KONA MANSION ESTATE SUBDIVISION

FOR 50 JACOBS ROAD LLC 50 JACOBS ROAD MOULTONBOROUGH, NH

TAX MAP 215, LOT 14 SEPTEMBER 26, 2018 REVISED: NOVEMBER 28, 2018

Owner of Record: Kona Inc.

Kevin Crowley PO Box 458

Center Harbor, NH 03226

(603) 253-4900

Applicant: 50 Jacobs Road LLC, c/o TMS Architects

1 Cate Street Portsmouth, NH (603) 436-4274

Engineer/Surveyor: Civilworks New England

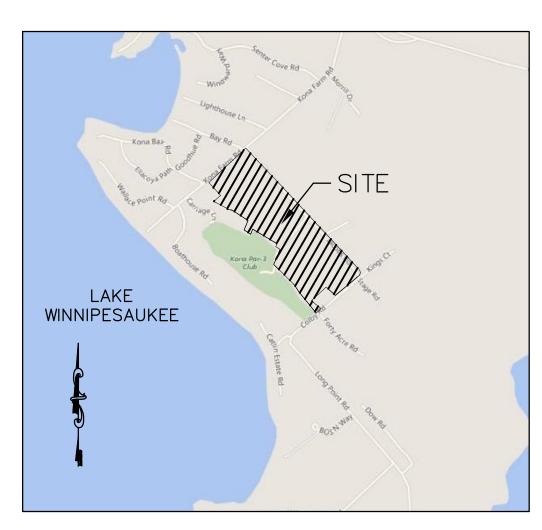
181 Watson Road P.O. Box 1166 Dover, NH 03820 (603) 749-0443

Soil Scientist: Michael Cuomo

6 York Pond Road

York, ME

(207) 363 - 4532



Locus Map not to scale

SHEET	SHEET NO.
Cover	1
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"Plan of Land Prepared for Kona, Inc., Moultonboro, N.H." dated June 1977, revised 1—3—86, prepared by Associated Surveyors, CRCD Plan Book83, Page 27. or Registry of Deeds Purposes Legend: C1 See Curve Table See Easement Table See Length Table Now or Formerly Carroll County Registry of Deeds Utility Pole Steel Stake Found 201/16 215/1 Concrete Bound Found Iron Rod Found Iron Pipe Found 201/20 Iron Rod to be Set Granite Bound to be Set \overline g S41°20′12"E 💳 Stone Wall 571.32**'** 424.46' — — Wetlands Buffer/No-Cut ----- Building Setback Steep Slope Conservation Lot 3 — -- Groundwater Protection Zone 126,121 s.f. 2.90 Acres —— ··· — Jurisdictional Wetlands Wetlands (Typ) ----- Access & Utility Easement — Slope & Drainage Easement N41°00'00"W 702.36 269,927 s.f. 6.20 Acres Lot 4 185,868 s.f. 4.27 Acres 216/17 S41°00'00"E 718.02 173,405 s.f. 3.98 Acres 216/46 Jurisdictional Wetlands (Typ) Access & Utility __Easement to 216/45 270.33 → N40°34'44"W 405,200 s.f. 9.30 Acres Lot 16 1,293,949 s.f. 29.70 Acres 216/2 //Access & Utility — Easement to Benefit Lots 1 & 2 Match Line to Sheet C−4

Plan Reference:

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	A STANCE OF
\$	B21 DAVID W. VINCENT
<u> </u>	MATINE

David W. Vincent, LLS No. 821

07 Dec. 2018

Date

ZONING REQUIREMENTS

APPROVED

APPROVED BY THE MOULTONBOROGH PLANNING BOARD

The subdivision regulations of the Town of

writing by the Board and attached hereto.

Moultonborough, New Hampshire, are part of this plat and approval of this plat is contingent upon completion

of said requirements of said subdivision regulations,

excepting only any variances or modifications made in

DATE

DATE

DATE

CHAIRMAN:

CHAIRMAN:

SECRETARY: .

MEMBER: _

VICE

ZONE
LOT AREA MIN.
FRONT YARD
SIDE & REAR YARD
WETLAND SETBACK
WETLAND BUFFER

RESIDENTIAL/AGRICULTURAL 40,000 S.F. (SOIL/SLOPE BASED) 25 FT. (50' FROM CL ROAD) 20 FT. 50 FT.

25 FT.



Notes:

- 1.) This plan does not represent a determination of title and the purpose of this plan is to subdivide the subject parcel into residential lots. Each lot is served by individual septic system and private well.
- Field Procedure: Topcon (GM-105) Electronic Total Station Instrument & Carlson Surveyor + Data Collector, Adjusted Closed Traverse Performed April 2018, Least Squares Balance.
- 3.) The physical features depicted on this plan are as provided by Eastern Topographics of Wolfeboro, NH, per a custom flight conducted on December 8, 2017. The horizontal datum is based upon New Hampshire State Plane NAD83/2011 and the vertical datum is based upon NGVD29 in US feet.
- 4.) Error of Closure Better Than 1:10,000.
- 5.) Parcel is shown as Lot 14 on the Town of Moultonborough Assessor's Map 215.
- 6.) Parcel is located in the Residential/Agricultural District, Groundwater Protection Overlay District, Steep Slope District & Wetlands Resources Conservation Overlay district (50' from edge of jurisdictional wetlands).
- 7.) Owner of Record: Kona Inc.
 c/o John F. Crowley
 PO Box 458
 Center Harbor, NH 03226
 CCRD Bk 497, Pg 88
 - a.) Parcel is subject to a utility easement to New Hampshire Electric Cooperative Inc. as described in CCRD Bk 317, Pg 241.
- 8.) This plan does not show any unrecorded or unwritten easements which may exist. A reasonable and diligent attempt has been made to observe any apparent, visible uses of the land; however this does not constitute that no such easements exist.
- 9.) Parcel is not located in a Flood Hazard Zone as depicted on Flood Insurance Rate Map, No. 33003C0595D, Effective Date: 3/19/2013.
- 10.) Existing Lot Area: 80.55± Acres
- 11.) The wetland boundaries shown hereon were field delineated December 2017 and April/May 2018 by Michael Cuomo, NH Certified Wetland Scientist 004. The wetland boundaries were identified in accordance with the town's wetland definition, which references the Corps of Engineers 1987 Wetland Delineation Manual. The delineated line also contains all wetlands as defined by the State of New Hampshire, which uses the technical criteria in the Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast Region. The soil component was classified using the Field Indicators of Hydric Soils in the United States and the Field Indicators for Identifying Hydric Soils in New England. The wetland status of plants were determined using the National List of Plant Species that Occur in Wetlands: Northeast (Region 1).
- 12.) NHDES Subdivision Approval: <u>Pending</u>.
- 13.) NHDES Aot Permit: Pending.
- 14.) NHDES Wetlands Permit: Pending.
- 15.) Waiver for Mansion Road as shown on revision 1, plan dated November 12, 2018 from subdivision road design standards (as per section 7.2, sub—sectione) and require full compliance using road design standards ASSHTO 25—mph design speed standards and minimum cross section standards; paved travel way of 22 feet wide plus 3—foot shoulders on each side and shall meet all other town construction standards. The Colby Road entrance subject to approval of the fire department.
- Residential houses to incorporate sprinkler system per NFPA and town requirements.

SUBDIVISION I
SUBDIV
PREF

FOR

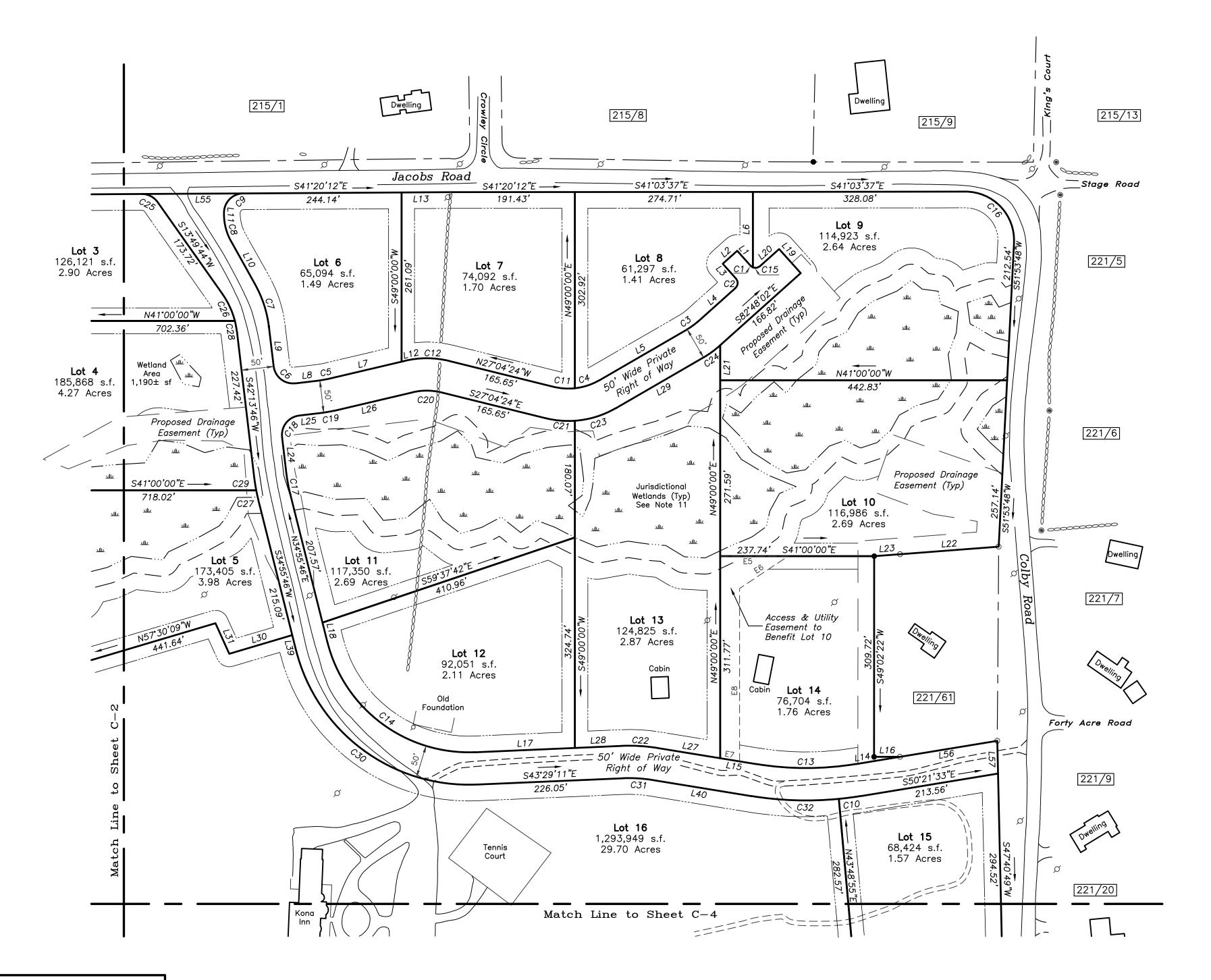
50 JACOBS ROAD MOULTONBOROUGH, NH COUNTY OF CARROLL

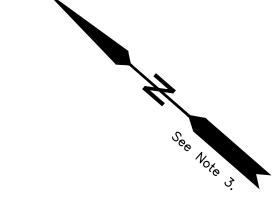
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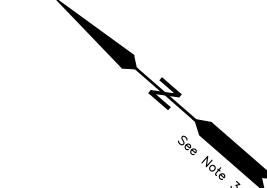
GRAPHIC SCALE: 1"=100'

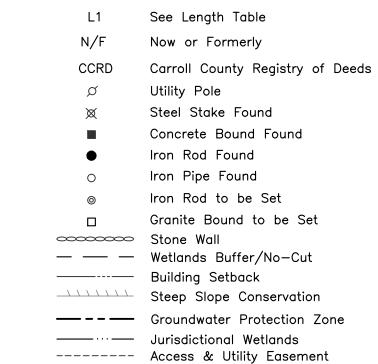
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For Registry of Deeds Purpose









Legend:

See Curve Table

See Easement Table

Curve Table:

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	10.00'	4.25'	24°20'57"	N04°58'31"W	4.22'
C2	10.00'	15.71	90'00'00"	S52*11'58"W	14.14'
C3	95.00'	19.41'	11°42'26"	N76°56'49"W	19.38'
C4	95.00'	39.94'	24.05,11"	N59°03'00"W	39.64'
C5	95.00'	10.78'	6°30'00"	N51°01'14"W	10.77'
C6	30.00'	47.12'	89*59'58"	N02°46'14"W	42.43'
C7	175.00'	68.50'	22°25'39"	N31°00'57"E	68.06'
C8	86.00'	42.41'	28°15'28"	N33°55'51"E	41.99'
C9	30.00'	47.44'	90°36'07"	S86°38'21"E	42.65'
C10	525.00'	35.23'	<i>3</i> *50'40"	S48°26'14"E	35.22'
C11	95.00'	33.05'	19*56'01"	N37°02'25"W	32.88'
C12	145.00'	68.83'	27°11′50″	N40°40'19"W	68.18'
C13	475.00'	154.35'	18'37'07"	N41°03'00"W	153.68'
C14	225.00'	307.94'	78°24'58"	N04°16'43"W	284.46'
C15	10.00'	11.46'	65*39'03"	N49°58'31"W	10.84'
C16	75.00'	121.68'	92*57'25"	S05°25'05"W	108.77'
C17	225.00'	28.67'	7°18'00"	N38°34'46"E	28.65'
C18	30.00'	47.12'	90°00'00"	N87°13'46"E	42.43'
C19	145.00'	16.45'	6°30'00"	S51°01'14"E	16.44'
C20	95.00'	45.09'	27°11'50"	S40°40'19"E	44.67'
C21	145.00'	45.19'	17'51'29"	S36°00'09"E	45.01
C22	275.00'	56.38'	11°44'45"	N37°36'49"W	56.28'
C23	145.00'	66.21'	26°09'42"	S58°00'45"E	65.63'
C24	145.01	31.58'	12°28'46"	S77°18'33"E	31.52'
C25	30.00'	28.88'	55*09'52"	S13°45'11"E	27.78'
C26	125.00'	45.52'	20°51'51"	S24°15'40"W	45.27'
C27	275.00'	15.13'	<i>3</i> *09'07"	S36°30'20"W	15.13'
C28	125.00'	16.44'	7°32'11"	S38°27'41"W	16.43'
C29	275.00'	19.91'	4°08'53"	S40°09'20"W	19.90'
C30	275.00'	376.37'	78*24'58"	S04°16'43"E	347.68'
C31	225.00'	46.13'	11°44'45"	S37*36'49"E	46.04
			1	1, ,	1

C32 525.00' 135.38' 14'46'27" S39'07'40"E 135.00'

	Easem	ent	Table
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E1	N60°07'28"E	60.00
E2	N31°03'14"W	23.66
E3	S59°07'55"W	22.63
E4	N12*31'08"W	25.00
E5	S41°00'00"E	105.00
E6	N74°33'26"W	90.00
E7	N31°44'27"W	30.40
E8	S49°00'00"W	266.91
E9	S58*56'46"W	65.81

Length Table:

--- Slope & Drainage Easement

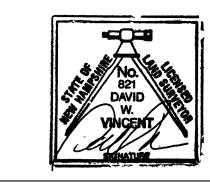
L2 L3	? N	82°48'02"W	30.0
L3	S	07°11'58"W	31.00
L4	. N	82°48'02"W	78.7
L5	N	71°05'36"W	157.2
L6	S S	49°00'00"W	116.5
L7	' N	54°16'14"W	118.5
L8	N.	47°46'14"W	38.1
L9		42°13'46"E	61.7
L1		19°48'07"E	76.7
L1		48°03'36"E	2.9
L1	2 N	54°16'14"W	5.8
L1	3 S	41°20'12"E	76.0
L1	4 N	50°21′33″W	68.5
L1	5 N	31°44'27"W	57.0.
L1	6 S	41°04'29"E	40.0
L1	7 N	43°29'11"W	154.0.
L1	8 N	34°55'46"E	31.0
L1	9 N	07°11'58"E	50.0
L2	0 N	82°48'02"W	40.0
L2	?1 N	49°00'00"E	54.0
L2	2 N	45°23'36"W	152.5
L2	23 N	45°25'20"W	40.0
L2	24 N	42°13'46"E	57.0
L2 L2	25 S	47°46'14"E 54°16'14"E	38.1
L2	?6 S	54°16'14"E	124.4
L2	?7 N	31°44'27"W	97.3
L2	28 N	43°29'11"W	72.0.
L2	9 S	71°05'36"E	157.2
L3	io I N	<i>57</i> °30'09"W	101.3
L3	31 N.	24°36′30″E	51.7
L3	32 S.	24°36'30"W	84.2
L3	3 N	54°25'39"W	121.2
L3		24°05'15"E	157.5
L3	5 N	54°23'00"W	123.3.
L3 L3	6 N	80°00'05"W	58.9. 23.1
L3	57 N	45°36'43"W	23.1
L3	8 N	49°44'47"E	141.4
L3		34°55'46"W	23.4
L4	:0 S	31°44'27"E	154.3
L4	1 N	40°35′12″E	25.3.
L4	2 N	42°39'41"E	143.5
L4	3 S	5 3° 42'53"W	145.4
L4		44°50'30"W	15.7
L4		44°09'55"E	50.2·
L4	6 N	39 ° 55'33"E	149.6
L4	7 N	42°28'10"W	100.8
L4	8 S	62°41'50"E	35.1
L4		74°43'49"E	54.6
L5		32°13'48"E	103.5
L5		21°12'28"E	67.8·
L5	2 N	43°45'50"E	112.3
L5	3 N	12°31'08"W	63.4
L5	54 N	66°25'04"E	24.7
L5	5 S	41°20'12"E	156.6.
L5	6 S	50°21'33"E	152.1
L5	57 S	47°40'49"W	50.5

A INC.	50 JACOBS MOULTONBORC COUNTY OF
SUBDIVISION PLAN FOR KONA INC.	SUBDIVISION PLAN PREPARED FOR KONA INC. c/o JOHN F. CROWLEY TAX MAP 215, LOT 14
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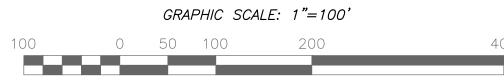
APPROVED	BY	THE	APPROVED MOULTONBOROGH PLANNING	BOARD
CHAIRMAN: .				
VICE CHAIRMAN:				DATE
				DATE
				DATE
MEMBER:				DATE

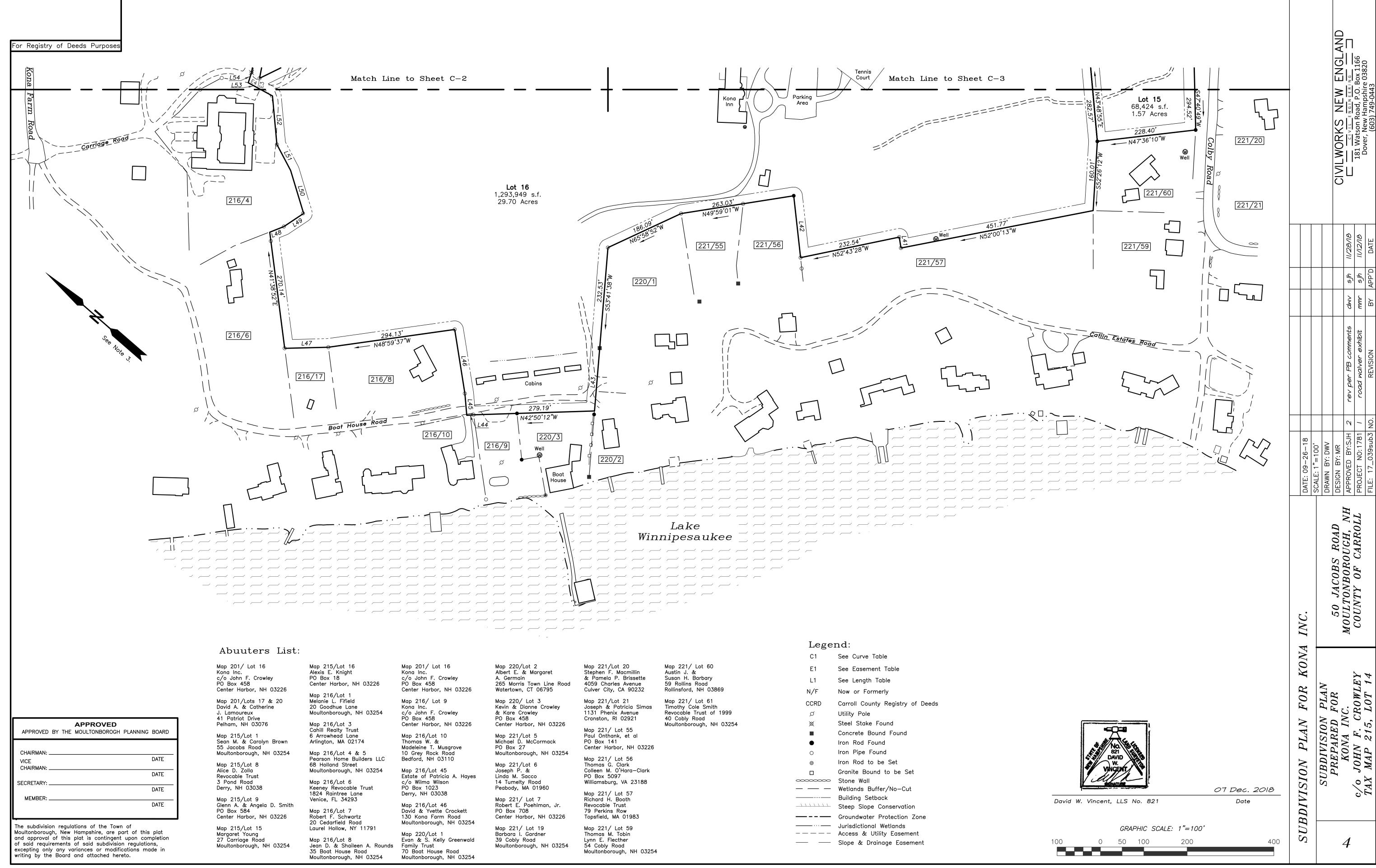
The subdivision regulations of the Town of Moultonborough, New Hampshire, are part of this plat and approval of this plat is contingent upon completion of said requirements of said subdivision regulations, excepting only any variances or modifications made in writing by the Board and attached hereto.

