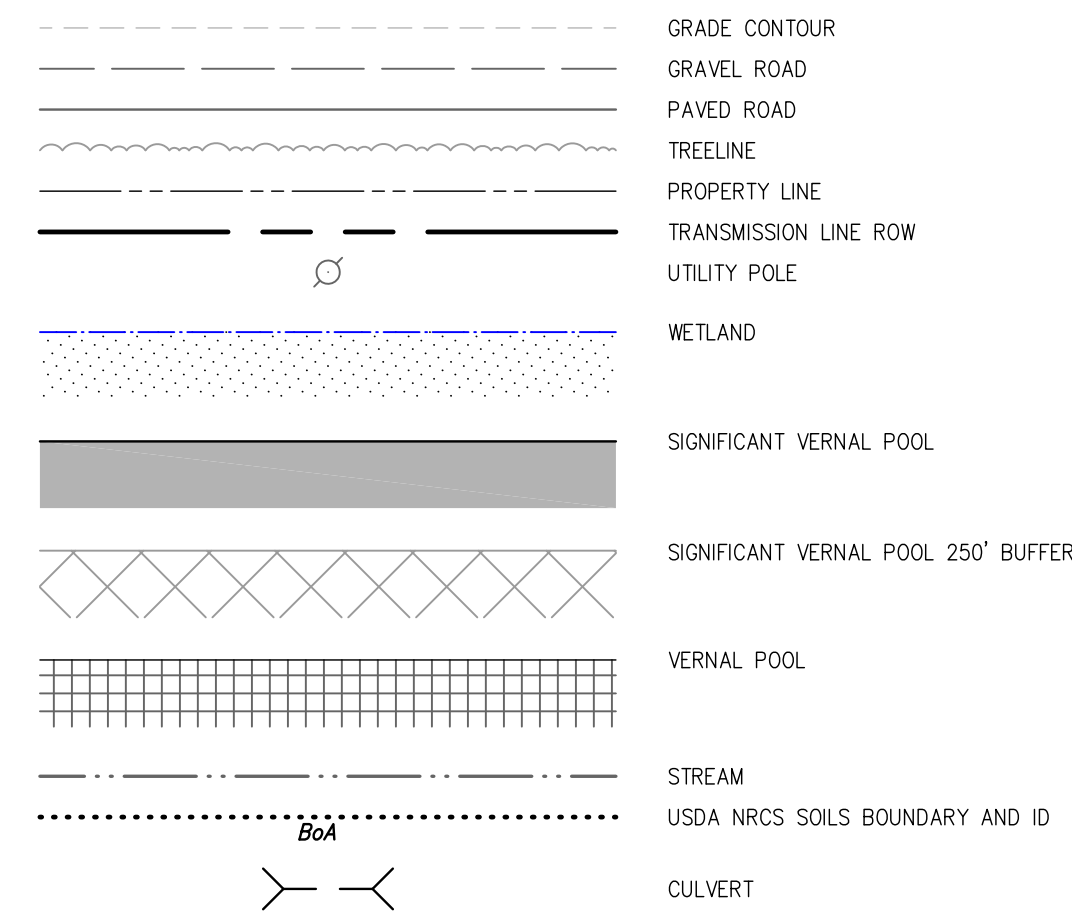
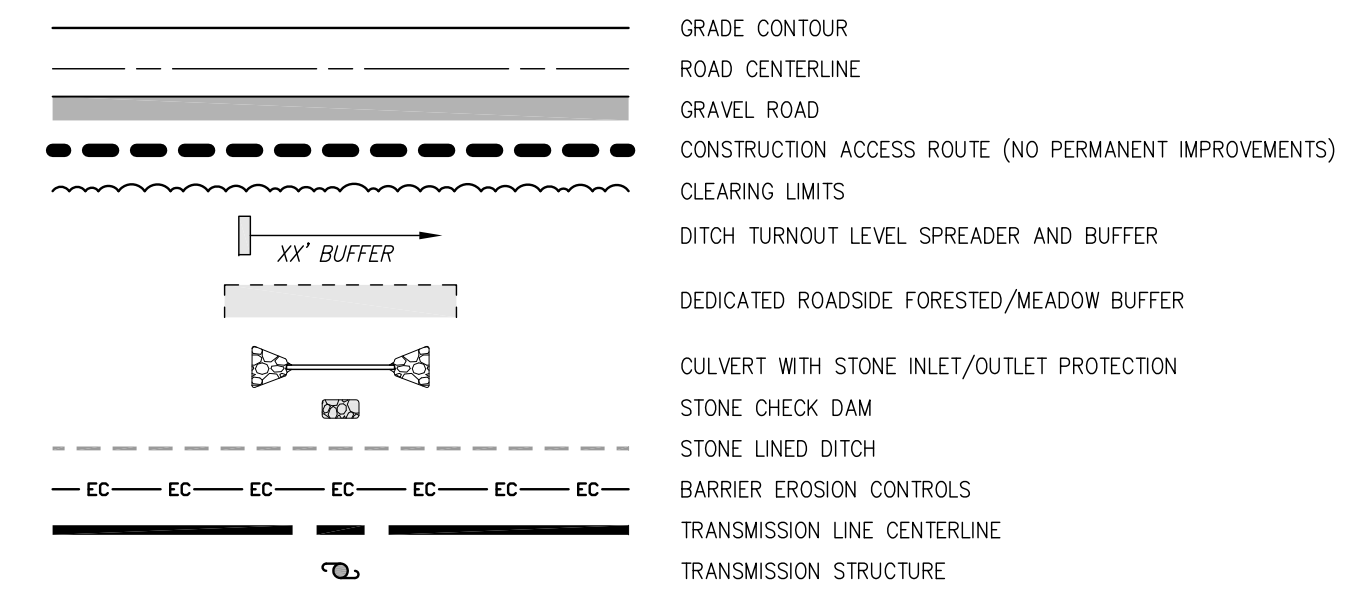


SHEET INDEX		
DWG Number	Title	Overall Sheet #
General Index Plans		
	Sheet Index/Legend/General Notes	1
Access Road Plan & Profile		
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AR-01	Access Road AR-120	3
AR-02	Access Road AR-212	4
AR-03	Access Road AR-230 (1 OF 2)	5
AR-04	Access Road AR-230 (2 OF 2)	6
AR-05	Access Road AR-300	7
AR-06	Access Road AR-355	8
AR-07	Access Road AR-390	9
AR-08	Access Road AR-460-B	10
Details and Notes		
DET-01	Erosion and Sedimentation Control Details	11
DET-02	Stormwater Details	12
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Stormwater Calculation Sheets		
SW-01	Stormwater Calculation Tables	14

EXISTING LEGEND:



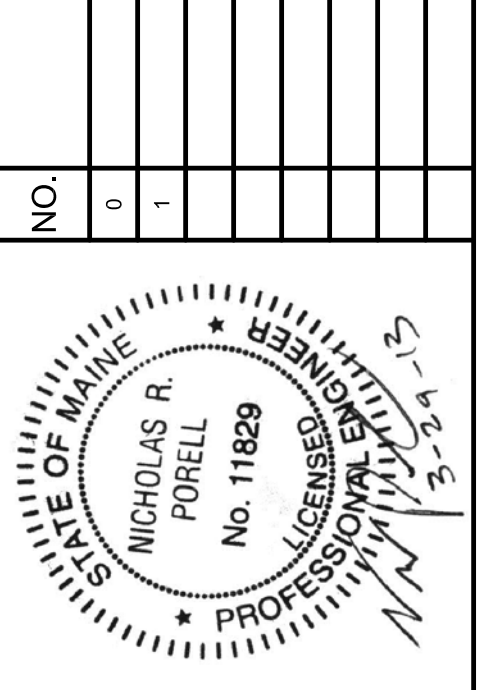
PROPOSED LEGEND:



GENERAL NOTES:

- NORTH AS SHOWN HEREON IS REFERENCED TO GRID NORTH, UTM 83, ZONE 19, U.S. SURVEY FEET.
- ELEVATIONS AS SHOWN HEREON ARE REFERENCED TO NAD 83.
- EXISTING TOPOGRAPHIC AND PLANNIMETRIC SURVEY INFORMATION AS SHOWN HEREON IS THE RESULT OF AERIAL TOPOGRAPHIC MAPPING COMPLETED BY AERIAL SURVEY AND PHOTO, INC. GROUND CONTROL BY PLISGA & DAY LAND SURVEYORS, BANGOR, MAINE.
- SOILS MAPPING IS COURTESY OF THE USDA ONLINE DATA CENTER.
- ENVIRONMENTAL RESOURCE MAPPING (WETLANDS, STREAMS, VERNAL POOLS, ETC.) AS SHOWN HEREON BY STANTEC.
- PROPERTY LINES AS SHOWN HEREON ARE A COMPILATION OF TAX MAPS. PROPERTY LINES AS SHOWN ARE APPROXIMATE.

NO.	REVISIONS:	APPD:	DATE:
0	ISSUED FOR REVIEW	TMH	03/20/13
1	MAINE DEP SUBMITTAL	TMH	03/20/13



SGC ENGINEERING, LLC
 • Civil Design & Survey Engineering
 • Environmental & Regulatory Permitting
 • Electrical, Power Systems Engineering

101 County Road
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 Phone: 207.688.1000
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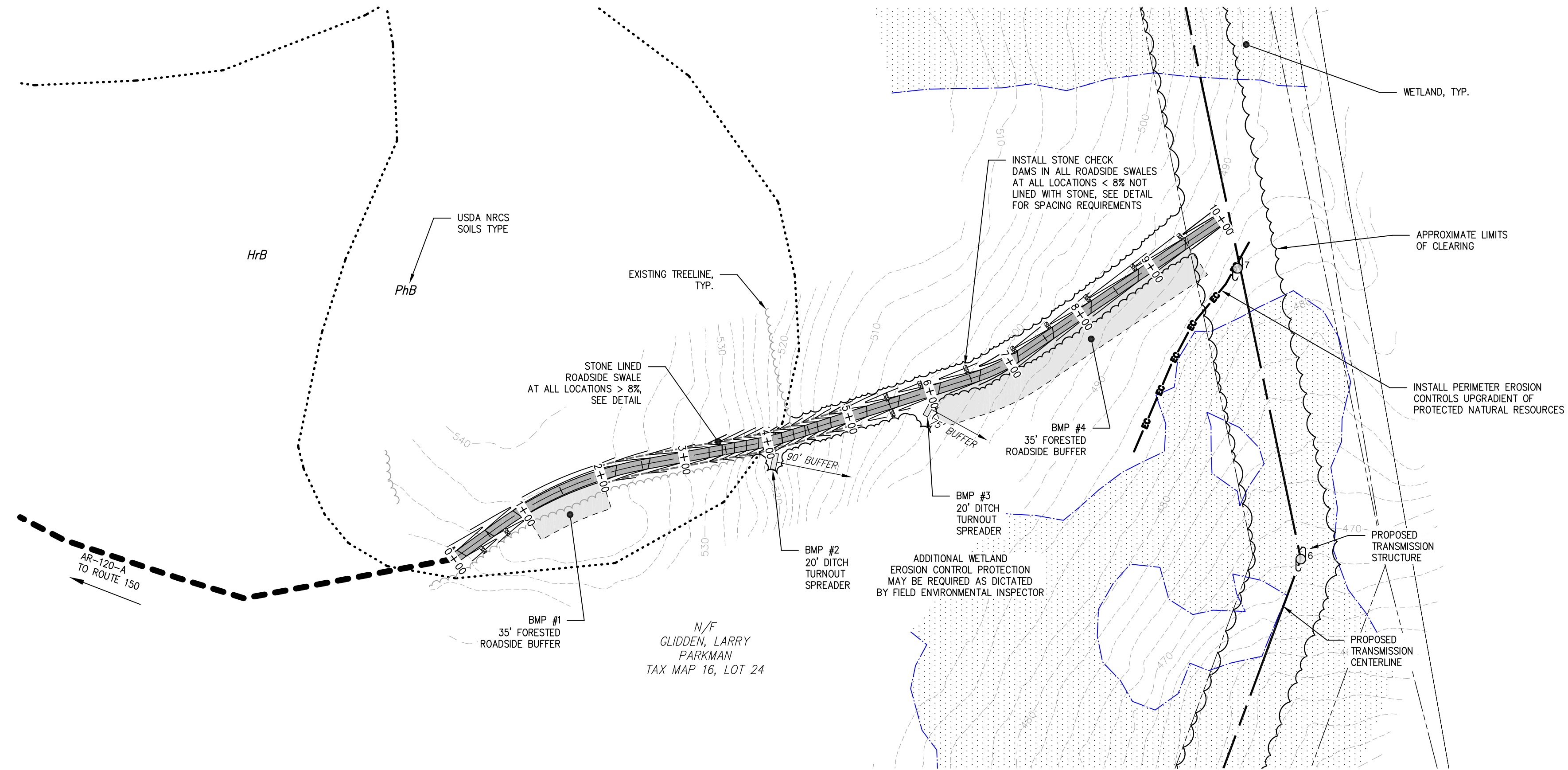
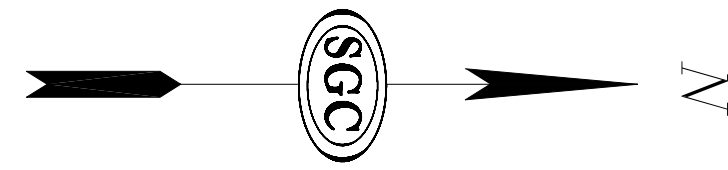
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Date: 03-20-2013

SGC Project: 782001

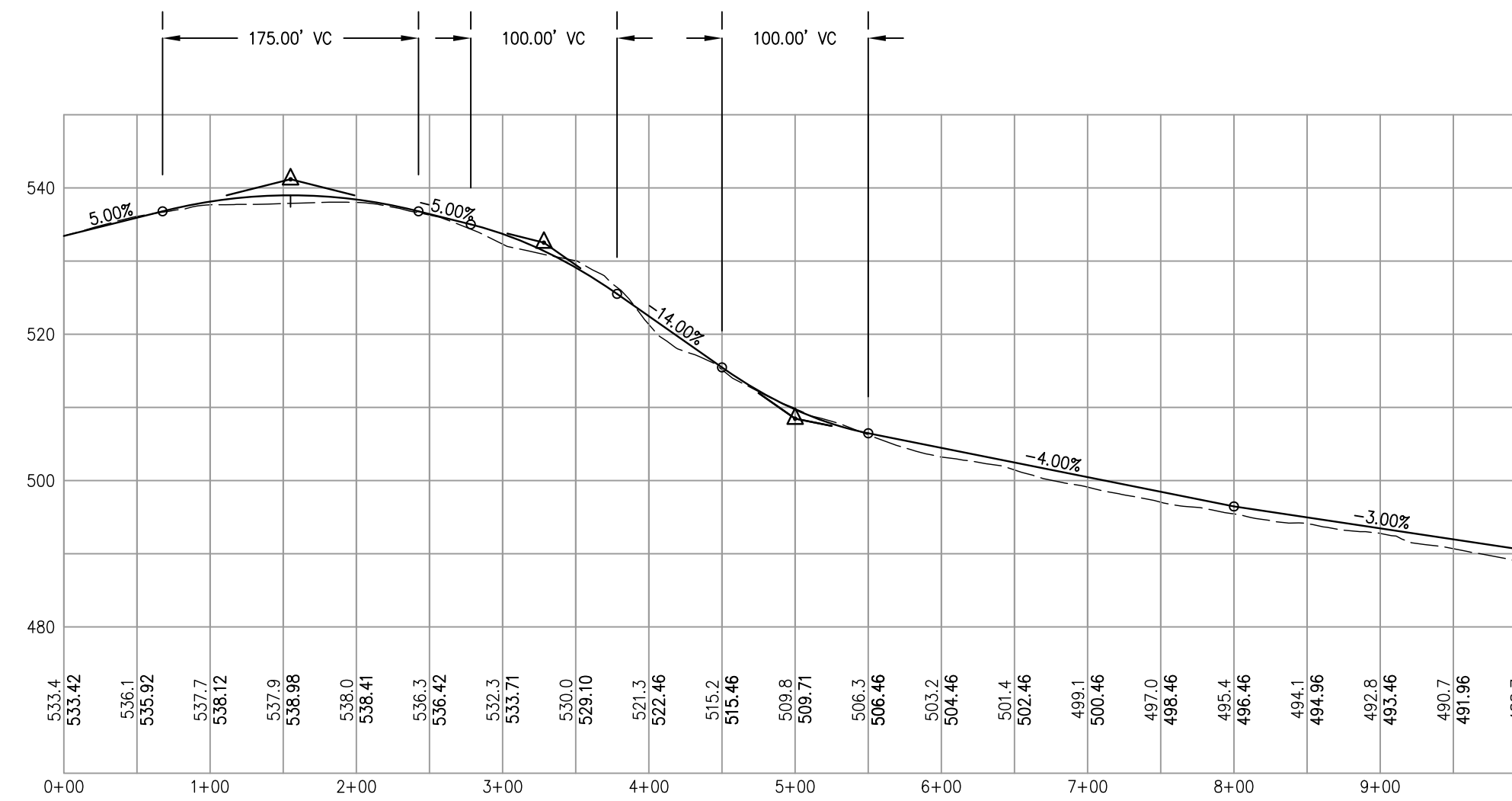
Title: SHEET INDEX, GENERAL NOTES, LEGEND
 Project: 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 Applicant: BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101





ROAD AR-120 STA. 0+00 TO 10+00 (END)

PLAN SCALE: 1"=100'

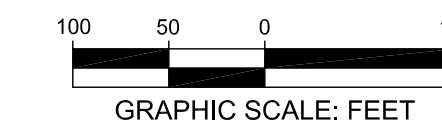


ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
0+00	10+00 (END)	RIGHT

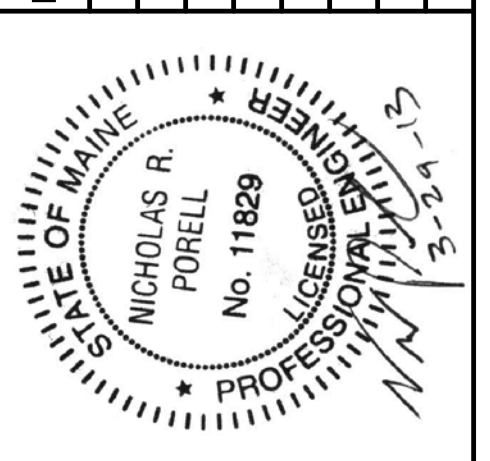
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PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

MAINE DEP PERMIT SUBMISSION
VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE. ADJUST FINISHED GRADE ELEVATION AS NECESSARY TO PROVIDE 2' MIN COVER ON ALL CULVERTS.



