# SITE DEVELOPMENT PLANS FOR ASHLAND SOLAR

## LOT 138 OFF MEGUNKO RD & MBTA ROADWAY ASHLAND, MA

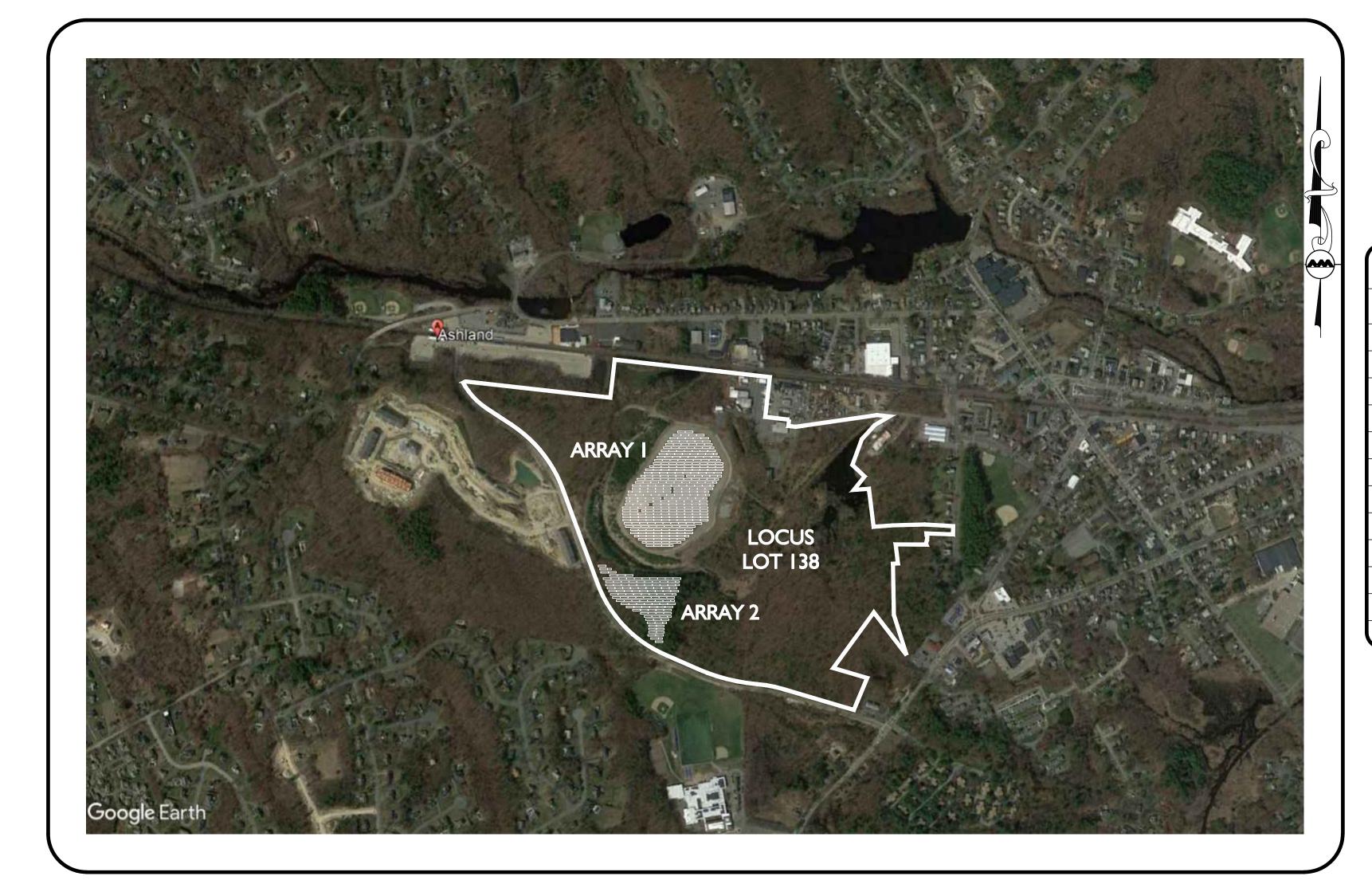
#### **APPLICANT:**



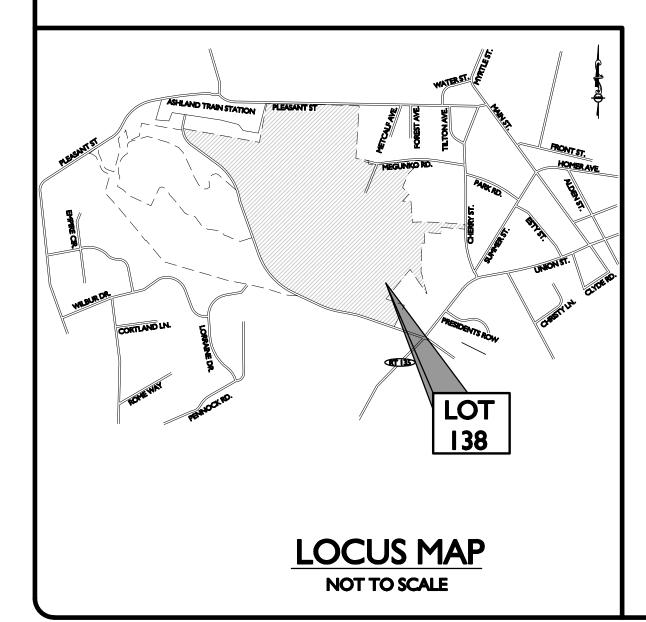
ASHLAND SOLAR, LLC 88 BLACK FALCON AVENUE CENTER LOBBY, SUITE 342 BOSTON, MA 02210

OWNER:
MEGUNKO TRANSIT DISTRICT, LLC
62 TEMPLE DRIVE
ALTON, NH 03809

SITE ENGINEERS:
ALLEN & MAJOR ASSOCIATES, INC.
10 MAIN STREET
LAKEVILLE, MA 02347



LIST OF DRAWINGS				
DRAWING TITLE	SHEET NO.	ISSUED	REVISED	
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EROSION CONTROL PLAN	C-101	05-01-2018		
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ORIGINAL EXISTING CONDITIONS PLAN WAS PROVIDED BY HANCOCK ASSOCIATES ENTITLED "JEFFERSON AT ASHLAND, WEST UNION STREET (RT 135)—ASHLAND, MA" DATED 1-30-2002 AND REVISED 4-13-2007.

SUPPLEMENTAL INFORMATION PROVIDED BY CAMPANELLI THORNDIKE DEVELOPMENT ENTITLED "SITE DEVELOPMENT PLANS FOR ASHLAND RAIL TRANSIT APARTMENTS M.B.T.A. ACCESS ROAD—ASHLAND, MA" DATED 9-28-2015 REVISED 12-15-2016 BY KELLY ENGINEERING GROUP, INC.

REVISED WETLANDS FLAG LOCATIONS DELINEATED BY ECOTEC INC. AND FIELD LOCATED BY ALLEN AND MAJOR ASSOCIATES INC. JULY 2016.

MBTA ROADWAY DESIGN BY ALLEN AND MAJOR ASSOCIATES INC. ENTITLED "PROPOSED ROADWAY-ASHLAND, MA" DATED 8-31-2016 AND REVISED 9-19-2016.

- 4. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES AND THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS AT NO ADDITIONAL COST.
- 5. ALL SITE WORK DONE FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE SITE PLANS AND SITE WORK SPECIFICATIONS FOR CONSTRUCTION.
- 6. ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTIES DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
- 7. ALL PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED AND RESTORED BY A SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS AT THE CONTRACTOR'S EXPENSE.
- 8. ALL DISTURBED AREAS SHALL BE MAINTAINED IN ACCORDANCE WITH THE EROSION CONTROL PLAN, MA DEP, AND THE REQUIREMENTS OF THE TOWN OF ASHLAND.
- 9. ALL APPLICABLE PERMITS AND AN APPROVED SET OF PLANS SHALL BE AVAILABLE AT THE CONSTRUCTION SITE.
- 10. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRECONSTRUCTION MEETING THE WITH THE APPROPRIATE TOWN DEPARTMENTS, THE APPROPRIATE UTILITY COMPANIES, THE OWNER AND OWNER'S REPRESENTATIVE. THE MEETING SHALL TAKE PLACE PRIOR TO THE START OF CONSTRUCTION AND THE CONTRACTOR MUST PROVIDE 48 HOURS NOTICE TO ALL ATTENDEES PRIOR TO THE START OF THE MEETING.
- 11. APPROPRIATE WARNING SIGNS, MARKERS, BARRICADES AND/OR FLAG MEN SHALL BE PROVIDED TO REGULATE TRAFFIC. CONSTRUCTION TRAFFIC CONTROLS SHALL BE IMPLEMENTED AND OPERATED ACCORDING TO THE MASS DEPARTMENT OF TRANSPORTATION, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE LOCAL AUTHORITY.
- 12. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ADDITIONAL BENCHMARK INFORMATION IF REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING BENCHMARKS. IF IT IS NECESSARY TO RELOCATE A BENCHMARK, IT SHALL BE RELOCATED BY A MASSACHUSETTS PROFESSIONAL LAND SURVEYOR AND DONE SO AT THE CONTRACTOR'S EXPENSE.
- 13. ALL PERMITS AND APPROVALS NECESSARY FROM AGENCIES GOVERNING THE WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORK.
- 14. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK OR EARTHWORK OPERATIONS, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY PER ON SITE INSPECTIONS OF THE OWNER, THEIR REPRESENTATIVES, OR REGULATORY AGENCIES HAVING JURISDICTION AT NO ADDITIONAL COST TO THE OWNER.
- 15. CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.
- 17. DISPOSAL OF ALL DEMOLISHED MATERIALS INCLUDING EXISTING MISC. CONSTRUCTION DEBRIS FILL IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE DISPOSED OF OFF—SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS AT NO ADDITIONAL
- 18. ALL DISTURBED AREAS NOT NOTED TO RECEIVE OTHER TREATMENT ARE TO RECEIVE SIX INCHES (6") MINIMUM OF TOPSOIL & SEED, AND BE MAINTAINED UNTIL ESTABLISHED & ACCEPTED.
- 19. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY.
- 20. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE THE TOWN OF ASHLAND GOVERNING AUTHORITY'S SPECIFICATIONS AND SHALL BE APPROVED BY SUCH.
- 21. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE EXACT POINT OF SERVICE CONNECTION AND DISCONNECTION AT EXISTING UTILITY.
- 22. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR AT GROUNDBREAK.
- 23. CONTRACTOR IS RESPONSIBLE FOR DIGGING TEST HOLES AND VERIFYING ANY EXISTING UTILITY OR STRUCTURE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT BASED ON EXACT LOCATION OF EXISTING UTILITIES, THERE ARE NO CONFLICTS BETWEEN THEM AND THE PROPOSED UTILITIES.
- 24. THE CONTRACTOR SHALL ADHERE TO ALL PERMIT CONDITIONS PROVIDED BY ALL GOVERNING AGENCIES AT NO ADDITIONAL COSTS. THIS INCLUDES BUT IS NOT LIMITED TO BUILDING PERMITS, DEMOLITION PERMITS, PLUMBING, GAS, AND ELECTRICAL PERMITS.
- 25. IT IS THE CONTRACTORS RESPONSIBILITY TO PROPERLY DISPOSE OF AND ABATE ALL BUILDING MATERIALS OR HAZARDOUS BUILDING MATERIALS ONSITE IN ACCORDANCE WITH ALL STATE, FEDERAL, AND LOCAL LAWS AND REGULATIONS AT NO ADDITIONAL COST TO THE OWNER.
- 26. DURING EXCAVATION, ANY EXISTING EARTH CUT MATERIALS THAT DOES NOT MEET THE ORDINARY FILL SPECIFICATIONS OR LOAM SPECIFICATIONS AND CANNOT BE REUSED SHALL BE REMOVED OFFSITE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNERS. MATERIAL WHICH DOES NOT MEET THE SPECIFICATION INCLUDES ALL BOULDERS, ROCKS, CONSTRUCTION DEBRIS, AND MISC. MATERIAL. PRIOR TO REUSE, CONTRACTOR TO PROVIDE TESTING REPORT OF SIEVE ANALYSIS TO ENGINEER FOR APPROVAL. CONTRACTOR CAN AMEND MATERIALS AND CONTINUE TO RETEST AS NECESSARY AT NO ADDITIONAL COST TO OWNER. AFTER AMENDING IF MATERIAL STILL DOES NOT MEET THE SPECIFICATIONS IT IS TO BE REMOVED FROM SITE AT NO ADDITIONAL COST TO THE OWNER AND IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

#### **EROSION & SEDIMENTATION CONTROL NOTES:**

- I. EROSION CONTROL SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 2012 "CONSTRUCTION GENERAL PERMIT" MANUAL, AND MASSACHUSETTS 2003 EROSION & SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS. ANY SUCH MODIFICATIONS FROM THE ABOVE MANUALS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER.
- 2. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED SHALL BE STABILIZED AS SOON AS PRACTICABLE BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY (UNLESS THE TOWN HAS STRICTER REQUIREMENTS WHICH SHALL BE FOLLOWED) IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF MULCH IS USED, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 4 BALES PER 1,000 SQUARE FEET. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS AND IN VEGETATIVE SLOPES WHICH EXCEED 15%.
- 3. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY OCTOBER 1ST OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 3 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS ON VEGETATED SLOPES IN EXCESS OF 15%. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.
- 4. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3LBS PER 1,000 SQUARE FOOT AND MULCHED, AND REUSED AS REQUIRED. SILTATION FENCING SHALL BE PLACED DOWN GRADIENT FROM STOCKPILED LOAM. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.
- 5. ALL FILTER BARRIERS, SILT SACKS, AND EROSION CONTROL BERMS SHALL BE INSTALLED ACCORDING TO THE EROSION CONTROL PLAN. THESE SHALL BE MAINTAINED DURING DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85-90% VIGOROUS PERENNIAL COVER OF GRASSES.
- 6. ADJACENT ROADS SHALL BE PERIODICALLY SWEPT OR WASHED TO AVOID TRACKING MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA. A WATERING TRUCK WILL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS.
- 7. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. CATCH BASIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION BY THE USE OF STRAW BALE BARRIERS AROUND EACH INLET. SILT SACKS SHALL BE INSTALLED IN ALL EXISTING BASINS. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85–90% OF VIGOROUS PERENNIAL GROWTH.
- 8. AS APPLICABLE, EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISHED SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.
- 9. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY MA DEP. THE ENGINEER AND THE MUNICIPALITY, AS AUTHORIZED BY THE OWNER. FAILURE TO COMPLY WITH THE OWNER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.
- 10. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED AT THE STORMWATER MANAGEMENT AREA INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.
- 11. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMI-MONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85-90% VEGETATED VIGOROUS GROWTH. RE-SEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.
- 12. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR, CLEANED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTIONS AND SHALL TAKE PLACE WEEKLY AND BEFORE AND AFTER EACH 1/4" RAINFALL EVENT. CONTRACTOR TO PROVIDE ALL WEEKLY REPORTS IN CONJUNCTION WITH THE EROSION CONTROL / NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM CONSTRUCTION SITE PERMIT REQUIREMENTS (NPDES PERMIT) TO OWNER AND ENGINEER ON A WEEKLY BASIS OR MORE FREQUENTLY AS NECESSARY.
- 13. ALL PROPOSED SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH JUTE MESH AND PROTECTED FROM EROSION UNTIL WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.
- 14. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAYBALES OR STRAW WATTLE AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE TOWN ENGINEER TO MITIGATE ANY EMERGENCY CONDITION.
- 15. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI WILL BE REQUIRED TO BE SUBMITTED AT LEAST 14 DAYS PRIOR TO COMMENCING CONSTRUCTION.

