STAFF REPORT FOR THE HISTORIC RESOURCES COMMISSION MEETING OF MARCH 11, 2010

AGENDA ITEM: F3 **FILE NO: HRC-10-116**

STAFF AUTHOR: Jennifer Pruitt, Principal Planner

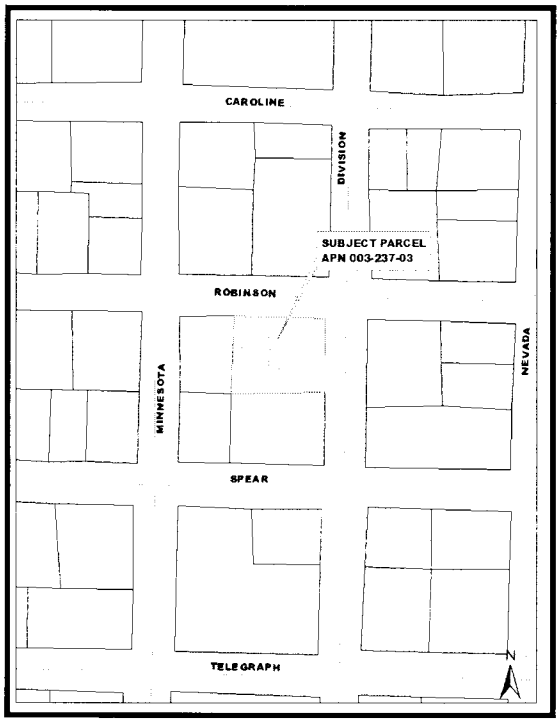
REQUEST: To allow the installation of photovoltaic solar panels on the A-Frame portion of the existing southern roof, on property zoned Residential Office (RO), located at 512 North Division Street.

APPLICANT: American Sun & Solar

OWNER: Sierra Acupuncture & Healing

LOCATION/APN: 512 North Division Street/003-237-03

RECOMMENDED MOTION: It is recommended that the Historic Resources Commission **"Move to approve HRC-10-016, a request from American Sun & Solar (property owner: Sierra Acupuncture & Healing) allow the installation of photovoltaic solar panels on the A-Frame portion of the existing roof, on property zoned Residential Office (RO), located at 512 North Division Street, APN 003-237-03, subject to the conditions of approval contained in the staff report. This approval is based the understanding that any stipulations to the commission by the applicant may be considered as conditions to the approval".**



RECOMMENDED CONDITIONS OF APPROVAL:

1. All development shall be substantially in accordance with the attached site development plan.

2. All on and off-site improvements shall conform to City standards and requirements.

3. The use for which this permit is approved shall commence within 12 months of the date of final approval. An extension of time must be requested in writing to the Planning Division 30 days prior to the one year expiration date. Should this request not be initiated within one year and no extension granted, the request shall become null and void.

4. The applicant must sign and return the Notice of Decision within 10 days of receipt of notification. If the Notice of Decision is not signed and returned within 10 days, then the item will be rescheduled for the next Historic Resources Commission meeting for further considerations.

5. The applicant shall submit a copy of the signed Notice of Decision and conditions of approval with the building permit application.

6. Approval is based on the project complying with the Standards and Guidelines for Rehabilitation, Carson City Historic District Guidelines, the Historic Resources Commission Policies and that the plans as submitted are in general conformance with the Secretary of the Interior's Standards.

7. This project requires a building permit prior to starting any work in relationship to the installation of the photovoltaic panels or equipment.

8. Project requires application for a Building Permit, issued through the Carson City Building Division. This will necessitate a complete review of the project to verify compliance with all adopted construction codes and municipal ordinances applicable to the scope of the project.

9. The plans submitted for review shall comply with the prescriptive requirements found in the Carson City Building Division handout titled: *Photovoltaic (Solar Electrical) Systems.* This handout may also be found online at: www.carson-city.nv.us/Index.aspx?page=1024

10. The panels and all accessory equipment shall be removed from the site if and when the use is abandoned or non-operational for a period of more than one year.

11. The panels shall only be affixed to the southern roof of the Henry Marvin Yerington House as noted on the plan provided.

LEGAL REQUIREMENTS: CCMC 18.06.015 (Procedure for Proposed Project).

MASTER PLAN DESIGNATION: Medium Density Residential

ZONING: Residential Office (RO)

SITE HISTORY:

- HRC-07-209 was approved by the HRC in January 2008 to allow the installation of a non-illuminated double-faced sign (48 inches x 58 inches) and a single-faced hanging sign (55 inches x 20 inches).
- On May 17, 2007 the site was a recipient of the Carson City Historic Preservation Award.
- HRC-07-202 was approved by the HRC to allow the new property owner to utilize a Historical Tax Deferment on site.
- HRC-07-186 was approved by the HRC in December 2007 to allow accessibility additions to the exterior of the office.
- MPR-07-170 was reviewed by City staff, the project included interior and exterior alterations to the existing office use on site.

DISCUSSION:

In order to provide a supply of renewable energy to the Henry Marvin Yerington House, the applicant is proposing to mount 45 photovoltaic (PV) panels, approximately 3-4 inches above the composition roof shingles on the southern roof exposure. The area necessary for the solar system as proposed is approximately 731 square feet. All PV panels, duct work, rails and flashing will be painted black to blend in with the existing composition roofing material.

The term photovoltaic is derived from the Greek language "photo," meaning light, and "voltaic," voltage which assists the flow of electricity. The process of capturing and using solar energy is as old as time. Like most things in the modern world, the simplicity of capturing the sun's energy has been elevated to a new technology. Unlike solar heating collectors that are used to warm fluids sunning within the collector, PV cells convert light from the sun directly into electricity.

The existing site is zoned Residential Office (RO). Staff conducted a site visit on February 23, 2010. The subject parcel is 9,350 square feet in size. Currently there is an existing 4,086 square foot structure which was built in 1863. The structure was previously used as a single family residence, but is currently used as a professional office. There is also a 572 square foot Carriage House on site, which was approved by Special Use Permit (U-85-17) on July 23, 1985.

The office structure is primarily one story in height with a limited second story in the taller gabled portion. Design inspirations derive from Greek Revival, Gothic Revival and Italianate origins, the

latter being predominant. According to the 1980 survey, the structure is exceptionally significant both historically and architecturally.

Since this is only the second application within the past two years for a solar photovoltaic system installation in the Historic District, staff has addressed the 10 Standards for Rehabilitation:

1. ***A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.***

The location of the proposed PV panels is on the A-frame roofing portion of the Henry Marvin Yerington House. The project includes the installation of 45 high efficiency black PV panels which will cover approximately 1/3 of the southern roof of the structure. No solar panels will be installed on the northern portion or the flat roof portion of the historic structure. The design of the PV is split (divided) to keep the existing flue feature of the roof in tact.

2. ***The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.***

From the corner of Division Street and Robinson Street the PVs will not be visible. At this time the applicant is **not** proposing to remove or alter any other historical features of the historic structure.

3. ***Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.***

No changes are proposed at this time that will create a false sense of historical development. Solar panels will be attached 3-4 inches above the existing roof.

4. ***Changes to a property that have acquired historic significance in their own right will be retained and preserved.***

The proposed project will allow the historic significance of the structure to be maintained and preserved. As well as allow the reduction and or elimination of the electric bill from NV Energy, reduce greenhouse gasses and reduce the carbon footprint while generating renewable energy credits.

5. ***Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.***

No distinctive features, finishes and construction techniques will be destroyed.

6. ***Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.***

The historic features on the Henry Marvin Yerington House are being properly maintained. The applicants will match the color (black), materials and design whenever possible. The solar system will not be a detraction to its historic design.

7. ***Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.***

The PV's only maintenance requirement is cleaning twice a year as noted in the specs.

8. ***Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.***

No archeological resources will be affected by the solar panels. All wiring will be beneath the solar panels, go through conduit and will be connected to the inverter. The inverter will be mounted on the exterior west wall next to the electric meter.

9. ***New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.***

The exterior solar panels are compatible with the property and by mounting them only on the southern roof element it protects the historic integrity of the structure and its environment. The applicant has also noted that the panel design allows for the existing mature trees on the east to not be altered or eliminated.

10. ***New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.***

If the solar system is removed in the future the essential form and integrity of the Henry Marvin Yerington House would be unimpaired.

PUBLIC COMMENTS: Public notices were mailed to adjacent property owners to the subject parcel in accordance with the provisions of NRS and CCMC 18.02.045. As of March 04, 2010, no comments have been received in favor or opposed to the proposed project. Any comments that are received after this report is completed will be submitted prior to or at the Historic Resources Commission meeting, depending on their submittal date to the Planning Division.

Engineering Division comments:

- Development Engineering has no preference or objection to the request.

Building Division comments:

NOTE: These comments do not constitute a complete plan review, but are merely observations based on the information provided.

Scope of Application

New PV panels on sloped and flat roof section

General

1. Project requires application for a Building Permit, issued through the Carson City Building Division. This will necessitate a complete review of the project to verify compliance with all adopted construction codes and municipal ordinances applicable to the scope of the project.

2. The plans submitted for review shall comply with the prescriptive requirements found in the Carson City Building Division handout titled: *Photovoltaic (Solar Electrical) Systems.* This handout may also be found online at: www.carson-city.nv.us/Index.aspx?page=1024

3. Provide complete structural calculations for wind and vertical loading at both sloped and flat roof areas. The engineering shall accurately represent existing structural conditions.

Staff believes that alternative energy is positive for Carson City. However, the Carson City Historic District Design Guidelines do not address photovoltaic systems. This is the second application that staff has seen for this type of project in the Historic District. If the Historic Resources Commission feels that these alternative energy systems should be addressed in the design guidelines, they may direct staff to prepare a draft of such guidelines.

With the recommended conditions of approval and based on upon the project complying with the Secretary of the Interior's Standards and Guidelines for Rehabilitation, Carson City Historic District Guidelines, the Historic Resources Commission Policies, and that the plans as submitted are in general conformance, it is recommended that the Historic Resources Commission approve HRC-10-216 subject to the recommended conditions of approval within this staff report.

PUBLIC WORKS DEPARTMENT, PLANNING DIVISION

Jennifer Pruitt

Jennifer Pruitt, AICP, LEED AP
Principal Planner
Attachments:

- Application (HRC-10-016)
- Building Division comments
- Engineering Division comments
- Fire Department comments

File # (Ex: MPR #07-111)	*HRC-10-016*
Brief Description	*PV Solar*
Project Address or APN	*APN #003-237-03*
Bldg Div Plans Examiner	*Kevin Gattis*
Review Date	*March 11, 2010*
Total Spent on Review	

BUILDING DIVISION COMMENTS:

NOTE: These comments do not constitute a complete plan review, but are merely observations based on the information provided.

Scope of Application

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3. Provide complete structural calculations for wind and vertical loading at both sloped and flat roof areas. The engineering shall accurately represent existing structural conditions.

RECEIVED
MAR 0 2 2010
CARSON CITY
PLANNING DIVISION

Carson City Engineering Division
Historic Resources Commission Report
512 N. Division Street
File Number HRC 10-016

TO: Historic Resources Commission

FROM: Rory Hogen, Asst. Engineer

DATE: March 2, 2010

SUBJECT TITLE:

Review of Historic Resources Commission application for installing solar panels on the roof of 512 N. Division St. APN # 003-237-03.

RECOMMENDATION:

Development Engineering has no preference or objection to the request.

DISCUSSION:

The Engineering Division has reviewed the request within our areas of purview relative to adopted standards and practices.

ORIGINAL

Carson City Planning Division
2621 Northgate Lane, Suite 62 · Carson City NV 89706
Phone: (775) 887-2180 • E-mail: plandept@ci.carson-city.nv.us

FILE # HRC - 10 - 016

FOR OFFICE USE ONLY:

HISTORIC RESOURCES COMMISSION

FEE: None

RECEIVED
FEB 22 2010
CARSON CITY
PLANNING DIVISION

Sierra Acupuncture
PROPERTY OWNER
512 N. Division St
MAILING ADDRESS, CITY, STATE, ZIP
Carson City NV 89703
PHONE # **FAX #**
775-841-3336
E-MAIL ADDRESS
Name of Person to Whom All Correspondence Should Be Sent
americansunandsolar@yahoo.com
APPLICANT/AGENT **PHONE #**
American Sun & Solar 775-853-3311
MAILING ADDRESS, CITY, STATE ZIP
59 Damonte Ranch Pkwy #B283
PHONE # **FAX #**
775-853-3311 775-852-0179
E-MAIL ADDRESS

SUBMITTAL PACKET

- ☑ Application Form with signatures
- ☑ 12 Completed Application Packets-Application form, maps, supporting documentation (1 Original + 11 Copies)
- ☐ CD containing application data (pdf format)
- ☑ Documentation of Taxes Paid-to-Date

Application Reviewed and Received By:

Submittal Deadline: See attached HRC application submittal schedule.

Project's Assessor Parcel Number(s):	Street Address	ZIP Code
003-237-03	512 N. Division St, Carson City, NV 89703	

Project's Master Plan Designation	Project's Current Zoning	Nearest Major Cross Street(s)
Mixed Use Residential	RO	Robinson

Briefly describe the work to be performed requiring HRC review and approval. In addition to the brief description of your project and proposed use, provide additional page(s) to show a more detailed summary of your project and proposal. NOTE: The Historic District Ordinance and Historic District Design Guidelines, as well as Policy Statements, are available in the Planning Division to aid applicants in preparing their plans. If necessary, attach additional sheets.

Installation of photovoltaic solar panels on the A-Frame portion of the existing roof. Roof is black and new solar panels will be black/dark blue with black aluminum frames. Roof flashing jacks will be black to match existing roof color.

Minimal visual impact to surrounding properties and passersby. See attached photos.

Does the project require action by the Planning Commission or the Board of Supervisors? ☐ Yes ☐ No If Yes, please explain:

No

Will the project involve demolition or relocation of any structure within or into the Historic District? ☐ Yes ☐ No If Yes, please describe:

No

Reason for project:

Addition of photovoltaic solar panels will eliminate or reduce significantly the electric bill to NV Energy, reduce greenhouse gasses, and reduce carbon footprint. System will generate renewable energy credits.

SUPPORTING DOCUMENTATION

Each application requires 12 copies, folded to 8 ½ x 11 inches, of quality site plan and drawings showing work to be performed on the subject project which requires HRC approval. Basically, this is any work which will affect the exterior of any structure and any modifications to the site, i.e., fences, walls, or major landscaping. The name of the person responsible for preparation of the plans and drawings shall appear on each sheet.