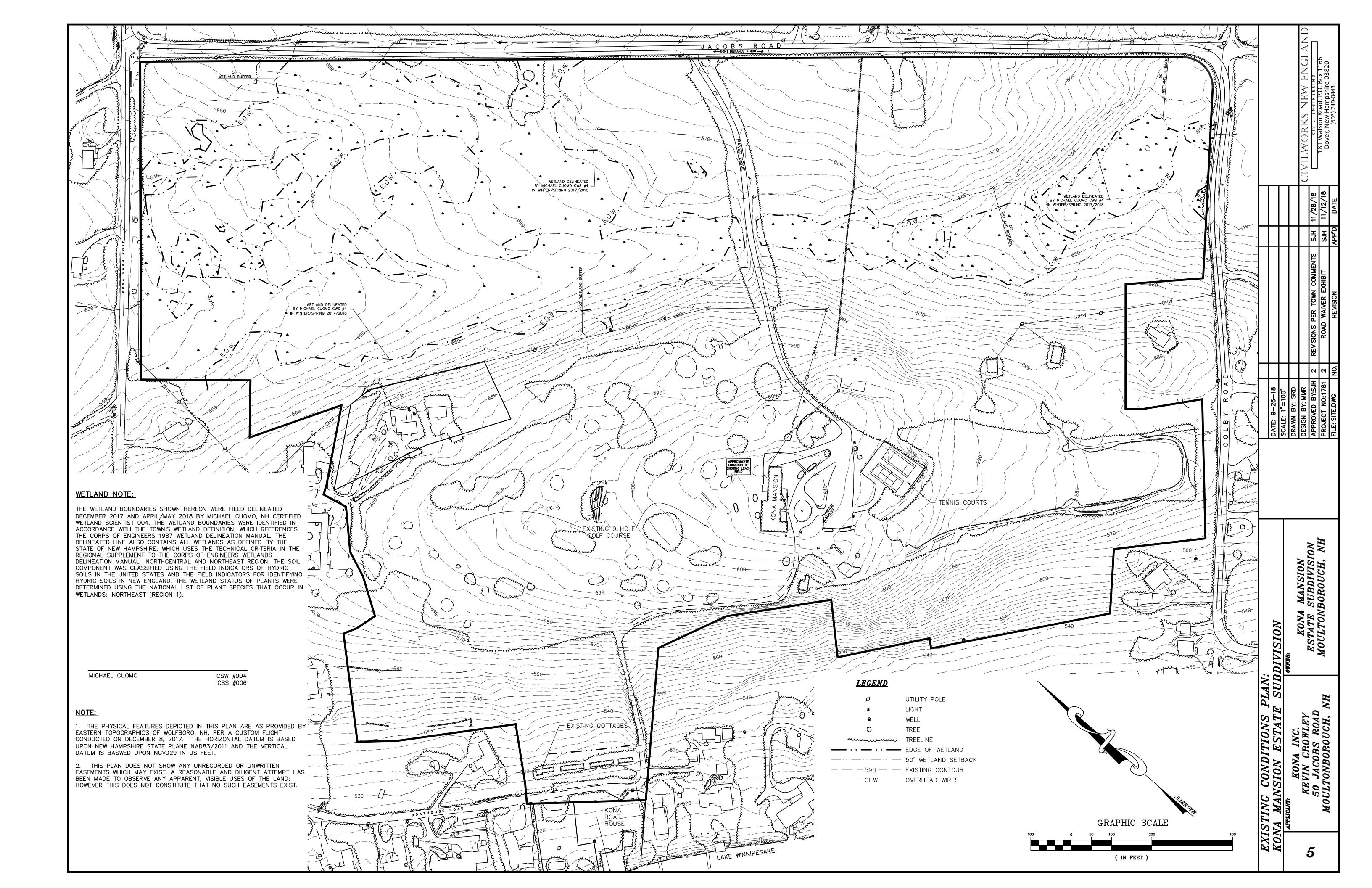


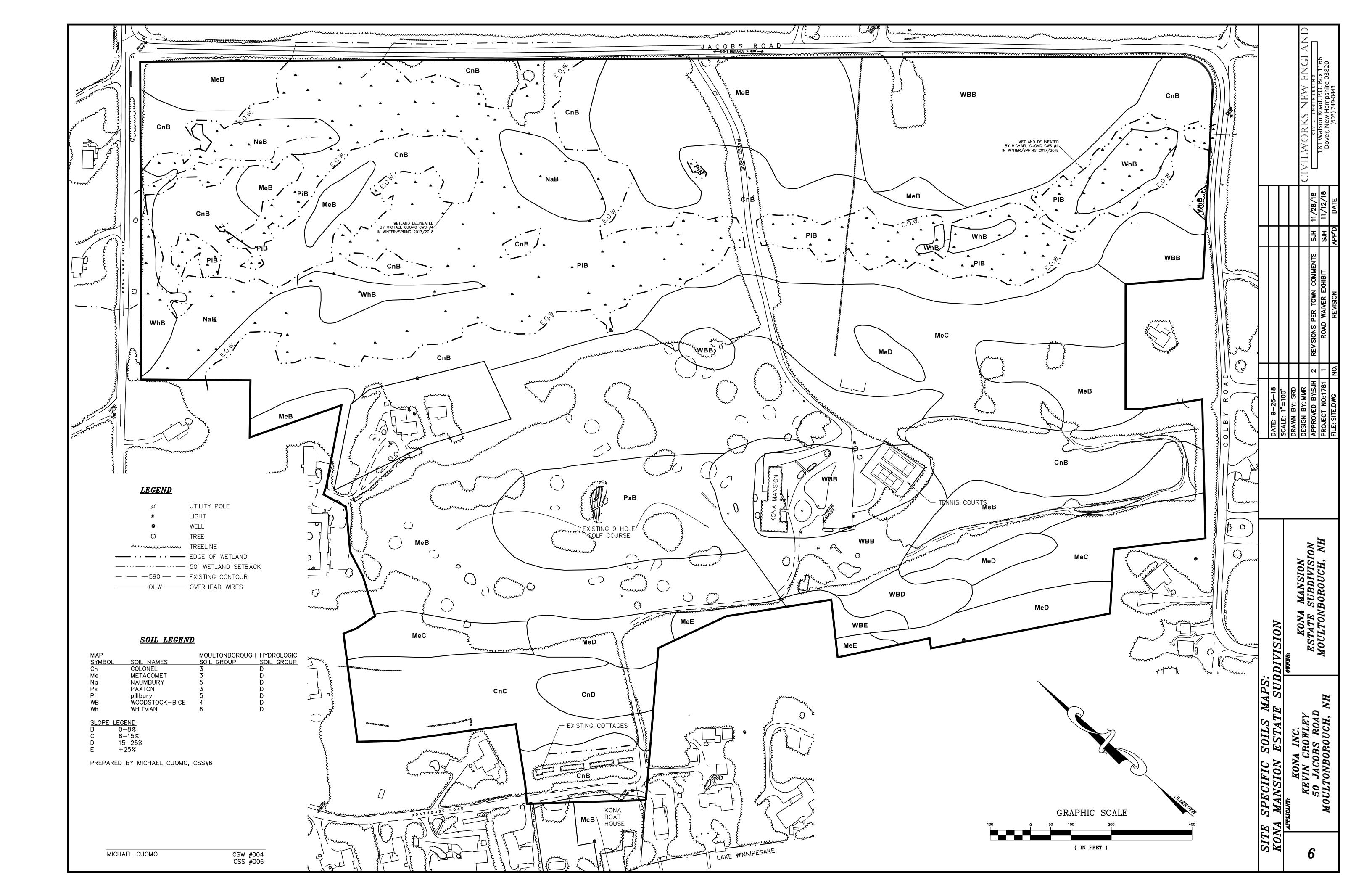
David W. Vincent, LLS No. 821

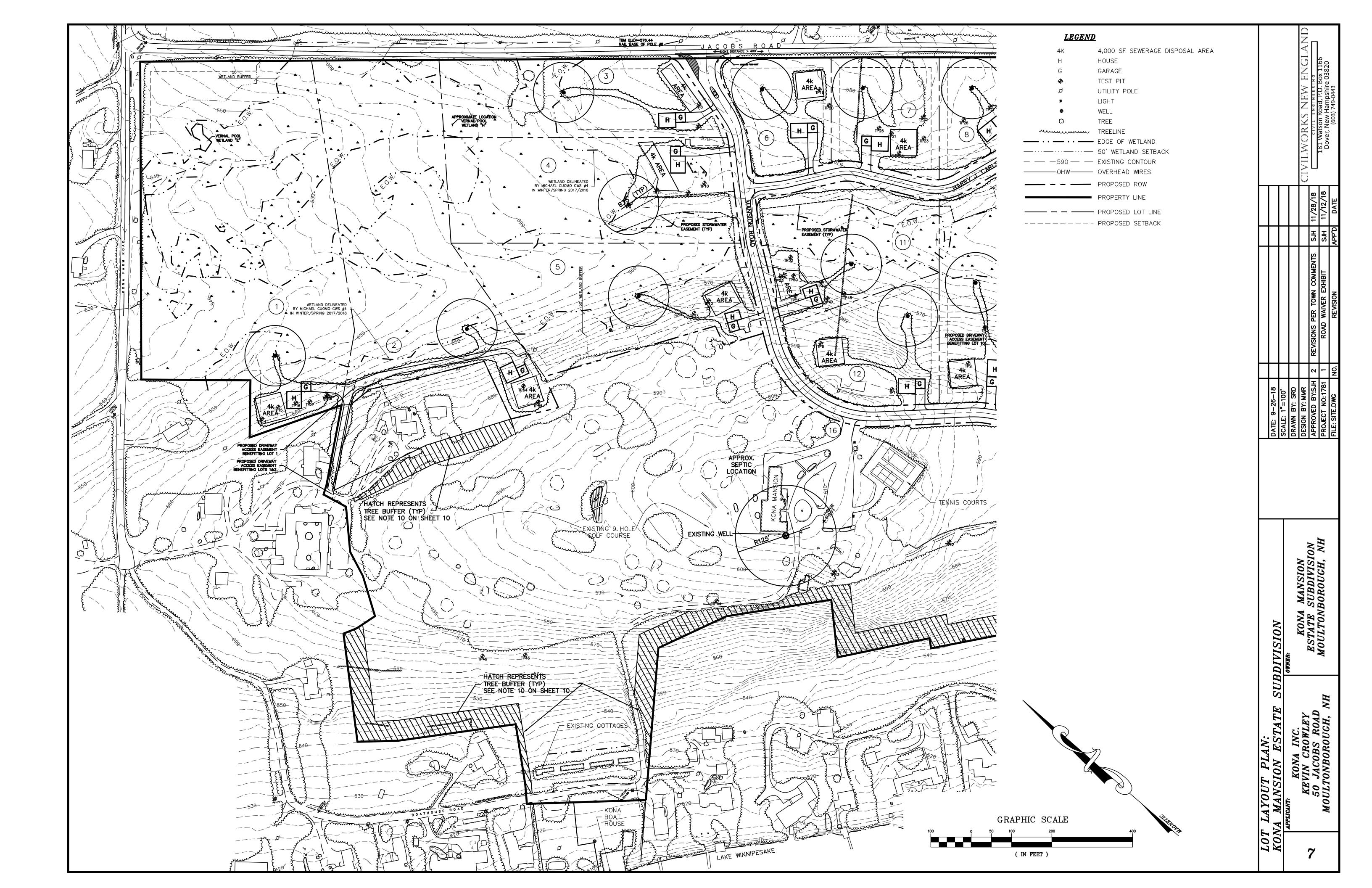
07 Dec. 2018 Date

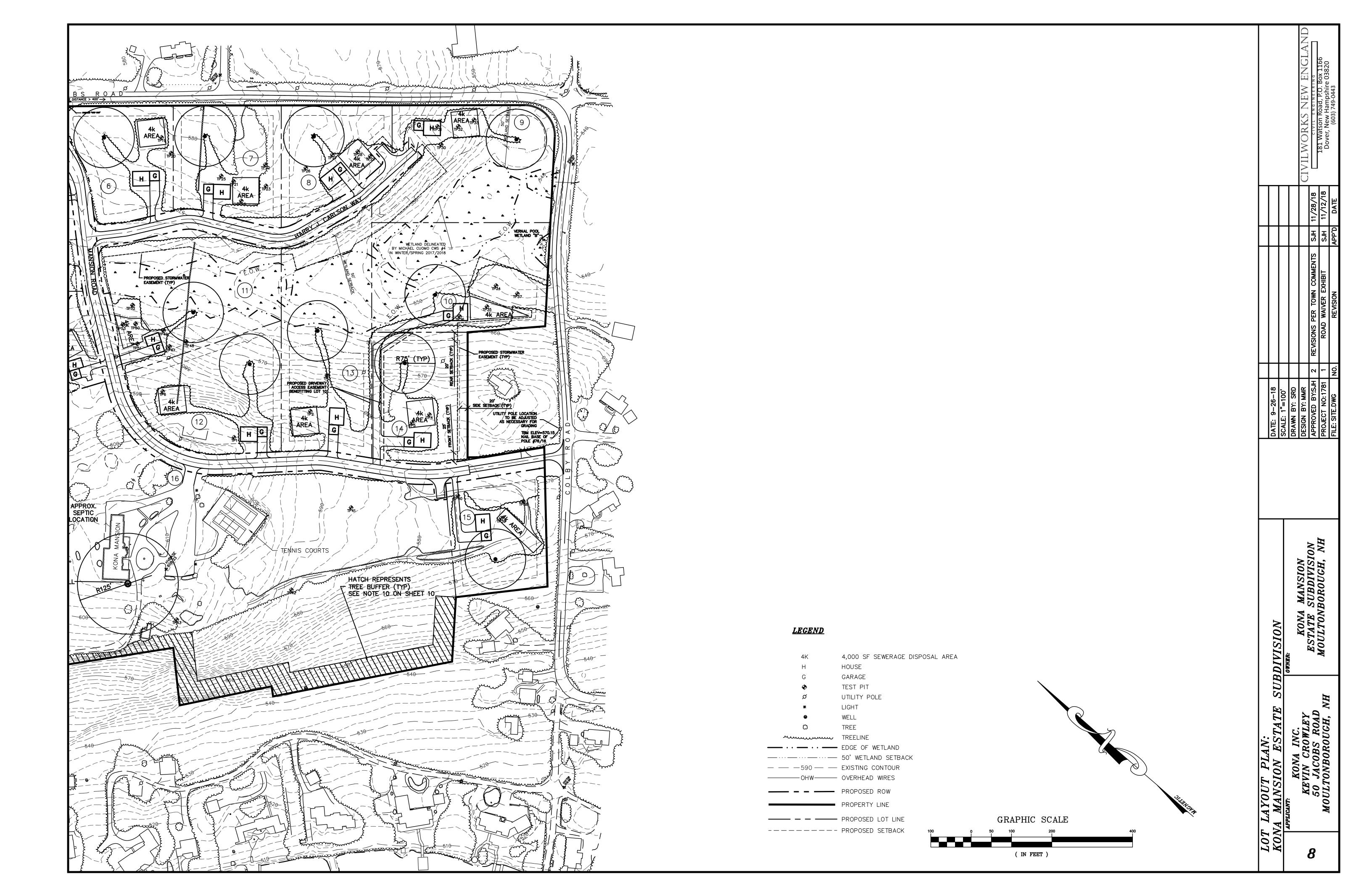


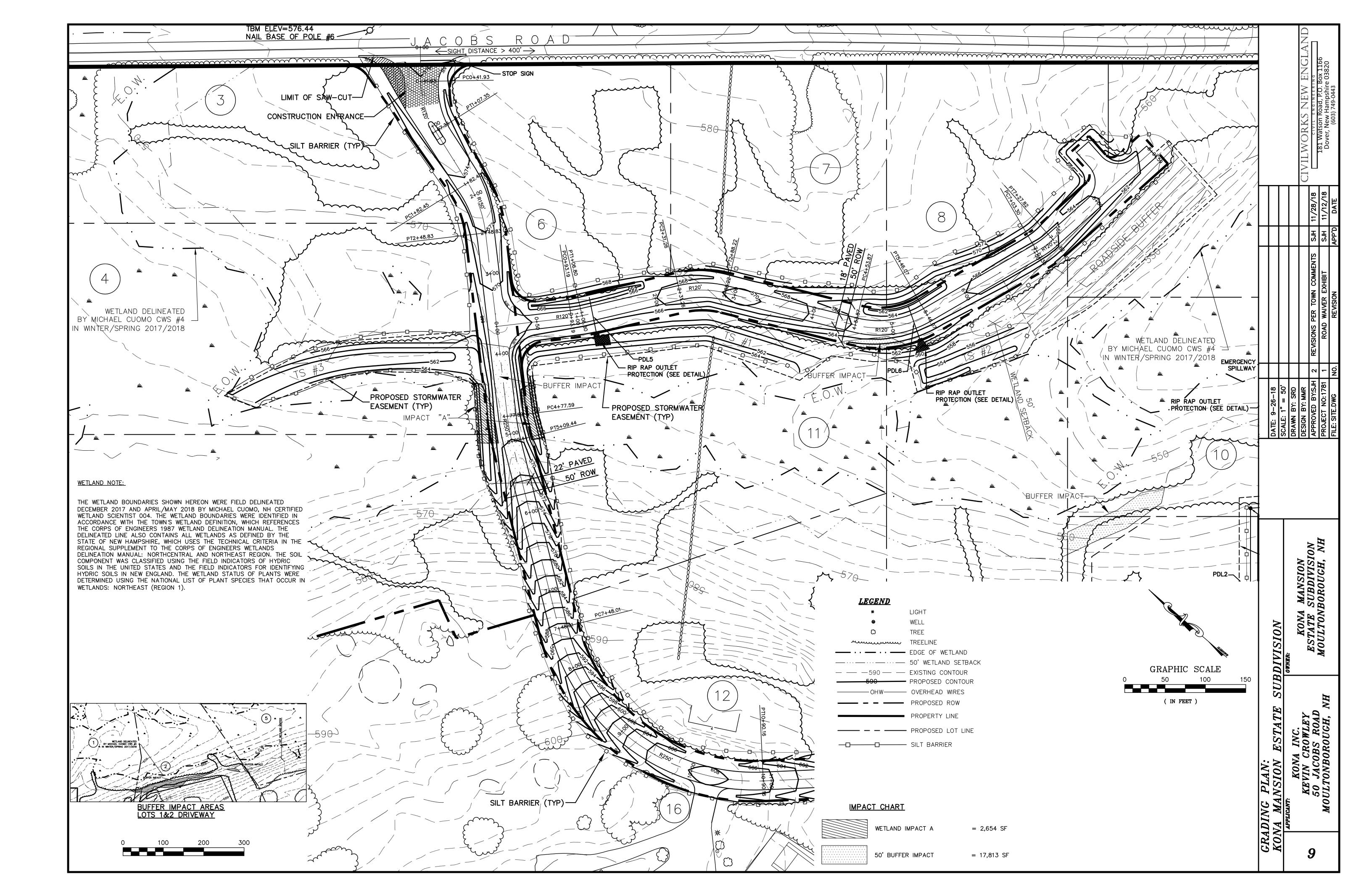


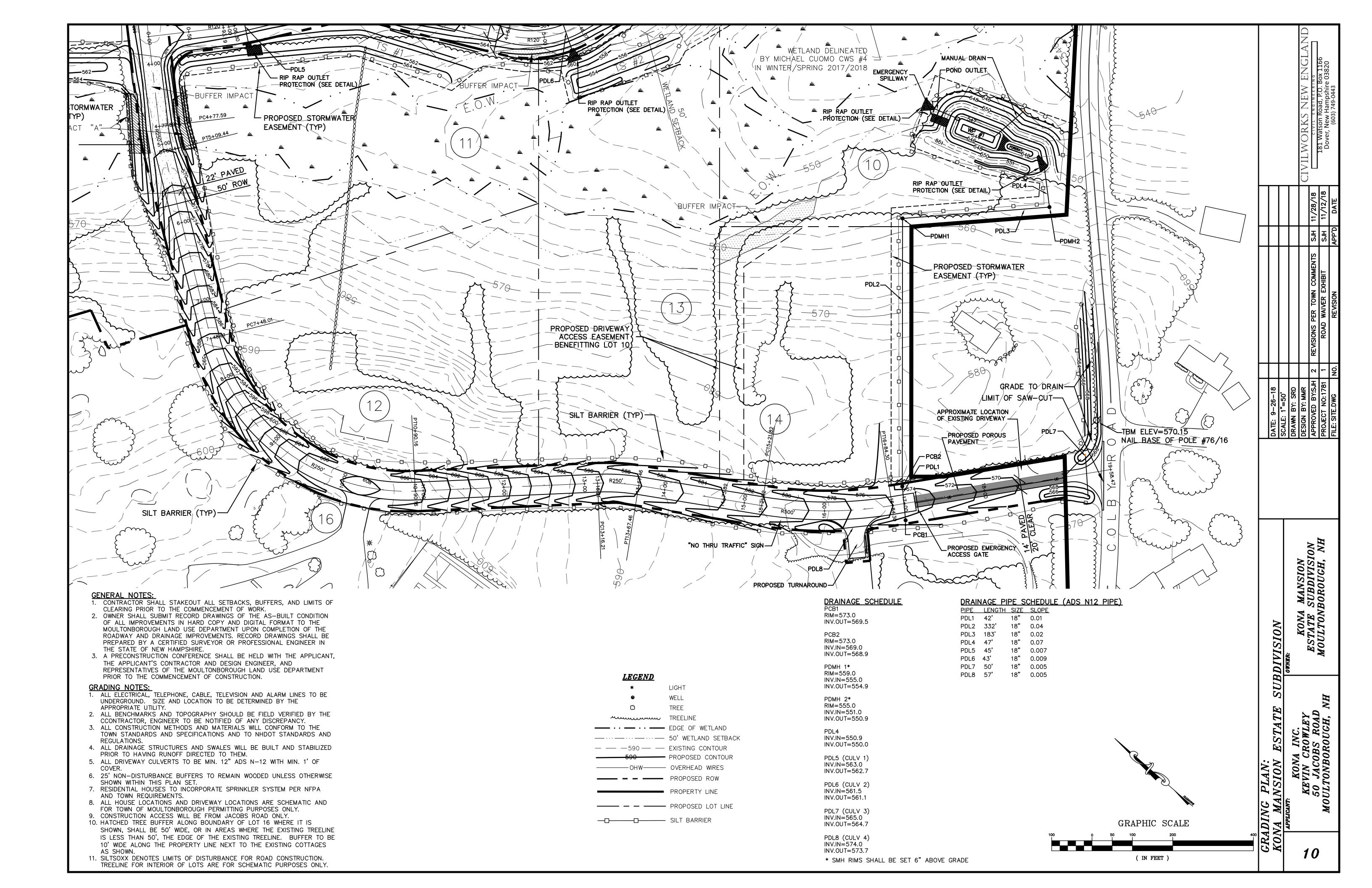


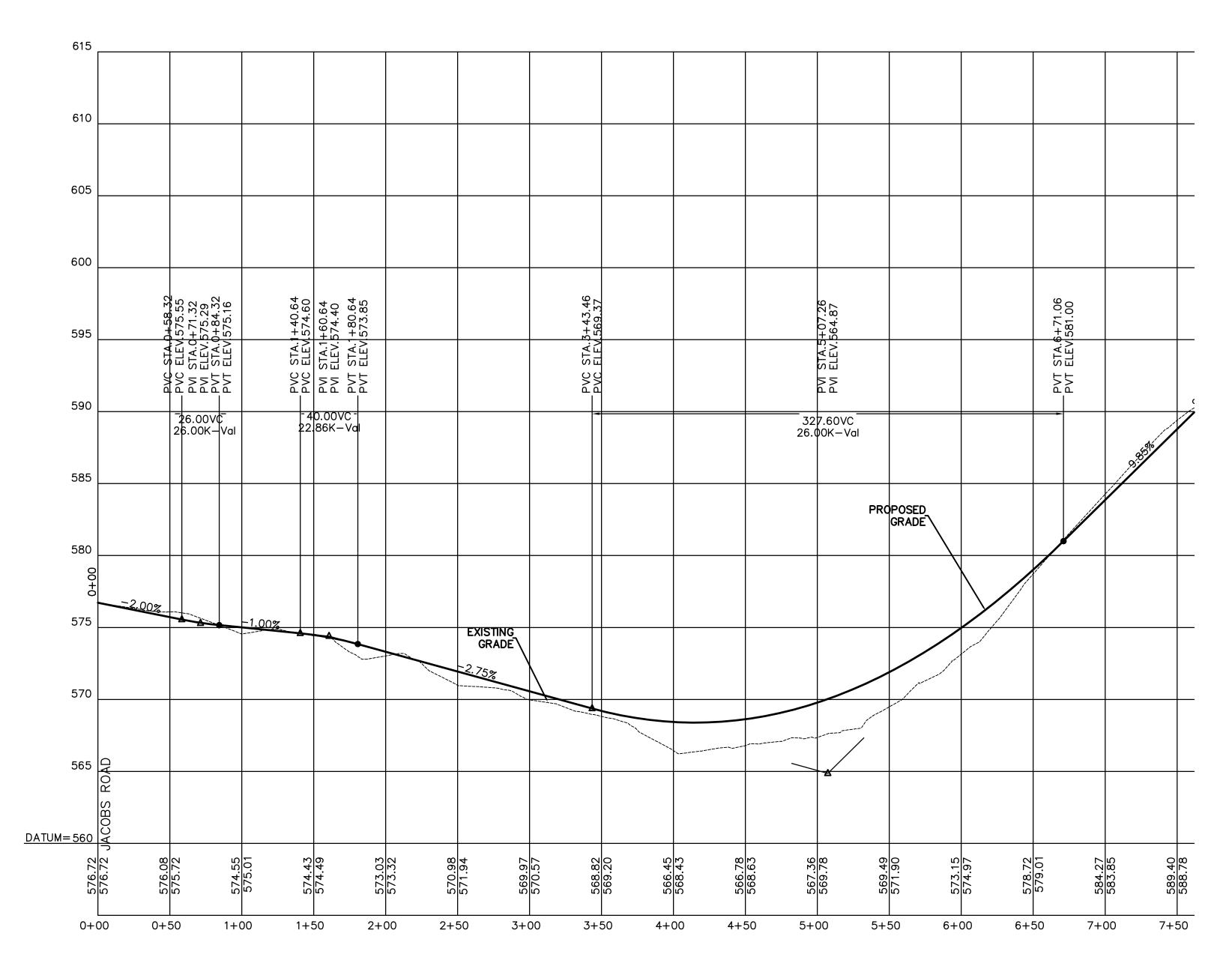












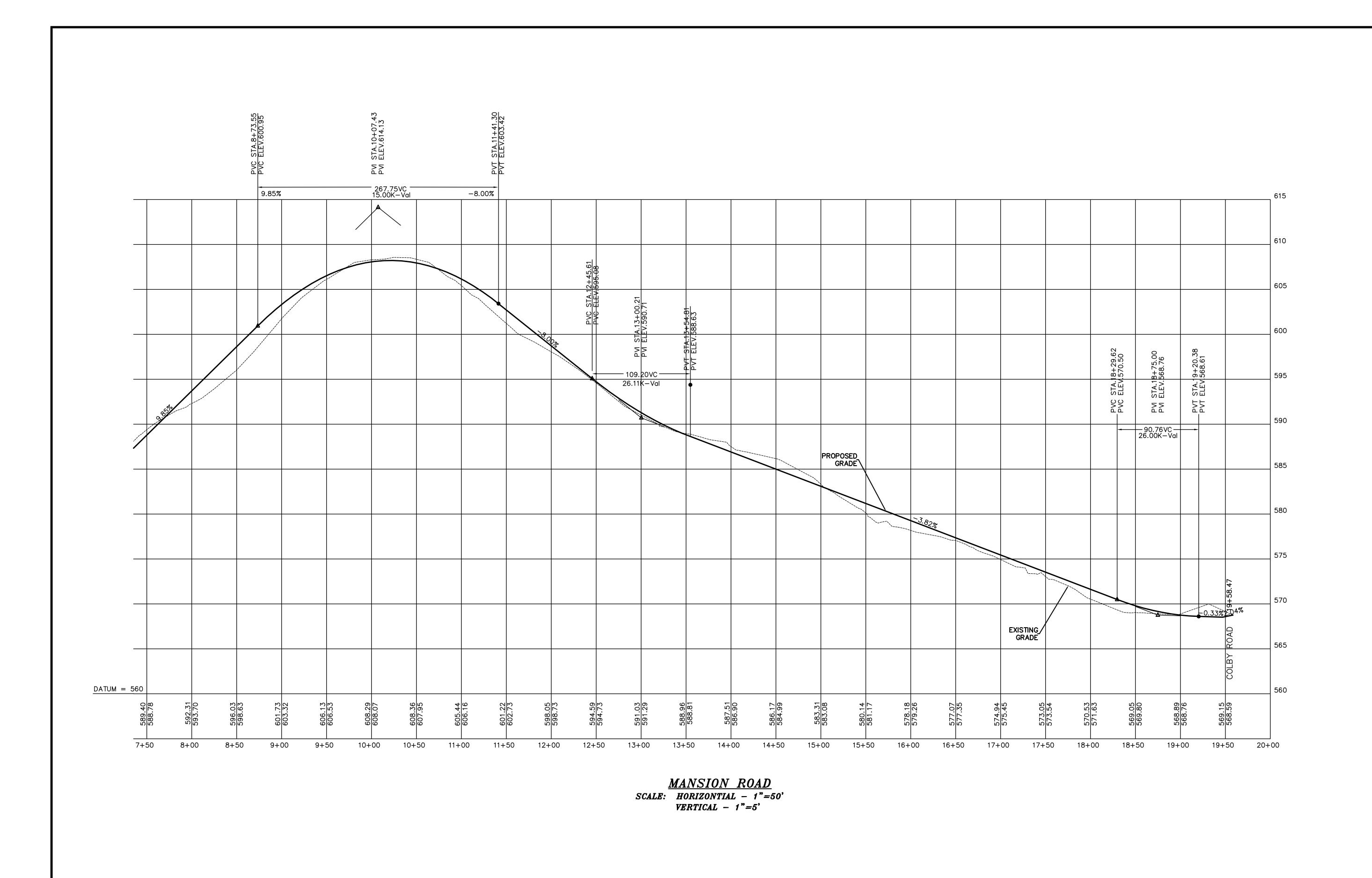
SCALE: MANSION ROAD
HORIZONTIAL - 1"=50'
VERTICAL - 1"=5'

ROAD WAIVERS: GRANTED

1. WAIVER FOR MANSION ROAD AS SHOWN ON REVISION 1, PLAN DATED NOVEMBER 12, 2018 FROM SUBDIVISION ROAD DESIGN STANDARDS (AS PER SECTION 7.2, SUB—SECTIONE) AND REQUIRE FULL COMPLIANCE USING ROAD DESIGN STANDARDS AASHTO 25—MPH DESIGN SPEED STANDARDS AND MINIMUM CROSS SECTION STANDARDS; PAVED TRAVEL WAY OF 22 FEET WIDE PLUS 3—FOOT SHOULDERS ON EACH SIDE AND SHALL MEET ALL OTHER TOWN CONSTRUCTION STANDARDS. THE COLBY ROAD ENTRANCE SUBJECT TO APPROVAL OF THE FIRE DEPARTMENT.

				CIVILWORKS NEW ENG	CIVIL ENGINEERING	181 Watson Road, P.O. Box 1166 Dover, New Hampshire 03820	, (603) 749 - 0443
)		11/12/18	DATE
					Hrs	Hrs	Q,ddV
					REVISIONS PER TOWN COMMENTS SJH 11/28/18	ROAD WAIVER EXHIBIT	REVISION
		1			2	1	NO.
DATE: 9-26-18	SCALE: 1"-100"	30ALE: 1 -100	DRAWN BY: SRD	DESIGN BY: MMR	АРРКОУЕД ВҮЗЛН	PROJECT NO:1781	FILE: SITE.DWG
		OWNER:		KONA MANSION) !:	MOULTONBOROUGH, NH	
MANSON DRIVE			KONA INC.	KEVIN CROWLEY	50 JACOBS ROAD	MOULTONBOROUGH. NH	

KONA



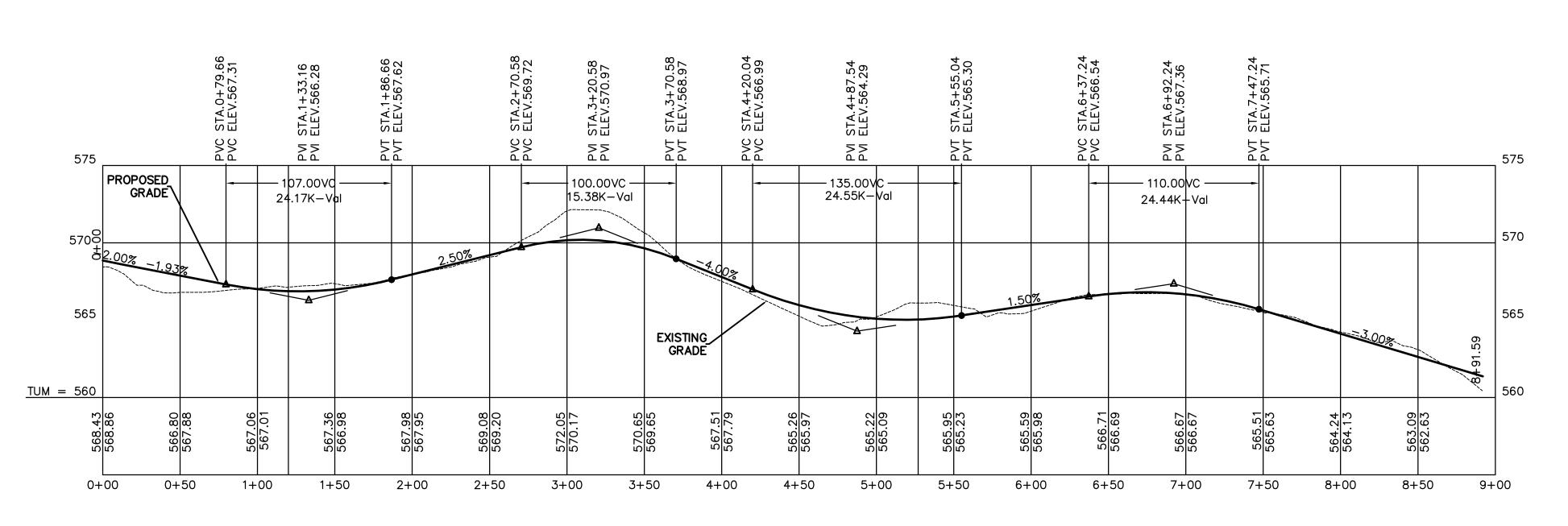
KONA MANSION ESTATE SUBDIVISION MOULTONBOROUGH, NH

DRIVE

MANSON

KONA

12



KONA TERRACE

SCALE: HORIZONTIAL - 1"=50'

VERTICAL - 1"=5'

				CIVILWORKS NEW ENGLAND	CIVIL ENGINEERING	181 Watson Road, P.O. Box 1166 Dover. New Hampshire 03820	(603) 749-0443
					IENTS SJH 11/28/18	SJH 11/12/18	DATE
					HCS	Hrs	APP'D DATE
					REVISIONS PER TOWN COMIN	ROAD WAIVER EXHIBIT	REVISION
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DATE: 9-26-18	SCALE: 1"-100"	SCALE: 1 -100	DRAWN BY: SRD	DESIGN BY: MMR	APPROVED BY:SJH	PROJECT NO:1781	FILE: SITE.DWG
		OWNER		KONA MANSION	ESTATE SUBDIVISION	MOULTONBOROUGH, NH	
KONA TERRACE		APPLICANT:	KONA INC.	KEVIN CROWLEY	50 JACOBS ROAD	MOULTONBOROUGH, NH	
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DESCRIPTION

THE INTENT OF THIS PLAN IS TO SHOW SITE IMPROVEMENTS ASSOCIATED WITH CONSTRUCTION OF 22' WIDE, 18' WIDE PAVED ROADS, AND EMERGENCY ACCESS WITHIN THE SUBDIVISION.

PROJECT NAME AND LOCATION KONA MANSON SUBDIVISION

50 JACOBS ROAD LATITUDE N43°41'07' MOULTONBOROUGH, NH LONGITUDE W71°24'03"

DISTURBED AREA \pm 250,000 square feet

SEQUENCE OF MAJOR ACTIVITIES

- 1. PLACE TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S PRIOR TO EARTH MOVING
- 2. INSTALL UNDERGROUND UTILITIES, STRUCTURES, AND STORMWATER PONDS/SWALES.
