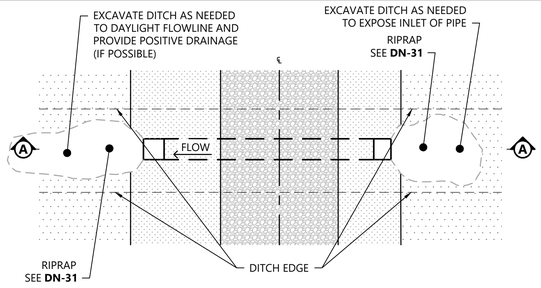
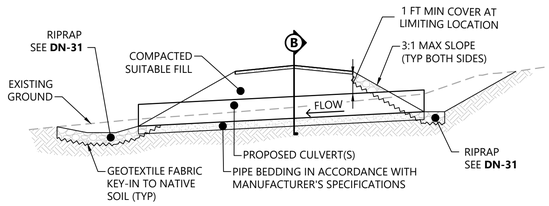
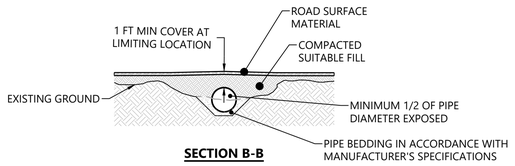


PLAN VIEW



SECTION A-A



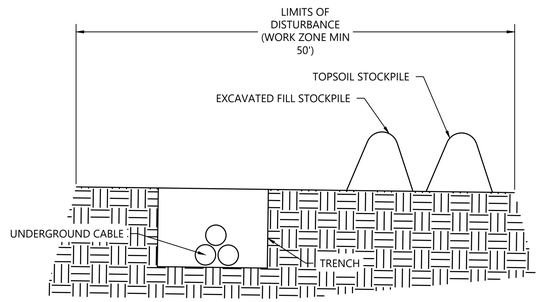
SECTION B-B

NOTES:

1. CULVERT INSTALLATION AND COMPACTION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS.
2. REFER TO DRAINAGE CROSSING SCHEDULE FOR SIZING.
3. FIT CULVERT TO FIELD CONDITIONS. CONTRACTOR TO GRADE OUTLET OF CULVERTS TO FREELY DRAIN IF POSSIBLE.
4. MINIMIZE DISTURBANCE TO EXISTING CHANNEL/DITCH DURING CULVERT INSTALLATION.
5. PERIMETER SEDIMENT CONTROLS MAY CONSIST OF SILT FENCE, FIBER LOGS, WOOD MULCH BERMS, OR TOPSOIL BERMS. REFER TO ASSOCIATED DETAIL(S) AND/OR NPDES PERMIT FOR ADDITIONAL DETAILS. SEE DETAIL **DN-03** FOR PLACEMENT AND ADDITIONAL INFORMATION.
6. IF MINIMUM 1' COVER IS NOT FEASIBLE, AN ALTERNATIVE PIPE SUCH AS STEEL MAY BE REQUIRED TO SUPPORT TRAFFIC.

Westwood	SUMPED CULVERT	DN-04

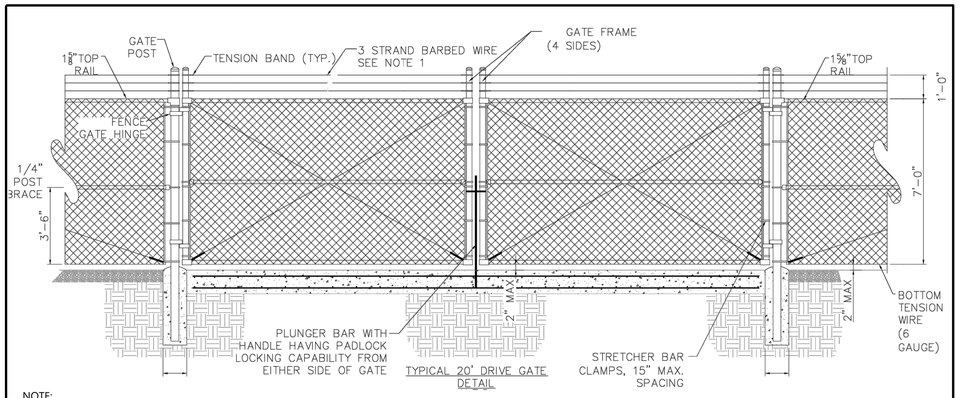
NOT TO SCALE



NOTES:

1. SEE ELECTRICAL PLANS FOR FURTHER DETAILS ON CABLE TRENCHING
2. THE 2018 NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS (NYSAGM) GUIDELINES MUST BE FOLLOWED IN ALL ACTIVE AGRICULTURAL AREAS.
3. EXCAVATED FILL, NOT TOP SOIL, IS TO BE USED FOR BACK FILL PURPOSES

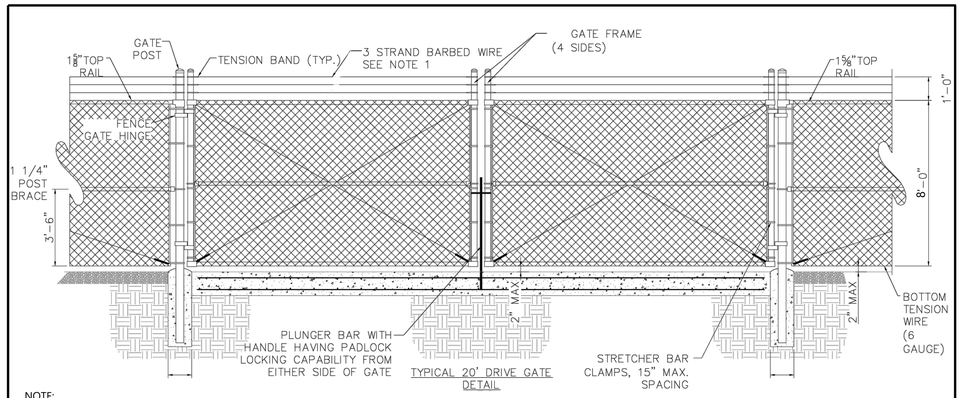
Westwood	TRENCHING IN AGRICULTURE LAND	TR-AG



NOTE:

1. TO BE INSTALLED AT SUBSTATION UNLESS OTHERWISE DIRECTED BY OWNER
2. THE MATERIAL FOR THE SUBSTATION FENCE IS TO BE BLACK VINYL COATED. THE MATERIAL FOR THE ADLS SECURITY GATE IS TO BE GALVANIZED STEEL.

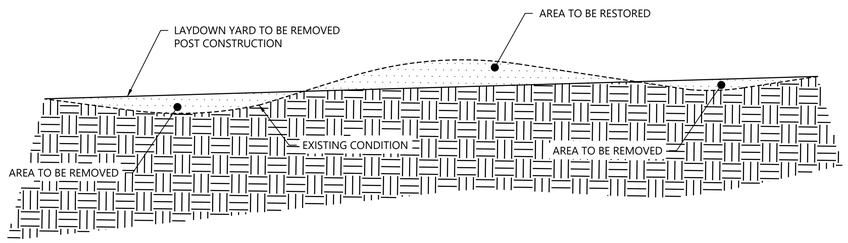
Westwood	SUBSTATION AND ADLS SECURITY GATE	FN05



NOTE:

1. TO BE INSTALLED AT POI UNLESS OTHERWISE DIRECTED BY OWNER
2. THE MATERIAL FOR THE POI FENCE IS TO BE BLACK VINYL COATED.

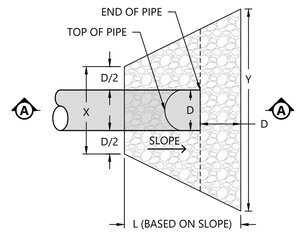
Westwood	POI SECURITY GATE	FN06



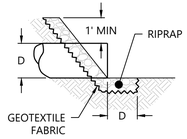
NOTES:

1. LAYDOWN YARDS SHALL BE REMOVED POST-CONSTRUCTION AND REGRADED TO EXISTING CONDITIONS. RESTORATION MUST INCLUDE DECOMPACTION AND STABILIZATION WITHIN THE IDENTIFIED DECOMPACTION ZONE.
2. ALL RESTORATION ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT'S SPDES PERMIT AND THE 2019 NYSAGM GUIDELINES.

Westwood	LAYDOWN YARD RESTORATION	RT-03



PLAN VIEW



SECTION A-A

RIPRAP AT CULVERT INLETS

PIPE DIAMETER (D)		L 1:1	L 2:1	L 3:1	X	Y	RIPRAP SIZE (D50)	RIPRAP DEPTH
(IN)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(IN)	(FT)
12	1	4	7	10	2	4	6	1
15	1.25	4.5	7.8	11	2.5	5	6	1
18	1.5	5	8.5	12	3	6	6	1
21	1.75	5.5	9.3	13	3.5	7	9	1.5
24	2	6	10	14	4	8	9	1.5
30	2.5	7	11.5	16	5	10	9	1.5
36	3	8	13	18	6	12	9	1.5
42	3.5	9	14.5	20	7	14	9	1.5
48	4	10	16	22	8	16	9	1.5
54	4.5	11	17.5	24	9	18	12	2
60	5	12	19	26	10	20	12	2
>60	>5	CONTACT ENGINEER FOR SPECIFIC DESIGN						

NOTES:

1. RIPRAP IS NOT REQUIRED AT CULVERTS 21" OR LESS, UNLESS SPECIFICALLY SHOWN ON THE PLANS.
2. RIPRAP SHALL BE INSTALLED AT ALL CULVERTS 24" THROUGH 60" PER THIS DETAIL, UNLESS APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL PLACE RIPRAP, PULVERIZED TOPSOIL, SEED AND WOODFIBER BLANKET IMMEDIATELY AFTER PIPE IS INSTALLED, EXTEND AREA TO MATCH UNDISTURBED SOIL.
4. CONFIRM REQUIREMENTS IN PUBLIC RIGHT-OF-WAY WITH THE AUTHORITY HAVING JURISDICTION.
5. DIMENSION "D" EQUALS INSIDE DIAMETER OF PIPE.
6. RIPRAP SHALL EXTEND THE ENTIRE WIDTH BETWEEN MULTIPLE CULVERTS.
7. RIPRAP MATERIAL SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE FHWA STANDARD SPECIFICATIONS FP-14 SECTION 705.02. CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH SECTION 251.

Westwood	PERMANENT RIPRAP AT CULVERT INLETS	DN-31

NOT TO SCALE

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Cayuga County, New York

Construction Details - 7

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SHEET: C706 REV: 0

BROAD-BASED DIP - **Sediment Removal Efficiency: VERY LOW. This device by itself is not an ABACT for special protection watersheds, but like a waterbar can be used to make an ABACT BMP work more effectively.** Broad-based dips may be used to direct runoff from active access roads to well-vegetated areas or sediment removal BMPs (e.g. sediment traps or sediment basins). Broad-based dips, unlike waterbars, are easily traversed by most construction equipment and typically require less maintenance to ensure their integrity. Due to the nature of broad-based dips, they should not be constructed on roads with grades exceeding 10%. Where access roads exceed 10% gradients, insloping or other deflection devices should be used to control runoff.

PA DEP

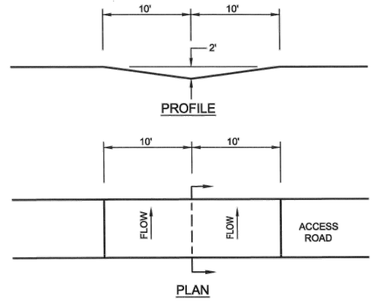
Discharges should be to the downslope side of access roads with a maximum gradient of 3% in the dip. For access roads with grades up to 5%, Standard Construction Detail # 3-6 should be used. Roadways with steeper grades should use Standard Construction Detail # 3-7.

TABLE 3.2 – Maximum Spacing of Broad-based Dips, Open-top Culverts and Deflectors

Road Grade (Percent)	Spacing Between Dips, Culverts, or Deflectors (feet)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140

USDA Forest Service

STANDARD CONSTRUCTION DETAIL # 3-6
Broad-based Dip for Low Gradient (≤5%) Roadways



Maine DEP

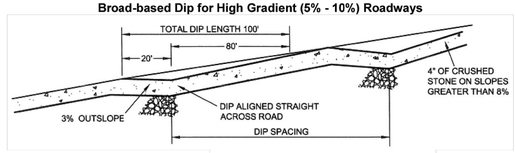
Broad-based dips shall be constructed to the dimensions shown and at the locations shown on the plan drawings.

Dips shall be oriented so as to discharge to the low side of the roadway.

Dips shall be inspected daily. Damaged or non-functioning dips shall be repaired by the end of the workday.

Maximum spacing of broad-based dips shall be as shown in Table 3.2

STANDARD CONSTRUCTION DETAIL # 3-7
Broad-based Dip for High Gradient (5% - 10%) Roadways



USDA Forest Service

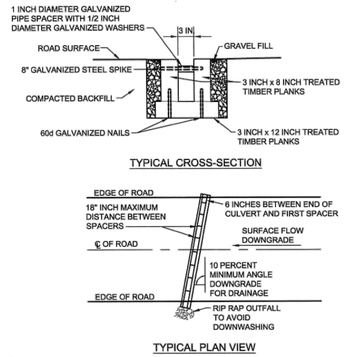
Broad-based dips shall be constructed to the dimensions shown and at the locations shown on the plan drawings.

Dips shall be oriented so as to discharge to the low side of the roadway.

Dips shall be inspected daily. Damaged or non-functioning dips shall be repaired by the end of the workday.

Maximum spacing of broad-based dips shall be as shown in Table 3.2.

STANDARD CONSTRUCTION DETAIL #3-8
Open-top Culvert



USDA Forest Service

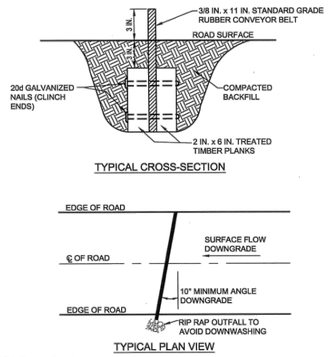
Culverts shall be inspected weekly and after runoff events.

Damaged or non-functioning culverts shall be repaired by the end of the workday.

Accumulated sediment shall be removed within 24 hours of inspection.

Maximum spacing of open-top culverts shall be as shown in Table 3.2.

STANDARD CONSTRUCTION DETAIL #3-9
Water Deflector



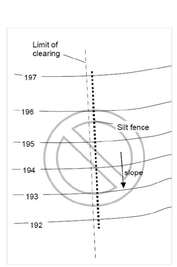
USDA Forest Service

Deflector shall be inspected weekly and after each runoff event.

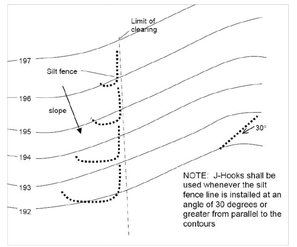
Accumulated sediment shall be removed from deflector within 24 hours of inspection.

Belt shall be replaced when worn and no longer effective.

Maximum spacing of deflectors shall be as shown in Table 3.2.



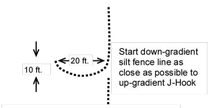
INCORRECT
Silt fence installed parallel to slope (perpendicular to contour) in one, long run



CORRECT
Silt fence installed in shorter runs with "J-Hooks" to avoid concentration of flows at one location by trapping runoff at multiple points along a slope.

Purpose:
The proper operation of silt fence depends on the ability to temporarily pond runoff behind the fence, allowing time for sediments to settle. Silt fence is ***not*** *a filter. If water flows around the end(s), the silt fence fails to function. It must be placed where it will store water - often times along a slope a* ***'smile'*** *or J-Hook shape is required to create a storage area. Long runs should be avoided, and broken up into smaller segments.*

Slope Steepness	Maximum Space between silt fence rows or J-hooks (ft.)
2:1 (50%)	25
3:1 (33%)	50
4:1 (25%)	75
5:1 or flatter (20%)	100



Typical J-Hook Dimensions
Minimum width of J-Hook recommended at 20 ft with a depth of 10 ft. Where space is limited (e.g., along narrow rights of way), narrower hooks can be used with a higher spacing frequency.

Figure A7.2 Installation of "J-Hooks" on slopes (Adapted from CNMI DEQ, 2009)

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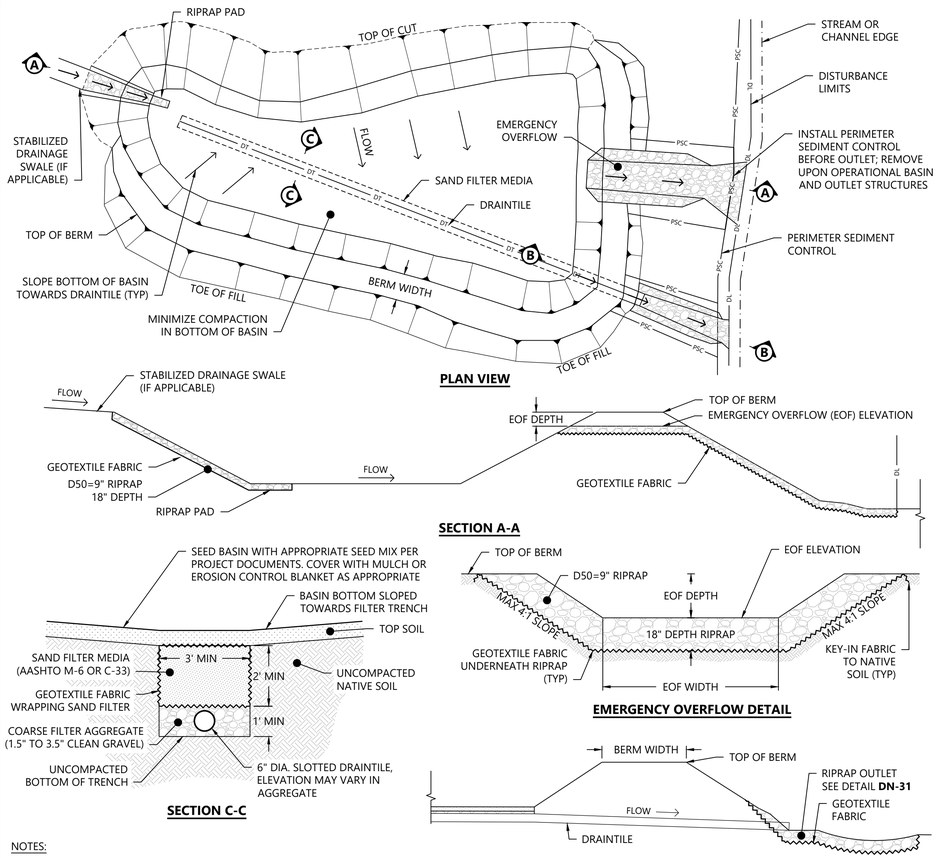


PLAN VIEW

SECTION A-A

SECTION C-C

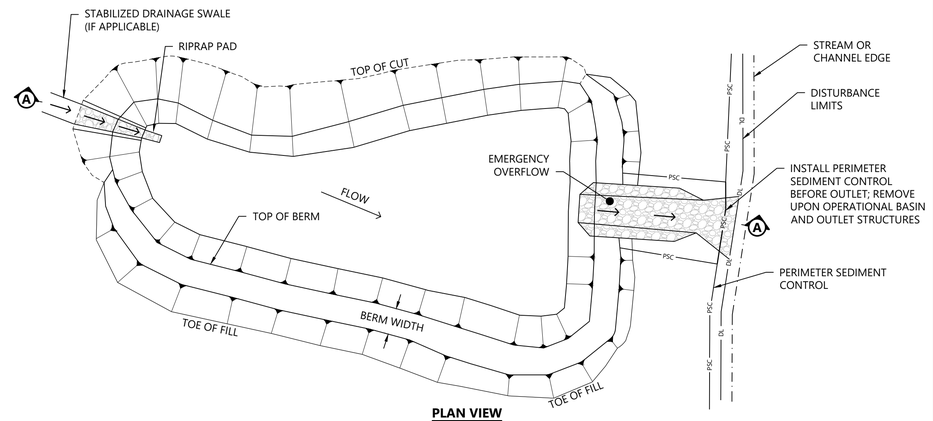
EMERGENCY OVERFLOW DETAIL

SECTION B-B

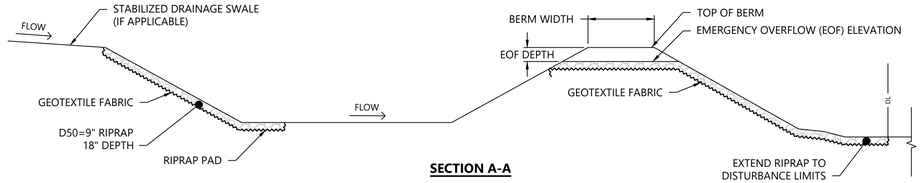
NOTES:

1. REFER TO TABLE 4 ON SHEET C717 FOR ELEVATIONS AND SIZES.
2. SEE PLANS FOR BASIN LOCATIONS.
3. ALL GRADED SLOPES SHALL BE A MAXIMUM 3:1 UNLESS SHOWN OTHERWISE.
4. REFER TO PROJECT SWPPP AND ESC PLAN FOR ADDITIONAL BASIN BMPS AND INSPECTION AND MAINTENANCE PROCEDURES.
5. IMMEDIATELY FOLLOWING BASIN CONSTRUCTION, THE SIDE SLOPES OF THE BASIN SHALL BE FULLY STABILIZED. TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES SHALL REMAIN UNTIL PROJECT SITE IS FULLY STABILIZED AND THE BASIN IS RESTORED OR CONVERTED TO PERMANENT CONDITIONS.

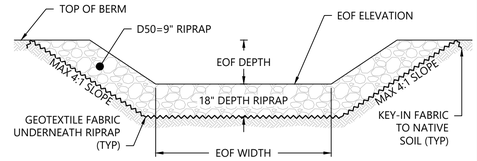
Westwood	STORMWATER FILTRATION BASIN	DN-42
	NOT TO SCALE	



PLAN VIEW



SECTION A-A

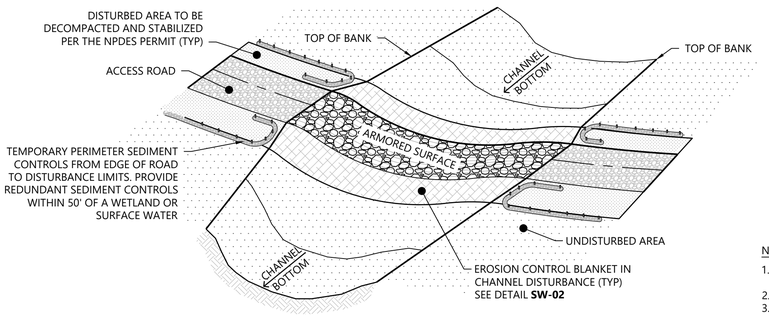


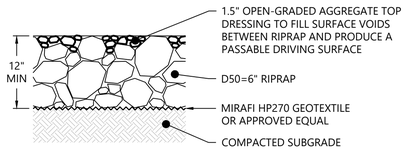
EMERGENCY OVERFLOW DETAIL

NOTES:

1. REFER TO TABLE 4 ON SHEET C717 FOR ELEVATIONS AND SIZES.
2. SEE PLANS FOR BASIN LOCATIONS.
3. ALL GRADED SLOPES SHALL BE A MAXIMUM 3:1 UNLESS SHOWN OTHERWISE.
4. REFER TO PROJECT SWPPP AND ESC PLAN FOR ADDITIONAL BASIN BMPS AND INSPECTION AND MAINTENANCE PROCEDURES.
5. IMMEDIATELY FOLLOWING BASIN CONSTRUCTION, THE SIDE SLOPES OF THE BASIN SHALL BE FULLY STABILIZED. TEMPORARY EROSION AND SEDIMENT CONTROL FEATURES SHALL REMAIN UNTIL PROJECT SITE IS FULLY STABILIZED AND THE BASIN IS RESTORED OR CONVERTED TO PERMANENT CONDITIONS.

Westwood	STORMWATER INFILTRATION BASIN	DN-43
	NOT TO SCALE	



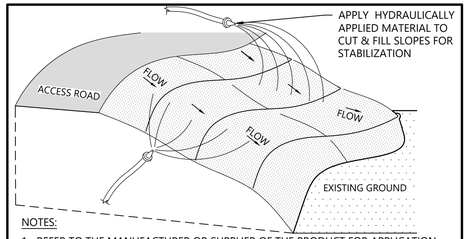


STANDARD ARMORED SURFACE

NOTES:

1. CHANNEL SIDE SLOPES MAY REQUIRE MODIFICATION TO CONSTRUCT THE ACCESS ROAD THROUGH THE CHANNEL TO MEET REQUIREMENTS OF CONSTRUCTION AND DELIVERY VEHICLES.
2. THE ACCESS ROAD SHALL CROSS THE CHANNEL AS CLOSE TO PERPENDICULAR AS POSSIBLE.
3. THE FINISHED ACCESS ROAD SURFACE SHALL BE AT AN ELEVATION THAT ALLOWS WATER TO FLOW THROUGH THE CHANNEL UNIMPEDED AND WITHOUT PONDING UPSTREAM OF ROAD OR ON THE ROAD SURFACE.
4. ARMORED SURFACE SHALL EXTEND THROUGH THE CHANNEL BOTTOM AND UP THE CHANNEL SIDE SLOPES TO THE OBSERVED TOP OF BANK OF THE CHANNEL, UNLESS OTHERWISE NOTED.
5. PERIMETER SEDIMENT CONTROL MAY CONSIST OF SILT FENCE, FIBERLOGS, WOOD MULCH BERMS, OR TOPSOIL BERMS. REFER TO APPROPRIATE DETAIL FOR INSTALLATION REQUIREMENTS.
6. STABILIZE DISTURBED GROUND IN ACCORDANCE WITH THE NPDES PERMIT.
7. CROSSING MAY BE INSTALLED DURING THE PROJECT RESTORATION PHASE. IF INSTALLED DURING CONSTRUCTION, MONITOR THE CROSSING FOR DAMAGE FROM CONSTRUCTION TRAFFIC. ADDITIONAL MAINTENANCE OR REPAIRS MAY BE REQUIRED.

Westwood	STANDARD DUTY LOW WATER CROSSING	DN-01
	NOT TO SCALE	



NOTES:

1. REFER TO THE MANUFACTURER OR SUPPLIER OF THE PRODUCT FOR APPLICATION, IMPLEMENTATION, AND SPECIFICATION REQUIREMENTS.
2. ALL HYDRAULICALLY APPLIED MATERIAL SHALL BE APPROVED BY ALL JURISDICTIONS HAVING AUTHORITY.
3. APPLY HYDRAULICALLY APPLIED MATERIAL TO EXPOSED SOILS FOR STABILIZATION MEASURES. EXPOSED SOILS MAY INCLUDE ROUGH GRADED AREAS, SOIL STOCKPILES, CUT/FILL SLOPES, ETC.
4. PREPARE SOIL SURFACES IN ACCORDANCE WITH PLANNED SEED BED PREPARATION.
5. AVOID OVER SPRAY ONTO ROADS AND INFRASTRUCTURE.
6. APPLY FROM TWO DIRECTIONS (90 DEGREES BETWEEN) TO ADEQUATELY COVER THE SOIL.
7. ALLOW ADEQUATE TIME FOR HYDRAULICALLY APPLIED MATERIAL TO DRY. HYDRAULICALLY APPLIED MATERIAL SHOULD NOT BE APPLIED IMMEDIATELY BEFORE, DURING OR IMMEDIATELY AFTER RAINFALL OR IF THE SOIL IS SATURATED.
8. APPLY SEED PRIOR TO HYDRAULICALLY APPLIED MATERIAL OR MIX SEED WITH HYDRAULICALLY APPLIED MATERIAL PRIOR TO APPLICATION.

Westwood	SLOPE STABILIZATION - HYDRAULICALLY APPLIED MATERIAL	SW-04
	NOT TO SCALE	

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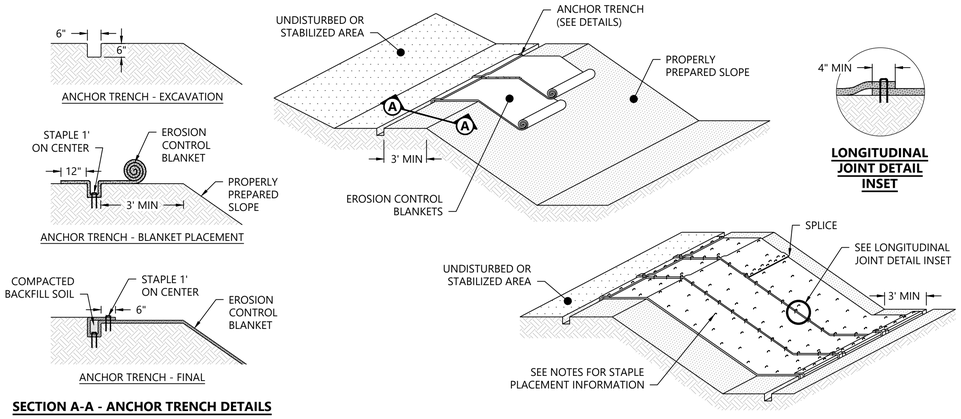


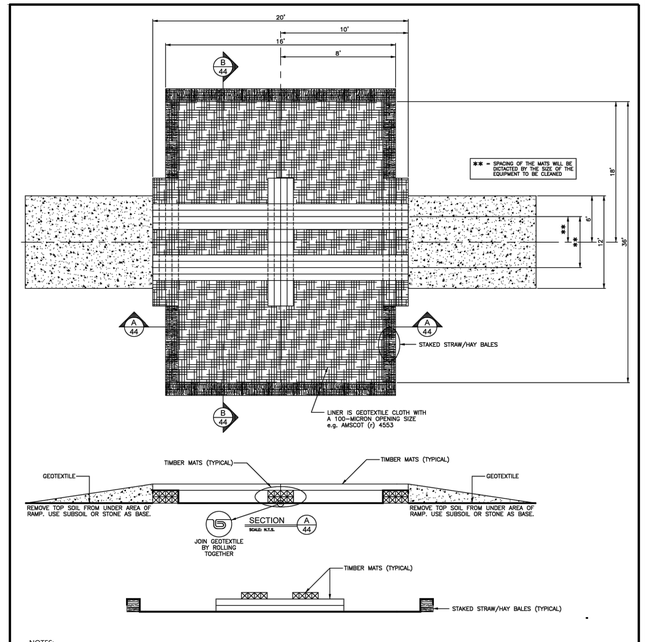
SECTION A-A - ANCHOR TRENCH DETAILS

NOTES:

1. EROSION CONTROL BLANKETS ARE INTENDED TO BE USED AS AN IMMEDIATE MULCH COVER FOR DISTURBED SLOPES THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED.
2. EROSION CONTROL BLANKETS SHALL BE INSTALLED ACCORDING TO MANUFACTURERS SPECIFICATIONS. WHEN NOT AVAILABLE, INSTALL ACCORDING TO THIS DETAIL AND THE FOLLOWING NOTES:
   - 2.1. STEP ONE: SITE PREPARATION. TO PREVENT TENTING THE SITE SHOULD BE FINE GRADED TO A SMOOTH PROFILE AND RELATIVELY FREE FROM ALL WEEDS, CLODS, STONES, ROOTS, STICKS, RIVULETS, GULLIES, CRUSTING, AND CAKING. FILL ANY VOIDS AND MAKE SURE THE SLOPE IS COMPACTED PROPERLY.
   - 2.2. STEP TWO: ADEQUATE TOPSOIL SHALL BE REAPPLIED AFTER GRADING PRIOR TO SEEDING.
   - 2.3. STEP THREE: SEEDING. SEEDING WITHOUT MULCH SHOULD BE APPLIED TO THE AREA TO BE VEGETATED.
   - 2.4. STEP FOUR: PREPARE THE ANCHOR TRENCH. AT THE TOP OF THE SLOPE EXCAVATE AN ANCHOR TRENCH 6" X 6". THE EROSION CONTROL BLANKET WILL BE ANCHORED INTO THE TRENCH BY STAPLES. ALLOW A MINIMUM OF 3' FROM THE CREST OF THE SLOPE TO THE ANCHOR TRENCH.
   - 2.5. STEP FIVE: SECURE THE EROSION CONTROL BLANKET IN THE ANCHOR TRENCH. BEGIN EROSION CONTROL BLANKET PLACEMENT 30" ABOVE THE ANCHOR TRENCH. PLACE THE EROSION CONTROL BLANKET INTO THE ANCHOR TRENCH. ANCHOR THE EROSION CONTROL BLANKET WITH STAPLES 1' ON CENTER IN THE ANCHOR TRENCH WHEN NO OTHER GUIDANCE IS AVAILABLE. BE SURE THE DRIVE STAPLES OR STAKES FLUSH WITH THE SOIL SURFACE. BACKFILL THE ANCHOR TRENCH AND COMPACT THE SOIL. PLACE SEED OVER THE COMPACTED SOIL. COVER THE COMPACTED SOIL WITH THE REMAINING 12" OF THE TERMINAL END OF THE EROSION CONTROL BLANKET. STAPLE OR STAKE TERMINAL END DOWN SLOPE OF THE ANCHOR TRENCH ON 1' CENTERS.
   - 2.6. STEP SIX: EROSION CONTROL BLANKET DEPLOYMENT. STARTING AT THE CREST OF THE SLOPE, ROLL THE EROSION CONTROL BLANKET DOWN THE SLOPE IN A CONTROLLED MANNER TO PREVENT EXCESSIVE STRETCHING. APPROXIMATELY EVERY 20'-25' PULL THE EROSION CONTROL BLANKET TO TAKE OUT ANY EXCESS SLACK. THE GOAL IS TO HAVE THE EROSION CONTROL BLANKET CONTOUR AND INITIATE CONTACT WITH THE SOIL.
   - 2.7. STEP SEVEN: STAPLE OR STAKE THE EROSION CONTROL BLANKET. SECURE THE OVERLAP OR THE EDGES WITH STAPLES. THE TYPICAL INSTALLATION WILL REQUIRE ONE STAPLE PLACED AT 3' INTERVALS ALONG THE VERTICAL LENGTH OF THE EROSION CONTROL BLANKET. STAPLES SHOULD BE STAGGERED EVERY 18" TO 24" HORIZONTALLY ACROSS THE EROSION CONTROL BLANKET. IF THE EROSION CONTROL BLANKET NEEDS TO BE SPLICED IN THE MIDDLE OF A SLOPE BE SURE THE EROSION CONTROL BLANKET IS "SHINGLED" WITH UP-SLOPE EROSION CONTROL BLANKET OVERLAPPING THE DOWN-SLOPE EROSION CONTROL BLANKET. THERE SHOULD BE A MINIMUM OF 4" OF OVERLAP IN A SPLICE. USE A STAPLE CHECK SLOT TO SECURE THE OVERLAP. A STAPLE CHECK SLOT IS MADE BY PLACING A ROW OF STAPLES 4" ON CENTER AND THEN PLACING A SECOND ROW OF STAPLES 4" ON CENTER, STAGGERED FROM THE FIRST ROW.
   - 2.8. STEP EIGHT: SECURING THE EROSION CONTROL BLANKET AT THE TOE OF THE SLOPE. ROLL THE EROSION CONTROL BLANKET 36" PAST THE TOE OF THE SLOPE. STAPLE OR STAKE TERMINAL END OF THE EROSION CONTROL BLANKET ON 1' CENTERS.