Attached is a Plan Checklist to aid preparation of plans and architectural drawings. It is understood that all checklist items will not be included in all projects. The list is intended to give the applicant an idea of the breadth of review by the Commission on those items which are included in the subject project. Photographs can be used for illustration and discussion, but are not acceptable as substitutes.

Owner's Signature

Maureen Lamerdin

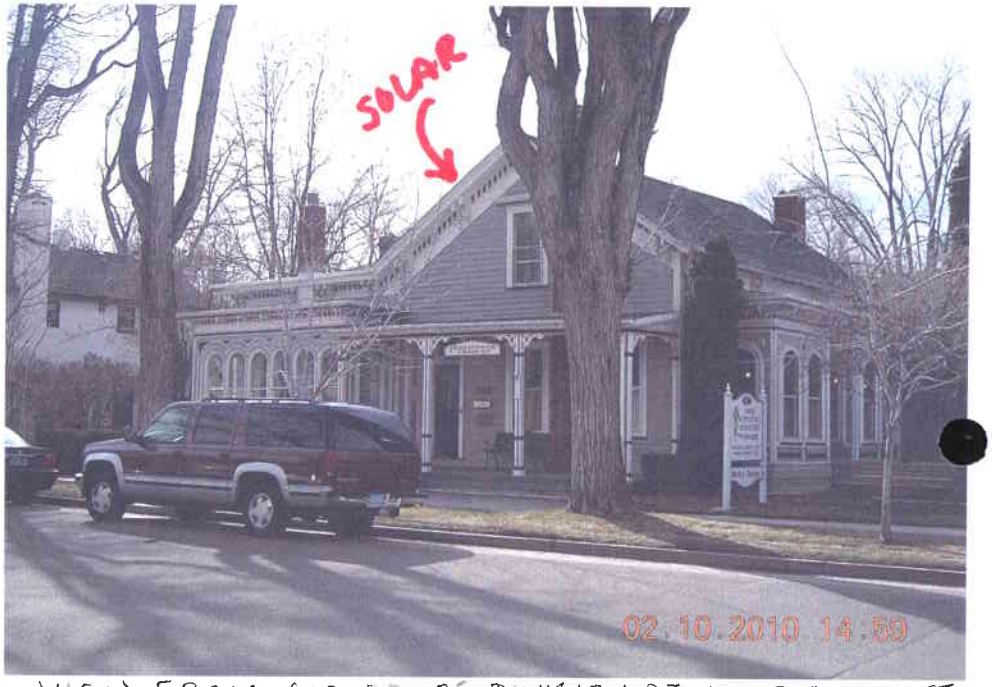
Owner's Printed Name

Applicant's/Agent's Signature

American Sun & Solar/Nick Jansing

Applicant's/Agent's Printed Name

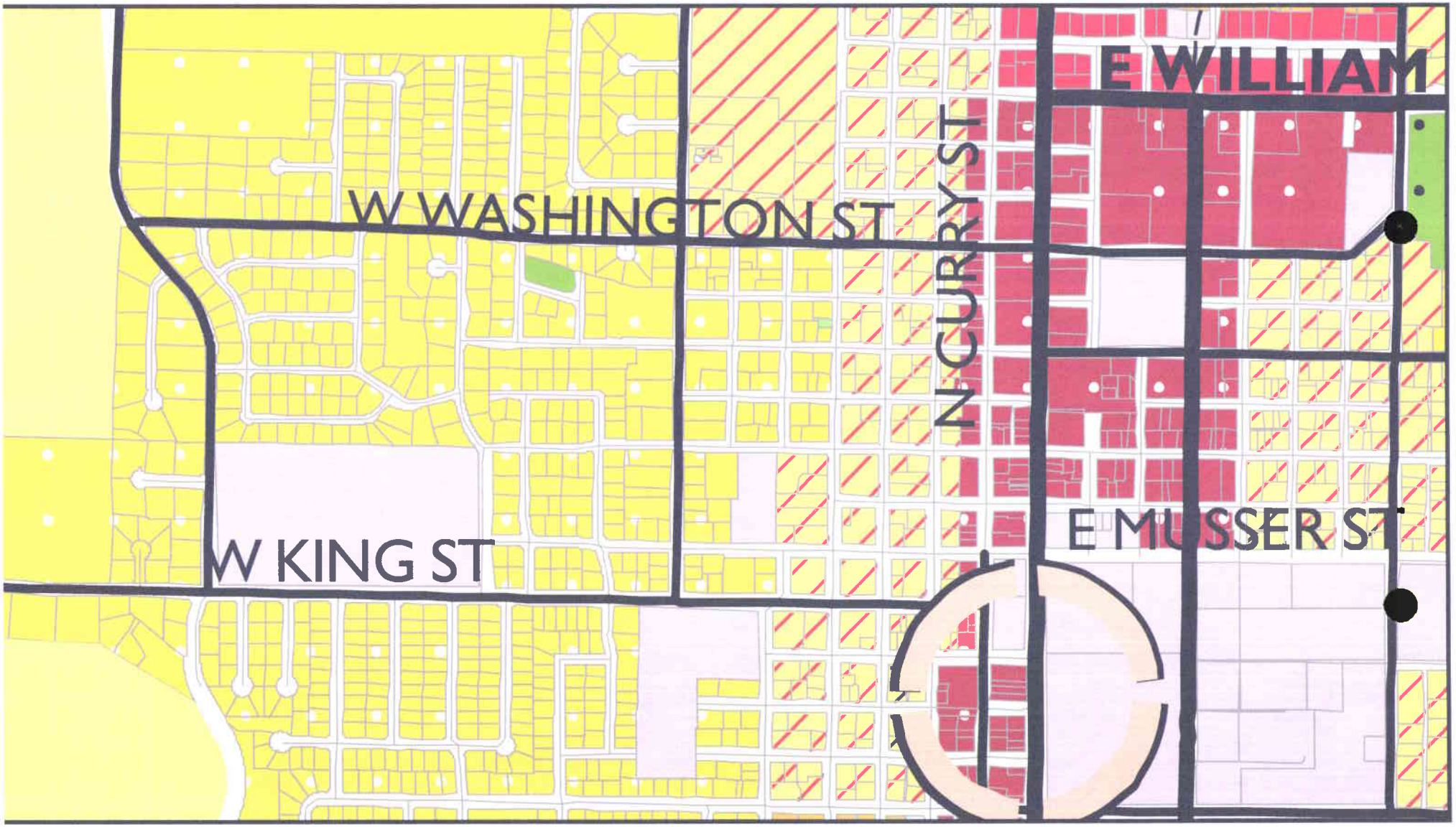
VIEW OF 512 N. DIVISION ST FROM ACROSS STREET



VIEW FROM CORNER OF DIVISION ST AND ROBINSON ST.

VIEW FROM ACROSS ROBINSON ST.

VIEW OF 512 N. DIVISION ST FROM SIDEWALK



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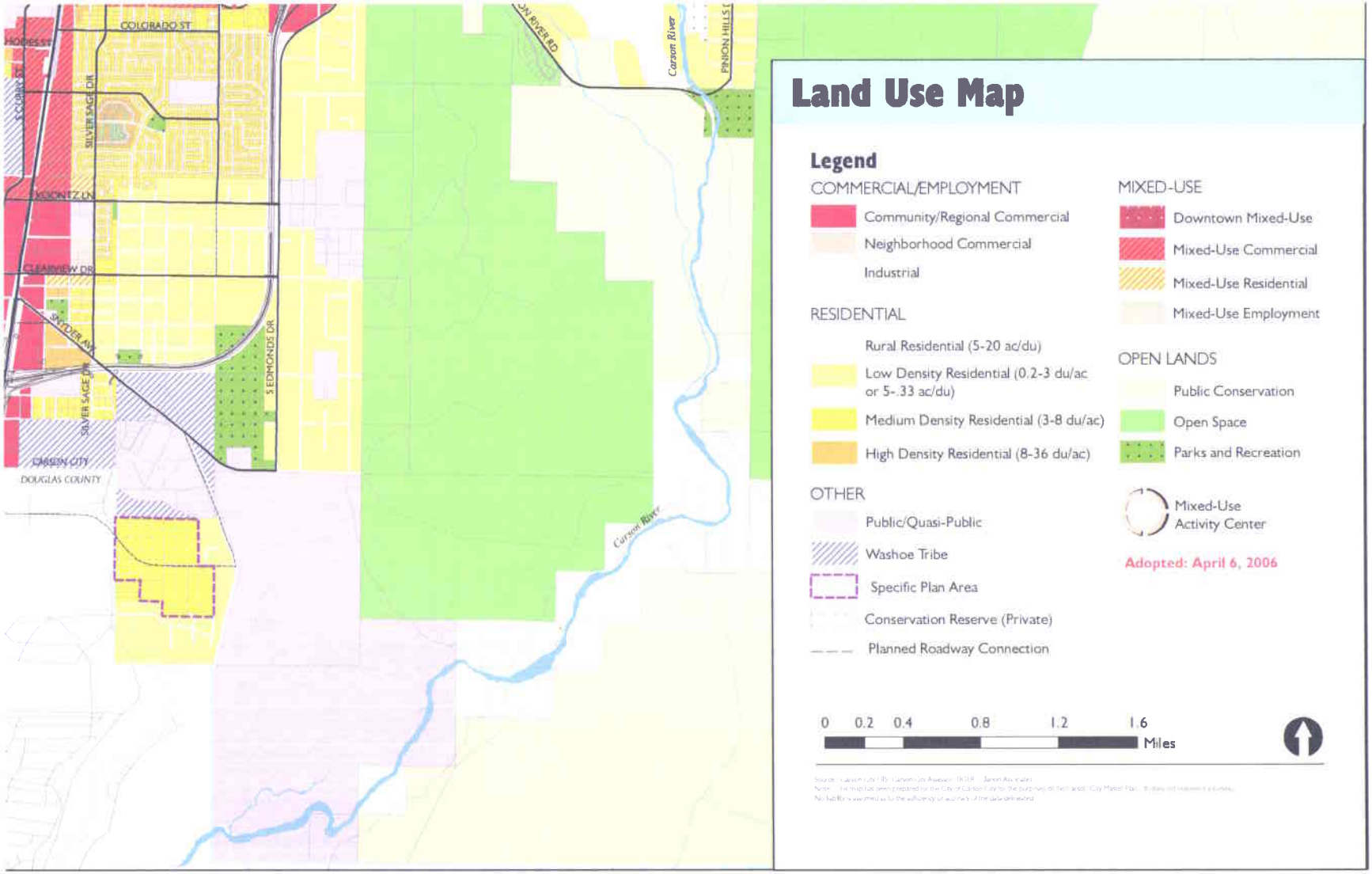


Land Use Map

Legend

COMMERCIAL/EMPLOYMENT

- Community/Regional Commercial
- Neighborhood Commercial
- Industrial

RESIDENTIAL

- Rural Residential (5-20 ac/du)
- Low Density Residential (0.2-3 du/ac or 5-.33 ac/du)
- Medium Density Residential (3-8 du/ac)
- High Density Residential (8-36 du/ac)

OTHER

- Public/Quasi-Public
- Washoe Tribe
- Specific Plan Area
- Conservation Reserve (Private)
- Planned Roadway Connection

MIXED-USE

- Downtown Mixed-Use
- Mixed-Use Commercial
- Mixed-Use Residential
- Mixed-Use Employment

OPEN LANDS

- Public Conservation
- Open Space
- Parks and Recreation

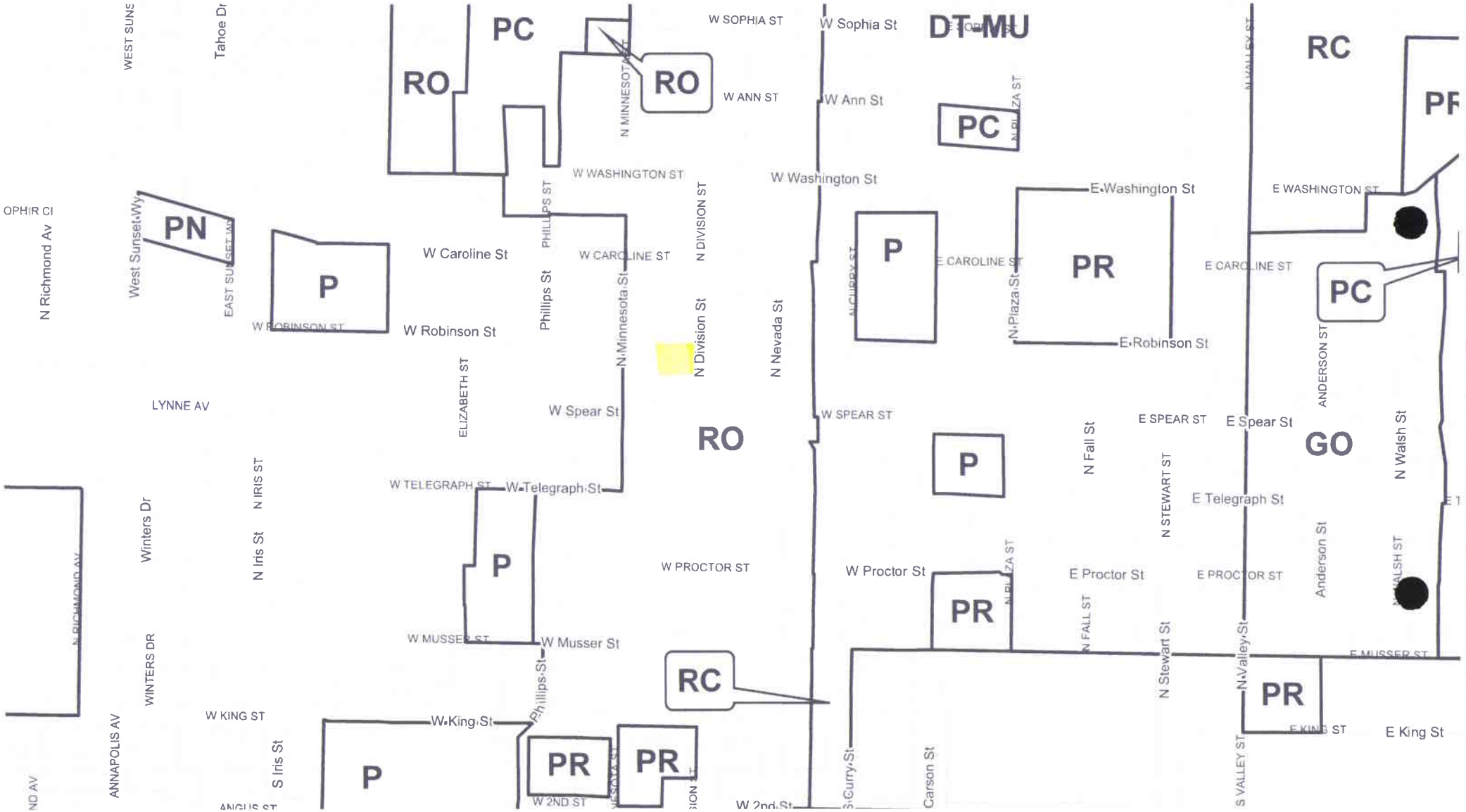
Mixed-Use Activity Center

Adopted: April 6, 2006

0 0.2 0.4 0.8 1.2 1.6 Miles

Source: Carson City, Carson City Assessor, TRPA, Jason Associates

Note: This map has been prepared for the City of Carson City for the purposes of their adopted City Master Plan. It does not represent a survey. No liability is assumed as to the sufficiency or accuracy of the data delineated.



