140#  
 TOP SECTION REQ'D (279358): 7.93CY (33,300#)

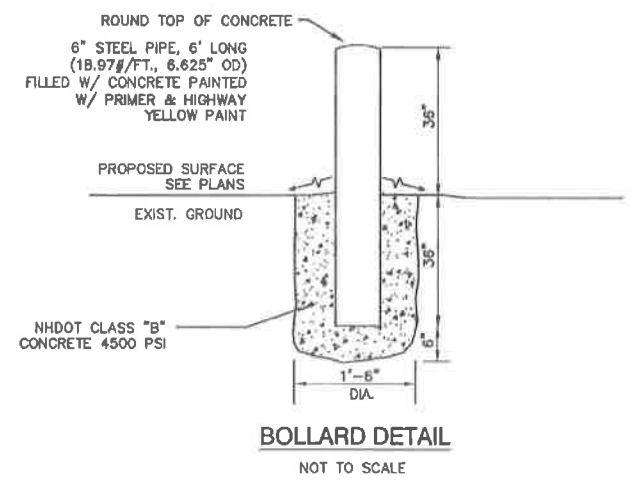
**30" X 30" X 28" RISER - 1 REQ'D**  
 UNIT WEIGHT AND VOLUME:  
 2200# (0.52CY)

**NOTES:**

- MAINTAIN MINIMUM 60 DEGREE SLING ANGLE WHEN HANDLING PRECAST COMPONENTS.
  - PRECAST COMPONENTS SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO STRIPPING, AND THE MINIMUM DESIGN COMPRESSIVE STRENGTH PRIOR TO SHIPPING, UNLESS OTHERWISE APPROVED.
  - CONCRETE SHALL BE SELF-CONSOLIDATING CONFORMING TO ASTM C260 WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI. AGGREGATE SHALL CONFORM TO ASTM C-33 WITH A MAXIMUM DIAMETER OF 3/4". CEMENT SHALL CONFORM TO ASTM C150.
  - REINFORCING SHALL BE GRADE 60 DEFORMED BLACK BARS CONFORMING TO ASTM A-615. ALL BARS SHALL BE BENT COLD.
  - ALL JOINTS AND VOIDS SHALL BE FILLED WITH NON-SHRINK GROUT.
  - TANK DESIGN USING THE FOLLOWING PROPERTIES:
    - LIVE LOAD: ASHTRIO 15-20
    - EARTH COVER: 2.33 FEET
    - WATER TABLE: 5FT BELOW F.G.
    - LATERAL EARTH PRESSURES: DRY - 40PCF; SAT - 81PCF
    - ADEQUACY OF THE ABOVE INFORMATION SHALL BE REVIEWED FOR SITE SPECIFIC CONDITIONS BY QUALIFIED LICENSED PROFESSIONAL ENGINEER.
  - ALL EXCAVATED HOLES SHALL BE PREPARED PER OSHA STANDARDS; NOTHING IN THESE PLANS SHALL BE CONSTRUED TO PROVIDE EXCAVATION GUIDANCE. TANK EXCAVATION SHALL BE KEPT DEWATERED THROUGHOUT INSTALLATION AND BACKFILL OPERATIONS.
  - SUBGRADE PREPARATION SHALL CONFORM TO NHDOT SECTION 608. STRUCTURE SHALL BE PLACED AT ELEVATIONS SHOWN ON A MINIMUM OF 1'-0" OF CRUSHED STONE CONFORMING TO NHDOT SECTION 508.2.1.1. ALL TOPSOIL, LOOSE FILL, AND DELETERIOUS MATERIALS SHALL BE REMOVED BEFORE PLACING MATERIAL.
  - BACKFILL MATERIAL SHALL CONFORM TO NHDOT SECTION 209.2.1.4 GRANULAR BACKFILL. BACKFILL SHALL EXTEND FOR A MINIMUM DISTANCE OF 5'-0" BEYOND THE HORIZONTAL LIMITS OF THE STRUCTURE. PLACEMENT SHALL CONFORM TO NHDOT SECTION 209.3.1. ALL COMPACTION SHALL BE DONE WITH HAND-OPERATED COMPACTION EQUIPMENT.
  - IF THERE IS ADDITIONAL INFORMATION PERTINENT TO THE FABRICATION AND INSTALLATION OF THESE UNITS THAT IS NOT CONTAINED WITHIN THE RESOURCES LISTED ABOVE IT SHALL BE BROUGHT TO THE ATTENTION OF MICHE CORPORATION. FAILURE TO MAKE SUCH ADDITIONAL INFORMATION AVAILABLE SHALL RELIEVE MICHE CORPORATION OF ALL LIABILITIES ARISING FROM ERRORS OR OMISSIONS RELATED TO THE OMITTED INFORMATION.
  - 10,500 GALLONS REQUIRED TO FILL TANK TO CAPACITY (3" FREEBOARD). USABLE TANK CAPACITY IS 9,960 GALLONS.
- STEELWORK WILL BEGIN.
  - EXCAVATION IS COMPLETED.
  - DEADMEN ARE IN PLACE.
  - TANK IN PLACE WITH TIE DOWN STRAPS INSTALLED PRIOR TO BACKFILLING.
  - BELOW GRADE PAINTING COMPLETE. PRIOR TO BACK FILLING.
  - BACKFILLING COMPLETED AFTER INSULATION IS INSTALLED.
  - START AND FINISH OF LEAKAGE TEST.
  - PIPING, MANWAYS AND BOLLARDS IN PLACE AND PAINTED.
  - ALL BACKFILLING, LOAM AND SEEDING IS COMPLETED.
  - PAVEMENT REPAIR AND ALL WORK 100% COMPLETED.
  - ACCEPTANCE TEST
- ALL CONCRETE MUST HAVE A MINIMUM DENSITY OF 140 PCF AND A COMPRESSIVE STRENGTH OF 3,500 PSI MIN.
  - ALL STONE MUST HAVE A MINIMUM DENSITY OF 120 PCF.
  - INFORMATION ASTM STANDARD DOCUMENT NO. D4021-96. TANK TO BE TESTED AND INSTALLED IN ACCORDANCE WITH XERXES CURRENT SPECIFICATIONS AND PUBLISHED INSTALLATION INSTRUCTIONS.
  - TANK TO BE BACKFILLED WITH MIX OF ROUNDED STONE PARTICLES FROM 3/8" TO 1/2", COMPACTED IN 12" LIFTS.
  - HOSE CONNECTIONS SHALL CONFORM TO TOWN FIRE DEPT. REQUIREMENTS.

**CISTERN SPECIFICATIONS**

- THE CISTERN SYSTEM SHALL BE DESIGNED FOR A 50 YEAR TROUBLE FREE LIFE EXPECTANCY.
- THE ENTIRE CISTERN SYSTEM AND APPURTENANCES SHALL BE DESIGNED FOR H-20 HIGHWAY LOADING.
- ALL SUCTION PIPING SHALL BE AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM) SCHEDULE 80 PVC WITH A DIAMETER OF EIGHT (8) INCHES. ALL VENT PIPING SHALL BE ASTM SCHEDULE 80 PVC WITH A DIAMETER OF 6" WITH 1000 GPM MINIMUM CAPACITY. ALL PIPING LOCATED WITHIN THE TANK SHALL BE ASTM SCHEDULE 80 PVC WITH GLUED JOINTS.
- THE DISTANCE FROM THE BOTTOM OF THE SUCTION PIPE TO THE DRY HYDRANT SUCTION PIPE SHALL NOT EXCEED FIFTEEN (15) FEET VERTICALLY.
- ALL HORIZONTAL SUCTION PIPES SHALL BE INSTALLED SLIGHTLY SLOPED TO PREVENT ANY WATER FROM REMAINING IN THE PIPES AFTER PUMPING.
- THE CONCRETE BASE AND STAINLESS STEEL TIE DOWNS HAVE BEEN DESIGNED TO PREVENT ANY BUOYANCY WHEN CISTERN IS EMPTY.
- BEDDING FOR THE CISTERN SHALL CONSIST OF A MINIMUM OF TWELVE (12) INCHES COMPACTED OF 3/8" TO 1/2" WASHED PEA STONE. NO FILL SHALL BE USED UNDER THE STONE. IN THE EVENT OF OVER EXCAVATION, THE ABOVE PEA STONE SHALL BE USED TO BRING UP TO PROPER GRADE.
- ALL BACKFILL MATERIAL SHALL BE SCREENED GRAVEL WITH NO STONES LARGER THAN ONE AND ONE-HALF (1 1/2) INCH PLACED FROM 6" ABOVE THE TANK. ALL MATERIAL SHALL BE COMPACTED TO 95 PERCENT OF THE OF THE ORIGINAL VOLUME IN ACCORDANCE WITH ASTM D 1557.
- THE TOP FOUR (4) FEET OF THE CISTERN SHALL BE BACKFILLED WITH A COMPACTED MATERIAL OF 120 PCF MINIMUM. INSULATION SHALL BE CLOSED CELL POLYURETHANE FOAM WITH AN INSULATION FACTOR OF R=7 PER INCH OR GREATER. ALL BACKFILL SHALL EXTEND TEN (10) FEET BEYOND THE EDGE OF PAVEMENT AND THEN HAVE A MAXIMUM SLOPE OF 3:1. ALL DISTURBED AREAS SHALL BE COVERED WITH LOAM AND SEEDED.
- THE FIRE CHIEF SHALL INSPECT THE COMPLETED CISTERN PRIOR TO ANY BACKFILLING.
- AFTER BACKFILLING IS COMPLETED, BOLLARDS WILL BE INSTALLED TO PROTECT THE CISTERN AND ALL APPURTENANCES.
- ALL CONSTRUCTION, BACKFILL AND GRADING MATERIALS SHALL BE IN ACCORDANCE WITH PROPER CONSTRUCTION PRACTICES AND ACCEPTABLE BY THE FIRE CHIEF.
- PRIOR TO THE START OF CONSTRUCTION THE FIRE CHIEF OR THE DESIGNATED REPRESENTATIVE OF THE FIRE DEPARTMENT SHALL BE NOTIFIED BY THE APPLICANT, FOR THE PURPOSE OF INSPECTION, THE DATES THAT:
  - STEELWORK WILL BEGIN.
  - EXCAVATION IS COMPLETED.
  - DEADMEN ARE IN PLACE.
  - TANK IN PLACE WITH TIE DOWN STRAPS INSTALLED PRIOR TO BACKFILLING.
  - BELOW GRADE PAINTING COMPLETE. PRIOR TO BACK FILLING.
  - BACKFILLING COMPLETED AFTER INSULATION IS INSTALLED.
  - START AND FINISH OF LEAKAGE TEST.
  - PIPING, MANWAYS AND BOLLARDS IN PLACE AND PAINTED.
  - ALL BACKFILLING, LOAM AND SEEDING IS COMPLETED.
  - PAVEMENT REPAIR AND ALL WORK 100% COMPLETED.
  - ACCEPTANCE TEST



BOLLARD DETAIL

NOT TO SCALE

Design: JAC	Draft: PSL	Date: 7/10/15
Checked: JAC	Scale: AS SHOWN	Project No.: 15031
Drawing Name: 15031-PLAN SET.dwg		
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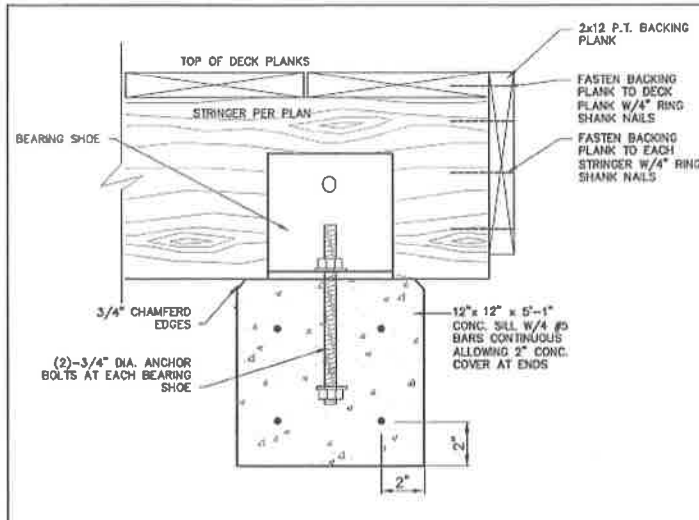
Civil Engineering Services

603-772-4746  
 FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>10,000 GALLON FIRE CISTERN DETAILS</b>
Project:	<b>BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051</b>
Owner of Record:	<b>DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842</b>

DRAWING No.	<b>F1</b>
SHEET 16 OF 20	JBE PROJECT NO. 15031

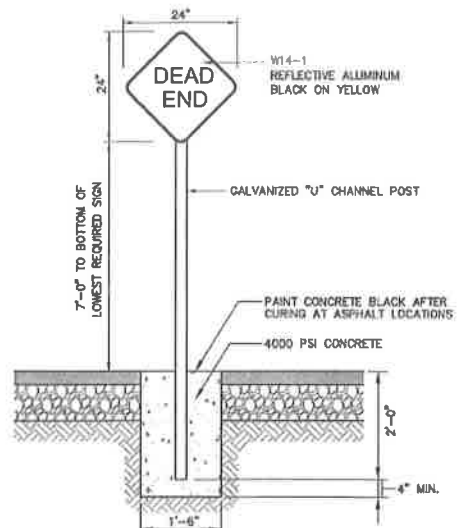
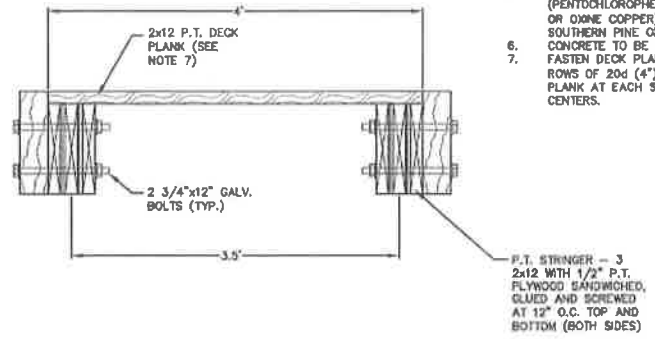




**FOOT BRIDGE DETAIL**

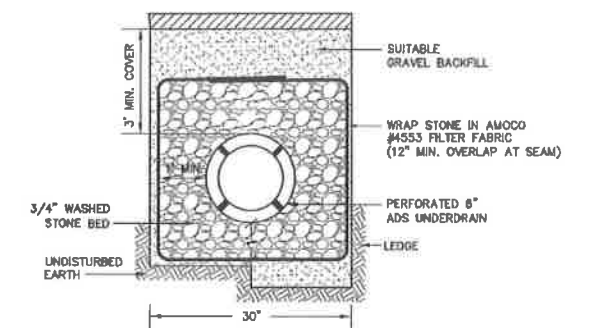
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- PROJECT DESIGN CRITERIA**  
 THIS BRIDGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
1. SPAN LENGTH=12' (CENTERLINE BEARING TO CENTERLINE BEARING)
  2. CLEAR WIDTH=4'
  3. STRINGERS: REQUIRED-3  
 \*NOMINAL DIMENSIONS-S 7/8" x 11 5/8" x 20'
  4. ALL HARDWARE TO BE GALVANIZED.
  5. ALL WOOD TO BE TREATED (PENTACHLOROPHENOL, COPPER NAPHTHENE OR DIXIE COPPER). ALL WOOD TO BE NO.2 SOUTHERN PINE OR BETTER.
  6. CONCRETE TO BE 4,000 PSI TYPICAL.
  7. FASTEN DECK PLANKS TO STRINGERS WITH TWO ROWS OF 20d (4") RING SHANK NAILS PER PLANK AT EACH STRINGER. ALTERNATE CENTERS.



**'DEAD END' SIGN (W14-1)**

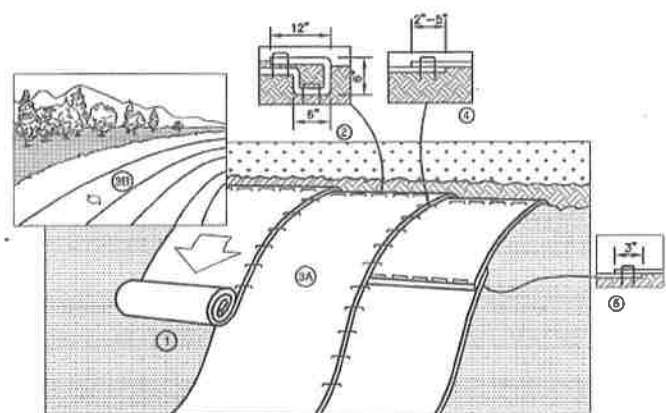
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**ROADWAY UNDERDRAIN TRENCH**

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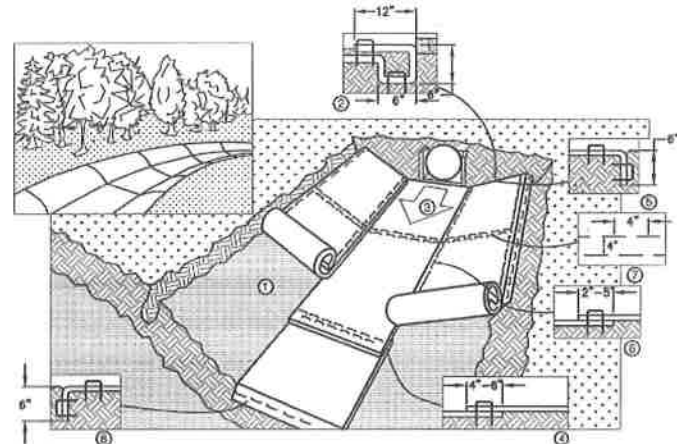
- NOTES:**
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
  2. NEW ROADWAY CONSTRUCTION SHALL CONFORM TO PROJECT AND TOWN SPECIFICATIONS.
  3. SLOPE UNDERDRAIN PIPE TO DAYLIGHT.



**EROSION CONTROL BLANKET SLOPE INSTALLATION**

NOT TO SCALE

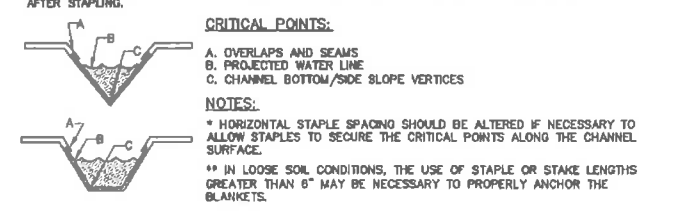
- NOTES:**
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
  3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-3" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
  5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH. NOTE: IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.



**EROSION CONTROL BLANKET SWALE INSTALLATION**

NOT TO SCALE

- NOTES:**
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
  3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
  5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
  6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (DEPENDING ON BLANKET TYPE) AND STAPLED, TO INSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
  7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
  8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



**EROSION CONTROL BLANKET SWALE INSTALLATION**

NOT TO SCALE

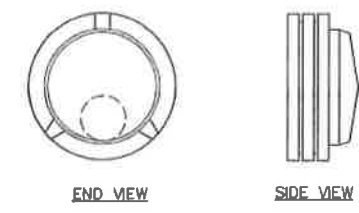
**CRITICAL POINTS:**

- A. OVERLAPS AND SEAMS
- B. PROJECTED WATER LINE
- C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

**NOTES:**

- \* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
- \*\* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

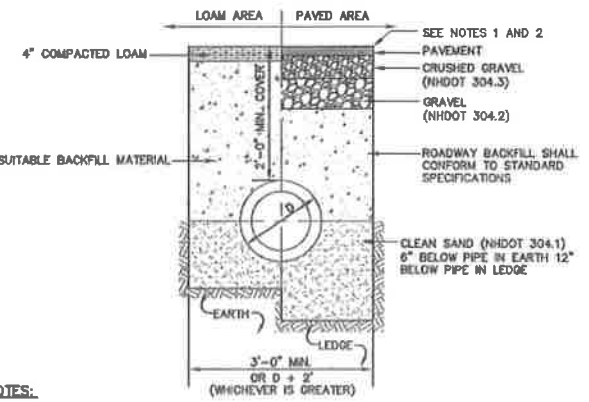
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**ADS ORIFICE END CAP**

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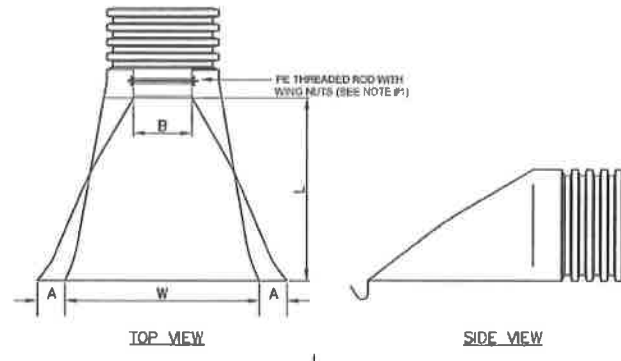
- NOTE:**
1. ADS N-12 SPLIT END CAP, ADS PRODUCT #--67-AA. CONTRACTOR TO DRILL A CIRCULAR ORIFICE AS SPECIFIED ON CONSTRUCTION DRAWINGS IN THE END CAP TO MATCH THE INLET INVERT OF THE RECEIVING ADS N-12 CULVERT. INSTALLATION REQUIRES THAT THE END CAP BE FIELD BOLTED TO THE CULVERT WITH STAINLESS STEEL (SS306) HARDWARE.



**DRAINAGE TRENCH**

NOT TO SCALE

- NOTES:**
1. PAVEMENT REPAIR IN EXISTING ROADWAYS SHALL CONFORM TO STREET OPENING REGULATIONS.
  2. NEW ROADWAY CONSTRUCTION SHALL CONFORM WITH PROJECT AND TOWN SPECIFICATIONS.
  3. ALL MATERIALS ARE TO BE COMPACTED TO 95% OF ASTM D-1557.



