

SITE PLAN REVIEW APPLICATION-DG BETHLEHEM SOLAR, LLC

3,753.22 MW DC SOLAR FACILITY AT TOWN OF BETHLEHEM CLAY MINE

253 BRIDGE STREET

TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

THIS DOCUMENT IS PROVIDED BY BORREGO SOLAR SYSTEMS INC. TO FACILITATE THE SALE AND INSTALLATION OF A SOLAR POWER SYSTEM FROM BORREGO SOLAR SYSTEMS. NO WARRANTY, RELEASE OR LIABILITY FOR ANY OTHER PURPOSE, WITHOUT PRIOR WRITTEN CONSENT IS STRICTLY FORBIDDEN.

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PV Engineers



GENERAL NOTES

- AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE BORREGO SOLAR SYSTEMS, INC AND "SUBCONTRACTOR" IS BORREGO'S INSTALLATION SUBCONTRACTOR.
- THESE NOTES SET MINIMUM STANDARDS FOR CONSTRUCTION. THE DRAWINGS GOVERN OVER THESE NOTES TO THE EXTENT SHOWN.
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING: LOCAL BUILDING CODE, LOCAL ELECTRICAL CODE, ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK AND THOSE CODES AND STANDARDS LISTED IN THESE DRAWINGS AND IN THE SUBCONTRACTOR AGREEMENT.
- EXCEPTIONS TO THE CONTRACT DOCUMENTS ARE PERMITTED ONLY WITH THE APPROVAL OF BORREGO.
- COORDINATE THESE DRAWINGS WITH SPECIFICATIONS AND MANUFACTURER INSTALLATION AND OPERATION MANUALS AND NOTIFY BORREGO OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK.
- DRAWINGS HAVE BEEN DETAILED IN COMPLIANCE WITH U.L. LISTING REQUIREMENTS AND THE BUILDING CODE FOR THE MATERIALS SPECIFIED. IF AN ALTERNATE OR SUBSTITUTED MATERIAL IS ACCEPTED AS AN EQUAL BY BORREGO, THE SUBCONTRACTOR WILL ASSUME THE RESPONSIBILITY FOR WHATEVER CONSTRUCTION MODIFICATION AND/OR ADDITIONAL COST THAT IS REQUIRED BY REASON OF THIS ACCEPTANCE.
- PRIOR TO THE COMMENCEMENT OF ANY WORK, EACH TRADE SHALL VERIFY EXISTING CONDITIONS AND NOTIFY BORREGO OF ANY DISCREPANCIES TO THAT WHICH IS SHOWN IN THESE DRAWINGS, INCLUDING BUT NOT LIMITED TO DIMENSIONS OF THE WORK AREA, STRUCTURE, EXISTING ELECTRICAL SERVICE, CONDUIT PATHS, OBSTRUCTIONS, ACCESSIBILITY ISSUES, AND WORKING CLEARANCES. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE SUBCONTRACTOR AT HIS OWN EXPENSE.
- SUBCONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO BORREGO FOR APPROVAL PRIOR TO MAKING ANY CHANGES. APPROVED CHANGES REQUIRE A DRAWING REVISION TO MAINTAIN CONTROL OVER THE APPROVED DESIGN. DEVIATION FROM THESE PLANS PRIOR TO BORREGO APPROVAL PLACES ALL LIABILITY ON THE SUBCONTRACTOR.
- UNLESS INDICATED AS EXISTING (E), ALL PROPOSED MATERIALS AND EQUIPMENT ARE NEW.
- ALL ITEMS TO BE REMOVED AND RELOCATED OR REPLACED SHALL BE HANDLED WITH PROPER CARE AND STORED IN A SAFE PLACE TO PREVENT DAMAGE, OR BE REPLACED AT THE SUBCONTRACTOR'S EXPENSE.
- ALL EQUIPMENT SHALL BE MOUNTED AS SHOWN. WHERE DETAILS ARE NOT PROVIDED, THE SUBCONTRACTOR SHALL USE DILIGENT EFFORTS TO MOUNT EQUIPMENT SUCH THAT IT WILL BE CLEAN, LEVEL AND SOLID.
- ALL SURFACES SHALL BE PATCHED AND PAINTED AROUND NEW DEVICES AND EQUIPMENT TO MATCH EXISTING FINISHES.
- ANY METAL SHAVINGS RESULTING FROM SITE WORK SHALL BE CLEANED FROM ROOF SURFACES, ENCLOSURES AND ANY ADDITIONAL AREAS WHERE OXIDIZED OR CONDUCTIVE METAL SHAVINGS MAY CAUSE RUST, ELECTRICAL SHORT CIRCUITS OR OTHER DAMAGE.
- NO STRUCTURAL MEMBER SHALL BE DRILLED UNLESS SPECIFICALLY AUTHORIZED BY BORREGO.
- SUBCONTRACTOR ACKNOWLEDGES THAT THE SYSTEM AS INDICATED ON THE PLANS REQUIRES ALL COMPONENTS TO BE INSTALLED TO PROPERLY RESIST WIND LOADS, SUCH AS BALLAST, WIND DEFLECTORS, ETC. IT IS THE RESPONSIBILITY OF THE SUBCONTRACTOR TO PROVIDE TEMPORARY MEANS TO RESIST WIND LOADS FOR ALL COMPONENTS NOT YET INSTALLED DURING AND AFTER REGULAR WORKING HOURS. THIS MAY INCLUDE TEMPORARY TIE DOWNS, COVERING, BALLAST OR ANY OTHER MEANS. DAMAGE TO ANY INSTALLED SYSTEM COMPONENT OR THE EXISTING FACILITY AS A RESULT OF THE UNFINISHED CONDITION NOT ADEQUATELY RESISTING WIND SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR TO REPAIR OR REPLACE AT THE SUBCONTRACTOR'S COST.