### 16. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. WEEKLY SWPPP INSPECTION REPORTS TO BE PERFORMED BY CONTRACTOR. COPIES OF ALL SWPPP INSPECTION REPORTS SHALL BE PROVIDED TO THE TOWN OF ASHLAND, EPA, DEP, OR ANY OTHER AUTHORITY

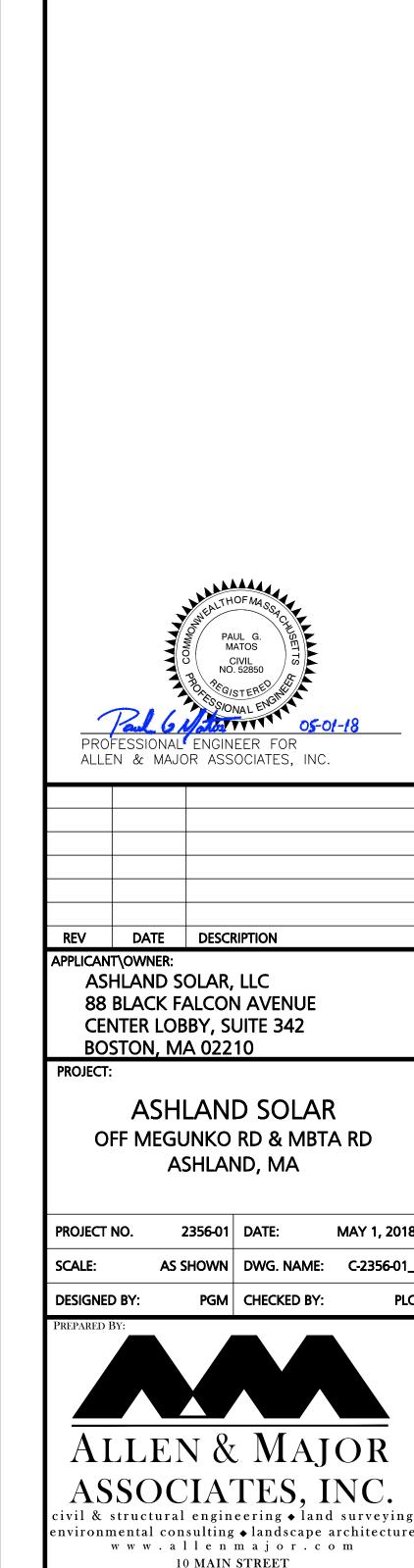
17. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED.

REQUESTING WITHIN 3 DAYS OF EACH INSPECTION.

- 18. IF DEWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION, ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED. IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DEWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURES CAPACITY TO SETTLE AND FILTER FLOW OR ITS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL-VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.
- 19. INITIATE STABILIZATION IMMEDIATELY IF CONSTRUCTION WORK TEMPORARILY OR PERMANENTLY CEASES.
- 20. ALL DISCHARGES FROM POLLUTION SOURCES SUCH AS FUELS. WASTEWATER FROM WASH OUT OF CONCRETE, WASTEWATER FROM CLEAN OUT OF PAINTS, FORM RELEASE OILS, CURING COMPOUND AND OTHER CONSTRUCTION CHEMICALS, POLLUTANT USED FOR MAINTENANCE OF VEHICLES AND EQUIPMENT. SOAPS & SOLVENTS. TOXIC OR HAZARDOUS SUBSTANCES, CHEMICALS AND OILS FROM EQUIPMENT IS PROHIBITED. IF A POLLUTANT IS DISCHARGED IT NEEDS TO BE IMMEDIATELY CLEANED UP BY REMOVING THE CHEMICAL AND AFFECTED SOIL OR AREA OF SPILL FROM THE SITE. DO NOT HOSE DOWN AND SPREAD SPILLED ITEM. ALL CHEMICALS USED ON THE SITE SHALL BE IN LEAK-PROOF CONTAINERS STORED AWAY FROM SURFACE WATERS, STORMWATER INLETS, AND DRAINAGE MEASURES. SPILL KITS SHALL BE AVAILABLE ONSITE FOR EMERGENCY USE. THERE SHALL BE A SECONDARY CONTAINMENT OR ALL CHEMICALS IN ADDITION TO SPILL-PROOF CONTAINERS.
- 21. PRIOR TO COMMENCEMENT OF CONSTRUCTION, APPLICABLE CONTRACTOR PERSONNEL MUST HAVE AN UNDERSTANDING OF THE EPA CONSTRUCTION GENERAL PERMIT REQUIREMENTS, AND THEIR SPECIFIC RESPONSIBILITIES UNDER THE PERMIT. AT A MINIMUM PERSONNEL MUST BE TRAINED AND UNDERSTAND THE FOLLOWING: LOCATION OF ALL STORMWATER CONTROLS AND HOW TO MAINTAIN THEM, PROCEDURES FOR COMPLYING WITH THE POLLUTION PREVENTION REQUIREMENTS. PROCEDURES FOR CONDUCTING INSPECTIONS, RECORDING FINDINGS, AND TAKING CORRECTIVE ACTION.
- 22. IF USING NON-VEGETATIVE STABILIZATION MEASURES, IT MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER INITIATING STABILIZATION. ALL AREAS OF EXPOSED SOILS MUST BE COVERED.

#### **ABBREVIATIONS:**

ABAN ADA ADJ	ABANDON AMERICANS WITH DISABILITIES ACTS ADJUST	L LB LP	LENGTH LEACHING BASIN LIGHT POLE
B BC BIT BCB BLDG BM BOS BOW	BOTTOM OF WALL	MAT MAX MH MIN MISC MCC MTD MW	MATERIAL MAXIMUM MANHOLE MINIMUM MISCELLANEOUS MONOLITHIC CONCRETE CURB MOUNTED MONITORING WELL
BRK BV&B BVW	BRICK BUTTERFLY VALVE & BOX BORDERING VEGETATED WETLAND	N NIC NO NTS	NORTH NOT IN CONTRACT NUMBER NOT TO SCALE
CATV CB CF CFS CI CL	CABLE TELEVISION CATCH BASIN CUBIC FEET CUBIC FEET PER SECOND CAST IRON (PIPE) CENTERLINE	OC OD OHW OVHD OW	ON CENTER OUTSIDE DIAMETER OVERHEAD WIRE OVERHEAD OBSERVATION WELL
CLDI CLF CM CMP CO CONC CONST CONT CRD CPP CUL CY	CHAIN LINK FENCE CONSTRUCTION MANAGER CORRUGATED METAL PIPE CLEAN OUT CONCRETE CONSTRUCTION CONTRACTOR COORDINATE CORRUGATED POLYETHYLENE PIPE CULVERT CUBIC YARD	PC PCC PI PKG PL PLMB POC POT PRC PROP, P PT PVC	PROPERTY LINE PLUMBING POINT ON CURVATURE POINT ON TANGENT POINT OF REVERSE CURVATURE PROPOSED POINT (OR POINT OF TANGENT) POLYVINYL CHLORIDE (PIPE)
DB DBL DEM DET DI DIA DIM DMH DW DWG DYCL	DOMESTIC WATER (OR DRY WELL) DRAWING	R&R R&S RCP RD RED RELOC REM RET ROW RR RWL RWY	REMOVE & RESET/REPLACE REMOVE & STACK REINFORCED CONCRETE PIPE ROAD (OR ROOF DRAIN) REDUCER RELOCATE REMOVE RETAIN, RETAINING OR RETENTION RIGHT OF WAY RAILROAD RAIN WATER LEADER ROADWAY
EHH EL ELEC EMH EOP EOR EOW ETC EXIST EXT FA FCC FES FFE	ELECTRIC HANDHOLE ELEVATION ELECTRIC ELECTRIC MANHOLE EDGE OF PAVEMENT EDGE OF ROAD EDGE OF WETLANDS ELECTRIC, TELEPHONE, CABLE EXISTING EXTERIOR FIRE ALARM FLUSH CONCRETE CURB FLARED END SECTION FINISH FLOOR ELEVATION	SD SF SGC SMH SP SPEC STA STC STD STRTL SWEL SW SWLL SYCL	SUBDRAIN SQUARE FEET SLOPED GRANITE CURB SEWER MANHOLE STANDPIPE SPECIFICATION STATION STORMCEPTOR STANDARD STRUCTURAL SOLID WHITE EDGE LINE SIDEWALK SOLID WHITE LANE LINE SOLID YELLOW CENTERLINE
FLNP FPS FS FT	FIRE LANE NO PARKING FEET PER SECOND FIRE SERVICE	TB TC TD TEL, T	TEST BORING TOP OF CURB TRENCH DRAIN TELEPHONE TELEPHONE MANHOLE
GC GEN GG GR GRAN	GENERAL CONTRACTOR GENERAL GAS GATE GUIDE RAIL GRANITE	TOS TOW TP TS&V TYP	TOP OF SLOPE TOP OF WALL TEST PIT TAPPING SLEEVE & VALVE TYPICAL
GV GV&B GW	GATE VALVE GATE VALVE & BOX GROUND WATER	UD UL UP	UNDERDRAIN UNDERWRITERS LABORATORY UTILITY POLE
H HOR HT HW HWY	HORIZONTAL HORIZONTAL HEIGHT HEADWALL HIGHWAY	V VCP VERT VGC	VERTICAL VITRIFIED CLAY PIPE VERTICAL VERTICAL GRANITE CURB
HYD  ID  IN  INCL  INST  INV, I.E.	HYDRANT INSIDE DIAMETER INCHES INCLUDE INSTALLED	WD WG WM WMH WSO	WOOD WATER GATE WATER MAIN WATER MANHOLE WATER SHUTOFF



LAKEVILLE MA 02347

TEL: (508) 923-1010

FAX: (508) 923-6309

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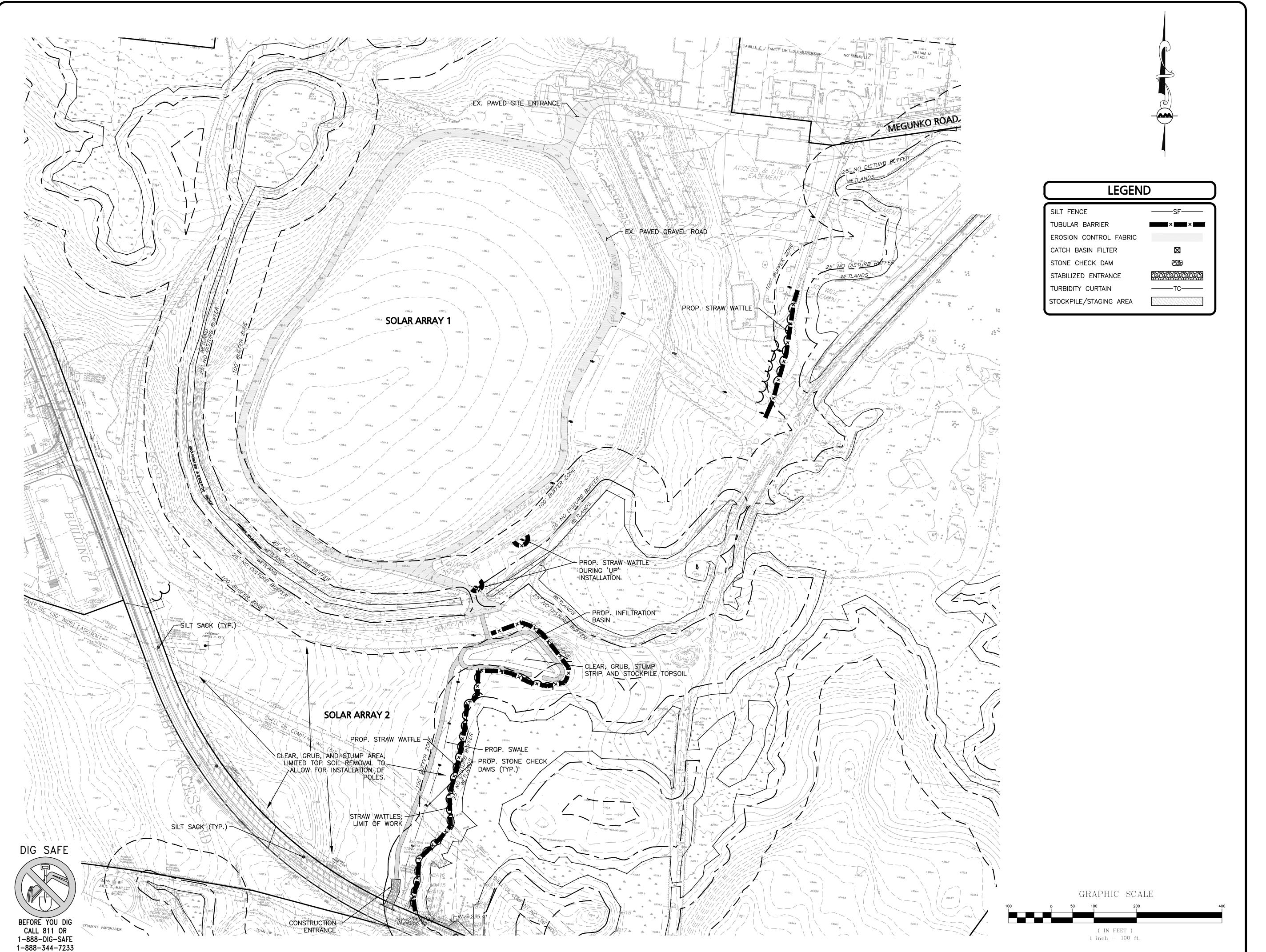
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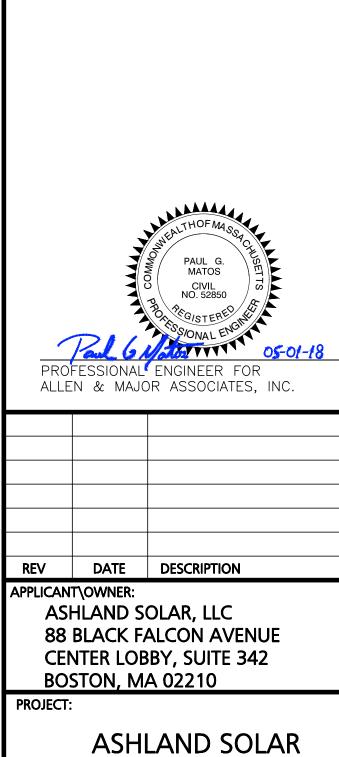
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10 MAIN STREET
LAKEVILLE MA 02347
TEL: (508) 923-1010
FAX: (508) 923-6309

