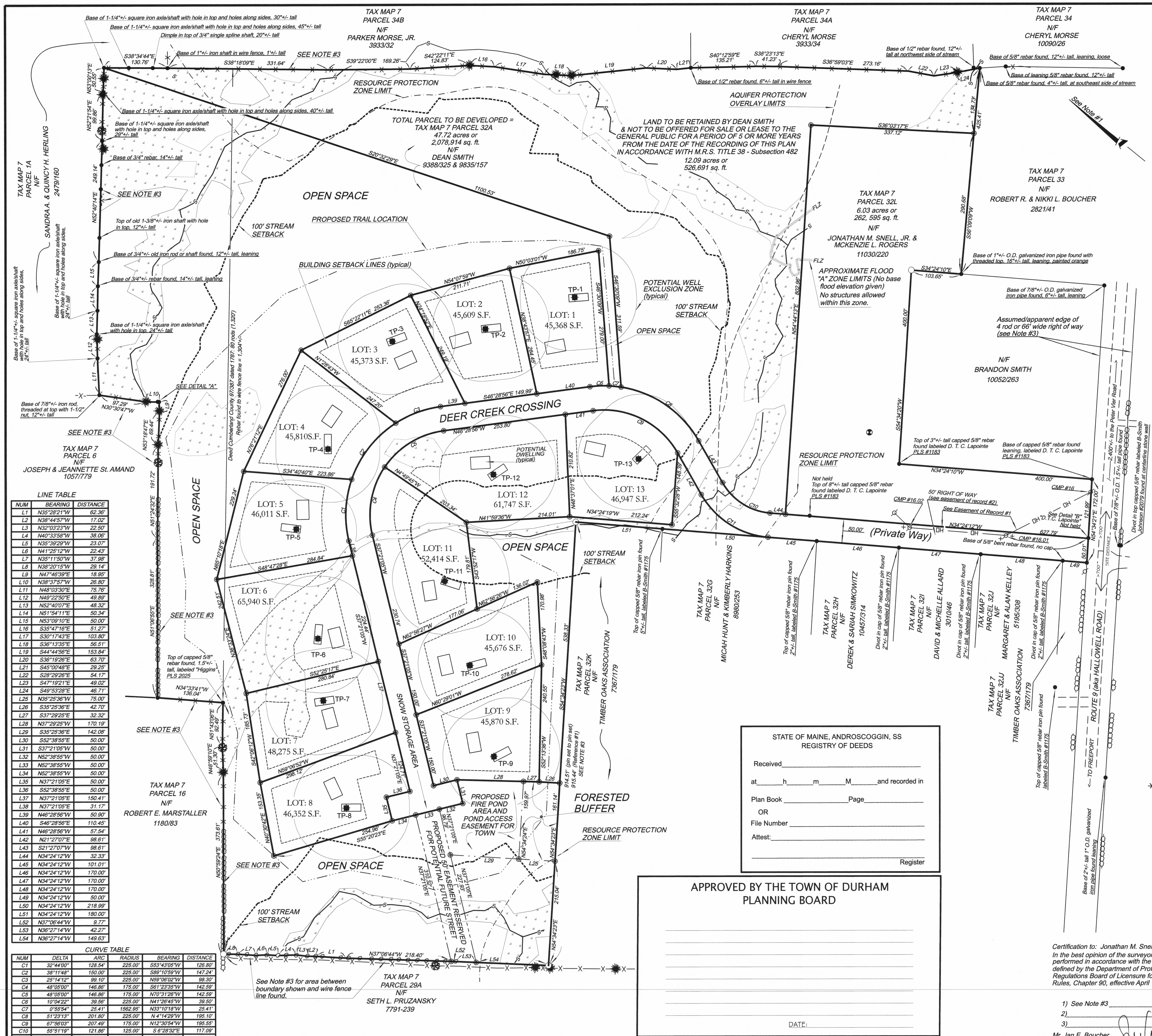


LINE TABLE		
NUM	BEARING	DISTANCE
L1	N35°28'21"W	62.36'
L2	N38°44'57"W	17.02'
L3	N32°03'23"W	22.50'
L4	N40°33'58"W	38.06'
L5	N35°39'29"W	23.07'
L6	N41°25'12"W	22.43'
L7	N35°11'50"W	37.98'
L8	N38°20'15"W	29.14'
L9	N47°46'39"E	18.95'
L10	N38°37'57"W	26.80'
L11	N48°03'30"E	75.76'
L12	N49°22'50"E	49.89'
L13	N52°40'07"E	48.32'
L14	N51°54'11"E	50.34'
L15	N53°09'10"E	50.00'
L16	S35°47'16"E	51.27'
L17	S30°17'43"E	103.80'
L18	S36°13'35"E	56.51'
L19	S44°44'56"E	153.84'
L20	S36°19'26"E	63.70'
L21	S45°00'48"E	29.25'
L22	S28°29'26"E	54.17'
L23	S47°19'21"E	49.02'
L24	S49°53'28"E	46.71'
L25	N35°25'36"W	75.00'
L26	S35°25'36"E	42.70'
L27	S37°29'25"E	32.32'
L28	N37°29'25"W	170.19'
L29	S35°25'36"E	142.08'
L30	S52°38'55"E	50.00'
L31	S37°21'05"W	50.00'
L32	N52°38'55"W	50.00'
L33	N52°38'55"W	50.00'
L34	N52°38'55"W	50.00'
L35	N37°21'05"E	50.00'
L36	S52°38'55"E	50.00'
L37	N37°21'05"E	150.41'
L38	N37°21'05"E	31.17'
L39	N46°28'56"W	50.90'
L40	S46°28'56"E	110.45'
L41	N46°28'56"W	57.54'
L42	N21°27'07"E	98.61'
L43	S21°27'07"W	98.61'
L44	N34°24'12"W	32.33'
L45	N34°24'12"W	101.01'
L46	N34°24'12"W	170.00'
L47	N34°24'12"W	170.00'
L48	N34°24'12"W	170.00'
L49	N34°24'12"W	50.00'
L50	N34°24'12"W	218.99'
L51	N34°24'12"W	180.00'
L52	N37°06'44"W	9.77'
L53	N36°27'14"W	42.27'
L54	N36°27'14"W	149.63'

CURVE TABLE					
NUM	DELTA	ARC	RADIUS	BEARING	DISTANCE
C1	32°44'00"	128.54'	225.00'	S53°43'05"W	126.80'
C2	38°11'48"	150.00'	225.00'	S89°10'59"W	147.24'
C3	25°14'12"	99.10'	225.00'	N59°06'02"W	98.30'
C4	48°05'00"	146.86'	175.00'	S61°23'35"W	142.59'
C5	48°05'00"	146.86'	175.00'	N70°31'26"W	142.59'
C6	10°04'22"	39.56'	225.00'	N41°26'45"W	39.50'
C7	0°55'54"	25.41'	1562.95'	N33°10'18"W	25.41'
C8	51°23'13"	201.80'	225.00'	N 4°14'29"W	195.10'
C9	67°56'03"	207.49'	175.00'	N12°30'54"W	195.55'
C10	55°51'19"	121.86'	125.00'	S 6°28'32"E	117.09'
C11	55°51'19"	170.60'	175.00'	S 6°28'32"E	163.92'

STATE OF MAINE, ANDROSCOGGIN, SS
REGISTRY OF DEEDS

Received______________________________

at_____h_____m_____M_____and recorded in

Plan Book____________Page__________

OR

File Number____________________________

Attest:_________________________________

______________________________ Register

APPROVED BY THE TOWN OF DURHAM
PLANNING BOARD

DATE:

REFERENCES

1) Plan of "Boundary Survey prepared for Dean Smith" by Cornerstone Professional Land Surveying, Inc., dated 1/31/2018 & revised through 8/8/2022.

EASEMENTS OF RECORD

1) Utility easement as recorded in the Androscoggin County Registry of Deeds in Book 5919, Page 338.
2) Fifty foot wide common right of way over Parcel 32A for access to lot 32L, as recorded in the Androscoggin County Registry of Deeds in Book 9381, Page 313.

NOTES

1) Bearings are based upon those shown on the plan in Reference #1.
2) Equipment used & to be used: Nikon DTM 520 Total Station Theodolite & Carlson BRX7 RTK GPS.
3) For all information regarding the boundaries of the parcel being subdivided see Boundary Survey in Reference #1.
4) Wetland & stream delineation and location was performed by Alex Finamore of Mainley Soils LLC, and soil septic test pits and locations were made by Stephen Marcotte, then provided to this surveyor in CAD format by the project engineer Charles Burnham.
5) Each numbered lot will be limited to 20,000 square feet of developed area (lawn included).
6) Areas within the side setbacks will remain vegetated. If these areas are cleared during the grading of the lots or road, the same number of trees that were removed will be replanted.
7) Trail construction will be limited to the removal of trees smaller than 3-inches in diameter. Any stream crossing will span the width of the stream bed by a minimum of 3' on either side of the stream.
8) No dug wells are permitted on any part of the property. All lots are to be served by individual wells.
9) There are 100' setbacks from all streams on the property, which will be determined by field measurements prior to construction.
10) Any stone walls moved during the construction of the road or residential lots will need to be relocated on-site.
11) Deer Creek Crossing shall remain private & be owned and maintained (along with the Fire Pond & Open Space) by an association.
12) Further subdivision of the Open Space and its use for other than non-commercial recreation, agriculture, or conservation purposes, except for easement for underground utilities, shall be prohibited. Structures and buildings accessory to non-commercial recreational or conservation uses may be erected on common land only with planning board review and approval.
13) None of the dedicated Open Space shall be used for future building lots and shall remain vegetated.
14) During street construction, the entire right of way shall not be cleared unless the clearing is for necessary utilities, drainage or other infrastructure beyond the right of way limits. Following street construction, the developer or contractor shall conduct a thorough clean-up of stumps and other debris that was created from the construction process, from the entire right of way. No on-site stump and/or debris burial sites are being proposed.
15) The forested buffer will be marked in the center of each of its exterior boundaries and monumented with capped 5/8" rebar labeled "Cornerstone PLS 2069" at each of its corners. The buffer markings will comply with the current Maine Department of Environmental Protection standards set forth in their stormwater BMP manual.
16) All driveways will have a 15" HDPE culvert centered in the drainage swale & require entrance permits from the Road Commissioner.
17) Trail systems will be completed prior to any certificate of occupancy permits being issued.
18) Setback lines, zone boundaries and information, density calculations, stormwater, erosion control, road design, proposed improvements and their locations, site distances, flood boundaries and lot, easement and open space design were provided to this surveyor in CAD format by project engineer Charles Burnham.
19) All lots are to be for detached single family residential units.
20) Electrical transformers and all common utilities will be installed within the right of way of the subdivision access road.

NET DEVELOPMENT DENSITY CALCULATION:

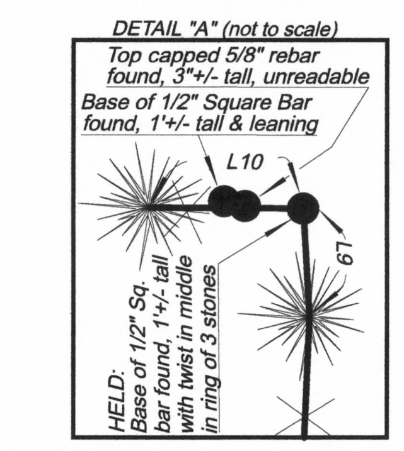
TOTAL PARCEL AREA		1,552,224 S.F.
AREAS UNSUITABLE IN NATURAL STATE:		
-- WETLANDS/WATERCOURSES & FLOODPLAIN	115,161 S.F.	
-- STEEP SLOPES OVER 20%	25,126 S.F.	
AREAS REMOVED FOR:		
-- ACCESS ROAD/R.O.W. (15% OF TOTAL PARCEL AS REQUIRED)		232,834 S.F.
-- EXISTING EASEMENTS (none outside of proposed access road r.o.w.)		
REMAINING LAND		1,179,103 S.F.

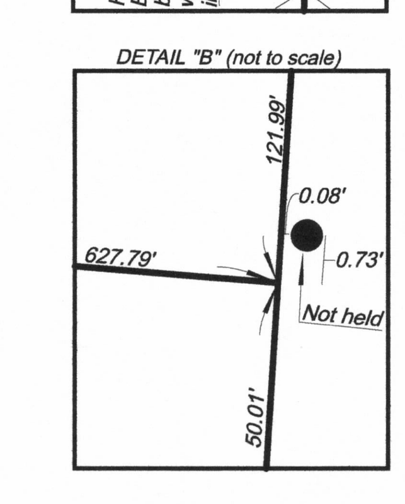
MINIMUM DWELLING UNIT AREA IN RURAL, RESIDENTIAL, AND AGRICULTURAL ZONE = 90,000 S.F.
NET DEVELOPMENT DENSITY CALCULATION: 1,179,103/ 90,000 = 13.1 UNITS
PROPOSED LOTS = 13 UNITS

ZONING SUMMARY

CURRENT USE: UNDEVELOPED
PROPOSED USE: 13 LOT-CLUSTERED SUBDIVISION
ZONE - RURAL, RESIDENTIAL, AND AGRICULTURAL, RESOURCE PROTECTION AND AQUIFER PROTECTION OVERLAY

APPLICABLE SPACE AND BULK REGULATIONS	MINIMUM	PROVIDED
LOT AREA	45,000 S.F.	> 45,000 S.F.
STREET FRONTAGE	150'	≥ 150'
CUL-DE-SAC FRONTAGE	N/A	N/A
LOT WIDTH	N/A	N/A
PRINCIPAL STRUCTURE:		
FRONT SETBACK	50 FT.	50 FT.
SIDE SETBACK	20 FT.	20 FT.
REAR SETBACK	20 FT.	20 FT.
OPEN SPACE	776,112 S.F. (50%)	787,323 S.F. (50.7%)
OPEN SPACE NOT WETLANDS	388,025 S.F. (50%)	598,351 S.F. (76%)





LEGEND

- ● IRON PIPE OR PIN FOUND, AS NOTED
- ○ IRON PIN SET IN 2018 (capped 5/8" rebar labeled "Cornerstone PLS 2069")
- ◎ IRON PIN TO BE SET (capped 5/8" rebar labeled "Cornerstone PLS 2069")
- EXISTING UTILITY POLE FOUND
- \+ EXISTING GUY ANCHOR FOUND (not all located/shown)
- CONIFEROUS TREE WITH WIRE FENCE FOUND
- DECIDUOUS TREE WITH WIRE FENCE FOUND
- DRILLED WELL CASE FOUND
- EXISTING LARGE DIAMETER STONE FOUND
- ✳✳✳ REMAINS OF BARBED AND/OR BOX WIRE FENCE FOUND (see Note #3)
- —— DH —— APPROXIMATE LOCATION EXISTING OVERHEAD UTILITIES
- S ——— S APPROXIMATE LOCATION OF MAPPED STREAM
- N/F NOW OR FORMERLY OF
- 2008/229 (TYPICAL FORM) ANDROSCOGGIN COUNTY REGISTRY OF DEEDS BOOK AND PAGE NUMBER.
- TP-11 POTENTIAL TEST PIT AND SYSTEM LOCATIONS
- REMAINS OF STONE WALL FOUND
- APPROXIMATE EDGE OF EXISTING PAVEMENT
- APPROXIMATE EDGE OF MAPPED WETLAND (see Note #4).