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 Fax: 207.848.1001

100 Park Street, Suite 205
 Bangor, Maine 04401
 Phone: 207.948.0100
 Fax: 207.948.0101

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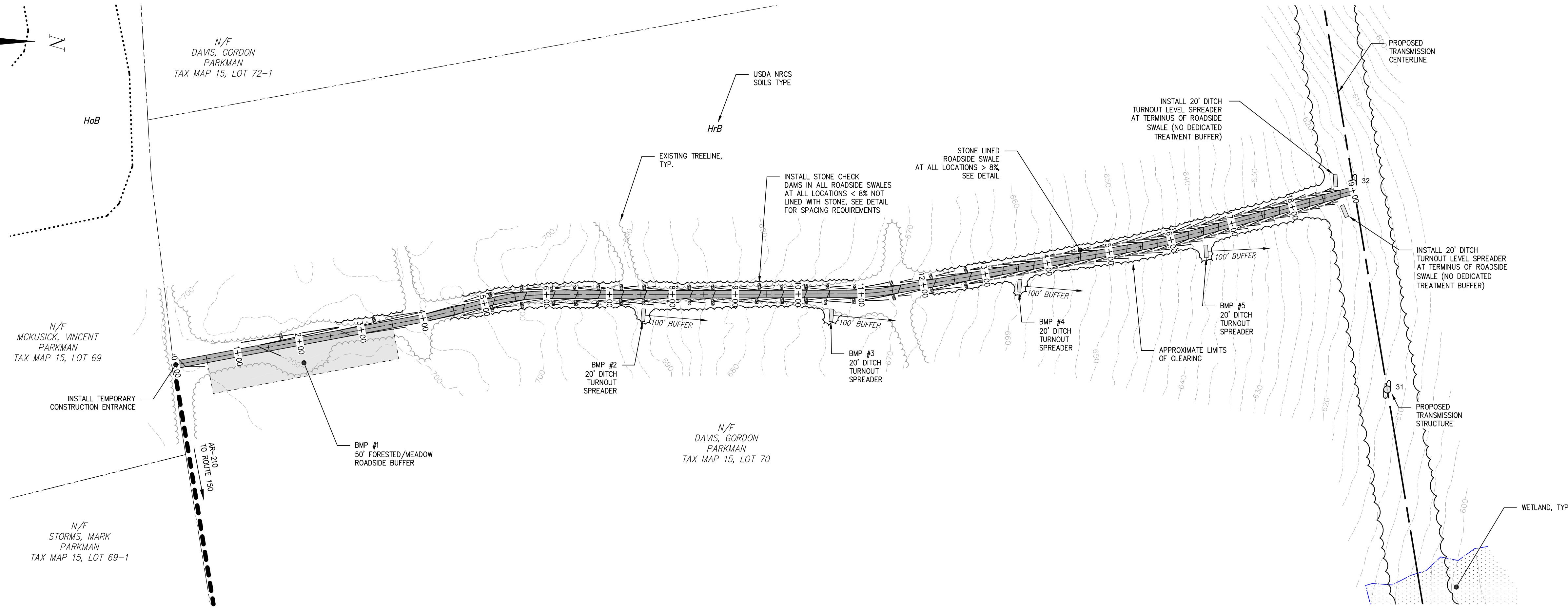
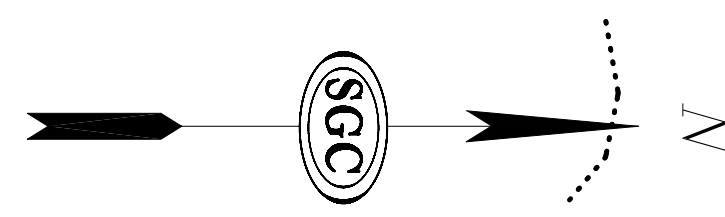
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 Date: 03-20-2013
 Drawn/Design/Asst: NRP/NRP/TMH

ACCESS ROAD PLAN AND PROFILE
 ACCESS ROAD AR-120 (B & C)
 Project: 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 Applicant: BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

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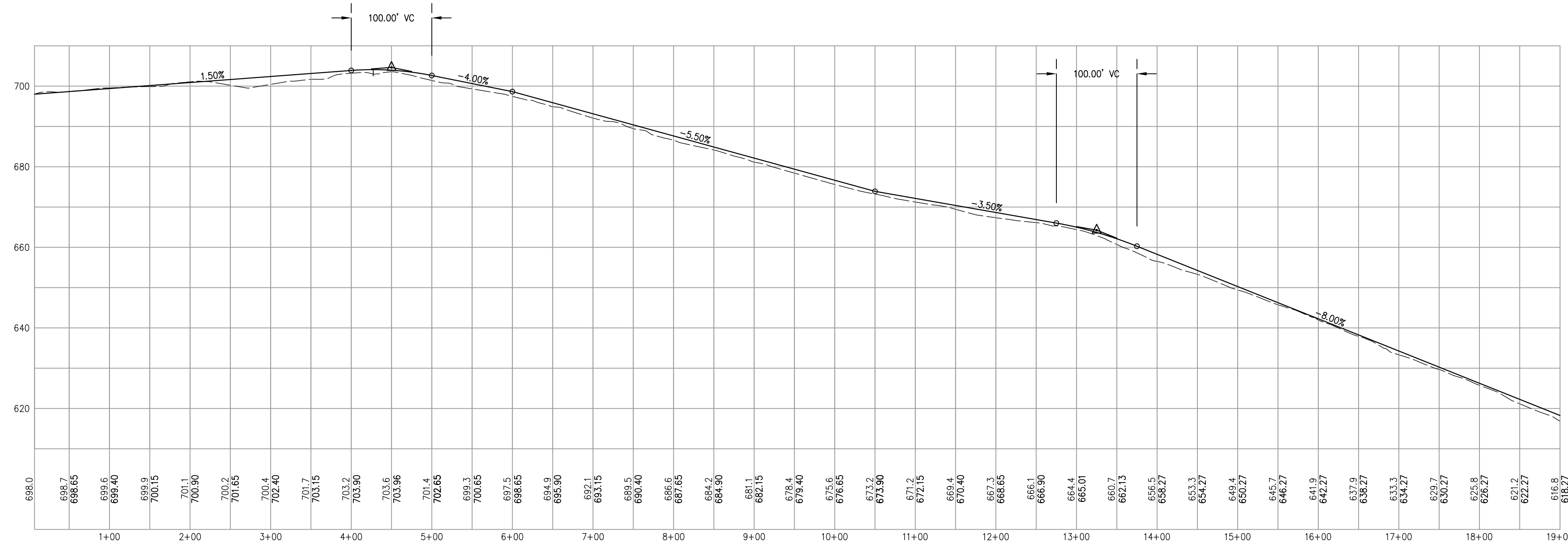
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DWG. AR-01 SHEET 03 of 14



ROAD AR-212 STA. 0+00 TO 19+00 (END)

PLAN SCALE: 1"=100'

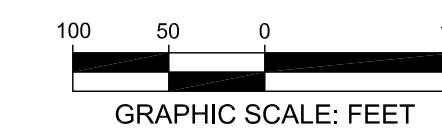


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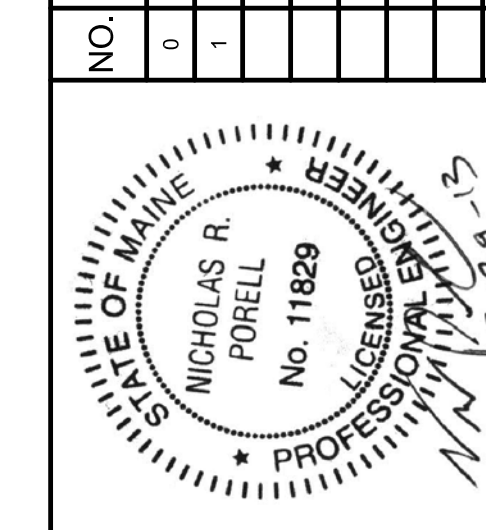
PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
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MAINE DEP PERMIT SUBMISSION
VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE. ADJUST FINISHED GRADE ELEVATION AS NECESSARY TO PROVIDE 2' MIN COVER ON ALL CULVERTS.



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 Fax: 207-846-0001

100 Park Street, Suite 205
 Bangor, ME 04401-2005
 Phone: 207-686-0178
 Fax: 207-686-0178

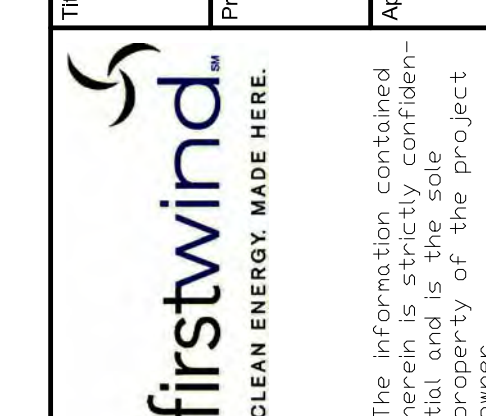
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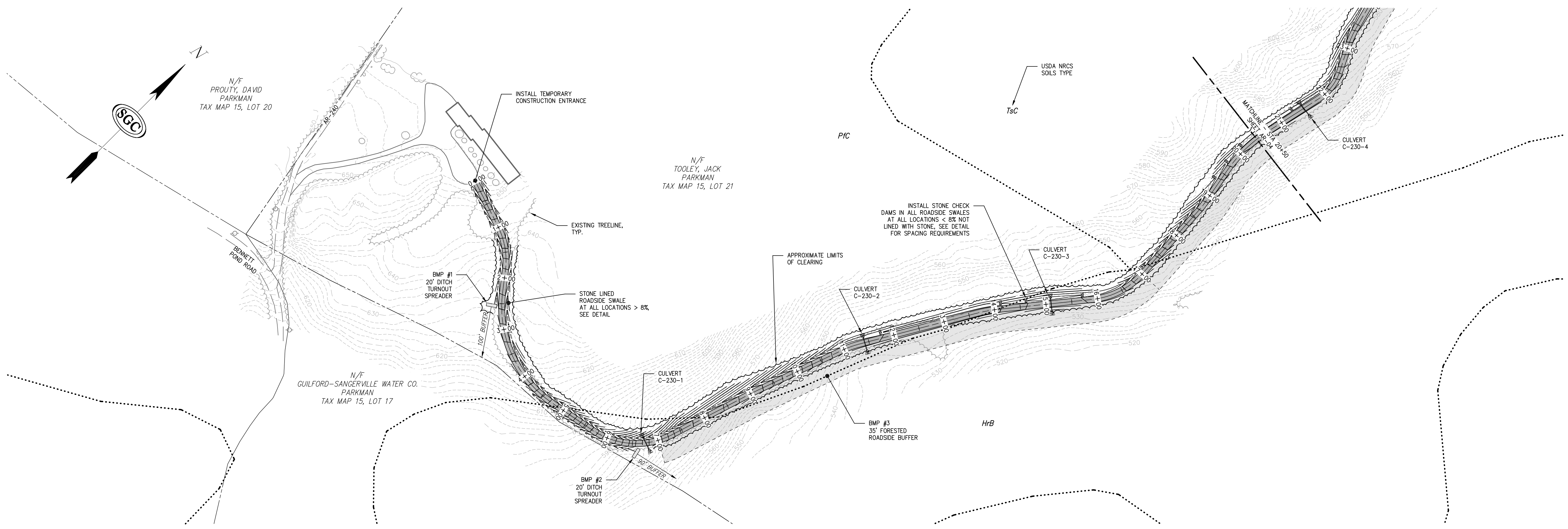
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 Design: NRP/TMH
 Date: 03-20-2013
 Scale: 1"=100'

ACCESS ROAD PLAN AND PROFILE
 ACCESS ROAD AR-212

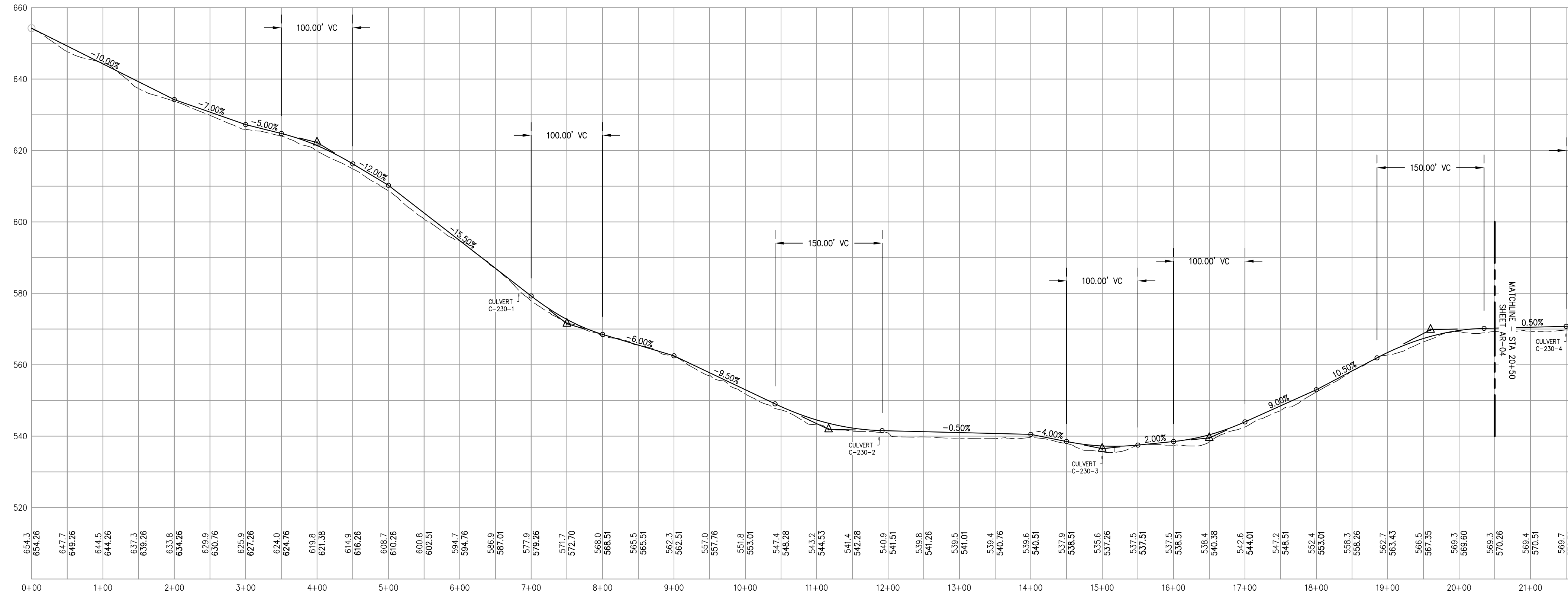
Project: **115KV GENERATOR LEAD**
 MAYFIELD TWP TO PARKMAN, MAINE

Applicant: **BLUE SKY WEST II, LLC**
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101



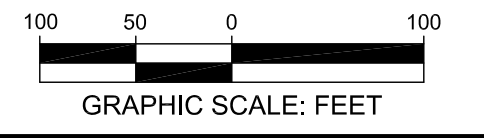


ROAD AR-230 STA. 0+00 TO 20+50
PLAN SCALE: 1"=100'



ROAD AR-230 STA. 0+00 TO 20+50
PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
0+00	34+65 (END)	RIGHT



MAINE DEP PERMIT SUBMISSION
VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE. ADJUST FINISHED GRADE ELEVATION AS NECESSARY TO PROVIDE 2' MIN COVER ON ALL CULVERTS.

DATE:	03/20/13
APPD:	TMH
REVISIONS:	ISSUED FOR REVIEW
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STATE OF MAINE
 NICHOLAS R. PORELL
 No. 11829
 LICENSED PROFESSIONAL ENGINEER

Drawn: NRP
 Design: NRP
 Scale: 1"=100'

Date: 03-20-2013
 Project: 782001

ACCESS ROAD PLAN AND PROFILE
 ACCESS ROAD AR-230 (STA 0+00 TO 20+50)

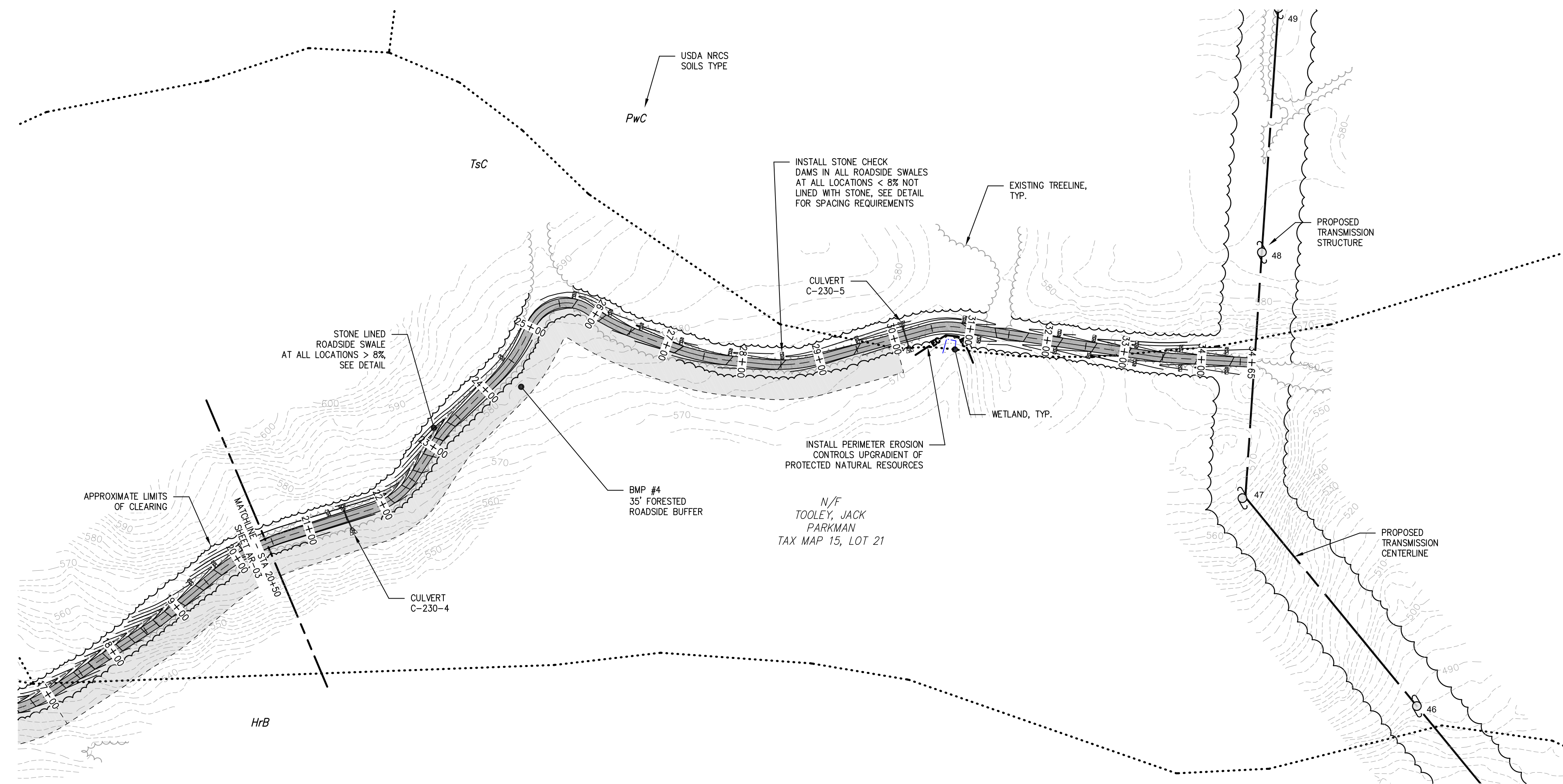
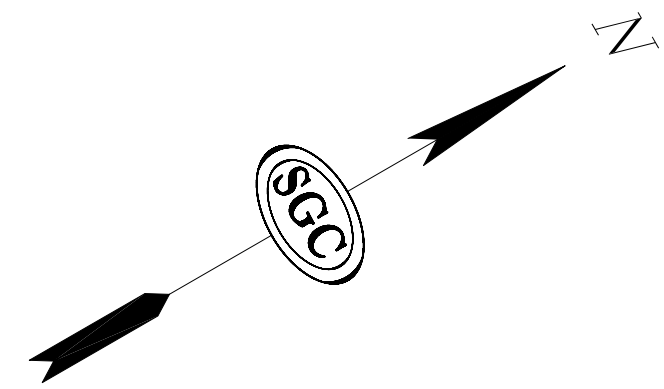
Project: 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE

Applicant: BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

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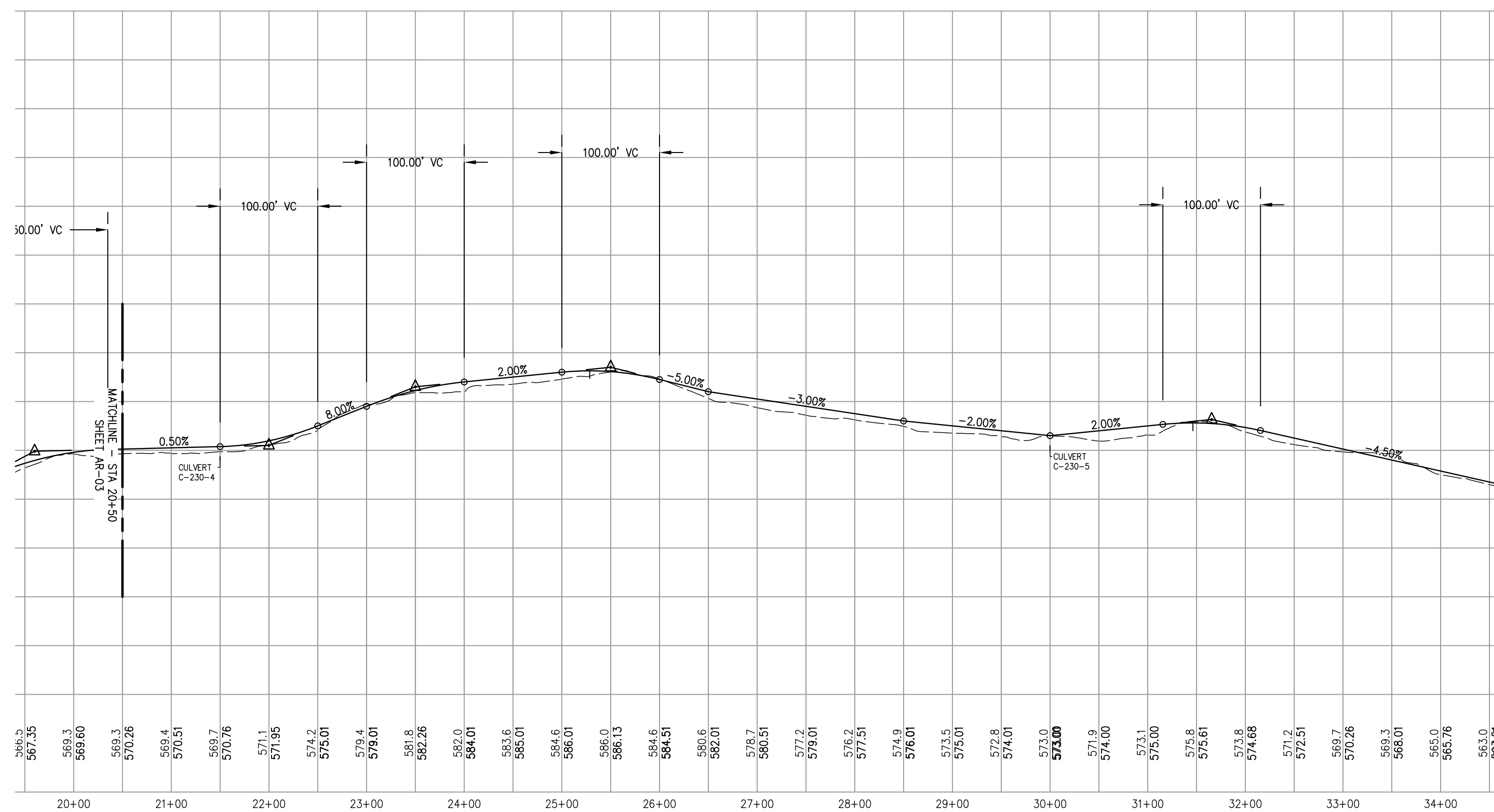
The information contained herein is confidential and is the property of the project owner.

DWG. AR-03
 SHEET 05 of 14



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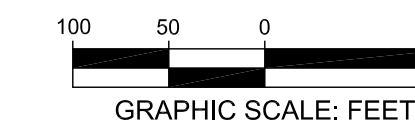
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ROAD AR-230 STA. 20+50 TO 34+65 (END)

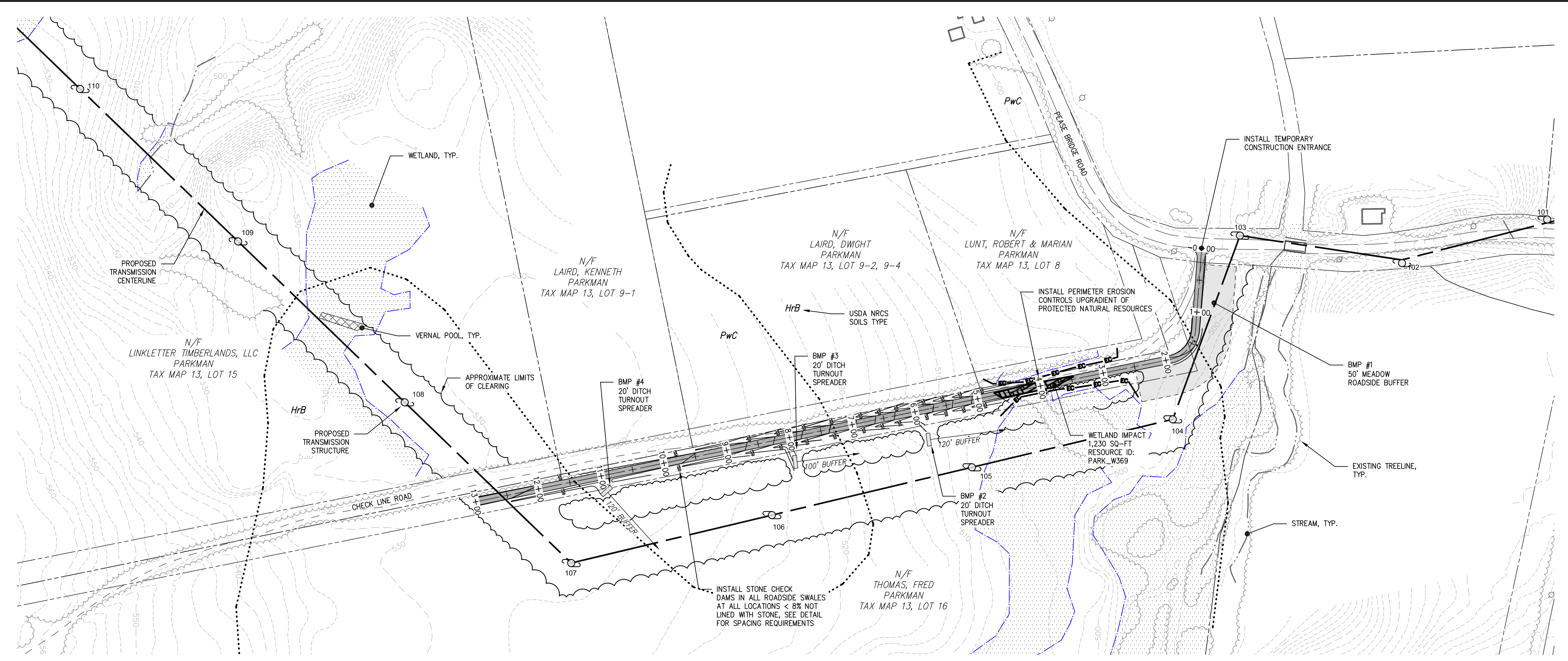
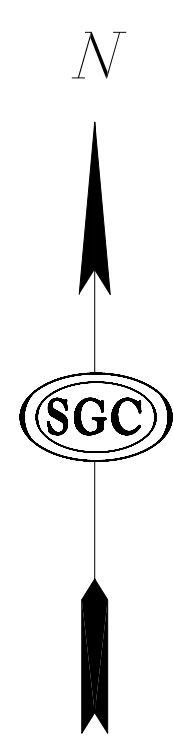
PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
0+00	34+65 (END)	RIGHT

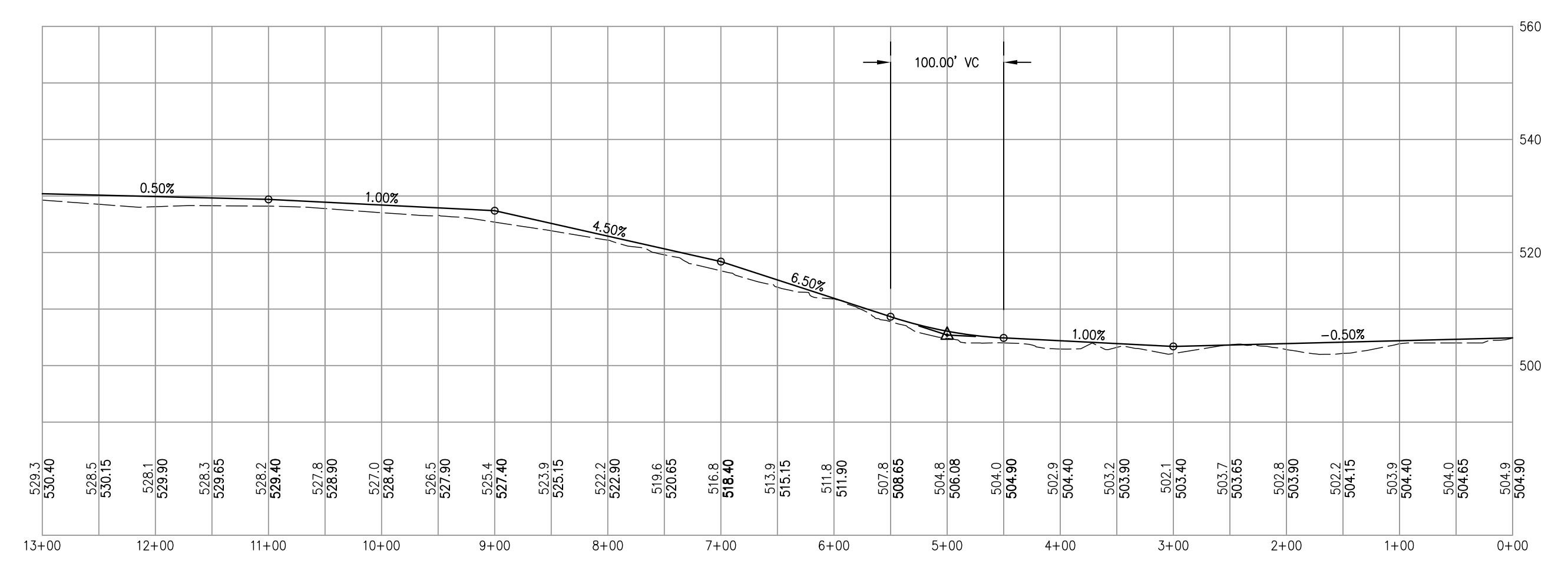


MAINE DEP PERMIT SUBMISSION
VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE. ADJUST FINISHED GRADE ELEVATION AS NECESSARY TO PROVIDE 2' MIN COVER ON ALL CULVERTS.

NO.	REVISIONS:	APPD:	DATE:
0	ISSUED FOR REVIEW	TMH	03/20/13
1	MAINE DEP SUBMITTAL	TMH	03/23/13
		Drawn: NRP Design: NRP Check: NRP Date: 03-20-2013	
Project: ACCESS ROAD AR-230 (STA 20+50 TO 34+65) 115KV GENERATOR LEAD MAYFIELD TWP TO PARKMAN, MAINE Applicant: BLUE SKY WEST II, LLC c/o First Wind Energy, LLC 129 Middle Street, 3rd Floor, Portland, ME 04101			
		DWG. AR-04 SHEET 06 of 14	



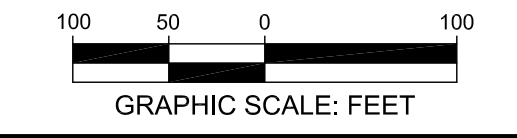
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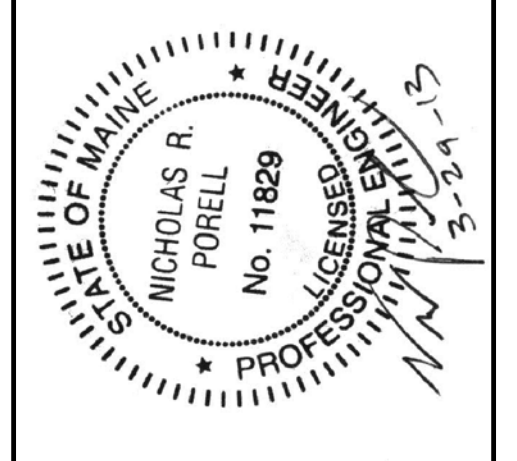
ROAD AR-300 STA. 0+00 TO 13+00 (END)
PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
0+00	13+00 (END)	LEFT

MAINE DEP PERMIT SUBMISSION
VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE. ADJUST FINISHED GRADE ELEVATION AS NECESSARY TO PROVIDE 2' MIN COVER ON ALL CULVERTS.



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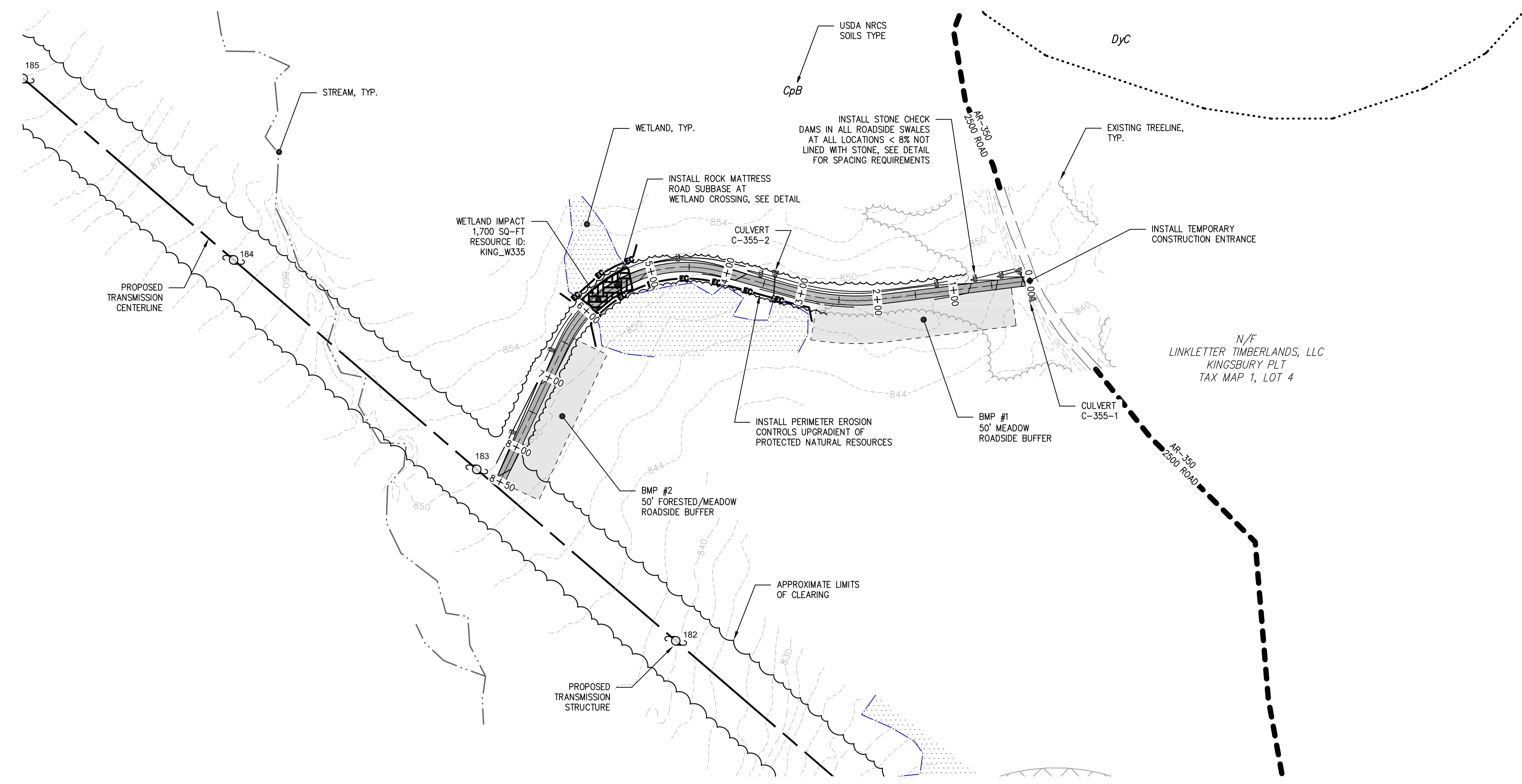
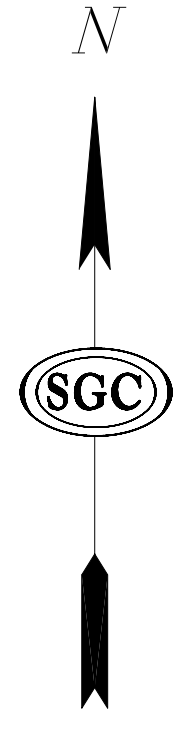
100 Park Street, Suite 205
 Bangor, ME 04401
 Tel: 207-688-0100
 Fax: 207-688-0105

Drawn: []
 Design: []
 Agent: []