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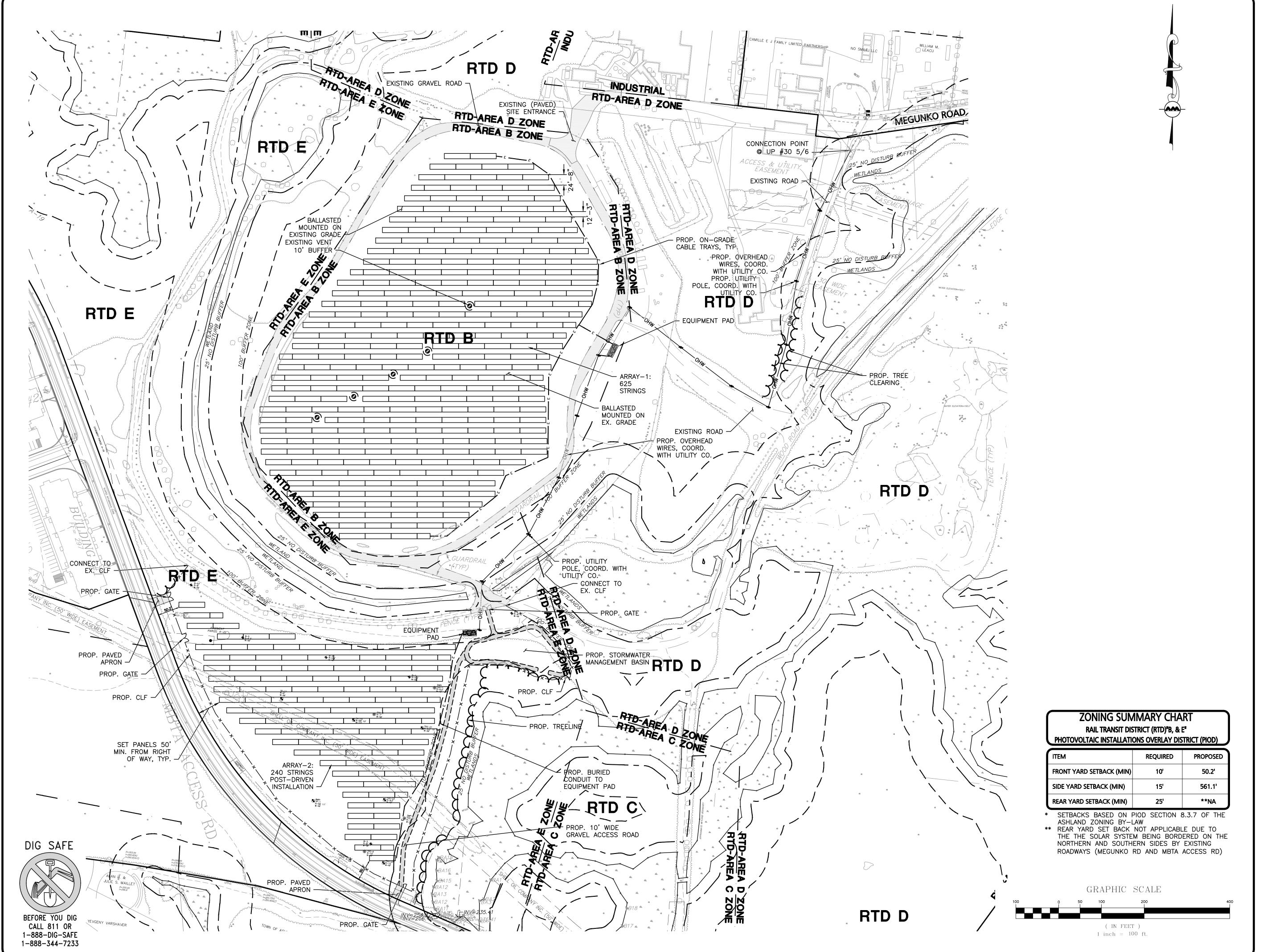
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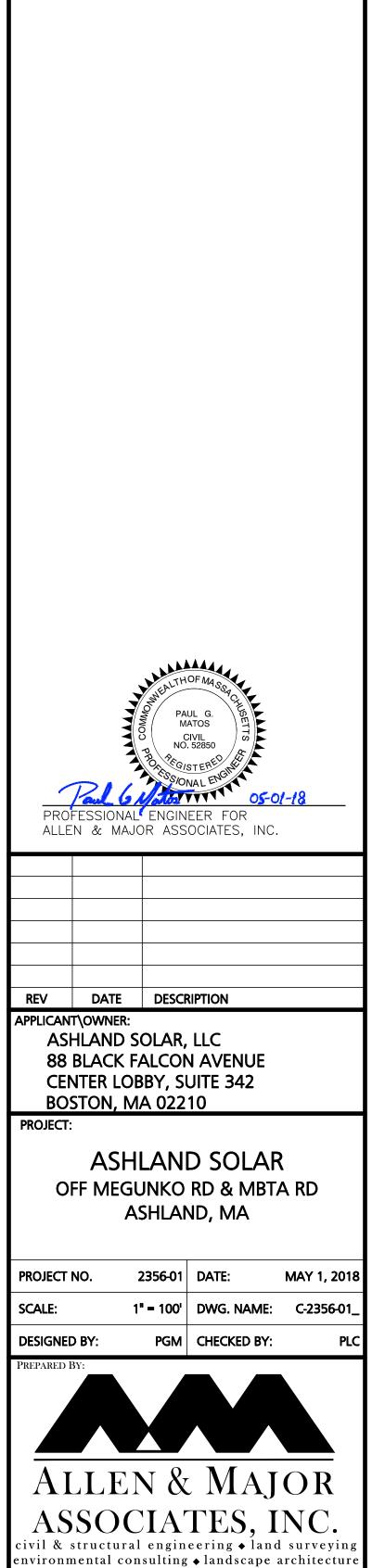
DRAWING TITLE:

EROSION CONTROL PLAN C-101

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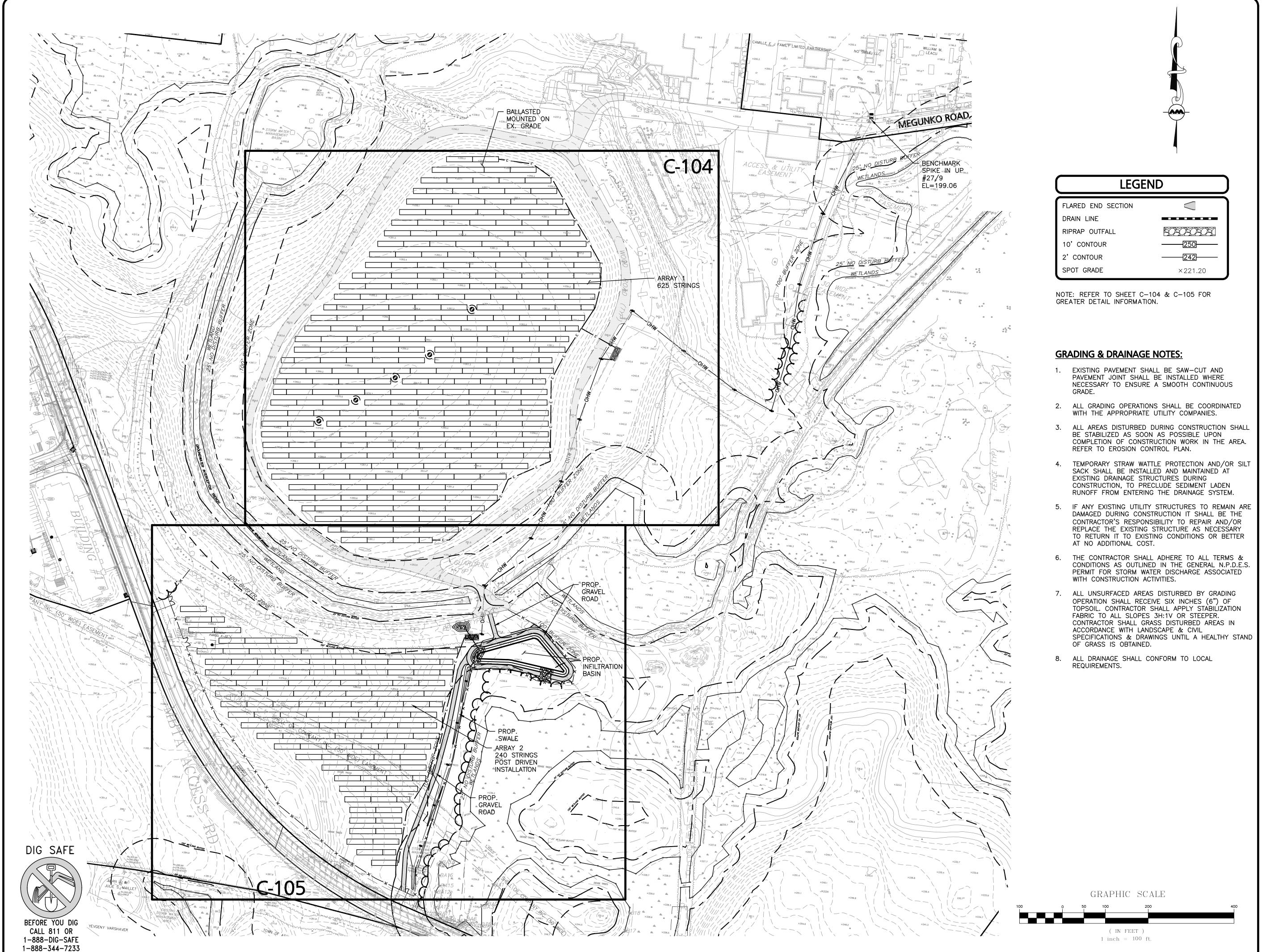
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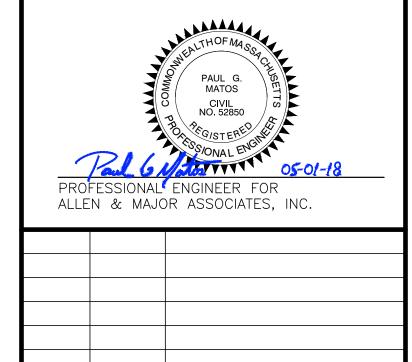
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**DRAWING TITLE:** 

SHEET No. LAYOUT & MATERIALS PLAN | C-102

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REV DATE DESCRIPTION

ASHLAND SOLAR, LLC

88 BLACK FALCON AVENUE

CENTER LOBBY, SUITE 342

APPLICANT\OWNER:

BOSTON, MA 02210 PROJECT: ASHLAND SOLAR OFF MEGUNKO RD & MBTA RD

ASHLAND, MA

2356-01 DATE: PROJECT NO. MAY 1, 2018 1" = 100' DWG. NAME: C-2356-01\_ SCALE:

PGM | CHECKED BY:

DESIGNED BY:



environmental consulting ◆ landscape architecture www.allenmajor.com

10 MAIN STREET LAKEVILLE MA 02347 TEL: (508) 923-1010 FAX: (508) 923-6309

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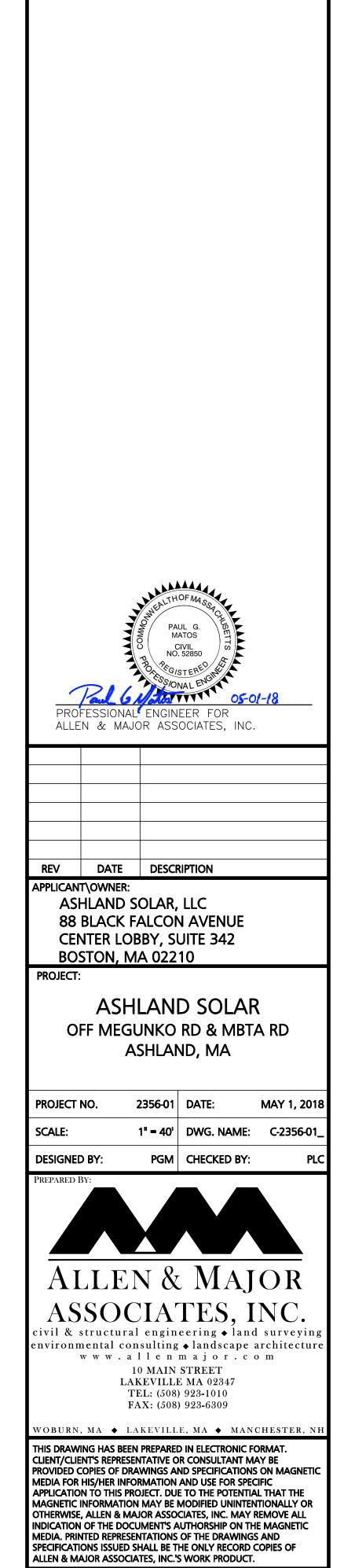
SHEET No.