- 3. PLACE GRAVELS AND FINE GRADE AND PAVE.
- 4. STABILIZE ROADWAYS WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
- 5. ALL SLOPES SHALL BE LOAMED AND SEEDED (AS APPLICABLE) WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
- 6. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST WEEKLY, OR, BI-WEEKLY AND AFTER EVERY 1/4" OF RAINFALL.
- 7. WHEN ALL SITE WORK IS COMPLETE AND ALL DISTURBED AREAS ARE STABILIZED REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

<u>DEFINITIONS</u>

- AN AREA SHALL BE CONSIDERED STABLE OF ONE OF THE FOLLOWING HAS OCCURRED.
- 1. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED 2. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED
- 3. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN
- INSTALLED; OR 4. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED

INSTALLATION, MAINTENANCE AND INSPECTION PROCEDURES OF EROSION AND SEDIMENT CONTROLS

A. GENERAL

THESE ARE THE GENERAL INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO IMPLEMENT

- ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM. THE SMALLEST PRACTICAL PORTION OF THE SITE WILL BE DENUDED AT ONE TIME. ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE EACH WEEK, OR BI-WEEKLY AND
- FOLLOWING ANY STORM EVENT OF 1/2 INCH OR GREATER. ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL
- BE INITIATED WITHIN 24 HOURS OF REPORT. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE OR CHECK DAMS WHEN IT HAS REACHED ONE THIRD THE HEIGHT OF THE FENCE OR DAM.
- ALL DIVERSION DIKES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED. TEMPORARY SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND UNHEALTHY GROWTH.
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A REPRESENTATIVE OF THE OWNER, WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
- ALL AREAS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE CONTRACTOR SHALL PROVIDE METHODS TO CONTROL SURFACE WATER TO PREVENT DAMAGE TO THE SITE, UTILITIES, STRUCTURES OR ADJOINING PROPERTIES. DISPOSE OF SURFACE WATER IN A MANNER TO PREVENT FLODDING, EROSION, SILTATION OR OTHER DAMAGE TO ANY PORTION OF THE SITE, UTILITIES, STRUCTURES, OR ADJOINING PROPERTIES.
- CONTRACTOR SHALL PROTECT EXISTING DRAINAGE STRUCTURES FROM SILT AND DEBRIS. CONTRACTOR SALL IMMEDIATELY REMVE ACCUMULATED SILT AND DEBRIS FROM DRAINAGE STRUCURES IMPACTED BY CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL KEEP STREAMS, WETLANDS, AND OTHER WATER CROSSINGS CLEAR OF MUD, SILT, DEBRIS, AND OTHER OBJECTIONABLE MATERIALS RESULTING FROM CONTRACTOR'S CONSTRUCTION
- O CONTRACTOR SHALL MAINTAIN THE FLOW CAPACITY OF RIVER AND STREAM CHANNELS TO PREVENT UNNATURAL FLODDING DUE TO CONTRACTOR'S OPERATIONS.
- O CONTRACTOR SHALL PRESERVE EXISTING NATURAL DRAINAGE PATTERNS AND VEGETATIVE COVER.