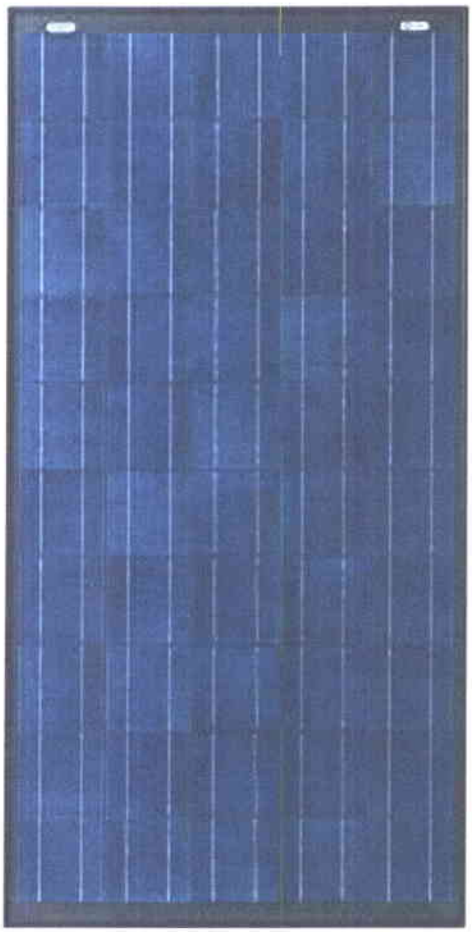
CARSON CITY ZONING

bp solar

SX 3190B

190 Watt Photovoltaic Module

High-efficiency photovoltaic module using silicon nitride multicrystalline silicon cells



Performance

Rated power (P_{max})	190W
Power tolerance	±5%
Nominal voltage	16V
Limited Warranty[1]	25 years

Configuration

B	Bronze frame with output cables and polarized Multicontact (MC) connectors

Electrical Characteristics[2]

	SX 3190
Maximum power (P_{max})[3]	190W
Voltage at P_{max} (V_{mp})	24.3V
Current at P_{max} (I_{mp})	7.82A
Warranted minimum P_{max}	172.9W
Short-circuit current (I_{sc})	8.5A
Open-circuit voltage (V_{oc})	30.6V
Temperature coefficient of I_{sc}	(0.065±0.015)%/°C
Temperature coefficient of V_{oc}	-(111±10)mV/°C
Temperature coefficient of power	-(0.5±0.05)%/°C
NOCT (Air 20°C; Sun 0.8kW/m²; wind 1m/s)	47±2°C
Maximum series fuse rating	15A
Maximum system voltage	600V (U.S. NEC rating)

Mechanical Characteristics

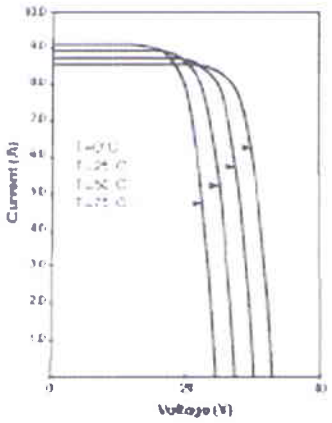
Dimensions	Length: 1680mm (66.14") Width: 837mm (32.95") Depth: 50mm (1.97")
Weight	15.9 kg (35.05 pounds)
Solar Cells	50 cells (156mm x 156mm) in a 5x10 matrix connected in series
Output Cables	RHW-2 AWG# 12 (4mm²), cable with polarized weatherproof DC rated Multicontact connectors; asymmetrical lengths - 1250mm (-) and 800mm (+)
Diodes	***IntegraBus™*** technology includes Schottky by-pass diodes integrated into the printed circuit board bus
Construction	Front: High-transmission 3mm (1/8th in) tempered **ARC** glass; Back: Black polyester backsheet with superior dielectric properties; Encapsulant: EVA
Frame	Anodized aluminum alloy type 6063T6 Universal frame; Color: Bronze

1. Module warranty: 25-year limited warranty of 80% power output; 12-year limited warranty of 90% power output; 5-year limited warranty of materials and workmanship. See our website for full terms of these warranties.
2. This data represents the performance of typical BP Solar products, and is based on measurements made in accordance with ASTM E1036 corrected to SRC (STC.)
3. During the stabilization process that occurs during the first few months of deployment, module power may decrease by approximately 1% from typical P_{max}.

Quality and Safety

ESTI	Module power measurements calibrated to World Radiometric Reference through ESTI (European Solar Test Installation at Ispra, Italy)
UL	Listed by Underwriter's Laboratories for electrical and fire safety (Class C fire rating)

SX 3190 I-V Curves

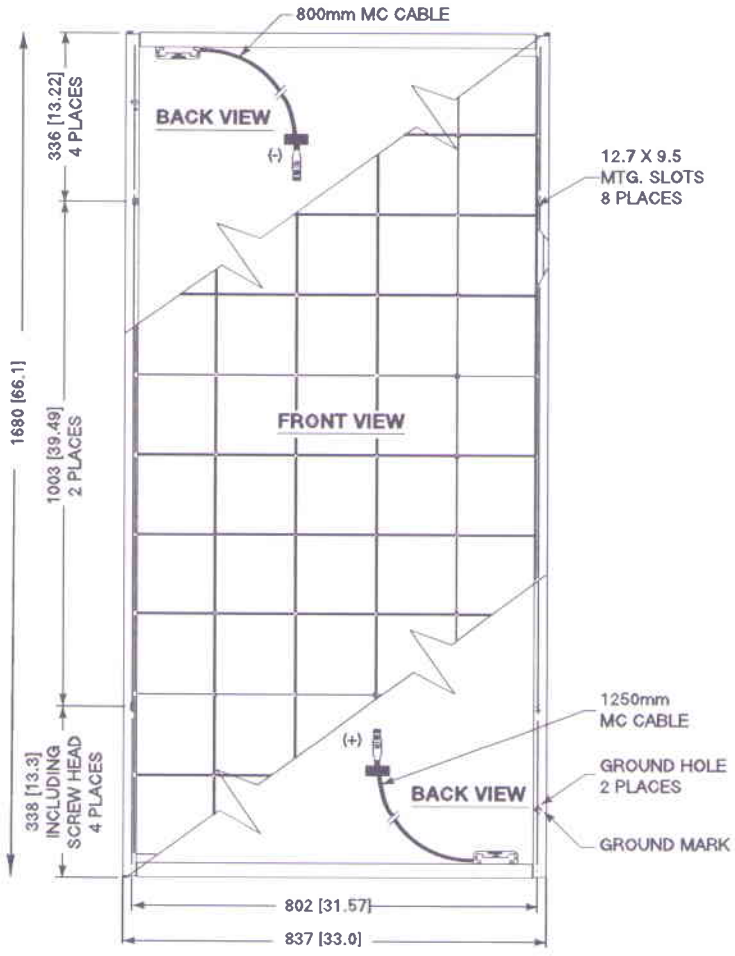


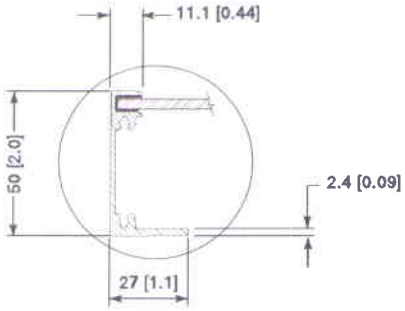
Qualification Test Parameters

Temperature cycling range	-40°C to +85°C (-40°F to 185°F)
Humidity freeze, damp heat	85% RH
Static load front and back (e.g. wind)	2,400 pa (50psf)
Front loading (e.g. snow)	5,400 pa (113psf)
Hailstone impact	25mm Ø (1 inch) at 23 m/s (52mph)

Module Diagram

Dimensions in brackets are in inches. Un-bracketed dimensions are in millimeters. Overall tolerances ±3mm (1/8").





SECTION A-A

GROUNDING DETAIL

Included with each module: self-tapping grounding screw, instruction sheet and warranty documents.

Note: This publication summarizes product warranty and specifications, which are subject to change without notice. Additional information may be found on our web site: **www.bpsolar.us**

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bp solar

Oatey®
4700 W. 160th St.
Cleveland, OH 44135
PH:800-321-9532
FX:800-321-9535
www.oatey.com

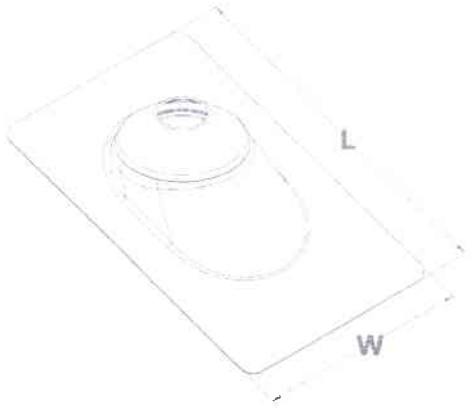
TECHNICAL SPECIFICATION

ALL-FLASH® NO-CALK® COLOR-FLASH® ROOF FLASHINGS

Quality ISO 9001 System

Engineering Specification: Oatey All-Flash No-Calk Roof Flashings can be used in commercial and residential applications where a watertight seal for roof penetrations around the plumbing vent pipe is required.

Job Reference



(All dimensions in inches)

- Plastic Base Roof Flashing slides over DWV pipe for pitch to 45°
- Metal Base Roof Flashing slides over DWV pipe for pitch to 40°
- Patented All-Flash collar has tear-away ring allowing flashing to seal different pipe diameters
- Plastic base flashings are made of rigid thermoplastic
- Aluminum base flashings are made of .032 stamped aluminum
- Galvanized base flashings are made of 24 gauge galvanized steel
- Non-fading sealing collar
- Approved for Type B installations
- Not for hot-mopped or built-up roofs
- Do not use paint or petroleum based products on plastic bases or rubber collars

✓	Product No.	Description	Length (L)	Width (W)	PACK	CARTON WEIGHT
	12944	1-½" – 3" Aluminum Roof Flashing – Brown	14-½	11	12	7 lbs.
X	12943	1-½" – 3" Aluminum Roof Flashing – Black	14-½	11	12	7 lbs.
	12942	1-½" – 3" Aluminum Roof Flashing – Gray	14-½	11	12	7 lbs.
	11872	1-½" – 3" Galvanized Roof Flashing – Brown	14-½	11	12	7 lbs.
	11873	1-½" – 3" Galvanized Roof Flashing – Black	14-½	11	12	7 lbs.
	11874	1-½" – 3" Galvanized Roof Flashing – Gray	14-½	11	12	7 lbs.
	12955	3" – 4" Aluminum Roof Flashing – Brown	15-½	12	12	13 lbs.
	12954	3" – 4" Aluminum Roof Flashing – Black	15-½	12	12	13 lbs.
	12953	3" – 4" Aluminum Roof Flashing – Gray	15-½	12	12	13 lbs.
	11875	3" – 4" Galvanized Roof Flashing – Brown	15-½	12	12	13 lbs.
	11876	3" – 4" Galvanized Roof Flashing – Black	15-½	12	12	13 lbs.
	11878	3" – 4" Galvanized Roof Flashing – Gray	15-½	12	12	13 lbs.

UPC IAPMO Listed

NES 653

Data is subject to manufacturing tolerances.

DSIRE

Database of State Incentives for Renewables & Efficiency

U.S. Department of Energy Energy Efficiency and Renewable Energy

North Carolina Solar Center

IREC

2/22/10

Nevada

Incentives/Policies for Renewables & Efficiency

Solar and Wind Access Laws

Last DSIRE Review: 06/03/2009

Program Overview:

State:	Nevada
Incentive Type:	Solar and Wind Access Law
Eligible Renewable/Other Technologies:	Solar Water Heat, Solar Space Heat, Solar Thermal Electric, Solar Thermal Process Heat, Photovoltaics, Wind
Applicable Sectors:	Commercial, Industrial, Residential, Nonprofit, Schools, Local Government, State Government, Fed. Government
Authority 1:	NRS § 111.370 et seq.
Date Enacted:	1995
Expiration Date	None
Authority 2:	NRS § 111.239
Authority 3:	NRS § 278.0208
Authority 4:	NRS § 116.2111
Authority 5:	SB 114
Date Enacted:	5/29/2009
Date Effective:	5/29/2009

Summary:
Nevada's general statutes provide owners of solar and wind energy systems protection against restrictions that would otherwise prevent them from installing these systems on their property. NRS § 111.239 and 278.0208 disallow the adoption of any covenant, deed, contract, ordinance or other legal instrument which affects the transfer or sale of real property that unreasonably restrict a landowner from installing solar or wind energy systems on their land. The law further states that any existing covenant, deed, contract or other legal instrument that unreasonably restrict a landowner from installing solar or wind energy systems on their land is void and unenforceable.

Solar and wind systems are also protected from siting restrictions that would "significantly decrease the efficiency or performance of the system and not allow for the use of an alternative system at a comparable cost and with comparable efficiency and performance." SB 114 of May 2009 clarified that a 10% decrease ir performance is considered a "significant decrease" for a solar system. The bill did not provide a similar value for an unacceptable decrease in the performance of a wind system.

NRS § 116.2111 ensures that common interest communities may not unreasonably restrict, prohibit or withhold approval of a wind energy system if it is installed on two acres or more of the owner's property within the established community if the owner obtains written consent from the owners of all properties within 300 feet of the system.

Nevada also allows parties to enter voluntarily into solar easements that are legally binding.

