

NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 3/4" SERVICE SADDLE
- 2 3/4" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 3/4" COPPER TUBING (TYPE " K ")
- 4 3/4" ANGLE VALVE
- 5 3/4" EXPANSION CONNECION (5/8" X 3/4" M.T.R. CONN.)
- 6 5/8" X 3/4" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 3/4" ANGLE ELL WITH TEST VALVE
- 8 3/4" CAST IRON METER YOKE
- 9 20" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER ALUMINUM FROST LID
- 13 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING)



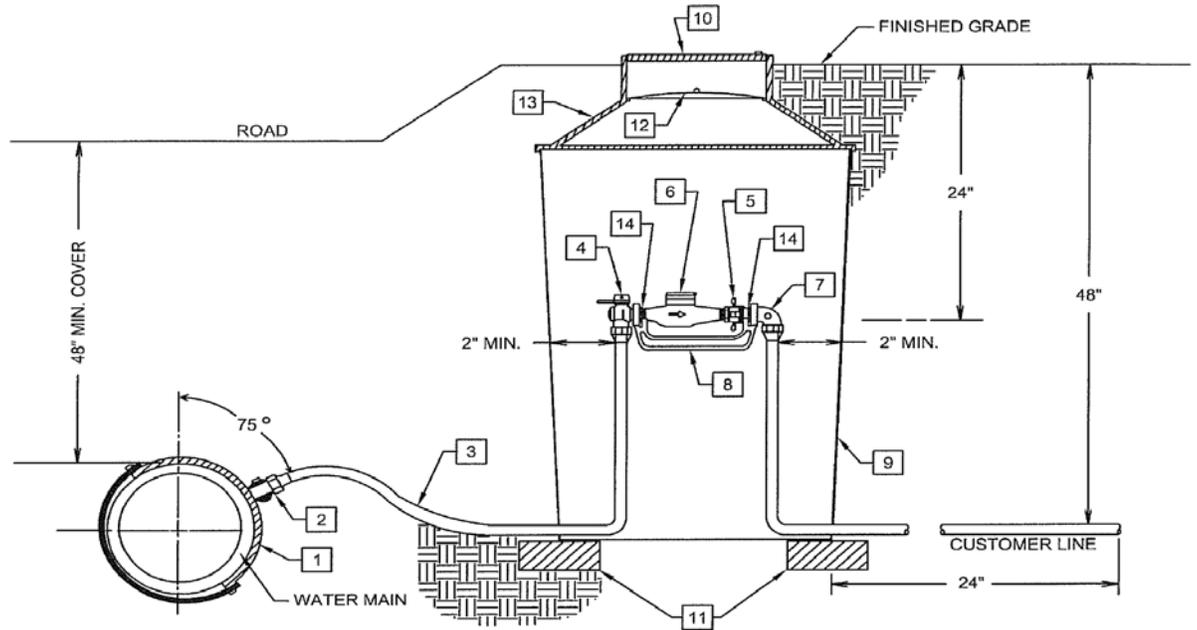
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CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



5/8" SINGLE SERVICE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

02



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 1" SERVICE SADDLE
- 2 1" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1" COPPER TUBING (TYPE " K ")
- 4 1" ANGLE VALVE
- 5 3/4" EXPANSION CONNECTION
- 6 3/4" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 1" ANGLE ELL WITH TEST VALVE
- 8 1" CAST IRON METER YOKE
- 9 24" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER ALUMINUM FROST LID
- 13 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING) WITH EXTENSION RING (20" DIA. X 24" DIA.)
- 14 1" X 3/4" METER ADAPTER



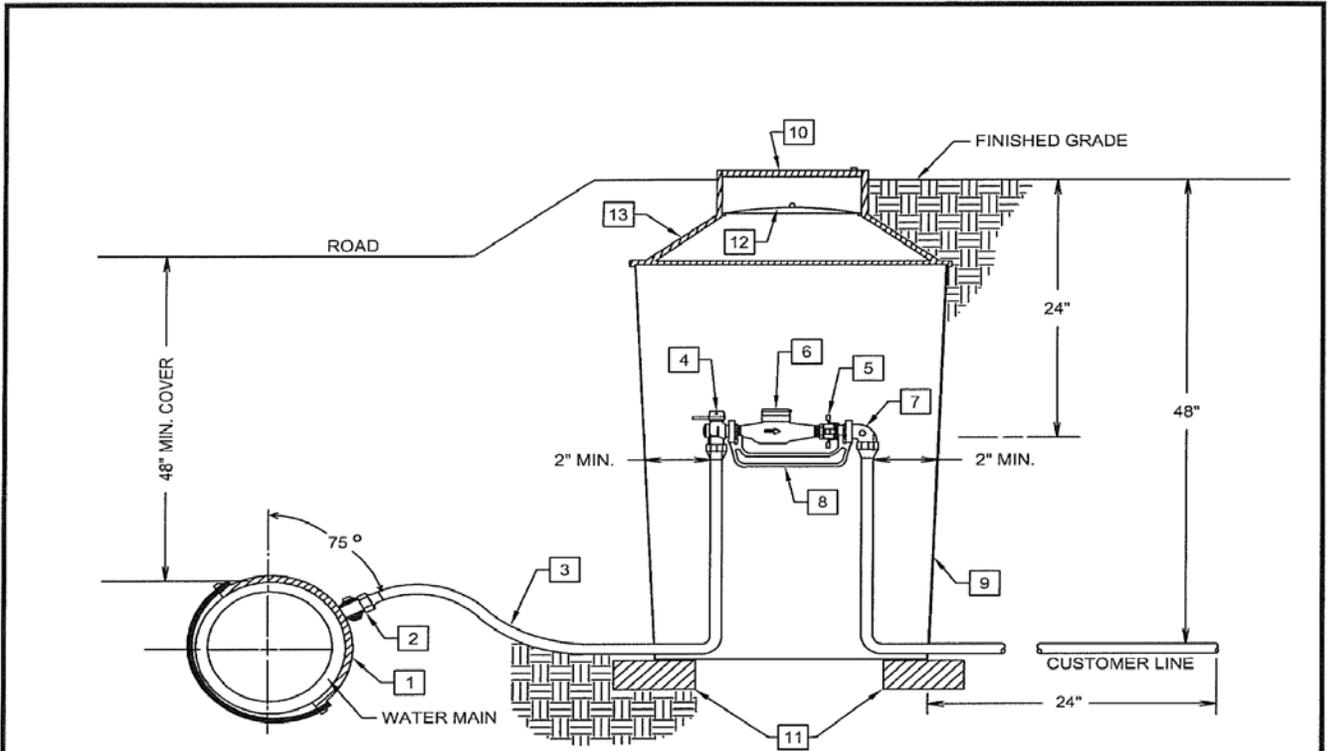
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3/4" SINGLE SERVICE

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02A



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 1" SERVICE SADDLE
- 2 1" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1" COPPER TUBING (TYPE " K ")
- 4 1" ANGLE VALVE
- 5 1" EXPANSION CONNECION
- 6 1" SEALED REGISTER WATER METER (FURNISHED & INSTALLED BY SDCW)
- 7 1" ANGLE ELL WITH TEST VALVE
- 8 1" CAST IRON METER YOKE
- 9 24" DIA. X 36" METER BOX
- 10 POLYMER LID (12-5/16" DIA.)
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER ALUMINUM FROST LID
- 13 DOUBLE LID COVER (20" DIA. X 11-1/2" DIA. INNER OPENING) WITH EXTENSION RING (20" DIA. X 24" DIA.)



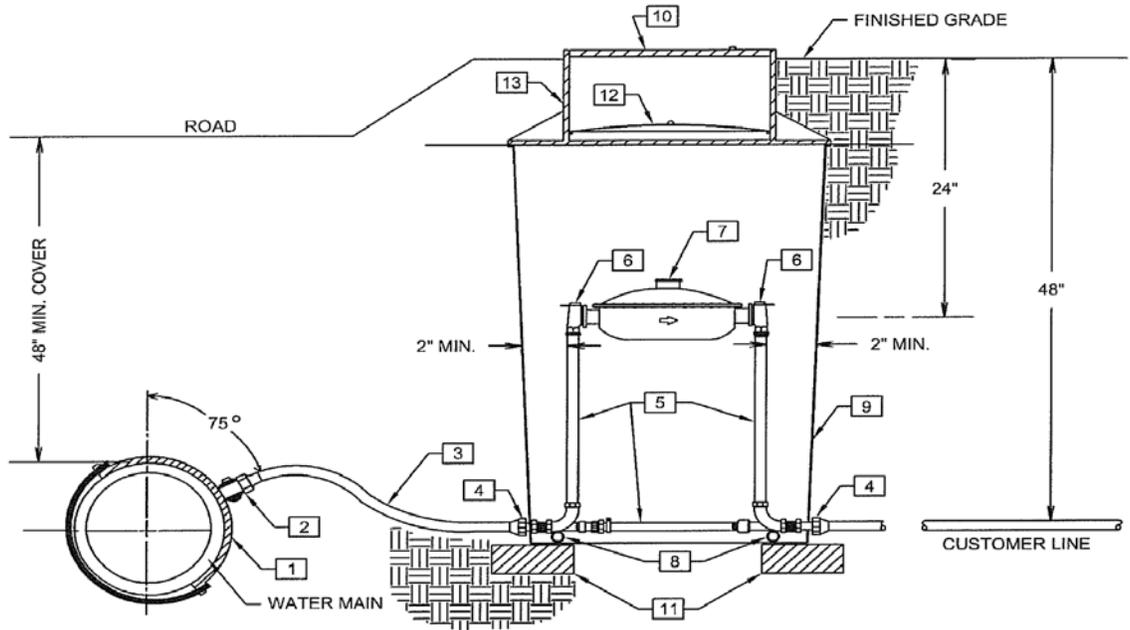
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1" SINGLE SERVICE

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03



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 1-1/2" SERVICE SADDLE
- 2 1-1/2" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 1-1/2" COPPER TUBING (TYPE " K ")
- 4 1-1/2" ADAPTER COUPLING
- 5 1-1/2" PREFABRICATED METER SETTER (NO BY-PASS)
- 6 1-1/2" BALL ANGLE VALVE (2 TOTAL)
- 7 1-1/2" SEALED REGISTER WATER METER - 13" FLANGE-TO-FLANGE SPACING (METER FURNISHED & INSTALLED BY SDCW)
- 8 1" GALVANIZED PIPE 24" LONG
- 9 36" DIA. X 36" METER BOX
- 10 20" DIA. POLYMER LID
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER METAL FROST LID
- 13 36" DIA. X 20" DIA. MONITOR COVER



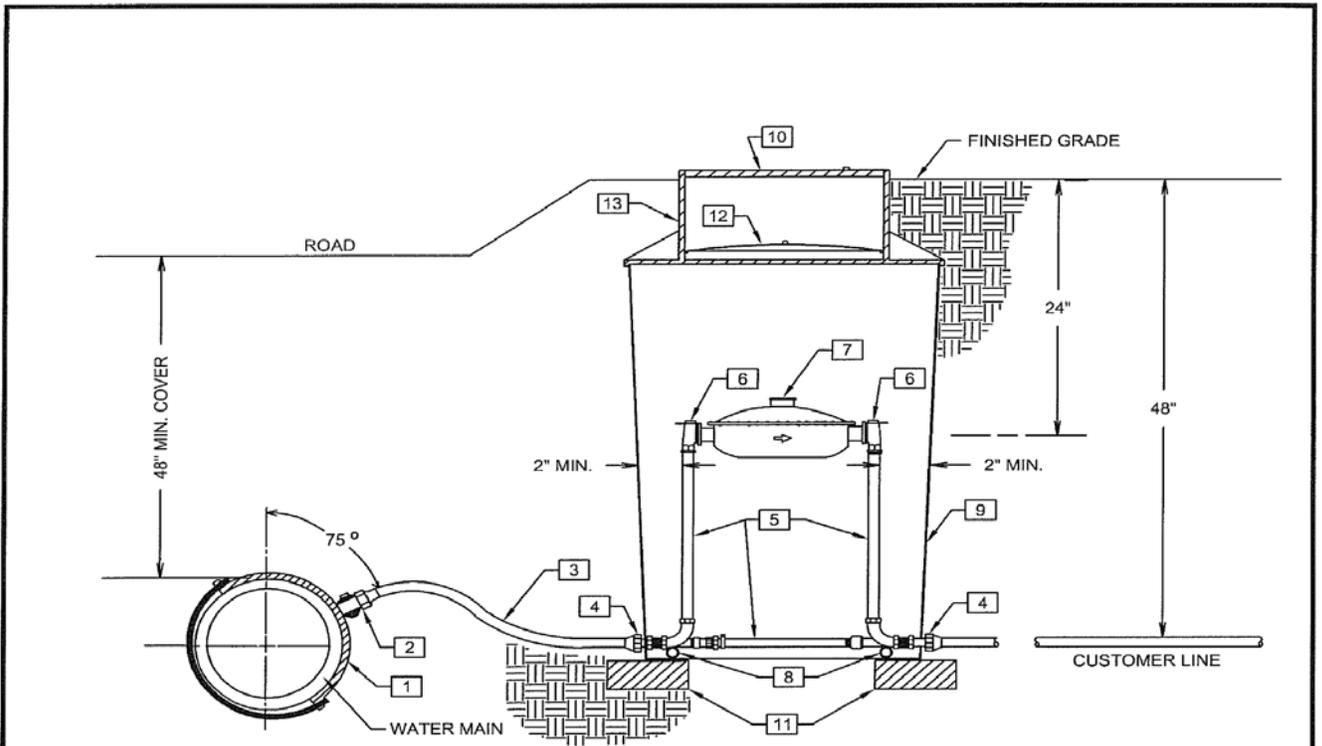
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1-1/2" SINGLE SERVICE

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04



NOTE: SEE SERVICE LOCATION DETAIL FOR PLACEMENT DIMENSIONS AND DIRECTIONS.

