BINGHAM WIND PROJECT

BINGHAM, KINGSBURY PLT, MAYFIELD TWP AND MOSCOW
MAINE

CLIENT

BLUE SKY WEST, LLC
c/o FIRST WIND ENERGY, LLC
129 MIDDLE STREET
PORTLAND, MAINE 04101
ATTN: DAVID FOWLER, DEVELOPMENT MANAGER

PREPARED BY

DELUCA-HOFFMAN ASSOCIATES, INC.
778 MAIN ST, SUITE 8
SOUTH PORTLAND, MAINE 04106
207.775.1121
ATTN: STEVE BUSHEY
STEVE BLAKE

DATA SOURCE

TOPOGRAPHIC INFORMATION:

AERIAL SURVEY AND PHOTO, INC.
546 AIRPORT ROAD
P.O. BOX 659
NORRIDGEWOCK, MAINE 04957
207.634.2006

2 FOOT CONTOURS DEVELOPED FROM PHOTOGRAMETRIC SURVEY BY AERIAL SURVEY AND PHOTO, INC. IN AUGUST 2009. FOR THE AREAS OUTSIDE OF THE PROPOSED ROADS AND TURBINE PADS, THE 10 FOOT CONTOUR DATA WAS OBTAINED FROM USGS TOPOGRAPHIC QUADRANGLE INFORMATION.

HORIZONTAL DATUM: 1983 NAD (1996adj.) UTM ZONE 19 US FEET

VERTICAL DATUM: 1988 NAVD US FEET

BOUNDARY INFORMATION:

PLISGA & DAY
72 MAIN STREET
BANGOR, MAINE 04401
207.947.0019
ATTN: ADAM ROBINSON

TOWER LOCATIONS:

FIRST WIND
179 LINCOLN STREET, SUITE 500
BOSTON, MASSACHUSETTS 02111
617.960.2888
ATTN: JEFF ARMBRUSTER

WETLANDS / NATURAL RESOURCES:

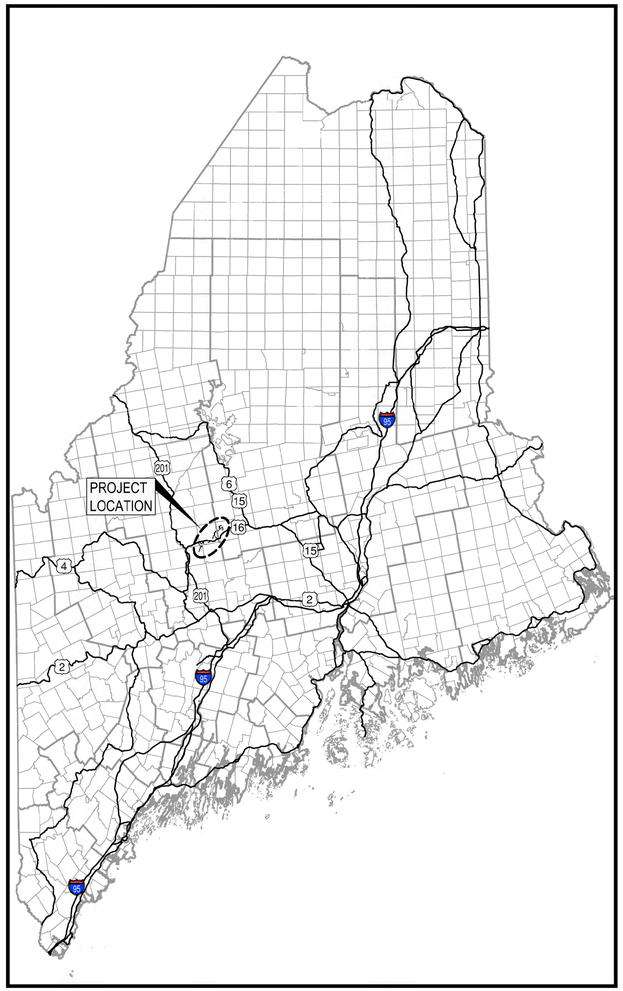
STANTEC
30 PARK DRIVE
TOPSHAM, MAINE 04086
207.729.1199
ATTN: DALE KNAPP

ELECTRICAL DESIGN:

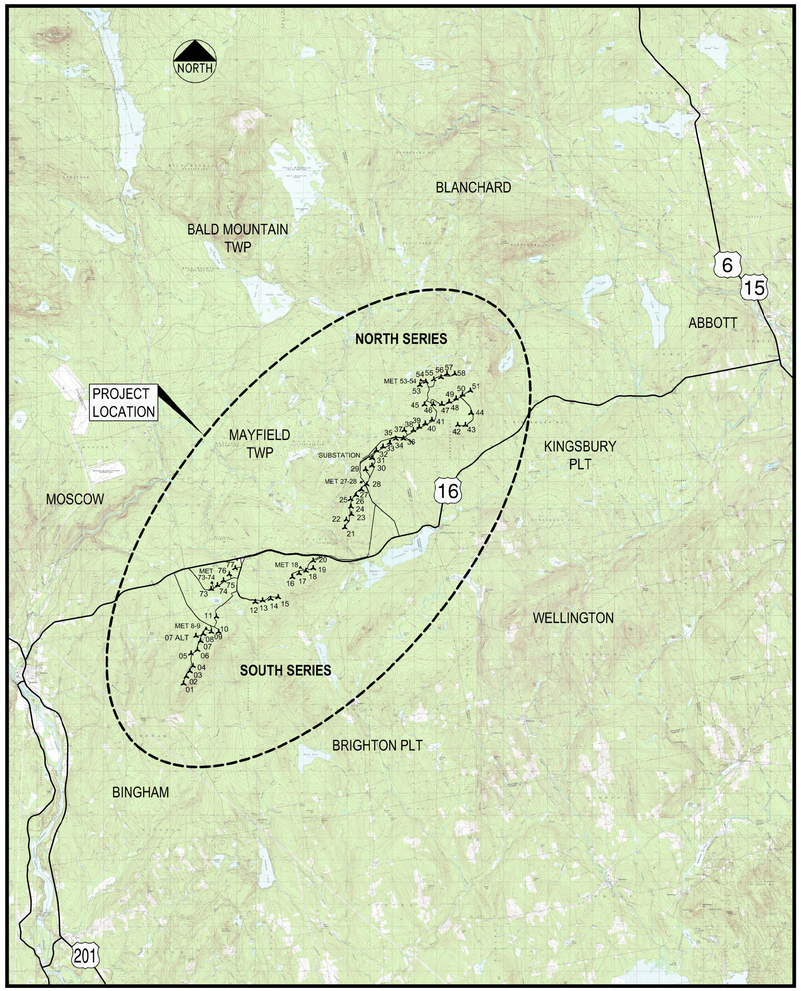
SGC ENGINEERING, LLC
501 COUNTY ROAD
WESTBROOK, MAINE 04092
207.347.8100
ATTN: TOM HENNAGHEN, P.E.

SOIL SURVEY:

ALBERT FRICK ASSOCIATES, INC.
95A COUNTY ROAD
GORHAM, MAINE 04038
207.839.5563
ATTN: ALBERT FRICK



LOCATION MAP
SCALE: 1" = 24 MILES



VICINITY MAP
SCALE: 1" = 2 MILES

INDEX

NOTE:
THESE PLANS REPRESENT ONLY THE TURBINE ACCESS AND CRANE PATH ROADS FOR GENERAL DELIVERY AND ERECTION OF THE WTG. SEE ADDITIONAL PLANS BY SGC ENGINEERING FOR THE TRANSMISSION SYSTEM.

THE PROJECT DRAWINGS PROVIDE ONLY A PORTION OF THE SITE WORK REQUIREMENTS. CONSTRUCTION SHALL OCCUR ONLY USING PROJECT SPECIFICATIONS PREPARED BY DELUCA-HOFFMAN ASSOCIATES, INC. OR THEIR SUBCONSULTANTS AND DRAWINGS WHICH HAVE A REVISION BLOCK INDICATING "ISSUED FOR CONSTRUCTION". AT A MINIMUM, ALL WORK SHOULD COMPLY WITH THE MAINE STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS. ALL MATERIALS PLACED AS PART OF THIS PROJECT SHALL BE COMPACTED TO THE PERCENT AS REQUIRED BY THE PROJECT'S GEOTECHNICAL ENGINEER.

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MAINE
THOMAS M. HENAGHEN
No. 12433
LICENSED
PROFESSIONAL ENGINEER
4-5-13

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

CIVIL COVER SHEET FOR ACCESS AND CRANE ROADS

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-COVER

STATE OF MAINE
STEVEN J. BLAKE II
REGISTERED PROFESSIONAL ENGINEER
P.E. STEVEN J. BLAKE II
LIC. # 11695

BINGHAM WIND PROJECT
BLUE SKY WEST, LLC

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, ME 04106
207.775.1121
www.delucahoffman.com

SHEET
C-1.0

GENERAL NOTES

GENERAL NOTES

1. 2FT CONTOURS DEVELOPED FROM PHOTOGRAMETIC SURVEY BY AERIAL SURVEY AND PHOTO, INC. IN AUGUST 2009. FOR THE AREAS OUTSIDE OF THE PROPOSED ROADS AND TURBINE PADS, THE 10FT CONTOUR DATA WAS OBTAINED FROM USGS TOPOGRAPHIC QUADRANGLE INFORMATION. BINGHAM, BRIGHTON AND MAYFIELD TOWN LINES PROVIDED BY PLISGA & DAY LAND SURVEYORS.
2. PLANIMETRIC AND TOPOGRAPHIC INFORMATION ARE SHOWN IN UTM ZONE 19, US-FEET, NAD 83. VERTICAL DATUM IS NAVD 1988 US-FEET. PROJECT BENCHMARKS TO BE PROVIDED AT TIME OF CONSTRUCTION.
3. SOIL SURVEY INFORMATION PROVIDED BY ALBERT FRICK ASSOCIATES.
4. NATURAL RESOURCE DATA, INCLUDING WETLAND DELINEATION BOUNDARIES AND OTHER SENSITIVE RESOURCES, PROVIDED BY STANTEC.
5. COLLECTOR AND TRANSMISSION SYSTEM LAYOUT PROVIDED BY SGC ENGINEERING.
6. EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL: BEST MANAGEMENT PRACTICE", BY MEDEP, LATEST VERSION.

CLEARING AND STOCKPILING OPERATIONS

1. INSTALL EROSION CONTROL MEASURES PRIOR TO SOIL DISTURBANCE.
2. ACCESS ROADS, EQUIPMENT LAYDOWN AREA, WTG ASSEMBLY AREAS, AND THE SUBSTATION AREA: CLEAR TIMBER AND BRUSH WITHIN LIMIT OF DISTURBANCE. STUMPS TO BE REMOVED IN AREAS WHERE STRUCTURES (ie ACCESS ROADS, CRANE ROADS, O & M BUILDING, SUBSTATION AND TURBINE AREAS) ARE PROPOSED.STUMPS SHALL BE GROUND TO GRADE OR REMOVED AND GROUND ON-SITE TO GENERATE EROSION CONTROL MIX (ECM).
3. WHILE THE ENTIRE ROAD SYSTEM MAY BE CLEARED IN ONE EFFORT, THE ROADS WILL BE CONSTRUCTED IN SEGMENTS WHERE EACH SEGMENT IS GRUBBED, CONSTRUCTED AND PROTECTED PRIOR TO EARTHWORK ON THE NEXT SEGMENT AS APPROVED BY ENGINEER. THIS CONSTRUCTION SEQUENCE IS INTENDED TO PREVENT LARGE AREAS FROM BEING EXPOSED, WITHOUT TEMPORARY STABILIZATION, TO EROSION DURING MAJOR RAIN EVENTS. A SEGMENT IS DEFINED AS AN AREA CLEARED AND GRUBBED. MULTIPLE SEGMENTS IN DIFFERENT AREAS OF THE PROJECT MAY BE CONSTRUCTED CONCURRENTLY.
4. RIDGE ROADS: IN FILL AREAS LESS THAN 3 FEET CLEAR, TIMBER AND BRUSH AND GRUB AS DESCRIBED IN 2 ABOVE. IN FILL AREAS EXCEEDING 3 FEET, GRUBBING AND STUMP REMOVAL IS NOT REQUIRED.
5. MINIMIZE THE AMOUNT OF DISTURBANCE AT ANY ONE TIME BY STAGING CONSTRUCTION AS MUCH AS PRACTICAL FOR EFFICIENT CONSTRUCTION OF THE PROJECT. WHERE FEASIBLE, CONTRACTOR OPERATIONS SHALL MAINTAIN THE NATURAL COVER MATERIAL OR USE NATURAL VEGETATIVE BUFFER STRIPS TO AID IN SEDIMENT RETENTION AND TO REDUCE THE POTENTIAL OF SOIL EROSION.
6. STRIPPED TOPSOIL SHALL BE STOCKPILED ON-SITE WITHIN DISTURBED AREAS FOR USE IN STABILIZING ACCESS ROAD DITCHES AND FOR FINAL STABILIZATION OF ROAD SHOULDERS, WTG ASSEMBLY AREAS, LAYDOWN AREAS AND SLOPES. AN EROSION CONTROL BARRIER SHALL BE INSTALLED AROUND SOIL STOCKPILES THAT ARE EXPECTED TO REMAIN UNDISTURBED FOR MORE THAN 48 HOURS OR PRIOR TO A STORM EVENT. THE BARRIERS SHALL BE ADEQUATELY LOCATED AND REINFORCED TO PREVENT COLLAPSE DURING A STORM EVENT AND THE POTENTIAL SLUMPING OF THE PILE. IF NO ACTIVITY IS SCHEDULED WITHIN 30 DAYS, APPLY HAY AND/OR STRAW MULCH AS SPECIFIED HEREIN, UNLESS DIRECTED OTHERWISE. 4 INCHES OF ECM MAY ALSO BE USED. HAY/STRAW MULCH MAY ALSO BE SUPPLEMENTED BY TEMPORARY SEEDING WITH ANNUAL RYEGRASS AS SPECIFIED HEREIN FOR AREAS WHERE ADDITIONAL ACTIVITY IS NOT EXPECTED FOR SEVERAL MORE WEEKS. APPLY ANCHORED MULCH OR SUPPLEMENTAL SEEDING DURING WINTER CONSTRUCTION.
7. STOCKPILE GENERATED ECM ON-SITE WITHIN DISTURBED AREAS.
8. REMOVE EXCESS SPOILS FROM SITE THAT WILL NOT BE USED FOR THE FINAL DESIGN AND STABILIZATION.

CONSTRUCTION OF ACCESS ROADS, ASSEMBLY AREAS, RIDGE ROADS AND SUBSTATION

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL USE SURVEY CREWS TO ACCURATELY LOCATE ALL IMPROVEMENTS INCLUDING ROADWAY CENTERLINES AND LIMITS OF DISTURBANCE. PROVIDE ADDITIONAL STAKING AND MARKING AT LOCATIONS WHERE STORMWATER CONTROL MEASURES ARE TO BE INSTALLED.
2. DUE TO DIFFERING SITE CONDITIONS, HORIZONTAL AND VERTICAL ADJUSTMENTS WITHIN PERMIT CONSTRAINTS MAY BE NECESSARY FOR PROPER CONSTRUCTION AND INTERPRETATION OF THE CONTRACT DRAWINGS. FIELD MODIFICATIONS WILL NOT CREATE ANY ADDITIONAL CLEARING/FILLING NATURAL RESOURCE IMPACTS AND WILL NOT IMPACT THE INTENT OF THE STORMWATER DESIGN. ALL CHANGES SHALL BE REFLECTED IN THE PROJECT RECORD DRAWINGS.

CONSTRUCTION OF PERMANENT STORMWATER MANAGEMENT SYSTEMS

1. GRADING TO BE CONDUCTED IN ACCORDANCE WITH PERMITTED PERMANENT STORMWATER MANAGEMENT DESIGN.
2. ONCE FINAL GRADES ARE ACHIEVED, EXPOSED SOIL SURROUNDING THE STORMWATER MANAGEMENT STRUCTURES SHALL BE PERMANENTLY STABILIZED AS DESCRIBED HEREIN.

CRANE PAD CONSTRUCTION

1. FOLLOWING CONSTRUCTION OF THE WTG ASSEMBLY AREA SUBGRADES, BRING ASSEMBLY AREAS AND CRANE PADS TO FINISH GRADE WITH CRUSHED AGGREGATE. SPREAD AND COMPACT MATERIAL AS NECESSARY TO THE LIMITS DEPICTED ON CONTRACT DOCUMENTS. VERTICAL ADJUSTMENTS WITHIN PERMIT CONSTRAINTS MAY BE NECESSARY TO ACCOMMODATE SPECIFIC SITE CONDITIONS. ALL ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
2. PORTIONS OF THE WTG ASSEMBLY AREA SURROUNDING THE TURBINE GENERATOR AND THE CRANE PAD SHALL REMAIN AS A PERMANENT DISTURBANCE. ALL OTHER AREAS WITHIN THE WTG ASSEMBLY AREA SHALL BE PERMANENTLY STABILIZED AS DESCRIBED HEREIN.