CARSON CITY RESOURCES INVENTORY

IDENTIFICATION:

1. Address: 512 North Division APN 3-237-3
2. Common Name: Bullis, Manke and Nelson, Ltd.
3. Historic Name: Henry Marvin Yerington House
4. Present Owner: John and Bonnie Bullis (Henry Brant)
5. Address (if not occupant): P.O. Box 461; Reno Nevada 98501
6. Present Use: offices/residence Original Use: residence

DESCRIPTION, ALTERATIONS, AND RELATED FEATURES:

The structure is primarily one story in height with a limited second story in the taller gabled portion. Design inspirations derive from Greek Revival, Gothic Revival and Italianate origins, the latter being predominant. The northern wing is rectangular with a flat roof and served as the wine cellar and servant's quarters. The current southern wing has a flat roof and includes a square projecting facade bay with a series of slender arched windows, two square bays projecting to the south, and a wing at the rear. The original building is the central gabled form which now contains two square bays projecting from the north elevation, and the entry porch supported by double columns with decorative brackets and a recessed entrance with sidelights and transom. A frieze with dentil course and brackets surrounds the house at the eaves and is echoed in the eaves of the projecting bays.

The north and south wings were very early additions, both occurring prior to 1872. Further changes to the south wing placed the sunporch at the front by 1876. The square bays were probably added by then also. Divided into three units in the 1950's, two of the units have recently been returned to their original unity.

RELATIONSHIP TO SURROUNDINGS:

Although larger in scale and mass and unusual in style for this neighborhood, this structure is compatible with surrounding buildings because of its fine articulation of design features.

Street Furniture: stone hitching post

Landscaping: mature street trees, bushes and shrubs

Architectural Evaluation: PS ____ NR X

District Designation: PD 2 NR ____

HISTORIC ENVIRONMENT CONSULTANTS
2306 J Street, Penthouse
Sacramento, CA 95816
(916) 446-2447

Date March 1980

THREATS TO SITE:

None Known X Private Development ____

Zoning RO Public Works Project ____

Vandalism ____ Neglect ____ Other ____

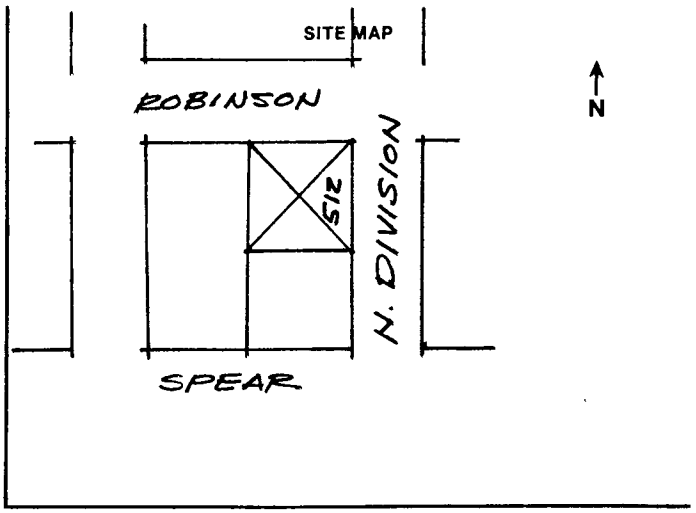
ADJACENT LAND USES:

offices/residential

PHYSICAL CONDITION:

Excellent ____ Good X Fair ____ Deteriorated ____

APPROXIMATE SETBACK: 20 feet



HISTORICAL BACKGROUND:

Architect (if known) ____

Builder (if known) ____

Date of Construction 1863 Estimated ____ Factual X Source: Ford/Sanborn Maps

Is Structure on Original Site? X Moved? ____ Unknown ____

SIGNIFICANCE:

The structure is an exceptionally significant structure both historically and architecturally. The original portion was built by Thomas Haydon, a noted Carson City lawyer, in 1863. Henry Yerington purchased the house in 1869 and made additionsto the structure. Yerington was an important figure in the early history of the state of Nevada. He was associated with major mining and lumber concerns and a key figure in the Virginia and Truckee Railroad. George Russell, another notable owner, served in various high level state and federal offices including State Treasurer.

The structure is a highly decorative and unique architectural design. Its variety of ornamentation reflects the exuberance of its era, and its cumulative quality, its growth. The building is an exceptional resource and contributes significantly to the character and heritage of the city.

SOURCES:

Victor Goodwin
Don Ford; Sanborn Maps
Historic American Building Survey, 1974
Carson City Historic Tour

SUGGESTED LAND USE AND FACADE MODIFICATIONS, WHERE APPROPRIATE:

Adaptive Use:

Facade Changes:

Zoning:

HRC - 10 - 022

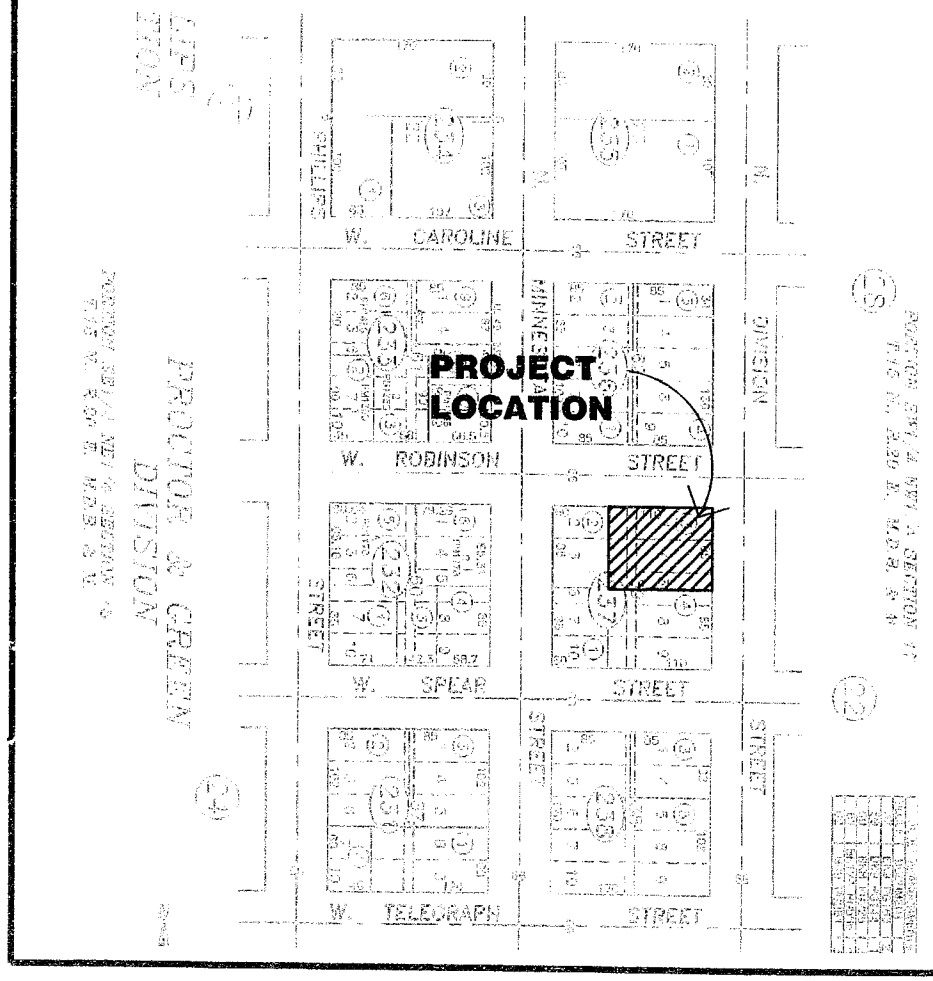
RECEIVED

FEB 22 2010

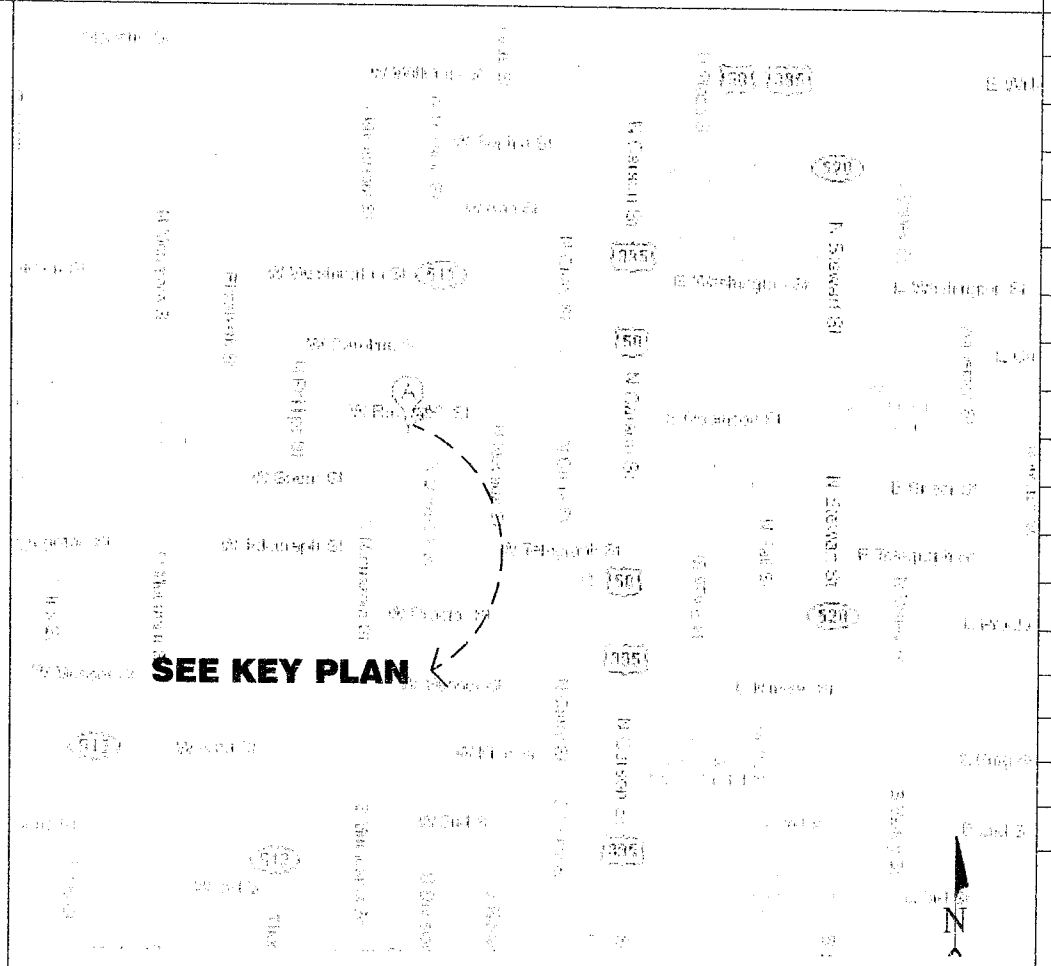
CARSON CITY
PLANNING DIVISION

PROPOSED PV SOLAR BP PANELS

KEY PLAN NOT TO SCALE



VICINITY MAP NOT TO SCALE



DRAWING CONTENTS:

DWG #.	DRAWING TITLE
T1	COVER SHEET
C1	PLOT PLAN
A1	PV PANEL LAYOUT
A2	WIRING BOOT LAYOUT
S1	PV MOUNT TRUSS SECTION TYP.
S1a	PV MOUNT FRAME DETAIL TYP.
S2b	PV PANEL STEEL FRAMES
S2	PANEL SPECIFICATION
S3	DETAIL
E1	ONE LINE DIAGRAM

SEE ATTACHED DETAILS FOR PANELS / MODULES MOUNTING TRACKING.

PROPOSED PV SOLAR BP PANELS FOR:
SIERRA ACUPUNCTURE & HEALING
512 N DIVISION ST.
CARSON CITY, NV 89703
COUNTY: CARSON CITY
TEL: 775-841-3336
APN # 003-237-03

CONTRACTOR:

AMERICAN SUN & SOLAR
59 DAMONTE RANCH PKWY
SUITE B283
TEL. 775-853-3311
NV LIC # 67222

ELECTRICAL:

JENSEN ELECTRIC
150 ISIDRO CT # 103
SPARKS, NV 89441
TEL. 775-322-3100
LIC.# 10105

DRAWING TITLE
COVER PAGE

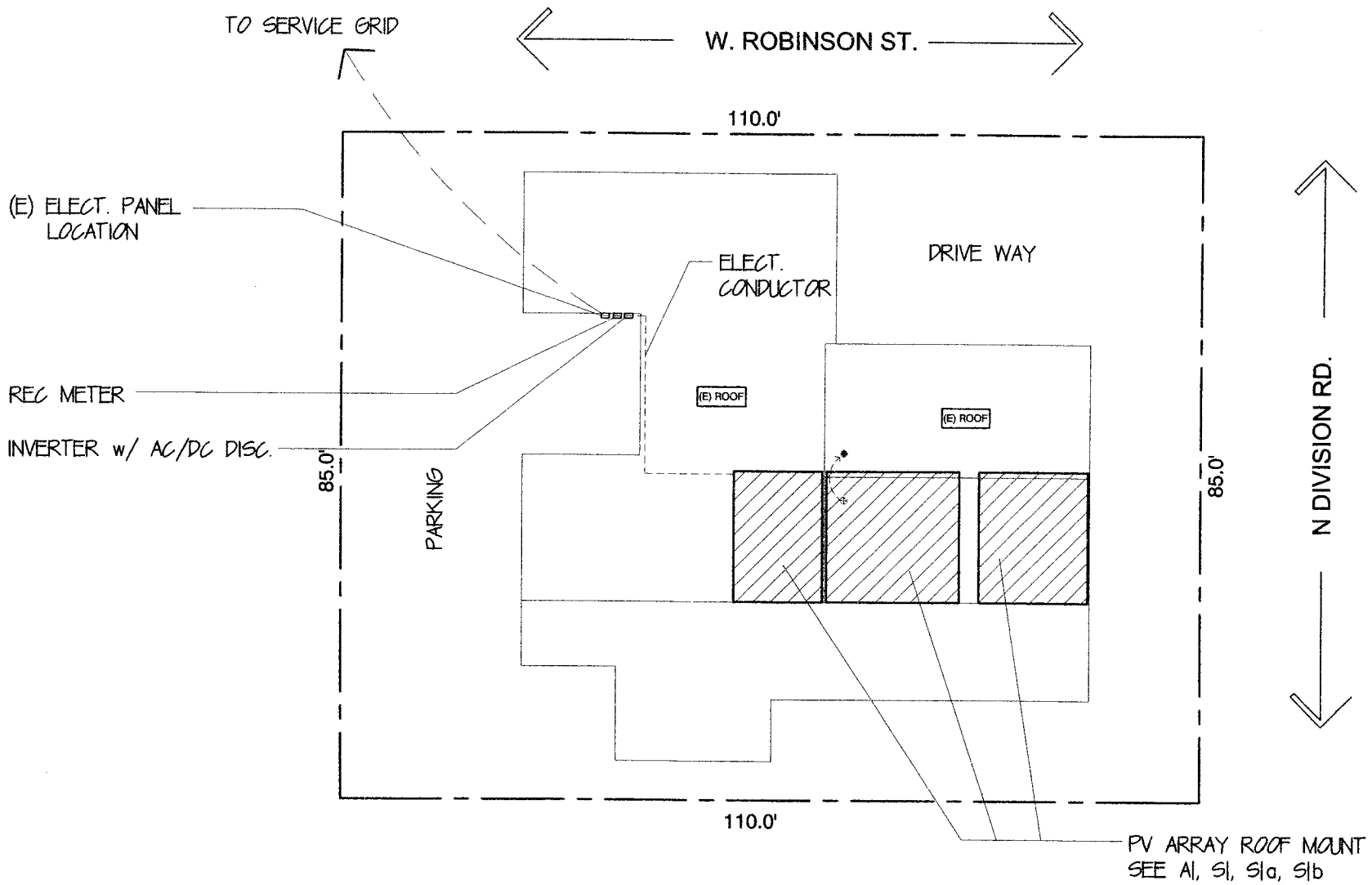
JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: tbd	DRAWING No. T1
CHECKED BY: tbd	
SCALE : AS SHOWN	

