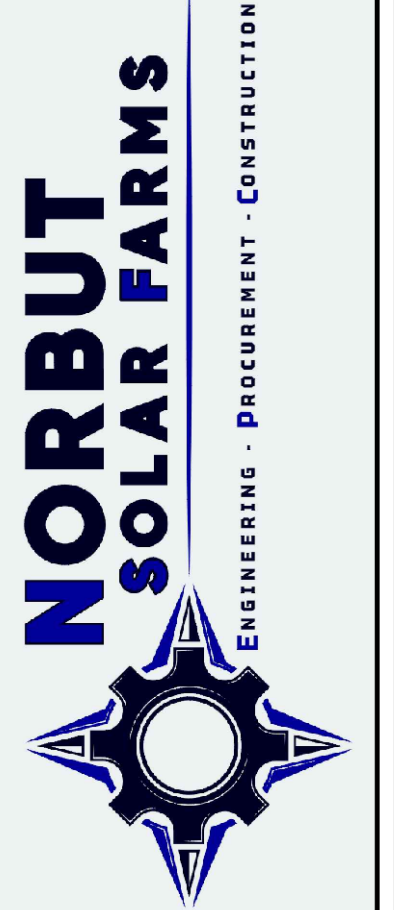


# NSF KIRKWOOD

## 15 MW SOLAR ELECTRIC GENERATION FACILITY



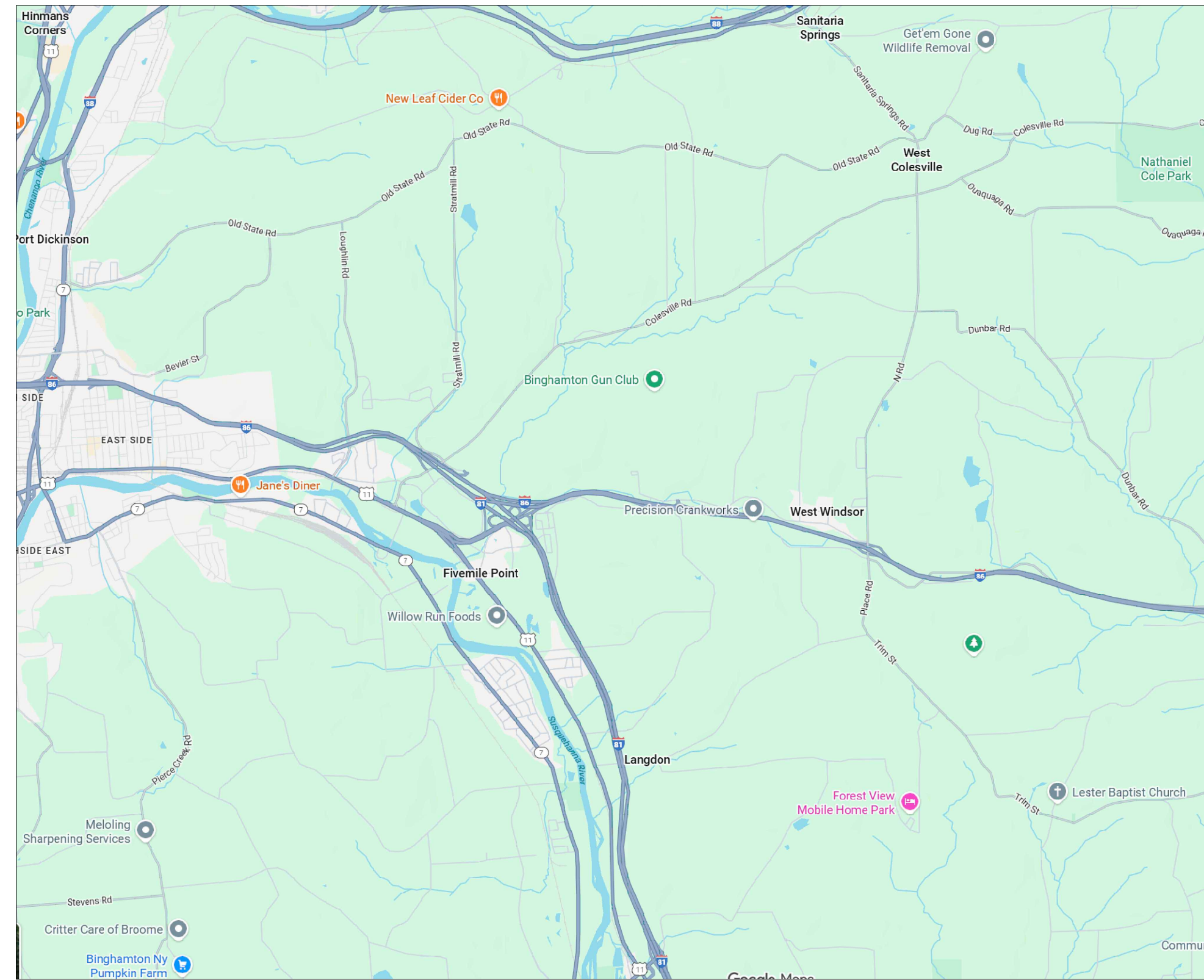
DESIGN BY:  
PAUL CONGDON, PE  
NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269



BY:	
DATE:	
REVISIONS:	

PROJECT NAME:	NSF KIRKWOOD
ADDRESS:	149 QUILTY HILL ROAD & 165 FOLEY ROAD TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK
DRAWING:	
SCALE:	N.T.S.
DATE:	DECEMBER 4, 2025

TITLE



### PROJECT LOCATION

149 QUILTY HILL ROAD, KIRKWOOD, NY



### PROJECT PROPERTY

153.9 ACRES +/-

**PROJECT SCOPE:**

THE PROJECT INVOLVES THE CONSTRUCTION OF THREE (3) 5 MW CAPACITY GROUND MOUNTED SOLAR ELECTRIC COLLECTION SYSTEMS ALONG WITH SUPPORTING INFRASTRUCTURE INCLUDING; OPERATIONS AND MAINTENANCE ROAD, INVERTERS, TRANSFORMERS, POLE MOUNTED INTERCONNECTION EQUIPMENT AND FENCING.

**SYSTEM INFORMATION:**

SITE	1	2	3
MODULE #	10,224	10,176	10,104
MODULE	ZNSHINE BIFACIAL 640W CAPACITY		
GCR	40%	40%	40%
DC SIZE	6.54 MW	6.51 MW	6.46 MW
AC SIZE	5 MW	5 MW	5 MW
RATIO	1.3	1.3	1.3
INVERTER	SUNGROW SG-3425UD (2,500KVA)		
RACKING	OMCO EAST WEST TRACKING (+/- 60°)		

**DIRECTORY:**

**AUTHORITY HAVING JURISDICTION:**  
TOWN OF KIRKWOOD  
70 CRESENT DRIVE  
KIRKWOOD, NY 13795

**ELECTRIC UTILITY:**  
NYSEG

**APPLICANT:**  
NORBUT SOLAR FARMS, LLC  
1242 UNIVERSITY AVE  
ROCHESTER, NY 14607

**BASE MAP INFORMATION:**

**SURVEY:**  
ALTA AND TOPOGRAPHIC SURVEY PREPARED BY JHA COMPANIES  
DATED AUGUST 17, 2023.  
VERTICAL DATUM - NORTH AMERICA VERTICAL DATUM  
HORIZONTAL - NY STATE PLANE NAD83, NY CENTRAL ZONE

**WETLANDS:**  
WETLAND DELINEATION AND AQUATIC RESOURCE STUDY  
PREPARED BY ARM GROUP LLC, DATED JUNE 19, 2023

**FLOOD ZONE:**  
THE PROJECT PROPERTY IS WITHIN A ZONE X

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C100 - SURVEY AND ZONING INFORMATION

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C203 - SITE PLAN - AREA 3

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C300 - ROAD PROFILES

C400 - EROSION AND SEDIMENT CONTROL PLAN

C500 - DETAILS

C501 - DETAILS

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**CONSTRUCTION REQUIREMENTS**

- BEFORE ANY TOPSOIL IS STRIPPED, REPRESENTATIVE SOIL SAMPLES SHOULD BE OBTAINED FROM THE AREAS TO BE DISTURBED. THE SOIL SAMPLING SHOULD BE CONSISTENT WITH CORNELL UNIVERSITY'S SOIL TESTING GUIDELINES, AND SAMPLES SHOULD BE SUBMITTED TO A LABORATORY FOR TESTING PH, PERCENT ORGANIC MATERIAL, CATION EXCHANGE CAPACITY, PHOSPHORUS/PHOSPHATE (P), AND POTASSIUM/POTASH (K). THE RESULTS ARE TO ESTABLISH A BENCHMARK THAT THE SOIL'S PH, NITROGEN (N), PHOSPHORUS/PHOSPHATE (P), AND POTASSIUM/POTASH (K) ARE TO BE MEASURED AGAINST UPON RESTORATION. IF SOIL SAMPLING IS NOT PERFORMED, FERTILIZER AND LIME APPLICATION RECOMMENDATIONS FOR DISTURBED AREAS CAN BE FOUND AT [HTTPS://WWW.AGRICULTURE.NY.GOV/AP/AGSERVICES/FERTILIZER\\_LIME\\_AND\\_SEEDING\\_RECOMMENDATIONS.PDF](https://www.agriculture.ny.gov/ap/agservices/fertilizer_lime_and_seeding_recommendations.pdf).
- STRIPPED TOPSOIL SHOULD BE STOCKPILED FROM WORK AREAS (E.G. PARKING AREAS, ELECTRIC CONDUCTOR TRENCHES, ALONG ACCESS ROADS, EQUIPMENT PADS) AND KEPT SEPARATE FROM OTHER EXCAVATED MATERIAL (ROCK AND/OR SUB-SOIL) UNTIL THE COMPLETION OF THE FACILITY FOR FINAL RESTORATION. FOR PROPER TOPSOIL SEGREGATION, AT LEAST 25 FEET OF ADDITIONAL TEMPORARY WORKSPACE (ATWS) MAY BE NEEDED ALONG "OPEN-CUT" UNDERGROUND UTILITY TRENCHES. ALL TOPSOIL WILL BE STOCKPILED AS CLOSE AS IS REASONABLY PRACTICAL TO THE AREA WHERE STRIPPED/REMOVED AND SHALL BE USED FOR RESTORATION ON THAT PARTICULAR AREA. ANY TOPSOIL REMOVED FROM PERMANENTLY CONVERTED AGRICULTURAL AREAS (E.G. PERMANENT ROADS, ETC.) SHOULD BE TEMPORARILY STOCKPILED AND EVENTUALLY SPREAD EVENLY IN ADJACENT AGRICULTURAL AREAS WITHIN THE PROJECT LIMITS OF DISTURBANCE (LOD); HOWEVER NOT TO SIGNIFICANTLY ALTER THE HYDROLOGY OF THE AREA. CLEARLY DESIGNATE TOPSOIL STOCKPILE AREAS AND TOPSOIL DISPOSAL AREAS IN THE FIELD AND ON CONSTRUCTION DRAWINGS; CHANGES OR ADDITIONS TO THE DESIGNATED STOCKPILE AREAS MAY BE NEEDED BASED ON FIELD CONDITIONS IN CONSULTATION WITH THE EM. SUFFICIENT LOD (AS DESIGNATED ON THE SITE PLAN OR BY THE EM) AREA SHOULD BE ALLOTTED TO ALLOW ADEQUATE ACCESS TO THE STOCKPILE FOR TOPSOIL REPLACEMENT DURING RESTORATION.
  - TOPSOIL STOCKPILES ON AGRICULTURAL AREAS LEFT IN PLACE PRIOR TO OCTOBER 31ST SHOULD BE SEEDED WITH AROOSTOOK WINTER RYE OR EQUIVALENT AT AN APPLICATION RATE OF THREE BUSHELS (168 LBS.) PER ACRE AND MULCHED WITH STRAW MULCH AT RATE OF TWO TO THREE BALES PER 1000 SQ. FT.
  - TOPSOIL STOCKPILES LEFT IN PLACE BETWEEN OCTOBER 31ST AND MAY 31ST SHOULD BE MULCHED WITH STRAW AT A RATE OF TWO TO THREE BALES PER 1000 SQ. FT. TO PREVENT SOIL LOSS.
- THE SURFACE OF ACCESS ROADS LOCATED OUTSIDE OF THE GENERATION FACILITY'S SECURITY FENCE AND CONSTRUCTED THROUGH AGRICULTURAL FIELDS SHALL BE LEVEL WITH THE ADJACENT FIELD SURFACE. IF A LEVEL ROAD DESIGN IS NOT FEASIBLE, ALL ACCESS ROADS SHOULD BE CONSTRUCTED TO ALLOW A FARM CROSSING (FOR SPECIFIC EQUIPMENT AND LIVESTOCK) AND TO RESTORE/ MAINTAIN ORIGINAL SURFACE DRAINAGE PATTERNS.
- INSTALL CULVERTS AND/OR WATERBARS TO MAINTAIN OR IMPROVE SITE SPECIFIC NATURAL DRAINAGE PATTERNS.
- DO NOT ALLOW VEHICLES OR EQUIPMENT OUTSIDE THE PLANNED LOD WITHOUT THE EM SEEKING PRIOR APPROVAL FROM THE LANDOWNER (AND/OR AGRICULTURAL PRODUCER), AND ASSOCIATED PERMIT AMENDMENTS AS NECESSARY. LIMIT ALL VEHICLE AND EQUIPMENT TRAFFIC, PARKING, AND MATERIAL STORAGE TO THE ACCESS ROAD AND/OR DESIGNATED WORK AREAS, SUCH AS LAYDOWN AREAS, WITH EXCEPTION THE USE OF LOW GROUND PRESSURE EQUIPMENT.\* WHERE REPEATED TEMPORARY ACCESS IS NECESSARY ACROSS PORTIONS OF AGRICULTURAL AREAS OUTSIDE OF THE SECURITY FENCE, PREPARATION FOR SUCH ACCESS SHOULD CONSIST OF EITHER STRIPPING / STOCKPILING ALL TOPSOIL LINEARLY ALONG THE ACCESS ROAD, OR THE USE OF TIMBER MATTING.
- PROPOSED PERMANENT ACCESS SHOULD BE ESTABLISHED AS SOON AS POSSIBLE BY REMOVING TOPSOIL ACCORDING TO THE DEPTH OF TOPSOIL AS DIRECTED BY THE EM. ANY EXTRA TOPSOIL REMOVED FROM PERMANENTLY CONVERTED AREAS (E.G. PERMANENT ROADS, EQUIPMENT PADS, ETC.) SHOULD BE TEMPORARILY STOCKPILED AND EVENTUALLY SPREAD EVENLY IN ADJACENT AGRICULTURAL AREAS WITHIN THE PROJECT LIMITS OF DISTURBANCE (LOD); HOWEVER NOT TO SIGNIFICANTLY ALTER THE HYDROLOGY OF THE AREA.
- WHEN OPEN-CUT TRENCHING IS PROPOSED, TOPSOIL STRIPPING IS REQUIRED FROM THE WORK AREA ADJACENT TO THE TRENCH (INCLUDING SEGREGATED STOCKPILE AREAS AND EQUIPMENT ACCESS). TRENCHER OR ROAD SAW LIKE EQUIPMENT ARE NOT ALLOWED FOR TRENCH EXCAVATION IN AGRICULTURAL AREAS, AS THE EQUIPMENT DOES NOT SEGREGATE TOPSOIL FROM SUBSOIL. HORIZONTAL DIRECTIONAL DRILLING (HDD) OR EQUIVALENT INSTALLATION THAT DOES NOT DISRUPT THE SOIL PROFILE, MAY LIMIT AGRICULTURAL GROUND DISTURBANCES. ANY HDD DRILLING FLUID INADVERTENTLY DISCHARGED MUST BE REMOVED FROM AGRICULTURAL AREAS. NARROW OPEN TRENCHES LESS THAN 25 FEET LONG INVOLVING A SINGLE DIRECTLY BURIED CONDUCTOR OR CONDUIT (AS REQUIRED) TO CONNECT SHORT ROFS WITHIN THE ARRAY, ARE EXEMPT FROM TOPSOIL SEGREGATION.
- ELECTRIC COLLECTION, COMMUNICATION AND TRANSMISSION LINES INSTALLED ABOVE GROUND CAN CREATE LONG TERM INTERFERENCE WITH MECHANIZED FARMING ON AGRICULTURAL LAND. THUS, INTERCONNECT CONDUCTORS OUTSIDE OF THE SECURITY FENCE MUST BE BURIED IN AGRICULTURAL FIELDS WHEREVER PRACTICABLE. WHERE OVERHEAD UTILITY LINES ARE REQUIRED, (INCLUDING POINT(S) OF INTERCONNECTION) INSTALLATION MUST BE LOCATED OUTSIDE FIELD BOUNDARIES OR ALONG PERMANENT ACCESS ROAD(S) WHEREVER POSSIBLE. WHEN OVERHEAD UTILITIES MUST CROSS FARMLAND, MINIMIZE AGRICULTURAL IMPACTS BY USING TALLER STRUCTURES THAT PROVIDE LONGER SPANNING DISTANCES AND LOCATE POLES ON FIELD EDGES TO THE GREATEST EXTENT PRACTICABLE.
- ALL BURIED UTILITIES LOCATED WITHIN THE GENERATION FACILITY'S SECURITY FENCE MUST HAVE A MINIMUM DEPTH OF 18-INCHES OF COVER IF BURIED IN A CONDUIT AND A MINIMUM DEPTH OF TWENTY-FOUR INCHES OF COVER IF DIRECTLY BURIED (E.G. NOT ROUTED IN CONDUIT).
- THE FOLLOWING REQUIREMENTS APPLY TO ALL BURIED UTILITIES LOCATED OUTSIDE OF THE GENERATION FACILITY SECURITY FENCE:
  - IN CROPLAND, HAYLAND, AND IMPROVED PASTURE BURIED ELECTRIC CONDUCTORS MUST HAVE A MINIMUM DEPTH OF 48-INCHES OF COVER, IN AREAS WHERE THE DEPTH OF SOIL OVER BEDROCK IS LESS THAN 48-INCHES, THE ELECTRIC CONDUCTORS MUST BE BURIED BELOW THE SURFACE OF THE BEDROCK IF FRIABLE/RIPPABLE, OR AS NEAR AS POSSIBLE TO THE SURFACE OF THE BEDROCK.
  - IN UNIMPROVED GRAZING AREAS OR ON LAND PERMANENTLY DEVOTED TO PASTURE THE MINIMUM DEPTH OF COVER MUST BE 36-INCHES.
  - WHERE ELECTRICAL CONDUCTORS ARE BURIED DIRECTLY BELOW THE GENERATION FACILITY'S ACCESS ROAD OR IMMEDIATELY ADJACENT (AT ROAD EDGE) TO THE ACCESS ROAD, THE MINIMUM DEPTH OF COVER MUST BE 24-INCHES. CONDUCTORS MUST BE CLOSE ENOUGH TO THE ROAD EDGE AS TO BE NOT SUBJECT TO AGRICULTURAL CULTIVATION/SUB-SOILING.
- WHEN BURIED UTILITIES ALTER THE NATURAL STRATIFICATION OF SOIL HORIZONS AND NATURAL SOIL DRAINAGE PATTERNS, RECTIFY THE EFFECTS WITH MEASURES SUCH AS SUBSURFACE INTERCEPT DRAIN LINES. CONSULT THE LOCAL SOIL AND WATER CONSERVATION DISTRICT CONCERNING THE TYPE OF INTERCEPT DRAIN LINES TO INSTALL TO PREVENT SURFACE SEEPS AND THE SEASONALLY PROLONGED SATURATION OF THE CONDUCTOR INSTALLATION ZONE AND ADJACENT AREAS. INSTALL AND/OR REPAIR ALL DRAIN LINES ACCORDING TO NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARDS AND SPECIFICATIONS. DRAIN TILE MUST MEET OR EXCEED THE AASHTO M-252 SPECIFICATIONS. REPAIR OF SUBSURFACE DRAINS TILES SHOULD BE CONSISTENT WITH THE NYS/DAM'S DETAILS FOR "REPAIR OF SEVERED TILE LINE" FOUND IN THE PIPELINE DRAWING A-5 ([HTTP://WWW.AGRICULTURE.NY.GOV/AP/AGSERVICES/PIPELINE-DRAWINGS.PDF](http://www.agriculture.ny.gov/ap/agservices/pipeline-drawings.pdf)).