CLEAN-UP AND FINAL STABILIZATION

1. AT STREAM CROSSINGS, COMPLETE FINAL RESTORATION (FINISH GRADE, SEED AND MULCH) OF ALL AREAS WITHIN 100 FEET OF THE WATERBODY WITHIN 48 HOURS OF FINAL GRADING UNLESS DIRECTED OTHERWISE. ALL OTHER AREAS OF EXPOSED SOIL SHALL BE PERMANENTLY RE-VEGETATED OR OTHERWISE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING.
2. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, ALL WORK AREAS SHALL BE CLEARED OF CONSTRUCTION DEBRIS AND OTHER MATERIALS.
3. SPECIFIC CLEAN-UP REQUIREMENTS TO INVOLVE REMOVAL OF ALL TEMPORARY WORK TRAILERS, REMOVAL OF MATERIAL AND EQUIPMENT, DISPOSAL OF ALL RUBBISH RESULTING FROM CLEARING CONSTRUCTION, ROUGH GRADING AND STABILIZATION OF EMBANKMENTS MADE FOR CONSTRUCTION PURPOSES, FILLING OF ANY EXCAVATION AND REPAIRING RUTS IN ACCESS ROADS.

WINTER CONSTRUCTION NOTES

FOR WORK PROPOSED DURING THE WINTER SEASON (TYPICALLY NOVEMBER 1 - APRIL 15), THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING PRACTICES:

1. A PLAN AND SCHEDULE OF ACTIVITIES SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO ANY WORK BEING DONE.
2. LIMIT THE TOTAL AREA OF EXPOSED SOIL TO THAT IN WHICH EARTH WORK CAN BE COMPLETED WITHIN 15 DAYS AND MULCHED WITHIN ONE DAY PRIOR TO A PRECIPITATION EVENT.
3. EXPOSED SOIL MAY BE LEFT BARE FOR NO MORE THAN 15 DAYS.
4. MULCH ALL EXPOSED SOIL WHERE NO ACTIVITY IS SCHEDULED WITHIN 7 DAYS AND PRIOR TO A FORECASTED SNOW EVENT OF MORE THAN 1 INCH.
5. WHERE PRACTICABLE, MULCH SHOULD BE APPLIED AT THE END OF EACH DAY'S WORK FOR AREAS THAT ARE FINAL GRADED. OTHERWISE, MULCH THE FOLLOWING DAY.
6. DO NOT APPLY MULCH OVER MORE THAN 1 INCH OF SNOW.
7. HAY OR STRAW MULCH SHALL BE APPLIED AT 140 LBS/1000 SF (APPROX. 4 BALES) AND SO THAT THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH.
8. ECM IS THE PREFERRED MULCHING MATERIAL AND SHALL BE APPLIED AT A MINIMUM 4 INCH THICKNESS WITH HIGHER AMOUNTS AS DESCRIBED HEREIN.
9. ECM IS THE PREFERRED EROSION CONTROL BARRIER. IF ECM IS NOT AVAILABLE, INSTALLATION OF SILT FENCE ON FROZEN GROUND MAY BE MODIFIED FROM ILLUSTRATIONS AND DETAIL DRAWINGS TO SUBSTITUTE SIX INCHES OF SUITABLE NON-ORGANIC MATERIAL OVER THE BOTTOM OF THE SILT FENCE IN LIEU OF TRENCHING AND BACKFILLING FABRIC.
10. A DOUBLE ROW OF EROSION CONTROL BARRIER WILL BE USED WHERE REQUIRED WITHIN 100 FEET OF WETLANDS AND WATER BODIES.
11. INSPECTION OF EROSION CONTROL MEASURES AND ANY NEEDED REPAIR/REPLACEMENT OF WHICH SHALL OCCUR EACH DAY.
12. PERMANENT SEEDING IS NOT REQUIRED DURING THE WINTER SEASON. HOWEVER, IF DONE, THE CONTRACTOR SHALL FOLLOW PROCEDURES FOR DORMANT SEEDING. THE PERMANENT SEED MIX SHALL BE APPLIED AT THREE TIMES THE STANDARD RATE AND MULCHED. RE-VEGETATION SUCCESS MUST BE INSPECTED BY THE CONTRACTOR IN THE FOLLOWING SPRING (AFTER APRIL 15) AND RE-SEEDED AS NECESSARY IF VEGETATIVE COVER IS LESS THAN 75 PERCENT. ACCEPTANCE OF DORMANT SEEDING AS SUCCESSFUL WILL NOT OCCUR UNTIL AFTER JUNE 1 OF THE FOLLOWING YEAR.

GRAVEL SURFACE SPECIFICATION

THE TYPICAL GRAVEL SURFACE MATERIAL TO BE USED ON THIS PROJECT SHALL CONSIST OF 12" - 24" OF PROCESSED BLAST ROCK SIMILAR TO AN MDOT TYPE D OR AS APPROVED BY ENGINEER.

SOIL HYDROLOGY NOTE

TO THE EXTENT POSSIBLE, EXISTING DRAINAGE FEATURES HAVE BEEN IDENTIFIED AND ARE SHOWN ON THESE DRAWINGS.

WHERE DRAINAGE FEATURES ARE IDENTIFIED DURING CONSTRUCTION THAT WERE NOT LOCATED ON THE PLANS, THE PROJECT'S FIELD ENGINEER AND CIVIL SUPERINTENDENT MAY BE REQUIRED TO REVIEW THESE AREAS WITH THE PROJECT'S WETLAND/SOIL SCIENTIST EXPERT AND/OR DESIGN ENGINEER TO DETERMINE THE APPROPRIATE PROJECT DETAIL TO BE EMPLOYED AT SUCH AREAS.

TEMPORARY CONSTRUCTION ROADS AND ALIGNMENT ADJUSTMENTS

A TEMPORARY UPLAND CONSTRUCTION ROAD MAY BE CLEARED TO A MINIMUM WIDTH TO ALLOW PASSAGE OF CONSTRUCTION EQUIPMENT AND WILL REQUIRE NO OTHER IMPROVEMENTS THAN REMOVAL OF LARGE ROCKS, STUMPS, AND BRUSH AND LIMITED EARTH CUTTING AND FILLING TO FACILITATE VEHICULAR PASSAGE. PREVIOUSLY USED LOGGING ROADS WILL FOLLOW THE NATURAL GROUND CONTOURS WHEN PRACTICAL AND STANDARD EROSION CONTROL MEASURES DESCRIBED IN THE EROSION AND SEDIMENT CONTROL REPORT PLAN WILL BE UTILIZED ALONG THESE AREAS. CORDUROY ROAD, GEOTEXTILES, AND ROCK SANDWICH CONSTRUCTION MAY BE USED IN AREAS WHERE POOR SOIL CONDITIONS EXIST.

WHEN TEMPORARY UPLAND CONSTRUCTION ROADS ARE CONSTRUCTED ALONG THE PROPOSED ROADWAY ALIGNMENT, THE ALIGNMENT WILL BE CLEARED TO A MAXIMUM 40-FOOT WIDTH AND CONSTRUCTED AS DESCRIBED ABOVE. THIS WILL ALLOW FOR ADVANCEMENT OF CONSTRUCTION ACTIVITIES ALONG THE ROUTE AND SLIGHT HORIZONTAL SHIFTS OR VERTICAL ADJUSTMENTS TO THE FINAL ROADWAY ALIGNMENT PRIOR TO COMPLETING FINAL CLEARING ACTIVITIES.

IMPLEMENTATION

SUBSEQUENT TO CLEARING, THE ALIGNMENT WILL BE STAKED OUT AT 50-FOOT CENTERS AND WALKED BY THE OWNER, THE GEOTECHNICAL ENGINEER, AND THE CONTRACTOR TO AGREE ON THE FOLLOWING:

- CONFIRMATION OR RECOMMENDED ADJUSTMENT OF HORIZONTAL AND VERTICAL ALIGNMENT;
- SELECTION OF CROSS SECTION TO BE USED IN THE AREA;
- LOCATIONS FOR CROSS CULVERTS; AND
- OTHER TOOLS TO BE EMPLOYED.

IT WILL BE NECESSARY FOR THIS EFFORT TO PRECEDE CONSTRUCTION BY A SUFFICIENT PERIOD OF TIME IN ORDER THAT ADJUSTMENTS CAN BE MADE AND THE CONTRACTOR CAN HAVE FINAL CLEARING, BLASTING, AND PROPER MATERIALS ON HAND.

REVEGETATION NOTES

UPON COMPLETION OF ROADSIDE CUT AND FILL GRADING WHERE EROSION CONTROL MIX MATERIAL HAS BEEN PLACED AS THE FINAL SURFACE TREATMENT, SEED MIX IS TO BE SPARSELY BROADCAST SPREAD OVER THE EROSION CONTROL MIX. SEED IS TO BE DISPERSED IN LATE SUMMER/EARLY FALL WHEN GROUND CONDITIONS ARE SUFFICIENTLY MOIST, FOLLOWED BY A SECOND, LIGHTER APPLICATION IN LATE FALL. AN INSPECTION OF SEEDED AREAS IS TO BE CONDUCTED IN THE FOLLOWING LATE SUMMER TO ENSURE ADEQUATE SEEDING ESTABLISHMENT.

AT THE END OF THE PROJECT ONCE THE WIDE TRAVEL SURFACES ARE NO LONGER NEEDED THE SAME SEEDING REQUIREMENTS NOTED ABOVE ARE TO BE APPLIED TO ACCESS ROADS IN SELECT AREAS WITHIN THE MAYFIELD POND WATERSHEDS. REFER TO DETAILS FOR CRANE ROAD REVEGETATION LIMITS. EXCEPT FOR A 24' GRAVEL ACCESS WAY, 100'X75' CRANE PAD, 25' DIAM. FOUNDATION, AND 16' GRAVEL RING TO REMAIN ACROSS TURBINE PADS, THE PADS ARE TO BE SCARIFIED COVERED WITH 4-INCHES OF EROSION CONTROL MIX AND SEEDED WITH SEED MIX AS NOTED ABOVE.

IN THE EVENT VEGETATION DOES NOT BECOME ESTABLISHED IN ANY OF THE ABOVE NOTED AREAS ADDITIONAL EROSION CONTROL MIX IS TO BE ADDED AND ADDITIONAL SEED MIX BROADCAST EACH LATE SUMMER/EARLY FALL UNTIL VEGETATION BECOMES ESTABLISHED. THOSE AREAS IN WHICH VEGETATION DOES NOT BECOME ESTABLISHED WITHIN THREE YEARS WILL BE INDIVIDUALLY ASSESSED TO DETERMINE IF SOIL MOISTURE, SEED, AND GROWING CONDITIONS (E.G., DEPTH OF ORGANIC MATERIAL, SUN EXPOSURE) ARE SUITABLE. BASED ON THAT REVIEW, REASONABLE MODIFICATIONS, INCLUDING DIRECT TRANSPLANTING OF SEEDLINGS IF NECESSARY, WILL BE UNDERTAKEN TO CORRECT DEFICIENCIES.

PAD AREAS AND PAD / ROAD AREAS CONSTRUCTED WITH BLAST ROCK WILL NOT REQUIRE ECM OR LOAM AND SEED. THESE AREAS WILL BE ALLOWED TO REVEGETATE NATURALLY.

Side Slope Treatment Option	Recommended Maintenance Procedure
Loam and Seed with Mulch and Mesh	- Mowing. - Replacement of washout areas.
Erosion Control Mix with Mesh	- Replacement of lost Erosion Control Mix.
Stone Face	- Washing to remove sediment. - Replacing displaced stone. - Filling gaps with new stone.
Reinforced Turf or Reinforced Erosion Control Mix	- Mowing. - Replacement of damaged/removed reinforcement.
Rip Rap	- Removal of sediment. - Replacing displaced stones. - Filling gaps with new stone.
Alternate Fill with Reinforcement	- Mowing. - Reparation of damaged mesh.
Reinforced Embankment	- Removal of larger vegetation.
Rock Face	- Remove loose rock from rock face. - Stabilize deteriorated areas.

AREA	TURBINE / PMT	NORTHING	EASTING	PROP. ELEV AT TURBINE
SOUTH	1	16368559.31	1435863.89	1525.0
	2	16369588.52	1436293.97	1482.8
	3	16370374.46	1436790.86	1432.1
	4	16371162.99	1437283.59	1456.5
	5	16372992.84	1436952.84	1400.3
	6	16373525.11	1437933.14	1465.4
	7	16374824.25	1438400.19	1492.0
	7ALT	16375583.75	1437704.23	1479.6
	8	16375872.46	1438781.71	1520.3
	9	16376184.10	1439944.75	1502.0
	10	16376603.06	1440975.05	1528.8
	11	16378440.41	1440658.96	1472.4
	12	16380727.20	1446343.18	1489.9
	13	16380982.59	1447429.77	1510.0
	14	16381191.97	1448595.17	1540.9
	15	16381401.41	1449760.89	1538.8
	16	16384257.90	1451897.09	1487.7
	17	16384815.64	1452863.13	1568.2
	18	16385197.16	1453911.34	1582.8
	19	16385578.67	1454955.55	1602.8
	20	16386677.21	1455153.25	1502.3
	73	16382518.70	1439911.66	1397.9
	74	16383076.45	1440877.69	1428.8
	75	16383764.16	1441756.86	1420.5
	76	16384677.61	1442610.99	1406.0
	77	16385591.80	1443463.49	1378.5
	PMT 8-9	16376712.67	1439179.86	1499.7
	PMT 18	16385694.20	1453046.81	1557.9
	PMT 73-74	16383442.17	1440022.96	1430.8
NORTH	21	16391597.46	1459665.35	1397.8
	22	16392752.02	1459889.78	1451.3
	23	16393540.79	1460678.54	1530.1
	24	16394654.58	1460605.33	1512.8
	25	16395767.68	1460532.38	1465.9
	26	16396366.29	1461331.78	1469.3
	27	16397155.06	1462120.54	1495.0
	28	16397943.83	1462909.31	1507.1
	29	16400171.95	1462722.56	1523.7
	30	16400744.02	1463539.56	1606.2
	31	16401923.49	1463736.89	1502.3
	32	16402963.60	1464326.83	1505.1
	33	16403521.34	1465292.87	1509.4
	34	16404079.09	1466258.90	1492.0
	35	16404699.45	1467186.34	1524.6
	36	16404712.25	1468302.97	1584.1
	37	16405804.98	1468527.01	1603.2
	38	16405957.32	1469767.69	1705.7
	39	16406440.85	1470640.01	1725.5
	40	16406924.39	1471512.34	1767.9
	41	16407482.13	1472478.37	1699.3
	42	16406714.81	1476318.50	1581.1
	43	16406714.81	1477433.99	1603.9
	44	16408472.99	1478256.00	1598.0
	45	16409749.86	1471403.59	1597.5
	46	16409775.88	1472687.81	1648.1
	47	16409798.31	1473973.04	1681.9
	48	16410157.57	1475029.15	1711.8
	49	16410623.63	1476042.15	1630.0
	50	16411181.37	1477008.19	1591.7
	51	16411777.00	1478147.57	1554.7
	53	16412604.41	1470724.77	1605.5
	54	16413103.10	1471588.52	1606.7
	55	16413442.00	1472750.48	1552.6
	56	16413762.37	1473853.17	1554.6
	57	16414261.05	1474716.92	1535.7
	58	16414261.05	1475832.41	1460.7
	PMT 27-28	16398264.72	1462059.27	1492.8
	PMT 53-54	16413333.12	1470880.07	1597.7

LEGEND

EXISTING

- PARCEL BOUNDARY
- 2 FOOT CONTOUR
- 2420 — 10 FOOT CONTOUR
- 1610.7 — SPOT GRADE
- CULVERT
- PAVED SURFACE
- GRAVEL SURFACE
- TREE LINE
- TP-2 — TEST PIT / BORING
- ROCK OUTCROP
- BORROW AREA
- HIGH INTENSITY SOIL LINE
- SCS LINE
- CEM — CEMETERY
- DELINEATED WETLAND
- NORTHERN SPRING SALAMANDER 250' STREAM BUFFER
- SIGNIFICANT VERNAL POOL
- SIGNIFICANT VERNAL POOL BUFFER
- STREAM
- NATURAL RESOURCES DELINEATION LIMIT

PROPOSED

- BUILDING
- ROAD ALIGNMENTS
- LAYDOWN AREA
- TURBINE LOCATION
- PMT / TMT — MET TOWER
  - PERMANENT
  - TEMPORARY
- CRANE PAD
- LIMIT OF CLEARING
- B — RESTRICTED CLEARING BUFFER AREA
- LMRA — LAND MANAGEMENT ROAD ACCESS POINT
- AD-S4 — ROADSIDE BUFFER
- DT-S36 — DITCH TURNOUT BUFFER
- LS-S73 — LEVEL LIP SPREADER BUFFER
- C-S8 — CULVERT
- REVEGETATED AREA
- CHAIN LINK FENCE
- 102 — 2 FOOT CONTOUR
- 100 — 10 FOOT CONTOUR
- UTILITY POLE
- OHE — COLLECTION / TRANSMISSION SYSTEM - OVERHEAD LINE
- UGE — COLLECTION SYSTEM - UNDERGROUND LINE
- JUNCTION BOX

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO.: 3048
FILE NAME: 3048-GENERAL NOTES

GENERAL NOTES AND LEGEND

STATE OF MAINE — STEVEN J. BLAKE — 11685 — LICENSED PROFESSIONAL ENGINEER

P.E. STEVEN J. BLAKE II
LIC. # 11685

BINGHAM WIND PROJECT

BLUE SKY WEST, LLC

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET SUITE 5
SOUTH PORTLAND, ME 04106
207.775.1121
www.delucahoffman.com

SHEET
C-2.0

NORTH

FOSS POND CONSERVATION MANAGEMENT DISTRICT

NORTH PLAN AREA
SEE SHEETS C-N1.00 TO C-N2.00

PROPOSED TRANSMISSION SYSTEM - SEE PLANS BY OTHERS

COLLECTION SYSTEM PLAN AREA
SEE SHEETS CL-1.01 TO CL-1.07

SOUTH PLAN AREA
SEE SHEETS C-S1.00 TO C-S2.00

SUBSTATION

PMT 53-54

PMT 27-28

PMT 18

PMT 73-74

PMT 8/9

O & M BUILDING

MOSCOW AIR FORCE STATION TRANSMIT SITE

ROUTE 16

ROUTE 151

ROUTE 201

OLD MOUNTAIN ROAD

HAYDEN POND ROAD

NEW HAYDEN POND ROAD

T ROAD

KINGSBURY PLT

BRIGHTON PLT

MAYFIELD (T2 R2 BKP EKR)

PRELIMINARY - NOT FOR CONSTRUCTION

2500 0 1250 2500 5000
(IN FEET)
1 inch = 2500 ft.

