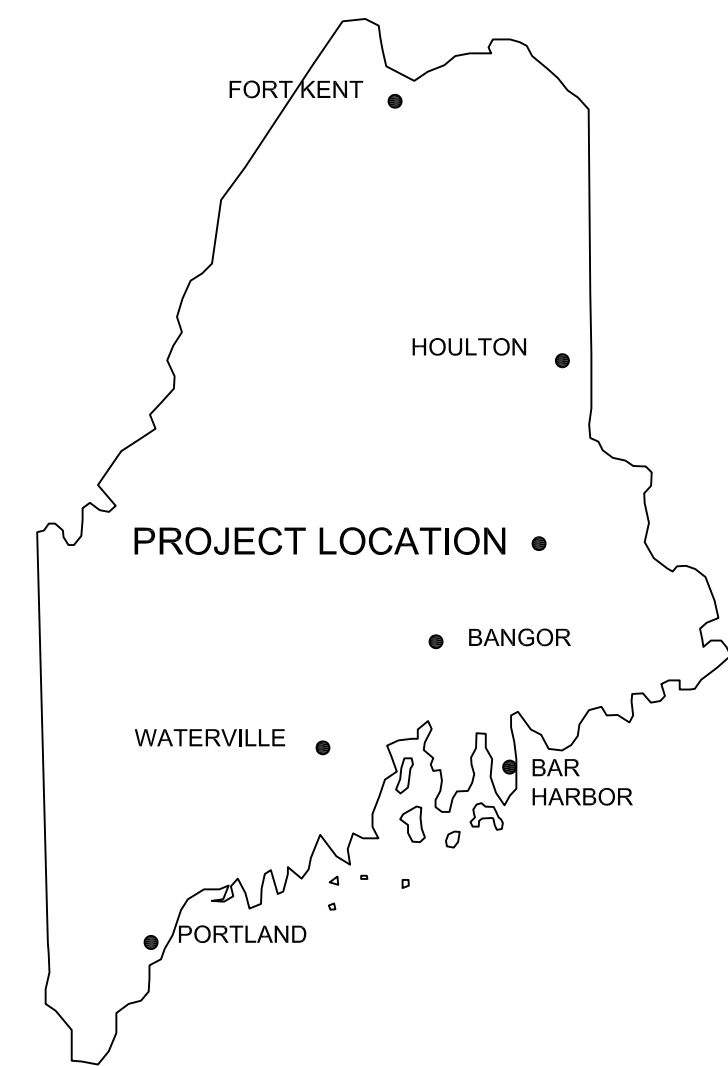


34.5 kV COLLECTOR LINE

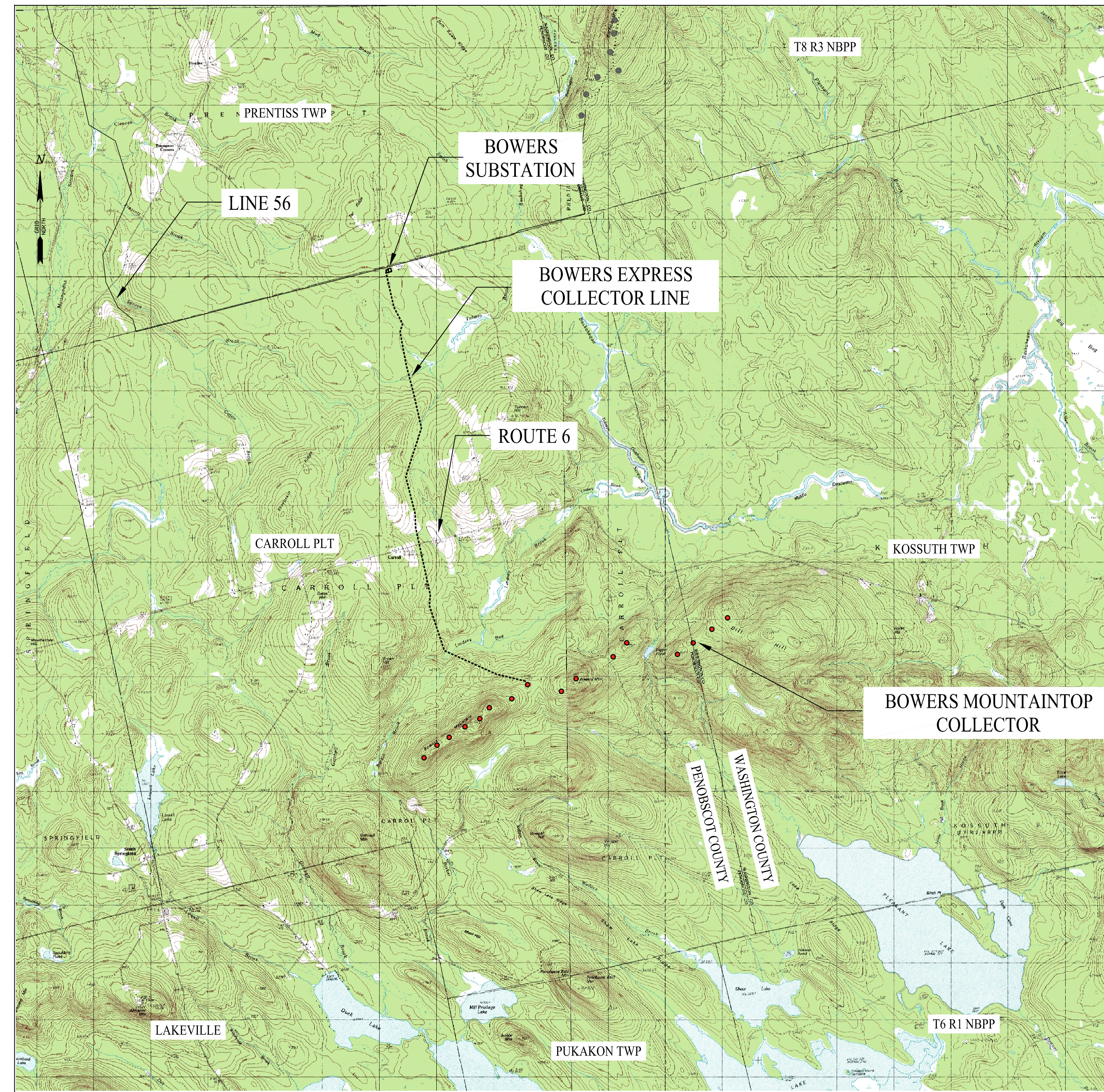
EXPRESS COLLECTOR PLAN AND PROFILE

BOWERS WIND PROJECT

LOCATED IN:
CARROLL PLANTATION
PENOBSCOT COUNTY, MAINE



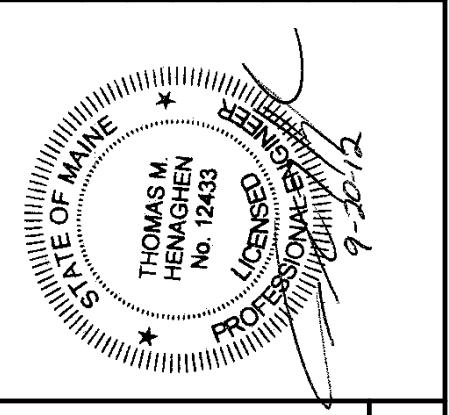
VICINITY MAP
SCALE: 1" = 320,000'±



LOCATION PLAN
SCALE: 1" = 4,500'±

- LEGEND:**
- PROPOSED WIND TURBINE LOCATIONS
 - EXPRESS COLLECTOR LINE
 - TOWN LINE

NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	TMR	08/19/12



SGC Project: 780001

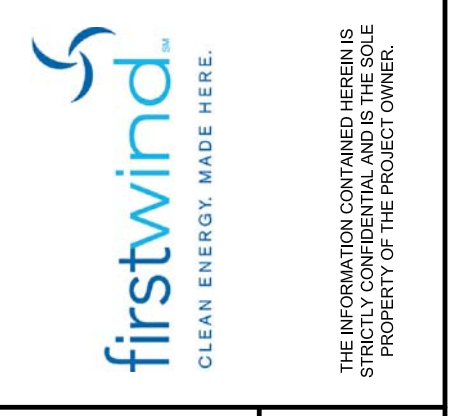
SGC ENGINEERING, LLC
• Civil Design & Survey Engineering
• Environmental & Regulatory Permitting
• Electrical Power Systems Engineering
Offices - South Burlington, Vermont
Farmington, New Mexico

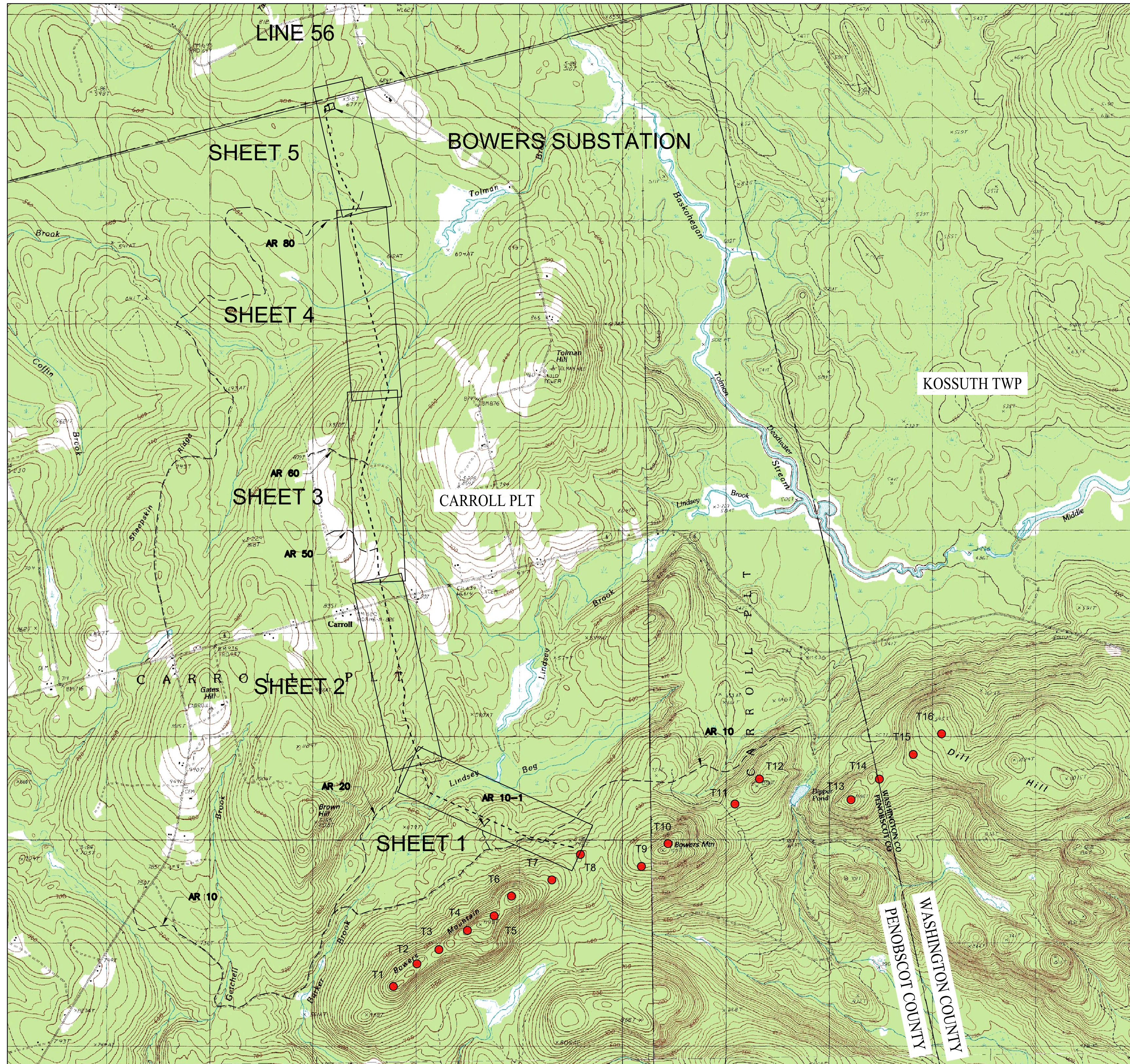
Date: DECEMBER 8, 2010
Scale: AS NOTED
Drawn: MGL
Design: AJG
Appr: AJG

Title: 34.5 kV COLLECTOR LINE COVER

Project: BOWERS WIND PROJECT
PENOBSCOT COUNTY, MAINE

Client: CHAMPLAIN WIND, LLC
129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101





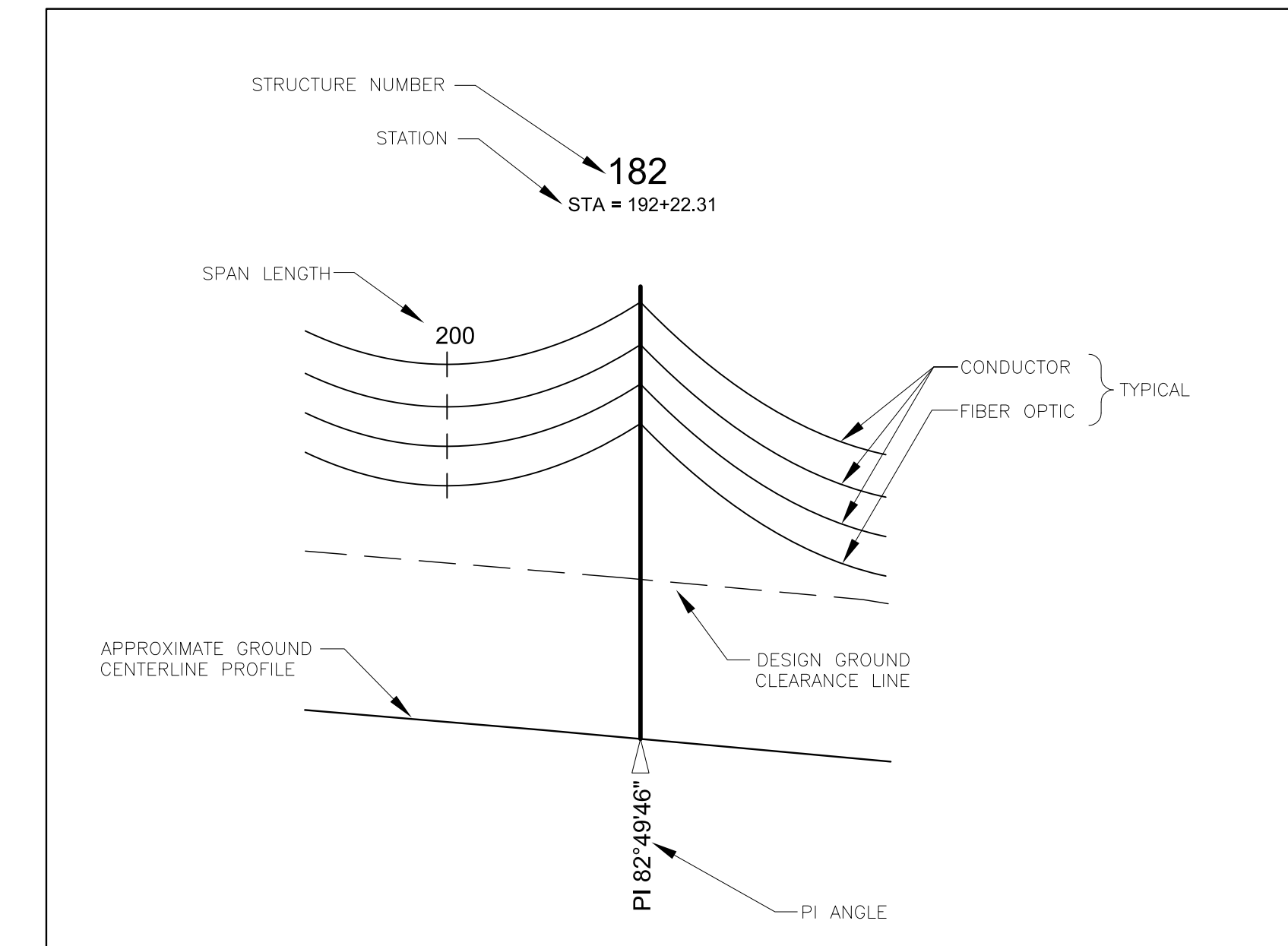
INDEX PLAN
SCALE: 1" = 2,000'±

INDEX PLAN LEGEND

- PROPOSED WIND TURBINE LOCATIONS
- EXPRESS COLLECTOR LINE
- TOWN LINE
- ACCESS ROAD

GENERAL NOTES:

1. CONDUCTOR SHALL BE ACSR. FIBER OPTIC CABLE SHALL BE OPGW.
2. ALL CLEARING ACTIVITIES AND CONSTRUCTION ACTIVITIES IN WETLANDS SHALL BE PERFORMED IN ACCORDANCE WITH THE LURC PERMIT REQUIREMENTS AND THE PROJECT SPECIFICATIONS.
3. ENVIRONMENTAL RESOURCES DELINEATED BY STANTEC INC.
4. MAPPING DATA BY JAMES W. SEWALL AND SGC ENGINEERING, LLC.
5. SEE CIVIL PLANS BY JAMES W. SEWALL CO. FOR MOUNTAINTOP COLLECTOR DESIGN.
6. SEE DRAWING 106-12-1100 FOR TYPICAL STRUCTURE DETAILS AND DETAILED NOTES ON THE EXPRESS LINE LAYOUT AND STRUCTURES.

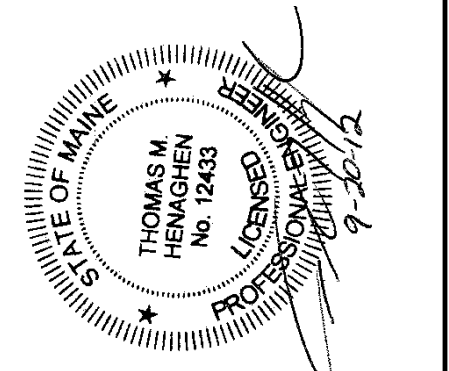


PROFILE STRUCTURE INFORMATION DETAIL
NOT TO SCALE

PLAN AND PROFILE LEGEND

- PROPOSED STRUCTURE
- RIGHT-OF-WAY
- OVERHEAD 34.5 kV COLLECTOR LINE
- UNDERGROUND 34.5 kV COLLECTOR LINE
- PROPOSED CLEARING LIMITS
- EXISTING TREELINE
- WETLAND
- VERNAL POOL
- STREAM/BROOK

NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	09/19/12



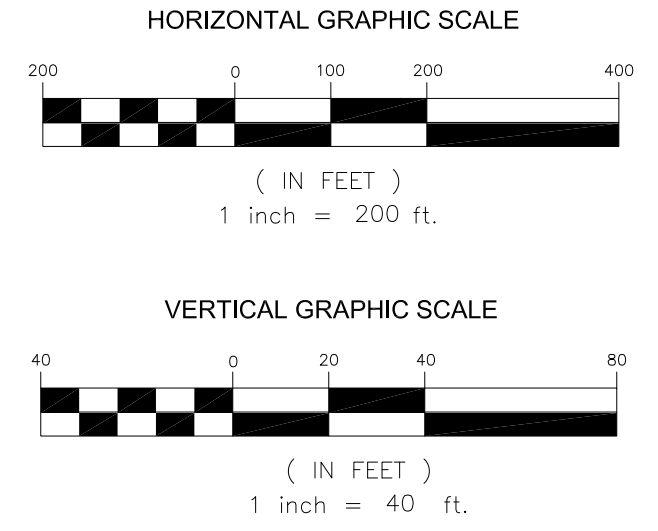
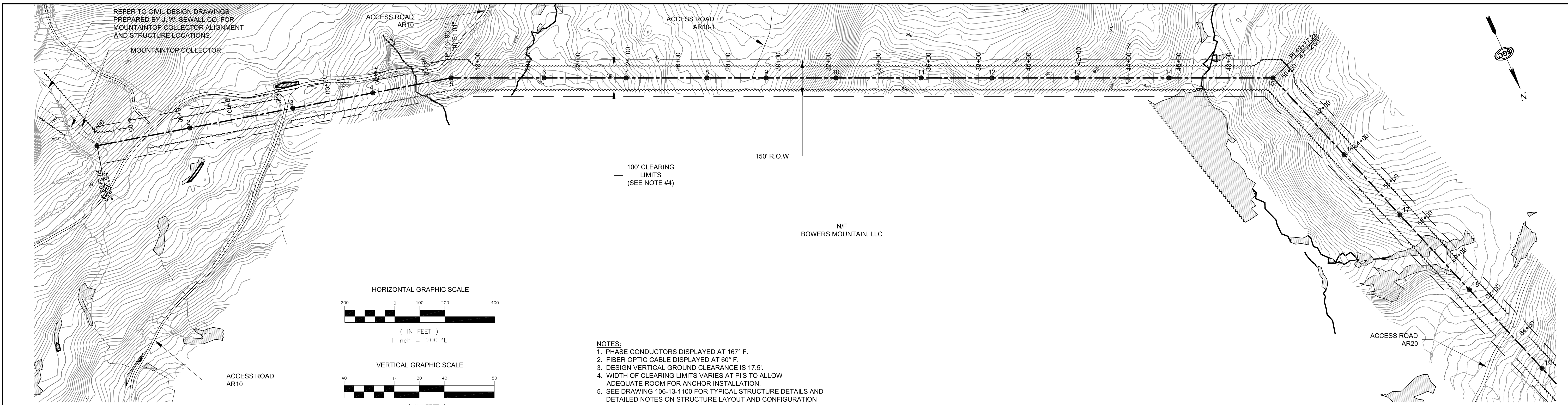
SGC ENGINEERING, LLC
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 • Environmental & Regulatory Permitting
 • Electrical Power Systems Engineering
 Offices - South Burlington, Vermont
 Farmington, New Mexico