C-103

**DRAWING TITLE:** 

**GRADING & DRAINAGE OVERVIEW PLAN** 

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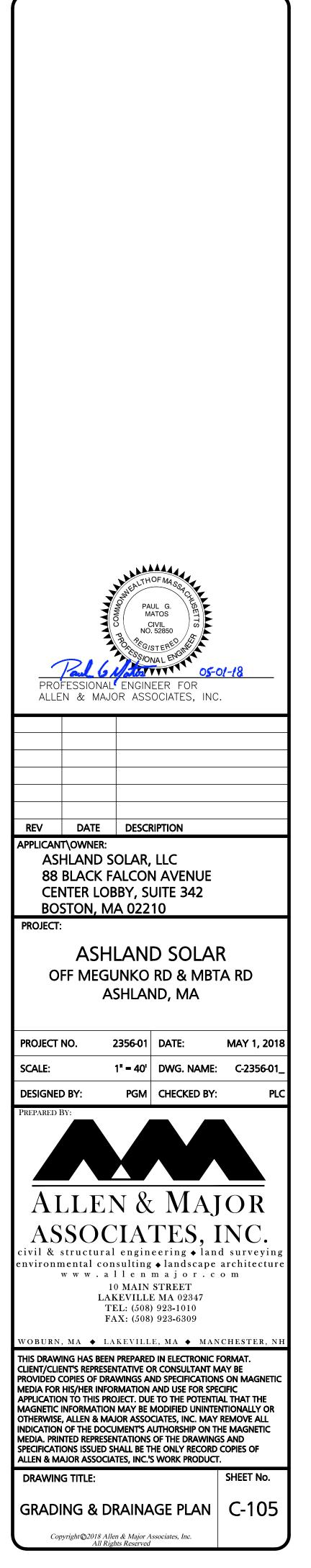
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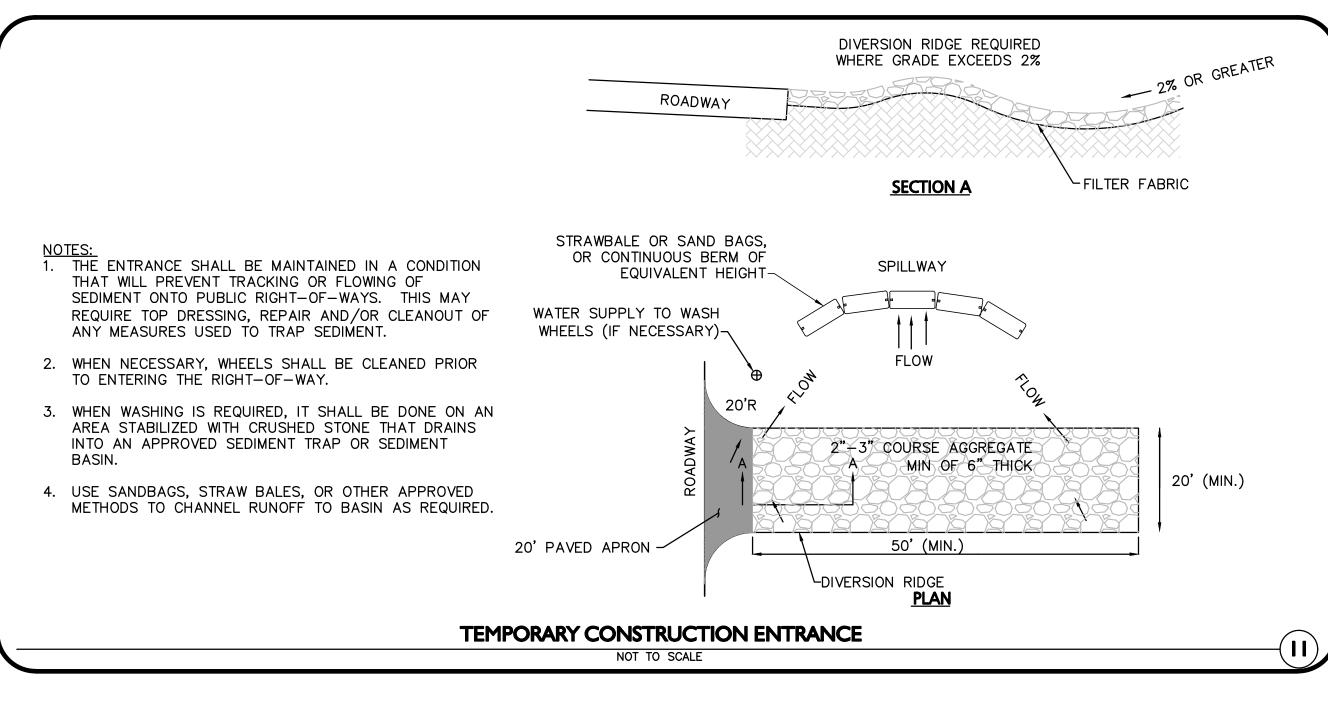
GRADING & DRAINAGE PLAN | C-104

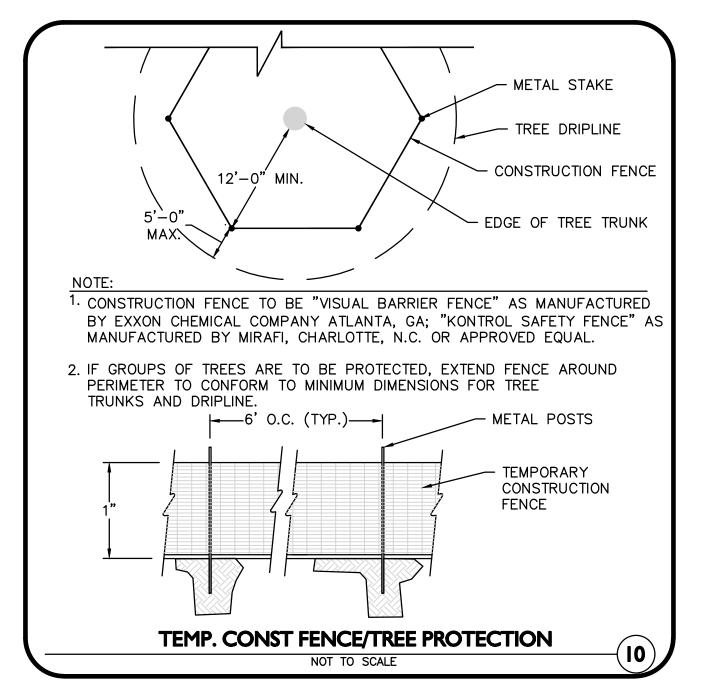
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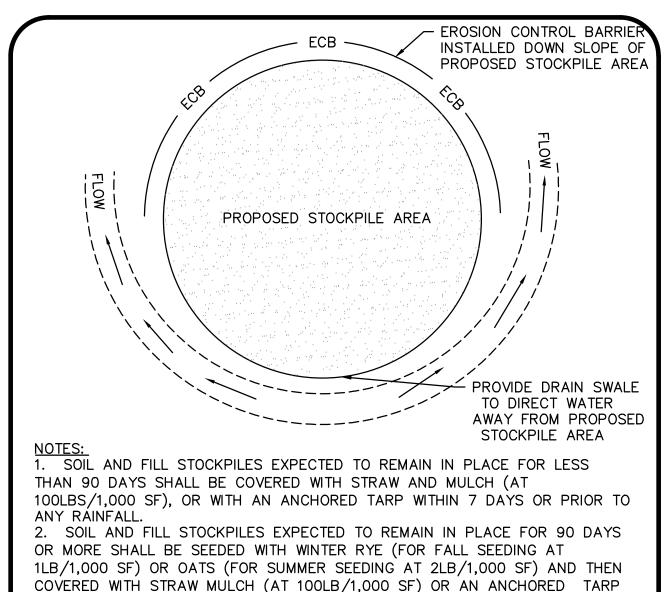
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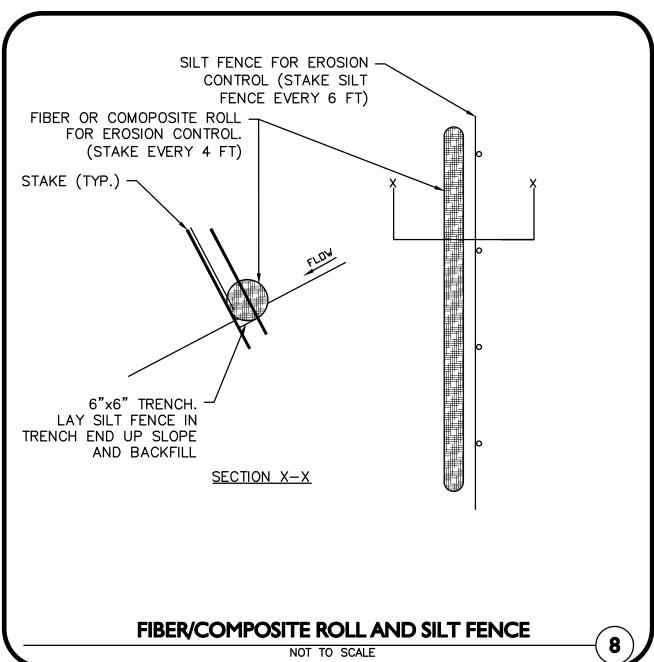


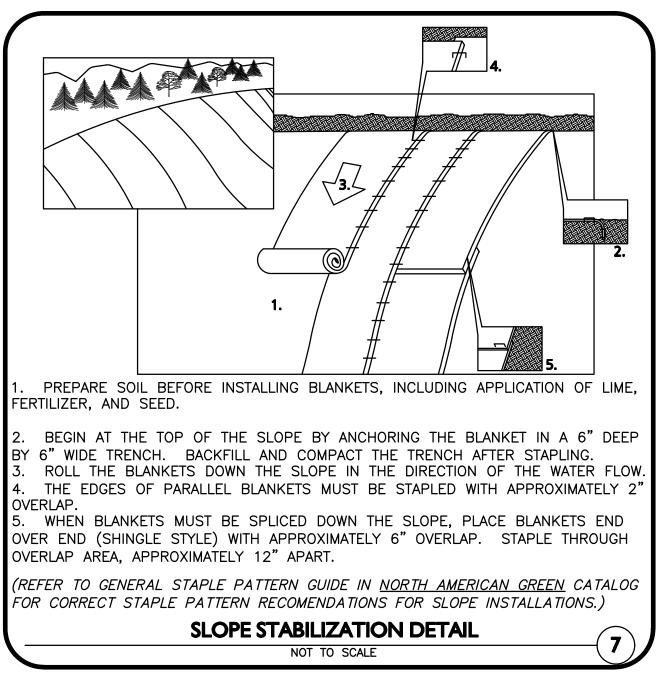


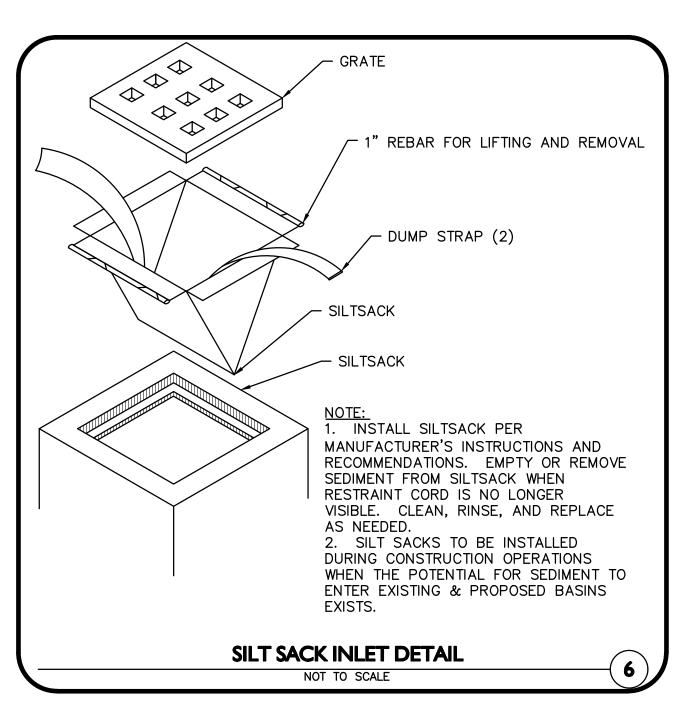
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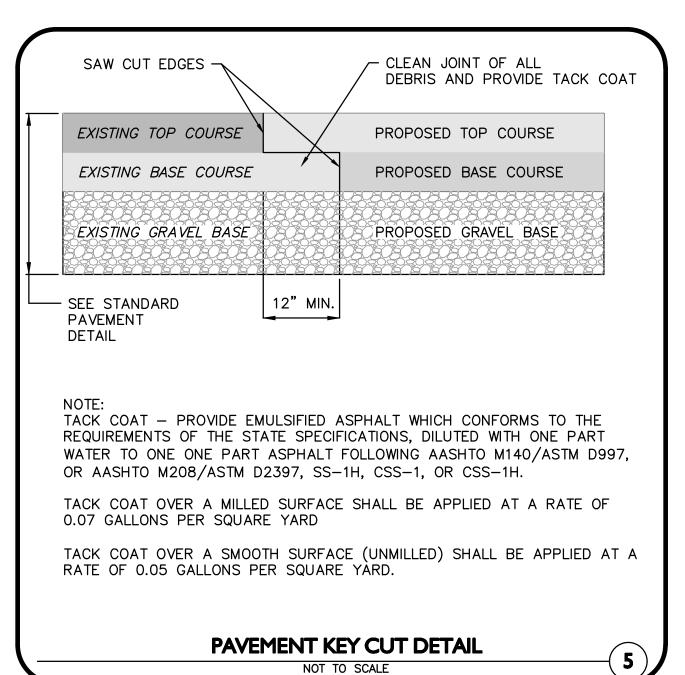
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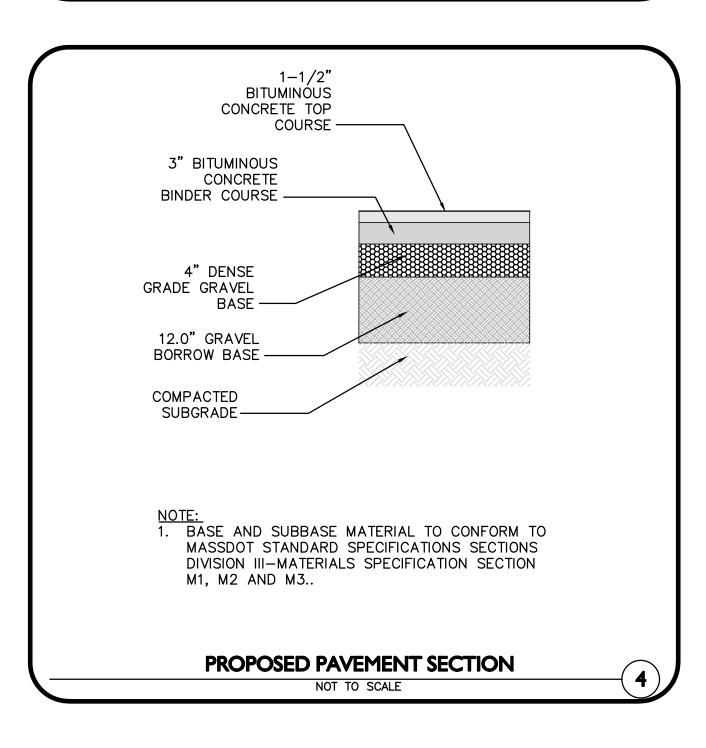
WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