NO.	DESCRIPTION	DATE
3	PERMIT PLAN SUBMISSION	04.09.13
2	ACOE REVISIONS	03.06.13
1	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW	12.19.12

OVERALL ORIENTATION MAP

DRAWN:	DED	SCALE:	1" = 2500'
DESIGNED:	SJB	DATE	SEPT 2012
CHECKED:	SRB	JOB NO.	3048
FILE NAME:	3048-BASE		

STATE OF MAINE STEVEN J. BLAKE 11695 REGISTERED PROFESSIONAL ENGINEER

P.E. STEVEN J. BLAKE III
LIC. # 11695

BINGHAM WIND PROJECT

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DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
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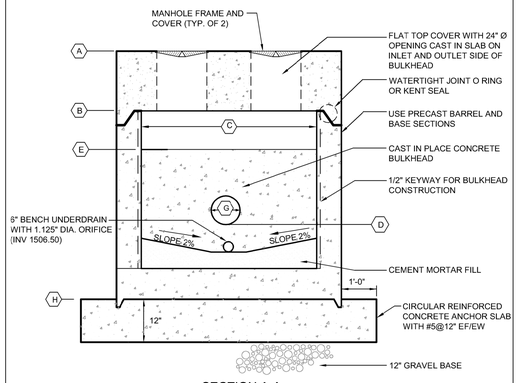
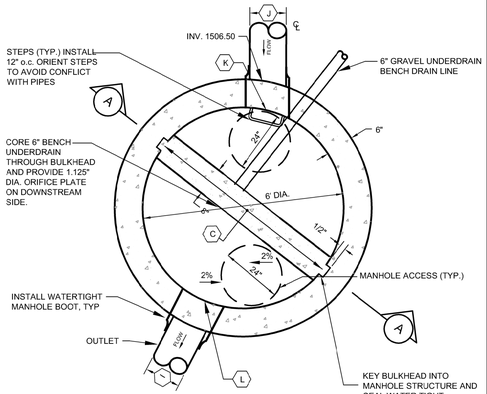
SHEET
C-3.0

R:\3048-Bingham Wind Farm\Cadd\Permit Set\dwg\3048-BASE.dwg ddavis 4/9/2013 10:38 AM



SECTION A-A

SEE SCHEDULE A



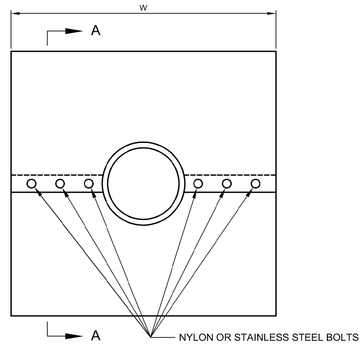
PLAN VIEW

SEE SCHEDULE A

STORMWATER MANAGEMENT POND

OUTLET CONTROL STRUCTURE

A N.T.S.



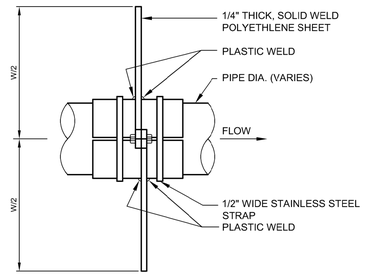


TABLE OF QUANTITIES				
PIPE DIA.	SHEET SIZE	COLLAR SIZE	NUMBER OF BANDS	NUMBER OF 3/8" x 1" BOLTS
4" - 15"	(W)	6"	2	6
18" - 24"	4' x 4' 6' x 6'	8"	2	6

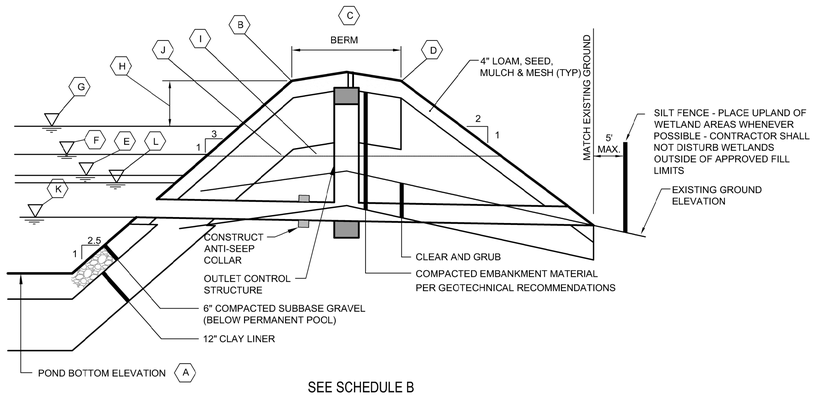
SECTION A-A

NOTES:

1. PIPE, COLLAR, AND SEAM COATING CAN BE EITHER SILICON CAULK (ASTM C920) (RECOMMENDED), OR MASTIC (ASPHALT OR TAR BASED) (ASTM A849, TROWEL GRADE).
2. APPLY SILICON CAULK OR MASTIC ON SEAMS AND AS NEEDED TO INSURE A WATERTIGHT INSTALLATION.
3. BACKFILL AROUND COLLAR AND AROUND NORMAL TRENCH SECTION WITH CLAYEY BACKFILL.

C SEEPAGE COLLAR DETAIL

N.T.S.

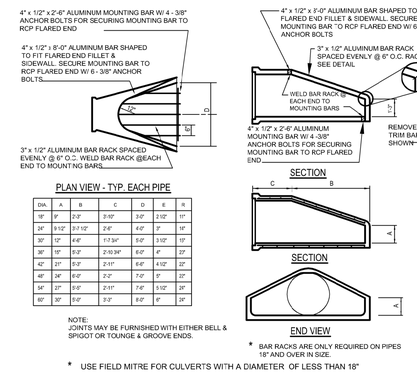


SEE SCHEDULE B

E TYPICAL CROSS-SECTION RETENTION/DETENTION FACILITY

N.T.S.

SCHEDULE B EMBANKMENT SCHEDULE		
	ITEM DESCRIPTION	DIMENSION/ ELEVATION
A	POND BASE ELEVATION	1502.50
B	TOP OF BASIN AT INSIDE OF BERM ELEV.	1514.0
C	WIDTH OF BERM	8'
D	TOP OF BASIN AT OUTSIDE OF BERM ELEV.	1514.0
E	2 YEAR STAGE ELEV.	1510.0
F	10 YEAR STAGE ELEV.	1510.76
G	25 YEAR STAGE ELEV.	1511.10
H	FREEBOARD (25 YR. STORM)	1.9'
I	CREST OF SPILLWAY ELEV.	1512.0
J	WIDTH OF SPILLWAY	10'
K	PERMANENT WET POND ELEV.	1509.0
L	CHANNEL PROTECTION ELEV.	1510.5



DIA	A	B	C	D	E	N
15"	9"	2'-3"	3'-10"	3'-0"	2'-10"	11"
24"	9 1/2"	3'-1 1/2"	2'-6"	4'-0"	3"	16"
30"	12"	4'-6"	1'-7 3/4"	5'-0"	3 1/2"	19"
36"	15"	5'-3"	2'-10 3/4"	6'-0"	4"	23"
42"	21"	5'-3"	2'-11"	6'-6"	4 1/2"	22"
48"	24"	6'-0"	2'-3"	7'-0"	5"	23"
54"	27"	6'-9"	2'-11"	7'-6"	5 1/2"	26"
60"	30"	8'-0"	3'-3"	8'-0"	6"	24"

NOTE:
JOINTS MAY BE FURNISHED WITH EITHER BELL & SPIGOT OR TOUNGE & GROOVE ENDS.

* BAR RACKS ARE ONLY REQUIRED ON PIPES 18" AND OVER IN SIZE.

* USE FIELD MITRE FOR CULVERTS WITH A DIAMETER OF LESS THAN 18"

D RCP FLARED END WITH BAR RACK DETAIL

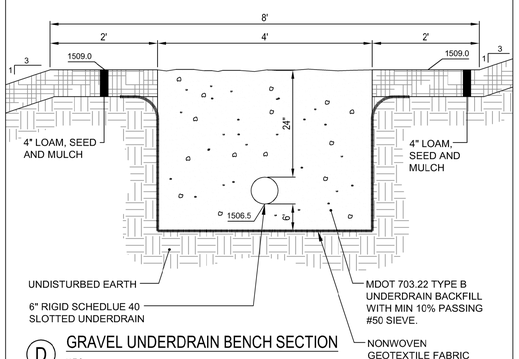
N.T.S.

REQUIRED FOR ALL INLETS/OUTLETS FOR PIPE 18" AND LARGER.

SCHEDULE A OUTLET CONTROL STRUCTURE			
	ITEM DESCRIPTION	DIMENSION	INVERT/ ELEVATION
A	TOP OF STRUCTURE	-	1514.0
B	UNDERSIDE TOP SLAB	-	1513.33
C	WEIR	6'	-
D	ORIFICE INVERT	-	1509.0
E	TOP OF CONCRETE BULKHEAD	-	1512.0
G	ORIFICE DIAMETER	4"	-
H	BOTTOM OF STRUCTURE	-	1505.90
I	PIPE DIAMETER	24"	-
J	PIPE DIAMETER	24"	-
K	INVERT IN	-	1510.50
L	INVERT CUT	-	1506.40

B SCHEDULE A

N.T.S.



D GRAVEL UNDERDRAIN BENCH SECTION

N.T.S.

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

WET POND DETAILS

DRAWN: SJB | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

STATE OF MAINE
STEVEN J. BLAKE
PLAKE
11695
LICENSED
PROFESSIONAL ENGINEER

P.E. STEVEN J.BLAKE II
LIC. # 11695

BINGHAM WIND PROJECT

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REED ENGINEERING GROUP
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SOUTH PORTLAND, ME 04106
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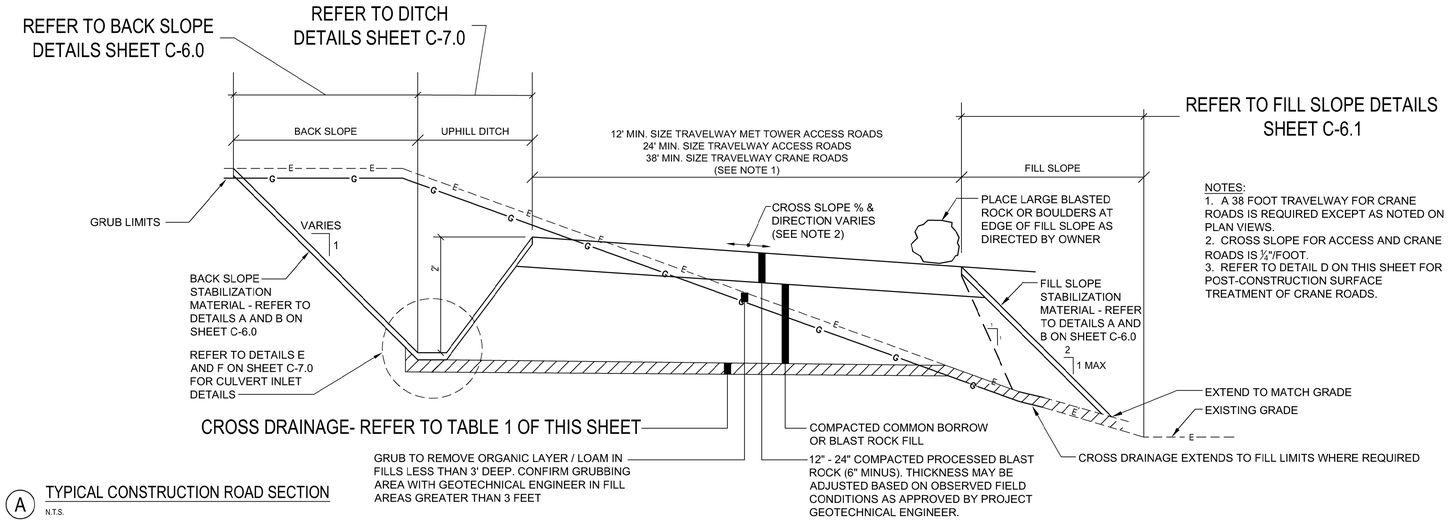
www.delucahoffman.com

SHEET

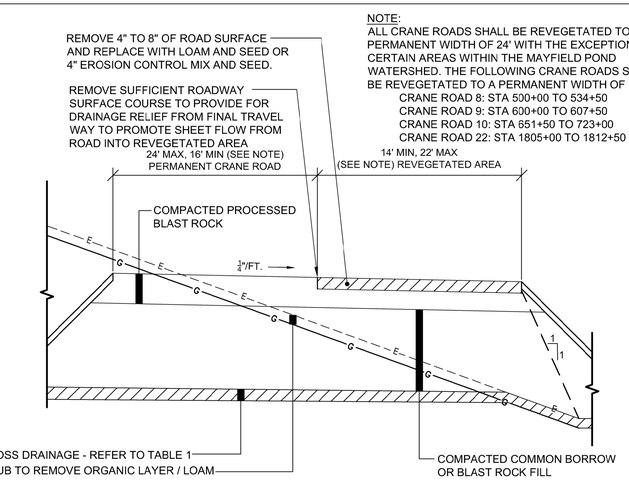
C-4.0

PRELIMINARY - NOT FOR CONSTRUCTION



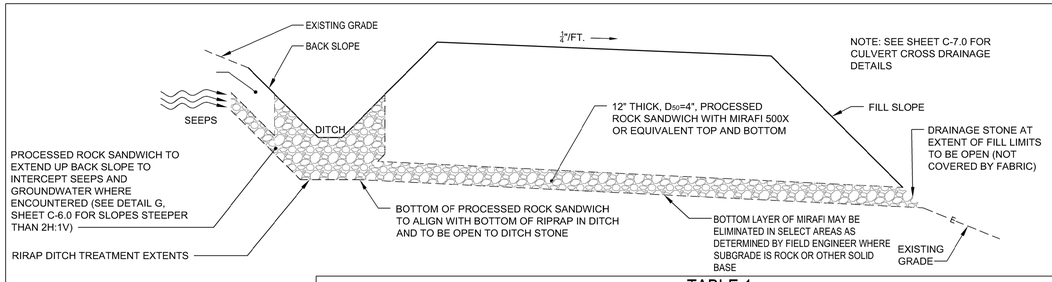
NOTES:
1. A 38 FOOT TRAVELWAY FOR CRANE ROADS IS REQUIRED EXCEPT AS NOTED ON PLAN VIEWS.
2. CROSS SLOPE FOR ACCESS AND CRANE ROADS IS ¼"/FOOT.
3. REFER TO DETAIL D ON THIS SHEET FOR POST-CONSTRUCTION SURFACE TREATMENT OF CRANE ROADS.

A TYPICAL CONSTRUCTION ROAD SECTION
N.T.S.



NOTE:
ALL CRANE ROADS SHALL BE REVEGETATED TO A PERMANENT WIDTH OF 24' WITH THE EXCEPTION OF CERTAIN AREAS WITHIN THE MAYFIELD POND WATERSHED. THE FOLLOWING CRANE ROADS SHALL BE REVEGETATED TO A PERMANENT WIDTH OF 16':
CRANE ROAD 8: STA 500+00 TO 534+50
CRANE ROAD 9: STA 600+00 TO 607+50
CRANE ROAD 10: STA 651+50 TO 723+00
CRANE ROAD 22: STA 1805+00 TO 1812+50

D POST CONSTRUCTION REVEGATION DETAIL (CRANE ROADS ONLY)
N.T.S.