V.6

APPLICABLE CODES AND STANDARDS

2010 NEW YORK STATE BUILDING CODE
2008 NATIONAL ELECTRIC CODE
UL-1703 - SOLAR MODULES
UL-1741 - INVERTERS, COMBINER BOXES
UL-2703 - RACKING MOUNTING SYSTEMS AND CLAMPING DEVICES FOR PV MODULES

PROJECT SCOPE			
THIS PROJECT CONSISTS OF THE INSTALLATION OF SOLAR MODULES, PER THE SYSTEM DESCRIPTION, BELOW. THE MODULES WILL BE INSTALLED ON A GROUND MOUNTED RACKING SYSTEM. THE MODULES WILL BE WIRED IN SERIES STRINGS TO COMBINER BOXES, WHERE THEY WILL BE WIRED IN PARALLEL. THE OUTPUT OF THE COMBINER BOXES WILL BE CONNECTED IN PARALLEL TO THE INVERTERS, WHICH CONVERT THE PHOTOVOLTAIC OUTPUT POWER FROM DC TO AC. THE SOLAR ELECTRIC SYSTEM WILL BE INTERCONNECTED WITH THE EXISTING SITE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE APPLICABLE ELECTRIC CODE AND NATIONAL GRID REQUIREMENTS.			
SYSTEM DESCRIPTION - TOTAL			
SYSTEM SIZE (DC STC)	3,753.22 KW	SYSTEM SIZE (AC)	2748.0 KW
MODULES	(11,448) CANADIAN CS6X-305P AND (902) SUNTECH STP290-24V/D	CEC RATING	280.3 W
MODULES PER STRING	19 / 11	# OF STRINGS	636 / 82
RACKING	TERRASMARK TERRAFARM	TILT ANGLE	25°
INVERTER(S)	(106) SMA 24000TL-US, (12) SMA 15000TL-US, AND (2) SMA 12000TL-US	CEC EFFICIENCY	98.0 %
AZIMUTH	180° (SOUTH = 180°)		
SYSTEM DESCRIPTION - BETHLEHEM-WEST			
SYSTEM SIZE (DC STC)	1,308.10 KW	SYSTEM SIZE (AC)	957.0 KW
MODULES	(3,996) CANADIAN CS6X-305P AND (308) SUNTECH STP290-24V/D	CEC RATING	280.3 W
MODULES PER STRING	19 / 11	# OF STRINGS	222 / 28
RACKING	TERRASMARK TERRAFARM	TILT ANGLE	25°
INVERTER(S)	(37) SMA 24000TL-US, (3) SMA 15000TL-US, AND (2) SMA 12000TL-US	CEC EFFICIENCY	98%
AZIMUTH	180° (SOUTH = 180°)		
SYSTEM DESCRIPTION - BETHLEHEM-EAST			
SYSTEM SIZE (DC STC)	2,445.12 KW	SYSTEM SIZE (AC)	1791.0 KW
MODULES	(7,452) CANADIAN CS6X-305P AND (594) SUNTECH STP290-24V/D	CEC RATING	280.3 W
MODULES PER STRING	19	# OF STRINGS	414 / 54
RACKING	TERRASMARK TERRAFARM	TILT ANGLE	25°
INVERTER(S)	(69) SMA 24000TL-US, (24) SMA 15000TL-US	CEC EFFICIENCY	98 %
AZIMUTH	180° (SOUTH = 180°)		