ITEM

- 1 2" SERVICE SADDLE
- 2 2" CORORATION STOP (A.W.W.A. TAPERED THREAD)
- 3 2" COPPER TUBING (TYPE " K ")
- 4 2" ADAPTER COUPLING
- 5 2" PREFABRICATED METER SETTER (NO BY-PASS)
- 6 2" BALL ANGLE VALVE (2 TOTAL)
- 7 2" SEALED REGISTER WATER METER - 17" FLANGE-TO-FLANGE SPACING (METER FURNISHED & INSTALLED BY SDCW)
- 8 1" GALVANIZED PIPE 24" LONG
- 9 36" DIA. X 36" METER BOX
- 10 20" DIA. POLYMER LID
- 11 BLOCKS - USE AS DIRECTED BY SDCW
- 12 INNER METAL FROST LID
- 13 36" DIA. X 20" DIA. MONITOR COVER



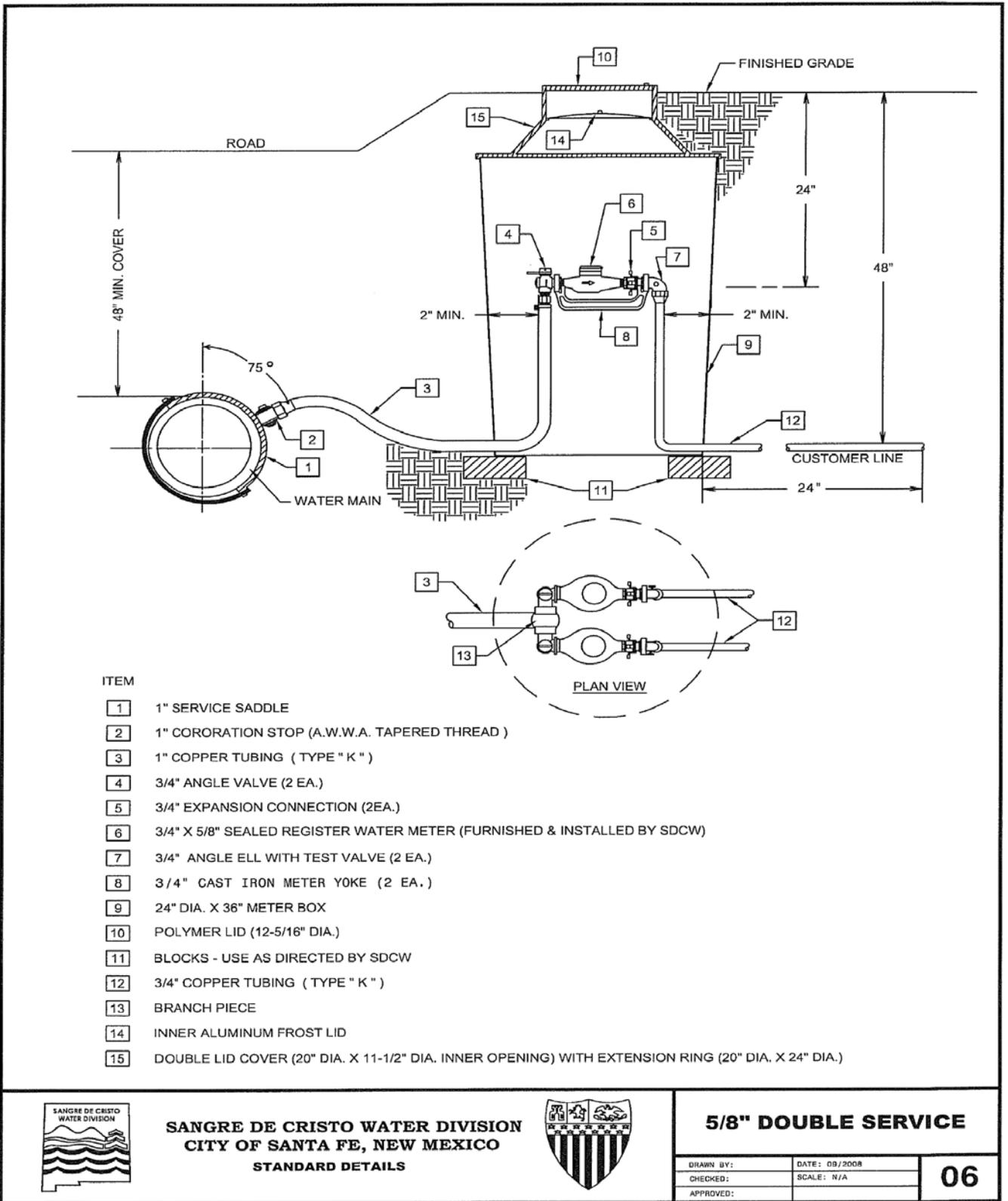
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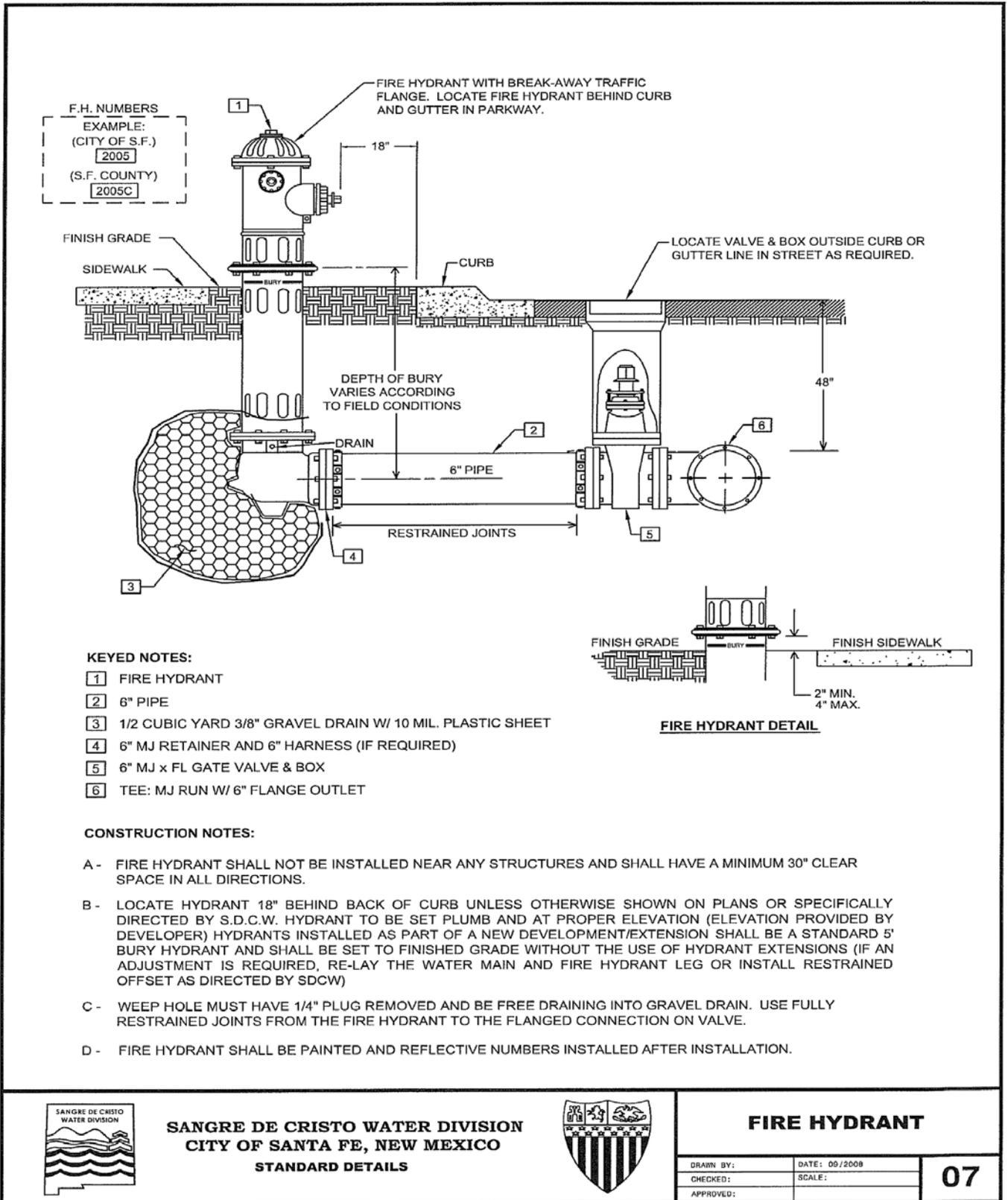


2" SINGLE SERVICE

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CHECKED:	SCALE: N/A
APPROVED:	

05





VALVE INSTALLATION

VALVES

- VALVES SHALL BE LOCATED AT ROAD INTERSECTIONS WITH THE INTENT OF ISOLATING THE WATER DISTRIBUTION SYSTEM, AS APPROVED BY SDCW.
- INLINE VALVES SHALL TYPICALLY BE INSTALLED FIVE (5) FEET BEYOND THE CURB RETURN, AS SHOWN IN THE DETAIL, AND CONSIST OF MECHANICAL JOINT FITTINGS WITH RESTRAINTS EXCEPT WHEN USING TEES, WHICH SHALL HAVE MECHANICAL JOINT x FLANGE FITTING.
- VALVES ON FIRE HYDRANT LEGS SHALL HAVE MECHANICAL JOINT x FLANGE FITTINGS AND SHALL CONNECT TO FIRE HYDRANT TEE WITH THE FLANGE FITTING AND THE MECHANICAL JOINT FITTING SHALL HAVE A RESTRAINT, AS SHOWN IN THE DETAIL.
- VALVES ON TEES SHALL HAVE VALVES AND TEES WITH MECHANICAL JOINT x FLANGE FITTINGS. THE MECHANICAL JOINT FITTING SHALL HAVE A RESTRAINT, AS SHOWN IN THE DETAIL.

VALVE BOX INSTALLATION

NEW PAVING

- VALVE BOXES SHALL BE INSTALLED AND RAISED TO GRADE IN THE FOLLOWING MANNER FOR NEW PAVING:

- VALVE BOX SHALL BE INSTALLED OVER VALVE DURING MAIN INSTALLATION. TOP OF VALVE BOX SHALL BE LEFT BELOW THE TOP OF SUBGRADE UNTIL VALVE IS READY TO BE RAISED TO FINAL GRADE.
- WHEN THE VALVE BOX IS READY TO BE RAISED, AN OCTAGON SHAPE SHALL BE CUT-OUT AROUND THE VALVE BOX FROM THE FIRST PAVING LIFT (AS SHOWN IN THE DETAILS); THE VALVE BOX SHALL BE RAISED TO THE FINISHED STREET GRADE; THE SOIL AROUND THE VALVE BOX SHALL BE THOROUGHLY COMPACTED IN ACCORDANCE WITH CITY STANDARDS; THE CONCRETE COLLAR (CONSISTING OF 3,000 PSI CONCRETE AND #4 REBAR) SHALL BE POURED FLUSH WITH THE TOP OF THE FIRST PAVING COURSE (INCLUDING HAND RODDING CONCRETE TO REMOVE VOIDS); AND THE VALVE BOX SHALL BE PROTECTED FROM VEHICULAR TRAFFIC FOR 24 HOURS.

EXISTING PAVING

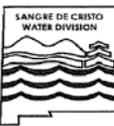
INSTALL VALVE BOXES PER "NEW PAVING" (SEE ABOVE) WITH THE CONCRETE COLLAR POURED FLUSH WITH THE FINISHED GRADE OF THE EXISTING PAVING WITH A SMOOTH TROWELED FINISH. NOTE: IF EXCAVATION OVER 42" SQUARE IS REQUIRED TO ADJUST VALVE BOX TO GRADE, "NEW PAVING" CONCRETE COLLAR PROCEDURE SHALL BE FOLLOWED AS WELL AS ANY NECESSARY PAVING SHALL BE COMPLETED.

UNPAVED AREAS

IN DIRT OR GRAVEL STREETS, TOP OF VALVE BOX AND CONCRETE COLLAR SHALL BE LEFT 6" BELOW THE STREET GRADE. IN OTHER UNPAVED AREAS, VALVE BOX AND CONCRETE COLLAR SHALL BE LEFT 2" ABOVE FINISHED GRADE OR AS DIRECTED BY SDCW.

PROTECTION OF VALVE BOXES

VALVE BOXES SHALL BE PROTECTED FROM DAMAGE, LOSS AND SHALL NOT BE FILLED WITH DIRT AND DEBRIS. VALVES MUST BE ACCESSIBLE DURING CONSTRUCTION WITH MINIMUM EXCAVATION. VALVES IDENTIFIED BY SDCW AS KEY SHUT OFF VALVES SHALL REMAIN AT GRADE DURING ALL PHASES OF CONSTRUCTION.