Westwood	EROSION CONTROL BLANKET INSTALLATION FOR SLOPE	SW-01

NOT TO SCALE



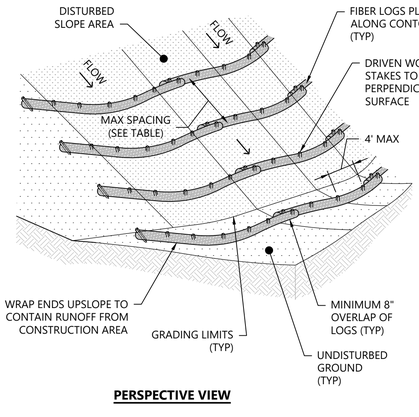
NOTES:

1) CLEANING STATIONS MUST BE WITHIN THE ENVIRONMENTALLY CLEARED RIGHT-OF-WAY AND OUTSIDE THE 100' WETLAND BUFFER ZONE.
2) IF CLEANING STATION IS IN AGRICULTURAL LANDS, REMOVE THE TOPSOIL AND STOCKPILE. BEFORE THE TOPSOIL IS REPLACED, THE SUBSOIL MUST BE DECOMPACTED AND ROCKS REMOVED. THE TOPSOIL MOISTURE MUST PASS THE ATTERBERG TEST PRIOR TO SPREADING THE TOPSOIL.
3) PLANTS, PLANT PARTS, AND SOIL TO BE REMOVED BY HAND OR DRY METHODS, SUCH AS DRY BRUSHING OR COMPRESSED AIR.
4) AFTER THE EQUIPMENT CLEANING IS COMPLETE, FOLD OR ROLL THE GEOTEXTILE (CAUTION WILL BE EXERCISED NOT TO SPILL ANY OF THE CONTAINED MATERIAL) AND REMOVE TO AN APPROPRIATE DISPOSAL SITE. REMOVE THE CLEANING EQUIPMENT, RAMPS AND STRAW/HAY BALES AND COMPLETE THE CLEANUP.
5) REMOVED PLANTS AND PLANT PARTS TO BE STOCKPILED IN DESIGNATED LOCATION FOR AIR DRYING. ONCE FULLY DRIED AND DEAD, PLANT MATERIAL MAY BE COMPOSTED.
6) SOILS REMOVED BY HAND OR DRY BRUSHING SHALL BE SEGREGATED FOR REDISTRIBUTION AT THE JOB SITE.

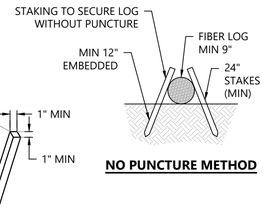
INVASIVE SPECIES CLEANING STATION	DRAWING NUMBER 44

NOTES:

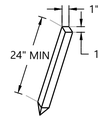
1. FIBER LOGS SHALL BE PREFABRICATED AND MADE FROM WEED FREE RICE STRAW, FLAX, OR A SIMILAR AGRICULTURAL MATERIAL BOUND INTO A TIGHT TUBULAR LOG BY NETTING.
2. STAKE FIBER LOGS INTO THE TRENCH. DRIVE STAKES AT THE END OF EACH FIBER LOG AND SPACED 4 FEET MAXIMUM ON CENTER. USE WOOD STAKES WITH NOMINAL CLASSIFICATION OF 1" BY 1" AND A MINIMUM LENGTH OF 24".
3. PREPARE THE SLOPE BEFORE BEGINNING THE INSTALLATION.
4. DIG SMALL TRENCHES ACROSS THE SLOPE ON THE CONTOUR. THE TRENCH DEPTH SHOULD BE 1/4 TO 1/3 OF THE THICKNESS OF THE LOG, AND THE WIDTH SHOULD EQUAL THE LOG DIAMETER, IN ORDER TO PROVIDE AREA TO BACKFILL THE TRENCH.
5. LOGS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND PARALLEL TO THE SLOPE CONTOUR.
6. START BUILDING TRENCHES AND INSTALLING LOGS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
7. TURN THE ENDS OF THE FIBER LOGS UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE LOG.
8. IF MORE THAN ONE FIBER LOG IS PLACED IN A ROW, THE LOGS SHOULD BE OVERLAPPED, NOT ABUTTED.
9. FIBER LOGS ENCASED WITH PLASTIC NETTING ARE USED FOR A TEMPORARY APPLICATION ONLY AND SHOULD BE REMOVED FOLLOWING STABILIZATION. FIBER LOGS USED IN A PERMANENT APPLICATION SHALL BE ENCASED WITH A BIODEGRADABLE MATERIAL AND MAY BE LEFT IN.
10. TEMPORARY INSTALLATIONS SHOULD ONLY BE REMOVED WHEN UP GRADIENT AREAS ARE STABILIZED PER GENERAL PERMIT REQUIREMENTS, AND/OR POLLUTANT SOURCES NO LONGER PRESENT A HAZARD. BUT, THEY SHOULD ALSO BE REMOVED BEFORE VEGETATION BECOMES TOO MATURE SO THAT THE REMOVAL PROCESS DOES NOT DISTURB MORE SOIL AND VEGETATION THAN IS NECESSARY
11. FIBER LOGS MUST BE INSPECTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS FOR THE ASSOCIATED PROJECT TYPE AND RISK LEVEL. IT IS RECOMMENDED THAT A MINIMUM, THE BMPS BE INSPECTED WEEKLY, PRIOR TO FORECASTED RAIN EVENTS, DAILY DURING EXTENDED RAIN EVENTS, AND AFTER THE CONCLUSION OF RAIN EVENTS.
12. REPAIR OR REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER LOGS.
13. IF THE FIBER LOG IS USED AS A SEDIMENT CAPTURE DEVICE, OR AS AN EROSION CONTROL DEVICE TO MAINTAIN SHEET FLOWS, SEDIMENT THAT ACCUMULATES IN THE BMP SHOULD BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN BMP EFFECTIVENESS. SEDIMENT SHOULD BE REMOVED WHEN SEDIMENT ACCUMULATION REACHES ONE-THIRD THE DESIGNATED SEDIMENT STORAGE DEPTH.
14. IF FIBER LOGS ARE USED FOR EROSION CONTROL, SEDIMENT REMOVAL SHOULD NOT BE REQUIRED AS LONG AS THE SYSTEM CONTINUES TO CONTROL THE GRADE. SEDIMENT CONTROL BMPS WILL LIKELY BE REQUIRE IN CONJUNCTION WITH THIS TYPE OF APPLICATION.
15. REPAIR ANY RILLS OR GULLIES PROMPTLY.



PERSPECTIVE VIEW



NO PUNCTURE METHOD



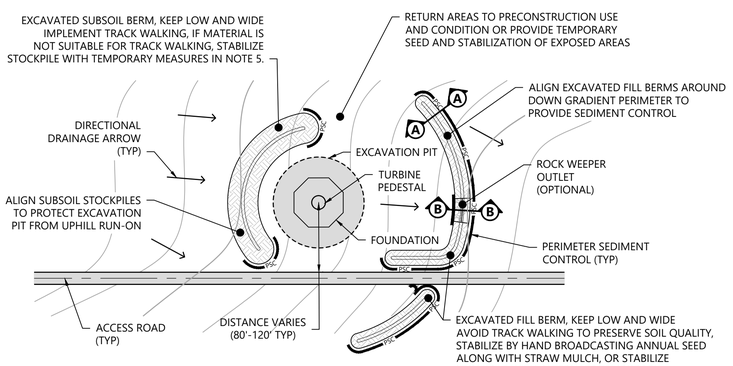
WOODEN STAKE

MAXIMUM SPACING RECOMMENDATIONS

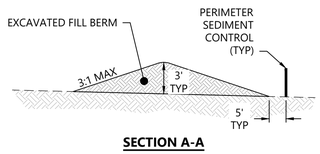
	FIBER LOG SIZE		
SLOPE	9" DIA.	12" DIA.	20" DIA.
≤4:1	40 FT	60 FT	80 FT
3:1	30 FT	45 FT	60 FT
2:1	20 FT	30 FT	40 FT
1:1	10 FT	15 FT	20 FT

Westwood	FIBER LOGS - SLOPE APPLICATION	SW-05

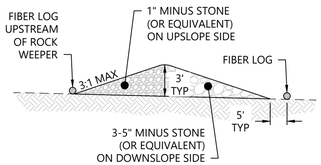
NOT TO SCALE



PLAN VIEW



SECTION A-A



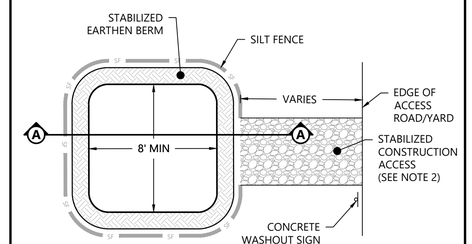
SECTION B-B

NOTES:

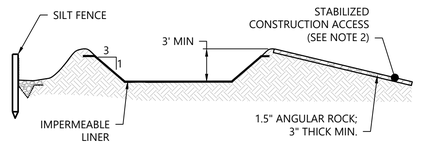
1. REFER TO SPDES PERMIT FOR SPECIFICATIONS OF EROSION AND SEDIMENT CONTROL MEASURES.
2. REDUNDANT PERIMETER SEDIMENT CONTROL IS RECOMMENDED AT TURBINE SITES WITHIN CLOSE PROXIMITY TO WATERWAYS.
3. TERMINAL ENDS OF EXCAVATED FILL BERM SHOULD BE HIGHER IN ELEVATION THAN THE TOP OF BERM.
4. MULTIPLE ROCK WEEPERS MAY BE NEEDED, CONTRACTOR TO FIELD FIT AS NECESSARY. ROCK WEEPERS ARE OPTIONAL TO MINIMIZE WATER ACCUMULATION WITHIN PAD AREA.
5. TEMPORARY STABILIZATION FOR STOCKPILES MAY CONSIST OF HYDROMULCH, SOIL STABILIZER, OR TACKIFIER.
6. PERIMETER SEDIMENT CONTROL MAY CONSIST OF SILT FENCE, FIBER LOGS, OR WOOD MULCH BERMS. REFER TO APPROPRIATE DETAIL FOR INSTALLATION REQUIREMENTS. LOCATION OF PERIMETER SEDIMENT CONTROL MAY VARY DEPENDING UPON THE TERRAIN AT THE TURBINE SITE.
7. ALTERNATE BERM PLACEMENT OPTION - PLACE EXCAVATED FILL BERM ALONG THE UP-GRADIENT PERIMETER. THIS WILL ACT AS A DIVERSION BERM TO ROUTE RUN-ON FLOWS AROUND THE PAD. INSTALL PERIMETER SEDIMENT CONTROL ALONG THE DOWN-GRADIENT SIDE OF THE PAD.
8. TOPSOIL IS NOT TO BE USED FOR EROSION AND SEDIMENT CONTROL FEATURES, FOR TRENCH BEDDING AND BACKFILL, APPLIED FOR FILL, OR OTHER NON-COMPLIANT SOIL FEATURES.
9. THE 2019 NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS (NYSAGM) GUIDELINES MUST BE FOLLOWED IN ACTIVE AGRICULTURAL AREAS.

Westwood	TURBINE SITE - EXCAVATED FILL BERM WITH ROCK WEEPER OUTLET	SW-17

NOT TO SCALE



PLAN VIEW



SECTION A-A

NOTES:

1. CONCRETE WASHOUT AREAS SHALL BE LINED WITH A 10 MIL PLASTIC IMPERMEABLE LINER TO PREVENT CONCRETE WASHOUT WATER FROM INFILTRATING/CONTACTING WITH SOIL.
2. PROVIDE STABILIZED CONSTRUCTION ACCESS IF SEDIMENT TRACKING CONTROLS ARE NECESSARY.
3. ALTERNATE WASHOUT SYSTEMS MAY BE USED IF APPROVED.
4. REFER TO PROJECT NPDES PERMIT FOR ADDITIONAL CONSTRUCTION, MAINTENANCE, AND REMOVAL REQUIREMENTS

Westwood	CONCRETE WASHOUT AREA	SW-60

NOT TO SCALE

Westwood Surveying & Engineering

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TollFree (888) 937-5150 ww-pc.com
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REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
0	08/23/2024	ISSUE FOR PERMIT	ME	AA	AL

Agricola Wind Project

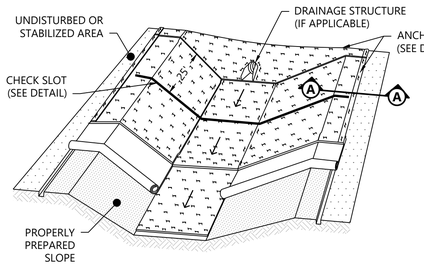
Cayuga County, New York

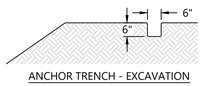
Construction Details - 10

ISSUE FOR PERMIT

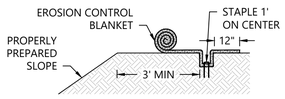
DATE: 08/23/2024

SHEET: C709 REV: 0

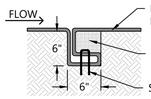




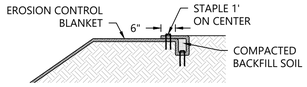
ANCHOR TRENCH - EXCAVATION



ANCHOR TRENCH - BLANKET PLACEMENT



CHECK SLOT DETAIL



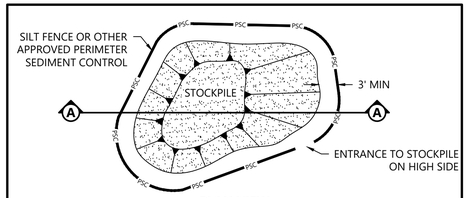
ANCHOR TRENCH - FINAL

SECTION A-A - ANCHOR TRENCH DETAILS

NOTES:

1. EROSION CONTROL BLANKETS ARE USED TO TEMPORARILY AND PERMANENTLY STABILIZE DITCHES AND SWALES.
2. EROSION CONTROL BLANKETS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. WHEN NOT AVAILABLE INSTALL ACCORDING TO THIS DETAIL AND THE FOLLOWING NOTES:
   - 2.1. STEP ONE: SITE PREPARATION. TO PREVENT TENTING THE CHANNEL SHOULD BE FINE GRADED TO A SMOOTH PROFILE AND RELATIVELY FREE FROM ALL WEEDS, CLODS, STONES, ROOTS, STICKS, RIVULETS, GULLIES, CRUSTING, AND CAKING. FILL ANY VOIDS AND MAKE SURE THE CHANNEL IS COMPACTED PROPERLY.
   - 2.2. STEP TWO: ADEQUATE TOPSOIL SHALL BE REAPPLIED AFTER GRADING PRIOR TO SEEDING.
   - 2.3. STEP THREE: SEEDING. SEEDING WITHOUT MULCH SHOULD BE APPLIED TO THE AREA TO BE VEGETATED.
   - 2.4. STEP FOUR: ANCHORING THE EROSION CONTROL BLANKET. EROSION CONTROL BLANKETS SHALL BE ANCHORED AT THE BEGINNING OF THE CHANNEL. A 6" X 6" DEEP TRENCH SHOULD BE EXCAVATED PERPENDICULAR TO THE DIRECTION OF WATER FLOW ACROSS THE ENTIRE WIDTH OF THE CHANNEL. THE EROSION CONTROL BLANKET SHOULD BE LAID IN THE CHECK SLOT WITH 30" OF THE EROSION CONTROL BLANKET EXTENDING UPSTREAM OF THE ANCHORING TRENCH. STAKE OR STAPLE THE EROSION CONTROL BLANKET IN THE CHECK SLOT ON 12" CENTERS WHEN NO OTHER GUIDANCE IS AVAILABLE. BACKFILL THE ANCHOR TRENCH AND COMPACT THE SOIL. PLACE SEED OVER THE COMPACTED SOIL. COVER THE COMPACTED SOIL WITH THE REMAINING 12 INCHES OF THE TERMINAL END OF THE EROSION CONTROL BLANKET. STAPLE OR STAKE TERMINAL END DOWN SLOPE OF THE ANCHOR TRENCH ON 12" CENTERS.
   - 2.5. STEP FIVE: EROSION CONTROL BLANKET DEPLOYMENT IN THE CHANNEL BOTTOM. THE EROSION CONTROL BLANKETS SHOULD BE UNROLLED IN THE DIRECTION OF WATER FLOW. FIRST THE EROSION CONTROL BLANKET IS DEPLOYED IN THE CHANNEL BOTTOM. IT IS ALSO NECESSARY TO PREVENT A SEAM FROM GOING DOWN THE CENTER OF THE CHANNEL BOTTOM OR IN AREAS OF CONCENTRATED WATER FLOW. WHEN INSTALLING TWO EROSION CONTROL BLANKETS SIDE BY SIDE IN A WATERWAY THE CENTER OF THE EROSION CONTROL BLANKET SHOULD BE CENTERED IN THE AREA OF CONCENTRATED WATER FLOW. INSTALL ADJOINING EROSION CONTROL BLANKETS AWAY FROM THE CENTER OF THE CHANNEL BOTTOM. ADJOINING EROSION CONTROL BLANKETS SHOULD BE OVERLAPPED 4" TO 6". CONTINUE TO INSTALL A COMMON ROW OF STAPLES AT 2' CENTERS ALONG THE LENGTH OF THE OVERLAP.
   - 2.6. STEP SIX: CHECK SLOTS. CHECK SLOTS SHOULD BE PLACED PERPENDICULAR TO THE FLOW DIRECTION ACROSS THE ENTIRE WIDTH OF THE CHANNEL AT 25' INTERVALS AND AT THE TERMINAL END OF THE CHANNEL. THE CHECK SLOTS SHOULD BE PLACED IN A 6" X 6" TRENCH AS SHOWN. SECURE THE EROSION CONTROL BLANKET IN THE UPSTREAM SIDE OF THE CHECK SLOT WITH STAPLES OR STAKES ON 12" CENTERS. FLIP THE EROSION CONTROL BLANKET ROLL ON THE UPSTREAM EDGE. BACK FILL THE CHECK SLOT AS SHOWN AND COMPACT THE SOIL. CONTINUE ROLLING THE EROSION CONTROL BLANKET DOWNSTREAM OVER THE COMPLETED CHECK SLOT.
   - 2.7. STEP SEVEN: EROSION CONTROL BLANKET DEPLOYMENT ON THE SIDE SLOPES. CONTINUE TO ROLL THE EROSION CONTROL BLANKET ALONG THE CHANNEL BOTTOM AND SIDE SLOPES IN THE DIRECTION OF THE WATER FLOW. AS THE EROSION CONTROL BLANKET IS INSTALLED FROM THE CHANNEL BOTTOM UP THE SLOPE, A SHINGLE TYPE INSTALLATION IS NECESSARY WITH THE UP-SLOPE EROSION CONTROL BLANKET OVERLAPPING THE LOWER EROSION CONTROL BLANKET APPROXIMATELY 4". ANCHOR THE EROSION CONTROL BLANKETS WITH A MINIMUM OF ONE STAPLE EVERY 24" ACROSS THE WIDTH AND ONE STAPLE EVERY 36" DOWN ITS LENGTH. IF THE EROSION CONTROL BLANKET NEEDS TO BE SPLICED, BE SURE THE EROSION CONTROL BLANKET IS "SHINGLED" WITH THE UPSTREAM EROSION CONTROL BLANKET OVERLAPPING THE DOWNSTREAM EROSION CONTROL BLANKET. THERE SHOULD BE A MINIMUM OF 4" OF OVERLAP IN A SPLICE. USE A STABLE CHECK SLOT TO SECURE THE OVERLAP. ANCHOR THE EROSION CONTROL BLANKET PLACED AT THE TOP OF THE CHANNEL SLOPE IN THE SAME MANNER AS SHOWN.
   - 2.8. STEP EIGHT: TERMINAL END. SECURE THE EROSION CONTROL BLANKET AT THE TERMINAL END OF THE CHANNEL WITH A SLOT SIMILAR TO THE ONE MADE AT THE BEGINNING OF THE CHANNEL.

Westwood	EROSION CONTROL BLANKET INSTALLATION FOR CHANNEL	NOT TO SCALE	SW-02



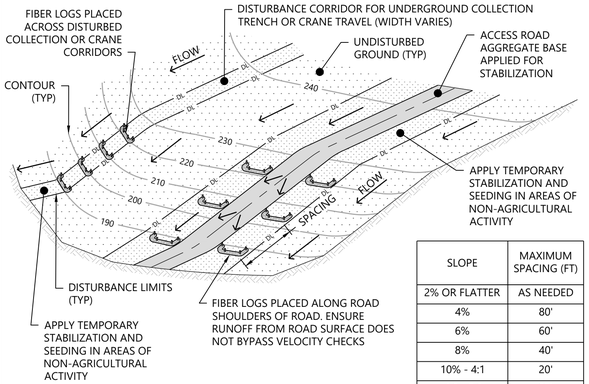
PLAN VIEW

SECTION A-A

NOTES:

1. STOCKPILE SHALL BE FORMED IN A WIDE, LOW PROFILE FORMATION, AS POSSIBLE.
2. SOIL STOCKPILES SHALL BE LOCATED ON SITE AND BE ENCLOSED WITH SILT FENCE OR OTHER APPROVED PERIMETER SEDIMENT CONTROL. IF THE SOIL IS TO REMAIN EXPOSED FOR MORE THAN 7 DAYS, IT SHALL BE HAND BROADCASTED AND MULCHED ACCORDING TO THE NPDES PERMIT.

Westwood	SOIL STOCKPILE PROTECTION	NOT TO SCALE	SW-10



PERSPECTIVE VIEW

SLOPE	MAXIMUM SPACING (FT)
2% OR FLATTER	AS NEEDED
4%	80'
6%	60'
8%	40'
10% - 4:1	20'
4:1 - 2:1	15'
> 2:1	10'

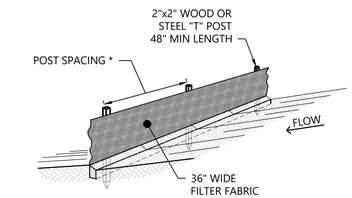
APPLICATION NOTES:

1. REFER TO THE NPDES PERMIT, APPLICABLE STATE BMP MANUALS AND THE PROJECT SWPPP FOR IMPLEMENTATION AND TIMING REQUIREMENTS.
2. VELOCITY CHECKS SHALL BE INSTALLED IN AREAS WHERE A DISTURBANCE ACTIVITY IS NEAR PERPENDICULAR (±30°) TO THE CONTOURS AND RUNOFF FLOWS DOWN THE DISTURBANCE PATH. IF DISTURBANCE IS SLOPED TO ONE SIDE, APPLY VELOCITY CHECKS WITH J-HOOKS AT THE SPACING RECOMMENDED BELOW, SEE **SW-18** FOR DETAILS ON J-HOOKS.
3. ROAD APPLICATION: INSTALL VELOCITY CHECKS ACROSS DISTURBED SHOULDERS.
4. CRANE PATH APPLICATION: INSTALL VELOCITY CHECKS ACROSS THE CRANE PATH DISTURBANCE. REMOVE AND REPLACE FIBER LOGS FOR CRANE TRAVEL.
5. UNDERGROUND COLLECTION TRENCH APPLICATION: INSTALL VELOCITY CHECKS ACROSS DISTURBANCE PATH.
6. WHERE RILLING AND CHANNELIZATION OCCURS AND VELOCITY CHECKS FAIL TO PROVIDE ADEQUATE EROSION CONTROL, APPLICATION OF HYDROMULCH, STRAW MULCH OR EROSION CONTROL BLANKET (TEMPORARY STABILIZATION) MUST BE APPLIED AFTER SOIL PREPARATION TO REMEDY THE ISSUE.

INSTALLATION NOTES:

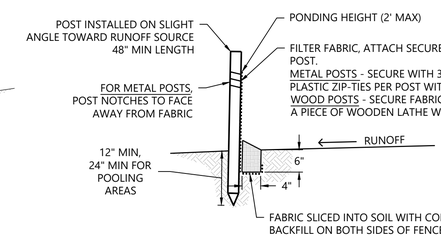
1. INSTALL VELOCITY CHECKS PER THE SPACING REQUIREMENTS ACCORDING TO THE SURFACE SLOPE DETAILED IN THE TABLE, AND ADJUST BASED ON FIELD CONDITIONS.
2. INSTALL VELOCITY CHECKS PARALLEL TO THE CONTOURS AND ACROSS DISTURBANCE CORRIDOR.
3. ELEVATIONS AT THE ENDS OF FIBER LOG NEED TO BE HIGHER THAN THE ELEVATION AT THE MIDDLE OF FIBER LOG. BOTH ENDS SHOULD HAVE A SMALL HOOK TO ENSURE THAT WATER FLOWS OVER THE FIBER LOG AND NOT AROUND THE ENDS.
4. SEE **SW-13** FOR INSTALLATION SPECIFICATIONS OF FIBER LOGS.

Westwood	VELOCITY CHECKS - FIBER LOGS	NOT TO SCALE	SW-07



* 7' MAX FOR OPEN RUNS
4' MAX FOR POOLING AREAS

PERSPECTIVE VIEW

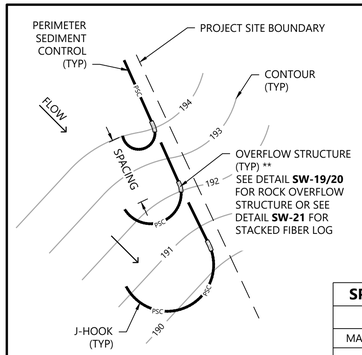


POST AND TRENCH DETAIL

NOTES:

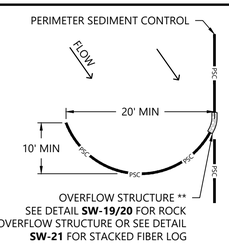
1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC WIDTH SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN 2 , ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NO. 30.
2. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST. THERE SHOULD BE A 3 FT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
4. ALL ENDS OF THE SILT FENCE SHALL BE WRAPPED UPSLOPE SO THE ELEVATION OF THE BOTTOM OF FABRIC IS HIGHER THAN "PONDING HEIGHT".
5. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN ACCUMULATED TO **1/3 HEIGHT** OF THE FABRIC OR MORE.
6. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
7. SILT FENCE SHOULD REMAIN IN PLACE AND MAINTAINED UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED.
8. INSTALL A SECOND ROW OF SILT FENCE APPROXIMATELY 5' FROM INITIAL ROW WHEN REDUNDANT PROTECTION IS REQUIRED WITHIN 50' OF WETLANDS AND STREAMS.
9. AVOID SPLICED SECTIONS IN LOW LYING (LOAD BEARING) LOCATIONS.

Westwood	SILT FENCE	NOT TO SCALE	SW-11



PERSPECTIVE VIEW

** OVERFLOW STRUCTURES MAY BE OMITTED WHEN FIBER LOGS ARE UTILIZED AS PERIMETER SEDIMENT CONTROL (PSC)



J-HOOK DETAIL

SPACING RECOMMENDATIONS				
		SOIL TYPE		
MATERIAL	SLOPE	SILTY	CLAYS	SANDY
SILT FENCE	3:1	75 FT	100 FT	125 FT
	4:1	100 FT	125 FT	150 FT
	≤10:1	125 FT	150 FT	200 FT
9" FIBER LOG	≤3%	46 FT	56 FT	75 FT

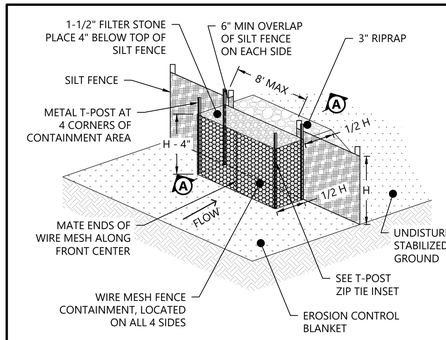
APPLICATION NOTES:

1. INSTALL J-HOOKS WHENEVER THE PERIMETER SEDIMENT CONTROL (PSC) BARRIER IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO CONTOURS.
2. ADHERE TO J-HOOK SPACING REQUIREMENTS ACCORDING TO SURFACE SLOPE DETAILED IN TABLE.
3. WHERE MINIMUM HOOK DIMENSIONS SHOWN CANNOT BE ACHIEVED, NARROWER HOOKS MAY BE USED WITH HIGHER FREQUENCY SPACING.
4. WHERE PONDING DEPTH BEGINS TO EXCEED 1.5 FEET OR THE PSC BARRIER AND ROCK OUTLET OTHERWISE FAIL TO PROVIDE CONTROL, FREQUENCY AND SIZING OF J-HOOKS MUST BE ADJUSTED TO REMEDY THE ISSUE.
5. WHEN OVERLAND SHEET FLOW SLOPE IS LESS THAN OR EQUAL TO 3%, FIBER LOGS MAY BE USED AS PERIMETER SEDIMENT CONTROL. IF SHEET FLOW SLOPE IS GREATER THAN 3%, SILT FENCE MUST BE USED.

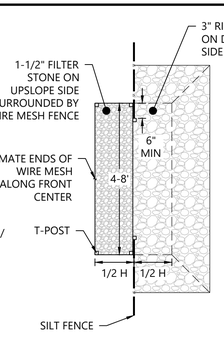
INSTALLATION NOTES:

1. INSTALL J-HOOK LOCATED IMMEDIATELY DOWN GRADIENT FROM THE ROCK OUTLET TO ENSURE THE WATER IS NOT DIVERTED TO THE LOWEST AREAS WHERE A COMPLEX SLOPE EXISTS.
2. UP-GRADIENT PSC BARRIER AND J-HOOK ARE ONE CONTINUOUS BARRIER.
3. START DOWN-GRADIENT PSC BARRIER AS CLOSE AS POSSIBLE TO THE UP-GRADIENT J-HOOK.
4. BOTTOM OF PSC BARRIER ELEVATIONS AT THE END OF J-HOOK NEED TO BE HIGHER THAN THE TOP OF BARRIER ELEVATIONS AT THE MIDDLE OF J-HOOK.
5. TOP OF BARRIER ELEVATIONS AT THE MIDDLE OF J-HOOK NEED TO BE HIGHER THAN THE ROCK OUTLET ELEVATIONS.