10-83 512 N division st

HRC - 10 - 022



PROPOSED PV SOLAR PANELS
BP SX3 190B
QTY. 45pcs (66.14"x32.95"x1.97")

ROOF MOUNT

NORTH

PLOT PLAN
SCALE: 1"=20'

ADOPTED CODES
(effective Date-January 1, 2008)

2006 INTERNATIONAL BUILDING CODE (06 IRC)
2005 NATIONAL ELECTRICAL CODE (05 NEC)
2008 NATIONAL ELECTRICAL CODE (08 NEC-690)

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

ROOF SNOW LOAD - elev. 4500ft~5500ft - 30psf
WIND SPEED (mph) - 100mph (3-sec. gust)
SEISMIC DESIGN CATEGORY - "E"
(Unless a site specific analysis of Development and approved)
SOIL SITE CLASS - D
FROST DEPTH - 24" min.
AIR FREEZING INDEX - 500
MEAN ANNUAL TEMPERATURE - 50°
WINTER DESIGN TEMPERATURE - 10°F

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LIC.# 10105

DRAWING TITLE

PLOT PLAN

INITIAL DRAWING DATE
23 DEC 2009

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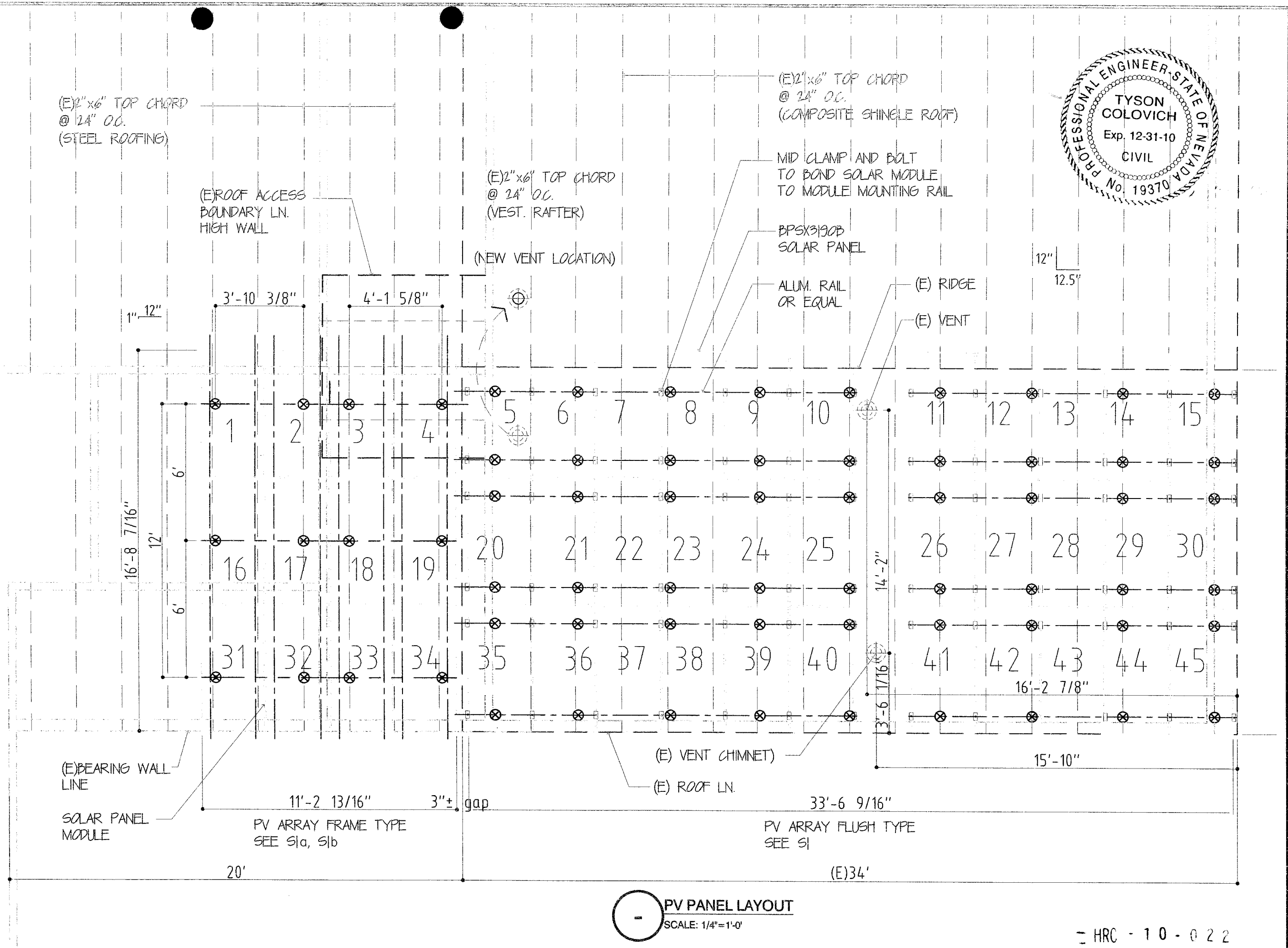
CHECKED BY: am	C1
SCALE : AS SHOWN	



PV PANEL LAYOUT

SCALE: 1/4"=1'-0'

HRC - 10 - 022

PROFESSIONAL ENGINEER-STATE OF NEVADA
TYSON COLOVICH
Exp. 12-31-10
CIVIL
No. 19370

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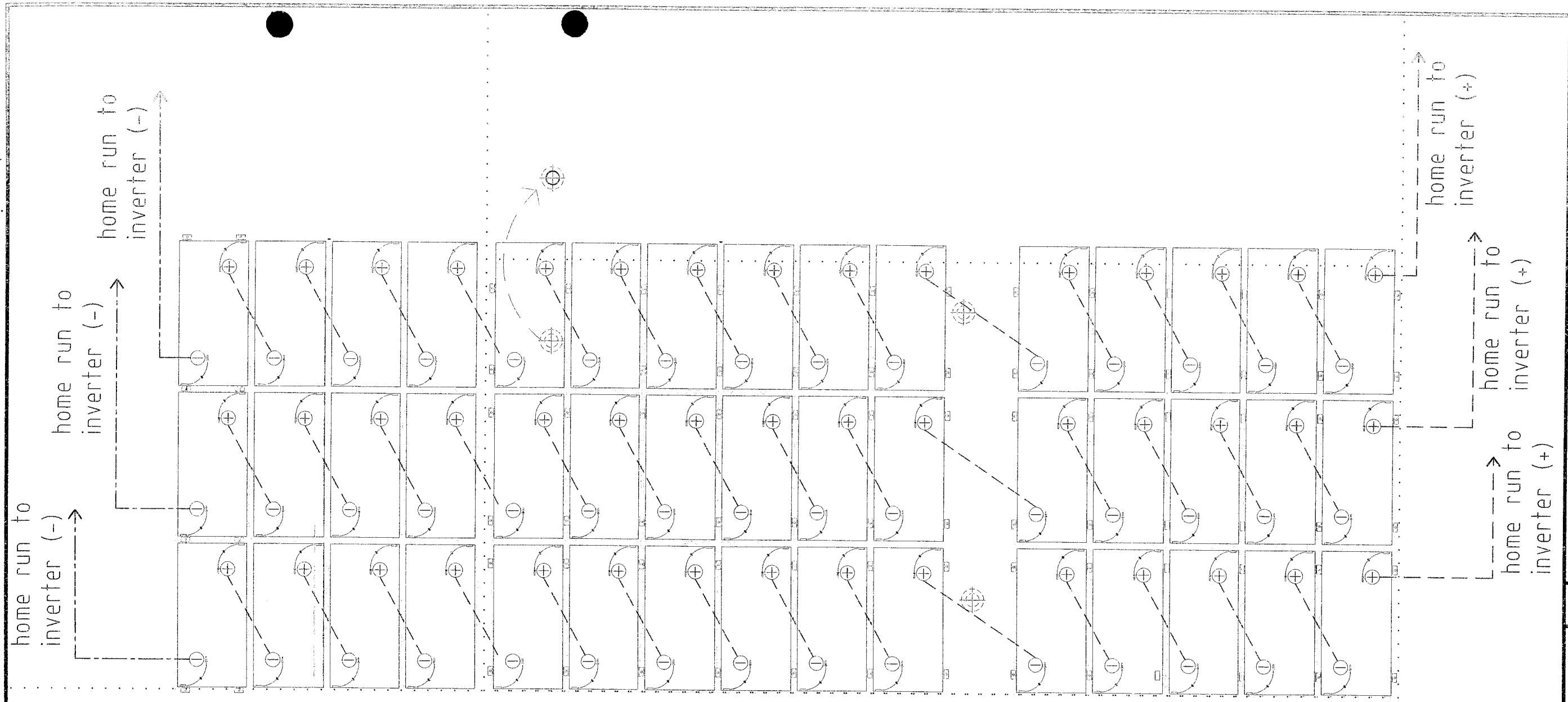
DRAWING TITLE

PV PANEL LAYOUT

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: am	DRAWING No.
CHECKED BY: am	A1
SCALE : AS SHOWN	



3-STRINGS OF
THREE ROWS

WIRING BOOT LAYOUT
SCALE: 1/4"=1'-0'

NOTE:
WIRING SIZES AND LOCATION AND INVERTER WATTAGE TO BE DETERMINED BY ELECTRICIAN

ROOF MOUNT

HRC - 10 - 022

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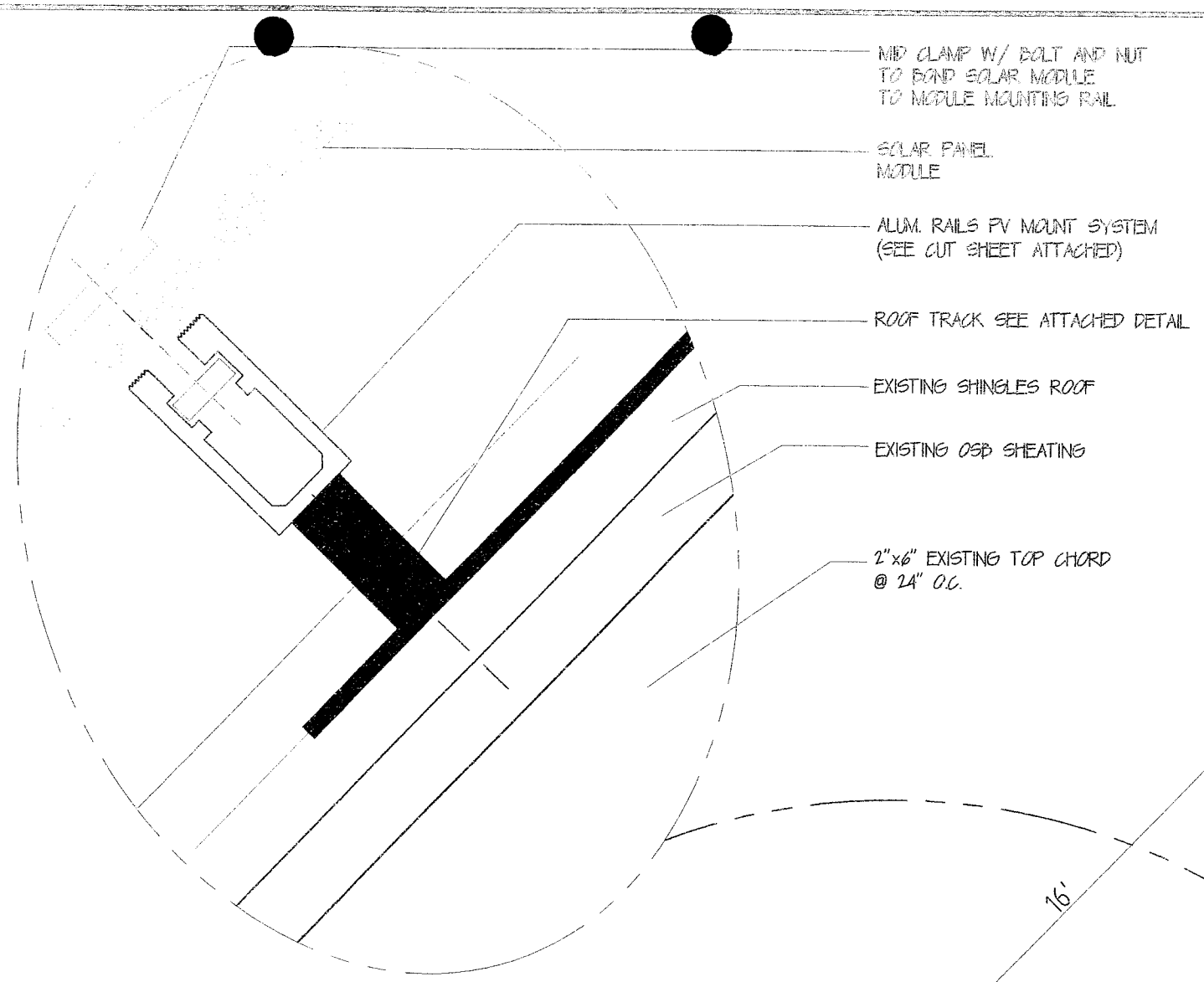
DRAWING TITLE
WIRING BOOT LAYOUT