NOTE: THE PRIMARY OBJECTIVE OF THIS CROSS DRAINAGE DETAIL IS TO KEEP EXISTING HYDROLOGY INTACT TO THE EXTENT POSSIBLE

TABLE 1
CROSS DRAINAGE OPTIONS

CONDITION	TYPICAL SOIL TYPE	DRAINAGE LAYER	6" CROSS PIPING	CULVERTS
① DRY SUBSOIL, NO SEEPS OR WATER TABLE AND SMALL WATERSHED ABOVE ROAD	-	NOT REQUIRED	NOT REQUIRED	REQUIRED FOR CONDITIONS 1 AND 2
② SEEPS OR WATER TABLE ENCOUNTERED OR SIGNIFICANT WATERSHED SIZE ABOVE ROAD	-	12" THICK, D_{50}=4", PROCESSED ROCK SANDWICH AS SHOWN ON PLANS*	AS SHOWN ON PLANS (AT MORE SIGNIFICANT SEEPS - SPACING TO BE DETERMINED BY FIELD ENGINEER)*	
③ ROAD CONSTRUCTED ON DRAINAGE DIVIDE, NO WATER TABLE (NO CROSS DRAINAGE REQUIRED)	-	NOT REQUIRED	NOT REQUIRED	NOT REQUIRED

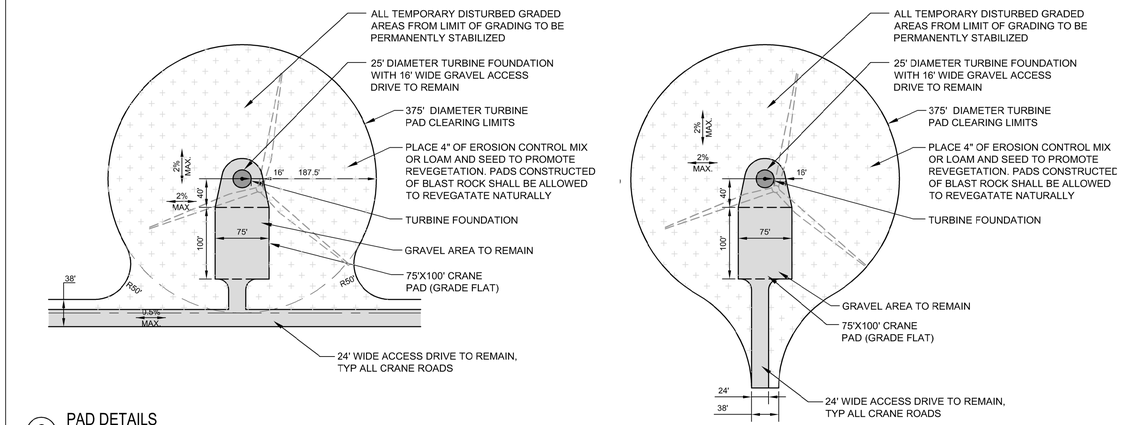
*ADDITIONAL AREAS REQUIRING THE ROCK SANDWICH OR CROSS PIPING MAY BE ENCOUNTERED ONCE CONSTRUCTION COMMENCES AND WILL BE DETERMINED BY THE FIELD ENGINEER AND CIVIL SUPERINTENDENT.

B CROSS DRAINAGE
N.T.S.

GENERAL ROADWAY CROSS SECTION NOTES (APPLICABLE TO ALL SECTIONS):

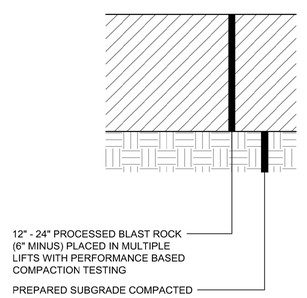
1. ALL PROPOSED ROADWAY GRADES, CUTS, FILLS AND SLOPES SUBJECT TO FINAL GEOTECHNICAL INVESTIGATION PRIOR TO CONSTRUCTION.
2. ROADWAY PROCESSED BLAST ROCK TO EXTEND TO EDGE OF THE DITCH/FILL SLOPE.
3. MAXIMUM LIFT THICKNESS AND COMPACTION SHALL BE PERFORMED BASED AND COORDINATED WITH THE PROJECT GEOTECHNICAL ENGINEER.
4. ROAD AREA SHALL BE GRUBBED A MINIMUM OF 6 INCHES BELOW EXISTING GRADE AND TO A DEPTH SUFFICIENT TO REMOVE ALL ORGANICS. BRING TO SUBGRADE WITH COMMON BORROW OR SUITABLE BLAST ROCK FILL. IN FILL AREAS GREATER THAN 3 FEET CONFIRM GRUBBING REQUIREMENTS WITH PROJECT GEOTECHNICAL ENGINEER.
5. GEOTEXTILE FABRIC TO BE PLACED BENEATH ROAD SUBBASE IN AREAS OF WEAK OR UNSTABLE SUBGRADE.
6. LIMIT ROADWAY CLEARING TO THE EXTENT PRACTICABLE. TYPICALLY, CLEARING SHOULD BE LIMITED TO 10 FEET FROM THE BOTTOM OF FILL SLOPES AND 5 FEET FROM THE TOP OF CUT SLOPES.
7. IN AREAS WHERE EXISTING ROADS ARE BEING IMPROVED, RE-CONSTRUCTED OR WIDENED, THE CONTRACTOR IS TO VERIFY THE ADEQUACY OF ROADWAY BASE AND SURFACE MATERIALS. IF EXISTING MATERIAL IS FOUND TO BE INADEQUATE OR OF INSUFFICIENT DEPTH, EXISTING ROADWAY MATERIALS ARE TO BE REMOVED, REPLACED, AND IMPROVED TO MEET THE SPECIFICATION OF THE ROADWAY DETAILS AS SHOWN ON THIS SHEET.
8. ROADSIDE SWALES ARE TO BE FINISHED PER THE DETAILS AS INDICATED. SWALES ARE TO BE GRASS LINED FOR ROAD SLOPES OF 6% OR LESS. SWALES WITH SLOPES GREATER THAN 6% ARE TO BE FINISHED PER THE STONE LINED SWALE DETAIL.
9. ROADWAY RE-VEGETATION IS TO OCCUR PER THE ROAD RE-VEGETATION DETAIL, THIS SHEET.

E GENERAL ROADWAY CROSS SECTION NOTES (APPLICABLE TO ALL SECTIONS)
N.T.S.

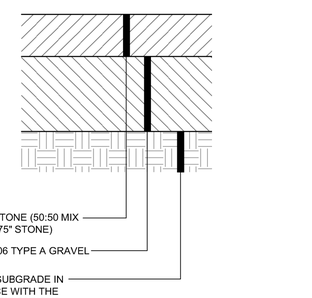


C PAD DETAILS
N.T.S.

NOTES:
1. ACTUAL LOCATIONS OF CRANE PADS SHALL BE DETERMINED IN THE FIELD
2. CRANE PADS SHALL BE GRADED WITH NO CROSS SLOPE



F TYPICAL GRAVEL CRANE PAD SECTION
N.T.S.



G SUBSTATION PAD SECTION
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

DRAWN: SJB | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO.: 3048
FILE NAME: 3048-DET

ROADWAY AND PAD SECTION DETAILS

STATE OF MAINE STEVEN J. BLAKE 11695 REGISTERED PROFESSIONAL ENGINEER
P.E. STEVEN J BLAKE II
LIC. # 11695

BINGHAM WIND PROJECT
BLUE SKY WEST, LLC

RED FEC

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DH

SHEET
C-5.0

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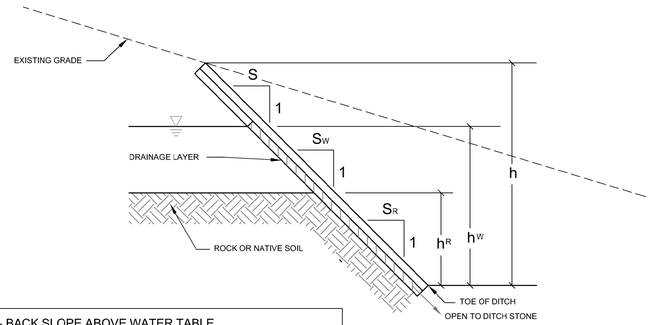
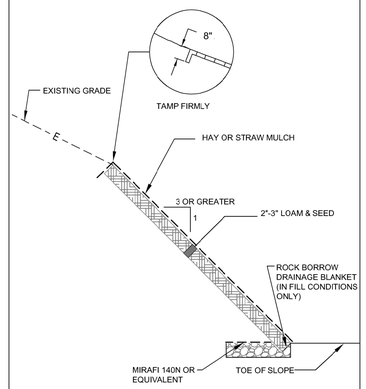
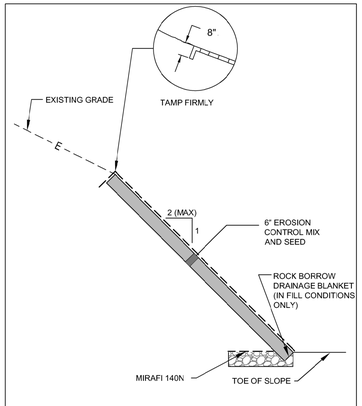


S - BACK SLOPE ABOVE WATER TABLE
S_W - BACK SLOPE BELOW WATER TABLE
S_R - BACK SLOPE IN ROCK
h_W - HEIGHT FROM TOE OF DITCH TO WATER TABLE
h_R - HEIGHT FROM TOE OF DITCH TO ROCK
h - SLOPE HEIGHT

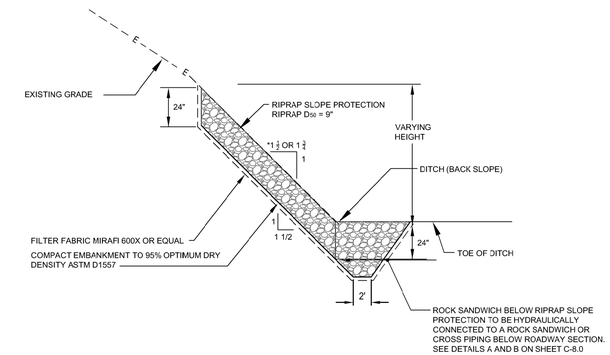
A GENERIC BACK SLOPE DETAIL
N.T.S.



C LOAM, SEED AND MULCH SLOPE (FOR EARTH SOIL BACK SLOPE CONDITIONS ONLY)
N.T.S.

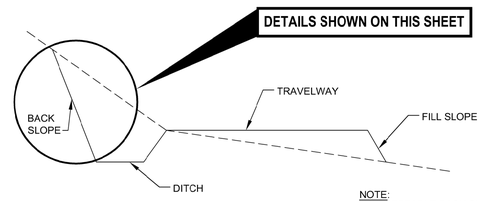


F EROSION CONTROL MIX SLOPE (FOR EARTH SOIL BACK SLOPE CONDITIONS ONLY)
N.T.S.



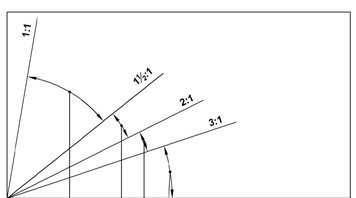
H RIPRAP SLOPE DETAIL (FOR EARTH SOIL BACK SLOPE CONDITIONS ONLY)
N.T.S.

CONDITION	Sr	Sw	S	LOAM SEED AND MULCH	EROSION CONTROL MIX	STONE FACE	RIPRAP	EXPOSED ROCK	ALT. MEASURES TO BE DETERMINED BY GEOTECHNICAL ENGINEER
ABOVE WATER TABLE	N/A	N/A	<1:1	--	--	--	--	--	X
ABOVE ROCK	N/A	N/A	1.1 to 1.75:1	--	--	--	X	--	--
	N/A	N/A	2:1	--	X	X	--	--	--
	N/A	N/A	3:1	--	X	X	--	--	--
	-	-	-	X	X	X	--	--	--
ABOVE WATER TABLE W/ ROCK	1:1	N/A	1:1	--	--	--	--	X	--
	1:1	N/A	1.5 to 1.75:1	--	--	--	--	X	--
	1:1	N/A	2:1	--	--	--	--	X	--
	1:1	N/A	3:1	--	--	--	--	X	--
	1:1	N/A	>3:1	--	--	--	--	X	--
BELOW WATER TABLE; ABOVE ROCK	N/A	Varies	1:1	--	--	--	--	--	X
(DRAINAGE LAYER OR PIPING REQUIRED)	N/A	Varies	1.5 to 1.75:1	--	--	--	X	--	--
	N/A	Varies	2:1	--	--	--	X	--	--
	N/A	Varies	3:1	--	--	--	X	--	--
	N/A	Varies	>3:1	--	--	--	X	--	--
BELOW WATER TABLE WITH ROCK	1:1	Varies	1:1	--	--	--	--	X	--
	1:1	Varies	1.5 to 1.75:1	--	--	--	--	X	--
	1:1	Varies	2:1	--	--	--	--	X	--
	1:1	Varies	3:1	--	--	--	--	X	--
	1:1	Varies	>3:1	--	--	--	--	X	--



NOTE:
1. ACCEPTABLE BACK SLOPE MATERIALS FOR SPECIFIC CONDITIONS ARE DESIGNATED BY AN "X".

2. PREFERENCE IS TO BE GIVEN TO SELECTING SLOPE TREATMENTS WHICH WILL MOST EASILY REVEGETATE OVER TIME. .



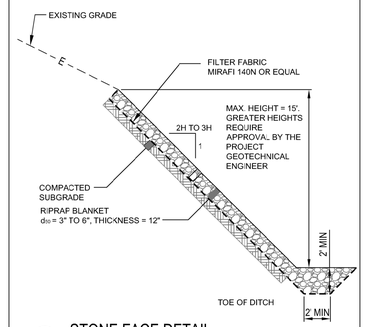
LOAM & SEED W/ MULCH & MESH OR REFER TO DETAIL C THIS SHEET EROSION CONTROL MIX W/ MESH REFER TO DETAIL D THIS SHEET

STONE FACE REFER TO DETAIL D THIS SHEET
OR REINFORCED TURF REFER TO DETAIL F THIS SHEET
OR REINFORCED EROSION CONTROL MIX REFER TO DETAIL G THIS SHEET

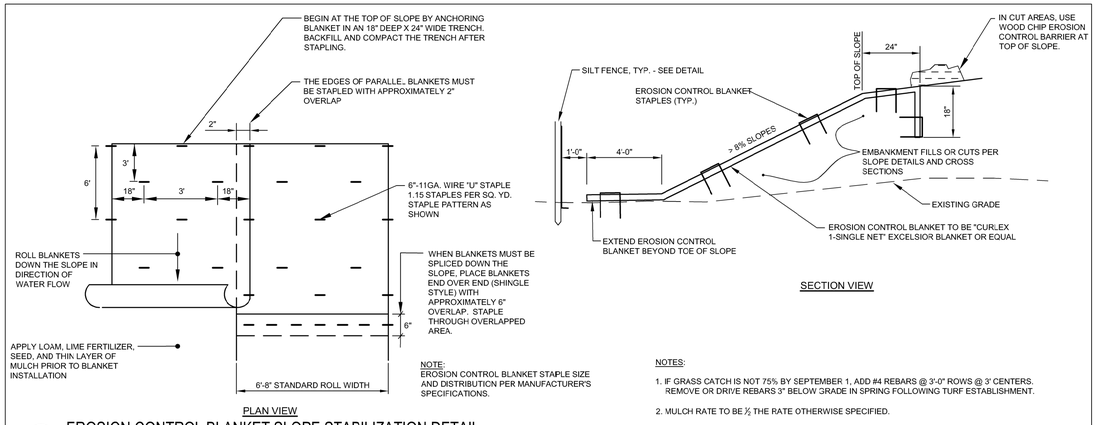
RIP RAP REFER TO DETAIL G THIS SHEET

ROCK FACE REFER TO DETAIL J THIS SHEET OR ALT. MEASURES AS DETERMINED BY THE GEOTECHNICAL ENGINEER.

B PERMISSIBLE BACK SLOPE MATERIALS
N.T.S.



D STONE FACE DETAIL
N.T.S.

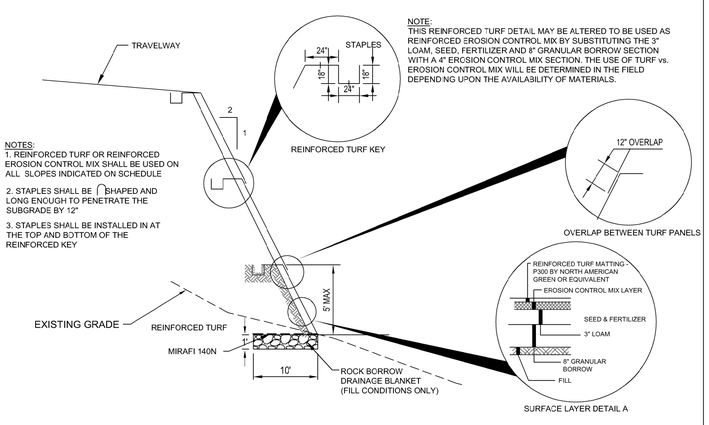


NOTE:
EROSION CONTROL BLANKET STAPLE SIZE AND DISTRIBUTION PER MANUFACTURERS SPECIFICATIONS.