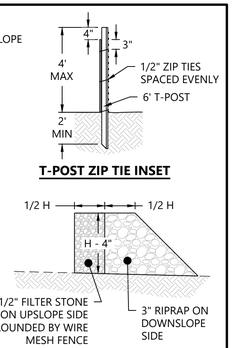
Westwood	PERIMETER SEDIMENT CONTROL - J-HOOK APPLICATION	NOT TO SCALE	SW-18



PERSPECTIVE VIEW



PLAN VIEW



T-POST ZIP TIE INSET

SECTION A-A

NOTES:

1. LOCATIONS OF ROCK OVERFLOW STRUCTURES ARE INDICATED ON THE PLANS AND/OR AS DETERMINED BY QUALIFIED PERSONNEL BASED ON FIELD CONDITIONS TO MAINTAIN PERMIT COMPLIANCE. QUALIFIED PERSONNEL MUST BE TRAINED AND CERTIFIED IN EROSION AND SEDIMENT CONTROL.
2. ROCK OVERFLOW STRUCTURES ARE RECOMMENDED AT ALL LOW POINTS AND AT A SPACING OF 300 FEET WHERE NO LOW POINT IS APPARENT.
3. PREFERRED CONTAINMENT MATERIAL IS 19 GAUGE WIRE MESH FENCE WITH 1/2 INCH HEXAGONAL TWIST OPENINGS, ACCEPTABLE ALTERNATE IS WITH 1/2 INCH SQUARE OPENINGS.

Westwood	ROCK OVERFLOW STRUCTURE FOR SILT FENCE - FULL HEIGHT	NOT TO SCALE	SW-20

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PREPARED FOR:

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REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
0	08/23/2024	ISSUE FOR PERMIT	ME	AA	AL

Agricola Wind Project

Cayuga County, New York

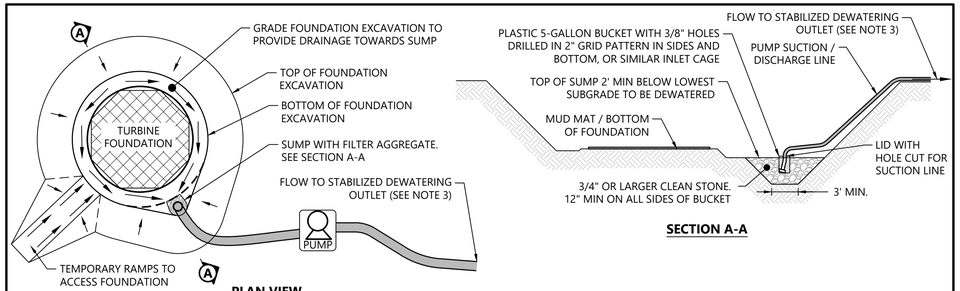
Construction Details - 11

ISSUE FOR PERMIT

DATE: 08/23/2024

SHEET: C710

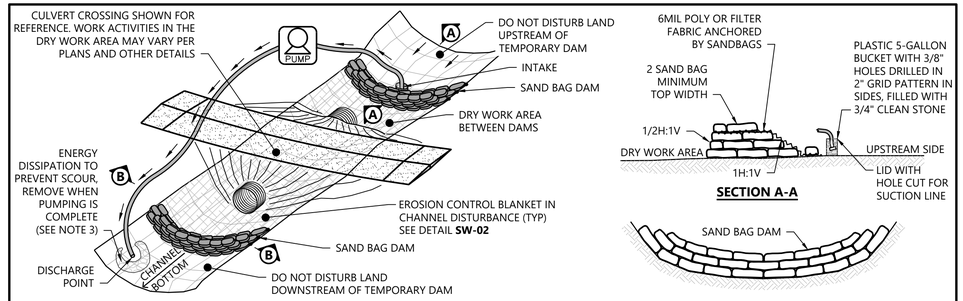
REV: 0



NOTES:

1. DEWATERING DETAILS PROVIDED ARE INTENDED TO BE USED AS SHOWN ON THE PLANS OR AT THE CONTRACTOR'S DISCRETION. REFER TO THE CONSTRUCTION GENERAL PERMIT FOR ADDITIONAL INFORMATION.
2. THE OWNER OR CONTRACTOR SHALL CONFIRM CONSTRUCTION STORMWATER DISCHARGE (DEWATERING) IS COVERED BY THE CONSTRUCTION STORMWATER GENERAL PERMIT PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ADDITIONAL DEWATERING PERMITS MAY BE REQUIRED. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE PERMIT REQUIREMENTS.
3. A STABILIZED DEWATERING OUTLET IS REQUIRED TO REDUCE SUSPENDED SEDIMENT TO ALLOWABLE LEVELS PRIOR TO RELEASE OFF SITE OR TO RECEIVING WATER. SEE ADDITIONAL DETAILS FOR DEWATERING OUTLETS.
4. INSPECT EACH WORKDAY AND MAINTAIN IN EFFECTIVE OPERATING CONDITION.
5. ANY DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED PER THE CONSTRUCTION GENERAL PERMIT.

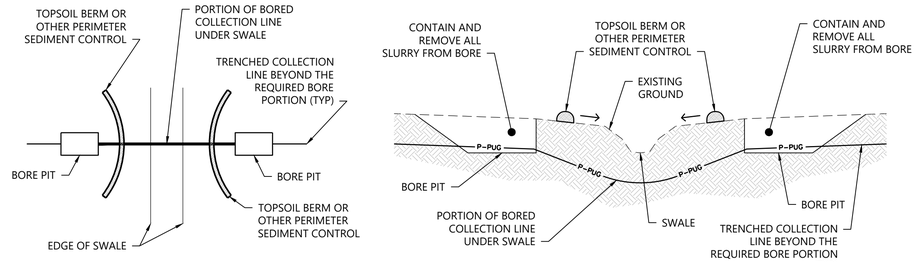
Westwood	DEWATERING INLET - TURBINE EXCAVATION	SW-50
	NOT TO SCALE	



NOTES:

1. TEMPORARY DAM WITH PUMP BYPASS SHALL BE USED IF DISTURBANCE TO CHANNEL IS PLANNED DURING WET CONDITIONS, TO PROVIDE A DRY WORK AREA IN THE CHANNEL.
2. MINIMIZE DISTURBANCE TO THE CHANNEL DURING WORK ACTIVITIES. INSTALLATION SHOULD BEGIN AT THE UPSTREAM END.
3. A PUMP ATTACHED TO THE INTAKE SHALL BE USED TO CONVEY WATER AROUND THE DRY WORK AREA. THE PUMPED WATER WILL BE DISCHARGED DOWN STREAM OF THE WORK AREA USING ENERGY DISSIPATION AT THE DISCHARGE LOCATION TO PREVENT ANY SCOUR. ROCK IS SHOWN ABOVE, BUT ALTERNATE METHODS USED TO PREVENT SCOUR ARE ACCEPTABLE.
4. THE RATE OF THE PUMP MUST MATCH EXISTING FLOW RATES/VOLUMES.
5. THE PUMPED BYPASS SHALL NOT REMAIN OVERNIGHT. ALL CROSSING CONSTRUCTION ACTIVITY INCLUDING RESTORATION MUST BE DONE WITHIN THE SAME WORK DAY.
6. PROVIDE SECONDARY CONTAINMENT FOR THE PUMP EQUIPMENT. LOCATE PUMP AS FAR AWAY AS FEASIBLE, WITH A 50' MINIMUM SEPARATION FROM PUMP AND THE EDGE OF WATER.

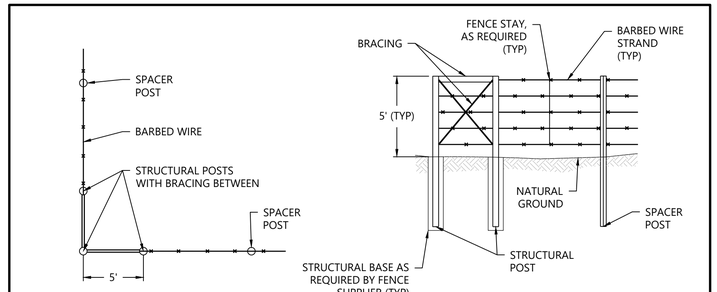
Westwood	TEMPORARY SAND BAG DAM WITH PUMPED BYPASS	SW-53
	NOT TO SCALE	



NOTES:

1. AVOID DISTURBANCE TO THE SWALE DURING CONSTRUCTION.
2. REFER TO PROJECT SPCC PLAN FOR ADDITIONAL REQUIREMENTS.
3. CONSTRUCT TOPSOIL BERM TO PROTECT EXISTING SWALE WHERE BORING WILL OCCUR FOR UNDERGROUND COLLECTION SYSTEM INSTALLATION.
4. ADDITIONAL SOILS SHALL BE STOCKPILED ADJACENT TO THE BORE PIT AND PROTECTED WITH PERIMETER SEDIMENT CONTROL.
5. ALTERNATE PERIMETER SEDIMENT CONTROLS MAY CONSIST OF SILT FENCE, FIBER LOGS, OR WOOD MULCH BERMS. REFER TO APPROPRIATE DETAILS FOR INSTALLATION REQUIREMENTS.
6. REDUNDANT PERIMETER SEDIMENT CONTROLS ARE REQUIRED WITHIN 50' OF A WETLAND OR SURFACE WATER.
7. UPON REMOVAL OF THE BORE PITS, THE DISTURBED AREAS SHALL BE RESTORED TO NATIVE CONDITIONS. REFER TO THE NPDES PERMIT.

Westwood	POWER COLLECTION SYSTEM CROSSING OF EXISTING SWALE - BORE PIT	SW-65
	NOT TO SCALE	



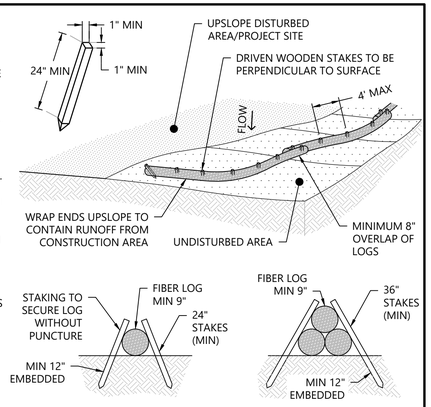
NOTES:

1. NUMBER OF BARBED WIRE STRANDS, FENCE MATERIAL, AND CONFIGURATION SHALL MATCH EXISTING FENCES OR AS APPROVED BY OWNER.
2. TYPICAL FENCE AND GATE INFORMATION SHOWN IS INTENDED FOR PLANNING PURPOSES. ACTUAL DIMENSIONS AND INFORMATION TO BE PROVIDED BY FENCE SUPPLIER.
3. REFER TO FENCE SUPPLIER SPECIFICATIONS AND DETAILS.
4. STRUCTURAL DESIGN OF FENCE POSTS AND FOUNDATIONS TO BE PROVIDED BY FENCE SUPPLIER.
5. STRUCTURAL PLANS AND FENCE SUPPLIER DRAWINGS SHALL SUPERSEDE THIS DETAIL IF CONFLICTS ARE PRESENT.
6. ALL FENCES SHALL BE TIED BACK TO MAINTAIN TENSION ON EXISTING FENCE PRIOR TO CUTTING OF THE EXISTING WIRES.

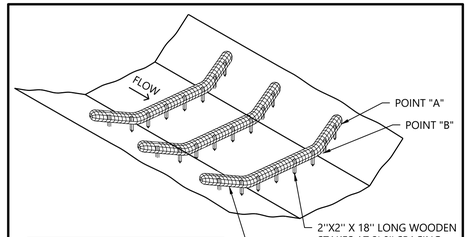
Westwood	BARBED WIRE FENCE CORNER	FN-12
	NOT TO SCALE	

NOTES:

1. FIBER LOGS SHALL BE INSTALLED PRIOR TO UPSLOPE DISTURBANCE ACTIVITIES COMMENCE.
2. FIBER LOGS SHALL BE PREFABRICATED AND MADE FROM CERTIFIED STRAW, WOOD, OR COCONUT FIBER MATERIAL BOUND INTO A TIGHT TUBULAR LOG BY NETTING. USE A 9" DIA. LOG MINIMUM.
3. TRENCHES SHALL BE CREATED ALONG THE SLOPE OF THE PERIMETER. THE TRENCH DEPTH SHOULD BE 1/4 TO 1/3 OF THE THICKNESS OF THE LOG, AND THE WIDTH SHOULD EQUAL THE LOG DIAMETER, IN ORDER TO PROVIDE AREA TO BACKFILL THE TRENCH.
4. STAKE FIBER LOGS INTO THE TRENCH. DRIVE STAKES AT THE END OF EACH FIBER LOG AND SPACED 4 FEET MAXIMUM ON CENTER. USE HARD WOOD STAKES WITH NOMINAL CLASSIFICATION OF AT LEAST 1" BY 1" AND A MINIMUM LENGTH OF 24". STAKES SHALL BE EMBEDDED A MINIMUM DEPTH OF 12".
5. LOGS SHALL BE INSTALLED PERPENDICULAR TO WATER MOVEMENT, AND PARALLEL TO THE SLOPE CONTOUR.
6. TURN THE ENDS OF THE FIBER LOGS UP SLOPE TO PREVENT RUNOFF FROM GOING AROUND THE LOG. THE UPSLOPE POINT SHOULD BE A MINIMUM 12" HIGHER IN ELEVATION THAN THE LOW POINT.
7. IF MORE THAN ONE FIBER LOG IS PLACED IN A ROW, THE LOGS SHOULD BE OVERLAPPED A MINIMUM OF 8 INCHES, NOT ABUTTED.
8. FIBER LOGS ENCASED WITH PLASTIC NETTING ARE USED FOR A TEMPORARY APPLICATION ONLY AND SHOULD BE REMOVED FOLLOWING STABILIZATION. FIBER LOGS USED IN A PERMANENT APPLICATION SHALL BE ENCASED WITH A BIODEGRADABLE MATERIAL AND MAY BE LEFT IN.
9. TEMPORARY INSTALLATIONS SHOULD ONLY BE REMOVED WHEN UP GRADIENT AREAS ARE STABILIZED PER GENERAL PERMIT REQUIREMENTS, AND/OR POLLUTANT SOURCES NO LONGER PRESENT A HAZARD. BUT, THEY SHOULD ALSO BE REMOVED BEFORE VEGETATION BECOMES TOO MATURE SO THAT THE REMOVAL PROCESS DOES NOT DISTURB MORE SOIL AND VEGETATION THAN IS NECESSARY
10. FIBER LOGS MUST BE INSPECTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS FOR THE ASSOCIATED PROJECT TYPE AND RISK LEVEL.
11. REPAIR OR REPLACE SPLIT, TORN, UNRAVELING, OR SLUMPING FIBER LOGS.
12. SEDIMENT THAT ACCUMULATES UPSLOPE OF THE BMP SHOULD BE PERIODICALLY REMOVED IN ORDER TO MAINTAIN BMP EFFECTIVENESS. REFER TO CONSTRUCTION GENERAL PERMIT FOR SEDIMENT ACCUMULATION MAINTENANCE INTERVALS.
13. RILL, UNDERMINING, AND/OR GULLIES MAY BEGIN TO FORM FOLLOWING MAJOR STORM EVENTS WHERE RUNOFF HAS OVERTOPPED THE FIBER LOGS. THESE RILLS OR GULLIES SHOULD BE PROMPTLY REPAIRED.



Westwood	PERIMETER SEDIMENT CONTROL - FIBER LOGS	SW-13
	NOT TO SCALE	

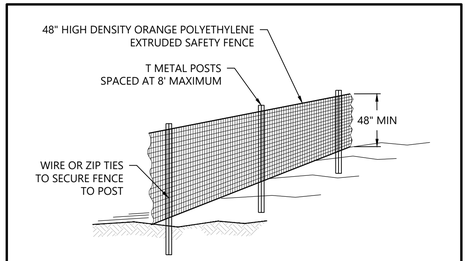


SPACING RECOMMENDATIONS	
DITCH GRADE (%)	SPACING (FT)
0-2	42'
3-5	28' - 17'
6-9	14' - 9'

NOTES:

1. REFER TO THE NPDES PERMIT FOR REQUIREMENTS.
2. POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

Westwood	FIBER LOGS - DITCH APPLICATION	SW-06
	NOT TO SCALE	



NOTES:

1. INSTALL FENCE AROUND PROTECTED AREAS PRIOR TO CONSTRUCTION ACTIVITIES IN THE VICINITY.
2. ALL SENSITIVE AREAS SHALL BE PROTECTED AS PER PLAN; ANY CHANGED TO FENCE SHALL BE APPROVED.
3. CULTURALLY SENSITIVE AREAS SHALL NOT BE DISTURBED DURING SAFETY FENCE INSTALLATION/REMOVAL.
4. FOR TREE PRESERVATION PURPOSES, INSTALL HIGH VISIBILITY 3 FEET OUTSIDE OF THE DRIP LINE OF THE TREE.
5. FENCE SHOULD BE TAUT AND FASTENED SECURELY TO THE POSTS.
6. THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION, AND REMOVED ONCE CONSTRUCTION ACTIVITIES ARE CONCLUDED.

Westwood	SENSITIVE AREAS - PROTECTION FENCE	FN-52
	NOT TO SCALE	

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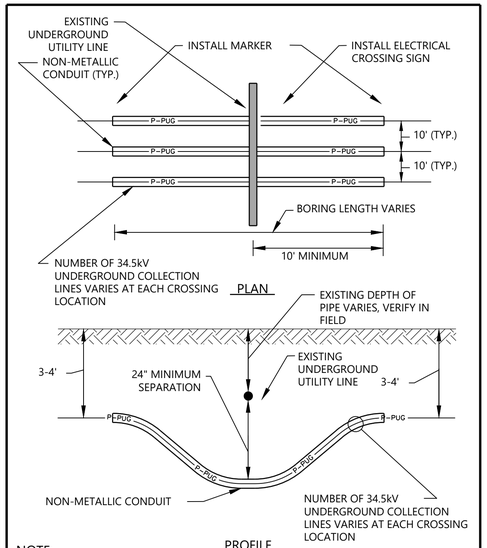
#	DATE	COMMENT	BY	CHK	APR
A	05/03/2024	60% CIVIL DESIGN	ME	AA	AL

Agricola Wind Project

Cayuga County, New York

Construction Details - 12

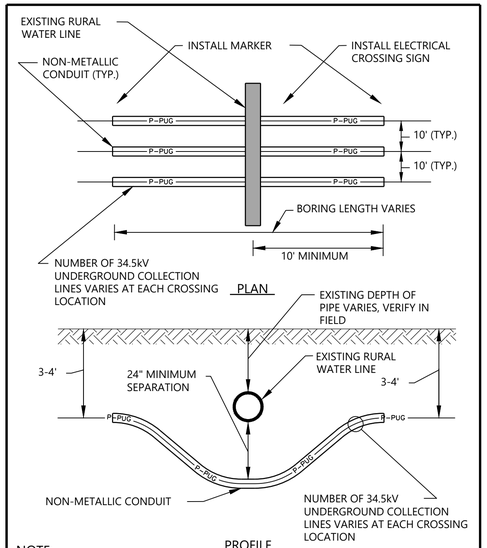
DATE: 2023-05-23
REV:
SHEET: C711



NOTE:

1. PRIOR TO DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
2. ALL ELECTRICAL AND DATA CIRCUITS SHALL CROSS AS CLOSE TO NINETY DEGREES (90°) TO UNDERGROUND UTILITY LINE AS POSSIBLE.
3. INSTALL MARKERS & SIGNS AT UNDERGROUND UTILITY LINE CROSSING.

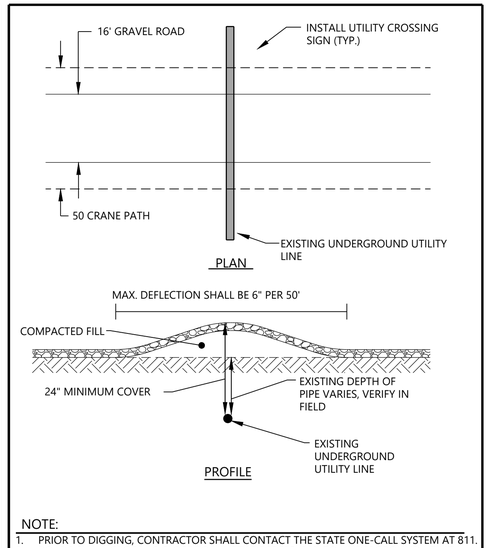
Westwood	UNDERGROUND UTILITY-ELECTRICAL CROSSING	LAST REVISED: 11/08/11 UT06



NOTE:

1. PRIOR TO DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
2. ALL ELECTRICAL AND DATA CIRCUITS SHALL CROSS AS CLOSE TO NINETY DEGREES (90°) TO WATER LINE AS POSSIBLE.
3. INSTALL MARKERS & SIGNS AT WATER LINE CROSSING.

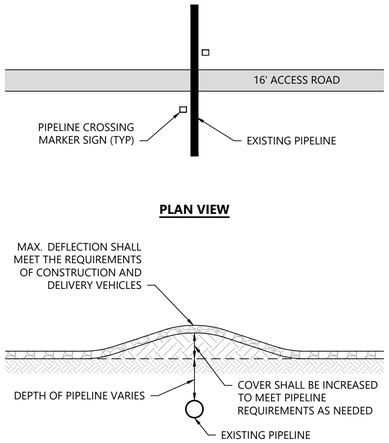
Westwood	WATER LINE-ELECTRICAL CROSSING	LAST REVISED: 11/08/11 UT04



NOTE:

1. PRIOR TO DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
2. ROADS SHALL CROSS AS CLOSE TO NINETY DEGREES (90°) TO UNDERGROUND UTILITY LINE AS POSSIBLE.
3. INSTALL MARKERS & SIGNS AT UNDERGROUND UTILITY LINE CROSSINGS.
4. COMPACTED FILL PLACED ABOVE THE EXISTING GRADE IS ONLY NEEDED IF THE EXISTING COVER ABOVE THE UNDERGROUND UTILITY LINE IS LESS THAN 24".

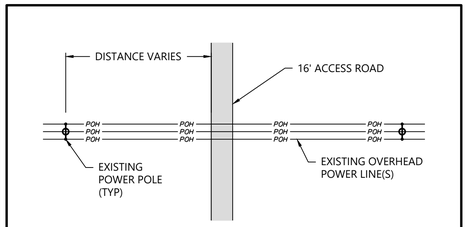
Westwood	UNDERGROUND UTILITY-ROAD/CRANE CROSSING	LAST REVISED: 11/08/11 UT05



NOTES:

1. EACH CROSSING MUST BE APPROVED BY THE PIPELINE OWNER PRIOR TO CROSSING ON A CASE-BY-CASE BASIS. REFER TO THE UTILITY CROSSING AGREEMENT.
2. CONTRACTOR SHALL NOTIFY PIPELINE OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
3. PRIOR TO ANY DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
4. CROSSINGS SHOULD BE AT OR AS NEAR TO RIGHT ANGLES AS PRACTICAL.
5. EARTH COVER PROTECTION FOR EXISTING PIPELINE SHALL BE USED WHERE THE COVER OVER THE EXISTING PIPELINE IS LESS THAN REQUIRED IN THE UTILITY CROSSING AGREEMENT.
6. INSTALL CROSSING MARKER SIGNS AT PERMANENT CROSSINGS IN ACCORDANCE WITH THE UTILITY CROSSING AGREEMENT.

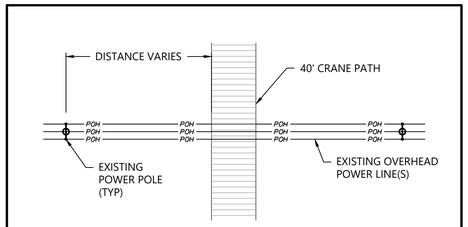
Westwood	ACCESS ROAD CROSSING OF EXISTING PIPELINE NOT TO SCALE	UT-01



NOTES:

1. EACH CROSSING MUST BE APPROVED BY THE OVERHEAD POWER OWNER PRIOR TO CROSSING ON A CASE-BY-CASE BASIS. REFER TO THE UTILITY CROSSING AGREEMENT.
2. CONTRACTOR SHALL NOTIFY OVERHEAD POWER OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
3. CROSSINGS SHOULD BE AT OR AS NEAR TO RIGHT ANGLES AS PRACTICAL.
4. DISTURBED GROUND NOT COVERED BY GRAVEL WILL BE RESTORED TO EXISTING CONDITIONS.
5. IN SOME CASES, PROPOSED ACCESS ROAD ELEVATION MAY VARY FROM EXISTING GROUND ELEVATION.
6. MAINTAIN OSHA AND OTHER APPLICABLE CLEARANCES/PROTOCOL.

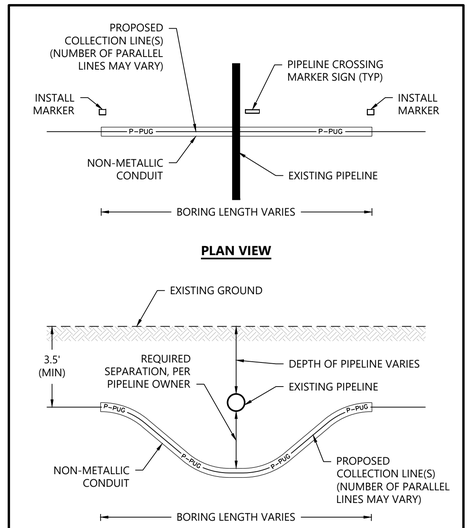
Westwood	ACCESS ROAD CROSSING OF EXISTING OVERHEAD POWER NOT TO SCALE	UT-04



NOTES:

1. EACH CROSSING MUST BE APPROVED BY THE OVERHEAD POWER OWNER PRIOR TO CROSSING ON A CASE-BY-CASE BASIS. REFER TO THE UTILITY CROSSING AGREEMENT.
2. CONTRACTOR SHALL NOTIFY OVERHEAD POWER OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
3. CROSSINGS SHOULD BE AT OR AS NEAR TO RIGHT ANGLES AS PRACTICAL.
4. DISTURBED GROUND WILL BE RESTORED TO EXISTING CONDITIONS.
5. IN SOME CASES, PROPOSED CRANE PATH ELEVATION MAY VARY FROM EXISTING GROUND ELEVATION.
6. MAINTAIN OSHA AND OTHER APPLICABLE CLEARANCES/PROTOCOL.

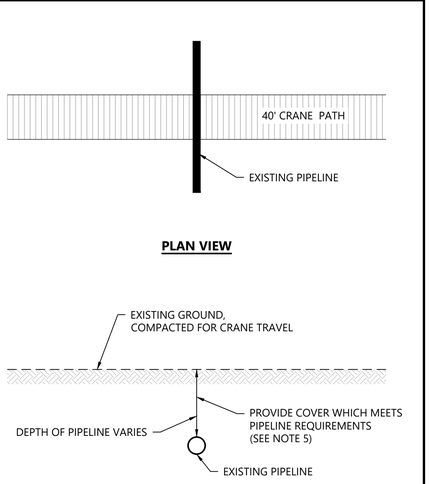
Westwood	CRANE CROSSING OF EXISTING OVERHEAD POWER NOT TO SCALE	UT-13



NOTES:

1. EACH CROSSING MUST BE APPROVED BY THE PIPELINE OWNER PRIOR TO CROSSING ON A CASE-BY-CASE BASIS. REFER TO THE UTILITY CROSSING AGREEMENT.
2. CONTRACTOR SHALL NOTIFY PIPELINE OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
3. PRIOR TO ANY DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
4. CROSSINGS SHOULD BE AT OR AS NEAR TO RIGHT ANGLES AS PRACTICAL.
5. INSTALL CROSSING MARKER SIGNS AT PERMANENT CROSSINGS IN ACCORDANCE WITH THE UTILITY CROSSING AGREEMENT.

Westwood	POWER COLLECTION SYSTEM CROSSING OF EXISTING PIPELINE NOT TO SCALE	UT-20



NOTES:

1. EACH CROSSING MUST BE APPROVED BY THE PIPELINE OWNER PRIOR TO CROSSING ON A CASE-BY-CASE BASIS. REFER TO THE UTILITY CROSSING AGREEMENT.
2. CONTRACTOR SHALL NOTIFY PIPELINE OWNER PRIOR TO CONSTRUCTION ACTIVITIES.
3. PRIOR TO ANY DIGGING, CONTRACTOR SHALL CONTACT THE STATE ONE-CALL SYSTEM AT 811.
4. CROSSINGS SHOULD BE AT OR AS NEAR TO RIGHT ANGLES AS PRACTICAL.
5. MATTING OR EARTHEN COVER MAY BE NEEDED TO ACHIEVE NECESSARY SUPPORT FOR CROSSINGS. THIS WILL BE AGREED UPON BY THE CONTRACTOR AND PIPELINE OWNER ON A CASE-BY-CASE BASIS.

Westwood	CRANE CROSSING OF EXISTING PIPELINE NOT TO SCALE	UT-10

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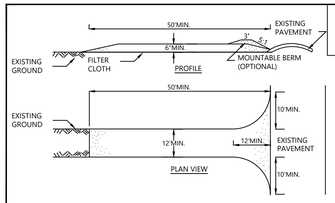
FIGURE 2.1
STABILIZED CONSTRUCTION ACCESS

SYMBOL



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

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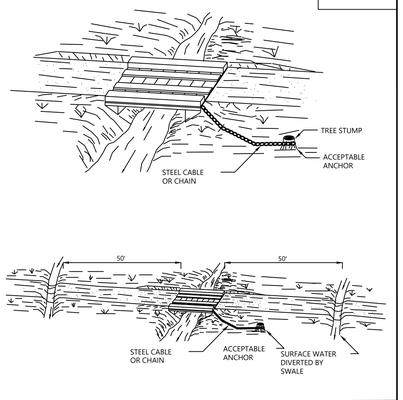
STABILIZED CONSTRUCTION ACCESS

FIGURE 2.2
TEMPORARY ACCESS BRIDGE

SYMBOL



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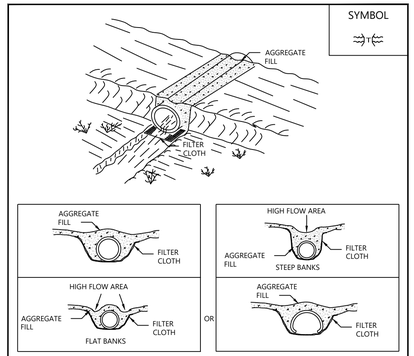
TEMPORARY ACCESS BRIDGE

FIGURE 2.3
TEMPORARY ACCESS CULVERT

SYMBOL



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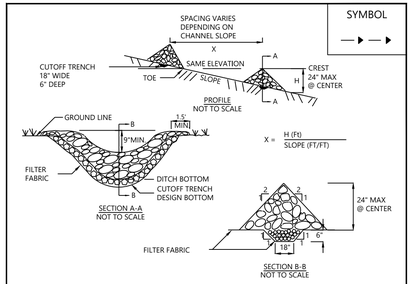
TEMPORARY ACCESS CULVERT

FIGURE 3.1
STONE CHECK DAM DETAIL

SYMBOL



CONSTRUCTION SPECIFICATIONS

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

MAXIMUM DRAINAGE AREA 2 ACRES.

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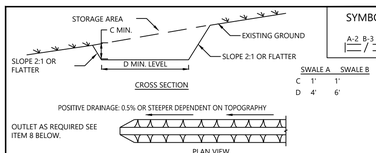
STONE CHECK DAM

FIGURE 3.2
CONSTRUCTION DITCH DETAIL

SYMBOL
A-2, B-3



CONSTRUCTION SPECIFICATIONS

1. ALL CONSTRUCTION DITCHES SHALL HAVE UNINTERUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. 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 SWALE.
5. THE DITCH 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.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DITCH.
8. STABILIZATION SHALL BE AS PER THE FLOW CHANNEL STABILIZATION CHART BELOW:

TYPE OF TREATMENT	CHANNEL GRADE	A/S AC. OR LESS)	B/S AC. -10AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED AND COVER USING RECP
3	5.1-8.0%	SEED AND COVER WITH RECP GEOTEXTILE	LINED WITH 4-8" RIP-RAP OR
4	8.1-10.%	LINED WITH 4-8" RIP-RAP OR GEOTEXTILE	SITE SPECIFIC DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

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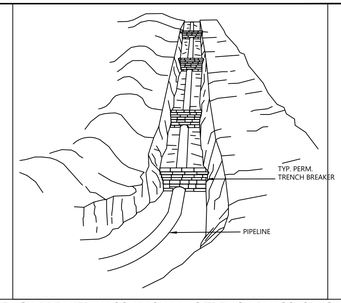
CONSTRUCTION DITCH

FIGURE 12
TRENCH BREAKER DETAIL



TRENCH BREAKER (ALSO KNOWN AS TRENCH PLUGS) SPACING	
SLOPE (%)	SPACING (FEET)
0-5%	150 FT
5-10%	100 FT
10-15%	80 FT
15-20%	70 FT
20-30%	50 FT
30-40%	40 FT
40-100%	25 FT

NOTE:
1. DEPENDING ON SITE SPECIFIC CONDITIONS OF SLOPES EXCEEDING 40%, THE SPACING BETWEEN TRENCH BREAKERS MAY CONTINUE DIMINISHING AS ILLUSTRATED, OR MAY CEASE DIMINISHING ONCE A SPACING OF 30 TO 35 FEET HAS BEEN REACHED
2. THE PREFERRED CONSTRUCTION MATERIAL FOR TRENCH BREAKERS IS SAND BAGS, WHICH ARE DURABLE YET FUNCTIONAL; IMPEDE THE FLOW OF SUBSURFACE WATER ALONG THE TRENCH
3. IN AGRICULTURAL LANDS, TOP OF TRENCH BREAKER WILL NOT BE CLOSER THAN TWO FEET FROM THE RESTORED SURFACE.