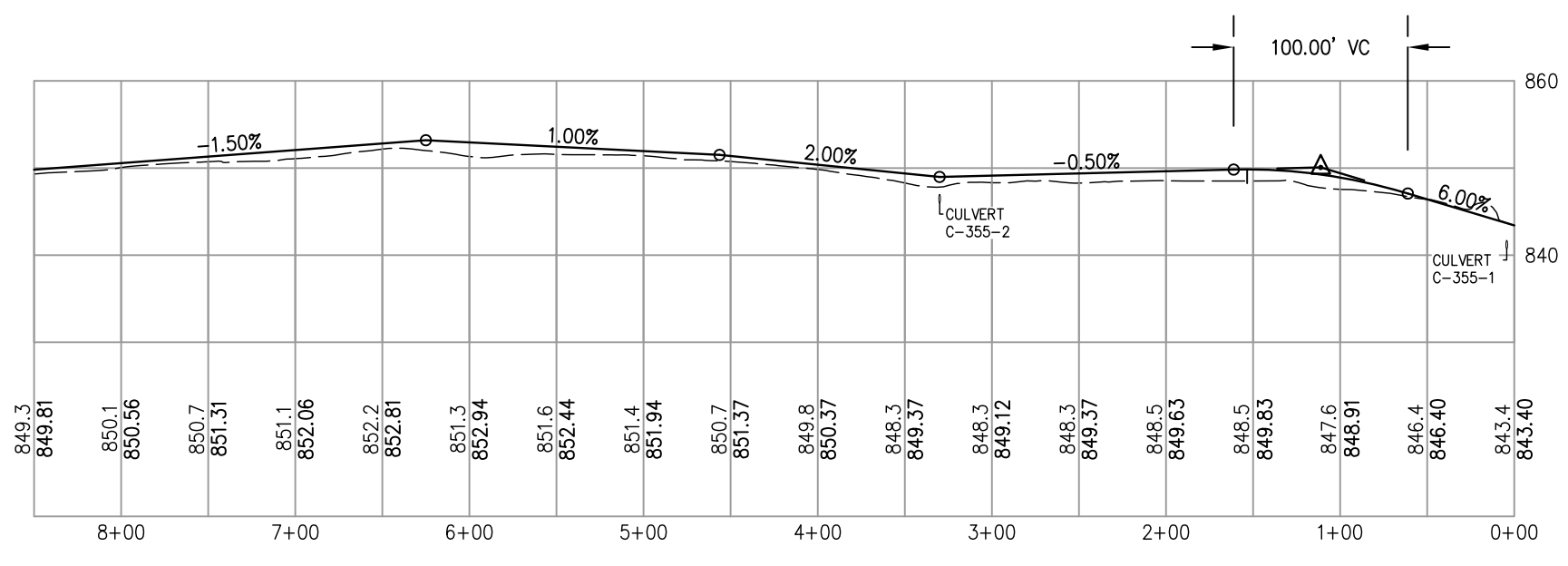
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 Date: 03-20-2013
 SGC Project: 782001
 Drawn: []
 Design: []
 Agent: []

THE: ACCESS ROAD PLAN AND PROFILE
 ACCESS ROAD AR-300
 PROJECT: 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 APPLICANT: BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101





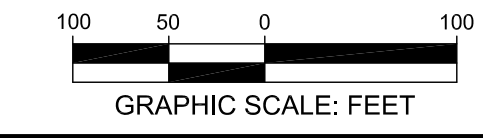
ROAD AR-355 STA. 0+00 TO 8+50 (END)
PLAN SCALE: 1"=100'



ROAD AR-355 STA. 0+00 TO 8+50 (END)
PROFILE SCALE: HOR. 1"=100'
VERT. 1"=20'

ROADWAY SUPERELEVATION TABLE		
BEGIN STATION	END STATION	DIRECTION
0+00	8+50 (END)	LEFT

MAINE DEP PERMIT SUBMISSION
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	0	ISSUED FOR REVIEW	03/20/13
1	MAINE DEP SUBMITTAL	TMH	03/23/13
		Drawn: NRP Design: NRP Check: NRP Date: 03-20-2013 Scale: 1"=100' SSGC Project: 782001	
ACCESS ROAD PLAN AND PROFILE ACCESS ROAD AR-355 115KV GENERATOR LEAD MAYFIELD TWP TO PARKMAN, MAINE APPLICANT: BLUE SKY WEST II, LLC c/o First Wind Energy, LLC 129 Middle Street, 3rd Floor, Portland, ME 04101			
		DWG. AR-06 SHEET 08 of 14	

GENERAL EROSION CONTROL NOTES:

- ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES SHALL BE INSTALLED & MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION DATED MARCH, 2003 (AS REVISED).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING STORM WATER MANAGEMENT PRACTICES IN ACCORDANCE WITH LOCAL REGULATIONS AND GOVERNING AUTHORITIES AND SHALL BE RESPONSIBLE FOR ANY FINES RESULTING FROM EROSION CONTROL VIOLATIONS.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND SHALL BE MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED.
- THE CONTRACTOR SHALL PROVIDE PROPER EROSION AND SEDIMENT CONTROL MEASURES IN ALL AREAS OF WORK. PRIOR TO BEGINNING EXCAVATION WORK, SILT FENCE SHALL BE INSTALLED. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM. CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES TO CONTROL EROSION. EROSION CONTROL MEASURES SHALL ALSO BE INSTALLED AT THE DOWNGRADE PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION.
- THE CONTRACTOR SHALL INSPECT ESC MEASURES ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS OF SIGNIFICANT RUNOFF EVENTS, INCLUDING THOSE THAT RESULT IN DISCHARGE OF STORMWATER FROM THE SITE. DAILY INSPECTIONS OF ESC MEASURES SHALL BE CONDUCTED DURING THE WINTER CONSTRUCTION PERIOD (NOVEMBER 1 – APRIL 15). REPAIRS SHALL BE MADE AS DIRECTED BY THE ENGINEER OR MAINE DEP AS NECESSARY. ACCUMULATED SEDIMENT TRAPPED BY ESC DEVICES SHALL BE REMOVED AS NECESSARY.
- TEMPORARY CONSTRUCTION ENTRANCES ARE TO BE PROVIDED AT ALL CONNECTIONS WITH PUBLIC/Private ROADWAYS.
- TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED AND THOSE ADJACENT AREAS RESTORED UPON COMPLETION OF THE WORK OR WHEN SO ORDERED BY THE ENGINEER OR MAINE DEP. EXPOSED SOIL RESULTING FROM REMOVAL OF TEMPORARY ESC MEASURES SHALL BE RAKED, SEEDED, AND MULCHED OR MATTED AS NEEDED.
- PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN MAY 15TH AND SEPTEMBER 1ST.
- TEMPORARY SEED MIX SHALL BE USED BETWEEN SEPTEMBER 1ST AND MAY 15TH AND SHALL MEET THE FOLLOWING CRITERIA:

SEED	% WEIGHT	% GERMINATION
WINTER RYE	80 MINIMUM	85 MIN
RED FESCUE (CREEPING)	4 MIN	80 MIN
PERENNIAL RYE GRASS	3 MIN	90 MIN
RED CLOVER	3 MIN	90 MIN
OTHER CROP GRASS	0.5 MAX	
NOXIOUS WEED SEED	0.5 MAX	
INERT MATTER	1.0 MAX	

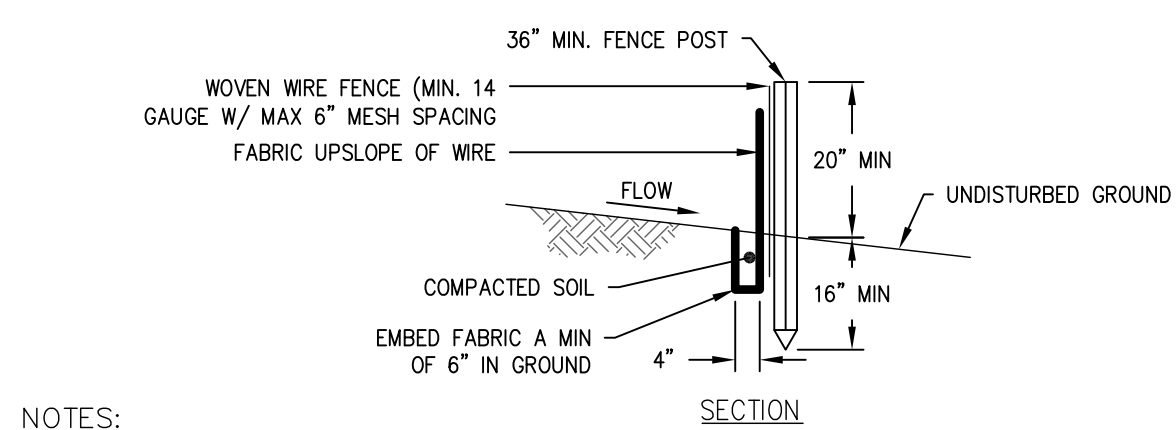
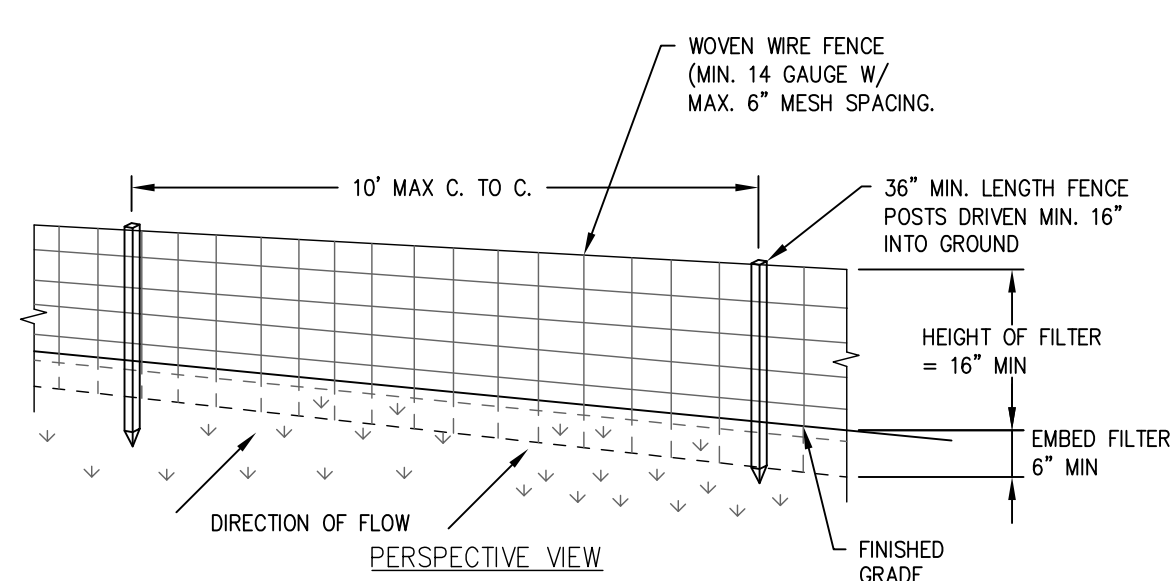
10. TEMPORARY MULCHING IS TO BE APPLIED TO ALL DISTURBED AREAS WITHIN 21 DAYS OF INITIAL DISTURBANCE AND TO AREAS LEFT INACTIVE AND UNSTABILIZED FOR A PERIOD GREATER THAN 7 DAYS AT A RATE OF 2 TONS/ACRE UNLESS:

- STABILIZATION IS NOT REQUIRED IF WORK IS TO CONTINUE IN THE AREA WITHIN THE NEXT 24 HOURS AND THERE IS NO PRECIPITATION FORECAST FOR THE NEXT 24 HOURS.
- STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION (i.e. NO OUTLET) WITH A DEPTH OF 2 FEET OR GREATER (e.g. UTILITY TRENCHES)

- PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN MAY 15TH AND SEPTEMBER 1ST AND MEET THE FOLLOWING CRITERIA:
- | | |
|--------------|-----|
| RED FESCUE | 50% |
| SHEEP FESCUE | 25% |
| RED TOP | 5% |
| WHITE CLOVER | 10% |
| ANNUAL RYE | 10% |
- WETLAND SEED MIX SHALL MEET THE FOLLOWING CRITERIA:
- | | |
|------------------------|------|
| NODDING BUR MARIGOLD | 3% |
| FOX SEDGE | 13% |
| CREEPING BENTGRASS | 14% |
| RIVERBANK WILD RYE | 8% |
| VIRGINIA WILD RYE | 14% |
| SOFT RUSH | 2% |
| SENSITIVE FEM | 1.5% |
| BLUE WERVAIN | 1% |
| BLACKWELL SWITCH GRASS | 25% |
| GREY DOGWOOD | 0.5% |
| CREEPING RED FESCUE | 18% |
- THE METHOD OF STRIPPING VEGETATION SHALL BE SUCH AS TO MINIMIZE EROSION. FILLS SHALL BE PLACED AND COMPACTED IN SUCH A MANNER THAT SOIL SLIDING AND EROSION IS MINIMIZED. GRADING SHALL BE DONE IN SUCH A MANNER AS NOT TO DIVERT WATER ON TO ADJOINING PROPERTY.
 - EROSION CONTROL BLANKET OR EQUIVALENT SHALL BE USED TO STABILIZE ALL DITCHES AND SIDESLOPES STEEPER THAN 3H:1V.
 - SEDIMENT LOGS AND OR EROSION CONTROL MIX BERMS MAY BE SUBSTITUTED FOR SILT FENCE BY THE CONTRACTOR AS CONDITIONS DICTATE.
 - PLACE EXCAVATED MATERIAL ON THE UP GRADIENT SIDE OF THE EXCAVATION TO THE EXTENT POSSIBLE. EXCESS SOILS ARE TO BE TRANSPORTED TO AN OFF-SITE UPLAND LOCATION FOR STOCKPILING. WETLAND SOILS SHALL BE STOCKPILED SEPARATELY FROM UPLAND SOILS.

WINTER CONSTRUCTION NOTES:

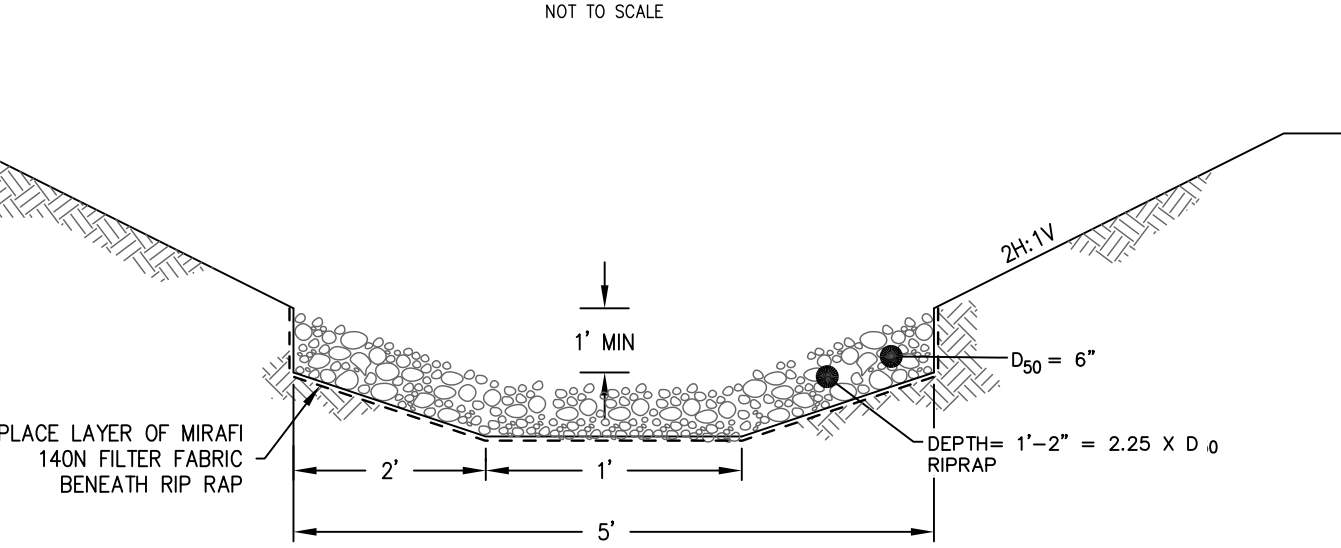
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL WINTER EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH SECTION A-3 OF "MAINE EROSION AND SEDIMENTATION CONTROL BMP'S".
 - WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT FOR ANY GIVEN SEGMENT OF THE PROJECT AREA, NO MORE AREA THAN CAN BE STABILIZED IN A ONE-WEEK PERIOD IS TO BE EXPOSED AT ANY GIVEN TIME. MULTIPLE SEGMENTS AT DIFFERENT LOCATIONS WITHIN THE PROJECT AREA CAN BE EXPOSED CONCURRENTLY.
 - DISTURBED AREAS ARE TO BE LIMITED TO AREAS WHERE WORK IS TO BE COMPLETED WITHIN 15 DAYS AND CAN BE MULCHED IN ONE DAY PRIOR TO A SNOW EVENT.
 - AREAS OF DISTURBED SOIL SHALL BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS: (1) IF NO RUNOFF EVENT IS FORECAST FOR WITHIN 24 HOURS AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS AND/OR (2) DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS OPEN UTILITY TRENCHES OR FOUNDATIONS, WHICH REQUIRE STABILIZATION AT THE END OF EACH WORK WEEK.
 - SNOW PILING SHALL OCCUR WITHIN THE DESIGNATED LIMITS OF DISTURBANCE.
 - DRAINAGE STRUCTURES SHALL BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
 - SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE SHALL BE INSTALLED PRIOR TO FROZEN GROUND CONDITIONS. SILT FENCE MAY BE INSTALLED WITH STONE BACKING DURING FROZEN GROUND CONDITIONS.
 - MULCH USED FOR TEMPORARY STABILIZATION SHALL BE APPLIED AT 4 TONS/ACRE WITH AN 80 TO 90 PERCENT UNIFORM COVER AND TRACKED IN TO PREVENT REMOVAL BY WIND.
 - PRIOR TO STABILIZATION, SNOW AND/OR ICE SHALL BE REMOVED TO LESS THAN 1 INCH THICKNESS.
 - TEMPORARY CONSTRUCTION ENTRANCES SHALL BE INSTALLED AND MAINTAINED AT LOCATIONS WHERE CONSTRUCTION VEHICLE TRAFFIC WILL BE ENTERING AND LEAVING THE CONSTRUCTION SITE. ENTRANCES SHALL BE AT LEAST 14 FEET WIDE TO ACCOMMODATE VEHICULAR TRAFFIC.
 - ALL SLOPES LESS THAN 3H:1V SHALL BE MULCHED AT 4 TONS/ACRE AND TRACKED IN.
 - THE SITE STABILIZATION SCHEDULE BEFORE WINTER SHALL BE AS FOLLOWS:
- | | |
|--------------|--|
| SEPTEMBER 15 | ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED. ALL SLOPES MUST BE STABILIZED, SEEDED AND MULCHED. ALL GRASS LINED DITCHES AND CHANNELS MUST BE STABILIZED WITH MULCH OR AN EROSION CONTROL BLANKET. |
| OCTOBER 1 | ALL DISTURBED AREAS TO BE PROTECTED WITH AN ANNUAL GRASS MUST BE SEEDED AT A SEEDING RATE OF 3 POUNDS PER 1000 SQ-FT AND MULCHED. |
| NOVEMBER 15 | ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED. SLOPES THAT ARE COVERED WITH RIPRAP MUST BE CONSTRUCTED BY THAT DATE. |
| DECEMBER 1 | ALL DISTURBED AREAS WHERE THE GROWTH OF VEGETATION FAILS TO BE AT LEAST THREE INCHES TALL OR AT LEAST 75% OF THE DISTURBED SOIL IS COVERED BY VEGETATION, MUST BE PROTECTED FOR OVER-WINTER. |