SGC

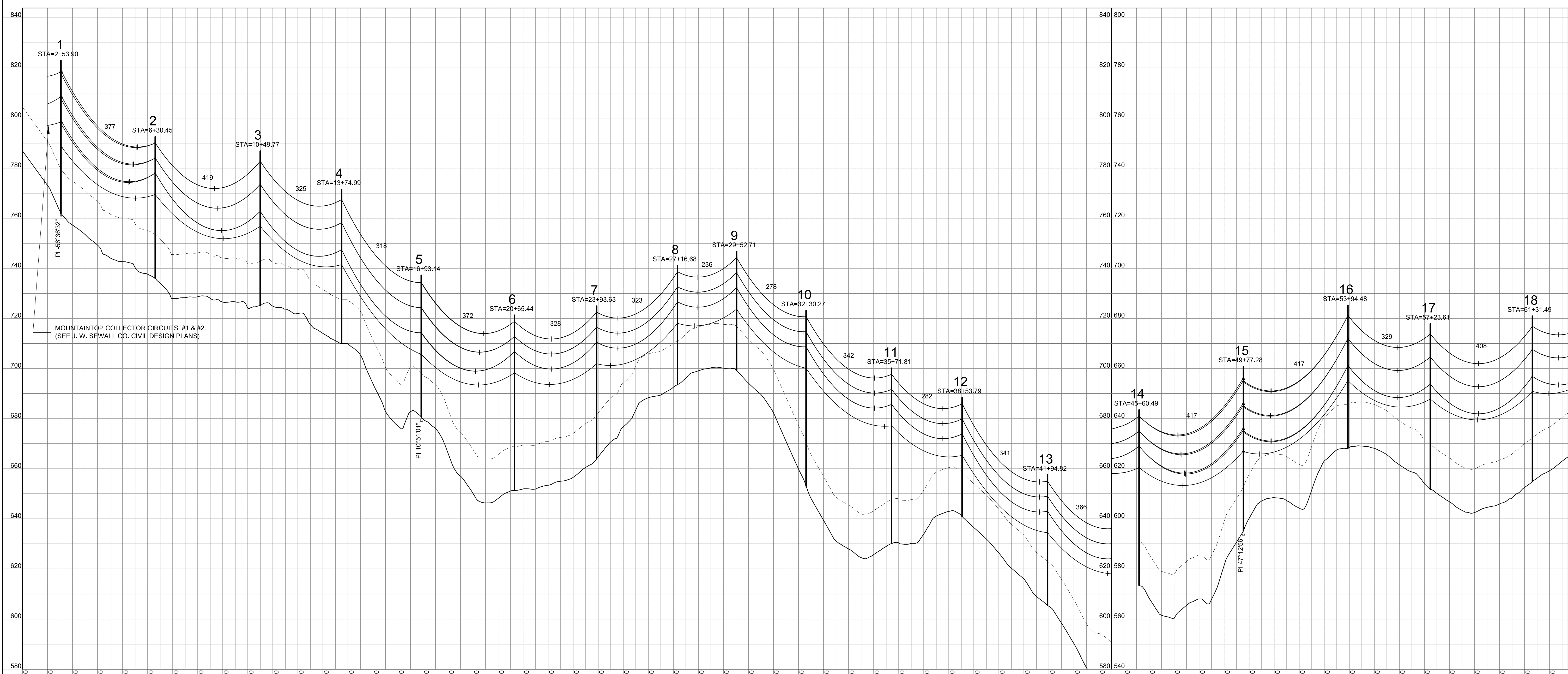
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 Date: DECEMBER 8, 2010
 Scale: AS NOTED
 Drawn: MGL
 Design: AJG
 Appr: AJG

Title: 34.5 kV COLLECTOR LINE INDEX
 Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE
 Client: CHAMPLAIN WIND, LLC
 129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101





- NOTES:
1. PHASE CONDUCTORS DISPLAYED AT 167° F.
 2. FIBER OPTIC CABLE DISPLAYED AT 60° F.
 3. DESIGN VERTICAL GROUND CLEARANCE IS 17.5'.
 4. WIDTH OF CLEARING LIMITS VARIES AT PIS TO ALLOW ADEQUATE ROOM FOR ANCHOR INSTALLATION.
 5. SEE DRAWING 106-13-1100 FOR TYPICAL STRUCTURE DETAILS AND DETAILED NOTES ON STRUCTURE LAYOUT AND CONFIGURATION



NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	THH	09/11/12

STATE OF MAINE
 THOMAS N. HENNINGER
 No. 12433
 REGISTERED PROFESSIONAL ENGINEER
 9-20-12

SGC ENGINEERING, LLC
 Civil Design & Survey Engineering
 Electrical Power System Engineering
 Offices - Westbrook & Orono, Maine
 South Burlington, Vermont
 Farmington, New Mexico

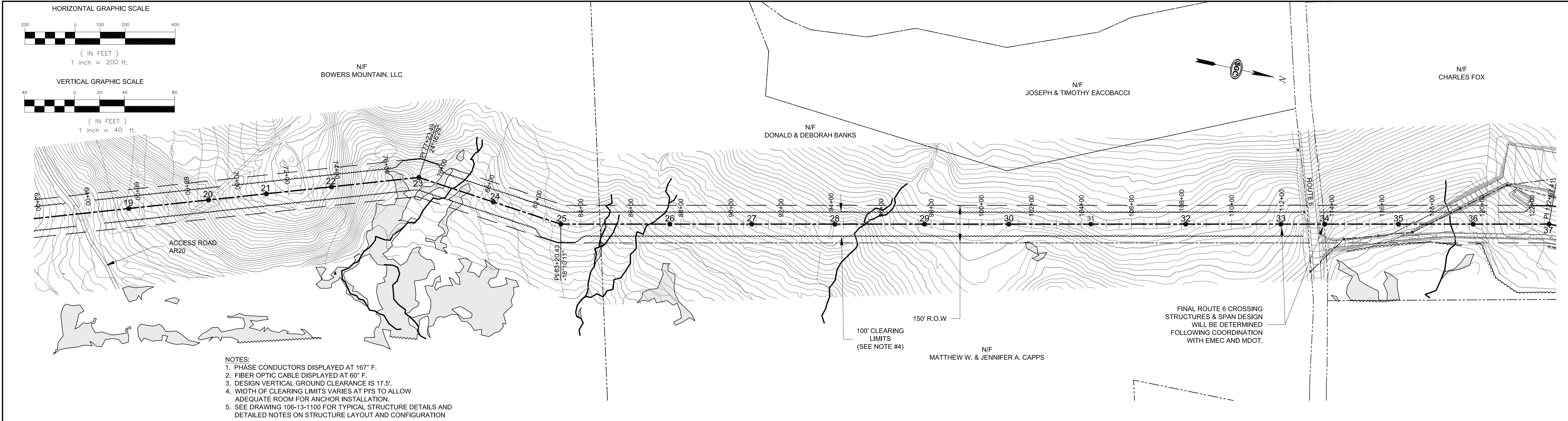
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 Drawn: JTF
 Design: AJG
 SGC Project: 780001

Title: 34.5 KV COLLECTOR LINE
 EXPRESS PLAN AND PROFILE

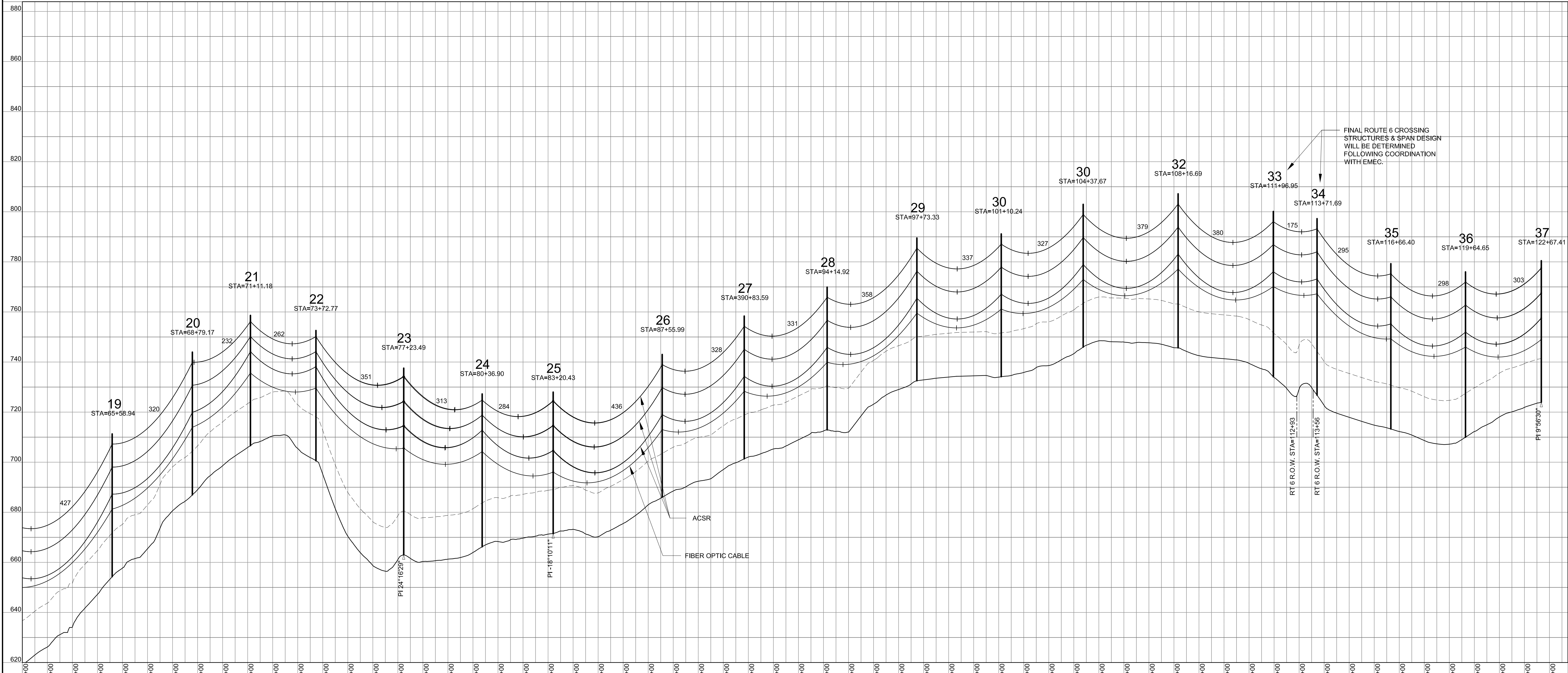
Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE

Client: CHAMPLAIN WIND, LLC
 129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101

ISSUED FOR PERMIT - NOT FOR CONSTRUCTION



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NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	09/15/12

STATE OF MAINE
 REGISTERED PROFESSIONAL ENGINEER
 THOMAS A. HENAGHER
 No. 12433
 9-20-12

SGC ENGINEERING, LLC
 Civil Design & Survey Engineering
 Electrical Power System Engineering
 Offices - Westbrook & Orono, Maine
 South Burlington, Vermont
 Farmington, New Mexico

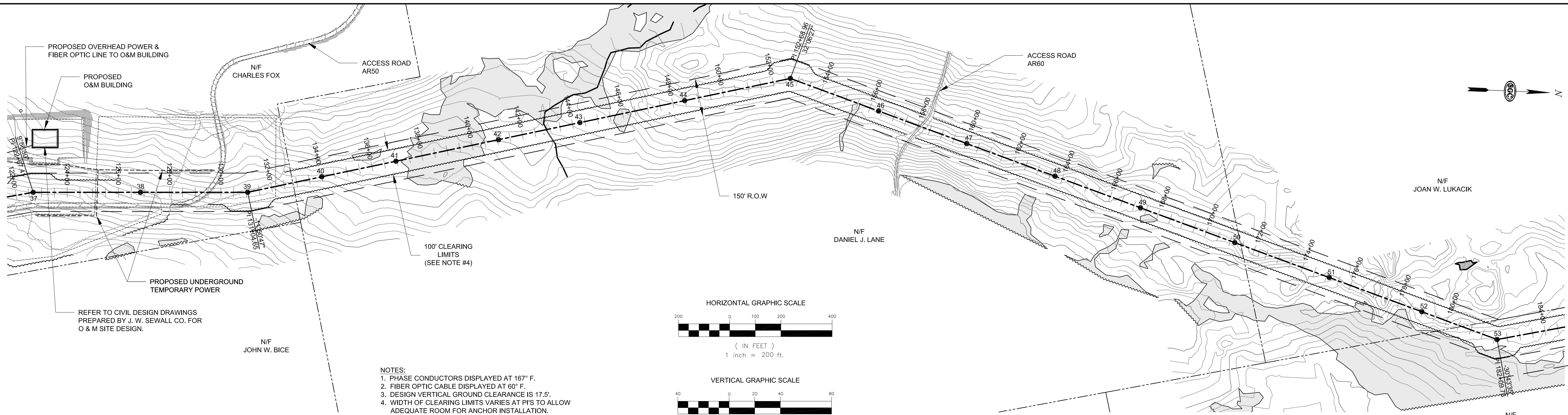
SGC PROJECT: 780001
 DATE: DECEMBER 8, 2010
 AS NOTED
 JTF
 AUG

34.5 kV COLLECTOR LINE
 EXPRESS PLAN AND PROFILE

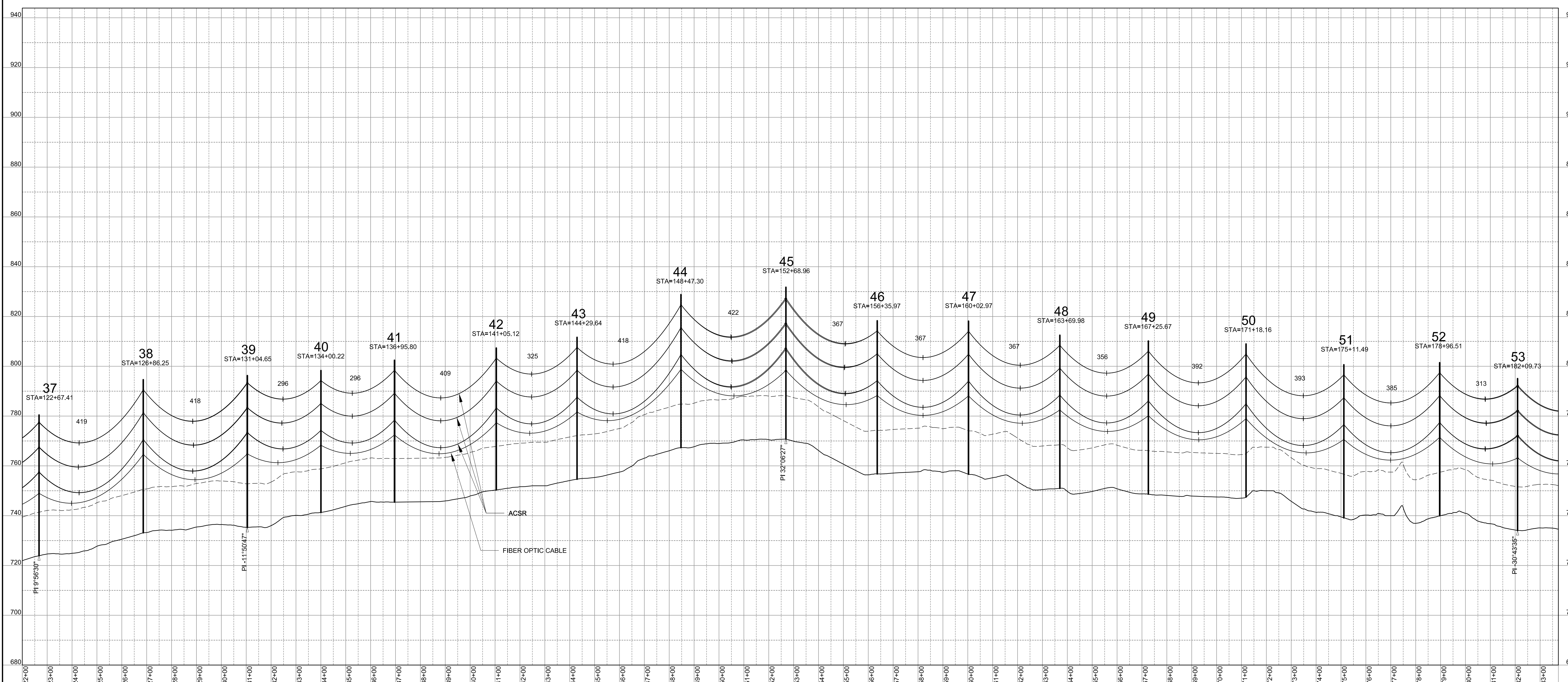
Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE

Client: CHAMPLAIN WIND, LLC
 129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101

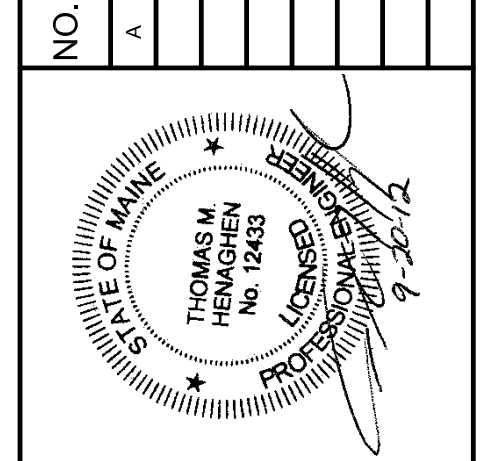
ISSUED FOR PERMIT - NOT FOR CONSTRUCTION



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A	ISSUED FOR PERMIT	TMH	09/15/12



SGC ENGINEERING, LLC

Civil Design & Survey Engineering
Electrical Power System Engineering

Offices: Westbrook & Orono, Maine
South Burlington, Vermont
Farmington, New Mexico