TRENCH BREAKER

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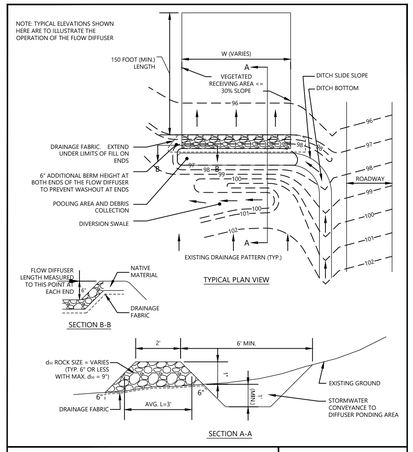
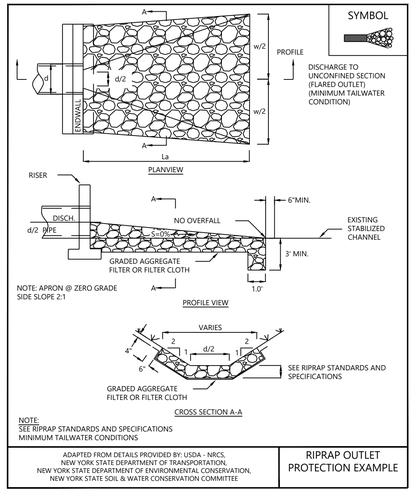
FIGURE 3.6
FLOW DIFFUSER DETAIL



FLOW DIFFUSER

FIGURE 3.18
RIPRAP OUTLET PROTECTION DETAIL (1)



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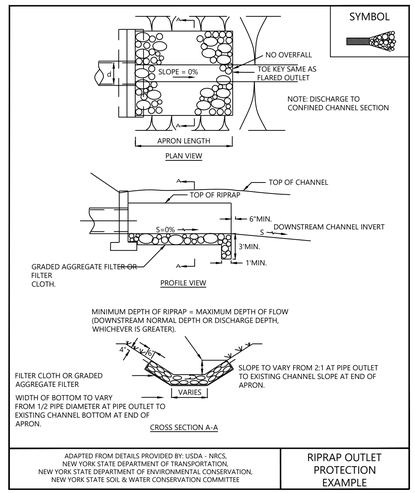
RIPRAP OUTLET PROTECTION EXAMPLE

FIGURE 3.19
RIPRAP OUTLET PROTECTION DETAIL (2)



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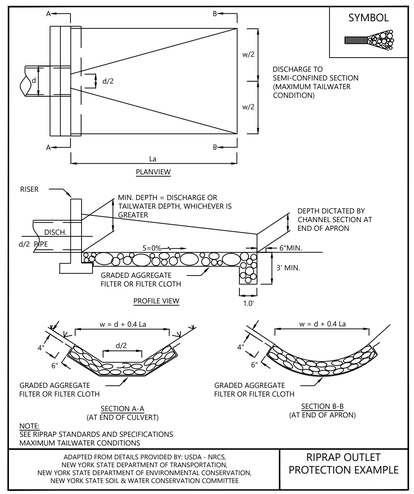
RIPRAP OUTLET PROTECTION EXAMPLE

SCHEDULE FOR STORM DRAIN			
CULVERT DIAMETER (D)	LENGTH (L)	WIDTH (W)	STONE ds_{50}
12"	8'	12'	6"
18"	10'	12'	6"
24"	12'	14'	6"
30"	16'	20'	12"
36"	20'	23'	12"

The minimum thickness of the riprap layer shall be 1.5 times the maximum rock diameter for d_{50} of 15 inches or less, and 1.2 times the maximum rock size for d_{50} greater than 15 inches. The following chart lists some examples:

D_{50} (Inches)	d_{max} (Inches)	Minimum Blanket Thickness (Inches)
4	6	9
6	9	14
9	14	20
12	18	27
15	22	32
18	27	32
21	32	38
24	36	43

FIGURE 3.20
RIPRAP OUTLET PROTECTION DETAIL (3)



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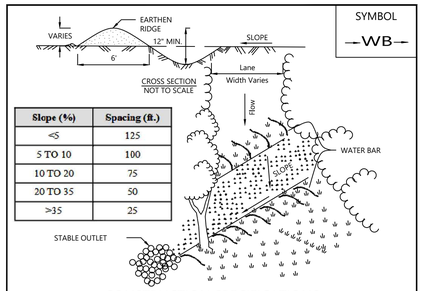
RIPRAP OUTLET PROTECTION EXAMPLE

FIGURE 3.22
WATER BAR DETAIL



Slope (%)	Spacing (ft.)
<5	125
5 TO 10	100
10 TO 20	75
20 TO 35	50
>35	25

CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE SEEDED AND MULCHED WITHIN 2 DAYS.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

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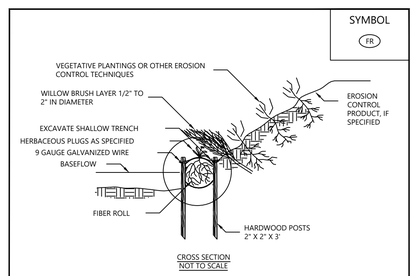
WATER BARS

FIGURE 4.8
FIBER ROLL



CONSTRUCTION SPECIFICATIONS

1. EXCAVATE A SHALLOW TRENCH SLIGHTLY BELOW BASEFLOW OR A 4" TRENCH ON SLOPE CONTOURS.
2. PLACE THE ROLL IN THE TRENCH AND ANCHOR WITH 2" x 2" POSTS PLACED ON BOTH SIDES OF THE ROLL AND SPACED LATERALLY ON 2' TO 4' CENTERS. TRIM THE TOP OF THE POSTS EVEN WITH THE EDGE OF THE ROLL IF NECESSARY.
3. NOTCH THE POSTS AND TIE TOGETHER, ACROSS THE ROLL, WITH 9 GAUGE GALVANIZED WIRE OR 1/8" DIAMETER BRAIDED NYLON ROPE..
4. PLACE SOIL EXCAVATED FROM THE TRENCH BEHIND THE ROLL AND HAND TAMP. PLANT WITH SUITABLE HERBACEOUS OR WOODY VEGETATION AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS. VEGETATION SHALL BE PLACED IMMEDIATELY ADJACENT TO THE ROLL TO PROMOTE ROOT GROWTH INTO THE FIBER. HERBACEOUS VEGETATION, IF SPECIFIED, SHALL BE PLANTED INTO THE FIBER ROLL.

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FIBER ROLL

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Figure 4.1
Angles of Repose of Riprap Stones (FHWA)

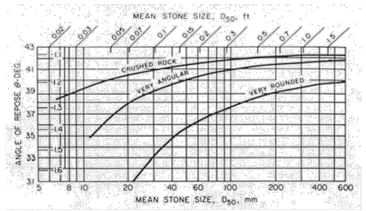


Figure 4.2
Typical Riprap Slope Protection Detail

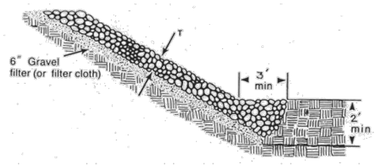
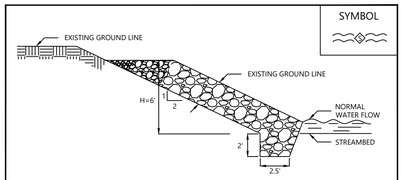


FIGURE 4.3
RIPRAP CHANNEL STABILIZATION



RIPRAP DESIGN TABLE

REACH	CLASS	THICKNESS	LAYER	HEIGHT	D10	D50	D85	D100	FILTER

CONSTRUCTION SPECIFICATIONS

1. SLOPE SHALL BE GRADED TO 2:1 OR FLATTER PRIOR TO PLACING FILTER, FILTER FABRIC, OR RIPRAP.
2. RIPRAP SHALL BE PLACED TO MAINTAIN A UNIFORM GRADATION. LARGER STONE SHALL BE PLACED AT THE TOE.
3. ENDS OF THE RIPRAP SHALL BE KEYED INTO A STABLE BANK. WHEN TYING INTO OTHER STRUCTURES, LARGER RIPRAP CAN BE LAID IN STEPS OR STACKED AS NEEDED TO FIT. STONES LARGER THAN THOSE DESIGNED FOR FLOW SHALL BE USED FOR THIS PURPOSE.
4. REMAINING DISTURBED AREAS SHALL BE GRADED AND PERMANENTLY SEEDED AND MULCHED.

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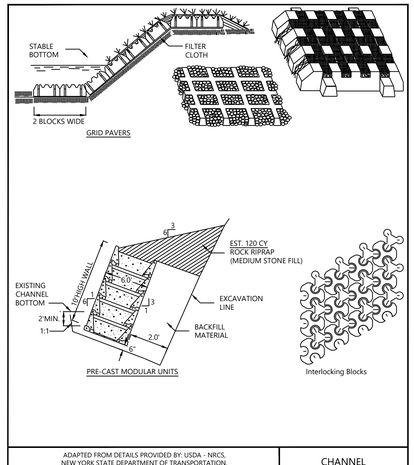
RIPRAP STREAMBANK PROTECTION DETAILS

FIGURE 4.4
CHANNEL STABILIZATION METHODS



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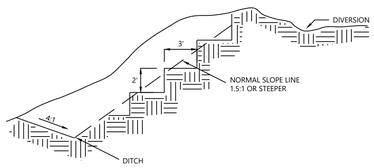
CHANNEL STABILIZATION METHODS

FIGURE 4.9
TYPICAL SECTION OF SERRATED CUT SLOPE



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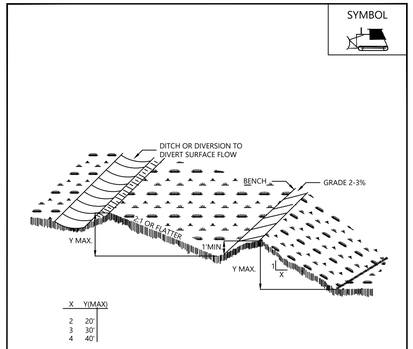
TYPICAL SECTION OF SERRATED CUT SLOPE

FIGURE 4.10
LANDGRADING



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LANDGRADING DETAIL

FIGURE 4.11
LANDGRADING - CONSTRUCTION SPECIFICATIONS

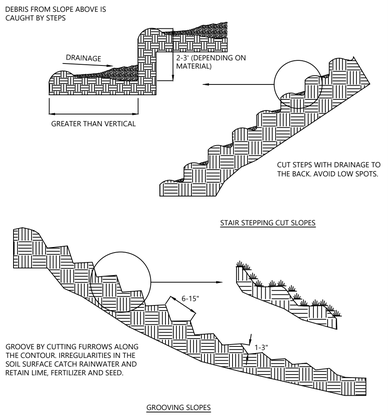
CONSTRUCTION SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER REALTED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

LANDGRADING SPECIFICATIONS

FIGURE 4.18
SURFACE ROUGHENING



ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

SURFACE ROUGHENING DETAILS

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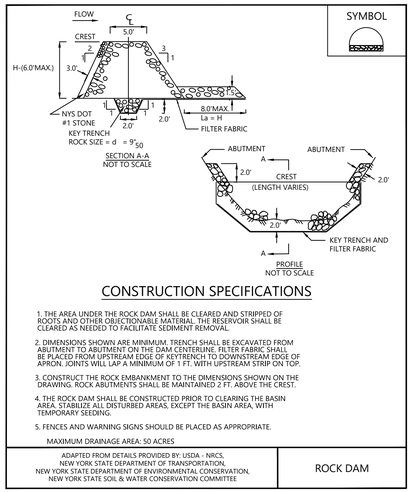
FIGURE 5.7
ROCK DAM



CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER THE ROCK DAM SHALL BE CLEARED AND STRIPPED OF ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE RESERVOIR SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT REMOVAL.

2. DIMENSIONS SHOWN ARE MINIMUM. TRENCH SHALL BE EXCAVATED FROM ABUTMENT TO ABUTMENT ON THE DAM CENTERLINE. FILTER FABRIC SHALL BE PLACED FROM UPSTREAM EDGE OF KEYTRENCH TO DOWNSTREAM EDGE OF APRON. JOINTS WILL LAP A MINIMUM OF 1 FT. WITH UPSTREAM STRIP ON TOP.

3. CONSTRUCT THE ROCK EMBANKMENT TO THE DIMENSIONS SHOWN ON THE DRAWING. ROCK ABUTMENTS SHALL BE MAINTAINED 2 FT. ABOVE THE CREST.

4. THE ROCK DAM SHALL BE CONSTRUCTED PRIOR TO CLEARING THE BASIN AREA. STABILIZE ALL DISTURBED AREAS, EXCEPT THE BASIN AREA, WITH TEMPORARY SEEDING.

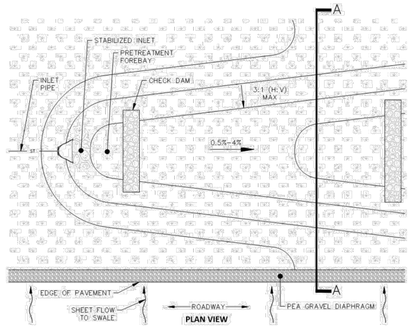
5. FENCES AND WARNING SIGNS SHOULD BE PLACED AS APPROPRIATE.

MAXIMUM DRAINAGE AREA: 50 ACRES

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	ROCK DAM

Wet Swale (O-2)

Wet swales are a vegetated conveyance channel designed to retain water/create marshy conditions that support wetland vegetation. A seasonal high water table or poorly drained soils are necessary to retain water. The wet swale essentially acts as a linear shallow wetland treatment system, where the WQ_v is retained.



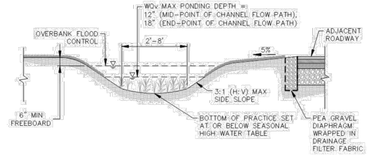
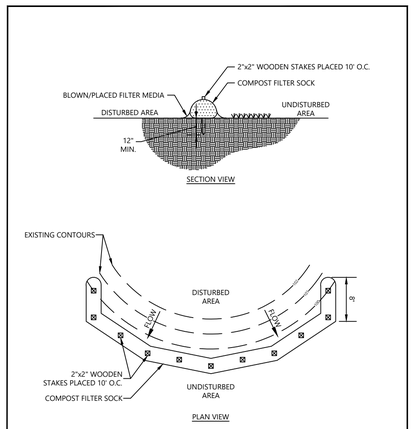


Figure 6.23 Wet Swale (O-2)

FIGURE 5.2
COMPOST FILTER SOCK



ADAPTED FROM DETAILS PROVIDED BY: FILTREXX	COMPOST FILTER SOCK

1. SOCK FABRIC SHALL MEET STANDARDS OF TABLE 5.1. COMPOST SHALL MEET THE STANDARDS LISTED ON OF TABLE 5.2.

2. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE, BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT (FIGURE 5.2). MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN ON FIGURE X.X. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.

3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

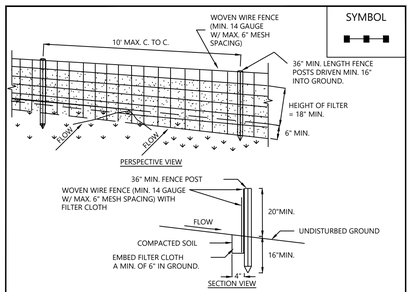
4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVEGROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

5. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

6. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

7. UPON STABILIZATION OF THE AREA TRIBUTART TO THE SOCKS, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

FIGURE 5.30
REINFORCED SILT FENCE



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.

2. 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.

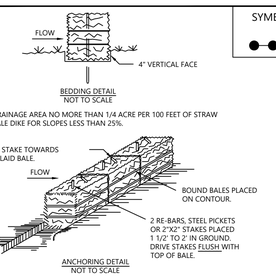
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.

4. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS SHOWN.

5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	REINFORCED SILT FENCE

FIGURE 5.34
STRAW BALE DIKE



CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.

3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.

4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULLNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	STRAW BALE DIKE

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TABLE 1: TURBINE TABLE

NEW YORK CENTRAL NSRS11 (2011) SPCS US FEET

Name	Northing	Easting	Lattitude	Longitude
T-1	1009795	825082	42.77150	-76.56472
T-2	1010562	829298	42.77380	-76.54938
T-3	1009034	830109	42.76921	-76.54631
T-4	1013228	833479	42.78090	-76.53390
T-5	1011699	833625	42.77670	-76.53336
T-6	1011215	835927	42.77525	-76.52477
T-7	1009709	833976	42.77124	-76.53206
T-8	1007789	834291	42.76597	-76.53089
T-9	1005090	834249	42.75978	-76.53142
T-10	1007564	837268	42.76535	-76.51980
T-11	1005533	836730	42.75978	-76.52181
T-12	1004814	842437	42.75881	-76.49947
T-13	1003047	831045	42.75352	-76.54308
T-14	1001791	829215	42.74952	-76.54980
T-15	1000323	830998	42.74549	-76.54316
T-16	1002170	836154	42.75040	-76.52346
T-17	1000773	837495	42.74674	-76.51811
T-18	1000252	844089	42.74527	-76.49443
T-19	994627	840504	42.72985	-76.50864
T-20	996375	838834	42.73464	-76.51400
T-21	994155	838511	42.72985	-76.50864
T-22	995396	835633	42.73196	-76.52592
T-23	995053	833242	42.73063	-76.53472
T-24	991302	831061	42.72985	-76.50864
MET-1	998753	843556	42.74116	-76.49642
MET-2	995503	841280	42.73225	-76.50490
ADLS-1	998166	844094	42.73955	-76.49442

TABLE 2: DRAINAGE CROSSINGS

Crossing Number	Storm Event	Culvert Size	LWC Type
DC01	100	-	HEAVY DUTY
DC02	100	2-24"	STANDARD DUTY
DC03	100	3-60"	HEAVY DUTY
DC04	100	2-36"	STANDARD DUTY
DC05	100	3-30"	STANDARD DUTY
DC06	100	-	HEAVY DUTY
DC07	100	4-54"	STANDARD DUTY
DC08	100	4-42"	STANDARD DUTY
DC09	100	4-48"	STANDARD DUTY
DC10	100	3-36"	STANDARD DUTY
DC11	100	-	STANDARD DUTY
DC12	100	3-36"	STANDARD DUTY
DC13	100	-	STANDARD DUTY
DC14	100	-	STANDARD DUTY
DC15	100	3-42"	STANDARD DUTY
DC16	100	1-18"	STANDARD DUTY
DC17	100	3-42"	STANDARD DUTY

TABLE 3: ENTRANCE CROSSINGS

Crossing Number	Storm Event	Culvert Size	Alternative Options
EC01	100	1-18"	SUMP CULVERT OR LWC
EC02	100	3-30"	-
EC03	100	1-18"	-
EC04	100	1-18" ; 1-12"	-
EC07	100	1-18"	SUMP CULVERT OR LWC
EC08	100	1-18" ; 1-12"	-
EC09	100	1-18" ; 1-12"	-
EC11	100	1-30"	-
EC12	100	1-30"	SUMP CULVERT OR LWC
EC13	100	1-18" ; 1-12"	SUMP CULVERT OR LWC
EC14	100	2-30"	SUMP CULVERT OR LWC
EC15	100	1-18"	-
EC16	100	2-30"	SUMP CULVERT OR LWC
EC17	100	1-18"	-
EC18	100	1-18"	-
EC19	100	2-36"	SUMP CULVERT OR LWC
EC20	100	1-18" ; 1-12"	SUMP CULVERT OR LWC
EC21	100	1-18" ; 1-12"	SUMP CULVERT OR LWC

TABLE 5: TURBINE PAD RESTORATION

Turbine Name	Restoration Detail Reference
T-1	RT-04
T-2	RT-04
T-3	RT-04
T-4	RT-02
T-5	RT-02
T-6	RT-04
T-7	RT-02
T-8	RT-03
T-9	RT-03
T-10	RT-03
T-11	RT-03
T-12	RT-03
T-13	RT-04
T-14	RT-04
T-15	RT-03
T-16	RT-03
T-17	RT-02
T-18	RT-03
T-19	RT-02
T-20	RT-04
T-21	RT-04
T-22	RT-02
T-23	RT-02
T-24	RT-04

TABLE 4: STORMWATER BASIN TABLE

BASIN ID	BASIN TYPE	PLAN SHEET	BOTTOM ELEVATION (FT)	TOP ELEVATION (FT)	EMERGENCY OVERFLOW		OUTLET CULVERT				RISER		SKIMMER		TOTAL CONTRIBUTING AREA (AC)	ASSUMED DISTURBED AREA (AC)	PROVIDED STORAGE VOLUME (AC-FT)
					ELEVATION (FT)	WIDTH (FT)	OUTLET CULVERT SIZE	CULVERT INVERT ELEVATION (FT)	CULVERT OUTLET ELEVATION (FT)	OUTLET CULVERT LENGTH (FT)	ELEVATION (FT)	SIZE (IN)	SKIMMER SIZE (IN)	ORIFICE DIA. SIZE (IN)			
SUBSTATION	INFILTRATION	EC309	1218.00	1220.50	1220.00	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.2	N/A	0.80
POI	FILTRATION	EC309	1242	1245	1244	4	6" DRAINTILE	1239	1238.5	N/A	N/A	N/A	N/A	N/A	4.2	N/A	0.59

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Agricola Wind Project

Cayuga County, New York

Construction Tables

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GENERAL NOTES

1. THE PLANIMETRIC FEATURES SHOWN ON THE PLANS ARE PROVIDED BY AGRICOLA WIND LLC BASED ON AERIAL PHOTOGRAPHY. GROUND SURFACE CONTOURS AND ELEVATIONS ARE PROVIDED BY AGRICOLA WIND LLC BASED ON AERIAL PHOTOGRAPHY. NOT ACTUAL FIELD SURVEYING. AS SUCH, THE ACCURACY OF THE ELEVATIONS AND CONTOURS ARE NOT AS HIGH AS INFORMATION GATHERED USING CONVENTIONAL FIELD SURVEYING PROCEDURES. THE CONTRACTOR MAY FIND THAT GROUND ELEVATIONS DETERMINED DURING FIELD VARY FROM THE GROUND ELEVATIONS SHOWN ON THE DRAWINGS. WHERE MAJOR DISCREPANCIES ARE FOUND, THE OWNER AND ENGINEER SHALL BE CONTACTED AND NOTIFIED.
2. PROPERTY LINES, RIGHT OF WAY (ROW) LINES, AND EASEMENTS ARE BASED ON ALTA SURVEY PREPARED BY WESTWOOD SURVEYING AND ENGINEERING, P.C.
3. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
4. THE CONTRACTOR SHALL NOTIFY STATE UTILITY LOCATE SERVICE (DIG SAFELY NEW YORK 811) AT LEAST 48 HOURS BEFORE EXCAVATION ACTIVITIES COMMENCE.
5. UTILITY LOCATIONS SHOWN ON THE PLANS ARE BASED ON ALTA SURVEY PREPARED BY WESTWOOD SURVEYING AND ENGINEERING, P.C.. CONTRACTOR AND OWNER ARE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION. IF UTILITIES ARE DETERMINED TO EXIST THAT ARE NOT SHOWN ON THE PLANS THE ENGINEER SHALL BE CONTACTED IMMEDIATELY. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND RELOCATE AS REQUIRED IN COORDINATION WITH UTILITY AND LANDOWNER.
6. THE CONTRACTOR SHALL NOTIFY AND COORDINATE ALL WORK WITH THE UTILITY COMPANIES.
7. UTILITY CROSSING REQUIREMENTS HAVE NOT BEEN COMPLETED FOR THE PROJECT. CONTRACTOR SHALL VERIFY CROSSING DESIGNS WITH ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO VERIFY EXISTING CONDITIONS SHOWN ON THE PLANS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
9. ANY FACILITIES REMOVED TO ALLOW FOR CONSTRUCTION (MAILBOXES, SIGNS, FENCES, LIGHTING, ETC.) SHALL BE REPLACED BY THE CONTRACTOR IN A CONDITION AS GOOD AS EXISTING.
10. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING DRAINAGE THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONSTRUCTION ACTIVITIES SHALL NOT BLOCK THE NATURAL OR MANMADE CREEKS OR DRAINAGE SWALES CAUSING RAINWATER TO POND. DEPENDING ON FIELD CONDITIONS, ADDITIONAL CULVERTS IN EXCESS OF THOSE ON THE PLANS MAY BE REQUIRED.
11. IF LOCALIZED LOW POINTS ARE ENCOUNTERED DURING TOPSOIL STRIPPING, MASSAGE SURROUNDING AREA TO MAINTAIN POSITIVE DIRECTION OF DRAINAGE TO MINIMIZE PONDING OF STORMWATER DURING RAINFALL EVENTS.
12. ROAD MAINTENANCE IS EXPECTED OVER THE LIFE OF THE FACILITY. ROADS SHALL BE MAINTAINED BY THE PROJECT OWNER. MAINTENANCE THROUGH CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
13. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL CLEAN THE LOCATION OF THE WORK AND ALL GROUND IN THE PROJECT AREA OCCUPIED BY THE CONTRACTOR DURING THE PROJECT. THE CONTRACTOR SHALL REMOVE ALL RUBBISH, EXCESS MATERIALS, TEMPORARY STRUCTURES, AND EQUIPMENT, LEAVING THE LOCATION OF THE WORK CLEANED TO THE SATISFACTION OF THE OWNER AND ENGINEER.
14. HAUL ROUTES SHOWN ON THE PLANS ARE PROVIDED BY AGRICOLA WIND LLC. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE SUITABILITY OF THIS ROUTE, INCLUDING EXISTING BRIDGE AND CULVERT STRUCTURES, FOR CONSTRUCTION TRAFFIC.
15. CONTRACTOR SHALL MINIMIZE DISTURBANCE DURING CULVERT REPLACEMENT ACTIVITIES AND REVIEW ENVIRONMENTAL REPORTS PRIOR TO WORK IN STREAM/WETLAND AREAS.
16. WHILE BUILDING THE ROADS AND EXCAVATING THE TURBINE FOUNDATIONS, EXCESS SOIL WILL RESULT. THE CONTRACTOR SHALL DISPOSE OF THIS EXCESS SOIL IN AN APPROVED MANNER. NO TOPSOIL WILL BE ALLOWED TO LEAVE THE PROPERTY FROM WHICH IT WAS DUG WITHOUT APPROVAL OF AGRICOLA WIND LLC, THE LANDOWNER, AND THE ENVIRONMENTAL MONITOR. EXCESS TOPSOIL SHALL BE DISTRIBUTED INTO A THIN LAYER ON LAND IMMEDIATELY ADJACENT TO WHERE THE TOPSOIL ORIGINATED. WHILE DOING SO THE CONTRACTOR SHALL AVOID CAUSING RIDGES OR MOUNDS THAT WOULD MAKE IT DIFFICULT FOR STORM WATER RUNOFF TO DRAIN. THE FINAL SURFACE OF THE DISTURBED TOPSOIL SHALL BE SMOOTH AND FOLLOW THE NATURAL CONTOUR OF THE LAND.
17. FINALIZE GRADING AROUND THE BASE OF TURBINES IN ACCORDANCE WITH DETAIL TS03-A/TS03-B.
18. GRADE ALL PROPOSED ROADS TO A MAXIMUM SLOPE OF 8%. IF 8% SLOPE CANNOT BE ACHIEVED, THE CONTRACTOR MAY UTILIZE ASSIST VEHICLES FOR THE PURPOSE OF DELIVERIES UP TO 12% AS PER VESTAS SPEC.
19. TEMPORARY INTERSECTION WIDENINGS SHALL, UPON COMPLETION OF ALL PROJECT CONSTRUCTION ACTIVITIES OR UPON NOTIFICATION TO THE CONTRACTOR BY THE ENGINEER, BE REMOVED AND RESTORED TO ITS ORIGINAL LINES AND GRADES AND STABILIZED/SEEDED IN ACCORDANCE WITH THE PROJECT SWPPP.
20. CRANE PATHS ARE SHOWN ON THE CONSTRUCTION PLANS. IF THE CONTRACTOR PROPOSES ALTERNATE CRANE PATHS, THEY SHALL MAKE SURE THAT AVOIDANCE AREAS ARE NOT DISTURBED. FINAL CRANE PATH ALIGNMENTS SHALL BE DETERMINED BY THE CONTRACTOR BASED UPON FIELD CONDITIONS WITHIN THE CONSTRUCTION EASEMENTS, AND THE PROJECT BOUNDARY. ALL PROPOSED CRANE PATH MODIFICATIONS MUST BE APPROVED BY AGRICOLA WIND LLC AND THE ENVIRONMENTAL MONITOR.
21. TURBINE SETBACKS ARE NOT IDENTIFIED ON THE CONSTRUCTION PLANS. IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT ALL TURBINE SETBACKS MEET PROJECT REQUIREMENTS.
22. THE CONTRACTOR SHALL BE FAMILIAR WITH THE REPORTS AND SHALL REVIEW ALL RECOMMENDATIONS.
23. REFER TO ELECTRICAL PLANS FOR LOCATIONS, CONSTRUCTION DETAILS AND SPECIFICATIONS FOR THE UNDERGROUND/OVERHEAD POWER COLLECTION SYSTEM, CONTROL BUILDING, SUBSTATION, AND PERMANENT & TEMPORARY FIBER OPTIC LINES.
24. WIND TURBINE TOWER DOOR ORIENTATION SHALL BE CONFIRMED WITH THE OWNER PRIOR TO CONSTRUCTION.
25. ISOLATED GRADING FOR CRANE PATHS MAY BE REQUIRED. CONTRACTOR TO GRADE ACCORDING TO CRANE MANUFACTURER'S SPECIFICATIONS
26. NO IMPACTS TO THESE AVOIDANCE AREAS ARE ALLOWED EXCEPT IN THE LOCATIONS SHOWN ON THE PLANS.
27. CONTRACTOR SHALL PROVIDE STAKING WHERE APPROPRIATE TO ENSURE ALL CONSTRUCTION ACTIVITIES STAY WITHIN THE PROJECT BOUNDARY.
28. TIMBER MATTING REQUIRED WHEN CROSSING AGRICULTURAL LAND.
29. SENSITIVE AREAS WILL REQUIRE SILT FENCING TO BE INSTALLED ALONG THE BORDER WHERE THESE FEATURES EXIST WITHIN 100' OF ACCESS ROADS AND OTHER FACILITIES.
30. REFER TO EROSION CONTROL PLANS FOR EROSION AND SEDIMENTATION CONTROL CONTINUATION.
31. EROSION AND SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN THE FIELD DURING VARIOUS PHASES OF THE PROJECT.
32. NO GROUND DISTURBANCE OR CONSTRUCTION RELATED ACTIVITIES WITHIN OCCUPIED WINTERING AND BREEDING HABITAT IDENTIFIED IN THE APPROVED NET CONSERVATION BENEIT PLAN SHALL BE CONDUCTED DURING THE RESTRICTED PERIODS IDENTIFIED IN 19 NYCRR 900-6.4(o). IF ACTIVITIES MUST OCCUR WITHIN THIS TIME WINDOW, THE OCCUPIED HABITAT AREAS PROPOSED FOR ACTIVE CONSTRUCTION SHALL BE ASSESSED WEEKLY BY THE ON-SITE ENVIRONMENTAL MONITOR OR BIOLOGIST.
33. CONTRACTOR SHALL REPAIR CRUSHED OR SEVERED DRAIN TILE IN ACCORDANCE WITH THE DRAIN TILE REPAIR DETAIL UT-41. THE ENVIRONMENTAL MONITOR SHALL COORDINATE WITH NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS (NYSAGM) TO ENSURE COMPLIANCE WITH THE APPROVED DRAINAGE REMEDIATION PLAN.
34. A THIRD-PARTY ENVIRONMENTAL MONITOR SHALL BE HIRED TO OVERSEE CONSTRUCTION, RESTORATION, AND FOLLOW-UP MONITORING IN AGRICULTURAL AREAS. THE ENVIRONMENTAL MONITOR SHALL BE ON-SITE WHENEVER CONSTRUCTION OR RESTORATION WORK IS OCCURRING IN AGRICULTURAL LANDS AND SHALL COORDINATE WITH THE NYSAGM TO ENSURE THAT THE GOALS OF THE NYSAGM GUIDELINES ARE BEING MET TO THE FULLEST EXTENT PRACTICABLE.
35. ALL DISTURBED AREAS ARE TO BE RESTORED TO PRE-EXISTING OR BETTER CONDITIONS. THE CONTRACTOR IS TO ENSURE RESTORATION OF THE ENTIRE WORK SITE IS IN COMPLIANCE WITH THE 94-C PERMIT AND NYSAGM GUIDELINES FOR WIND ENERGY PROJECTS.
36. CONSTRUCTION WORK SHALL BE LIMITED TO THE HOURS OF 7:00 A.M. TO 8:00 P.M. MONDAY THROUGH SATURDAY AND 8:00 A.M. TO 8:00 P.M. SUNDAYS AND NATIONAL HOLIDAYS. FOR CERTAIN CONSTRUCTION PHASES AND ACTIVITIES, ADDITIONAL WORK HOURS MAY BE NECESSARY AND SHALL BE NOTIFIED IN ACCORDANCE WITH THE 94-C PERMIT. ACCESS IS RESTRICTED IN ENVIRONMENTALLY SENSITIVE AREAS IDENTIFIED ON THE PLANS BETWEEN THE PERIOD OF DECEMBER THROUGH MARCH. THE ENVIRONMENTAL MONITOR SHALL MONITOR ACTIVITIES WITHIN THE ENVIRONMENTALLY SENSITIVE AREA DURING APPROVED TIME FRAMES

ROAD DESIGN PARAMETERS

1. THE ROAD SECTION HAS BEEN DESIGNED TO ACCOMMODATE WIND TURBINE COMPONENT DELIVERY DURING CONSTRUCTION AND LIGHT DUTY TRUCKS FOR LOW VOLUME USE IN NORMAL OPERATING CONDITIONS. THE ROAD DESIGN SPECIFIED IS NOT INTENDED FOR ALL WEATHER USE FOR HEAVY DUTY, HIGH VOLUME, CONSTRUCTION LOADS.
2. ROAD MAINTENANCE CAN BE EXPECTED OVER THE LIFE OF THE PERMANENT FACILITY AND MAY INCLUDE BLADING AND REPLACEMENT OF AGGREGATE MATERIAL.
3. CONTRACTOR SHALL CONFIRM ROAD DESIGN MEETS THE REQUIREMENTS OF THE TURBINE MANUFACTURER ACCESS ROAD MANUAL.