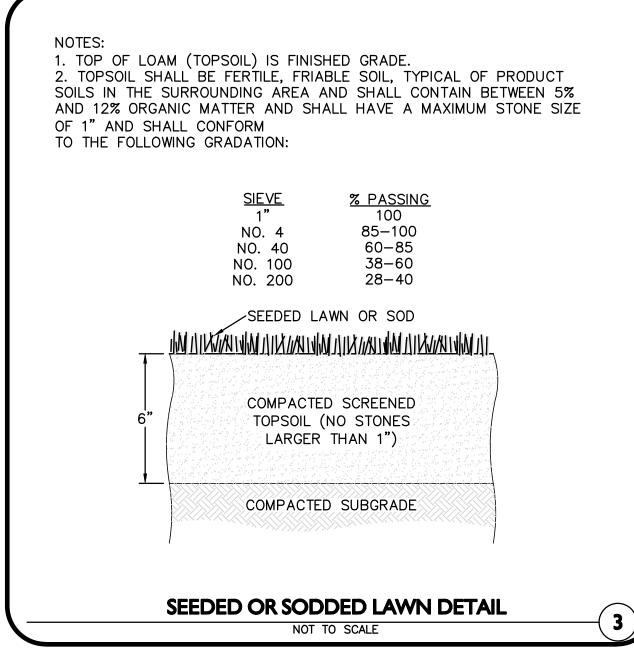


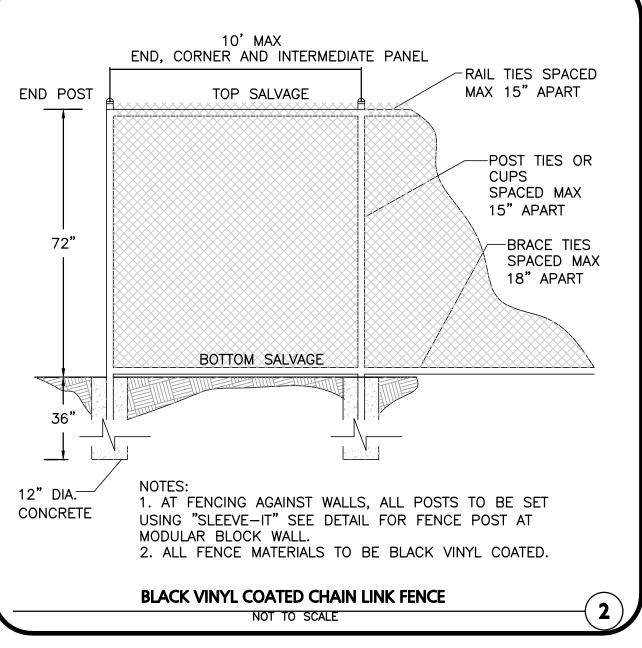


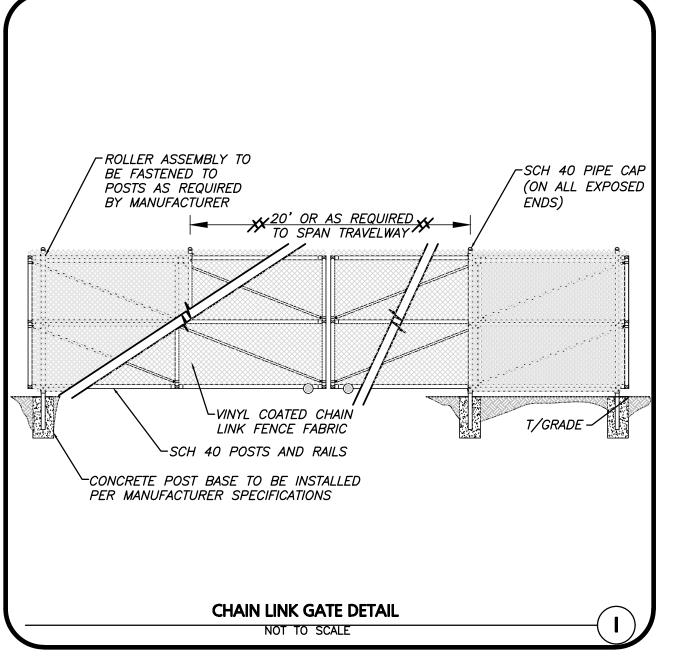


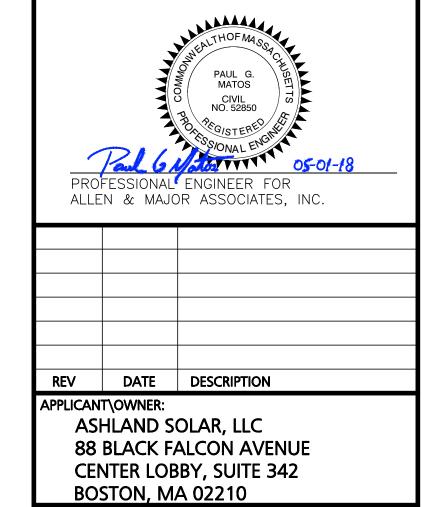












PROJECT: ASHLAND SOLAR OFF MEGUNKO RD & MBTA RD

ASHLAND, MA

2356-01 DATE:

MAY 1, 2018

PROJECT NO.

AS SHOWN DWG. NAME: C-2356-01 **DESIGNED BY:** PGM | CHECKED BY:



environmental consulting • landscape architecture www.allenmajor.com 10 MAIN STREET LAKEVILLE MA 02347

TEL: (508) 923-1010 FAX: (508) 923-6309

WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, N

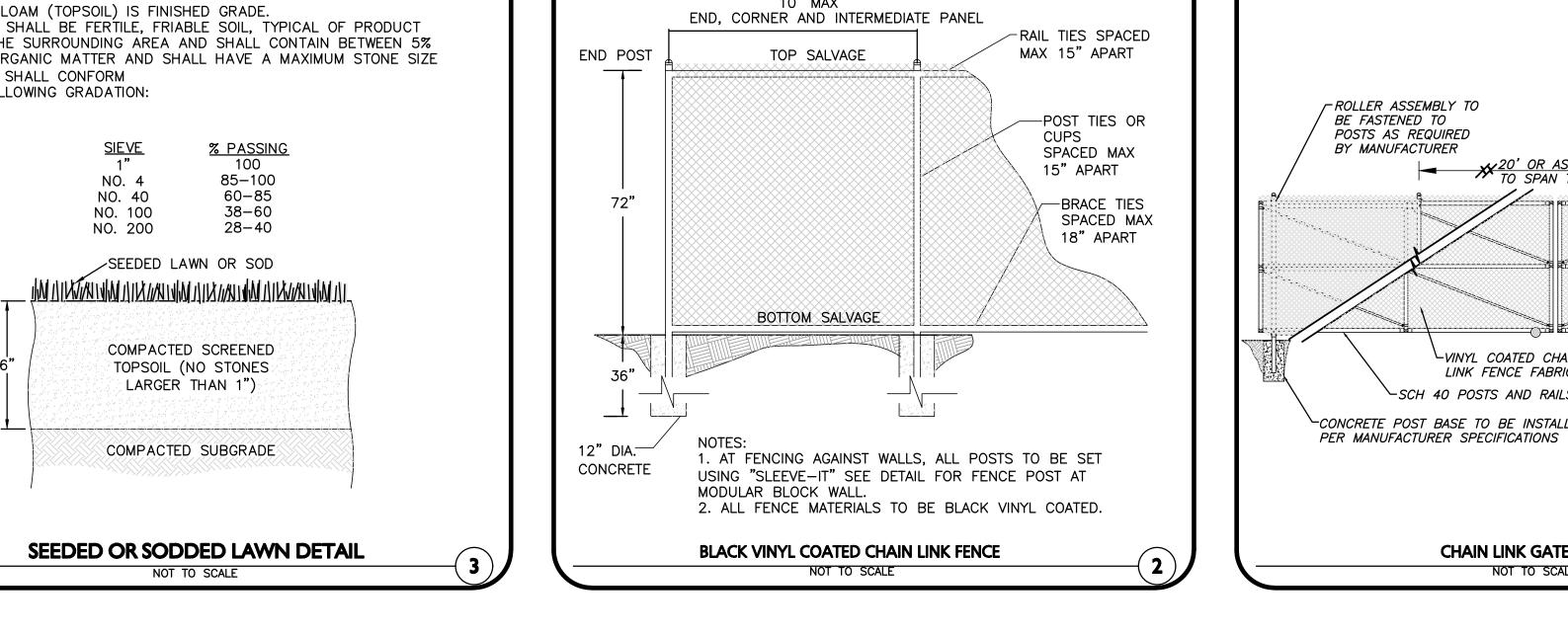
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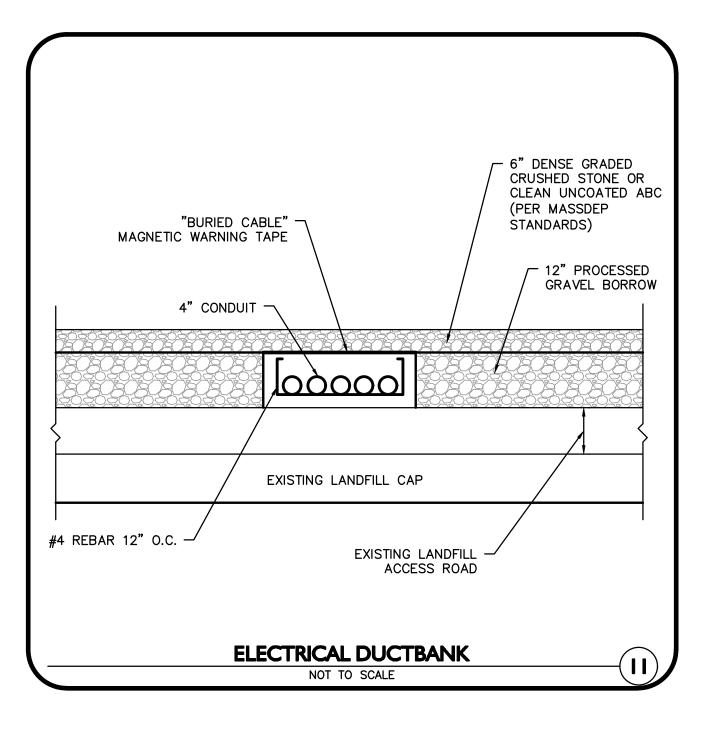
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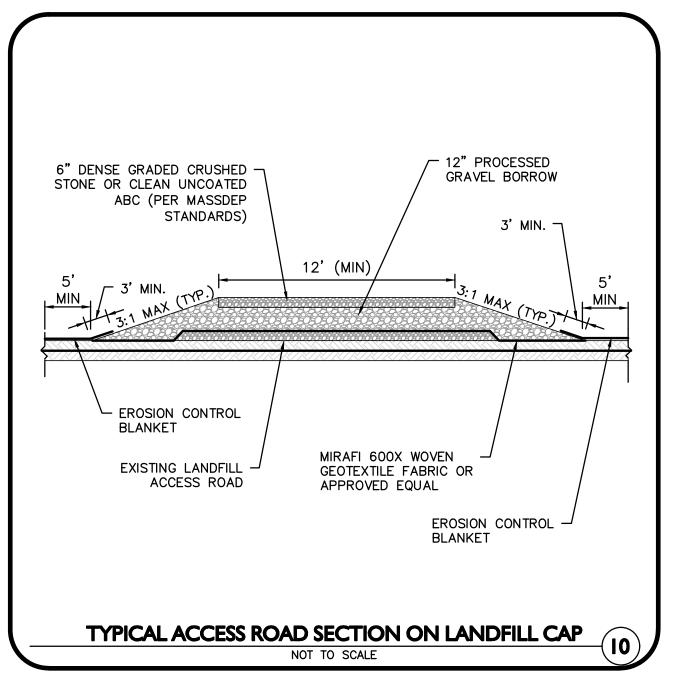
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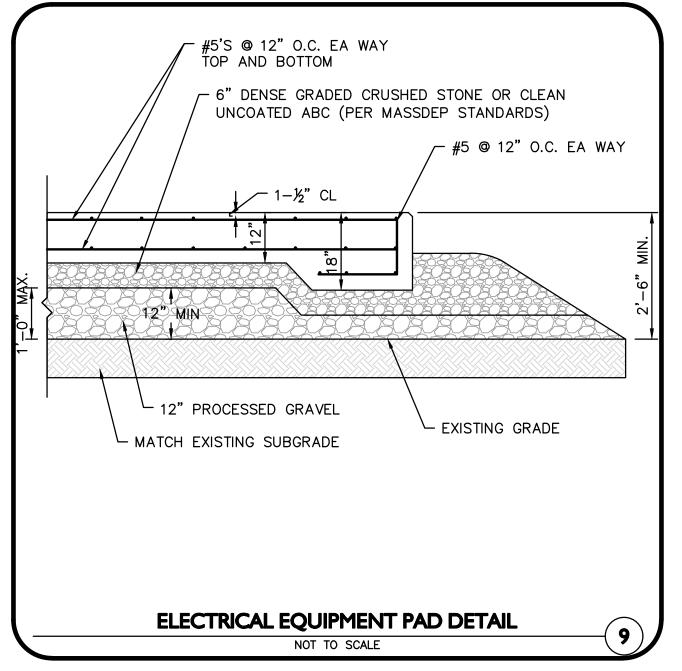
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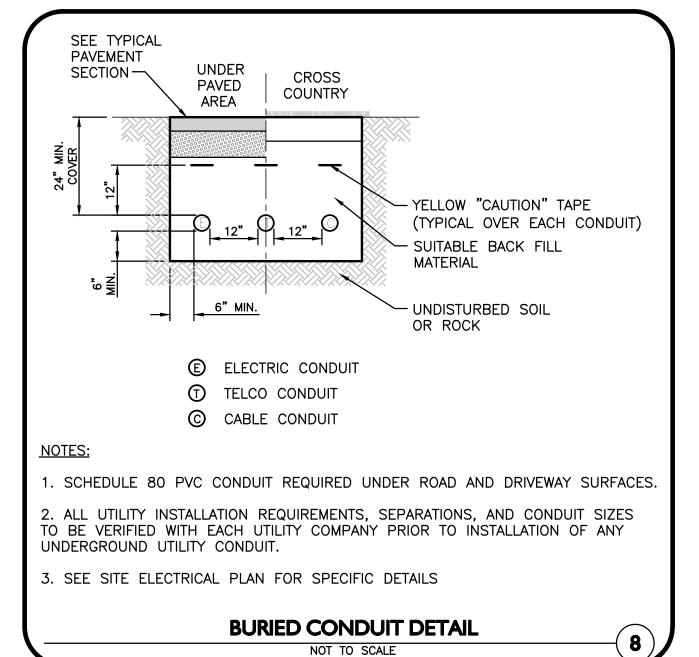
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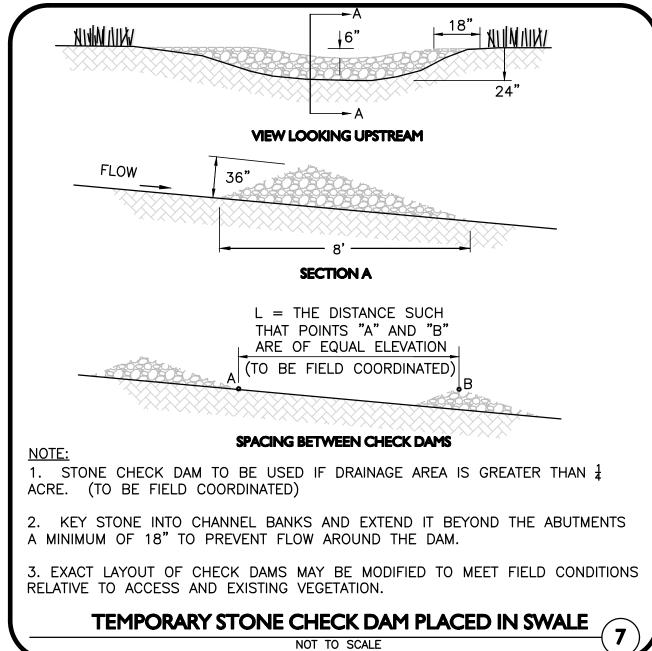