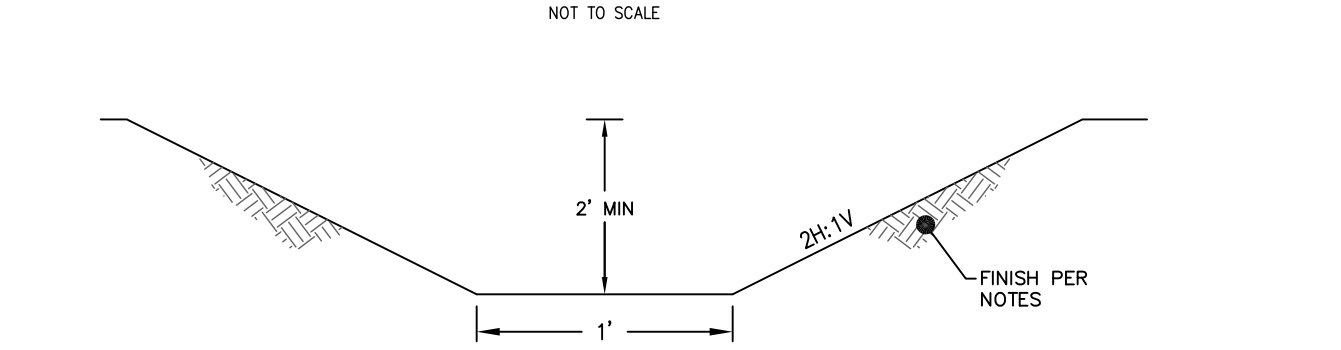
NOTES:

- REINFORCED FENCE CAN BE USED IN PLACE OF TWO LAYERS OF CONVENTIONAL SILT FENCE WHEN WORKING IN ENVIRONMENTALLY SENSITIVE AREAS SUCH AS WITHIN 250' OF A LAKE, POND, RIVER, STREAM, OR BROOK, WITHIN 100 FEET A WETLAND OR STREAM CROSSING OR OTHER SENSITIVE AREAS.
- WIRE REINFORCING NOT NECESSARY FOR NON-SENSITIVE INSTALLATIONS. FOR CONVENTIONAL SILT FENCE, INSTALL PER DETAIL MINUS WOVEN WIRE FENCE.
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE FLOW EFFICIENCY.
- INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
- DO NOT PLACE SILT FENCE IN STREAMS OR CONCENTRATED FLOW CONDITIONS.
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA 1140N, OR APPROVED EQUIVALENT.
- PREFABRICATED UNITS SHALL BE GEOTAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.
- REMOVED SEDIMENT SHALL BE DEPOSITED TO AN UPLAND AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

SILT FENCE DETAIL



STONE LINED SWALE DETAIL

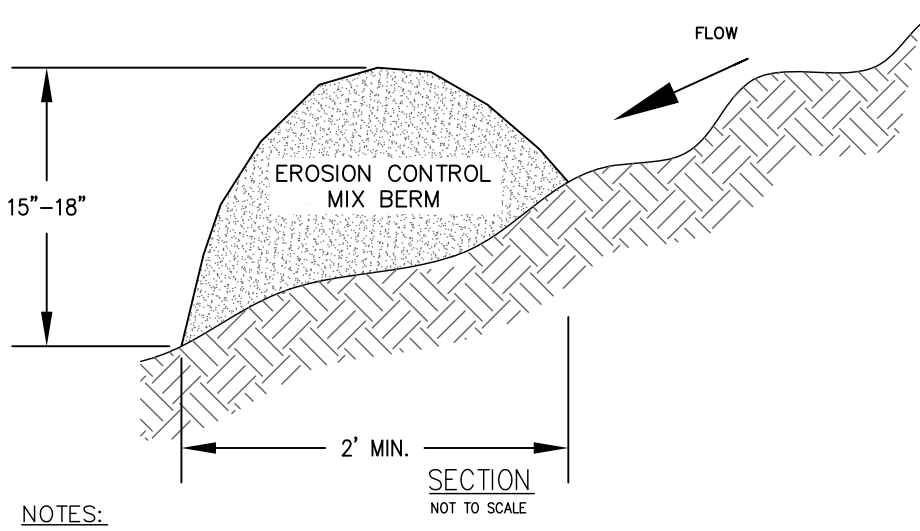
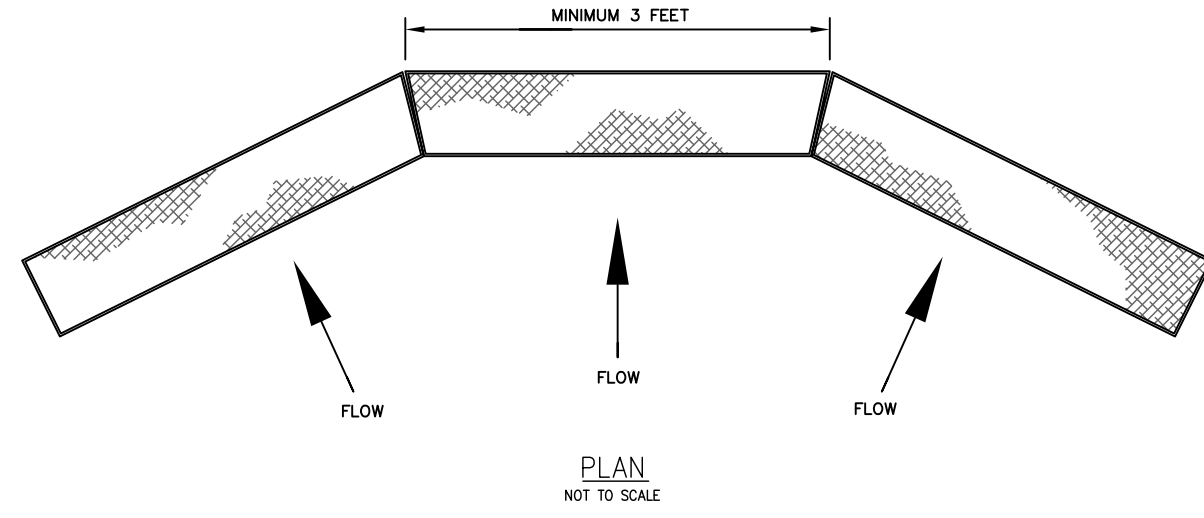


NOTES:

- GRASSED WATERWAYS/SWALES ARE TO BE USED ONLY FOR SLOPES 6% OR LESS. FOR SLOPES GREATER THAN 6%, STONE LINED SWALES ARE TO BE UTILIZED. SEE DETAIL, THIS SHEET.
- ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE WATERWAY.
- 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.
- FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE WATERWAY.
- 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.
- GRASSED WATERWAY SHALL BE FINISHED AND STABILIZED AS FOLLOWS:
 - A MINIMUM OF 4" SCREENED LOAM SHALL BE PROVIDED AS TOPSOIL.
 - DURING THE WINTER MONTHS, THE PERIMETER SWALE IS TO BE LINED WITH EITHER MULCH OR EROSION CONTROL BLANKET AS GROUND CONDITIONS DICTATE.
 - 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 MATCH ONE OF THE FOLLOWING:

BIRDSFOOT TREFLOID OR LADINO CLOVER	27%
TALL FESCUE OR SMOOTH BROMEGRASS	67%
REDFEST	6%
OR	
KENTUCKY BLUEGRASS	45%
CREEPING RED FESCUE	36%
PERENNIAL RYEGRASS	19%

ROADSIDE SWALE DETAIL



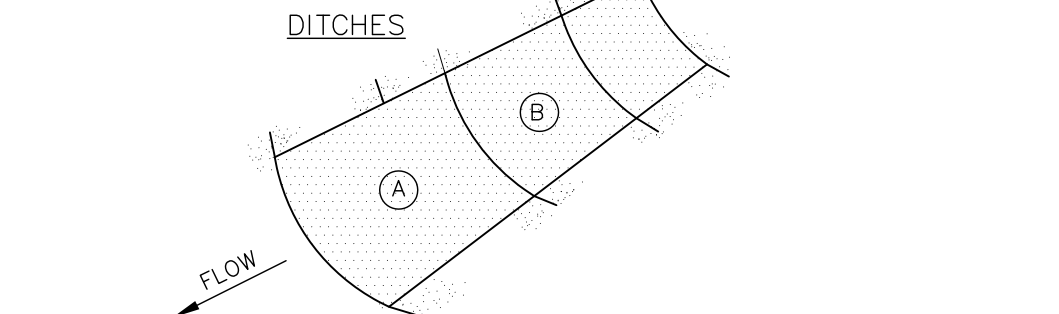
NOTES:

- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF STUMP GRINDINGS OR SIMILAR COARSE, FIBROUS ORGANIC MATERIAL WITH A RANGE OF SIZES AND MAY CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100 PERCENT, DRY WEIGHT BASIS.
 - PARTICLE SIZE BY WEIGHT SHALL BE 100 PERCENT PASSING A 6-INCH SCREEN AND 70 PERCENT TO 85 PERCENT PASSING A 3/4-INCH SCREEN.
 - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. TALL GRASSES MAY NEED TO BE CUT TO AVOID SPACES THAT WOULD ALLOW FINES TO WASH UNDER THE BARRIER.
- FROZEN GROUND, OUTCROPS OF BEDROCK AND VERY ROOTED FORESTED AREAS ARE LOCATIONS WHERE BERMS OF EROSION CONTROL MIX ARE MOST PRACTICAL AND EFFECTIVE. THE EROSION CONTROL MIX CAN BE CONTAINED WITHIN A SYNTHETIC TUBULAR NETTING OR 'SOCK'.

EROSION CONTROL MIX BERM DETAIL



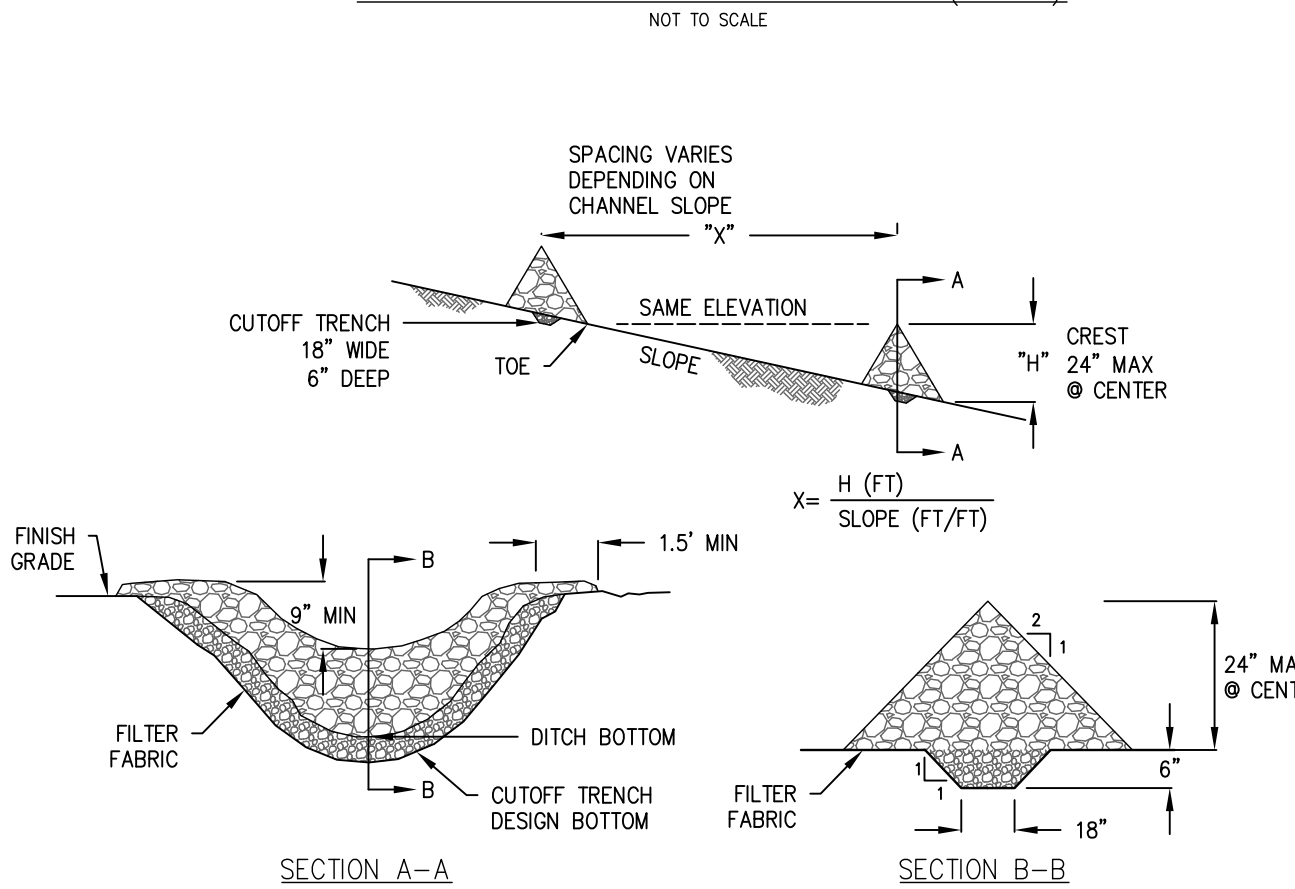
DITCHES



NOTES:

- BURY THE TOP END OF THE MESH MATERIAL IN A 12" TRENCH. BACKFILL AND TAMP TRENCH, SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END.
- FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND STAPLED. OVERLAP B OVER A.
- LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.
- STAPLE OUTSIDE LATERAL EDGE 2" ON CENTER.
- WIRE STAPLES TO BE MIN. OF #11 WIRE 6" LONG AND 1-1/2" WIDE.
- USE NORTH AMERICAN GREEN DS 150 OR APPROVED EQUAL.

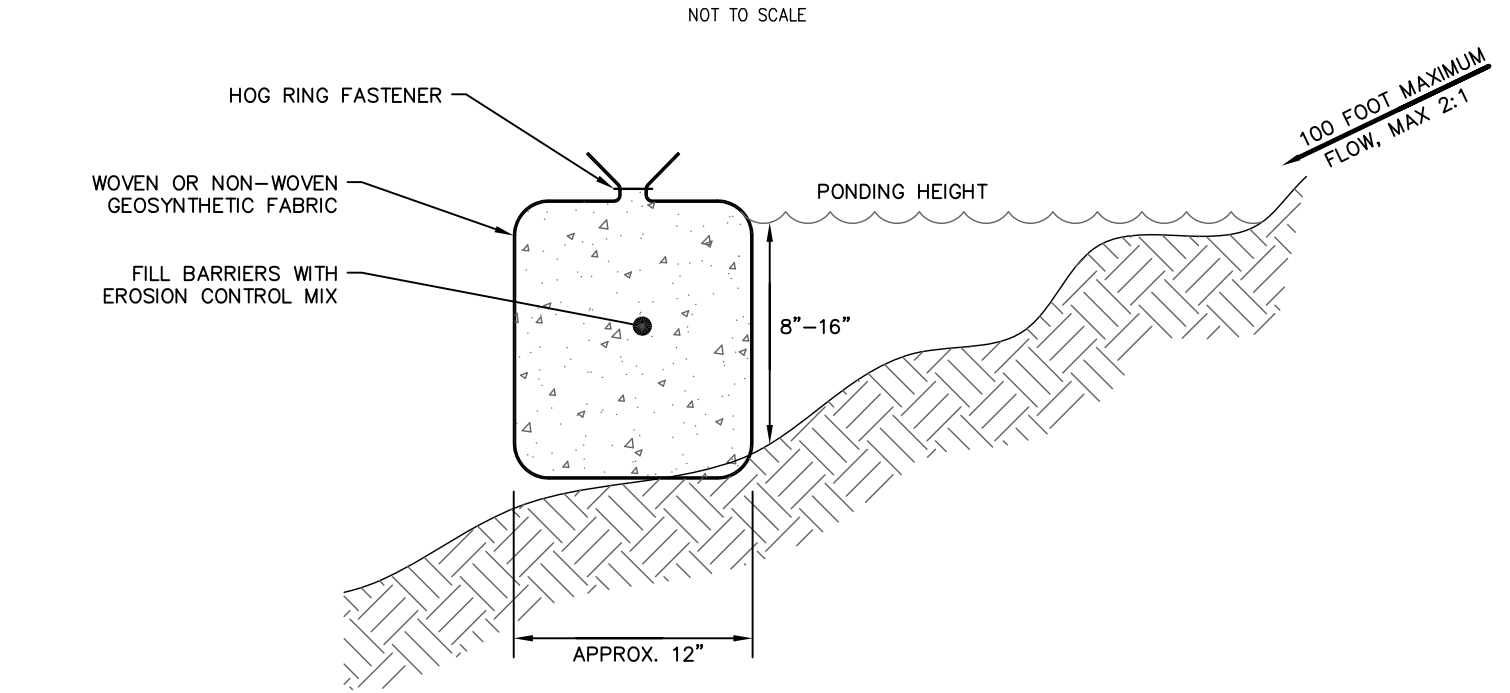
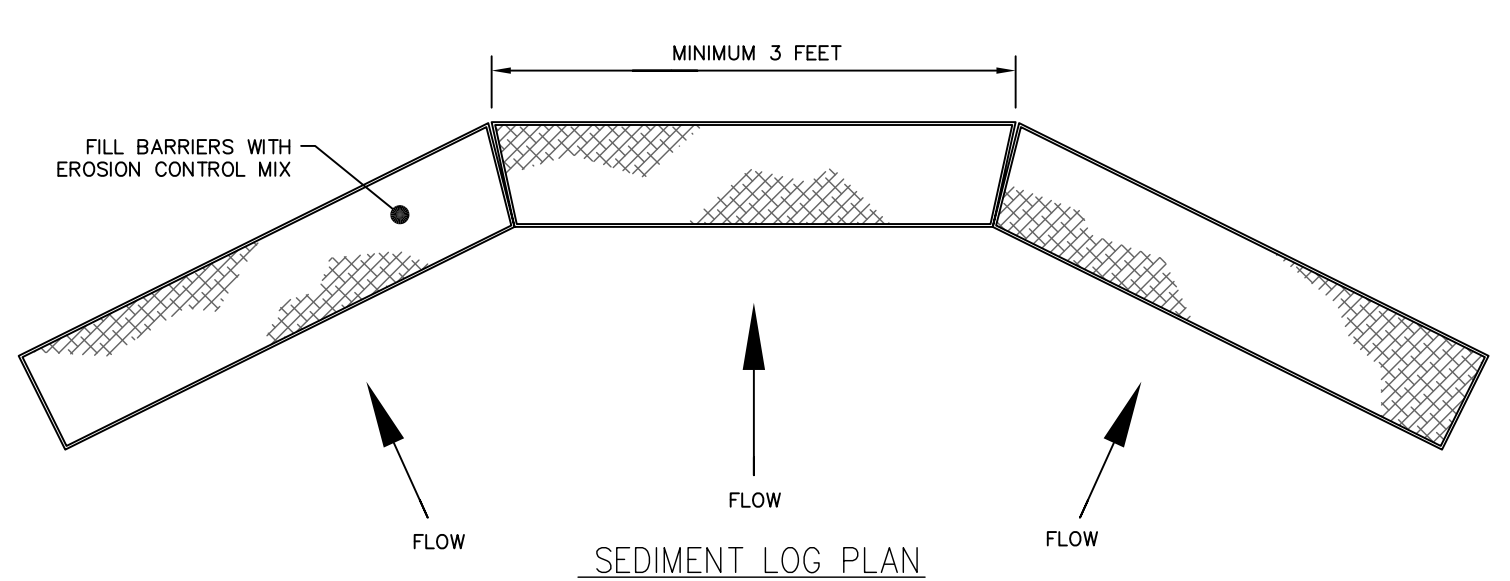
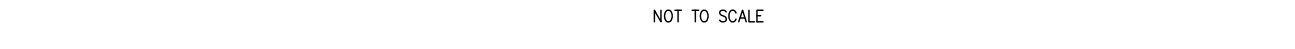
EROSION CONTROL BLANKET DETAIL (DITCH)