STORM WATER DESIGN PARAMETERS

1. ANTICIPATED DRAINAGE CROSSINGS ARE SHOWN ON THE CONSTRUCTION PLANS BASED LARGELY ON OBSERVATION OF DRAINAGE CHANNELS/DRAINAGE EROSION FROM THE AERIAL IMAGERY, GIS STREAM LINEWORK AND EXISTING TOPOGRAPHY DATA AVAILABLE. ADDITIONAL CULVERTS/LOW WATER CROSSINGS MAY NEED TO BE INSTALLED IN AREAS WHERE CONCENTRATED FLOW IS EXPECTED DUE TO THE CONSTRUCTION ACTIVITIES.
2. FOR FEDERAL ONLY STREAMS CULVERT SIZE TO BE DETERMINED IN COORDINATION WITH THE UNITED STATES ARMY CORPS OF ENGINEERS (USACE).
3. FOR FEDERAL AND STATE STREAMS CULVERT SIZE TO BE DETERMINED IN COORDINATION WITH THE USACE AND IN ACCORDANCE WITH THE 19 NYCRR §900-2.6(3)(r)(6).
4. CULVERTS WITHIN THE ROWS HAVE BEEN SIZED BY WESTWOOD. INSTALLED CULVERTS SHALL BE SIZED TO MATCH THE DOWNSTREAM CULVERT SIZE WHERE AVAILABLE. WHERE THERE IS NO DOWNSTREAM CULVERT, COUNTY ROAD CULVERTS HAVE BEEN SIZED BASED ON A 10 YEAR STORM EVENT, AND STATE ROAD CULVERTS HAVE BEEN SIZED BY NYSDOT OR THE 10 YEAR STORM EVENT. IN-FIELD CULVERTS HAVE BEEN SIZED BASED UPON A 10 YEAR STORM EVENT FOR NON-JURISDICTIONAL CROSSINGS. CULVERTS FOR JURISDICTIONAL CROSSINGS HAVE BEEN SIZED BASED ON STREAM TYPE DESIGNATED BY WESTWOOD AND USACOE GENERAL GUIDELINES FOR STREAM CROSSINGS REGIONAL CONDITION 1. THE MINIMUM TYPICAL CULVERT SIZE IS 18". IT IS EXPECTED THAT CULVERTS WILL BE OVERTOPPED DURING SOME STORMS AND MAINTENANCE WILL BE REQUIRED THROUGH THE LIFE OF THE PROJECT.
5. ALL CULVERTS SHALL BE INSTALLED PER NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND/OR CAYUGA COUNTY STANDARD SPECIFICATIONS. CULVERTS WITHIN THE NYSDOT ROW REQUIRE DOUBLE-WALLED HDPE PIPE WITH SMOOTH INTERIOR WALLS WITH FLARED END SECTIONS ON PERMANENT INSTALLATIONS IN ACCORDANCE WITH NYSDOT PERMITS. CULVERTS WITHIN THE NYSDOT ROW REQUIRE FLARED END SECTIONS IN ACCORDANCE WITH NYSDOT PERMITS. ALL TEMPORARY PORTIONS OF THE INSTALLED CULVERTS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
6. WHEN INSTALLING DRAINAGE CULVERTS THE CONTRACTOR SHALL USE JUDGMENT IN SETTING THE FLOW LINE ELEVATIONS AND CULVERT LONGITUDINAL SLOPE. TYPICALLY, THE FLOW LINE ELEVATIONS AND LONGITUDINAL SLOPE OF THE CULVERT SHOULD MATCH THE NATURAL GROUND ELEVATIONS AND SLOPE TO ENSURE POSITIVE DRAINAGE. CULVERTS SHALL BE SUMPED 2.5" BELOW THE EXISTING CHANNEL FLOW LINE. CULVERTS LARGER THAN 48" SHALL BE EMBEDDED 1 FOOT BELOW THE GRADE OF THE STREAM. MINIMUM COVER SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS. WHEN POSSIBLE, ALL CULVERTS SHOULD BE PLACED AT A MINIMUM 0.5% GRADE. CULVERTS PERCHED ABOVE THE GRADE OF THE STREAM ARE NOT ALLOWED. CULVERTS IN JURISDICTIONAL STREAMS REQUIRE 20% EMBEDMENT.
7. LOW WATER CROSSINGS HAVE BEEN DESIGNED TO ALLOW NATURAL DRAINAGE TO OCCUR POST CONSTRUCTION OF THE ACCESS ROADS. IT IS ANTICIPATED THAT DURING “HEAVY” RAIN STORM EVENTS AND DURING THE FREEZE/THAW CYCLE SOME ACCESS ROADS MAY BE DIFFICULT TO TRAVERSE DUE TO THE SEASONAL ENVIRONMENTAL CONDITIONS. MAINTENANCE OF THE ACCESS ROADS MAY BE REQUIRED DUE TO NATURAL DRAINAGE.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY EROSION CONTROL MEASURES IN COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT. THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED BY WESTWOOD. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE SWPPP AND THE NEW YORK STATE GENERAL PERMIT GP-0-20-001 REFER TO THE SWPPP FOR EROSION CONTROL AND RESTORATION SPECIFICATIONS, SEDIMENT AND EROSION CONTROL PROCEDURES, LOCATIONS OF BMPs, DETAILS, AND INSPECTION INFORMATION.
2. NON-STORM WATER POLLUTANTS SUCH AS CONCRETE, FLY ASH, LIME, ASPHALT MATERIALS, OILS, AND OTHER MATERIALS SHALL BE CONTAINED AND NOT ALLOWED TO BE DISCHARGED FROM THE PROJECT AREA.

TREE CLEARING:

1. TREES WILL BE FELLED AND CUT TO APPROPRIATE LENGTHS WITHIN THE LIMITS OF DISTURBANCE IN PROXIMITY TO THE PROPOSED LOG STORAGE AREA. FELLED TIMBER WILL BE STACKED IN PLACE UNTIL SUFFICIENT SPACE HAS BEEN CLEARED TO ESTABLISH IDENTIFIED LOG STORAGE AREAS. APPROXIMATE LOG STORAGE AREAS WILL BE FINALIZED BASED ON FIELD CONDITIONS.
2. PRIOR TO WETLAND PERMIT ISSUANCE, TREE CLEARING WITHIN PALUSTINE FORESTED (PFO) WETLANDS IS NOT ALLOWED; TREES WITHIN OR ADJACENT TO PALUSTINE EMERGENT (PEM) AND PALUSTRINE SHRUB SCRUB (PSS) WETLANDS ARE TO BE HAND CUT. WETLANDS ARE NOT TO BE ENCROACHED WITH MACHINERY AND WETLANDS ARE TO BE PROTECTED.
3. ONCE PERMIT HAS BEEN OBTAINED THE CONTRACTOR MAY CUT TREES WITHIN WETLANDS MECHANICALLY, WITH THE INSTALLATION OF TIMBER MATS, AND REMOVE TREE STUBS. WETLAND ENCROACHMENT WILL BE MINIMIZED TO THE EXTENT PRACTICABLE WHEN REMOVING TREE STUMPS.
4. CONTRACTOR IS TO PROPERLY REMOVE AND DISPOSE OF THE TIMBER. COORDINATE WITH THE DEVELOPER.
5. TREE CLEARING PERMIT IS TO BE OBTAINED BY THE OWNER.
6. ALL PERMITS FEES ARE TO BE PAID BY THE OWNER.
7. AREAS DENOTED AS "PROPOSED BLADE SWING AREA" NEED TO BE FREE OF OBJECTS. WHICH INCLUDES BUT IS NOT LIMITED TO TREES AND SIGNS. ADDITIONAL AGGREGATE OR GRUBBING IS NOT NEEDED IN THESE AREAS

EXECUTION

1. CLEARING AND GRUBBING
   A. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, STUMPS, BRUSH, AND DEBRIS WITHIN THE GRADING AREAS SHOWN ON THE PLANS. THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED.
2. TOPSOIL STRIPPING
   A. TOPSOIL SHALL BE STRIPPED FROM ALL ROADWAY AND FOUNDATION AREAS THROUGH THE ROOT ZONE. TOPSOIL SHALL NOT BE STRIPPED OUTSIDE OF THE DESIGNATED DISTURBANCE AREAS.
   B. ANY TOPSOIL, THAT HAS BEEN STRIPPED, SHALL BE RE-SPREAD OR STOCKPILED WITHIN GRADING AREAS AND/OR USED AS FILL OUTSIDE OF THE DISTURBANCE AREAS. ALL TOPSOIL SHALL BE REDISTRIBUTED TO THE LAND OWNER'S PROPERTY OF WHERE IT ORIGINATED FROM AND NOT IMPEDE NATURAL DRAINAGE FLOW.
3. EMBANKMENT CONSTRUCTION
   A. EMBANKMENT CONSTRUCTION SHALL CONSIST OF THE PLACING OF SUITABLE FILL MATERIAL, AFTER TOPSOIL STRIPPING, ABOVE THE EXISTING GRADE. GENERALLY, EMBANKMENTS SHALL HAVE COMPACTED SUPPORT SLOPES OF THREE FOOT HORIZONTAL TO ONE FOOT VERTICAL. THE MATERIAL FOR EMBANKMENT CONSTRUCTION SHALL BE OBTAINED FROM THE O+M SITE/ACCESS ROAD/TURBINE EXCAVATION (SEE GEOTECHNICAL REPORT FOR RESTRICTIONS), OR ANY SUITABLE, APPROVED SOIL OBTAINED ONSITE/OFFSITE BY CONTRACTOR, AS DIRECTED OR APPROVED BY THE ENGINEER. THIS MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12".
   B. SIDE SLOPES GREATER THAN 3:1 WILL NOT BE PERMITTED, UNLESS OTHERWISE NOTED ON THE PLAN.

INSPECTIONS AND TESTING

1. SUBGRADE
   A. TESTING SHALL BE PERFORMED BY A DESIGNATED INDEPENDENT TESTING AGENCY
   B. FOR PASSING CRITERIA, REFER TO GEOTECH INFORMATION.
   C. TESTING AND INSPECTION RECORDS SHALL BE MAINTAINED BY THE CONTRACTOR AND MADE ACCESSIBLE TO THE CIVIL EOR AT THEIR REQUEST
      C.1. THE ENGINEER MAY REVIEW THE TESTING AND INSPECTION RECORDS TO CHECK CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONSTRUCTION CONTRACTOR FROM THE RESPONSIBILITY FOR CORRECTING DEFECTIVE WORK.
   D. REFER TO TABLE 1 FOR PROJECT TESTING SPECIFICATIONS
   E. PROOF ROLLING: PROOF ROLLING SHALL BE PERFORMED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER OR QUALIFIED GEOTECHNICAL REPRESENTATIVE
      E.1. UNSTABILIZED SUBGRADE AND AGGREGATE BASE SHALL BE PROOF ROLLED USING A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 20 TONS OR A FULLY LOADED WATER TRUCK WITH AN EQUIVALENT AXLE LOADING
   F. IF THE PROOF ROLL REQUIREMENTS CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATES MAY BE IMPLEMENTED:
      F.1. SCARIFY, DRY, AND RECOMPACT SUBGRADE AND PERFORM ADDITIONAL PROOFROLL AND DCP.
      F.2. REMOVE UNSUITABLE MATERIAL AND REPLACE WITH CRUSHED AGGREGATE BASE.
2. AGGREGATE BASE: IF THE PROOF ROLL REQUIREMENTS CANNOT BE ACHIEVED, THE FOLLOWING ALTERNATES MAY BE IMPLEMENTED:
   A. ADD ADDITIONAL 2 INCHES OF AGGREGATE.

TABLE 2: NYSDOT TYPE 2 SUBBASE COURSE AGGREGATE

SIEVE SIZE	PERCENT PASSING
2"	100
3/4"	50-90
3/8"	70-35
1/4"	25-60
#40	5-40
#200	0-10

LIQUID LIMIT (MAX) = 45
PLASTICITY INDEX = 0-15
L.A ABRASION (% MAX) = 40%

TABLE 4: IMPORTED STRUCTURAL FILL

SIEVE SIZE	PERCENT PASSING
3"	100
#200	10-100

*IMPORTED STRUCTURAL FILL SHOULD CONTAIN NO PARTICLES LARGER THAN 3 INCHES AND LESS THAN 10 PERCENT, BY WEIGHT, OF MATERIAL FINER THAN A NO. 200 MESH SIEVE.
**THE IMPORTED MATERIALS SHALL BE FREE OF RECYCLED CONCRETE, ASPHALT, BRICKS, GLASS AND PYRITIC SHALE ROCK.
***ADDITIONAL LABORATORY TESTING WILL BE REQUIRED TO DETERMINE IF THE ON-SITE SOILS ARE SUITABLE FOR USE AS STRUCTURAL FILL ON SITE, HOWEVER IT IS NOT EXPECTED TO MEET THE CRITERIA FOR STRUCTURAL FILL.

PRODUCTS

1. ROAD AGGREGATE SHALL BE CRUSHED AGGREGATE MEETING NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION (DATE: JULY 9, 2020) PROVIDED IN TABLE 7.1.1, OR AN APPROVED EQUAL.
2. ROAD SHOULDERS, AND CRANE PATHS SHALL CONSIST OF COMPACTED NATIVE SOILS.
3. CULVERTS: SEE PLAN FOR CULVERT LOCATIONS. ACCESS ROAD CULVERTS SHALL MEET THE MINIMUM SPECIFICATIONS SET FORTH BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND/OR THE COUNTY. ALL CULVERTS SHALL BE MANUFACTURED OF CORRUGATED METAL PIPES.
4. GEOTEXTILE FABRIC SHALL BE MIRAFI HP570 OR APPROVED EQUAL IF REQUIRED.
5. STRUCTURAL FILL: CLEAN SOIL THAT IS FREE OF SIGNIFICANT ORGANIC OR DELETERIOUS MATTER, OR IMPORTED SOIL AS APPROVED BY THE ENGINEER.

TABLE 1: MATERIAL TESTING SCHEDULE

	Location	Required Test	ASTM Standard	Frequency	Specified Criteria
Subgrade (Non-cement Stabilized)	Access Roads Spur Roads Met Tower Roads Public Road Improvements Substation Area O&M Area	Standard Proctor	ASTM D-698	1 per soil type as determined by independent testing agency	N/A
		Nuclear Density	ASTM D-6938	Roads: 1 test per 2,500 LF (minimum 1 per road) Areas: 1 test per 5,000 SF (minimum 1 per area)	95% of Standard Proctor Maximum Dry Density +/- 2% of Optimum Moisture Content
		Proof Roll	N/A	Entire Length / Area	No rutting greater than 1.5" and no "pumping" of the soil beneath/behind the loaded truck. See testing requirements for additional information.
	Temporary Roads Temporary Intersection Improvements Laydown Yard Batch Plant Turbine Pads (Staging Areas)	Proof Roll	N/A	Entire Length / Area	No rutting greater than 1.5" and no "pumping" of the soil beneath/behind the loaded truck. See testing requirements for additional information.
	Crane Walks[1] Crane Pads[1]	EXCLUDED[1]	EXCLUDED[1]	EXCLUDED[1]	EXCLUDED[1]
General Fill (for Mass Grading)	Source (On -Site Borrow) (Imported Fill) (Common Excavation)	Standard Proctor	ASTM D-698	1 per soil type/source as determined by independent testing agency	N/A
		Moisture Content	ASTM D-2216		
		Atterberg Limits	ASTM D-4318		LL < 45 and PI < 20
	Embankments Turbine Pads (Staging Areas) Intersection Improvements Access Roads Spur Roads Met Tower Roads Public Road Improvements Substation Area O&M Area Laydown/Batch Plant	Nuclear Density	ASTM D-6938	1 test per 5,000 SF per lift 1 test per 30,000 SF per lift (Turbine Pads only)	95% of Standard Proctor Maximum Dry Density +/- 2% of Optimum Moisture Content
		Proof Roll	N/A	Entire Length / Area (Final Surface)	No rutting greater than 1.5" and no "pumping" of the soil beneath/behind the loaded truck. See earthwork specifications for additional information.
Aggregate Material	Quarry Testing (Pre-Placement)	Grain Size Analysis	ASTM C-136	Per source from quarry. Sample from site every 5,000CY.	See Table 2
		Standard Proctor	ASTM D-698		N/A
		Moisture Content	ASTM D-2216		
		Atterberg Limits	ASTM D-4318		See Table 2
		Los Angeles Abrasion	ASTM C-131		See Table 2
	Access Roads Spur Roads Met Tower Roads Public Road Improvements Substation (Base Aggregate Only) O&M Area Aggregate Rings Intersection Improvements Laydown/Batch Plant	Proof Roll	N/A	Entire Length / Area	No rutting greater than 1.5" and no "pumping" of the soil beneath/behind the loaded truck. See earthwork specifications for additional information.

[1]Structural design, recommendations, and testing for crane walks and crane pads is excluded from the engineering design contained within these plans. Refer to the geotechnical report, project specific crane walk/pad structural design (if available), geotechnical engineer, and/or contractor for specific information.

PRELIMINARY CONTRACTOR NOTES:

1. THE BOUNDARIES OF ALL STREAMS, WETLANDS, AND WETLAND ADJACENT AREAS AS DEPICTED ON THE FINAL CONSTRUCTION DRAWINGS WILL BE MARKED IN THE FIELD BY EITHER LATH MARKERS, SURVEYORS RIBBON, PIN FLAGS, OR SUITABLE EQUIVALENT PRIOR TO CONSTRUCTION BY THE BOP CONTRACTOR.
2. THE BOUNDARIES OF ALL AREAS OF TREES TO BE CLEARED AS DEPICTED ON THE FINAL CONSTRUCTION DRAWINGS WILL BE MARKED IN THE FIELD BY EITHER LATH MARKERS, SURVEYORS RIBBON, PIN FLAGS, OR SUITABLE EQUIVALENT PRIOR TO CONSTRUCTION BY THE BOP CONTRACTOR.
3. ANY DISRUPTION TO ORES REGULATED WETLANDS WILL BE MINIMIZED. THE NEW YORK OFFICE OF RENEWABLE ENERGY SITING'S (ORES) FIELD REPRESENTATIVE WILL NOTIFY THE ORES REPRESENTATIVE AND THE APPLICANT'S REPRESENTATIVE OF ANY ACTIVITIES THAT VIOLATE OR MAY VIOLATE EITHER THE TERMS OF THE ARTICLE 10 CERTIFICATE OR THE ENVIRONMENTAL CONSERVATION LAW. ORES STAFFS' FIELD REPRESENTATIVES WILL WORK COOPERATIVELY TO DETERMINE WHETHER STOP WORK AUTHORITY WILL BE EXERCISED, OR WHETHER TO DIRECT THE APPLICANT TO TAKE ACTION TO FURTHER MINIMIZE IMPACTS TO STREAMS AND WETLANDS.
4. RESTRICTED ACTIVITIES PERTAIN TO A BUFFER ZONE OF 300 FEET ON EITHER SIDE OF THE BOUNDARIES OF WATER-RELATED RESOURCES (STREAMS, WETLANDS, SPRINGS, WELLS, DRAINAGE, ETC.) AND INCLUDE THE FOLLOWING RESTRICTIONS:
   A. NO DEPOSITION OF SLASH WITHIN IDENTIFIABLE STREAM CHANNELS OR WOOD CHIPS WITHIN 25 FEET OF WETLANDS;
   B. NO UNNECESSARY REMOVAL OF WOODY VEGETATION OR DEGRADATION OF STREAM BANKS;
   C. NO EQUIPMENT WASHING OR REFUELING EXCEPT AS SPECIFIED IN THE FINAL CONSTRUCTION DRAWINGS;
   D. AND NO STORAGE MIXING OR HANDLING OF ANY PETROLEUM OR CHEMICAL MATERIALS IN OPEN CONTAINERS.
   E. REFUELING OF EQUIPMENT MUST UTILIZE SECONDARY CONTAINMENT MEASURES.
   F. REFUELING OR CHEMICAL STORAGE CAN NOT OCCUR WITHIN 300 FEET OF WETLANDS OR STREAMS.
5. “AVOID, DO NOT CROSS” INDICATES THAT AN AREA DOES NOT HAVE A DESIGNATED ACCESS ROUTE AND THAT EQUIPMENT IS RESTRICTED FROM CROSSING OR OPERATING IN THAT AREA. THIS DESIGNATION IS APPLIED TO ALL WETLANDS, STREAMS, AND ASSOCIATED BUFFERS THAT DO NOT HAVE APPROVED EQUIPMENT ACCESS, AS DEPICTED ON THE WETLAND IMPACT DRAWINGS. THESE RESTRICTIONS SHALL ALSO BE INDICATED ON THE FINAL CONSTRUCTION DRAWINGS.
6. THE CONTRACTOR SHALL BE REQUIRED TO REMOVE ALL TREES, BRUSH, AND DEBRIS WITHIN THE GRADING AREAS SHOWN ON THE PLANS. THE CONTRACTOR IS TO REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED BY THE OWNER'S REPRESENTATIVE FOR REMOVAL, AND SHALL EXERCISE EXTREME CARE AROUND EXISTING TREES TO BE SAVED.
7. THE BOUNDARIES OF ALL STREAMS, WETLANDS, AND WETLAND ADJACENT AREAS AS DEPICTED ON THE FINAL CONSTRUCTION DRAWINGS WILL BE MARKED IN THE FIELD BY EITHER LATH MARKERS, SURVEYORS RIBBON, PIN FLAGS, OR SUITABLE EQUIVALENT PRIOR TO TREE CLEARING BY THE TREE CLEARING CONTRACTOR. BOUNDARIES SHALL BE RE-MARKED AS NECESSARY FOLLOWING CLEARING.
8. CONCRETE WASHOUT LOCATIONS TO BE INDENTIFIED BY THE CONTRACTOR AS FOLLOWS:
   WASTE CONCRETE OR CONCRETE FROM THE TRUCK CLEAN OUT ACTIVITY AND/OR ANY WASH WATER FORM TRUCKS, EQUIPMENT OR TOOLS IF DONE ON SITE, MUST BE CONTAINED IN A MANNER THAT WILL PREVENT IT FROM ESCAPING INTO THE STREAMBANK OR INTO THE STREAM CHANNEL AND ENTERING THE STREAM, OR ENTERING WETLAND, OR ANY OTHER WATERBODY. IF A DISCHARGE OCCURS, ORES REGION 9 SUPERVISOR OF NATURAL RESOURCES SHALL BE CONTACTED WITHIN 2 HOURS. DISPOSAL OF WASTE CONCRETE OR WASH WATER MUST OCCUR GREATER THAN 100 FEET FROM ANY WATERBODY.
9. 911 ADDRESS SIGNAGE WILL BE POSTED AT THE ENTRANCE OF EVERY ROAD AND NEAR EACH TURBINE. GENERAL LOCATION FOR THE SIGNS ARE SHOWN ON THE PLANS. ADDRESS NUMBERS AND LETTERS SHALL BE NO LESS THAN 4 INCHES IN HEIGHT. THE SIGN POST SHALL BE 3 FEET FROM THE EDGE OF THE BRIM OF THE ROAD TO INSURE IT IS NOT STRUCK BY SNOWPLOWS OR BURIED IN DEPOSITS OF SNOW DURING THE WINTER. POST TOPS SHALL BE FIVE FEET ABOVE GRADE AND BE INSTALLED ON THE FAR SIDE OF THE DRIVE AS APPROACHED FROM THE DIRECTION OF TRAVEL ON THE SIDE OF THE ROADWAY. REVIEW CAYUGA COUNTY POSTING STANDARDS FOR FURTHER DETAIL ON THE SIGNAGE.

PRELIMINARY GENERAL ENVIRONMENTAL RESTRICTIONS:

1. ALL EQUIPMENT ACCESS, STORAGE OF EQUIPMENT AND MATERIALS, AND OTHER CONSTRUCTION ACTIVITIES WILL BE CONFINED TO THE ACCESS ROADS, LAYDOWN AREAS, AND THE COLLECTION LINE AND TRANSMISSION LINE ROUTES AS DEPICTED ON THE FINAL CONSTRUCTION DRAWINGS.
2. EQUIPMENT WILL UTILIZE THE INTERSECTION OF ACCESS ROADS AND EXISTING ROADS FOR TURNING. WORK AREAS, SUCH AS TURBINE SITES AND LAYDOWN AREAS, WILL ALSO PROVIDE AREAS FOR EQUIPMENT TURNING AND PARKING, IN ADDITION TO DESIGNATED TURNING LOCATIONS.
3. FUGITIVE DUST RESULTING FROM CONSTRUCTION ACTIVITIES WILL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICAL BY IMPLEMENTING APPROPRIATE CONTROL MEASURES. THESE MEASURES INCLUDE THE APPLICATION OF MULCH, WATER, OR STONE ON ACCESS ROADS, EXPOSED SOILS, STOCKPILED SOILS, OR UNPAVED PUBLIC ROADS WHEN DRY AND WINDY CONDITIONS EXIST. A WATERING VEHICLE WILL BE AVAILABLE ON AN AS-NEEDED BASIS. REFER TO DUST CONTROL PLAN PREPARED BY WESTWOOD.
4. WITHIN 100 FEET OF STATE REGULATED WETLANDS AND 50 FEET OF OTHER WATER BODIES, REMOVE ONLY THE MINIMUM VEGETATION NECESSARY TO ALLOW CONSTRUCTION AND OPERATION OF THE FACILITY.
5. STREAMS AND WETLANDS WILL BE PROTECTED FROM INDIRECT IMPACTS DURING CONSTRUCTION BY UTILIZING VARIOUS EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH APPROVED PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP). SUCH MEASURES WILL INCLUDE, BUT NOT BE LIMITED TO, SILT FENCES PLACED BETWEEN WATER RESOURCE BOUNDARIES AND CONSTRUCTION AREAS. EXPOSED SOIL WILL BE SEEDED AND/OR MULCHED, AS SOON AS PRACTICABLE, BUT IN ANY EVENT, NO LATER THAN THE END OF THE WORK DAY IN WHICH SITE DISTURBANCE OCCURS, TO ASSURE THAT EROSION AND SILTATION IS KEPT TO A MINIMUM ALONG STREAM AND WETLAND BOUNDARIES.
6. TEMPORARY EROSION CONTROL DEVICES AND STABILIZATION PRACTICES WILL BE INSTALLED SOON AS PRACTICABLE AND APPROPRIATE, IN ACCORDANCE WITH THE SWPPP. EROSION CONTROL DEVICES WILL BE INSTALLED AFTER CLEARING, BUT PRIOR TO SOIL DISTURBANCE.
7. NO REFILLING OR CHEMICAL STORAGE WITHIN 300 FT OF WETLANDS OR STREAMS.
8. THE SEEDING MIXTURE WILL BE IN ACCORDANCE TO THE BLUEBOOK AND THE DISCRETION OF THE ENVIRONMENTAL MONITOR.
9. THE BOP CONTRACTOR WILL LOCATE AND DISTRIBUTE EXCESS EXCAVATION MATERIAL IN NON-AGRICULTURE UPLAND AREAS (I.E., OUTSIDE OF WETLANDS, STREAMS, AND AGRICULTURAL FIELDS). WHERE PRACTICAL, SUCH MATERIAL WILL BE USED AS ROAD FILL OR BACKFILL AROUND STRUCTURES. EROSION CONTROL PRACTICES WILL BE INSTALLED, AND EXPOSED SOILS STABILIZED IN ACCORDANCE WITH THE SWPPP.
10. CONSTRUCTION EQUIPMENT SANITATION: THE INTRODUCTION OF NON-NATIVE INVASIVE PLANT SPECIES WILL BE CONTROLLED BY ASSURING THAT ALL CONSTRUCTION EQUIPMENT IS CLEAN UPON ARRIVAL ON SITE, AND THAT EQUIPMENT UTILIZED IN AREAS WITH AN ABUNDANCE OF INVASIVE SPECIES WILL BE CLEANED PRIOR TO MOVING TO ANOTHER SITE. THE INTENT IS THAT EQUIPMENT SHOULD ARRIVE AT THE SITE CLEAN AND LEAVE THE SITE CLEAN. EQUIPMENT/CLOTHING CLEANING STATIONS WILL BE ESTABLISHED TO ENSURE THAT INVASIVE SPECIES SEEDS AND OTHER VIABLE PLANT PARTS CANNOT ESCAPE IN RUNOFF OR THROUGH OTHER MEANS.

PRELIMINARY SPECIFIC STREAM CROSSING RESTRICTIONS:

1. CONSTRUCTION WORK IN STREAMS WILL CONFORM TO APPROPRIATE TIMING RESTRICTIONS OUTLINED IN 19 NYCRR §900-6.4(R) TO PROTECT IMPORTANT FISHERIES RESOURCES, DURING SPAWNING AND PRIMARY MIGRATION PERIODS. FOR COLD WATER FISHERIES IN THE PROJECT AREA, CONSTRUCTION WORK IN STREAMS WILL BE PROHIBITED BETWEEN OCTOBER 1 AND MAY 31 TO AVOID TROUT SPAWNING PERIODS. FOR WARM WATER FISHERIES, CONSTRUCTION WORK IN STREAMS WILL BE PROHIBITED BETWEEN MARCH 1 AND JULY 15. HOWEVER, ONCE INSTALLED, SUCH CROSSINGS CAN BE USED BY CONSTRUCTION VEHICLES THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION. ANY EXCEPTIONS TO THESE PROHIBITED PERIODS REQUIRE PRIOR APPROVAL BY ORES STAFF.
2. IN PROTECTED STREAMS CLASSIFIED AS C(T), ALL INSTREAM WORK, AS WELL AS ANY WORK THAT MAY RESULT IN THE SUSPENSION OF SEDIMENT, IS PROHIBITED DURING THE TROUT SPAWNING AND INCUBATION PERIOD COMMENCING OCTOBER 1 AND ENDING MAY 31, UNLESS OTHERWISE APPROVED BY ORES.
3. A BUFFER ZONE OF 300 FEET, REFERRED TO AS "RESTRICTED ACTIVITIES AREA" OR SIMILAR ON THE FINAL FACILITY CONSTRUCTION DRAWINGS AND ROW CLEARING PLANS, SHALL BE ESTABLISHED WHERE FACILITY CONSTRUCTION TRAVERSES STREAMS, WETLANDS AND OTHER BODIES OF WATER. RESTRICTED ACTIVITIES AREAS SHALL BE MARKED IN THE FIELD. RESTRICTIONS WILL INCLUDE:NO DEPOSITION OF SLASH WITHIN OR ADJACENT TO A WATERBODY; NO ACCUMULATION OF CONSTRUCTION DEBRIS WITHIN THE AREA;HERBICIDE RESTRICTIONS WITHIN 300 FEET OF A STREAM OR WETLAND(OR AS REQUIRED PER MANUFACTURER'S INSTRUCTIONS); NO DEGRADATION OF STREAM BANKS;NO EQUIPMENT WASHING OR REFUELING WITHIN THE AREA; NO STORAGE OF ANY PETROLEUM OR CHEMICAL MATERIAL;AND NO DISPOSAL OF EXCESS CONCRETE OR CONCRETE WASH WATER.
4. EXCEPT WHERE CROSSED BY PERMITTED ACCESS ROADS OR THROUGH USE OF TEMPORARY MATTING, STREAMS SHALL BE DESIGNATED "NO EQUIPMENT ACCESS" OR SIMILAR ON THE FINAL FACILITY CONSTRUCTION DRAWINGS.