**ADS N-12 FLARED END SECTION**

NOT TO SCALE

- NOTES:**
1. FE THREADED ROD WITH WING NUTS PROVIDED FOR END SECTIONS 12"-24". 30" AND 36" END SECTIONS TO BE WELDED PER MANUFACTURER'S RECOMMENDATIONS.
  2. ALL DIMENSIONS ARE NOMINAL.

PART NO.	PIPE SIZE	A	B (MAX)	H	L	W
1210-NP	12"	6.5"	10"	6.5"	25"	28"
1510-NP	15"	6.5"	10"	6.5"	25"	29"
1810-NP	18"	7.5"	15"	6.5"	32"	35"
2410-NP	24"	7.5"	18"	6.5"	36"	43"
3010-NP	30"	10.5"	N/A	7.0"	53"	68"
3610-NP	36"	10.5"	N/A	7.0"	53"	68"

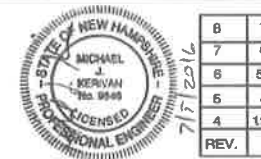
**NORTH AMERICAN GREEN**  
 14649 HIGHWAY 41 NORTH  
 EVANSVILLE, INDIANA 47725  
 1-800-772-2040

**EROSION CONTROL BLANKET SLOPE INSTALLATION**  
 NORTH AMERICAN GREEN (800) 772-2040

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Design: JAC	Draft: PSL	Date: 7/10/15
Checked: JAC	Scale: AS NOTED	Project No.: 15031
Drawing Name: 15031-PLAN SET.dwg		

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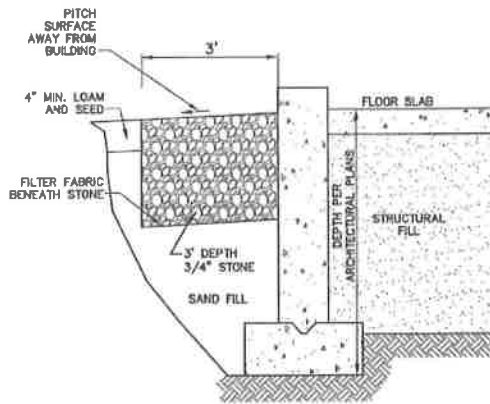
Designed and Produced in NH

**Jones & Beach Engineers, Inc.**  
 Civil Engineering Services  
 65 Portsmouth Ave. PO Box 219 Stratham, NH 03885  
 603-772-4746  
 FAX: 603-772-0227  
 E-MAIL: JBE@JONESANDBEACH.COM

Plan Name: **DETAIL SHEET**  
 Project: **BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051**  
 Owner of Record: **DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842**

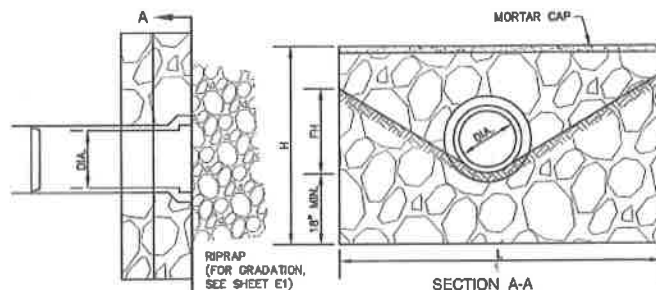
DRAWING No. **D2**  
 SHEET 18 OF 20  
 JBE PROJECT NO. 15031

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DRIP EDGE DETAIL

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SECTION A-A

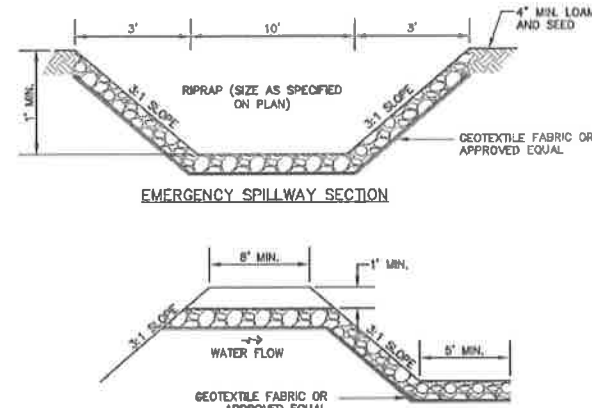
DIA.	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	PIPE COVER	HEADWALL BOTTOM WIDTH
D	L	H	FH	h	W
12"	4'-3"	3'-9"	1'-1"	1'-3"	2'-0"
15"	6'-0"	4'-3"	1'-7"	1'-6"	2'-1"
18"	7'-0"	4'-6"	1'-10"	1'-8"	2'-2"
24"	9'-0"	5'-0"	2'-4"	1'-8"	2'-3"
30"	11'-0"	5'-8"	2'-10"	1'-8"	2'-5"
36"	13'-0"	6'-0"	3'-4"	1'-6"	2'-6"
42"	15'-9"	6'-9"	4'-1"	1'-9"	2'-9"
48"	17'-9"	7'-3"	4'-7"	1'-9"	2'-10"

NOTES:

1. ALL DIMENSIONS GIVEN IN FEET AND INCHES.
2. PROVIDE BELL END AT INLET HEADWALL, AND SPIGOT END AT OUTLET END HEADWALL.
3. RIPRAP SHALL BE SIZED TO RESIST THE TRACTIVE VELOCITY FORCES.

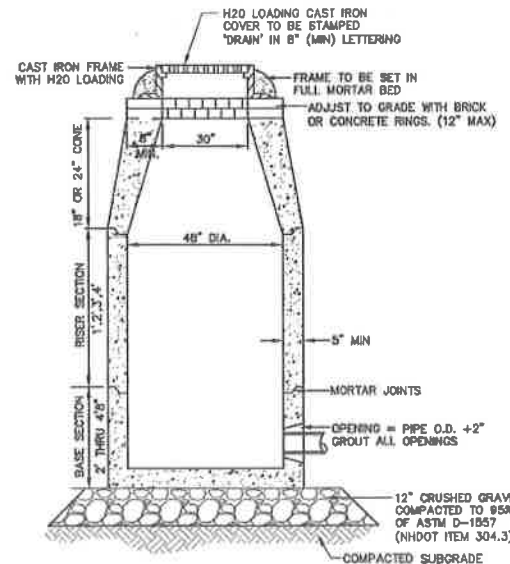
MORTAR RUBBLE MASONRY HEADWALL

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EMERGENCY SPILLWAY

NOT TO SCALE

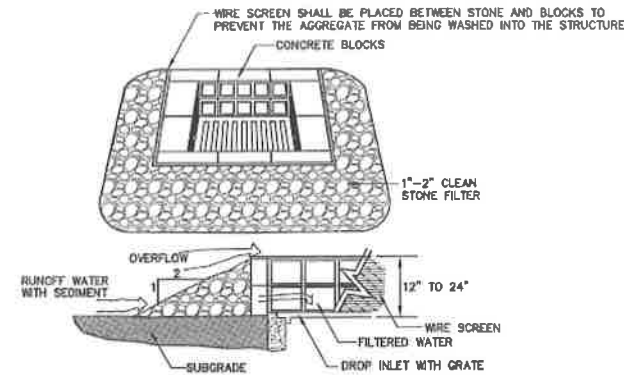


NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL DRAIN MANHOLE FRAMES AND GRATES SHALL BE NHDOT TYPE MH-1, OR MEEHAR R-1798 OR APPROVED EQUAL (30" DIA. TYPICAL).
8. STANDARD FRAME(S) AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE "DONUTS".

DRAIN MANHOLE

NOT TO SCALE

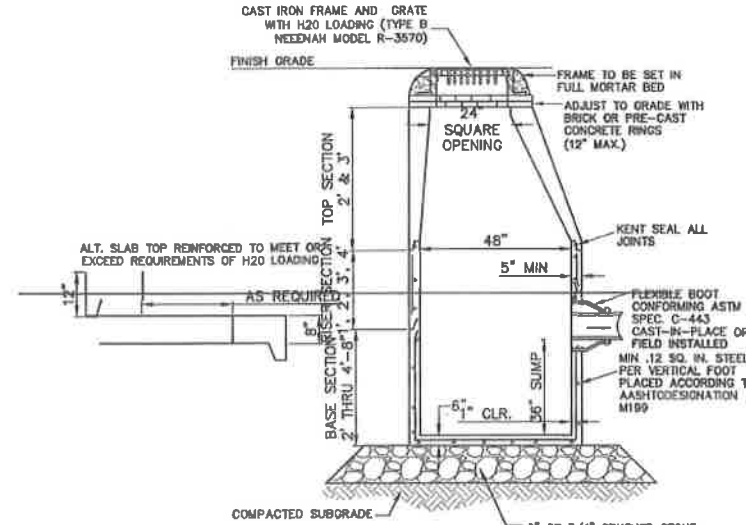


MAINTENANCE NOTE:

1. ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAINFALL AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED IN A SUITABLE UPLAND AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURE OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

TEMPORARY CATCH BASIN INLET PROTECTION (Block and Gravel Drop Inlet Sediment Filter)

NOT TO SCALE



NOTES:

1. BASE SECTION SHALL BE MONOLITHIC WITH 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H2O LOADING.
3. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. FRAMES AND GRATES SHALL BE HEAVY DUTY AND DESIGNED FOR H2O LOADING.
5. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS SO AS TO BE WATERTIGHT.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NHDOT CATCH BASIN TYPE ALTERNATE 1 OR MEEHAR R-3870 OR APPROVED EQUAL (24"x24" TYPICAL).
8. STANDARD CATCH BASIN FRAME AND GRATE(S) SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM, BUT NO MORE THAN 12"), OR PRECAST CONCRETE "DONUTS".

CATCH BASIN

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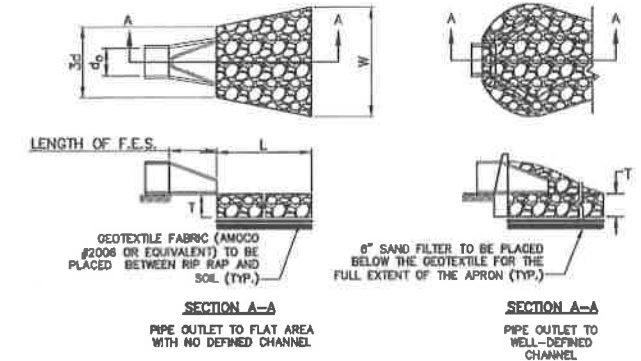


TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES  
THICKNESS OF RIP RAP = 0.75 FEET

d50 SIZE=	0.25 FEET	3 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO
100%	5	6
85%	4	5
50%	3	5
15%	1	2

TABLE 7-24--RECOMMENDED RIP RAP GRADATION RANGES  
THICKNESS OF RIP RAP = 1.5 FEET

d50 SIZE=	0.50 FEET	6 INCHES
% OF WEIGHT SMALLER THAN THE GIVEN d50 SIZE	SIZE OF STONE (INCHES) FROM	TO
100%	9	12
85%	8	11
50%	6	9
15%	2	3

NOTES:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE RIP RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
5. OUTLETS TO A DEFINED CHANNEL SHALL HAVE 2:1 OR FLATTER SIDE SLOPES AND SHOULD BEGIN AT THE TOP OF THE CULVERT AND TAPER DOWN TO THE CHANNEL BOTTOM THROUGH THE LENGTH OF THE APRON.
6. MAINTENANCE: THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIP RAP HAS BEEN DISPLACED, UNDERMINED OR DAMAGED, IT SHOULD BE REPAIRED IMMEDIATELY. THE CHANNEL IMMEDIATELY BELOW THE OUTLET SHOULD BE CHECKED TO SEE THAT EROSION IS NOT OCCURRING. THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO OUTLET PROTECTION.

RIP RAP OUTLET PROTECTION APRON

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Design: JAC	Draft: PSL	Date: 7/10/16
Checked: JAC	Scale: AS NOTED	Project No.: 16031
Drawing Name: 15031-PLAN SET.dwg		
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REV.	DATE	REVISION	BY
8	7/5/16	REVISED PER TOWN COMMENTS	PSL
7	8/1/16	REVISED LOTS 13-5 AND 13-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/16	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/15	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced in NH

**J/B Jones & Beach Engineers, Inc.**

Civil Engineering Services

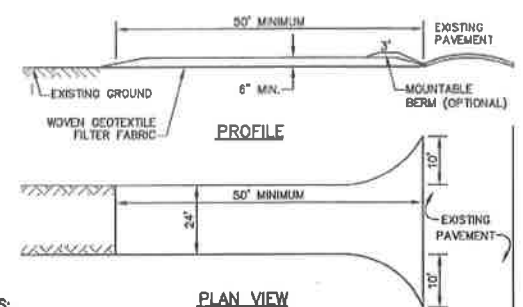
65 Portsmouth Ave. PO Box 219 Stratham, NH 03885

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603-772-0227  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	DETAIL SHEET	DRAWING No.	D3
Project:	BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051	SHEET 19 OF 20	JBE PROJECT NO. 16031
Owner of Record:	DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842		

**SEEDING SPECIFICATIONS**

1. **GRADING AND SHAPING**
  - A. SLOPES SHALL NOT BE STEEPER THAN 2:1 WITHOUT APPROPRIATE EROSION CONTROL MEASURES AS SPECIFIED ON THE PLANS (3:1 SLOPES OR FLATTER ARE PREFERRED).
  - B. WHERE MOWING WILL BE DONE, 3:1 SLOPES OR FLATTER ARE RECOMMENDED.
2. **SEEDBED PREPARATION**
  - A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
  - B. STONES LARGER THAN 4 INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT 4 INCHES TO PREPARE A SEEDBED AND FERTILIZER AND LIME MIXED INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
3. **ESTABLISHING A STAND**
  - A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. TYPES AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:  
 AGRICULTURAL LIMESTONE, 2 TONS PER ACRE OR 100 LBS. PER 1,000 SQ.FT.  
 NITROGEN(N), 50 LBS. PER ACRE OR 1.1 LBS. PER 1,000 SQ.FT.  
 PHOSPHATE(P2O5), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.  
 POTASH(K2O), 100 LBS. PER ACRE OR 2.2 LBS. PER 1,000 SQ.FT.  
 (NOTE: THIS IS THE EQUIVALENT OF 600 LBS. PER ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS. PER ACRE OF 5-10-10.)
  - B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH .25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
  - C. REFER TO THE 'SEEDING GUIDE' AND 'SEEDING RATES' TABLES ON THIS SHEET FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING. ALL LEGUMES (CROWNFETCH, BIRDFOOT, TREFOIL AND FLATPEA) MUST BE INOCULATED WITH THEIR SPECIFIC INOCULANT PRIOR TO THEIR INTRODUCTION TO THE SITE.
  - D. WHEN SEEDING AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. WHEN SEEDING AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20th OR FROM AUGUST 10th TO SEPTEMBER 1st.
4. **MULCH**
  - A. HAY, STRAW OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
  - B. MULCH WILL BE HELD IN PLACE USING APPROPRIATE TECHNIQUES FROM THE BEST MANAGEMENT PRACTICE FOR MULCHING. HAY OR STRAW MULCH SHALL BE PLACED AT A RATE OF 90 LBS PER 1000 S.F.
5. **MAINTENANCE TO ESTABLISH A STAND**
  - A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
  - B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ON-SITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED.
  - C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED, ANNUAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.



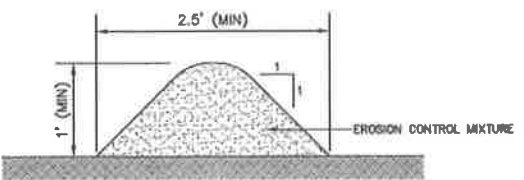
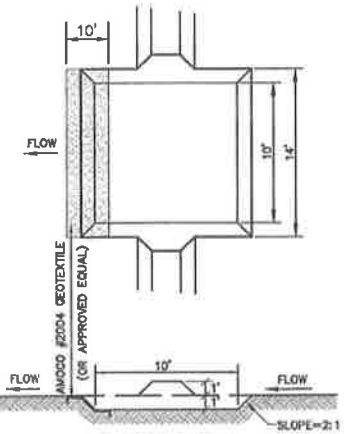
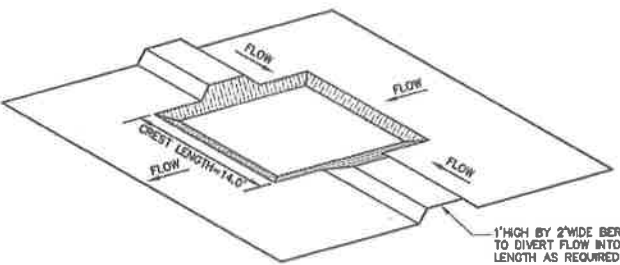
- NOTES:**
1. STONE FOR STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE, OR RECYCLED CONCRETE EQUIVALENT.
  2. THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
  3. THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
  4. THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN THE FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS, OR 10 FEET, WHICHEVER IS GREATER.
  5. GEOTEXTILE FILTER FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. FILTER FABRIC IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
  6. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A STONE BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
  7. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED PROMPTLY.

**STABILIZED CONSTRUCTION ENTRANCE**

NOT TO SCALE

**TEMPORARY EROSION CONTROL NOTES**

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME. AT NO TIME SHALL AN AREA IN EXCESS OF 5 ACRES BE EXPOSED AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED.
2. EROSION, SEDIMENT AND DETENTION MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND AT LOCATIONS AS REQUIRED, DIRECTED BY THE ENGINEER.
3. ALL DISTURBED AREAS (INCLUDING POND AREAS BELOW THE PROPOSED WATERLINE) SHALL BE RETURNED TO PROPOSED GRADES AND ELEVATIONS. DISTURBED AREAS SHALL BE LOAMED WITH A MINIMUM OF 6" OF SCREENED ORGANIC LOAM AND SEEDED WITH SEED MIXTURE 'C' AT A RATE NOT LESS THAN 1.10 POUNDS OF SEED PER 1,000 S.F. OF AREA (48 LBS. / ACRE).
4. SILT FENCES AND OTHER BARRIERS SHALL BE INSPECTED EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 0.25" OR GREATER. ALL DAMAGED AREAS SHALL BE REPAIRED, AND SEDIMENT DEPOSITS SHALL PERIODICALLY BE REMOVED AND DISPOSED OF.
5. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, THE TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED AND THE AREA DISTURBED BY THE REMOVAL SMOOTHED AND RE-VEGETATED.
6. AREAS MUST BE SEEDED AND MULCHED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 3 DAYS OF FINAL GRADING, OR TEMPORARILY STABILIZED WITHIN 14 DAYS OF THE INITIAL DISTURBANCE OF SOIL. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE.
7. ALL PROPOSED VEGETATED AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING NORTH AMERICAN GREEN S75 EROSION CONTROL BLANKETS (OR AN EQUIVALENT APPROVED IN WRITING BY THE ENGINEER) ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
8. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
9. AFTER NOVEMBER 15th, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3" OF CRUSHED GRAVEL PER MNDOT ITEM 304.3.
10. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
  - a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
  - b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
  - c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED; OR
  - d. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
11. FUGITIVE DUST CONTROL IS REQUIRED TO BE CONTROLLED IN ACCORDANCE WITH ENV-A 1000, AND THE PROJECT IS TO MEET THE REQUIREMENTS AND INTENT OF RSA 430:83 AND AGR 3800 RELATIVE TO INVASIVE SPECIES.
12. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS, AND PHONE NUMBER SHALL BE SUBMITTED TO DES VIA EMAIL (SEE BELOW).
13. PRIOR TO CONSTRUCTION, A PHASING PLAN THAT DELINEATES EACH PHASE OF THE PROJECT SHALL BE SUBMITTED. ALL TEMPORARY SEDIMENT BASINS THAT WILL BE NEEDED FOR DEWATERING WORK AREAS SHALL BE LOCATED AND IDENTIFIED ON THIS PLAN.



- NOTES:**
1. ORGANIC FILTER BERMS MAY BE UTILIZED IN LIEU OF SILT FENCE, UNLESS OTHERWISE SPECIFIED.
  2. THE EROSION CONTROL MIX USED IN THE FILTER BERMS SHALL BE A WELL-GRADED MIXTURE OF PARTICLE SIZES, MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER, STUMP GRINDINGS, SHREDDED OR COMPOSTED BARK, OR ACCEPTABLE MANUFACTURED PRODUCTS, AND SHALL BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH, AND SHALL MEET THE FOLLOWING STANDARDS:
    - a) THE ORGANIC CONTENT SHALL BE 80-100% OF DRY WEIGHT.
    - b) PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN, AND 70-85% PASSING A 0.75" SCREEN.
    - c) THE ORGANIC PORTION SHALL BE FIBROUS AND ELONGATED.
    - d) LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS SHALL NOT BE INCLUDED IN THE MIXTURE.
    - e) SOLUBLE SALTS CONTENT SHALL BE >4.0mmhos/cm.
    - f) THE PH SHALL BE BETWEEN 5.0 AND 8.0.
  3. ORGANIC FILTER BERMS SHALL BE INSTALLED ALONG A RELATIVELY LEVEL CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BERM.
  4. ON SLOPES LESS THAN 6% OR AT THE BOTTOM OF SLOPES STEEPER THAN 3:1, UP TO 20' LONG, THE BERM SHALL BE A MINIMUM OF 12" HIGH (AS MEASURED ON THE UPHILL SIDE), AND A MINIMUM OF 36" WIDE. ON LONGER OR STEEPER SLOPES, THE BERM SHALL BE WIDER TO ACCOMMODATE THE POTENTIAL ADDITIONAL RUNOFF.
  5. FROZEN GROUND, OUTCROPS OF BEDROCK, AND VERY ROOTED FORESTED AREAS PRESENT THE MOST PRACTICAL AND EFFECTIVE LOCATIONS FOR ORGANIC FILTER BERMS. OTHER BMP'S SHOULD BE USED AT LOW POINTS OF CONCENTRATED RUNOFF, BELOW CULVERT OUTLET APRONS, AROUND CATCH BASINS, AND AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT HAVE A LARGE CONTRIBUTING AREA.
  6. SEDIMENT SHALL BE REMOVED FROM BEHIND THE STRUCTURES WHEN IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE STRUCTURE.
  7. STRUCTURES MAY BE LEFT IN PLACE ONCE THE SITE IS STABILIZED.