NOTES:

- STONE SHALL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
- STONE CHECK DAMS SHALL BE CONSTRUCTED OF 2 TO 3 INCH STONE.
- SET SPACING OF CHECK DAMS SO THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE DOWNSTREAM DAM.
- EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
- PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
- MONITOR INSTALLATION TO ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

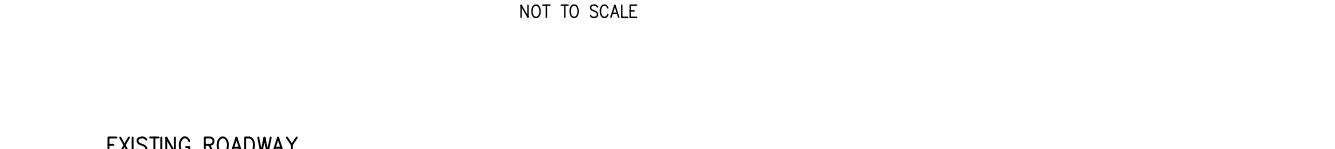
STONE CHECK DAM DETAIL



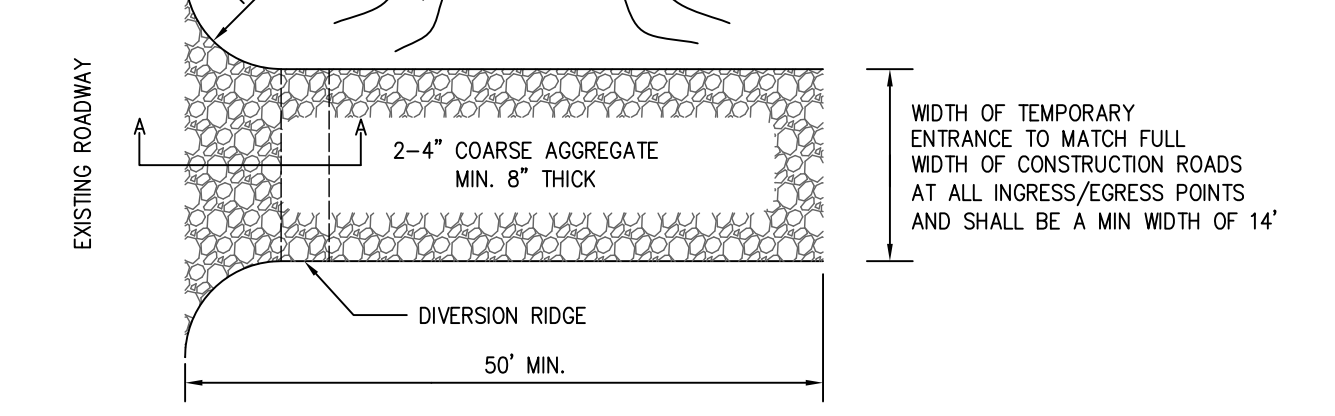
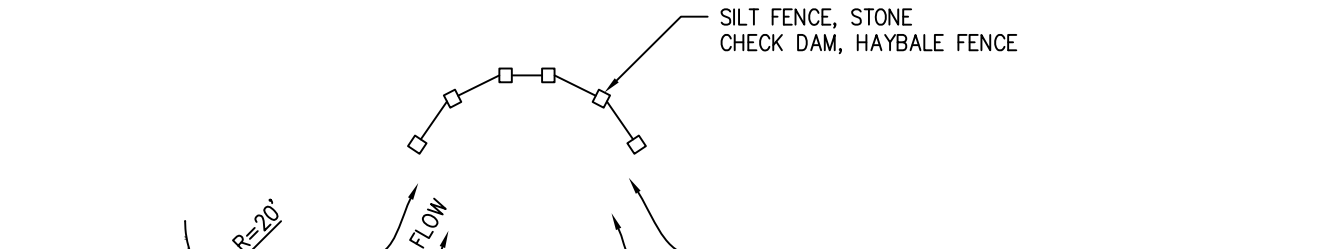
NOTES:

- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZE AND MAY CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS:
 - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100 PERCENT, DRY WEIGHT BASIS.
 - PARTICLE SIZE BY WEIGHT SHALL BE 100 PERCENT PASSING A 6-INCH SCREEN AND A MINIMUM OF 70 PERCENT, MAXIMUM OF 85 PERCENT, PASSING A 3/4-INCH SCREEN.
 - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
 - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
 - SUITABLE SALTS CONTENT SHALL BE LESS THAN 4.0 MINIMUM.
- THE BARRIER MUST BE PLACED ALONG A RELATIVELY LEVEL CONTOUR. TALL GRASSES MAY NEED TO BE CUT TO AVOID SPACES THAT WOULD ALLOW FINES TO WASH UNDER THE BARRIER.
- FROZEN GROUND, OUTCROPS OF BEDROCK AND VERY ROOTED FORESTED AREAS ARE LOCATIONS WHERE BERMS OF EROSION CONTROL MIX ARE MOST PRACTICAL AND EFFECTIVE.

SEDIMENT LOG DETAIL



SECTION A-A



NOTES:

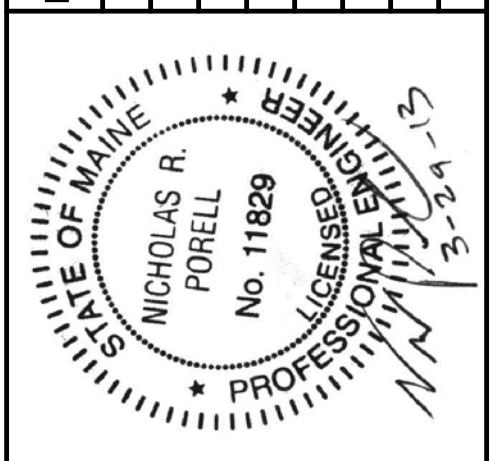
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
- ALL SEDIMENT SPILLED, DROPPED, OR WASHED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
- PLACE STONE ON GEOTEXTILE FABRIC EQUAL TO MIRAFI 600X.

TEMPORARY CONSTRUCTION ENTRANCE DETAIL



ROAD/DITCH GRADE, %	CHECK DAM SPACING, FT			
	6" HIGH	12" HIGH	18" HIGH	24" HIGH
1	50.0	100.0	150.0	200.0
2	25.0	50.0	75.0	100.0
3	16.7	33.3	50.0	66.7
4	12.5	25.0	37.5	50.0
5	10.0	20.0	30.0	40.0
6	8.3	16.7	25.0	33.3
7	7.1	14.3	21.4	28.6
≥8	USE STONE LINED SWALE, SEE DETAIL			

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SGC ENGINEERING, LLC
 • Civil Design & Survey Engineering
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Drawn/Revised/Asmt:
 NRP/NRP/TMH

Date:
 03-20-2013

SGC Project:
 782001

ACCESS ROAD DETAILS
EROSION AND SEDIMENTATION CONTROL DETAILS

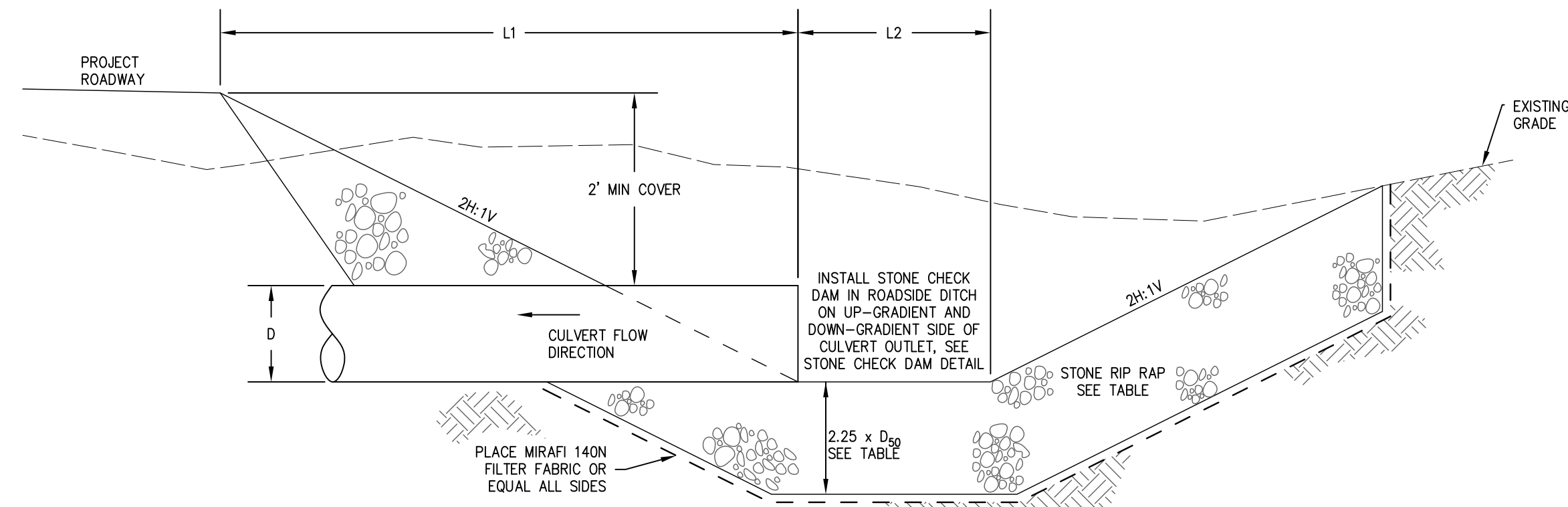
Project:
115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE

Applicant:
BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

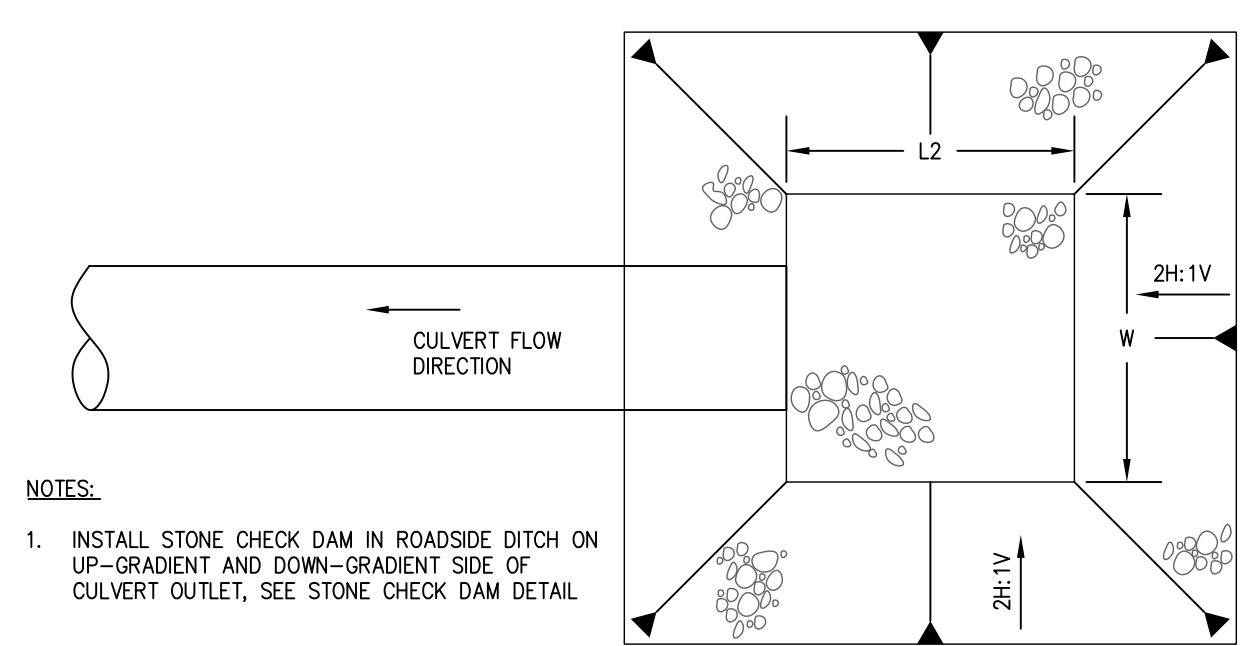
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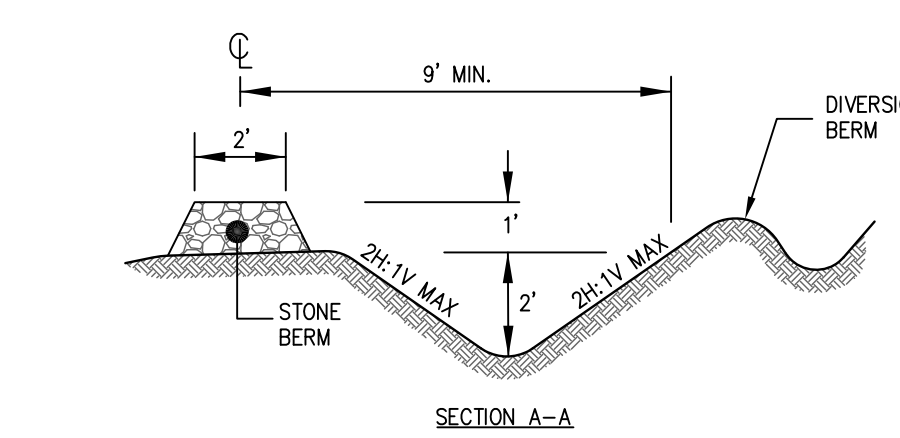
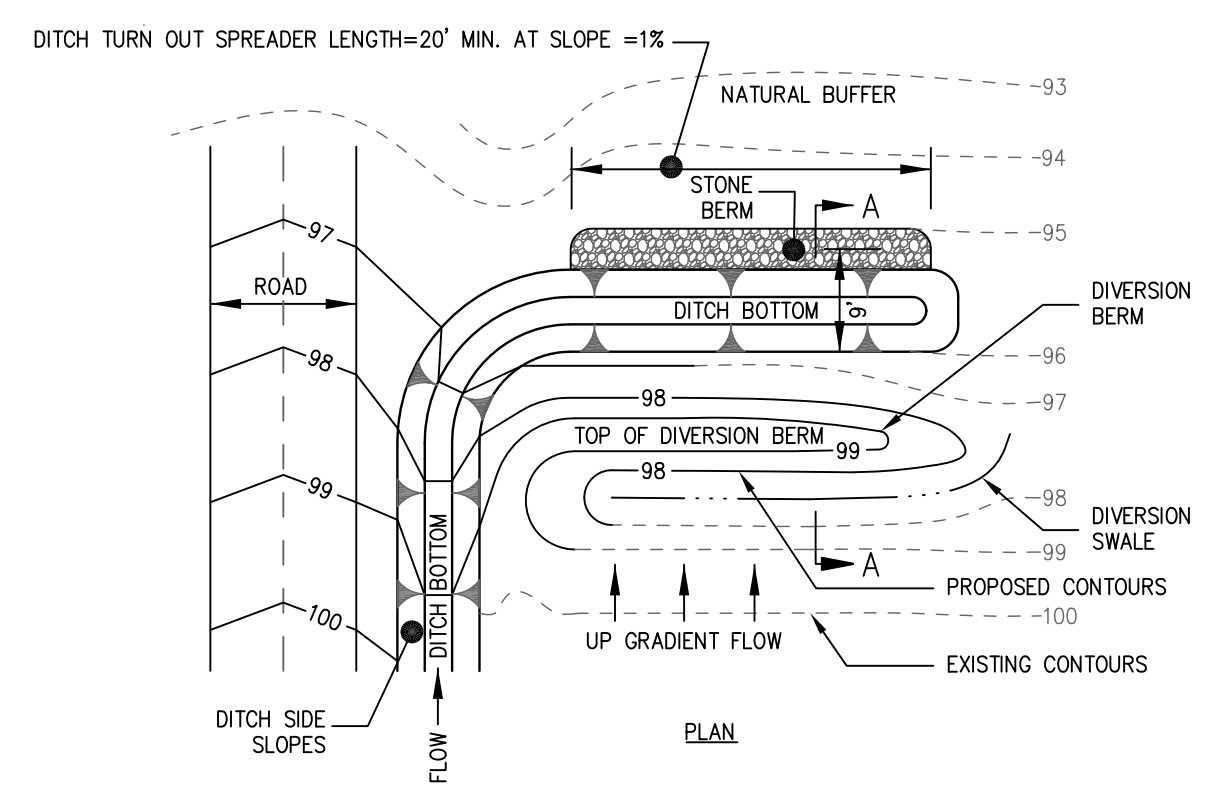
SECTION