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REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
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Agricola Wind Project

Cayuga County, New York

General Notes - 1

ISSUE FOR PERMIT

DATE: 08/23/2024

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COMPLIANCE GENERAL NOTES

1. THE CONTRACTOR SHALL CONSTRUCT THE FACILITY CONSISTENT WITH THE NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS (AGM) GUIDELINES FOR AGRICULTURAL MITIGATION FOR WIND POWER PROJECTS, TO THE MAXIMUM EXTENT PRACTICABLE.
2. EXCEPT WHERE CROSSED BY PERMITTED ACCESS ROADS OR THROUGH USE OF TEMPORARY MATTING, STREAMS ARE DESIGNATED "NO EQUIPMENT ACCESS" ON THE FINAL FACILITY CONSTRUCTION DRAWINGS AND ROW CLEARING PLANS, AND MUST BE MARKED IN THE FIELD. THE USE OF MOTORIZED EQUIPMENT IS PROHIBITED IN THESE AREAS.
3. A BUFFER ZONE OF 300 FEET IS REFERRED TO AS "RESTRICTED ACTIVITIES AREA" ON THE CONSTRUCTION DRAWINGS AND ROW CLEARING PLANS WHERE FACILITY CONSTRUCTION TRAVERSES STREAMS, WETLANDS AND OTHER BODIES OF WATER. RESTRICTED ACTIVITIES AREAS SHALL BE MARKED IN THE FIELD. RESTRICTIONS WILL INCLUDE: NO DEPOSITION OF SLASH WITHIN OR ADJACENT TO A WATER BODY; NO ACCUMULATION OF CONSTRUCTION DEBRIS WITHIN THE AREA; HERBICIDE RESTRICTIONS WITHIN 100 FEET OF A STREAM OR WETLAND (OR AS REQUIRED PER MANUFACTURER'S INSTRUCTIONS); NO DEGRADATION OF STREAM BANKS; NO EQUIPMENT WASHING OR REFUELING WITHIN THE AREA; NO STORAGE OF ANY PETROLEUM OR CHEMICAL MATERIAL; AND NO DISPOSAL OF EXCESS CONCRETE OR CONCRETE WASH WATER. NO REFILLING OR CHEMICAL STORAGE WITHIN 300 FEET.
4. TREE AND VEGETATION CLEARING SHALL BE LIMITED TO THE MINIMUM NECESSARY FOR FACILITY CONSTRUCTION. SURROUNDING TREES AND VEGETATION WILL NOT BE CUT DOWN ON ANY PROPERTY SOLELY TO REDUCE TURBULENCE OR INCREASE WIND FLOW TO THE FACILITY. TO REDUCE MORTALITY TO NESTING/ROOSTING BIRDS AND BATS, ALL TREE CLEARING ACTIVITIES (EXCEPT FOR HAZARD TREE REMOVAL) SHALL BE CONDUCTED BETWEEN NOVEMBER 1 AND APRIL 1 AND DOES NOT INCLUDE TREES LESS THAN OR EQUAL TO 3 INCHES IN DIAMETER AT BREAST HEIGHT (DBH).
5. ALL EQUIPMENT ACCESS, STORAGE OF EQUIPMENT AND MATERIALS, AND OTHER CONSTRUCTION ACTIVITIES WILL BE CONFINED TO THE LIMITS OF DISTURBANCE AS DEPICTED ON THE FINAL CONSTRUCTION DRAWINGS.
6. FUGITIVE DUST RESULTING FROM CONSTRUCTION ACTIVITIES WILL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICAL BY IMPLEMENTING APPROPRIATE CONTROL MEASURES. THESE MEASURES INCLUDE THE APPLICATION OF MULCH, WATER, OR STONE ON EXPOSED SOILS OR UNPAVED PUBLIC ROADS WHEN DRY AND WINDY CONDITIONS EXIST. A WATERING VEHICLE WILL BE AVAILABLE ON AN AS-NEEDED BASIS. REFER TO DUST CONTROL PLAN BY AGRICOLA WIND LLC.
7. TEMPORARY EROSION CONTROL DEVICES AND STABILIZATION PRACTICES WILL BE INSTALLED SOON AS PRACTICABLE AND APPROPRIATE, IN ACCORDANCE WITH THE SWPPP. EROSION CONTROL DEVICES WILL BE INSTALLED AFTER CLEARING, BUT PRIOR TO SOIL DISTURBANCE OR VEHICULAR TRAFFIC.
8. WOOD CHIP DEPTH SHALL NOT BE GREATER THAN THREE (3) INCHES. WOOD CHIPS SHALL NOT BE STORED OR DISPOSED OF IN WETLANDS, WITHIN STREAM BANKS, DELINEATED FLOODWAYS, OR ACTIVE AGRICULTURAL FIELDS.
9. AREAS DENOTED AS "PROPOSED BLADE SWING AREA" NEED TO BE FREE OF OBJECTS. WHICH INCLUDES BUT IS NOT LIMITED TO TREES AND SIGNS. ADDITIONAL AGGREGATE OR GRUBBING IS NOT NEEDED IN THESE AREAS

THREATENED AND ENDANGERED SPECIES

1. EXCLUDING BALD EAGLES (*HALIAEETUS LEUCOCEPHALUS*), IF AT ANY TIME AN ACTIVE NEST OF ANY FEDERALLY, OR STATE, LISTED THREATENED OR ENDANGERED (TE) BIRD SPECIES IS DISCOVERED WITHIN AN ACTIVE CLEARING SITE, THE REGIONAL NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC) NATURAL RESOURCE SUPERVISOR (607-622-8273) WILL BE NOTIFIED WITHIN FORTY-EIGHT (48) HOURS OF DISCOVERY, AND THE NEST SITE WILL BE MARKED. AN AREA FIVE HUNDRED (500) FEET IN RADIUS AROUND THE NEST WILL BE AVOIDED UNTIL NOTICE TO CONTINUE CONSTRUCTION AT THAT SITE IS GRANTED BY THE REGIONAL ORES NATURAL RESOURCE SUPERVISOR.
2. IF AT ANY TIME A BALD EAGLE NEST OR COMMUNAL ROOST (DEFINED AS A CLOSE CLUSTER OF TREES WITH 4 OR MORE EAGLES OBSERVED PERCHED) IS LOCATED, THE REGIONAL ORES NATURAL RESOURCE SUPERVISOR WILL BE NOTIFIED WITHIN FORTY-EIGHT (48) HOURS OF DISCOVERY, AND PRIOR TO ANY DISTURBANCE OF THE NEST OR IMMEDIATE AREA. AN AREA OF AT LEAST 0.25 MILES (1,320 FEET) IF THERE IS NOT VISUAL BUFFER OR IF THERE IS A VISUAL BUFFER AN AREA OF AT LEAST SIX HUNDRED SIXTY (660) FEET IN RADIUS FROM THE NEST TREE OR COMMUNAL ROOST WILL BE POSTED AND AVOIDED UNTIL NOTICE TO CONTINUE CONSTRUCTION WITHIN THE BUFFER IS GRANTED BY THE REGIONAL ORES NATURAL RESOURCES SUPERVISOR. THE NEST TREE OR COMMUNAL ROOST WILL NOT BE APPROACHED UNDER ANY CIRCUMSTANCES UNLESS AUTHORIZED BY THE REGIONAL ORES NATURAL RESOURCE SUPERVISOR.
3. REPORT ALL OCCURRENCES OF TE AVIAN SPECIES TO THE ENVIRONMENTAL MONITOR. IF AN AVIATION SPECIES IS OBSERVED DEMONSTRATING BREEDING BEHAVIOR IT SHOULD BE REPORTED TO THE NATURAL RESOURCES SUPERVISOR WITHIN TWENTY-FOUR (24) HOURS.
4. IF ANY DEAD, INJURED OR DAMAGED STATE-LISTED TE SPECIES, OR THEIR PARTS, EGGS, OR NESTS ARE DISCOVERED WITHIN THE PROJECT AREA THE REGIONAL DEC REGION 7 NATURAL RESOURCE SUPERVISOR AND UNITED STATES FISH AND WILDLIFE SERVICE (USFWS) (607-753-9334) MUST BE NOTIFIED WITHIN TWENTY-FOUR (24) HOURS TO ARRANGE FOR RECOVERY AND TRANSFER OF THE SPECIMEN(S).
5. ALL SNAG AND CAVITY TREES DEFINED UNDER ORES PROGRAM POLICY ONRDLF-2 RETENTION ON STATE FORESTS WILL BE RETAINED UNLESS THEIR REMOVAL IS NECESSARY FOR PROTECTION OF HUMAN LIFE AND PROPERTY. SNAG OR CAVITY TREES MAY BE REMOVED AFTER BEING CLEARED BY THE ENVIRONMENTAL MONITOR WHO SHALL CONDUCT AN EMERGENCE COUNT FOR BATS. UNOCCUPIED SNAGS AND CAVITY TREES WILL BE REMOVED WITHIN TWENTY-FOUR (24) HOURS OF A NEGATIVE EMERGENCE COUNTY.
6. LEAVE ALL KNOWN AND DOCUMENTED MATERNITY ROOST TREES OF LISTED BAT SPECIES AND ANY TREES WITHIN A 150-FOOT RADIUS OF DOCUMENTED SUMMER OCCURRENCE.
7. IF ANY BAT IS OBSERVED FLYING FROM A TREE OR A TREE THAT HAS BEEN CUT, TREE CLEARING ACTIVITIES WITHIN 150-FEET OF THE TREE SHALL BE SUSPENDED AND THE ORES WILDLIFE STAFF SHALL BE NOTIFIED WITHIN TWENTY-FOUR (24) HOURS. A STOP WORK ORDER SHALL IMMEDIATELY BE ISSUED AND THE ORES STAFF CONSULTED BEFORE RESUMPTION OF WORK.

WETLANDS AND STREAMS, VEGETATION AND INVASIVE SPECIES

1. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PRECLUDE CONTAMINATION OF ANY WETLAND OR WATERWAY BY SUSPENDED SOLIDS, SEDIMENTS, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, PAINTS, CONCRETE, LEACHATE OR ANY OTHER ENVIRONMENTALLY DELETERIOUS MATERIALS ASSOCIATED WITH THE PROJECT.
2. ALL CONSTRUCTION ACTIVITY, INCLUDING CLEARING OF VEGETATION, IS TO TAKE PLACE WITHIN THE PROJECT SITE AS DEPICTED ON PROJECT PLANS. NO CONSTRUCTION ACTIVITY IS TO TAKE PLACE WITHIN AREAS TO BE LEFT IN A NATURAL CONDITION. STAKING AND/OR FLAGGING CONSTRUCTION LIMITS SHALL OCCUR PRIOR TO ANY SITE DISTURBANCE.
3. ALL EQUIPMENT AND MACHINERY SHALL BE STORED AND SAFELY CONTAINED MORE THAN 300 FEET LANDWARD OF THE REGULATED WETLAND OR WATER BODY AT THE END OF EACH WORK DAY. THIS WILL SERVE TO AVOID THE INADVERTENT LEAKAGE OF DELETERIOUS SUBSTANCES INTO THE REGULATED AREA.
4. FUEL OR OTHER CHEMICAL STORAGE TANKS SHALL BE CONTAINED AND LOCATED AT ALL TIMES IN AN AREA MORE THAN 300 FEET LANDWARD OF ANY REGULATED WETLAND OR WATER BODY. IF THE ABOVE REQUIREMENT CANNOT BE MET, THEN THE STORAGE AREAS MUST BE DESIGNED TO COMPLETELY CONTAIN ANY AND ALL POTENTIAL LEAKAGE. SUCH A CONTAINMENT SYSTEM MUST BE APPROVED BY ORES STAFF IN WRITING PRIOR TO EQUIPMENT, MACHINERY OR TANK STORAGE.
5. ALL MOBILE EQUIPMENT, EXCLUDING DEWATERING PUMPS, MUST BE FUELED IN A LOCATION AT LEAST 300 FEET FROM THE TOP OF STREAM BANK, WETLAND, OR OTHER WATER BODY. DEWATERING PUMPS OPERATED CLOSER THAN 100 FEET FROM THE STREAM BANK, WETLAND, OR WATER BODY, MUST BE ON AN IMPERVIOUS SURFACE AND ABSORBENTS CAPABLE OF CONTAINING ANY LEAKAGE OF PETROLEUM PRODUCTS.
6. SPILLAGE OF FUELS, WASTE OILS, OTHER PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS SHALL BE REPORTED TO THE DEC' SPILL HOTLINE (1-800-457-7362) WITHIN TWO HOURS ACCORDING TO THE ORES SPILL REPORTING AND INITIAL NOTIFICATION REQUIREMENTS TECHNICAL FIELD GUIDANCE.
7. ALL EQUIPMENT USED WITHIN THE BED OR BANKS OF STREAMS, OR IN WETLANDS AND ADJACENT AREAS, MUST BE INSPECTED DAILY FOR LEAKS OF PETROLEUM, OTHER FLUIDS, OR CONTAMINANTS AND MAY ONLY ENTER A STREAM CHANNEL IF FOUND TO BE FREE OF ANY LEAKAGE. A SPILL KIT MUST BE ON SITE AND ANY LEAKS MUST BE STOPPED AND CLEANED UP IMMEDIATELY.
8. VISIBLY TURBID DISCHARGES FROM LAND CLEARING, SHALL NOT ENTER ANY SURFACE WATER BODY. ALL NECESSARY MEASURES SHALL BE IMPLEMENTED TO PREVENT ANY VISIBLE INCREASE IN TURBIDITY OR SEDIMENTATION DOWNSTREAM OF THE WORK SITE, INCLUDING BUT NOT LIMITED TO THE USE OF:
   - 8.1. APPROPRIATELY MAINTAINED UPLAND SETTLING BASINS;
   - 8.2. CRUSHED STONE, SAND, OR SILT SCREENING (MAXIMUM OPENING SIZE OF U.S. SIEVE NUMBER 20) TO FILTER TURBID WATERS;
   - 8.3. SILT-BAGS OR SIMILAR PRE-CONSTRUCTED STRUCTURE DESIGNED TO REMOVE SILT AND SEDIMENT PARTICLES BEFORE THEY ARE DISCHARGED, OR;
   - 8.4. GRASSY UPLAND AREAS AT A SUFFICIENT DISTANCE FROM THE RECEIVING WATER BODY TO PREVENT A VISUALLY DISCERNIBLE TURBID DISCHARGE TO THE RECEIVING WATER.
9. AT LOCATIONS WHERE TEMPORARY WETLAND CROSSINGS ARE NECESSARY IMPACTS WILL BE AVOIDED THROUGH THE USE OF TIMBER MATS.
10. ALL DISTURBED SOILS WITHIN REGULATED FRESHWATER WETLANDS AND THE ASSOCIATED ADJACENT AREAS MUST BE SEEDED WITH A NATIVE SEED MIX OR CROPS CONSISTENT WITH EXISTING AGRICULTURAL USES. MULCH SHALL BE MAINTAINED UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. ADDITIONAL SEEDING SHALL BE COMPLETED AS NECESSARY TO ACHIEVE AN 80% VEGETATIVE COVER ACROSS ALL DISTURBED AREAS.
11. ANY DEBRIS OR EXCESS MATERIAL FROM CONSTRUCTION OF THE PROJECT SHALL BE COMPLETELY REMOVED FROM WETLANDS OR ADJACENT AREAS (UPLAND) AND RELOCATED TO A FACILITY DULY AUTHORIZED TO RECEIVE SUCH MATERIAL.
12. CLEARED VEGETATION AND SLASH FROM WETLANDS AND ADJACENT AREAS WILL NOT BE BURNED OR BURIED WITHIN THE WETLAND OR ADJACENT AREA. THE VEGETATION MUST BE DISPOSED OF OUTSIDE OF THE WETLAND AND ADJACENT AREA, BUT SLASH THAT IS CUT MAY BE LEFT IN PLACE (DROP AND LOP OR PILED IN DRY OR SEASONALLY SATURATED PORTIONS OF FRESHWATER WETLANDS AND 100-FOOT ADJACENT AREAS TO CREATE WILDLIFE BRUSH PILES).
13. TO CONTROL THE SPREAD OF INVASIVE INSECTS, THE CONTRACTOR WILL:
   - 13.1. ENSURE THAT ALL CONSTRUCTION EQUIPMENT (INCLUDING TIMBER MATS) IS CLEAN UPON ARRIVAL ON SITE, AND THAT EQUIPMENT UTILIZED IN AREAS WITH AN ABUNDANCE OF INVASIVE SPECIES ARE CLEANED PRIOR TO MOVING TO ANOTHER SITE.
   - 13.2. COORDINATE FOR SALE AND USE OF THE MERCHANTABLE TIMBER; AND PROVIDE UNMERCHANTABLE TIMBER AS FIREWOOD TO ADJACENT LANDOWNERS OR THE GENERAL PUBLIC PURSUANT TO THE ORES' FIREWOOD RESTRICTIONS TO PROTECT FORESTS FROM INVASIVE SPECIES FOUND IN 6 NYCRR PART 192.5;
   - 13.3. MAKE SURE CREWS ARE TRAINED TO IDENTIFY THE ASIAN LONGHORNED BEETLE AND THE EMERALD ASH BORER AND ANY OTHER INSECTS THAT THE ORES IDENTIFIES AS A POTENTIAL PROBLEM. IF THESE INSPECTS ARE ROUND, THEY MUST BE REPORTED TO THE ORES REGIONAL FORESTER, AND
   - 13.4. COMPLY WITH SITE-SPECIFIC PLANS FOR MANAGEMENT OF JAPANESE KNOTWEED AND SPECIES AS DESCRIBED IN THE INVASIVE SPECIES CONTROL PLAN (ISCP).
14. IF A ONE-TIME CROSSING OF A STREAM OCCURS AS PART OF AN INSTALLATION OF A TEMPORARY BRIDGE AND A TIRE MAT IS USED, THE FOLLOWING RESTRICTIONS APPLY:
   - 14.1. THE MAT MUST FOLLOW THE CONTOUR OF THE STREAMBED AND ALLOW FOR A LOW FLOW CHANNEL AND NOT CHANGE THE FLOW PATH OF THE STREAM.
   - 14.2. THE MAT SHALL BE REMOVED IMMEDIATELY AFTER THE CROSSING OF THE STREAM OCCURS.
15. IF ANY TREES AND SHRUBS GROWING WITHIN 50 FEET OF STREAMS NEED TO BE CUT IN THE PROCESS OF CONSTRUCTING OVERHEAD POWER LINE CROSSINGS, THEY SHALL BE CUT OFF WITH AT LEAST TWO FEET OF THE STUMP REMAINING. STUMPS AND ROOT SYSTEMS SHALL NOT BE DAMAGED TO FACILITATE STUMP SPROUTING. TREES SHALL NOT BE FELLED INTO ANY STREAM OR ONTO THE IMMEDIATE STREAM BANK. ALL TREES AND SHRUBS CUT WITHIN THE 50 FOOT BUFFER AREA SHALL BE LEFT ON THE GROUND.
16. CLEARING OF NATURAL VEGETATION ALONG STREAMS AND WITHIN WETLANDS SHALL BE LIMITED TO THAT MATERIAL WHICH POSES A HAZARD OR HINDRANCE TO THE CONSTRUCTION ACTIVITY. SNAGS WHICH PROVIDE SHELTER IN STREAMS FOR FISH SHALL NOT BE DISTURBED UNLESS THEY CAUSE SERIOUS OBSTRUCTIONS, SCOURING OR EROSION. TREES SHALL NOT BE FELLED INTO ANY STREAM OR ONTO THE IMMEDIATE STREAM BANK.
17. WITHIN 100 FEET OF STATE REGULATED WETLANDS AND 50 FEET OF OTHER WATER BODIES, REMOVE ONLY THE MINIMUM VEGETATION NECESSARY TO ALLOW CONSTRUCTION AND OPERATION OF THE FACILITY.
18. STREAMS AND WETLANDS WILL BE PROTECTED FROM INDIRECT IMPACTS DURING CONSTRUCTION BY UTILIZING VARIOUS EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH APPROVED PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP). SUCH MEASURES WILL INCLUDE, BUT NOT BE LIMITED TO, SILT FENCES PLACED BETWEEN WATER RESOURCE BOUNDARIES AND CONSTRUCTION AREAS. EXPOSED SOIL WILL BE SEEDED AND/OR MULCHED, AS SOON AS PRACTICABLE, BUT IN ANY EVENT, NO LATER THAN THE END OF THE WORK DAY IN WHICH SITE DISTURBANCE OCCURS, TO ASSURE THAT EROSION AND SILTATION IS KEPT TO A MINIMUM ALONG STREAM AND WETLAND BOUNDARIES.
19. CONSTRUCTION WORK IN STREAMS WILL CONFORM TO APPROPRIATE TIMING RESTRICTIONS TO PROTECT IMPORTANT FISHERIES RESOURCES, DURING SPAWNING AND PRIMARY MIGRATION PERIODS. STREAMS SUBJECT TO SUCH RESTRICTIONS WILL BE DETERMINED IN THE FIELD BY REPRESENTATIVES OF THE ORES AND THE APPLICANT, PRIOR TO CONSTRUCTION. FOR COLD WATER FISHERIES IN THE PROJECT AREA, CONSTRUCTION WORK IN STREAMS WILL BE PROHIBITED BETWEEN OCTOBER 1 AND MAY 31 TO AVOID TROUT SPAWNING PERIODS. FOR WARM WATER FISHERIES, CONSTRUCTION WORK IN STREAMS WILL BE PROHIBITED BETWEEN MARCH 1 AND JULY 15. HOWEVER, ONCE INSTALLED, SUCH CROSSINGS CAN BE USED BY CONSTRUCTION VEHICLES THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION. ANY EXCEPTIONS TO THESE PROHIBITED PERIODS REQUIRE PRIOR APPROVAL BY ORES, IN CONSULTATION WITH ORES.
20. ANY DISRUPTION TO NYS REGULATED WETLANDS WILL BE MINIMIZED. DEC' FIELD REPRESENTATIVE WILL NOTIFY THE DEC REPRESENTATIVE AND THE APPLICANT'S REPRESENTATIVE OF ANY ACTIVITIES THAT VIOLATE OR MAY VIOLATE EITHER THE TERMS OF 94-C OR THE ENVIRONMENTAL CONSERVATION LAW. ORES STAFFS' FIELD REPRESENTATIVES WILL WORK COOPERATIVELY TO DETERMINE WHETHER STOP WORK AUTHORITY WILL BE EXERCISED, OR WHETHER TO DIRECT THE APPLICANT TO TAKE ACTION TO FURTHER MINIMIZE IMPACTS TO STREAMS AND WETLANDS.
21. RESTRICTED ACTIVITIES PERTAIN TO A BUFFER ZONE OF 300 FEET ON EITHER SIDE OF THE BOUNDARIES OF WATER-RELATED RESOURCES (STREAMS, WETLANDS, SPRINGS, WELLS, DRAINAGE, ETC.) AND INCLUDE THE FOLLOWING RESTRICTIONS:
   - A. NO DEPOSITION OF SLASH WITHIN IDENTIFIABLE STREAM CHANNELS OR WOOD CHIPS WITHIN 25 FEET OF WETLANDS;
   - B. NO UNNECESSARY REMOVAL OF WOODY VEGETATION OR DEGRADATION OF STREAM BANKS;
   - C. NO EQUIPMENT WASHING OR REFUELING EXCEPT AS SPECIFIED IN THE FINAL CONSTRUCTION DRAWINGS;
   - D. AND NO STORAGE MIXING OR HANDLING OF ANY PETROLEUM OR CHEMICAL MATERIALS IN OPEN CONTAINERS.
   - E. REFUELING OF EQUIPMENT MUST UTILIZE SECONDARY CONTAINMENT MEASURES.

CLEARING METHODS

1. TYPE I - CLEARING CONSISTS OF CLEARING THE DESIGNATED AREAS OF ALL WOOD PLANTS, INCLUDING DESIRABLE LOW-GROWING SPECIES, ALL PLANTS WILL BE CUT AS CLOSE TO THE GROUND AS PRACTICABLE, AND AFTER CUTTING NO PLANT WILL EXCEED SIX (6) INCHES ABOVE GROUND LINE. TYPE I CLEARING WILL BE UTILIZED IN CIRCUMSTANCES WHERE WOODY PLANTS WOULD HINDER ACCESS AND CONSTRUCTION ACTIVITIES (I.E., IN CONNECTION WITH CLEARING ACCESS ROADS, WORK AREAS, AND COLLECTION LINE ROUTES.)
2. TYPE II - CLEARING CONSISTS OF CLEARING THE DESIGNATED AREAS OF ANY WOODY PLANTS SPECIES WHICH HAVE THE POTENTIAL TO VIOLATE MINIMUM CLEARANCE DISTANCE. ALL GROWTH WILL BE CUT AS CLOSE TO THE GROUND AS PRACTICABLE, BUT IN NO CASE WILL AFTER-CUTTING HEIGHT EXCEED SIX (6) INCHES ABOVE GROUND LINE, UNLESS OTHERWISE DIRECTED BY THE ENVIRONMENTAL MONITOR (EM).
3. REASONABLE CARE WILL BE TAKEN, INSOFAR AS IS PRACTICAL, TO RETAIN DESIRABLE SPECIES FOUND WITHIN TYPE II CLEARING ZONES. THE ENVIRONMENTAL MONITOR (EM) WILL MAKE A FIELD DETERMINATION AS TO WHETHER SUCH RETENTION WOULD IMPOSE AN UNREASONABLE BURDEN ON CLEARING OR CONSTRUCTION ACTIVITIES.

WOOD/SLASH DISPOSAL METHODS

1. TYPE A - CONSISTS OF REMOVING ALL WOODY DEBRIS FROM THE PROPERTY.
2. TYPE B - CONSISTS OF THE REMOVAL OF ALL LOGS FROM THE PROPERTY. BRUSH/SLASH SHOULD BE CHIPPED AND SPREAD WITHIN THE LIMITS OF DISTURBANCE.
3. TYPE C - LOGS SHALL BE PLACED IN PILES IN DESIGNATED STORAGE AREAS AS SHOWN, OR AT THE EDGE OF THE LIMITS OF DISTURBANCE. BRUSH/SLASH SHOULD BE CHIPPED AND SPREAD WITHIN THE LIMITS OF DISTURBANCE.
4. TYPE D - CONSISTS OF DROPPING LOPPING TREES SO THAT THE SLASH LIES AS CLOSE TO THE GROUND AS PRACTICABLE, WITH BRANCHES AND LIMB WOOD NOT EXCEEDING AN AVERAGE DEPTH OF TWENTY-FOUR (24) INCHES. INCLUDING WETLAND AND STREAMS AREAS, TYPE D WOOD DISPOSAL WILL ADHERE TO THE FOLLOWING ADDITIONAL CONDITIONS INCLUDED:
   - 4.1. ONLY A SELECTIVE PORTION OF VEGETATION, AS NEEDED TO PREVENT THE BLOCKING OF FLOW AND THE TRAPPING OF DEBRIS, IS TO BE REMOVED FROM THE WATER COURSE AND FLOODWAY. ALL CUTTINGS (REGARDLESS OF LOCATIONS) ARE TO BE CUT AND BUCKED TO LIE NEAR GROUND LEVEL. HOWEVER WHERE TREE ROOT BASES ARE ATTACHED TO THE STREAM BANK, THEY WILL BE LEFT IN PLACES. THE REMAINDER OF THE TREE WILL BE CUT FROM THE BASE PRIOR TO REMOVAL.

DANGER TREES

1. A DANGER TREE IS ANY TREE ROOTED OUTSIDE OF A ROW THAT DUE TO ITS PROXIMITY AND PHYSICAL CONDITION (I.E., MORALITY, LEAN, DECAY, CAVITIES, CRACKS, WEAK BRANCHING, ROOT LIFTING, OR OTHER INSTABILITY), POSES A PARTICULAR DANGER TO A CONDUCTOR OR OTHER KEY COMPONENT OF THE FACILITY.
2. ALL DANGER TREES WILL BE REMOVED AT THE TIME OF THE INITIAL CLEARING AND AS PART OF THE NORMAL CLEARING ACTIVITIES. THE SLASH FROM THESE DANGER TREES WILL BE DISPOSED OF IN ACCORDANCE WITH THE SLASH DISPOSAL METHOD DESIGNATED FOR THE WORK AREA ADJOINING THE AREA FROM WHICH THE DANGER TREES HAVE BEEN REMOVED.

PROCEDURE FOR OFF-SITE REMOVAL OF STUMPS, CHIPS, AND SLASH

1. WHERE OFF-SITE REMOVAL OF STUMPS, CHIPS, OR SLASH IS NECESSARY, ALL MATERIALS WILL BECOME THE PROPERTY OF THE CONTRACTOR. IN ALL CASES, ALL MATERIAL THAT IS REMOVED FROM THE SITE WILL BE DISPOSED ON IN AN ENVIRONMENTALLY-ACCEPTABLE MANNER AND IN COMPLIANCE WITH ALL APPLICABLE RULES AND REGULATIONS INCLUDING 6 NYCRR PART 192 AND ALL OTHER INVASIVE SPECIES REGULATIONS.
2. THE CONTRACTOR WILL PROVIDE AGRICOLA WIND LLC WITH A DESCRIPTION AND THE LOCATION OF ALL PROPOSED OFF-SITE DISPOSAL SITES PRIOR TO THE START OF THE PROJECT. THE ENVIRONMENTAL MONITOR (EM) WILL INSPECT ALL PROPOSED OFF-SITE DISPOSAL SITES TO ENSURE THAT THEY ARE SUITABLE AND WILL NOTIFY ORES.

CULTURAL RESOURCE PROTECTION

1. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CONTRACTOR TO DISCUSS THE AREAS OF SENSITIVITY, AVOIDANCE MEASURES AND THE EXTENT OF THE PROTECTION MEASURES.
2. NO GRADING OR SIGNIFICANT GROUND DISTURBANCE IS ALLOWED WITHIN ENVIRONMENTALLY SENSITIVE AREAS. SIGNIFICANT GROUND DISTURBANCE IS DEFINED AS EXCAVATION OR GRADING MORE THAN 6 INCHES DEEP, GRUBBING OR STUMP REMOVAL, AND TRENCHING WIDER THAN 3 FEET.
3. IMPACTS TO ARCHEOLOGICAL AND HISTORIC RESOURCES SHALL BE AVOIDED OR MINIMIZED TO THE EXTENT PRACTICABLE. CONSTRUCTION, INCLUDING SITE CLEARING OR OTHER DISTURBANCE, SHALL NOT BE ALLOWED IN ANY AREAS THAT HAVE NOT BEEN REVIEWED AND APPROVED FOR THE PRESENCE OF CULTURAL RESOURCES.
4. THE MAPPED LOCATIONS OF IDENTIFIED ARCHAEOLOGICAL SITES, SURROUNDED BY AN AVOIDANCE BUFFER, ARE IDENTIFIED AS "ENVIRONMENTAL SENSITIVE AREAS" ON THE CONSTRUCTION DRAWINGS AND ARE TO BE MARKED IN THE FIELD BY CONSTRUCTION FENCING WITH SIGNS THAT RESTRICT ACCESS.
5. CONTRACTOR MUST COMPLY WITH THE PROJECT UNANTICIPATED DISCOVERY PLAN, WHICH ESTABLISHES PROCEDURES IN THE EVENT THAT RESOURCES OF CULTURAL, HISTORICAL, OR ARCHAEOLOGICAL IMPORTANCE ARE ENCOUNTERED DURING FACILITY CONSTRUCTION.