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

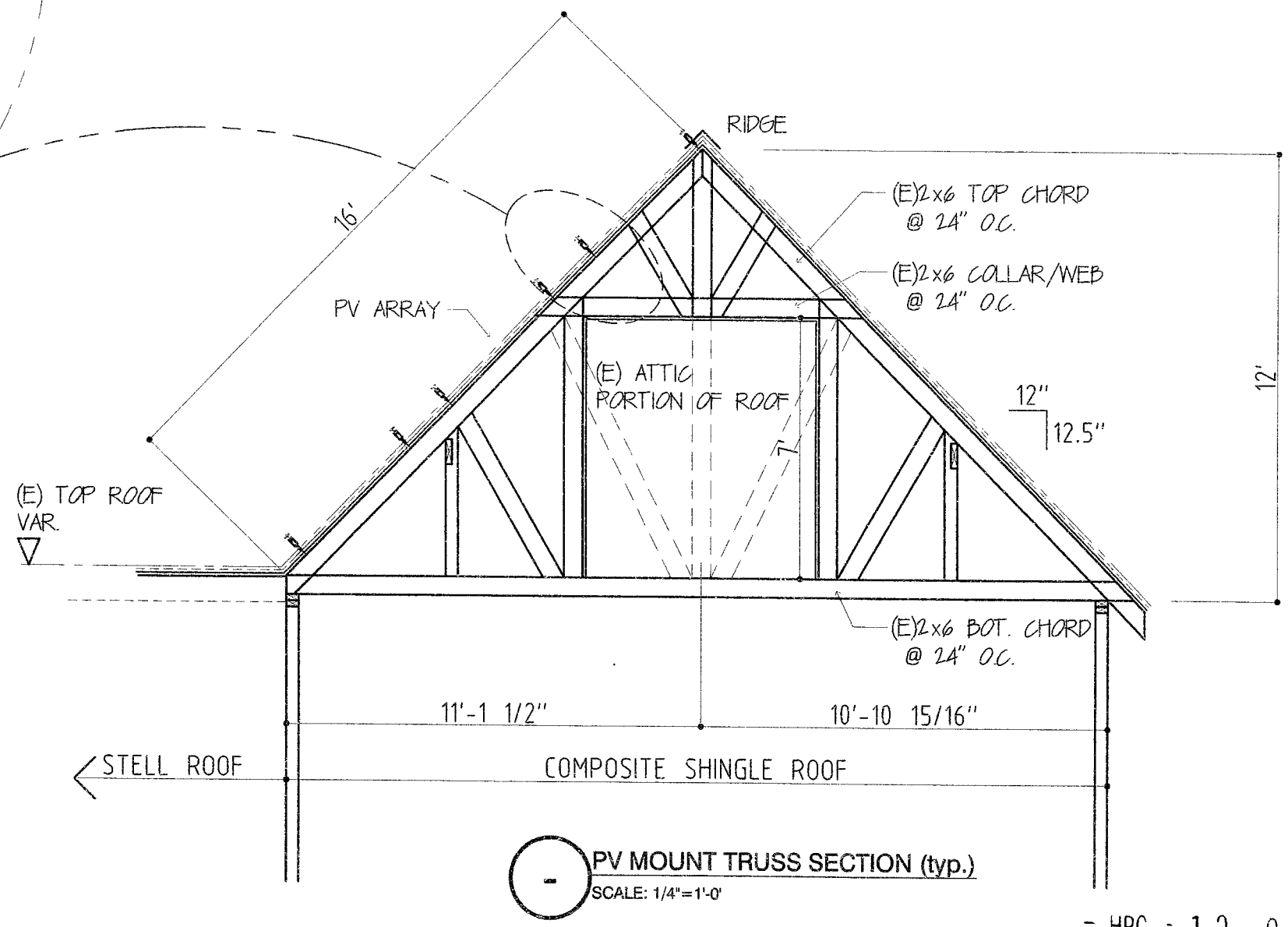
DRAWN BY: am	DRAWING No.
CHECKED BY: am	A2
SCALE : AS SHOWN	



SPOT DETAIL

N.T.S.

NOTE:
GENERALLY ALLOWED
FIXING POINT FIELD
ADJUSTMENT O.U.S.



PV MOUNT TRUSS SECTION (typ.)

SCALE: 1/4"=1'-0'

HRC - 10 - 022

PROFESSIONAL ENGINEER-STATE OF NEVADA
TYSON COLOVICH
Exp. 12-31-10
CIVIL
No. 19370

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DRAWING TITLE
PV MOUNT TRUSS SECTION

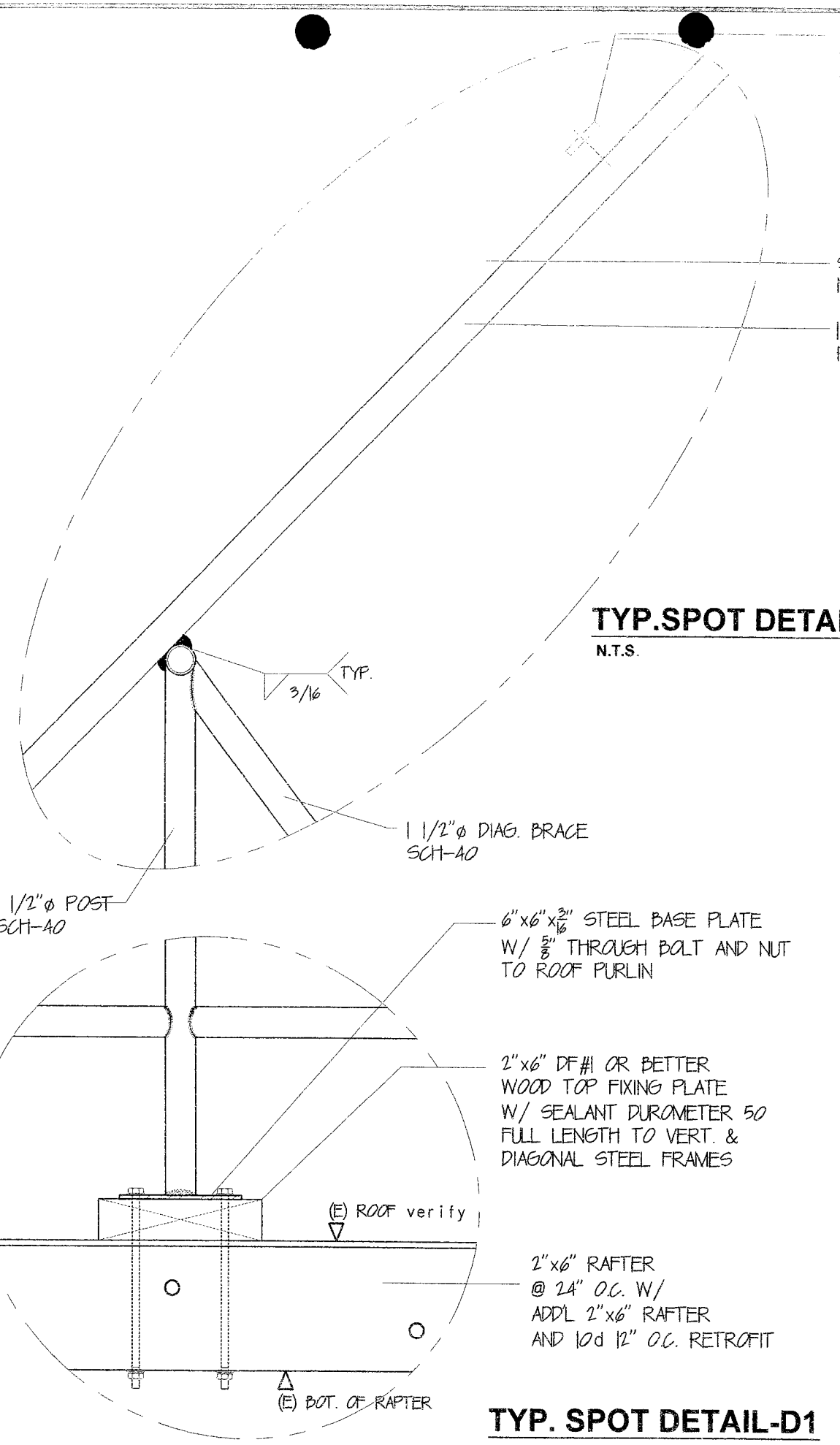
JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: am
CHECKED BY: am
SCALE : AS SHOWN

DRAWING No.
S1

- HRC - 10 - 022

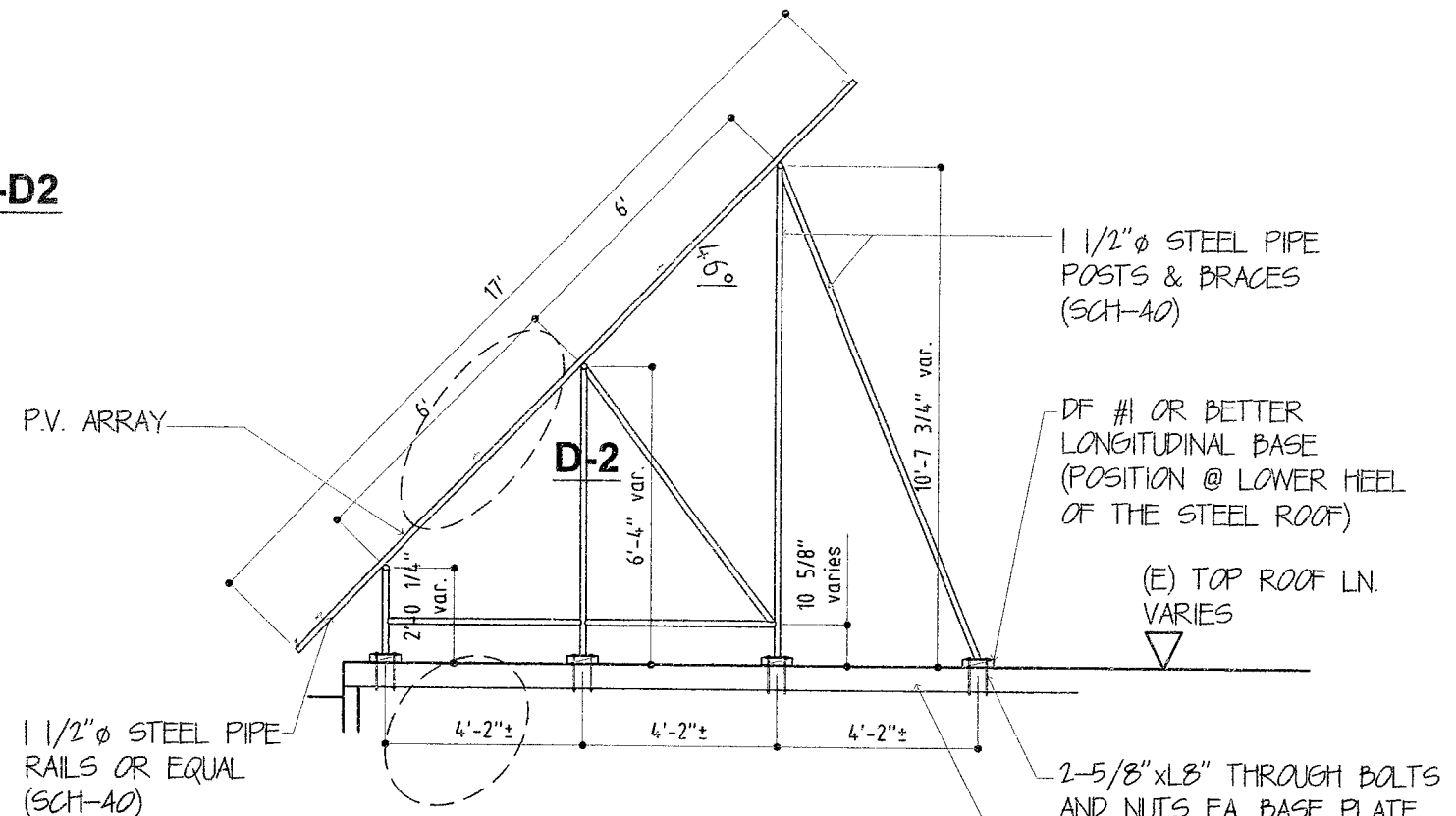


TYP.SPOT DETAIL-D2

N.T.S.

TYP. SPOT DETAIL-D1

N.T.S.



D-1 PV MOUNT FRAME DETAIL (typ.)