**ORGANIC FILTER BERM**

NOT TO SCALE

**CONSTRUCTION SPECIFICATIONS:**

1. THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION, ROOTS, AND DEBRIS.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS, WOODY VEGETATION, STONES OVER 6" SIZE, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIALS. THE FILL SHALL BE COMPACTED BY ROUTING CONSTRUCTION EQUIPMENT OVER IT SO THAT THE ENTIRE AREA OF THE FILL IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT.
3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
4. ALL CUT AND FILL SLOPES SHALL BE 2:1 (H:V) OR FLATTER.
5. OUTLET CREST ELEVATIONS SHALL BE AT LEAST ONE FOOT BELOW THE TOP OF THE EMBANKMENT.
6. OUTLET CREST IS TO BE STABILIZED WITH AMOCO #2004 GEOTEXTILE (OR APPROVED EQUAL), WHICH IS TO BE "TOED" INTO THE GROUND AT ITS ENDS AT LEAST SIX INCHES AND IS TO EXTEND AT LEAST ONE FOOT INTO THE TRAP AND ONE FOOT DOWNSTREAM FROM THE OUTLET EDGE FOR THE ENTIRE LENGTH OF THE CREST.
7. ALL DISTURBED AREAS SHALL BE VEGETATED USING THE APPROPRIATE VEGETATIVE BEST MANAGEMENT PRACTICE.
8. ALL TRAPS ARE TO HAVE SEDIMENT DEPOSITS REMOVED AND DISPOSED PROPERLY AT LEAST ONCE WEEKLY AND AFTER EACH RAINFALL.

**TEMPORARY SEDIMENT TRAP**

NOT TO SCALE

USE	SEEDING MIXTURE 1/	DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, OOD AREAS, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	EXCELLENT
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
PLAY AREAS AND ATHLETIC FIELDS (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT	2/
	F	FAIR	EXCELLENT	EXCELLENT	2/
GRAVEL PIT, SEE NH-PM-24 IN APPENDIX FOR RECOMMENDATION REGARDING RECLAMATION OF SAND AND GRAVEL PITS.					
1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE BELOW.					
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREA AND ATHLETIC FIELDS.					

NOTE: TEMPORARY SEED MIX FOR STABILIZATION OF TURF SHALL BE WINTER RYE OR OATS AT A RATE OF 2.6 LBS. PER 1000 S.F. AND SHALL BE PLACED PRIOR TO OCTOBER 15th, IF PERMANENT SEEDING NOT YET COMPLETE.

**SEEDING GUIDE**

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 Sq. Ft.
A. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
RED TOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREeping RED FESCUE	15	0.35
CROWN VETCH OR FLAT PEA	30	0.75
TOTAL	40 OR 65	0.95 OR 1.35
C. TALL FESCUE	20	0.45
CREeping RED FESCUE	20	0.45
BIRD'S FOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. TALL FESCUE	20	0.45
FLAT PEA	30	0.75
TOTAL	50	1.20
E. CREeping RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/2	50	1.15
TOTAL	100	2.30
F. TALL FESCUE 1	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

**SEEDING RATES**

Design: JAC	Draft: PSL	Date: 7/10/15
Checked: JAC	Scale: AS NOTED	Project No.: 15031
Drawing Name: 15031-PLAN SET.dwg		
THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.		



REV.	DATE	REVISION	BY
8	7/5/18	REVISED PER TOWN COMMENTS	PSL
7	6/1/16	REVISED LOTS 19-5 AND 19-6	PSL
6	5/31/16	REVISED PER TOWN COMMENTS	PSL
5	4/7/18	REVISED PER PLANNING BOARD COMMENTS	PSL
4	12/18/16	REVISED PER CONSERVATION COMMISSION COMMENTS	PSL

Designed and Produced In NH

**J/B Jones & Beach Engineers, Inc.**

85 Portsmouth Ave. Stratham, NH 03885

Civil Engineering Services

603-772-4748  
603-772-0227  
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	<b>EROSION AND SEDIMENT CONTROL DETAILS</b>
Project:	<b>BROOKVIEW SUBDIVISION SPEARE ROAD, HUDSON, NH 03051</b>
Owner of Record:	<b>DOUGLAS S. SANDERSON 11 NERSESIAN WAY, HAMPTON, NH 03842</b>

DRAWING No.	<b>E1</b>
SHEET 20 OF 20	JBE PROJECT NO. 15031

F:\Land Projects\311503-HUDSON-SPEARE-ROAD-PORTER.dwg V15031-PLAN SET.dwg 7/1/2016 12:03:15 PM EDT

Packet: 07/13/2016

## **Brookview OSD Subdivision (f.k.a. Breckenridge Estates) 50 Speare Road**

Staff Report  
13 July 2016

**SITE:** Brookview -- 50 Speare Rd. -- Map 186/Lot013 -- SB# 04-16

**ZONING:** General (G) Minimum Lot Size w/out sewer and water 43,560 sf for a duplex and 43,560 sf (1 acre) for a single-family dwelling and 150 ft. of frontage OSD Subdivisions 21,780 sf min. lot size for single-family dwelling, 75 ft. frontage and 50% required standard setbacks.

**PURPOSE OF PLAN:** to subdivide Tax Map 186/Lot 013 into eight (8) single-family OSD residential lots with individual sanitary sewer disposal and individual well water.

**PLANS UNDER REVIEW ENTITLED:** Open Space Development "Brookview" Tax Map 186, Lot 13, Speare Road, Hudson, New Hampshire, prepared by Jones & Beach Engineers, Inc. 85 Portsmouth Ave., PO Box 219, Stratham, NH, dated 10 JUL 15 and revised thru 1 jul 16, consisting of Sheets 1 – 21 (CS, Y1 -Y2, OV1, A1 – A3, C1 – C4, P1, H1, X1 – X2, D1 – D3 & E1) and Notes 1 – 24 on Sheet OV1(said plans are attached hereto).

**NOTE:** BECAUSE I WILL BE ON VACATION THE WEEK OF THE 4<sup>TH</sup>, AND THE DEADLINE FOR SUBMITTING REVISED PLANS IS JULY 5<sup>TH</sup> THE ABOVEMENTIONED SHEET AND NOTE TOTALS MAY BE DIFFERENT THAN THE ATTACHED PLAN. THIS MATTER WILL BE CLARIFIED AT THE MEETING.

### **ATTACHMENTS:**

1. CLD 2d Comments Report, dated 18 MAY 16 -"A".
2. Jones & Beach, Engineers, Inc. Response Report, pending as of this writing; it will be included in this staff report at the time of its mailing-"B".
3. Deputy Fire Chief, John O'Brien's memo, RE: Cistern Issue, per Planning Board Request, dated 1 JUL 2016 – "C".

### **ATTACHMENTS INCLUDED IN 8 JUNE 16 MEETING PACKET:**

1. Project Narrative Letter by Project Eng., Joseph Coronati OSD Subdivision Plan Application, Waiver Request Forms, CLD/JMC & Applicant Checklists, Owner's Authorization Form and Warranty Deed for Subject Lot, Map 186/Lot 013 - dated 19 APR 16 – "A".

2. CLD Initial Comments Report, dated 18 MAY 16 -"B".
3. Jones & Beach, Engineers, Inc. Response Report, dated 31 MAY 16-"C".
4. Comment Forms and Reports from Engineering, Fire, Zoning, Highway, Assessing & Police -"D".
5. C.A.P. Fee Worksheet -"E".

#### 6. APPLICATION TRACKING:

- 19 APR 16- OSD Subdivision application submitted.
- 25 MAY 16 – Initial Public Hearing postponed, per Applicant's written request, date specific, till the 8 JUN 16 Meeting.
- 8 JUN 16 – Initial public hearing held; application accepted and deferred, date specific, to the 13 JUL 16 Meeting.

#### OUTSTANDING ISSUES/STAFF COMMENTS:

1. Status of Homeowners Association By-Laws and Declaration of Covenants & Restrictions: pending submission. Said docs are required for the proposed "Open Space", landscaped cul-de-sac island and drainage pond/detention basin. Both documents must be provided and favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.
2. Status of the Well Radius Easements for Lots 13 and 13-1 thru 13-6, Well Radius Hold Harmless Agreements for Lots 13-5 & 13-6, as well as all other easement deeds pertaining to this proposed OSD Subdivision: pending submission, and said easement and agreement docs must be provided for and favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.
3. Status of the Fire Dept. recommended cistern: **Since the 8 June 16 meeting, the cistern issue has been addressed, with the Applicant agreeing to install a 10,000 gallon cistern (as shown on the Plans) and he will also install sprinkler systems in each dwelling, per the Deputy Fire Chief's memo "C".**
4. Status of "No cut/No disturb" Conservation Markers – Said markers should now be shown on the pending revised plan, and proposed, as follows: installed along the perimeter of the Conservation District boundaries of the development, and a Note added to Sheet OV 1, citing said markers, as well as other Plan sheets depicting said Conservation District areas. Said markers should be permanently affixed to 8 ft. sections of split-rail fencing, placed at a maximum distance of 200 ft. between sections and along the nearest perimeter of each Conservation District area and the developed lots.

**REQUESTED WAIVERS:**

- 1) HTC §289-28.(G) –Requirements (**APPROVED AT THE 8 JUN 16 MEETING**).
- 2) Town of Hudson, NH Application for Subd. Plan Review Checklist Item 0. (**APPROVED AT THE 8 JUN 16 MEETING**).
- 3) HTC §289-18.Y. – Streets (**VOTE PENDING FAVORABLE REVIEW AND RECOMMENDATION BY CLD, PER BOARD REQUEST AT 8 JUN 16 MEETING**).

**RECOMMENDED ACTION:** For this meeting, staff recommends to continue with the public hearing and if the board determines the submission sufficient for approval, the appropriate DRAFT MOTIONS are provided below for the board's consideration, including the remaining requested waiver.

**DRAFT MOTIONS:**

**REQUESTED WAIVER:**

- HTC §289-18.Y. - Streets

I move to grant the requested waiver HTC §289-18.Y. - Streets - based on the testimony of the Applicant's representative here this evening, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_; Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_.

**MOTION to APPROVE:**

I move to approve the subdivision plan entitled: Open Space Development "Brookview", Tax Map 186, Lot 13, Speare Road, Hudson, New Hampshire, prepared by Jones & Beach Engineers, Inc. 85 Portsmouth Ave., PO Box 219, Stratham, NH, dated 10 JUL 15 and revised thru 1 JUN 16, consisting of Sheets 1 – 19 (CS, Y1 -Y2, OV1, A1 – A3, C1 – C4, P1, H1, X1 -X2, D1 – D3 & E1) and Notes 1 – 24 on Sheet OV1, in accordance with the following terms and conditions:

- 1) All stipulations of approval shall be incorporated into the Development Agreement, which, after the favorable review of Town Counsel, shall be recorded at the HCRD, together with the above-cited Plan-of-Record (hereafter referred to as the Plan).
- 2) The pending Homeowner's Association By-Laws and Declaration of Covenants & Restrictions shall cite the limitations and restrictions pertaining, but not limited to, the proposed "Open Space", cul-de-sac landscaped island and drainage pond/detention basin. The aforementioned documents shall be provided and favorably



reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.

- 3) The Well Radius Easements for Lots 13 and 13-1 thru 13-6, Well Radius Hold Harmless Agreements for Lots 13-5 & 13-6, as well as all other easement deeds pertaining to this proposed OSD Subdivision, must be provided for and favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.
- 4) In accordance with Deputy Fire Chief, John O'Brien's, memorandum, on file, dated 1 JUL 16, a 10,000 gallon cistern shall be installed within this subdivision, and all dwelling units will have sprinkler systems installed. A cistern easement and agreement for the cistern's perpetual maintenance and bonding shall be established between the Applicant and the Town (Fire Dept.).
- 5) Prior to Planning Board endorsement of the Plan, lot numbers on the Plan must comply with the Town's Assistant Assessor, James Michaud's, memo in file, dated 26 APR 2016.
- 6) Prior to Planning Board endorsement of the Plan, the issue of altering Speare Rd. for the purposes of providing the required Safe Stopping Distance in accordance with §193-10.E. of the Planning Board's Driveway Regulations shall be provided for.
- 7) "No cut/No disturb" Conservation markers shall be installed along the perimeter of the Conservation District boundaries of this development, and a Note shall be added to Sheet OV 1, citing said markers. Said markers shall be permanently affixed to 8 ft. sections of split-rail fences, placed at a maximum distance of 200 ft. between sections and along the nearest perimeter of each Conservation District area and the developed lots.
- 8) All monumentation shall be set or bonded prior to the Planning Board endorsing the Plan.
- 9) Construction activities involving the proposed undeveloped lots shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday. No exterior construction activities shall occur on Sunday. A note to the affect of the foregoing shall be inscribed on Sheet OV I.
- 10) A cost allocation procedure (CAP) amount of \$1,664.00 per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
- 11) A public school impact fee in the amount of \$3,578.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
- 12) A recreation contribution in the amount of \$400.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.

- 13) All monumentation shall be set or bonded for prior to the Planning Board endorsing the Plan-of -Record.
- 14) Approval of this plan shall be subject to final engineering review, including the location of the driveways for each lot.
- 15) Upon completion of the Subdivision and prior to the establishment of the two-year maintenance surety, the Applicant shall submit an "As-Built" Plan of the subdivision in its entirety, together with the ROW deed dedicating the ROW as a public street.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_



A



June 21, 2016

Mr. John Cashell, Town Planner  
Town of Hudson  
12 School Street  
Hudson, NH 03051

Re: Town of Hudson Planning Board Review  
Brookview Subdivision, 50 Speare Road  
Tax Map 186, Lot 013; Acct. #1350-878  
CLD Reference No. 03-0249.1500

Dear Mr. Cashell:

CLD Consulting Engineers, Inc. (CLD) has reviewed the second submission of materials related to the above-referenced project received between June 8, 2016 and June 17, 2016. A list of items reviewed is enclosed. The scope of our review is based on the Subdivision Plan Review Codes, Driveway Review Codes, Stormwater Management Codes, Zoning Regulations, and criteria outlined in the CLD Proposal approved September 16, 2003, revised September 20, 2004, June 4, 2007 and September 3, 2008; recently modified to include a zoning overview.

The project consists of creating an eight (8)-lot residential open space development subdivision, with one open space area. The 33.22-acre (including open space area) subdivision will be accessed from Speare Road. All lots will be serviced by proposed wells and on-site subsurface disposal systems.

The following items have outstanding issues:

### 1. Subdivision Review Codes

- a. *Former CLD Comment: Hudson Regulation (HR) 289-6 and 276-11.1.B.16. The applicant has requested a waiver from providing the location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve area, floodways/floodplains, driveways, travel areas, parking areas, natural features within 200 feet of the tract, but has not shown requested waivers on the plan set.*

**Current CLD Comment:** The applicant has noted that all features within 200' of the parcel as required by HR 289-6 and HR 276-11.1.B.16 are now shown on the plans. Features required per Item O of the subdivision review checklist are not shown and the applicant has indicated that a waiver has been requested.

- d. *Former CLD Comment: HR 289-18.B.5. The applicant has not provided a "not a through street" informational sign in accordance with the Regulation.*

**Current CLD Comment:** The applicant has noted a "Dead End" street sign, but should provide a detail for Town review.



- f. *Former CLD Comment: HR 289-19. The applicant should provide a copy of the proposed drainage easement.*

**Current CLD Comment:** The applicant has noted that the proposed drainage easement will be provided once available from the applicant's attorney.

- g. *Former CLD Comment: HR 289-20.A.(1). The applicant has not provided the finish floor elevations of the proposed homes on the Plan Set.*

**Current CLD Comment:** The applicant has noted sill and slab elevations for each lot on the effluent disposal design plans; however, some slab elevations don't make sense based upon adjacent grading.

- i. *Former CLD Comment: HR 289-27.B.(7). The applicant has not shown benchmarks on the plans and has not made reference to a U.S.G.S. benchmark. Vertical and horizontal datum are noted as 'assumed'. The applicant has noted in the checklist that a waiver was requested; however, we were unable to find a relevant waiver request in the package received for review. Use of an assumed datum with no reference provided, means the data is not able to be linked vertically to the Town's GIS System.*

**Current CLD Comment:** The applicant has noted "USGS" for vertical datum. The applicant should reference which USGS standard they used for the datum.

## 2. Driveway Review Codes (HR 193-10)

- b. *Former CLD Comment: The applicant has shown a 10% maximum grade on the typical driveway sections, but contours and cross sections show slopes near some proposed driveway locations that are likely to exceed this maximum. Once the proposed finish floor elevations are added to the plan set (that include any indication of drive under garages), we will be better able to assess the viability of construction of the drives, homes and septic systems as laid out.*

**Current CLD Comment:** The applicant has included floor elevations on the septic design plans and has stated that driveway grading has been revised so that it does not exceed 10%. Grading of several driveways does not appear to have been updated and still appears to exceed 10%. Also, Lot 13-3 appears to have some grading irregularities that are difficult to coordinate with the slab and sill elevations provided on the effluent disposal design plan.

## 3. Roadway Design

- a. *Former CLD Comment: HR 289-18.Y. The applicant has proposed a 2% slope for only 25' approaching the edge of pavement at the Speare Road intersection. The Regulation requires a 100' approach at a 2% grade. We did not find evidence of a waiver request in the package received for review.*

**Current CLD Comment:** The applicant has included a waiver request from this Regulation. The current proposal has a 3 percent downward road grade approaching the intersection without a stopping platform. The 2 percent shown in the profile is actually the Speare Road road crown. They also have provided a sketch showing that based upon



a motor home vehicle, the sport platform is not a concern for damage to pavement from vehicles bottoming out.

- h. *Former CLD Comment: The applicant has noted underdrain placement to be determined by the Engineer. Since the estimated seasonal high water table (eshwt) is shown in several cases to be within 24 inches of existing ground, and since the proposed cuts in many of these areas are lower than the eshwt, there needs to be a clear understanding of where underdrain is to be used and whether there will be any connection to the closed drainage system. If there is a high volume of water collected from the underdrain system, operation of the proposed closed drainage system and treatment devices could be affected. The applicant should also provide a detail for underdrain installation.*

**Current CLD Comment:** The applicant has shown the underdrain on the plan sheets, added an underdrain detail to the plans, and has noted that no groundwater was found in any test pits. We note that the area was experiencing drought-like conditions at the time the test pits were performed so these may not be an accurate indicator of long term groundwater elevations.

#### 4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)

- c. *Former CLD Comment: HR 290-5.A(8): It is noted that the applicant's Stormwater Management calculations do not account for frozen ground conditions. The applicant should provide additional information or request a waiver for this requirement.*

**Current CLD Comment:** The applicant has noted that the frozen ground conditions are accounted for in the infiltration/exfiltration devices as required. However, the applicant has provided information related to the proposed drip edges and ponds which utilize volume below the lowest outlet illustrated within HydroCAD; unless infiltration is utilized, this volume is theoretically unusable since it is occupied by undrainable stormwater. The applicant should introduce a 'starting elevation' at the lowest outlet elevation to properly model the volume below the outlet as being unusable as per typical engineering practice.

#### 6. Sewer/Septic Design/Conflicts & Utility Design/Conflicts

- c. *Former CLD Comment: HR 289-19.D. Although a septic review was not performed as part of this review, we were unable to find the Traditional Subsurface Subdivision Plan, showing 20,000 s.f. minimum of contiguous receiving area, and the required 4,000 s.f. area. Per the current layout, it appears infeasible to fit 4,000 s.f. areas on the test pit(s) provided. NHDES representatives were also unable to find such a plan in their file. We also note that test pits indicate refusal at elevations that may fall within proposed leach field grades. Therefore, special design details may be required for any leach fields constructed on ledge.*

**Current CLD Comment:** The applicant has still not included a standard NHDES Septic Subdivision Plan, but has included septic system design plans within the revised plan set submission.



The following items require Town input:

## 2. Driveway Review Codes

- c. *Former CLD Comment: The applicant should clarify the intent for construction of proposed culverts in the cut section of the typical driveway as they relate to the proposed Right-of-Way line. This detail also needs to be coordinated with the proposed sidewalk location detail.*

**Current CLD Comment:** The applicant has noted that culverts are not proposed and has modified the detail so that culverts are not included.

## 3. Roadway Design

- k. *HR 275-9.B. Traffic Study Review – A traffic study was not included in the review package received by CLD. It is our understanding that the Town will be reviewing traffic impacts separately.*

## 5. Zoning (HR 334)

- d. *Former CLD Comment: HR 334.39.A. Wetlands are shown on the plan set, however the Certified Soils Scientist who delineated the wetlands area did not endorse the plan.*

**Current CLD Comment:** The applicant has noted that all final plans will be stamped by all professionals involved in preparing the plans including the Certified Wetlands Scientist.