TRENCHLESS CROSSING NOTES

1. THE CONTRACTOR SHALL ADHERE TO APPROVED CONTINGENCY PLAN/INADVERTENT RELEASE PLAN PRIOR TO COMMENCING ANY TRENCHLESS DRILLING OPERATIONS. IN THE EVENT OF AN INADVERTENT DRILLING MUD RETURN THE CONTRACTOR WILL BE RESPONSIBLE FOR REPORTING THE EVENT IN ACCORDANCE WITH THE 94-C PERMIT.
2. TRENCHLESS CROSSINGS ARE TO BE COMPLETED BY HORIZONTAL DIRECTIONAL DRILLING (HDD) OR BORE
3. CONTRACTOR SHALL LIMIT TREE CLEARING OVER HDDS AND BORES.
4. THE CONTRACTOR SHALL COMPLETE THE HDD IN GENERAL ACCORDANCE WITH THE CONCEPTUAL DRILL PATH SHOWN ON THE DRAWINGS. THE MINIMUM CLEARANCES FROM UTILITIES, STREAMS, WETLANDS, AND PAVED AREAS ARE SHOWN ON THE PLANS.
5. CONCEPTUAL ALIGNMENT SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN EVALUATION BASED UPON AVAILABLE TOOLS, EQUIPMENT, AND MATERIALS PROPOSED FOR USE IN BID PRICE AND GIVEN THE AVAILABLE SUBSURFACE CONDITIONS

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Agricola Wind Project

Cayuga County, New York

General Notes - 2

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

New York State
Department of Environmental Conservation

Document Prepared by:

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Land Resource Consultant and Environmental Compliance Monitor
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NYS Dept. of Agriculture & Markets)

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) “Deep Ripping;” and 2) “Decompaction” (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil’s water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper “rips” through severely compressed subsoil.

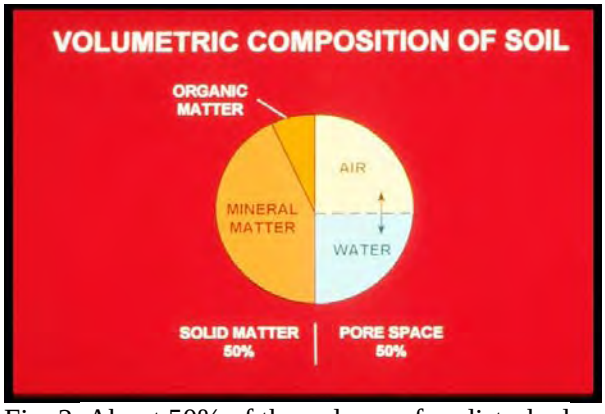

Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the "two-phase" practice of Deep Ripping and Decompaction first became established as a "best management practice" through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive "deep ripping" through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by "decompaction," i.e.: "sub-soiling," through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area's direct surface infiltration of rainfall by providing the open site's mitigated soil condition and lowers the demand on concentrated runoff control structures

- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures

- Decreases runoff volume generated and provides hydrologic source control

- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility / Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

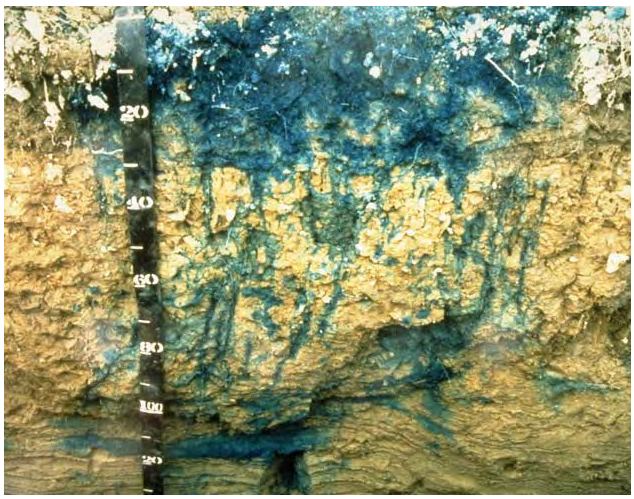

Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a "plastic" or "liquid" state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the "slicing and smearing" of the material or added "squeezing and compression" instead of the necessary fracturing. Ample drying time is needed for a "rippable" soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The "poor man's Atterberg field test" for soil plasticity is a simple "hand-roll" method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a "plastic" state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, "decompaction," mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area's soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only "scarify" the uppermost surface portion of the mass of compacted subsoil material. The term "chisel plow" is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a "heavy duty" agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like "lifting and shattering" action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas

For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors

In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

● A second series of passes makes a broad “S” shaped pattern of rips, continually and gradually alternating the “S” curves between opposite edges inside the compacted corridor.

● The third and final series again uses the broad, alternating S pattern, but it is “flip-flopped” to continually cross the previous S pattern along the corridor’s centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site’s soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

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NEW YORK STATE
DEPARTMENT OF AGRICULTURE AND MARKETS

Guidelines for Agricultural Mitigation for Wind Power Projects (Revision 4/19/2018)

The following guidelines apply to construction areas for wind power construction projects impacting agricultural land. The project sponsor shall coordinate with the New York State Department of Agriculture and Markets, Division of Land and Water Resources to develop an appropriate schedule for inspections to assure that the goals of these guidelines are being met. The project sponsor shall hire an Environmental Monitor to oversee the construction and restoration in agricultural fields. The Environmental Monitor shall be on site whenever construction or restoration work is occurring on agricultural land. Frequent contact with impacted farmers and the Department is encouraged.

In all cases, the Environmental Monitor shall contact the New York State Department of Agriculture and Markets, Division of Land and Water Resources, if farm resource concerns, management matters pertinent to the agricultural operation, and site-specific implementation conditions found in these guidelines, cannot be resolved.

Construction Requirements

- The surface of access roads constructed through agricultural fields shall be level with the adjacent field surface.

- Culverts and waterbars shall be installed to maintain natural drainage patterns.

- All topsoil must be stripped from agricultural areas used for vehicle and equipment traffic and parking. All vehicle and equipment traffic and parking shall be limited to the access road and/or designated work areas such as tower sites and laydown areas. No vehicles or equipment will be allowed outside the work area without prior approval from the landowner and, when applicable, the Environmental Monitor.

- The area of impact from the installation of electric cables can vary depending on the installation method and number of cables. When 3 or more cables are installed in the same area or if an open trench is required for installation, topsoil stripping from the entire work area will be necessary. As a result, additional work space may be required.

- Topsoil stripped from work areas (tower sites, parking areas, electric cable trenches, along access roads) shall be stockpiled separate from other excavated material (rock and/or subsoil). At least 50 feet of temporary workspace is needed along "open-cut" electric cable trenches for proper topsoil segregation. All topsoil will be stockpiled immediately adjacent to the area where stripped/removed and shall be used for restoration on that particular site. Topsoil stockpile areas shall be clearly designated in the field and on the on-site “working set” of construction drawings.

- Electric interconnect cables and transmission lines installed above ground can create long term interference with agricultural land use. As a result, interconnect cables must be buried in agricultural fields wherever practicable. Interconnect cables and transmission lines installed above ground shall be located outside field boundaries wherever possible. When above ground cables and transmission lines must cross farmland, the project sponsor shall minimize agricultural impacts by using taller structures that provide longer spanning distances and shall locate poles on field edges to the greatest extent practicable. The line location and pole placements shall be reviewed with the Department and the Environmental Monitor prior to final design.

- In cropland, hayland and improved pasture a minimum depth of forty-eight inches of cover will be required for all buried electric cables. In unimproved grazing areas and land permanently devoted to pasture, a minimum depth of thirty-six inches of cover will be required. In areas where the depth of soil over bedrock ranges from zero to forty-eight inches, the electric cables shall be buried entirely below the top of the bedrock or at the depth specified for the particular land use whichever is less. At no time will the depth of cover be less than twenty-four inches below the soil surface.

- For lands disturbed within or adjoined to agricultural areas where the installation of the buried electric cables alters the natural stratification of soil horizons and natural soil drainage patterns, the Project Sponsor shall rectify the effects with measures such as subsurface intercept drain lines. The Environmental Monitor, in consultation with Ag. and Markets staff, shall select the type of intercept drain lines to install to prevent surface seeps and the seasonally prolonged saturation of the cable installation zone and adjacent areas. Drawings of such drain locations shall be provided by the Project Sponsor during monitoring and follow-up remediation. All drain lines shall be installed according to Natural Resource Conservation Service standards and specifications and shall meet or exceed the AASHTO M252 specifications.

- All excess subsoil and rock shall be removed from the site. On site disposal of such material may be allowed if approved by the landowner and the Environmental Monitor, with appropriate consideration given to any possible agricultural or environmental impacts.*

- In pasture areas, work areas will be fenced to prevent livestock access, consistent with landowner agreements.

- All pieces of wire, bolts, and other unused metal objects will be picked up and properly disposed of as soon as practical after the unloading and packing of turbine components so that these objects will not be mixed with any topsoil.*

- Excess concrete will not be buried or left on the surface in active agricultural areas. Concrete trucks will be washed outside of active agricultural areas.*

(*Any permits necessary for disposal under local, State and/or federal laws and regulations must be obtained by the contractor, with the cooperation of the landowner when required.)

Restoration Requirements

Following construction, all disturbed agricultural areas will be decompacted to a depth of 18 inches with a deep ripper or heavy-duty chisel plow. Soil compaction results shall be no more than 250 pounds per square inch (PSI) as measured with a soil penetrometer. In areas where the topsoil was stripped, soil decompaction shall be conducted prior to topsoil replacement. Following decompaction, all rocks 4 inches and larger in size will be removed from the surface of the subsoil prior to replacement of the topsoil. The topsoil will be replaced to original depth and the original contours will be reestablished where possible. All rocks 4 inches and larger shall be removed from the surface of the topsoil. Subsoil decompaction and topsoil replacement must be avoided after October 1, unless approved on a site-specific basis by the landowner in consultation with Ag. and Markets. All parties involved must be cognizant that areas restored after October 1st may not obtain sufficient growth to prevent erosion over the winter months. If areas are to be restored after October 1st, necessary provision must be made to restore any eroded areas in the springtime, to establish proper growth.

All access roads will be regraded to allow for farm equipment crossing and to restore original surface drainage patterns, or other drainage pattern incorporated into the design.

All restored agricultural areas shall be seeded with the seed mix specified by the landowner, in order to maintain consistency with the surrounding areas.

All surface or subsurface drainage structures damaged during construction shall be repaired to as close to preconstruction conditions as possible, unless said structures are to be removed as part of the project design. Any surface or subsurface drainage problems resulting from construction of the wind energy project will be corrected with the appropriate mitigation as determined by the Environmental Monitor, the Department and the Landowner.

On affected farmland, any restoration practices shall be postponed until favorable (workable, relatively dry) topsoil/subsoil conditions exist. Restoration shall not be conducted while soils are in a wet or plastic state. Stockpiled topsoil shall not be regraded and subsoil shall not be decompacted until plasticity, as determined by the Atterberg field test is significantly reduced. No Project restoration activities shall occur in agricultural fields between the months of October through May unless favorable soil moisture conditions exist. The Environmental Monitor shall advise Ag & Markets regarding tentative restoration planning. Potential schedules will be determined by conducting the Atterberg field test at appropriate depths into topsoil stockpiles, and below the subsoil surface for a mutual determination of adequate field conditions for the restoration phase of the Project.

Following restoration, all construction debris will be removed from the site.

Two Year Monitoring and Remediation

The Project Sponsor will provide a monitoring and remediation period of no less than two years immediately following the completion of initial restoration. The two year period allows for the effects of climatic cycles such as frost action, precipitation and growing seasons to occur, from which various monitoring determinations can be made. The monitoring and remediation phase will be used to identify

any remaining agricultural impacts associated with construction that are in need of mitigation and to implement the follow-up restoration.

General conditions to be monitored include topsoil thickness, relative content of rock and large stones, trench settling, crop production, drainage and repair of severed fences, etc. Impacts will be identified by the Environmental Monitor through on site monitoring of all agricultural areas impacted by construction and through contact with respective farmland operators and the Department of Agriculture and Markets.

Topsoil deficiency and trench settling shall be mitigated with imported topsoil that is consistent with the quality of topsoil on the affected site. Excessive amounts of rock and oversized stone material will be determined by a visual inspection of disturbed areas as compared to portions of the same field located outside the construction area. All excess rocks and large stones will be removed and disposed of by the Project Sponsor.

When the subsequent crop productivity within affected areas is less than that of the adjacent unaffected agricultural land, the Project Sponsor as well as other appropriate parties, will help to determine the appropriate rehabilitation measures to be implemented. Because conditions which require remediation may not be noticeable at or shortly after the completion of construction, the signing of a release form prior to the end of the remediation period will not obviate the Project Sponsor's responsibility to fully redress all project impacts.

Subsoil compaction shall be tested using an appropriate soil penetrometer or other soil compaction measuring device. Compaction tests will be made for each soil type identified on the affected agricultural fields. The subsoil compaction test results within the affected area will be compared with those of the adjacent unaffected portion of the farm field/soil unit. Where representative subsoil density of the affected area exceeds the representative subsoil density of the unaffected areas, additional shattering of the soil profile will be performed using the appropriate equipment. Deep shattering will be applied during periods of relatively low soil moisture to ensure the desired mitigation and to prevent additional subsoil compaction. Oversized stone/rock material which is uplifted to the surface as a result of the deep shattering will be removed.

Appendix F

Post-Construction Maintenance Inspection Forms

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6.Pond, toe & chimney drains clear and functioning		
7.Seeps/leaks on downstream face		
8.Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____ 1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

Appendix G

Contractor Certification and Inspection, Maintenance, and SWPPP Amendment Forms

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Inspector (print name)	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

SUBCONTRACTOR CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN

SPDES Project Number:	
Project Title:	
Project Location:	
Project Operator:	

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer. Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment of knowing violations."

This certification is hereby signed in reference to the above named project:

Company:	
Address:	
Telephone Number:	
Description of Work:	
Trained Contractor Signature:	
Title:	
Date:	

SWPPP Amendment Log

The following table should be completed as necessary during construction to document changes and amendments to this document. Place the Amendment Number next to all application changes, redlines and information in the document to reference back to the changes summarized below. If an additional sheet is necessary attach the additional sheet to the SWPPP.

Amend #	Date	Reason, location and brief description of change or amendment	Requested by:	Prepared by:

Appendix H

Endangered Species and Cultural Resource Information and Correspondence

Appendix I

Stormwater Management Memo

Westwood

3701 12th St. N, Suite 206
St. Cloud, MN 56303

Main (320) 253-9495
Fax (320) 358-2001

westwoodps.com
(800) 270-9495

MEMORANDUM

Date: October 4, 2024

Re: Agricola Wind Project
File 0042617.01

The proposed Agricola Wind Project was reviewed against the New York Stormwater Manual to ensure that permanent stormwater management requirements are met for the site for post construction conditions. New York has requirements for water quality and rate control.
https://extapps.dec.ny.gov/fs/docs/pdf/stormwaterdesignmanual.pdf

Background
The project is located approximately 10 miles south of the city of Auburn and extends to the south for about 5 miles in Cayuga County, New York. For the purpose of this analysis, a project boundary of approximately 4,175 acres was modeled. The soils in the project boundary consist primarily of Hydrologic Soil Group (HSG) B and D. Type B soils have moderate infiltration rates while type D soils have low infiltration rates. Some areas of Type A (high infiltration capacity) and C soils (low infiltration capacity) are present but are not as predominant.

The proposed site will include the installation and operation of up to 24 wind turbines and pads, together with the associated electrical collection lines (below ground and overhead), access roads, meteorological towers and pads, operations, and maintenance ("O&M") building, POI, and a substation. The permanent components will create an additional 23 acres of impervious are within the approximately 4,175 acres modeled.

Requirements
1) Rainfall from the 90th Percentile Rainfall event (Figure 4.1 in Manual) must be treated.
2) Runoff rates must not increase from existing to proposed conditions for the 10-year and 100-year 24-hour rainfall events.

Water Quality
The 90th percentile rainfall event for the project site is 1.0 inches. The New York water quality equation was used to calculate the required water quality volume (WQv) for the proposed facilities. The channel protection volume (CPv) is based off the 1-year 24-hour runoff and is required to be detained in addition to the WQv. Table 1 summarizes the required volumes for each permanent facility.

The State of New York Stormwater Management Calculator was used to determine the required water quality for the site. The total proposed impervious area was used for this calculation since per the NY Manual, the areas not being disturbed can be removed from the calculation and the disturbed areas (outside of impervious) will be returned to existing conditions after construction.

The proposed substation, O&M pad, and POI areas are not reflective of the final grades and are subject to change as design progresses. Calculations were completed assuming these areas will remain the size and shape as shown in the plan set. These areas will have their own treatment systems due to the large amount of impervious at these locations.

Table 1:

Location	Impervious Area (ac)	Water Quality Volume (af)	Channel Protection Volume (af)	Total Required Volume (af)
Substation and O&M Pad	2.20	0.17	0.32	0.49
POI	1.5	0.12	0.22	0.34

The substation and O&M pad will drain to a proposed infiltration basin while the POI will drain to a proposed filtration basin. The basins will be downstream of the proposed impervious area. See Appendices B and C for water quality calculations. Treatment volumes are subject to change as design progresses. See the Civil Plan set for proposed treatment locations.

Table 2:

Location	Basin Type	Bottom Elevation	EOF Elevation	Top Elevation	Provided Treatment Volume (af)
Substation and O&M Pad	Infiltration	1,218.0	1,220.0	1,220.5	0.80
POI	Filtration	1,244.0	1,246.5	1,247.0	0.75

The proposed access roads will drain to wet swales adjacent to the downstream side of the road. To calculate required treatment and required volume, the required treatment of 100 linear feet of road was calculated and compared to the provided treatment of 100 linear feet of wet swale. See Tables 3 & 4 for calculations.

Table 3:

Location	Impervious Area (ac)	Water Quality Volume (af)	Channel Protection Volume (af)	Total Required Volume (af)
100 Linear Feet of Road	0.04	0.003	0.001	0.004

Table 4:

Location	Required Treatment Volume (af)	Provided Treatment Volume (af)
100 Linear Feet of Wet Swale Aling Road	0.004	0.022

In locations were large amounts of offsite runoff flow to the proposed access roads, diversion swales are proposed to reroute clean water around the wet swales to not overwhelm the treatment capacity. See Civil Plans for locations.

Runoff Rates

Existing and proposed site conditions were modeled in HydroCAD for each overall drainage area to check runoff rates for the site. Atlas 14 rainfall and distribution values were used to model runoff rates for the site. Exhibits 1 and 2 show the overall drainage area boundaries used in the analysis. Exhibit 3 shows the curve numbers of each drainage area that were used to generate weighted values for HydroCAD. Note that proposed access road areas were modeled as meadow in existing conditions and impervious in proposed conditions for the respective weighted values. Table 5 summarizes the weighted curve numbers for the site calculated using ArcGIS Pro and Excel to delineate and average the various curve numbers for each drainage area.

Table 5:

Drainage Area	Total Area (ac)	Area of Roads Proposed (ac)	Weighted CN Without Roads Factored In	Existing Weighted CN With Roads as Meadow	Weighted CN With Roads Area as Impervious
DA01-West	2904.7	14.97	76	76	76
DA02-East	1270.2	5.05	79	79	79

The proposed substation O&M pad, and POI were analyzed separate from the overall drainage areas to ensure these critical areas reduced runoff for the required rain events. Appendices D and E show the landcover and HydroCAD modeling for each drainage area.

Table 6:

Location	Storm Event	Existing (cfs)	Proposed (cfs)
DA-1	10-Year	1,005.3	1,005.3
	100-Year	2,174.0	2,174.0
DA-2	10-Year	523.1	523.1
	100-Year	1,064.6	1,064.6
Substation and O&M Pad	10-Year	1.4	0.0*
	100-Year	6.12	0.4**
POI	10-Year	2.3	0.2
	100-Year	7.2	0.4

*The basin is anticipated to infiltrate the entire runoff from the 10-year event.
**The basin is anticipated to infiltrate a portion of the runoff for the 100-year event.

The site does not show an increase in runoff rates from existing to proposed conditions for any drainage area. This is due to the new impervious only changing 0.1% of the modeled drainage areas.

Crossing Sizing

Crossings are proposed at new access roads to maintain existing drainage patterns through the proposed site. See civil plan set for crossing locations.
Culverts are sized for the 100-year 24-hour rain event with a 1-foot allowable head. Calculations were performed using HydroCAD and CulvertMaster and are included in Appendix F.

Low water crossings can be used instead of culverts for internal crossing locations. Low water crossings are sized to withstand the shear stress caused by flow during the 100-year 24-hour rainfall event. FLO-2D models were created and analyzed to determine the shear stresses and lengths. The combination of crossing depths and the slope of the flow path at each crossing location were multiplied by the density of water to determine the expected shear stress. Calculations can be found in Appendix F.

Table 7: Entrance Culvert Summary

Location	Culvert Size	Culvert Material
EC01	1-18"	CMP
EC02	3-30"	CMP
EC03	1-18"	CMP
EC04	1-18"	CMP
EC05	1-18"	CMP
EC06	1-18"	CMP
EC07	1-18"	CMP

Location	Culvert Size	Culvert Material
EC08	1-18"	CMP
EC09	1-18"	CMP
EC11	1-30"	CMP
EC12	1-30"	CMP
EC13	1-18"	CMP
EC14	4-72"	CMP
EC15	1-18"	CMP
EC16	2-30"	CMP
EC17	1-18"	CMP
EC18	1-18"	CMP
EC19	2-36"	CMP
EC20	1-18"	CMP
EC21	1-18"	CMP

Table 8: Internal Crossing Summary

Location	Culvert Size	Culvert Material	Low Water Crossing Type
DC01	4-60"	CMP	HEAVY DUTY
DC02	2-24"	CMP	STANDARD DUTY
DC03	3-60"	CMP	HEAVY DUTY
DC04	2-36"	CMP	STANDARD DUTY
DC05	3-30"	CMP	STANDARD DUTY
DC06	4-54"	CMP	HEAVY DUTY
DC07	4-45"	CMP	STANDARD DUTY
DC08	4-42"	CMP	STANDARD DUTY
DC09	4-48"	CMP	STANDARD DUTY
DC10	3-36"	CMP	STANDARD DUTY
DC11	2-24"	CMP	STANDARD DUTY
DC12	3-36"	CMP	STANDARD DUTY
DC13	2-30"	CMP	STANDARD DUTY
DC14	2-42"	CMP	STANDARD DUTY
DC15	3-42"	CMP	STANDARD DUTY
DC16	1-18"	CMP	STANDARD DUTY
DC17	3-42"	CMP	STANDARD DUTY

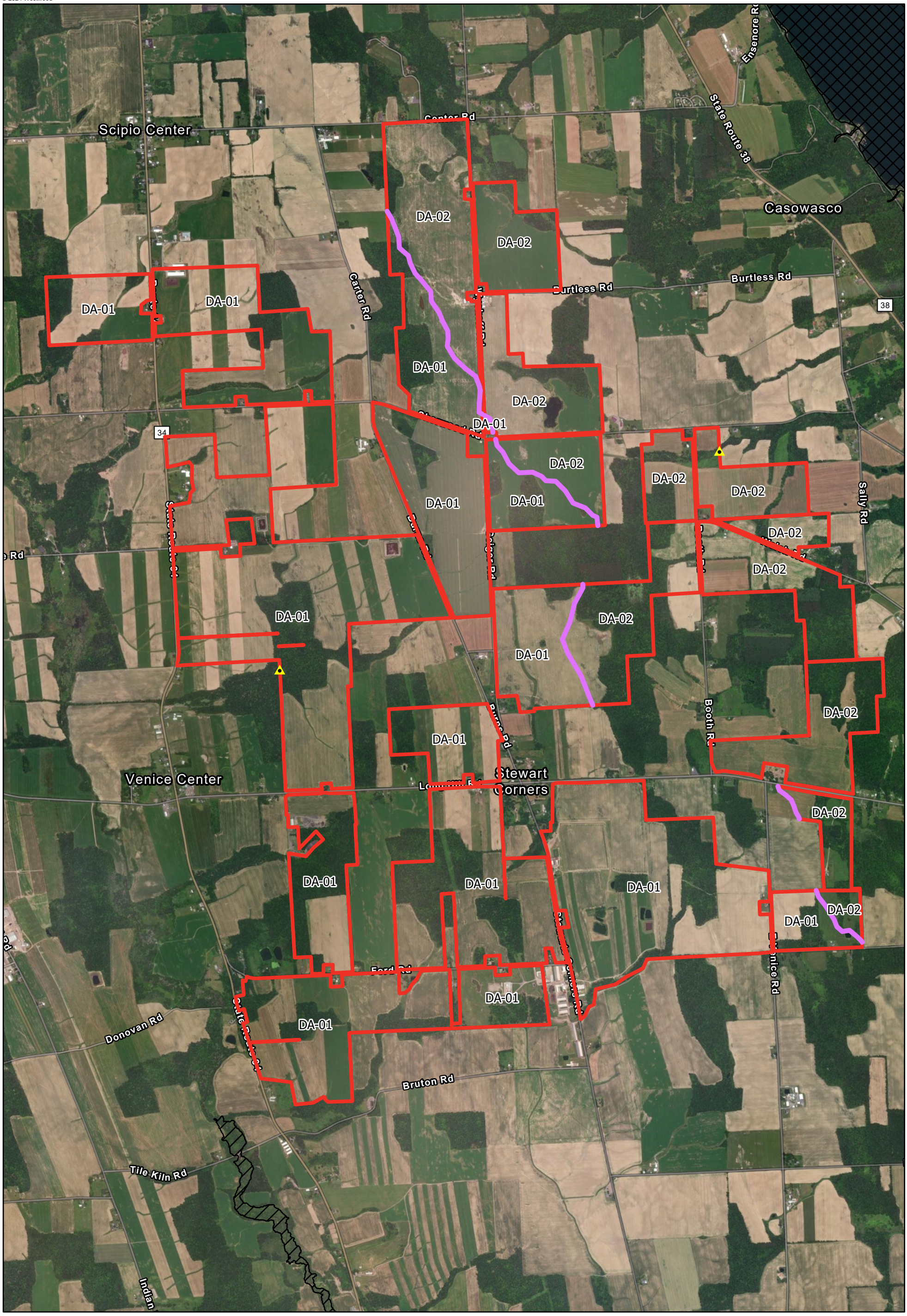
Conclusion
The proposed site will meet the requirements of the State of New York by providing the required water quality treatment in each critical location and ensuring no increase in runoff rates for the site.

Exhibits
Exhibit 1: Existing Drainage Map
Exhibit 2: Proposed Drainage Map
Exhibit 3: Curve Number Map
Exhibit 4: Substation and O&M Pad Drainage Map

Appendices
Appendix A: Atlas 14 Rainfall Data
Appendix B: Required Water Quality and Channel Protection Volumes
Appendix C: Provided Storage Calculations
Appendix D: Substation O&M Pad, and POI Runoff Rate Calculations
Appendix E: Overall Drainage Area Runoff Rate Calculations
Appendix F: Crossing Sizing Calculations

Exhibits

\\westwoodps.local\Global Projects\0042617.01_GIS_Hydro_Exhibits\Agricola Wind Project - SWMR\Agricola Wind Project.aprx
07A-100 Yr Peak Velocity Project Area Map - 100 Yr Peak Velocity Project Area | 10/2/2024 9:56 AM | kmzangel



Data Source(s): Westwood (2024); Esri WMS Basemap Imagery (Accessed 2024); USGS (2024); FEMA (2024); USDA (2024)

Legend

- Project Area
- County Boundary
- Drainage Area Division Line
- Discharge Locations

Layer

- FEMA Zone A
- FEMA Zone AE

N

0 — 2,200 US Feet

Agricola Wind Project

Cayuga County, New York

Exhibit 1: Existing Drainage Map

October 4, 2024

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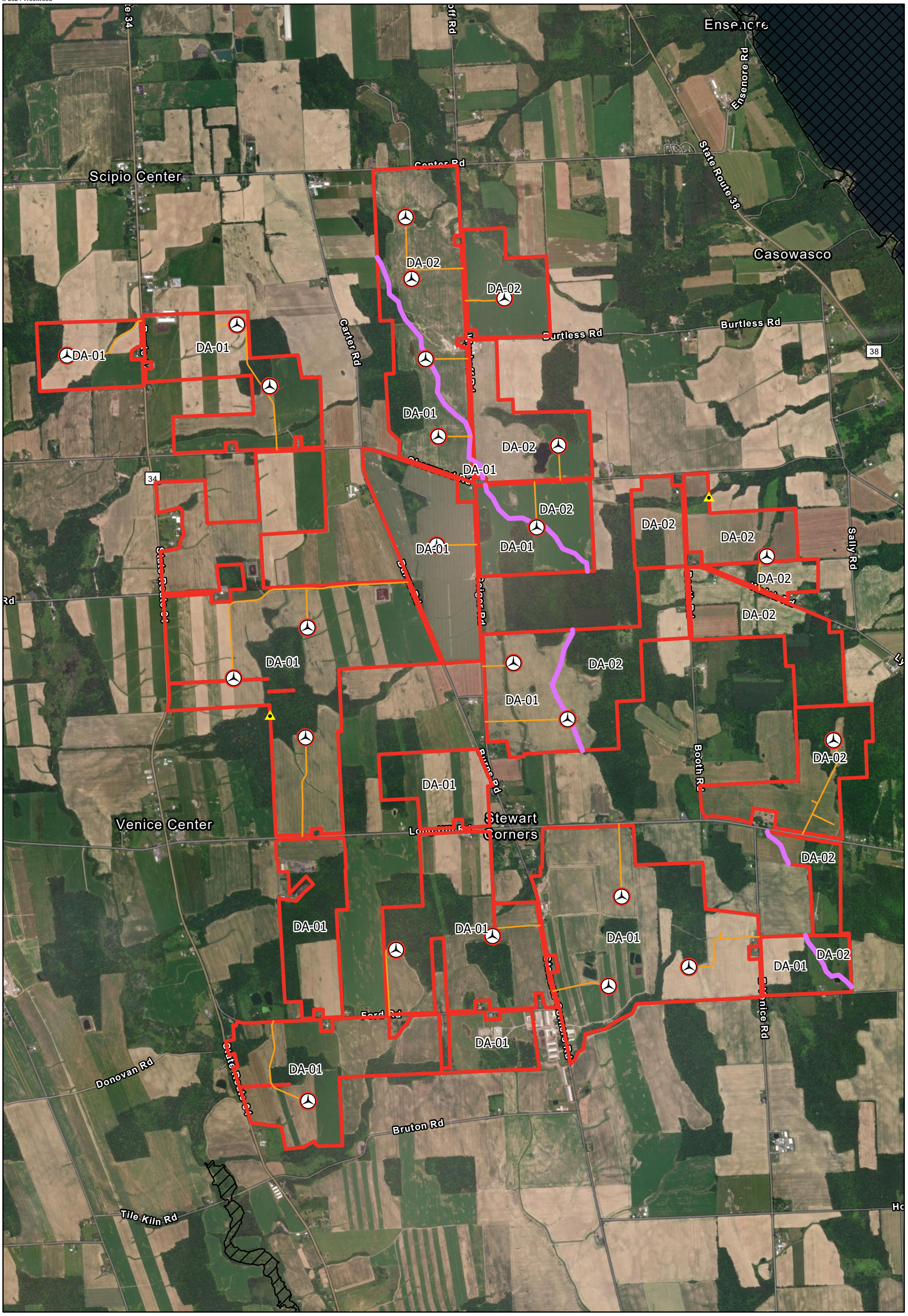
\\westwoodps.local\Global Projects\0042617.01_GIS_Hydro_Exhibits\Agricola Wind Project - SWMR\Agricola Wind Project.aprx
06A-100 Yr Max Water Depth Project Area Map - 100 Yr Max Water Depth Project Area | 10/2/2024 9:28 AM | kmzangel



Data Source(s): Westwood (2024); Esri WMS Basemap Imagery (Accessed 2024); USGS (2024); FEMA (2024); USDA (2024)

Legend

- Project Area
- Drainage Area Division Line
- County Boundary
- Discharge Locations
- Proposed Access Roads
- FEMA Zone A
- FEMA Zone AE
- Turbine Array