GRAPHIC SCALE: 1" = 100 feet.
100' 0' 50' 100' 200' 400'

Certification to: Jonathan M. Snell, Jr.
In the best opinion of the surveyor, this survey work has been performed in accordance with the Standards of Practice as defined by the Department of Professional and Financial Regulations Board of Licensure for Professional Land Surveyors Rules, Chapter 90, effective April 1, 2001, except as noted.

1) See Note #3 ______________
2) ______________
3) ______________

Mr. Jan E. Boucher PLS 2069

Revision #1: Revised Note 16, added Note 20 and removed underground utility graphics and reference in legend, added snow storage area note at turnaround, 11-28-2022.

DEER CREEK CROSSING FINAL SUBDIVISION PLAN

Prepared for

JONATHAN M. SNELL, JR.

Owner of record of Parcel 32A = Dean Smith per deeds recorded in the Androscoggin County Registry of Deeds in Book 9388, Page 325 & Book 9835, Page 157.
Residence Address = 98 Patriot Way, Durham, Maine 04222.

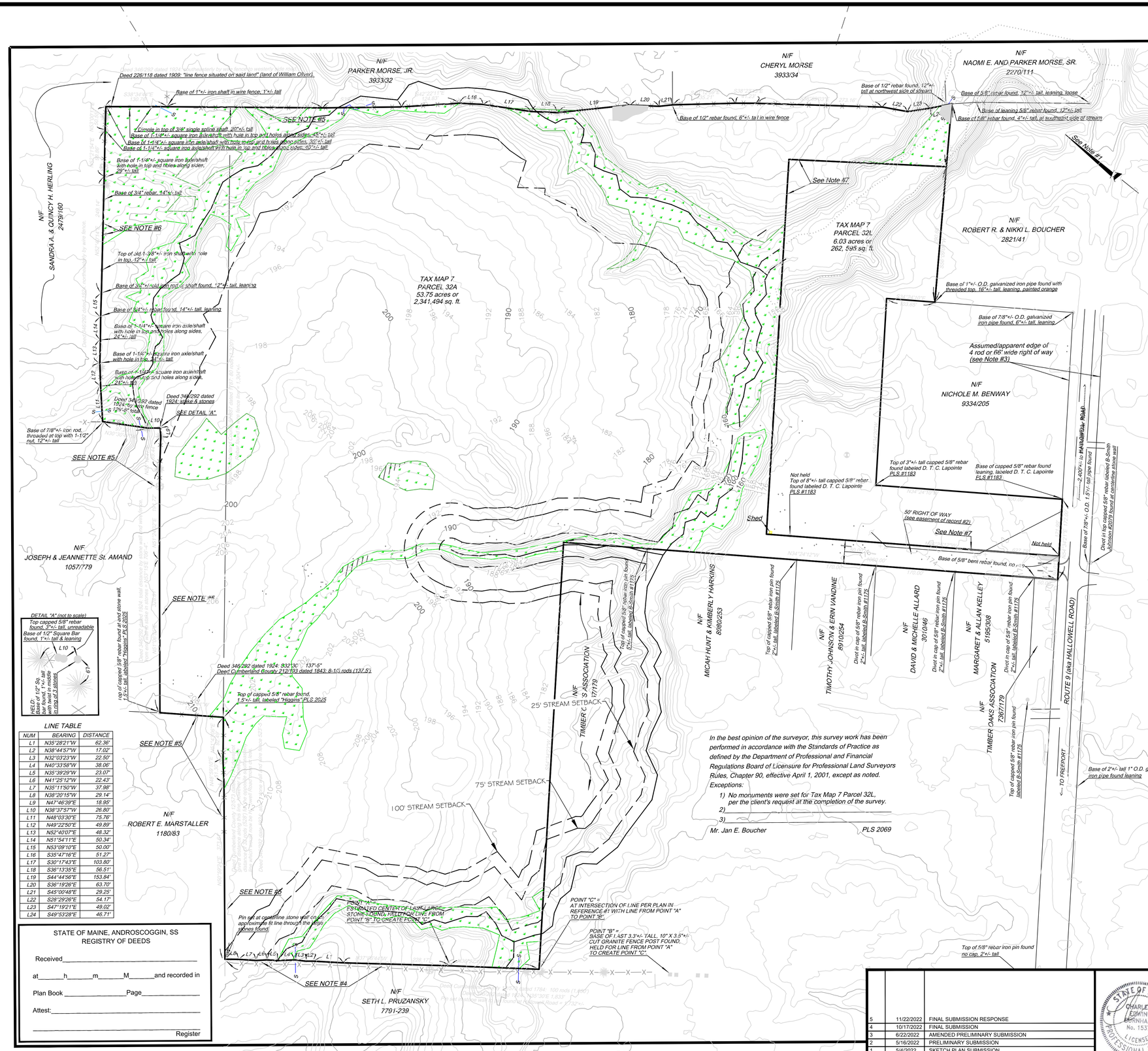
Owner of record of Parcel 32L = Jonathan M. Snell, Jr. & Mckenzie L. Rogers per deed recorded in the Androscoggin County Registry of Deeds in Book 11030, Page 220.
Residence Address = 735 Hallowell Rd, Durham, Maine 04222.

Project Applicant: Jack Doughty, 231 Flying Point Road, Freeport, Maine 04032.

Project address: Route 9, Durham, Maine 04222.
Date: October 17, 2022 Job #202205, Field Book D-13

Prepared by

CORNERSTONE PROFESSIONAL LAND SURVEYING, INC.
28 CORNERSTONE DRIVE
BOWDOIN, MAINE 04287
Web = www.cornerstoneprofessionallandsurveying.com Tel = 1-207-666-8015



NUM	BEARING	DISTANCE
L1	N35°28'21"W	62.36'
L2	N38°44'57"W	17.02'
L3	N32°03'23"W	22.50'
L4	N40°33'58"W	38.06'
L5	N35°39'29"W	23.07'
L6	N41°26'12"W	22.43'
L7	N35°11'50"W	37.98'
L8	N38°20'15"W	29.14'
L9	N47°46'39"E	18.95'
L10	N38°37'57"W	26.80'
L11	N48°03'30"E	75.76'
L12	N49°22'50"E	49.89'
L13	N52°40'07"E	48.32'
L14	N51°54'11"E	50.34'
L15	N53°09'10"E	50.00'
L16	S35°47'16"E	51.27'
L17	S30°17'43"E	103.80'
L18	S36°13'35"E	56.51'
L19	S44°44'56"E	153.84'
L20	S36°19'26"E	63.70'
L21	S45°00'48"E	29.25'
L22	S28°29'26"E	54.17'
L23	S47°19'21"E	49.02'
L24	S49°53'28"E	46.71'

STATE OF MAINE, ANDROSCOGGIN, SS
REGISTRY OF DEEDS

Received_____

at_____h_____m_____M_____and recorded in

Plan Book _____Page_____

Attest:_____

_____
Register

In the best opinion of the surveyor, this survey work has been performed in accordance with the Standards of Practice as defined by the Department of Professional and Financial Regulations Board of Licensure for Professional Land Surveyors Rules, Chapter 90, effective April 1, 2001, except as noted.
Exceptions:
1) No monuments were set for Tax Map 7 Parcel 32L, per the client's request at the completion of the survey.
2)
3)

Mr. Jan E. Boucher *PLS 2069*

NORTH

REFERENCES

1) *Final revised plan of Timber Oaks subidivison made for Dewitt Corp. by Brian Smith Surveying, Inc. dated 7/25/1988 and recorded in the Androscoggin County Registry of Deeds in Plan Book 34, Page 32.*
2) *Plan of property survey made for Russell A. Wing, Sr. et. al., by Wright & Pierce, dated 12/9/1963 and recorded in the Androscoggin County Registry of Deeds in Plan Book 16, Page 36.*
3) *Noyes plan of Royalsborough, dated 5/22/1766, an image of which was found at the United States Library of Congress Division of Maps, with a recording stamp date of 11/8/1935, and with several catalogue numbers including "74-694805," "480192," and "G3734-D8G46-1766-N6-Vault."*
4) *Layouts of Route 9 as recorded in the Cumberland County Commissioners records in Volume 3, Page 329 dated 1805 (no width given) and in the Androscoggin County Commissioners Records in Volume 4, Page 575 dated 1909 (varying widths).*
5) *Plan of Foxboro Woods subidivison made for Coastal Construction Services and Bowie Home Construction by Brian Smith Surveying, Inc. dated 6/12/2002 and recorded in the Androscoggin County Registry of Deeds in Plan Book 42, Page 85.*

EASEMENTS OF RECORD

1) *Utility easement as recorded in the Androscoggin County Registry of Deeds in Book 5919, Page 338.*
2) *Fifty foot wide common right of way over Parcel 32A for access to lot 32L, as recorded in the Androscoggin County Registry of Deeds in Book 9381, Page 313.*

NOTES

1) *Bearings are based upon those shown on the plan in Reference #1.*
2) *Equipment used: Nikon DTM 520 Total Station Theodolite and internal data collector.*
3) *The right of way limits of Route 9 shown hereon are based upon those shown on the plan in Reference #1, and the monuments found along said way as shown hereon. This surveyor was unable to re-locate the way as it is specifically described in the layouts in Reference #4, due in part to a lack of original monumentation and the poor quality of the descriptions in said layouts. The surveyor believes that the remains of the existing old stone walls located along portions of the way are the best existing evidence of the long standing occupied right of way limits in those locations (reference is made to to M.R.S.A. Title 23, Chapter 301, Subchapter 6, SS 2952). The plan in Reference #1 appears to use those walls to best fit a four rod wide right of way along the frontage of the locus parcel reasonably well, and those limits have been held as an assumed/apparent edge of right of way for the purposes of this survey.*
4) *The area lying between the remains of existing wire fence and the apparent southwesterly boundary line of the locus parcel (and of the Timber Oaks subdivision shown on the plan in Reference #1), along land now or formerly of Seth L. Pruzansky, shown hereon as being defined by large uncut stones and granite fence posts as they run, appears to be an area of questionable title. This surveyor believes that the uncut stones and granite fence posts represent the best evidence of the long standing possession/occupation line. However, the wire fence line running just southwesterly of the stones also appears to represent a potential line of long standing possession/occupation, as evidenced by its use as a boundary line on the plan in Reference #2. This surveyor recommends review by an attorney, and the establishment of this boundary (if possible) by quit-claim deed exchange between abutting property owners and any other relevant parties.*
5) *This surveyor believes that the remains of stone wall and/or wire fence lines as they run along lands now or formerly of Marstaller, St. Amand and Morse, represent physical evidence of long standing lines of possession/occupation, and the best evidence existing today of the location of these boundaries. Courses and distances shown hereon are for area and closure calculations, and to indicate major angle points in the wall and fence remains as located.*
6) *The area lying between the existing wire fence line remains, and the line defined by iron pipes, shafts and pins (of varying descriptions), along land now or formerly of Herling as shown hereon, appears to be an area of questionable title. The wire fence line (which is described in the locus deeds beginning in 1924 in Book 346, Page 292) appears to have been mostly removed, and the surveyor was only able to locate a few short segments of that fence (as shown hereon). It appears likely that the line of iron pipes, shafts and pins was established at some time after 1924, since the deed states that the description was taken from a survey made that day by William Plummer, C.E., and it seems likely that if the pins had existed at the time of this survey, Mr. Plummer would not have found them and noted them as being an evident line of occupation. The line of pipes, shafts and pins appear to be of significant age and to represent the current line of possession/occupation along this boundary. A deed in the Herling chain in Book 2479/160 dated 1989 calls for an "iron" to have been set at each of the corners of Herling that abut the locus parcel. Since some of the pins found on the common line are rebar, it is possible that the line of pins and corner pins were set at or near the time of this deed over 38 years ago. For these reasons, the surveyor recommends review by an attorney and the establishment of this boundary (if possible) by quit-claim deed exchange between abutting property owners, and any other relevant parties.*
7) *The deed creating Tax Map 7 Parcel 32L, from Dewitt Corp. to Dewitt Builders, Inc., contains a metes and bounds description that has a relatively large closure error. That parcel as shown hereon, is based in part upon a composite of the courses and distances stated in said deed, a call for a 50' right of way, and unrecorded documents found on file at the Durham Town Office, describing a similar but smaller 5.06 acre parcel surveyed by Daniel T. C. Lapointe. The lines as shown hereon for this parcel are therefore recommended for agreement.*

LEGEND

- ● IRON PIPE OR PIN FOUND, AS NOTED
- ○ IRON PIN SET (capped 5/8" rebar labeled "Cornerstone PLS 2069")
- EXISTING UTILITY POLE FOUND
- \+ EXISTING GUY ANCHOR FOUND (not all located/shown)
- CONIFEROUS TREE WITH WIRE FENCE FOUND
- DECIDUOUS TREE WITH WIRE FENCE FOUND
- ■ BASE OF TALL, OLD CUT GRANITE FENCE POST FOUND
- DRILLED WELL CASE FOUND
- ∅ EXISTING LARGE DIAMETER STONE FOUND
- REMAINS OF BARBED AND/OR BOX WIRE FENCE FOUND (see Notes #3, 4, 5, and 6)
- REMAINS OF STONE WALL FOUND
- APPROXIMATE EDGE OF EXISTING PAVEMENT
- APPROXIMATE EDGE OF EXISTING GRAVEL DRIVE OR WOODS ROAD/TRAIL
- APPROXIMATE EDGE OF TREELINE (not all located or shown)
- APPROXIMATE LOCATION OVERHEAD UTILITIES (not all located/shown)
- S APPROXIMATE LOCATION OVERHEAD UTILITIES (not all located/shown) S
- N/F NOW OR FORMERLY OF
- 2008/229 (TYPICAL FORM) ANDROSCOGGIN COUNTY REGISTRY OF DEEDS BOOK AND PAGE NUMBER.

GENERAL NOTES:

1. WETLAND DELINEATION PERFORMED BY ALEX FILAMORE.
2. BOUNDARY SURVEY PROVIDED BY CORNERSTONE PROFESSIONAL SURVEYING.
3. TOPOGRAPHIC INFORMATION TAKEN FROM GIS.
4. AERIAL IMAGE GENERATED BY GRANGE ENGINEERING LLC.