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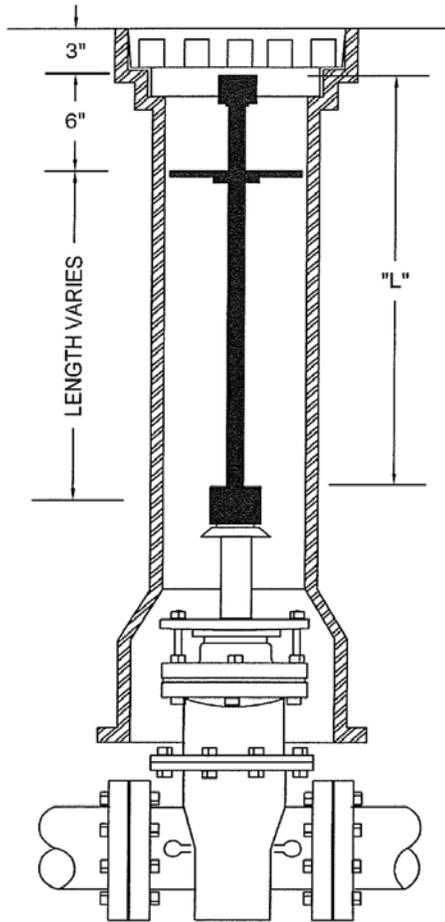
STANDARD DETAILS



VALVE & VALVE BOX INSTALLATION

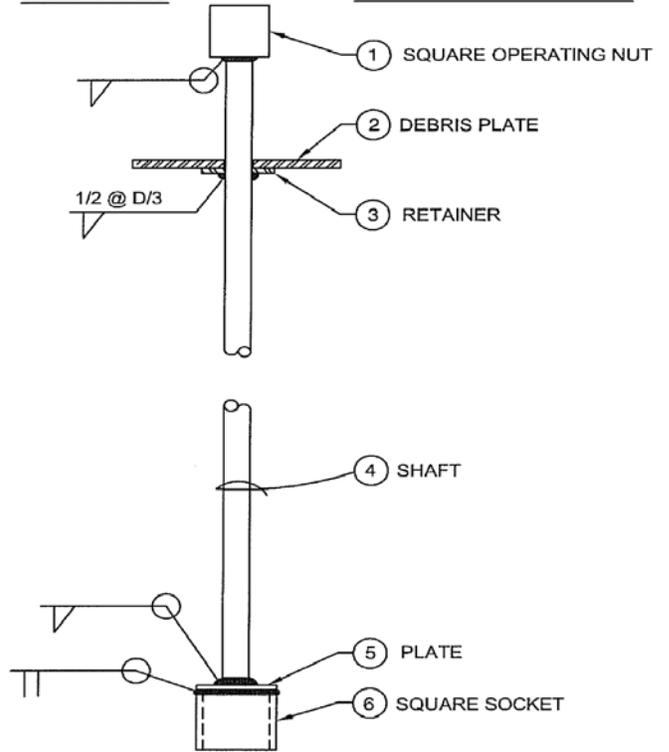
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08



WELD TYPES

EXTENSION STEM ITEMS



EXTENSION STEM ITEM DESCRIPTIONS

- ① 2"x 2"x 2" BAR
- ② 5" DIA. PLATE 3/16" W/1-3/8" DIA. HOLE
- ③ 1-3/8" DIA. HEAVY WASHER
- ④ 1" DIA. SCHEDULE 40 STEEL PIPE (L < 6")
1-1/4" DIA. SCHEDULE 40 STEEL PIPE (L > 6")
- ⑤ 2-1/2"x 2-1/2"x 1/4" PLATE
- ⑥ 2-1/2"x 2-1/2"x 1/4" TUBING

NOTE: ALL STEEL TO BE SAW OR MACHINE CUT.



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**VALVE STEM
EXTENSION**

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APPROVED:	

09

THRUST RESTRAINT TABLE
BENDS, TEES, CAPS/VALVES, & REDUCERS
 (RESTRAINED JOINT LENGTHS IN FEET)

DIAMETER (IN.)	HORIZONTAL BENDS						CAPS / PLUGS / VALVES L _R	SIZE (IN.) Lg/ Sm/ Run X Br.	TEES						REDUCERS L _R		
	11-1/4°		22-1/2°		45°				90°		Run	Branch	Run	Branch		Run	Branch
	L _R	FJO	L _R	FJO	L _R	FJO			L _R	FJO							
4	FJO	2	5	12	34	4 X 4	FJO	28	5	8	10	FJO	N/A				
6	2	3	7	17	47	6 X 6	FJO	42	5	21	10	FJO	N/A				
8	2	4	9	23	62	6 X 4	FJO	26	5	FJO	10	FJO	24				
10	3	5	11	27	75	8 X 8	FJO	57	5	36	10	FJO	N/A				
12	3	6	13	32	88	8 X 6	FJO	40	5	13	10	FJO	26				
						8 X 4	FJO	23	5	FJO	10	FJO	45				
						10 X 10	FJO	69	5	48	10	FJO	N/A				
						10 X 8	FJO	55	5	29	10	FJO	25				
						10 X 6	FJO	39	5	4	10	FJO	46				
						10 X 4	FJO	21	5	FJO	10	FJO	61				
						12 X 12	FJO	83	5	61	10	FJO	N/A				
						12 X 10	FJO	68	5	42	10	FJO	43				
						12 X 8	FJO	54	5	22	10	FJO	47				
						12 X 6	FJO	37	5	FJO	10	FJO	64				
						12 X 4	FJO	18	5	FJO	10	FJO	77				

DIAMETER (IN.)	VERTICAL BENDS							
	11-1/4°		22-1/2°		45°		90°	
	TOP/BOTTOM	L _R	TOP/BOTTOM	L _R	TOP/BOTTOM	L _R	TOP/BOTTOM	L _R
4	3/2	7/4	14/9	N/A	N/A	N/A	N/A	
6	5/3	9/6	20/12	N/A	N/A	N/A	N/A	
8	6/4	12/7	26/15	N/A	N/A	N/A	N/A	
10	7/4	15/9	31/18	N/A	N/A	N/A	N/A	
12	9/5	18/10	37/21	N/A	N/A	N/A	N/A	

Table: This table is based on the EBAA Iron Megalug joint calculations program with the following input criteria: 3.5 ft. depth of bury (conservative); trench type 4; PVC pipe material; GM soil type; 150 psi test pressure; 1.5 safety factor. Specific calculations for restrained lengths are required for conditions not covered by this table.

L_R: Length of restrained pipe, in feet, for each side of the fitting.

Minimum Restrained Length: A minimum restrained length of 5 ft. from the fitting joint is recommended. Vertical offsets shall be completely restrained between the top vertical fitting and the bottom vertical fitting.

FJO: Fitting Joint Only -- This includes at least a 1 ft. length of restrained pipe beyond the fitting joint.

Vertical Offset: Use 11-1/2° bends or 22-1/2° bends wherever possible due to the shorter restrained length requirements.

Caps/Plugs: Concrete blocking may be required by SDCW on a case-by-case basis in addition to mechanical restraint.

Pipe Lengths: Piping shall be laid out to minimize pipe joints near fittings. Wherever possible, full 20 ft. pipe lengths shall be utilized when connecting to fittings or valves. No pipe bell joints shall be used where fittings are less than 20 ft. apart.



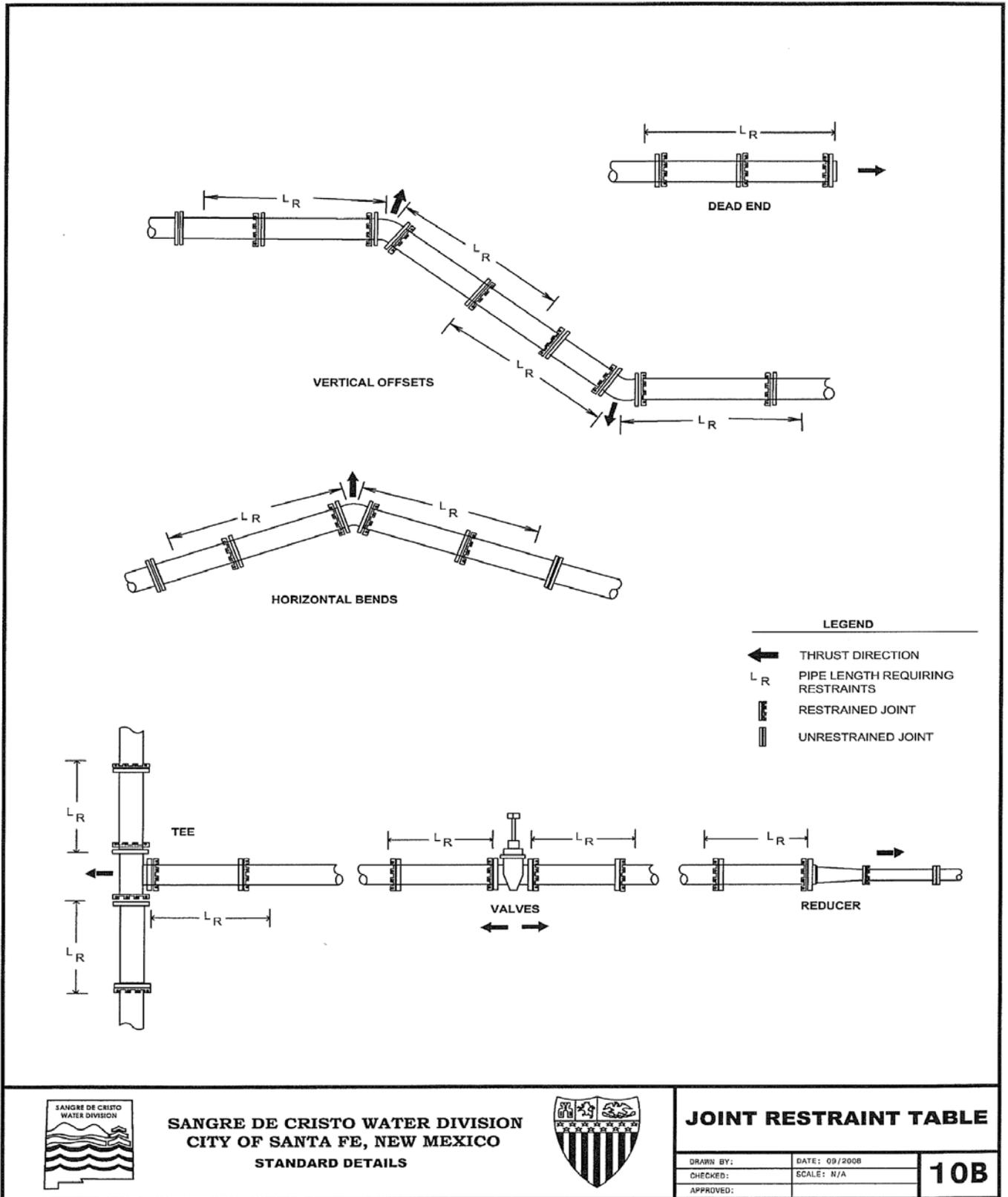
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JOINT RESTRAINT TABLE

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10A



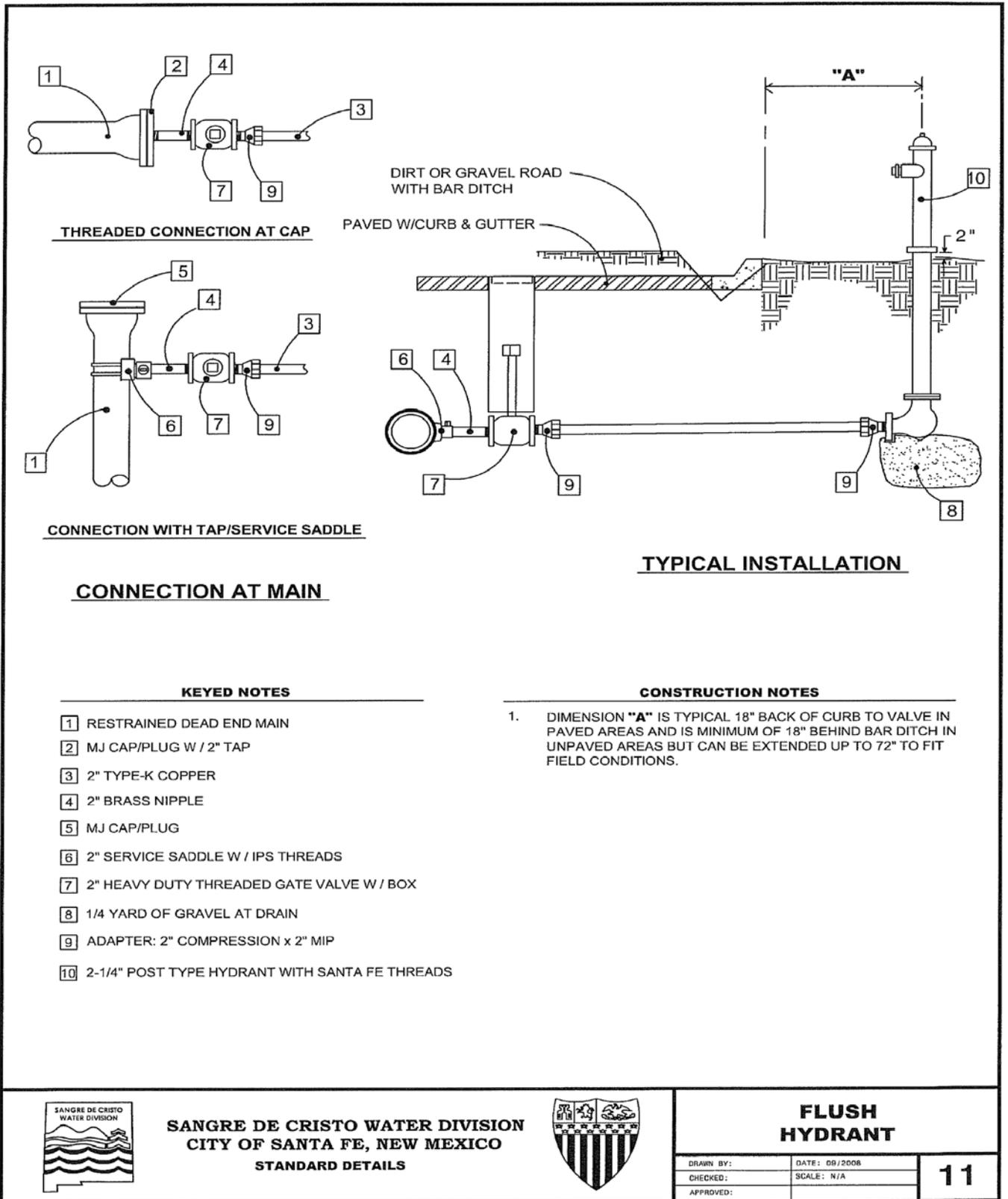
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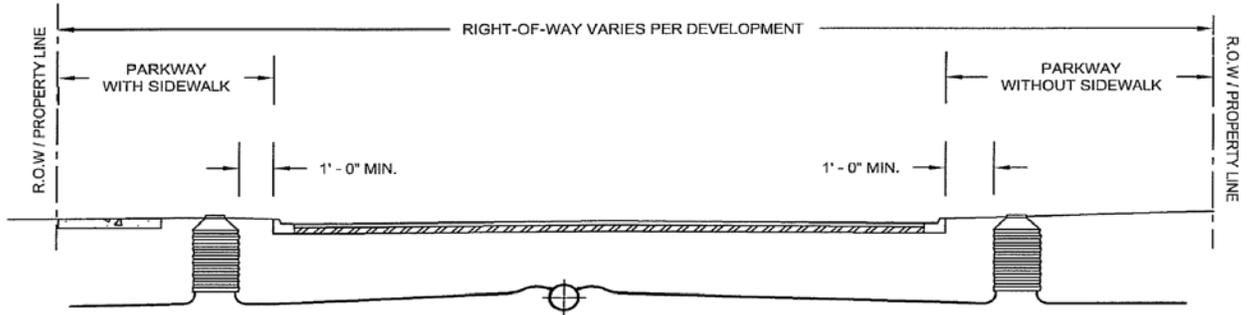