**POST-CONSTRUCTION RESTORATION REQUIREMENTS APPLICABLE TO CONTINUED USE AGRICULTURAL AREAS THAT SUFFERED GROUND DISTURBANCE DUE TO CONSTRUCTION ACTIVITIES (TYPICALLY LANDS OUTSIDE OF THE DEVELOPED PROJECT'S SECURITY FENCE).**

- ALL CONSTRUCTION DEBRIS IN ACTIVE AGRICULTURE AREAS INCLUDING PIECES OF WIRE, BOLTS, AND OTHER UNUSED METAL OBJECTS WILL NEED TO BE REMOVED AND PROPERLY DISPOSED OF AS SOON AS PRACTICAL TO PREVENT MIXING 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. REMOVE ALL EXCESS SUBSOIL AND ROCK UNEARTHED FROM CONSTRUCTION RELATED ACTIVITIES OCCURRING IN AREAS INTENDED TO RETURN TO AGRICULTURAL USE. ON-SITE DISPOSAL OF SUCH MATERIAL IS NOT PERMISSIBLE IN ACTIVE AGRICULTURAL LANDS. DESIGNATED SPOIL DISPOSAL LOCATIONS SHOULD BE SPECIFIED IN THE ASSOCIATED CONSTRUCTION PLANS. IF LANDOWNER AGREEMENTS, LOD BOUNDARY, OR PROJECT'S LAND USE ASSOCIATIONS DO NOT ALLOW FOR ON-SITE DISPOSAL, MATERIAL MUST BE REMOVED FROM THE SITE.
- EXCESS STRIPPED TOPSOIL SHALL NOT BE UTILIZED FOR FILL WITHIN THE PROJECT AREA. ANY EXTRA TOPSOIL REMOVED FROM PERMANENTLY IMPACTED AREAS (E.G. ROADS, EQUIPMENT PADS, ETC.) SHOULD BE EVENLY SPREAD IN ADJACENT AGRICULTURAL PROJECT AREAS, HOWEVER NOT TO SIGNIFICANTLY ALTER THE HYDROLOGY OF THE AREA.

- REGRADE ALL ACCESS ROADS OUTSIDE OF THE SECURITY FENCING (AS DETERMINED NECESSARY BY THE EM), TO ALLOW FOR FARM EQUIPMENT CROSSING AND RESTORE ORIGINAL SURFACE DRAINAGE PATTERNS, OR OTHER DRAINAGE PATTERN INCORPORATED INTO THE DESIGN.
  - REPAIR ALL SURFACE OR SUBSURFACE DRAINAGE STRUCTURES DAMAGED DURING CONSTRUCTION AS CLOSE TO PRECONSTRUCTION CONDITIONS AS POSSIBLE, UNLESS SAID STRUCTURES ARE TO BE REMOVED AS PART OF THE PROJECT DESIGN. CORRECT ANY SURFACE OR SUBSURFACE DRAINAGE PROBLEMS RESULTING FROM CONSTRUCTION OF THE SOLAR ENERGY PROJECT WITH THE APPROPRIATE MITIGATION AS DETERMINED BY THE ENVIRONMENTAL MONITOR, SOIL AND WATER CONSERVATION DISTRICT AND THE LANDOWNER.
  - ON AGRICULTURAL LAND NEEDING RESTORATION BECAUSE OF GROUND DISTURBANCE, POSTPONE ANY RESTORATION PRACTICES UNTIL FAVORABLE (WORKABLE, RELATIVELY DRY) TOPSOIL/SUBSOIL CONDITIONS EXIST. RESTORATION MUST NOT BE CONDUCTED WHILE SOILS ARE IN A WET OR PLASTIC STATE OF CONSISTENCY. STOCKPILED TOPSOIL MUST NOT BE REGRADED, AND SUBSOIL MUST NOT BE DECOMPACTED UNTIL PLASTICITY, AS DETERMINED BY THE ATTERBERG FIELD TEST, IS ADEQUATELY REDUCED. NO PERMANENT PROJECT RESTORATION ACTIVITIES SHALL OCCUR IN AGRICULTURAL AREAS BETWEEN THE MONTHS OF OCTOBER THROUGH MAY UNLESS FAVORABLE SOIL MOISTURE CONDITIONS EXIST.
  - IN ALL CONTINUED USE AGRICULTURAL LAND WHERE THE TOPSOIL WAS STRIPPED, SUBSOIL DECOMPACTION SHALL BE CONDUCTED PRIOR TO TOPSOIL REPLACEMENT. FOLLOWING CONSTRUCTION, ALL SUCH AREAS WILL BE DECOMPACTED TO A DEPTH OF 18 INCHES WITH A TRACTOR MOUNTED DEEP RIPPER OR HEAVY-DUTY CHISEL PLOW. SOIL COMPACTION RESULTS SHALL BE NO MORE THAN 250 POUNDS PER SQUARE INCH (PSI) THROUGHOUT THE DECOMPACTED 18 INCHES AS MEASURED WITH A SOIL PENETROMETER. FOLLOWING DECOMPACTION, ALL ROCKS 4 INCHES AND LARGER IN SIZE UNEARTHED FROM DECOMPACTION 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 FROM TOPSOIL 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 NYS/DAM. ALL PARTIES INVOLVED MUST BE COGNIZANT THAT AREAS RESTORED AFTER OCTOBER 1ST MAY NOT OBTAIN SUFFICIENT GROWTH FOR STABILIZATION TO PREVENT EROSION OVER THE WINTER MONTHS. IF AREAS ARE TO BE RESTORED AFTER OCTOBER 1ST, NECESSARY PROVISIONS MUST BE MADE TO PREVENT POTENTIAL SPRINGTIME EROSION, AS WELL AS RESTORE ANY ERODED AREAS IN THE SPRINGTIME, TO ESTABLISH PROPER GROWTH. EXCESS STRIPPED TOPSOIL SHALL BE EVENLY SPREAD IN THE ADJACENT PROJECT AREAS, OR ADJACENT AGRICULTURAL AREAS (WITHIN THE LOD), HOWEVER, NOT TO SIGNIFICANTLY ALTER THE HYDROLOGY OF THE AREA.
  - IN ALL CONTINUED USE AGRICULTURAL AREAS WHERE THE TOPSOIL WAS NOT STRIPPED, INCLUDING TIMBER MATED AREAS, THE EM SHALL DETERMINE APPROPRIATE ACTIVITIES TO RETURN THE AREA TO AGRICULTURAL USE. THESE ACTIVITIES MAY INCLUDE DECOMPACTION, ROCK REMOVAL, AND REVEGETATION. SOIL COMPACTION SHOULD BE TESTED IN THE AFFECTED AREAS AND THE AFFECTED AREA'S ADJACENT UNDISTURBED AREAS USING AN APPROPRIATE SOIL PENETROMETER OR OTHER SOIL COMPACTION MEASURING DEVICE AS SOON AS SOILS ACHIEVE MOISTURE EQUILIBRIUM WITH ADJACENT UNAFFECTED AREAS. COMPACTION TESTS WILL BE MADE AT REGULAR INTERVALS OF DISTANCE THROUGHOUT THE AFFECTED AREAS, INCLUDING EACH SOIL TYPE IDENTIFIED WITHIN THE AFFECTED AREAS. SOIL COMPACTION RESULTS SHALL BE MEASURED WITH A SOIL PENETROMETER NOT EXCEEDING MORE THAN 250 POUNDS PER SQUARE INCH (PSI), BY COMPARING PROBING DEPTHS OF BOTH THE AFFECTED AND UNAFFECTED AREAS. WHERE REPRESENTATIVE SOIL DENSITY OF THE AFFECTED AREA'S COLLECTIVE DEPTH MEASUREMENTS PRESENT COMPACTION RESTRICTIONS EXCEEDING AN ACCEPTABLE DEVIATION OF NO MORE THAN 20% FROM THE ADJACENT UNDISTURBED AREA'S MEAN SOIL DENSITY, ADDITIONAL DECOMPACTION MAY BE REQUIRED TO A DEPTH OF 18-INCHES WITH A TRACTOR MOUNTED DEEP RIPPER OR HEAVY-DUTY CHISEL PLOW. FOLLOWING DECOMPACTION, REMOVE ALL ROCKS UNEARTHED FROM DECOMPACTION ACTIVITIES 4 INCHES AND LARGER IN SIZE FROM THE SURFACE. REVEGETATION SHALL BE PERFORMED IN ACCORDANCE WITH THE INSTRUCTIONS BELOW.
  - SEED ALL AGRICULTURAL AREAS FROM WHICH THE VEGETATION WAS REMOVED OR DESTROYED WITH THE SEED MIX SPECIFIED BY THE LANDOWNER/AGRICULTURE PRODUCER OR AS OTHERWISE RECOMMENDED IN THE DEPARTMENT'S FERTILIZER, LIME AND SEEDING GUIDELINE: [\[HTTPS://WWW.AGRICULTURE.NY.GOV/AP/AGSERVICES/FERTILIZER\\_LIME\\_AND\\_SEEDING\\_RECOMMENDATIONS.PDF\]](https://www.agriculture.ny.gov/ap/agservices/fertilizer_lime_and_seeding_recommendations.pdf).
  - SOIL AMENDMENTS SHOULD BE APPLIED AS NECESSARY SO THAT RESTORED AGRICULTURAL AREAS' SOIL PROPERTIES, AT MINIMUM, REASONABLY REFLECT THE PRE-CONSTRUCTION SOIL TEST RESULTS OR AS OTHERWISE AGREED TO BY THE INVOLVED PARTIES TO ENSURE CONTINUED AGRICULTURAL USE. ALL PARTIES 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 PROVISIONS MUST BE MADE TO RESTORE AND/OR RE-SEED ANY ERODED OR POORLY GERMINATED AREAS IN THE SPRINGTIME, TO ESTABLISH PROPER GROWTH.
- MONITORING AND REMEDIATION**
- PROJECT COMPANIES SHALL PROVIDE A MONITORING AND REMEDIATION PERIOD OF ONE COMPLETE GROWING SEASON FOLLOWING THE DATE UPON WHICH THE DESIRED CROP IS PLANTED. ALL PROJECTS SUBJECT TO NYS PUBLIC SERVICE LAW ARTICLE 10 WILL PROVIDE A MONITORING PERIOD OF TWO COMPLETE GROWING SEASONS FOLLOWING THE DATE UPON WHICH THE PROJECT ACHIEVES THE ESTABLISHMENT OF THE DESIRED CROP.
  - ON SITE MONITORING SHALL BE CONDUCTED SEASONALLY AT LEAST THREE TIMES DURING THE GROWING SEASON (SPRING, SUMMER, FALL). MONITORING IS REQUIRED TO IDENTIFY ANY REMAINING IMPACTS DIRECTLY ASSOCIATED WITH THE CONSTRUCTION OF THE PROJECT ON AGRICULTURAL LANDS PROPOSED TO REMAIN OR RESUME AGRICULTURE PRODUCTION, INCLUDING THE EFFECTS OF CLIMATIC CYCLES SUCH AS FROST ACTION, PRECIPITATION AND GROWING SEASONS TO OCCUR, FROM WHICH VARIOUS MONITORING OBSERVATIONS CAN BE MADE. NYS/DAM EXPECTS THE PROJECT COMPANY (OR ITS CONTRACTOR) TO RETAIN THE EM FOR FOLLOW-UP MONITORING AND REMEDIATION (AS NEEDED) IN AGRICULTURAL AREAS. MONITORING IS LIMITED TO THE RESTORED AGRICULTURAL AREA. NON-PROJECT RELATED IMPACTS AFFECTING THE RESTORED PROJECT AREA WILL BE DISCUSSED WITH NYS/DAM STAFF AND CONSIDERED FOR OMISSION FROM FUTURE MONITORING AND REMEDIATION. THE EM IS EXPECTED TO RECORD THE FOLLOWING OBSERVATIONS FROM ONSITE INSPECTIONS:
    - TOPSOIL THICKNESS AND TRENCH SETTling - THE EM OBSERVATIONS MAY REQUIRE SMALL HAND DUG HOLES TO OBSERVE THE PERCENTAGE OF SETTLED TOPSOIL IN AREAS WHERE THE TOPSOIL WAS STRIPPED, OR TRENCHING WAS PERFORMED WITHOUT STRIPPING TOPSOIL. OBSERVATIONS CONCERNING DEPTH OF TOPSOIL DEFICIENCIES SHALL REQUIRE FURTHER REMEDIATION BY RE-APPROPRIATING ADDITIONAL TOPSOIL. ACCEPTABLE MATERIALS FOR REMEDIATION ARE: KNOWN AREAS OF NATIVE EXCESS TOPSOIL (ACCORDING TO RECORDS OF PROJECT SPECIFIC EXCESS TOPSOIL DISPOSAL SPREAD WITHIN THE ORIGINAL LOD) OR IMPORTED TOPSOIL FREE OF INVASIVE SPECIES THAT IS CONSISTENT WITH THE QUALITY OF TOPSOIL ON THE AFFECTED SITE.
    - EXCESSIVE ROCK (>4-INCHES) - DETERMINED BY A VISUAL INSPECTION OF DISTURBED AREAS AS COMPARED TO UNAFFECTED PORTIONS OF THE SAME FIELD LOCATED OUTSIDE THE CONSTRUCTION AREA. OBSERVATIONS CONCERNING EXCESS STONE MATERIAL IN COMPARISON TO OFF-SITE CONDITIONS SHALL REQUIRE FURTHER REMEDIATION INCLUDING REMOVAL AND DISPOSAL OF ALL EXCESS ROCKS AND LARGE STONES.
    - SOIL COMPACTION - PROJECT AFFECTED AGRICULTURAL SOILS SHOULD BE TESTED USING AN APPROPRIATE SOIL PENETROMETER OR OTHER SOIL COMPACTION MEASURING DEVICE. COMPACTION TESTS WILL BE MADE AT REGULAR INTERVALS OF DISTANCE THROUGHOUT THE ACCESS OR WORK AREAS, INCLUDING EACH SOIL TYPE IDENTIFIED ON THE AFFECTED AGRICULTURAL AREAS. WHERE REPRESENTATIVE SOIL DENSITY OF THE AFFECTED AREA EXCEEDS THE REPRESENTATIVE SOIL DENSITY OF THE UNAFFECTED AREAS, ADDITIONAL DECOMPACTION MAY BE REQUIRED. CONSULTATION WITH NYS/DAM STAFF AND THE AGRICULTURAL PRODUCER(S) SHOULD BE CONDUCTED PRIOR TO SCHEDULING ADDITIONAL DECOMPACTION. IF WARRANTED, DECOMPACTION TO A DEPTH OF 18-INCHES WITH A TRACTOR MOUNTED DEEP RIPPER OR HEAVY-DUTY CHISEL PLOW. RESTORATION OF DISPLACED TOPSOIL TO ORIGINAL DEPTH AND RE-ESTABLISH ORIGINAL CONTOURS WHERE POSSIBLE. DECOMPACTION DEEP SHATTERING WILL BE APPLIED DURING PERIODS OF RELATIVELY LOW SOIL MOISTURE TO ENSURE THE DESIRED MITIGATION AND TO PREVENT ADDITIONAL SOIL COMPACTION. OVERSIZED STONE/ROCK (FOUR-INCHES) MATERIAL THAT IS UPLIFTED/UNEARTHED TO THE SURFACE AS A RESULT OF THE DEEP SHATTERING WILL BE REMOVED.
    - DRAINAGE - THE EM SHALL VISUALLY INSPECT THE RESTORED AGRICULTURAL AREAS IN SEARCH OF PERSISTIVE STUNTED CROP GROWTH DUE TO SEASONAL SATURATION, NOT PREVIOUSLY EXPERIENCED AT THE SITE AND NOT RESULTING FROM THE AGRICULTURAL PRODUCER'S IRRIGATION MANAGEMENT OR DUE TO EXCESSIVE RAINFALL. IDENTIFIED AREAS OF STUNTED CROP GROWTH SHALL BE COMPARED TO THE NEAREST UNDISTURBED ADJACENT AREAS UNDER A SUBSTANTIALLY EQUIVALENT TERRAIN AND CROP MANAGEMENT PLAN. DRAINAGE OBSERVATIONS SHOULD BE EVALUATED TO DETERMINE IF THE PROJECT AFFECTED SURFACE OR SUB-SURFACE DRAINAGE DURING CONSTRUCTION OR RESTORATION. PROJECT CAUSED DRAINAGE ISSUES AFFECTING OR LIKELY TO REDUCE CROP PRODUCTIVITY OF THE ADJACENT AREAS WILL HAVE TO BE REMEDIATED VIA A POSITIVE SURFACE DRAINAGE, SUB-SURFACE DRAINAGE REPAIR OR AN EQUIVALENT.
    - AGRICULTURE FENCING AND GATES - THE EM SHALL INSPECT PROJECT ASSOCIATED FENCING AND GATES (INSTALLED, ALTERED OR REPAIRED) WITHIN THE PROJECT'S LOD ASSOCIATED WITH AGRICULTURAL ACTIVITIES FOR FUNCTION AND LONGEVITY. THE PROJECT COMPANY IS RESPONSIBLE DURING THE MONITORING AND REMEDIATION PHASE FOR MAINTAINING THE INTEGRITY OF PROJECT ASSOCIATED FENCING AND GATES.
  - ALL IMPORTED SOIL ONTO THE PROJECT AREA SHALL BE IN ACCORDANCE WITH THE NYS AG & MARKETS GUIDELINES

**STORM WATER POLLUTION PREVENTION PLAN NOTES:**

- REFER TO THE STORMWATER POLLUTION PREVENTION PLAN PREPARED FOR THE PROJECT FOR MORE INFORMATION.
- THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
- ALL INLETS TO THE STORM SEWER SHALL HAVE INLET PROTECTION. ADD INLET PROTECTION ON INLET NEXT TO ROAD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
- REMOVE AND STOCKPILE TOPSOIL IN ACCORDANCE WITH THE NEW YORK STATE AG & MARKETS GUIDELINES FOR SOLAR ENERGY PROJECTS (REV. 10/18/2019)
- IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
- ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
- THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
- ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
- PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
- DUST SHALL BE CONTROLLED BY WATERING.
- ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
- EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATIONS AT THE END OF EACH DAY.
- PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY A MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 lbs/1000 SF OF WEEED FREE STRAW.
- SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

**SITE STABILIZATION:**

- WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
- MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
- STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENT MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR. NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
- BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
- GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
- TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS. REFER TO THE NEW YORK STATE AG & MARKETS GUIDELINES FOR SOLAR ENERGY PROJECTS (REV. 10/18/2019) FOR ADDITIONAL INFORMATION REGARDING TOPSOIL REMOVAL, STOCKPILING, AND PLACEMENT.
- TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. REFER TO THE NEW YORK STATE AG & MARKETS GUIDELINES FOR SOLAR ENERGY PROJECTS (REV. 10/18/2019) FOR ADDITIONAL INFORMATION REGARDING TOPSOIL REMOVAL, STOCKPILING, AND PLACEMENT.
- WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
- POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
- SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
- MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
- LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
- NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

**SEQUENCE OF CONSTRUCTION:**


- PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, TOWN MSA REPRESENTATIVE, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
- INSTALL PERIMETER SILT FENCE.
- BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
- STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
- COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO SWPPP WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
- AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
- STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT COMMENCE WITHIN 14 DAYS.
- INSTALL PERIMETER FENCING
- INSTALL ARRAY AND BATTERY STORAGE AREAS. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
- STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT COMMENCE WITHIN 14 DAYS.
- SEED AND MULCH AREAS SHOWN ON PLANS
- REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

**GENERAL NOTES:**

- THE EXISTING UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS AS PROVIDED, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
- HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
- THE CONTRACTOR SHALL CONSULT THE OWNER OR THEIR REPRESENTATIVE BEFORE DEVIATING FROM THESE PLANS.
- IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
- IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE COUNTY DEPARTMENT OF HEALTH AND THE NEW YORK STATE DEPARTMENT OF CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
- EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
- AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- TREES MAY BE CLEARED WITHIN THE FLOODPLAIN OR WETLAND AREAS AS LONG AS THE STUMPS ARE NOT CLEARED OR GRUBBED. LOW GROUND PRESSURE CONSTRUCTION VEHICLES OR TIMBER MATTING MAY BE UTILIZED TO CUT TREES AND TO REMOVE DEBRIS WITHIN THE FLOODPLAIN OR WETLAND AREAS. CONSTRUCTION TRAFFIC WITHIN THE FLOODPLAIN OR WETLANDS SHALL BE MINIMIZED TO THAT WHICH IS NECESSARY FOR THE INSTALLATION OF THE PANELS, RACKING, AND OTHER PROJECT COMPONENTS. THE WETLAND AREAS SHALL BE PROTECTED AT ALL TIMES AS SHOWN ON THE PLANS WHEN INSTALLATION OF THE PROJECT COMPONENTS IS NOT ONGOING.
- FINAL COMPACTION DENSITIES FOR THE ACCESS ROAD WILL BE SPECIFIED IN ACCORDANCE WITH ASTM D1557 PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. FIELD DENSITY TESTS PRIOR TO FINAL CLOSE OUT OF THE PROJECT SHALL BE MADE IN ACCORDANCE WITH ASTM D6936.
- THE CONTRACTOR MAY UTILIZE EITHER SILT FENCE OR FILTER SOCK. THE FINAL DETAILS WILL BE INCLUDED ON AN ISSUED FOR CONSTRUCTION PLAN SET AND SHOULD NOT BE A CONDITION FROM SITE PLAN APPROVAL.