SCALE

0 50 100 200

SCALE in FEET
1"=100'

REV	DATE	DESCRIPTION
5	11/22/2022	FINAL SUBMISSION RESPONSE
4	10/17/2022	FINAL SUBMISSION
3	6/22/2022	AMENDED PRELIMINARY SUBMISSION
2	5/16/2022	PRELIMINARY SUBMISSION
1	5/4/2022	SKETCH PLAN SUBMISSION

REVISIONS

STATE OF MAINE — CHARLES EDWIN BURNHAM No. 15377 — LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
EXISTING CONDITIONS PLAN

Jack Doughty
231 Flying Point Road
Freeport, Maine 04032

Grange Engineering LLC
241 Rowe Station Road
New Gloucester, ME 04260
Tel: 207.712.6990

DRAWN: CB	DATE: OCTOBER 19, 2022
DESIGNED: CB	SCALE: 1" = 100'
CHECKED: CB	JOB NO. 1
FILE NAME:	
SHEET: C-100	

C:\Users\Grange Engineering\Desktop\Workbench\Jonny Snell\Hallowell Subdivision\Drawing\Hallowell Subdivision Plan Final.dwg

NET DEVELOPMENT DENSITY CALCULATION:

TOTAL PARCEL AREA	1,552,102 S.F.
AREAS UNSUITABLE IN NATURAL STATE:	
-- WETLANDS/WATERCOURSES & FLOODPLAIN	115,161 S.F.
-- STEEP SLOPES OVER 20%	25,126 S.F.
AREAS REMOVED FOR:	
-- ACCESS ROAD/R.O.W.*	232,815 S.F.
-- EASEMENTS*	
REMAININGLAND	1,179,000 S.F.

MINIMUM DWELLING UNIT AREA IN RURAL, RESIDENTIAL, AND AGRICULTURAL ZONE = 90,000 S.F.

NET DEVELOPMENT DENSITY CALCULATION: 1,179,000/ 90,000 = 13.1 UNITS

PROPOSED LOTS = 13 UNITS

ZONING SUMMARY:

CURRENT USE: UNDEVELOPED
PROPOSED USE: 13 LOT-CLUSTERED SUBDIVISION

ZONE - RURAL, RESIDENTIAL, AND AGRICULTURAL, RESOURCE PROTECTION AND AQUIFER PROTECTION OVERLAY

APPLICABLE SPACE AND BULK REGULATIONS	MINIMUM	PROVIDED
LOT AREA	45,000 S.F.	> 45,000 S.F.
STREET FRONTAGE	150'	> 150'
CUL-DE-SAC FRONTAGE	N/A	N/A
LOT WIDTH	N/A	N/A
PRINCIPAL STRUCTURE:		
FRONT SETBACK	50 FT.	50 FT.
SIDE SETBACK	20 FT.	20 FT.
REAR SETBACK	20 FT.	20 FT.
OPEN SPACE	776,051 S.F. (50%)	784,025 S.F. (51%)
OPEN SPACE NOT WETLANDS	388,025 S.F. (50%)	598,351 S.F. (76%)

GENERAL NOTES:

1. WETLAND DELINEATION WAS PERFORMED BY ALEX FINAMORE.
2. CONTOURS ARE FROM GIS.
3. EACH LOT WILL BE LIMITED TO 20,000 SQUARE FEET OF DEVELOPED AREA (LAWN INCLUDED)
4. THE SIDE SETBACKS WILL REMAIN VEGETATED. IF THE SIDE SETBACKS ARE CLEARED DURING THE GRADING OF THE LOTS OR ROAD THE SAME NUMBER OF TREES THAT WERE REMOVED WILL BE REPLANTED.
5. TRAIL CONSTRUCTION WILL BE LIMITED TO THE REMOVAL OF TREES SMALLER THAN 3-INCHES IN DIAMETER. ANY STREAM CROSSING WILL SPAN THE WIDTH OF THE STREAM BED BY A MINIMUM OF 3' ON EITHER SIDE OF THE STREAM.
6. NO DUG WELLS ARE PERMITTED ON ANY PART OF THE PROPERTY.
7. THERE IS A 100' SETBACK FROM ALL STREAMS ON THE PROPERTY.
8. ALL RESIDENTIAL STRUCTURES SHALL HAVE SPRINKLERS IN ACCORDANCE WITH THE MOST RECENT STATE FIRE CODES.
9. ANY STONE WALLS MOVED DURING THE CONSTRUCTION OF THE ROAD OR RESIDENTIAL LOTS WILL NEED TO BE RELOCATED ON SITE.
10. OPEN SPACE SHALL REMAIN VEGETATED.
11. FURTHER SUBDIVISION OF THE OPEN SPACE AND ITS USE FOR THAN NONCOMMERCIAL RECREATION, AGRICULTURE, OR CONSERVATION PURPOSES, EXCEPT FOR EASEMENTS FOR UNDERGROUND UTILITIES, SHALL BE PROHIBITED. STRUCTURES AND BUILDINGS ACCESSORY TO NON-COMMERCIAL RECREATIONAL OR CONSERVATION USES MAY BE ERECTED ON COMMON LAND ONLY WITH PLANNING BOARD REVIEW AND APPROVAL.
12. ALL DEDICATED OPEN SPACE SHALL NOT BE USED FOR FUTURE BUILDING LOTS.
13. DURING STREET CONSTRUCTION, THE ENTIRE RIGHT OF WAY SHALL NOT BE CLEARED UNLESS CLEARING IS NECESSARY FOR UTILITIES, DRAINAGE OR OTHER INFRASTRUCTURE NECESSITIES BEYOND THE CLEAR ZONE. FOLLOWING STREET CONSTRUCTION, THE DEVELOPER OR CONTRACTOR SHALL CONDUCT A THOROUGH CLEAN-UP OF STUMPS AND OTHER DEBRIS FROM THE ENTIRE RIGHT OF WAY CREATED DURING THE STREET CONSTRUCTION PROCESS. IF ON-SITE DISPOSAL OF THE STUMPS AND DEBRIS IS PROPOSED, THE SITE SHALL BE INDICATED ON THE PLAN, AND BE SUITABLY COVERED WITH FILL AND TOPSOIL, LIMED, FERTILIZED, AND SEEDED.
14. FORESTED BUFFERS WILL BE MARKED IN THE CENTER OF EACH LIMIT AND PINNED AT THE CORNERS. THE BUFFER MARKINGS WILL COMPLY WITH THE CURRENT MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS SET FORTH IN THEIR STORMWATER BMP MANUAL.
15. ALL DRIVEWAYS WILL HAVE A 15" HDPE CULVERT CENTERED IN THE DRAINAGE SWALE.
16. TRAIL SYSYEM WILL BE COMPLETED PRIOR TO ANY CERTIFICATE OF OCCUPANCY PERMITS BEING ISSUES.

REV	DATE	DESCRIPTION
5	11/22/2022	FINAL SUBMISSION RESPONSE
4	10/17/2022	FINAL SUBMISSION
3	6/22/2022	AMENDED PRELIMINARY SUBMISSION
2	5/16/2022	PRELIMINARY SUBMISSION
1	5/4/2022	SKETCH PLAN SUBMISSION

REVISIONS

STATE OF MAINE — CHARLES EDWIN BURNHAM No. 15377 — LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
MAP 7 LOT 32A
OVERALL SITE LAYOUT PLAN

Jack Doughty
231 Flying Point Road
Freeport, Maine 04032

Grange Engineering LLC
241 Rowe Station Road
New Gloucester, ME 04260
Tel: 207.712.6990

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NORTH

LOT 3

LOT 2

LOT 1

OPEN SPACE

DRAINAGE SWALE

CULVERT 2
15" HDPE
INV IN - 170.4
INV OUT - 170.0
LENGTH - 40'

UNDERDRAINED SOIL FILTER

UD5F OUTLET
CAP OUTLET AND DRILL 0.75" HOLE TO CONTROL OUTLET
4" PVC
INV OUT - 166.0

UD5F OUTLET 2
10' STONE SPILLWAY
INV - 168.5

ELEV - 172'

STREAM CROSSING
60" ARCH
INV IN - 162.0
INV OUT - 161.5
LENGTH - 70'

INSTALL CONSTRUCTION ENTRANCE

N/F
NICHOLE M. BENWAY
9334/205

S54°34'20"W

N34°24'10"W

N64°34'21"E 172.00'

121.00'

637.78'

50.00'

LOT 4

WETLAND IMPACTS
1,835 SQFT

LOT 12

LOT 13

LOT 5

CULVERT 3
36" HDPE (BURIED 18")
INV IN (TOP OF FILL) - 194.0
INV OUT (TOP OF FILL) - 191.5
LENGTH - 70'

OPEN SPACE

LOT 1

DRAINAGE SWALE

LOT 10

CLEARING LIMITS

DRAINAGE SWALE

INSTALL EROSION CONTROL BERM
ON THE DOWN HILL SIDE OF ALL DISTURBED AREAS

LOT 7

LOT 9

DRY HYDRANT W/ 2 BOLLARDS (SEE DETAILS)

FIRE POND (SEE DETAILS)

FORESTED BUFFER

CULVERT 4
15" HDPE
INV IN - 197.0
INV OUT - 196.5
LENGTH - 40'

LOT 8

55' STONE LEVEL SPREADER
ELEV- 188.5

OPEN SPACE

TIMBER OAKS ASSOCIATION
7367

N/F
MICAH HUNT & KIMBERLY HARKINS
8980/253

N/F
TIMOTHY JOHNSON & ERIN VANDINE
8910/254

N/F
DAVID & MICHELLE ALLARD
3010/46

N/F
MARGARET & ALLAN KELLEY
5195/308

N/F
TIMBER OAKS ASSOCIATION
7367/179

GENERAL NOTES:

1. EROSION CONTROL MAT SHALL BE INSTALLED ALONG ALL SLOPES LONGER THAN 12 FEET AND GREATER THAN 3:1 SLOPE. MATS SHALL BE INSTALLED IN ACCORDANCE WITH THE MAINE DEP EROSION CONTROL BEST MANAGEMENT PRACTICES.

0 25 50 100
SCALE in FEET
1"=50'

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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURNHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
GRADING AND EROSION CONTROL PLAN

Jack Doughty
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241 Rowe Station Road
New Gloucester, ME 04260
Tel: 207.712.6990

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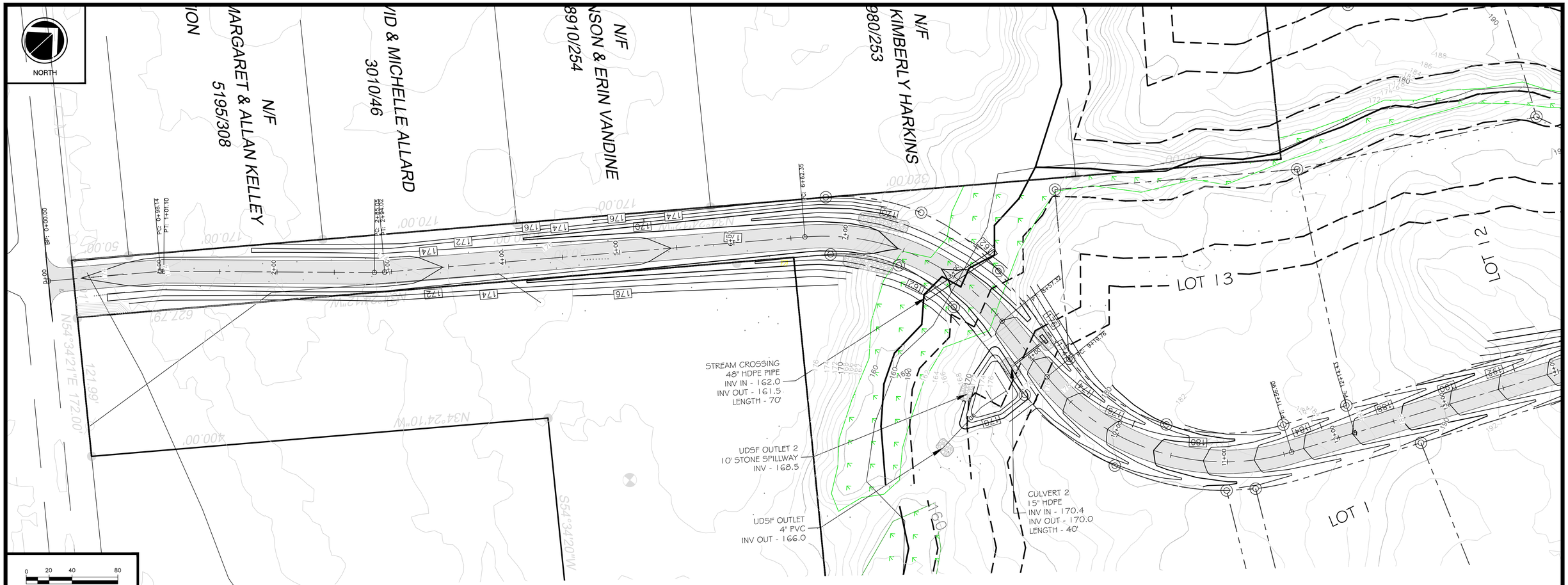
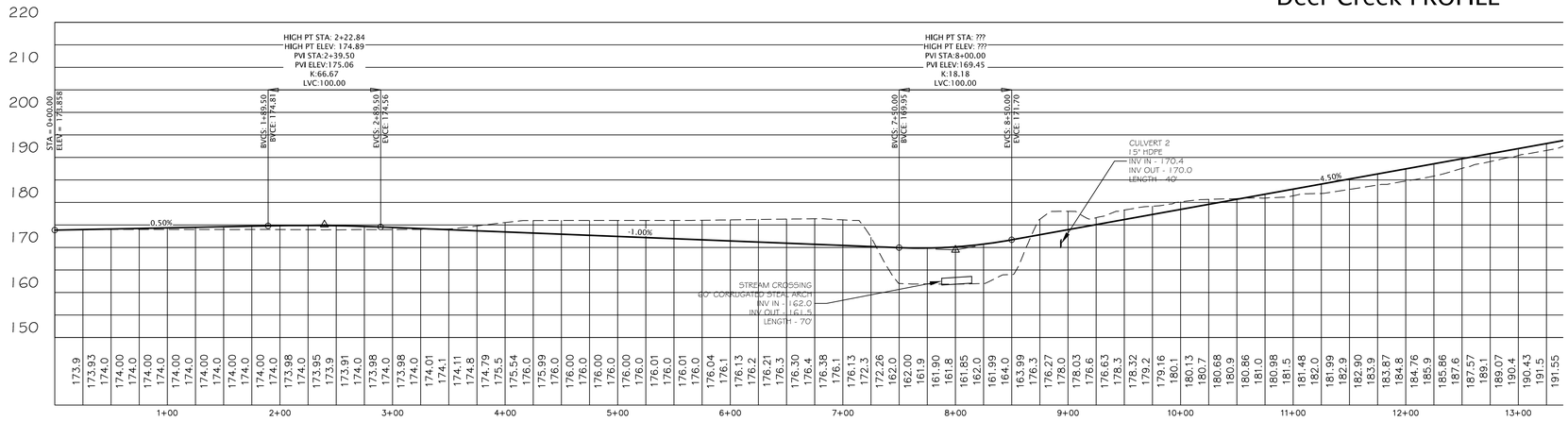