NOTES:
1. IF GRASS CATCH IS NOT 75% BY SEPTEMBER 1, ADD #4 REBARS @ 3'-0" ROWS @ 3' CENTERS. REMOVE OR DRIVE REBARS 3" BELOW GRADE IN SPRING FOLLOWING TURF ESTABLISHMENT.

2. MULCH RATE TO BE ½ THE RATE OTHERWISE SPECIFIED.

G EROSION CONTROL BLANKET SLOPE STABILIZATION DETAIL
N.T.S.



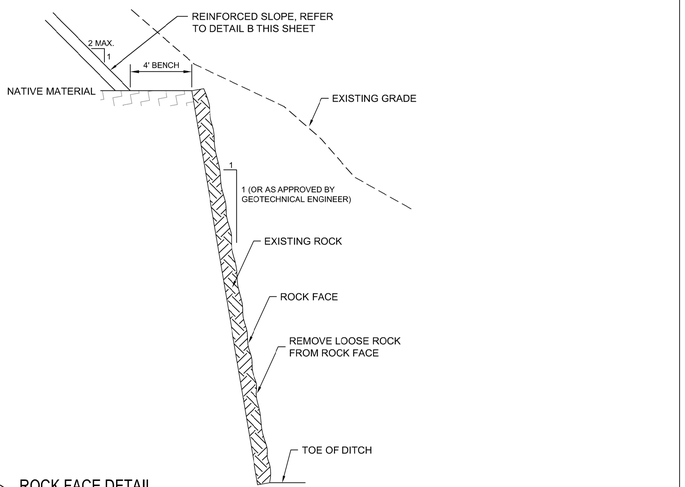
NOTES:
1. REINFORCED TURF OR REINFORCED EROSION CONTROL MIX SHALL BE USED ON ALL SLOPES INDICATED ON SCHEDULE

2. STAPLES SHALL BE ⌒ SHAPED AND LONG ENOUGH TO PENETRATE THE SUBGRADE BY 12"

3. STAPLES SHALL BE INSTALLED IN AT THE TOP AND BOTTOM OF THE REINFORCED KEY

NOTE:
THIS REINFORCED "TURF DETAIL MAY BE ALTERED TO BE USED AS REINFORCED EROSION CONTROL MIX BY SUBSTITUTING THE 3" LOAM, SEED, FERTILIZER AND 8" GRANULAR BORROW SECTION WITH A 4" ERCSION CONTROL MIX SECTION. THE USE OF TURF vs. EROSION CONTROL MIX WILL EE DETERMINED IN THE FIELD DEPENDING UPON THE AVAILABILITY OF MATERIALS.

E REINFORCED TURF AND REINFORCED EROSION CONTROL MIX DETAILS - FOR EARTH FILL CONDITIONS
N.T.S.



I ROCK FACE DETAIL
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

BACK SLOPE DETAILS

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

STATE OF MAINE — STEVEN J. BLAKE — 11695 — REGISTERED PROFESSIONAL ENGINEER

P.E. STEVEN J BLAKE II
LIC. # 11695

BINGHAM WIND PROJECT

BLUE SKY WEST, LLC

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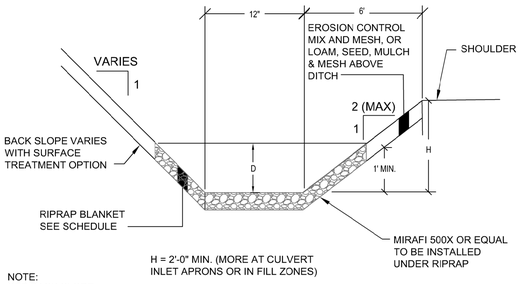
SHEET
C-6.0



H = 2'-0" MIN. (MORE AT CULVERT INLET APRONS OR IN FILL ZONES)

NOTE:
SEE BACK SLOPE DETAILS SHEET C-6.0

A DITCH DETAIL (SOIL CONDITIONS ONLY)
N.T.S.

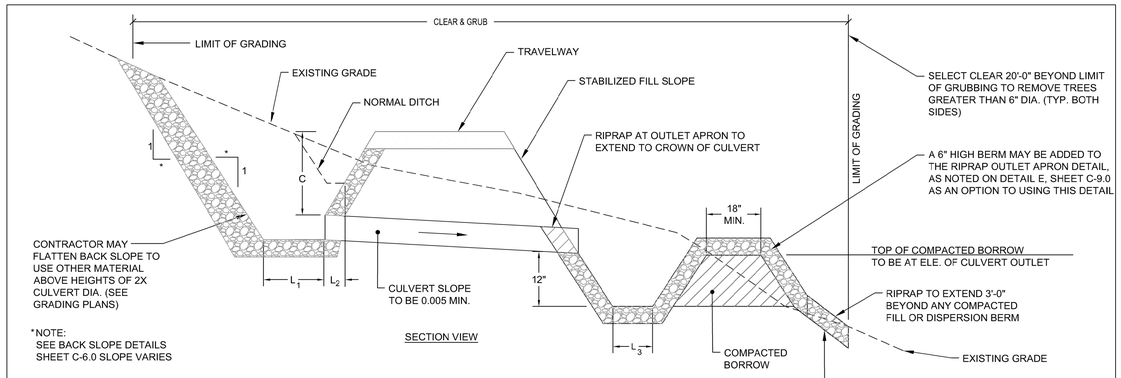
TABLE 2

ACCEPTABLE DITCH LINING RIPRAP MATERIAL SIZE, DEPTH & THICKNESS

		DITCH GRADIENT 0-5%		DITCH GRADIENT 5-10%		DITCH GRADIENT 10-15%	
CULVERT SIZE BELOW DITCH	D	RIPRAP SIZE	RIPRAP THICKNESS	RIPRAP SIZE	RIPRAP THICKNESS	RIPRAP SIZE	RIPRAP THICKNESS
12"	11"	3"	7"	3"	7"	6"	14"
18"	15"	3"	7"	6"	14"	6"	14"
24"	19"	6"	14"	6"	14"	9"	21"
30"	24"	6"	14"	9"	21"	9"	21"
36"	24"	6"	14"	9"	21"	12"	27"

NOTE: WHERE 15" CULVERTS ARE USED THEY ARE TO MATCH RIPRAP REQUIREMENTS FOR THE 18" CULVERTS

DITCH TREATMENT OPTIONS
N.T.S.

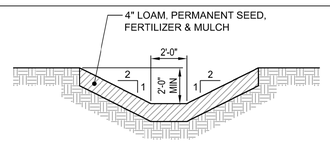


*NOTE:
SEE BACK SLOPE DETAILS SHEET C-6.0 SLOPE VARIES

SECTION VIEW

D TYPICAL CULVERT INSTALLATION WITH FLOW DISPERSION BERM AND PLUNGE POOL
N.T.S.

B VACANT
N.T.S.



NOTES:

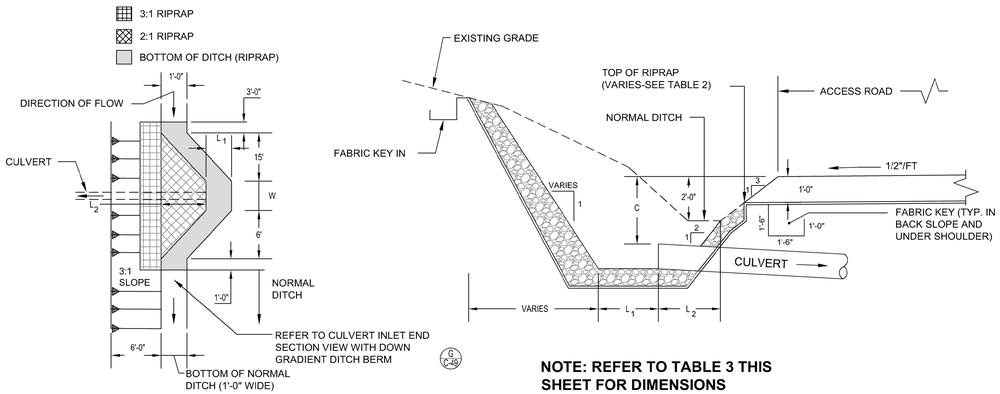
1. GRASSED WATERWAYS / SWALES ARE TO BE USED ONLY FOR SLOPES 6% OR LESS. FOR SLOPES GREATER THAN 6%, STONE LINED SWALES ARE TO BE UTILITIZED. SEE DETAIL, THIS SHEET.
2. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SC AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.
3. THE WATERWAY SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
4. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE WATERWAY.
5. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF IN UPLAND AREAS SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE WATERWAY.
6. GRASSED WATERWAY SHALL BE FINISHED AND STABILIZED AS FOLLOWS:

A. A MINIMUM OF 2" SCREENED LOAM OR 4" EROSION CONTROL MIX SHALL BE PROVIDED AS TOPSOIL.

B. DURING THE WINTER MONTHS, THE PERIMETER SWALE IS TO BE LINED WITH EITHER EROSION CONTROL MIX OR EROSION CONTROL BLANKET AS GROUND CONDITIONS DICTATE.

C. THE GRASSED WATERWAY IS TO BE MULCHED AND SEEDED TO ENCOURAGE A GOOD CATCH OF GRASS AT THE COMPLETION OF CONSTRUCTION WHEN WINTER CONDITIONS HAVE SUBSIDED. SEED MIX SHALL BE: NEW ENGLAND LOGGING ROAD SEED MIX AS MANUFACTURED BY "NEW ENGLAND WETLAND PLANTS, INC." - AMHERST, MA. OR EQUIVALENT.

C GRASS LINED DITCH DETAIL
N.T.S.



NOTE: REFER TO TABLE 3 THIS SHEET FOR DIMENSIONS

E CULVERT INLET PLAN VIEW
N.T.S.

CULVERT INLET SECTION VIEW
N.T.S.

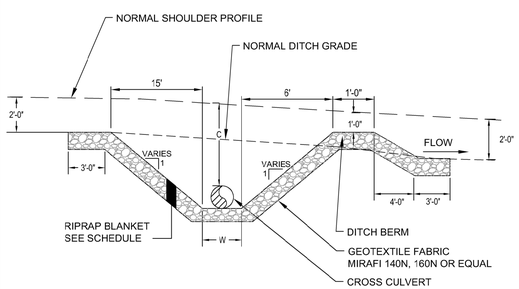


TABLE 3

DIMENSIONAL SCHEDULE FOR CULVERT INLETS AND FLOW DISPERSION BERMS

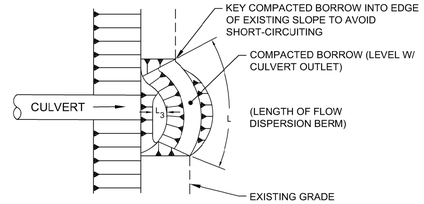
CULVERT DIAMETER	RIPRAP BLANKET D_{50}	RIPRAP BLANKET THICKNESS	W	C	L_1	L_2	L_3	L
12"	6"	14"	2'	36"	2'	4'	8'	8'
18"	6"	14"	4'	30"	4'	4'	*	*
24"	6"	14"	6'	24"	6'	4'	*	*
30"	12"	27"	8'	24"	8'	5'	*	*
36"	12"	27"	8'	24"	8'	6'	*	*

NOTE: WHERE 15" CULVERTS ARE USED THEY ARE TO MATCH RIPRAP REQUIREMENTS FOR THE 18" CULVERTS

*FLOW DISPERSION BERMS ARE NOT TO BE USED FOR CULVERTS LARGER THAN 15 INCHES.

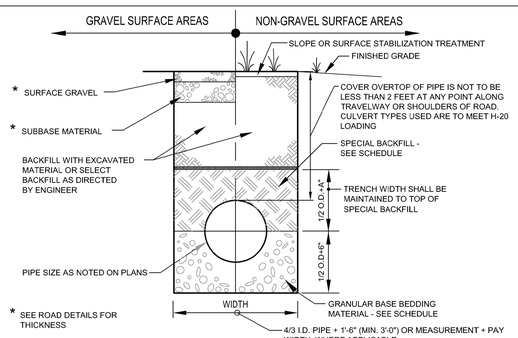
F CULVERT INLET END SECTION VIEW WITH DOWN GRADIENT DITCH BERM
N.T.S.

NOTE:
1. FLOW DISPERSION BERMS ARE TO BE USED WHERE CONCENTRATED FLOW BELOW THE ROAD SECTION IS NOT OBVIOUS. A 6" HIGH BERM MAY BE ADDED TO THE RIPRAP OUTLET APRON DETAIL, AS NOTED ON DETAIL E SHEET C-9.0 AS AN OPTION TO USING THIS DETAIL.
2. REFER TO TABLE 3 THIS SHEET FOR DIMENSIONS



NOTE: FLOW DISPERSION BERMS ARE TO BE SITED SUCH THAT FLOWS WILL ENTER IN AN IDENTIFIABLE CHANNEL (DRAINAGE SWALE, BROOK OR STREAM) WITHIN 100 FEET WHERE POSSIBLE.

G PLUNGE POOL AND FLOW DISPERSION BERM PLAN VIEW
N.T.S.



SCHEDULE OF BASE BACKFILL

TYPE OF PIPE	BEDDING MATERIAL	SPECIAL BACKFILL	SPECIAL BACKFILL COVER "A" (IN)	SELECT BACKFILL
CONCRETE	GRANULAR AASHTO M145-49 A-3 OR BETTER	GRANULAR AASHTO M145-49 A-3 OR BETTER	12	GRANULAR AASHTO M145-49 A-3 OR BETTER
HDPE	3/4" CRUSHED STONE	GRANULAR AASHTO M145-49 A-3 OR BETTER	6	GRANULAR AASHTO M145-49 A-3 OR BETTER
CMP	3/4" CRUSHED STONE	GRANULAR AASHTO M145-49 A-3 OR BETTER	6	GRANULAR AASHTO M145-49 A-3 OR BETTER

SUBMITTALS FOR PIPE TYPE TO BE USED ARE REQUIRED NOTING THAT PIPE TYPE MEETS H-20 LOADING WITH 2 FEET OF GRAVEL COVER

H TYPICAL CULVERT TRENCH SECTION
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

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DITCH AND CULVERT DETAILS

NO.	DESCRIPTION	DATE
3	PERMIT PLAN SUBMISSION	04.09.13
2	ACOE REVISIONS	03.06.13
1	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW	12.19.12

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

STATE OF MAINE — STEVEN J. BLAKE II — 11695 — LICENSED PROFESSIONAL ENGINEER
P.E. STEVEN J. BLAKE II
L.C. # 11695

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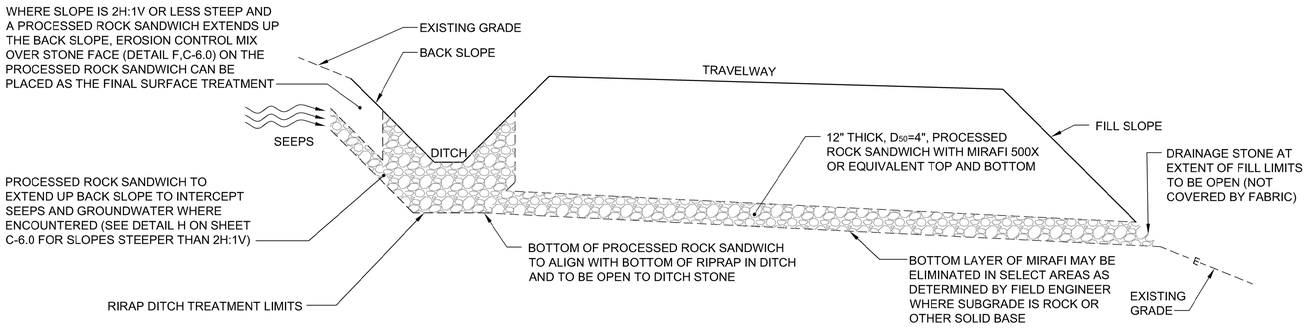
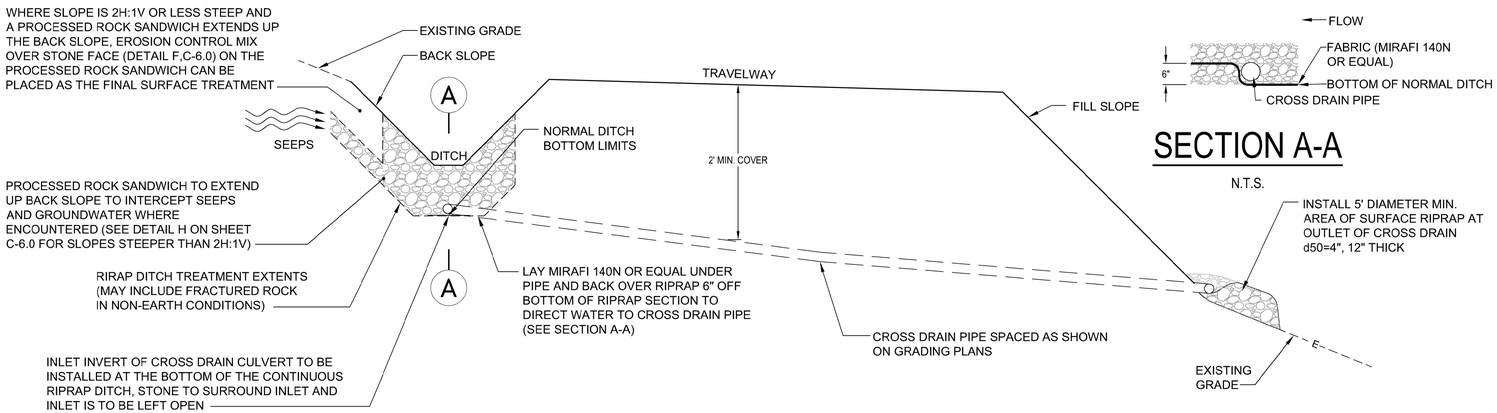
REED POWER SERVICES