**WASTE /HAZARDOUS MATERIAL PRACTICES:**

- WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
- DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
- CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
- ALL FUELS, OILS AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.



STATE OF NEW YORK  
OFFICE OF THE COMPTROLLER  
1983


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NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269

---

NORBUT SOLAR FARMS

ENGINEERING · DOCUMENT · CONSTRUCTION



DATE:		BY:		REVISIONS:					

NSF KIRKWOOD

PROJECT NAME:  
149 QUILITY HILL ROAD & 165 FOLEY ROAD  
TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

GENERAL CONSTRUCTION NOTES

SCALE:  
DATE:

C100

DRAWING:

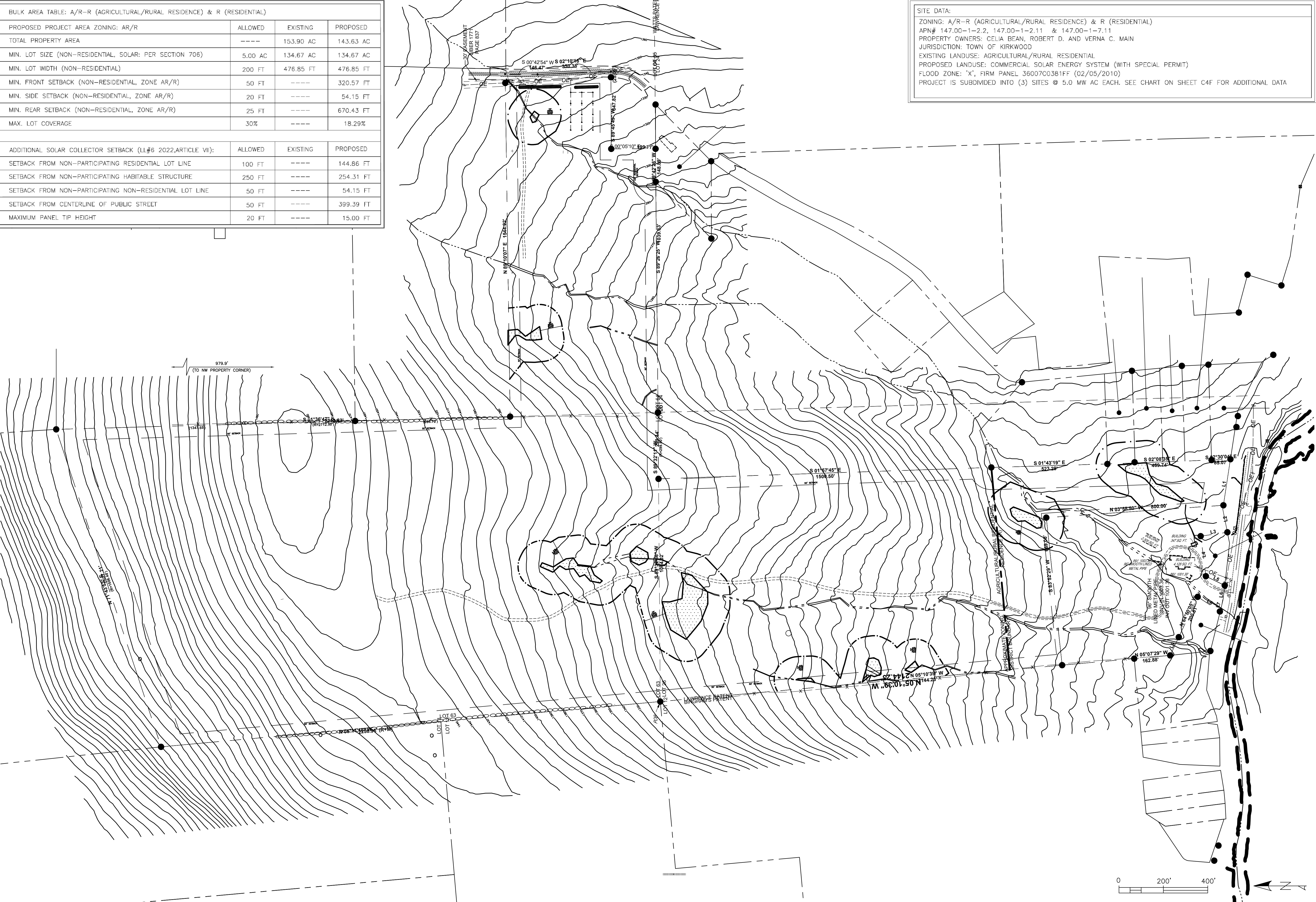
DECEMBER 4, 2025

BULK AREA TABLE: A/R-R (AGRICULTURAL/RURAL RESIDENCE) & R (RESIDENTIAL)			
PROPOSED PROJECT AREA ZONING: AR/R	ALLOWED	EXISTING	PROPOSED
TOTAL PROPERTY AREA	----	153.90 AC	143.63 AC
MIN. LOT SIZE (NON-RESIDENTIAL, SOLAR: PER SECTION 706)	5.00 AC	134.67 AC	134.67 AC
MIN. LOT WIDTH (NON-RESIDENTIAL)	200 FT	476.85 FT	476.85 FT
MIN. FRONT SETBACK (NON-RESIDENTIAL, ZONE AR/R)	50 FT	----	320.57 FT
MIN. SIDE SETBACK (NON-RESIDENTIAL, ZONE AR/R)	20 FT	----	54.15 FT
MIN. REAR SETBACK (NON-RESIDENTIAL, ZONE AR/R)	25 FT	----	670.43 FT
MAX. LOT COVERAGE	30%	----	18.29%
ADDITIONAL SOLAR COLLECTOR SETBACK (LL#6 2022, ARTICLE VII):	ALLOWED	EXISTING	PROPOSED
SETBACK FROM NON-PARTICIPATING RESIDENTIAL LOT LINE	100 FT	----	144.86 FT
SETBACK FROM NON-PARTICIPATING HABITABLE STRUCTURE	250 FT	----	254.31 FT
SETBACK FROM NON-PARTICIPATING NON-RESIDENTIAL LOT LINE	50 FT	----	54.15 FT
SETBACK FROM CENTERLINE OF PUBLIC STREET	50 FT	----	399.39 FT
MAXIMUM PANEL TIP HEIGHT	20 FT	----	15.00 FT

**SITE DATA:**  
 ZONING: A/R-R (AGRICULTURAL/RURAL RESIDENCE) & R (RESIDENTIAL)  
 APN# 147.00-1-2.2, 147.00-1-2.11 & 147.00-1-7.11  
 PROPERTY OWNERS: CELIA BEAN, ROBERT D. AND VERA C. MAIN  
 JURISDICTION: TOWN OF KIRKWOOD  
 EXISTING LANDUSE: AGRICULTURAL/RURAL RESIDENTIAL  
 PROPOSED LANDUSE: COMMERCIAL SOLAR ENERGY SYSTEM (WITH SPECIAL PERMIT)  
 FLOOD ZONE: 'X', FIRM PANEL 36007C0381FF (02/05/2010)  
 PROJECT IS SUBDIVIDED INTO (3) SITES @ 5.0 MW AC EACH. SEE CHART ON SHEET C4F FOR ADDITIONAL DATA



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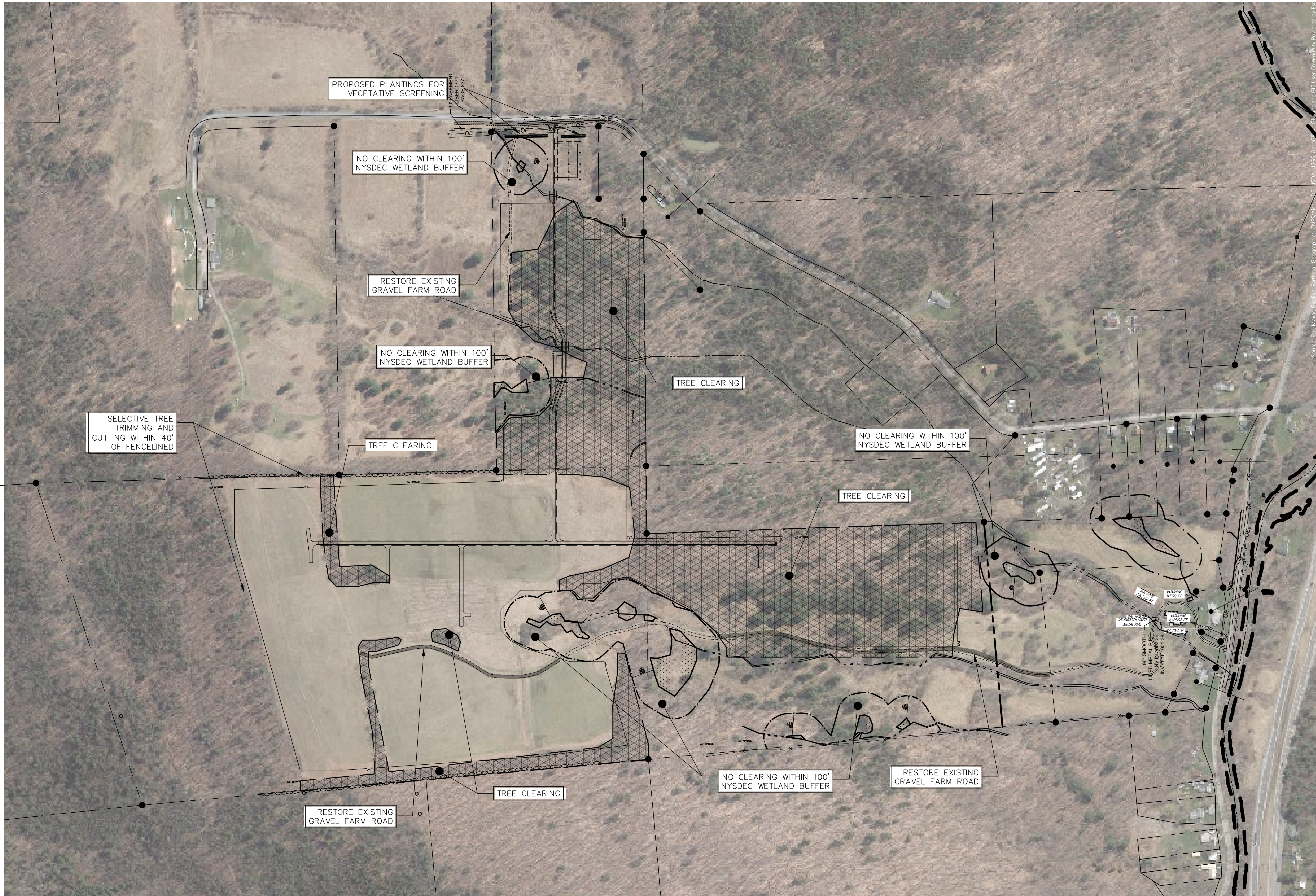


REVISIONS:	DATE:	BY:

PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILITY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C101**  
 SCALE:   
 DATE: DECEMBER 4, 2025

**SURVEY AND ZONING INFORMATION**



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PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

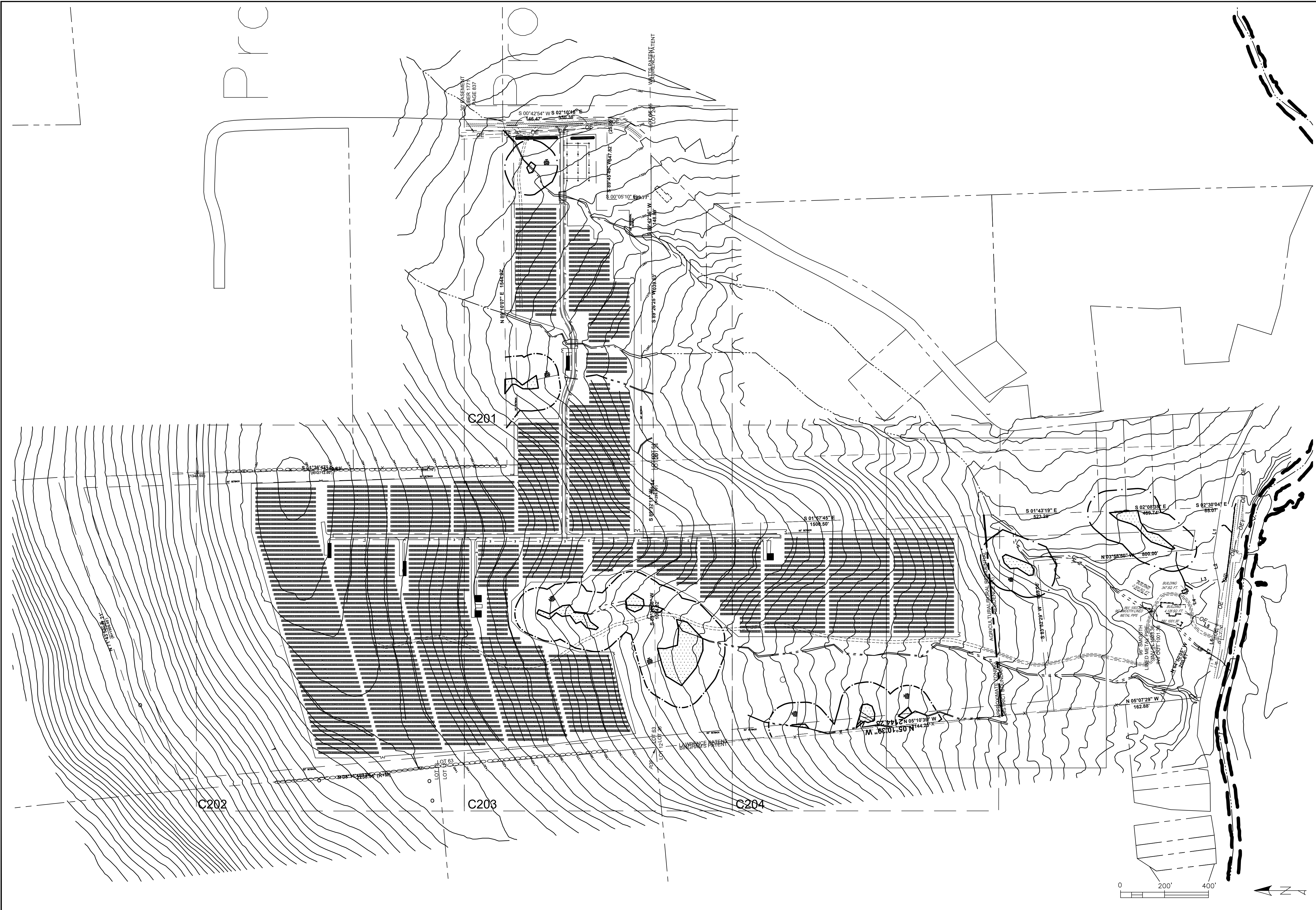
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SCALE: 1" = 200'

DATE: DECEMBER 4, 2025

**EXISTING CONDITIONS & VEGETATION PLAN**

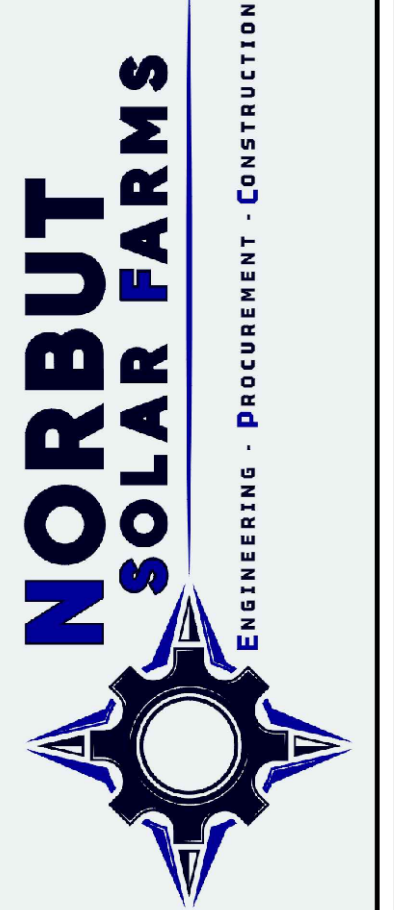
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Powered by Esri



PRC



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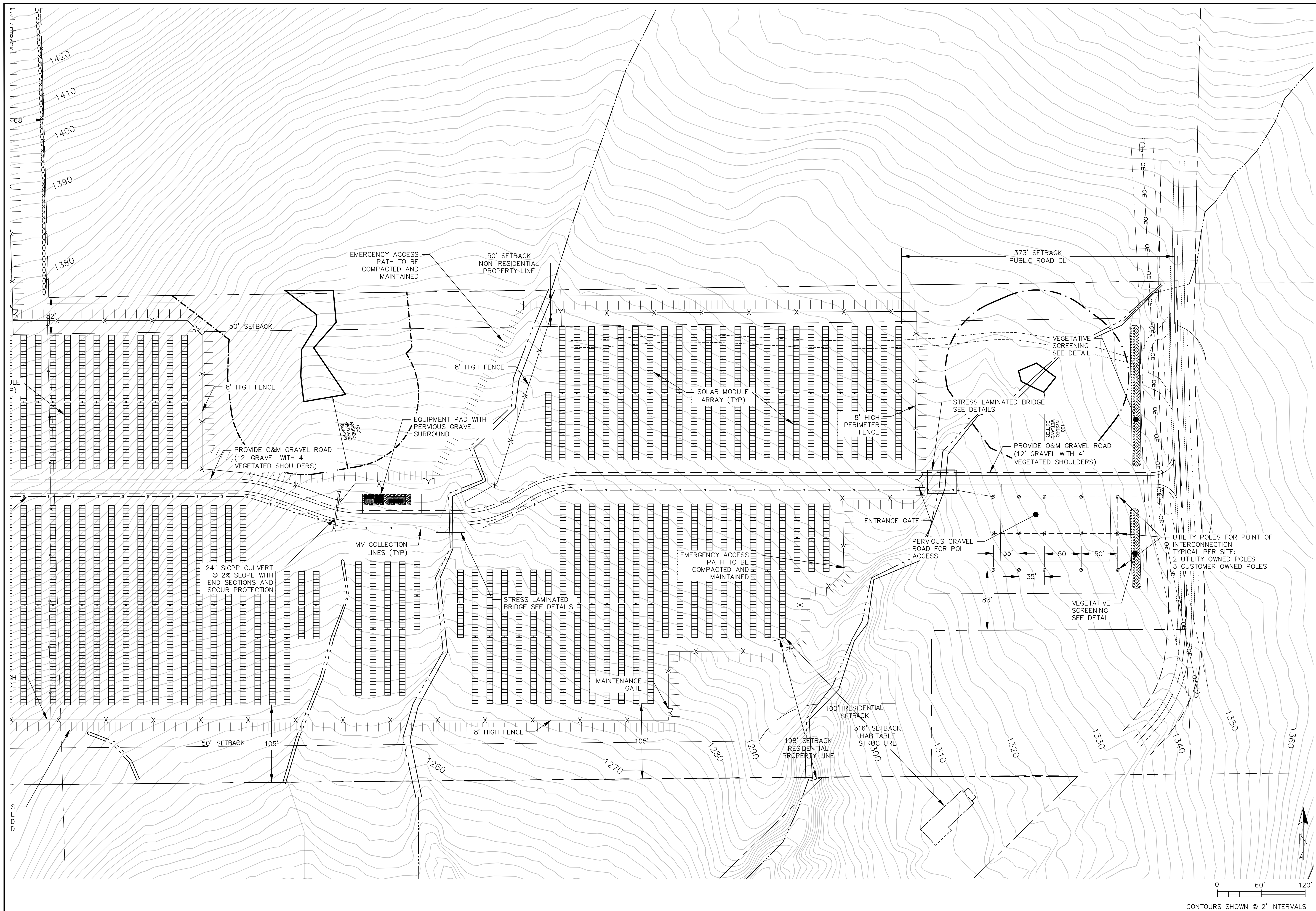