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Agricola Wind Project

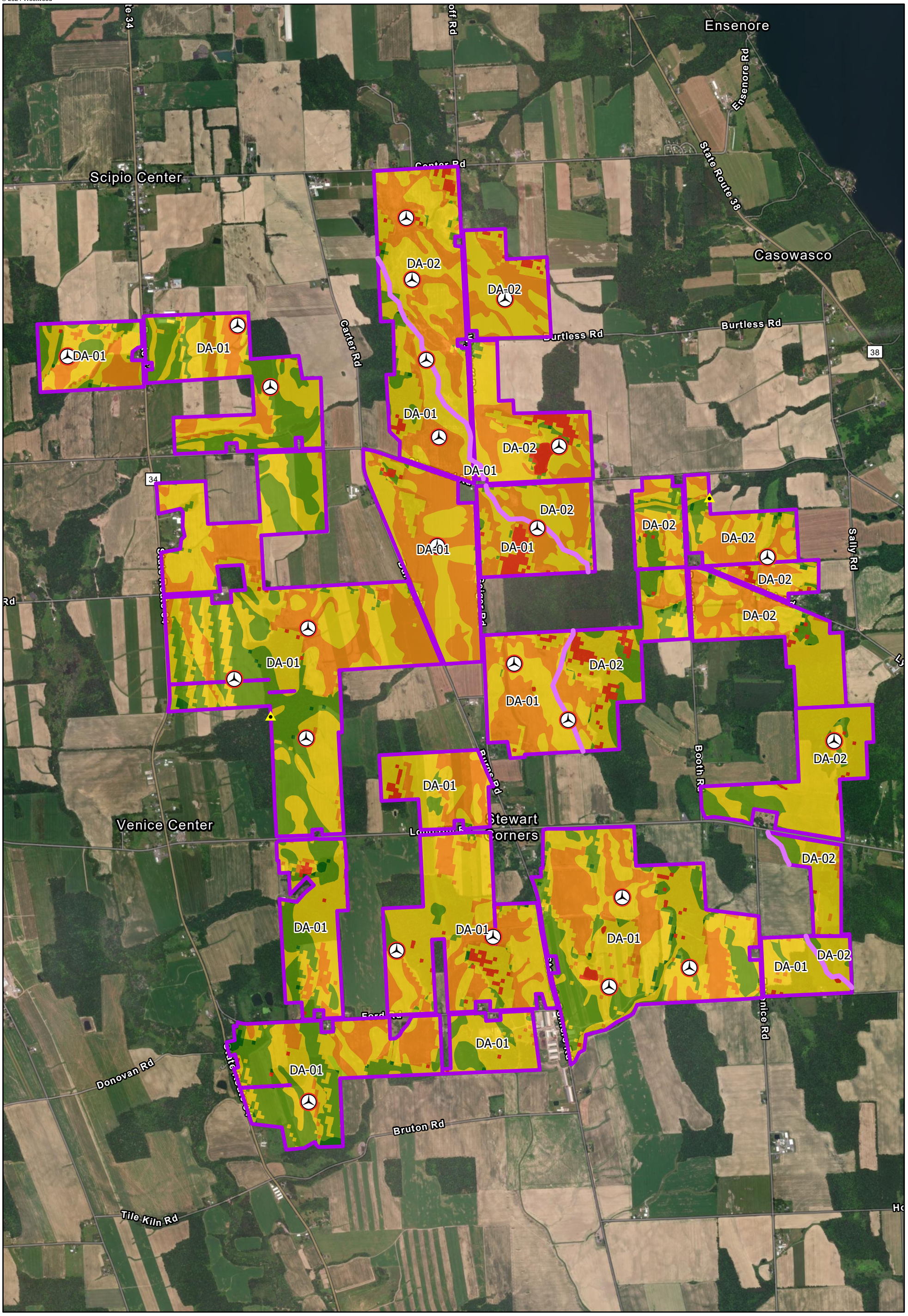
Cayuga County, New York

Exhibit 2: Proposed Drainage Map

October 4, 2024

N

0 2,200 US Feet



Data Source(s): Westwood (2024); Esri WMS Basemap Imagery (Accessed 2024); USGS (2024); FEMA (2024); USDA (2024)

Legend

- Project Area
- County Boundary
- Turbine Array

Curve Number

- 40 - 49
- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99

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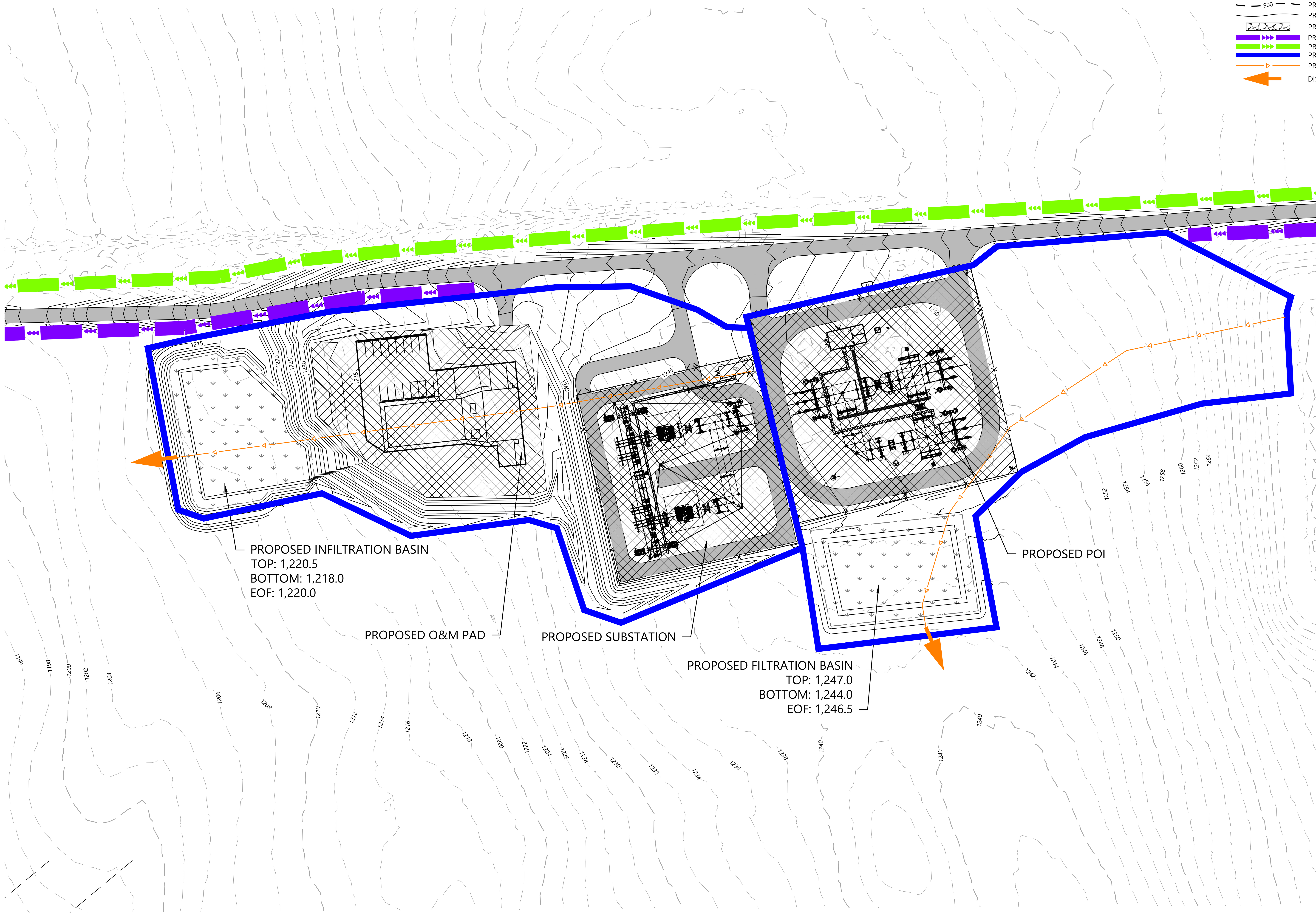
Cayuga County, New York

Exhibit 3: Curve Number Map

N

0 2,200 Feet

October 4, 2024



LEGEND:

- PROJECT BOUNDARY
- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- EX. TREELINE
- EX. PAVED ROAD
- EX. GRAVEL ROAD
- EX. BUILDING
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED INDEX CONTOUR
- PROPOSED INTERVAL CONTOUR
- PROPOSED EMERGENCY OVERFLOW OUTLET
- PROPOSED WET SWALE
- PROPOSED DIVERSION SWALE
- PROPOSED ONSITE DRAINAGE AREA BOUNDARY
- PROPOSED TIME OF CONCENTRATION LINE
- DISCHARGE LOCATION

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Westwood Professional Services, Inc.

PREPARED FOR:

Agricola Wind LLC

90 State Street
Albany, NY 12207

REVISIONS:

#	DATE	COMMENT

0' 60' 120' 180'

Agricola Wind Project

Cayuga County, New York

Substation, O&M Pad, and POI Drainage Map

NOT FOR CONSTRUCTION

DATE: 10/04/2024

SHEET: 4

Appendix A

Atlas 14 Rainfall Data

NOAA Atlas 14, Volume 10, Version 3
Location name: Scipio Center, New York, USA*
Latitude: 42.7547°, Longitude: -76.5293°
Elevation: 1327 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.283** (0.218-0.361)	**0.345** (0.266-0.441)	**0.447** (0.343-0.572)	**0.531** (0.405-0.684)	**0.647** (0.480-0.871)	**0.733** (0.534-1.01)	**0.825** (0.586-1.18)	**0.932** (0.626-1.35)	**1.09** (0.705-1.63)	**1.22** (0.773-1.86)
10-min	**0.401** (0.309-0.512)	**0.489** (0.377-0.625)	**0.633** (0.486-0.811)	**0.752** (0.574-0.968)	**0.916** (0.679-1.23)	**1.04** (0.756-1.43)	**1.17** (0.830-1.67)	**1.32** (0.886-1.92)	**1.54** (0.999-2.31)	**1.73** (1.10-2.64)
15-min	**0.472** (0.364-0.602)	**0.576** (0.443-0.735)	**0.745** (0.571-0.954)	**0.885** (0.675-1.14)	**1.08** (0.799-1.45)	**1.22** (0.889-1.68)	**1.38** (0.977-1.96)	**1.55** (1.04-2.25)	**1.82** (1.18-2.72)	**2.04** (1.29-3.11)
30-min	**0.638** (0.491-0.813)	**0.777** (0.598-0.992)	**1.00** (0.770-1.29)	**1.19** (0.911-1.54)	**1.45** (1.08-1.95)	**1.64** (1.20-2.26)	**1.85** (1.32-2.64)	**2.09** (1.40-3.03)	**2.44** (1.58-3.66)	**2.74** (1.73-4.18)
60-min	**0.803** (0.619-1.02)	**0.978** (0.753-1.25)	**1.26** (0.969-1.62)	**1.50** (1.14-1.93)	**1.82** (1.35-2.46)	**2.07** (1.51-2.84)	**2.33** (1.65-3.32)	**2.63** (1.76-3.81)	**3.07** (1.99-4.60)	**3.44** (2.18-5.26)
2-hr	**1.00** (0.778-1.26)	**1.20** (0.933-1.52)	**1.53** (1.18-1.94)	**1.80** (1.39-2.30)	**2.18** (1.63-2.91)	**2.45** (1.80-3.35)	**2.75** (1.98-3.92)	**3.12** (2.10-4.48)	**3.67** (2.39-5.46)	**4.15** (2.64-6.29)
3-hr	**1.13** (0.883-1.42)	**1.35** (1.05-1.70)	**1.71** (1.33-2.16)	**2.01** (1.55-2.55)	**2.42** (1.82-3.22)	**2.72** (2.01-3.70)	**3.05** (2.20-4.33)	**3.46** (2.34-4.95)	**4.09** (2.66-6.04)	**4.63** (2.95-6.98)
6-hr	**1.38** (1.08-1.71)	**1.64** (1.30-2.05)	**2.08** (1.64-2.61)	**2.45** (1.91-3.08)	**2.95** (2.24-3.89)	**3.32** (2.47-4.48)	**3.72** (2.70-5.23)	**4.21** (2.87-5.98)	**4.98** (3.26-7.30)	**5.64** (3.61-8.42)
12-hr	**1.66** (1.32-2.04)	**1.99** (1.59-2.47)	**2.55** (2.02-3.16)	**3.01** (2.37-3.75)	**3.64** (2.78-4.75)	**4.11** (3.08-5.48)	**4.61** (3.36-6.40)	**5.21** (3.57-7.33)	**6.12** (4.03-8.89)	**6.88** (4.42-10.2)
24-hr	**1.96** (1.58-2.40)	**2.37** (1.90-2.90)	**3.03** (2.42-3.72)	**3.58** (2.84-4.42)	**4.33** (3.33-5.59)	**4.89** (3.68-6.45)	**5.49** (4.02-7.51)	**6.18** (4.26-8.60)	**7.19** (4.76-10.3)	**8.02** (5.18-11.8)
2-day	**2.31** (1.87-2.80)	**2.75** (2.23-3.34)	**3.47** (2.80-4.23)	**4.07** (3.26-4.98)	**4.89** (3.79-6.25)	**5.51** (4.18-7.19)	**6.16** (4.53-8.33)	**6.90** (4.78-9.52)	**7.96** (5.30-11.4)	**8.83** (5.73-12.8)
3-day	**2.56** (2.09-3.09)	**3.02** (2.46-3.65)	**3.78** (3.06-4.58)	**4.40** (3.55-5.36)	**5.26** (4.10-6.68)	**5.91** (4.50-7.66)	**6.59** (4.85-8.84)	**7.35** (5.11-10.1)	**8.43** (5.63-12.0)	**9.32** (6.06-13.5)
4-day	**2.78** (2.28-3.34)	**3.26** (2.66-3.92)	**4.03** (3.29-4.87)	**4.68** (3.79-5.68)	**5.56** (4.35-7.03)	**6.23** (4.76-8.04)	**6.93** (5.12-9.26)	**7.71** (5.38-10.5)	**8.82** (5.90-12.5)	**9.72** (6.33-14.0)
7-day	**3.34** (2.76-3.99)	**3.86** (3.18-4.60)	**4.69** (3.85-5.62)	**5.38** (4.39-6.48)	**6.33** (4.98-7.93)	**7.06** (5.42-9.02)	**7.80** (5.78-10.3)	**8.62** (6.05-11.7)	**9.78** (6.57-13.7)	**10.7** (7.00-15.3)
10-day	**3.89** (3.22-4.62)	**4.43** (3.67-5.26)	**5.32** (4.39-6.34)	**6.05** (4.96-7.25)	**7.06** (5.58-8.80)	**7.83** (6.04-9.95)	**8.63** (6.41-11.3)	**9.48** (6.67-12.8)	**10.7** (7.19-14.9)	**11.6** (7.61-16.5)
20-day	**5.57** (4.66-6.55)	**6.21** (5.19-7.31)	**7.25** (6.04-8.56)	**8.12** (6.72-9.64)	**9.31** (7.41-11.4)	**10.2** (7.93-12.8)	**11.1** (8.30-14.4)	**12.1** (8.57-16.1)	**13.3** (9.03-18.4)	**14.3** (9.38-20.1)
30-day	**7.00** (5.90-8.19)	**7.71** (6.49-9.03)	**8.88** (7.44-10.4)	**9.84** (8.19-11.6)	**11.2** (8.93-13.6)	**12.2** (9.50-15.2)	**13.2** (9.86-16.9)	**14.2** (10.1-18.8)	**15.5** (10.5-21.2)	**16.4** (10.8-23.0)
45-day	**8.81** (7.46-10.2)	**9.60** (8.13-11.2)	**10.9** (9.19-12.7)	**12.0** (10.0-14.1)	**13.5** (10.8-16.3)	**14.6** (11.4-18.0)	**15.7** (11.8-19.9)	**16.8** (12.0-22.1)	**18.0** (12.3-24.6)	**18.9** (12.5-26.4)
60-day	**10.3** (8.80-12.0)	**11.2** (9.51-13.0)	**12.6** (10.7-14.6)	**13.8** (11.6-16.1)	**15.4** (12.4-18.5)	**16.6** (13.0-20.4)	**17.8** (13.3-22.4)	**18.9** (13.6-24.8)	**20.1** (13.8-27.4)	**21.0** (13.9-29.1)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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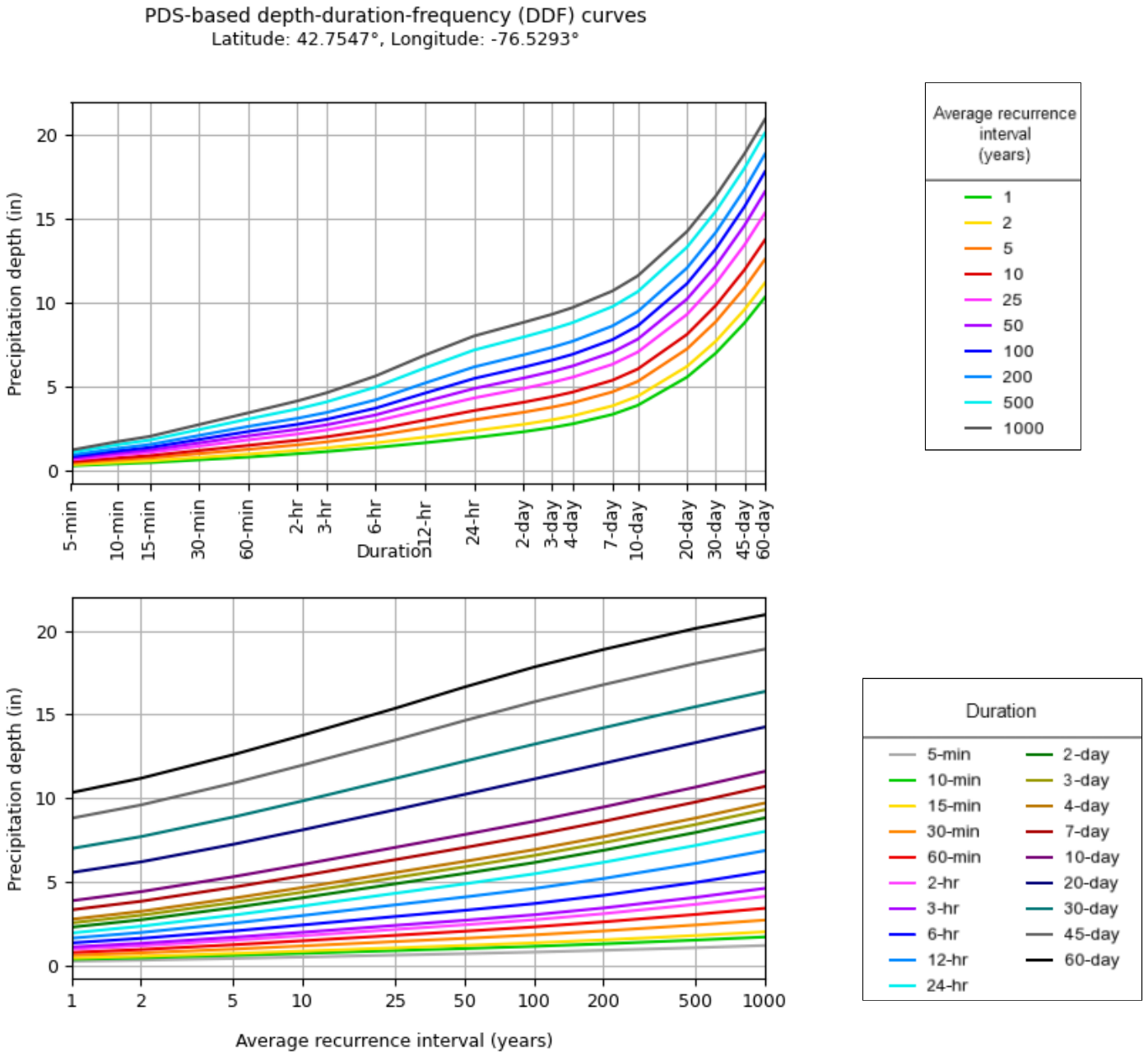
PF graphical



NOAA Atlas 14, Volume 10, Version 3 Created (GMT): Thu Jun 29 18:42:06 2023

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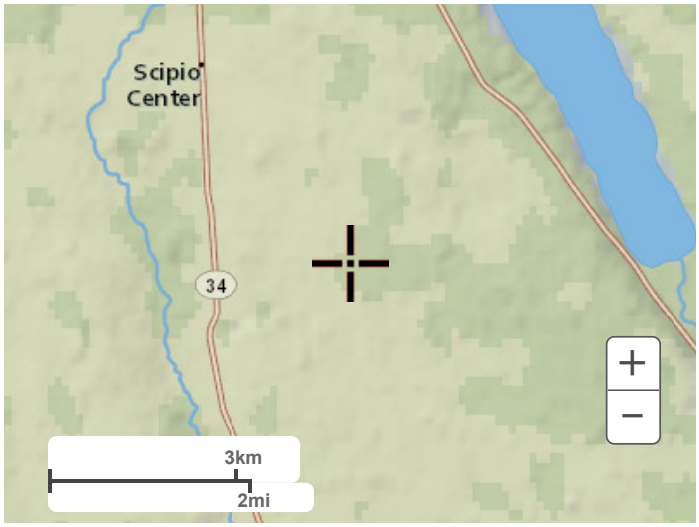
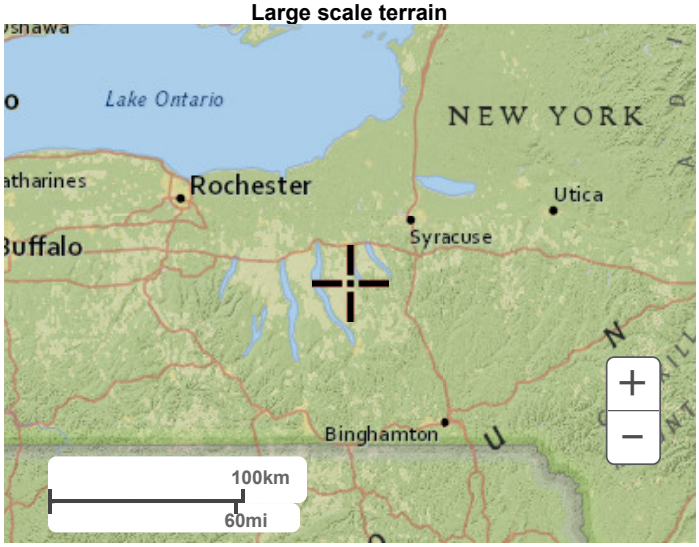
Maps & aerials

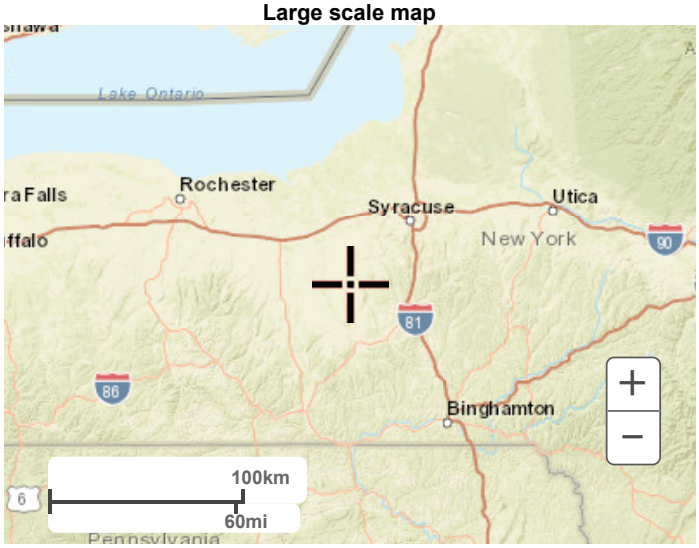
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix B

Required Water Quality and Channel Protection Volumes

State of New York Stormwater Mangement Calculator

Project: Agricola Wind - 100 LF of Road WQv
Date: 4/16/2024
By: kmz

100 LF of road

Step 1	Caclulate Overall Water Quality Volume WQ_v			
	P (90%)	1	Inches	
	Imp Surfaces	0.04	Acres	
	Rv	0.950		
	Area	0.04	Ac	
Overall	WQ_v	0.003167	Acft	

State of New York Stormwater Mangement Calculator

Project: Agricola Wind - Substation and O&M Pad
Date: 10/1/2024
By: kmz

Substation

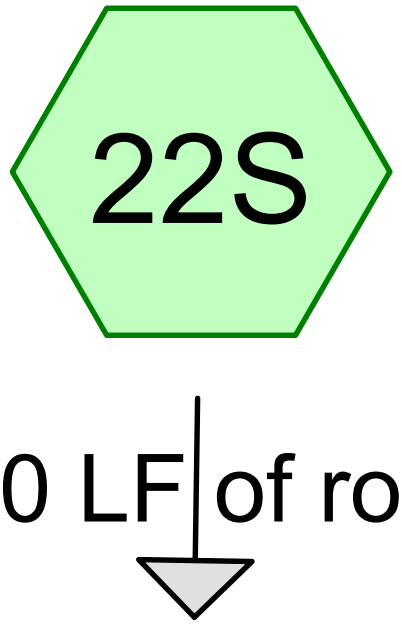
Step 1	Caclulate Overall Water Quality Volume WQ_v			
	P (90%)	1	Inches	
	Imp Surfaces	2.2	Acres	
	Rv	0.950		
	Area	2.2	Ac	
Overall	WQ_v	0.174	Acft	

State of New York Stormwater Mangement Calculator

Project: Agricola Wind - POI Location
Date: 10/1/2024
By: kmz

Substation

Step 1	Caclulate Overall Water Quality Volume WQ_v			
	P (90%)	1	Inches	
	Imp Surfaces	1.5	Acres	
	Rv	0.950		
	Area	1.5	Ac	
Overall	WQ_v	0.119	Acft	



Ex Wet Swale

Subcat Reach Pond Link

Routing Diagram for 2024-04-17 Agricola Wet Swale Sizing
Prepared by Westwood Professional Services, Printed 4/29/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Agricola 24-hr S1	1-yr	Default	24.00	1	1.96	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.004	98	Paved parking, HSG D (22S)
0.004	**98**	**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.004	0.000	0.004	Paved parking	22S
0.000	**0.000**	**0.000**	**0.004**	**0.000**	**0.004**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 22S: 100 LF of road Runoff Area=0.004 ac 100.00% Impervious Runoff Depth=1.73"
Flow Length=50' Slope=0.0400 '/' Tc=0.7 min CN=98 Runoff=0.01 cfs 0.001 af

Reach 29R: Ex Wet Swale Avg. Flow Depth=0.01' Max Vel=0.61 fps Inflow=0.01 cfs 0.001 af
n=0.035 L=100.0' S=0.0400 '/' Capacity=144.09 cfs Outflow=0.01 cfs 0.001 af

Total Runoff Area = 0.004 ac Runoff Volume = 0.001 af Average Runoff Depth = 1.73"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.004 ac

Summary for Subcatchment 22S: 100 LF of road

Runoff = 0.01 cfs @ 11.96 hrs, Volume= 0.001 af, Depth= 1.73"
Routed to Reach 29R : Ex Wet Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NY-Agricola 24-hr S1 1-yr Rainfall=1.96"

Area (ac)	CN	Description
0.004	98	Paved parking, HSG D
0.004		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0400	1.22		**Lag/CN Method,**

Summary for Reach 29R: Ex Wet Swale

Inflow Area = 0.004 ac,100.00% Impervious, Inflow Depth = 1.73" for 1-yr event
Inflow = 0.01 cfs @ 11.96 hrs, Volume= 0.001 af
Outflow = 0.01 cfs @ 12.05 hrs, Volume= 0.001 af, Atten= 21%, Lag= 5.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.61 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.61 fps, Avg. Travel Time= 2.7 min

Peak Storage= 2 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 2.05'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 144.09 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 100.0' Slope= 0.0400 '/'
Inlet Invert= 4.00', Outlet Invert= 0.00'

Stage-Area-Storage for Reach 29R: Ex Wet Swale

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
4.00	0.0	0
4.02	0.0	4
4.04	0.1	8
4.06	0.1	13
4.08	0.2	18
4.10	0.2	23
4.12	0.3	28
4.14	0.3	34
4.16	0.4	40
4.18	0.5	46
4.20	0.5	52
4.22	0.6	59
4.24	0.7	65
4.26	0.7	72
4.28	0.8	80
4.30	0.9	87
4.32	0.9	95
4.34	1.0	103
4.36	1.1	111
4.38	1.2	119
4.40	1.3	128
4.42	1.4	137
4.44	1.5	146
4.46	1.6	155
4.48	1.7	165
4.50	1.8	175
4.52	1.9	185
4.54	2.0	195
4.56	2.1	206
4.58	2.2	217
4.60	2.3	228
4.62	2.4	239
4.64	2.5	251
4.66	2.6	263
4.68	2.7	275
4.70	2.9	287
4.72	3.0	300
4.74	3.1	312
4.76	3.3	325
4.78	3.4	339
4.80	3.5	352
4.82	3.7	366
4.84	3.8	380
4.86	3.9	394
4.88	4.1	408
4.90	4.2	423
4.92	4.4	438
4.94	4.5	453
4.96	4.7	468
4.98	4.8	484
5.00	5.0	500
5.02	5.2	516
5.04	5.3	532
5.06	5.5	549
5.08	5.7	566
5.10	5.8	583
5.12	6.0	600
5.14	6.2	618
5.16	6.4	636
5.18	6.5	654
5.20	6.7	672
5.22	6.9	691
5.24	7.1	709
5.26	7.3	728
5.28	7.5	748
5.30	7.7	767
5.32	7.9	787
5.34	8.1	807
5.36	8.3	827
5.38	8.5	847
5.40	8.7	868
5.42	8.9	889
5.44	9.1	910
5.46	9.3	931
5.48	9.5	953
5.50	9.8	975
5.52	10.0	997
5.54	10.2	1,019
5.56	10.4	1,042
5.58	10.6	1,065
5.60	10.9	1,088
5.62	11.1	1,111
5.64	11.3	1,135
5.66	11.6	1,159
5.68	11.8	1,183
5.70	12.1	1,207
5.72	12.3	1,232
5.74	12.6	1,256
5.76	12.8	1,281
5.78	13.1	1,307
5.80	13.3	1,332
5.82	13.6	1,358
5.84	13.8	1,384
5.86	14.1	1,410
5.88	14.4	1,436
5.90	14.6	1,463
5.92	14.9	1,490
5.94	15.2	1,517
5.96	15.4	1,544
5.98	15.7	1,572
6.00	**16.0**	**1,600**


WQv = 0.17 af
CPv = 0.32af
WQv = 0.12af
CPv = 0.22af
Total Required Treatment Volume = 0.49af
Total Required Treatment Volume = 0.34af
17S
18S
22S
25S
Substation and O&M Location - Existing
Substation and O&M Location - Proposed
POI - Existing
POI - Proposed
Subcat
Reach
Pond
Link
Routing Diagram for 2024-04-16 Agricola Facility Basin Sizing
Prepared by Westwood Professional Services, Printed 10/2/2024
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Project Notes

Copied 7 events from NY-Agricola 24-hr S1 storm

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.350	58	Meadow, non-grazed, HSG B (17S, 22S)
0.350	78	Meadow, non-grazed, HSG D (22S)
3.700	98	Paved parking, HSG B (18S, 25S)
7.400	**79**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
7.050	HSG B	17S, 18S, 22S, 25S
0.000	HSG C	
0.350	HSG D	22S
0.000	Other	
7.400		**TOTAL AREA**

Summary for Subcatchment 17S: Substation and O&M Location - Existing

Runoff = 0.01 cfs @ 16.71 hrs, Volume= 0.006 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Agricola 24-hr S1 1-yr Rainfall=1.96"

Area (ac)	CN	Description
2.200	58	Meadow, non-grazed, HSG B
2.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.4	629	0.0590	0.64		**Lag/CN Method,**

Summary for Subcatchment 18S: Substation and O&M Location - Proposed

Runoff = 6.13 cfs @ 12.02 hrs, Volume= 0.318 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Agricola 24-hr S1 1-yr Rainfall=1.96"

Area (ac)	CN	Description
2.200	98	Paved parking, HSG B
2.200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	629	0.0590	2.45		**Lag/CN Method,**

Summary for Subcatchment 22S: POI - Existing

Runoff = 0.03 cfs @ 12.58 hrs, Volume= 0.012 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Agricola 24-hr S1 1-yr Rainfall=1.96"

Area (ac)	CN	Description
1.150	58	Meadow, non-grazed, HSG B
0.350	78	Meadow, non-grazed, HSG D
1.500	63	Weighted Average
1.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	271	0.0200	0.36		**Lag/CN Method,**

Summary for Subcatchment 25S: POI - Proposed

Runoff = 4.28 cfs @ 12.01 hrs, Volume= 0.217 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
NY-Agricola 24-hr S1 1-yr Rainfall=1.96"

Area (ac)	CN	Description
1.500	98	Paved parking, HSG B
1.500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	271	0.0200	1.21		**Lag/CN Method,**