SHEET
C-7.0

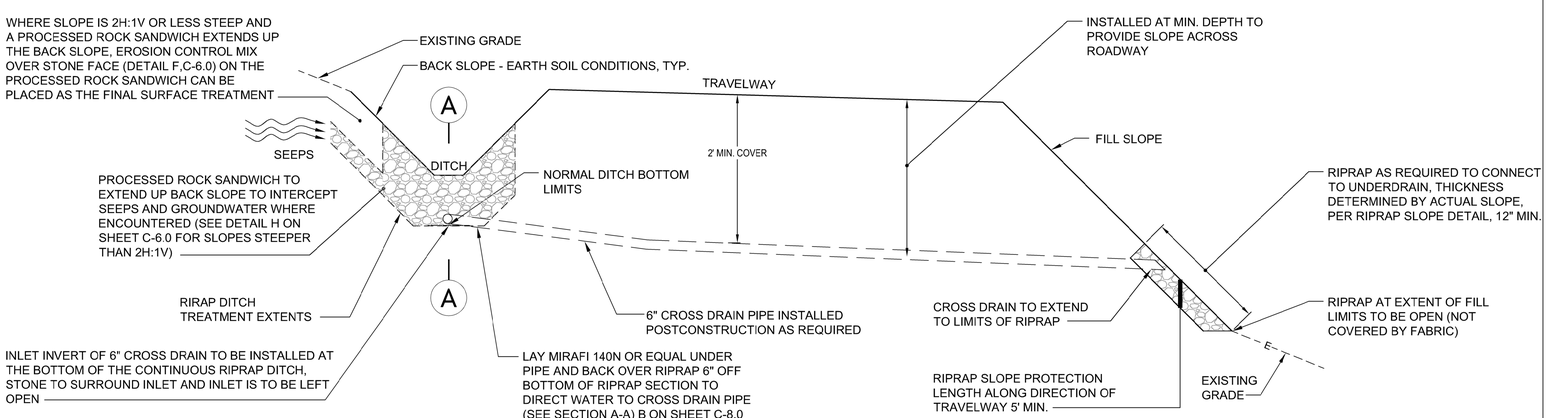


A PROCESSED ROCK SANDWICH CROSS DRAINAGE DETAIL
N.T.S.



SECTION A-A
N.T.S.

B PIPED CROSS DRAINAGE OPTION DETAIL
N.T.S.



C POST CONSTRUCTION PIPED CROSS DRAINAGE DETAIL
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES:

1. THE PRIMARY OBJECTIVE OF THESE CROSS DRAINAGE DETAILS IS TO KEEP EXISTING HYDROLOGY INTACT TO THE EXTENT POSSIBLE BY MAINTAINING SEEP AND SHALLOW PERCHED GROUND WATER FLOW.
2. THESE CROSS DRAINAGE DETAILS DO NOT REPLACE REQUIRED CULVERTING FOR STORMWATER CONVEYANCE. SEE OTHER DETAILS FOR STORMWATER FLOW CONTROL VIA DITCH AND CULVERTING.
3. THE POST CONSTRUCTION CROSS DRAINAGE DETAIL WILL BE INSTALLED WHERE SEEPS ARE OBSERVED AFTER CONSTRUCTION OF THE ROADWAYS AND DETAIL A OR B CONSTRUCTION WAS NOT PROVIDED.
4. ROCK SANDWICHES MAY NOT BE REQUIRED IF ROADWAY IS CONSTRUCTED WITH BLAST ROCK. COORDINATE WITH FIELD ENGINEER AND THIRD PARTY INSPECTOR.

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

SOIL HYDROLOGY PRESERVATION DETAILS

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

STATE OF MAINE — STEVEN J. BLANCHETTE — 11695 — LICENSED PROFESSIONAL ENGINEER
P.E. STEVEN J. BLANCHETTE
LIC. # 11695

REED & REED — WIND POWER SERVICES

BINGHAM WIND PROJECT

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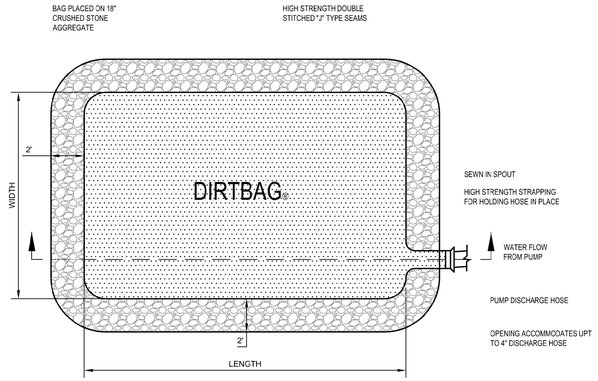
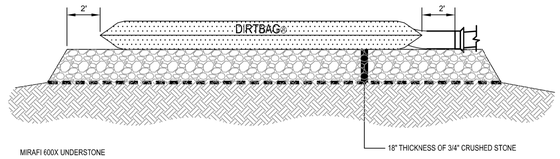
SOUTH PORTLAND, ME 04106
207.775.1121
www.delucahoffman.com

SHEET
C-8.0



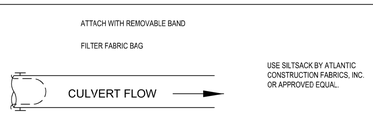
PLAN VIEW



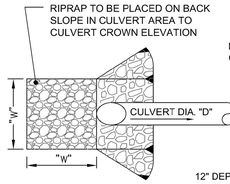
SECTION VIEW

NOTE:
LOCATION OF DIRTBAGS TO BE SELECTED BY THE CONTRACTOR BUT SHALL NOT BE SITED IN WETLAND AREAS.

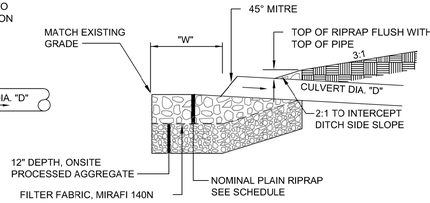
A DIRTBAG DETAIL
N.T.S.



B SILT SACK DETAIL
N.T.S.



PLAN VIEW



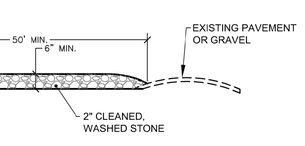
SECTION VIEW

NOTE:
RIPRAP GRADATION AND PLACEMENT - THE RIPRAP GRADATION SHALL BE A WELL-GRADED MIX FROM ABOUT 1.5 TIMES THE d_{50} SIZE TO ABOUT 25 PERCENT OF THE d_{50} SIZE. THE RIPRAP STONES SHALL BE CAREFULLY PLACED WORKING FROM THE TOE OF THE SLOPE UPWARD. THE STONES SHOULD BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12 INCHES ONTO THE GEOTEXTILE. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH UNIFORMLY SLOPED SURFACE.

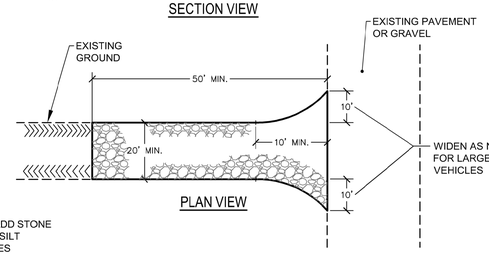
SCHEDULE FOR STORM DRAIN

CULVERT DIAMETER (D)	WIDTH (W)	STONE ds_{50}	RIPRAP THICKNESS
12"	2'	6"	14"
15" OR 18"	4'	6"	14"
24"	6'	6"	14"
30"	8'	12"	27"
36"	8'	12"	27"

D PIPE / CULVERT INLET APRON IN FILL AREAS
N.T.S.



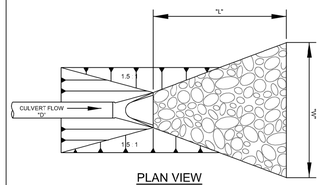
SECTION VIEW



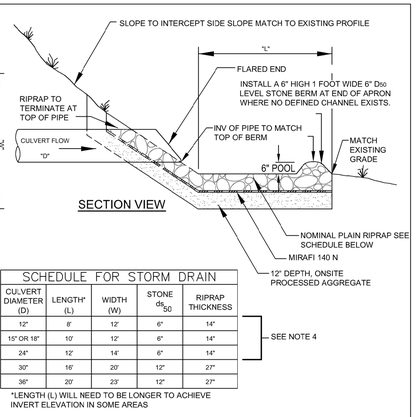
PLAN VIEW

NOTE:
CONTRACTOR SHALL ADD STONE TO ENTRANCE AS MUD/SILT MATERIAL ACCUMULATES

G STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



PLAN VIEW



SECTION VIEW

NOTES:
1. RIPRAP GRADATION AND PLACEMENT - THE RIPRAP GRADATION SHALL BE A WELL-GRADED MIX FROM ABOUT 1.5 TIMES THE d_{50} SIZE TO ABOUT 25 PERCENT OF THE d_{50} SIZE. THE RIPRAP STONES SHALL BE CAREFULLY PLACED WORKING FROM THE TOE OF THE SLOPE UPWARD. THE STONES SHOULD BE LOWERED TO THE SLOPE AND NOT BE ALLOWED TO DROP MORE THAN 12 INCHES ONTO THE GEOTEXTILE. THE FINISHED SURFACE SHALL BE A RELATIVELY SMOOTH UNIFORMLY SLOPED SURFACE.
2. THIS DETAIL WITHOUT THE STONE BERM AT THE END IS TO BE USED WHERE CONCENTRATED FLOW BELOW THE ROADWAY SECTION IS OBVIOUS. A FLOW DISPERSION BERM IS TO BE ADDED AT 12" CULVERTS AS DETERMINED BY THE FIELD ENGINEER WHERE CONCENTRATED FLOWS ARE NOT OBVIOUS.
3. WHERE EXISTING SLOPE GRADES AT CULVERT OUTLETS EXCEED 30%, THE 6" POOL IS NOT REQUIRED.
4. WHERE EXISTING GRADES AT CULVERT OUTLETS EXCEED 30%, D_{50}=12", 27" THICK IS TO BE USED FOR ALL PIPE SIZES.

SCHEDULE FOR STORM DRAIN

CULVERT DIAMETER (D)	LENGTH* (L)	WIDTH (W)	STONE ds_{50}	RIPRAP THICKNESS
12"	8'	12'	6"	14"
15" OR 18"	10'	12'	6"	14"
24"	12'	14'	6"	14"
30"	16'	20'	12"	27"
36"	20'	23'	12"	27"

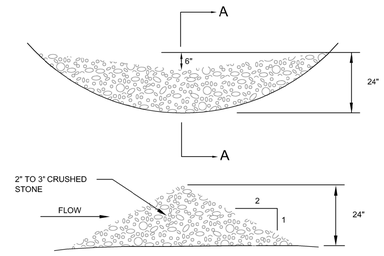
SEE NOTE 4

*LENGTH (L) WILL NEED TO BE LONGER TO ACHIEVE INVERT ELEVATION IN SOME AREAS

E PIPE / CULVERT OUTLET APRON
N.T.S.

SPACING BETWEEN CHECK DAMS

S_O (FT./FT.)	L (FT.)
0.020	65
0.030	40
0.040	30
0.050	25
0.080	15
0.100 OR MORE	15

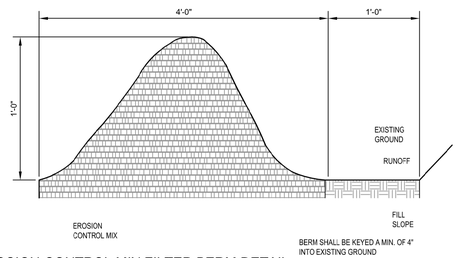


SECTION A-A

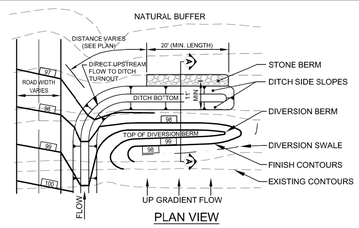
NOTE:
THIS IS A TEMPORARY MEASURE AND IS TO BE REMOVED ONCE DITCHING AND SLOPES ARE STABILIZED

H STONE CHECK DAM
N.T.S.

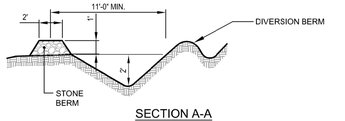
NOTES:
1. THE EROSION CONTROL MIX SHALL CONFORM TO THE FOLLOWING STANDARDS:
   - A. THE ORGANIC MATTER CONTENT IS BETWEEN 50 AND 100%, DRY WEIGHT BASIS.
   - B. PARTICLE SIZE BY WEIGHT IS 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%, MAXIMUM OF 85%, PASSING A 0.75" SCREEN.
   - C. THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
   - D. LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
   - E. SOLUBLE SALTS CONTENT IS LESS THAN 4.0 MMHOS/CM.
   - F. THE pH SHOULD FALL BETWEEN 5.0 AND 8.0.
   - G. ON SLOPES LESS THAN 5% OR AT THE BOTTOM OF STEEPER SLOPES (<2:1) UP TO 20 FEET LONG, THE BARRIER SHOULD BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BARRIER, AND A MINIMUM OF TWO FEET WIDE. ON LONGER OR STEEPER SLOPES, THE BARRIER SHOULD BE WIDER TO ACCOMMODATE THE ADDITIONAL FLOW.
   - H. THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL, CONTOUR. IT MAY BE NECESSARY TO CUT TALL GRASSES OR WOODY VEGETATION TO AVOID CREATING VOIDS AND BRIDGES THAT WOULD ENABLE FINES TO WASH UNDER THE BARRIER THROUGH THE GRASS BLADES OR PLANT STEMS.
   - I. GOCD LOCATIONS FOR STAND-ALONE USE WITHOUT REINFORCEMENT BY OTHER BMPS ARE:
     - AT TOE OF SHALLOW SLOPES;
     - ON FROZEN GROUND, OUTCROPS OF BEDROCK AND VERY ROOTED FORESTED AREAS; AND
     - AT THE EDGE OF GRAVEL PARKING AREAS AND AREAS UNDER CONSTRUCTION.
   - J. LOCATIONS WHERE OTHER BMPS SHOULD BE USED:
     - AT LOW POINTS OF CONCENTRATED RUNOFF;
     - BELOW CULVERT OUTLET APRONS;
     - WHERE A PREVIOUS STAND-ALONE EROSION CONTROL MIX APPLICATION HAS FAILED;
     - AT THE BOTTOM OF STEEP PERIMETER SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM (I.E., A LARGE UP-GRADIENT CONTRIBUTING WATERSHED); AND
     - AROUND CATCHBASINS AND CLOSED STORM SYSTEMS.
2. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS COMPLETED OR 90% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED BY SPREADING SUCH THAT THE NATIVE EARTH CAN BE SEEN BELOW.



C EROSION CONTROL MIX FILTER BERM DETAIL
N.T.S.