JOINT RESTRAINT TABLE

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10B

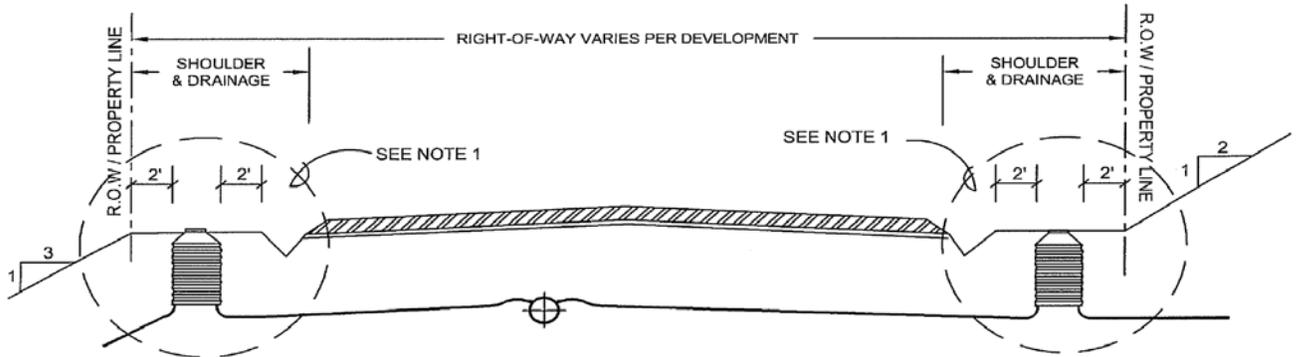




CONSTRUCTION NOTES

1. METER COVER TO BE FLUSH WITH TOP OF CURB.
2. SERVICE INSTALLATION SHALL BE RUN PERPENDICULAR TO WATER MAIN.

PAVED STREETS WITH CURB



CONSTRUCTION NOTES

1. DO NOT LOCATE METER CANS OR FIRE HYDRANTS IN SLOPES UNLESS APPROVED BY SDCW AND BENCHING IS PROVIDED AS SHOWN. A MINIMUM BENCH OF 2' SHALL BE PROVIDED ALL AROUND AS SHOWN.
2. SERVICE INSTALLATION SHALL BE RUN PERPENDICULAR TO WATER MAIN.

PAVED STREETS WITHOUT CURB



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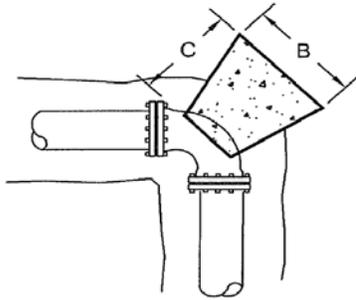


**SERVICE LOCATION
 DETAIL**

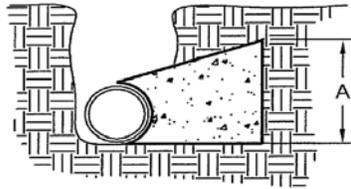
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12

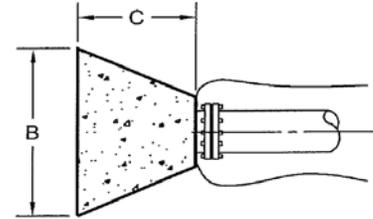
USE MECHANICALLY RESTRAINED FITTINGS & PIPE JOINTS FOR THRUST RESTRAINT UNLESS CONCRETE BLOCKING IS SPECIFICALLY CALLED FOR BY SDCW.



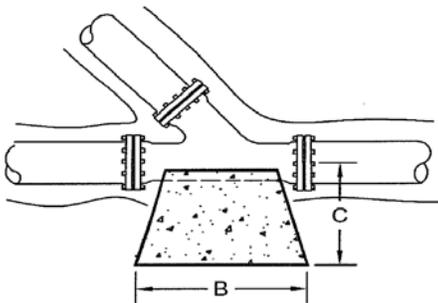
TYPE "A"



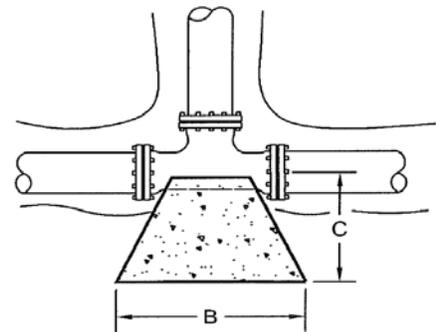
SECTION VIEW



DEAD END (TYPE "B")



BRANCH WYE (TYPE "B")



TEE (TYPE "B")

THRUST BLOCK SIZING TABLE

PIPE DIAMETER	TYPE "A" BENDS												TYPE "B" FITTINGS		
	11-1/4°			22-1/2°			45°			90°			A	B	C
	A	B	C	A	B	C	A	B	C	A	B	C			
4"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6"	12	12	12	12	12	12	12	18	12	18	24	12	12	24	12
8"	12	12	12	12	18	12	18	24	12	24	30	18	18	30	12
10"	12	12	12	12	24	12	20	30	12	24	42	18	24	36	18
12"	12	18	12	18	24	12	24	36	18	32	48	24	24	42	18
14"	12	24	12	18	36	18	30	42	24	36	60	24	30	48	24
16"	18	24	24	24	36	24	30	40	24	42	66	24	36	54	24
18"	18	30	24	24	40	24	36	54	24	48	72	24	42	60	24
20"	20	30	24	30	42	24	42	60	24	54	80	24	42	76	24
24"	24	36	24	36	54	24	48	72	24	66	96	30	54	80	30

1. TABLE BASED ON 200 P.S.I. (130 P.S.I. WORKING PRESSURE) AND 3000 LB/FT² ALLOWABLE SOIL BEARING PRESSURE.
2. USE TEE OUTLET DIAMETER TO DETERMINE THRUST BLOCK SIZING. USE BRANCH DIAMETER ON WYE TO DETERMINE THRUST BLOCK SIZING.
3. THE "C" DIMENSION LISTED IS A MINIMUM DIMENSION. CONCRETE BLOCKING MUST BE POURED TO THE UNDISTURBED SOIL OF THE TRENCH WALL.



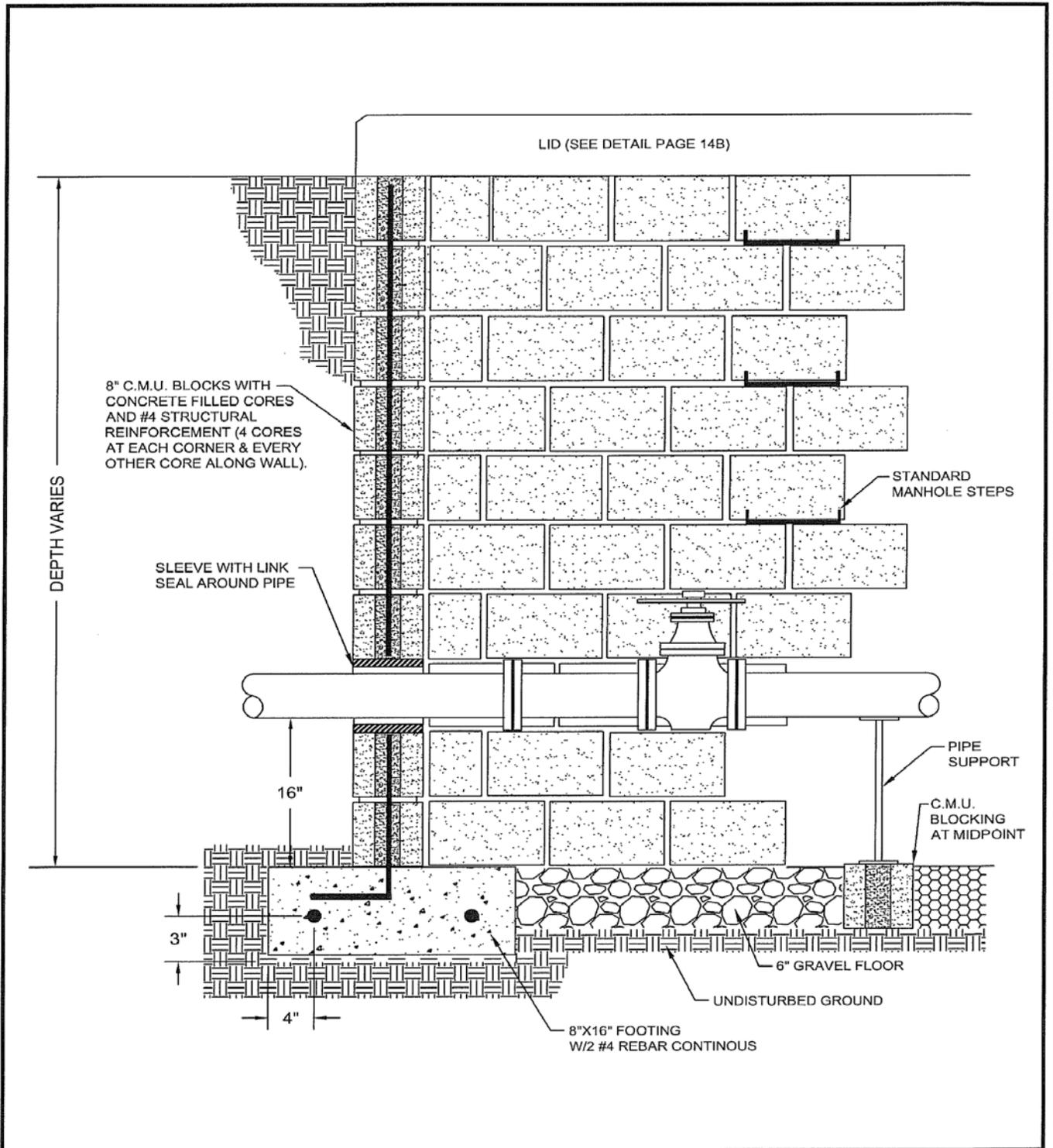
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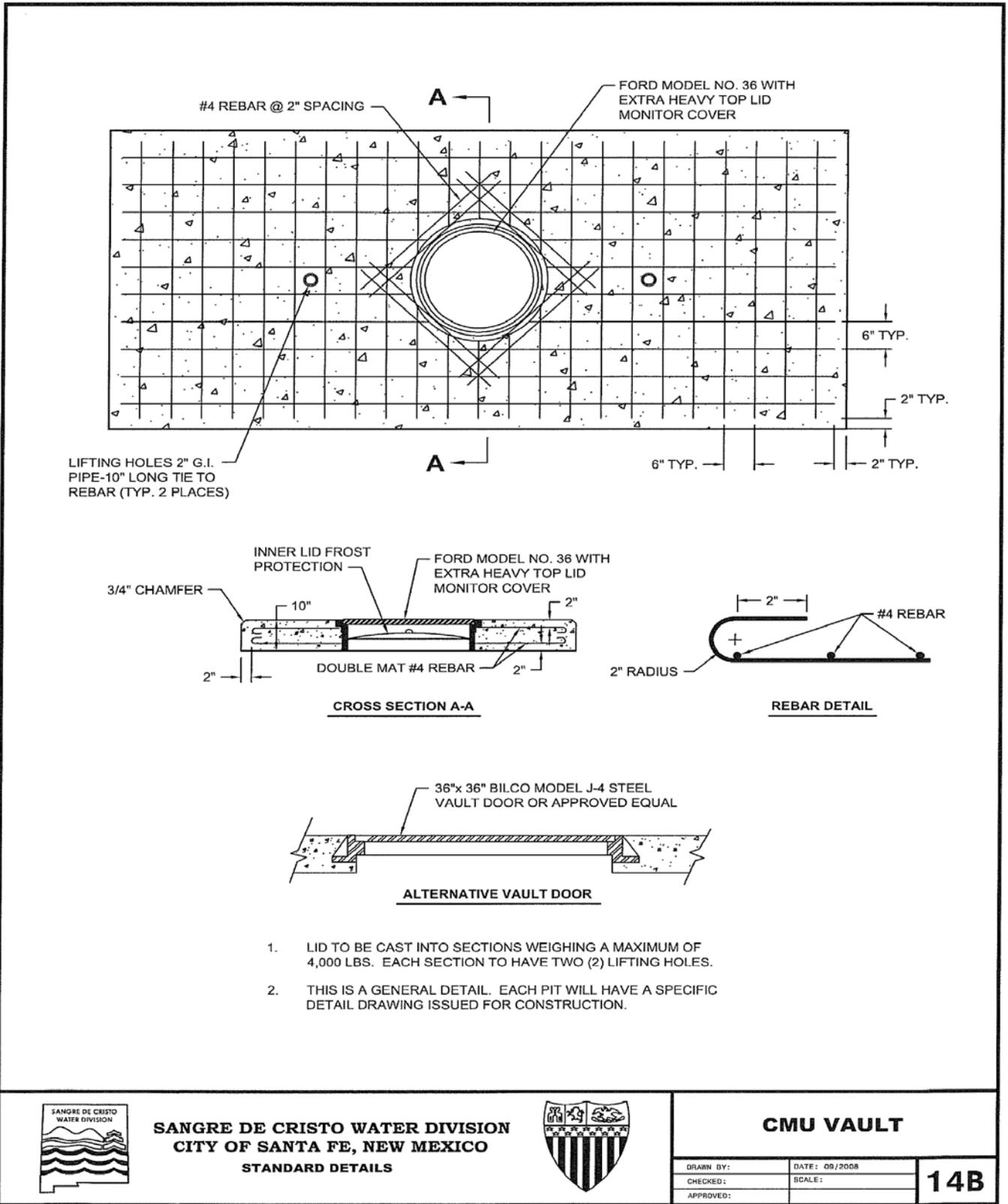
CONCRETE THRUST BLOCKING