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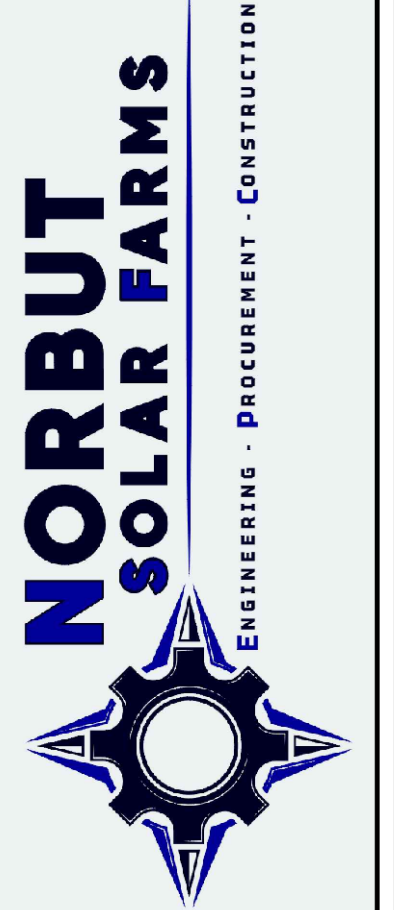
PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C200**  
 SCALE: 1" = 200'  
 DATE: DECEMBER 4, 2025

**SITE PLAN - OVERALL**



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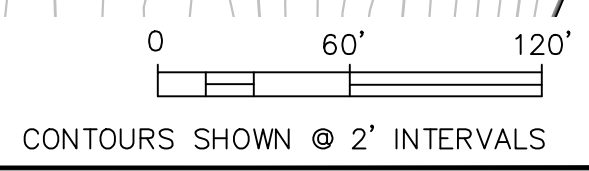


NO.	DATE	BY	REVISIONS

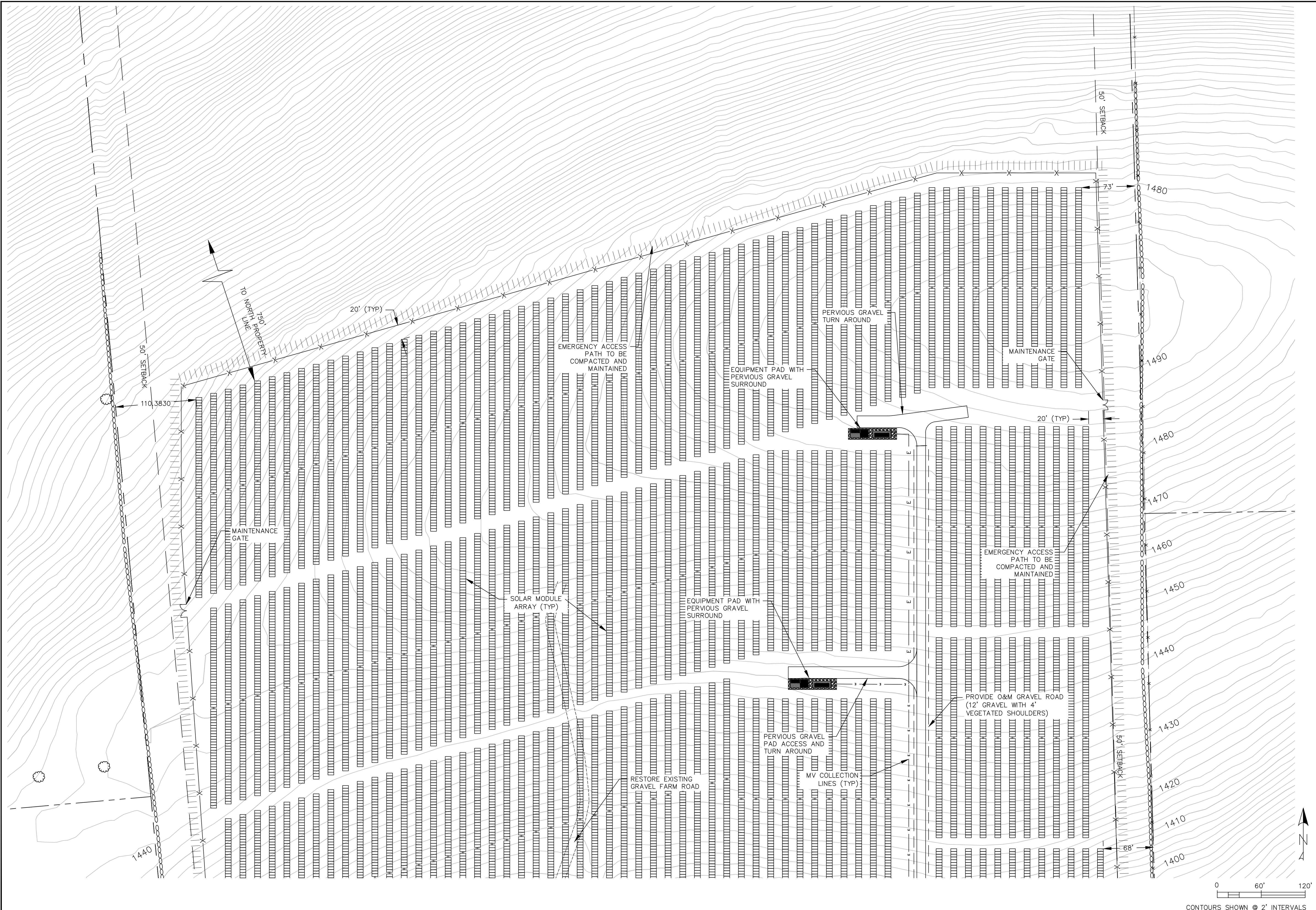
PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C201**  
 SCALE: 1" = 60'  
 DATE: DECEMBER 4, 2025

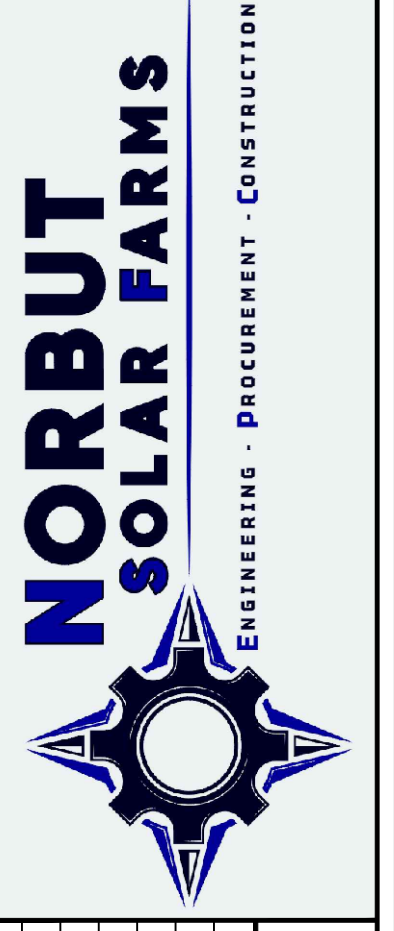
**SITE PLAN - AREA 1**



CONTOURS SHOWN @ 2' INTERVALS



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 LICENSE # 095269



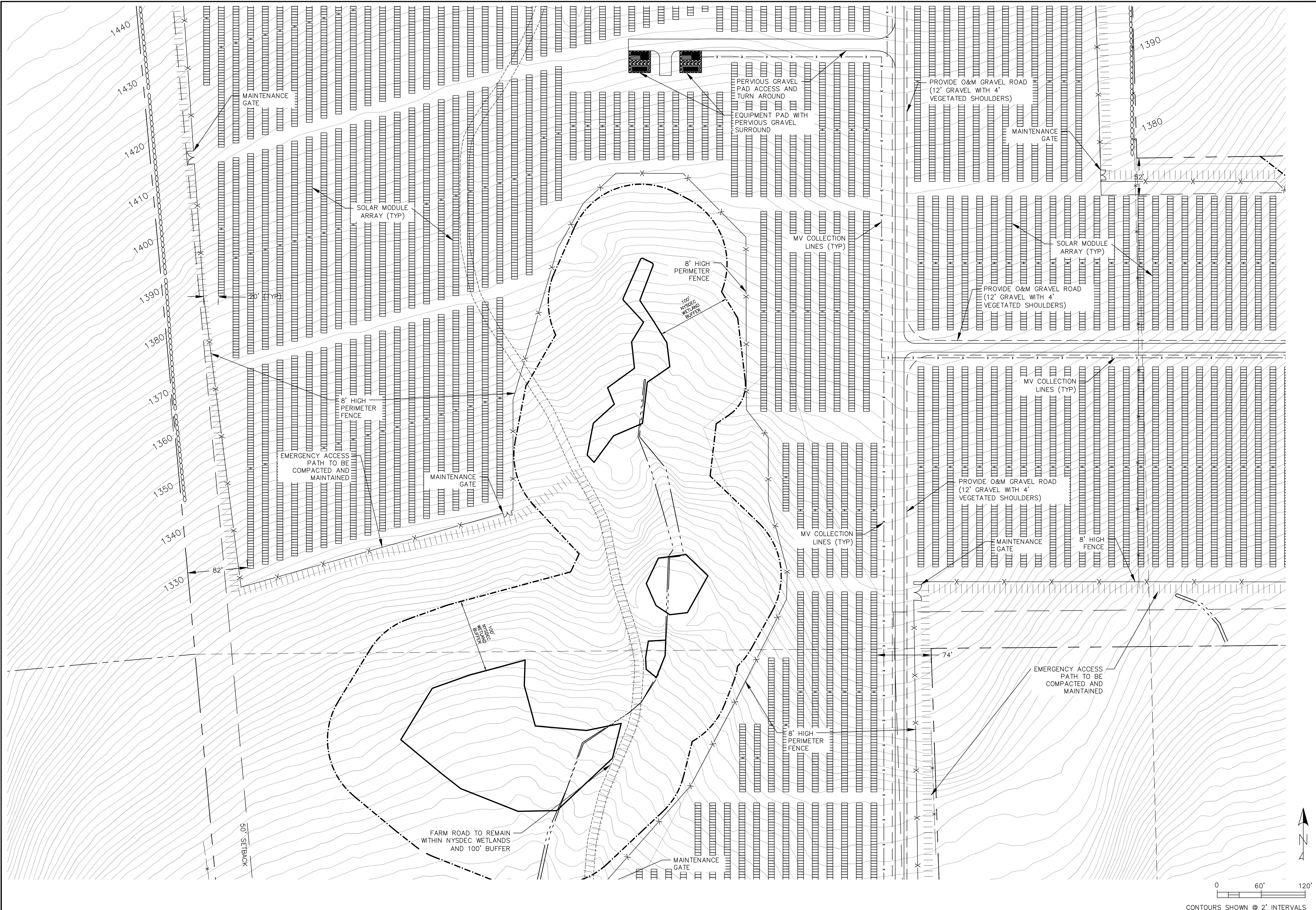
REVISIONS:	DATE:	BY:

PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

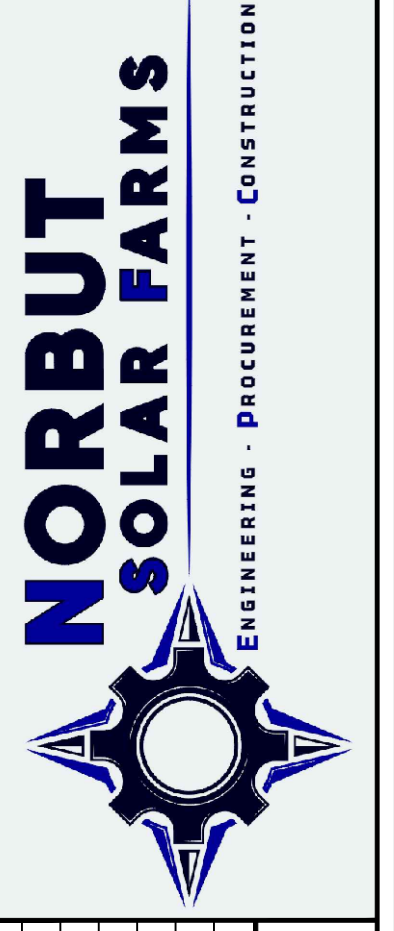
DRAWING: **C202**  
 SCALE: 1" = 60'  
 DATE: DECEMBER 4, 2025

**SITE PLAN - AREA 2**

CONTOURS SHOWN @ 2' INTERVALS



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 LICENSE # 095269

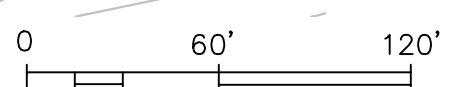
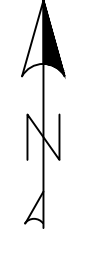


REVISIONS:	DATE:	BY:

PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C203**  
 SCALE: 1" = 60'  
 DATE: DECEMBER 4, 2025

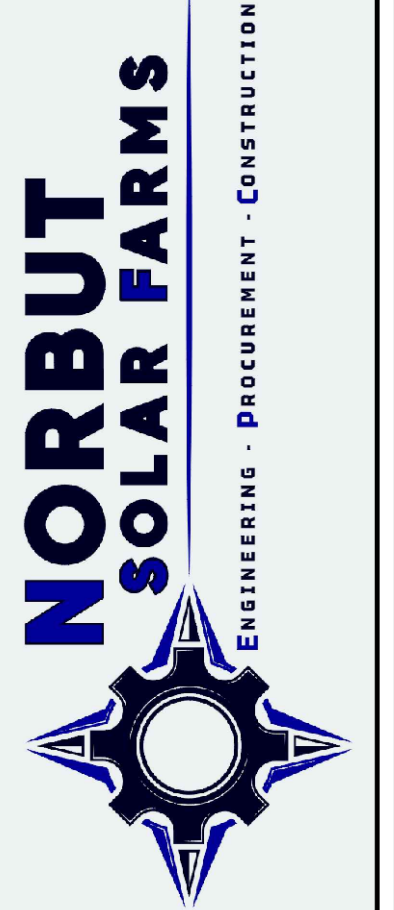
**SITE PLAN - AREA 3**



CONTOURS SHOWN @ 2' INTERVALS



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NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269



BY:	
DATE:	
REVISIONS:	

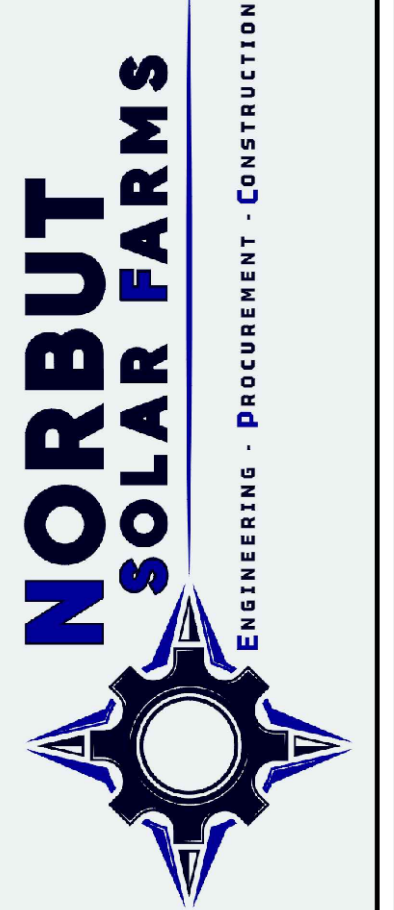
PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C204**  
 SCALE: 1" = 60'  
 DATE: DECEMBER 4, 2025

**SITE PLAN - AREA 4**



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NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269

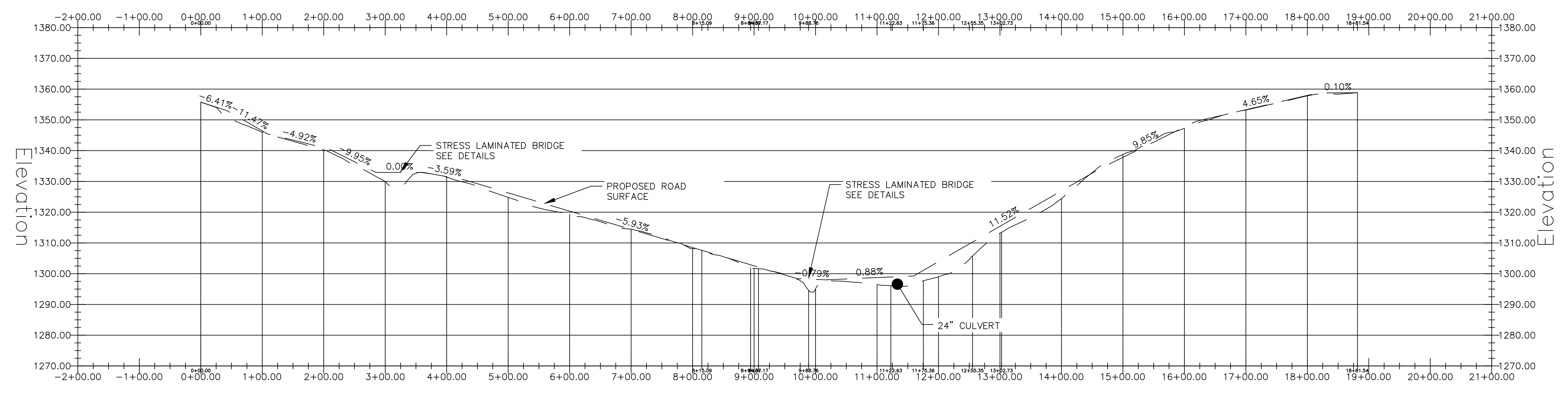
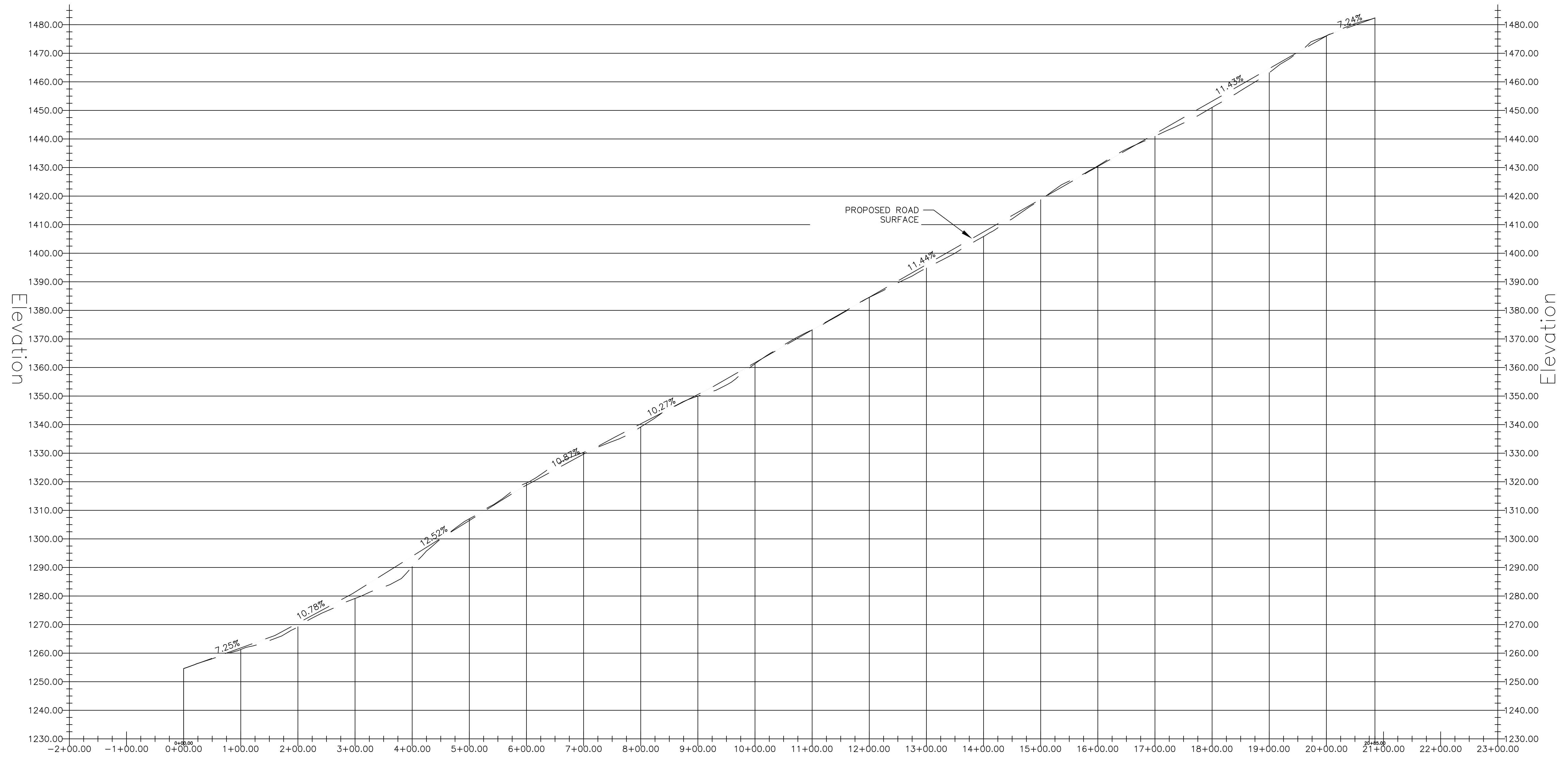