Scale: AS NOTED

Date: DECEMBER 8, 2010

SGC Project: 780001

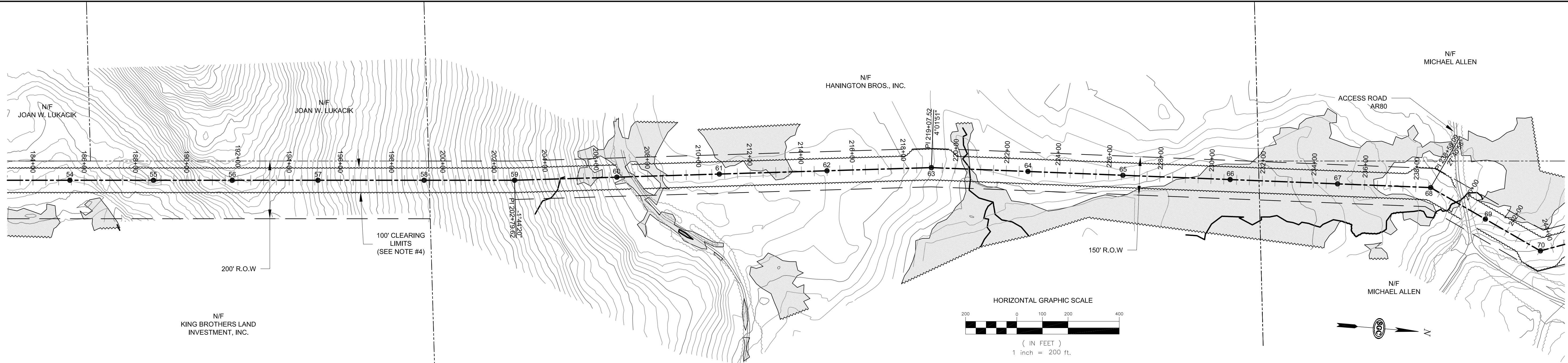
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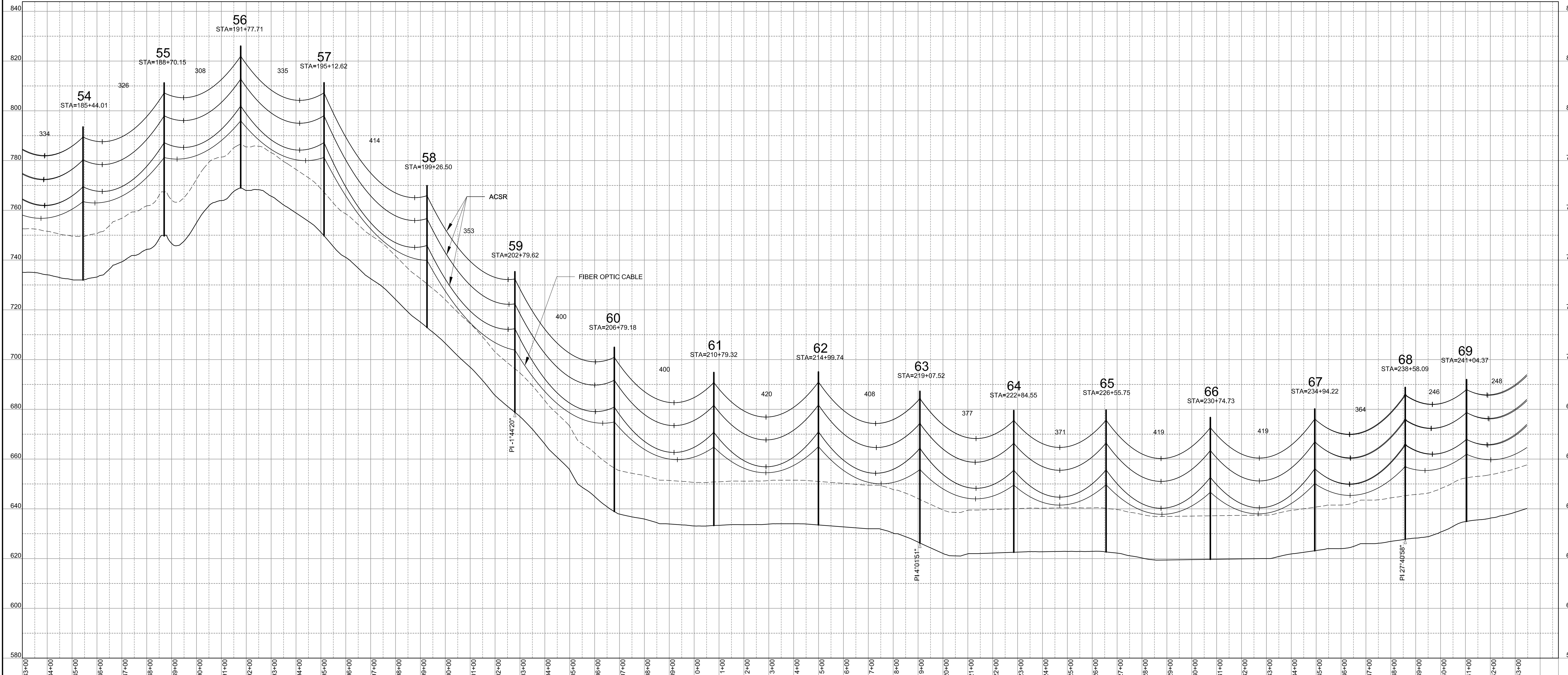
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PENOBSCOT COUNTY, MAINE

Client: CHAMPLAIN WIND, LLC
129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101

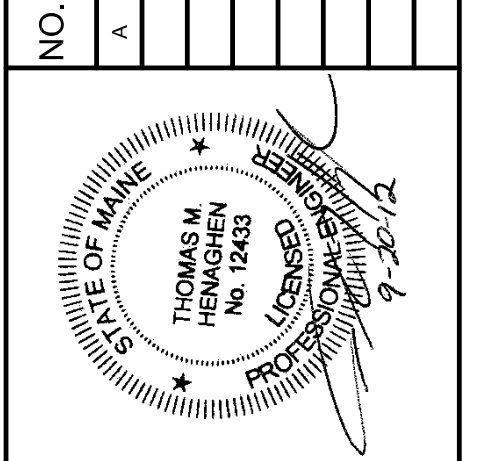
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NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	09/15/12



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 Civil Design & Survey Engineering
 Electrical Power System Engineering
 Offices: Westbrook & Orono, Maine
 South Burlington, Vermont
 Farmington, New Mexico

SGC

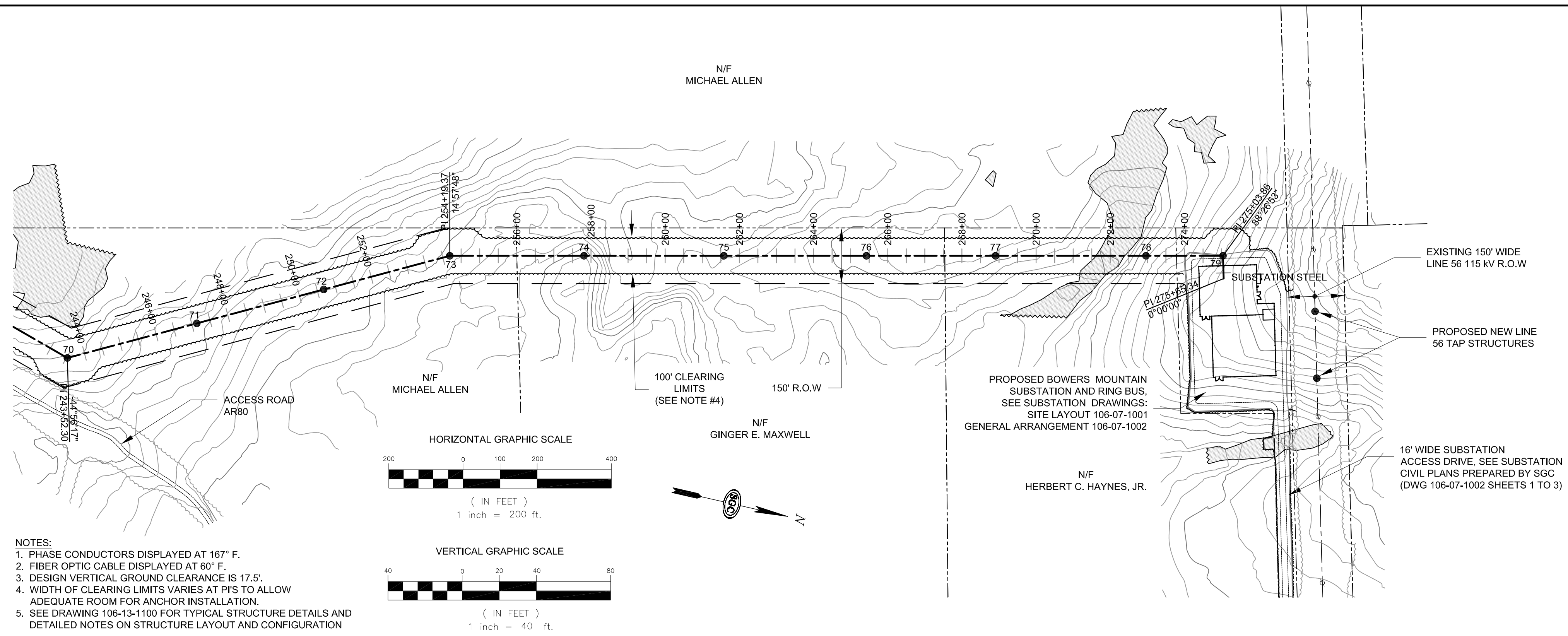
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 Scale: AS NOTED
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 Design: AJG

Title: 34.5 kV COLLECTOR LINE
 EXPRESS PLAN AND PROFILE

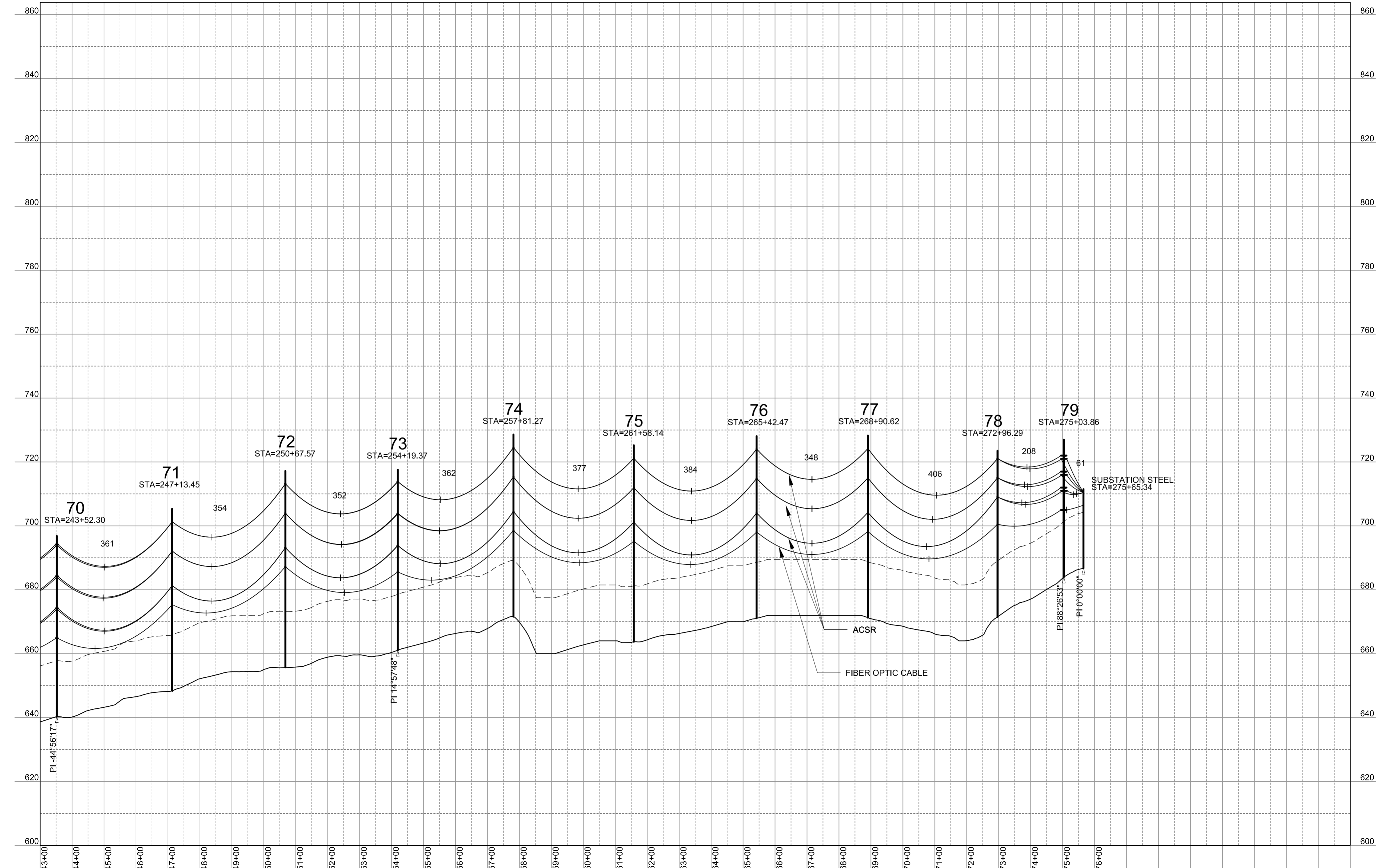
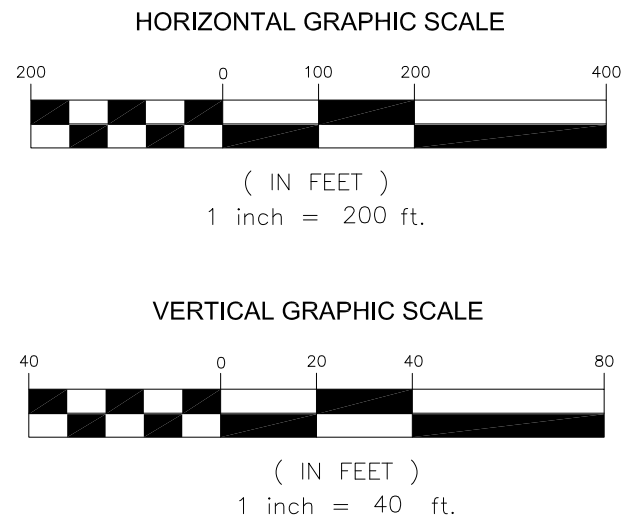
Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE

Client: CHAMPLAIN WIND, LLC
 129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101

ISSUED FOR PERMIT - NOT FOR CONSTRUCTION

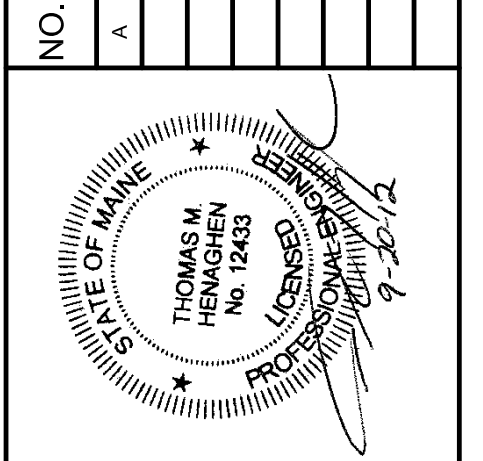


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ISSUED FOR PERMIT - NOT FOR CONSTRUCTION

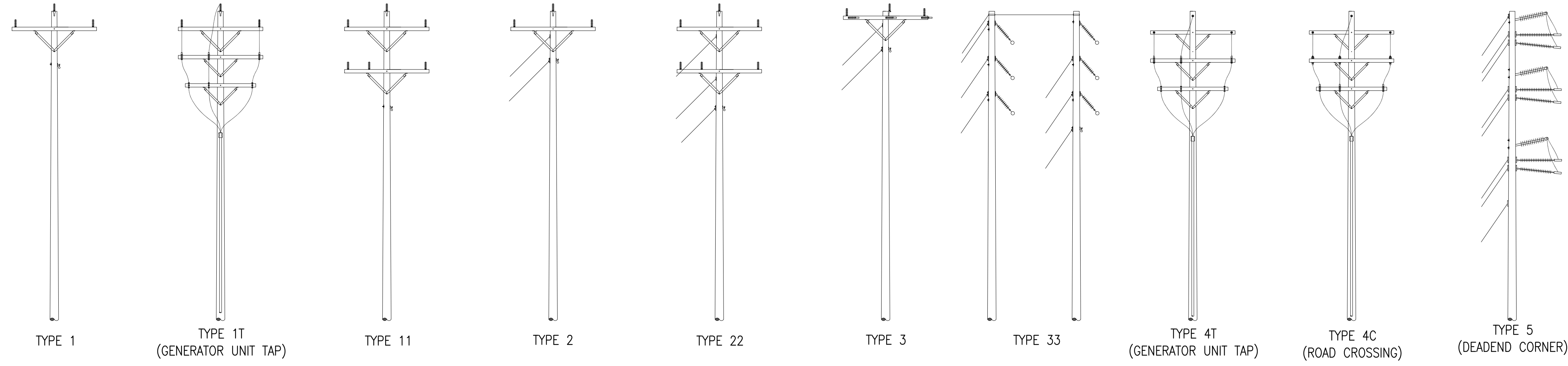
NO.	REVISIONS:	DATE:
A	ISSUED FOR PERMIT	09/15/12



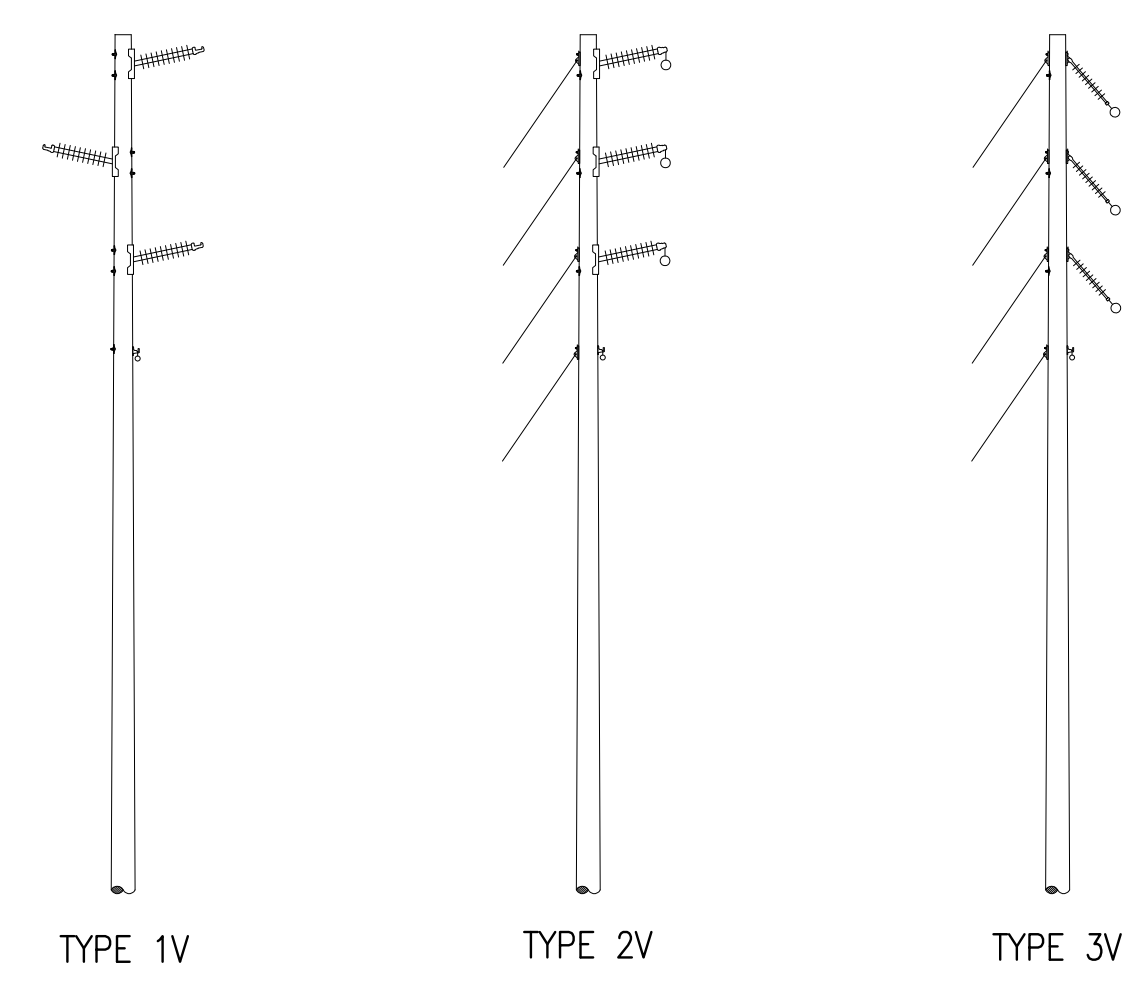
SGC ENGINEERING, LLC
Civil Design & Survey Engineering
Electrical Power System Engineering
Offices - Westbrook & Orono, Maine
South Burlington, Vermont
Farmington, New Mexico

SGC
Date: DECEMBER 8, 2010
Scale: AS NOTED
Drawn: JTF
Design: AJG

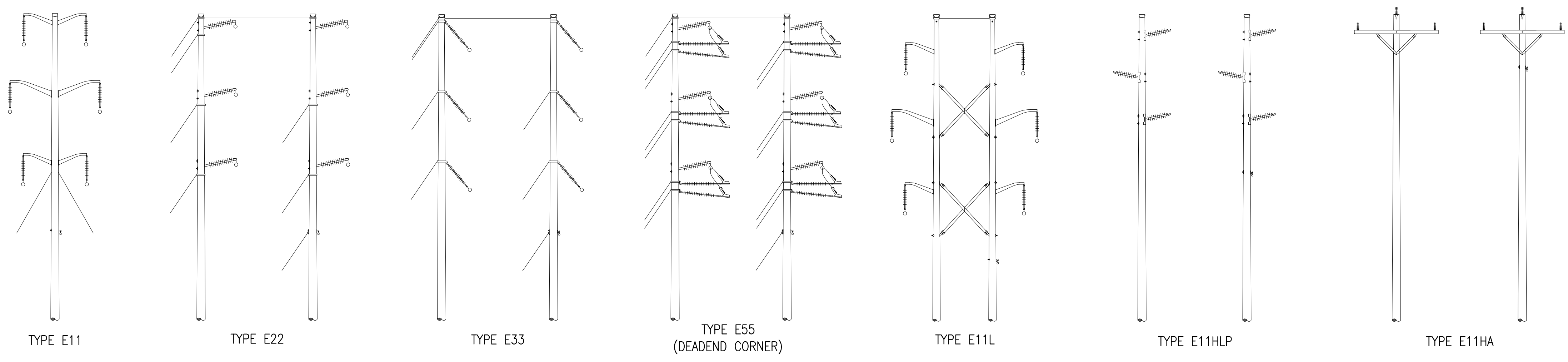
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Project: BOWERS WIND PROJECT PENOBSCOT COUNTY, MAINE
Client: CHAMPLAIN WIND, LLC
129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101