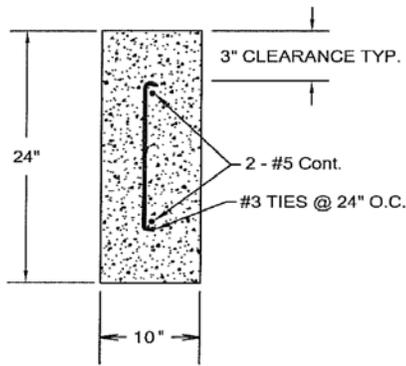
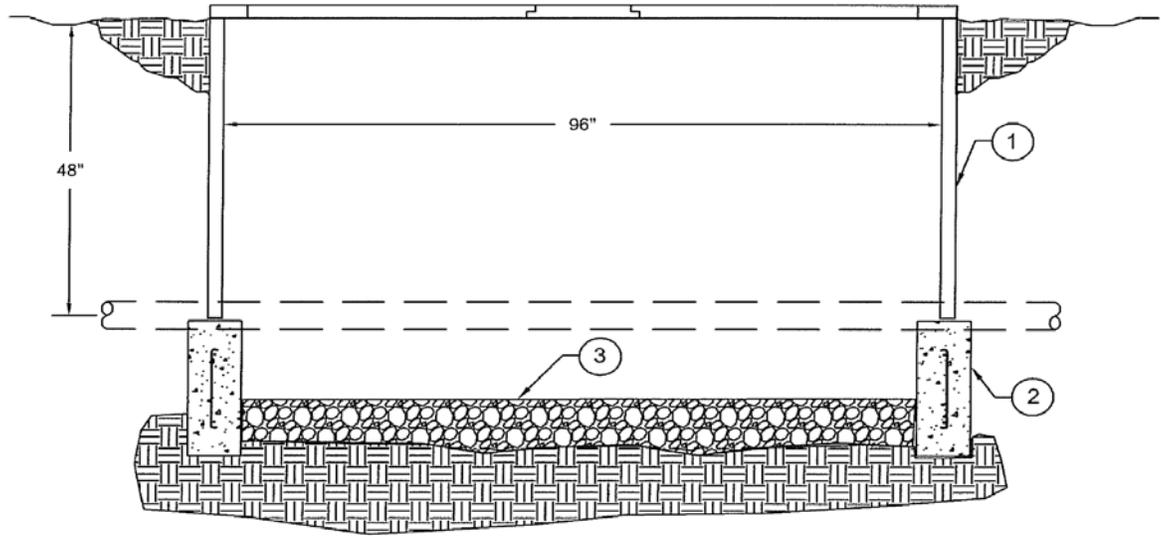
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	<p>SANGRE DE CRISTO WATER DIVISION CITY OF SANTA FE, NEW MEXICO STANDARD DETAILS</p>		<p>CMU VAULT</p>						
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DRAWN BY:	DATE: 09/2008								
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			14A						





CONCRETE FOOTING DETAIL

- ① Prefabricated Vault 48" x 96" x 48"
(Per Material Specifications)
- ② Concrete Footing
- ③ Gravel Floor 3/4" Crushed - 6" Thick



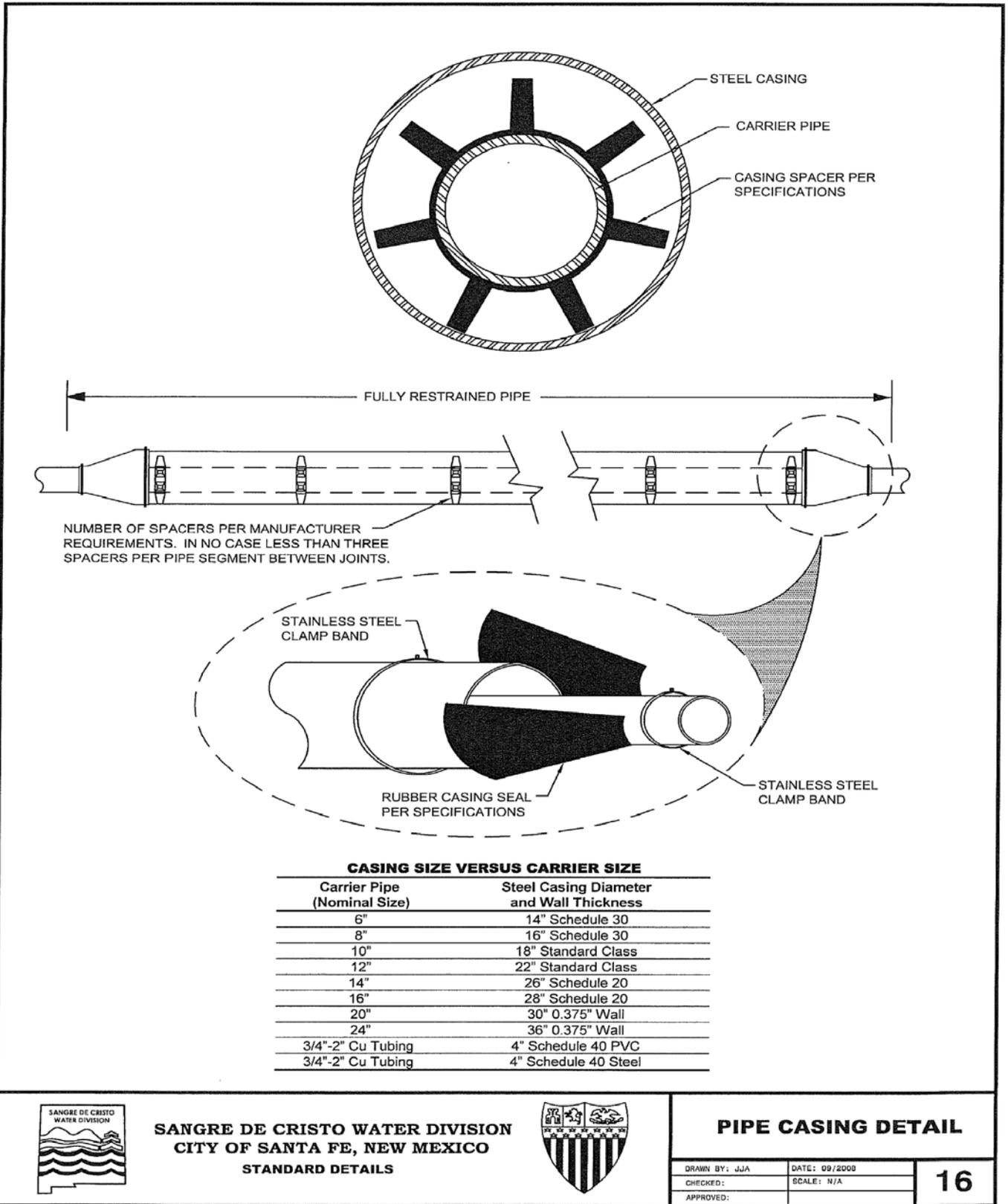
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PREFABRICATED VAULT

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CASING SIZE VERSUS CARRIER SIZE

Carrier Pipe (Nominal Size)	Steel Casing Diameter and Wall Thickness
6"	14" Schedule 30
8"	16" Schedule 30
10"	18" Standard Class
12"	22" Standard Class
14"	26" Schedule 20
16"	28" Schedule 20
20"	30" 0.375" Wall
24"	36" 0.375" Wall
3/4"-2" Cu Tubing	4" Schedule 40 PVC
3/4"-2" Cu Tubing	4" Schedule 40 Steel



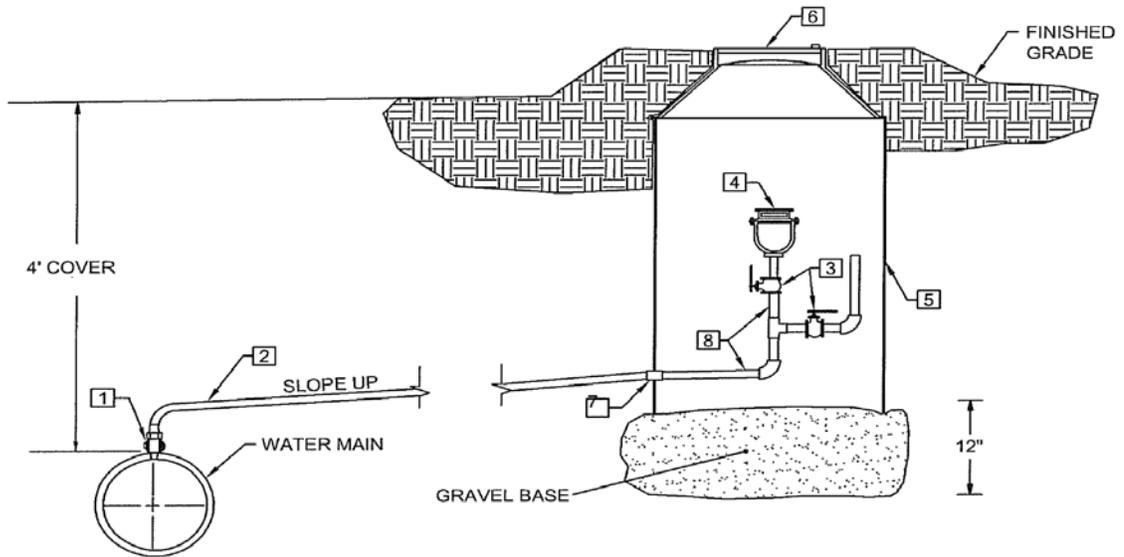
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PIPE CASING DETAIL

DRAWN BY: JJA	DATE: 09/2008
CHECKED:	SCALE: N/A
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ITEM	DESCRIPTION
1	1" OR 2" TAPPING SADDLE 1" OR 2" CORPORATION COCK (A.W.W.A. TAPERED THEAD)
2	1" OR 2" TYPE K COPPER
3	1" OR 2" BRASS BALL VALVE
4	1" OR 2" NPT COMBINATION AIR & VACUUM UNIT VALVE & PRESSURE UNIT: CRISPIN C10 OR C20 WITH PROTECT-TOP
5	36" x 36" -20# POLYETHYLENE METER BOX
6	36" MONITOR RING WITH 20" COVER WITH INNER LID
7	1" OR 2" ADAPTER COUPLING
8	1" OR 2" THREADED BRASS PIPE

LOCATION: WHERE WATER MAIN IS INSTALLED IN ROAD, THE AIR-VACUUM VALVE INSTALLATION SHALL BE LOCATED OUT OF THE PAVEMENT AND OUT OF BAR DITCH, BUT WITHIN RIGHT-OF-WAY OR EASEMENT.



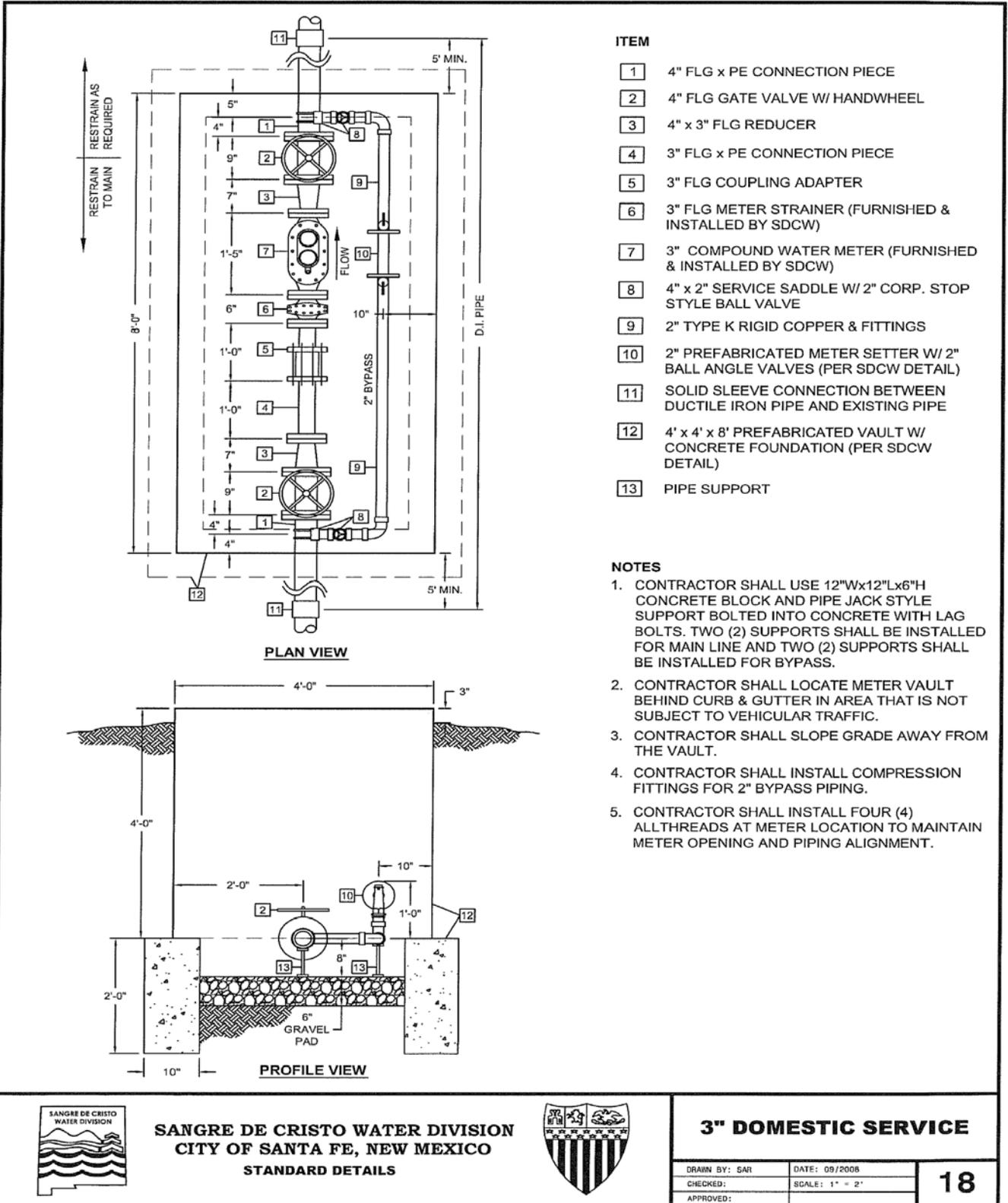
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