ROADWAY PLAN VIEW: STA. 0+00 ~ 13+00

Deer Creek PROFILE



ROADWAY PROFILE VIEW: STA. 0+00 ~ 13+00

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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURNHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
PLAN AND PROFILE

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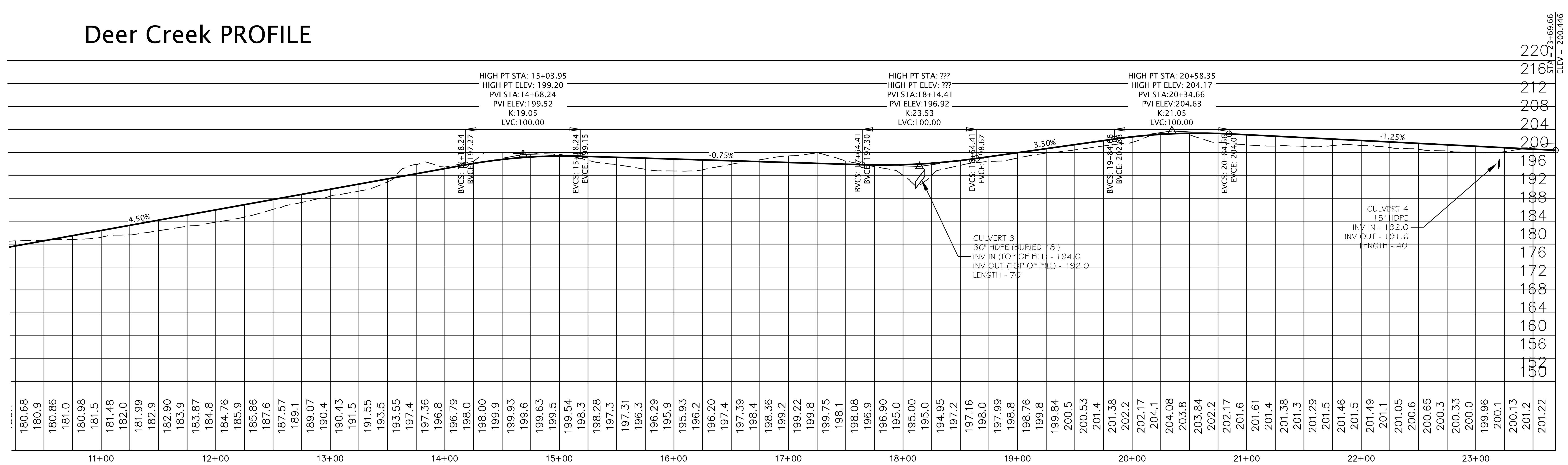
NORTH
LOT 2
LOT 12
LOT 3
LOT 4
LOT 5
LOT
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
PC: 14+68.24
CULVERT 3
36" HDPE (BURIED 18")
INV IN (TOP OF FILL) - 194.0
INV OUT (TOP OF FILL) - 191.5
LENGTH - 70'
CULVERT 4
15" HDPE
INV IN - 197.0
INV OUT - 196.5
LENGTH - 40'
FORESTED BUFFER
20' STONE LEVEL SPREADER
ELEV. 193.0
S54°34'23"W (914.51')
SCALE in FEET
1"=40'

ROADWAY PLAN VIEW: STA. 13+00 ~ 23+70

Deer Creek PROFILE


HIGH PT STA: 15+03.95
HIGH PT ELEV: 199.20
PVI STA:14+68.24
PVI ELEV:199.52
K:19.05
LVC:100.00
HIGH PT STA: ???
HIGH PT ELEV: ???
PVI STA:18+14.41
PVI ELEV:196.92
K:23.53
LVC:100.00
HIGH PT STA: 20+58.35
HIGH PT ELEV: 204.17
PVI STA:20+34.66
PVI ELEV:204.63
K:21.05
LVC:100.00
4.50%
-0.75%
3.50%
-1.25%
CULVERT 3
36" HDPE (BURIED 18")
INV IN (TOP OF FILL) - 194.0
INV OUT (TOP OF FILL) - 192.0
LENGTH - 70'
CULVERT 4
15" HDPE
INV IN - 192.0
INV OUT - 191.6
LENGTH - 40'
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00

ROADWAY PROFILE VIEW: STA. 13+00 ~ 23+70

SCALE

VERTICAL - 1" = 5'
HORIZONTAL - 1" = 40'

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REVISIONS

STATE OF MAINE
CHARLES EDWIN BURNHAM
No. 15377
LICENSED
PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE

PLAN AND PROFILE

Jack Doughty
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A. SOIL EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, SILTATION FENCE, EROSION CONTROL MIX, STONE CHECK DAMS, HAY BALE BARRIERS, CATCH BASIN SEDIMENT COLLECTION BAGS, EROSION CONTROL BLANKET, AND TEMPORARY SEEDING AND MULCHING AS REQUIRED. PERMANENT DEVICES INCLUDE THE USE OF RIP RAP AT EXPOSED STORM DRAIN AND CULVERT INLETS AND OUTLETS, AND PERMANENT VEGETATION.

GENERAL

1. IT IS ANTICIPATED THAT CONSTRUCTION MAY BEGIN AS SOON AS POSSIBLE FOLLOWING RECEIPT OF NECESSARY PERMITS.
2. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION & SEDIMENT CONTROL BMPS - MANUAL FOR DESIGNERS AND ENGINEERS (2016), OR AS CURRENTLY REVISED OR U.S. ENVIRONMENTAL PROTECTION AGENCY PUBLICATION 832/R-92-005 (SEPTEMBER, 1992) STORM WATER MANAGEMENT FOR CONSTRUCTION, CHAPTER 3, WHICHEVER IS MORE STRINGENT.
3. ANY ADDITIONAL EROSION AND SEDIMENTATION CONTROL DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERSONNEL AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/ REPLACEMENT/ MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF ACCEPTABLE PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:
   a. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS A 90% COVER OF THE DISTURBED AREA WITH MATURE, HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.
   b. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THE COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.
   c. FOR MULCHED AREAS, PERMANENT MULCHING MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL. EROSION CONTROL MIX MAY BE USED AS MULCH FOR PERMANENT STABILIZATION ACCORDING TO THE APPROVED APPLICATION RATES AND LIMITATIONS.
   d. FOR AREAS STABILIZED WITH RIP RAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIP RAP HAVE AN APPROPRIATE BACKING OF A WELL-GRADED GRAVEL OR APPROVED GEOTEXTILE TO PREVENT SOIL MOVEMENT FROM BEHIND THE RIP RAP. STONE MUST BE SIZED APPROPRIATELY.
   e. PAVED AREAS: FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE COMPACTED GRAVEL SUBBASE IS COMPLETED.
   f. FOR OPEN CHANNELS, PERMANENT STABILIZATION MEANS THE CHANNEL IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH WELL-GRADED RIP RAP, OR WITH ANOTHER NON-EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE LINING, UNDERCUTTING OF THE BANKS, OR DOWN CUTTING OF THE CHANNEL.

B. EROSION AND SEDIMENTATION CONTROL MEASURES

1. PRIOR TO THE BEGINNING OF CONSTRUCTION, THE TEMPORARY SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, OR ENGINEER. SILT FENCE SHALL BE INSTALLED ALONG THE DOWNGRADIENT SIDE OF CONSTRUCTION WORK AREAS, WITH LOCATIONS BEING ADJUSTED ALONG WITH THE CONSTRUCTION PHASING AREAS. THE CONTRACTOR MAY USE EROSION MIX IN PLACE OF SINGLE SILT FENCE BARRIER. IN AREAS WHERE THE GRADE IS STEEPER THAN 8% SILT FENCE AND EROSION CONTROL MIX SHOULD BE USED.
2. THE SILT FENCE SHALL BE INSTALLED PER THE DETAIL PROVIDED IN THE PLAN SET AND INSPECTED IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST WEEKLY IN THE ABSENCE OF SIGNIFICANT RAINFALL. ANY REQUIRED REPAIRS WILL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE SILT BARRIERS. THIS SEDIMENT WILL BE SPREAD AND STABILIZED IN AREAS OF THE SITE NOT SUBJECT TO EROSION. THE CONTRACTOR SHALL MAKE REPAIRS IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE FENCE LINE. IF SUCH EROSION IS OBSERVED, THE CONTRACTOR SHALL TAKE PROACTIVE ACTION TO IDENTIFY THE CAUSE OF THE EROSION AND TAKE ACTION TO AVOID ITS REOCCURRENCE. PROPER PLACEMENT OF STAKES AND KEYING THE BOTTOM OF THE FABRIC INTO THE GROUND IS CRITICAL TO THE FENCE'S EFFECTIVENESS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THE FENCE, THE BARRIER SHALL BE REPLACED WITH A STONE CHECK DAM AND MEASURES TAKEN TO AVOID THE CONCENTRATION OF FLOWS NOT INTENDED TO BE DIRECTED TO THE SILT FENCE. SILT FENCE SHALL BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION.
3. TEMPORARY SEDIMENT SUMPS WILL PROVIDE SEDIMENTATION CONTROL FOR STORMWATER RUNOFF FROM DISTURBED AREAS DURING CONSTRUCTION UNTIL STABILIZATION HAS BEEN ACHIEVED.
4. A CONSTRUCTION ENTRANCE WILL BE CONSTRUCTED AT ALL ACCESS POINTS ONTO THE SITE TO PREVENT TRACKING OF SOIL ONTO ADJACENT LOCAL ROADS AND STREETS.
5. SILT LOGS MAY BE INSTALLED IN LIEU OF STONE CHECK DAMS PROVIDED THE DEVICES ARE WELL ANCHORED, AND IF PRIOR APPROVAL IS RECEIVED FROM THE PROJECT ENGINEER.
6. SILTSACKS™ WILL BE UTILIZED IN CATCH BASINS IN OR NEAR WORK AREAS AT RISK FROM RECEIVING TRANSPORTED SEDIMENT.
7. ALL CATCH BASINS AND FIELD INLETS, NEW OR EXISTING, THAT MAY RECEIVE RUNOFF FROM DISTURBED AREAS MUST BE PROTECTED DURING CONSTRUCTION.
8. REMOVAL OF SOD, TREES, BUSHES AND OTHER VEGETATION AND SOIL DISTURBANCE WILL BE KEPT TO A MINIMUM WHILE ALLOWING PROPER SITE DEVELOPMENT.
9. GRUBBINGS AND ANY UNUSABLE TOPSOIL SHALL BE STRIPPED AND REMOVED FROM THE PROJECT SITE AND DISPOSED OF IN AN APPROVED MANNER.
10. ANY SUITABLE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR REUSE IN FINAL GRADING. TOPSOIL WILL BE STOCKPILED IN A MANNER SUCH THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE WILL RESULT. IF A STOCKPILE IS NECESSARY, THE SIDE SLOPES OF THE TOPSOIL STOCKPILE WILL NOT EXCEED 2:1. TOPSOIL STOCKPILES WILL BE TEMPORARILY SEEDED WITH AROOSTOOK RYE, ANNUAL OR PERENNIAL RYE GRASS WITHIN 7 DAYS OF FORMATION, OR TEMPORARILY MULCHED IF SEEDING CANNOT BE DONE WITHIN THE RECOMMENDED SEEDING DATES.
11. TEMPORARY DIVERSION BERMS AND DRAINAGE SWALES SHALL BE CONSTRUCTED AS NECESSARY TO PREVENT OFF-SITE DRAINAGE FROM ENTERING THE WORK AREA.
12. TEMPORARY STABILIZATION SHALL BE CONSTRUCTED WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOILS, PRIOR TO ANY RAIN EVENT, AND PRIOR TO ANY WORK SHUT DOWN LASTING MORE THAN ONE DAY. TEMPORARY STABILIZATION INCLUDES SEED, MULCH, OR OTHER NON-ERODABLE COVER.
13. TEMPORARY SEEDING SPECIFICATIONS: WHERE SEEDBED HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME, AND SEED. APPLY LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND 10-10-10 (N-P205-K20) FERTILIZER AT A RATE OF 600 LBS PER ACRE (13.8 LB. PER 1,000 SQUARE FEET). UNIFORMLY APPLY SEED AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY. RECOMMENDED TEMPORARY SEEDING DATES AND APPLICATION RATES ARE AS FOLLOWS:

    AROOSTOOK RYE: RECOMMENDED SEEDING DATES: 8/15 -10/1
    APPLICATION RATE: 112 LBS/ACRE
    ANNUAL RYE GRASS: RECOMMENDED SEEDING DATES: 4/1 - 7/1
    APPLICATION RATE: 40 LBS/ACRE
    PERENNIAL RYE GRASS: RECOMMENDED SEEDING DATES: 8/15 - 9/15
    APPLICATION RATE: 40 LBS/ACRE

14. PERMANENT SEEDING SPECIFICATION. IF A LANDSCAPE PLAN HAS BEEN PREPARED FOR THE PROJECT, SOIL PREPARATION AND SEED SPECIFICATIONS OF THAT PLAN SHALL SUPERSEDE THESE GENERAL PERMANENT SEEDING REQUIREMENTS. IT IS RECOMMENDED THAT PERMANENT SEEDING BE COMPLETED BETWEEN APRIL 1 AND JUNE 15 OF EACH YEAR. LATE SEASON SEEDING MAY BE DONE BETWEEN AUGUST 15 AND SEPTEMBER 15. AREAS NOT SEEDED OR WHICH DO NOT OBTAIN A SATISFACTORY GROWTH BY OCTOBER 1SHALL BE SEEDED WITH AROOSTOOK RYE OR MULCHED AT RATES PREVIOUSLY SPECIFIED. SEE WINTER CONDITIONS NOTES FOR SEEDING STABILIZATION AFTER NOVEMBER 1.
   a. APPLY TOPSOIL TO A MINIMUM DEPTH OF 4 INCHES. MIX TOPSOIL WITH THE SUBSOIL TO A MINIMUM DEPTH OF 6 INCHES.
   b. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TESTS. IN LIEU OF SOIL TESTS, APPLY GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE (138 LB. PER 1,000 SQUARE FEET) AND GRANULAR, COMMERCIAL-GRADE, 10-10-10 (N-P2O5-K2O) FERTILIZER AT A RATE OF 800 LBS PER ACRE (18.4 LBS PER1,000 SQUARE FEET).
   c. UNIFORMLY APPLY SEED MIXTURE AT THE RECOMMENDED SEEDING RATES AND DATES, APPLY HAY OR STRAW MULCH AT A RATE OF 2 TONS PER ACRES, AND ANCHOR AS NECESSARY.
   d. THE SEED MIXTURE FOR LAWN AND FILTRATION BASIN AREAS SHALL CONSIST OF SEEDS PROPORTIONED BY WEIGHT AS FOLLOWS:

      30% CREEPING RED FESCUE
      50% KENTUCKY BLUEGRASS
      20% ITALIAN/PERENNIAL RYE GRASS

   NOTE: SEED MIXTURE SHALL CONSIST OF AT LEAST TWO VARIETIES OF EACH TYPE OF GRASS. WHEN USED IN A FILTER BASIN, STORMWATER SHALL NOT BE DIRECTED TO THE BASIN UNTIL THE GRASS IS ESTABLISHED.
15. MULCH ALL AREAS SEEDED SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE.
16. DITCH LININGS, STONE CHECK DAMS, AND RIP RAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF CULVERT.
17. RIP RAP REQUIRED AT CULVERTS AND STORM DRAIN INLETS AND OUTLETS SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE.
18. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 15%, IN THE BASE OF DITCHES NOT OTHERWISE PROTECTED, AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (E.G. WETLANDS AND WATER BODIES). EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
19. TEMPORARY CONTROL MEASURES, SUCH AS SILT FENCE, SHALL BE REMOVED WITHIN 30 DAYS AFTER PERMANENT STABILIZATION IS ATTAINED.