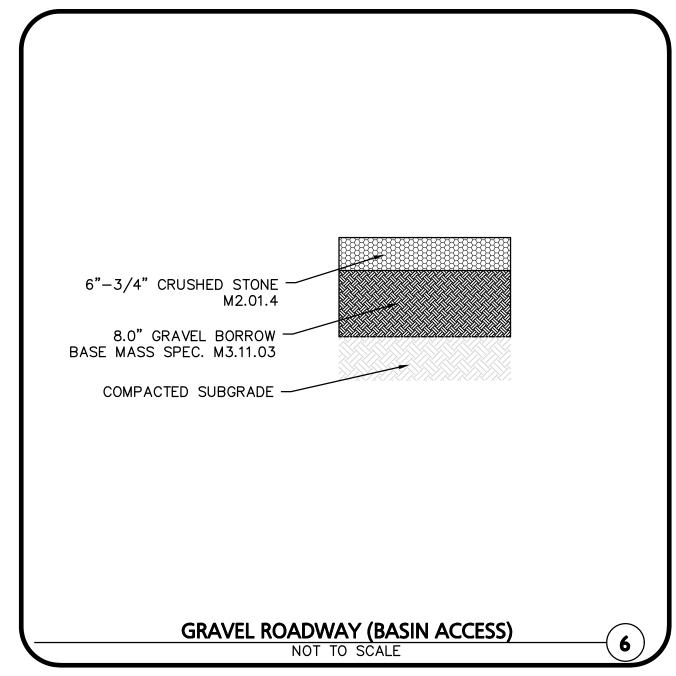


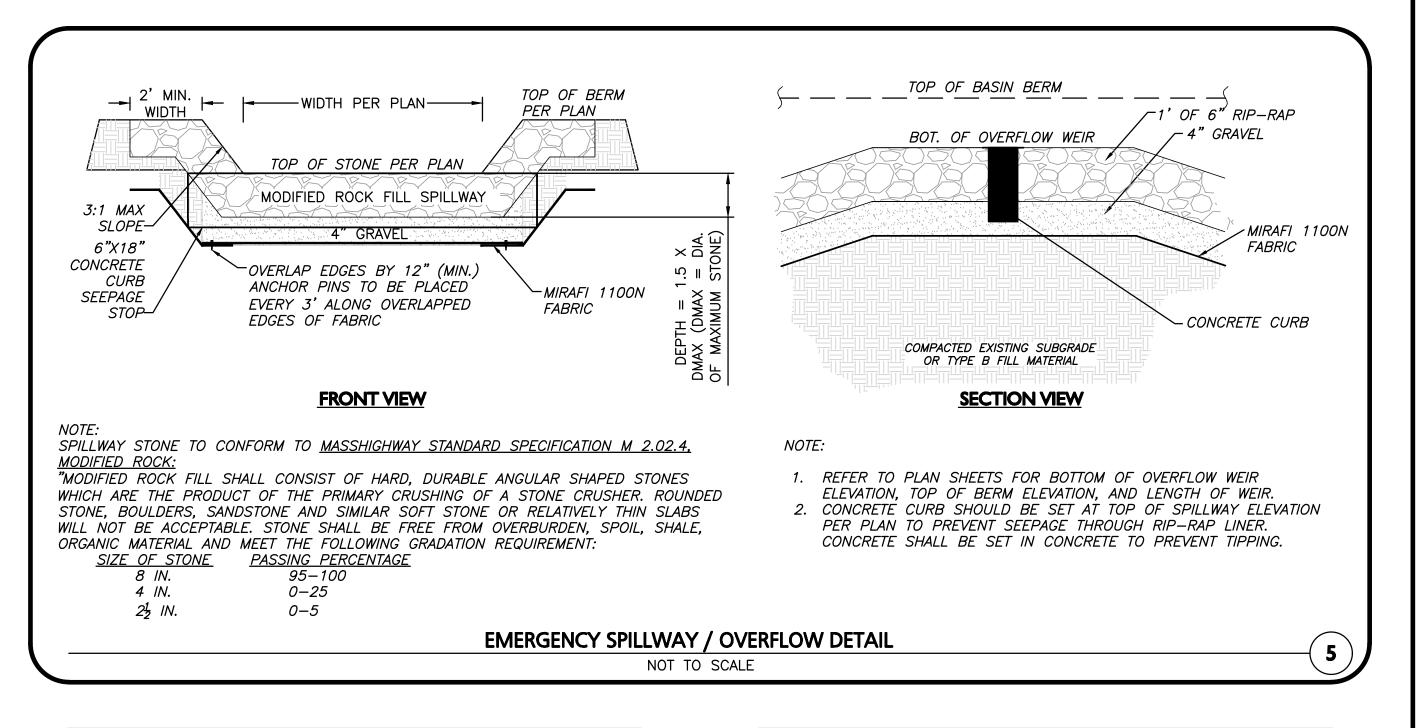


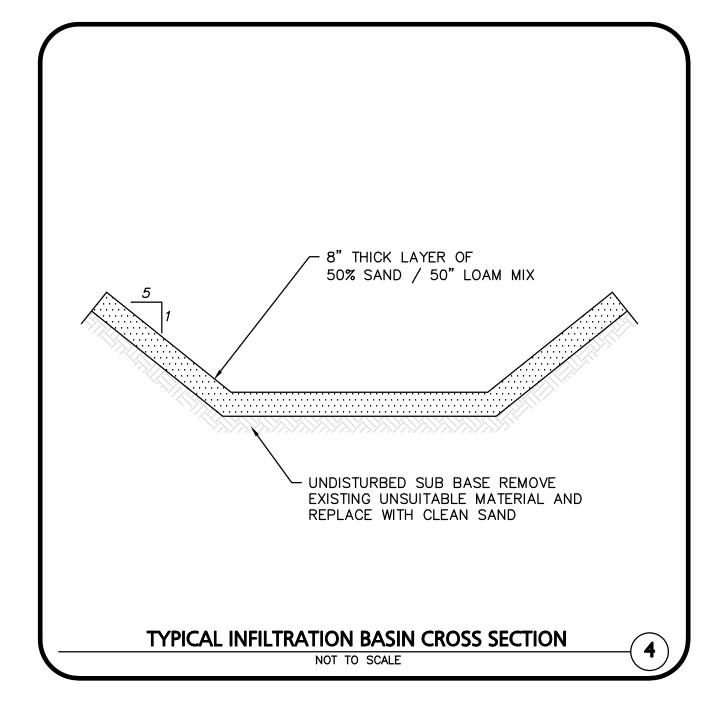


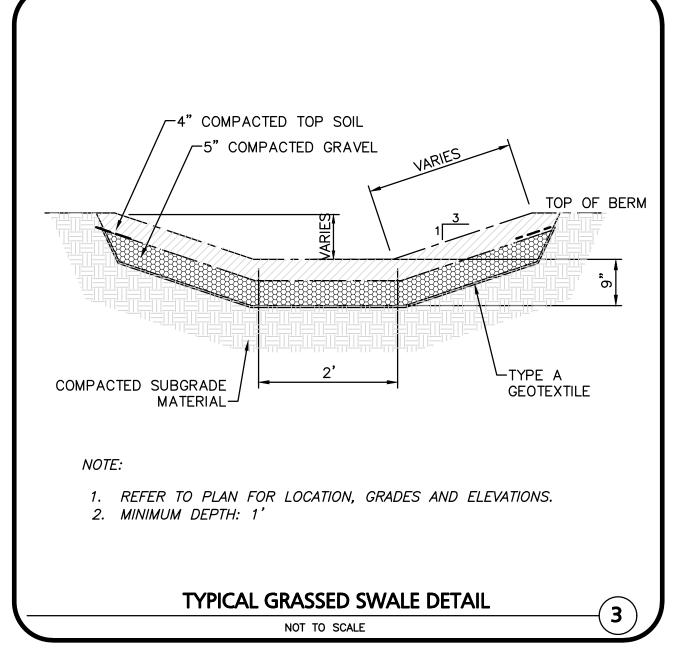


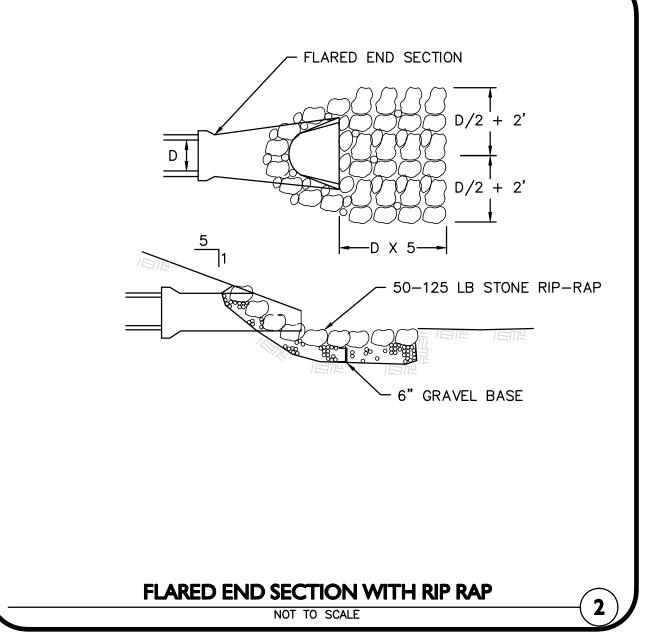


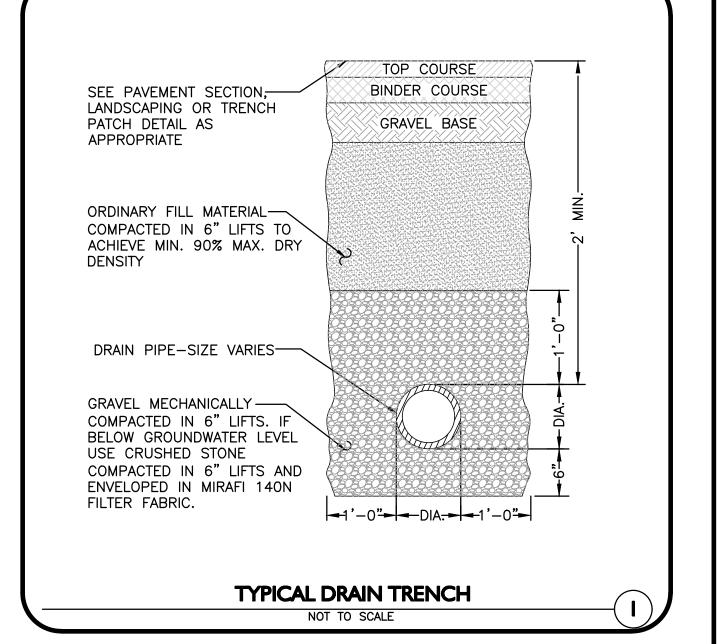


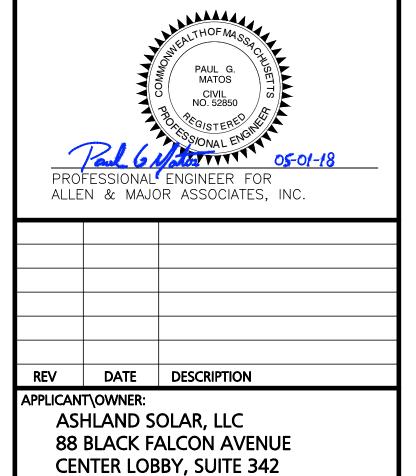












PROJECT: ASHLAND SOLAR OFF MEGUNKO RD & MBTA RD ASHLAND, MA

BOSTON, MA 02210

2356-01 DATE: PROJECT NO. MAY 1, 2018 AS SHOWN DWG. NAME: C-2356-01 **DESIGNED BY:** PGM | CHECKED BY:



civil & structural engineering ♦ ĺand surveying environmental consulting ◆ landscape architecture www.allenmajor.com 10 MAIN STREET