## 6. Sewer/Septic Design/Conflicts & Utility Design/Conflicts

- a. *Former CLD Comment: The applicant has shown protective well radii within the proposed right-of-way. With the right-of-way and road maintenance responsibilities intended to be turned over to the Town, either the wells should be relocated such that the protective radii are outside the right-of-way or documents should be developed indemnifying the Town from any future contamination.*

**Current CLD Comment:** The applicant has noted that hold harmless agreements will be signed by owners of lots 13-5 and 13-6 whose well radii are within the right-of-way, indemnifying the Town for any future contamination. Copies of these documents should be forwarded to the Town for their review and acceptance prior to their execution.

- b. *Former CLD Comment: The applicant has proposed several over lapping well radii on the plans that may require individual easements from abutting lots. Several of these are shown immediately adjacent to conceptual locations for leach fields of the abutting lots.*

**Current CLD Comment:** The applicant has shown easements on the plans for well radii that encroach on abutting lots. The applicant should forward copies of these easements to the Town for their records.

- h. **Former/Current CLD Comment:** The applicant has noted that no municipal water supply is available in the vicinity of this subdivision for firefighting purposes and tanker trucks will be used in the event of an emergency situation. The Town should review whether additional protective measures will be required.



The following items are resolved or have no further CLD input:

### 1. Subdivision Review Codes

b. *HR 289-15. The applicant has noted that the subdivision is not located within a federally designed 100-year flood hazard area.*

c. *Former CLD Comment: HR 289-18.B.4. The applicant has not provided details regarding any special surface treatment or ground cover for the interior of the cul-de-sac.*

Current CLD Comment: The applicant has added a cul-de-sac planting detail. No further CLD comment.

e. *Former CLD Comment: HR 289-18.O. The applicant should provide a street identification sign in accordance with the Regulation.*

Current CLD Comment: The applicant has added a street identification sign to the plans. The applicant must review the proposed street name with the Town as required. No further CLD comment.

h. *Former CLD Comment: HR 289-27.A. & 276.11.1.B.4. The Planning Board approval block on the plan sheets does not conform to the Regulation.*

Current CLD Comment: The applicant has revised the approval block to conform with the Regulation. No further CLD comment.

j. *Former CLD Comment: HR 276.11.1.B.6. The owner's signature is not on the plan set.*

Current CLD Comment: The plans have been signed on the owner's behalf, and a letter of authorization has been included in the review submittal. No further CLD comment.

### 2. Driveway Review Codes (HR 193-10)

a. *Former CLD Comment: HR 193-10.A. The applicant should provide additional Typical Driveway sections for use in areas of sidewalk to show an ADA-complaint access path (2% cross slope maximum) at each proposed sidewalk crossing.*

Current CLD Comment: The applicant has removed the proposed sidewalk from the plans and noted that the Town Planner indicated that the Town requires the submission of the sum equal to the value of the proposed sidewalk, so a cost estimate for the proposed sidewalks was included.

### 3. Roadway Design

b. *Former CLD Comment: HR 289-28.F. The applicant has shown sloped granite curbing on the typical roadway sections but the curbing detail is for vertical granite curb. The applicant should coordinate these details.*

Current CLD Comment: The applicant has revised the detail to show sloped granite curbing. No further CLD comment.



- c. *Former CLD Comment: HR 289-28.G. The applicant has shown a 4' sidewalk on the typical roadway sections behind a 7' grass strip, but the sidewalk detail shows a 5' sidewalk adjacent to the granite curbing at the edge of the roadway. The applicant should coordinate these details.*

Current CLD Comment: The applicant has removed the sidewalk from the detail and requested a waiver from the Regulation to include a sidewalk. No further CLD comment.

- d. *Former CLD Comment: The applicant has noted that retaining walls will be designed and stamped by a licensed Professional Engineer; however, proposed locations for retaining walls are not shown on the plans. This is important to show if the walls affect septic systems, Right-of-Way, or driveways.*

Current CLD Comment: The applicant has removed the note regarding retaining walls as no retaining walls are proposed. No further CLD comment.

- e. *Former CLD Comment: The applicant has noted that ornamental street lighting shall be privately owned and maintained by the homeowner's association. However, no street lighting is shown on the plan set.*

Current CLD Comment: The applicant has removed the note regarding street lighting as no lighting is proposed. No further CLD comment.

- f. *Former CLD Comment: A stop sign detail is included in the plan set but the proposed stop sign location is not shown on the plans.*

Current CLD Comment: The applicant has shown the stop sign on the plans. No further CLD comment.

- g. *Former CLD Comment: The applicant has not shown the intent for use of Americans with Disabilities Act (ADA) compliant curb ramps within the subdivision. A detail should be provided and locations intended to use detectable warning devices should be clearly shown on the plan set.*

Current CLD Comment: The applicant has removed the sidewalk from the plans and requested a waiver from the Regulation to include a sidewalk. No further CLD comment.

- i. *Former CLD Comment: The applicant should provide a detail for the proposed footbridge.*

Current CLD Comment: The applicant has provided a detail for the footbridge. No further CLD comment.

- j. *Former CLD Comment: The applicant has shown in several of the cross sections that the sidewalk is to be constructed starting at the toe of slope. Due to the fact that the sidewalk is proposed adjacent to a large cut section where test pits demonstrate ground water elevations above the proposed sidewalk elevation, there could be a potential slip hazard for pedestrians and increase the maintenance effort for the Town. The applicant should consider installing a drainage swale behind the sidewalk or provide some other means of keeping water from flowing across the sidewalk.*

Current CLD Comment: The applicant has removed the sidewalk from the plans and requested a waiver from the Regulation to include a sidewalk. No further CLD comment.





#### 4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)

- a. *Former CLD Comment: HR 290-4.A.(3). The applicant should provide a copy of the Sediment and Erosion Control Best Management Practices for review as listed within Section 4.0 of the Drainage Analysis and illustrated upon the Detail Sheets.*  
Current CLD Comment: The applicant has provided a list of BMPS within the drainage report, pages 3-9. No further CLD comment.
- b. *Former CLD Comment: HR 290-4.A.(3). The applicant should provide Rip Rap dimensions on Sheet C4 for the outlet at DMH#2.*  
Current CLD Comment: The applicant has illustrated the dimensions of Rip Rap on C4 for DMH#2. No further CLD comment.
- d. *Former CLD Comment: The last paragraph on page two (2) in section 3.0 of the analysis discusses the use of five deep sump catch basins. It is noted that deep sump catch basins utilize a sump of 48" in depth, while the plans and write up mention only 36" deep sumps.*  
Current CLD Comment: The applicant has removed the deep sump reference. No further CLD comment.
- e. *Former CLD Comment: It is noted that Pond 5P (Catch Basin #5) has an outflow slightly greater than an inflow in the 25 and 50-Year Storm Events provided. This represents a system under pressure; most likely that is not the intent, nor the expected process of this design. The applicant should review this node and address this issue for all storms analyzed that this occurs, since it potentially alters the stormwater runoff quantity downstream of the Catch Basin.*  
Current CLD Comment: The applicant has increased the size of pipes. No further CLD comment.
- f. *Former CLD Comment: It is noted that the proposed Detention Basin is to benefit the development of the proposed subdivision. The applicant should provide documentation regarding the maintenance plan for this proposed detention basin. Is the easement intended to be conveyed to the Town or be an "association" maintenance? If it is to be conveyed to the Town, the Town should confirm they are comfortable with the access and maintenance plan.*  
Current CLD Comment: The applicant has provided an Operation and Maintenance (O&M) Manual. No further CLD comment.
- g. *Former CLD Comment: The applicant provided the required Inspection and Maintenance Schedule within the Drainage Analysis. Often contractors never see the Drainage Analysis. The applicant should provide this information in a separate document to the Town and/or on the plan set.*  
Current CLD Comment: The applicant has provided this information in an O&M Manual. No further CLD comment.

#### 5. Zoning (HR 334)

- a. *HR 334-20. The site is located in the General (G) District. The applicant's proposed use for the site is permitted in this district.*



- b. *Former CLD Comment: HR 334-20. The applicant has not noted on the plan set whether the proposed subdivision will consist of single-family or two-family homes. It is noted in the application as a single-family subdivision.*  
Current CLD Comment: The applicant has revised the plan to note that the subdivision consists of single family homes. No further CLD comment.
- c. *HR 334-27 & 52. The proposed subdivision conforms with the minimum dimensional requirements for setbacks and frontage for an open space development within the General (G) District*
- d. *Former CLD Comment: The applicant did not include any subsurface disposal system details within the plan set.*  
Current CLD Comment: The applicant has included septic system design plans and details within the revised plan set submission. No further CLD comment.
- e. *Former CLD Comment: HR 334-53.C. The applicant should review the area calculations for Lot 13-5. Based purely on scaling the paper plan set provided, it appears as if the area of slopes greater than 25% may exceed the amount noted in the lot area table. (It would be helpful to outline the wetland and slopes greater than 25% areas on a subdivision plan.)*  
Current CLD Comment: The applicant has confirmed that the areas with slopes greater than 25% are correct as listed on the table, and has outlined them on the plans. No further CLD comment.
- f. *HR 334-62. The applicant has not proposed installing a subdivision identification sign. Should one be desired the applicant shall follow Town permitting procedures.*
- g. *HR 334-83. The applicant has noted that the site is not located in a federally designated 100 year flood hazard area.*

## 6. Sewer/Septic Design/Conflicts & Utility Design/Conflicts

- d. *Former CLD Comment: The applicant did not include any subsurface disposal system details within the plan set.*  
Current CLD Comment: The applicant has included septic system design plans and details within the revised plan set submission. No further CLD comment.
- e. *Former CLD Comment: Env-W8 1005. We were unable to find the soil types identified on the portion of the parcel to be subdivided shown with the lot lines. Therefore, the applicant should add the soil types to a plan showing the subdivision and provide calculations showing that the proposed lots meet NHDES sizing criteria.*  
Current CLD Comment: The applicant has shown soil types on the Grading, Drainage & Utility Plan, and provided lot loading calculations within their submission review response letter. No further CLD comment.
- f. *Former CLD Comment: HR 289-26.B.4. The applicant has not provided acknowledgement of the required permit and Certificate of Approval from the Board of Health of the Town of Hudson and from the State of New Hampshire for the proposed on-lot utilities.*  
Current CLD Comment: The applicant has added a note to the plans regarding these required permits. No further CLD comment.



- g. *Former CLD Comment: HR 289-26.B.4 and HR 289-27.B.5. The applicant has shown proposed well locations; however, has not provided indication of the required permit and Certificate of Approval from the Board of Health of the Town of Hudson and from the State of New Hampshire for the proposed on-lot utilities. Additionally, neither a typical well installation detail, nor a typical subsurface disposal system detail were provided. We were unable to find a relevant waiver request in the package received for review.*

Current CLD Comment: The applicant has added a note to the plan set regarding this requirement. Septic system design details were provided. The applicant did not provide a well installation detail but noted that they will be installed per NHDES standards by a NHDES certified installer. No further CLD comment.

## 7. Erosion Control/Wetland Impacts

- a. *Former CLD Comment: HR 290. The applicant has not shown erosion controls on the plan sheets (other than on the east side of the drainage area at lots 13-1 and 13-2) and on detail Sheet E1. Additional erosion controls should be shown in all disturbed areas. This is especially important because of the proposed steep slopes. At a minimum, additional protection should be shown or more clearly shown around the catch basins.*

Current CLD Comment: The applicant has provided a detail for catch basin inlet protection and has added silt fence around the cul-de-sac where roadway is in fill section. No further CLD comment.

- b. *Former CLD Comment: The applicant has noted that erosion control measures are to be inspected and maintained after each rain event of 0.5" or greater or at least once per week. If at any time, the inspections occur at a frequency of less than once a week, the inspection storm depth should be reduced to 0.25 inches.*

Current CLD Comment: The applicant has revised the note. No further CLD comment.

## 8. State and Local Permits

- a. *Former CLD Comment: HR 193-10.C. The applicant should note the need for Town-issued Driveway Permits.*

Current CLD Comment: The applicant has added a note to the plans regarding driveway permits. No further CLD comment.

- b. *HR 290-9.B. The applicant has noted the need for preparing a Stormwater Pollution Prevention Plan (SPPP) and filing a Notice of Intent (NOI) in accordance with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit.*

- c. *Former CLD Comment: The applicant has noted the need for a NHDES Subdivision Permit. A note should be added showing the need for Individual Subsurface Septic Disposal System Approvals.*

Current CLD Comment: The applicant has provided space on the individual septic design sheets for the permit numbers to be recorded when they are approved. No further CLD comment.



d. *Additional local permitting may be required.*

## 9. Other

a. *Former CLD Comment: The plan should clearly note who will own the open space developed as a part of this subdivision.*

Current CLD Comment: The applicant has added a note to the plans which states that each lot within the subdivision will own an equal portion of the open space. No further CLD comment.

b. *Former CLD Comment: The applicant has shown plantings, but has not shown any planting details.*

Current CLD Comment: The applicant has added shrub planting detail to the plans. No further CLD comment.

c. *Former CLD Comment: HR 289-4. The applicant should provide a detail for the required 5"x5"x30" bounds.*

Current CLD Comment: The applicant has added a granite bound detail to the plans. No further CLD comment.

d. *Former CLD Comment: Although a footbridge is proposed on the area not to be developed, the applicant has not shown a public access to get to the bridge. Even if only the owners in the subdivision are intended to be allowed access, two owners will not have frontage on the parcel.*

Current CLD Comment: The applicant has noted that 10' wide open space area has been added between lots 13 and 13-5 so that all owners have access to the open space. No further CLD comment.

Please feel free to call if you have any questions.

Very truly yours,

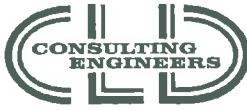
Heidi J. Marshall, P.E.

Paul Konieczka, AICP

HJM/PK:mjt

Enclosure

cc: Town of Hudson Engineering Division – File  
Jones & Beach Engineers, Inc.  
85 Portsmouth Ave.  
Stratham, NH 03885  
Fax (603) 772-0227



540 Commercial Street Manchester, NH 03101  
(603) 668-8223 • Fax: (603) 668-8802  
cld@cldengineers.com • www.cldengineers.com  
New Hampshire • Vermont • Maine

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**TO:** File

**FROM:** Steven W. Reichert, P.E. *SwR*

**DATE:** June 21, 2016

**RE:** Town of Hudson Planning Board Review  
Brookview (Breckenridge Estates) Subdivision  
Tax Map 186, Lot 013; Acct. #1350-878  
CLD Reference No. 03-0249.1500

The following list itemizes the second set of documents reviewed related to the Brookview Subdivision at 50 Speare Road, Hudson, NH, received by CLD on June 8, 2016, including the following:

- Review Comment Response Letter, prepared by Jones & Beach Engineers, Inc., dated May 31, 2016.
- Copy of *Drainage Analysis & Sediment and Erosion Control Plan*, prepared by Jones & Beach Engineers, Inc., revision dated May 31, 2016.
- Copy of Stormwater Management Operation and Maintenance Manual, prepared by Jones & Beach Engineers, Inc., dated May 31, 2016.
- Copy of *Open Space Development Site Plan – “Brookview”, Map 186, Lot 13, Speare Road, Hudson, New Hampshire* Full-Size and Half-Size Plan Sets, prepared by Jones and Beach Engineers, Inc., all sheets revised dated May 31, 2016, including the following:
  - a. *Cover Sheet - CS*, Sheet 1 of 19.
  - b. *Yield Plan – Y1*, Sheet 2 of 19.
  - c. *Yield Plan – Y2*, Sheet 3 of 19.
  - d. *Overview Subdivision Plan – OVI*, Sheet 4 of 19.
  - e. *Subdivision Plans – A1 through A3*, Sheets 5 through 7 of 19.
  - f. *Existing Conditions Plans – C1 through C3*, Sheets 8 through 10 of 19.
  - g. *Grading, Drainage and Utility Plan – C4*, Sheet 11 of 19.
  - h. *Plan and Profile – P1*, Sheet 12 of 19.
  - i. *Highway Access Plan – H1*, Sheet 13 of 19.
  - j. *Cross Sections - X1 & X2*, Sheets 14 & 15 of 19.
  - k. *Detail Sheets – D1, D2 & D3*, Sheets 16, 17, & 18 of 19.
  - l. *Erosion and Sediment Control Details – E1*, Sheet 19 of 19.
  - m. *Effluent Disposal Design Plans –* Sheets 1 through 8 of 8.

SWR:mjt

cc: John Cashell – Town of Hudson Planner  
Town of Hudson Engineering Division – File

# JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885  
603.772.4746 - JonesandBeach.com

"B"

July 5, 2016

Hudson Planning Department  
Attn: John Cashell, Planner  
12 School Street  
Hudson, NH 03051



**RE: Proposed Conservation Subdivision  
50 Speare Road, Hudson, NH  
Tax Map 186, Lot 13  
JBE Project No. 15031**

Dear Mr. Cashell:

Jones & Beach Engineers, Inc. has received a Staff Report from the Town of Hudson with outstanding issues and staff comments, dated May 25, 2016, as well as review comments from Heidi Marshall, CLD Consulting Engineers, dated June 21, 2016. CLD Review comments and town comments/outstanding issues are listed below with our responses in bold.

### CLD Review Comments

The following items have outstanding issues:

#### 1. Subdivision Review Codes

- a. Former CLD Comment: Hudson Regulation (HR) 289-6 and 276-JJ.1.B.16. The applicant has requested a waiver from providing the location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve area, floodways/lloodplains, driveways, travel areas, parking areas, natural features within 200 feet of the tract, but has not shown requested waivers on the plan set.  
*Current CLD Comment: The applicant has noted that all features within 200' of the parcel as required by HR 289-6 and HR 276-11.1.B.16 are now shown on the plans. Features required per Item 0 of the subdivision review checklist are not shown and the applicant has indicated that a waiver has been requested.*  
**RESPONSE: No response necessary.**
  
- d. Former CLD Comment: HR 289-18.B.5. The applicant has not provided a "not a through street" informational sign in accordance with the Regulation.  
*Current CLD Comment: The applicant has noted a "Dead End" street sign, but should provide a detail for Town review.*  
**RESPONSE: A "Dead End" Sign Detail has been added to Sheet D2.**

- f. Former CLD Comment: HR 289-19. The applicant should provide a copy of the proposed drainage easement.  
*Current CLD Comment: The applicant has noted that the proposed drainage easement will be provided once available from the applicant's attorney.*  
**RESPONSE: No response necessary.**
- g. Former CLD Comment: HR 289-20.A.(1). The applicant has not provided the finish floor elevations of the proposed homes on the Plan Set.  
*Current CLD Comment: The applicant has noted sill and slab elevations for each lot on the effluent disposal design plans; however, some slab elevations don't make sense based upon adjacent grading.*  
**RESPONSE: Additional grading has been added to the plans to clarify the slab and sill elevations.**
- i. Former CLD Comment: HR 289-27.B. (7). The applicant has not shown benchmarks on the plans and has not made reference to a U.S.G.S. benchmark. Vertical and horizontal datum are noted as 'assumed'. The applicant has noted in the checklist that a waiver was requested; however, we were unable to find a relevant waiver request in the package received for review. Use of an assumed datum with no reference provided, means the data is not able to be linked vertically to the Town's GIS System.  
*Current CLD Comment: The applicant has noted "USGS" for vertical datum. The applicant should reference which USGS standard they used for the datum.*  
**RESPONSE: Additional field survey will be performed in order to determine the datum used on the original survey conducted in 2002. This will be completed before final plans are issued.**

## 2. Driveway Review Codes (HR 193-10)

- b. Former CLD Comment: The applicant has shown a 10% maximum grade on the typical driveway sections, but contours and cross sections show slopes near some proposed driveway locations that are likely to exceed this maximum. Once the proposed finish floor elevations are added to the plan set (that include any indication of drive under garages), we will be better able to assess the viability of construction of the drives, homes and septic systems as laid out.  
*Current CLD Comment: The applicant has included floor elevations on the septic design plans and has stated that driveway grading has been revised so that it does not exceed 10%. Grading of several driveways does not appear to have been updated and still appears to exceed 10%. Also, Lot 13-3 appears to have some grading irregularities that are difficult to coordinate with the slab and sill elevations provided on the effluent disposal design plan.*  
**RESPONSE: The driveway grading has been revised so that it does not exceed 10%. Additional grading has been added to the plans to clarify the slab and sill elevations. Some houses are graded with drive under garages. Slab and sill elevations are now noted on Sheet C4.**

## 3. Roadway Design

- a. Former CLD Comment: HR 289-18.Y. The applicant has proposed a 2% slope for only 25' approaching the edge of pavement at the Speare Road intersection. The Regulation requires a 100' approach at a 2% grade. We did not find evidence of a waiver request in the package received for review.  
*Current CLD Comment: The applicant has included a waiver request from this Regulation. The current proposal has a 3 percent downward road grade approaching the intersection without a stopping platform. The 2 percent shown in the profile is actually the Speare Road road crown. They also have provided a sketch showing that based upon a motor home vehicle, the sport platform is not a concern for damage to pavement from vehicles bottoming out.*  
**RESPONSE: No response necessary.**

- h. Former CLD Comment: The applicant has noted underdrain placement to be determined by the Engineer. Since the estimated seasonal high water table (eshwt) is shown in several cases to be within 24 inches of existing ground, and since the proposed cuts in many of these areas are lower than the eshwt, there needs to be a clear understanding of where underdrain is to be used and whether there will be any connection to the closed drainage system. If there is a high volume of water collected from the underdrain system, operation of the proposed closed drainage system and treatment devices could be affected. The applicant should also provide a detail for underdrain installation.

