PHOTOVOLTIAC PERMIT APPLICATION INFORMATION

(CUT SHEETS FOR *ALL* PRODUCTS TO BE PROVIDED ALSO)

Worksheet for PV System Plan Check

Supplied Diagrams

_____ Is a basic site diagram supplied with the permit package?
Location of major equipment identified on plan.

_____ Is a one-line diagram supplied with the permit package?

_____ Array configuration shown
_____ Array wiring identified
_____ Combiner/junction box identified
_____ Conduit from Array to PV Power Source Disconnect identified
_____ Equipment grounding specified
_____ Disconnect specified
_____ Conduit from disconnect to inverter identified
_____ Inverter specified
_____ Conduit from inverter to disconnect to panel identified
_____ System grounding specified
_____ Point of connection attachment method identified

Inverter Information

_____ Are cut sheets provided for Inverter?

_____ Inverter model number

_____ Is inverter listed for utility interactivity (see CEC list of Eligible Inverters)

_____ Maximum continuous output power at 40°C

_____ Input voltage range of inverter

PV Module Information

_____ Are cut sheets provided for PV modules?

_____ Are the modules listed? (see CEC list of Eligible PV Modules)

_____ Open-circuit voltage (Voc) from listing label

_____ Maximum permissible system voltage from listing label

_____ Short-circuit current (Isc) from listing label

_____ Maximum series fuse rating from listing label

_____ Maximum power at Standard Test Conditions (Pmax on Label)

_____ Voltage at Pmax from listing label

_____ Current at Pmax from listing label

Array Information

_____ Number of modules in series

_____ Number of parallel source circuits

_____ Total number of modules

_____ Operating voltage
(number of modules in series x module voltage at Pmax)

_____ Operating current
(number of parallel source circuits x module current at Pmax)

_____ Maximum system voltage (690.7)

*assuming minimum expected temperature of 15F- 42.8V x 1.13 x 10 = 484 Volts

_____* Short-circuit current (690.8)

*4.7 Amps x 1.25 x 2 = 11.75 Amps

Wiring and Overcurrent Protection

_____ Wire type is 90°C wet rated

_____ Conductor ampacities are sufficient

_____ Maximum PV source circuit current

_____ Minimum PV source circuit ampacity

_____ Minimum PV output circuit ampacity

_____ Minimum inverter output circuit ampacity

_____ Source Circuit overcurrent protection is sufficient

_____ If inverter is not listed for no backfeed current, does each source circuit have overcurrent protection in compliance with the listed maximum series fuse?

_____ If inverter is listed for no backfeed current, overcurrent protectio is not necessary if only two parallel strings are connected to the inverter.

_____ Overcurrent protection on Inverter Output Circuit is sufficient

_____ Point of connection meets provisions of NEC 690.64.

_____ Point of connection panel busbar rating

Roof Information (for rooftop systems)

_____ Are the conductors from the PV Array run through the house?
If yes, what method will be used to address the protection issues?

_____ Weight of array for rooftop systems
(pounds per square foot--include mounting hardware)
*module is 2.67 lbs/sq. ft. and hardware is less than 0.3 lbs/sq. ft.

_____ Age of building (roof structure)
(If building is under 30 years old and array weight is less than 6 lb/sq.ft., then engineering calcs unnecessary for roof loading)

_____ If roof structure is over 30 years old, describe structural elements:
Rafters:
_____ Size of rafters (e.g. 2"x6")
_____ Span of rafters (e.g. 14')
_____ Spacing of rafters (e.g. 24")

_____ Identify roofing type (e.g. comp shingle, masonry tile, shake, etc...)

_____ Is the detail of PV panel mounting attachment to the roof-framing members provided?

_____ Identify method of sealing roof penetrations
(e.g. flashing, sealed with urethane caulk, etc...)

Ground Mounting Structure (for ground-mounted structures)

_____ Weight of array
(pounds per square foot--include mounting hardware)

_____ Are the details of the array supports, framing members, and foundation posts and footings provided

_____ Is the information on mounting structure(s) construction provided?
(If the mounting structure is unfamiliar to the local jurisdiction and is more than six feet above grade, it may require engineering calculations.)