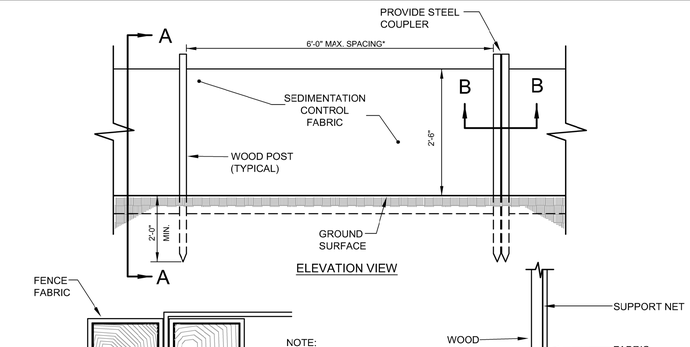
PLAN VIEW



SECTION A-A

NOTES:
1. ONLY RUNOFF FROM ADJACENT ROAD SURFACE AND SHOULDERS BE DIRECTED TO BUFFER.
2. BUFFER SLOPES NOT ALLOWED ON SLOPES IN EXCESS OF 15%.
3. NO MORE THAN 400 FEET OF ROAD AND DITCH MAY BE TREATED IN ANY ONE DITCH TURNOUT BUFFER, AND NO MORE THAN 250 FEET MAY BE TREATED IF MORE THAN ONE TRAVEL LANE IS DRAINING TO THE DITCH.
4. THE TURNOUT SHOULD EXTEND INTO THE SIDE DITCH OR CUT SLOPE TO INTERCEPT THE DITCH RUNOFF AND CARRY IT INTO THE BUFFER AREA.
5. THE STONE BERM MUST BE AT LEAST 20 FEET IN LENGTH AND CONSTRUCTED ALONG THE CONTOUR. IT MUST BE AT LEAST ONE FOOT HIGH AND TWO FEET ACROSS THE TOP WITH 2:1 SIDE SLOPES. THE STONE MUST CONSIST OF SOUND DURABLE ROCK THAT WILL NOT DISINTEGRATE BY EXPOSURE TO WATER OR WEATHER. FIELDSTONE, ROUGH QUARRIED STONE, BLASTED LEDGE OR TAILINGS MAY BE USED. THE ROCK MUST BE WELL GRADED WITH A MEDIAN SIZE OF APPROXIMATELY 3 INCHES AND A MAXIMUM SIZE OF 6 INCHES.

F TYPICAL DITCH TURNOUT BUFFER DETAIL
N.T.S.



NOTE:
BOTTOM OF SILT FENCE MUST BE TOED INTO GROUND OR NO PAYMENT SHALL BE MADE.

*NOTE:
THE SILT FENCE SHOULD HAVE A MINIMUM STAKING OF 6' UNLESS THE FENCE IS SUPPORTED BY WIRE FENCE REINFORCEMENT A MINIMUM 14 GAUGE AND WITH A MINIMUM MESH SPACING OF 6".

I SILTATION FENCE DETAIL
N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

P.E. STEVEN J. BLAXE II
LIC. # 11695

EROSION CONTROL DETAILS

BINGHAM WIND PROJECT

BLUE SKY WEST, LLC

DeLuca-Hoffman Associates, Inc.
778 MAIN STREET, SUITE 8
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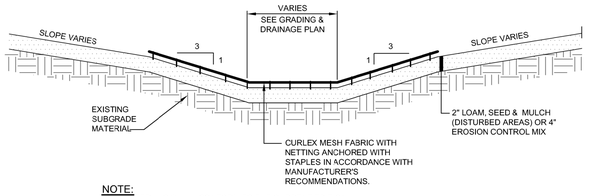
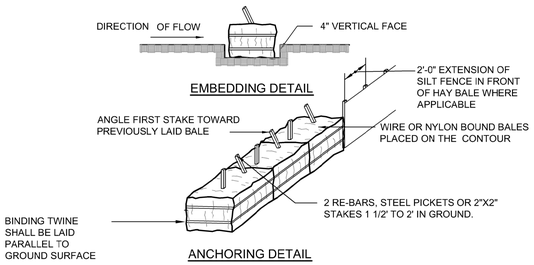
SHEET
C-9.0



NOTE:
ALL MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE MDOT STANDARD SPECIFICATIONS.

(A) VEGETATED SWALE DETAIL

N.T.S.

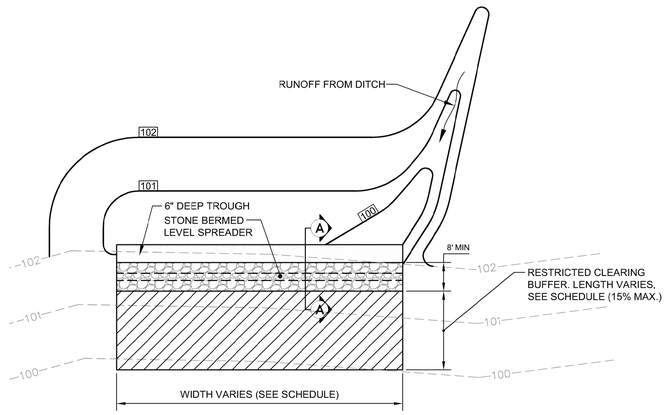


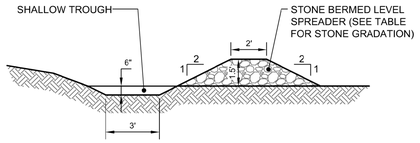
CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

(B) STRAW OR HAY BALE BARRIER

N.T.S.





SECTION A-A

BERM STONE SIZE	
SIEVE DESIGNATION (US CUSTOMARY)	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVE
12 IN	100
6 IN	84-100
3 IN	68-83
1 IN	42-55
NO. 4	8-12

NOTE:
LEVEL SPREADER SHALL BE ORIENTATED PARALLEL TO THE EXISTING CONTOUR. SHOULD FIELD CONDITIONS CHANGE ROTATE LAYOUT OF BERM TO DIRECT SHEET FLOW ALONG EXISTING CONTOUR.

(C) STONE BERMED LEVEL SPREADER DETAIL

N.T.S.

PRELIMINARY - NOT FOR CONSTRUCTION

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NO.	DATE	DESCRIPTION
3	04.09.13	PERMIT PLAN SUBMISSION
2	03.06.13	ACOE REVISIONS
1	12.19.12	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW

EROSION CONTROL DETAILS

DRAWN: DED | SCALE: AS NOTED
DESIGNED: SJB | DATE: SEPT 2012
CHECKED: SRB | JOB NO. 3048
FILE NAME: 3048-DET

STATE OF MAINE — STEVEN J. BLAKE — 11695 — REGISTERED PROFESSIONAL ENGINEER

P.E. STEVEN J. BLAKE II
LIC. # 11695

BINGHAM WIND PROJECT

BLUE SKY WEST, LLC

REED & REED INC. — MAINE POWER SERVICES

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SHEET
C-9.1

14.0 Basic Standards

14.1 Introduction

The following plan has been developed to provide a strategy for controlling erosion and sedimentation associated with the Bingham Wind Project (project) both during and after site construction (Maine Construction General Permit). The project is a proposed utility-scale wind energy facility located in Somerset and Piscataquis Counties, Maine, and includes 62 wind turbines (63 potential turbine locations are being permitted), existing and new access roads and crane paths, up to 5 temporary and up to 5 permanent meteorological towers, an Operations and Maintenance (O&M) building, 34.5-kilovolt electrical collector lines (the majority of which will be buried alongside project roads), a collector substation, and an approximately 17-mile electrical generator lead. This plan is based upon sound conservation practices, including as applicable, those outlined in the "Maine Erosion and Sediment Control Best Management Practices" manual published by the Bureau of Land and Water Quality, Maine Department of Environmental Protection (MDEP; March 2003), and past experience of the Applicants in constructing wind projects in Maine.

Details of erosion and sedimentation control during the construction of roadways and turbine pads can be found in the civil design plan included within Exhibit 1. Details of erosion and sedimentation control during the construction of the O&M building and substation facilities are located on sheets C-9.0 and C-9.1 of Exhibit 1. The electrical generator lead erosion and sedimentation control can be found in the electrical design plan of Exhibit 2.

14.1.1 Stormwater Management Measures

Additional measures may be required to protect new stormwater conveyance or management systems due to changes in actual site conditions. For more information on stormwater management, see Section 12. For additional information on buffers, the contractor shall reference the Maine Stormwater Best Management Practices Manual, Volume III: BMP Technical Design Manual Chapter 5, Vegetated Buffers (revised June 2010).

14.2 field adjustments

The Applicants expect that minor adjustments will be made during final design work and during construction based on conditions encountered in the field. As described below, the Applicants have identified changes that do not require a permit modification and that may be made (a) without advance notice to MDEP or, (b) that require prior approval by the third-party inspector or MDEP staff.

The following field and/or final design adjustments are authorized under the permit provided they do not result in new impacts to protected natural resources as defined under the Natural Resources Protection Act (38 MRSA Section 480-B(8)); do not increase overall project clearing; do not impact a new landowner; and meet the requirements of MDEP Chapter 500 Stormwater Management Standards. Any of these adjustments will be reflected in the final as-built drawings.

(a)Examples of adjustments that may be made during construction and/or final design without advance notice to MDEP:

- Reduction in clearing, impervious surface, or size of structure; elimination of a structure; or relocation of a structure;
- Location, dimension or addition of drainage culverts, level spreaders, rock sandwiches or other stormwater infrastructure, provided that the culvert does not convey a regulated stream and that the hydraulic capacity of the modified stormwater infrastructure meets design standards;
- Changes to pole or anchor locations for the electrical collector, provided that any adjustment meets the buffer requirements as defined in Section 10;
- Maintenance within the footprint of existing roads with exception of any in-stream work or wetland impacts to be used for temporary construction access;
- Changes of up to 10 feet in vertical roadway alignment and turbine pad elevation; and
- Changes of up to 300 feet in either direction in horizontal roadway alignment and associated clearing, and in turbine or met tower clearing area, and in electrical collector alignment laydown/staging areas.

(b) May be made upon prior approval by the third-party inspector or MDEP staff:

- Changes other than those identified in (a) and that do not otherwise require a permit amendment as determined by MDEP.

14.3 Construction Calendar

The Contractor is required to give special attention to the sections pertaining to fall and winter construction, as well as to sensitive areas and requirements for temporary seeding, dormant seeding, and mulching.

14.3.1 Definitions

The following definitions are terms commonly used throughout this plan.

Acceptance - As used herein shall mean verification by the Owner and/or the Engineer that the specific erosion control measure or device to be accepted is adequately constructed, performs satisfactorily as intended, and is complete. Acceptance of a measure or device by the Owner or the Engineer shall be based upon visual observations and inspection and is not a warranty of compliance, compaction, structural integrity, workmanship, or other construction-related or qualitative factors that may require testing or other means of certification of compliance.

Buffer strips - Natural, undisturbed strips of natural vegetation or reseeded strips of close-growing vegetation adjacent to and downslope of developed areas.

- Buffer with stone bermed level lip spreaders: This buffer is used for larger, developed areas and uses a level spreader to create sheet flow onto the buffer.
- Roadside Buffer adjacent to the downhill side of a road: This buffer is used for flow from a roadway when it directly enters the buffer as sheet flow.
- Ditch turn-out buffer: This buffer is used to divert roadway runoff collected in a ditch into a buffer as sheet flow.

Clearing - Includes cutting and removing of vegetative cover. It does not include grubbing. Limited cutting, thinning, use of heavy equipment, and other clearing restrictions will apply to sensitive areas and wetland crossings (Section 10).

Critical Areas - Specific areas identified herein or subjected to significant erosion problems as observed in the field prior to, during, or following construction activities such as areas with steep slopes or channels in excess of eight percent, newly graded slopes, highly erodible soils that will be exposed for more than seven days, or bare soils exposed during late fall and winter when no vegetation can grow.

Earthwork - Consists of the movement of soil by mechanical means including excavation, filling, grading, trenching, and shaping.

Engineer - As used herein shall mean a representative of the civil engineer of record or person designated by the Owner.

Erosion and Sedimentation Controls - Defined as the installation of silt fence, bales, erosion control berms, rip-rap, mulching, erosion control matting or netting, check dams, inlet protection, reinforced turf, erosion control mix, construction entrances, diversions, level spreaders, and any other temporary or permanent measures required herein.

Grubbing - The removal of grass, stumps, roots, and scrub required to begin earthwork. Grubbing is the initial clearing action that exposes soil to erosive forces (wind, rain).

Interim Period - A period of time that an un-vegetated area sits un-worked, awaiting the next phase of work.

Permanent or Final - As used herein shall refer to the use or placement of erosion or sedimentation controls, seeding, or other measures, which will remain through final project completion.

Seasons - The following dates define the seasons as referred to herein:

Seasons	Dates *(Seasonal dates may vary from year-to-year)*
Winter	November 1 to April 15
Mud-Season	March 16 to April 30
Spring	May 1 to June 14
Summer	June 15 to September 15
Fall	September 16 to October 31

Temporary - As used herein shall refer to the use or placement of erosion or sedimentation controls, seeding, or other measures intended to be either removed, replaced, reworked, reseeded, or followed with permanent measures.

14.1.1 Schedule of Activities

The following activities, erosion control measures, or other items are required for the construction of this project or require specific measures or scheduling of activities to be conducted or restricted during the various construction seasons as defined above.

Clearing - Ground conditions permitting, clearing may occur at any time of the year.

Critical Areas - Work proposed in the defined critical areas may be conducted all year ground conditions permitting. Some problem areas may become "critical areas" during the course of construction. Areas observed to be experiencing significant erosion problems shall be deemed critical areas and shall be stabilized with appropriate erosion control measures immediately prior to progressing with work in these areas as directed by the Engineer.

Erosion and Sedimentation Controls Installation - Erosion control installation shall occur all year long, except that such measures shall be installed prior to commencement of disturbance activities related to each erosion control measure. See design plans for locations and installation procedures.

Road Construction - This construction may occur in the spring, summer, and fall seasons. It will also be allowed in the winter season, however, the winter construction schedule must be followed (see Section 14.5.1 below). The following requirement for access road construction will be adhered to in order to prevent erosion from taking place during winter construction:

- While the entire road system may be cleared in one effort, the roads will be constructed in segments where each segment is grubbed, constructed, and protected prior to earthwork on the next segment as approved by the Engineer. This construction sequence is intended to prevent large areas from being exposed, without temporary stabilization, to erosion during major rain events. A segment is defined as an area cleared and grubbed. See below for the stabilization schedule. Multiple segments in different areas of the project may be constructed concurrently.

Temporary Timber Mat Bridge - Temporary timber mat bridges will be used throughout the year as necessary for clearing and construction activities. Installation and removal of temporary timber mat bridges will proceed according to the following sequence:

- Install erosion controls at the down-gradient perimeter of work adjacent to the stream resource.
- Strip topsoil beneath the temporary bridge supports and stockpile for replacement following construction.
- Place sand leveling material and geotextile fabric to create a stable base for bridge supports.
- Place timber bridge supports and span.
- Place gravel as necessary to create a smooth transition onto bridge.
- Remove bridge following construction, re-grade area with stockpiled topsoil, and reseed/restore per the project restoration plan.
- Remove barrier erosion controls following final stabilization/restoration of the crossing.

14.2 ERosion control measures

14.2.1 General

The construction of this project may require or incorporate the following measures or practices as needed or applicable. Such measures, where indicated on the design plans, shall be implemented as shown, or as deemed necessary by the Engineer. Additional measures not shown on design plans may be required as specified herein or requested by the Engineer, as needed, in order to protect natural resources or off-site properties and prevent erosion and sedimentation.

Bales - Shall be installed along the contours in the locations and as detailed on the design plans. Straw (or hay) bales may be required in addition to silt fencing or other measures in sensitive areas as shown on Drawings. Bales are to be embedded four inches into the existing soil and staked with ends tightly abutting adjacent bales. Where staking and embedding of bales is impractical due to excessive roots, ledge, or other construction hazards, bale barriers may be substituted with erosion control mix berms as long as they are not installed in locations with concentrated flow.

Construction Entrance - A crushed stone-stabilized construction entrance will be installed wherever construction traffic will enter the public road system. The size, type, and locations of these shall be as shown and detailed in the design plans. Entrances shall be constructed with a 6-inch minimum layer of 2-inch stone. Stone entrances shall be placed on geotextile fabric and shall include a minimum 10-foot by 10-foot taper (or as needed to support large construction/delivery vehicles) on both sides of the entrance to allow for turning vehicles.

Dust Control - Contractor shall take necessary steps to control blowing and airborne movement of dust from exposed soil surfaces. Maintaining natural or temporary vegetation and/or mulching shall be used where practical. Mechanical sweepers shall be used where necessary to prevent and remove dust buildup on paved surfaces. Regularly traveled soil surfaces shall be maintained to minimize dust by periodically moistening bare areas with adequate water to prevent dust (for water sources, see Section 16, Water Supply). Calcium Chloride solution spray should be used in areas experiencing significant dust problems and to reduce frequency of watering. Repetitive treatment shall be applied as necessary to accomplish adequate dust control (refer to Section B-5 in the "Maine Erosion and Sediment Control Best Management Practices" manual).

Erosion Control Mix Berms - May be installed in locations that do not have a concentrated flow. Erosion control mix berms are an approved alternative to silt fence provided they are not located in sensitive areas described above. Erosion control mix may be manufactured on or offsite and shall follow the guidelines outlined in Section B-1 in the "Maine Erosion and Sediment Control Best Management Practices." The composition specification outlined in Section B-1 should be used a guideline but the actual mix design will be performance based. The mix shall be subject to testing if required by the Engineer.