*Current CLD Comment: The applicant has shown the underdrain on the plan sheets, added an underdrain detail to the plans, and has noted that no groundwater was found in any test pits. We note that the area was experiencing drought-like conditions at the time the test pits were performed so these may not be an accurate indicator of long term groundwater elevations.*

**RESPONSE: Pipe sizes in the closed drainage system where groundwater from the underdrain will be directed have been increased to 15" to account for possible groundwater flow. However, because no groundwater was found in the test pits, if groundwater flow to the closed drainage system does occur, it will have minimal impact on the closed drainage system.**

#### 4. Drainage Design /Stormwater Management (HR 289-20.C. /Chapter 290)

- c. Former CLD Comment: HR 290-5.A(8): It is noted that the applicant's Stormwater Management calculations do not account for frozen ground conditions. The applicant should provide additional information or request a waiver for this requirement.

*Current CLD Comment: The applicant has noted that the frozen ground conditions are accounted for in the infiltration/exfiltration devices as required. However, the applicant has provided information related to the proposed drip edges and ponds which utilize volume below the lowest outlet illustrated within HydroCAD; unless infiltration is utilized, this volume is theoretically unusable since it is occupied by undrainable stormwater. The applicant should introduce a 'starting elevation' at the lowest outlet elevation to properly model the volume below the outlet as being unusable as per typical engineering practice.*

**RESPONSE: The two ponds do not utilize volume below their lowest outlet as the bottom of the storage of both ponds is at their lowest outlets. Therefore, the ponds are designed for frozen ground conditions as is. Drainage calculations are**



attached completely removing the drip edges from the drainage design to account for the frozen ground condition during which the drip edges would not provide storage or infiltration. In this condition, this drainage design still provides a decrease in runoff for all storm events to both analysis points, with the exception of the 2 year storm, where there is a small increase in runoff of 0.22 cfs. However, the existing condition drainage computations do not account for frozen ground conditions so this comparison is unrealistic.

6. Sewer/Septic Design/Conflicts & Utility Design/Conflicts

- c. Former CLD Comment: HR 289-19.D. Although a septic review was not performed as part of this review, we were unable to find the Traditional Subsurface Subdivision Plan, showing 20,000 sf minimum of contiguous receiving area, and the required 4,000 sf area. Per the current layout, it appears infeasible to fit 4,000 sf areas on the test pit(s) provided. NHDES representatives were also unable to find such a plan in their file. We also note that test pits indicate refusal at elevations that may fall within proposed leach field grades. Therefore, special design details may be required for any leach fields constructed on ledge.

*Current CLD Comment: The applicant has still not included a standard NHDES Septic Subdivision Plan, but has included septic system design plans within the revised plan set submission.*

**RESPONSE: A Subdivision application, as well as Individual Sewage Disposal System applications for all 8 proposed residential lots have been submitted to NHDES. The intent of submitting all of these simultaneously was to provide the septic designs for each lot in lieu of showing 4,000 S.F. septic reserve areas for the Subdivision application as would normally be shown on the NHDES Subdivision plan. All NHDES permits are currently pending.**

Town of Hudson Outstanding Issues/Staff Comments/Conditions of Approval

1. The pending Homeowners Association By-Laws and Declaration of Covenants & Restrictions shall include language not limited to the proposed "Open Space", landscaped cul-de-sac island and drainage pond/detention basin. Both documents must be provided and favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.  
**RESPONSE: These documents will be provided by the applicant's attorney.**
2. The Well Radius Easements for Lots 13 and 13-1 thru 13-6, Well Radius Hold Harmless Agreements for Lots 13-5 & 13-6, as well as all other easement deeds pertaining to this proposed OSD Subdivision, must be provided for and favorably reviewed by Town Counsel prior to Planning Board endorsement of the Plan and Development Agreement.  
**RESPONSE: These documents will be provided by the applicant's attorney.**
3. Cistern - In accordance with Deputy Fire Chief's attached memo, included in Attachment "D", the issue of requiring a cistern(s) remains outstanding. If this becomes a requirement, a cistern easement and agreement for the cistern's perpetual maintenance and bonding shall be established between the Applicant and the Town (Fire Dept.). That is, as all cisterns in new developments are required to provide for.

**RESPONSE: A fire cistern has been provided on the revised plans. See Sheet F1 for details. The applicant's attorney will provide a copy of the fire cistern easement and maintenance agreement. A cost estimate for the proposed subdivision is attached and includes the cost for the fire cistern for the purpose of bonding.**

4. Lot numbers- Prior to Planning Board endorsement of the Plan, lot numbers must comply with the Town's Assistant Assessor's written recommendation. Note: see Asst. Assessor, James Michaud's, memo in file, dated 26 APR 16, which is also included, herewith, in attachment "D".

**RESPONSE: The lot numbering has been modified on the plans to comply with the Town's Assistant Assessor's April 26, 2016 memo.**

5. The Hall Chart, found on the upper left-hand corner of Sheet OV1, has been amended to reflect that proposed Lot 13-5, at 21,796 sf of contiguous upland, meets the minimum OSD lot-size requirement of 21,780 sf, as inscribed on Note 2 of said Sheet OV1. Note: the attached revised full-size Sheet OV1 reflects the corrected minimum lot size requirement for proposed Lot 13-5, and the final Plan set will be amended accordingly to reflect this change.

**RESPONSE: The revised plan set reflects the change previously shown only on Sheet OV1.**

6. In accordance with the Planning Board's Conceptual Plan Review of this proposed OSD Subd., the number of proposed lots has been reduced from 9 to 8.

**RESPONSE: No response necessary.**

7. The required Safe Stopping Distance, in accordance with §193-10.E. of the Planning Board's Driveway Regulations, has been delineated in the attached Plan set. Please see Sheet H1, which indicates that a section of Speare Rd., approximately 150 ft. west of the proposed intersection, needs to be reduced in height in order to provide the proposed safe stopping distance. Note: the issue of altering Speare Rd. falls within the jurisdiction of the Highway Dept., and an agreement has been reached between the Applicant, the Road Agent, Kevin Burns, and the Town Eng., Elvis Dhima, regarding the subject modification to Speare Rd.

**RESPONSE: No response necessary.**

8. The issues and permits involving the associated wetlands and wetland buffers of the development are addressed and noted primarily on Sheet C4, and further addressed in Jones & Beach's Response Letter, dated 31 MAY 16, "C".

**RESPONSE: No response necessary.**

9. The issue of "No cut/No disturb" Conservation Markers - Said markers should be installed along the perimeter of the Conservation District boundaries of the development, and a Note added to Sheet OV1, citing said markers, as well as other Plan sheets depicting said Conservation District areas. Said markers should be permanently affixed to 8 ft. sections of split-rail fencing, placed at a maximum distance of 200 ft. between sections and along the nearest perimeter of each Conservation District area and the developed lots.

**RESPONSE: A note has been added to Sheet OV1 and the conservation district markers are shown on the plans. The majority of the conservation district boundary will be located in a wooded area, so we believe that fencing will not be required as the markers can be affixed to trees rather than installing fencing in the woods.**

10. The following Plan Notes have to be amended:

a. Existing Note 3, Sheet C4, amended to read:  
"3. All benchmarks and topography ~~should~~ **shall** be field verified by the contractor."  
**RESPONSE: This note has been revised on the plans.**

b. Existing Note 38, Sheet C4, amended to read:  
"38. As-built plans shall be submitted to ~~Department of Public Works~~ **the Highway Department and the Planning Board.**"  
**RESPONSE: This note has been revised on the plans.**

c. Existing Note 15, Sheet P1, shall be deleted, i.e., if the board votes to not require the construction of a sidewalk in this subd. Please note, the Profile Sheets of the Plan set already reflect no sidewalk construction.  
**RESPONSE: Note 15 has been removed from Sheet P1.**

d. Also on Sheet P1, the reference to "detention ponds" should be changed to "detention pond" (singular), i.e., since there is only 1 "detention pond" proposed for this subd.  
**RESPONSE: This note has been revised.**

e. Existing Sheet D1 should be amended to include a new Note, and for it to read:  
"5. Within the landscaped cul-de-sac island, landscaping, and the perpetual maintenance, thereof, shall be the responsibility of the homeowners, as prescribed in the Homeowners Association By-Laws."  
**RESPONSE: This note has been added to Sheet D1 as Note 2 on the cul-de-sac planting plan detail notes.**

11. All stipulations of approval shall be incorporated into the Development Agreement, which, after the favorable review of Town Counsel, shall be recorded at the HCRD, together with the above-cited Plan-of-Record (hereafter referred to as the Plan).

**RESPONSE: This document will be provided by the applicant's attorney.**

12. Prior to Planning Board endorsement of the Plan, the issue of altering Speare Rd. for the purposes of providing the required Safe Stopping Distance in accordance with §193-10.E. of the Planning Board's Driveway Regulations shall be provided for.

**RESPONSE: JBE has met with the road agent and town engineer to discuss the offsite roadway improvements, and borings have been performed in the road. The road agent will review and approve the plans.**

13. All monumentation shall be set or bonded prior to the Planning Board endorsing the Plan.

**RESPONSE: A cost estimate for the proposed subdivision is attached and includes the cost for monumentation for the purpose of bonding.**

14. Construction activities involving the proposed undeveloped lots shall be limited to the hours between 7:00A.M. and 7:00P.M., Monday through Saturday. No exterior construction activities shall occur on Sunday. A note to the affect of the foregoing shall be inscribed on Sheet OV1.

**RESPONSE: This note has been added to Sheet OV1.**

15. Approval of this plan shall be subject to final engineering review.

**RESPONSE: No response necessary.**

16. Prior to Planning Board endorsement of the Plan, Sheet OV1, shall be further amended to include the following additional notes, which shall provide a total of 29 Notes:

- a. A cost allocation procedure (CAP) amount of \$1,664.00, per single-family residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
- b. A public school impact fee in the amount of \$3,578.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
- c. A recreation contribution in the amount of \$400.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.

**RESPONSE: These notes have been added to Sheet OV1.**

#### Town of Hudson Fire Department Comments

17. Street Name - Please submit three (3) possible names to the Fire Dept for approval. Be advised Fire Dept. approval is required

**RESPONSE: The applicant will provide possible road names to the fire department.**

18. Numbering - House numbers must be assigned AND approved by the Fire Dept. prior to issuance of permits.

**RESPONSE: The planning board will assign house numbers.**

19. Combustibles/ Construction - No Combustible construction is allowed without an adequate water supply.

**RESPONSE: A fire cistern has been provided on the revised plans. See Sheet F1 for details.**

20. Water Supply for Firefighting - In the absence of a municipal water supply ( Hydrants) a cistern will be required for fire protection. Installation shall be approved by the Fire Department.

**RESPONSE: A fire cistern has been provided on the revised plans. See Sheet F1 for details.**

21. NFPA 1142 Standard for Water Supplies in Suburban and Rural Firefighting Sec B.3.3 (3) requires a minimum capacity of 30,000 gallons.

**RESPONSE: There is an agreement between the fire department and the applicant that a 10,000 gallon fire cistern will be sufficient for this subdivision, provided that all homes are equipped with sprinkler systems.**

22. The Cistern shall be located near the entrance to the proposed street on Pelham Road.

**RESPONSE: The cistern has been located close to the entrance of the proposed street.**

23. Additionally the Insurance Services Organization requires the Hudson Fire Dept to maintain a minimum fire flow of 250 gallons per minute for a period of two hours.

**RESPONSE: There is an agreement between the fire department and the applicant that a 10,000 gallon fire cistern will be sufficient for this subdivision, provided that all homes are equipped with sprinkler systems.**

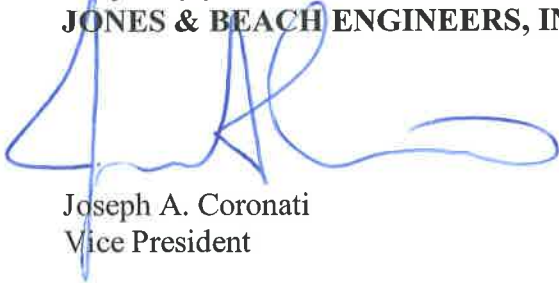
The following items are submitted along with this letter to support the application:

- Frozen Ground Drainage Computations Summaries
- Cost Estimate
- Nine (9) complete revised full size plan sets (folded).
- Seventeen (17) complete revised reduced size plan sets (folded).

Thank you very much for your time. If you have any questions, or need further assistance, please contact our office.

Very truly yours,

**JONES & BEACH ENGINEERS, INC.**



Joseph A. Coronati  
Vice President

cc: Mike Garrepy, Tuck Realty Corp., Applicant (letter, attachments & plan set via email)

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1: Northerly subcatchment</b>	Runoff Area=6.050 ac 1.32% Impervious Runoff Depth>0.60" Flow Length=1,016' Tc=33.1 min CN=68 Runoff=1.94 cfs 0.305 af
<b>Subcatchment 2: Southwesterly</b>	Runoff Area=0.190 ac 10.53% Impervious Runoff Depth>0.39" Flow Length=72' Tc=3.7 min CN=62 Runoff=0.05 cfs 0.006 af
<b>Subcatchment 3: East side of cul-de-sac</b>	Runoff Area=0.130 ac 38.46% Impervious Runoff Depth>1.42" Flow Length=188' Tc=2.6 min CN=83 Runoff=0.24 cfs 0.015 af
<b>Subcatchment 4: Cul-de-sac pavement</b>	Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>2.74" Flow Length=161' Tc=1.0 min CN=98 Runoff=0.26 cfs 0.018 af
<b>Subcatchment 5: Cul-de-sac interior</b>	Runoff Area=0.120 ac 0.00% Impervious Runoff Depth>0.46" Flow Length=47' Slope=0.0850 '/' Tc=3.1 min CN=64 Runoff=0.05 cfs 0.005 af
<b>Subcatchment 6: West side cul-de-sac</b>	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth>0.99" Flow Length=148' Tc=3.6 min CN=76 Runoff=0.24 cfs 0.017 af
<b>Subcatchment 7: Eastern side of proposed</b>	Runoff Area=0.300 ac 50.00% Impervious Runoff Depth>1.49" Flow Length=332' Tc=2.7 min CN=84 Runoff=0.57 cfs 0.037 af
<b>Subcatchment 8: Western side of proposed</b>	Runoff Area=0.420 ac 33.33% Impervious Runoff Depth>0.99" Flow Length=343' Tc=8.0 min CN=76 Runoff=0.43 cfs 0.035 af
<b>Subcatchment 9: Units #8 and #9</b>	Runoff Area=0.670 ac 5.97% Impervious Runoff Depth>0.39" Flow Length=316' Tc=9.7 min CN=62 Runoff=0.15 cfs 0.022 af
<b>Subcatchment 10: Proposed detention pond</b>	Runoff Area=1.350 ac 9.63% Impervious Runoff Depth>0.45" Flow Length=195' Tc=6.0 min CN=64 Runoff=0.49 cfs 0.051 af
<b>Subcatchment 13-1: Lot 13-1 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af
<b>Subcatchment 13-2: Lot 13-2 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af
<b>Subcatchment 13-3: Lot 13-3 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af
<b>Subcatchment 13-4: Lot 13-4 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af
<b>Subcatchment 13-5: Lot 13-5 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af
<b>Subcatchment 13-6: Lot 13-6 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74" Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af

**15031-FROZEN**

Type III 24-hr 2-YEAR Rainfall=2.97"

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**Subcatchment 13-7: Lot 13-7 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74"  
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af

**Subcatchment 13-8: Lot 13-8 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>2.74"  
Tc=6.0 min CN=98 Runoff=0.31 cfs 0.025 af

**Reach 1R: Vegetated Treatment Swale** Avg. Flow Depth=0.19' Max Vel=0.71 fps Inflow=0.62 cfs 0.299 af  
n=0.045 L=100.0' S=0.0050 '/' Capacity=52.77 cfs Outflow=0.62 cfs 0.298 af

**Reach 2R: Runoff flow through wetlands** Avg. Flow Depth=0.07' Max Vel=1.09 fps Inflow=0.62 cfs 0.298 af  
n=0.045 L=1,000.0' S=0.0400 '/' Capacity=226.55 cfs Outflow=0.61 cfs 0.293 af

**Reach 50: Northerly flow** Inflow=2.46 cfs 0.673 af  
Outflow=2.46 cfs 0.673 af

**Reach 60: Southerly flow** Inflow=0.05 cfs 0.006 af  
Outflow=0.05 cfs 0.006 af

**Pond 1P: Catch Basin #1** Peak Elev=292.60' Inflow=0.29 cfs 0.023 af  
15.0" Round Culvert n=0.012 L=28.0' S=0.0161 '/' Outflow=0.29 cfs 0.023 af

**Pond 2P: Catch Basin #2** Peak Elev=292.25' Inflow=0.24 cfs 0.015 af  
15.0" Round Culvert n=0.012 L=18.0' S=0.0050 '/' Outflow=0.24 cfs 0.015 af

**Pond 3P: Catch Basin #3** Peak Elev=292.48' Inflow=1.03 cfs 0.080 af  
15.0" Round Culvert n=0.012 L=168.0' S=0.0302 '/' Outflow=1.03 cfs 0.080 af

**Pond 4P: Catch Basin #4** Peak Elev=284.19' Inflow=1.54 cfs 0.137 af  
15.0" Round Culvert n=0.012 L=155.0' S=0.0050 '/' Outflow=1.54 cfs 0.137 af

**Pond 5P: Catch Basin #5** Peak Elev=284.67' Inflow=1.11 cfs 0.099 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=1.11 cfs 0.099 af

**Pond 6P: Drain Manhole #1** Peak Elev=287.10' Inflow=1.03 cfs 0.080 af  
15.0" Round Culvert n=0.012 L=102.0' S=0.0257 '/' Outflow=1.03 cfs 0.080 af

**Pond 7P: Drain Manhole #2** Peak Elev=282.38' Inflow=1.54 cfs 0.137 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=1.54 cfs 0.137 af

**Pond 8P: Small roadside swale** Peak Elev=284.90' Storage=326 cf Inflow=0.71 cfs 0.072 af  
12.0" Round Culvert n=0.012 L=40.0' S=0.0287 '/' Outflow=0.69 cfs 0.065 af

**Pond 9P: Proposed detention pond** Peak Elev=279.09' Storage=5,385 cf Inflow=3.54 cfs 0.318 af  
Outflow=0.62 cfs 0.299 af

**Total Runoff Area = 10.390 ac Runoff Volume = 0.711 af Average Runoff Depth = 0.82"**  
**84.31% Pervious = 8.760 ac 15.69% Impervious = 1.630 ac**

**15031-FROZEN**

Type III 24-hr 10-year Rainfall=4.49"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1: Northerly subcatchment</b>	Runoff Area=6.050 ac 1.32% Impervious Runoff Depth>1.51" Flow Length=1,016' Tc=33.1 min CN=68 Runoff=5.57 cfs 0.763 af
<b>Subcatchment 2: Southwesterly</b>	Runoff Area=0.190 ac 10.53% Impervious Runoff Depth>1.13" Flow Length=72' Tc=3.7 min CN=62 Runoff=0.24 cfs 0.018 af
<b>Subcatchment 3: East side of cul-de-sac</b>	Runoff Area=0.130 ac 38.46% Impervious Runoff Depth>2.72" Flow Length=188' Tc=2.6 min CN=83 Runoff=0.45 cfs 0.029 af
<b>Subcatchment 4: Cul-de-sac pavement</b>	Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>4.25" Flow Length=161' Tc=1.0 min CN=98 Runoff=0.39 cfs 0.028 af
<b>Subcatchment 5: Cul-de-sac interior</b>	Runoff Area=0.120 ac 0.00% Impervious Runoff Depth>1.26" Flow Length=47' Slope=0.0850 '/' Tc=3.1 min CN=64 Runoff=0.18 cfs 0.013 af
<b>Subcatchment 6: West side cul-de-sac</b>	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth>2.12" Flow Length=148' Tc=3.6 min CN=76 Runoff=0.53 cfs 0.035 af
<b>Subcatchment 7: Eastern side of proposed</b>	Runoff Area=0.300 ac 50.00% Impervious Runoff Depth>2.81" Flow Length=332' Tc=2.7 min CN=84 Runoff=1.07 cfs 0.070 af
<b>Subcatchment 8: Western side of proposed</b>	Runoff Area=0.420 ac 33.33% Impervious Runoff Depth>2.12" Flow Length=343' Tc=8.0 min CN=76 Runoff=0.96 cfs 0.074 af
<b>Subcatchment 9: Units #8 and #9</b>	Runoff Area=0.670 ac 5.97% Impervious Runoff Depth>1.13" Flow Length=316' Tc=9.7 min CN=62 Runoff=0.69 cfs 0.063 af
<b>Subcatchment 10: Proposed detention pond</b>	Runoff Area=1.350 ac 9.63% Impervious Runoff Depth>1.26" Flow Length=195' Tc=6.0 min CN=64 Runoff=1.80 cfs 0.142 af
<b>Subcatchment 13-1: Lot 13-1 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
<b>Subcatchment 13-2: Lot 13-2 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
<b>Subcatchment 13-3: Lot 13-3 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
<b>Subcatchment 13-4: Lot 13-4 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
<b>Subcatchment 13-5: Lot 13-5 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af
<b>Subcatchment 13-6: Lot 13-6 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af



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**Subcatchment 13-7: Lot 13-7 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25"  
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af

**Subcatchment 13-8: Lot 13-8 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>4.25"  
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.039 af

**Reach 1R: Vegetated Treatment Swale** Avg. Flow Depth=0.24' Max Vel=0.82 fps Inflow=0.94 cfs 0.614 af  
n=0.045 L=100.0' S=0.0050 '/' Capacity=52.77 cfs Outflow=0.94 cfs 0.613 af

**Reach 2R: Runoff flow through wetlands** Avg. Flow Depth=0.09' Max Vel=1.29 fps Inflow=0.94 cfs 0.613 af  
n=0.045 L=1,000.0' S=0.0400 '/' Capacity=226.55 cfs Outflow=0.94 cfs 0.605 af