B. FILTERS 1. Silt Fence

- a. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or the following requirements:
 - Physical Property Filtering Efficiency Tensile Strength at 20% Maximum Elongation* Standard Strenath

30 lb/lin in (min)

- VTM-52
- 0.3 gal/sf/min (min)

Requirements

75% minimum

Extra Strength

50 lb/lin in (min)

VTM-51 Flow Rate Requirements reduced by 50 percent after six (6) months of installation.

Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six (6) months of expected usable construction life at a temperature range of O degrees F to 120 Degrees F.

- The height of a silt fence shall not exceed thirty—six (36) inches.
- The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at support post, with a minimum six (6) inch overlap, and securely sealed.
- Posts shall be spaced a maximum of ten (10) feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
- Posts for silt fences shall be 2-inch diameter wood with a minimum length of 5 feet. Wire fence reinforcement for silt fences using standard strength filter cloth shall be a minimum of 42 inches in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches.
- A trench shall be excavated approximately four (4) inches wide and four (4) inches
- deep along the line of posts and upslope from the barrier. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least one (1) inch long, tie wires or hog rings. The wire shall extend no more than
- 36 inches above the original ground surfaces. The "standard strength" filter fabric shall be stapled or wired to the fence, and eight (8) inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not
- he stanled to existing trees. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired
- directly to the posts with all other provisions of item (i) applying. The trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed when they have served their useful purpose, but not before the upslope areas has been permanently stabilized.
- Sequence of Installation

Sediment barriers shall be installed prior to any soil disturbance of the contributing drainage area above them.

Maintenance

- a. Check dams and silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them. Any required repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or impounding of large volumes of water behind them,
- sediment barriers shall be replaced with a temporary check dam. b. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
- c. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one third (1/3) the height of the barrier.
- d. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

MULCHING

- Timing In order for mulch to be effective, it must be in place prior to major storm events. There are two (2) types of standards which shall be used to assure this.
- Apply mulch prior to any storm event. It will be necessary to closely monitor weather predictions, usually by contacting the National Weather Service in Concord, to have adequate warning of significant
- b. Required Mulching within a specified time period. The time period can range from 14 to 21 days of inactivity on a area, the length of time varying with site conditions. Professional judgement shall be used to evaluate the interaction of site conditions (soil erodibility, season of year, extent of disturbance, proximity to sensitive resources, etc.) and the potential impact of erosion on adjacent areas to choose an appropriate time restriction.
- Application Rate Mulch shall be applied at a rate of between 1.5 to 2 tons per acre, or 90 to 100 pounds per 1000 square feet.
- Guidelines for Winter Mulch Application. When mulch is applied to provide protection over winter (past the growing season) it shall be at a rate of 6,000 pounds of hay or straw per acre. A tackifier may be added to the
- 4. Maintenance All mulches must be inspected periodically, in particular after rainstorms, to check for rill erosion. If less than 90% of the soil surface is covered by mulch, additional mulch shall be immediately applied.
- 5. Excelsior Matting Excelsior Matting shall be used in place of mulch on all

TEMPORARY GRASS COVER

slopes steeper than 3:1.

- Seedbed Preparation Apply fertilizer at the rate of 600 pounds per acre of 10-10-10. Apply limestone (equivalent to 50 percent calcium plus magnesium oxide) at a rate of three (3) tons per acre. 2. Seeding
- a. Utilize annual rye grass at a rate of 40 lbs/acre. b. Where the soil has been compacted by construction operations, loosen soil to a depth of two (2) inches before applying fertilizer, lime and seed. Apply seed uniformly by hand, cyclone seeder, or hydroseeder
 - (slurry including seed and fertilizer). Hydroseedings, which include mulch, may be left on soil surface. Seeding rates must be increased 10% when hydroseeding.

3. Maintenance

Temporary seedings shall be periodically inspected. At a minimum, 95% of the soil surface should be covered by vegetation. If any evidence of erosion or sedimentation is apparent, repairs shall be made and other temporary measures used in the interim (mulch, filter barriers, check dams, etc.).

PERMANENT SEEDING

- 1. Bedding stones larger than 1 ½ ", trash, roots, and other debris interfere with seeding and future maintenance of the area should be removed. Where feasible, the soil should be tilled to a depth of 4" to prepare a seedbed and mix fertilizer into the soil.
- 2. Fertilizer lime and fertilizer should be applied evenly over the area prior to or at the time of seeding and incorporated into the soil. Kinds 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

Agricultural Limestone @ 100 lbs. per 1,000 s.f. 10-20-20 fertilizer @ 12 lbs. per 1,000 s.f.

3. Seed Mixture (recommended)

Rate: <u>Type</u>	LBS. per Acre	LBS. per 1,000 s.
Tall Fescue Creeping Red	20 20	0.45 0.45
Fescue Birdsfoot Trefoil Total	<u>8</u> 48	<u>0.20</u> 1.10

- 4. Sodding sodding is done where it is desirable to rapidly establish cover on a disturbed area. Sodding an area may be substituted for permanent seeding procedures anywhere on site. Bed preparation, fertilizing, and placement of sod shall be performed according to the S.C.S. Handbook.
- Sodding is recommended for steep sloped areas, areas immediately adjacent to sensitive water courses, easily erodible soils (fine sand/silt) etc.
- 5. Provide a minimum of 4 inches (5 inches loose) of topsoil to all areas to be
- F. STORM DRAIN INLET PROTECTION
- 1. Straw/Hay Bale Inlet Structure
 - a. Bales shall be either wire bound or string tied with the bindings oriented around the sides rather than over and under the bales.
 - Bales shall be placed lengthwise in a single row surrounding the inlet, with the ends of adjacent bales pressed together.
 - The filter barrier shall be entrenched and backfilled. A trench shall be excavated around the inlet the width of bale to a minimum depth of four (4) inches. After the bales are staked, the excavated soil shall be backfilled and compacted against the filter barrier.
 - d. Each bale shall be securely anchored and held in place by at least two (2) stakes or rebars driven through the bale.
 - Loose straw/hay shall be wedged between bales to prevent water from entering between bales. All structures should be inspected after every rainstorm and repairs
 - made as necessary. Sediment should be removed from the devices after the sediment has
 - reached a maximum of one-third the depth of the trap.
 - Haybales should be removed and the area repaired as soon as the contributing drainage area to the inlet has been completely stabilized.

TIMING OF CONTROLS/MEASURES

As indicated in the sequence of Major Activities the silt fences shall be installed prior to commencing any clearing or grading of the site. Structural controls shall be installed concurrently with the applicable activity. Areas where construction activity temporarily ceases for more than twenty one (21) days will be stabilized with a temporary seed and mulch within fourteen (14) days of the last disturbance. Once construction activity ceases permanently in an area, silt fences and any earth/dikes will be removed once permanent measures are established. All areas shall be stabilized within 72 hours of achieving finish grade.

WASTE DISPOSAL

- A. WASTE MATERIALS
 - All waste materials will be collected and stored in securely lidded receptacles. All trash and construction debris from the site will be deposited in a dumpster. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal by the superintendent.
- HAZARDOUS WASTE All hazardous waste materials will be disposed of in the manner specified by local or
- state regulation or by the manufacturer. Site personnel will be instructed in these
- SANITARY WASTE All sanitary waste will be collected from the portable units a minimum of once per

week by a licensed sanitary waste management contractor.

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

practices by the superintendent.

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances during construction to stormwater runoff:

Good Housekeeping.

The following good housekeeping practices will be followed on site during the

- construction project: An effort will be made to store only sufficient amounts of products to do the
- All materials stored on site will be stored in a neat, orderly manner in their proper (original if possible) containers and, if possible, under a roof or other
- Manufacturer's recommendations for proper use and disposal will be followed. The site superintendent will inspect daily to ensure proper use and disposal of
- Substances will not be mixed with one another unless recommended by the
- Whenever possible all of a product will be used up before disposing of the

Hazardous Products:

The following practices will be used to reduce the risks associated with hazardous

- materials: Products will be kept in their original containers unless they are not resealable. Original labels and material safety data will be retained for important product
- Surplus product that must be disposed of will be discarded according to the manufacturer's recommended methods of disposal.

All on site vehicles will be monitored for leaks and receive regular preventive

PRODUCT SPECIFICATION PRACTICES

The following product specific practices will be followed on site.

Petroleum Products:

maintenance to reduce leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt based substances used on site will be applied according to the manufacturer's recommendations. Fertilizers:

Fertilizers used will be applied only in the minimum amounts directed by the specifications. Once applied fertilizer will be worked into the soil to limit exposure to

stormwater. Storage will be in a covered shed or enclosed trailers. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be disposed of properly

according to manufacturer's instructions or state and local regulations. Concrete Trucks:

Concrete trucks will discharge and wash out surplus concrete or drum wash water in a contained area on site.

SPILL CONTROL PRACTICES In addition to good housekeeping and material management practices discussed in the previous section the following practices will be followed for spill prevention and

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area on site. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic or metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.

spill prevention and cleanup coordinator.

AGR 3800 Prohibited Invasive Plant Species Rules

covers to material stockpiles:

- The spill area will be kept well ventilated and personnel will wear appropriate
- protective clothing to prevent injury from contact with a hazardous substance. Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and how to cleanup the spill if it recurs. A description of the spill, its cause, and the cleanup measures will be included.

The site superintendent responsible for day-to-day site operations will be the

The project proponent is required to manage construction to meet the requirements of AGR 3800 relative to controlling invasive species and controlling fugitive dust in accordance with ENV-A 1002.

The rule, Agr 3800, states: "No person shall collect, transport, import, export, move, buy, sell. distribute. propagate or transplant any living and viable portion of any plant species, which includes all of their cultivars and varieties, listed in Table 3800.1, New Hampshire prohibited invasive species list". A complete copy of the rules can be accessed on the

internet at http://agriculture.nh.gov/topics/plants_insects.htm. Env-A 1002 FUGITIVE DUST: Precautions to Prevent, Abate, and Control Fugitive Dust. (a) Any person engaged in any activity within the state that emits fugitive dust, other than those listed in Env-A 1002.02(b), shall take precautions throughout the duration of

(b) Precautions required by (a), above, shall include but not be limited to the following:

(2) The application of asphalt, water or hydrophilic material, or tarps or other such

(1) The use of water or hydrophilic material on operations or surfaces, or both;

the activity in order to prevent, abate, and control the emission of fugitive dust.

- (3) The use of hoods, fans, fabric filters, or other devices to enclose and vent areas where materials prone to producing fugitive dust are handled;
- (4) The use of containment methods for sandblasting or similar operations; and (5) The use of vacuums or other suction devices to collect airborne particulate matter.

1) All activities associated with blasting need to be optimized to prevent the release of chemicals associated with blasting activities to the environment. 2) Identify drinking water wells located within 2000 feet of the proposed blasting activities. Develop a groundwater quality sampling program to monitor for nitrate and nitrite either in the drinking water supply wells or in other wells that are representative of the drinking water supply wells in the area. The plan must include pre and post blast water quality monitoring and be approved by NHDES prior to initiating

blasting. The groundwater sampling program must be implemented once approved by NHDES. 3) The following Best Management Procedures for blasting shall be complied with:

(1) Loading practices. The following blasthole loading practices to minimize environmental effects shall

(a) Drilling logs shall be maintained by the driller and communicated directly to the blaster. The logs shall indicate depths and lengths of voids, cavities, and fault zones or other weak zones encountered as well as groundwater conditions. (b) Explosive products shall be managed on-site so that they are either used in the borehole,

returned to the delivery vehicle, or placed in secure containers for off-site disposal. (c) Spillage around the borehole shall either be placed in the borehole or cleaned up and returned to an appropriate vehicle for handling or placement in secured containers for off-site disposal.

(d) Loaded explosives shall be detonated as soon as possible and shall not be left in the blastholes overnight, unless weather or other safety concerns reasonably dictate that detonation should be postponed.

(e) Loading equipment shall be cleaned in an area where wastewater can be properly contained and handled in a manner that prevents release of contaminants to the environment. (f) Explosives shall be loaded to maintain good continuity in the column load to promote

complete detonation. Industry accepted loading practices for priming, stemming, decking and

column rise need to be attended to. (2) Explosive Selection. The following BMPs shall be followed to reduce the potential for groundwater contamination when explosives are used: (a) Explosive products shall be selected that are appropriate for site conditions and safe blast

(b) Explosive products shall be selected that have the appropriate water resistance for the site conditions present to minimize the potential for hazardous effect of the product upon

aroundwater (3) Prevention of Misfires. Appropriate practices shall be developed and implemented to prevent

(4) Muck Pile Management. Muck piles (the blasted pieces of rock) and rock piles shall be managed in a manner to reduce the potential for contamination by implementing the following measures:

(b) Manage the interaction of blasted rock piles and stormwater to prevent contamination of water supply wells or surface water. (5) Spill Prevention Measures and Spill Mitigation. Spill prevention and spill mitigation measures shall be

(a) Remove the muck pile from the blast area as soon as reasonably possible.

implemented to prevent the release of fuel and other related substances to the environment. The measures shall include at a minimum: (a) The fuel storage requirements shall include:

1. Storage of regulated substances on an impervious surface;

2. Secure storage areas against unauthorized entry; 3. Label regulated containers clearly and visibly;

4. Inspect storage areas weekly; 5. Cover regulated containers in outside storage areas; 6. Wherever possible, keep regulated containers that are stored outside more than 50 feet

from surface water and storm drains, 75 feet from private wells, and 400 feet from 7. Secondary containment is required for containers containing regulated substances stored outside, except for on premise use heating fuel tanks, or aboveground or underground storage tanks otherwise regulated.