Level Lip Spreader - Level lip spreader lengths are given in the details in the design plans and will be 6-inches to 24-inches deep, stone-lined ponded areas discharging over a level berm through a well vegetated buffer area. These spreaders will function to disperse channelized flow into shallow sheet flow. Construction and length of level lip spreaders shall be as detailed on the design plans.

Matting - Shall consist of straw, coconut or excelsior sandwiched between photodegradable netting. Matting may be substituted with sod where desired. Netting over straw mulch may be substituted for matting only when approved by the Engineer. Matting shall be used: (1) where indicated on the design plans; (2) in the base of swales with moderate slopes and erosive capability. High velocity ditch lining or geotextile soft armor may be required in steep ditches (> 8%) or areas receiving significant concentrated flows; (3) on steep slopes where rilling may occur or where mulching has proven to be ineffective in the field; or (4) where straw mulch has been determined to be ineffective based on observations made in the field or as directed by the Engineer.

Outlet Protection - Riprap outlets (aprons or plunge pools) shall be placed in locations where indicated on the design plans, and in locations where flared end sections have proven to be inadequate to prevent scouring at the pipe outlet in the field, as directed by the Engineer. The riprap outlets shall be the same size as that specified on the design plans.

Permanent Mulching and Revegetation - Permanent mulch is long-term cover that provides a good buffer on and around disturbed areas. Permanent mulching with erosion control mix can be used as a permanent ground cover, as an overwinter stabilization mulch, or left to naturalize and revegetate to near natural conditions. It is not used to support grassy vegetation, but legumes or woody vegetation may be established if allowed to revert to natural conditions. Permanent mulch must not be used in areas of concentrated water flows, and any evidence of groundwater seepage on slopes may require the erosion control mix to be replaced with riprap. Erosion control mix can be manufactured on or off the project site. It shall consist primarily of organic material, separated at the point of generation and may include shredded bark, stump grindings, composted bark, or flume grit and fragmented wood generated from water-flume log handling systems. Wood chips, ground construction debris, reprocessed wood products, or bark chips will not be acceptable as the organic component of the mix. Erosion control mix composition shall be in accordance with Section A-1 of the "Maine Erosion and Sediment Control Best Management Practices" manual. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth.

Riprap - Shall be used in swales, steep slopes, and outlets as shown on the design plans to protect soils from excessive flow velocities. It shall be of the size and depths specified on the design plans; angular stone shall be used. Riprap may be required at locations where revegetation matting, high velocity ditch lining or soft armor is proven to be ineffective in the field as directed by the Engineer.

Sediment Barrier Berms - A sediment barrier is a berm installed across or at the toe of a slope and down gradient of disturbed earth. Its purpose is to intercept and retain small amounts of sediment from disturbed or unprotected areas of limited extent. For other sediment barrier use, see Section B-1 of the "Maine Erosion and Sediment Control Best Management Practices" manual. A sediment barrier is used where:

- Sedimentation can pollute or degrade a wetland or other water resource.
- Sedimentation will reduce the capacity of storm drainage systems or adversely flood adjacent areas.
- The contributing drainage area does not exceed 1/4 acre per 100 feet of barrier length; the maximum length of slope above the barrier is 100 feet; and the maximum gradient behind the barrier is 50 percent (2:1). If the slope length is greater, additional measures such as diversions may be necessary to reduce that length.
- Sediment barriers cannot be used in areas of concentrated flows. *Under no circumstances* should erosion control mix sediment barriers be constructed in streams or in swales.

Silt Fence - Shall be installed along the contours in the locations and as detailed on the design plans. Silt fence may be required in additional or other locations, not indicated on design plans, as warranted or determined by field conditions or as directed by the Engineer. Silt fence may also be required in addition to bales or other measures in sensitive areas as shown on the design plans. Where staking and embedding fabric is impractical due to excessive roots, ledge, or other construction hazards, silt fence may be substituted with erosion control mix berms or placement of six inches of suitable non-organic material along fabric flap on upslope side of fence, in lieu of burying fabric in trench.

Stone Check Dams - Shall be installed in existing and proposed swales or at culvert inlets as shown on the design plans. These check dams serve to reduce flow velocities in swales thus helping to reduce rilling. Check dams shall be constructed with a six-inch tapered spillway at the center as shown on design plans to prevent breaching and scour at the outer edges along the sides of the ditch.

Temporary Mulching - Shall consist of spreading of straw (or hay) mulch or erosion control mix over bare or disturbed areas. It shall be applied at the rates described in the *Temporary Seeding and Mulching Schedule* described below. Alternate mulch materials or methods such as hydro seeding may be used only when approved by the Engineer. Mulching shall be substituted with matting in locations where it has proven to be ineffective in the field. Mulching rates shall be doubled where requested by the Engineer based on observations in the field or in locations undergoing winter construction.

14.1 ERosion control execution

14.1.1 General Construction Phase

The following general practices will be used to prevent erosion during construction of the project. Refer to design plans for applications, and installation methods. If the Contractor is unclear regarding the use, location, installation, intended performance, or maintenance of any prescribed erosion control measures, the Contractor shall refer to the "Maine Erosion and Sediment Control Best Management Practices" Manual for detailed procedures or contact the Engineer for assistance.

NOTE: Locations of erosion control measures are shown on design plans as typical for general purposes only to indicate the Intent. Final locations should be selected based on actual field conditions and as site conditions warrant.

Construction Traffic - Construction traffic will be directed over the stabilized construction entrances and proposed roads. The crushed stone construction entrances shall be maintained with the addition of more crushed stone as needed or as the voids become filled. The public roadway shall be swept as soon as possible should mud be tracked onto it.

Erosion Control Installation - Prior to the start of grubbing, silt fence, bales, erosion control mix berms, stabilized construction entrances, or other appropriate measures shall be installed adjacent to construction areas, at the toe of slopes and in areas as shown on design plans, or as otherwise required to protect against construction related erosion. Immediately following construction of culverts and swales, stone check dams, and ditch linings shall be installed, as shown on the design plans. Prior to start of construction there will be a mandatory pre-construction meeting to discuss the construction schedule and the erosion and sedimentation control plan. The meeting shall be attended by the owner (or owner's representative), the Engineer, the contractor, the third-party inspector, and MDEP staff.

Following Clearing - Only those areas under active construction shall be left in an untreated or unvegetated condition.

Grading - Grading will be held to a maximum 2:1 slope where practical. Greater slopes may be used in ledge cut or stable material as shown in the design drawings. Finish-graded areas shall be stabilized with permanent seeding and mulching or other accepted means immediately after final grading is complete. If final grading will not be completed immediately, refer to the *Temporary Seeding and Mulching Schedule* detailed below. It is understood that immediately means within five days of the completion of work. For time periods longer than five days, refer to *Permanent Seeding and Mulching Plan* below.

Monitoring Schedule - The Contractor shall be responsible for installing, monitoring, maintaining, repairing, replacing and/or removing the temporary erosion and sedimentation controls as specified herein or as directed by the Engineer, or shall appoint a qualified subcontractor to do so, as follows:

- The Contractor or approved designated Inspector shall perform weekly inspections of the site until the site is stabilized. Inspections may be performed on a bi-weekly schedule when work has abated for more than one week.
- Maintenance measures will be performed as needed during the entire construction cycle. After each rainfall, and *prior to* predicted significant rainfall events (> 1"), a visual erosion controls inspection will be made by the Contractor or approved designated Inspector to insure their continuing function as designed.
- Stone check dams, bale barriers, drop inlet barriers, erosion control mix berms, silt fence, and mulch shall be inspected and repaired once a week or immediately following any significant rainfall. Sediment trapped behind these barriers shall be removed when it reaches a depth of 6 inches (or 1/2 the height of the dam for check dams) and redistributed to areas undergoing final grading.
- Near completion of the construction and after the site is reseeded and stabilized, the Contractor shall inspect, clean, maintain, repair, restabilize, or revegetate all drainage structures, storm drains, culverts, level spreaders and ditches prior to acceptance by the Owner.

Permanent Seeding and Mulching Plan - The following general practices will be used to re-establish final vegetation.

- Loam will be spread over disturbed areas and graded to a uniform depth and a natural appearance. Loam shall be as specified or approved by the Engineer.
- Final seeding shall be completed immediately (within 7 days) following final topsoil and loam grading. All final fertilizing and seeding shall adhere to these specifications unless otherwise approved by the Engineer.
- Areas shall be mulched immediately after seeding. Immediately upon first signs of any evidence of significant erosion occurring, the Contractor shall repair and mulch all such areas until the area is stabilized. Mulching shall consist of hay mulch, hydro-mulch, or any suitable substitute deemed acceptable by the Engineer. Mulching shall be monitored according to the *Monitoring Schedule* above. Should mulching prove to be ineffective, netting or matting shall be used in its place.
- Straw mulch shall be applied at the rate of 2 tons per acre (90 pounds or 2 bales/1,000 square feet) unless otherwise specified.
- Hydro-mulch shall consist of a mixture of tackifier, wood fiber or paper fiber and water sprayed over a seeded area. Hydro-mulch shall not be used during the fall, winter, or mud season unless approved by the Engineer.
- Dormant seeding shall not occur unless approved by the Engineer. Should seeding be necessary between November 1 and April 15, the following procedure shall be followed.
  - Only unfrozen loam shall be used.
  - Loaming, seeding, and mulching will not be done over snow cover. If snow exists, it must be removed prior to placement of seed.
  - No permanent seeding will be done during fall, winter, or mud season unless specifically approved by the Engineer. If attempted, the normal seed application rate shall be doubled. Reseeding in spring by Contractor will be required in all areas with insufficient growth.
  - Where temporary seeding is required, the rates specified in the *Temporary Seeding and Mulching Schedule* below shall be adhered to.
  - Fertilizing, seeding, and mulching shall be done as soon as possible after the loam is spread. Winter mulch rates shall apply as specified in the *Temporary Seeding and Mulching Schedule* below.
  - On slopes greater than 3:1, straw matting or excelsior matting may be substituted for mulch. Biodegradable netting over mulch may be applied where required by the Engineer.
  - Following final seeding, the site will be inspected every 30 days until 80 percent cover has been established. Reseeding and mulching shall be carried out in areas where inadequate catch is observed until adequate growth is established in seeded areas, as agreed upon by the Engineer. The Contractor may be required to reseed during the following spring subsequent to winter or fall construction and seeding in order to provide 90 percent vegetative cover as required for Acceptance by the Owner.
- Erosion control mix utilized for permanent stabilization and to promote natural revegetation may be used in lieu of loaming and seeding.

Temporary Seeding and Mulching Schedule - During construction, all disturbed areas shall adhere to the schedules specified in Tabled 14-1 and 14-2 below. Refer to *Permanent Seeding and Mulching Plan* above for permanent seeding and mulching requirements.

- The Contractor shall be responsible for monitoring daily weather reports when working in identified sensitive areas and for monitoring weekly reports in all other areas. The Contractor shall adjust the work schedule in anticipation of rains and shall stabilize the site as indicated or required.
- All completed areas that have been loamed and/or finish graded shall be permanently reseeded in accordance with the *Permanent Seeding and Mulching Plan* above.
- Temporary mulching and/or seeding shall commence immediately following initial fine grading of any area expected to remain bare for an interim period of more than 30 days (7 days for sensitive and critical areas). Stabilization or seeding requirements shall be determined in accordance with Tables 14-1 and 14-2 and shall be implemented at the beginning of the expected interim period. In no case shall any bare areas remain untreated for more than 30 days (7 days for sensitive and critical areas).
- Interim periods for sensitive and critical areas are indicated in the Tables 14-1 and 14-2. However, exposed or bare soil in these areas shall be mulched at the completion of work, each day, if significant rainfall is predicted or eminent.
- Mulch application rate shall be doubled during winter construction. Where practicable, mulch should be applied at the end of each day's work for areas that have been fine graded or if snow is predicted or eminent. In no case shall any areas be left bare for more than 15 days during winter construction.
- Permanent seeding shall not be attempted during the fall or winter seasons unless otherwise approved by the Engineer. Should seeding be approved by the Engineer during fall or winter seasons, the Contractor shall follow procedures for dormant seeding. See *Permanent Seeding and Mulching Plan* above for dormant seeding requirements. However, vegetation must be inspected and reseeded by Contractor as necessary in the following spring to ensure good vegetative cover. Acceptance of dormant seeding shall not occur until after May 1, in the following spring.
- Temporary seeding and mulch shall be inspected and maintained or repaired weekly. At a minimum, 75 percent 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 (e.g., mulch, filter barriers, check dams, bales). Mulch shall be reapplied as necessary to completely cover soil.
- Areas within 75 feet of a wetland or waterbody shall be stabilized prior to any storm event with a double row of sediment barriers (Maine Construction General Permit, Appendix A (3)).

Table 14-1: Stabilization Schedule

STABILIZATION SCHEDULE		
Maximum Expected Interim Period* - (Days)	**Temporary Mulching (Hay)**	**Temporary Seeding**
0-7 (0-2)	None	None
7-30 (2-14)	2-bales/1,000 sq.ft	None
30-60 (14-30)	2-bales/1,000 sq.ft.	(per Table 14-2: Temporary Seeding Schedule)
More than 7 days during winter season	4-bales/1,000 sq.ft.	Dormant seeding only
* Values in parentheses indicates interim period for sensitive and critical areas.		
** Mulch application rates shall be doubled for winter construction.		

Table 14-2: Temporary Seeding Schedule

TEMPORARY SEEDING SCHEDULE			
Seed	**Seeding Rate (lbs/1,000 sq. ft.)**	**Seeding Depth (Inches)**	**Recommended Seeding Dates**
Annual Rye Grass	0.9	4-Jan	4/1 to 7/1
Sudan Grass	0.9	2-Jan	7/1 to 8/15
Perennial Rye Grass	1.8	4-Jan	8/15 to 9/15
Winter Rye Grass	2.6	1	9/15 to 10/15
Dormant Seeding	3.5	1	10/15 to 3/31
50% Winter Rye	-2.6		
50% Annual Rye	-0.9		

Topsoil - Topsoil will be stockpiled on-site when necessary in areas that have minimum potential for erosion, such as flat slopes or on-site borrow pits, and will be kept as far as possible from existing drainage areas. Stockpiles expected to remain longer than 15 days shall be encircled with bales, erosion control mix berms, or silt fence at the down gradient sides of the stockpile and mulched with a second application of hay mulch and anchored with biodegradable netting if deemed necessary by the Engineer (Maine Construction General Permit, Appendix A (6) a-d).

Winter Construction - For any work proposed during the winter season, the Contractor shall adhere to the following practices.

- Limit the exposed area to those areas in which work is to occur during the following 15 days and that can be mulched in one day prior to any snow event.
- Where required and approved by the Engineer, installation of silt fence may be modified from detail on design plans to substitute six inches of suitable non-organic material over the bottom of the silt fence in lieu of trenching and backfilling fabric or erosion control mix berm/barrier.
- Mulching and seeding rates shall adhere to the *Temporary Seeding and Mulching Schedule* above. *Note that all mulching rates shall be doubled as shown in the above table and shall follow the sensitive area schedule during winter construction.*
- Permanent seeding shall not be attempted by the Contractor during winter season unless otherwise approved by the Engineer.

14.1.1 Erosion Control Removal

Removal of temporary erosion control measures shall be the responsibility of the Contractor. Erosion controls shall remain in place and will be maintained by the Contractor until all related construction is complete and the area has been stabilized. Erosion control mix will be used to revegetate roads/pads and should be left in place.

An area is considered stable if a 90 percent cover of vegetation has been established or riprap or other permanent measures are in place and functioning properly.

Bales and silt fence shall be removed within 30 days of final stabilization. The bales and silt fence shall be disposed of legally and properly off-site. Sediment trapped behind these controls shall be distributed to an area undergoing final grading and graded in an aesthetic manner to conform to the topography, and fertilized, seeded and mulched, or otherwise stabilized, in accordance with the rates previously stated.

The sediment trapped behind/around/in stone check dams, perforated risers, and sedimentation basins, shall be removed and transported off-site, or to an upslope area undergoing final grading. The sediment trapped by these devices shall not be regraded locally since they exist in drainage ways.

The rip-rap and stone from the check dams and risers may be either removed or regraded in an aesthetic manner that does not inhibit flow or create the potential for erosion.

Once the trapped sediments have been removed from the temporary sedimentation devices, the disturbed areas will be loamed (if necessary), fertilized, seeded and mulched, or otherwise stabilized, in accordance with the rates previously stated.

14.2 Conclusion

If constructed in conformance with the project design plans and these basic standards, the project is not expected to result in any significant erosion or sedimentation either on or off the site.

NO.	DESCRIPTION	DATE
3	PERMIT PLAN SUBMISSION	04.09.13
2	ACOE REVISIONS	03.06.13
1	PERMIT DRAWINGS SUBMITTED FOR PROJECT TEAM REVIEW	12.19.12

EROSION CONTROL NOTES

SCALE: - | DRAWN:
DATE: SEPT 2012 | DESIGNED: SJB
JOB NO.: 3048 | CHECKED: SWR
FILE NAME: 3048-DET

STATE OF MAINE — STEVEN J. BLAKE II — 11695 — LICENSED PROFESSIONAL ENGINEER

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