**Reach 50: Northerly flow** Inflow=6.52 cfs 1.484 af  
Outflow=6.52 cfs 1.484 af

**Reach 60: Southerly flow** Inflow=0.24 cfs 0.018 af  
Outflow=0.24 cfs 0.018 af

**Pond 1P: Catch Basin #1** Peak Elev=292.69' Inflow=0.53 cfs 0.041 af  
15.0" Round Culvert n=0.012 L=28.0' S=0.0161 '/' Outflow=0.53 cfs 0.041 af

**Pond 2P: Catch Basin #2** Peak Elev=292.36' Inflow=0.45 cfs 0.029 af  
15.0" Round Culvert n=0.012 L=18.0' S=0.0050 '/' Outflow=0.45 cfs 0.029 af

**Pond 3P: Catch Basin #3** Peak Elev=292.68' Inflow=1.93 cfs 0.145 af  
15.0" Round Culvert n=0.012 L=168.0' S=0.0302 '/' Outflow=1.93 cfs 0.145 af

**Pond 4P: Catch Basin #4** Peak Elev=284.56' Inflow=3.19 cfs 0.278 af  
15.0" Round Culvert n=0.012 L=155.0' S=0.0050 '/' Outflow=3.19 cfs 0.278 af

**Pond 5P: Catch Basin #5** Peak Elev=284.80' Inflow=2.43 cfs 0.208 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=2.43 cfs 0.208 af

**Pond 6P: Drain Manhole #1** Peak Elev=287.30' Inflow=1.93 cfs 0.145 af  
15.0" Round Culvert n=0.012 L=102.0' S=0.0257 '/' Outflow=1.93 cfs 0.145 af

**Pond 7P: Drain Manhole #2** Peak Elev=282.77' Inflow=3.19 cfs 0.278 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=3.19 cfs 0.278 af

**Pond 8P: Small roadside swale** Peak Elev=285.03' Storage=373 cf Inflow=1.54 cfs 0.141 af  
12.0" Round Culvert n=0.012 L=40.0' S=0.0287 '/' Outflow=1.47 cfs 0.134 af

**Pond 9P: Proposed detention pond** Peak Elev=280.25' Storage=12,036 cf Inflow=7.61 cfs 0.643 af  
Outflow=0.94 cfs 0.614 af

**Total Runoff Area = 10.390 ac Runoff Volume = 1.547 af Average Runoff Depth = 1.79"**  
**84.31% Pervious = 8.760 ac 15.69% Impervious = 1.630 ac**

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1: Northerly subcatchment</b>	Runoff Area=6.050 ac 1.32% Impervious Runoff Depth>2.37" Flow Length=1,016' Tc=33.1 min CN=68 Runoff=8.97 cfs 1.193 af
<b>Subcatchment 2: Southwesterly</b>	Runoff Area=0.190 ac 10.53% Impervious Runoff Depth>1.88" Flow Length=72' Tc=3.7 min CN=62 Runoff=0.42 cfs 0.030 af
<b>Subcatchment 3: East side of cul-de-sac</b>	Runoff Area=0.130 ac 38.46% Impervious Runoff Depth>3.80" Flow Length=188' Tc=2.6 min CN=83 Runoff=0.63 cfs 0.041 af
<b>Subcatchment 4: Cul-de-sac pavement</b>	Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>5.45" Flow Length=161' Tc=1.0 min CN=98 Runoff=0.50 cfs 0.036 af
<b>Subcatchment 5: Cul-de-sac interior</b>	Runoff Area=0.120 ac 0.00% Impervious Runoff Depth>2.04" Flow Length=47' Slope=0.0850 '/' Tc=3.1 min CN=64 Runoff=0.30 cfs 0.020 af
<b>Subcatchment 6: West side cul-de-sac</b>	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth>3.11" Flow Length=148' Tc=3.6 min CN=76 Runoff=0.78 cfs 0.052 af
<b>Subcatchment 7: Eastern side of proposed</b>	Runoff Area=0.300 ac 50.00% Impervious Runoff Depth>3.91" Flow Length=332' Tc=2.7 min CN=84 Runoff=1.48 cfs 0.098 af
<b>Subcatchment 8: Western side of proposed</b>	Runoff Area=0.420 ac 33.33% Impervious Runoff Depth>3.11" Flow Length=343' Tc=8.0 min CN=76 Runoff=1.41 cfs 0.109 af
<b>Subcatchment 9: Units #8 and #9</b>	Runoff Area=0.670 ac 5.97% Impervious Runoff Depth>1.88" Flow Length=316' Tc=9.7 min CN=62 Runoff=1.22 cfs 0.105 af
<b>Subcatchment 10: Proposed detention pond</b>	Runoff Area=1.350 ac 9.63% Impervious Runoff Depth>2.04" Flow Length=195' Tc=6.0 min CN=64 Runoff=3.07 cfs 0.230 af
<b>Subcatchment 13-1: Lot 13-1 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af
<b>Subcatchment 13-2: Lot 13-2 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af
<b>Subcatchment 13-3: Lot 13-3 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af
<b>Subcatchment 13-4: Lot 13-4 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af
<b>Subcatchment 13-5: Lot 13-5 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af
<b>Subcatchment 13-6: Lot 13-6 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45" Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af

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**Subcatchment 13-7: Lot 13-7 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45"  
Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af

**Subcatchment 13-8: Lot 13-8 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>5.45"  
Tc=6.0 min CN=98 Runoff=0.60 cfs 0.050 af

**Reach 1R: Vegetated Treatment Swale** Avg. Flow Depth=0.28' Max Vel=0.90 fps Inflow=1.23 cfs 0.884 af  
n=0.045 L=100.0' S=0.0050 '/' Capacity=52.77 cfs Outflow=1.23 cfs 0.882 af

**Reach 2R: Runoff flow through wetlands** Avg. Flow Depth=0.10' Max Vel=1.42 fps Inflow=1.23 cfs 0.882 af  
n=0.045 L=1,000.0' S=0.0400 '/' Capacity=226.55 cfs Outflow=1.22 cfs 0.868 af

**Reach 50: Northerly flow** Inflow=10.21 cfs 2.211 af  
Outflow=10.21 cfs 2.211 af

**Reach 60: Southerly flow** Inflow=0.42 cfs 0.030 af  
Outflow=0.42 cfs 0.030 af

**Pond 1P: Catch Basin #1** Peak Elev=292.76' Inflow=0.76 cfs 0.057 af  
15.0" Round Culvert n=0.012 L=28.0' S=0.0161 '/' Outflow=0.76 cfs 0.057 af

**Pond 2P: Catch Basin #2** Peak Elev=292.43' Inflow=0.63 cfs 0.041 af  
15.0" Round Culvert n=0.012 L=18.0' S=0.0050 '/' Outflow=0.63 cfs 0.041 af

**Pond 3P: Catch Basin #3** Peak Elev=292.83' Inflow=2.69 cfs 0.200 af  
15.0" Round Culvert n=0.012 L=168.0' S=0.0302 '/' Outflow=2.69 cfs 0.200 af

**Pond 4P: Catch Basin #4** Peak Elev=285.09' Inflow=4.61 cfs 0.404 af  
15.0" Round Culvert n=0.012 L=155.0' S=0.0050 '/' Outflow=4.61 cfs 0.404 af

**Pond 5P: Catch Basin #5** Peak Elev=285.00' Inflow=3.57 cfs 0.307 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=3.57 cfs 0.307 af

**Pond 6P: Drain Manhole #1** Peak Elev=287.45' Inflow=2.69 cfs 0.200 af  
15.0" Round Culvert n=0.012 L=102.0' S=0.0257 '/' Outflow=2.69 cfs 0.200 af

**Pond 7P: Drain Manhole #2** Peak Elev=283.11' Inflow=4.61 cfs 0.404 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=4.61 cfs 0.404 af

**Pond 8P: Small roadside swale** Peak Elev=285.18' Storage=428 cf Inflow=2.30 cfs 0.205 af  
12.0" Round Culvert n=0.012 L=40.0' S=0.0287 '/' Outflow=2.20 cfs 0.198 af

**Pond 9P: Proposed detention pond** Peak Elev=281.03' Storage=18,662 cf Inflow=11.22 cfs 0.934 af  
Outflow=1.23 cfs 0.884 af

**Total Runoff Area = 10.390 ac Runoff Volume = 2.314 af Average Runoff Depth = 2.67"**  
**84.31% Pervious = 8.760 ac 15.69% Impervious = 1.630 ac**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

<b>Subcatchment 1: Northerly subcatchment</b>	Runoff Area=6.050 ac 1.32% Impervious Runoff Depth>3.23" Flow Length=1,016' Tc=33.1 min CN=68 Runoff=12.39 cfs 1.630 af
<b>Subcatchment 2: Southwesterly</b>	Runoff Area=0.190 ac 10.53% Impervious Runoff Depth>2.66" Flow Length=72' Tc=3.7 min CN=62 Runoff=0.62 cfs 0.042 af
<b>Subcatchment 3: East side of cul-de-sac</b>	Runoff Area=0.130 ac 38.46% Impervious Runoff Depth>4.85" Flow Length=188' Tc=2.6 min CN=83 Runoff=0.79 cfs 0.053 af
<b>Subcatchment 4: Cul-de-sac pavement</b>	Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>6.57" Flow Length=161' Tc=1.0 min CN=98 Runoff=0.60 cfs 0.044 af
<b>Subcatchment 5: Cul-de-sac interior</b>	Runoff Area=0.120 ac 0.00% Impervious Runoff Depth>2.86" Flow Length=47' Slope=0.0850 '/' Tc=3.1 min CN=64 Runoff=0.43 cfs 0.029 af
<b>Subcatchment 6: West side cul-de-sac</b>	Runoff Area=0.200 ac 30.00% Impervious Runoff Depth>4.09" Flow Length=148' Tc=3.6 min CN=76 Runoff=1.02 cfs 0.068 af
<b>Subcatchment 7: Eastern side of proposed</b>	Runoff Area=0.300 ac 50.00% Impervious Runoff Depth>4.96" Flow Length=332' Tc=2.7 min CN=84 Runoff=1.86 cfs 0.124 af
<b>Subcatchment 8: Western side of proposed</b>	Runoff Area=0.420 ac 33.33% Impervious Runoff Depth>4.08" Flow Length=343' Tc=8.0 min CN=76 Runoff=1.85 cfs 0.143 af
<b>Subcatchment 9: Units #8 and #9</b>	Runoff Area=0.670 ac 5.97% Impervious Runoff Depth>2.66" Flow Length=316' Tc=9.7 min CN=62 Runoff=1.78 cfs 0.148 af
<b>Subcatchment 10: Proposed detention pond</b>	Runoff Area=1.350 ac 9.63% Impervious Runoff Depth>2.85" Flow Length=195' Tc=6.0 min CN=64 Runoff=4.38 cfs 0.321 af
<b>Subcatchment 13-1: Lot 13-1 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af
<b>Subcatchment 13-2: Lot 13-2 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af
<b>Subcatchment 13-3: Lot 13-3 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af
<b>Subcatchment 13-4: Lot 13-4 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af
<b>Subcatchment 13-5: Lot 13-5 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af
<b>Subcatchment 13-6: Lot 13-6 Home</b>	Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57" Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af

**15031-FROZEN**

Prepared by Microsoft

HydroCAD® 10.00-13 s/n 03433 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 50-year Rainfall=6.81"

Printed 7/1/2016

Page 8

**Subcatchment 13-7: Lot 13-7 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57"  
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af

**Subcatchment 13-8: Lot 13-8 Home** Runoff Area=0.110 ac 100.00% Impervious Runoff Depth>6.57"  
Tc=6.0 min CN=98 Runoff=0.72 cfs 0.060 af

**Reach 1R: Vegetated Treatment Swale** Avg. Flow Depth=0.61' Max Vel=1.38 fps Inflow=4.93 cfs 1.153 af  
n=0.045 L=100.0' S=0.0050 '/' Capacity=52.77 cfs Outflow=4.85 cfs 1.151 af

**Reach 2R: Runoff flow through wetlands** Avg. Flow Depth=0.22' Max Vel=2.29 fps Inflow=4.85 cfs 1.151 af  
n=0.045 L=1,000.0' S=0.0400 '/' Capacity=226.55 cfs Outflow=4.41 cfs 1.136 af

**Reach 50: Northerly flow** Inflow=15.63 cfs 2.947 af  
Outflow=15.63 cfs 2.947 af

**Reach 60: Southerly flow** Inflow=0.62 cfs 0.042 af  
Outflow=0.62 cfs 0.042 af

**Pond 1P: Catch Basin #1** Peak Elev=292.82' Inflow=0.97 cfs 0.072 af  
15.0" Round Culvert n=0.012 L=28.0' S=0.0161 '/' Outflow=0.97 cfs 0.072 af

**Pond 2P: Catch Basin #2** Peak Elev=292.49' Inflow=0.79 cfs 0.053 af  
15.0" Round Culvert n=0.012 L=18.0' S=0.0050 '/' Outflow=0.79 cfs 0.053 af

**Pond 3P: Catch Basin #3** Peak Elev=292.96' Inflow=3.42 cfs 0.253 af  
15.0" Round Culvert n=0.012 L=168.0' S=0.0302 '/' Outflow=3.42 cfs 0.253 af

**Pond 4P: Catch Basin #4** Peak Elev=285.72' Inflow=5.90 cfs 0.529 af  
15.0" Round Culvert n=0.012 L=155.0' S=0.0050 '/' Outflow=5.90 cfs 0.529 af

**Pond 5P: Catch Basin #5** Peak Elev=285.25' Inflow=4.65 cfs 0.405 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=4.65 cfs 0.405 af

**Pond 6P: Drain Manhole #1** Peak Elev=287.59' Inflow=3.42 cfs 0.253 af  
15.0" Round Culvert n=0.012 L=102.0' S=0.0257 '/' Outflow=3.42 cfs 0.253 af

**Pond 7P: Drain Manhole #2** Peak Elev=283.50' Inflow=5.90 cfs 0.529 af  
15.0" Round Culvert n=0.012 L=24.0' S=0.0050 '/' Outflow=5.90 cfs 0.529 af

**Pond 8P: Small roadside swale** Peak Elev=285.42' Storage=516 cf Inflow=3.07 cfs 0.269 af  
12.0" Round Culvert n=0.012 L=40.0' S=0.0287 '/' Outflow=2.88 cfs 0.262 af

**Pond 9P: Proposed detention pond** Peak Elev=281.33' Storage=21,172 cf Inflow=14.68 cfs 1.223 af  
Outflow=4.93 cfs 1.153 af

**Total Runoff Area = 10.390 ac Runoff Volume = 3.083 af Average Runoff Depth = 3.56"**  
**84.31% Pervious = 8.760 ac 15.69% Impervious = 1.630 ac**

<b>J/B</b>	<b>CONSTRUCTION COST ESTIMATE</b>				<b>J/B</b>
<b>"Brookview Subdivision"</b> <b>Tuck Realty Corp.</b> <b>Speare Road</b> <b>Hudson, NH</b> <b>JBE Project No. 15031</b> <b>Total Length of Road = 707 lin. ft.</b>	<b>Jones &amp; Beach Engineers, Inc.</b> <b>85 Portsmouth Avenue</b> <b>P.O. Box 219</b> <b>Stratham, NH 03885</b> <b>July 5, 2016</b>				
ITEM DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL COST	SUBTOTAL
<b>GENERAL CONSTRUCTION</b>					
Clearing and Grubbing	AC	2.00	\$ 3,000.00	\$ 6,000.00	
Stump Disposal	AC	2.00	\$ 1,500.00	\$ 3,000.00	
Trench Ledge	CY	50	\$ 20.00	\$ 1,000.00	
Unsuitable Materials	CY	50	\$ 20.00	\$ 1,000.00	
Common Excavation Cuts/Fills	CY	5000	\$ 2.00	\$ 10,000.00	
Loam Stripping	CY	1606	\$ 2.50	\$ 4,014.44	
Bank Run Gravel	CY	680	\$ 20.00	\$ 13,595.56	
Crushed Gravel	CY	340	\$ 24.00	\$ 8,157.33	
Top Course	TON	106	\$ 73.00	\$ 7,728.88	
Binder Course	TON	212	\$ 71.00	\$ 15,034.25	
Sloped Granite Curbing	LF	1342	\$ 22.00	\$ 29,524.00	
Construction Entrance	LS	1	\$ 1,500.00	\$ 1,500.00	
Loam and Seed	SY	7745	\$ 5.00	\$ 38,725.00	
Iron Bounds	EA	27	\$ 164.00	\$ 4,428.00	
Granite Bounds	EA	15	\$ 222.00	\$ 3,330.00	
Signs	EA	3	\$ 150.00	\$ 450.00	
Striping	LS	1	\$ 1,000.00	\$ 1,000.00	
Material Testing	LS	1	\$ 15,000.00	\$ 15,000.00	
Inspections	LS	1	\$ 12,000.00	\$ 12,000.00	
Road As-Built	LS	1	\$ 5,000.00	\$ 5,000.00	
Landcaping Shrubs	EA	40	\$ 250.00	\$ 10,000.00	
SWPPP Inspection Fees	LS	1	\$ 3,000.00	\$ 3,000.00	
Erosion Control Maintenance	LS	1	\$ 1,000.00	\$ 1,000.00	
<b>GENERAL CONSTRUCTION SUBTOTAL</b>					<b>\$ 194,487</b>
<b>DRAINAGE SYSTEM</b>					
6" Perforated Underdrain	LF	1031	\$ 16.00	\$ 16,496.00	
12" ADS-N12 Culvert	LF	40	\$ 32.50	\$ 1,300.00	
15" ADS-N12 Culvert	LF	551	\$ 32.50	\$ 17,907.50	
5" End Cap w/ Orifice	EA	1	\$ 350.00	\$ 350.00	
Catch Basin	EA	5	\$ 1,500.00	\$ 7,500.00	
Drain Manhole	EA	2	\$ 1,500.00	\$ 3,000.00	
Standard Headwall	EA	2	\$ 650.00	\$ 1,300.00	
15" Flared End Section	EA	3	\$ 400.00	\$ 1,200.00	
Detention Pond	LS	1	\$ 10,000.00	\$ 10,000.00	
Rip Rap Erosion Control	CY	14	\$ 18.00	\$ 243.33	
Erosion Control Blanket	SY	132	\$ 2.50	\$ 330.56	
Vegetated Treatment Swale	SY	149	\$ 3.00	\$ 446.67	
Silt Fence	LF	706	\$ 4.00	\$ 2,824.00	
<b>DRAINAGE SYSTEM SUBTOTAL</b>					<b>\$ 62,898</b>
<b>WATER SERVICE</b>					
6" Steel Bollards	EA	5	\$ 500.00	\$ 2,500.00	
10,000 Gallon Fire Cistern	EA	1	\$ 25,000.00	\$ 25,000.00	
<b>WATER SERVICE SUBTOTAL</b>					<b>\$ 27,500</b>

<b>J/B</b>	<b>CONSTRUCTION COST ESTIMATE</b>				<b>J/B</b>	
<b>"Brookview Subdivision"</b> Tuck Realty Corp. Speare Road Hudson, NH JBE Project No. 15031 Total Length of Road = 707 lin. ft.		Jones & Beach Engineers, Inc. 85 Portsmouth Avenue P.O. Box 219 Stratham, NH 03885 July 5, 2016				
<b>ITEM DESCRIPTION</b>		<b>UNIT</b>	<b>QTY</b>	<b>UNIT COST</b>	<b>TOTAL COST</b>	<b>SUBTOTAL</b>
<b>UTILITIES</b>						
Underground Conduit		LF	655	\$ 18.00	\$ 11,790.00	
Overhead Electric		LF	124	\$ 18.00	\$ 2,232.00	
Drop Utility Pole		EA	1	\$ 2,000.00	\$ 2,000.00	
<b>UTILITIES SUBTOTAL</b>						<b>\$ 16,022.00</b>
<b>SUBTOTAL</b>						<b>\$ 300,908</b>
<b>10% CONTINGENCY</b>						<b>\$ 30,091</b>
<b>GRAND TOTAL</b>						<b>\$ 330,998</b>



# TOWN OF HUDSON

FIRE DEPARTMENT

INSPECTIONAL SERVICES DIVISION

~  
C  
~



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12 SCHOOL STREET, HUDSON, NEW HAMPSHIRE 03051

Emergency 911  
Business 603-886-6005  
Fax 603-594-1142

Robert M. Buxton  
Chief of Department

1 July, 2016

To: John Cashell  
Town Planner

Fr: John J. O'Brien  
Deputy Fire Chief  
Addendum

Re: Site Plan review proposed subdivision of Map 186/ Lot 13 50 Speare Rd.

---

NFPA 1142 Standard for Water Supplies in Suburban and Rural Firefighting Sec B.3.3 (3) requires a minimum capacity of 30,000 gallons.

The Standard allows a significant reduction in water flow requirements if Fire Sprinklers are installed. With the installation of an Approved NFPA 13D system, cistern capacity may be reduced to 10,000 gallons. This cistern coupled with the 4500 gallons carried by the Hudson Fire Dept allows for a 50% reduction in cistern size.

If you have questions feel free to email [jobrien@hudsonnh.gov](mailto:jobrien@hudsonnh.gov) or call 603-886-6021

John J. O'Brien  
Deputy Fire Chief  
Town of Hudson N.H



# Cummings & Webster Streets 2 Lot Subdivision Plan

## STAFF REPORT

July 13, 2016

**SITE:** 15 Cummings St. & 37 Webster St. -- Map 173/Lot 052 & Lot 53-2 -- SB# 05-16

**ZONING:** TR -- Minimum lot size 10,000 sf and 90 ft. of frontage.

**PURPOSE OF PLAN:** to subdivide Map 173/Lot 52 into 2 lots and relocate lot line between Lot 52 & 53-2 at 37 Webster St.