SCALE: 1/4"=1'-0'

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TYSON COLOVICH
Exp. 12-31-10
CIVIL
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LIC.# 10105

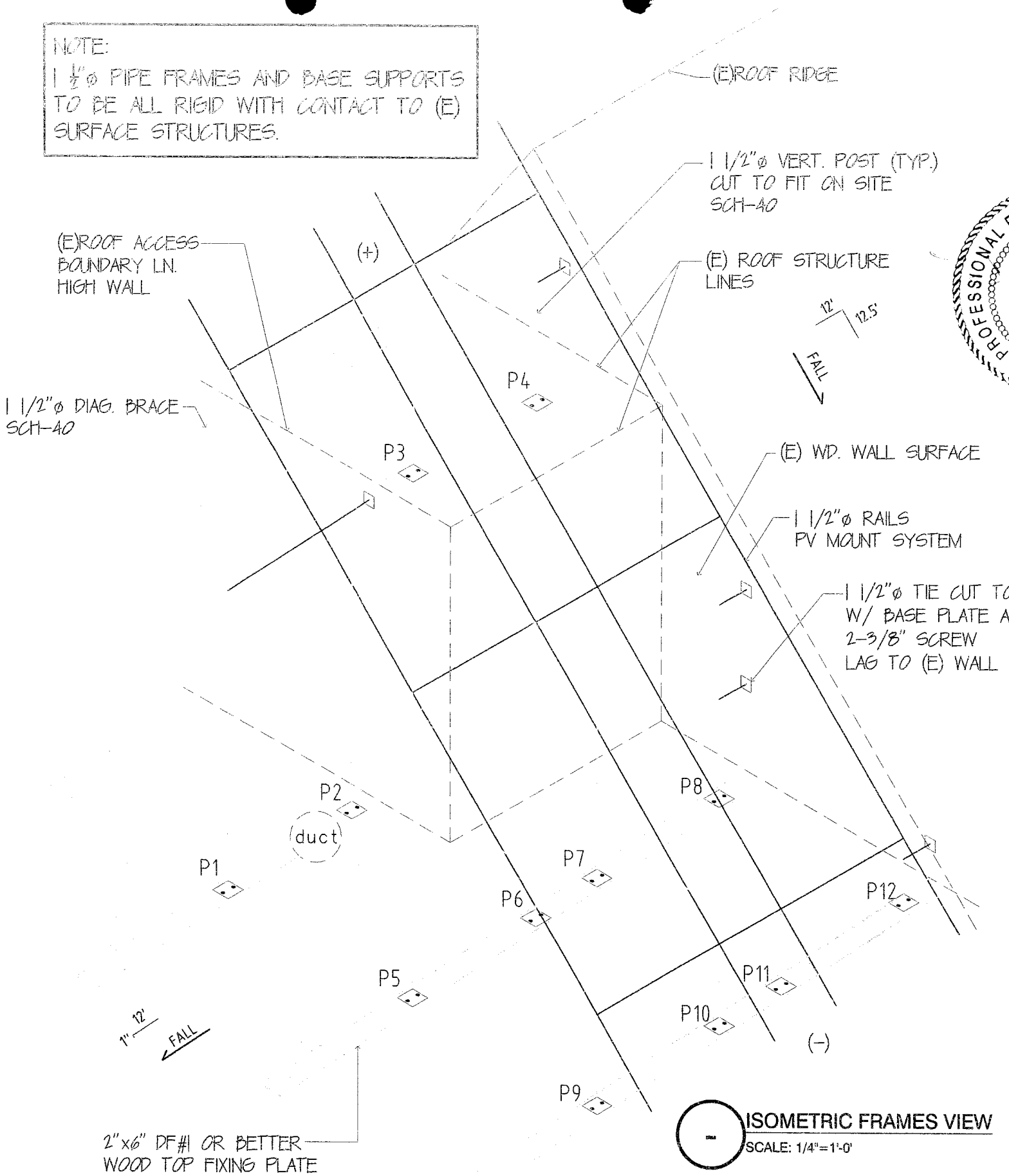
DRAWING TITLE
PV MOUNT FRAME DETAIL TYP.

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: am	DRAWING No.
CHECKED BY: am	S1a
SCALE : AS SHOWN	

NOTE:
1 ½"ø PIPE FRAMES AND BASE SUPPORTS TO BE ALL RIGID WITH CONTACT TO (E) SURFACE STRUCTURES.



ISOMETRIC FRAMES VIEW
SCALE: 1/4"=1'-0'

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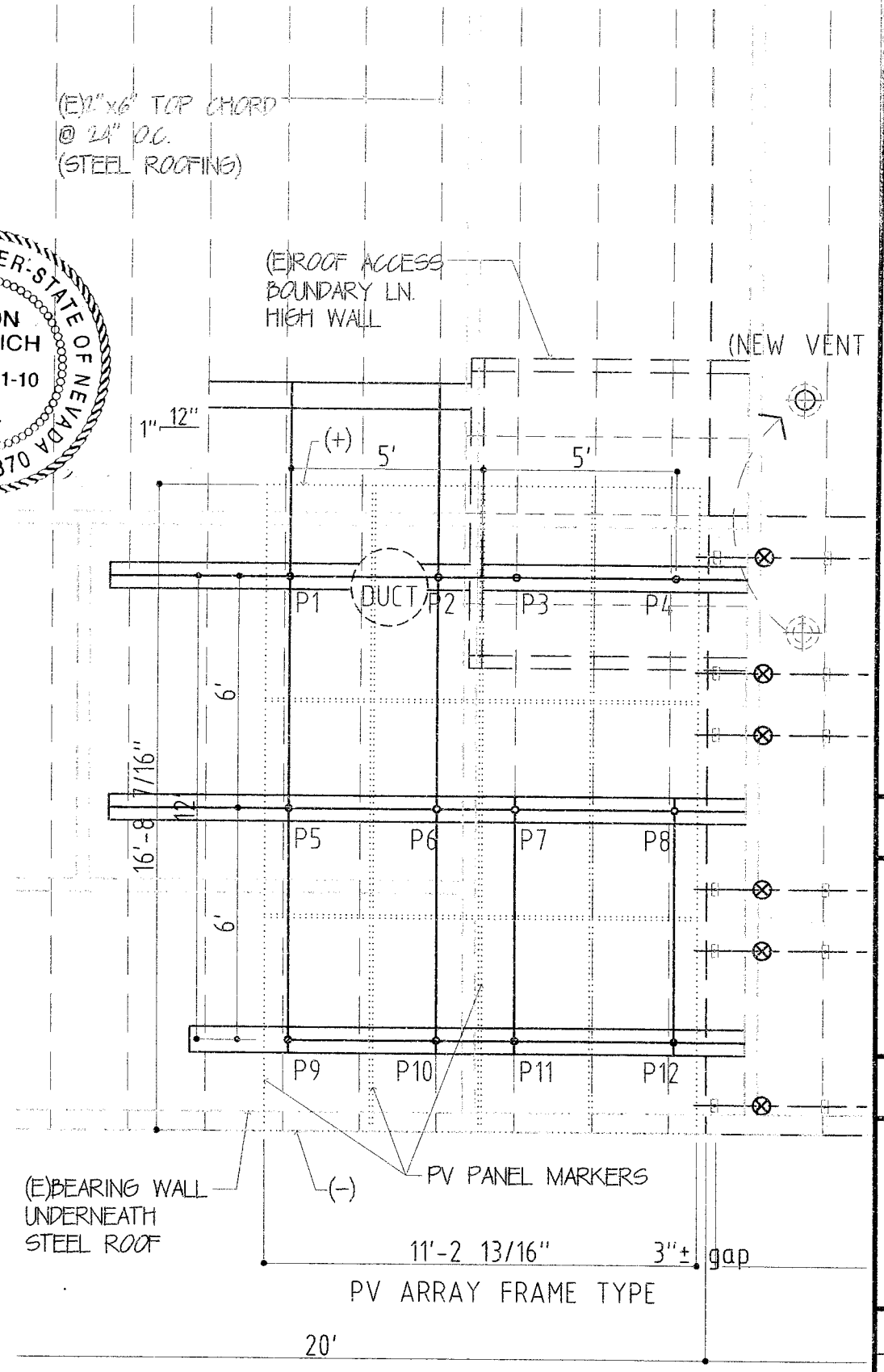
TYSON COLOVICH
Exp. 12-31-10
CIVIL
No. 19370



PV PANEL STEEL FRAMES
SCALE: 1/4"=1'-0'

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LIC.# 10105

DRAWING TITLE
PV PANEL STEEL FRAMES

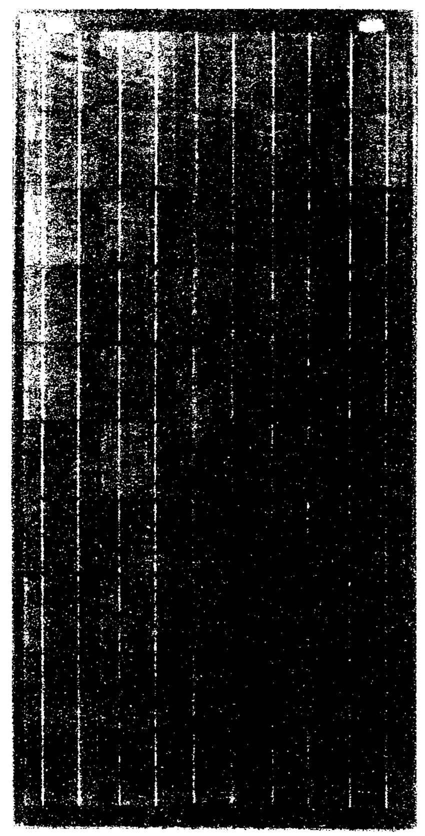
JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: am	DRAWING No.
CHECKED BY: am	S1b
SCALE : AS SHOWN	

DRC - 10-022

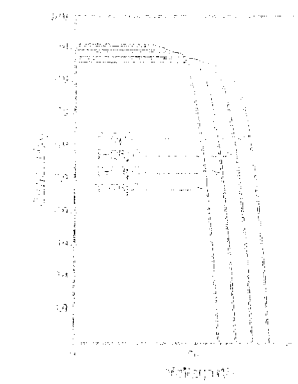
190 Watt Photovoltaic Module

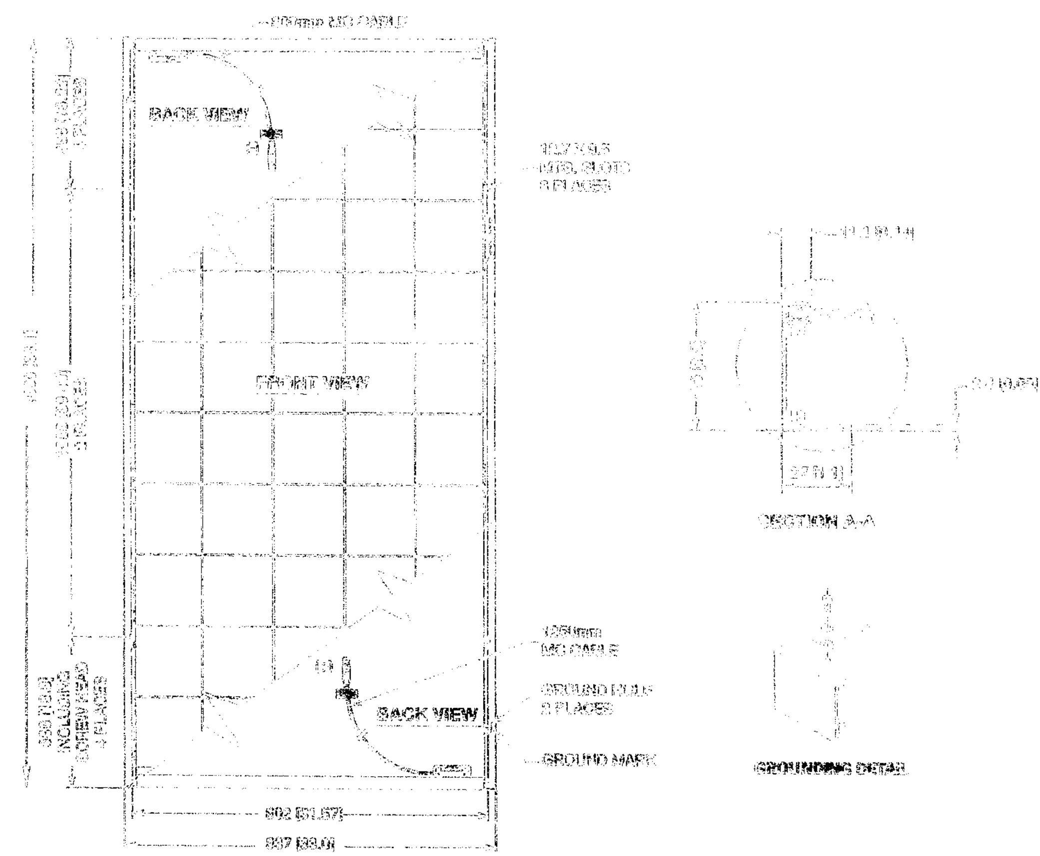


Maximum power (P_{max})	190W
Voltage at P_{max} (V_{mp})	24.3V
Current at P_{max} (I_{mp})	7.8A
Warranted minimum P_{max}	[illegible]
Short-circuit current (I_{sc})	[illegible]
Open circuit voltage (V_{oc})	30.6V
Temperature coefficient of I_{sc}	[illegible]
Temperature coefficient of V_{oc}	-(109±10)mV/°C
Temperature coefficient of power	[illegible]
NOCT (Air 20°C; Sun 0.8kW/m²; wind 1m/s)	47±2°C
Maximum series fuse rating	15A
Maximum system voltage	600V (U.S. NEC rating)

Dimensions	Length: [illegible] Width: 837mm (32.95") Depth: 50mm (1.97")
Weight	[illegible]
Solar Cells	50 cells (156mm × 156mm) in a 5x10 matrix connected in series
Output Cables	RHW 2 AWG# 12 (4mm²); cable with polarized weatherproof DC rated Multicontact connectors; asymmetrical lengths - 1250mm (-) and 800mm (+)
Diodes	*IntegraBus*™ technology includes Schottky by-pass diodes integrated into the printed circuit board bus
Construction	Front: High-transmission and anti-reflective 3mm (1/8th in) tempered glass; Back: Charcoal Gray Tedlar; Encapsulant: EVA
Frame	Anodized aluminum alloy type 6063T6 Universal frame; Color: Black

Module warranty: 25-year limited warranty of 80% power output; 12-year limited warranty of 90% power output; 5-year limited warranty of materials and workmanship. See our website for full terms of these warranties.





Includes with each module: self-tapping grounding screw, instruction sheet and warranty documents.

Note: This publication summarizes product warranty and specifications, which are subject to change without notice. Additional information may be found on our web site: www.bpsolar.us

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LIC.# 10105

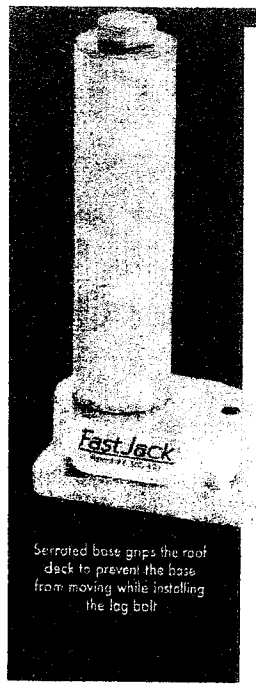
DRAWING TITLE
PANEL SPECIFICATION

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: am
CHECKED BY: am
SCALE : AS SHOWN
DRAWING No. **S2**

- HRC - 10 - 022



FastJack®

Patent #6,360,491

Laboratory Tested
2,359 lbs
Vertical Pullout
808 lbs
Side Load Pullout

Flashable Roof Stanchion

The patented design of the FastJack® can be easily expressed as the most innovative, efficient and cost-effective tool of it's kind!

Between the precision CNC machined base and stanchion along with strict engineering and material standards, the FastJack® has been laboratory tested to provide 2,359 pounds of strength using only a single lag bolt (included)!