(b) The fuel handling requirements shall include: 1. Except when in use, keep containers containing regulated substances closed and sealed; 2. Place drip pans under spigots, valves, and pumps;

3. Have spill control and containment equipment readily available in all work areas; 4. Use funnels and drip pans when transferring regulated substances; and 5. Perform transfers of regulated substances over an impervious surface. (c) The training of on-site employees and the on-site posting of release response information

describing what to do in the event of a spill of regulated substances. (d) Fueling and maintenance of excavation, earthmoving and other construction related equipment will comply with the regulations of the New Hampshire Department of Environmental Services [note these requirements are summarized in WD−DWGB−22−6 Best Management Practices for Fueling and Maintenance of Excavation and Earthmoving Equipment" or its successor document. (see http://des.nh.gov/organization/commissioner/pip/factsheets/dwab/documents/dwab-22-6.pdf

All site improvements which require blasting of land shall meet the following requirements prior to

any blasting occurring. 1. The Applicant shall prepare a pre—blast survey of all structures within five (500) feet of the external boundaries of the proposed lot to be developed. This survey, along with a monitoring plan, shall be on file with the Moultonborough Fire and Rescue. Upon recommendations of the Chief, the planning Board may require a pre-blast survey of all structures within one thousand (1000) feet.

2. The Applicant shall hold a neighborhood meeting to review the blasting plan and pre-blast survey, with representatives of the Fire and Rescue and the blasting company in attendance, prior to any on-site blasting. Abutters within on thousand (1000) feet of the external boundary of the project parcel shall be notified by certified mail (paid for by the applicant) of the meeting no less than ten (10) days prior to the meeting. 3. Permit holders shall be in compliance with NFPA 495. The Code for the Manufacture. Transportation.

Storage and Use of Explosive Material, in addition to all other ordinances and codes set forth in the Town of Moultonborough Fire Prevention Code, which specifically prohibits the overnight storage of explosive or blasting agents. Further all storage magazines shall be locked in the open position at the end of the days' operation, for easy inspection by Town Officials.

3. blasting permits may be obtained by calling the Town of Moultonborough Fire and Rescue during

normal business hours. The permits are only active for the dates and time specified on the permit. 4. Permit holders shall hold insurance against claims for damages for personal injury and property which may arise from performance of the work. 5. Hours of operation for the blasting shall be no earlier than 8:00 am and no later than 6:00 pm

MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES

Monday through Friday, excluding federal holidays.

The project proponent is responsible for the maintenance of all stormwater facilities during construction

and the property owner is responsible after construction is complete. CATCH BASINS & STORMWATER TREATMENT STRUCTURES

1. Catch basins & Stormwater treatment structures should be inspected on a monthly basis and/or after a major rainfall event to assure that debris or sediments do not reduce the effectiveness of the system.

WINTER CONSTRUCTION NOTES

All proposed post-development vegetated areas which do not exhibit a minimum of 85% vegetative growth by October 15th, or which are disturbed after October 15th, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The placement 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.

2. All slopes which do not exhibit a minimum of 85% vegetative growth by October 15th,

- or which are disturbed after October 15th shall be stabilized with stone or erosion control blankets. 3. After October 15th, incomplete road surfaces shall be protected with a minimum of
 - 3-inches of crushed gravel per NHDOT item 403.3, or if construction is to continue through the winter season be cleared of any accumulated snow after each storm

KONA MANSION ESTATE SUBDIVISION MOULTONBOROUGH, NH

NOTE.

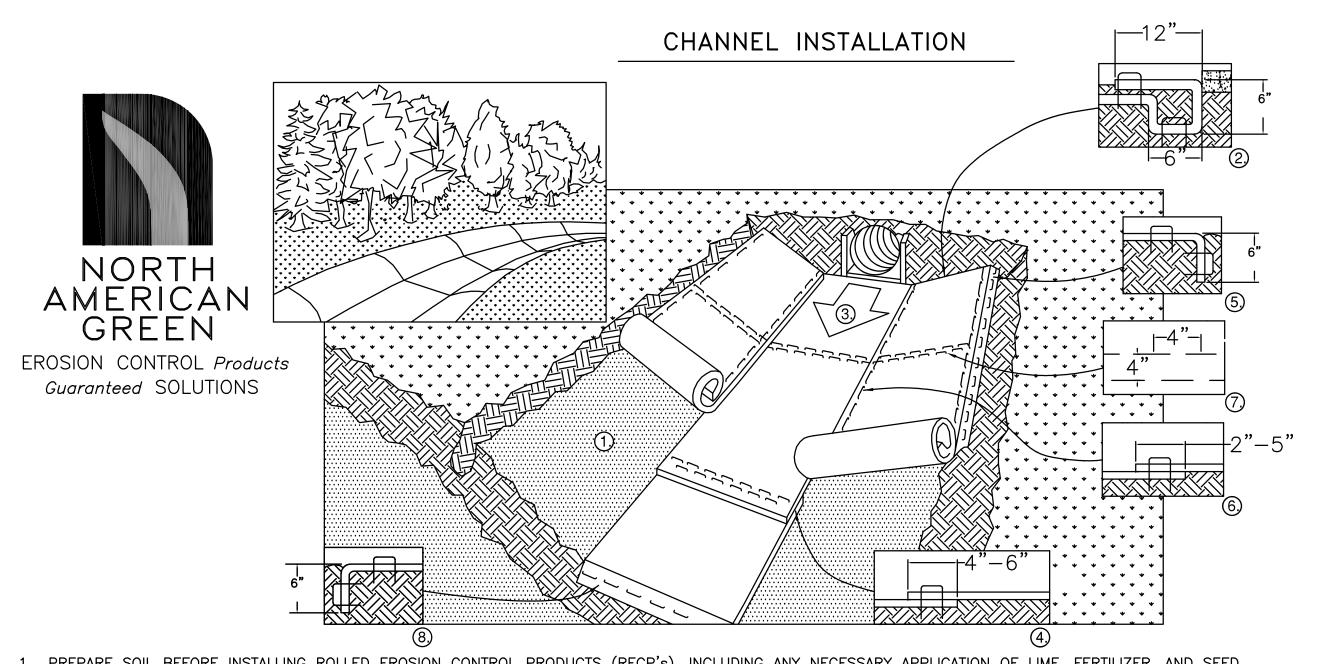
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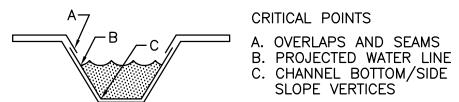
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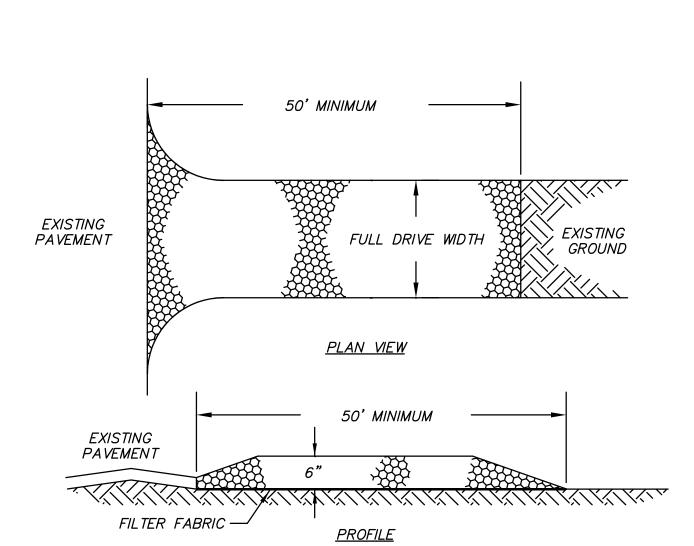
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- PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- 2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMAPCT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" ACROSS THE WIDTH OF THE RECP'S.
- 3. ROLL CENTER RECP'S IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. PLACE CONSECUTIVE RECP'S 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 RECP's. 5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE
- TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. 6. ADJACENT RECP'S MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (DEPENDING ON RECP'S TYPE) AND STAPLED.
- 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 RECP'S MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. NOTE: * IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

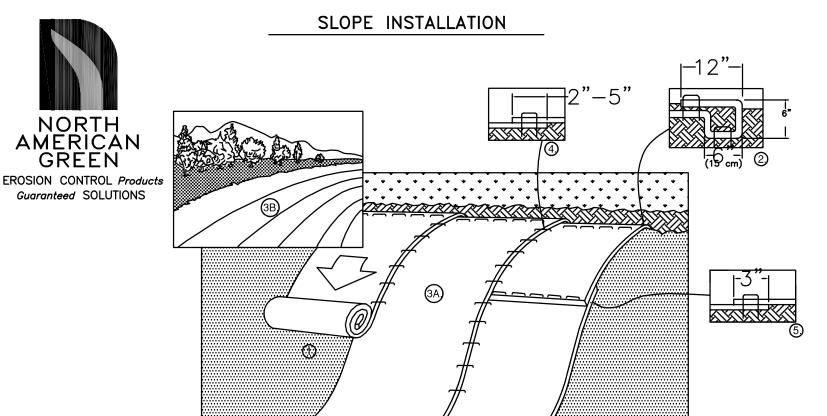


- * HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.
- ** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

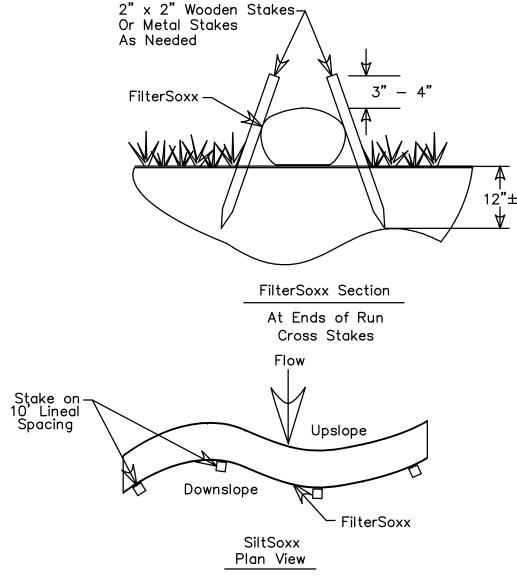


- 1. SEE EROSION CONTROL NOTES BELOW FOR MATERIAL, INSTALLATION AND MAINTENANCE REQUIREMENTS. 2. TO BE INSTALLED AT EACH POINT OF EGRESS FROM THE WORK AREA.
- STABILIZED CONSTRUCTION ENTRANCE
 - 1. SPECIFICATIONS A. AGGREGATE SIZE: USE TWO (2) INCHES STONE, OR RECLAIMED OR RECYCLED CONCRETE
 - B. AGGREGATE THICKNESS: NOT LESS THAN SIX (6) INCHES. C. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF POINTS WHERE
 - INGRESS OR EGRESS OCCURS.
 - D. LENGTH: AS REQUIRED, BUT NOT LESS THAN FIFTY (50) FEET. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED.
 - GEOTEXTILE: TO BE PLACED OVER THE ENTIRE AREA TO BE COVERED WITH AGGREGATE. CRITERIA FOR GEOTEXTILE: THE FABRICS SHALL BE TREVIA SPUNBOND 1135, MIRAFI 600X
 - 2. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH AGGREGATE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING STORM DRAINS, DITCHES, OR WATERWAYS.

STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE



- 1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), 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 RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
- 3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN. 4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING
- 5. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE
- " (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE
- *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO