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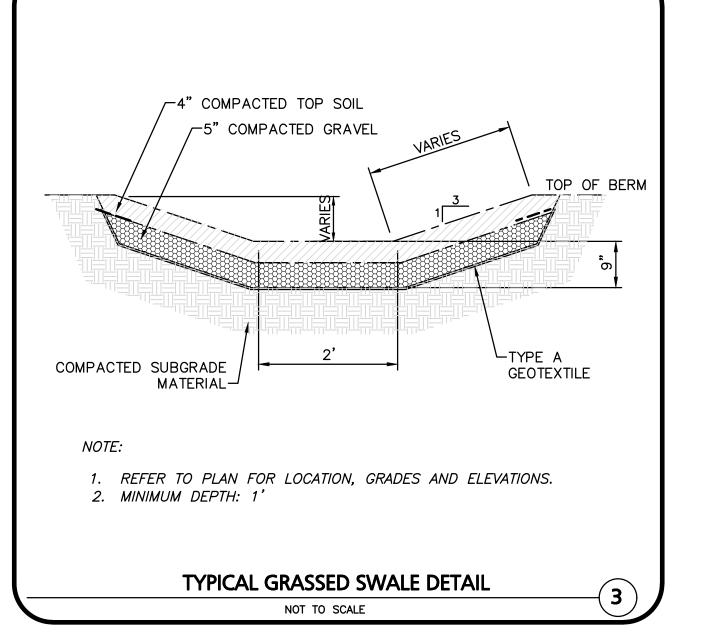
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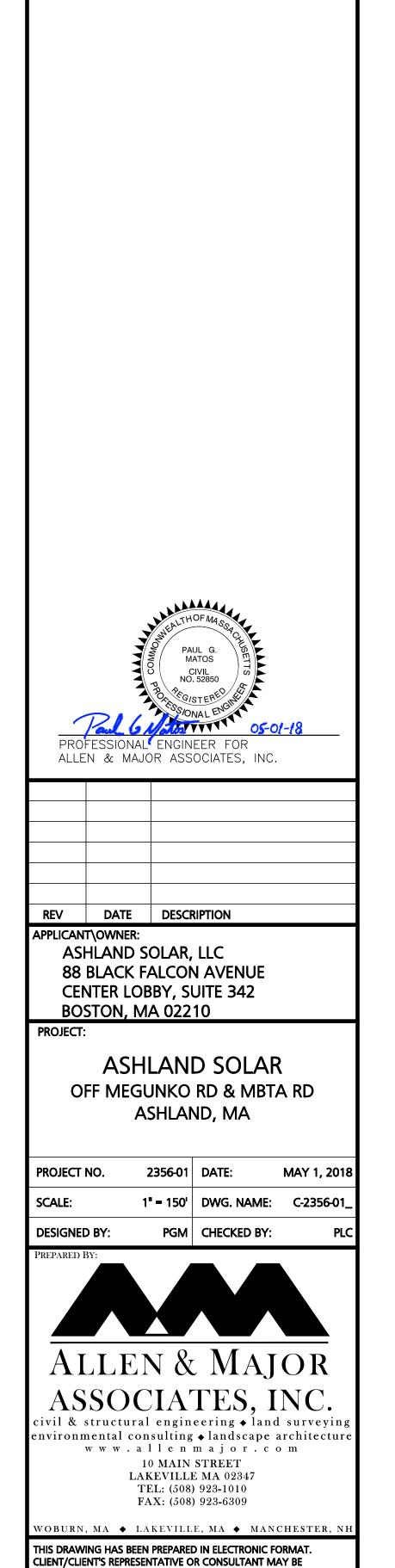
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SHEET No.

C-502





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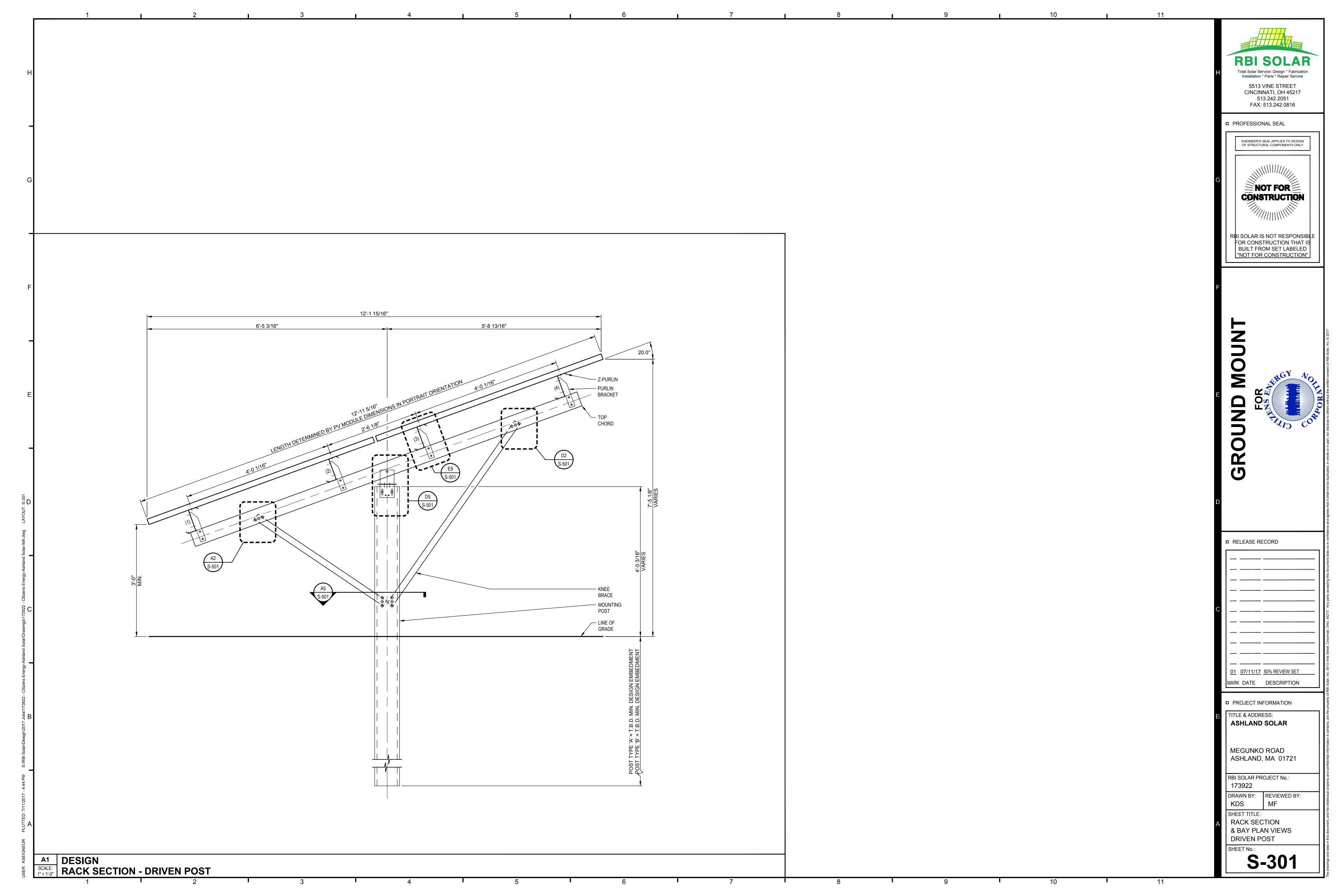
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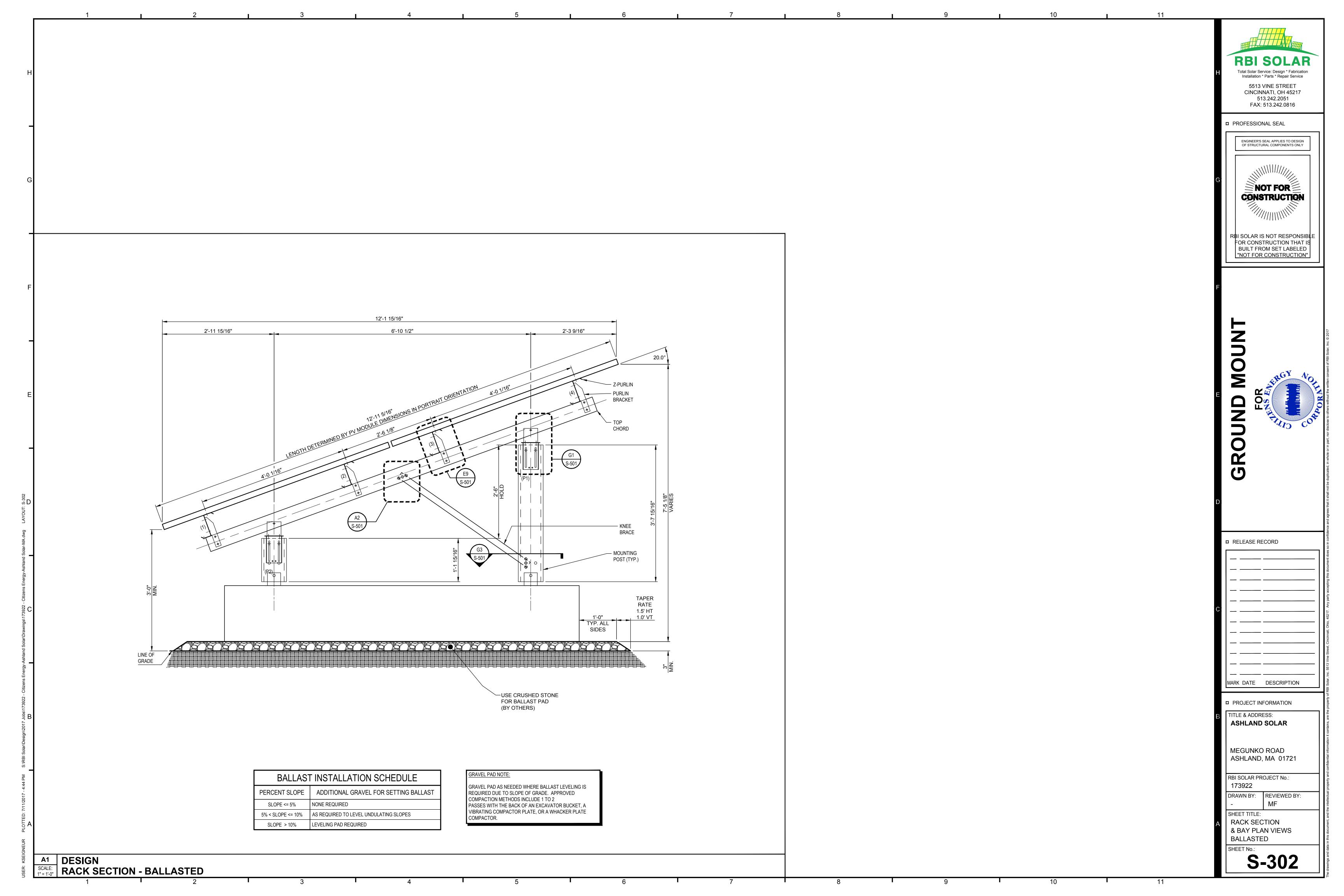
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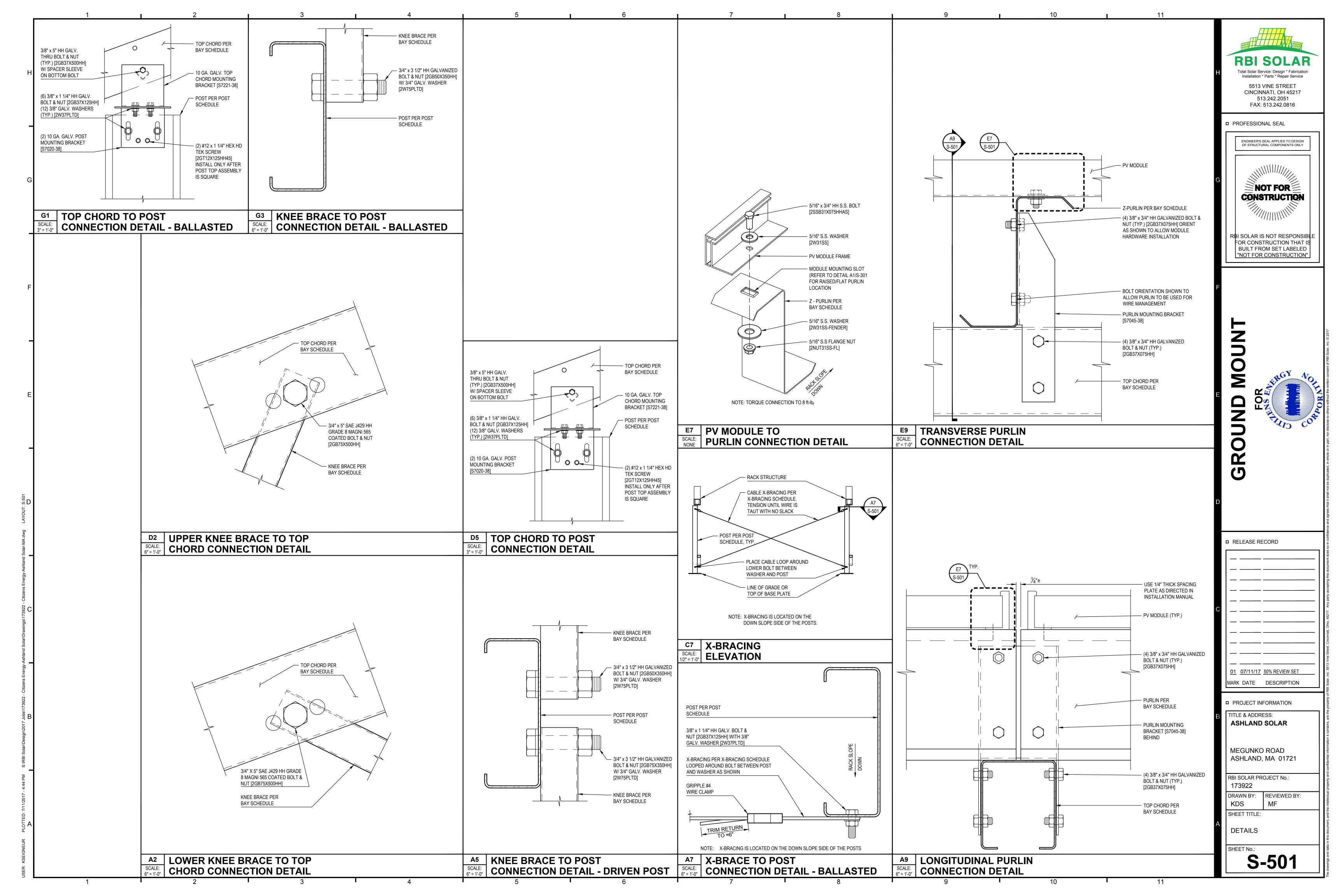
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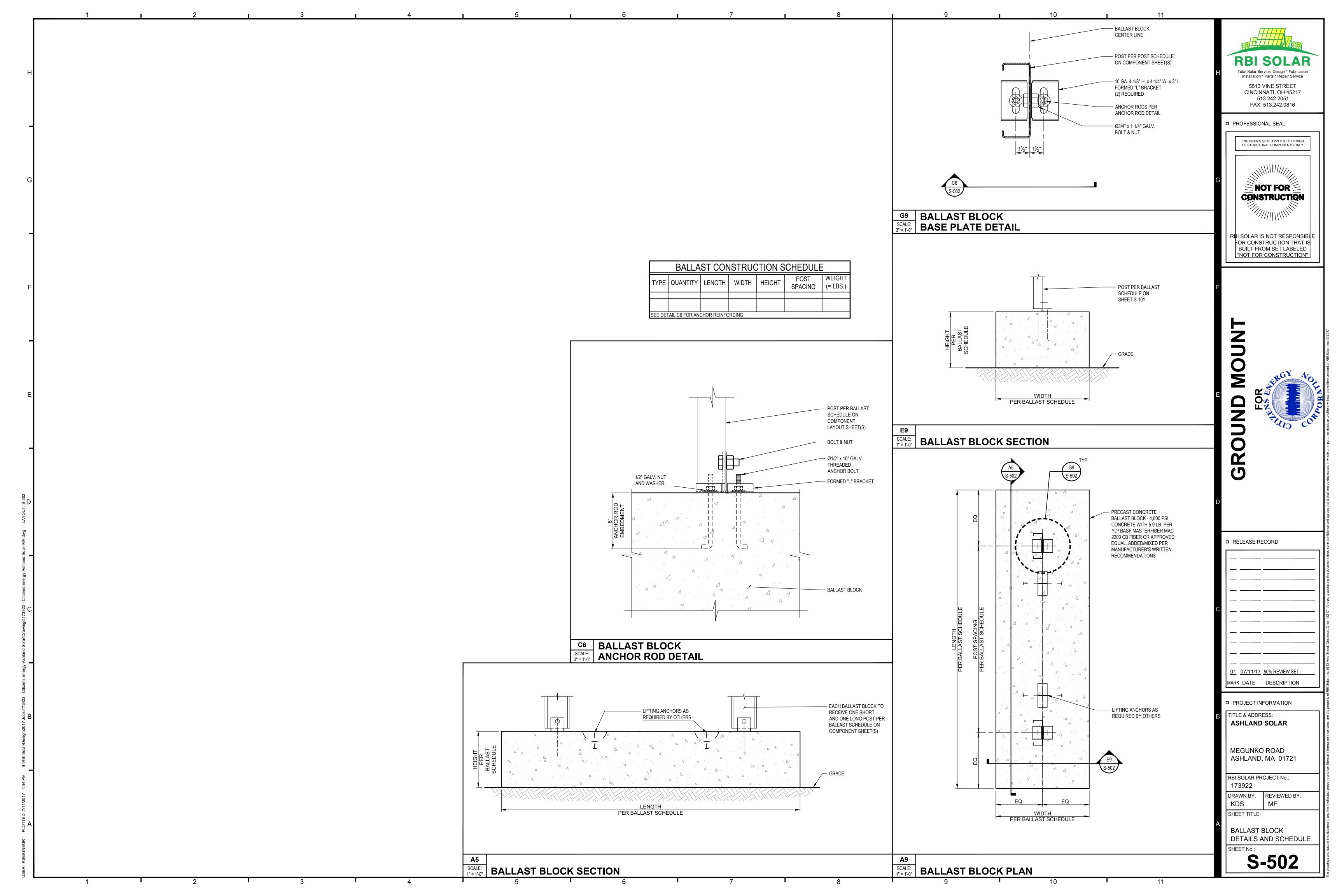
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LOAD - BREAK SWITCH FUSE, SIZE AS INDICATED