_____ Is the detail on module attachment method to mounting structure provided?

Worksheet for PV System Field Inspection

One-line diagram comparison

_____ Is a one-line diagram available at the site?

_____ PV module model number matches plans and cut sheets

_____ PV modules are properly grounded with lugs on each module or equivalent grounding method

_____ PV array wiring is consistent with plans (# of modules)

_____ Check that cable and conduit is properly supported

*Contractor fixed three places with insufficient support

_____ Where plug connectors are used for module wiring, inspect a sample to make sure that connectors are fully engaged

_____ Inverter model number matches plans and cut sheets

Structural Attachment of Array

_____ Confirm that footings and support structure match the supplied detail.

_____ Confirm that module attachment matches the supplied detail.

PV System Signs

_____ Do signs have sufficient durability to withstand the environment?

_____ Sign Identifying Photovoltaic Power Source (at DC disconnect)

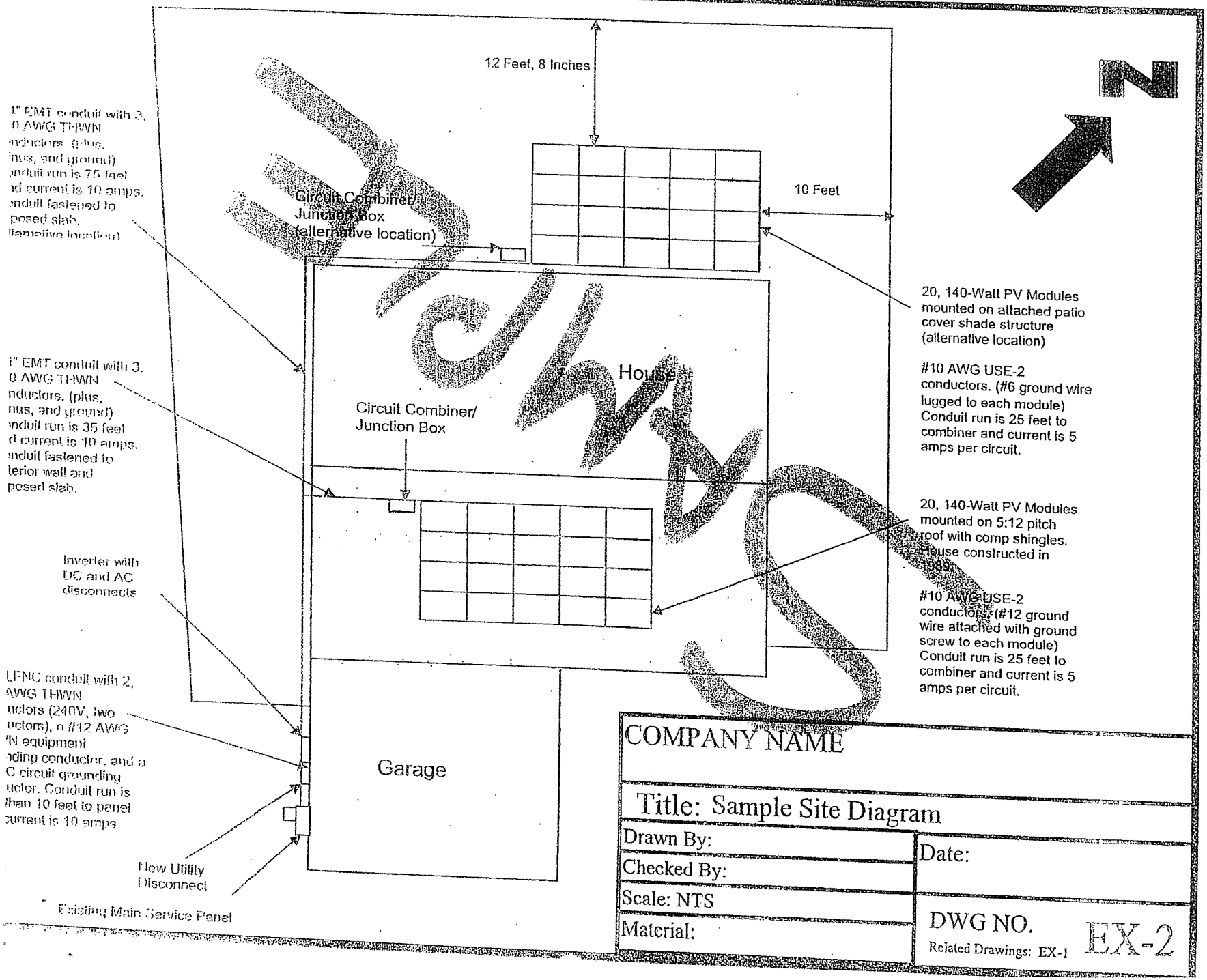
- _____ Operating current (provided in initial plan review)
- _____ Operating voltage (provided in initial plan review)
- _____ Maximum system voltage (690.7)
- _____ Short-circuit current (690.8)