PROJECT DIRECTORY

OWNER
DG BETHLEHEM SOLAR, LLC
VIRGINIA COOK
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PORTLAND, OR 97204

HOST
TOWN OF BETHLEHEM
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445 DELAWARE AVENUE
DELMAR, NY 12054

AUTHORITY HAVING JURISDICTION:
TOWN OF BETHLEHEM
445 DELAWARE AVENUE
DELMAR, NY 12054

UTILITY:
NATIONAL GRID

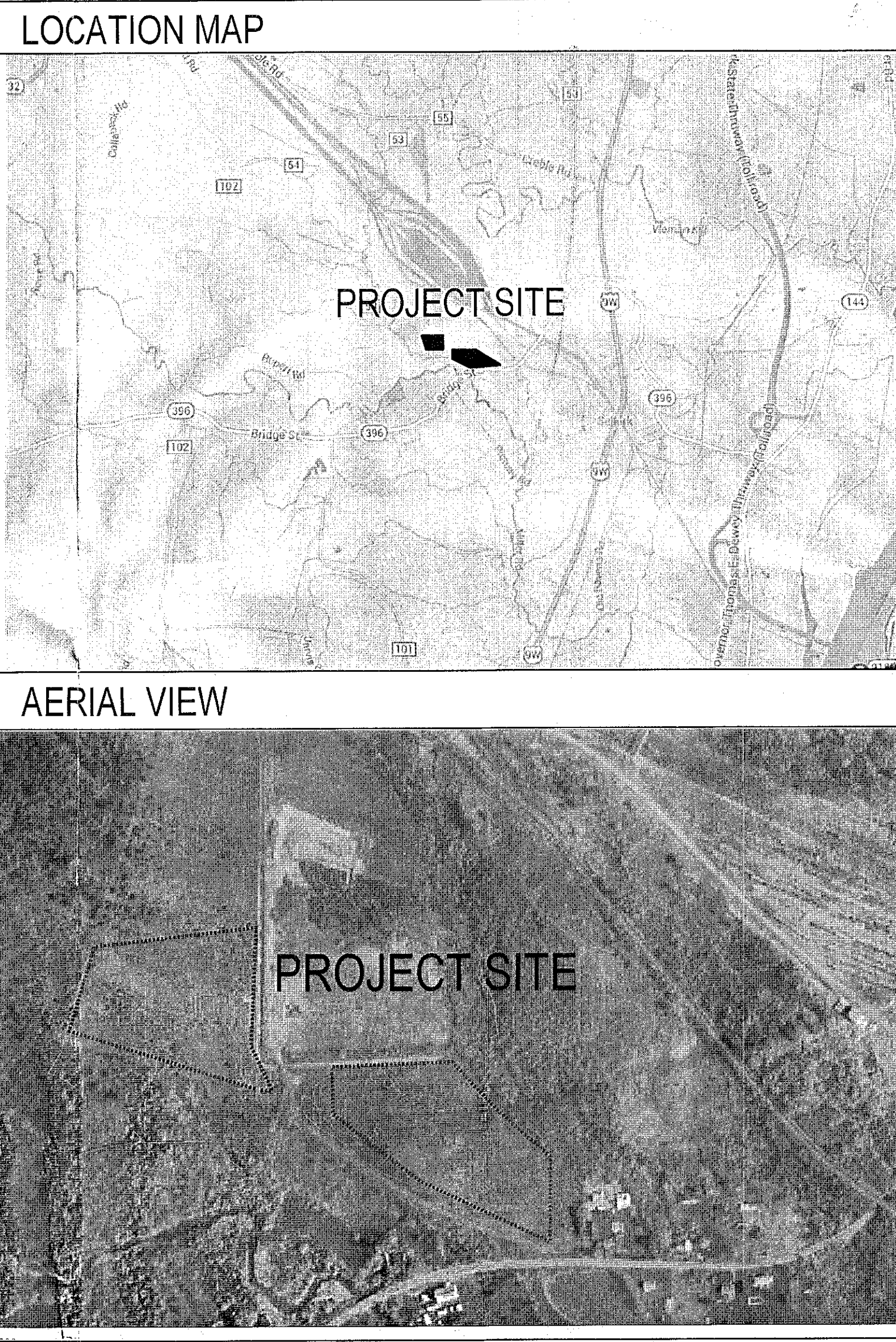
PROJECT MANAGER
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ELECTRICAL ENGINEER
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CONTACT: TBD
PHONE: TBD