**1" AND 2"
 AIR-VACUUM VALVE**

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

17



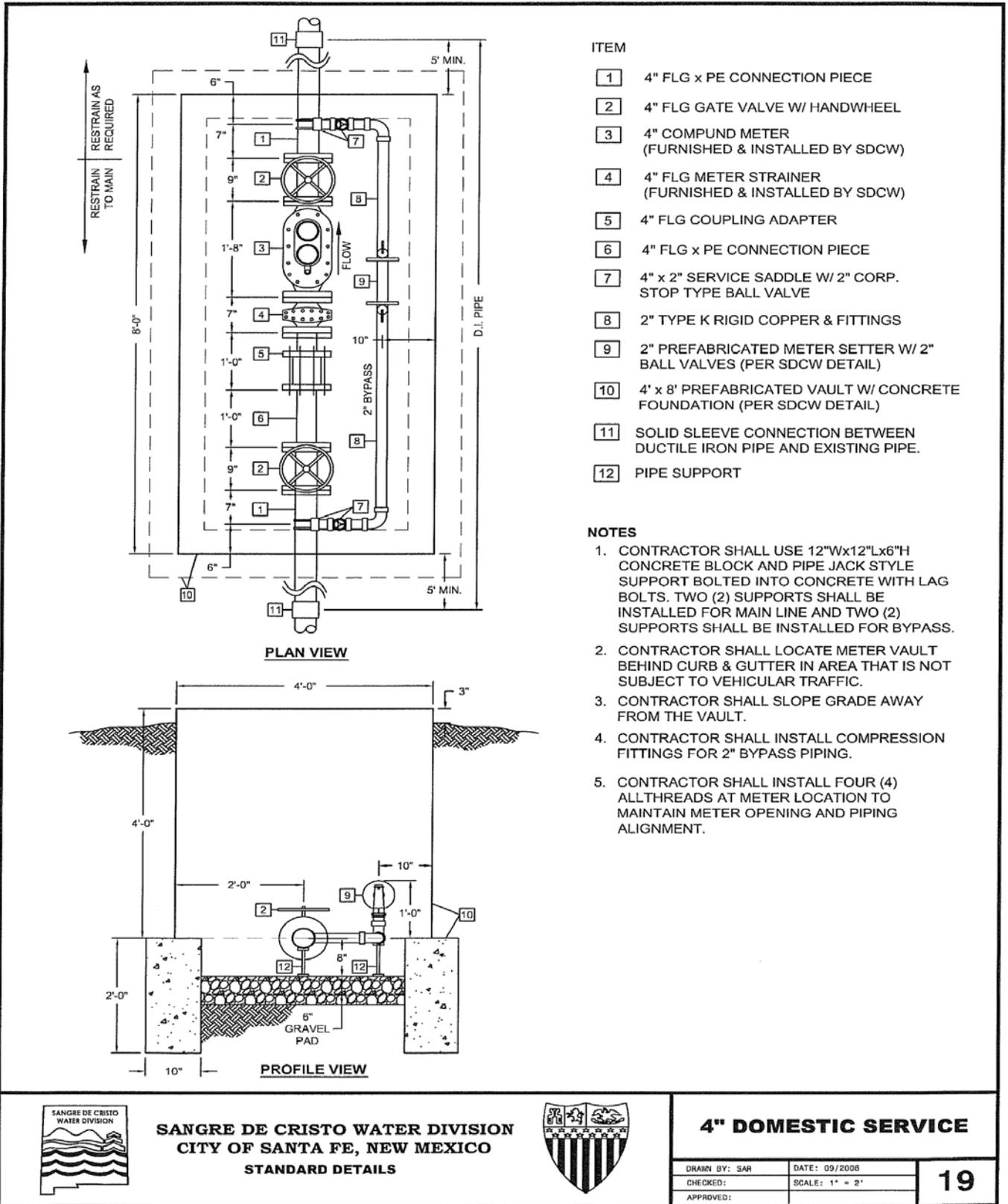
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



3" DOMESTIC SERVICE

DRAWN BY: SAR	DATE: 09/2008
CHECKED:	SCALE: 1" = 2'
APPROVED:	

18



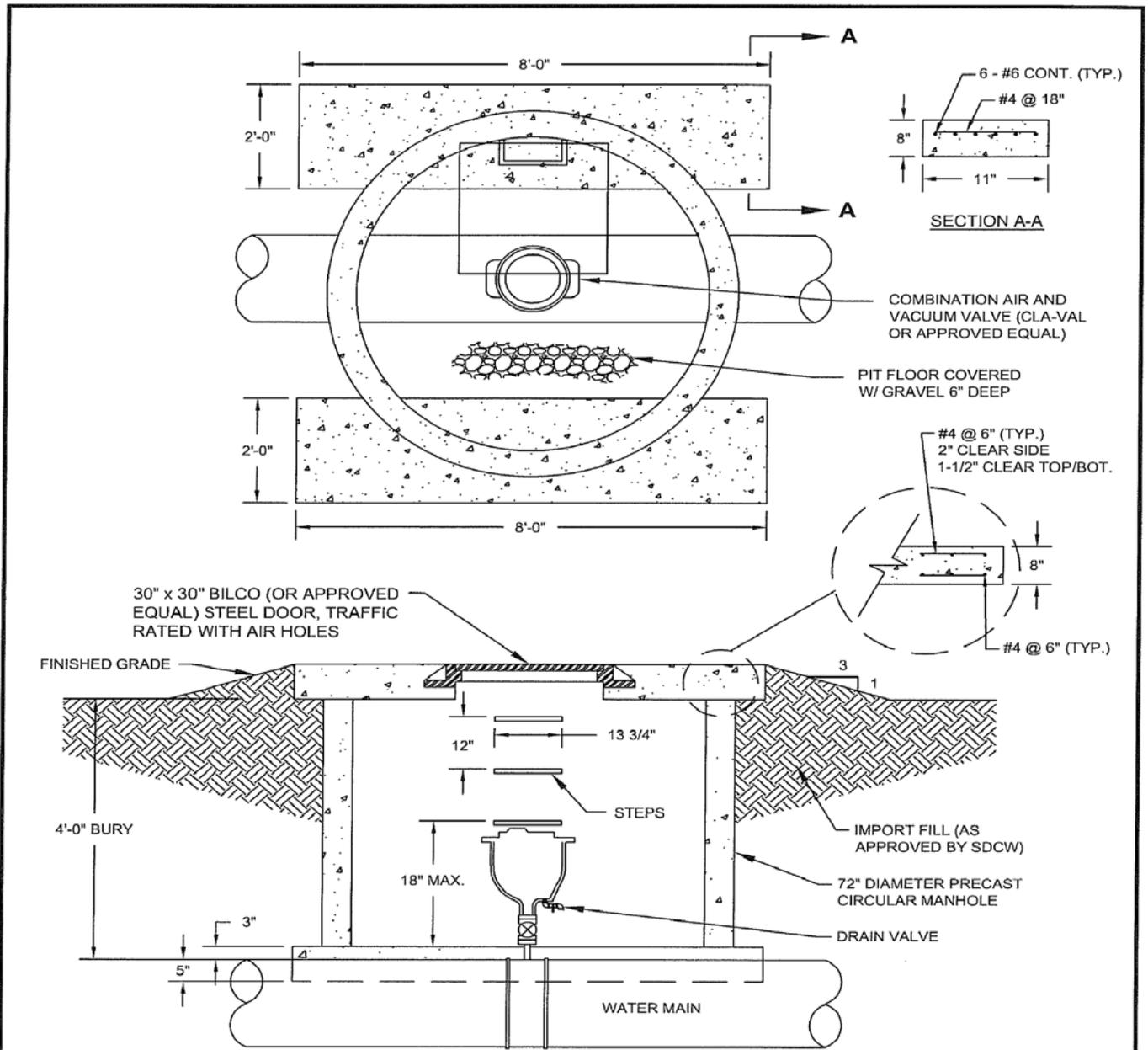
**SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS**



4" DOMESTIC SERVICE

DRAWN BY: SAR	DATE: 09/2008
CHECKED:	SCALE: 1" = 2'
APPROVED:	

19



NOTE:

1. 3" (MODEL 363CAV332FT, CL125 FLANGE), 4" (MODEL MTP364/34.116.3, CL250 FLANGE/MODEL MTP364/34.332, CL125 FLANGE) & 6" (MODEL MTP366/34.116.3, CL250 FLANGE/MODEL MTP366/34.332, CL125 FLANGE) AIR & VACUUM VALVES SHALL BE MANUFACTURED BY CLA-VAL (OR APPROVED EQUAL).



**SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO**

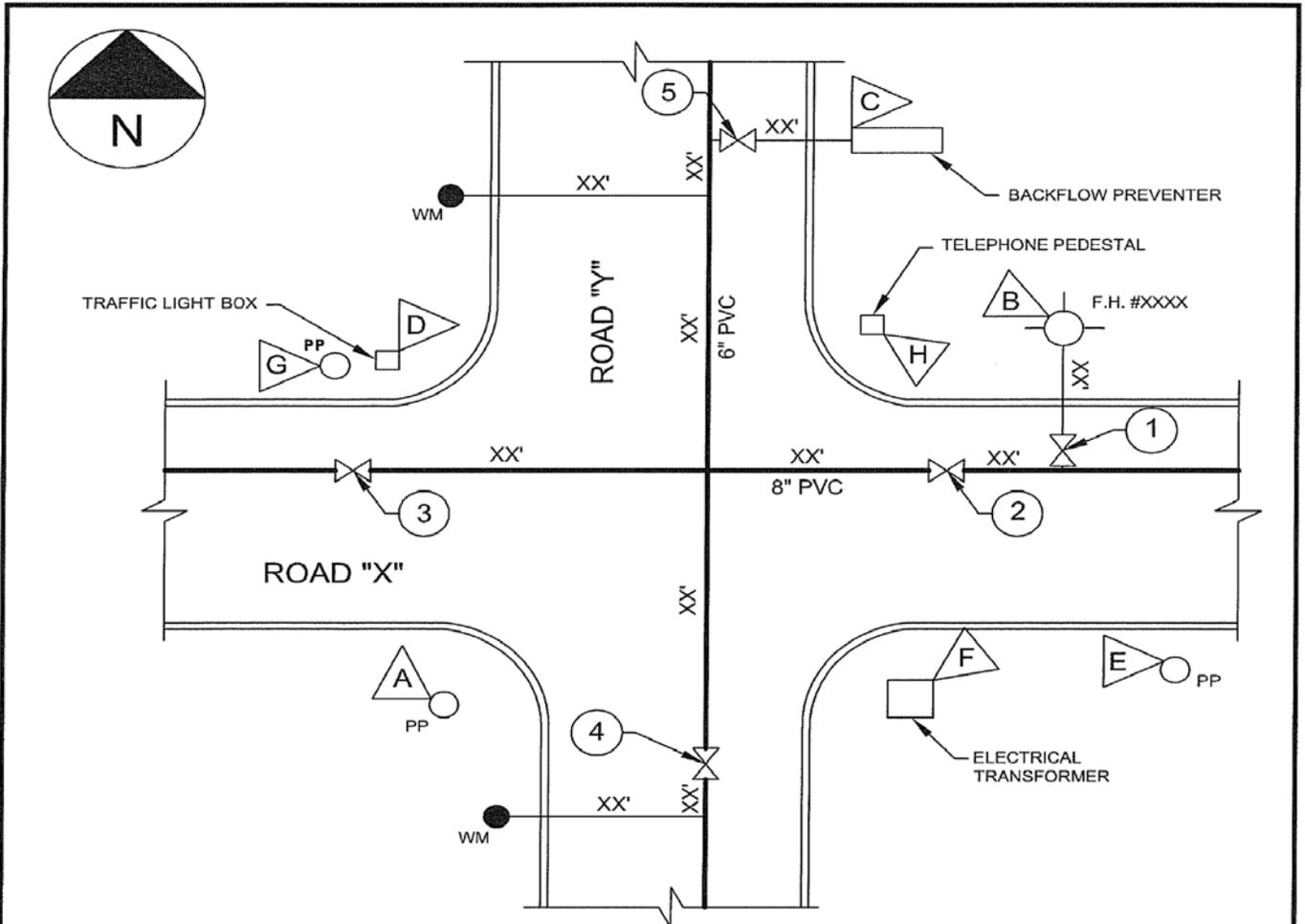
STANDARD DETAILS



**3" and Larger Air-Vacuum
Valve Vault**

DRAWN BY: BKS	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

20



FROM POINT	TO VALVE				
	①	②	③	④	⑤
▲			XX'XX"	XX'XX"	
▲	XX'XX"	XX'XX"			
▲					XX'XX"
▲			XX'XX"		XX'XX"
▲	XX'XX"	XX'XX"			
▲	XX'XX"	XX'XX"		XX'XX"	
▲			XX'XX"		
▲				XX'XX"	XX'XX"

1/4"
1/2"

VALVE REFERENCING NOTES:

- (1) ALL VALVES SHALL BE REFERENCED DURING CONSTRUCTION WITH 3 SWING TIES FROM SUITABLE REFERENCED POINTS AND THE TIES RECORDED ON THE CONSTRUCTION DRAWING.
- (2) ALL REFERENCE POINTS SHALL BE EASILY FIELD IDENTIFIED AND SHALL CONSIST OF: PERMANENT LAND MARKS (IE. FIRE HYDRANTS, POWER POLES, ELECTRIC TRANSFORMERS, TELEPHONE PEDESTALS, ETC.) THAT WILL NOT BE RELOCATED OR REMOVED DURING CONSTRUCTION.
- (3) ALL FIRE HYDRANT VALVES SHALL BE REFERENCED WITH A DIMENSION FROM THE CENTER OF THE HYDRANT TO THE VALVE BOX AND SHALL HAVE A MINIMUM OF ONE (1) SWING TIE FROM A SEPARATE REFERENCE POINT.