PLAN
CULVERT INLET DETAIL
NOT TO SCALE

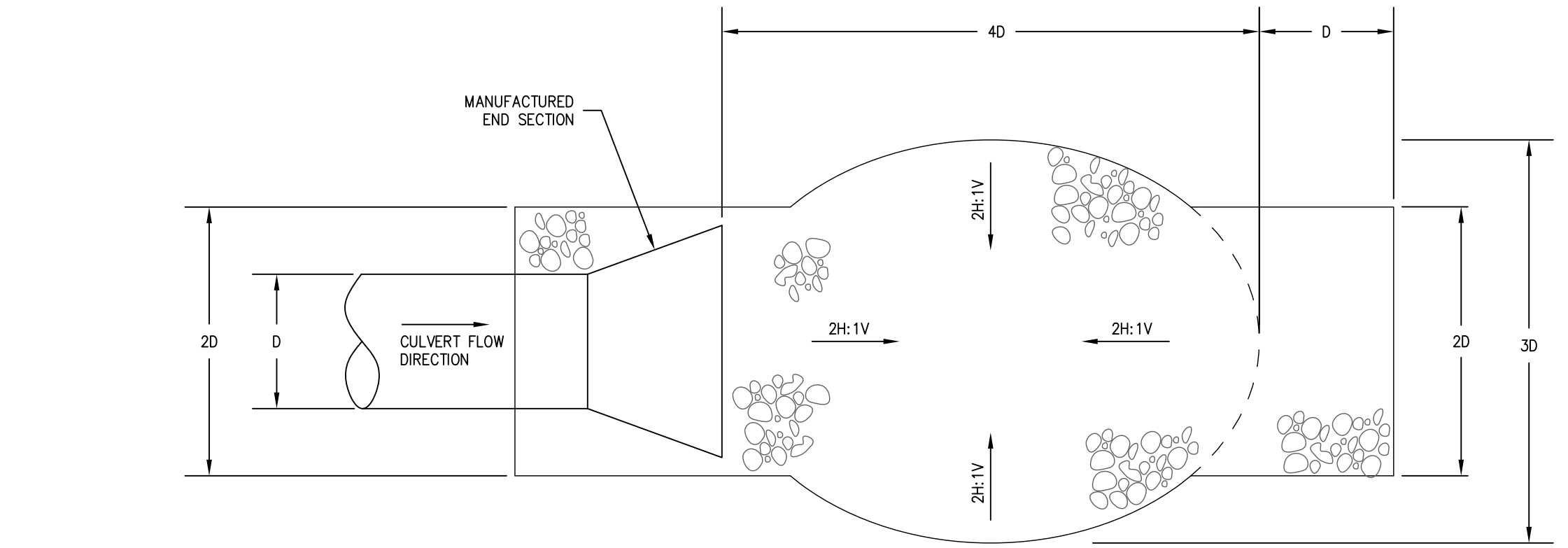
SCHEDULE				
CULVERT DIA.	L1	L2	STONE D50	2.25 x D50
12"	6'	2'	2'	6" 14"
15"	6.5'	4'	4'	6" 14"
18"	7'	4'	4'	6" 14"
24"	8'	8'	8'	6" 14"
36"	10'	8'	8'	12" 27"

LEVEL LIP BERM STONE SIZE GRADATION SPECIFICATION	
SIEM DESIGNATION	PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES
12 IN.	100
6 IN.	84-100
3 IN.	68-83
1 IN.	42-55
NO. 4	8-12



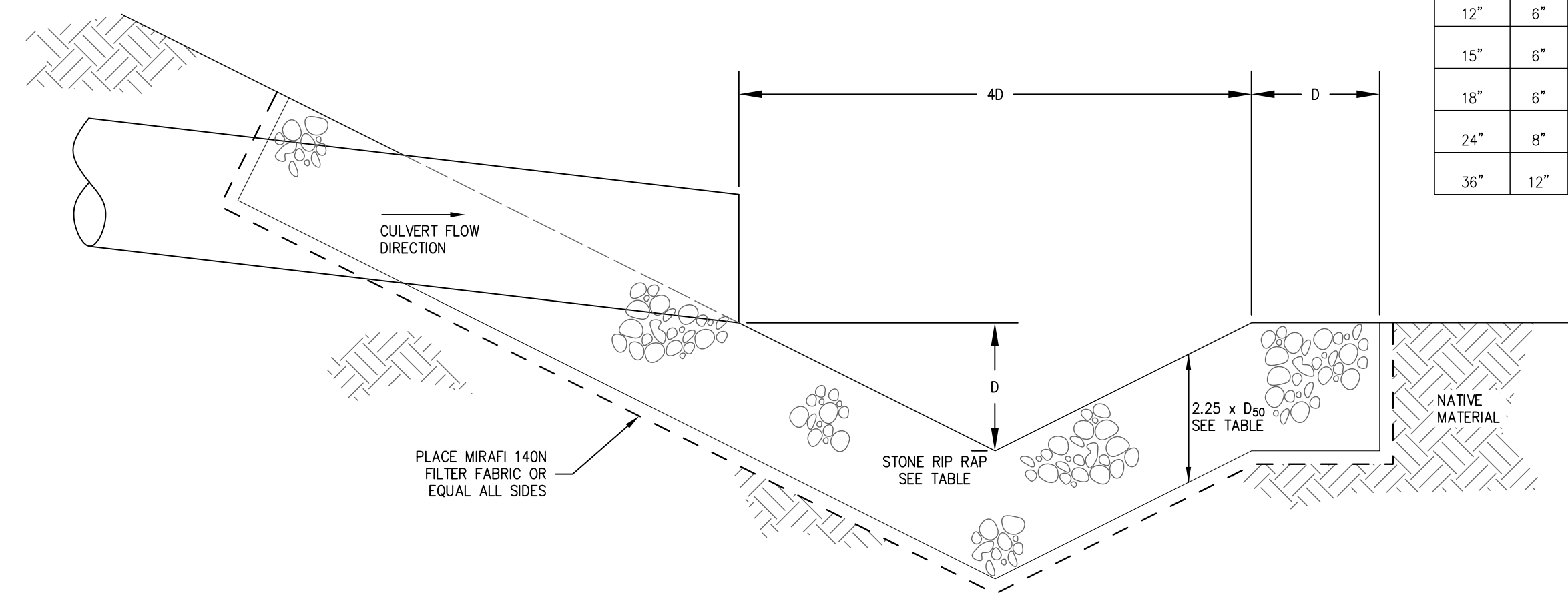
- NOTES:
- ONLY RUNOFF FROM ADJACENT ROAD SURFACE AND SHOULDERS WILL BE DIRECTED TO BUFFER.
 - BUFFER SLOPES RESTRICTED TO MAXIMUM OF 15%.
 - THE TURNOUT SHOULD EXTEND INTO THE SIDE DITCH OF CUT SLOPE TO INTERCEPT THE DITCH RUNOFF AND CARRY IT INTO THE BUFFER AREA.
 - THE STONE BERM MUST BE AT LEAST 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 BERM MUST CONSIST OF SOUND DURABLE ROCK THAT WILL NOT DISINTEGRATE BY EXPOSURE TO WATER OR WEATHER. FIELDSTONE, ROUGH QUARRIED STONE, BLASTED LEDGE OR TALINGS MAY BE USED. THE ROCK MUST BE WELL GRADED WITH A MEDIAN SIZE OF APPROXIMATELY 3 INCHES AND A MAXIMUM SIZE OF 6 INCHES. (SEE TABLE ABOVE FOR GRADATION SPECIFICATION.)
 - CONSTRUCT LEVEL LIP AND SPREADER ON ZERO PERCENT GRADE.
 - LEVEL SPREADER SHALL NOT BE CONSTRUCTED ON FILL.
 - STORM RUNOFF CONVERTED TO SHEET FLOW SHALL OUTLET ONTO STABILIZED AREA. AREA A DISTANCE 25' BELOW SPREADER TO BE VEGGATED WITH DENSE GROWTH OF GRASS IF UN-VEGETATED PRIOR TO OR FOLLOWING CONSTRUCTION.
 - WATER SHALL NOT BE CHANNELIZED IMMEDIATELY BELOW POINT OF DISCHARGE. AREA BELOW SPREADER TO BE GRADED SMOOTH TO AVOID DEVELOPMENT OF CHANNELS IF NECESSARY.
 - APPROACH CHANNEL SHALL BE LESS THAN 1% FOR AT LEAST 20 FT BEFORE ENTERING THE LEVEL SPREADER.

DITCH TURNOUT AND LEVEL LIP SPREADER DETAIL
NOT TO SCALE



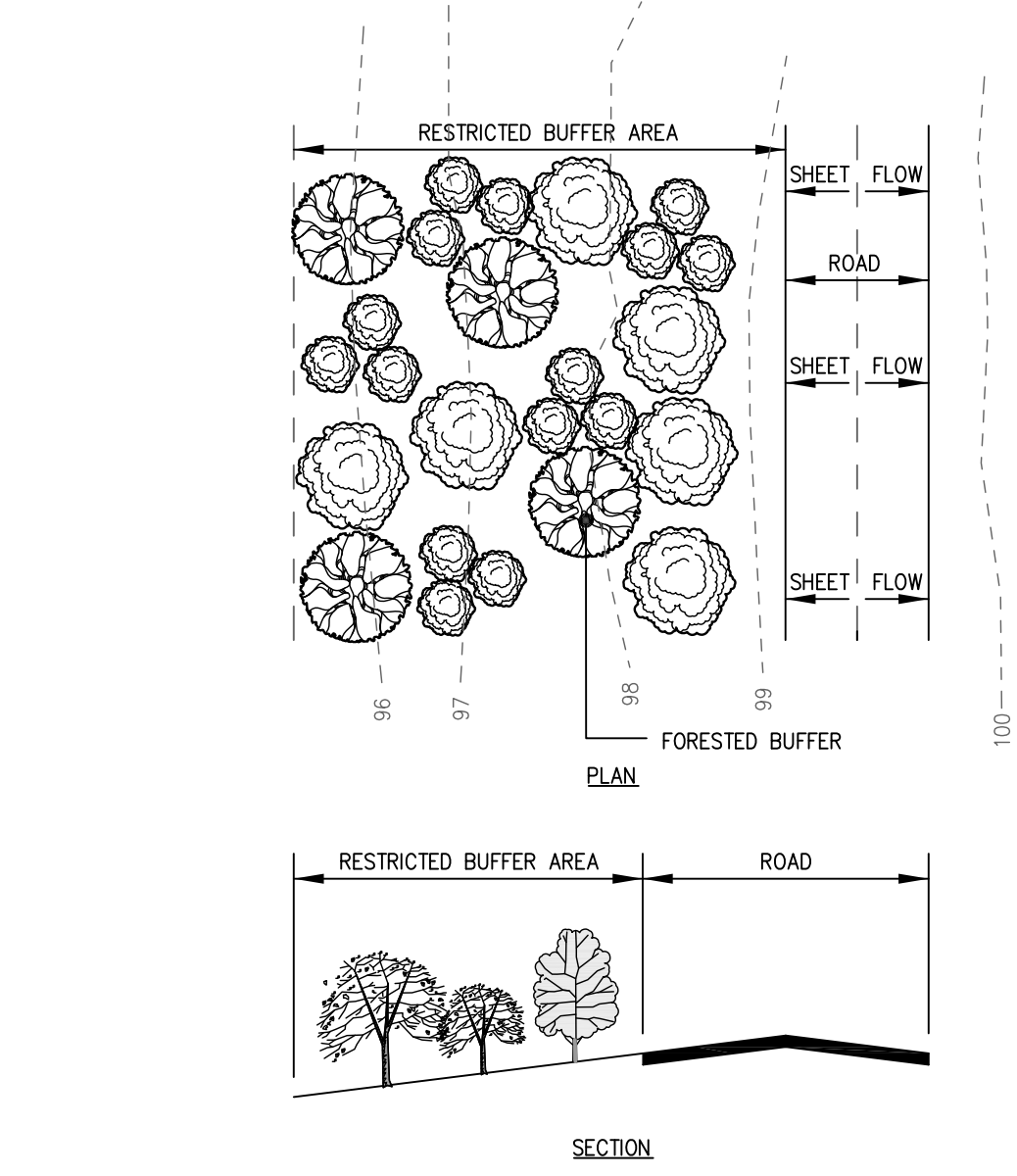
PLAN

SCHEDULE		
CULVERT DIA.	STONE D50	2.25 x D50
12"	6"	14"
15"	6"	14"
18"	6"	14"
24"	8"	18"
36"	12"	27"



SECTION

CULVERT OUTLET/PLUNGE POOL DETAIL
NOT TO SCALE

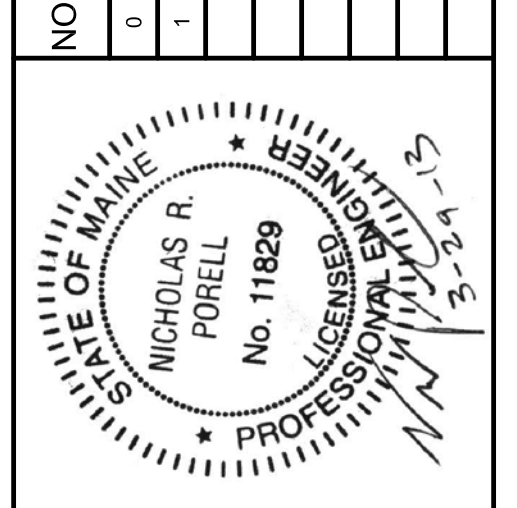


- NOTES:
- ROAD MUST BE GENERALLY PARALLEL TO THE CONTOURS OF THE SLOPE.
 - ONLY RUNOFF FROM ADJACENT ROAD SURFACE AND SHOULDERS WILL BE DIRECTED TO BUFFER.
 - BUFFER SLOPES RESTRICTED TO MAXIMUM OF 20%.
 - RUNOFF MUST ENTER BUFFER AS SHEET FLOW.
 - IF BUFFER IS USED TO TRAP SEDIMENT DURING CONSTRUCTION, SEDIMENT MUST BE REMOVED AND ORIGINAL TOPOGRAPHY, GROUND COVER AND VEGETATION IS TO BE REESTABLISHED. PROTECT BUFFER STRIP WITH WOOD WASTE BERM SEDIMENTATION BARRIERS OR SILT FENCE DURING THE CONSTRUCTION PROCESS.

REQUIRED BUFFER FLOW PATH DOWNHILL SIDE OF ROAD		
	LENGTH OF FLOW PATH FOR A FORESTED BUFFER	LENGTH OF FLOW PATH FOR A MEADOW BUFFER
1 TRAVEL LANE DRAINING TO BUFFER	35 FEET	50 FEET
2 TRAVEL LANES DRAINING TO BUFFER	55 FEET	80 FEET

BUFFER ADJACENT TO THE DOWNHILL SIDE OF A ROAD DETAIL
NOT TO SCALE

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0	ISSUED FOR REVIEW	03/20/13
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 • Environmental & Regulatory Permitting
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Drawn/Revised/Annot: NRP/NRP/TMH
 Scale: _____
 Date: 03-20-2013
 SSGC Project: 782001

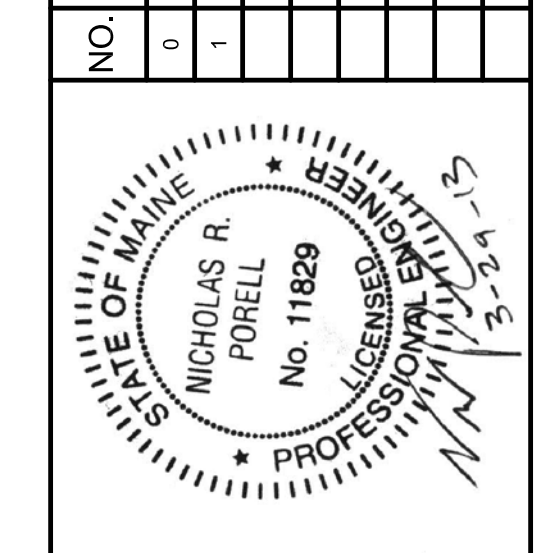
ACCESS ROAD DETAILS
 STORMWATER DETAILS
 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 APPLICANT:
BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

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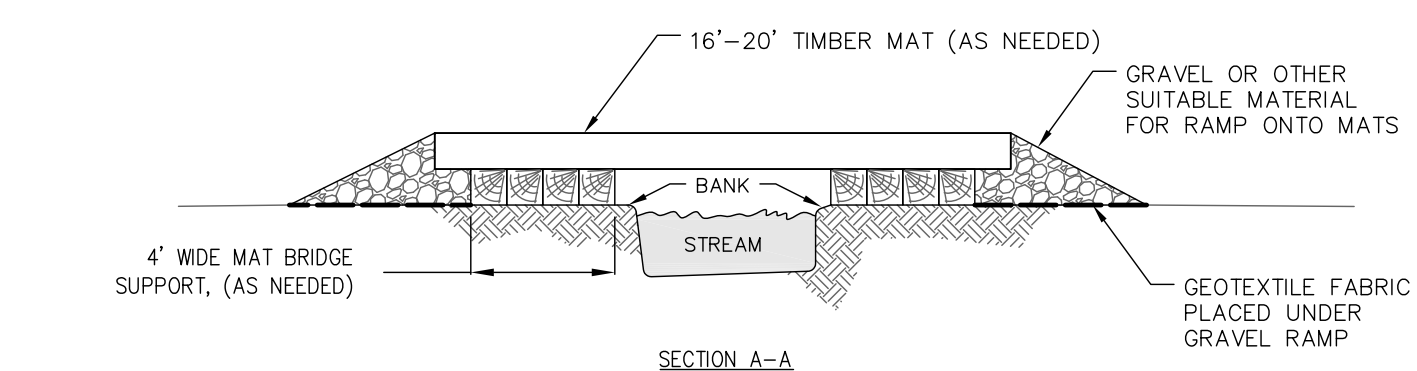
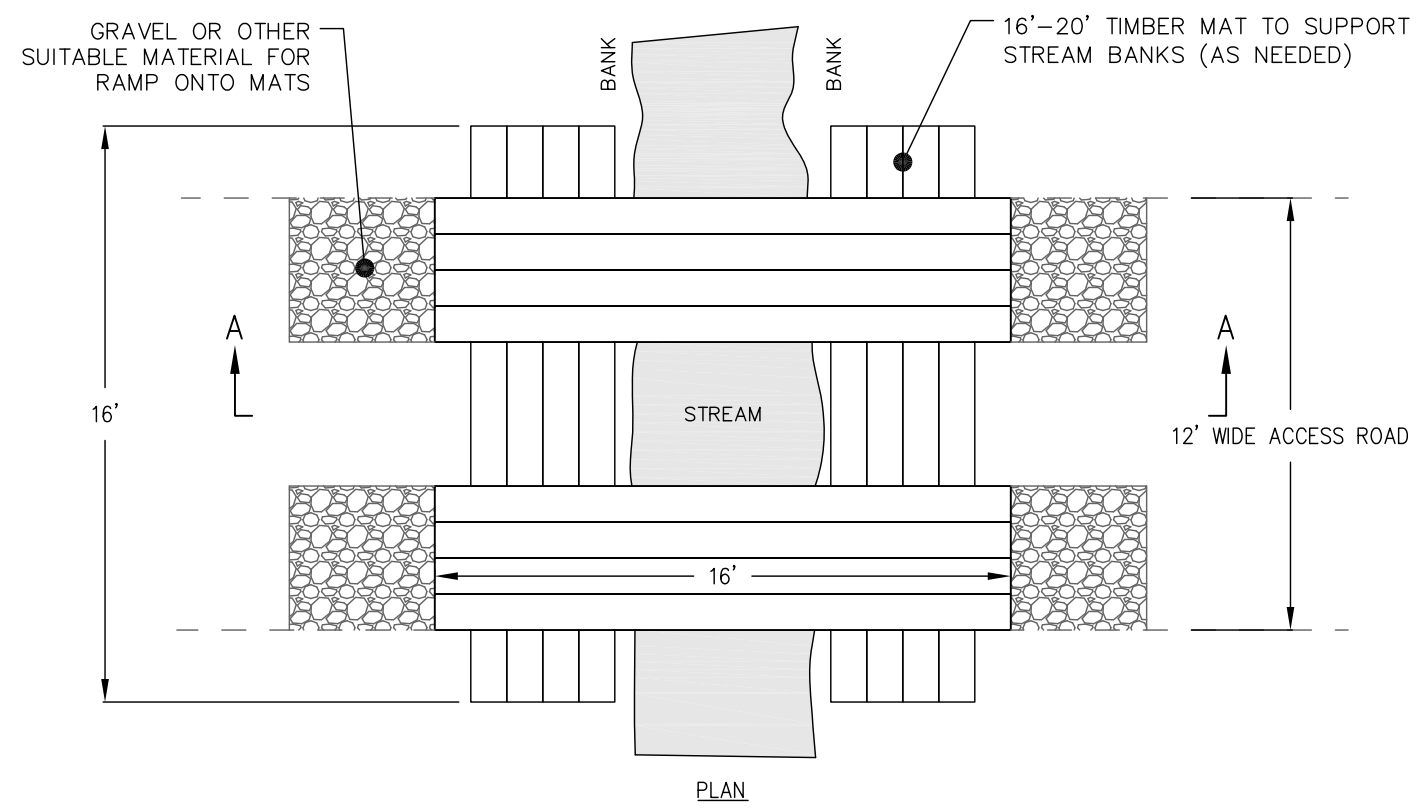
801 County Road
 10 Cornville, Maine 04960
 Phone: 207.844.0002
 Fax: 207.844.0001