**SUBDIVISION PLAN UNDER REVIEW ENTITLED:** 15 Cummings Street and 37 Webster Street, Tax Map 173/Lot 052 & 53-2, Hudson, NH, prepared by Maynard & Paquette, Engineering Associates, LLC, 23 East Pearl Street, Nashua, NH 03060, dated 2 JUN 2016 (no revision), consisting of Sheets 1 & 2 and Notes 1 – 12 are included on Sheet 1(said plans are attached herewith).

### ATTACHMENTS:

- 1) Subdivision Application, Waiver Request Form, and Aerial Photo, showing features within 200 ft. of the subdivision, date stamped 20 JUN 16 – Attachment “A”.
- 2) Comments from: Town Eng., Elvis Dhima Road Agent, Kevin Burns, Zoning Administrator, Bruce Buttrick, Asst. Assessor, Jim Michaud, Police Lt. Dave Bianchi and Deputy Fire Chief, John O’Brien – “B”.

### OUTSTANDING ISSUES:

1. Sheet 1 of 2 ( the recording sheet) shows an existing single-family dwelling on the present lot, i.e., Map 173/Lot 052, which presently consists of: (i) 30,143 sf, (ii) 79 ft. of existing frontage on Baker St. and (iii) 79.97 ft. of existing frontage on Webster St.

This Plan proposes to subdivide this lot into 2-lots, i.e., Lot 52 to consist of 20,319 sf and the existing 79 ft. of frontage, which provides access for the existing single-family dwelling on this proposed lot; the 2d lot, i.e., Lot 52-1, will consist of 10, 566 sf, with 90.07 of frontage on Webster St.

Note: with the increase of frontage on Webster St. for this proposed lot to 90.07 ft., via the lot line adjustment and land area transfer from abutting Lot 53-2, the newly proposed Lot 52-1, as well as new Lot 53-2, comply with the minimum lot area and frontage requirements for the TR Zone (i.e., min. frontage 90 ft. and min. lot size 10,000 sf.)

2. At the meeting Mr. Maynard, Professional Land Surveyor and Professional Engineer, will address the driveways and utilities proposed for each lot, together with requested amendments to the plan, as requested by own Eng. Elvis Dhima, in his attached memo “B”.

a) The Hall Chart, Sheet 1 of 2 indicates the following, proposed:

- Lot 52 shall have 20, 319 sf of net buildable upland (min. required 10,000 sf).

- Lot 52-1 shall have 10,566 sf of net buildable upland.
  - Lot 53-2 shall have 16,465 sf of net buildable upland.
- b) This plan does not include wetland or wetland buffer impacts. To this effect, please see Hall Chart on Sheet 1 of 2.
- c) Prior to Planning Board endorsement of the Plan, Note 9 on the Recording Sheet, 1 of 2, needs to be amended to read:

*9. A cost allocation procedure (CAP) amount of \$1,664.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy. NOTE: This present note includes reference to "inflation indexing", which no longer applies.*

**REQUESTED WAIVER:** HTC 289-19 – Underground Utilities

**APPLICATION TRACKING:**

20 JUN 16 - Application submitted.  
 13 JUL 16 - Initial public hearing scheduled.

**RECOMMENDED ACTION:** For this meeting, staff recommends application acceptance, conduct the public hearing and subdivision approval in accordance with the below DRAFT MOTIONS.

**DRAFT MOTIONS:**

I move to accept the 2-lot Subdivision application for 15 Cummings St. and 37 Webster St., Map 173/Lots 052 & 53-2.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

I move to defer the public hearing on this Subdivision application date specific to the 27 JUL 2016 Planning Board meeting.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**REQUESTED WAIVER:** HTC 289-19 – Underground Utilities

I move to grant the requested waiver HTC -289-19 – Underground Utilities - based on the testimony of the Applicant’s representative here this evening, and in accordance with the language included in the submitted Waiver Request Form for said waiver.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_

**MOTION to APPROVE:**

I move to approve the subdivision plan entitled: 15 Cummings Street and 37 Webster St. Tax Map 173/Lot 052 & 53-2, Hudson, NH, prepared by Maynard & Paquette, Engineering Associates, LLC, 23 East Pearl Street, Nashua, NH 03060, dated 2 JUN 2016 (no revision), consisting of Sheets 1 & 2 and Notes 1 – 12, in accordance with the following terms and conditions:

1. All stipulations of approval shall be incorporated into the Decision of Approval, which shall be recorded at the HCRD, together with the Plan.
2. A cost allocation procedure (CAP) amount of \$1,664.00 per residential unit shall be paid prior to the issuance of a Certificate of Occupancy. Prior to Planning Board endorsement of the Plan, Note 9 on Sheet 1 of 2 shall be amended to reflect the foregoing condition and sum.
3. A public school impact fee in the amount of \$3,578.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
4. A recreation contribution in the amount of \$400.00, per residential unit shall be paid prior to the issuance of a Certificate of Occupancy.
5. All monumentation shall be set or bonded for prior to the Planning Board endorsing the Plan-of -Record.
6. Approval of this plan shall be subject to final engineering review, including the location of the driveways for each lot.
7. Construction activities involving the proposed undeveloped lots shall be limited to the hours between 7:00 A.M. and 7:00 P.M., Monday through Saturday. No exterior construction activities shall occur on Sunday. Prior to Planning Board endorsement of the Plan, Note 10 shall be added to Sheet 1 of 2 of the Plan reflecting the foregoing condition.

Motion by: \_\_\_\_\_ Second: \_\_\_\_\_ Carried/Failed: \_\_\_\_\_.

MA



**SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 + 53-2  
Name of Project: 15 CUMMINS ST + 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-110  
(For Town Use) (For Town Use)  
ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN VLEBY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHNEFER CIRCLE ACQUISITIONS, LLC  
6 SCHNEFER CIRCLE  
HUDSON, NH 03051  
603-689-8582  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT ENGINEER

Name: MAYNARD + PAQUETTE ENG'S  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 603-883-8384  
Fax # 603-883-7227  
Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 + 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: \_\_\_\_\_ Sub/Site Date: \_\_\_\_\_

\_\_\_\_\_ I have no comments \_\_\_\_\_ I have comments (attach to form)

\_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

(Initials)

DEPT:

\_\_\_\_\_ Zoning \_\_\_\_\_ Engineering \_\_\_\_\_ Assessor \_\_\_\_\_ Police \_\_\_\_\_ Fire \_\_\_\_\_ Planning

\_\_\_\_\_ Consultant \_\_\_\_\_ Highway Department

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Fees Paid \$ 565.78

SITE DATA SHEET

Plan Name: 15 Cummins St & 37 Webster St Subdivision

Plan Type: Subdivision Plan

Legal Description: Map 173 Lot 52  
Map 173 Lot 53-2

Date: 6/6/16

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Location: WEBSTER & CUMMINS ST

Total Area: S.F. 47,350 Acres: \_\_\_\_\_

Area in Wetlands: NONE

Zoning: T12

Lots Not Meeting Required Dimensions: NONE

Required Area: 10,000

Required Frontage: 90

Water and Waste System Proposed: TOWN WATER & SEWER

Number of Lots With Existing Buildings: NONE

Existing Buildings To Be Removed: NONE

Flood Zone Reference: N/A

Proposed Linear Feet Of New Roadway: N/A

LOT AREA CALCULATION TABLE

LOT #	TOTAL AREA	WETLAND AREA	AREA > 25% SLOPE	BUILDABLE AREA (net contiguous upland useable)	FRONTAGE
1.	20,319	0	0	20,319	79.00 Baker St
2.	10,566	0	0	10,566	90.07
3.	16,465	0	0	16,465	141.9 ft 128
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Data Sheets Checked By:  Date: 6.20.16

**SUBDIVISION PLAN DATA SHEET**

Dates/Case #/Description/  
Stipulations of ZBA,  
Conservation Commission,  
NH Wetlands Board Action:

N/A

(Attach Stipulations on  
Separate Sheet)

List Permits Required:

BUILDING PERMIT, SEWER CONN &  
WATER CONN PERMITS

\*Waivers Requested: N/A      Hudson Town Code  
Reference      Regulation Description

	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	

\*(Left Column for Town Use)

	<u>Amount</u>	<u>Account</u>
<b>Impact Fees</b>	3457.8	SCHOOL
	<del>1664</del>	
	400	REPERATION
<b>Cap Fees</b>	4664	CAP

Development Agreement  
Proposed:       Yes       No  
If Yes      Endorsed       Yes      Date \_\_\_\_\_  No

**SUBDIVISION/SITE PLAN WAIVER REQUEST FORM**  
**Town of Hudson, New Hampshire**

Name of Subdivision/Site Plan:

CUMMINGS & WEBSTER ST SUBDIVISION

Street Address:

15 CUMMINGS ST & 37 WEBSTER ST

I Richard Maynard (AUTH. REP) hereby request that the Planning Board waive the requirements of item HRC 289-19 of the Subdivision/Site Plan Checklist in reference to a plan presented by WYNDRO PRAQUITE (name of surveyor and engineer) dated JUNE 2 2016 for property tax map(s) 173 and lot(s) 52 & 52-2 in the Town of Hudson, NH.

As the aforementioned applicant, I, herein, acknowledge that this waiver is requested in accordance with the provisions set forth in RSA 674:36, II (n), i.e. (For Subdivisions) and RSA 674:44, III (e) (For Site-Plans). Without the Planning Board granting said waiver, it would pose an unnecessary hardship upon me (the applicant), and the granting of this waiver would not be contrary to the spirit and intent of the Subdivision/Site Plan regulations.

Hardship reason(s) for granting this waiver (if additional space is needed please attach the appropriate documentation hereto):

THE LOT IS ALREADY SERVED BY OVERHEAD UTILITIES AND REPLACING THEM WITH UNDERGROUND UTILITIES WOULD NOT SERVE ANY PURPOSE. IT IS AN UNNECESSARY EXPENSE AND WOULD UNNECESSARILY DISTURB THE EXISTING ROADWAYS AND LAND

Reason(s) for granting this waiver, relative to not being contrary to the Spirit and Intent of the Subdivision/Site Plan regulations: (if additional space is needed please attach the appropriate documentation hereto):

NO NEW O/H UTILITIES PROPOSED - EXISTING O/H UTILITIES ARE IN PLACE. ALL NEIGHBORING HOMES HAVE O/H UTILITIES.

Signed:



Applicant or Authorized Agent

Planning Board Action:

Waiver Granted \_\_\_\_\_

Waiver Not Granted \_\_\_\_\_



**APPLICATION FOR SUBDIVISION PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

Twenty one (21) days prior to Planning Board Meeting, a complete subdivision plan to include all supporting materials/documents must be submitted in final form. The subdivision plan shall comply with the following specifications/requirements:

**Applicant  
Initials**

**Staff  
Initials**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> a) Submission of eight (8) full sets of Site Plans (sheet size: 22" x 34") shall be submitted at the time of application filing, followed by the submission of seventeen (17) 11" X 17" plan sets (revised if applicable) to the Community Development Department no later than 10:00 A.M. Tuesday the week prior to the scheduled public hearing/conceptual review date.</li> <li><input checked="" type="checkbox"/> b) Seventeen (17)-subdivision narratives, describing the project.</li> <li><input checked="" type="checkbox"/> c) Plan scale at not less than one inch equals fifty feet (example: 1" = 50' acceptable).</li> <li><input checked="" type="checkbox"/> d) Locus plan with 1,000 minimum radius of site to surrounding area.</li> <li><input checked="" type="checkbox"/> e) Plan dated by day/month/year.</li> <li><input checked="" type="checkbox"/> f) Revision block.</li> <li><input checked="" type="checkbox"/> g) Planning Board approval block.</li> <li><input checked="" type="checkbox"/> h) Title of project inscribed on plan.</li> <li><input checked="" type="checkbox"/> i) Name(s) and address of property owner(s) and signature(s) shall be inscribed on plan.</li> <li><input checked="" type="checkbox"/> j) North point shall be inscribed on plan.</li> <li><input checked="" type="checkbox"/> k) Property lines-exact locations and dimensions.</li> <li><input checked="" type="checkbox"/> l) Acreage/sq. ft. of entire subdivision.</li> <li><input checked="" type="checkbox"/> m) Proposed lots, with lot numbers and area of each lot. Note: each proposed Lot shall be listed on the plan, in chart form, indicating in square feet/ acreage the total lot area, wetland, slope area greater than 25% and total net contiguous useable upland area.</li> </ul> | <ul style="list-style-type: none"> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u> Photo<br/>provided</li> <li><u>JC</u> No<br/>Revision</li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> <li><u>JC</u></li> </ul> |
|--|--|

Applicant  
Initials

Staff  
Initials

- |                |  |   |
|----------------|--|---|
| <u>✓</u> n)    | Certified list of names and addresses of bordering abutters, shown on Tax Assessor's records not more than five (5) days prior to application date to be listed on plan.   | JC  |
| <u>✓</u> o)    | Location of all structures, roads, wetlands, hydrants, wells, septic systems, 4k reserve area, floodways/floodplains, driveways, travel areas, parking areas, natural features within 200 feet of the tract.       | JC SEWER & MUNI WATER PROVIDED                    |
| <u>✓</u> p)    | Locations of existing and proposed permanent monuments and benchmarks within 200 feet of the tract.  | JC<br>N/A   |
| <u>N/A</u> q)  | Pertinent highway projects.  | N/A   |
| <u>✓</u> r)    | Assessor map and lot number.   | JC  |
| <u>    </u> s) | Waiver application form shall be submitted with subdivision application, Note on plan listing waivers requested/granted; and all waivers granted to the subdivision regulations shall be listed on the final plan. | WILL BE ATTACHED FOR 289.19 UNDERGROUND UTILITIES |
| <u>✓</u> t)    | Delineate zoning.  | JC  |
| <u>N/A</u> u)  | Storm water drainage plan.   | N/A   |
| <u>✓</u> v)    | Topographical contours at 2-foot intervals existing and proposed.  | JC  |
| <u>W</u> w)    | Utilities: existing and proposed.  | W   |
| <u>✓</u> x)    | Building and wetland setback lines.  | JC  |
| <u>✓</u> y)    | Rights of way, existing and proposed.  | JC  |
| <u>N/A</u> z)  | Location of dedicated recreational public use land(s) proposed.  | N/A   |
| <u>N/A</u> aa) | Detailed designs of bridges and culverts.  | PLANS TO BE REVISED PER TOWN ENG                  |
| <u>N/A</u> ab) | Typical roadway cross-section, road profile, stationing, and curve data, etc.  | N/A   |

Applicant  
Initials

Staff  
Initials

N/A ac) Proposed location of water supply and sewage disposal systems, including perk test data, test-pit logs and locations; wells, (proposed and existing) 75' protective well radii and attached copies of any required well protection easements.

N/A MUNI. WATER & SEWER

ad) All notes from plats.

JC

N/A ae) Buffers as required by subdivision regulations.

N/A

N/A af) Soil types and boundaries, Note: If site contains marginal or questionable soils, a High Intensity Soil Survey (HISS) may be deemed necessary to submit as part of the application. Said HISS, if required, shall be performed by a State of New Hampshire Certified Soil Scientist, who shall affix his/her stamp and signature and this shall be inscribed on the plan.

N/A

N/A ag) Wetlands (and poorly-drained and very poorly-drained soils), also identified as Class 5 and Class 6 High Intensity Soil Survey (HISS soils), and permanent and seasonal wetlands shall be identified on the plan by a New Hampshire Certified Wetland or Soil Scientist, who shall affix his/her stamp and signature to the respective plan.

N/A

N/A ah) Easements, existing and proposed.

N/A

ai) State of New Hampshire Engineer's seal and signature.  
Surveyor's seal and signature.

JC  
SURVEYOR ONLY  
REQUIRED.

aj) Error of closure (1 in 10,000 or better).

JC

N/A ak) Drafting errors/omissions.

N/A

N/A al) Note outlining phasing schedule.

N/A

N/A am) Narrative description stating the purpose, location, long range plans impacts on traffic, schools, and utilities.

N/A

Town an) Aerial photograph of site and area within 200 feet of the subdivision parcel.

JC

N/A ao) Fiscal impact study.

N/A

N/A ap) Traffic study.

N/A

N/A aq) Drainage calculations and supporting data.

N/A

Applicant  
Initials

Staff  
Initials

N/A ar)

Copies of any proposed or existing easements, covenants, deed restrictions, right of way agreements or other similar documents.

N/A

N/A as)

Copy of applicable town, state, federal approval/permits to include but not limited to the following:

JC

- sewer applications — PENDING
- flood plain permit
- wetlands special exception
- variance
- erosion control permit (149:8a)
- WSPCC subdivision approval (septic)
- dredge and fill permit
- curb cut/driveway permit — PENDING
- shore land protection certification in accordance with RSA483-B.
- if applicable, review application with Lower Merrimack River Local Advisory Committee (LMRLAC) and attach LMRLAC project comments hereto.



N/A at)

Off-site agreement(s).

N/A

N/A au)

Presentation plan (colored, with color-coded bar chart).

ATMOS/IN/6

av)

Fees paid to clerk.

JC

aw)

Plans that include relocation of lot lines shall clearly delineate the former (old) lot lines from proposed (new) lot lines.

JC

- Any or all items may be waived under the purview of the Planning Board.

UNDERGROUND UTILITIES

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**APPLICATION FOR SUBDIVISION PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

I hereby apply for Subdivision Plan Review and acknowledge I will comply with all of the Ordinances of the Town of Hudson, New Hampshire State Laws, as well as any stipulations of the Planning Board, in development and construction of this project. I understand that if any of the items listed under the Subdivision Plan specifications or application form are incomplete, the application will be considered rejected.

Pursuant to RSA 674:1-IV, the owner(s), by the filing of this application as indicated above, hereby give permission for any member of the Hudson Planning Board, the Town Engineer, the Conservation Commission and such agents or employees of the Town or other persons as the Planning Board may authorize, to enter upon the property which is the subject of this application at all reasonable times for the purpose of such examinations, surveys, tests and inspections as may be appropriate. The owner(s) release(s) any claim or right he/she (they) may now or hereafter possess against any of the above individuals as a result of any examinations, surveys, tests and inspections conducted on his (their) property in connection with this applications.

Signature of Owner: *Edmund Murray / Robert Scire*  
*JORDAN MURRAY / ROBERT SCIRE*

- ❖ If other than an individual, indicate name of organization and its principal owner, partners, or corporate officers.

Signature of Developer: *Robert Scire*  
*ROBERT SCIRE*

- ❖ The developer/individual in charge must have control over all project work and be available to the Code Enforcement Officer/Building Inspector during the construction phase of the project. The Code Enforcement Officer/Building Inspector must be notified within two (2) working days of any change by the individual in charge of the project.

Technical Review Signature: *TOWN ENG*

Planner Approval Signature: *Jan C. Hill*



# 15 Cummings St & 37 Webster St

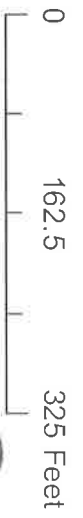


July 1, 2016

Easement\_Lines

Parcels

1 inch = 149 feet



"B"



SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 + 53-2  
Name of Project: 15 COMMINS ST + 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-11  
(For Town Use) (For Town Use)  
ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN ULEY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHNEFER CIRCLE ACQUISITIONS, LLC  
6 SCHNEFER CIRCLE  
HUDSON, NH 03051  
603-689-8582

PROJECT ENGINEER

Name: MAYNARD + PAQUETS ENG'G  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 609-883-8384  
Fax # 609-883-7227  
Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 + 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/16 Sub/Site Date: 7/13/16

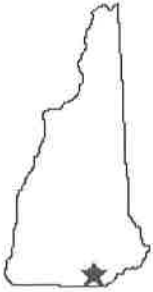
I have no comments  I have comments (attach to form)

EZO Title: TOWN ENGINEER Date: 6/23/16  
(Initials)

DEPT: \_\_\_\_\_ Zoning  Engineering  Assessor \_\_\_\_\_ Police \_\_\_\_\_ Fire \_\_\_\_\_ Planning \_\_\_\_\_  
\_\_\_\_\_ Consultant \_\_\_\_\_ Highway Department \_\_\_\_\_

Fees Paid \$565.78 (82)





# TOWN OF HUDSON

## Engineering Department



12 School Street • Hudson, New Hampshire 03051 • Tel: 603-886-6008 • Fax: 603-594-1142

June 22, 2016

37 Webster Street & 15 Cummings Road  
Hudson, NH 03051

RE: 37 Webster Street & 15 Cummings Road Lot Line Relocation

Mr. Cashell

Below are my comments for the project listed above:

1. Our records indicate that the existing water service line for 37 Webster Street is located under the proposed dwelling located on the proposed lot 52-1. This needs to be addressed through an easement or a new service line.
2. Revise the layout for lot 52-1 to avoid the existing catch basin within the proposed driveway.
3. Add a proposed culvert under the proposed driveway on lot 53-2 to address any potential runoff.
4. Add note stating the existing utility pole located on the proposed driveway, lot 52-3, to be removed.
5. Add note stating that Webster Street will be paved; binder course, in 2016 and final course in 2017 therefore no utility work will be allowed on Webster Street until 2022.