34.5 kV MOUNTAIN TOP COLLECTOR STRUCTURES



34.5 kV MOUNTAIN TOP COLLECTOR VERTICAL STRUCTURES



34.5 kV EXPRESS COLLECTOR STRUCTURES

STRUCTURE AND LAYOUT NOTES:

1. TYPICAL STRUCTURE HEIGHTS ON THE MOUNTAIN TOP COLLECTOR WILL RANGE FROM 35 TO 60 FEET AND WILL VARY BASED ON SITE CONDITIONS AT THE TIME OF INSTALLATION. THE LOCATIONS OF STRUCTURES FOR THE MOUNTAIN TOP COLLECTOR ARE GENERALLY REFERENCED ON THE CIVIL DESIGN PLANS. STRUCTURE HEIGHTS FOR THE EXPRESS COLLECTOR WILL RANGE FROM 40 TO 80 FEET AND WILL VARY BASED ON SITE CONDITIONS AT THE TIME OF INSTALLATION.
2. STRUCTURE CONFIGURATIONS VARY (E.G. SINGLE-POLE, DOUBLE-POLE, HORIZONTAL, VERTICAL) BASED ON SITE CONDITIONS AT THE TIME OF INSTALLATION. SEE STRUCTURE DETAILS (THIS SHEET) FOR STANDARD CONFIGURATIONS.
3. TYPICAL OVERHEAD SPANS (I.E., DISTANCE BETWEEN STRUCTURES) VARY BETWEEN 150 AND 300 FEET ON THE MOUNTAIN TOP, AND BETWEEN 200 AND 450 FEET ON THE EXPRESS. AS GENERALLY REPRESENTED ON THE PERMIT PLANS. FINAL SPAN LENGTHS MAY BE ADJUSTED BASED ON SITE CONDITIONS AT THE TIME OF INSTALLATION.
4. STRUCTURES REQUIRING GUYS ARE SHOWN ON THE TYPICAL STRUCTURE DETAILS. FINAL ANCHOR LOCATIONS WILL VARY BASED ON STRUCTURE HEIGHT, TERRAIN AND SITE CONDITIONS. FOR THE MOUNTAIN TOP COLLECTOR, NO ANCHORS ARE PROPOSED WITHIN WETLAND RESOURCE AREAS. FOR THE EXPRESS COLLECTOR, THE PLACEMENT OF ANCHORS ASSOCIATED WITH ONE STRUCTURE MAY BE REQUIRED WITHIN A WETLAND. UNLESS IT IS NOT PRACTICABLE, THESE ANCHORS WILL BE SCREW-TYPE.
5. ANCHORS WILL PREDOMINATELY BE SCREW TYPE, BUT ROCK OR SLUG ANCHORS MAY BE USED DEPENDENT ON SITE CONDITIONS.
6. FINAL POLE OR ANCHOR LOCATIONS MAY BE ADJUSTED BASED ON SITE CONDITIONS AT THE TIME OF INSTALLATION. NO ADJUSTMENTS TO POLE OR ANCHOR LOCATIONS WILL BE MADE THAT WOULD RESULT IN STRUCTURES OR ANCHORS BEING RELOCATED CLOSER THAN 25' TO A STREAM. CURRENTLY, THERE ARE TWO STRUCTURES AND THE ANCHORS ASSOCIATED WITH A THIRD STRUCTURE LOCATED WITHIN A WETLAND. WHILE THERE MAY BE ADJUSTMENT OF POLES OR ANCHORS THAT IMPACT WETLANDS, THERE WILL BE NO NET INCREASE IN WETLAND IMPACTS BEYOND THOSE REFLECTED IN THE DRAWINGS AND PERMITTED WITHIN THIS APPLICATION.
7. REMOVAL OF INDIVIDUAL "DANGER TREES" BEYOND THE PROPOSED CLEARING LIMITS SHOWN ON THE DRAWINGS WILL BE REQUIRED.
8. TO THE EXTENT PRACTICABLE, STRUCTURES WILL BE DESIGNED WITH REFERENCE TO THE GUIDELINES SET FORTH IN THE AVIAN POWER LINE INTERACTION COMMITTEE DOCUMENT, "SUGGESTED PRACTICES FOR AVIAN PROTECTION ON POWER LINES: THE STATE OF THE ART IN 2006". COMPLIANCE WILL BE MET PRIMARILY BY PROVIDING ADEQUATE SPACING BETWEEN CONDUCTORS WITH ADDITIONAL INSULATION OR COVERING OF ENERGIZED ELEMENTS AS SUGGESTED.

NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR PERMIT	TMH	09/15/12

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 South Burlington, Vermont
 Farmington, New Mexico

Date: DECEMBER 8, 2010
 SGC Project: 780001
 Scale: N/A
 Drawn: DJM
 Design: AJG
 Annot: AJG

Title: COLLECTOR AND EXPRESS LINES
 34.5 kV STRUCTURES
 Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE
 Client: CHAMPLAIN WIND, LLC
 129 MIDDLE ST., 3rd FLOOR, PORTLAND, MAINE 04101

CLEAN ENERGY MADE HERE.

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115/34.5 kV SUBSTATION

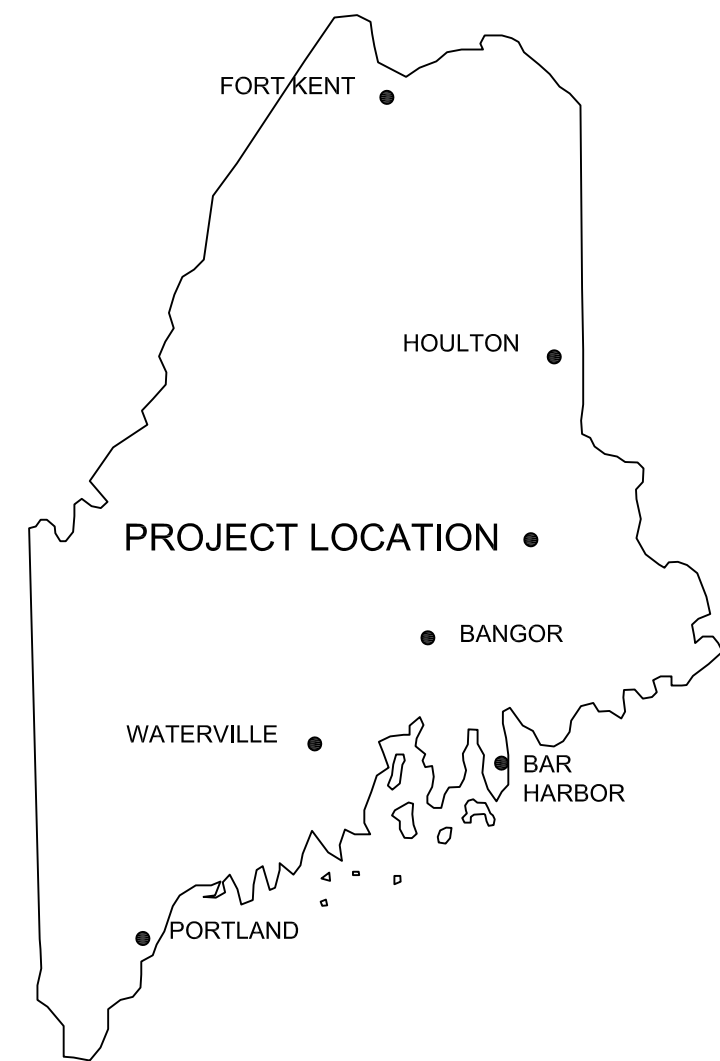
BOWERS WIND PROJECT

LOCATED IN:
CARROLL PLANTATION
PENOBSCOT COUNTY, MAINE

PROPOSED BY:
CHAMPLAIN WIND, LLC.
129 MIDDLE STREET, THIRD FLOOR
PORTLAND, MAINE 04103

ISSUED FOR PERMIT

SEPTEMBER 2012

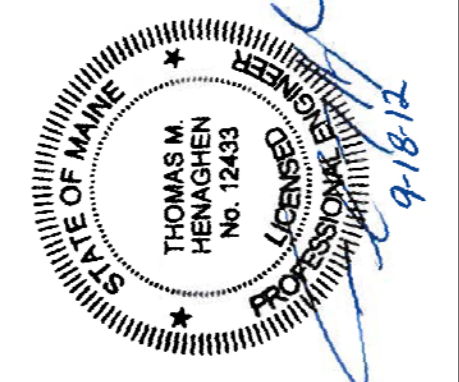


VICINITY MAP
SCALE: 1" = 320,000'±

SHEET INDEX

DRAWING	TITLE
106-07-1000	COVER
106-07-1001	SITE LAYOUT AND UTILITY PLAN
106-07-1002 (1 OF 3)	GRADING AND DRAINAGE PLAN AND PROFILE
106-07-1002 (2 OF 3)	GRADING AND DRAINAGE PLAN AND PROFILE
106-07-1002 (3 OF 3)	GRADING AND DRAINAGE PLAN AND PROFILE
106-07-1003	EROSION AND SEDIMENTATION CONTROL DETAILS AND NOTES
106-07-1004	EROSION AND SEDIMENTATION CONTROL DETAILS AND NOTES
106-07-1005	FENCE AND GATE DETAILS

NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR REVIEW	JMR	10/28/10
B	ISSUED FOR PERMIT	JMR	12/08/10
C	ISSUED FOR DEP PERMITTING	TMH	09/18/12



SGC ENGINEERING, LLC
 Civil Design & Survey Engineering
 Environmental & Regulatory Permitting
 Electrical Power Systems Engineering
 Offices - Westbrook & Orono, Maine
 Portland, Bangor, Lewiston, Farmington, New Market

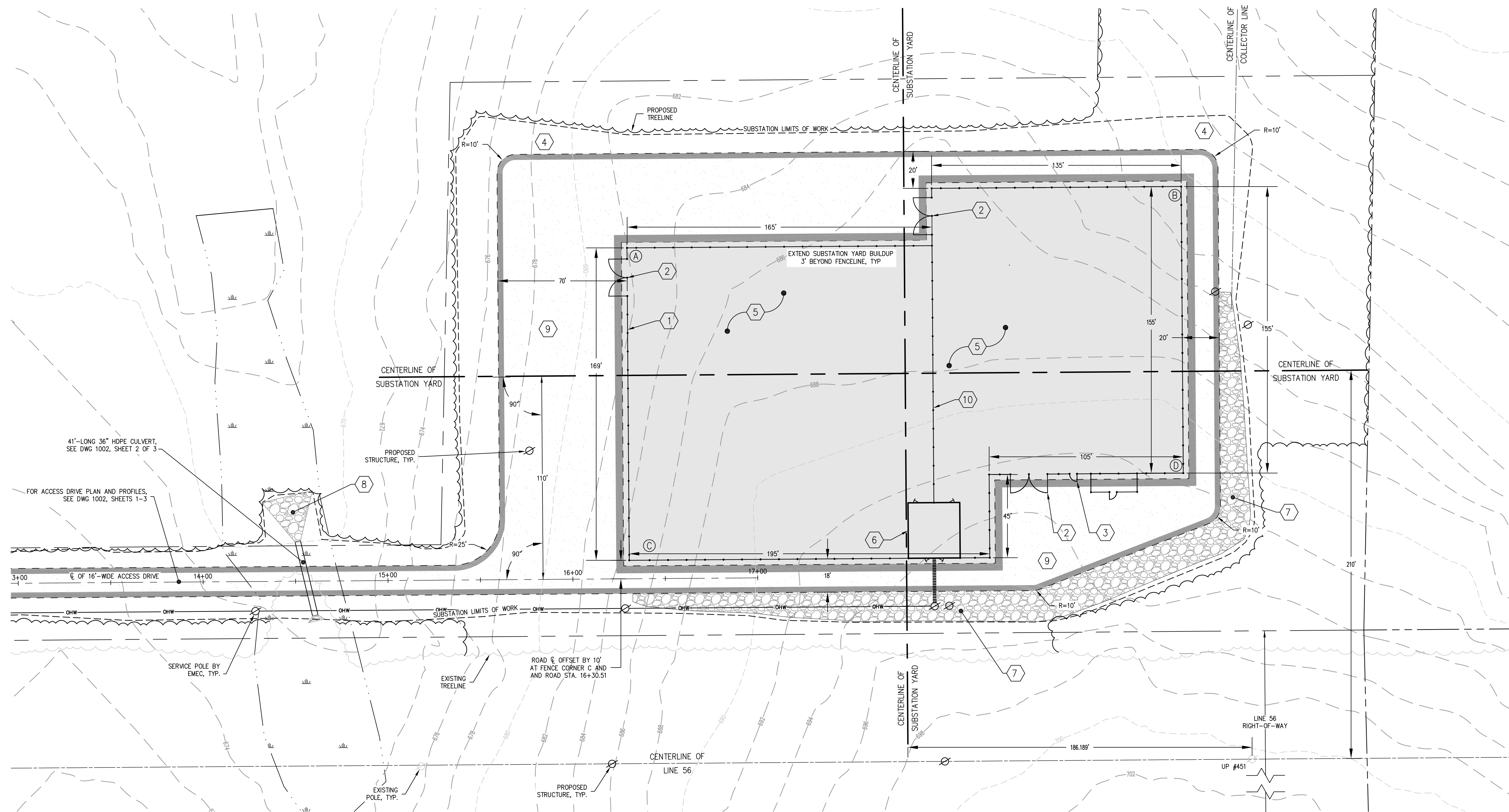
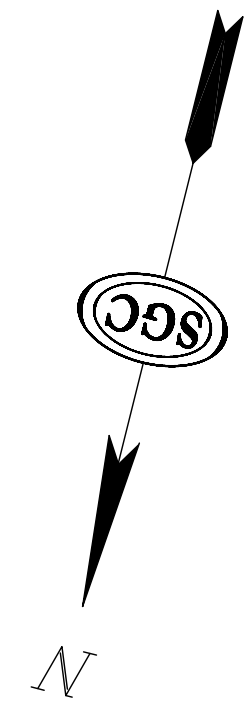
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 Date: OCT. 21, 2010
 Drawn: MRR
 Design: MRR
 Appr: TMH

SGC Project: 780001

Title: COVER
 Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE
 Client: CHAMPLAIN WIND, LLC
 129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101



ISSUED FOR PERMIT



41'-LONG 36" HDPE CULVERT, SEE DWG 1002, SHEET 2 OF 3

FOR ACCESS DRIVE PLAN AND PROFILES, SEE DWG 1002, SHEETS 1-3

LEGEND

EXISTING		PROPOSED	
	GRADE CONTOUR		GRAVEL ACCESS DRIVE
	PAVED ROAD		GRAVEL SUBSTATION YARD
	PROPERTY LINE		FENCE
	LEASE AREA LINE		ROAD CENTERLINE
	TREELINE		LIMITS OF DISTURBANCE
	WETLAND		PERIMETER EROSION CONTROL
			OVERHEAD POWER & TELECOMM. LINES
			TREE LINE
			SPOT GRADE
			CULVERT
			RIP RAP (SLOPE/DITCH)
			CULVERT OUTLET PROTECTION
			STONE CHECK DAM

KEY NOTES

- 1 8'-HIGH CHAIN LINK FENCE
- 2 20'-WIDE VEHICLE GATE
- 3 4'-WIDE CHAIN LINK PERSONNEL GATE
- 4 EROSION CONTROL MULCH OR LOAM, SEED AND BLANKET
- 5 YARD CRUSHED STONE SURFACING AND GRAVEL SUBBASE MATERIAL
- 6 CONTROL SHELTER
- 7 RIP RAP SLOPE
- 8 RIPRAP DRAINAGE OUTLET
- 9 GRAVEL ACCESS DRIVE MATERIAL
- 10 6'-HIGH CHAIN LINK FENCE

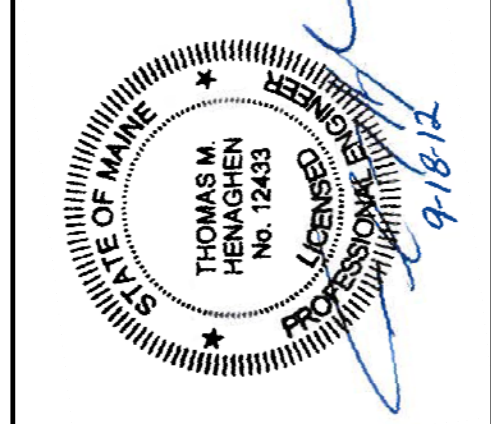
LOCATION CONTROL COORDINATES

FENCE CORNERS	NORTHING	EASTING
(A)	16516747.73	1887302.06
(B)	16516643.01	1887019.22
(C)	16516911.40	1887259.98
(D)	16516793.12	1886980.63
ACCESS DRIVE STA 0+00	16517327.06	1888836.69

GENERAL NOTES:

1. EXISTING TREELINE IS APPROXIMATE.
2. TOPOGRAPHIC MAPPING IS BASED ON AN AERIAL PHOTOGRAMMETRIC SURVEY CONDUCTED BY JAMES W. SEWALL IN NOVEMBER 2009.
3. THE BOUNDS OF THE 300' X 500' SUBSTATION PARCEL WERE CREATED WITH THE INTENT TO BE PARALLEL WITH THE SOUTHERLY BOUND OF LAND NOW OR FORMERLY OWNED BY SUSAN B. THORNE AS AGREED TO IN A BOUNDARY LINE AGREEMENT WITH HERBERT C. HAYNES, JR. DATED OCTOBER 10, 2008 AND RECORDED OCTOBER 24, 2008 AT THE PENOBSCOT REGISTRY OF DEEDS IN BOOK 11570, PAGE 242 AND PARALLEL WITH THE WESTERLY BOUND OF THE PARENT PROPERTY OWNED BY SAID HAYNES.
4. DRAWING COORDINATES ARE UTM NAD 83, ZONE 19, US FOOT AND VERTICAL NAVD88.
5. ALL DISTURBED AREAS SHALL RECEIVE PERMANENT STABILIZATION IN THE FORM OF: PAVEMENT, COMPACTED GRAVEL, RIPRAP, LOAM AND SEED, EROSION CONTROL MULCH OR BLANKET PLACED IN ACCORDANCE WITH THESE PLANS AND DETAILS AND TO THE APPROVAL OF THE ENGINEER.
6. WETLANDS SHOWN HEREON WERE DELINEATED BY STANTEC.