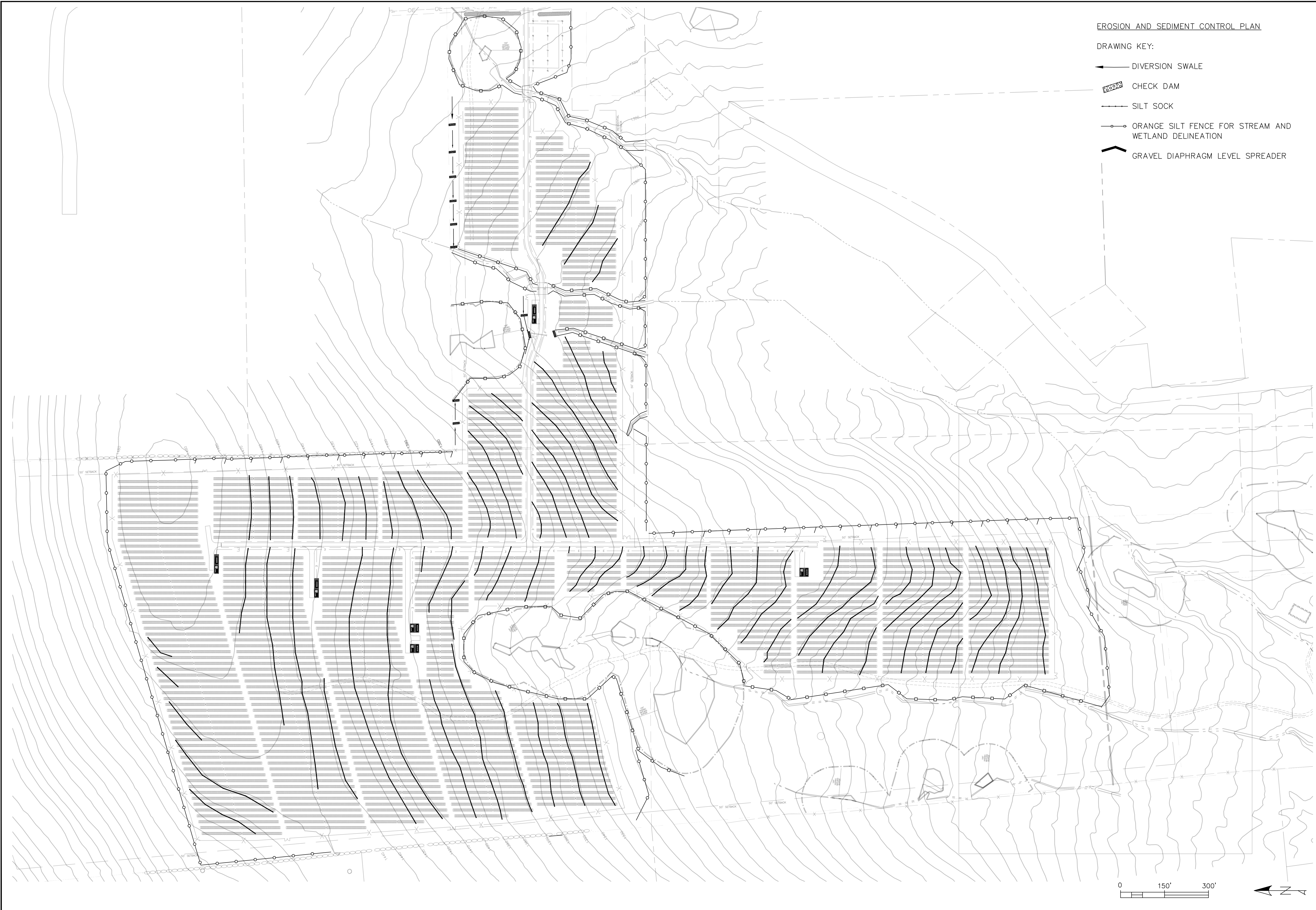
BY:	
DATE:	
REVISIONS:	

PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C300**  
 SCALE: 1" = 60'  
 DATE: DECEMBER 4, 2025

# ROAD PROFILES





**EROSION AND SEDIMENT CONTROL PLAN**

**DRAWING KEY:**

- ← DIVERSION SWALE
- ▨ CHECK DAM
- ▨ SILT SOCK
- ORANGE SILT FENCE FOR STREAM AND WETLAND DELINEATION
- ∨ GRAVEL DIAPHRAGM LEVEL SPREADER



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REVISIONS:	DATE:	BY:

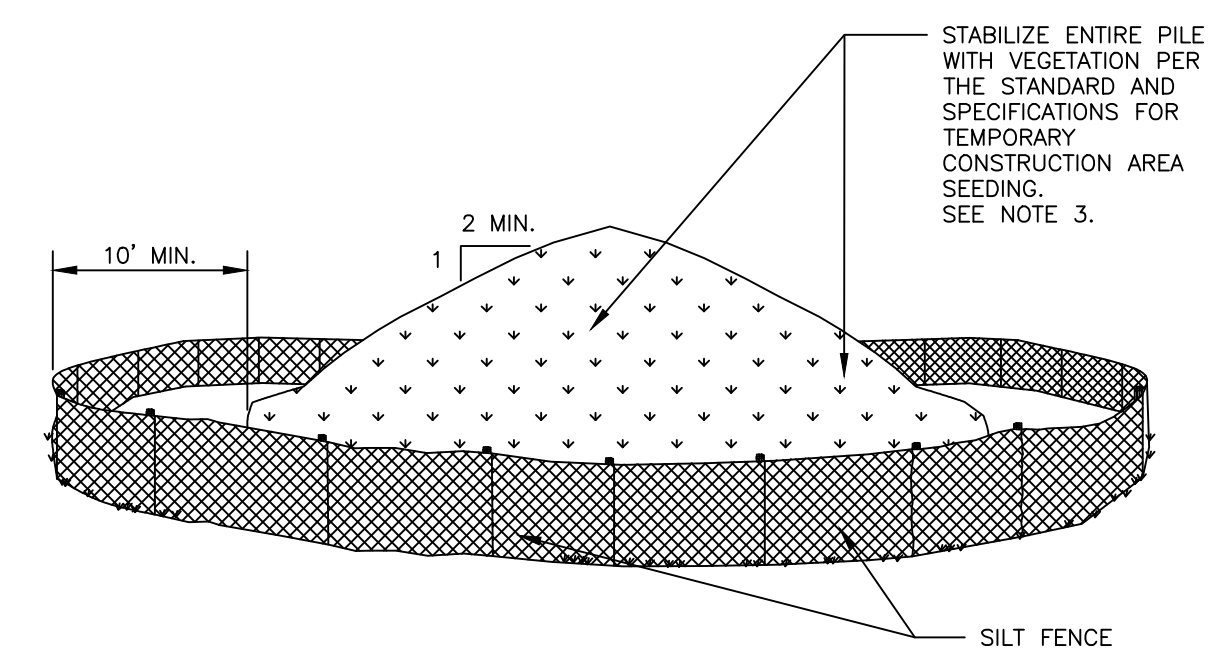
PROJECT NAME: **NSF KIRKWOOD**  
 ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
 TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C400**  
 SCALE: 1" = 150'  
 DATE: DECEMBER 4, 2025

**EROSION AND SEDIMENT CONTROL PLAN**



DESIGN BY:  
NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269

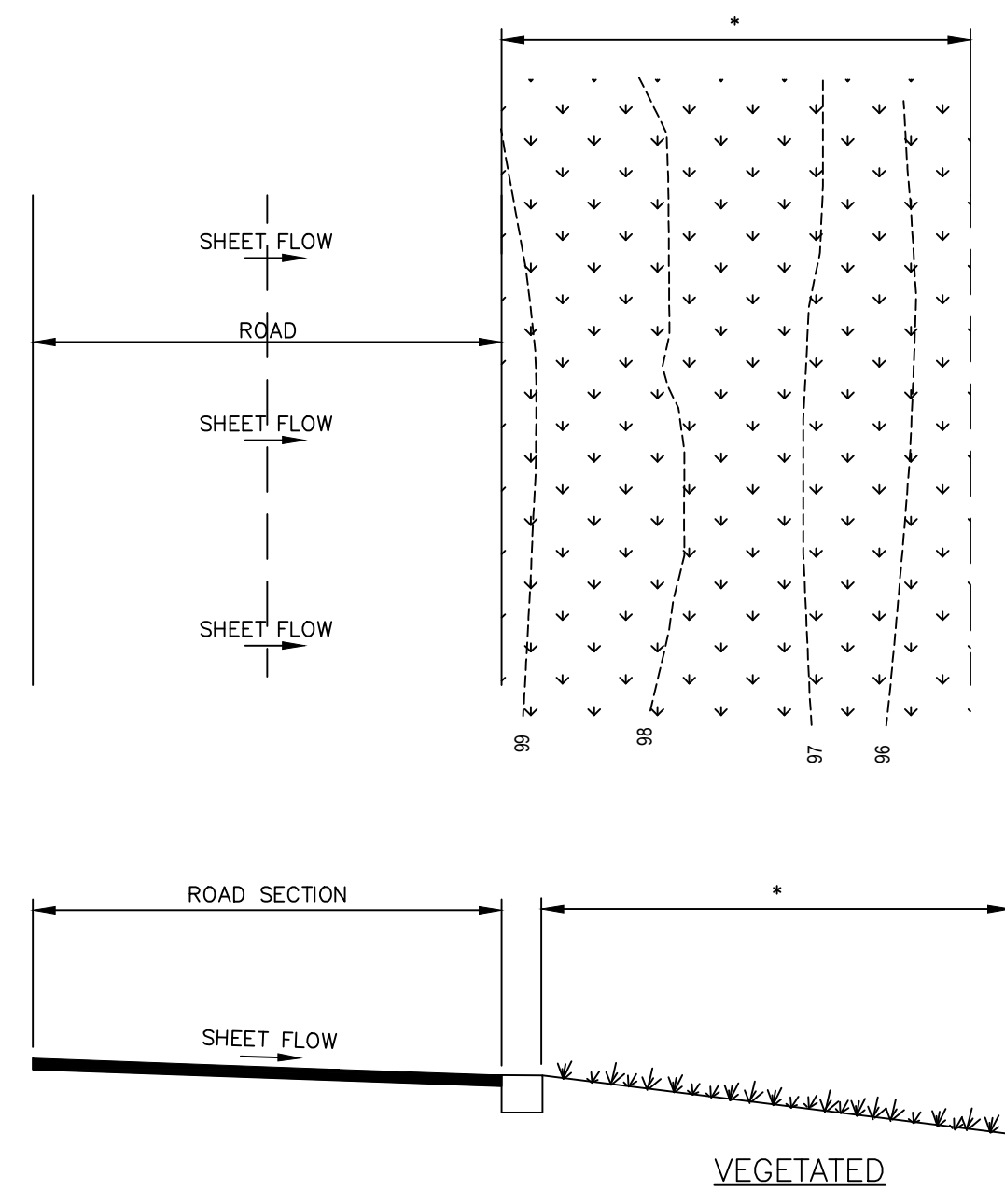


- NOTES:**
- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY, STABILIZED AND LOCATED AWAY FROM KNOWN WORK AREAS TO PREVENT RELOCATION.
  - MAXIMUM STOCKPILE HEIGHT SHALL BE 12 FEET.
  - EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, INSTALLED PER SILT FENCE DETAIL, THEN STABILIZED IN ACCORDANCE WITH THE NYSDEC STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA SEEDING WITHIN 7 DAYS OF COMPLETION.
  - A PERIMETER DIKE/SWALE SHALL BE LOCATED UP-SLOPE OF THE TOPSOIL STOCKPILE TO DIVERT STORMWATER AROUND THE STOCKPILE.

**STABILIZED SOIL STOCKPILE**  
NOT TO SCALE

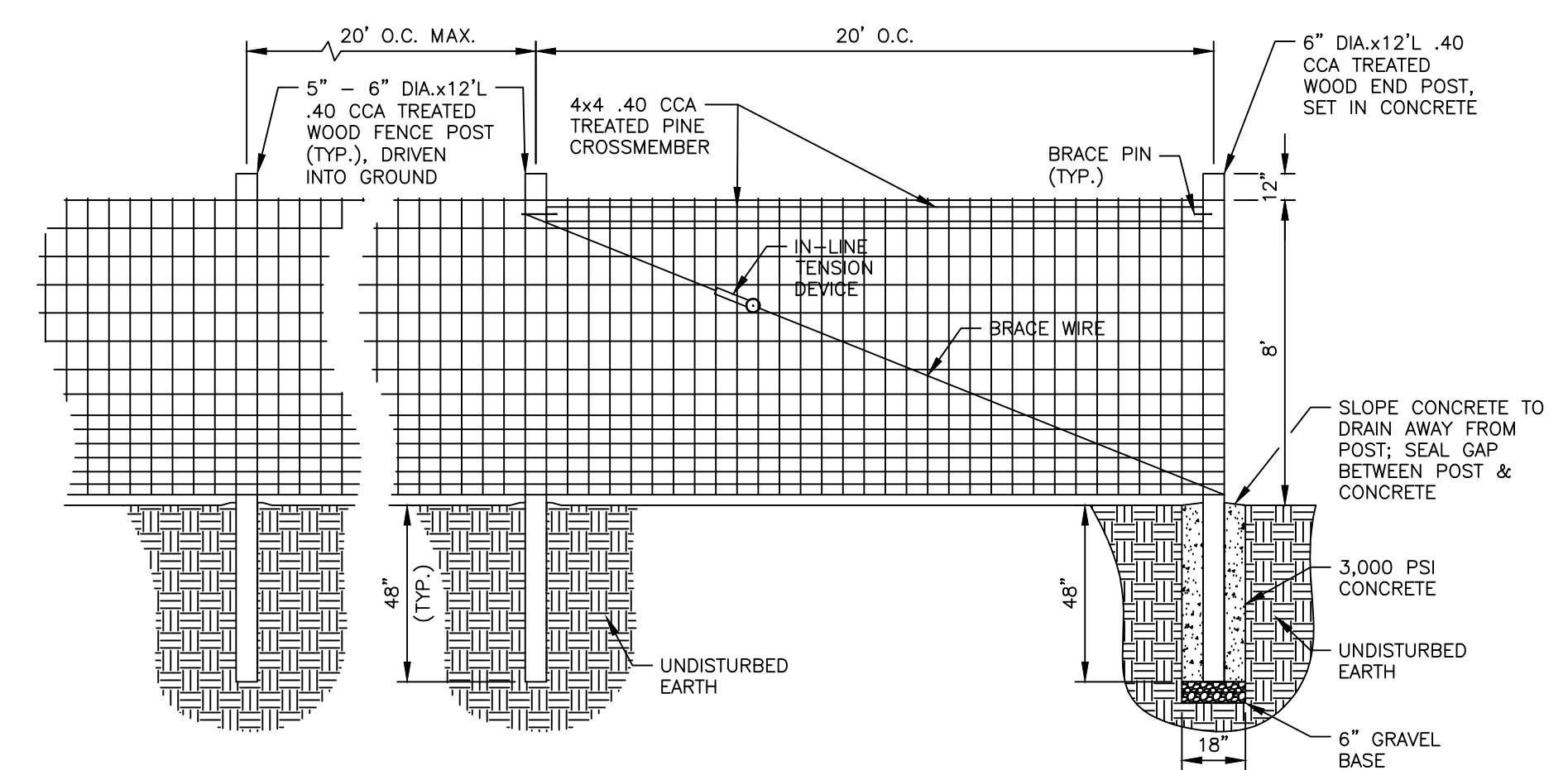
**FILTER STRIP SPECIFICATIONS**

LAND SLOPE (%)	MINIMUM FILTER STRIP WIDTH (FT.)
0-8	50
8-12	75
12-15	100

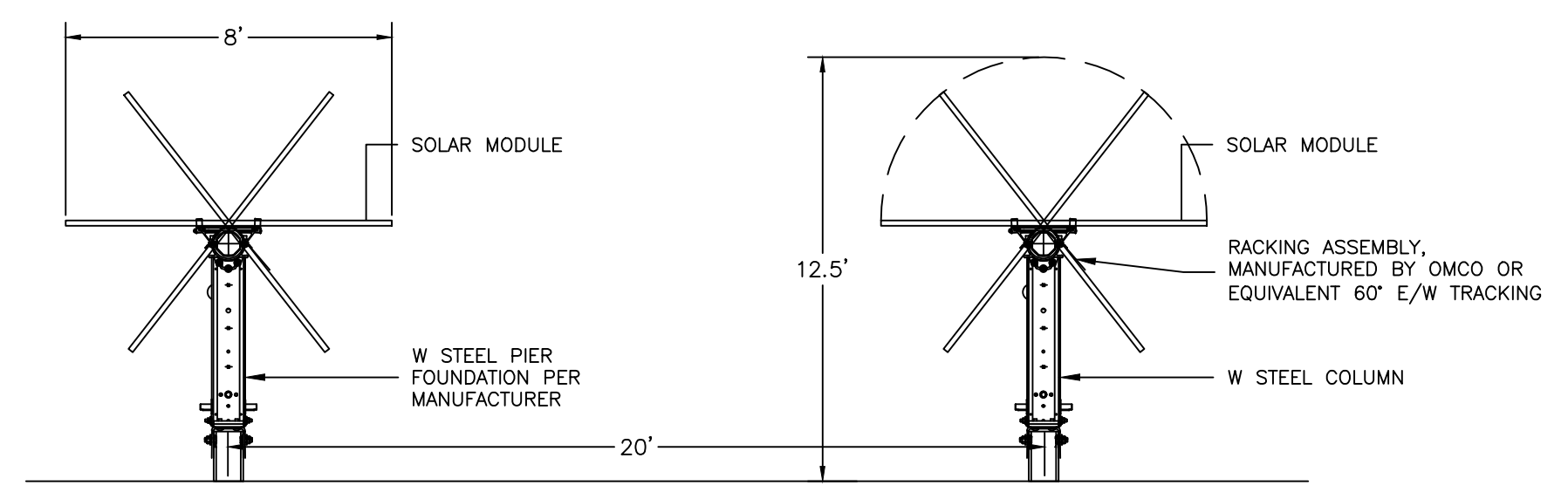


- NOTES:**
- ROAD MUST BE GENERALLY PARALLEL TO THE CONTOURS OF THE SLOPE AND GRADED TO MAINTAIN SHEET FLOW TO THE FILTER STRIP.
  - IF FILTER STRIP AREA IS DISTURBED DURING CONSTRUCTION, AREA SHALL BE DECOMPACTED, TOPSOIL SHALL BE INSTALLED AND SEEDING.
  - FILTER STRIP SHALL REMAIN VEGETATED FOR THE LIFE OF THE PROJECT.
  - FILTER STRIP WIDTH SHALL BE AS PER THE INCLUDED TABLE.