FastJack® FJ-300-18
For Oatey® style flashings

FastJack® FJ-450-18
For standard height flashings

Four Sizes Available!

3" High	Part# FJ-300-18
For low profile installations using Oatey® flashings (for composition shingle roof-tops)	
4-1/2" High	Part# FJ-450-18
For installations using standard flashings (for composition & flat rooftops)	
6" High	Part# FJ-600-18
For standard flashings (for flat tile rooftops)	
7-1/2" High	Part# FJ-750-18
For standard flashings (sized for S-curve tile roofs and/or double flashed installations)	

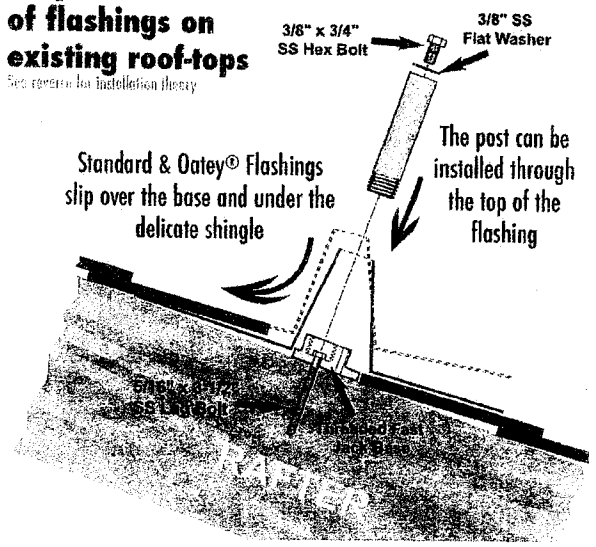
The FastJack® design is covered under Pat. #6,360,491
Using hex 3/16" x 3 1/2" Lag Bolt

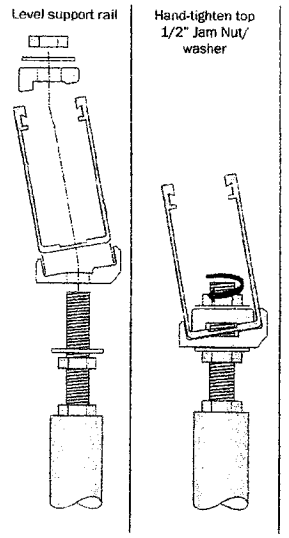
Benefits of the FastJack®

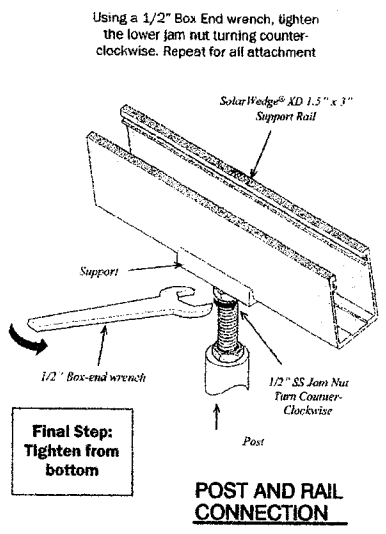
- Removable post makes installation on existing roofs/retrofit quick and easy (refer to the illustration to the right)
- Patented design locates the lag bolt directly under the stanchion providing superior strength values
- Fast & easy to install - saves time and labor costs
- Precision machined from extruded aluminum, there are no welds to corrode or break
- Significantly lighter than steel for installer convenience and reduced shipping costs.
- Integrated drill guide insures perfect pilot holes every time - minimizes the possibility of splitting roof rafters
- Base design allows virtually any roof flashing to install flat on the roof deck

Easy installation of flashings on existing roof-tops

See reverse for installation theory

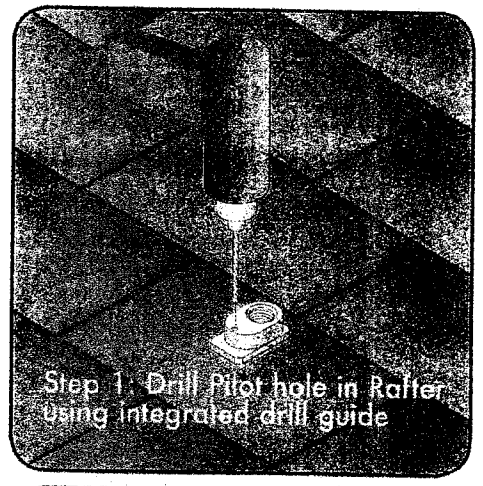


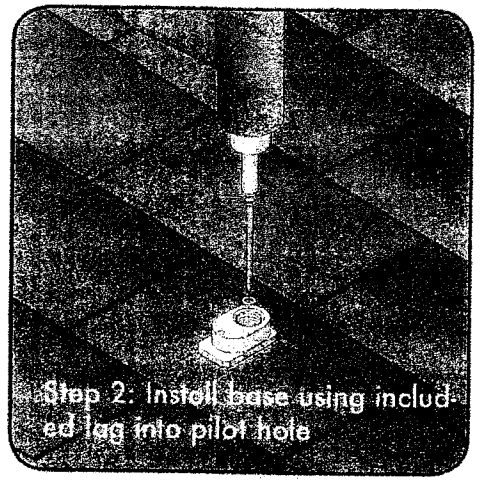


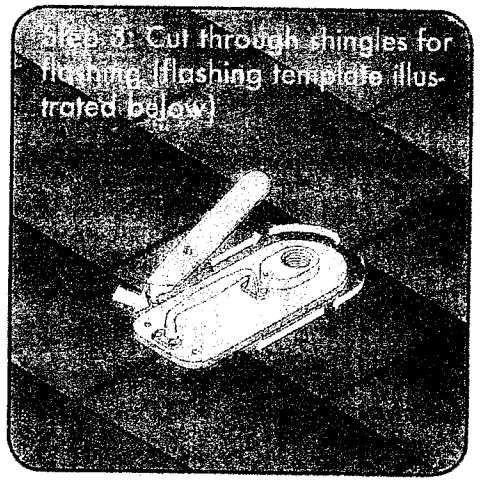


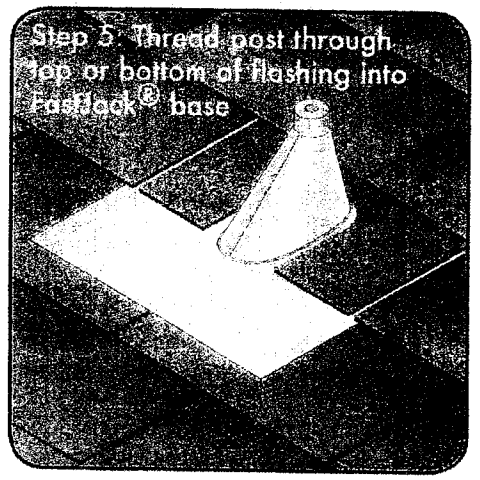
POST AND RAIL CONNECTION

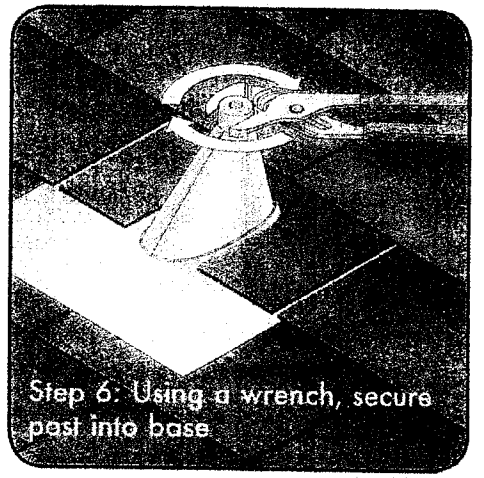
Easy Installation:

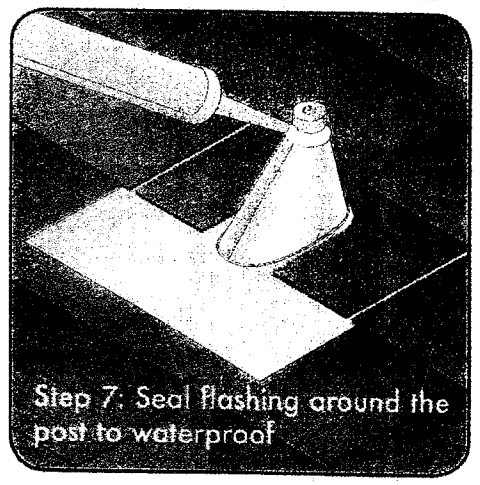


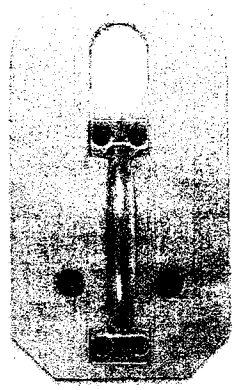












Flashing Template

Available for Oatey (Pictured) and standard flashings. Makes cutting in a perfect flashing easy and painless!

Kit includes Fast Jack post threader with knob

ROOF MOUNT SYSTEM
SEE C1, A1, S1

TYPICAL DETAIL

N.T.S.

- HRC - 10-022

PROPOSED PV SOLAR BP PANELS FOR:
SIERRA ACUPUNCTURE & HEALING
512 N DIVISION ST.
CARSON CITY, NV 89703
COUNTY: CARSON CITY
TEL: 775-841-3336
APN # 003-237-03

CONTRACTOR:

AMERICAN SUN & SOLAR
59 DAMONTE RANCH PKWY
SUITE B283
TEL. 775-853-3311
NV LIC # 67222

ELECTRICAL:

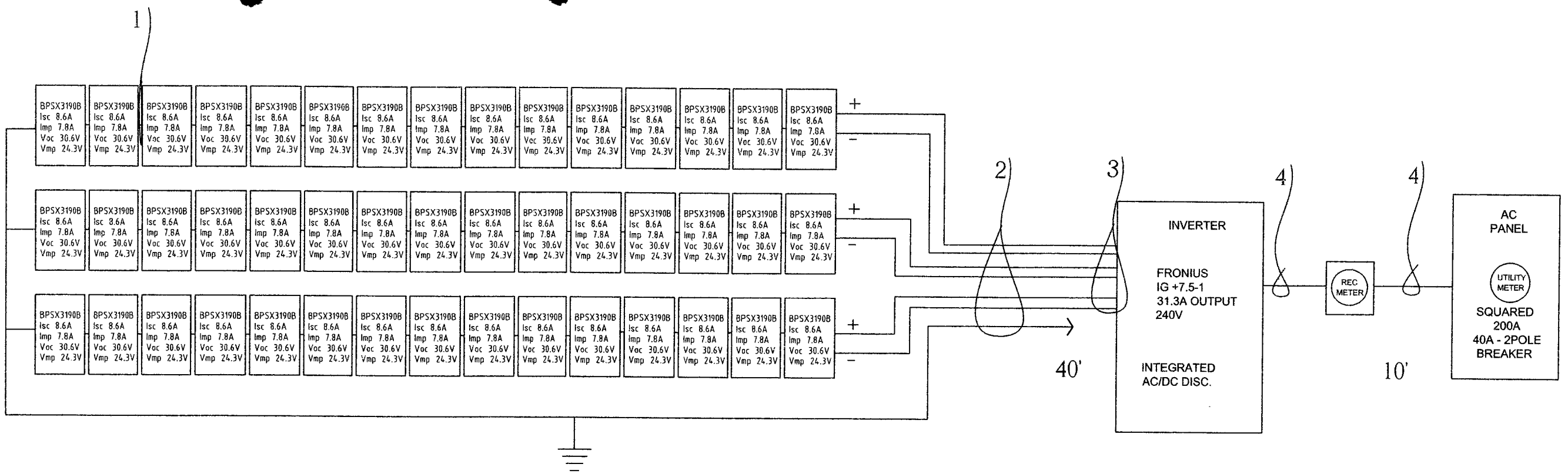
JENSEN ELECTRIC
150 ISIDRO CT # 103
SPARKS, NV 89441
TEL. 775-322-3100
LIC.# 10105

DRAWING TITLE
DETAIL

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: tbd	DRAWING No.
CHECKED BY: tbd	S3
SCALE : AS SHOWN	



PANEL QTY.=45 PCS @ 190W
ROOF MOUNT

ONE-LINE NOTES:

1. CURRENT DRAW PER NEC ARTICLE 690.8,(1)
   8.6A x 125%=10.75A.
2. OVER CURRENT PROTECTION DRAW PER NEC ARTICLE 690.8,B(1)
   10.75A x 125%=13.44A
3. #6 GROUNDING ELECTRODE CONDUCTOR FROM INVERTER TO HOUSE AC PANEL . UNSPLICED, BONDED TO EXISTING GROUNDING ELECTRODE CONDUCTOR, SIZE PER ARTICLE 250.66
4. VOLTAGE CORRECTION FACTOR
   (RENO-19deg) TABLE 690.7
   1.23 x 31.21 = 38.4V
   45 x 38.4 = 1728V

SHEET NOTES:

A. ALL PANELS AND RAILS GROUNDED WITH EITHER SELF GROUNDING CLAMPS OR #12 WIRE WITH STAKE-ON TERMINALS AND GROUNDING SCREWS.

B. ALL CONDUCTORS TO BE COPPER, OUTDOOR USE.

C. MOUNT REC METER AT SAME HEIGHT AS REV METER.

D. MOUNT AC DISCONNECT WITHIN 10' OF REV METER WITHIN SIGHT.

REQUIRED SIGNAGE

WARNING MAX VOLTAGE 600V OPERATING CURRENT 31.25A OPERATING VOLTAGE 264VDC SHORT CIRCUIT CURRENT 29.42A	WARNING 240 VAC 8.35 AMPS

WIRE SCHEDULE

	# OF CONDUCTORS	WIRE SIZE	VOLTAGE	AMPERAGE	LENGHT	CONDUIT SIZE	VOLTAGE DROP
1	1	12 awg		8.5 A			
2	2	10 awg	1728V	31.0 A	40'	3/4" EMT	0.23%
	1	4 awg					
3	INTEGRAL WITH INVERTER						
4	3	8 awg	240V	8.35 A	10'	1" EMT	0.23%
	1	6 awg					

10-022

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DRAWING TITLE
ONE LINE DIAGRAM

JOB NUMBER
512 N DIVISION ST.

INITIAL DRAWING DATE
23 DEC 2009

DRAWN BY: tbd
CHECKED BY: tbd
SCALE : AS SHOWN

DRAWING No.
E1