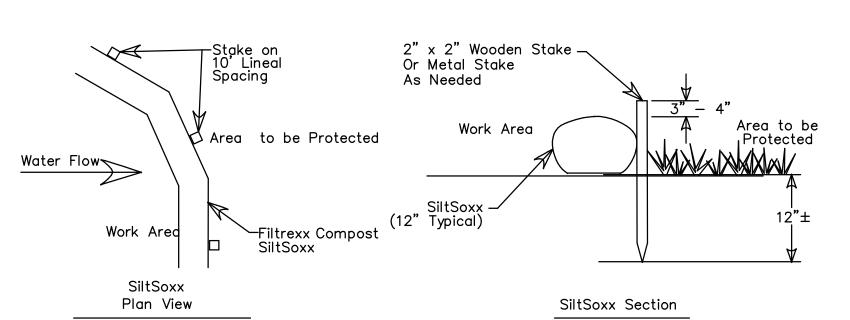


1. All material to meet Filtrexx specifications

2. FilterSoxx compost/jsoil/rock/seed fill to meet application

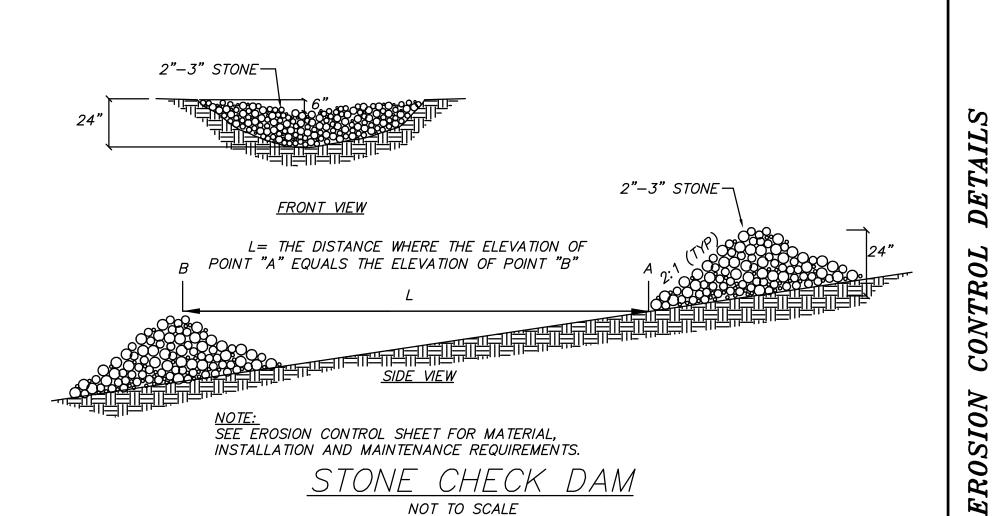
FilterSoxx Staking Details

3. Compost material to be dispersed on site, as determined by Engineer.

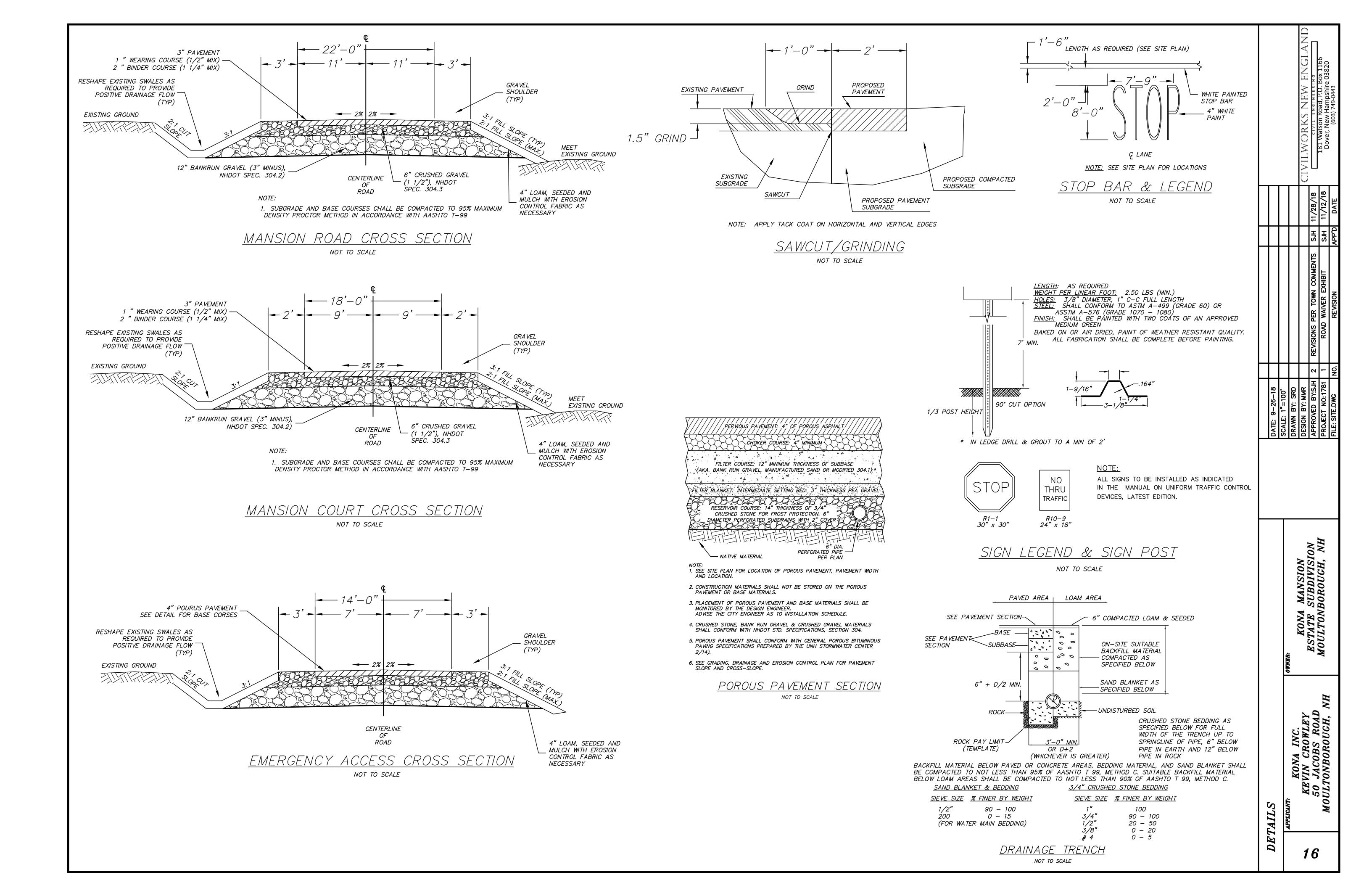


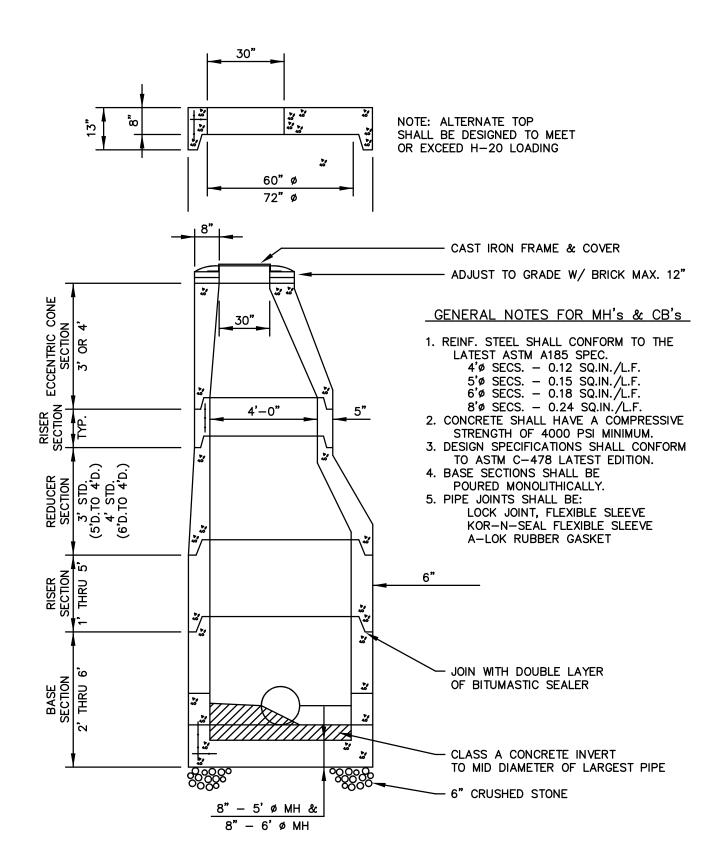
- 1. All material to meet Filtrexx specifications
- 2. SiltSoxx compost/jsoil/rock/seed fill to meet application requirements.
- 3. SiltSoxx depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer. 4. Compost material to be dispersed on site, as determined by Engineer.

SiltSoxx Details NOT TO SCALE

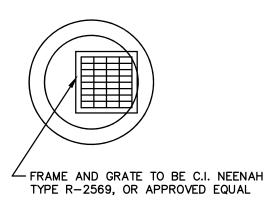


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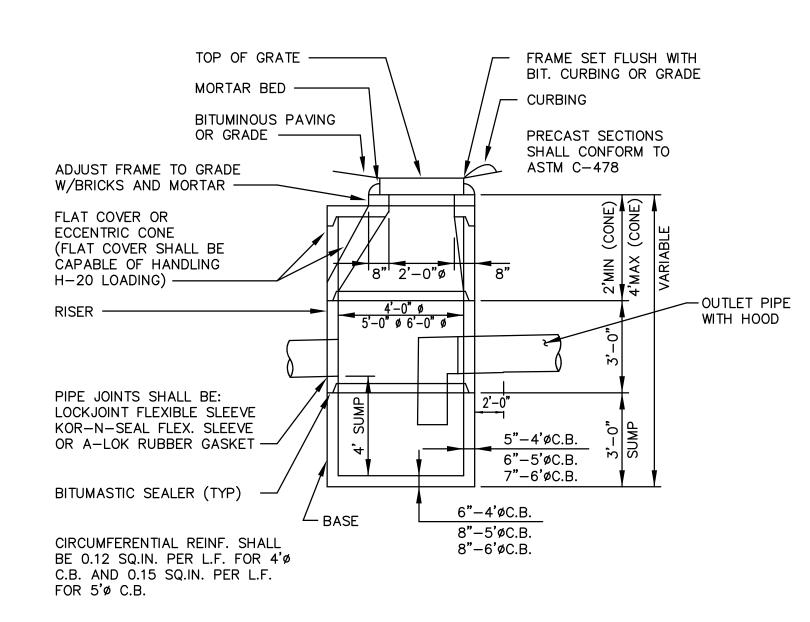




STANDARD 4 FT. DIA. MANHOLE NOT TO SCALE



GRATE DETAIL NOT TO SCALE

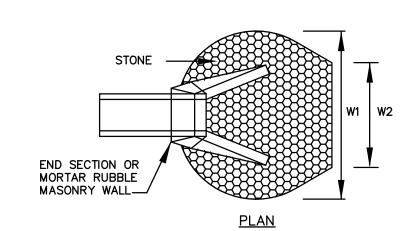


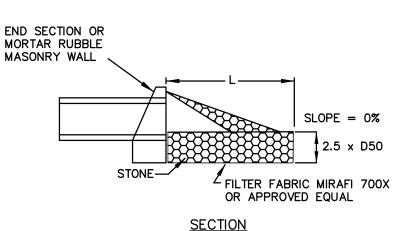
PRE-CAST REINFORCED CATCH BASIN

NOT TO SCALE

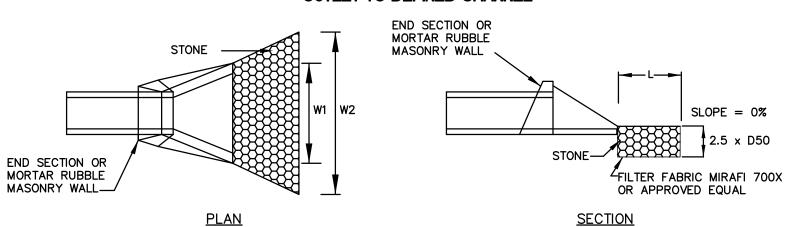
<u>SPECIFICATIONS</u>

- 1. All construction shall conform with the State of New Hampshire Department of Transportation (NHDOT), "Standard Specifications for Road and Bridge Construction"; hereinafter referred to as the "Standard Specifications".
- 2. Catch basins and manholes shall be pre-cast reinforced concrete designed by an engineer registered in New Hampshire, and able to withstand loadings of 8 tons (H2O Loading).
- 3. Manholes shall have cast iron frames and covers with 30" inside diameter openings. A 3—inch (minimum) letter "D" for drain shall be plainly cast into the center of each cover.
- 4. Catch basins and manholes shall be adjusted to grade with courses of brick. Maximum adjustment to grade shall be 12 inches. Frames shall be set on a full bed of mortar, true to grade and concentric with the masonry. All voids between the top of the structure and the bottom flange of the frame shall be completely filled to make a watertight fit. A ring of mortar at least one inch thick and pitched to shed water away from the frame, shall be placed over and around the outside of the bottom flange. The mortar shall extend to the outer edge of the masonry all around its circumference and shall be finished smooth. No visible leakage will be permitted.
- 5. Invert channels of sewer manholes shall be formed smoothly to the largest pipe radius. Changes in grade shall be formed smoothly and evenly. The floor of the structure outside the channels shall be sloped towards the channels at approximately 1/2 inch per foot. The floor at the channel shall match the crown of the largest
- 6. Trench construction will conform with Section 603.3.1 of the Standard Specifications (1974).
- 7. Wood sheeting or a suitable trench box shall be used to support the trench as necessary. If wood sheeting is used, it shall be driven at a distance of 1 foot from the outside diameter of the pipe to a depth 6 inches below the invert of the pipe. Wood sheeting shall be cut off and left in place to an elevation not less than 1 foot above the top of the pipe, but not greater than 3 feet below the finished grade.
- 8. Bedding shall conform with Section 603.3.2 of the Standard Specifications (1974).
- 9. Backfill material will conform with Section 603.3.5 of the Standard Specifications (1974) and, in addition, shall exclude debris, pieces of pavement, organic matter, top soil, all wet or soft muck, peat or clay, all excavated ledge material, frozen material, all rocks over 6 inches in largest dimension, or any material which, as determined by the Engineer, will not provide sufficient support or maintain the completed construction in a stable condition. Backfill shall not be placed on frozen or previously frozen material.
- 10. All backfill and bedding compaction shall meet the requirements of AASHTO 99 Method C. Density shall be 95 percent. Compaction shall be 6 inch lifts for bedding and backfill to a plane 1 foot above the pipe and in 12 inch lifts thereafter by an approved mechanical compactor.
- 11. Should frozen material be encountered, it shall not be placed in the backfill nor shall backfill be placed upon frozen material. Previously frozen material shall be removed as required before new backfill is placed.
- 12. The Contractor shall be responsible for any damage to frames and grates during and from the time of removal from the existing structure to and during the time of resetting, and shall replace in kind any damaged frames or grates at no additional compensation.
- 13. All trenches will be covered and debris, including any rejected materials, shall be removed daily. Strict safety precautions shall be maintained at all times.
- 14. Location of utilities shown on the plans are approximate. a) the Contractor shall, 48 hours prior to construction, notify the utility companies and have all utilities in the vicinity of the construction marked in the field.
 - b) after the utilities have been located and prior to construction, the Contractor with the Engineer, shall layout the proposed drainage system in the field and rectify any utility conflicts which may be found.
 - c) Any conflicts with utilities found during construction by the Contractor shall be immediately brought to the attention of the Engineer and the Utility Company and properly rectified.
- d) The Contractor is responsible for the cost of repair for any utilities damaged during construction. The Contractor shall contact the Utility Company to repair any damages, however, the Contractor may make appropriate repairs with the Utility Company's permission.
- 15. Complete shop drawings for pipe, manholes, catch basins, frames, grates and covers shall be submitted in triplicate for approval by the Engineer prior to the start of construction. Each shop drawing shall be checked and initialized by the Contractor to indicate approval before it is submitted to the Engineer.
- 16. Shop drawings for flat concrete covers shall be stamped prior to submission for approval by a New Hampshire Registered Professional Engineer.
- 17. Brick masonry for setting frames and brick and mortar plugs shall conform to the Standard Specification Section 604.2.4.





STONE APRON OUTLET PROTECTION DETAIL OUTLET TO DEFINED CHANNEL



STONE APRON OUTLET PROTECTION DETAIL OUTLET TO FLAT AREA, NON DEFINED CHANNEL

MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP 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 THE OUTLET PROTECTION APRON.

STONE GRADATION

	
% OF WEIGHT SMALLER	SIZE OF
THAN THE GIVEN SIZE	STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

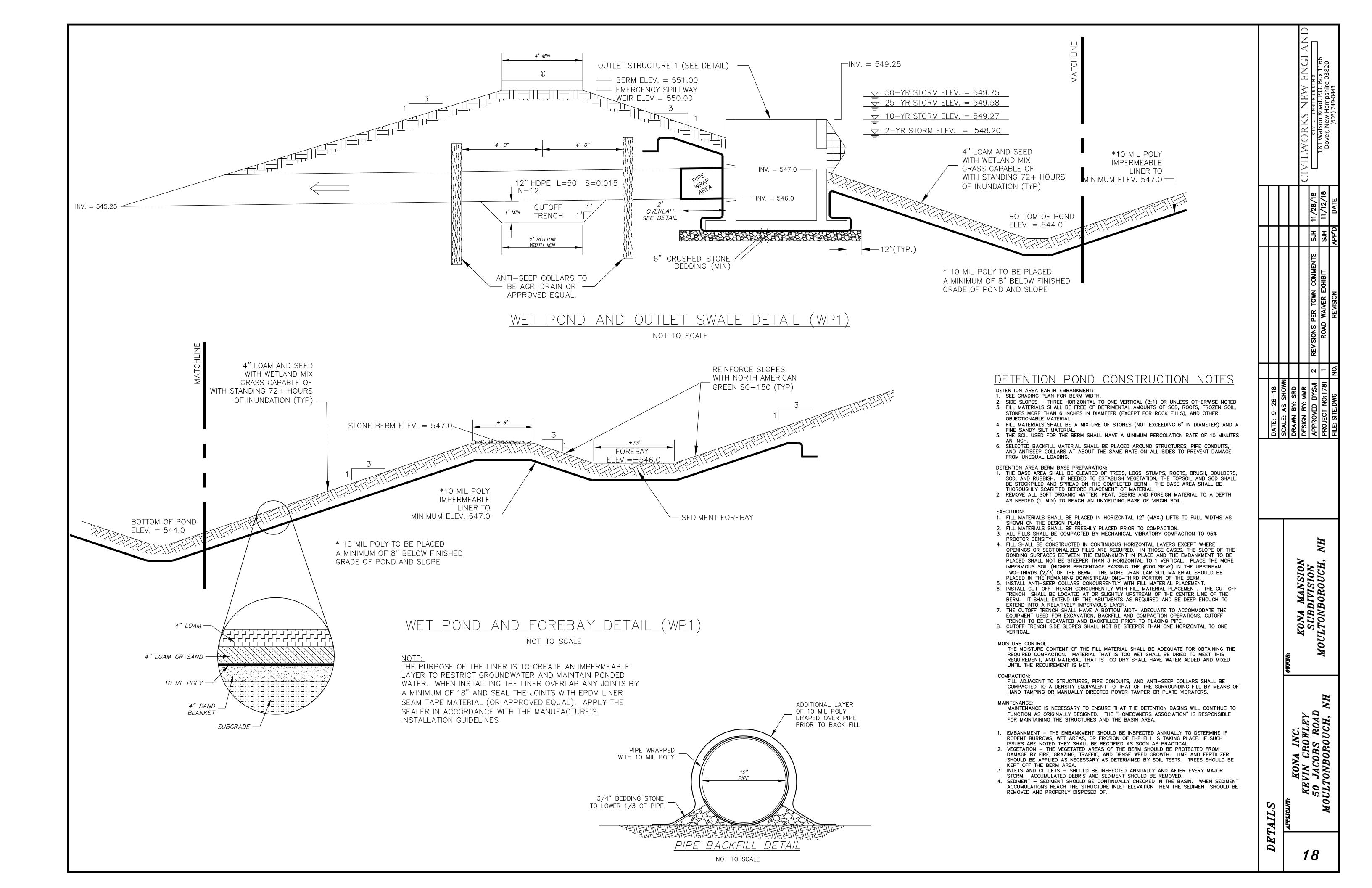
CONSTRUCTION SPECIFICATIONS

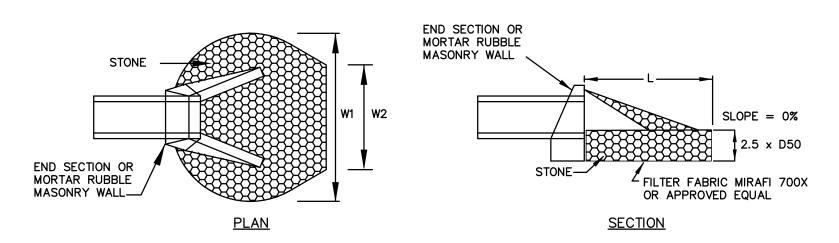
- 1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE
- LINES AND GRADES SHOWN ON THE PLANS.
- THE ROCK OR GRAVEL USED FOR FILTER OR RIPRAP SHALL CONFORM TO THE SPECIFIED GRADATION. 3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIPRAP. 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 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. APRON DEPTH SHALL BE 2.5 TIMES D50.