80 Park Street, Suite 205
 Bangor, Maine 04401-2005
 Phone: 207.686.0778
 Fax: 207.686.0775

SERVING OUR CLIENTS IN THE U.S.A. & CANADA

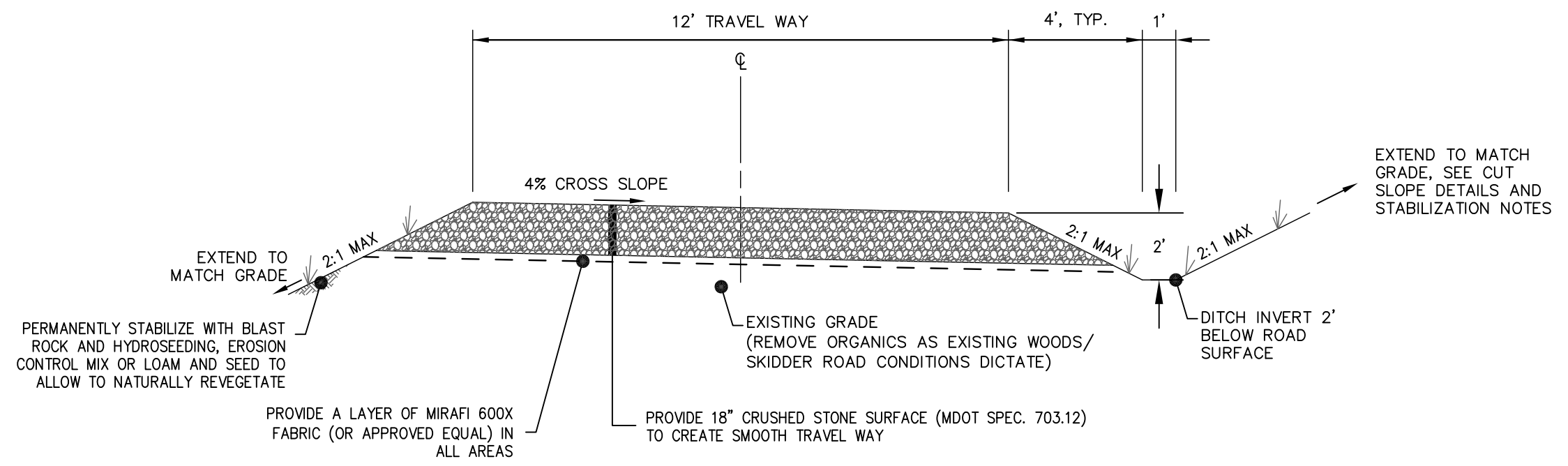
Drawn: NRP/TMH
 Checked: NRP/TMH
 Date: 03-20-2013
 SGC Project: 782001

ACCESS ROAD DETAILS
 ROADWAY DETAILS
 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 APPLICANT:
BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

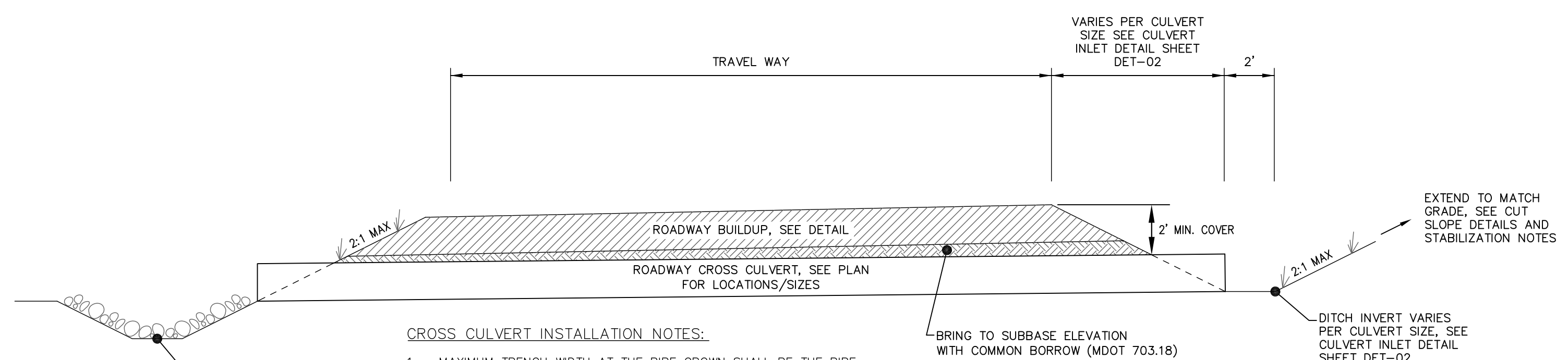


- NOTES**
1. DEPLOY EROSION CONTROLS AS NEEDED TO MINIMIZE EROSION.
 2. PERFORM ROUTINE INSPECTION TO INCLUDE REMOVAL OF LOOSE SOIL TRACKED ONTO BRIDGE BY EQUIPMENT AND INSPECTION OF STREAM BANKS FOR STABILITY.
 3. MATS SHALL BE POSITIONED TO RETAIN THE NATURAL STREAM CHARACTERISTICS.
 4. MATS LAID PERPENDICULAR TO THE STREAM CAN BE SUBSTITUTED WITH PRE-FABRICATED BRIDGE STRUCTURES AS SPAN LENGTHS DICTATE OR AT THE PREFERENCE OF THE CONTRACTOR.

TYPICAL "SWAMP MAT" TEMPORARY BRIDGE
 NOT TO SCALE



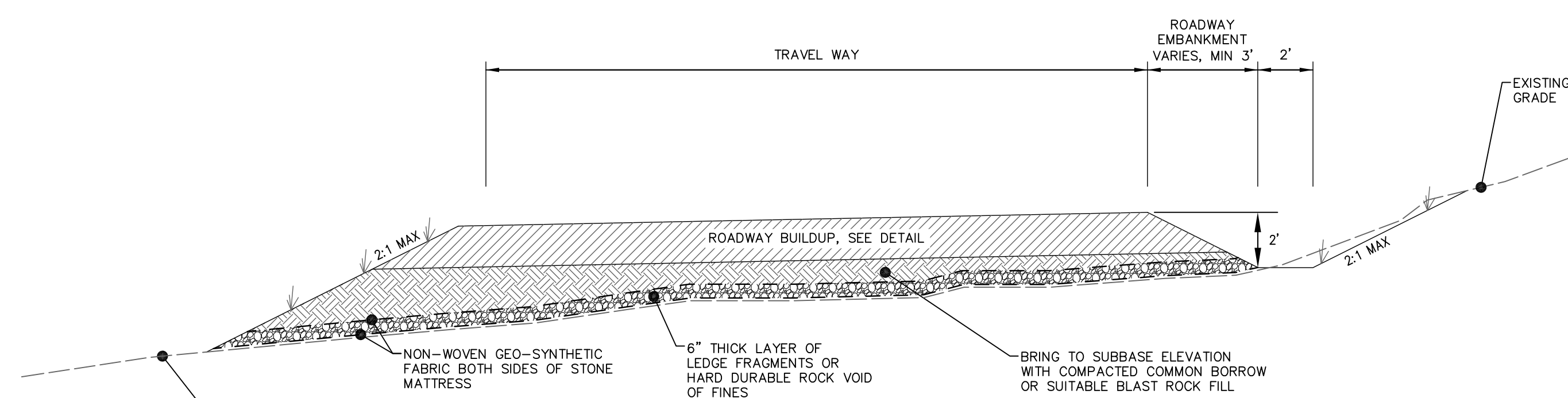
12' TRANSMISSION LINE ACCESS ROAD CROSS-SECTION DETAIL
 NOT TO SCALE



CROSS CULVERT INSTALLATION NOTES:

1. MAXIMUM TRENCH WIDTH AT THE PIPE CROWN SHALL BE THE PIPE OUTSIDE DIAMETER PLUS 2 FEET.
2. PIPE SHALL BE BEDDED IN COMMON BORROW (MDOT 703.18) REACHING A MINIMUM 6 INCHES BELOW THE BOTTOM OF THE PIPE AND 6 INCHES ABOVE THE TOP OF THE PIPE.
3. ALL ROAD CULVERTS TO BE HDPE, DOUBLE WALL, SMOOTH INTERIOR BORE, OUTSIDE CORRUGATED, ADS N-12 ST 18 OR EQUAL, SIZE VARIES PER PLAN.

TYPICAL ROADWAY CROSS CULVERT DETAIL
 NOT TO SCALE



ROCK MATTRESS INSTALLATION NOTES:

1. ROCK MATTRESS TO BE USED AS APPROPRIATE IN AREAS WHERE SIGNIFICANT UNANTICIPATED GROUNDWATER SEEPS ARE ENCOUNTERED DURING CONSTRUCTION.

TYPICAL ROCK MATTRESS DRAINAGE DETAIL
 NOT TO SCALE

ROADWAY CROSS SECTION NOTES:

1. VERTICAL ROADWAY GEOMETRY FOR REFERENCE PURPOSES ONLY AND TO CONFIRM DRAINAGE PATTERNS. FINAL FINISHED GRADE ELEVATION AND VERTICAL CURVE GEOMETRY TO BE DETERMINED AS FIELD CONDITIONS DICTATE.
2. ROADWAY GRAVEL TO EXTEND TO EDGE OF THE DITCH/FILL SLOPE.
3. ALL ROADWAY MATERIALS TO BE PLACED IN 2 FOOT MAXIMUM LIFTS COMPACTED TO 95%.
4. IN AREAS OF EXISTING VEGETATION/ORGANIC MATERIAL, ROAD AREA SHALL BE GRUBBED TO A DEPTH SUFFICIENT TO REMOVE ALL ORGANICS (2 FEET MAXIMUM). BRING TO SUBGRADE WITH COMMON BORROW OR SUITABLE BLAST ROCK FILL.
5. GEOTEXTILE FABRIC TO BE PLACED BENEATH ROAD SUBBASE IN ALL AREAS.
6. LIMIT ROADWAY CLEARING TO THE EXTENT PRACTICABLE. TYPICALLY, CLEARING SHOULD BE LIMITED TO 10' FROM THE BOTTOM OF FILL SLOPES AND 5' FROM THE TOP OF CUT SLOPES.
7. IN AREAS WHERE EXISTING ROADS ARE BEING IMPROVED, RE-CONSTRUCTED, OR WIDENED, THE ADEQUACY OF EXISTING ROADWAY BASE AND SURFACE MATERIALS TO BE REUSED SHALL BE AS DETERMINED OR AGREED TO BY ENGINEER OR OTHER AUTHORIZED OWNER'S REPRESENTATIVE. 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 ON SHEET DET-01. 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.

Stormwater Treatment Calculations
River Watersheds
 Ch. 500 4.B Stormwater Management General Standards - (Linear Project)
 Stormwater treatment of new impervious area required = 75.00%

BMP ID Descriptions
 BM = Meadow buffer adjacent to road
 BF = Forested buffer adjacent to road
 DM = Meadow ditch turnout buffer
 DF = Forested ditch turnout buffer

Road ID	Roadway Segment Treated (Stations)	Buffer Location (Looking Upstation) R:right side road L:left side road	Road Length (ft) Total/Treated	Road Width (ft)	BMP TYPE	BMP ID	Level Spreader Length (ft)	USDA Soil	Soil HSG	Buffer Slope (%)	Buffer Length (ft)	Impervious Area (sq-ft)	Impervious Area Treated (sq-ft)	Treatment Percentage
Piscataquis River Watersheds														
Piscataquis River (direct)														
AR-120-B&C			1,000	12								12,000		
	1+00 to 2+00	R	100		BF	1	-	PhB	C	3	35		1,200	10.00%
	2+00 to 4+00	R	200		DF	2	20	HrB	C	14	90		2,400	20.00%
	4+00 to 6+00	R	200		DF	3	20	HrB	C	8	75		2,400	20.00%
	6+00 to 9+50	R	350		BF	4	-	HrB	C	8	35		4,200	35.00%
Sub-Watershed Total												12,000	10,200	85.00%
Gales Brook > Piscataquis River														
AR-212			1,900	12								22,800		
	0+50 to 3+50	R	300		BF/BM	1	-	HrB	C	5	50		3,600	15.79%
	4+50 to 7+50	R	300		DF	2	20	HrB	C	7	100		3,600	15.79%
	7+50 to 10+50	R	300		DF	3	20	HrB	C	7	100		3,600	15.79%
	10+50 to 13+50	R	300		DF	4	20	HrB	C	8	100		3,600	15.79%
	13+50 to 16+50	R	300		DF	5	20	HrB	C	8	100		3,600	15.79%
Sub-Watershed Total												64,380	51,000	79.22%
Carlton Stream > Kingsbury Stream > Piscataquis River														
AR-300			1,300	12								15,600		
	0+25 to 2+50	L	225		BM	1	-	HrB/PwC	C	3-15	50		2,700	17.31%
	6+00 to 8+00	L	200		DM	2	20	HrB	C	6	120		2,400	15.38%
	8+00 to 11+00	L	300		DF	3	20	PwC	C	6	100		3,600	23.08%
	11+00 to 13+00	L	200		DM	4	20	PwC	C	3	120		2,400	15.38%
Sub-Watershed Total												15,600	11,100	71.15%
Kingsbury Stream > Piscataquis River														
AR-355			850	12								10,200		
	0+25 to 2+75	L	250		BF/BM	1	-	CpB	D	5	50		3,000	29.41%
	6+40 to 8+50	L	210		BF/BM	2	-	CpB	D	5	50		2,520	24.71%
AR-390			1,575	12								18,900		
	1+00 to 15+00	R	1,400		BF/BM	1	-	DbC	B	10-15	50		16,800	88.89%
AR-460-B			525	12								6,300		
	1+25 to 3+25	R	200		DF	1	20	DyC	D	8	100		2,400	38.10%
	3+25 to 5+25	R	200		DF	1	20	DyC	D	8	100		2,400	38.10%
Sub-Watershed Total												35,400	27,120	76.61%
PROJECT TOTAL												127,380	99,420	78.05%

CULVERT SIZING TABLE

Mannings Equation $Q (cfs) = \frac{kAR^{2/3}S^{1/2}}{n}$ $k = 1.486$ (US Units) $R =$ A/P slope (ft/ft)
 $n = 0.013$ HDPE Pipe $S =$

$A =$ Pipe Area (full), ft^2
 $P =$ Wetted Perimeter (full), ft

Rational Method $Q (cfs) = C^*IA$ $C = 0.3$ (Moderately Sloped Timberland, C/D Soils)
 $I = 6$ (Rainfall Intensity, inches/hr, Newport, ME)
 $A =$ Area, acres

Road ID	Culvert ID	Tributary Area sq-ft acres	Calculated Runoff, Rational Method (cfs)	Length (ft)	Diameter (in) (15" Min)	# of Culverts **	Min Slope (ft/ft)	Mannings Culvert Capacity (cfs)	
AR-120									
AR-212									
AR-230									
	C-230-1	130,000	2.984	5.37	25	1	0.02	9.14	
	C-230-2	200,000	4.591	8.26	25	1	0.03	11.19	
	C-230-3	735,000	16.873	30.37	25	24	1	0.04	45.24
	C-230-4	220,000	5.051	9.09	25	1	0.03	11.19	
	C-230-5	205,000	4.706	8.47	25	1	0.03	11.19	
AR-300									
AR-355									
	C-355-1	86,000	1.974	3.55	30	1	0.01	6.46	
	C-355-2	80,000	1.837	3.31	25	1	0.01	6.46	
AR-390									
AR-460-B									

DATE: 03/20/13
 APPD: TMH
 REVISIONS:
 NO. 0 ISSUED FOR REVIEW
 1 MAINE DEP SUBMITTAL

STATE OF MAINE
 NICHOLAS R. PORELL
 No. 11829
 LICENSED PROFESSIONAL ENGINEER

SGC ENGINEERING, LLC
 • Civil Design & Survey Engineering
 • Environmental & Regulatory Permitting
 • Electrical, Power Systems Engineering

801 Congress Street
 20 Collins Center
 Bangor, ME 04401
 Phone: (207) 688-0000
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Drawn: NRP/TMH
 Checked: NRP/TMH
 Date: 03-20-2013
 SGC Project: 782001

STORMWATER CALCULATIONS
 115KV GENERATOR LEAD
 MAYFIELD TWP TO PARKMAN, MAINE
 APPLICANT: BLUE SKY WEST II, LLC
 c/o First Wind Energy, LLC
 129 Middle Street, 3rd Floor, Portland, ME 04101

firstwind.
 CLEAN ENERGY. MADE HERE.

The information contained herein is the confidential and proprietary property of the project owner.

DWG. SW-01 SHEET 14 of 14