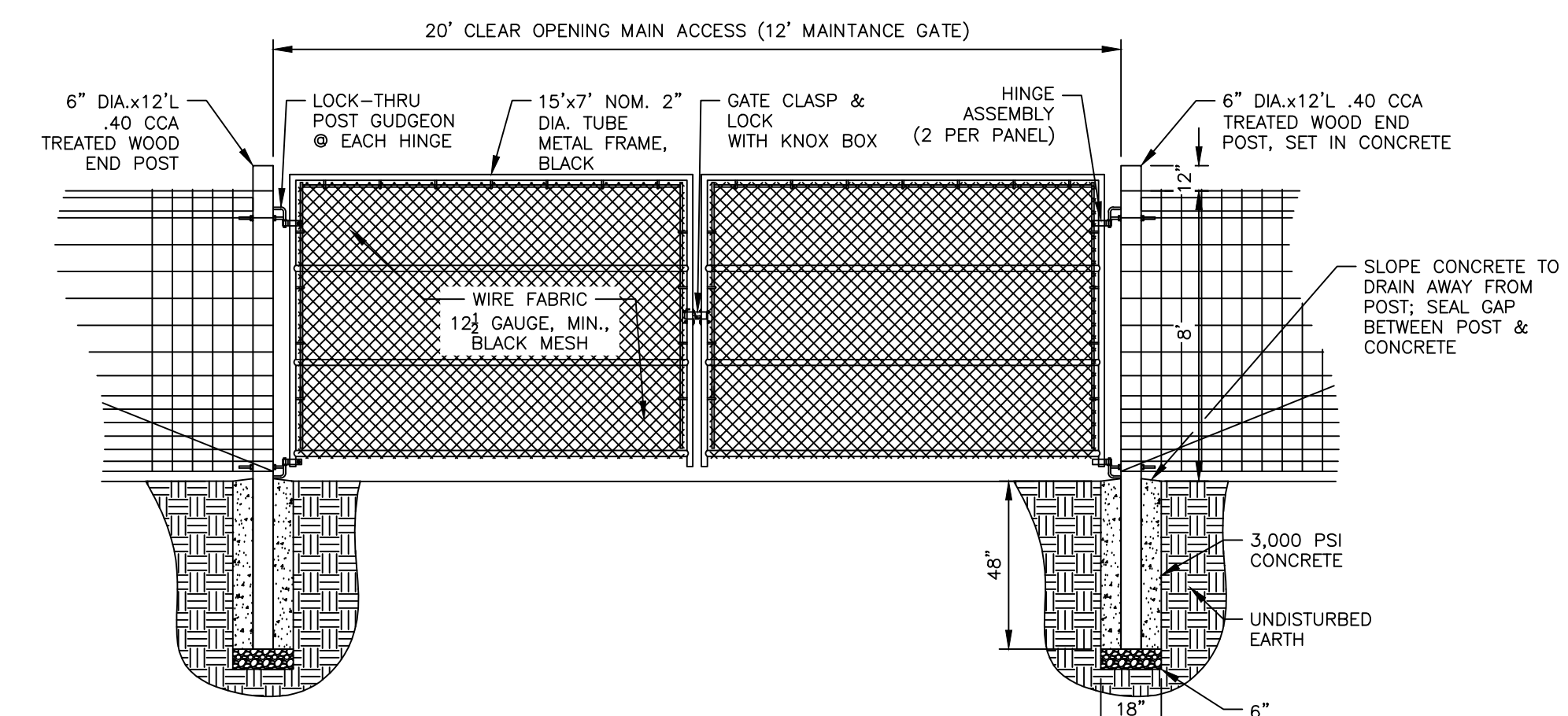
**FILTER STRIP DETAIL**  
NOT TO SCALE



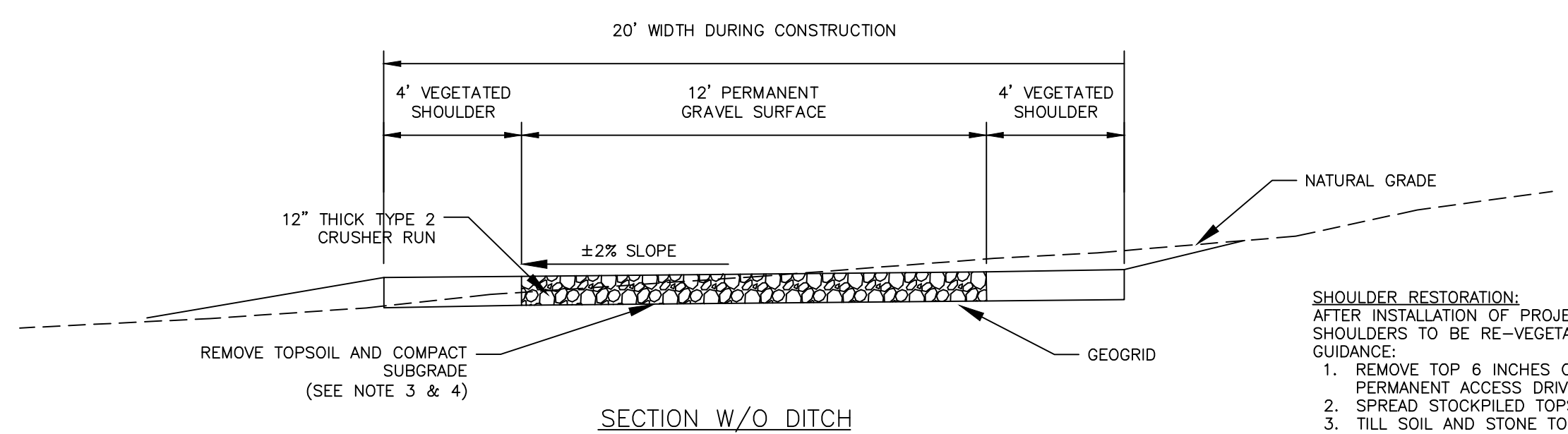
**TYPICAL AGRICULTURAL ALTERNATE FENCE DETAIL**



**ARRAY CONFIGURATION**  
NOT TO SCALE



**AGRICULTURAL ALTERNATE CHAIN LINK GATE DETAIL**  
NOT TO SCALE



- NOTES:**
- THE PREPARED SUBGRADE SURFACE IS TO BE VISUALLY OBSERVED, AND ALL DELETERIOUS MATERIALS AND ORGANIC MATTER, ARE TO BE EXCAVATED AND REMOVED.
  - PER NYS AG & MARKETS GUIDELINES, EXCAVATED TOPSOIL SHALL BE DISTRIBUTED ALONG EITHER SIDE OF THE ACCESS ROAD AND VEGETATED. THE SOIL SHALL BE TAPERED TO THE EXISTING GRADE AND NOT IMPEDE NATURAL DRAINAGE PATTERNS.
  - IF THE PROOF ROLLING EVALUATION INDICATES ANY OF THE EXISTING SUBGRADES ARE FOUND TO BE IN A LOOSE/SOFT/WET, OR UNSTABLE CONDITION, BASE STABILIZATION COULD BE PROVIDED BENEATH THE ACCESS DRIVE EMBANKMENT FILL AREAS OR POOR SUBGRADE CONDITIONS TO HELP STIFFEN, STABILIZE AND IMPROVE THE SUBGRADE CONDITIONS FOR THE ACCESS DRIVE FILL PLACEMENT AND COMPACTION. THE BASE STABILIZATION SHALL INCLUDE THE PLACEMENT OF A STABILIZATION/SEPARATION GEOTEXTILE FABRIC OVER THE EXPOSED SUBGRADES, FOLLOWING SITE STRIPPING, FOLLOWED BY PLACEMENT OF APPROXIMATELY 2 FEET TO 3 FEET OF A COMPACTED OVERSIZED STRUCTURAL GRANULAR FILL MATERIAL (I.E. WELL GRADED COARSE TO FINE 'SHOT ROCK' OR COARSER CRUSHER RUN STONE, WITH A MAXIMUM PARTICLE SIZE OF ±6-INCHES) OVER THE STABILIZATION GEOTEXTILE. THE OVERSIZED STRUCTURAL GRANULAR FILL MATERIAL SHALL BE FULLY ENCAPSULATE WITH THE GEOTEXTILE FABRIC. A LAYER OF BI-AXIAL GEOGRID (I.E. TENSAR BX-1100 OR SUITABLE EQUIVALENT) MAY BE INCORPORATED OVER THE STABILIZATION GEOTEXTILE TO FURTHER REINFORCE THE BASE STABILIZATION LAYER, IF DEEMED NECESSARY BY THE GEOTECHNICAL ENGINEER.

**OPERATIONS AND MAINTENANCE ROAD**  
NOT TO SCALE

REVISIONS:

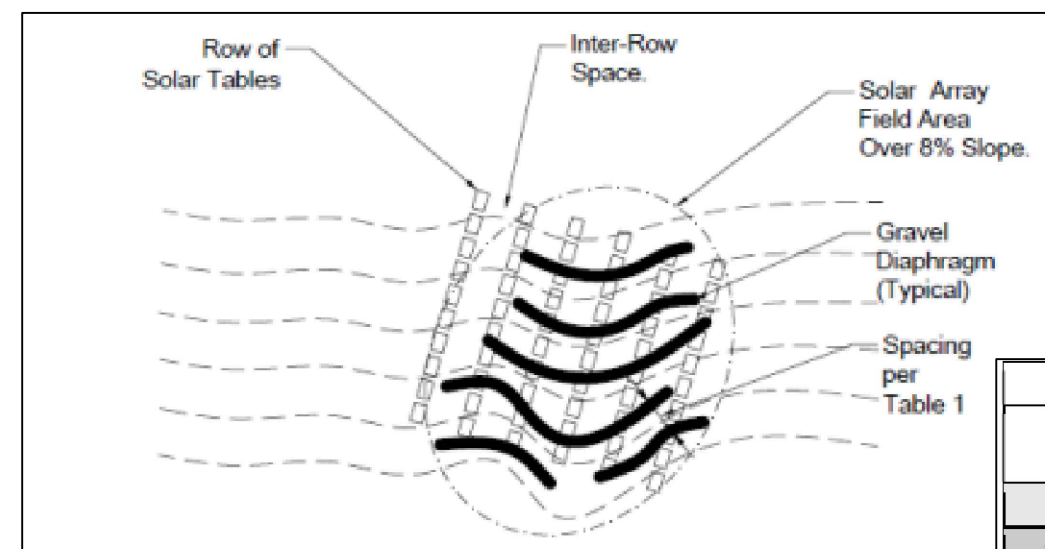
NO.	DATE	BY

PROJECT NAME: **NSF KIRKWOOD**  
ADDRESS: **149 QUILITY HILL ROAD & 165 FOLEY ROAD**  
**TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK**

DRAWING: **C500**

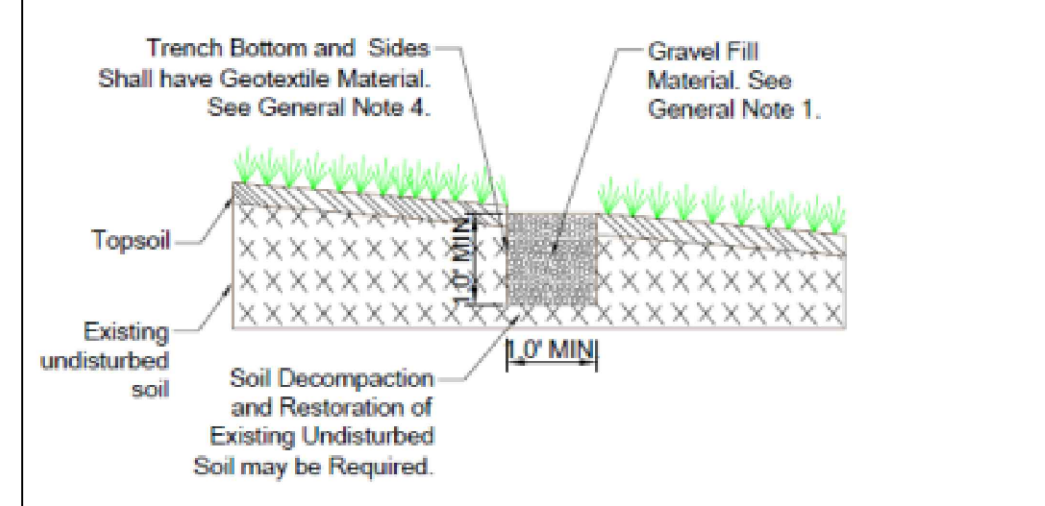
SCALE:   
DATE: **DECEMBER 4, 2025**

**DETAILS**

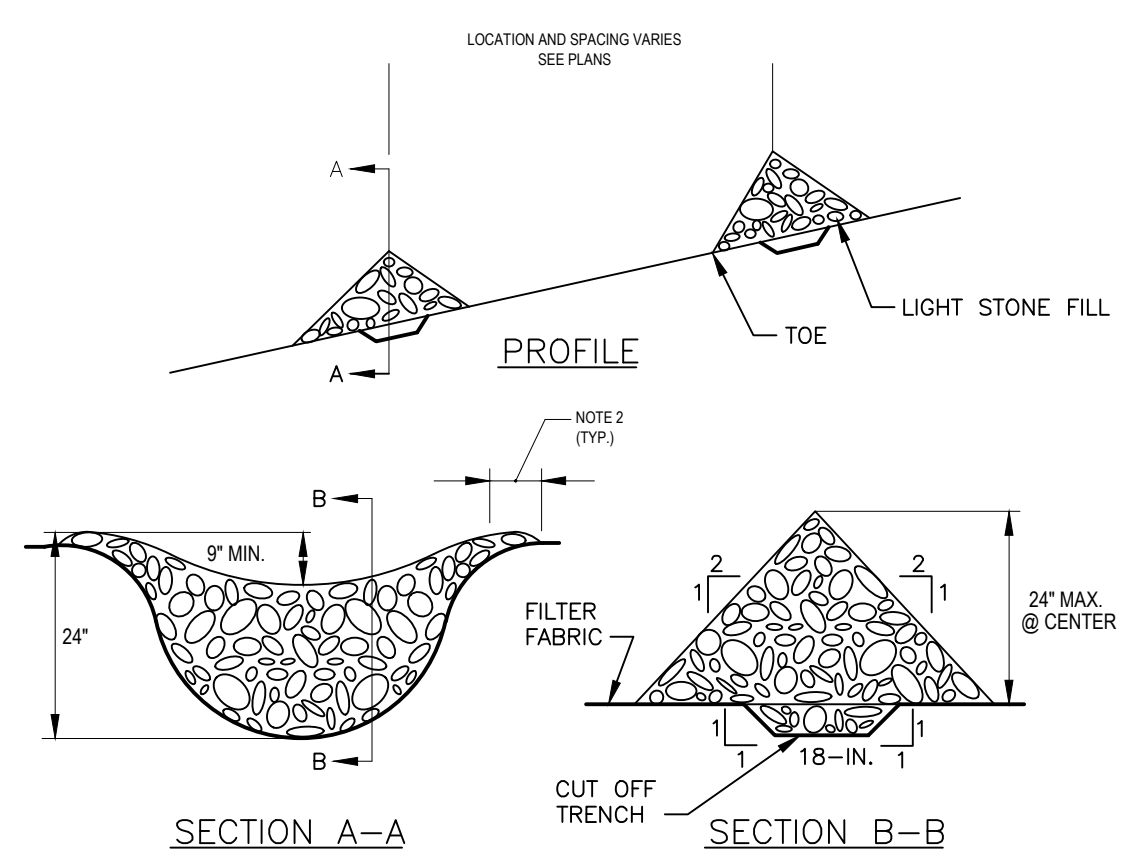


Slope (%)	Spacing (FT.)
8 to 10	100
10 to 20	75
20 to 35	50

**SOLAR ARRAY FIELD AREA WITH GRAVEL DIAPHRAGMS PLAN VIEW**

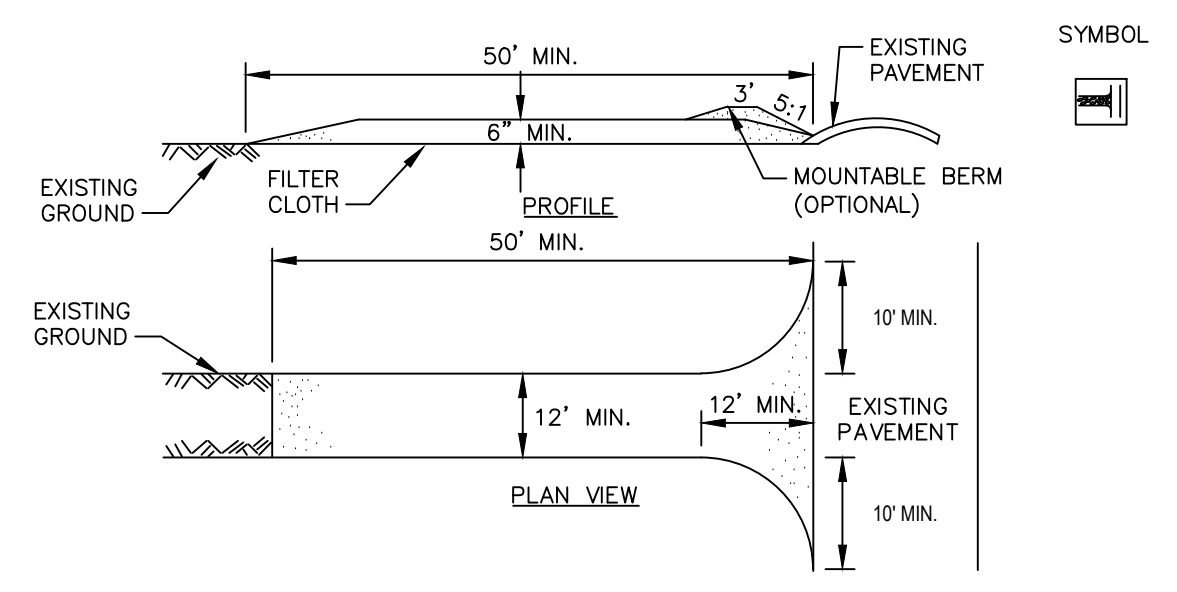


**GRAVEL DIAPHRAGM CROSS SECTION**



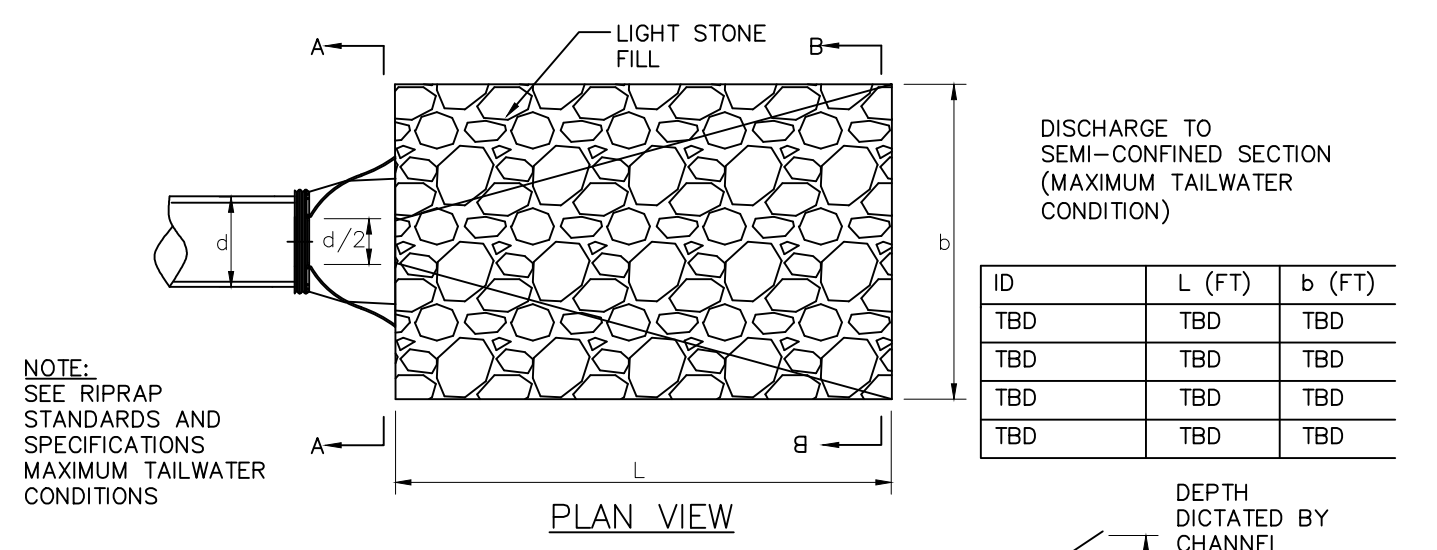
- APPLICATION NOTES:**
- CHECK DAMS SHALL BE USED TO REDUCE EROSION IN DRAINAGE CHANNEL BY RESTRICTING THE VELOCITY OF FLOW IN THE CHANNEL.
  - MAXIMUM DRAINAGE AREA ABOVE THE CHECK DAM SHALL NOT EXCEED 2-ACRES.
- CONSTRUCTION SPECIFICATIONS:**
- STONE SHALL BE PLACED ON FILTER FABRIC FOUNDATION.
  - EXTEND THE STONE A MINIMUM OF 1.5- FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
  - PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
  - ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
- MAINTENANCE NOTES:**
- INSPECT CHECK DAMS ONCE A WEEK AND AFTER RAINFALLS. REMOVE SILT FROM BEHIND DAM AS NEEDED TO PERMIT FLOW THROUGH THE DAM AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM.
  - INSTALL STONE LINER IN CHANNEL UPSTREAM OF CHECK DAM IF SIGNIFICANT EROSION OCCURS.
  - REPLACE STONES AS NEEDED TO MAINTAIN THE DESIGN CROSS SECTION OF THE STRUCTURES.
  - UPON STABILIZATION OF THE SITE REMOVE CHECK DAMS SO AS NOT TO BLOCK STORM FLOW OR DRAINAGE.