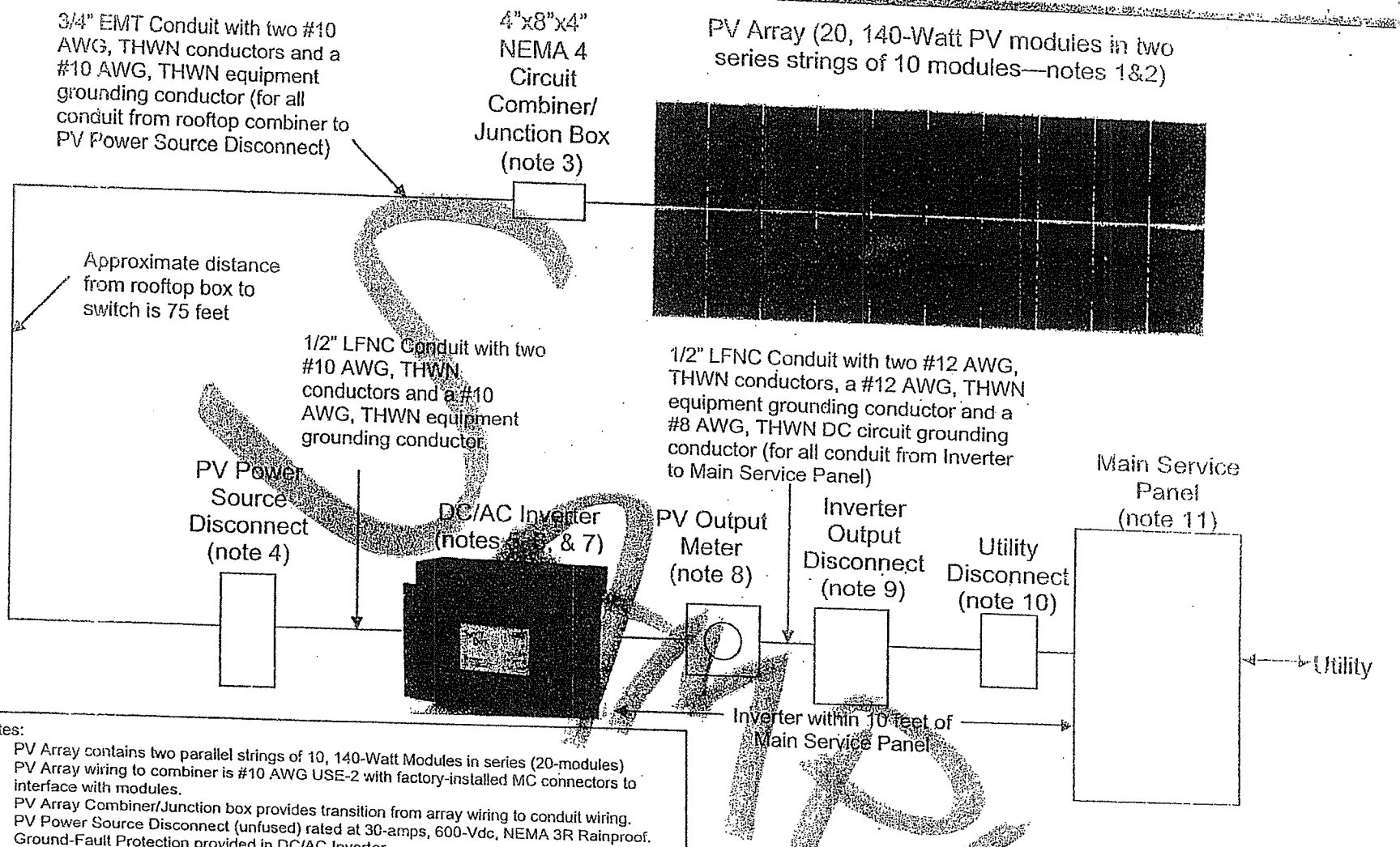
_____ Sign identifying AC point of connection (690.54)