TRANSFORMER, SIZE AS INDICATED (DELTA:GRD WYE TYPICAL)

-√- FUSE

\_\_\_\_ CIRCUIT BREAKER

CURRENT TRANSFORMER

→ POTENTIAL TRANSFORMER

⊶ ←|| LIGHTNING ARRESTER

GROUP AIR (GOAB) SWITCH

M REVENUE METER (BY UTILITY)

200A 200A LOAD BREAK ELBOWS

= ~

PV INVERTER

OVERHEAD / PRIMARY

--- UNDERGROUND / PRIMARY

---- ON GRADE / PRIMARY

---- EQUIPMENT

PROJECT LOCATION 42°15'29.75"N 71°28'32.99"W

PV SYSTEM SUMMARY

15,570 PANELS

375W

375W @ STC EACH

5,838.75 KWDC TOTAL

18 MODULES PER STRING

865 STRINGS

4,450kW AC TOTAL

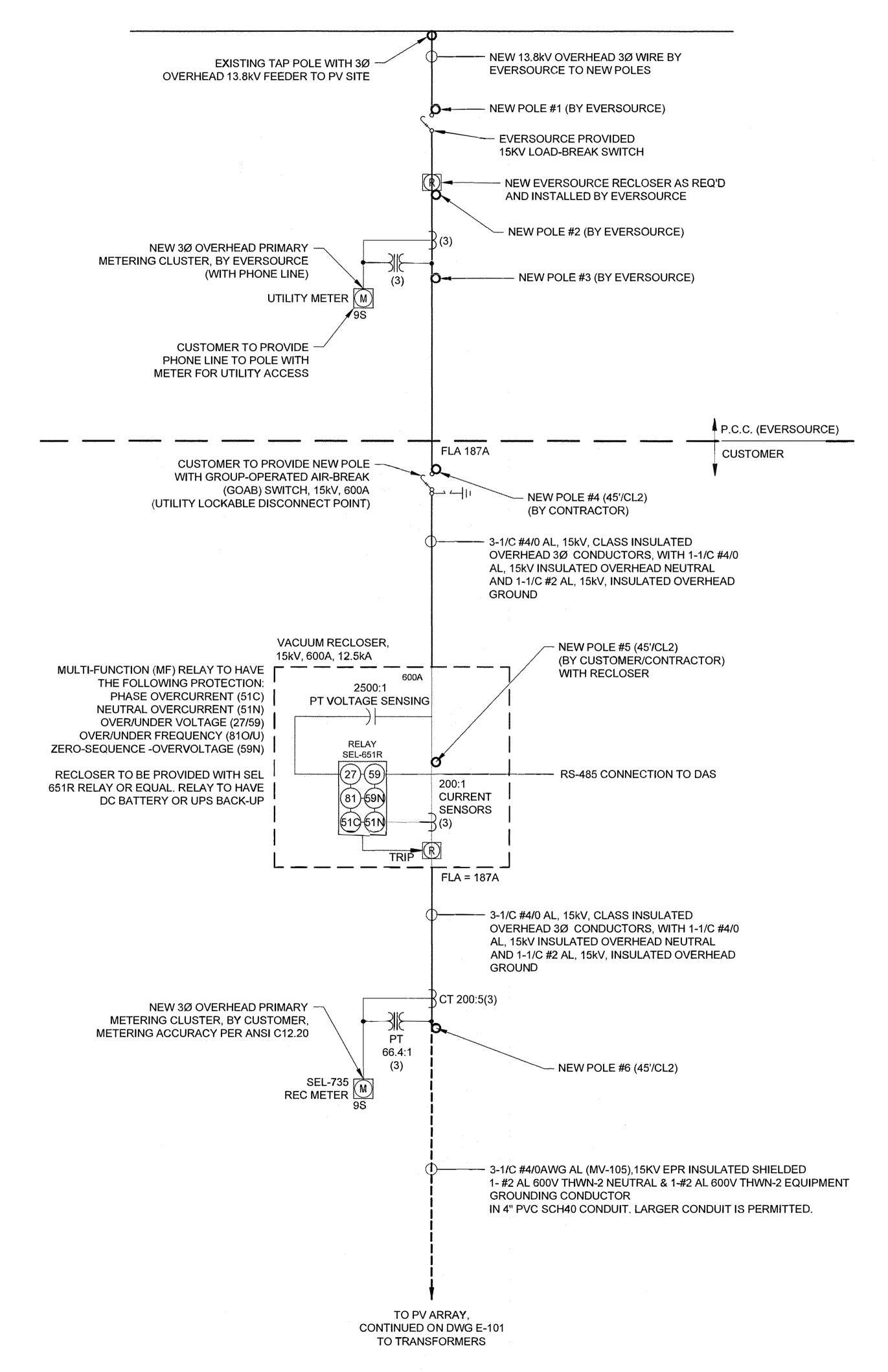
(2) 1,335kW + (1) 1780 kW

POWER ELECTRONICS

INVERTERS & (3) PAD

MOUNTED TRANSFORMERS

DEVICE	DESCRIPTION
27T	TIME UNDER VOLTAGE RELAY
271	INSTANTANEOUS UNDER VOLTAGE RELAY
32F	FORWARD OVER POWER RELAY
32R	REVERSE POWER RELAY
46	NEGATIVE PHASE SEQUENCE OVERCURRENT RELAY
47	REVERSE PHASE VOLTAGE RELAY
50/51	INSTANTANEOUS/TIME OVERCURRENT RELAY
51N	GROUND OVERCURRENT RELAY
591	INSTANTANEOUS OVERVOLTAGE RELAY
59T	TIME OVERVOLTAGE RELAY
60	VOLTAGE BALANCE RELAY
81/0	OVER FREQUENCY RELAY
81/U	UNDER FREQUENCY RELAY





PROPOSED SEL-651R **RELAY SETTINGS** DEVICE PICKUP TIME DELAY 27-1 50% 6.5 CYC 88% 117 CYC 59-1 57 CYC 59-2 6.5 CYC 81U-1 57HZ 6.5 CYC 81U-2 | 58.5HZ 100 CYC 810-1 60.5HZ 6.5 CYC 51C 245A 2.0 TD U4 51N 50A 2.0 TD U3 140V 80 CYC 59N (SETTINGS INCLUDE 3 CYCLE ESTIMATED CONTACTOR OPENING TIME)

TIME DELAY

0.16 SEC

2.0 SEC

1.0 SEC

0.16 SEC

0.16 SEC

0.16 SEC

0.16 SEC

**INVERTER SETTINGS** 

PICKUP

V<50%

V<88%

V>110%

V>=120%

F<57HZ

F<59.3HZ

F>60.5HZ

SETTINGS TAKEN FROM IEEE1547.

81U-2 IS TO BE ADJUSTABLE AT THE

REQUIREMENT OF EVERSOURCE TO

F<{59.8-57.90} WITH A CLEARING TIME OF

DEVICE

27-1

27-2

59-1

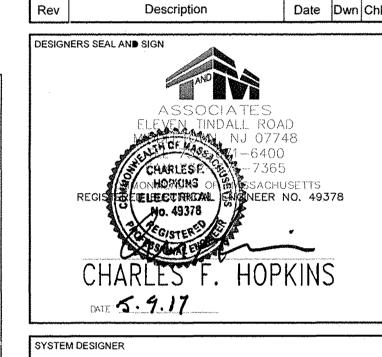
59-2

81U-1

81U-2

810-1

0.16 - 300 SEC



05/01/17 EP S

PRELIMINARY

SYSTEM OWNER

CITIZENS ENERGY

PROJECT NAME AND ADDRESS

ASHLAND SOLAR LLC
MEGUNKO RD,

ASHLAND, MA 01721

PRELIMINARY
PV AC ONE LINE - 1

ENGINEER:

EDGAR PUESAN

PROJECT NO.

CREATION DATE

05/01/2017

SCALE

AS NOTED