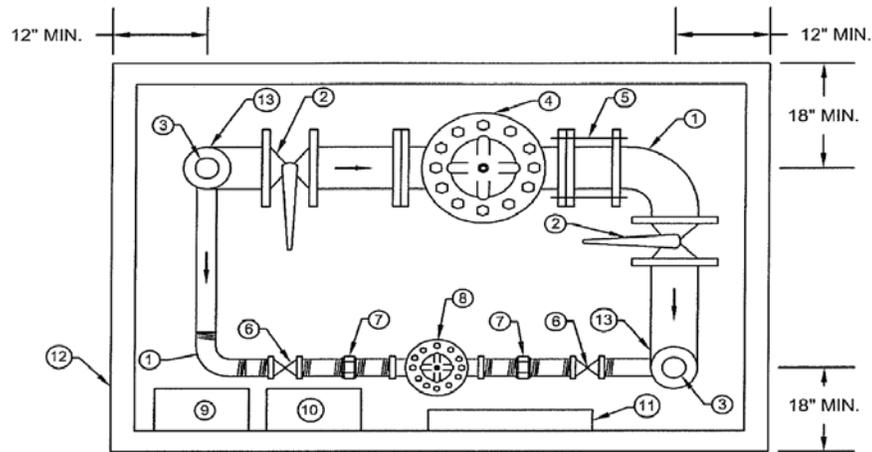
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



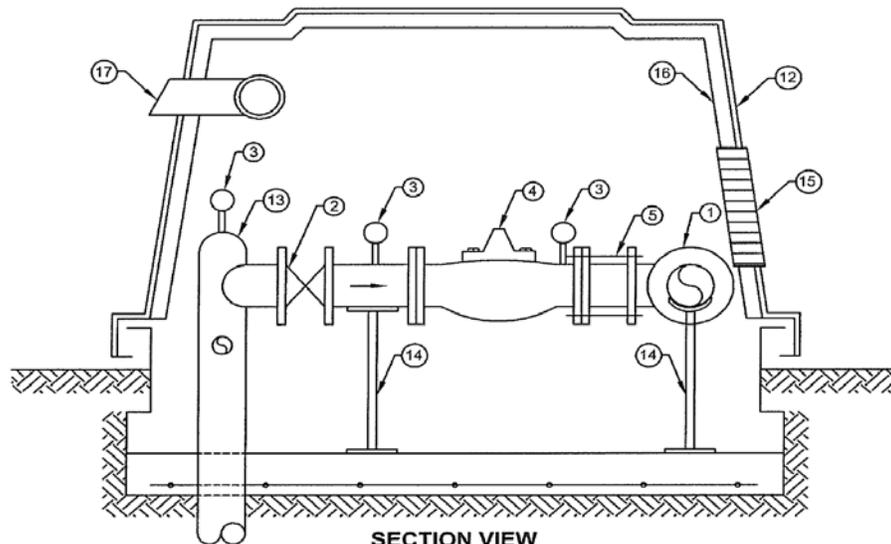
VALVE REFERENCE MAP

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

21



PLAN VIEW



SECTION VIEW

EQUIPMENT LIST

- | | |
|--|--------------------------------------|
| ① 90° ELBOW | ⑩ POWER PANEL W/ TWO (2) GFI OUTLETS |
| ② BUTTERFLY VALVE | ⑪ PRESSURE GAUGE MOUNTING PANEL |
| ③ PRESSURE GAUGE | ⑫ PREFABRICATED ENCLOSURE |
| ④ PRESSURE REDUCING VALVE (SIZED FOR HIGH DEMAND FLOW RATES) | ⑬ WELDED TEE RISER |
| ⑤ FLANGE COUPLING ADAPTER | ⑭ PIPE SUPPORT |
| ⑥ BALL VALVE | ⑮ AIR VENT |
| ⑦ UNION | ⑯ FOAM INSULATION |
| ⑧ PRESSURE REDUCING VALVE (SIZED FOR LOW DEMAND FLOW RATES) | ⑰ EXHAUST FAN |
| ⑨ HEATER UNIT | ⑱ CONCRETE SLAB |

NOTES:

1. PRESSURE GAUGES SHALL BE 4" OIL FILLED GAUGES AND MOUNTED ON PRESSURE GAUGE MOUNTING PANEL (SEE DETAIL).
2. PRESSURE REDUCING VALVES SHALL BE CLA-VAL (MODEL 90-01AB) OR APPROVED EQUAL.
3. PRESSURE REDUCING VALVE VAULTS SHALL BE ABOVE GRADE VAULTS AS MANUFACTURED BY ENGINEER FLUID INC., CANARIS, OR APPROVED EQUAL.
4. SACRIFICIAL ANODE IS REQUIRED FOR CATHODIC PROTECTION ON PREFABRICATED ENCLOSURE BASE.
5. ENCLOSURE SHALL BE PAINTED PER MANUFACTURER RECOMMENDATION WITH COLOR APPROVED BY SDCV.
6. CONCRETE SLAB SHALL BE 6-INCHES THICK WITH #5 REBAR AT 12" O.C. FOR REINFORCEMENT.



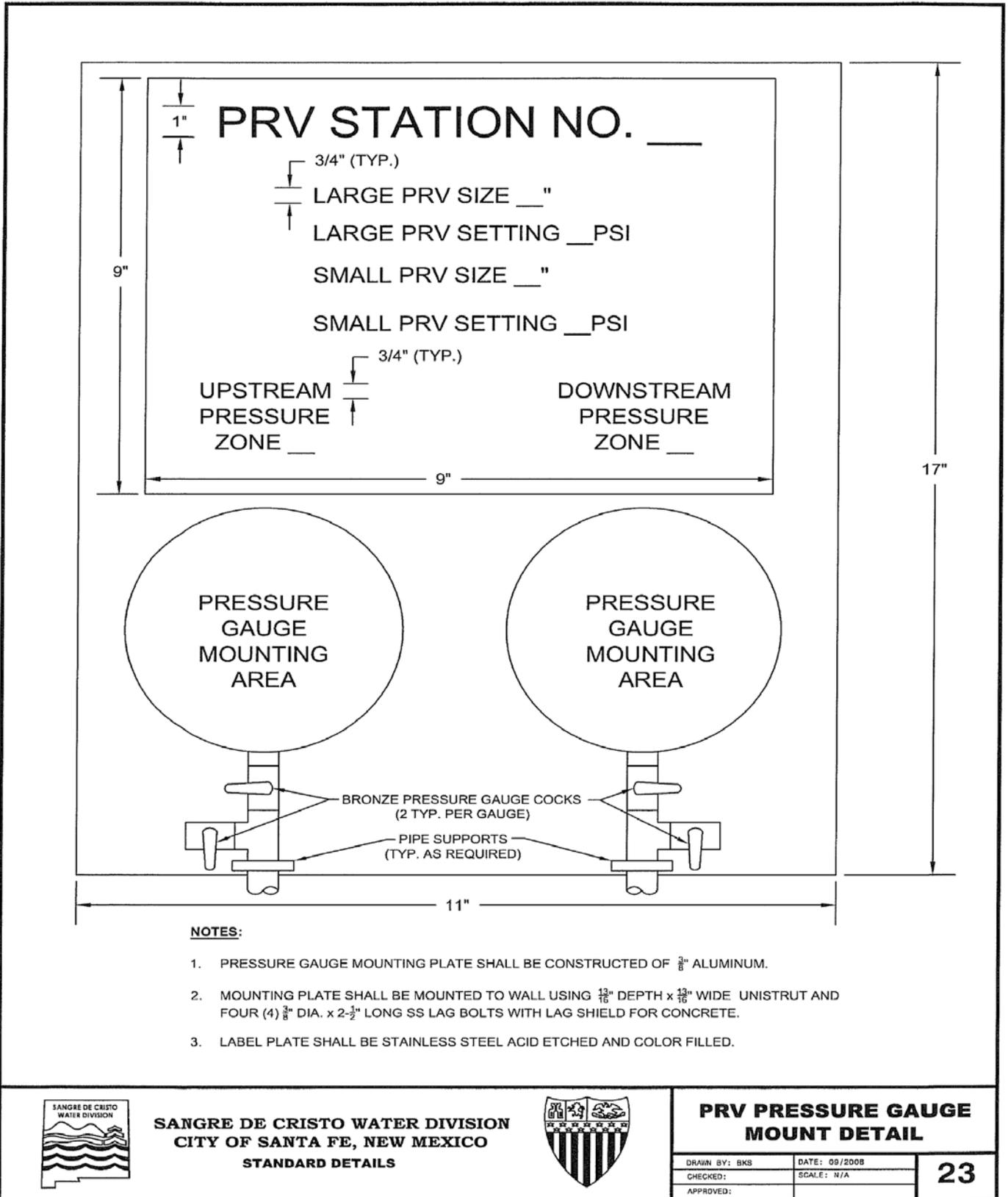
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



PRESSURE REDUCING VALVE

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

22



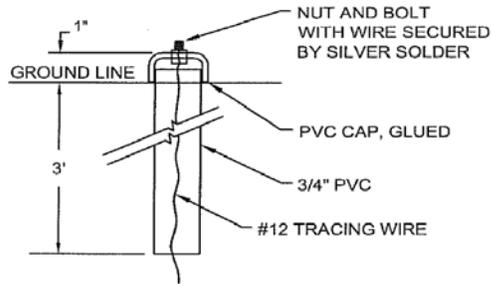
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



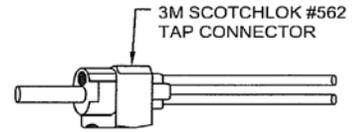
PRV PRESSURE GAUGE MOUNT DETAIL

DRAWN BY: BKS	DATE: 09/2008
CHECKED:	SCALE: N/A
APPROVED:	

23

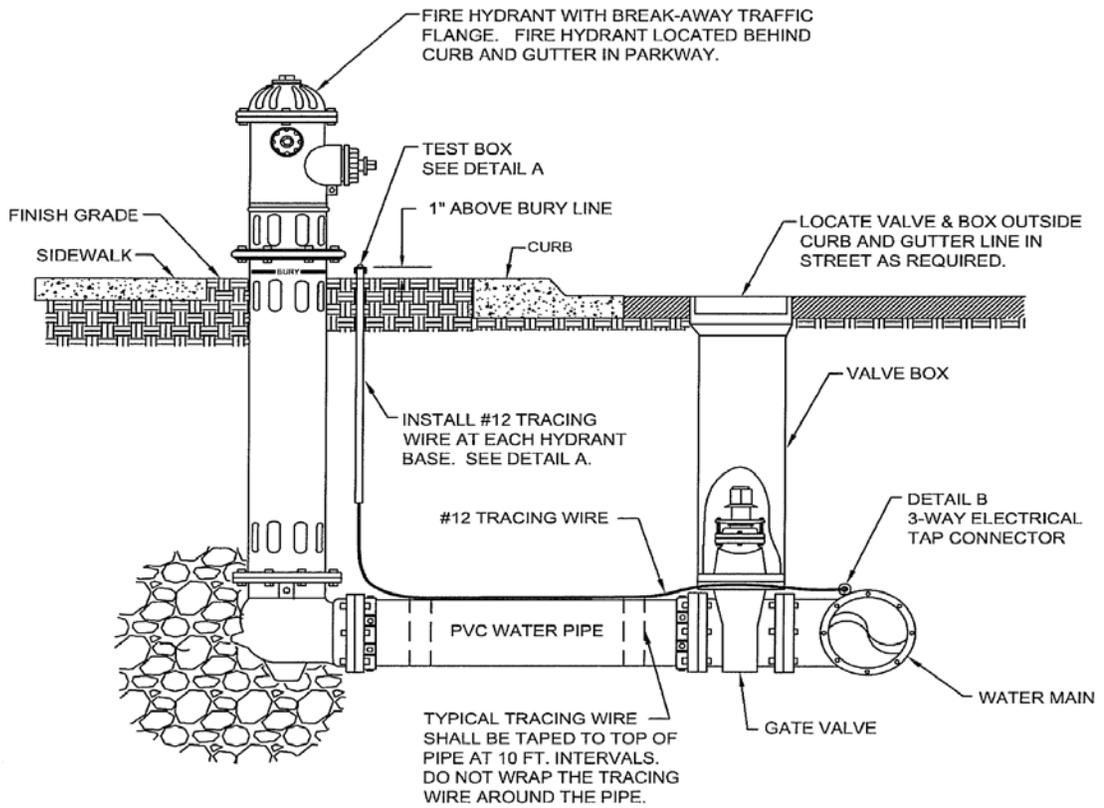


DETAIL A
TEST BOX



DETAIL B
ELECTRICAL TAP CONNECTOR

NOTE: WRAP CONNECTOR AND WIRE ENDS WITH GENERAL PURPOSE TAPE SEALANT TO MAKE THE CONNECTION MOISTURE PROOF (NOT SHOWN).



TYPICAL TRACING WIRE SHALL BE TAPED TO TOP OF PIPE AT 10 FT. INTERVALS. DO NOT WRAP THE TRACING WIRE AROUND THE PIPE.

TRACING WIRE DESIGN AND DETAILS COURTESY OF PEAK POWER ENGINEERING, INC. 1309 AGUA FRIA, SANTA FE, NM 87501



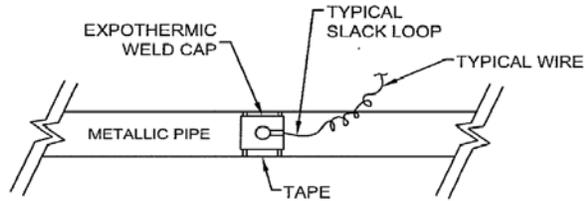
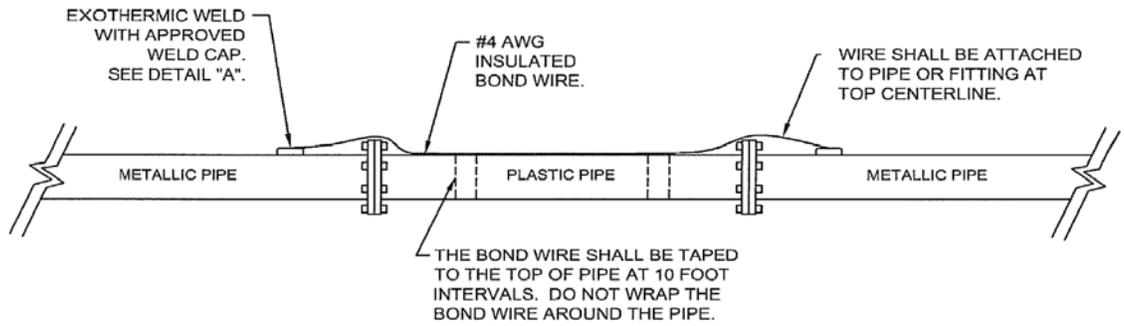
SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



TRACING WIRE DETAIL

DRANN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

24



DETAIL "A"

DRAWING COURTESY OF PEAK POWER ENGINEERING, INC.
1309 AGUA FRIA, SANTA FE, NM 87501



SANGRE DE CRISTO WATER DIVISION
CITY OF SANTA FE, NEW MEXICO
STANDARD DETAILS



BONDING JUMPER DETAIL

DRAWN BY:	DATE: 09/2008
CHECKED:	SCALE:
APPROVED:	

25

Sangre De Cristo Water Division
2008 Construction Standards & Specifications
Amendment #1

SANGRE DE CRISTO WATER DIVISION

SEPTEMBER 2008 CONSTRUCTION STANDARDS AND SPECIFICATIONS

Amendment #1

Issue Date: September 23, 2009

Section C.5 (Revise as follows):

C.5 Mechanical Joint Retainers: shall be the Megalug as manufactured by EBAA Iron, Inc. Eastland, Texas, or the Uni-Flange as manufactured by the Ford Meter Box Company, Inc., Wabash, Indiana.