- _____ Maximum operating current (provided in initial plan review)
- _____ Operating AC voltage (provided in initial plan review)

_____ Sign identifying switch for alternative power system

_____ Sign at the main service disconnect (702.8) notifying the type and location of the optional standby system


12 Feet, 8 Inches
10 Feet
N
Circuit Combiner/
Junction Box
(alternative location)
House
Circuit Combiner/
Junction Box
Garage
20, 140-Watt PV Modules mounted on attached patio cover shade structure (alternative location)
#10 AWG USE-2 conductors. (#6 ground wire lugged to each module) Conduit run is 25 feet to combiner and current is 5 amps per circuit.
20, 140-Watt PV Modules mounted on 5:12 pitch roof with comp shingles. House constructed in 1989.
#10 AWG USE-2 conductors. (#12 ground wire attached with ground screw to each module) Conduit run is 25 feet to combiner and current is 5 amps per circuit.
Inverter with DC and AC disconnects
New Utility Disconnect
Existing Main Service Panel
COMPANY NAME
Title: Sample Site Diagram
Drawn By:
Checked By:
Scale: NTS
Material:
Date:
DWG NO. EX-2
Related Drawings: EX-1



Notes:

1. PV Array contains two parallel strings of 10, 140-Watt Modules in series (20-modules)
2. PV Array wiring to combiner is #10 AWG USE-2 with factory-installed MC connectors to interface with modules.
3. PV Array Combiner/Junction box provides transition from array wiring to conduit wiring.
4. PV Power Source Disconnect (unfused) rated at 30-amps, 600-Vdc, NEMA 3R Rainproof.
5. Ground-Fault Protection provided in DC/AC Inverter.
6. DC/AC Inverter is SB2500UL model rated at 2.5 kW AC output and is rated to provide 10.4 amps at 240-Volts at 40°C.
7. Inverter is Listed to UL-1741 "Utility-Interactive"
8. PV Output Meter is Form 2S kWh meter with cyclometer register (easy-read).
9. Inverter Output Disconnect rated at 30-amps, 240Vac, NEMA 3R. (needed only if Utility Switch not within view of inverter)
10. Utility Switch is visible open, lockable in open position, 240-Vac, 30-amp switch.
11. 100-Amp Main Service Panel with 15-Amp Two-Pole Circuit Breaker for Interactive Point of Connection (up to 20-amp allowed for 100 amp busbar—NEC 690.64(B)(2) exception)
12. Equipment grounding conductors on AC- and DC-side sized according to NEC 250.122.
13. Negative pole of PV array referenced to ground at the Inverter.
14. All grounds connected to main service ground in Main Service Panel.

COMPANY NAME	
Title: Sample One-Line Diagram for PV System	
Drawn By:	Date:
Checked By:	
Scale: NTS	DWG NO. EX-1
Material:	Related Dwgs: EX-2