NO.	REVISIONS:	APPD:	DATE:
A	ISSUED FOR REVIEW	JMR	10/28/10
B	ISSUED FOR REVIEW-ADDITION OF POLE LINE	JMR	11/03/10
C	ISSUED FOR PERMIT	JMR	12/08/10
D	ISSUED FOR DEP PERMITTING	TMH	09/18/12



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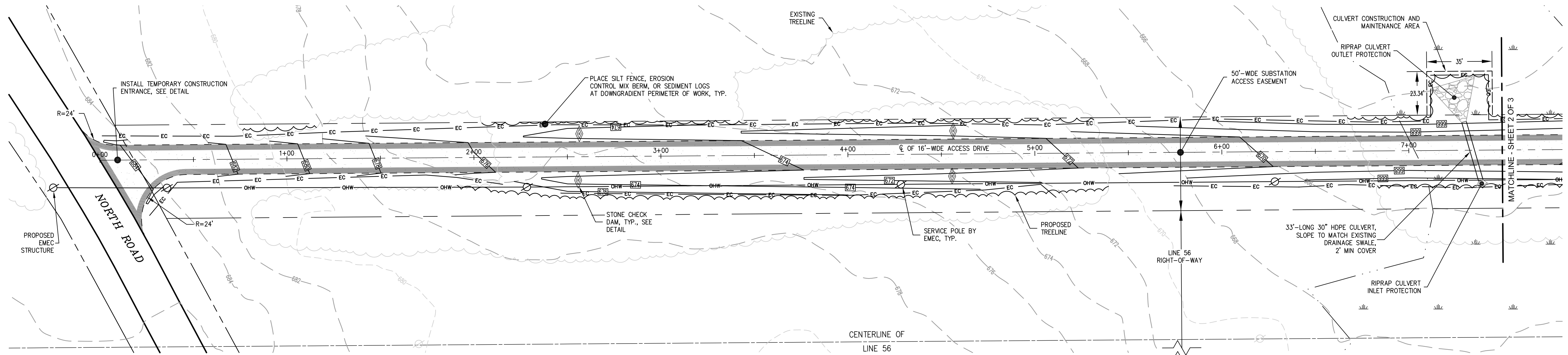
SGC

Scale: 1"=30'
 Date: OCT. 21, 2010
 Project: 780001
 Drawn: MRR
 Design: MRR
 Appr: TMH

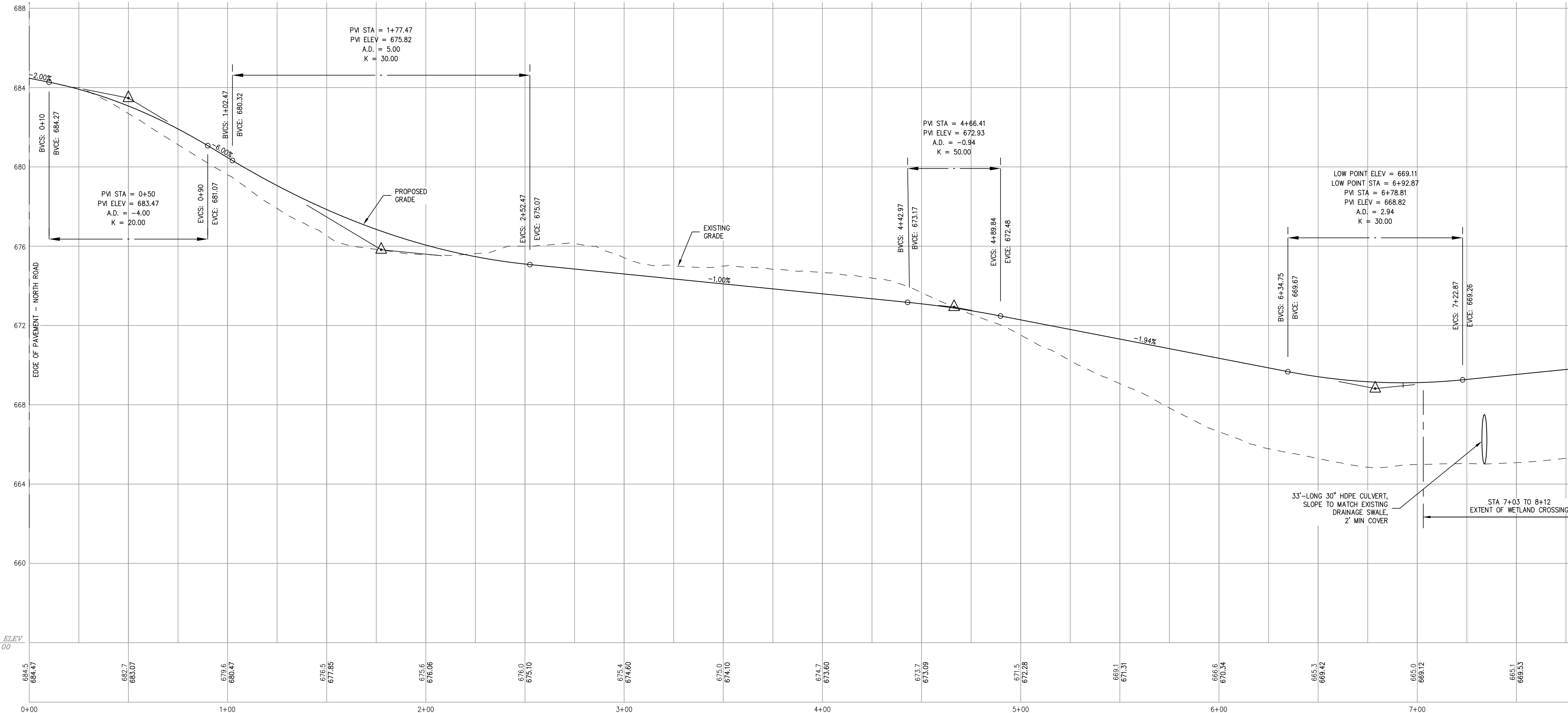
Title: SITE LAYOUT AND UTILITY PLAN
Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE
Client: CHAMPLAIN WIND, LLC
 129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101



ISSUED FOR PERMIT

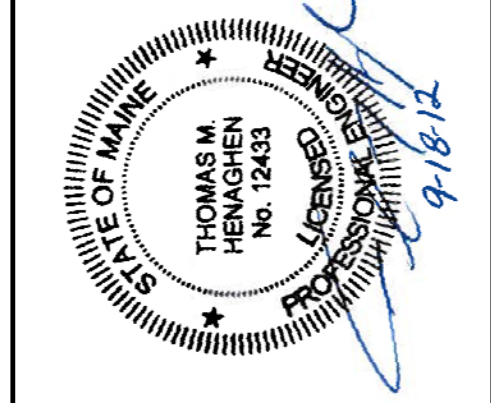


ACCESS DRIVE PLAN
HOR. SCALE: 1"=30'



ACCESS DRIVE PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=3'

NO.	REVISIONS:	DATE:
A	ISSUED FOR REVIEW	10/28/10
B	ISSUED FOR REVIEW/ADDITION OF POLE LINE	11/03/10
C	ISSUED FOR PERMIT	12/08/10
D	ISSUED FOR DEP. PERMITTING	09/18/12



SGC ENGINEERING, LLC
 • Civil Design & Survey Engineering
 • Environmental & Regulatory Permitting
 • Electrical Power Systems Engineering
 Offices - Westbrook & Orono, Maine
 Portland, New Brunswick, New Mexico

Scale: 1"=30'
 Date: OCT. 15, 2010
 Drawn/Design: MRR/MRR/TMH
 SGC Project: 780001

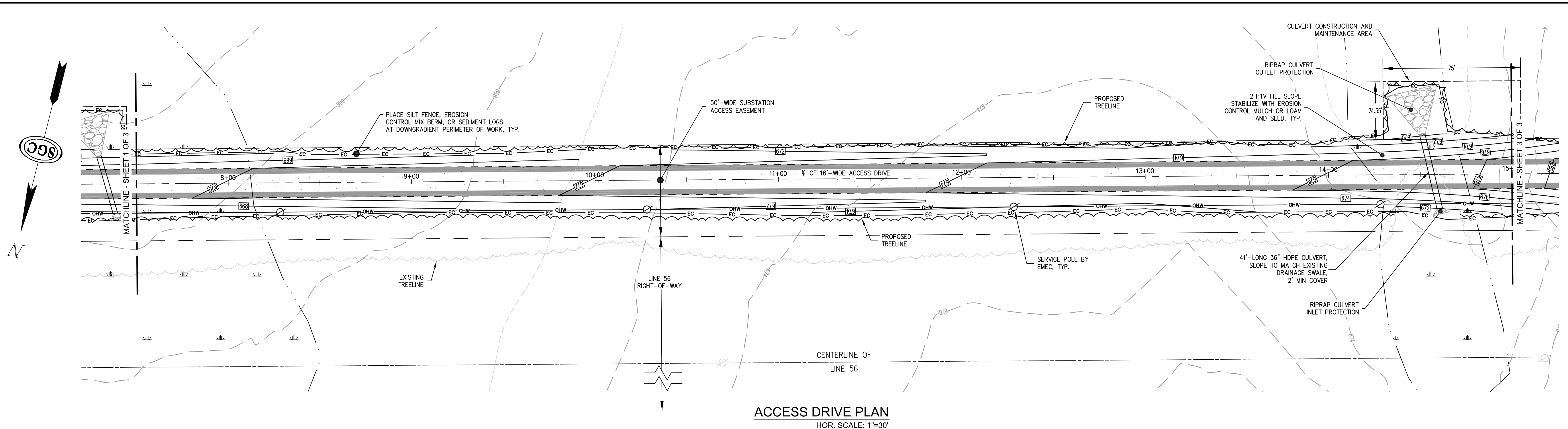
GRADING AND DRAINAGE PLAN AND PROFILE

Project: BOWERS WIND PROJECT
 PENOBSCOT COUNTY, MAINE

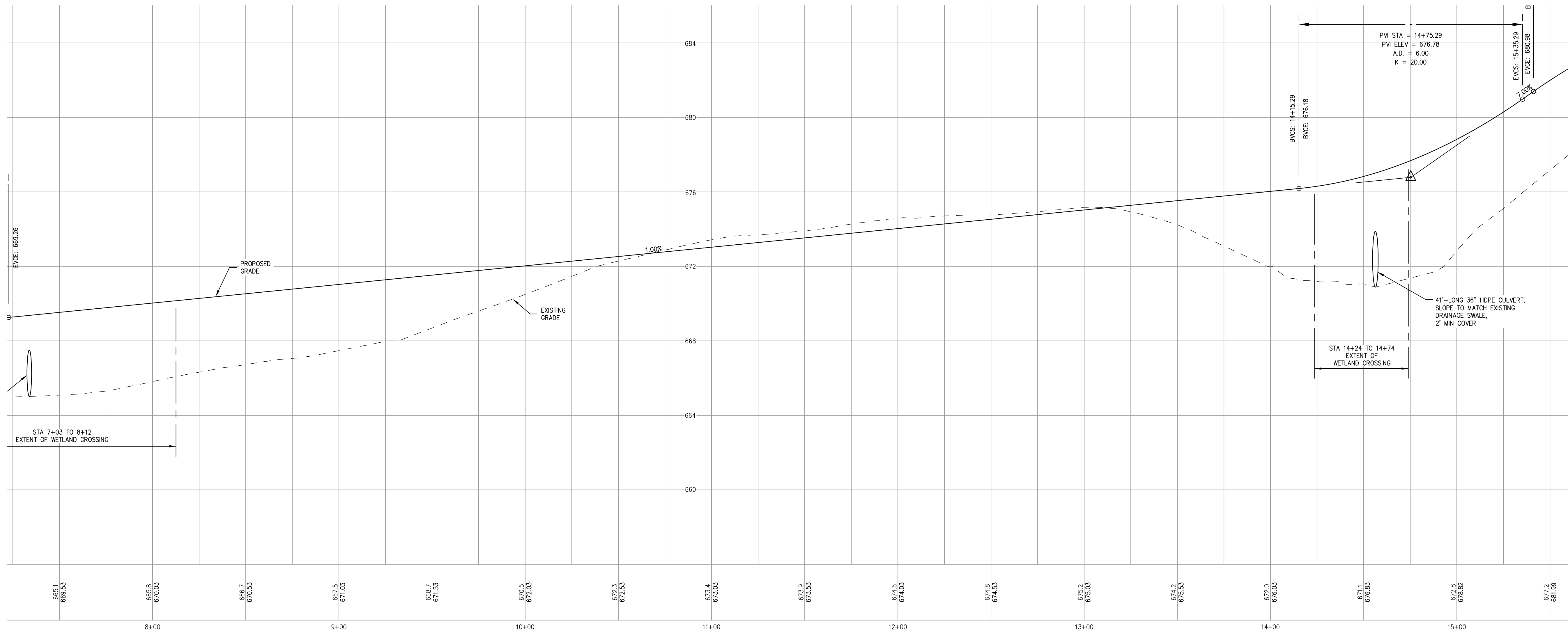
Client: CHAMPLAIN WIND, LLC
 129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101



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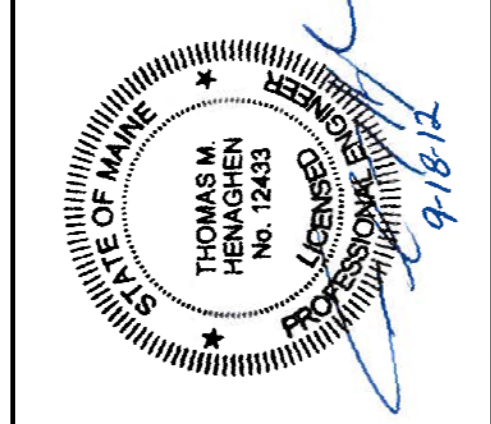


ACCESS DRIVE PLAN
HOR. SCALE: 1"=30'



ACCESS DRIVE PROFILE
HOR. SCALE: 1"=30'
VER. SCALE: 1"=3'

NO.	REVISIONS:	APPR:	DATE:
A	ISSUED FOR REVIEW	JMR	10/28/10
B	ISSUED FOR REVIEW/ADDITION OF POLE LINE	JMR	11/03/10
C	ISSUED FOR PERMIT	JMR	12/08/10
D	ISSUED FOR DEP. PERMITTING	TMH	09/18/12



SGC ENGINEERING, LLC
 • Civil Design & Survey Engineering
 • Environmental & Regulatory Permitting
 • Electrical Power Systems Engineering
 Offices - Westbrook & Orono, Maine
 Portland, New Brunswick, and
 Farmington, New Mexico

SGC

Scale: 1"=30'
 Date: OCT. 21, 2010
 Project: 780001
 Design: MRR/MRR/TMH
 Drawn: MRR/MRR/TMH

Title: **GRADING AND DRAINAGE PLAN AND PROFILE**
 Project: **BOWERS WIND PROJECT**
 Client: **CHAMPLAIN WIND, LLC**
 129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101



ISSUED FOR PERMIT

GENERAL EROSION CONTROL NOTES:

- ALL EROSION & SEDIMENT CONTROL MEASURES SHALL BE INSTALLED & MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES BY THE CUMBERLAND 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 CONTROL AND DRAINAGE 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 DOWNGRADIENT 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 ON-SITE PLAN COORDINATOR 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 NECESSARY. ACCUMULATED SEDIMENT TRAPPED BY ESC DEVICES SHALL BE REMOVED AS NECESSARY.
- 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 ON-SITE PLAN COORDINATOR. EXPOSED SOIL RESULTING FROM REMOVAL OF TEMPORARY ESC MEASURES SHALL BE RAKED, SEED, AND MULCHED OR MATTED AS NEEDED.
- PERMANENT SEED MIX SHALL BE USED AS EARLY AS PRACTICABLE BETWEEN 05/15 AND 9/1.
- TEMPORARY SEED MIX SHALL BE USED BETWEEN 9/1 AND 5/14 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	
- 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 05/15 AND 9/1 AND MEET THE FOLLOWING CRITERIA:

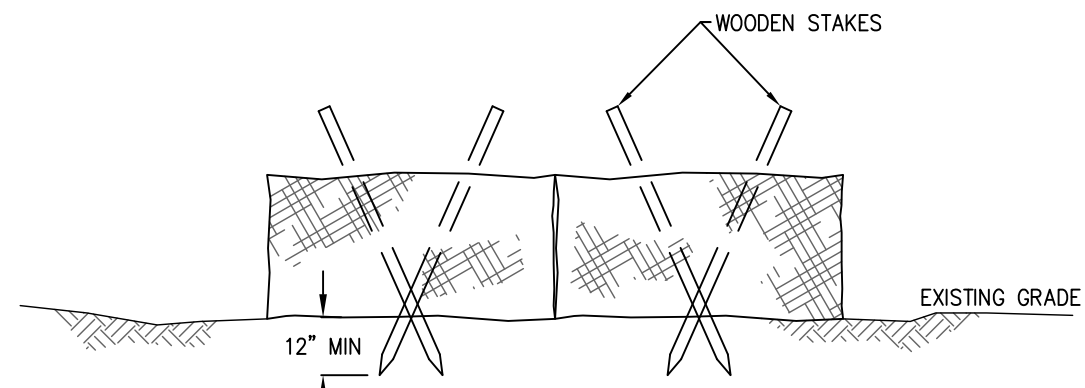
RED FESCUE	50%
SHEEP FESCUE	25%
RED TOP	5%
WHITE CLOVER	10%
ANNUAL RYE	10%
- WETLAND SEED MIX SHALL MEET THE FOLLOWING CRITERIA:

NOODING 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 VERVAIN	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 ON-SITE PLAN COORDINATOR 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 STOCKPIILING. WETLAND SOILS SHALL BE STOCKPIILED SEPARATELY FROM UPLAND SOILS.

WINTER CONSTRUCTION NOTES:

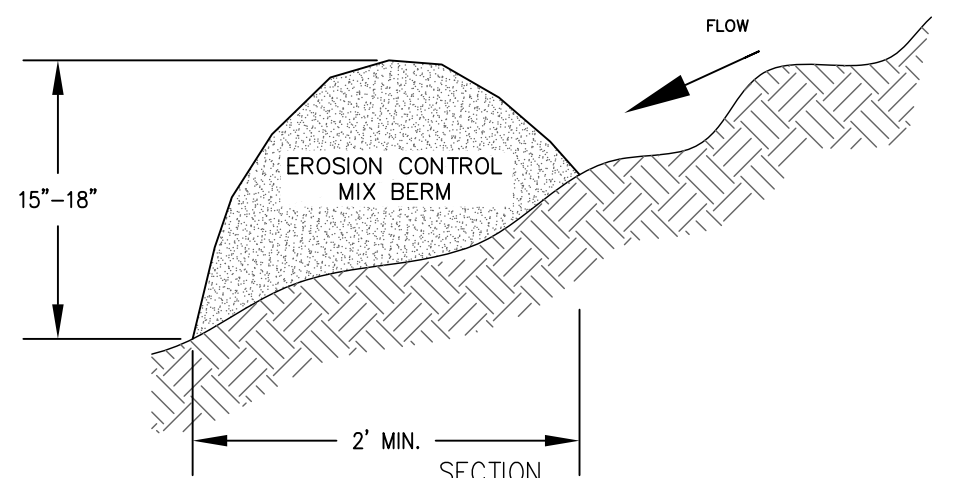
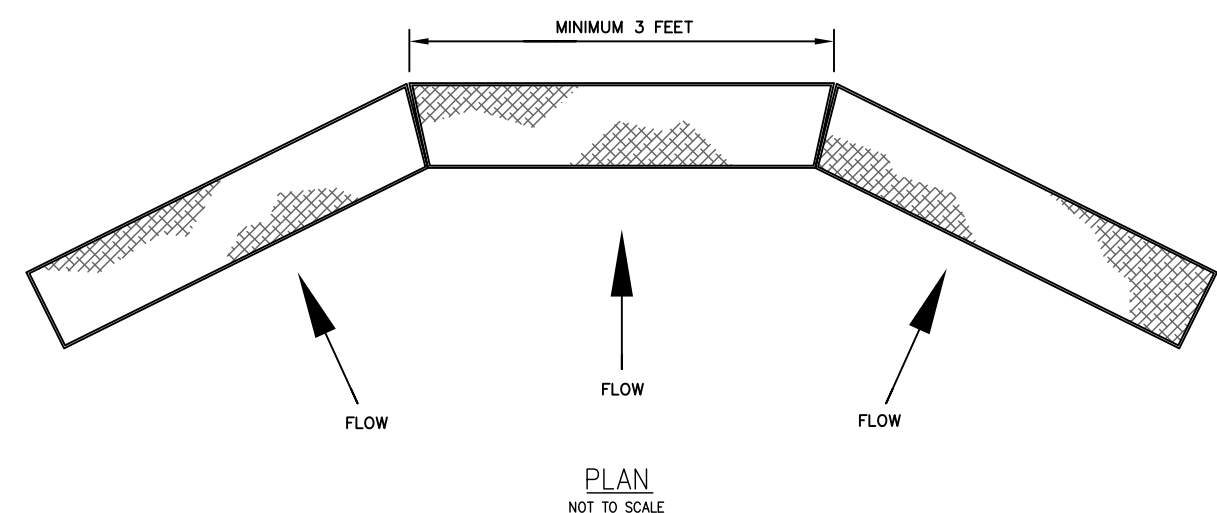
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL WINTER EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH SECTION A-3 OF "MAINE EROSION AND SEDIMENTATION CONTROL BMP'S".
- WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT FOR ANY GIVEN SEGMENT OF THE PROJECT AREA, NO MORE AREA THAN CAN 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.
- STONE SHALL CONSTRUCTION ENTRANCES BE USED TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE 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.