DESIGN ENGINEER
FIRM: PV ENGINEERS, D.P.C.
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PHONE: TBD



GENERAL ABBREVIATIONS

(E)	EXISTING	NS	NORTH-SOUTH
AHJ	AUTHORITY HAVING JURISDICTION	NTS	NOT TO SCALE
AL	ALUMINUM	OAE	OR APPROVED EQUAL
APPROX	APPROXIMATE	OC	ON CENTER
ARY	ARRAY	OD	OUTSIDE DIAMETER
BLDG	BUILDING	OFCL	OWNER FURNISHED CONTRACTOR
BSS	BORREGO SOLAR SYSTEM	PV	INSTALLED PHOTOVOLTAIC
CL	CENTERLINE	PVC	POLY VINYL CHLORIDE
DAS	DATA ACQUISITION SYSTEM	SCH	SCHEDULE
DIA	DIAMETER	SS	STAINLESS STEEL
DO	DITTO	SSS	SOLAR SUPPORT STRUCTURE
EW	EAST-WEST	STC	STANDARD TEST CONDITIONS
FBO	FURNISHED BY OTHERS	TBD	TO BE DETERMINED
FF	FORWARD FACING	TP	TAMPER PROOF
GALV	GALVANIZED	TYP	TYPICAL
HDC	HOT DIP GALVANIZED	UON	UNLESS OTHERWISE NOTED
HVAC	HEATING VENTILATION AND AIR CONDITIONING	VIF	VERIFY IN FIELD
ID	INSIDE DIAMETER	WP	WEATHER PROOF
MFR	MANUFACTURER		
MOD	SOLAR MODULE		

Sheet List Table	
Sheet Number	Sheet Title
T-1	TITLE PAGE
C-0.0	CIVIL NOTES
C-1.0	EXISTING CONDITIONS PLAN
C-2.0	SITE PLAN
C-3.0	GRADING & EROSION CONTROL PLAN
C-4.0	CIVIL DETAILS - 1
C-4.1	CIVIL DETAILS - 2
C-5.0	AERIAL OVERVIEW
C-6.0	LANDSCAPE PLAN
V-1.1	VIEW STUDY
V-1.2	VIEW STUDY
V-1.3	VIEW STUDY
SURVEY 1	PARTIAL BOUND & TOPO 1 OF 2
SURVEY-2	PARTIAL BOUND & TOPO 2 OF 2
SURVEY-3	SUB-PARCEL PLAN

Zoning Summary Table				
Zoning District - Rural Light Industrial		Require d	Provide d	Notes
Minimum Lot Area (non-residential)	acre	1	79±	
Minimum Front Yard (front right-of-way)	feet	50	65±	to array
Minimum Front Yard (front centerline of Bridge Street)	feet	75	98±	to array
Side Yard	feet	25	83	to array
Rear Yard	feet	50	>500	to array
Minimum Highway Frontage	feet	50	466±	
Minimum Lot Depth	feet	150	>1,000	
Minimum Lot Width	feet	50	n/a	Arrays 8'-9' high
Maximum Lot Coverage*	%	30	n/a	
*Arrays do not fall under definition *That percentage of the lot covered by the footprint of the principal and accessory building area.				

FILE

PLANNING BOARD APPROVAL

PLANNING BOARD
TOWN OF BETHLEHEM
ALBANY COUNTY, NEW YORK
By direction of the Chairman.
These drawings are hereby approved.
See sheet(s) 1-9 of 15
for date and signature.

See:
Sheet 15 of 15
Sub Parcel Plan
Filed w/ ACC 07/31/2015

TOWN OF BETHLEHEM, NEW YORK
PLANNING DEPT. ORIGINAL
- SCANNED -

0 1 2 INCHES

RELEASE LEVEL

REV	DATE	DRAWN	CHECKED	REVISIONS
	10/1/14	DA/JAW	DA	Site Plan Review Application Submittal
	10/6/14	DA	DA	Revisions to Site Plan Review Set
	10/27/14	DA/JAW	DA	REVISED OHW LAYOUT
	11/14/14	DA/JAW	DA	REVISIONS BASED ON TOWN COMMENTS
	05/05/15	DA/JAW	DA	FINAL REVISIONS FOR PB SUBMISSION

PROJECT NUMBER:
908-0087

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TOWN OF BETHLEHEM, ALBANY COUNTY, NY

SCALES STATED ON DRAWINGS
ARE VALID ONLY WHEN PLOTTED
ARCH D 24" X 36"

T-1
TITLE PAGE

SHEET 1 of 15

SPA 212 11/18/2014