Calculations for Sandowsky, Eric-

260W Trina Solar modules
- Operating current – 8.5A
- Operating voltage – 30.6 V
- Open circuit voltage – 38.2V
- Short circuit current – 9.0A

- 11.96 Watt system divided by 260W modules = 46 Modules

- 1 – Solar Edge 10,000W inverter –
2 strings of 15 modules (as per Solar Edge sizing program)
1 string of 16 modules (as per Solar Edge sizing program)

** Please be advised that DC calculations are affected by the use of Optimizers.
One Solar Edge P300 Optimizer will be installed per module. Optimizers regulate string voltage to a fixed voltage dependent upon AC grid voltage. Please see attached Solar Edge document "PV power source labeling in a Solar Edge system" for details.

As per Solar Edge Document:
Fixed string voltage for single phase 240Vac grid = 350V
Maximum current value of 15 amps used to determine DC output circuit conductor size and overcurrent protection.

- 2 strings of 15 =
  - Maximum power point current – (15 modules x 260w) / 350v = 11.14A
  - Rated maximum power point voltage – 240 Vac grid = 350 Vdc nominal string voltage
  - Maximum system voltage – All single phase inverters = 500 Vdc
  - Maximum system current – 15

- 1 string of 16 =
  - Maximum power point current – (16 modules x 260w) / 350v = 11.88A
  - Rated maximum power point voltage – 240 Vac grid = 350 Vdc nominal string voltage
  - Maximum system voltage – All single phase inverters = 500 Vdc
  - Maximum system current – 15

Total system =
- Maximum power point current – (46 modules x 260w) / 350v = 34.17A
- Rated maximum power point voltage – 240 Vac grid = 350 Vdc nominal string voltage
- Maximum system voltage – All single phase inverters = 500 Vdc
- Maximum system current – 45

Conductors

- 3/4" EMT from roof J-Box to Combiner
  15A max load on each conductor
  10 Awg THWN-2 – 40A x 80% for 6ccc conduit fill = 32A
  32A X 76% (55 degrees C) = 24.32A

- 3/4" EMT from Combiner to Inverter
  45A max load on each conductor
  6 Awg THWN-2 – 75A x 100% for 2ccc conduit fill = 75A
  75A X 100% (30 degrees C) = 75A

- 10,000 watt Solar Edge inverter at 240V single phase output
  42A x 1.25 (continuous load) = 52.5A

- 3/4" EMT from inverter to service
  52.5A max load on each conductor
  6 Awg THWN-2 – 75A x 100% for 2ccc conduit fill = 75A
  75A X 100% (30 degrees C) = 75A

- Main disconnect / 2-60A fuses – 42A x 1.25 = 52.5A

- 42 Amps total supply to service.