**CHECK DAM DETAIL NOT TO SCALE**



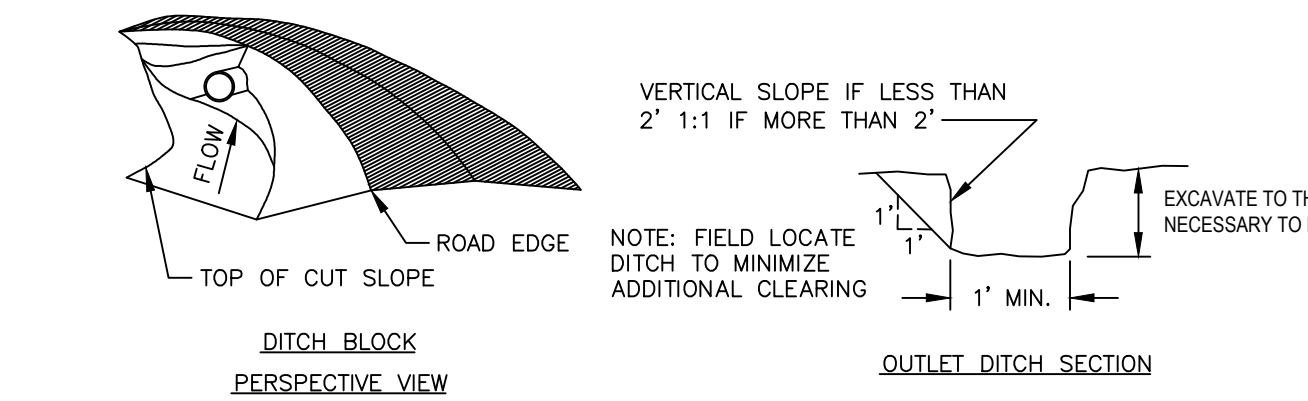
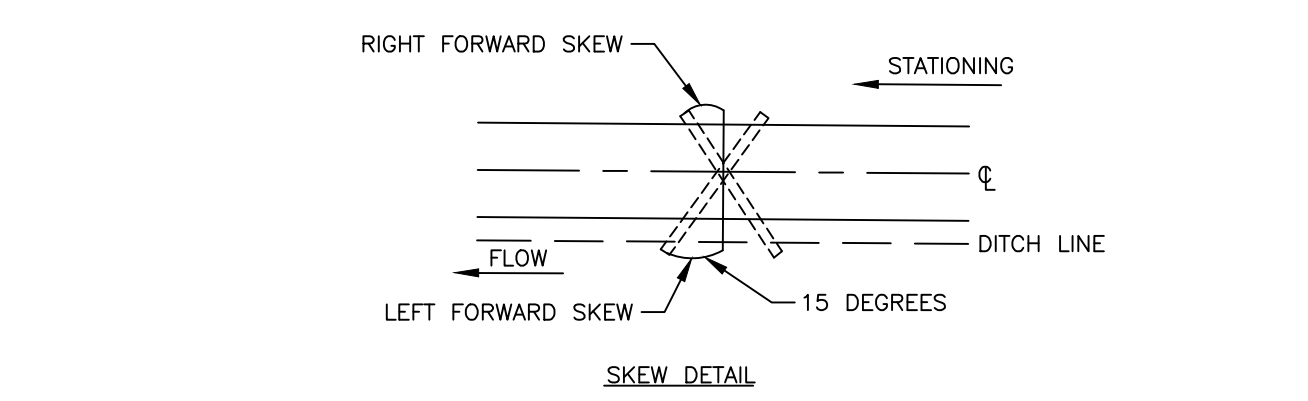
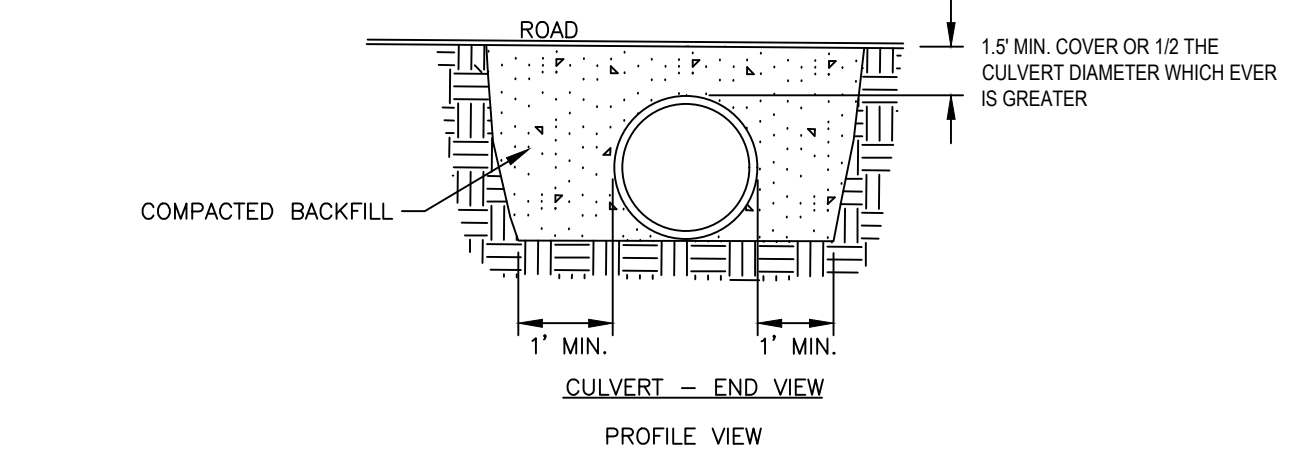
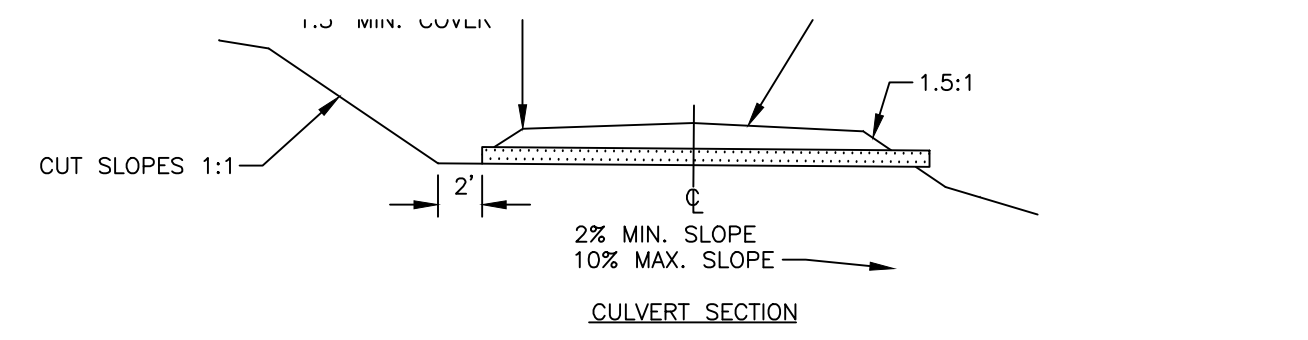
- CONSTRUCTION SPECIFICATIONS**
- STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
  - LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
  - THICKNESS - NOT LESS THAN SIX (6) INCHES.
  - WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
  - FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
  - SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
  - 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.
  - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE, AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
  - PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
  - REFER TO SITE PLANS FOR DIMENSION AND LOCATION

**STABILIZED CONSTRUCTION ENTRANCE NOT TO SCALE**

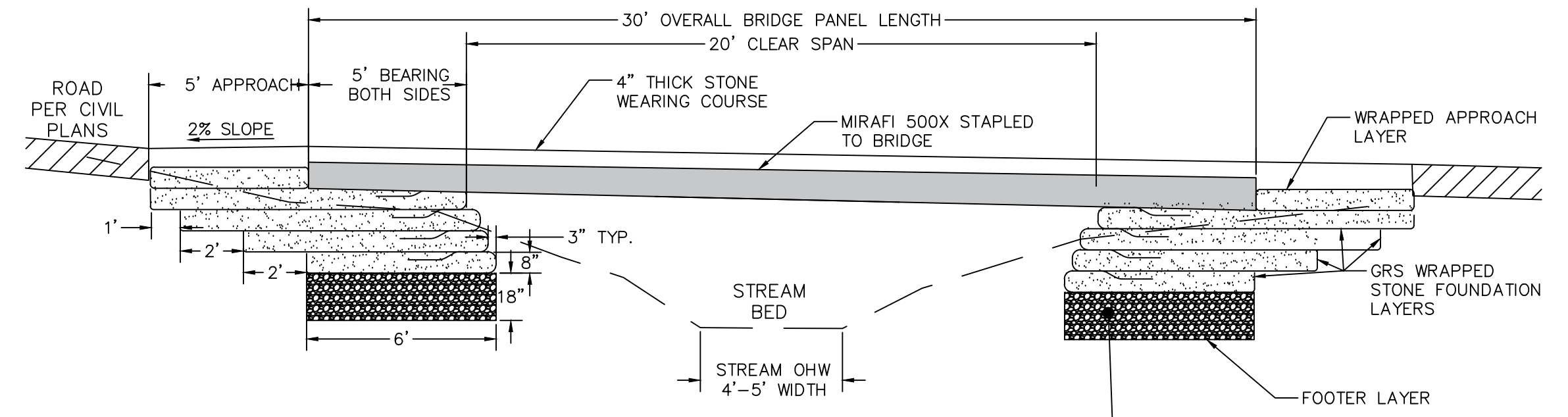
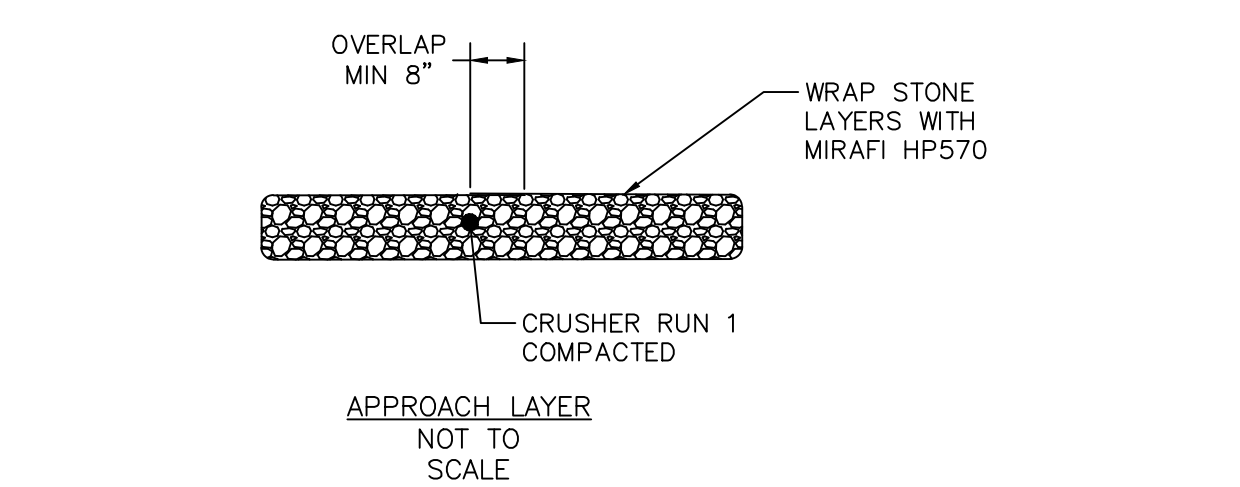
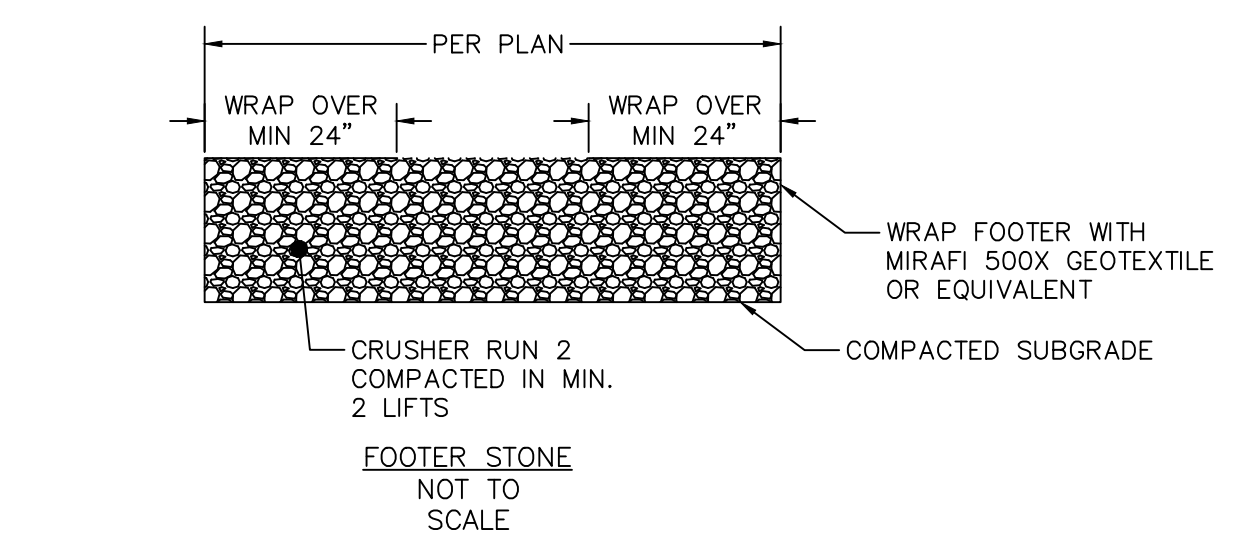
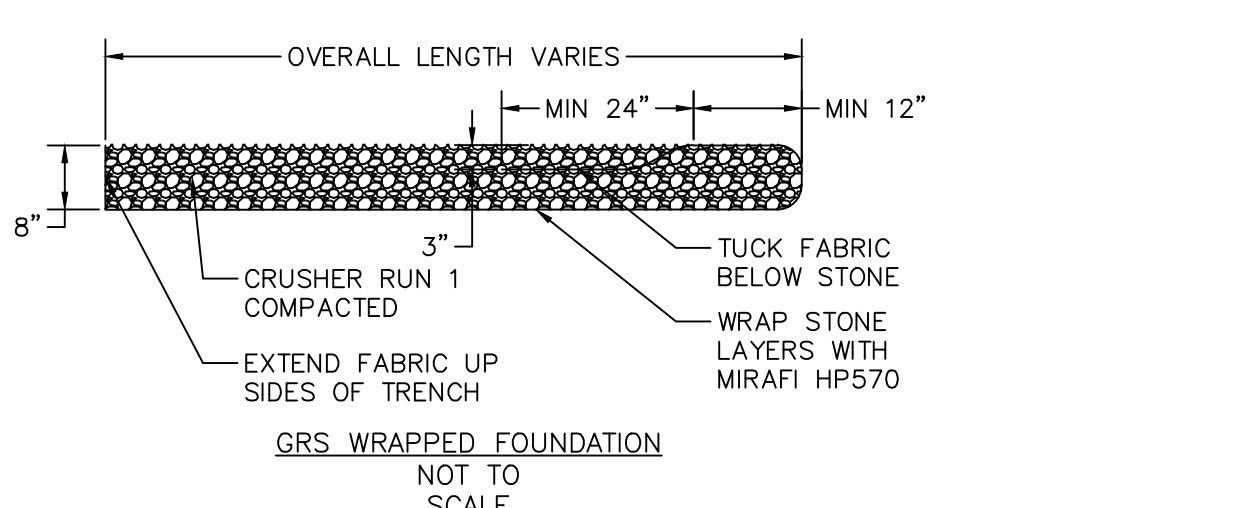


- APPLICATION NOTES:**
- ROCK OUTLET PROTECTION SHALL BE PROVIDED AT THE INLETS AND OUTLET OF ALL CULVERT PIPES TO REDUCE THE DEPTH, VELOCITY, AND ENERGY OF WATER, SUCH THAT THE FLOW WILL NOT BROKE THE RECEIVING DOWNSTREAM REACH.
- CONSTRUCTION SPECIFICATIONS:**
- SEE GRADING AND STORMWATER POLLUTION PREVENTION PLAN FOR OUTFALL INVERTS AND SURROUNDING GRADES.
  - ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
  - SEE UTILITY PLAN FOR PIPE AND OUTFALL LOCATIONS AND PIPE SIZES.
  - FILTER CLOTH SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN THE OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF CLOTH OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE CLOTH. ALL OVERLAPS, WHETHER FOR REPAIRS OR JOINING TWO PIECES OF CLOTH SHALL BE A MINIMUM OF 1'.
- MAINTENANCE NOTES:**
- INSPECT STRUCTURE AFTER HIGH FLOWS FOR EVIDENCE OF SCOUR BENEATH RIPRAP OR FOR DISLODGED STONES. REPAIRS SHOULD BE MADE IMMEDIATELY.