C. SPECIAL MEASURES FOR SUMMER CONSTRUCTION

DURING DRY SUMMER CONDITIONS, THE CONTRACTOR SHALL:

1. IMPLEMENT A PROGRAM TO APPLY DUST CONTROL MEASURES ON A DAILY BASIS EXCEPT THOSE DAYS WHERE PRECIPITATION IS SUFFICIENT TO SUPPRESS DUST FORMATION. THIS PROGRAM SHALL EXTEND TO AND INCLUDE SWEEPING OF ADJACENT STREETS.
2. SPRAY ANY MULCHES WITH WATER AFTER ANCHORING TO DAMPEN THE SOIL AND ENCOURAGE EARLY GROWTH. SPRAYING MAY BE REQUIRED SEVERAL TIMES. TEMPORARY SEED MAY BE REQUIRED UNTIL THE LATE SUMMER SEEDING SEASON.
3. COVER STOCKPILES OF FINE-GRAINED MATERIALS, OR EXCAVATED SOILS WHICH ARE SUSCEPTIBLE TO EROSION TO PROTECT FROM THE INTENSE, SHORT-DURATION STORMS WHICH ARE MORE PREVALENT IN THE SUMMER MONTHS.
4. TAKE ADDITIONAL STEPS NEEDED, INCLUDING WATERING, OR COVERING EXCAVATED MATERIALS TO CONTROL FUGITIVE DUST EMISSIONS TO MINIMIZE REDUCTIONS IN VISIBILITY AND THE AIRBORNE DISBURSEMENT OF FINE-GRAINED SOILS. THIS IS PARTICULARLY IMPORTANT GIVEN THE POTENTIAL PRESENCE OF SOIL CONTAMINANTS, AND THEIR PROXIMITY ALONG THE ADJACENT STREETS AND PROPERTIES.
5. THESE MEASURES MAY ALSO BE REQUIRED IN THE SPRING AND FALL DURING THE DRIER PERIODS OF THESE SEASONS.

D. WINTER CONDITIONS

1. "WINTER CONSTRUCTION" IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1ST THROUGH APRIL 15TH. IF AREAS WITHIN THE CONSTRUCTION ACTIVITY ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15TH, THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS. NO MORE THAN ONE ACRE OF THE SITE MAY BE WITHOUT STABILIZATION AT ONE TIME.
2. SILT FENCE: IN LIEU OF PROVIDING THE 4" X 4" TRENCH, FOR FROZEN GROUND, STONY SOIL, THE PRESENCE OF LARGE ROOTS, OR OTHER PROHIBITIVE CONDITIONS, THE BOTTOM 8" TO 12" OF THE FABRIC MAY BE LAID ON EXISTING GRADE AND BACK FILLED WITH STONE ANCHORING MATERIAL, AS SHOWN ON THE DRAWINGS.
3. HAY MULCH SHALL BE APPLIED AT TWICE THE STANDARD TEMPORARY STABILIZATION RATE. AT THE END OF EACH CONSTRUCTION DAY, AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE STABILIZED. MULCH MAY NOT BE SPREAD ON TOP OF SNOW.
4. AFTER NOVEMBER 1ST OR THE FIRST KILLING FROST FOR THE REGION AND BEFORE SNOW FALL, ALL EXPOSED AND DISTURBED AREAS NOT TO UNDERGO FURTHER DISTURBANCE ARE TO HAVE DORMANT SEEDING. THE DORMANT SEEDING METHOD: PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED PERMANENT SEED MIXTURE AT DOUBLE THE REGULAR SEEDING RATE, AND MULCH AND ANCHOR. DORMANT SEEDINGS NEED TO BE ANCHORED EXTREMELY WELL ON SLOPES, DITCH BASES AND AREAS OF CONCENTRATED FLOWS. DORMANT SEEDING REQUIRES INSPECTION AND RESEEDING AS NEEDED IN THE SPRING. ALL AREAS WHERE COVER IS INADEQUATE MUST BE IMMEDIATELY RESEEDED AND MULCHED AS SOON AS POSSIBLE.
5. ALL VEGETATED DITCH LINES THAT HAVE NOT BEEN STABILIZED BY NOVEMBER 1ST, OR WILL BE WORKED DURING THE WINTER CONSTRUCTION PERIOD, MUST BE STABILIZED WITH AN APPROPRIATE STONE LINING BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE UNLESS SPECIFICALLY RELEASED FROM THIS STANDARD BY THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
6. MULCH NETTING MUST BE USED TO ANCHOR MULCH ON ALL SLOPES GREATER THAN 8% UNLESS EROSION CONTROL BLANKETS OR EROSION CONTROL MIX IS BEING USED ON THESE SLOPES.

E. HOUSEKEEPING

1. SPILL PREVENTION. CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS STORED ON-SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORM WATER, AND APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING AND IMPLEMENTATION.
2. GROUNDWATER PROTECTION. DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS, ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL. DIKES, BERMS, SUMPS, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.
3. FUGITIVE SEDIMENT AND DUST. ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL.
4. DEBRIS AND OTHER MATERIAL. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WATER, MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
5. COMPLY WITH ALL LOCAL AND STATE REGULATIONS FOR THE REMOVAL AND DISPOSAL OF CONSTRUCTION DEBRIS AND WASTE.
6. TRENCH OR FOUNDATION DE-WATERING. THE COLLECTED WATER REMOVED FROM THE PONDED AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODED BUFFERS OR REMOVED AREAS THAT ARE SPECIFICALLY DESIGNATED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE, LIKE A COFFER DAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE.
7. NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORWATER DISCHARGES. WHERE ALLOWED NON-STORWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE.

F. INSPECTION AND MAINTENANCE

1. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION AND STORM WATER CONTROL MEASURES, AREAS USED FOR STORAGE THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AT LEAST ONCE A WEEK AND BEFORE AND AFTER A STORM EVENT, PRIOR TO COMPLETION OF PERMANENT STABILIZATION. A PERSON WITH KNOWLEDGE OF EROSION AND STORM WATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT AND ANY DEP OR MUNICIPAL COMPANION DOCUMENTS, MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE MODIFIED OF IF ADDITIONAL BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT (RAINFALL). ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.
2. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT SUMMARIZING THE SCOPE OF THE INSPECTION, NAME AND QUALIFICATIONS OF THE PERSON PERFORMING THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO OPERATION OF EROSION AND SEDIMENTATION CONTROLS AND POLLUTION PREVENTION MEASURES.
3. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:
   a. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET.
   b. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.
   c. IDENTIFY AREAS WHICH APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES WHICH SHOULD BE USED TO IMPROVE CONDITIONS.
   d. INSPECT AREAS OF RECENT SEEDING TO DETERMINE PERCENT CATCH OF GRASS. A MINIMUM CATCH OF 90 PERCENT IS REQUIRED PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.
4. IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, TO EITHER IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.
5. ALL CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS PREPARED BY THE INSPECTOR(S) SHALL BE FILED WITH THE OWNER, AND THE PERMIT FILE CONTAINED ON THE PROJECT SITE. ALL WRITTEN CERTIFICATIONS, INSPECTION FORMS, AND WRITTEN REPORTS MUST BE FILED WITHIN ONE (1) WEEK OF THE INSPECTION DATE.
6. THE PERMITTEE SHALL RETAIN COPIES OF THE ESC PLAN AND ANY FORMS, SUBMISSIONS, REPORTS, OR OTHER MATERIALS REQUIRED BY THE GENERAL PERMIT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.
7. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR COMPLYING WITH THE EROSION/SEDIMENT CONTROL REPORT, INCLUDING CONTROL OF FUGITIVE DUST, AND SHALL BE RESPONSIBLE FOR ANY MONETARY PENALTIES RESULTING FROM FAILURE TO COMPLY WITH THESE STANDARDS.

C. CONSTRUCTION SCHEDULE & SEQUENCE

(TIMELINES ARE APPROXIMATE AND WILL BE DEPENDENT ON WEATHER AND SITE CONDITIONS).

1. **PRE-CONSTRUCTION CONFERENCE:** PRIOR TO ANY CONSTRUCTION AT THE SITE, REPRESENTATIVES OF THE CONTRACTOR, THE ARCHITECT, THE OWNER, AND THE SITE DESIGN ENGINEER SHALL MEET TO DISCUSS THE SCHEDULING OF THE SITE CONSTRUCTION AND THE DESIGNATION OF THE RESPONSIBLE PARTIES FOR IMPLEMENTING THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE MEETING. PRIOR TO THE MEETING, THE CONTRACTOR WILL PREPARE A DETAILED SCHEDULE AND A MARKED-UP SITE PLAN INDICATING AREAS AND COMPONENTS OF THE WORK AND KEY DATES SHOWING DATE OF DISTURBANCE AND COMPLETION OF THE WORK. THE CONTRACTOR SHALL CONDUCT A MEETING WITH EMPLOYEES AND SUB-CONTRACTORS TO REVIEW THE EROSION CONTROL PLAN, THE CONSTRUCTION TECHNIQUES WHICH WILL BE EMPLOYED TO IMPLEMENT THE PLAN AND PROVIDE A LIST OF ATTENDEES AND ITEMS DISCUSSED AT THE MEETING TO THE OWNER. THREE COPIES OF THE SCHEDULE, THE CONTRACTOR'S MEETING MINUTES, AND MARKED-UP SITE PLAN SHALL BE PROVIDED TO THE OWNER.
2. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND SEDIMENTATION CONTROL MEASURES IS OPTIMIZED.
   a. INSTALL SAFETY AND CONSTRUCTION FENCE TO SECURE THE SITE FOR DEMOLITION.
   b. INSTALL ALL PERIMETER SILTATION FENCE AND EROSION CONTROL BARRIERS. PARTICULAR ATTENTION SHALL BE PAID TO AREAS UPSTREAM OF PROTECTED NATURAL RESOURCES. SIGNS SHALL BE ERECTED PERIODICALLY ALONG THESE PERIMETER BARRIERS INDICATING THAT THE DOWNSTREAM AREAS ARE OFF LIMITS TO ALL CONSTRUCTION ACTIVITIES.
   c. INSTALL CONSTRUCTION ENTRANCES.
   d. MAINTAIN EXISTING PAVED AREAS FOR LAYDOWN AND ACCESS DURING INITIAL CONSTRUCTION ACTIVITIES.
   e. CONSTRUCT ACTIVITIES ON THE SITE TO OPTIMIZE THE HANDLING OF MATERIALS AND RESTRICT THE DENUDED AREAS TO THE TIME STIPULATED.
   f. CONSTRUCT STABILIZED PADS FOR FOUNDATION AND BUILDING CONSTRUCTION.
   g. MAINTAIN STABILIZED SITE ACCESS AND WORKING AREAS DURING BUILDING CONSTRUCTION.
   h. INSTALL STORWATER BMP'S
   i. REMOVE EXISTING PAVEMENT AND INSTALL NEW PAVEMENT BASE GRAVEL MATERIALS TO RAISE THE SITE TO THE DESIGN SUBGRADE ELEVATION.
   j. INSTALL BINDER PAVEMENT.
   k. LANDSCAPE (LOAM AND SEED).
   l. INSTALL SURFACE PAVEMENTS.
   m. INSTALL STRIPING, SIGNAGE, AND MISCELLANEOUS SITE IMPROVEMENTS.
   n. REVIEW AND PUNCH THE SITE.
   o. REMOVE ANY TEMPORARY EROSION CONTROL MEASURES.
3. THE CONTRACTOR MUST MAINTAIN AN ACCURATE SET OF RECORD DRAWINGS INDICATING THE DATE WHEN AN AREA IS FIRST DENUDED, THE DATE OF TEMPORARY STABILIZATION, AND THE DATE OF FINAL STABILIZATION. ON OCTOBER 1 OF ANY CALENDAR YEAR, THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN FOR STABILIZING THE SITE FOR THE WINTER AND A DESCRIPTION OF WHAT ACTIVITIES ARE PLANNED DURING THE WINTER.

REV	DATE	DESCRIPTION
5	11/22/2022	FINAL SUBMISSION RESPONSE
4	10/17/2022	FINAL SUBMISSION
3	6/22/2022	AMENDED PRELIMINARY SUBMISSION
2	5/16/2022	PRELIMINARY SUBMISSION
1	5/4/2022	SKETCH PLAN SUBMISSION

REVISIONS

STATE OF MAINE — CHARLES EDWIN BURNHAM — No. 15377 — LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
EROSION CONTROL NOTES

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DRAWN:	CB	DATE:	OCTOBER 19, 2022
DESIGNED:	CB	SCALE:	
CHECKED:	CB	JOB NO.	1
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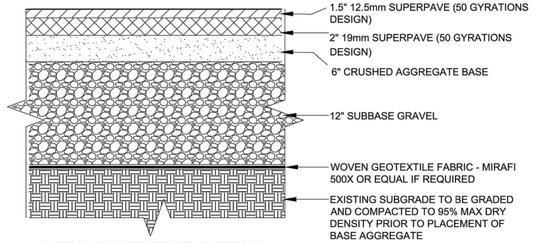

A NEW PAVEMENT DETAIL

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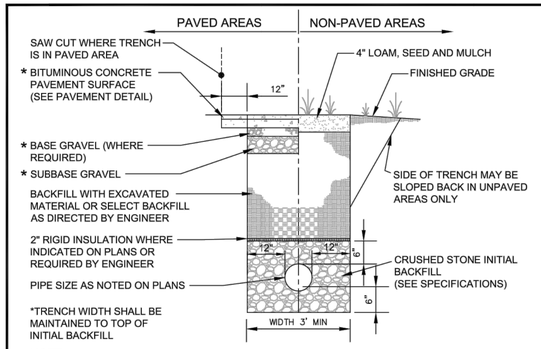

NOTE:
BRACING AND SHEETING OR OTHER TRENCH PROTECTION TO BE PROVIDED TO MEET APPLICABLE STATE AND O.S.H.A. SAFETY STANDARDS. ALL SUCH TRENCH PROTECTION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

B TYPICAL SEWER AND STORM DRAIN TRENCH DETAIL

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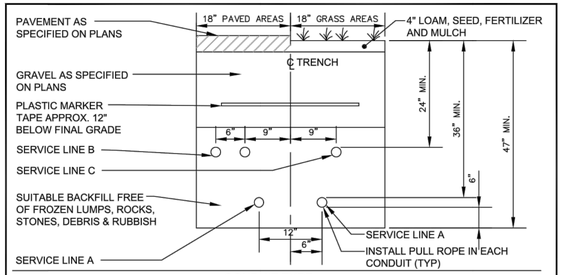

CONDUIT TYPE

SERVICE	CONDUIT SIZE	GRASS AREAS	PAVED AREAS	UTILITY	REMARKS
A	5"	SCHEDULE 40 PVC ELECTRICAL GRADE	RIGID GALVANIZED STEEL, ASTM A120	POWER	SEE NOTE 1
B	4"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120	TELEPHONE	SEE NOTE 1
C	2"	SCHEDULE 40 PVC	RIGID GALVANIZED STEEL, ASTM A120	COMMUNICATION	

NOTES:
1. ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10' ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.
2. SEE SITE ELECTRICAL PLAN FOR LOCATION AND NUMBER OF CONDUITS.