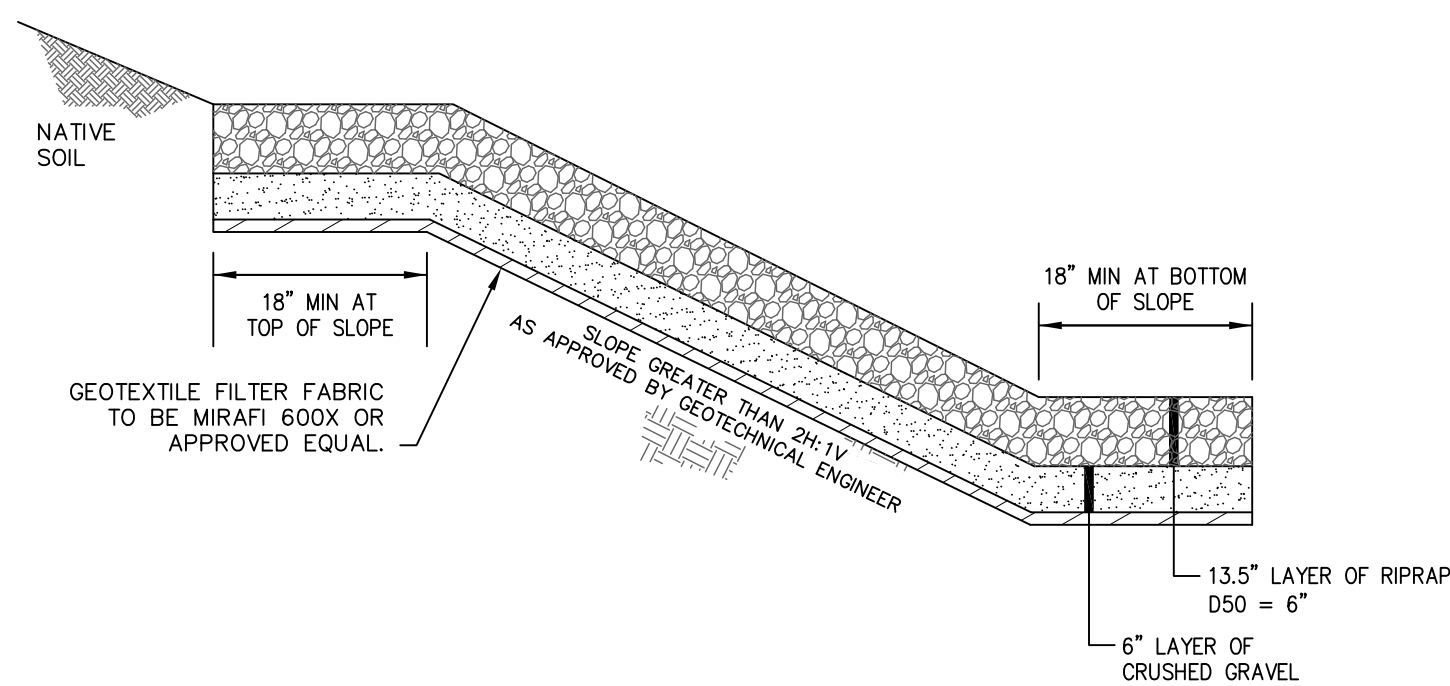
- NOTES:**
- LAY HAYBALES FLAT ON EXISTING GROUND AND MINIMIZE GAPS BETWEEN BALES.
 - PLACE HAYBALES PARALLEL TO EXISTING GRADE CONTOURS TO PREVENT CONCENTRATED FLOW. DO NOT USE HAYBALE FENCE IN AREAS OF CONCENTRATED FLOW.
 - DRIVE WOODEN STAKES INTO EXISTING GROUND A MINIMUM OF 12 INCHES.
 - WITHIN 21 DAYS HAYBALES SHALL BE REMOVED/REPLACED IF DAMAGED, ROTTED, OR OTHERWISE NON-FUNCTIONAL.
 - HAYBALES ARE TO BE SPREAD AS MULCH AT THE COMPLETION OF CONSTRUCTION ACTIVITIES, DO NOT RE-USE HAYBALES.

HAYBALE FENCE DETAIL
NOT TO SCALE

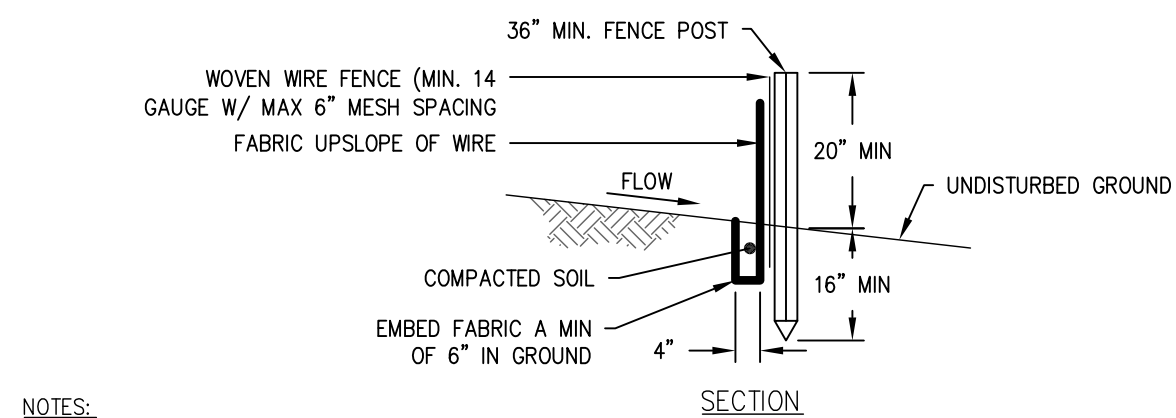
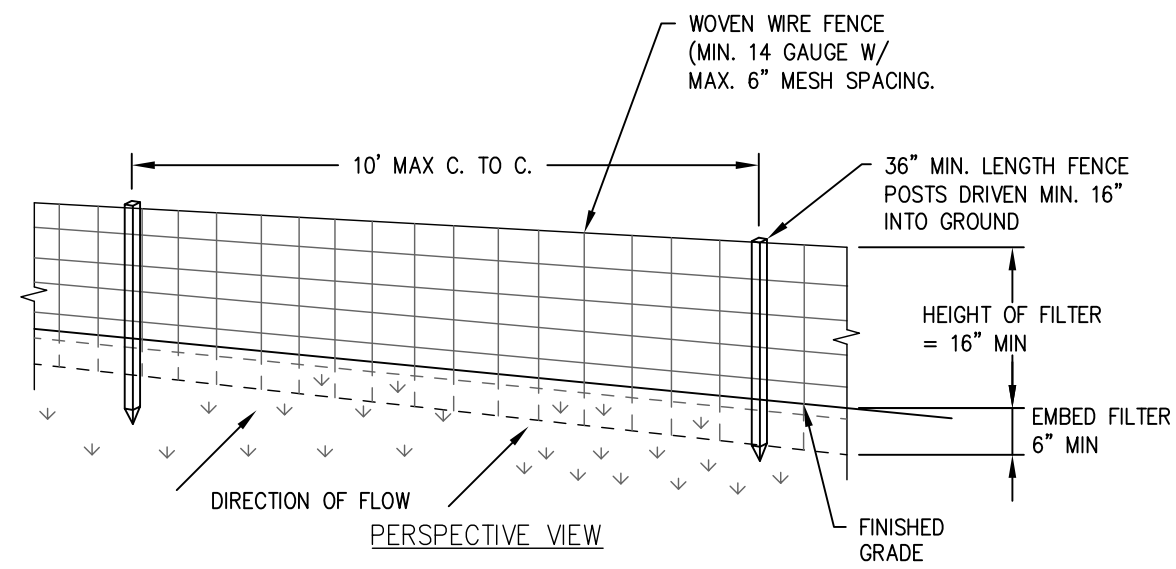


- NOTES:**
- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZE AND MAY CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS.
 - 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 VOID 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.

EROSION CONTROL MIX BERM DETAIL
NOT TO SCALE

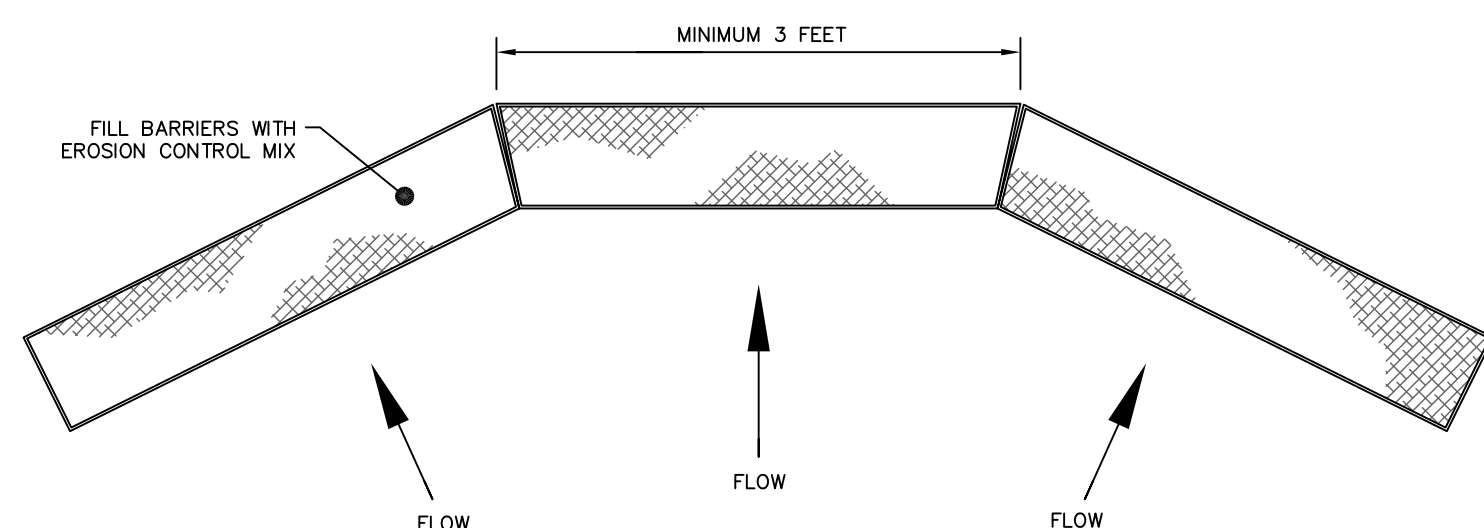


RIPRAP SLOPE STABILIZATION DETAIL
NOT TO SCALE

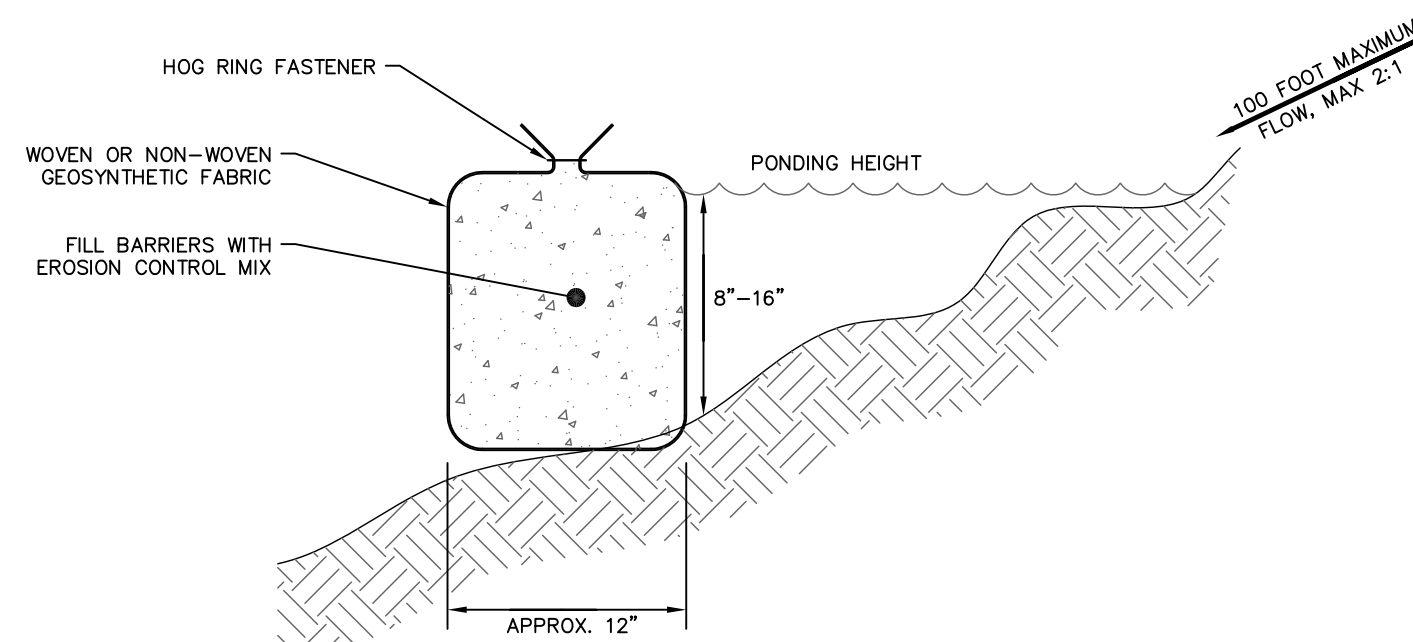


- NOTES:**
- REINFORCED FENCE CAN BE USED IN PLACE OF TWO LAYERS OF CONVENTIONAL SILT FENCE WHEN WORKING IN ENVIRONMENTALLY SENSITIVE AREAS SUCH AS WITHIN 250' OF A LAKE, POND, RIVER, STREAM, OR BROOK, WITHIN 100 FEET A WETLAND OR STREAM CROSSING OR OTHER SENSITIVE AREAS.
 - WIRE REINFORCING NOT NECESSARY 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 PONDING 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 T140N, OR APPROVED EQUIVALENT.
 - PREFABRICATED UNITS SHALL BE GEOFAB, 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
NOT TO SCALE

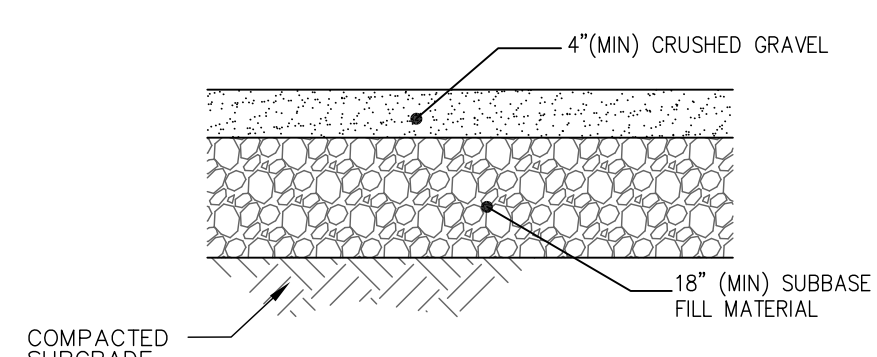


SEDIMENT LOG PLAN
NOT TO SCALE



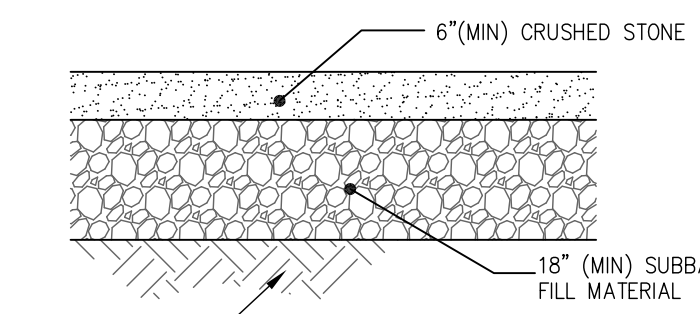
- NOTES:**
- EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZE AND MAY CONTAIN ROCKS LESS THAN 4-INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS.
 - 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
NOT TO SCALE



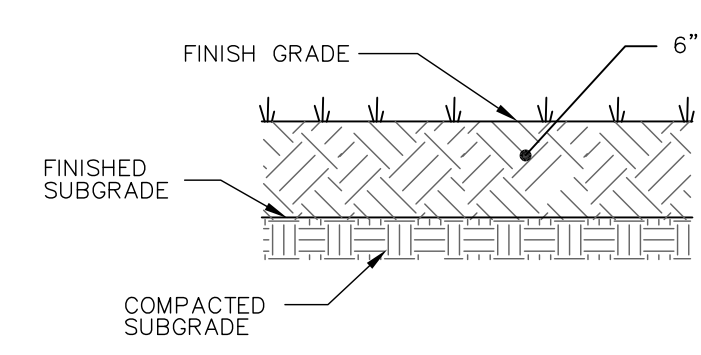
- NOTE:**
- CRUSHED GRAVEL SHALL BE MDOT 703.10
 - SUBBASE FILL MATERIAL SHALL BE MDOT 703.06, TYPE C, PLACED AND COMPACTED IN 6-INCH LIFTS.
 - SUBGRADE MATERIAL SHALL BE FREE OF ORGANICS, ROCKS, DEBRIS AND OTHER DELETERIOUS MATERIALS AND SHALL NOT BE WET OR FROZEN DURING PLACEMENT OF SUBBASE MATERIAL.

GRAVEL DRIVE DETAIL
NOT TO SCALE



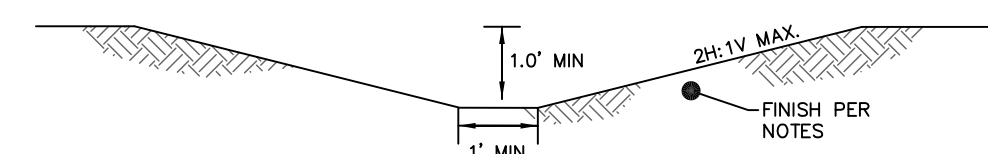
- NOTE:**
- CRUSHED STONE SHALL BE MDOT 703.12.
 - SUBBASE FILL MATERIAL SHALL BE MDOT 703.06, TYPE C, PLACED AND COMPACTED IN 6-INCH LIFTS.
 - SUBGRADE MATERIAL SHALL BE FREE OF ORGANICS, ROCKS, DEBRIS AND OTHER DELETERIOUS MATERIALS AND SHALL NOT BE WET OR FROZEN DURING PLACEMENT OF SUBBASE MATERIAL.

YARD CRUSHED STONE SURFACING AND GRAVEL SUBBASE DETAIL
NOT TO SCALE



- NOTE:** EROSION CONTROL FABRIC (SC150 BY NORTH AMERICAN GREEN, OR EQUAL) SHALL BE INSTALLED ON ALL SLOPES OF 3H:1V OR STEEPER.

LOAM AND SEED DETAIL
NOT TO SCALE



- NOTES:**
- 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 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 PERIMETER SWALE 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 TREFLOL OR LADINO CLOVER	27%
TALL FESCUE OR SMOOTH BROMEGRASS	67%
RETOP	6%
OR	
KENTUCKY BLUEGRASS	45%
CREEPING RED FESCUE	36%
PERENNIAL RYEGRASS	19%

GRASSED SWALE DETAIL
NOT TO SCALE

NO.	REVISIONS:	DATE:
A	ISSUED FOR REVIEW	10/28/10
B	ISSUED FOR PERMIT	12/08/10
C	ISSUED FOR DEP PERMITTING	09/18/12

THOMAS M. HENAGHEN
No. 12493
Professional Engineer
State of Maine

SGC ENGINEERING, LLC
Civil Design & Survey Engineering
Environmental & Regulatory Permitting
Electrical & Power Systems Engineering
Offices: Westbrook & Orono, Maine
Portland, Bangor, Farmington, Lewiston, Waterville, Augusta, Biddeford, Scarborough, New Market

Scale: 1"=30'
Date: OCT. 21, 2010
SGC Project: 780001
Drawn: MRRR/MRR/TWH
Appr: MRRR/MRR/TWH

EROSION AND SEDIMENTATION CONTROL DETAILS AND NOTES

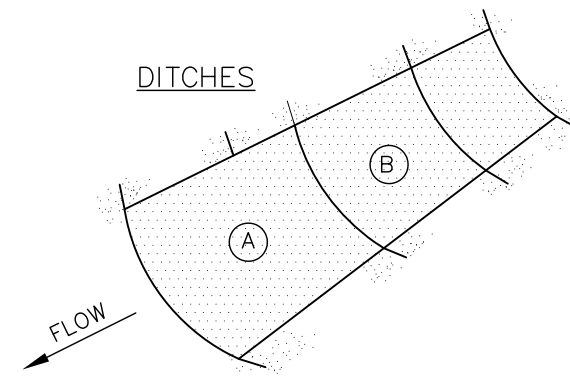
Project: BOWERS WIND PROJECT
Client: CHAMPLAIN WIND, LLC
Location: PENOBSCOT COUNTY, MAINE
129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101

firstwind
CLEAN ENERGY. MADE HERE.