**ROCK OUTLET PROTECTION DETAIL NOT TO SCALE**

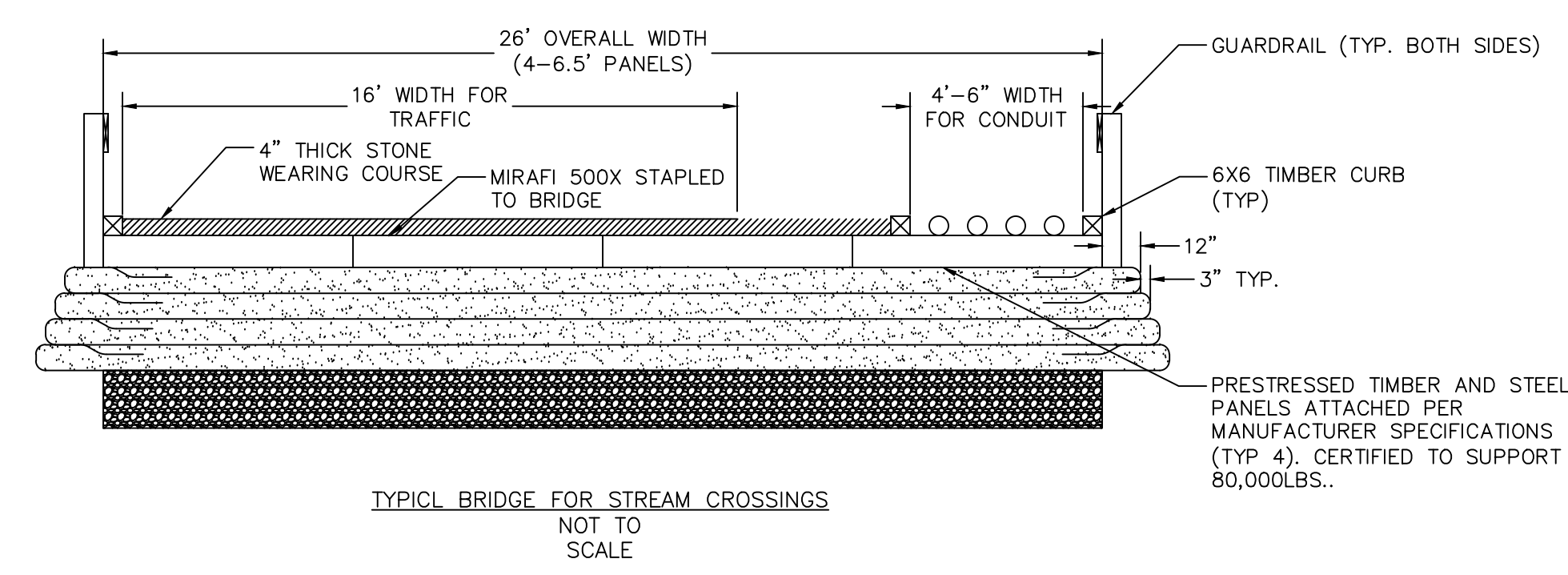


**ACCESS ROAD CULVERT DETAIL NOT TO SCALE**



**NOTE:** BRIDGE TO BE CERTIFIED TO SUPPORT HS-25 LOADING.

**TYPICAL BRIDGE FOR STREAM CROSSINGS - SECTION NOT TO SCALE**



**TYPICAL BRIDGE FOR STREAM CROSSINGS NOT TO SCALE**



DESIGN BY:  
NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269



NO.	DATE	BY	REVISIONS

PROJECT NAME: **NSF KIRKWOOD**  
ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C501**  
SCALE:  
DATE: DECEMBER 4, 2025

**DETAILS**



DESIGN BY:  
NSF ENGINEERING  
PAUL CONGDON, PE  
LICENSE # 095269

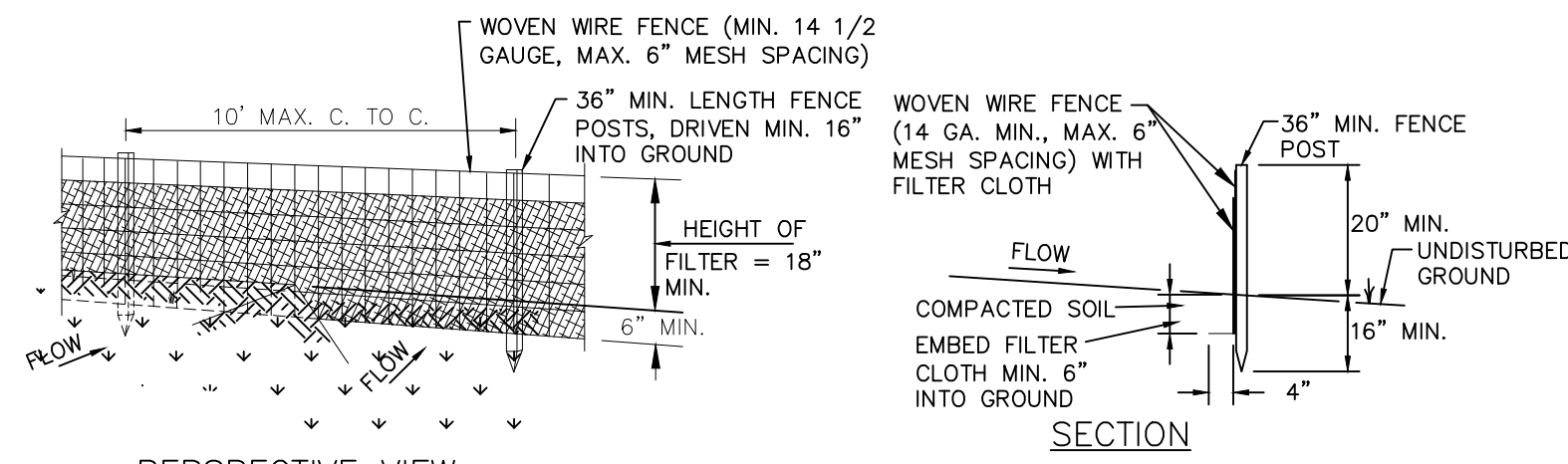


BY:	
DATE:	
REVISIONS:	

PROJECT NAME: **NSF KIRKWOOD**  
ADDRESS: 149 QUILTY HILL ROAD & 165 FOLEY ROAD  
TOWN OF KIRKWOOD, BROOME COUNTY, NEW YORK

DRAWING: **C502**  
SCALE:  
DATE: DECEMBER 4, 2025

**DETAILS**



SILT FENCE SPECIFICATIONS

SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)		
		STANDARD	REINFORCED	SUPER
<2%	<50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	>2:1	20/125	30/175	50/250

**APPLICATION NOTES:**

- SILT FENCE SHALL BE USED IN SMALL AREAS WITH SHEET FLOW RUNOFF TO INTERCEPT SEDIMENT AND REDUCE RUNOFF VELOCITY.
- MAXIMUM SLOPE LENGTH FOR SLOPES FLATTER THAN 5:1 SHALL BE 100 FEET.
- MAXIMUM DRAINAGE AREA TO SILT FENCE SHALL NOT EXCEED 1/4 ACRE PER 100' OF FENCE.

**CONSTRUCTION SPECIFICATIONS:**

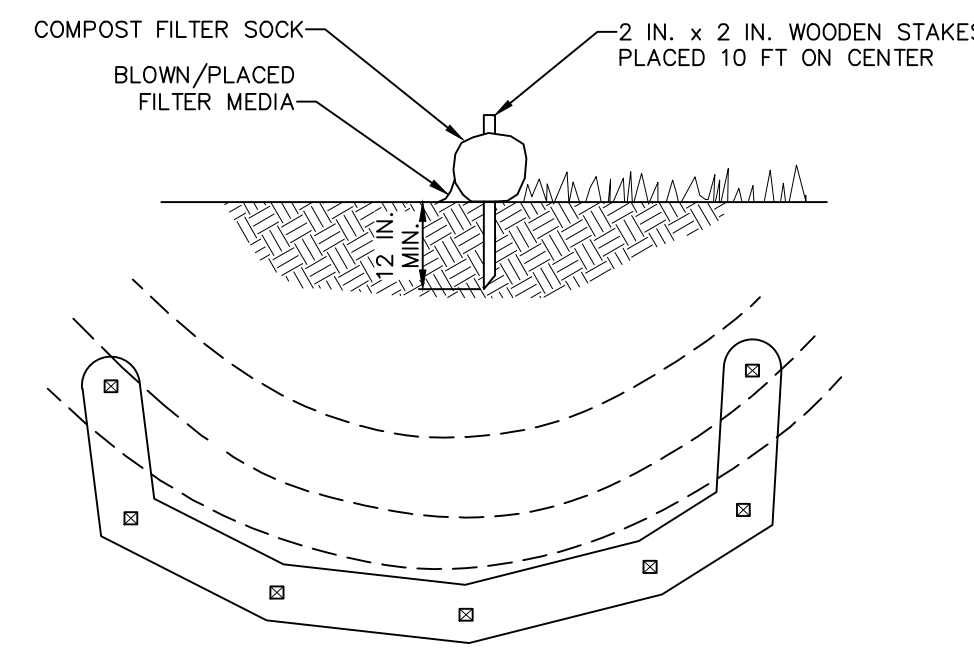
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.
- POSTS SHALL BE A MINIMUM 36" LONG AND SHALL BE TYPE T OR U STEEL WEIGHING NOT LESS THAN 1.0 LBS PER SQ.FT.; OR HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
- FILTER CLOTH SHALL BE FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
- WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- 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, 14 GAUGE, 6" MAXIMUM MESH SPACING.
- PREFABRICATED UNITS SHALL BE ENFIROFENCE OR APPROVED EQUAL.

**MAINTENANCE NOTES:**

- INSPECT SILT FENCE ONCE A WEEK AND AFTER RAINFALLS, REMOVE AND REPLACE THE FABRIC WHEN BULGES DEVELOP IN THE SILT FENCE.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED, REPLACE ALL SILT FENCE EVERY 9-MONTHS OR AS DIRECTED BY THE PROJECT REPRESENTATIVE.
- UPON STABILIZATION OF THE SITE REMOVE SILT FENCE SO AS NOT TO BLOCK STORM FLOW OR DRAINAGE.

STANDARD SILT FENCE

NOT TO SCALE

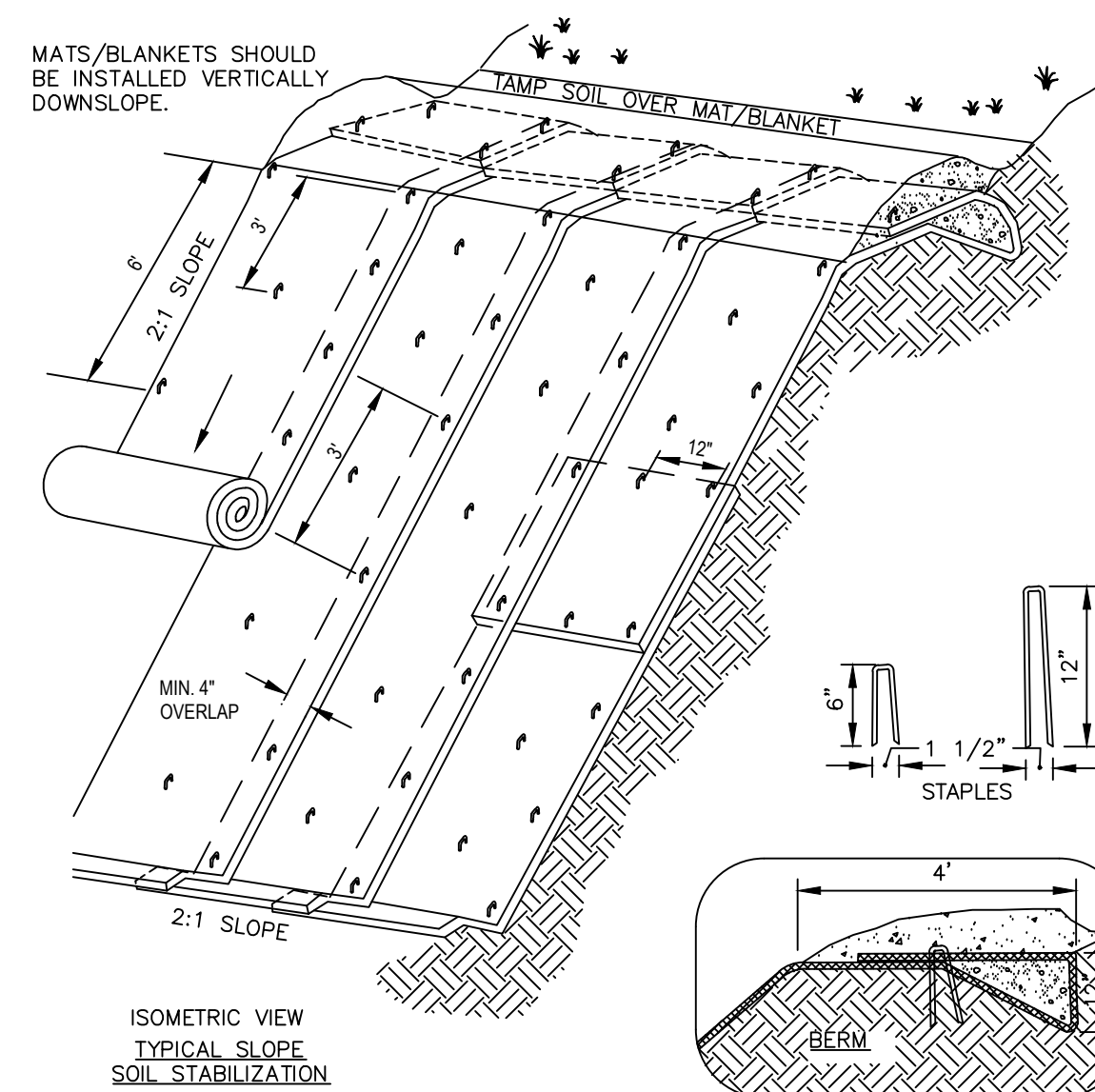


**NOTES:**

- SOCK FABRIC AND COMPOST SHALL MEET STANDARDS OF THE NYS DEC EROSION CONTROL MANUAL.
- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
- TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
- COMPOST FILTER 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.
- BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, 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.

COMPOST FILTER SOCK

NOT TO SCALE

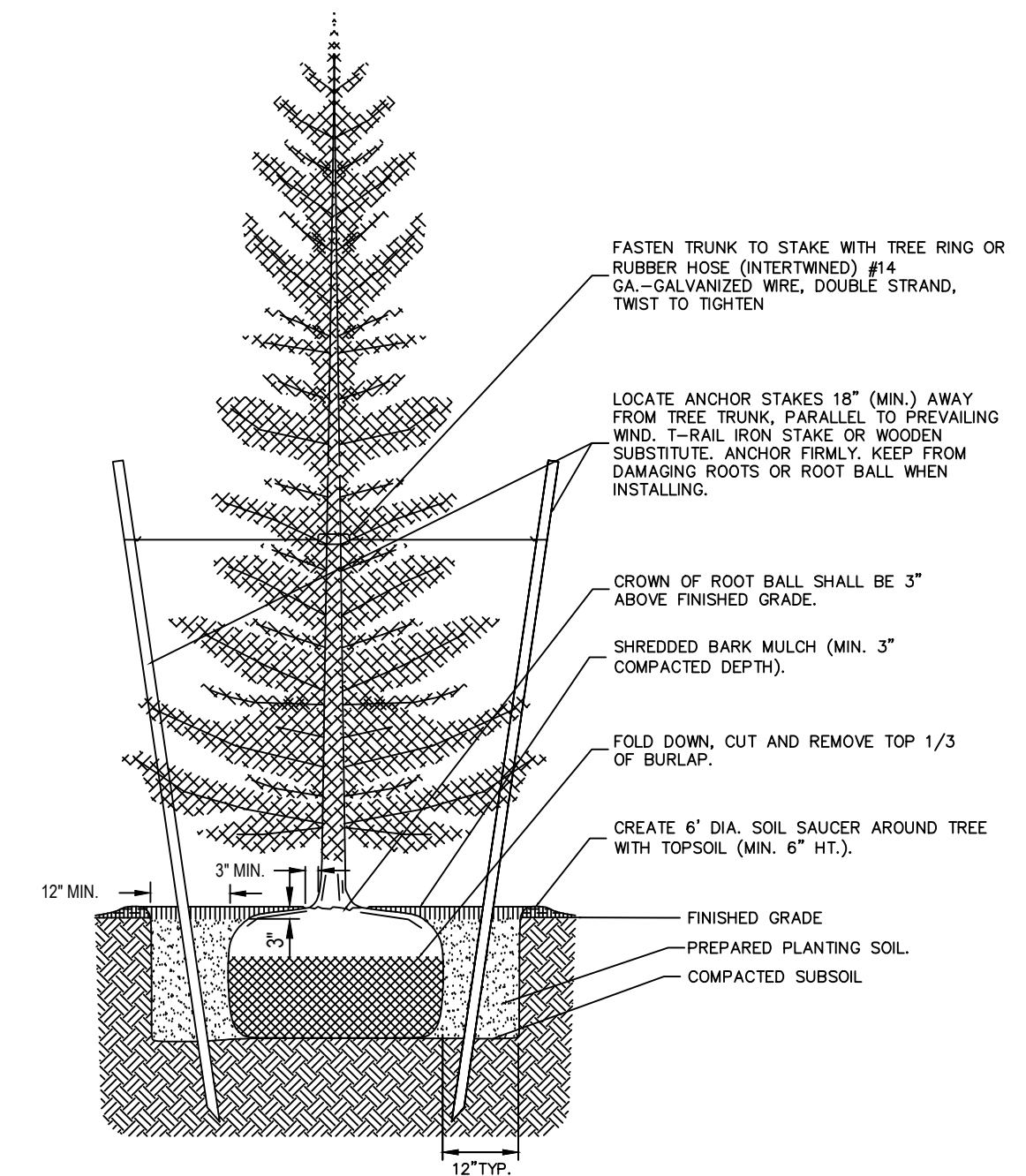


**NOTES:**

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

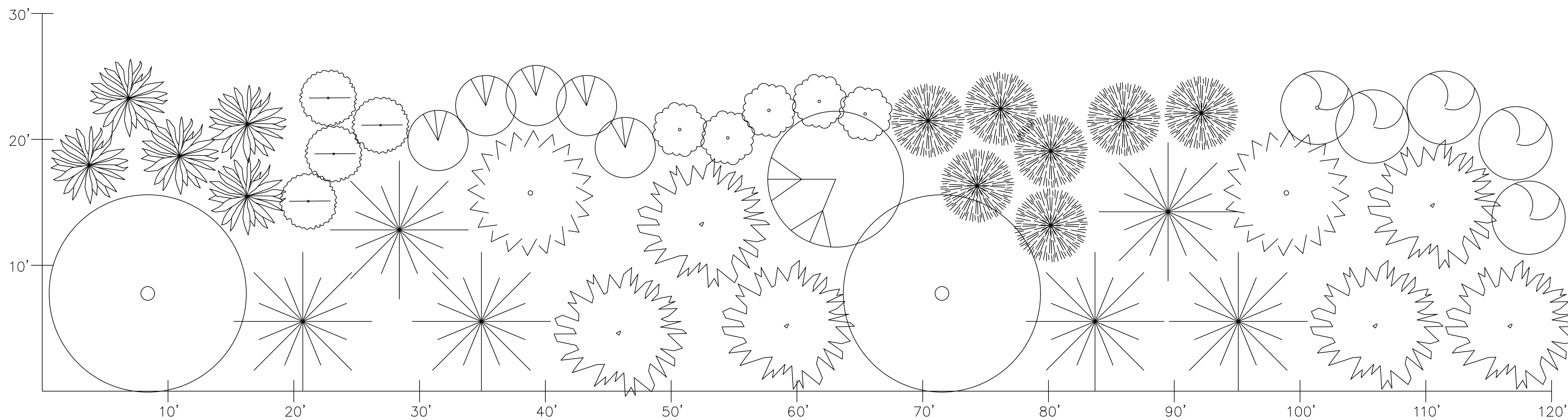
EROSION BLANKETS SLOPE INSTALLATION

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE



MULCH AND TREE SCREENING AREA

TYPICAL PLANTING DETAIL

NOT TO SCALE

PLANT SCHEDULE PER 120' BUFFER LENGTH (PROJECT QTY. ASSUME 360' OF BUFFER)			
KEY	COMMON NAME	SIZE & ROOT	QUANTITY
○	AMERICAN HORNBEAM	2" CALIPER B&B	6
●	CHOKECHERRY	1 GAL.	6
⊗	WHITE SPRUCE (BLACK HILLS CULTIVAR)	5-6' B&B	18
⊙	EASTERN RED CEDAR	5-6' B&B	18
⊖	GRAY DOGWOOD	5-6' & #7	15
⊗	VIBURNUM ARROW WOOD	2-2.5" & B&B	21
⊙	NINEBARK	1 GAL.	15
⊗	BAYBERRY	1 GAL.	15
⊙	FRAGRANT SUMAC	1 GAL.	15
⊖	WITHERED VIBURNAM	2-2.5" & B&B	12
⊙	BLACKHAW VIBURNUM	2-2.5" & B&B	3

NOTE: PLANT SPECIES SHOWN ARE PRELIMINARY ONLY. NATIVE TREES WILL BE UTILIZED FOR THE LANDSCAPE SCREENING. FINAL PLANT SELECTION WILL OCCUR PRIOR TO CONSTRUCTION AND BASED ON AVAILABILITY AT LOCAL NURSERIES.