C COMBINED UTILTIY TRENCH DETAIL

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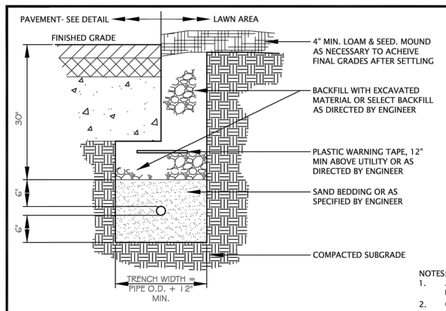

NOTES:
1. ALL WORK TO COMPLY WITH UTILTY COMPANY STANDARDS.
2. CONTRACTOR TO PROVIDE 2" POLYPROPYLENE PULL ROPES IN ALL CONDUITS.

D ELECTRIC UTILITY TRENCH DETAIL

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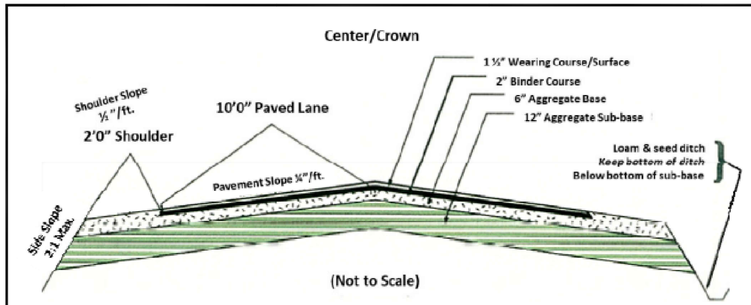
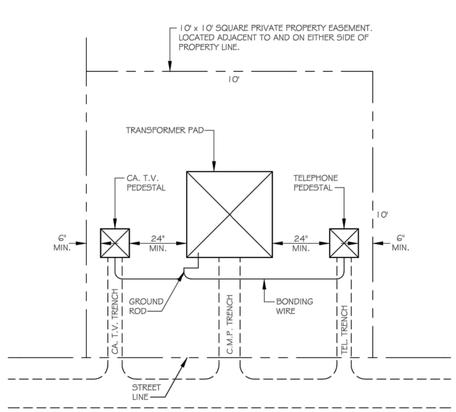


1. THIS DETAIL REFLECTS MINIMUM REQUIREMENTS, INSITU SOIL CONDITIONS MAY REQUIRE ADDITIONAL MATERIALS AS DIRECYED BY PUBLIC WORKS DIRECTOR OR ENGINEER.
2. CLEARING AND GRUBBING SHALL BE 6'-12" DEEP DEPENDING ON SOIL CONDITIONS AND EXTEND A MINIMUM OF THE ENTIRE WIDTH OF THE RIGHT OF WAY.
3. ALL CONSTRUCTION SHALL MEET THE REQUIREMENTS RELATIVE TO THE APPLICABLE MDOT STANDARD SPECIFICATION FOR MATERIALS, PLACEMENT AND TESTING.
4. BASE COURSE ASPHALT SHALL EXTEND UNDER SLIPFORM CURB. SEE CURB DETAIL THIS SHEET.

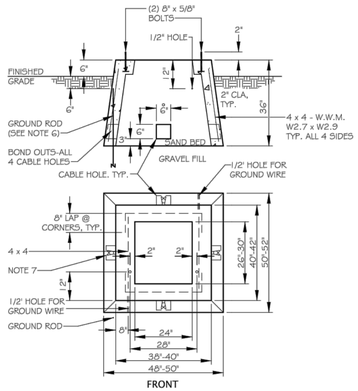
E TYPICAL ROADWAY SECTION

N.T.S.

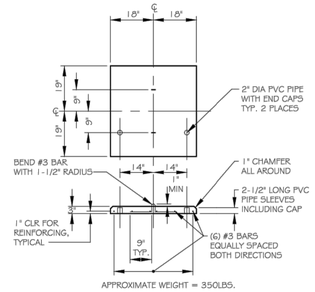


RECOMMENDED TRANSFORMER EASEMENT

NOTES:
1. THIS ILLUSTRATION IS THE RECOMMENDED LAYOUT OF A PAD-MOUNTED TRANSFORMER EASEMENT. IT IS EVIDENT THAT THIS EASEMENT IS NOT ALWAYS POSSIBLE, BUT IN CASES WHERE SUCH AN EASEMENT CAN BE OBTAINED IT WOULD BE BENEFICIAL TO SET THE EASEMENT UP AS SHOWN.
2. CONCRETE FOUNDATION IS SUITABLE FOR BOTH 7200/12470 VOLT AND 20/34.5kv SINGLE PHASE TRANSFORMER AND PRIMARY JUNCTION BOX INSTALLATIONS.
3. SET FOUNDATION ON SUITABLE GRAVEL FILL AND PROVIDE ADEQUATE DRAINAGE. LOCATION TO BE ACCESSIBLE BY TRUCK AND SUITABLY PROTECTED FROM FLOW AND TRAFFIC DAMAGE.
4. FRONT DENOTES THE SIDE ON WHICH THE ACCESS DOORS ARE LOCATED. THE FOUNDATION MUST BE INSTALLED SO THAT THE "FRONT" IS READILY ACCESSIBLE.
5. OTHER C.M.P. APPROVED PADMOUNT TRANSFORMER FOUNDATIONS MAY BE USED.
6. PROVIDE 6" SQUARE CABLE HOLES (BOND OUT) 3" UP THE WALL FROM THE BASE. ONE PER WALL, LINE UP WITH TRENCHES.
7. CMPCo. TO FURNISH 3/4" x 8' GALVANIZED ROD TO BE INSTALLED 6" IN FRONT OF THE LEFT CORNER OF TRANSFORMER FOUNDATION. THE TOP OF THE GROUND ROD IS TO BE 6" BELOW FINAL GRADE.
8. PULLING EYE INSERT, FOR USE WITH 3/4" NATIONAL THREAD EYE-BOLT (RICHMOND LCB-1 OR EQUIVALENT). LOCATED OPPOSITE EACH CABLE HOLE AND APPROXIMATELY 16" FROM THE BOTTOM.
9. CAN BE USED AS A FOUNDATION FOR 3 PHASE JUNCTION CABINET CU UDCUT3 (S/C 62-1490) WITH CU UDCUT35 (S/C 67-3921) SKIRT.



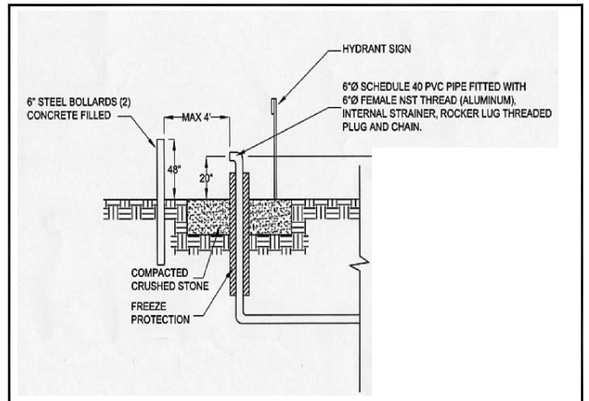
CONCRETE TRANSFORMER FOUNDATION



CONCRETE TRANSFORMER COVER

F CENTRAL MAINE POWER TRANSFORMER PAD

NOT TO SCALE



G DRY HYDRANT DETAIL WITH BOLLARDS

N.T.S.

AGGREGATE BASE

Sieve Designation	% By Weight Passing Square Mesh Sieves
2-inch	100%
1/2 inch	45-70%
1/4 inch	30-55%
No. 40	0-30%
No. 200	0-7%

*Aggregate for the base shall contain no particles of rock exceeding four (4") inches in any dimension.

AGGREGATE SUBBASE

Sieve Designation	% By Weight Passing Square Mesh Sieves
6-inch	100%
1/4 inch	25-70%
No. 40	0-30%
No. 200	0-7%

Gravel base shall be compacted over the full width and length of road bed including shoulders to a minimum of ninety-five (95%) percent of proctor density in accordance with American Society for Testing Materials Standard, ASTM D1556 and D1557.

SUBMITTED FOR FINAL PLAN REVIEW

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REVISIONS

STATE OF MAINE — CHARLES EDWIN DURHAM — No. 15377 — LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
CIVIL DETAILS
2

Jack Doughty
231 Flying Point Road
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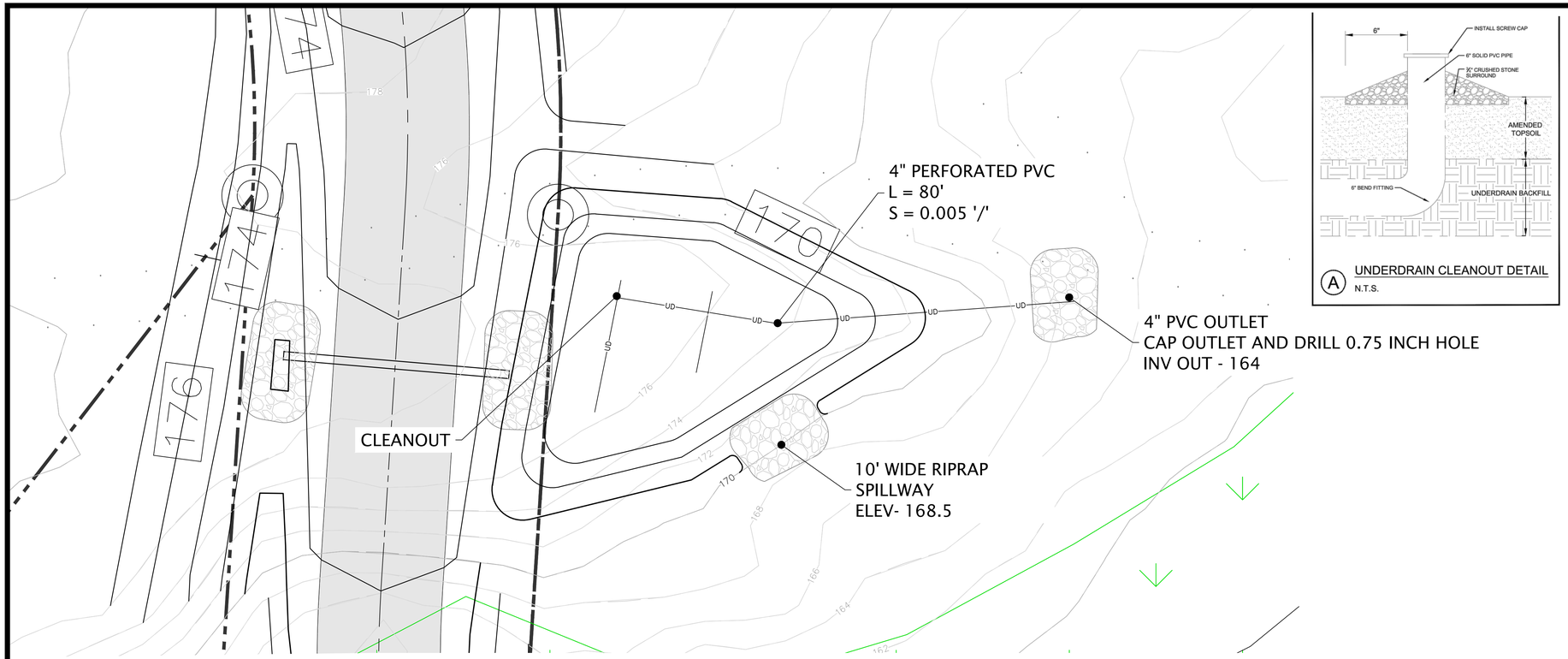

A UNDERDRAIN CLEANOUT DETAIL
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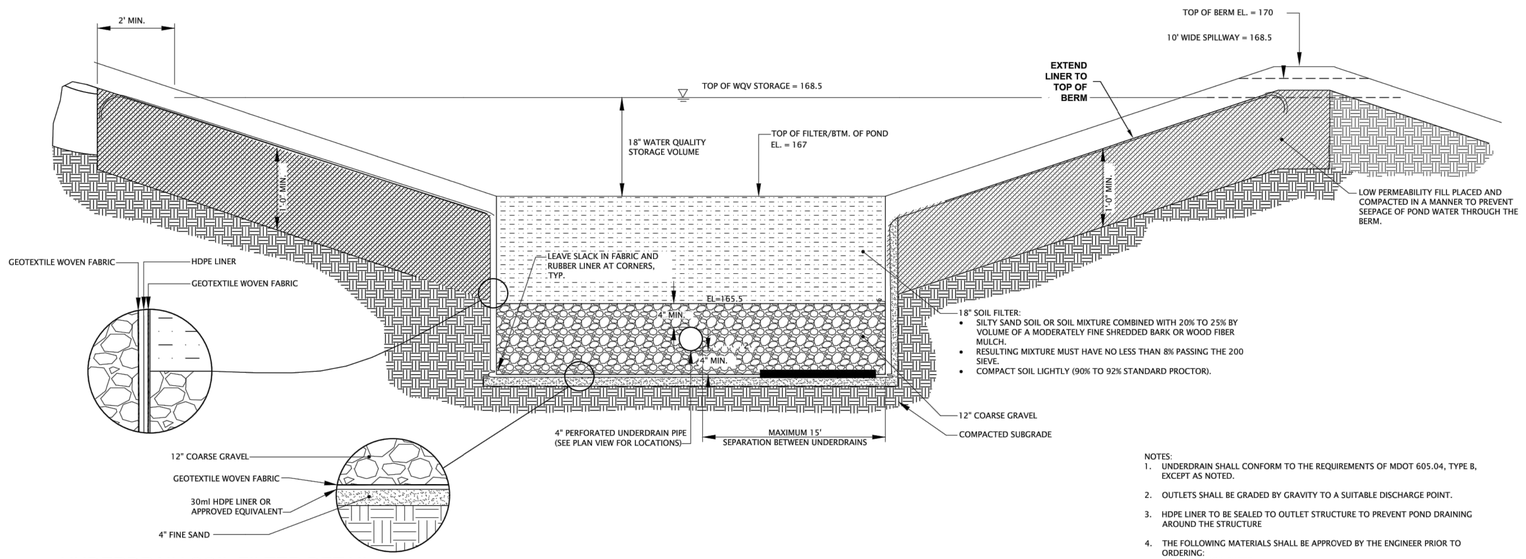

A UNDERDRAIN SOIL FILTER DETAIL
N.T.S.