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DWG. SHEET
106-07-1003 1 of 1

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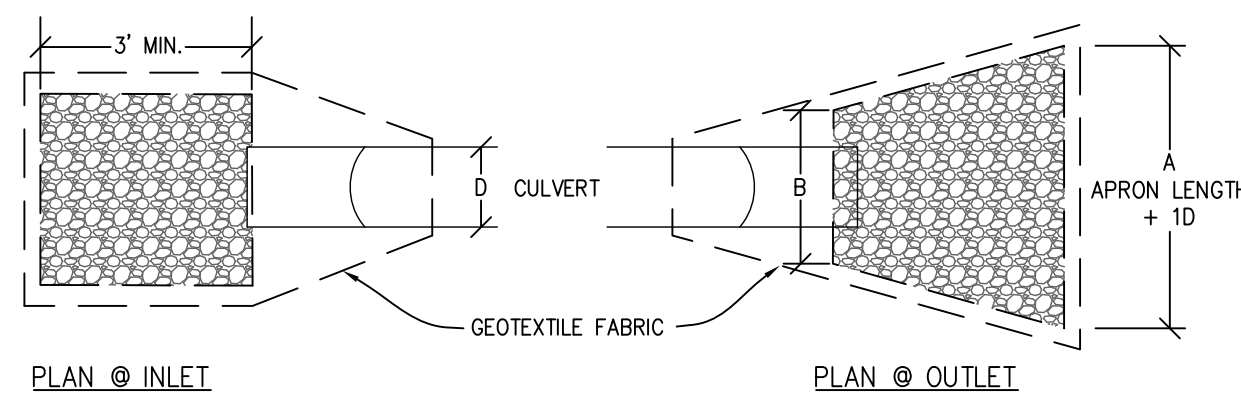
NOTES:

- 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)
NOT TO SCALE

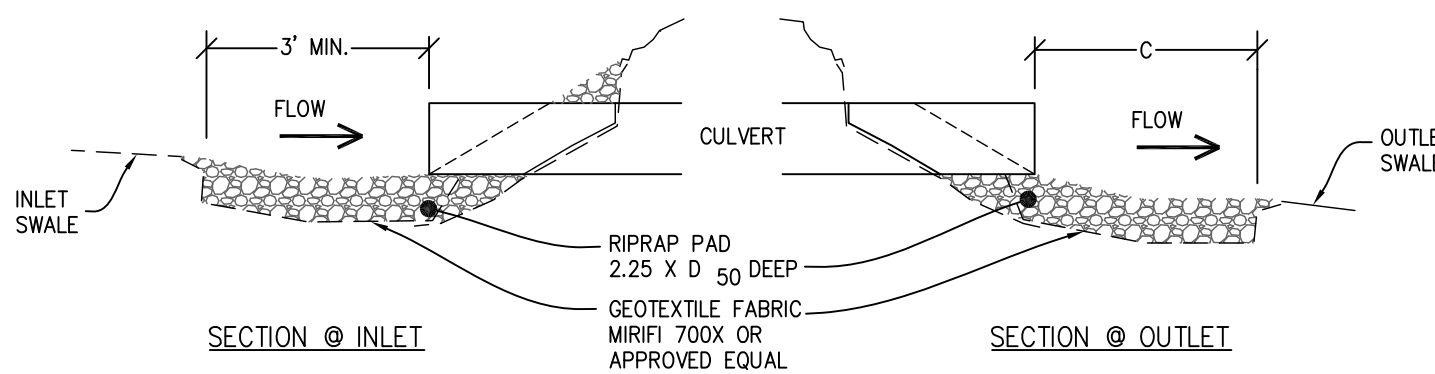
RIPRAP PAD MUST BE INSTALLED WITHIN 48 HOURS OF INSTALLING NEW PIPE OR CULVERT.

PIPE (D)	A	B	C	D ₅₀
30"Ø	25 FT.	15 FT.	22 FT.	8 IN.
36"Ø	28 FT.	18 FT.	25 FT.	10 IN.



PLAN @ INLET

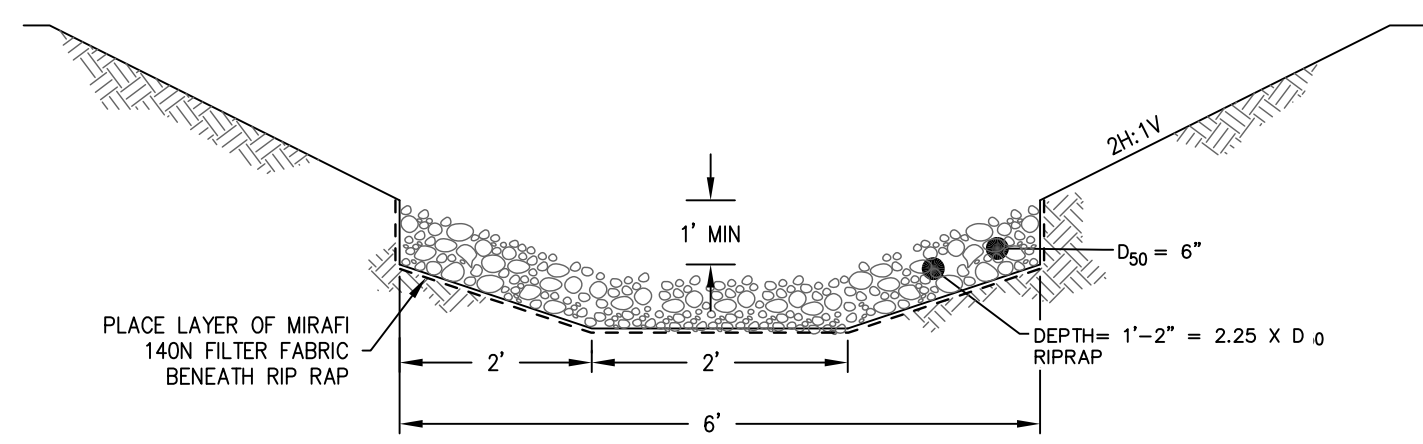
PLAN @ OUTLET



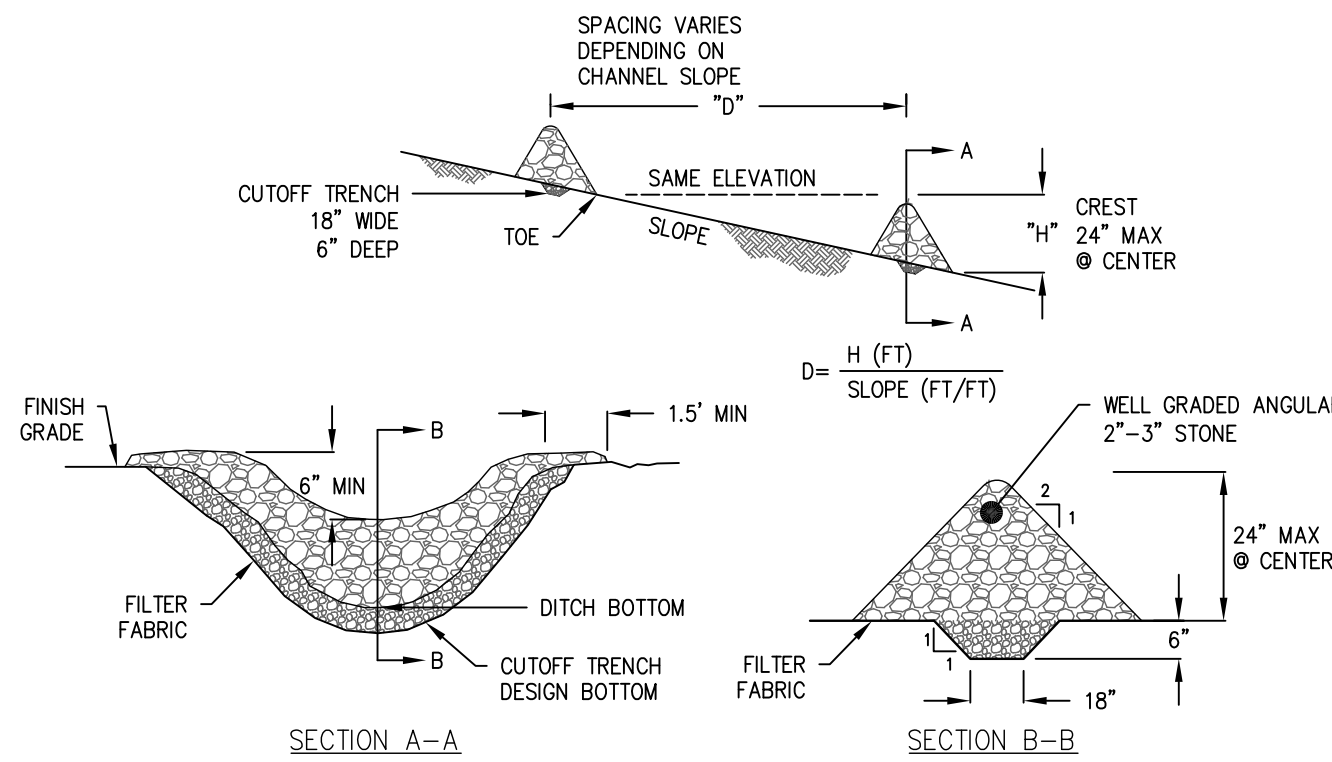
SECTION @ INLET

SECTION @ OUTLET

RIPRAP APRON
NOT TO SCALE



STONE LINED SWALE DETAIL
NOT TO SCALE



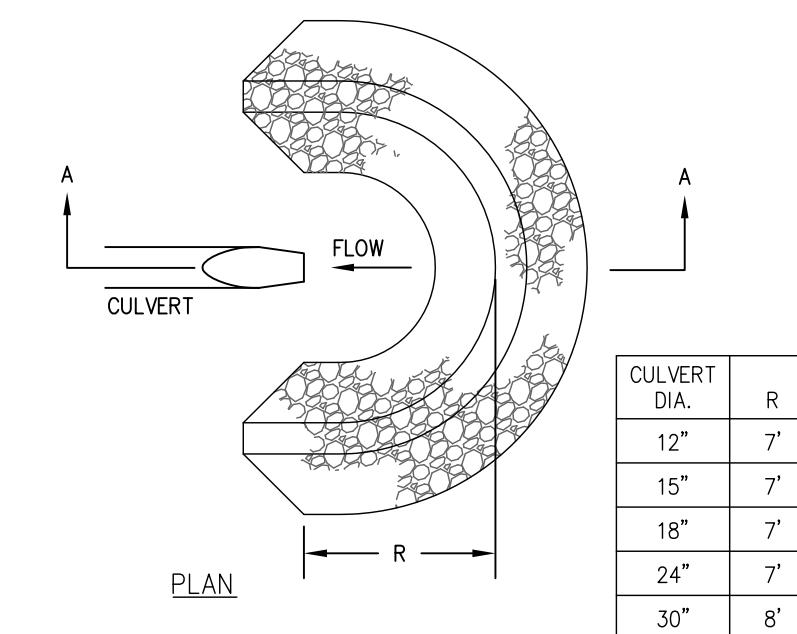
SECTION A-A

SECTION B-B

NOTES:

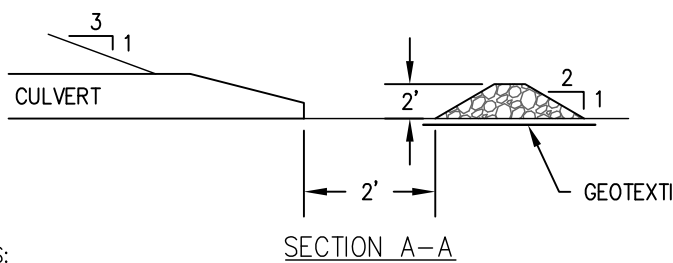
- STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
- SET SPACING OF CHECK DAMS TO ASSURE THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE DOWNSTREAM DAM.
- EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND 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.
- 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
NOT TO SCALE



PLAN

CULVERT DIA.	R
12"	7'
15"	7'
18"	7'
24"	7'
30"	8'



SECTION A-A

NOTES:

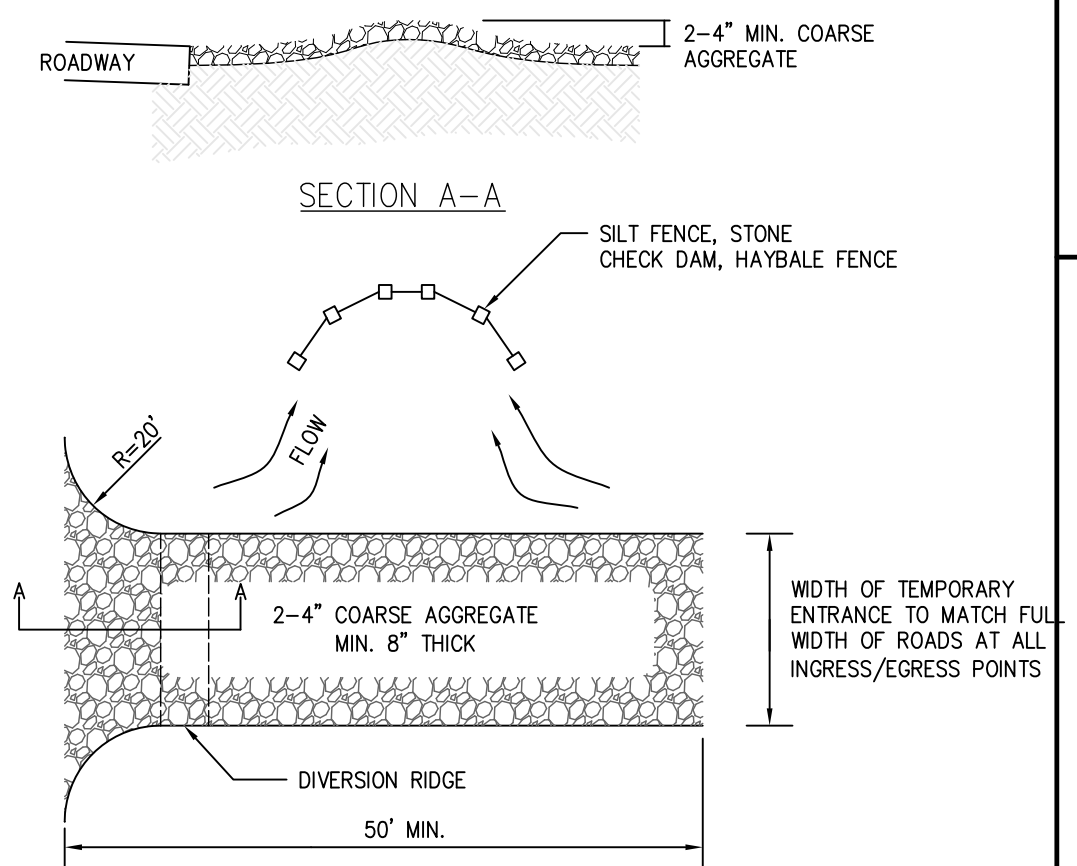
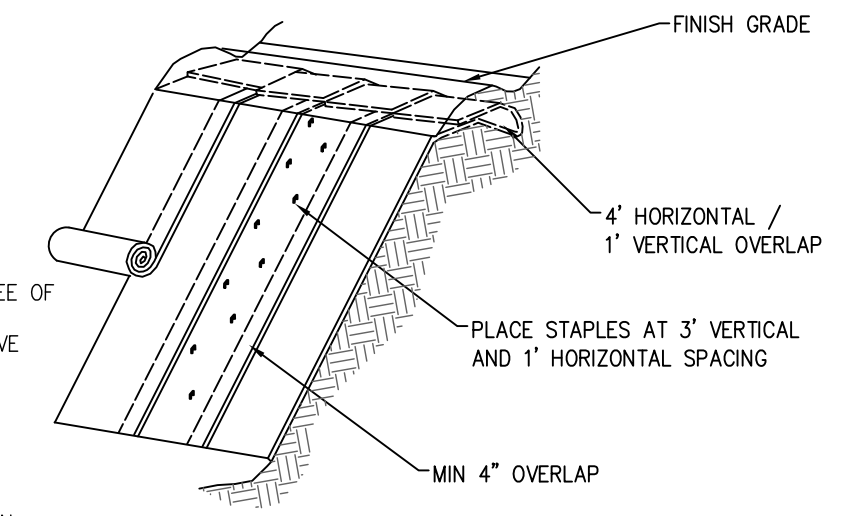
- USE 2" TO 3" STONE.
- PLACE STONE OVER GEOTEXTILE.
- ONCE THE AREAS UPGRADIENT FROM THE CHECK DAM ARE STABILIZED BY VEGETATION, THE SEDIMENT TRAPPED BEHIND/WITHIN THE DAM SHALL BE RELOCATED TO AN AREA UNDERGOING FINAL GRADING OR DISPOSED OF OFFSITE.
- ONCE UPGRADIENT AREAS ARE STABILIZED, DAMS SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE.
- GEOTEXTILE MUST BE REMOVED AND DISPOSED OF OFFSITE.
- THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 10 ACRES.

TEMPORARY CULVERT INLET PROTECTION DETAIL
NOT TO SCALE

NOTES:

- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. BLANKETS SHALL HAVE GOOD SOIL CONTACT.
- APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
- LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
- INSTALL BLANKETS VERTICALLY DOWNSLOPE.

EROSION CONTROL BLANKET DETAIL (SLOPE)
NOT TO SCALE

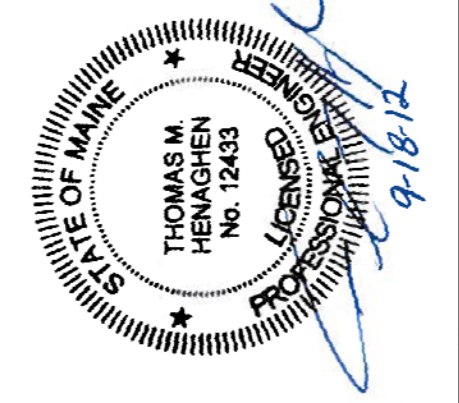


NOTES:

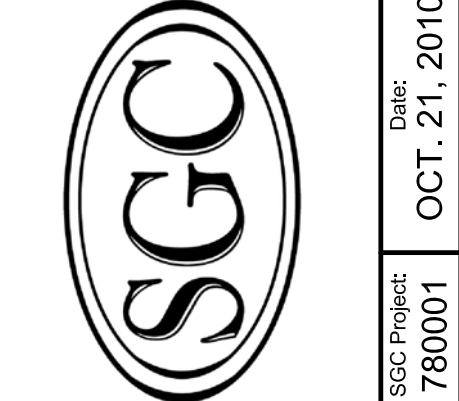
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- 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.