RIP RAP OUTLET PROTECTION NOT TO SCALE

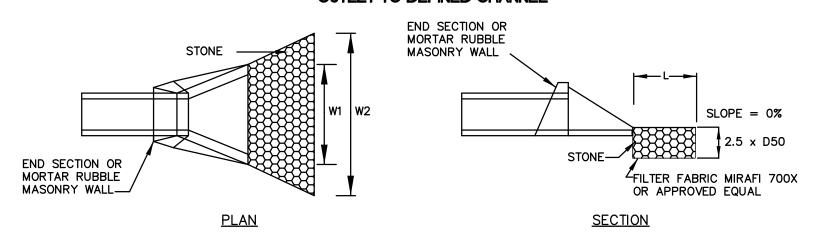
OUTLET	W1(ft)	W2(ft)	L(ft)	D50(in)	CHANNEL TYPE
PDL#4	12	3	16	8	DEFINED
PDL#5	16	7	16	12	DEFINED
PDL#6	5	18	14	12	NON-DEFINED
WP#1 OUTLET	3	18	15	6	NON-DEFINED

				CIVILWORKS NEV	CIVIL ENGINEE	181 Watson Koad, P.C Dover, New Hampsh	(603) 749-044
				\Box		SJH 11/12/18	APP'D DATE
					HCS	HLS	APP'D
					REVISIONS PER TOWN COMMENTS SJH 11/28/18	ROAD WAIVER EXHIBIT	REVISION
					2	1	NO.
DATE: 9-26-18	SCALE: 1"=100"	30ALL: 1 -100	DRAWN BY: SRD	DESIGN BY: MMR	APPROVED BY:SJH	PROJECT NO:1781	FILE: SITE.DWG
							_
		OFVER		KONA MANSION	ESTATE SUBDIVISION	MOULTONBOROUGH, NH	
JETAILS:		APPLICANT:	KONA INC.	EY		HN	





STONE APRON OUTLET PROTECTION DETAIL OUTLET TO DEFINED CHANNEL



STONE APRON OUTLET PROTECTION DETAIL OUTLET TO FLAT AREA, NON DEFINED CHANNEL

MAINTENANCE

THE OUTLET PROTECTION SHOULD BE CHECKED AT LEAST ANNUALLY AND AFTER EVERY MAJOR STORM. IF THE RIPRAP 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 THE OUTLET PROTECTION APRON.

STONE GRADATION

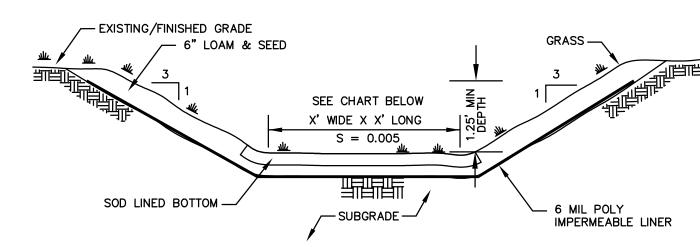
OF WEIGHT SMALLER	SIZE OF
HAN THE GIVEN SIZE	STONE
100	1.5 TO 2.0 D50
85	1.3 TO 1.8 D50
50	1.0 TO 1.5 D50
15	0.3 TO 0.5 D50

CONSTRUCTION SPECIFICATIONS

- 1. THE SUBGRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIPRAP SHALL BE PREPARED TO THE
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- 5. APRON DEPTH SHALL BE 2.5 TIMES D50.

RIP RAP OUTLET PROTECTION NOT TO SCALE

OUTLET	W1(ft)	W2(ft)	L(ft)	D50(in)	CHANNEL TYPE
CB#2	16	8	20	4	DEFINED
CB#5	4	11	17	4	NON-DEFINED
DMH#1	16	8	12	4	DEFINED



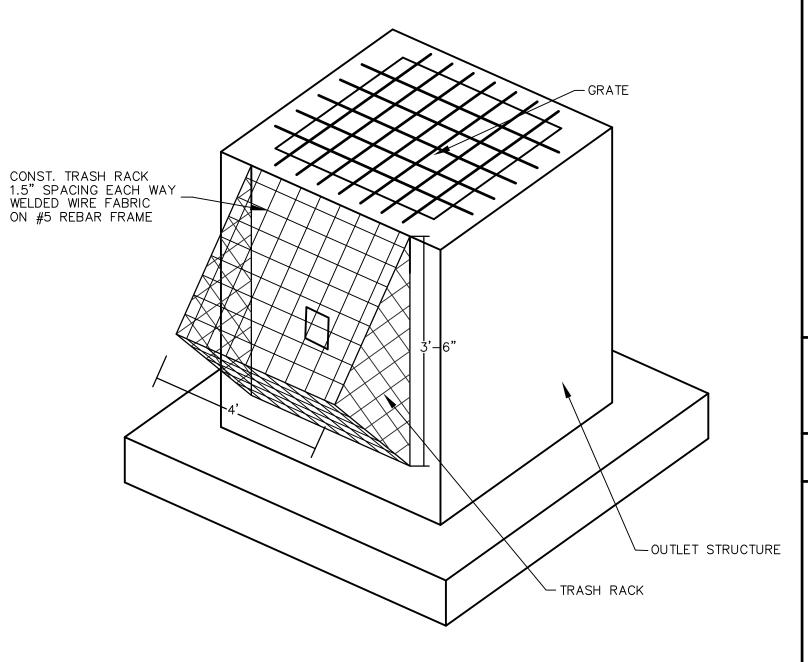
NOT TO SCALE

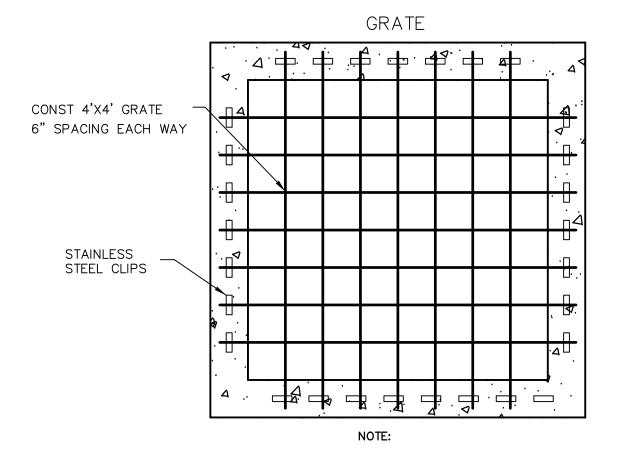
SWALE	INV. IN	INV. OUT	LENGTH	SLOPE	WIDTH
TS#1	561.00'	560.25	150'	0.005	8'
TS#2	553.00'	552.35'	130'	0.005'	6'
TS#3	560.75	560.00'	150'	0.005'	8'

MAINTENANCE
TIMELY MAINTENANCE IS IMPORTANT TO KEEP THE VEGETATION IN THE SWALE IN GOOD CONDITION. MOWING SHOULD BE DONE FREQUENTLY ENOUGH TO KEEP THE VEGETATION IN VIGOROUS CONDITION AND TO CONTROL ENCROACHMENT OF WEEDS AND WOODY VEGETATION, HOWEVER IT SHOULD NOT BE MOWED TOO CLOSELY, MAINTAIN A MINIMUM 4" STAND OF VEGETATION. FERTILIZE ON AN "AS NEEDED" BASIS TO KEEP THE GRASS HEALTHY. OVER FERTILIZATION CAN RESULT IN THE SWALE BECOMING A SOURCE OF POLLUTION.

THE SWALE SHOULD BE INSPECTED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE THE CONDITION OF THE SWALE. RILLS AND DAMAGED AREAS SHOULD BE PROMPTLY REPAIRED AND REVEGETATED AS NECESSARY TO PREVENT FURTHER DETERIORATION.

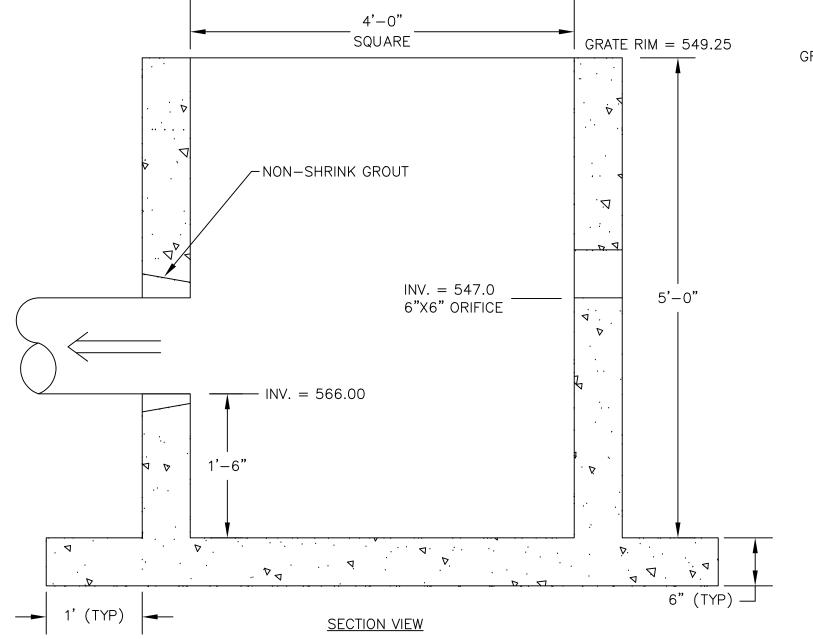
TREATMENT SWALE DETAIL

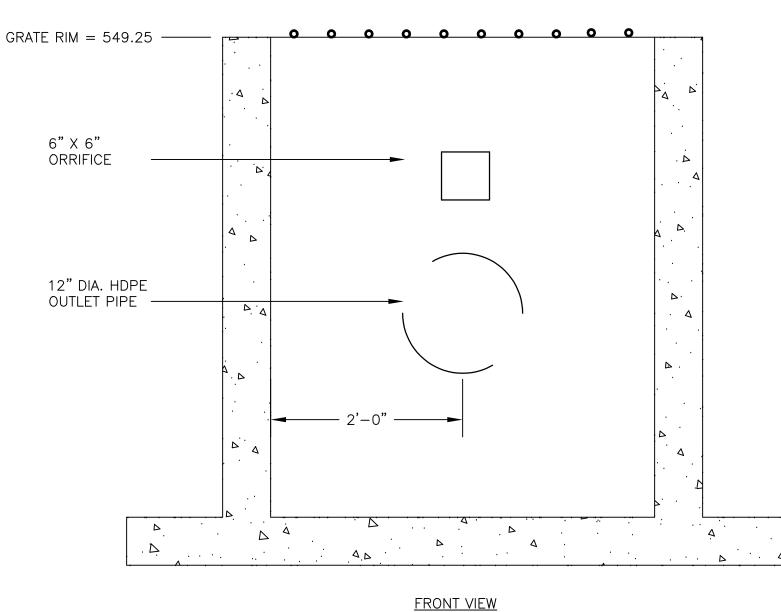


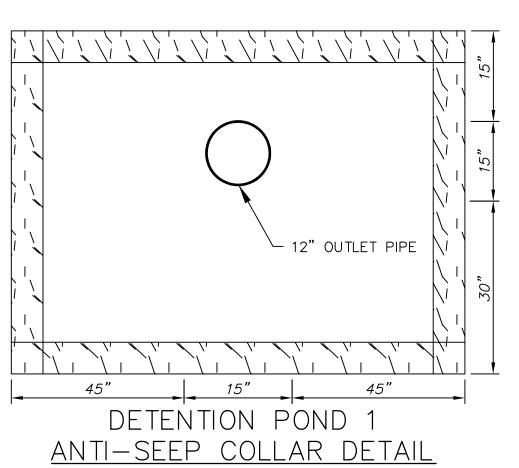


1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS. 2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.

TYPICAL INLET TRASH RACKS NOT TO SCALE

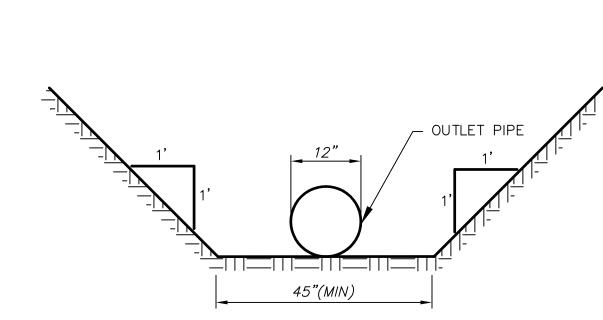






NOT TO SCALE

1. ANTI-SEEP COLLARS SHALL BE WATERPROOF AND HAVE A WATERPROOF CONNECTION TO THE PIPE. 2. ANTI-SEEP COLLARS TO BE AGRI DRAIN OR APPROVED EQUAL.



DETENTION POND 1 OUTLET PIPE TRENCH DETAIL NOT TO SCALE

DETAILS

19

1) ALL OUTLET STRUCTURES SHALL BE PRE CAST WITH A MINIMUM CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.

2) THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR EACH STRUCTURE FOR REVIEW BY THE TOWN.