NOTES:
1. UNDERDRAIN SHALL CONFORM TO THE REQUIREMENTS OF MDOT 605.04, TYPE B, EXCEPT AS NOTED.
2. OUTLETS SHALL BE GRADED BY GRAVITY TO A SUITABLE DISCHARGE POINT.
3. HDPE LINER TO BE SEALED TO OUTLET STRUCTURE TO PREVENT POND DRAINING AROUND THE STRUCTURE
4. THE FOLLOWING MATERIALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ORDERING:
   - SOIL FILTER
   - COARSE GRAVEL
   - LINER

UNDERDRAINED SOIL FILTER NOTES:

1. UNDERDRAINED FILTER BASINS CONSTRUCTION SEQUENCE: THE SOIL FILTER MEDIA AND VEGETATION MUST NOT BE INSTALLED UNTIL THE AREA THAT DRAINS TO THE FILTER HAS BEEN PERMANENTLY STABILIZED WITH PAVEMENT OR OTHER STRUCTURE, 90% VEGETATION COVER, OR OTHER PERMANENT STABILIZATION UNLESS THE RUNOFF FROM THE CONTRIBUTING DRAINAGE AREA IS DIVERTED AROUND THE FILTER UNTIL STABILIZATION IS COMPLETED.COMPACTION OF SOIL FILTER: FILTER SOIL MEDIA AND UNDERDRAIN BEDDING MATERIAL MUST BE COMPACTED TO BETWEEN 90% AND 92% STANDARD PROCTOR. THE BED SHOULD BE INSTALLED IN AT LEAST 2 LIFTS OF 9 INCHES TO PREVENT POCKETS OF LOOSE MEDIA.
   CONSTRUCTION OVERSIGHT: INSPECTION BY A PROFESSIONAL ENGINEER WILL OCCUR AT A MINIMUM:
   - AFTER THE PRELIMINARY CONSTRUCTION OF THE FILTER GRADES AND ONCE THE UNDERDRAIN PIPES ARE INSTALLED BUT NOT BACKFILLED,
   - AFTER THE DRAINAGE LAYER IS CONSTRUCTED AND PRIOR TO THE INSTALLATION OF THE FILTER MEDIA,
   - AFTER THE FILTER MEDIA HAS BEEN INSTALLED AND SEEDED. BIO-RETENTION CELLS MUST BE STABILIZED PER THE PROVIDED PLANTING SCHEME AND DENSITY FOR THE CANOPY COVERAGE OF 30 AND 50%,
   - AFTER ONE YEAR TO INSPECT HEALTH OF THE VEGETATION AND MAKE CORRECTIONS, AND
   - ALL THE MATERIAL USED FOR THE CONSTRUCTION OF THE FILTER BASIN MUST BE CONFIRMED AS SUITABLE BY THE DESIGN ENGINEER. TESTING MUST BE DONE BY A CERTIFIED LABORATORY TO SHOW THAT THEY ARE PASSING DEP SPECIFICATIONS.

   TESTING AND SUBMITTALS: THE CONTRACTOR SHALL IDENTIFY THE LOCATION OF THE SOURCE OF EACH COMPONENT OF THE FILTER MEDIA. ALL RESULTS OF FIELD AND LABORATORY TESTING SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR CONFIRMATION. THE CONTRACTOR SHALL:
   - SELECT SAMPLES FOR SAMPLING OF EACH TYPE OF MATERIAL TO BE BLENDED FOR THE MIXED FILTER MEDIA AND SAMPLES OF THE UNDERDRAIN BEDDING MATERIAL. SAMPLES MUST BE A COMPOSITE OF THREE DIFFERENT LOCATIONS (GRABS) FROM THE STOCKPILE OR PIT FACE. SAMPLE SIZE REQUIRED WILL BE DETERMINED BY THE TESTING LABORATORY.
   - PERFORM A SIEVE ANALYSIS CONFORMING TO STM C136 (STANDARD TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COURSE AGGREGATES 1996A) ON EACH TYPE OF THE SAMPLE MATERIAL. THE RESULTING SOIL FILTER MEDIA MIXTURE MUST HAVE 8% TO 12% BY WEIGHT PASSING THE #200 SIEVE, A CLAY CONTENT OF LESS THAN 2% (DETERMINED HYDROMETER GRAIN SIZE ANALYSIS) AND HAVE 10% DRY WEIGHT OF ORGANIC MATTER.
   - PERFORM A PERMEABILITY TEST ON THE SOIL FILTER MEDIA MIXTURE CONFORMING TO ASTM D2434 WITH THE MIXTURE COMPACTED TO 90-92% OF MAXIMUM DRY DENSITY BASED ON ASTM D698.

2. DEWATERING: A DEWATERING PLAN IS NEEDED TO ADDRESS EXCAVATION DE-WATERING FOLLOWING HEAVY RAINFALL EVENTS OR WHERE THE EXCAVATION MAY INTERCEPT THE GROUNDWATER TABLE DURING CONSTRUCTION. THE COLLECTED WATER NEEDS TREATMENT AND A DISCHARGE POINT THAT WILL NOT CAUSE DOWNGRADIENT EROSION AND OFFSITE SEDIMENTATION OR WITHIN A RESOURCE. PLEASE FOLLOW THE DETAILS OF SUCH A PLAN.

3. BASIC STANDARDS - EROSION CONTROL MEASURES: MINIMUM EROSION CONTROL MEASURES WILL NEED TO BE IMPLEMENTED AND THE APPLICANT WILL BE RESPONSIBLE TO MAINTAIN ALL COMPONENTS OF THE EROSION CONTROL PLAN UNTIL THE SITE IS FULLY STABILIZED. HOWEVER, BASED ON SITE AND WEATHER CONDITIONS DURING CONSTRUCTION, ADDITIONAL EROSION CONTROL MEASURES MAY NEED TO BE IMPLEMENTED. ALL AREAS OF INSTABILITY AND EROSION MUST BE REPAIRED IMMEDIATELY DURING CONSTRUCTION AND NEED TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED OR VEGETATION IS ESTABLISHED. A CONSTRUCTION LOG MUST BE MAINTAINED FOR THE EROSION AND SEDIMENTATION CONTROL INSPECTIONS AND MAINTENANCE. THE MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES AS PUBLISHED IN 1991 BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION HAS BEEN CHANGED TO THE "MAINE EROSION AND SEDIMENT CONTROL BMPS" PUBLISHED BY THE MAINE DEP IN 2003. ALL REFERENCES SHOULD BE CHANGED TO THE NEW MANUAL. HTTP://WWW.MAINE.GOV/DEP/BLWQ/DOCSTAND/ESCBMPS/INDEX.HTM

CONSTRUCTION OVERSIGHT REQUIRED:

THE APPLICANT WILL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER OR THIRD PARTY INSPECTOR TO INSPECT THE CONSTRUCTION AND STABILIZATION OF ALL STORMWATER MANAGEMENT STRUCTURES. IF NECESSARY, THE INSPECTING ENGINEER WILL INTERPRET THE POND'S CONSTRUCTION PLAN FOR THE CONTRACTOR. ONCE ALL STORMWATER MANAGEMENT STRUCTURES ARE CONSTRUCTED AND STABILIZED, THE INSPECTING ENGINEER WILL NOTIFY BOTH THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AS WELL AS THE TOWN OF ARUNDEL IN WRITING WITHIN 30 DAYS TO STATE THAT THE POND HAS BEEN COMPLETED. ACCOMPANYING THE ENGINEER'S NOTIFICATION MUST BE A LOG OF THE ENGINEER'S INSPECTIONS GIVING THE DATE OF EACH INSPECTION, THE TIME OF EACH INSPECTION, AND THE ITEMS INSPECTED ON EACH VISIT, AND INCLUDE ANY TESTING DATA OR SIEVE ANALYSIS DATA OF EVERY MINERAL SOIL AND SOIL MEDIA SPECIFIED IN THE PLANS AND USED ON SITE.

SUBMITTED FOR FINAL PLAN REVIEW

REV	DATE	DESCRIPTION
5	11/22/2022	FINAL SUBMISSION RESPONSE
4	10/17/2022	FINAL SUBMISSION
3	6/22/2022	AMENDED PRELIMINARY SUBMISSION
2	5/16/2022	PRELIMINARY SUBMISSION
1	5/4/2022	SKETCH PLAN SUBMISSION

REVISIONS

STATE OF MAINE — CHARLES EDWIN DURHAM — No. 15377 — LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
CIVIL DETAILS
3

Jack Doughty
231 Flying Point Road
Freeport, Maine 04032

Grange Engineering LLC
241 Rowe Station Road
New Gloucester, ME 04260
Tel: 207.712.6990

DRAWN:	CB	DATE:	OCTOBER 19, 2022
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FILE NAME:			
SHEET:	C-303		

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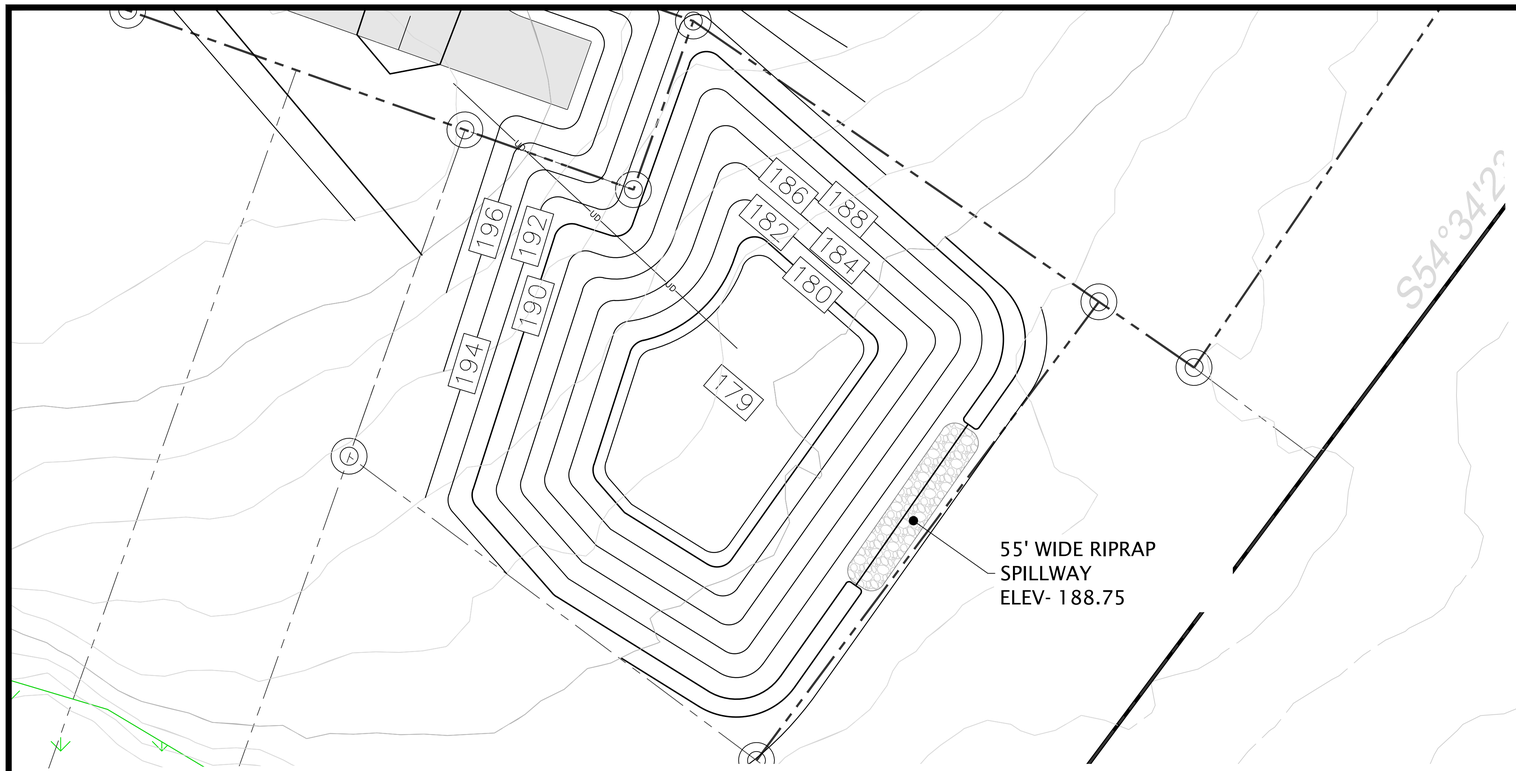