TEMPORARY CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

NO.	REVISIONS:	DATE:
A	ISSUED FOR REVIEW	10/28/10
B	ISSUED FOR PERMIT	12/08/10
C	ISSUED FOR DEP PERMITTING	09/18/12

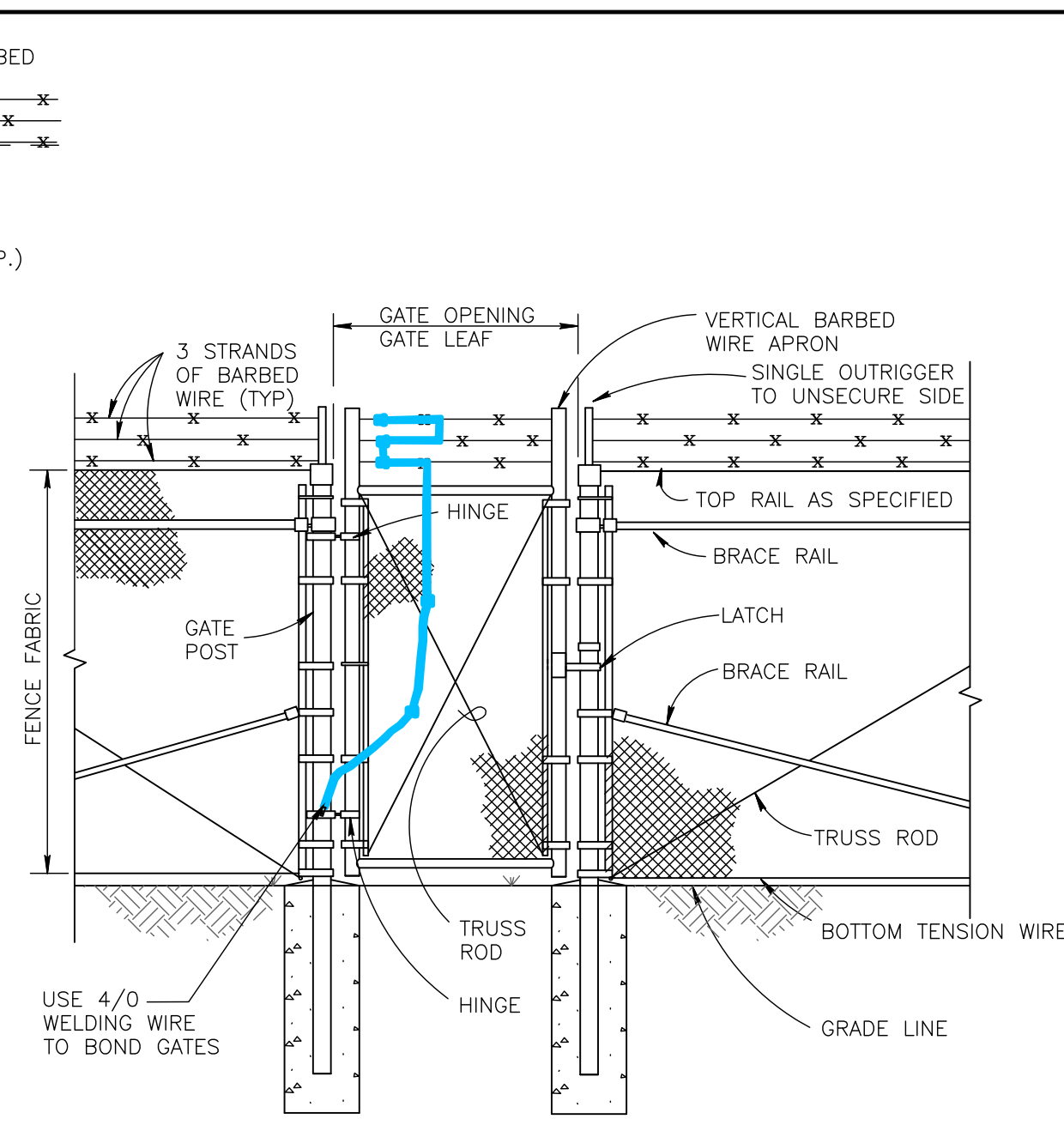
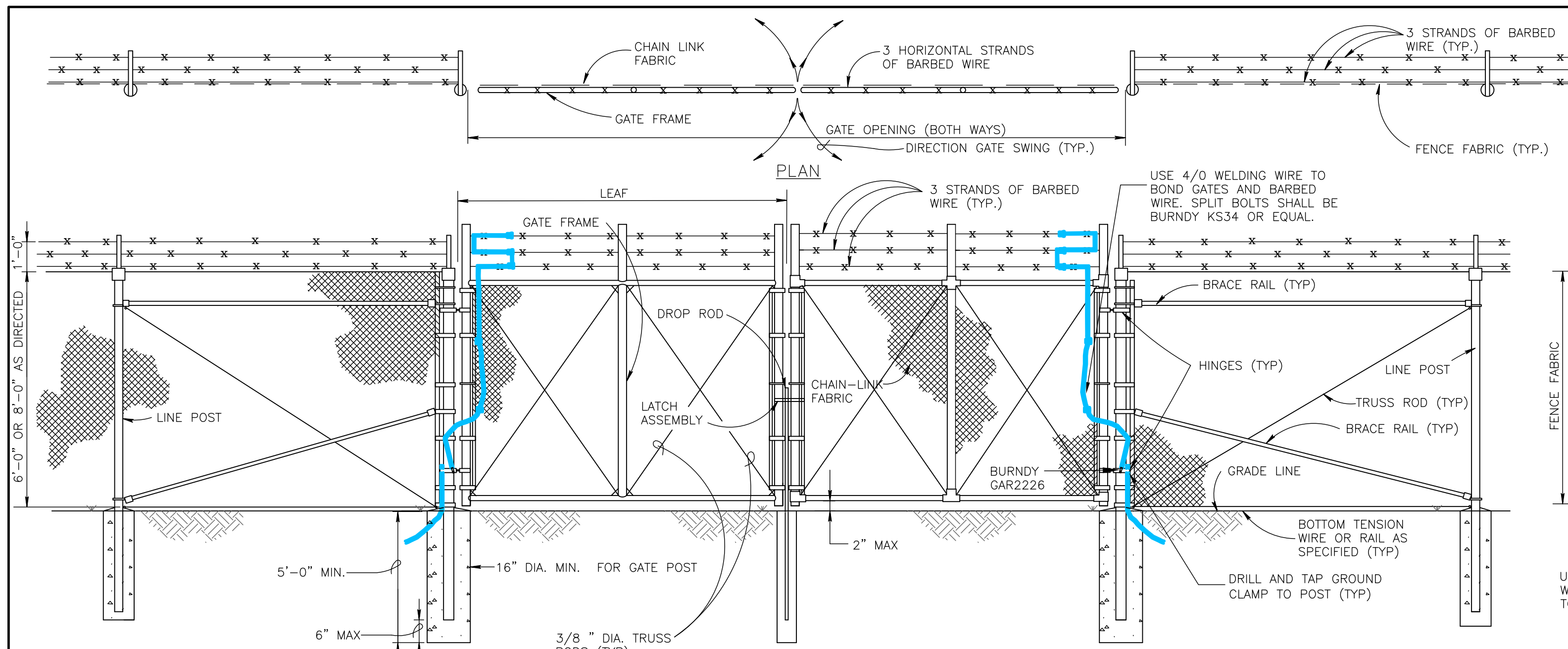


SGC ENGINEERING, LLC
Civil Design & Survey Engineering
Environmental & Regulatory Permitting
Electrical Power Systems Engineering
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Licensing: Professional Engineer
Registration: ME 12433



EROSION AND SEDIMENTATION CONTROL DETAILS AND NOTES
BOWERS WIND PROJECT
PENOBSCOT COUNTY, MAINE
CHAMPLAIN WIND, LLC
129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101





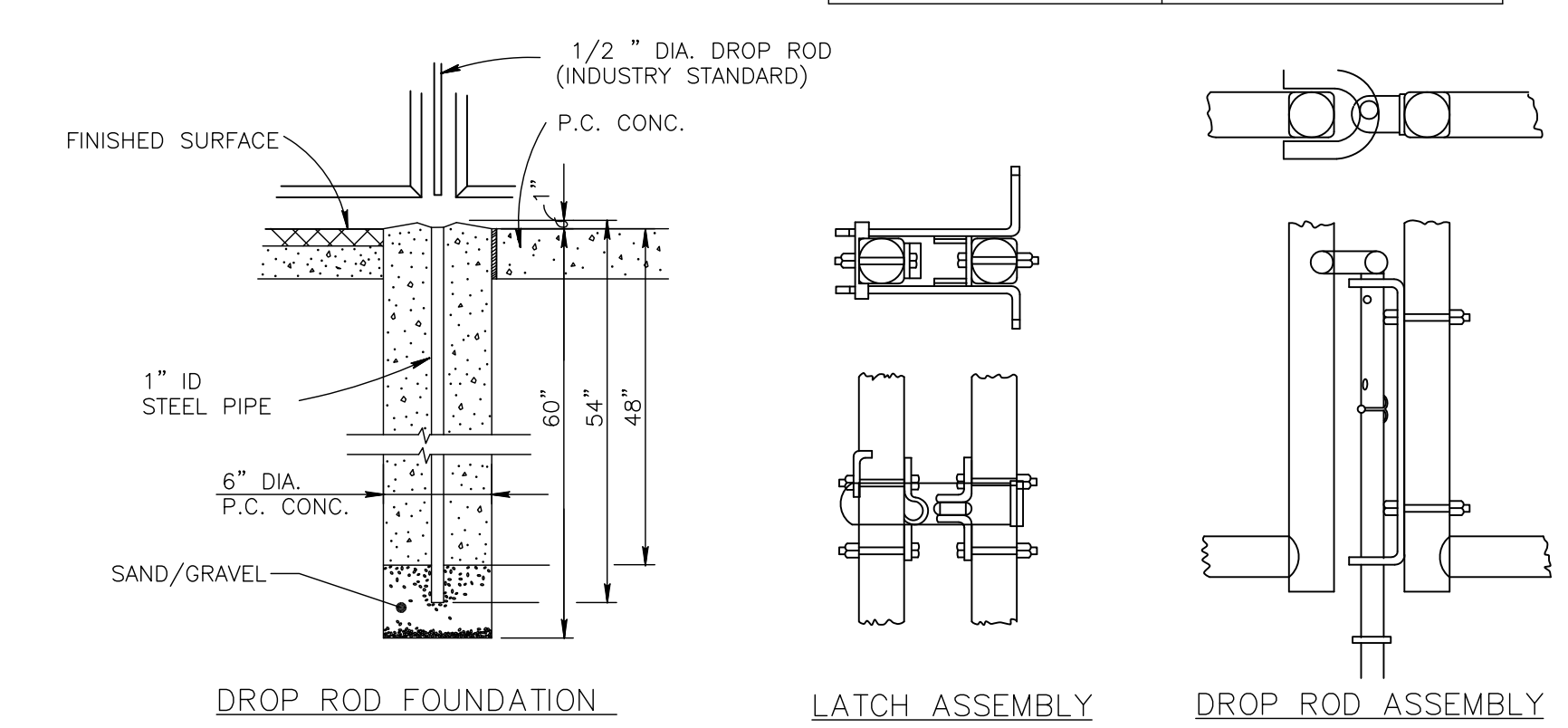
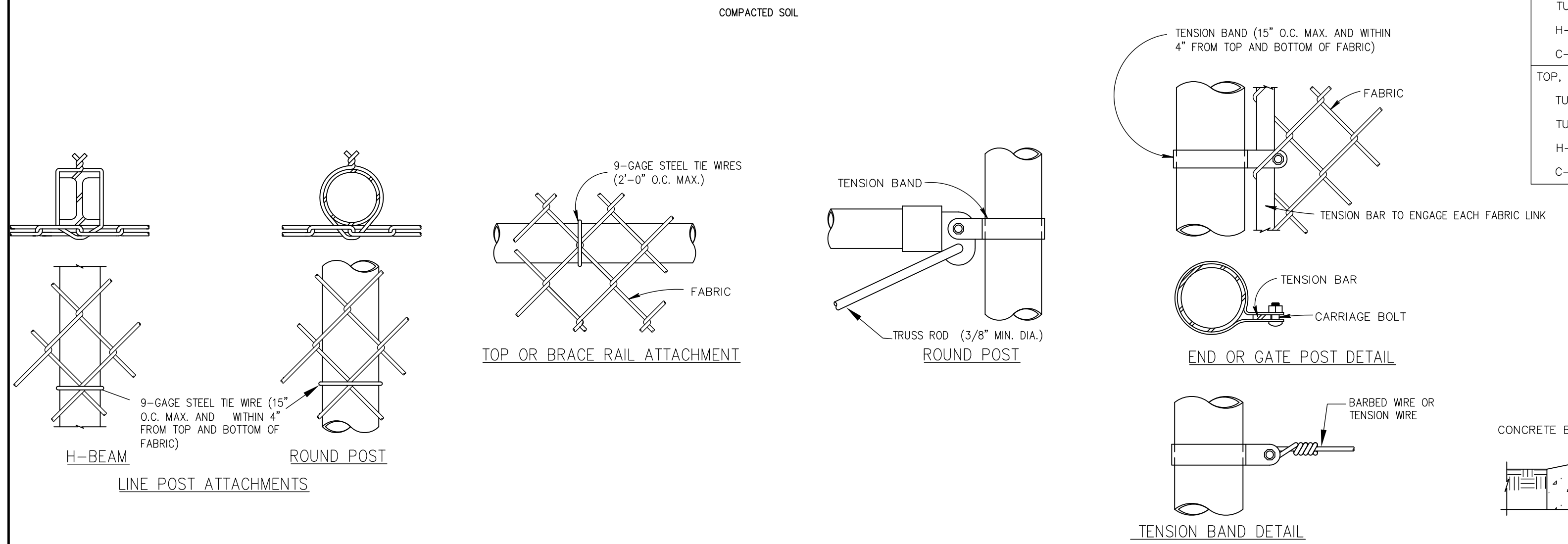
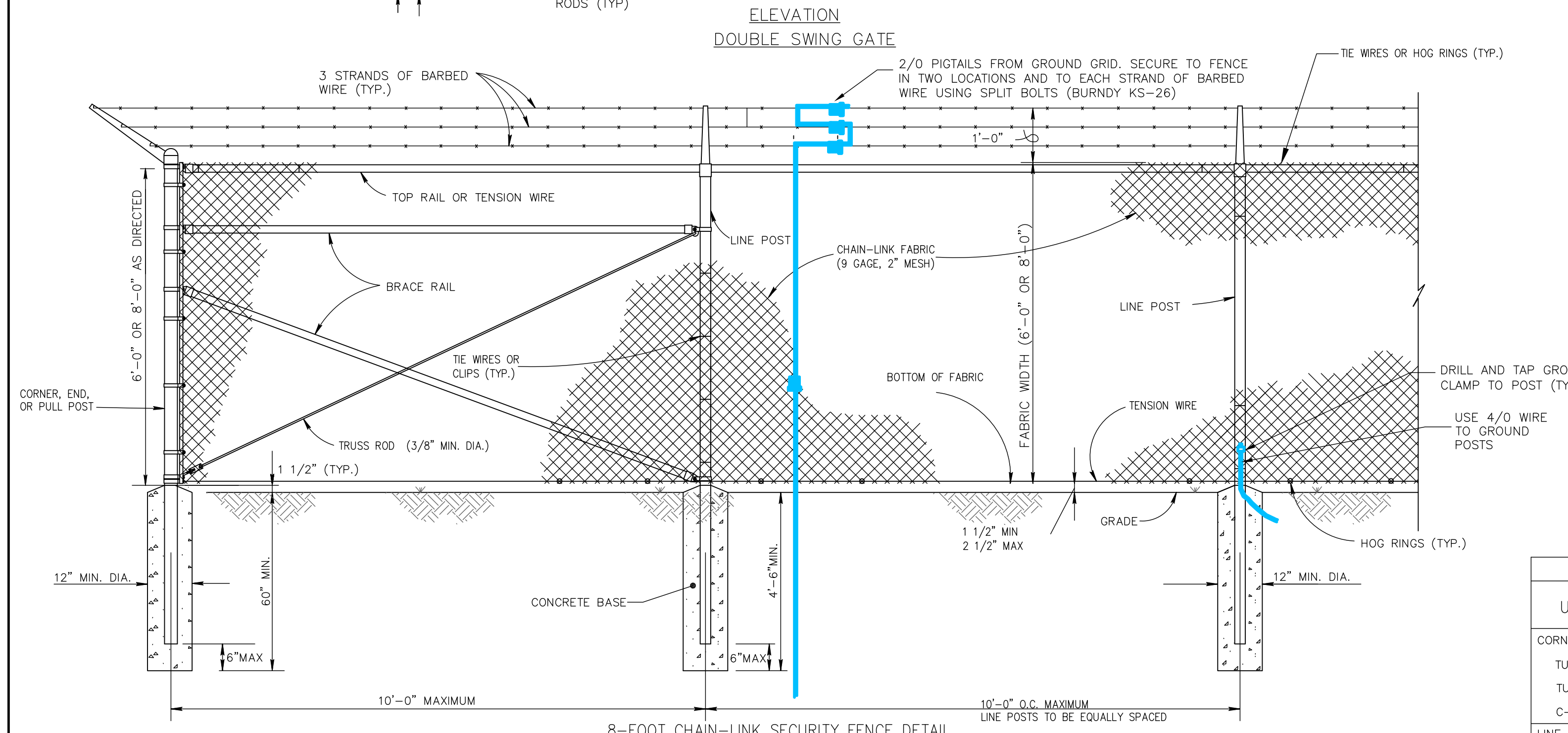
GENERAL NOTES

1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.
2. DOUBLE SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS AND LATCH ASSEMBLY, EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F900 1.90" NOMINAL (ROUND) OR 2.00" NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL-WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUBMITTED.

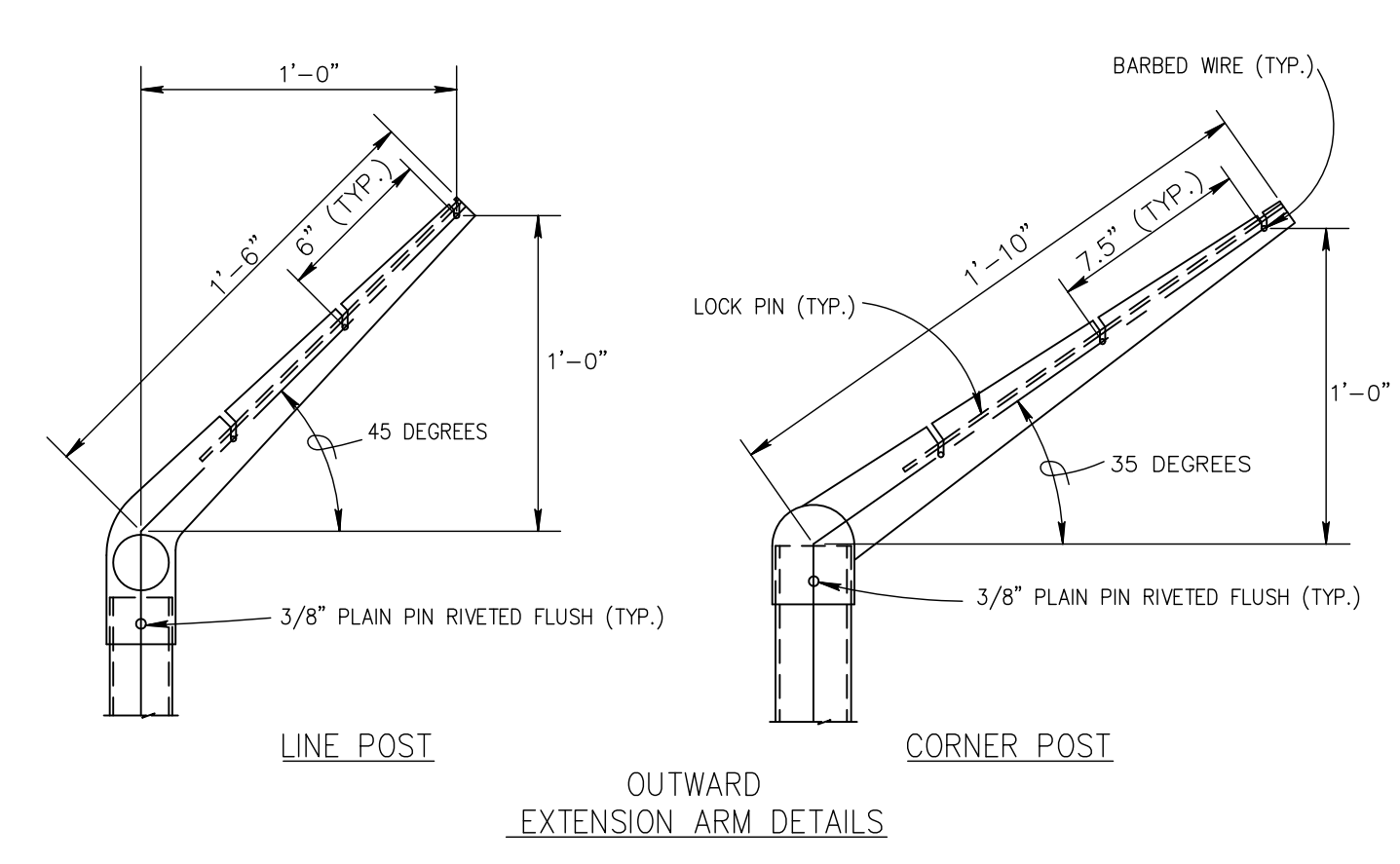
GROUNDING NOTES

1. AT A MINIMUM, FENCE POSTS SHALL BE CONNECTED TO THE MAIN GROUND GRID EVERY 20 FEET WITH 4/0 COPPER. THE POST CONNECTIONS SHALL BE DRILLED AND TAPPED.
2. FENCE FABRIC, AT A MINIMUM, SHALL BE CONNECTED TO THE MAIN GROUND GRID EVERY 40 FEET WITH 2/0 COPPER WIRE. WIRE SHALL BE WEAVED THROUGH THE FABRIC AND CONNECTED TO EACH STRAND OF THE BARB WIRE WITH A SPLIT BOLT CONNECTOR. SPLIT BOLT CONNECTOR SHALL BE BURNDY KS-26 OR EQUAL.

GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' OR LESS	2.875" OD 2.5" SQ
6' TO 12'	4.0" OD



STEEL POST SCHEDULE	
USE AND SECTION	MIN. OUTSIDE DIM. (NOMINAL) FABRIC WIDTH 84" TO 96"
CORNER, END & PULL POSTS	
TUBULAR - ROUND	2.875" O.D.
TUBULAR - SQUARE	2.50" SQ.
C-SECTION (ROLL-FORMED)	3.50" X 3.50"
LINE POSTS	
TUBULAR - ROUND	2.375" O.D.
H-SECTION	2.25" X 1.70"
C-SECTION (ROLL-FORMED)	2.25" X 1.70"
TOP, BOTTOM & BRACE RAILS	
TUBULAR - ROUND	1.66" O.D.
TUBULAR - SQUARE	1.50" SQ.
H-SECTION	1.625" X 1.50"
C-SECTION (ROLL-FORMED)	1.625" X 1.25"



DATE:	10/28/10
APPR:	JMR
ISSUED FOR REVIEW:	JMR
ISSUED FOR PERMIT:	JMR
ISSUED FOR DEP. PERMITTING:	TMH
NO.	A
	B
	C

SGC ENGINEERING, LLC
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 • Environmental & Regulatory Permitting
 • Electrical Power Systems Engineering
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 Portland, Bangor, Lewiston, Biddeford, Farmington, New Mexico

Title: **FENCE AND GATE DETAILS**
 Project: **BOWERS WIND PROJECT**
 Client: **PENOBSCOT COUNTY, MAINE**
 129 MIDDLE STREET, 3RD FLOOR, PORTLAND, ME 04101

Scale: 1"=30'
 Date: OCT. 21, 2010
 Project: 780001
 Drawn: MRR/MRR/TMH
 Appr: MRR/MRR/TMH

DWG. SHEET
 106-07-1005 1 of 1

ISSUED FOR PERMIT