Sincerely,

Elvis Dhima, P.E.  
Town Engineer

cc: Kevin Burns, Road Agent,  
Gary Webster, Civil Engineer,  
Bruce Buttrick, Zoning Administrator



SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 + 53-2

Name of Project: 15 CUMMINS ST + 37 WEBSTER ST SUBDIVISION

Zoning District: TR (For Town Use) General SB# 05-16 (For Town Use)

ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN ULLERY

Address: 37 WEBSTER ST

Address: HUDSON, NH 03051

X Telephone # \_\_\_\_\_

Fax # \_\_\_\_\_

Email: \_\_\_\_\_

DEVELOPER:

SCHNEFFER CIRCLE ACQUISITIONS, LLC

6 SCHNEFFER CIRCLE

HUDSON, NH 03051

603-689-8582

PROJECT ENGINEER

Name: MAYNARD + PAQUETTE ENG'S

Address: 23 EAST PEARL ST

Address: NASHUA, NH 03060

Telephone # 603-883-8384

Fax # 603-883-7227

Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT LINE BETWEEN LOT 52 + 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/16 Sub/Site Date: 7/13/16

I have no comments  I have comments (attach to form)

RD Title: ROAD AGENT Date: 6/20/16

(Initials)

DEPT:

Zoning  Engineering  Assessor  Police  Fire  Planning

Consultant  Highway Department

---

Fees Paid \$565.78 (RD)

COMMENTS INCORPORATED WITH  
TOWN ENG. REPORT.  
RD



**SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 + 53-2  
Name of Project: 15 COMMINS ST + 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-14  
(For Town Use) (For Town Use)

ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN VLEBY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHNEFFER CIRCLE ACQUISITIONS, LLC  
6 SCHNEFFER CIRCLE  
HUDSON, NH 03051  
603-689-8582

PROJECT ENGINEER

Name: MAYNARD + PAQUETTE ENG'G  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 609-883-8384  
Fax # 609-883-7227  
Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 + 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/16 Sub/Site Date: 7/13/16

I have no comments  I have comments (attach to form)

BB Title: ZONING ADMIN. Date: 6-28-16  
(Initials)

DEPT:  Zoning  Engineering  Assessor  Police  Fire  Planning  
 Consultant  Highway Department

Fees Paid \$565.78 (82)



**SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 / 53-2  
Name of Project: 15 COMMINS ST & 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-16  
(For Town Use) (For Town Use)

ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN VLEBY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHMETER CIRCLE ACQUISITIONS, LLC  
6 SCHMETER CIRCLE  
HUDSON, NH 03051  
603-689-8582

PROJECT ENGINEER

Name: MAYNARD & PAQUETTE ENG'G  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 609-883-8384  
Fax # 609-883-7227  
Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 & 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/16 Sub/Site Date: 7/13/16

I have no comments  I have comments (attach to form)

DR Title: LIEUTENANT Date: \_\_\_\_\_  
(Initials)

DEPT:

Zoning  Engineering  Assessor  Police  Fire  Planning

Consultant  Highway Department

---

Fees Paid \$565.78 (82)



SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 / 53-2  
Name of Project: 15 CUMMINS ST & 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-14  
(For Town Use) (For Town Use)  
ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN VLEBY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHMETER CIRCLE ACQUISITIONS, LLC  
6 SCHMETER CIRCLE  
HUDSON, NH 03051  
603-689-8582  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT ENGINEER

Name: MAYNARD & PAQUETTE ENG'G  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 609-883-8384  
Fax # 609-883-7227  
Email: MPEA LLC@AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 & 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/14 Sub/Site Date: 7/3/14

I have no comments  I have comments (attach to form)

JB Title: Deputy Fire Chief Date: 6/23/14  
(Initials)

DEPT:

Zoning  Engineering  Assessor  Police  Fire  Planning

Consultant  Highway Department

---

Fees Paid \$565.78 (82)



**SUBDIVISION PLAN APPLICATION FOR PLAN REVIEW  
TOWN OF HUDSON, NEW HAMPSHIRE**

Date of Application: JUNE 6, 2016 Tax Map # 173 Lot # 52 / 53-2  
Name of Project: 15 COMMINS ST & 37 WEBSTER ST SUBDIVISION  
Zoning District: TR General SB# 05-110  
(For Town Use) (For Town Use)  
ZBA Action: N/A

PROPERTY OWNER:

Name: JORDAN VLEBY  
Address: 37 WEBSTER ST  
Address: HUDSON, NH 03051  
X Telephone # \_\_\_\_\_  
Fax # \_\_\_\_\_  
Email: \_\_\_\_\_

DEVELOPER:

SCHAEFER CIRCLE ACQUISITIONS, LLC  
6 SCHAEFER CIRCLE  
HUDSON, NH 03051  
603-689-8582

PROJECT ENGINEER

Name: MAYNARD & PAQUETTE ENG'G  
Address: 23 EAST PEARL ST  
Address: NASHUA, NH 03060

Telephone # 609-883-8384  
Fax # 609-883-7227  
Email: MPEA LLC @ AOL.COM

PURPOSE OF PLAN:

SUBDIVIDE LOT 52 INTO 2 LOTS AND RELOCATE LOT  
LINE BETWEEN LOT 52 & 53-2 AT 37 WEBSTER ST

(FOR TOWN USE)

Plan Routing Date: 6/22/16 Sub/Site Date: 7/13/16

I have no comments  I have comments (attach to form)

(Initials) [Signature] Title: Asst. Assessor Date: 6-22-16

DEPT:

Zoning  Engineering  Assessor  Police  Fire  Planning

Consultant  Highway Department

---

Fees Paid \$565.78 (82)

**ABUTTERS:**

**DIRECT ABUTTERS:**

Map 173 / Lot 1  
Cynthia Ann Tomposi  
32 Webster Street  
Hudson, NH 03051

Map 173 / Lot 2  
Joy M. Garon & John G. Scott  
34 Webster Street  
Hudson, NH 03051

Map 173 / Lot 3  
John McLaughlin  
36 Webster Street  
Hudson, NH 03051

Map 173 / Lot 3-1  
John McLaughlin  
36 Webster Street  
Hudson, NH 03051

Map 173 / Lot 3B  
Leon R. & Lynn M. Bechard  
37 Baker Street  
Hudson, NH 03051

Map 173 / Lot 39  
Ryan M. Lacasse  
9 Cummings Street  
Hudson, NH 03051

Map 173 / Lot 44  
Kelli M. Brown  
32 Baker Street  
Hudson, NH 03051

Map 173 / Lot 45  
Thomas F. Long & Stacy Milbouer  
34 Baker Street  
Hudson, NH 03051

Map 173 / Lot 46  
Kenneth L. Macintosh  
38 Baker Street  
Hudson, NH 03051

Map 173 / Lot 51  
Ardell H. Fuhrmann  
39 Webster Street  
Hudson, NH 03051

Map 173 / Lot 54  
Kathleen M. Descoteaux Trustee  
Descoteaux Family Trust  
16 Cummings Street  
Hudson, NH 03051

Map 173 / Lot 55  
Richard J. & Dawn L. Gendron  
31 Webster Street  
Hudson, NH 03051

Within 200 feet

Map 173 / Lot 4  
Robert R. Williams  
40 Webster Street  
Hudson, NH 03051

Map 173 / Lot 36  
Raymond K. & Miriam L. Somero  
41 Baker Street  
Hudson, NH 03051

Map 173 / Lot 37  
Donald L. Tharp  
39 Baker Street  
Hudson, NH 03051

Map 173 / Lot 40  
Harold B. Dillon Jr. &  
Kelsey J. Dillon  
7 Cummings Street  
Hudson, NH 03051

Map 173 / Lot 41  
Ruth A. Fackler  
c/o Mary-Elen Jenney Trustee  
45 Newport Road  
Beaufort, SC 29907

Map 173 / Lot 43  
David L. & Joan S. Plummer  
30 Baker Street  
Hudson, NH 03051

Map 173 / Lot 47  
Luis A. & Tracy L. Bonilla  
3 Daw Street  
Hudson, NH 03051

Map 173 / Lot 49  
Jean K. Warmick  
45 Webster Street  
Hudson, NH 03051

Map 173 / Lot 50  
Karen A. Campbell  
28 Merrimack Street  
Hudson, NH 03051

**PROPOSED LOT CRITERIA**

LOT NO.	GROSS AREA	WETLANDS	STEEP SLOPE	NET AREA
52	20,319 SF	0	0	20,319 SF
52-1	10,566 SF	0	0	10,566 SF
53-2	16,465 SF	0	0	16,465 SF

**WAIVERS:**

HTC 288-19 UNDERGROUND UTILITIES

APPROVED BY THE TOWN OF HUDSON PLANNING BOARD

SECRETARY \_\_\_\_\_ DATE \_\_\_\_\_

CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

JANICE G. ULERY \_\_\_\_\_ DATE \_\_\_\_\_

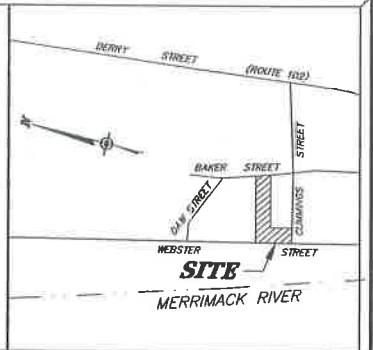
JORDAN G. ULERY \_\_\_\_\_ DATE \_\_\_\_\_

SCHAEFER CIRCLE ACQUISITIONS, LLC \_\_\_\_\_ DATE \_\_\_\_\_

**PLAN REFERENCES:**

1. PLAN OF DAW ACRES, HUDSON, DATED JUNE 1960 BY NED SPAULDING, CIVIL ENGINEER. FILED HCRD AS PLAN No. 2473.
2. TEAS SUBDIVISION, 29 WEBSTER STREET, HUDSON, NH DATED 4/26/45 BY PIANTIOSI ASSOC. INC. FILED HCRD AS PLAN No. 9784.
3. SUBDIVISION PLAN MAP 173 / LOT 53, 15 CUMMINGS STREET HUDSON NH. DATED FEB. 16, 2016 BY MAYNARD & PAQUETTE. FILED HCRD AS PLAN No. 38890.

- STONE BOUND FOUND
- STONE BOUND TO BE SET
- IRON PIN FOUND
- IRON PIN TO BE SET
- MINIMUM BUILDING SETBACK
- ▤ EXISTING BUILDING
- STOCKADE FENCE
- (47) STREET ADDRESS



**LEGEND**

**VICINITY**

**NOTES:**

1. PRESENT ZONING - "TR" TOWN RESIDENTIAL
2. EXISTING & PROPOSED USE - RESIDENTIAL
3. THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE LOT 52 INTO A TOTAL OF 2 LOTS AND RELOCATE THE LOT LINE BETWEEN LOT 52 AND 53-2.
4. TOTAL AREA OF PARCEL - 47,350 S.F. / 1.087 AC.
5. LOTS ARE SERVED BY TOWN WATER AND SEWER.
6. ALL MONUMENTATION SHALL BE SET OR BONDED FOR PRIOR TO THE PLANNING BOARD ENDORSING THE PLAN OF RECORD.
7. DIMENSIONAL REQUIREMENTS -  
MINIMUM LOT AREA - 10,000 S.F.  
FRONT YARD SETBACK - 30 FEET  
SIDE YARD SETBACK - 15 FEET  
REAR YARD SETBACK - 15 FEET  
MIN. LOT FRONTAGE - 90 FEET
8. N.F.I.P. FIRM MAP NUMBER 33011C0514E INDICATES THAT THE SITE IS NOT LOCATED WITHIN THE 100 YEAR FLOOD PLAIN.
9. A C.A.P. FEE OF \$1,664.00, SUBJECT TO ANNUAL INFLATION INDEXING, AS PERMITTED BY THE IMPACT FEE METHODOLOGY SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
10. A PUBLIC SCHOOL IMPACT FEE OF \$3,578.00 SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. A RECREATION CONTRIBUTION OF \$400.00 SHALL BE PAID PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
12. CONSTRUCTION ACTIVITIES INVOLVING THE PROPOSED UNDEVELOPED LOTS SHALL BE LIMITED TO THE HOURS BETWEEN 7:00 AM AND 7:00 PM, MONDAY THROUGH SATURDAY; NO EXTERIOR CONSTRUCTION ACTIVITIES SHALL OCCUR ON SUNDAY.



SUBDIVISION PLAN MAP 173/LOT 52 & 53-2

**15 CUMMINGS STREET & 37 WEBSTER STREET HUDSON, NEW HAMPSHIRE**

OWNER: LOT 53-2

SCHAEFER CIRCLE ACQUISITIONS, LLC  
6 SCHAEFER CIRCLE  
HUDSON, NH 03051  
Bk. 8738 Pg. 2311

OWNER: LOT 52

JORDAN G. & JAMICE L. ULERY  
37 WEBSTER STREET  
HUDSON, NH 03051  
Bk. 8721 Pg. 2786

SCALE: 1" = 40' DATE: JUNE 2, 2016

ENGINEERING  
**MP**  
ASSOCIATES  
Maynard & Paquette  
Engineering Associates, LLC  
Consulting Engineers and Land Surveyors  
23 East Pearl Street, Nashua, NH 03060  
Phone: (603)883-8433 Fax: (603)883-7227

I CERTIFY THAT THIS PLAN WAS PREPARED FROM BOUNDARY INFORMATION SHOWN ON PLAN REFERENCE 1 AND A FIELD SURVEY LAST MADE ON THE GROUND IN NOVEMBER 2015 HAVING A MAXIMUM ERROR OF CLOSURE OF 1:10,000.

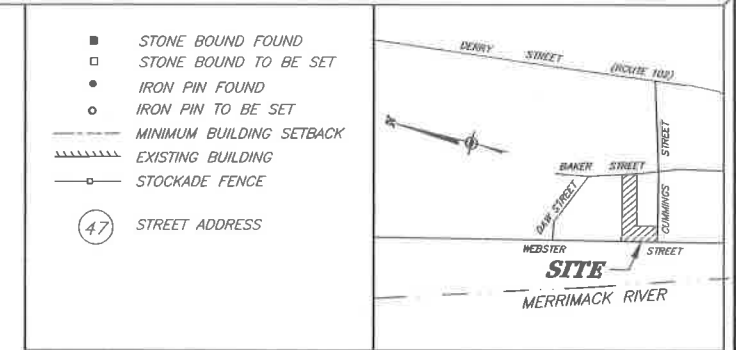


JWY	JWY	734/66	D	12456
DESIGNED	DRAWN	CHECKED	APPROVED	BOOK & PAGE
REVISION	SIZE	JOB NUMBER		

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**PLAN REFERENCES:**

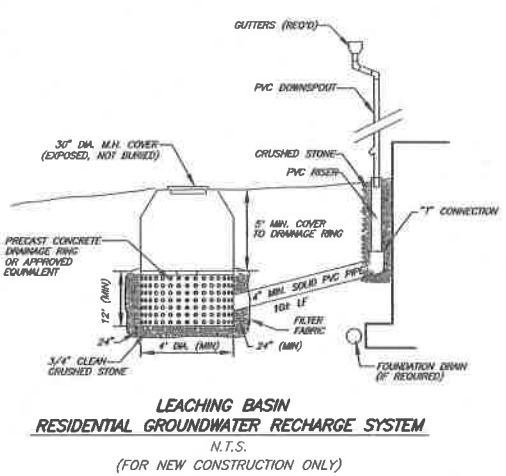
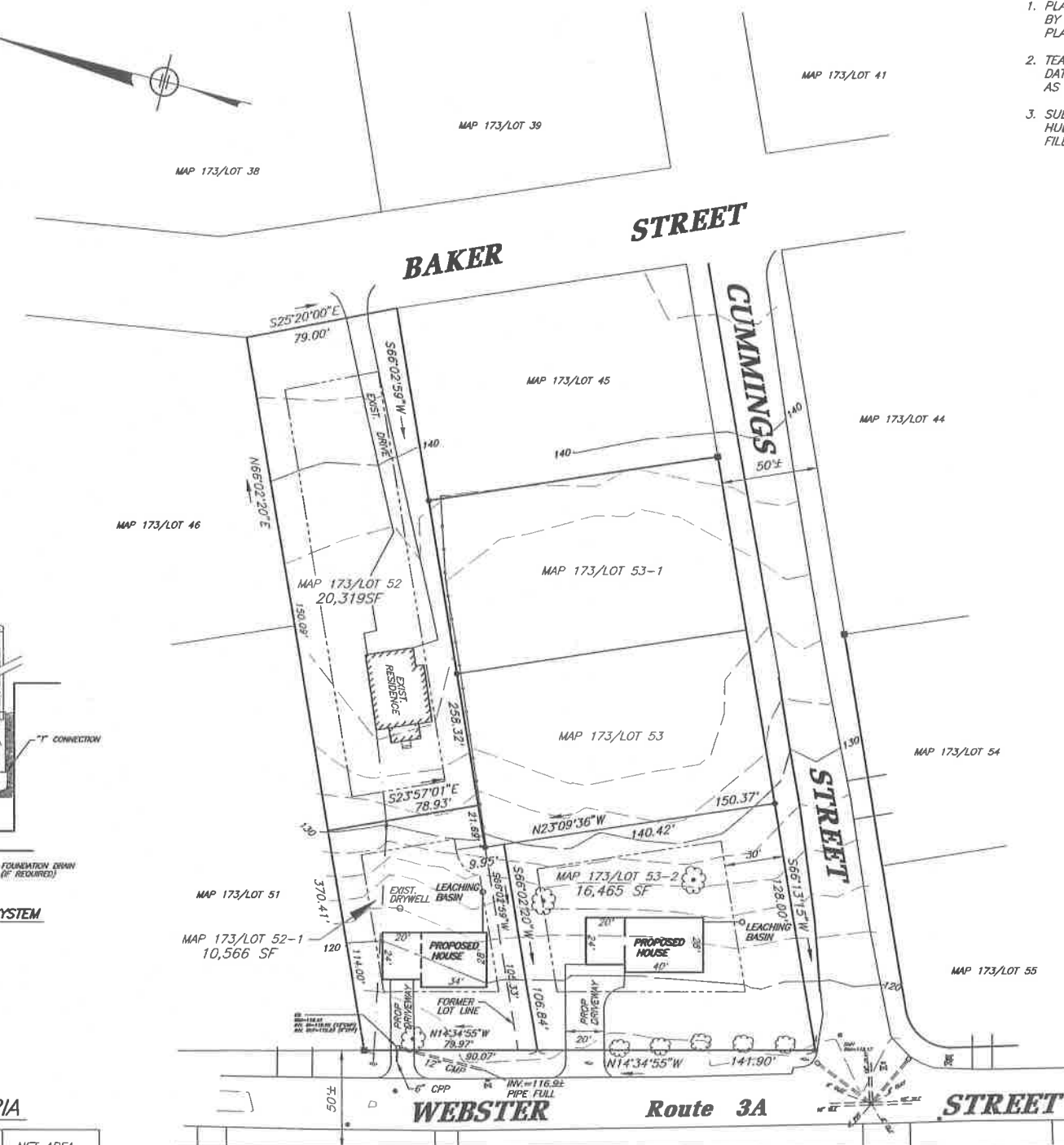
1. PLAN OF DAW ACRES, HUDSON, DATED JUNE 1960 BY NED SPAULDING, CIVIL ENGINEER. FILED HCRD AS PLAN No. 2473.
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3. SUBDIVISION PLAN MAP 173 / LOT 53, 15 CUMMINGS STREET HUDSON NH. DATED FEB. 16, 2016 BY MAYNARD & PAQUETTE. FILED HCRD AS PLAN No. 38890.



**LEGEND**

**NOTES:**

1. PRESENT ZONING - "TR" TOWN RESIDENTIAL
2. EXISTING & PROPOSED USE - RESIDENTIAL
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 SIDE YARD SETBACK - 15 FEET  
 REAR YARD SETBACK - 15 FEET  
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**PROPOSED LOT CRITERIA**

LOT NO.	GROSS AREA	WETLANDS	STEEP SLOPE	NET AREA
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53-2	16,465 SF	0	0	16,465 SF

**WAIVERS:**

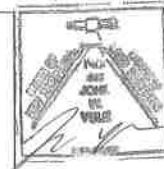
HTC 289-19 UNDERGROUND UTILITIES

APPROVED BY THE TOWN OF HUDSON PLANNING BOARD

SECRETARY \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN \_\_\_\_\_ DATE \_\_\_\_\_

JANICE G. ULERY \_\_\_\_\_ DATE \_\_\_\_\_  
 JORDAN G. ULERY \_\_\_\_\_ DATE \_\_\_\_\_  
 SCHAEFER CIRCLE ACQUISITIONS, LLC \_\_\_\_\_ DATE \_\_\_\_\_

I CERTIFY THAT THIS PLAN WAS PREPARED FROM BOUNDARY INFORMATION SHOWN ON PLAN REFERENCE 1 AND A FIELD SURVEY LAST MADE ON THE GROUND IN NOVEMBER 2015 HAVING A MAXIMUM ERROR OF CLOSURE OF 1:10,000.



SUBDIVISION PLAN MAP 173/LOT 52 & 53-2  
**15 CUMMINGS STREET & 37 WEBSTER STREET HUDSON, NEW HAMPSHIRE**

OWNER: LOT 53-2  
 SCHAEFER CIRCLE ACQUISITIONS, LLC  
 6 SCHAEFER CIRCLE  
 HUDSON, NH 03051  
 Bk. 8738 Pg. 2311

OWNER: LOT 52  
 JORDAN G. & JAMICE L. ULERY  
 37 WEBSTER STREET  
 HUDSON, NH 03051  
 Bk. 8721 Pg. 2786

SCALE: 1" = 40' DATE: JUNE 2, 2016

**ENGINEERING**  
**MP**  
**ASSOCIATES**  
 Maynard & Paquette  
 Engineering Associates, LLC  
 Consulting Engineers and Land Surveyors  
 23 East Pearl Street, Nashua, NH 03060  
 Phone: (603)883-8433 Fax: (603)883-7227

JWY	JWY			734/66	D	12456
DESIGNED	DRAFTED	CHECKED	APPROVED	BOOK & PAGE	REVISION	SIZE JOB NUMBER

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