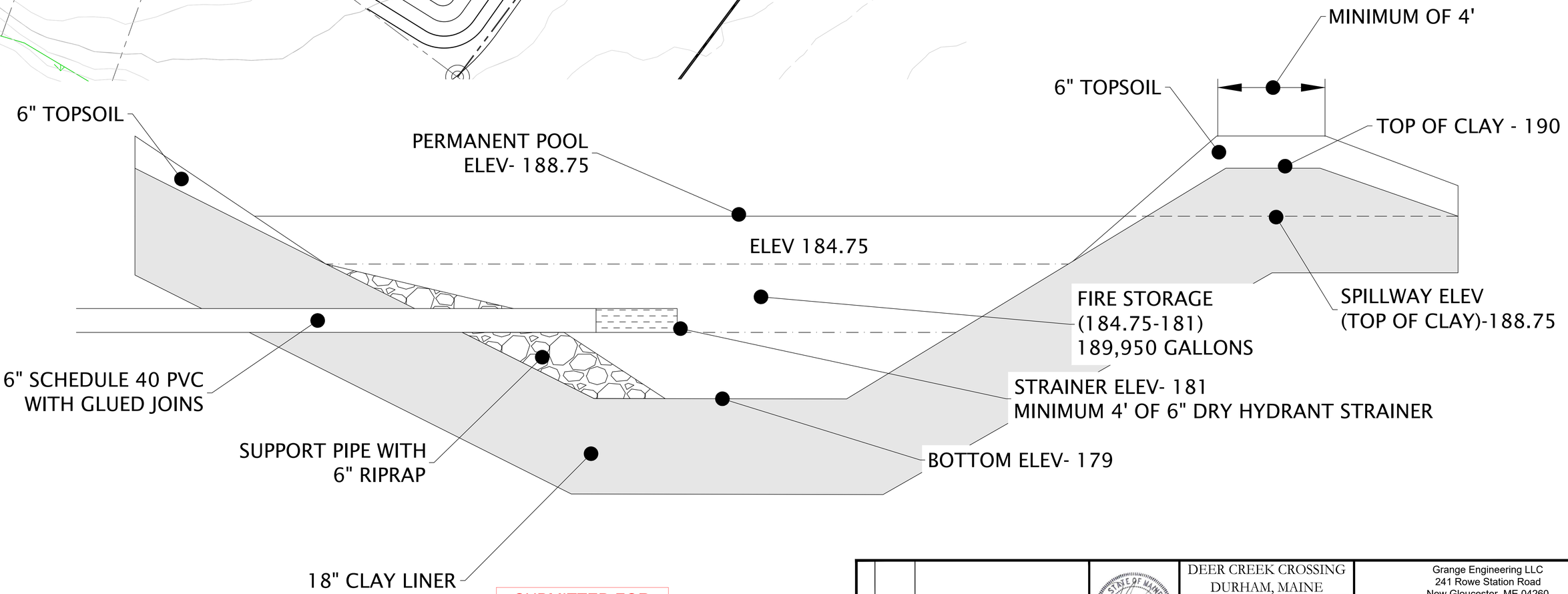

SUBMITTED FOR
FINAL PLAN
REVIEW

REV	DATE	DESCRIPTION
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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE

FIRE POND
DETAILS

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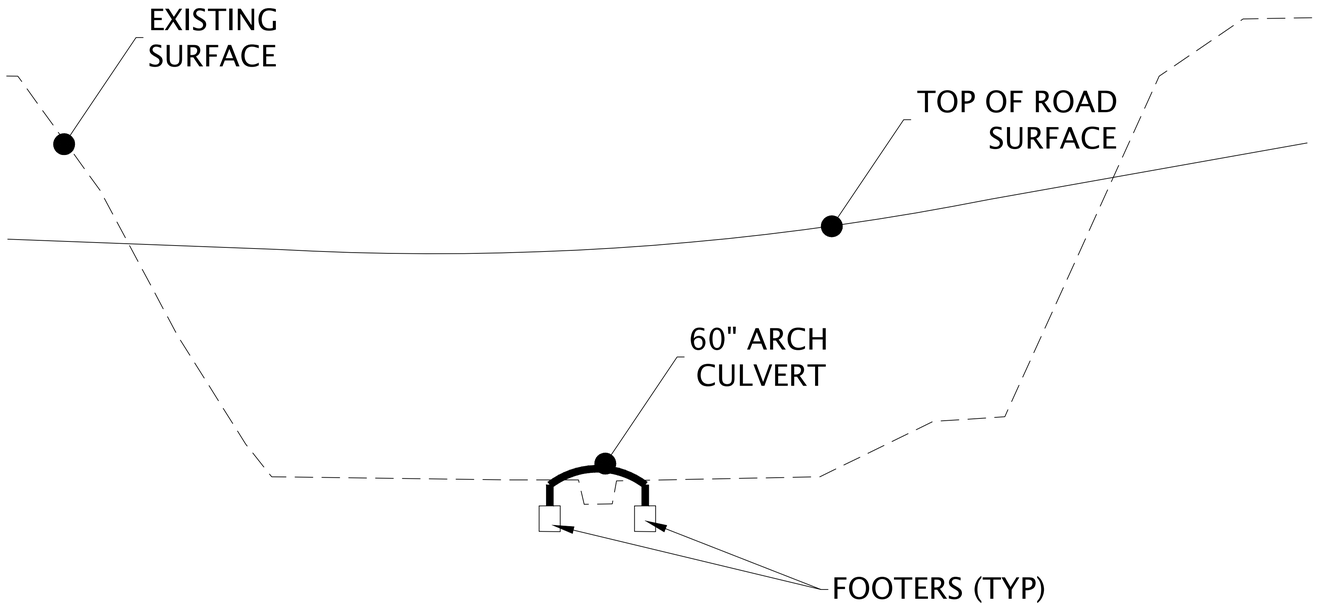

1. Span streams or size culverts or pipe arches such that they are wider than bankfull width (BFW). Spans are strongly preferred as they avoid or minimize disruption to the streambed, and avoid entire streambed reconstruction and maintenance inside the culvert or pipe arch (see 4, 5 & 7 below), which may be difficult in smaller structures. Footings and abutments for spans and scour protection should be landward of 1.2 times BFW. The width of culverts and arches at bankfull elevation should be ≥1.2 times BFW.

2. Embed pipe arch below the grade of the streambed. This is not required when ledge/bedrock prevents embedment, in which case spans are required. The following depths are recommended to prevent streambed washout, and ensure compliance and long-term success:
a. ≥ 2 feet for box culverts and pipe arches,
or
b. ≥ 2 feet and at least 25% for round pipe culverts,

3. Match the culvert gradient (slope) with the stream channel profile.

4. Construct crossings with a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass substantial high flow events.

5. Construct crossings with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows at the time of construction and over time. In order to provide appropriate water depths and

1 For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of BFW. The use of bridge piers or similar supports does not prevent a structure from being considered as a span.

2 For 2(a) and 2(b), deeper embedment depths may be needed if there are elements of the constructed stream bed that are greater than 15 inches in diameter.
Stream Crossing BMPs January 2015 velocities at a variety of flows and especially low flows, it is usually necessary to reconstruct the streambed (sometimes including a low flow channel), or replicate or preserve the natural channel within the structure. Otherwise, the width of the structure needed to accommodate higher flows will create conditions that are too shallow at low flows. The grain and rock size, and arrangement of streambed materials within the structure should be in accordance with (4) above. Flows could go subsurface within the structure if only large material is used without smaller material filling the voids.

6. Banks on each side of the stream inside the crossing matching the horizontal profile of the existing stream and banks outside the crossing are recommended. This will allow terrestrial passage for wildlife and prevent flow from being focused to one side and scouring the bed, especially against the structure's sidewall which may undermine the footings in the case of spans. To prevent failure, all constructed banks should have a height to width ratio of no greater than 1:1.5 (vertical:horizontal) unless the stream is naturally incised. Tie these banks into the up and downstream banks and configure them to be stable during expected high flows

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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURNHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
STREAM CROSSING
DETAILS

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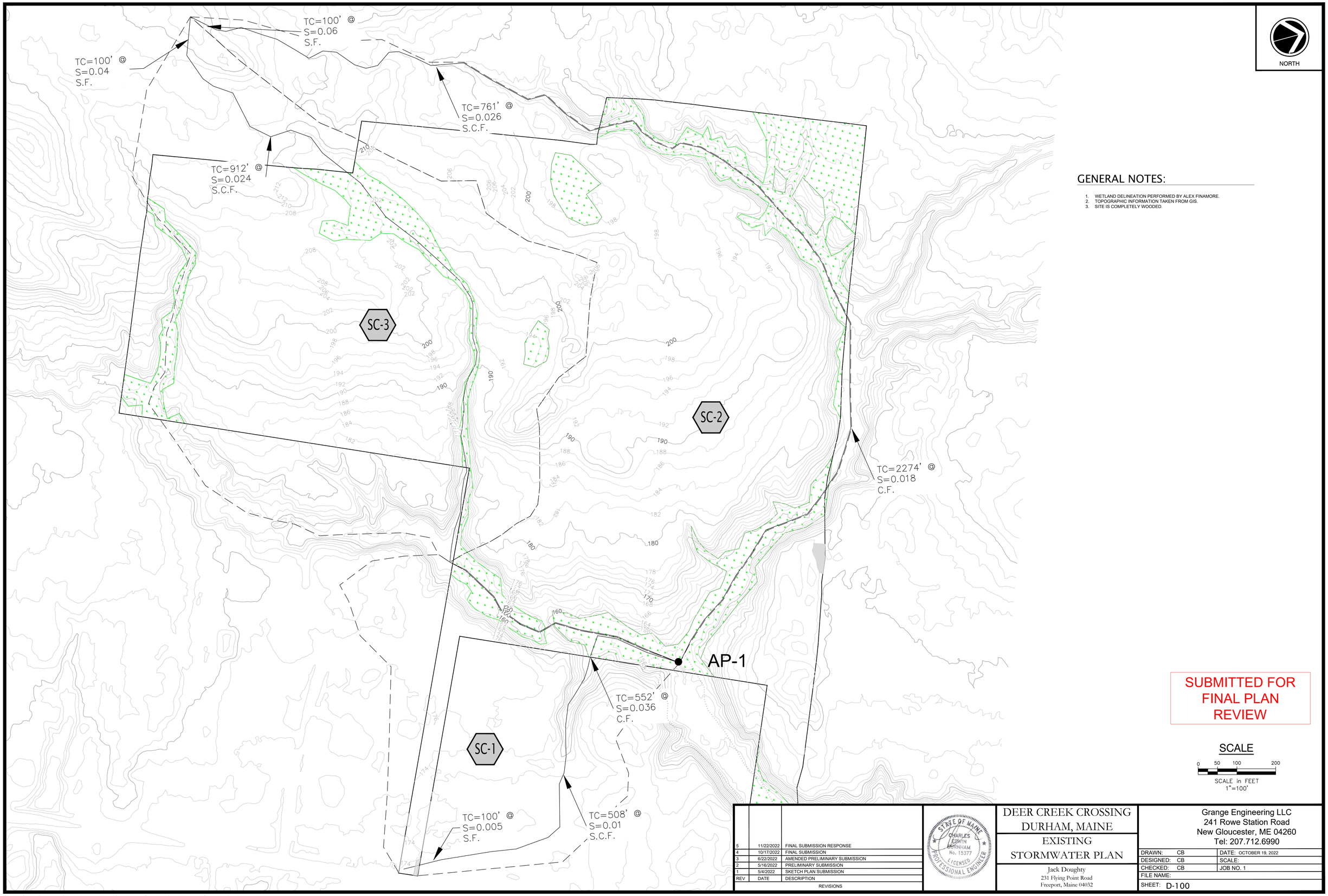

NORTH

GENERAL NOTES:

1. WETLAND DELINEATION PERFORMED BY ALEX FINAMORE.
2. TOPOGRAPHIC INFORMATION TAKEN FROM GIS.
3. SITE IS COMPLETELY WOODED.

SUBMITTED FOR FINAL PLAN REVIEW

SCALE

0 50 100 200

SCALE in FEET
1"=100'

REV	DATE	DESCRIPTION
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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURNHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
EXISTING STORMWATER PLAN

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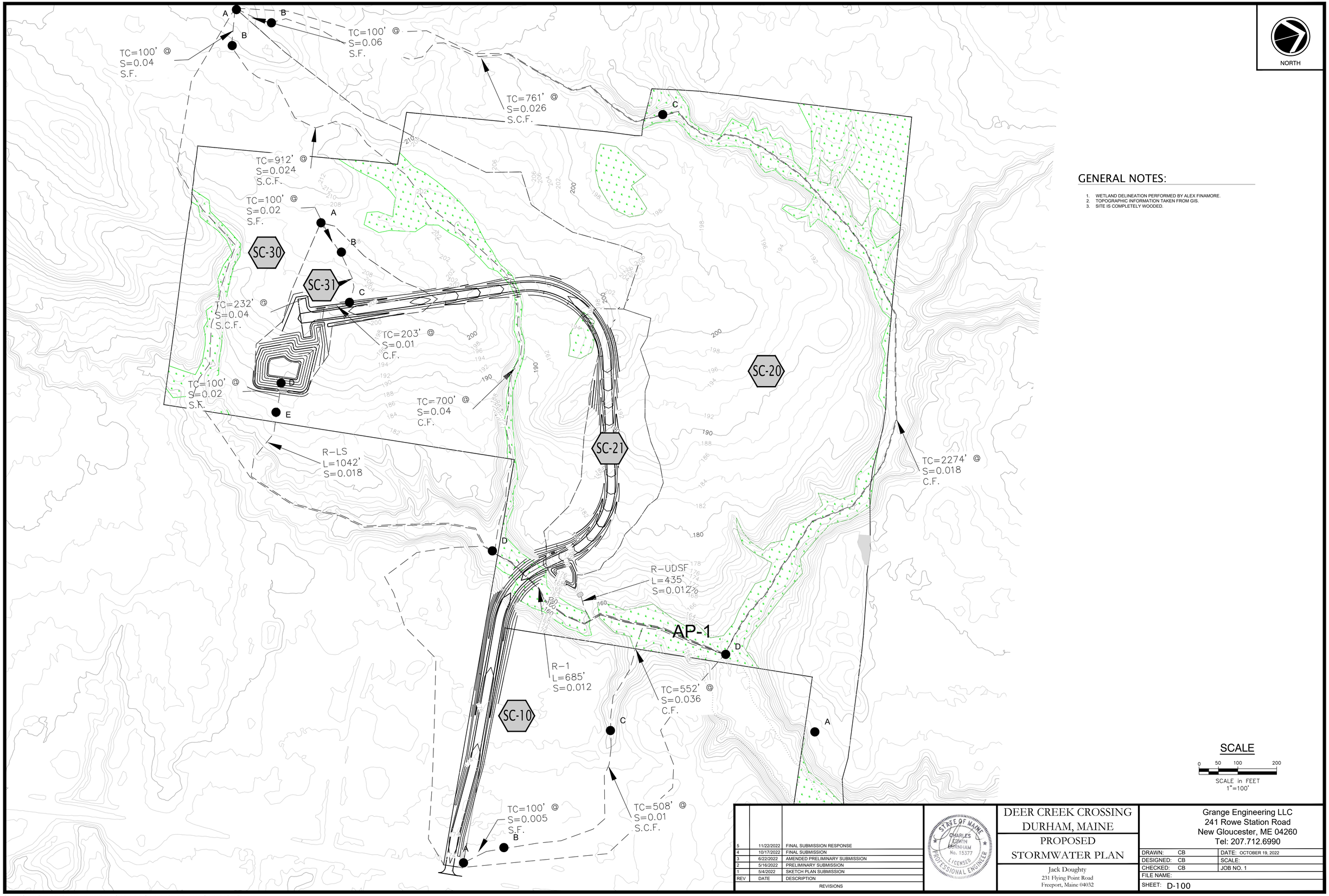

GENERAL NOTES:

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2. TOPOGRAPHIC INFORMATION TAKEN FROM GIS.
3. SITE IS COMPLETELY WOODED.

SCALE

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SCALE in FEET
1"=100'

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REVISIONS

STATE OF MAINE
CHARLES EDWIN DURHAM
No. 15377
LICENSED PROFESSIONAL ENGINEER

DEER CREEK CROSSING
DURHAM, MAINE
PROPOSED STORMWATER PLAN

Jack Doughty
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