For EBAA Iron, Inc. products, the following shall be used:

The series 2000PV Megalug shall be used for 4"-12" AWWA C900 PVC pipe and for 14"-30" AWWA C905 PVC pipe. The series 1100 Megalug shall be used for Ductile Iron pipe. Push on pipe joint harness devices shall be series 1500 HV for AWWA C900 PVC, series 1100HV for AWWA C905 PVC, and series 1700 for Ductile Iron pipe.

Ford Uni-Flange products shall be as follows:

Series UFR1500-E-x-U shall be used for 4"-12" AWWA C900 PVC DR18 pipe. Series UFR1500-E-C shall be used for AWWA C905 14"-24" PVC pipe. Series UFR1400-D-x-U shall be used for Ductile Iron Pipe. Push on pipe joint harness devices shall be the series UFR1390-C-x-U for Ductile Iron pipe and AWWA C900 PVC.

Section C.6 (Revise as follows):

C.6 Tapping Sleeves: Tapping sleeves (for taps other than size-on-size) shall have an epoxy lined and coated carbon steel A-36 body or an all stainless steel body; type 304 stainless steel bolts, hex nuts and plug; gasket suitable for water use; ANSI Class 150 flange. Tapping sleeves shall be manufactured by Romac Industries (Model 420 fabricated steel tapping sleeve), JCM (Model 412 fabricated steel tapping sleeve), PowerSeal (Model 3490 MJ stainless steel tapping sleeve with MJ outlet or AS stainless steel tapping sleeve with flange outlet), Ford (Model FTSC steel tapping sleeve or Model FTSS stainless steel tapping sleeve with stainless steel flange), or approved equal.

For size-on-size taps, a full wrap-around gasket and stainless steel full wrap-around tapping sleeve is required. The acceptable manufacturers are: Romac Industries (Model SST or Model SST-III stainless steel tapping sleeve), PowerSeal (Model 3480 stainless steel tapping sleeve or Model 3490 MJ stainless steel tapping sleeve with MJ outlet or AS stainless steel tapping sleeve

with flange outlet), Ford (Model FTSS stainless steel tapping sleeve with stainless steel flange), or approved equal.

Section C.17 (Revise as follows):

C.17 Meter Yokes: Yokes shall be constructed of cast iron. The meter yoke bar shall be painted. A 5/8" meter shall use 5/8" x 3/4" yoke; a 3/4" meter shall use 1" yoke, two (2) 1" x 3/4" meter adapters, and one (1) expansion connector; a 1" meter shall use 1" yoke and one (1) expansion connector. Yokes shall be the model and manufacturer as listed:

Manufacturer	Model for 5/8"	Model for 3/4" or 1"
AY McDonald	14-2	14-4
Ford	Y 502	Y 504
Jones	J 6201	J 6202
Mueller	H-5020	H-5040

Section C.18 (Revise as follows):

C.18 Angle Valves: Angle valves shall be ball type compression connection for CTS tubing x locknut. (Locknut for yoke bar shall be used instead of a meter swivel). Angle valves shall be the model and manufacturer as listed:

Manufacturer	Ball Style Model for 5/8"	Ball Style Model for 3/4" or 1"
AY McDonald	4602BYQ	4602BYQ
Jones	J-6417WSG	J-6417WSG
Ford	BA94-323W-Q	BA94-444W-Q
Mueller	B-24273	B-24273

Include the following information for residential double meter services:

1. 5/8" Double Service Branch Piece
 - Acceptable Manufacturers: Jones (J-2613SG w/ dimensions of 1"x7-1/2"x 3/4"MIP), Mueller (H-15363 1"x7-1/2"x 3/4"MIP), and Ford (U48-43-Q 1"x7-1/2"x 3/4" MIP).
2. 5/8" Double Service Angle Valve
 - Acceptable Manufacturer: Mueller Co. Angle Ball Valve (B-24278 w/ dimensions of 5/8"x 3/4"x 3/4" FIP) and Ford Angle Ball Yoke Valve (BA91-323W w/ dimensions of 5/8"x 3/4"& 3/4" FIP).

Section C.19 (Revise as follows):

C.19 Angle Ell: Angle ells shall be equipped with test valves and shall be compression connection by locknut. Angle ells shall be the model and manufacturer as listed:

Manufacturer	Model for 5/8"	Model for 3/4"	Model for 1"
Jones	J-6231DSG	J-6231SG	J-6231SG
Mueller	H-14237		
Ford	L94-23TD-Q	L94-44TD-Q	L94-44TD-Q

Section C.22 (Revise as follows):

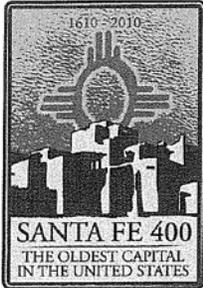
C.22 Corporation Stops: Corporation stops must be ball type with CC thread (AWWA tapered thread) inlet and compression connection on outlet (CTS – copper tube size). Iron pipe thread not acceptable. Corporation stops shall be the model and manufacturer listed:

Manufacturer	Model Number
AY McDonald	4701BQ
Mueller	B-25008
Ford	FB1000-x-Q-K

Section C.23 (Revise as follows):

C.23 Service Tapping Saddles: For PVC (C900) installations: bronze parts are not acceptable. Service tapping saddle shall be stainless steel, double strap with iron body. The iron body shall have either epoxy coating (10-12 mills minimum) or nylon coating (10-12 mills minimum). Acceptable manufacturers are Smith-Blair, Ford, and Mueller Co. Double band brass saddles with stainless steel bolts and band, style 202BS, as manufactured by Ford are also accepted.

For DIP/CIP installations: Direct tap with CC threads (AWWA tapered threads) is preferred. Iron pipe thread is not acceptable. Alternate exception is installation of stainless steel full circle tapped clamp with CC threads (AWWA tapered threads). All stainless steel to be: one section, two bolt minimum. Romac and JCM are acceptable manufacturers. Double band brass saddles with stainless steel bolts and band, style 202BSD, as manufactured by Ford are also accepted. When multiple taps are required the following spacing is approved: Minimum 12" horizontal spacing and vertical spacing shall alternate 75° and 85° from vertical.



City of Santa Fe, New Mexico

200 Lincoln Avenue, P.O. Box 909, Santa Fe, N.M. 87504-0909

David Coss, *Mayor*

Councilors:

Rebecca Wurzburger, Mayor Pro Tem, Dist. 2
Patti J. Bushee, Dist. 1
Chris Calvert, Dist. 1
Rosemary Romero, Dist. 2
Miguel M. Chavez, Dist. 3
Carmichael A. Dominguez, Dist. 3
Matthew E. Ortiz, Dist. 4
Ronald S. Trujillo, Dist. 4

January 6, 2010

Mr. David Morrill
Engineering & Municipal Sales Manager
Baker Utility Supply
2351 Aztec Road NE
Albuquerque, NM 87107

RE: Ford Product Review Submittals

Dear Mr. Morrill,

This letter regards the following products that were submitted to the Sangre de Cristo Water Division's Product Review Committee on May 20, 2009 by Baker Utility:

1. Ford Bolt-on-Flanges (Uni-Flange Series UFR1500 Retainer Gland for PVC and Uni-Flange Series UFR1400 Retainer Gland for Ductile Iron)
2. Ford Joint Harnesses/Restraint (Uni-Flange Series 1390)

The Product Review Committee determined that these items were acceptable and "equal" to the current list of approved products, and an approval letter was sent to you on September 3, 2009. However, upon further inspection of the EBAA Iron joint harnesses and bolt-on-flanges, it was determined that a corrosion resistant coating must be applied to these products. Therefore, as of the date of this letter, only the cathodic epoxy coated restraints and flanges with the designation of UFR1500-E-x-U and UFR1500-E-C on the series 1500 Ford products will be allowed. The UFR1390-C-x-U and UFR1400-D-x-U already come with this coating and are acceptable.

If you have any questions or comments, please contact me at sareynolds@santafenm.gov or at (505) 955-4278.

Sincerely,

Stephanie A. Reynolds, P.E.
Engineer Associate





City of Santa Fe, New Mexico

200 Lincoln Avenue, P.O. Box 909, Santa Fe, N.M. 87504-0909

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- Miguel M. Chavez, Dist. 3
- Carmichael A. Dominguez, Dist. 3
- Matthew E. Ortiz, Dist. 4
- Ronald S. Trujillo, Dist. 4

January 20, 2010

Mr. Michael H. Hendrick, Territory Manager
 AY McDonald
 20280 N 59th Ave., Suite 115 #207
 Glendale, AZ 85308

RE: AY McDonald Product Review Submittals

Dear Mr. Hendrick,

Thank you for submitting products to the Sangre de Cristo Water (SDCW) Division's Product Review Committee, which met on December 16, 2009. The products evaluated from AY McDonald are as follows:

1. Yoke 90 Degree Elbow with Test/Drain Port
2. Yoke Expander UFR (Unmeasured Flow Reducer)
3. Angle Single UFR with Test/Drain Port – No Check Valve

The above item 1 is approved for use in the SDCW transmission and distribution system. The allowable models of this item from AY McDonald are as follows for each meter size.

Manufacturer	Model for 5/8"	Model for 3/4"	Model for 1"
AY McDonald	4779YWQ 3/4 x 01	4779YWQ 1 x 3/4	4779YWQ 1 x 1

The Product Review Committee determined that this item is acceptable and "equal" to the current list of approved products, and therefore waived the conditional approval process for this item. The UFR submittals (items 2 and 3) were evaluated by SDCW and are not approved for use in the SDCW system. Please contact me at sareynolds@santafenm.gov or at (505) 955-4278 if you have any questions or comments.

Sincerely,

Stephanie A. Reynolds, P.E.
 Engineer Associate
 Water Division, City of Santa Fe





City of Santa Fe, New Mexico

200 Lincoln Avenue, P.O. Box 909, Santa Fe, N.M. 87504-0909

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Miguel M. Chavez, Dist. 3

Carmichael A. Dominguez, Dist. 3

Matthew E. Ortiz, Dist. 4

Ronald S. Trujillo, Dist. 4

February 22, 2010

Mr. Michael Moore, Water Market Sales Manager
Copperhead Industries, Inc.
9350 Fallon Ave.
Monticello, MN 55362

RE: Copperhead Tracer Wire Product Review Submittals

Dear Mr. Moore,

Thank you for submitting products to the Sangre de Cristo Water (SDCW) Division's Product Review Committee, which met on December 16, 2009. The products evaluated from Copperhead Industries, Inc. are as follows:

1. #12 Copper Clad Steel (CCS) High Strength Soft Drawn 380#
2. Snake Bite Corrosion Proof Wire Connector
3. Snake Pit Magnetized Tracer Box

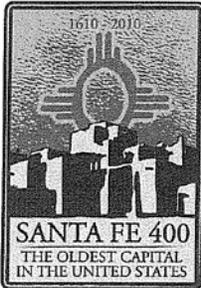
The above items are approved for use in the SDCW transmission and distribution system. The Product Review Committee determined that these items are acceptable and "equal" to the current list of approved products, and therefore waived the conditional approval process for these items. Please contact me at sareynolds@santafenm.gov or at (505) 955-4278 if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads 'Stephanie A. Reynolds'.

Stephanie A. Reynolds, P.E.
Engineer Associate
Water Division, City of Santa Fe





City of Santa Fe, New Mexico

200 Lincoln Avenue, P.O. Box 909, Santa Fe, N.M. 87504-0909

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- Miguel M. Chavez, Dist. 3
- Carmichael A. Dominguez, Dist. 3
- Matthew E. Ortiz, Dist. 4
- Ronald S. Trujillo, Dist. 4

February 23, 2010

Mr. Wayne Andrews
Sigma Corporation
5000 Askins
Houston, TX 77093

RE: Sigma Product Review Submittals

Dear Mr. Andrews,

Thank you for submitting products to the Sangre de Cristo Water (SDCW) Division's Product Review Committee, which met on December 16, 2009. The products evaluated from Sigma are as follows:

- a. One-Lok Model SLD
- b. One-Lok Model SLC
- c. PV-Lok Model PVM/PVP/PVPP

The items listed below are approved for use in the SDCW transmission and distribution system provided they come with a corrosion resistant "corrsafe" electrodeposition coating, as designated by a "-X." The Product Review Committee determined that these items are acceptable and "equal" to the current list of approved products, and therefore waived the conditional approval process for these items. These products will be added to the standards as follows:

Retainer Rings / Bolt-on-Flanges

<i>AWWA C900 PVC (4" - 12")</i>	<i>AWWA C905 PVC (14" - 36")</i>	<i>Ductile Iron Pipe (all sizes)</i>
One-Lok SLC-X	One-Lok SLC-X	One-Lok SLD-X (new pipe) or One-Lok SSLD-X (existing pipe)

Joint Harnesses

<i>AWWA C900 PVC (4" - 12")</i>	<i>AWWA C905 PVC (14" - 36")</i>	<i>Ductile Iron Pipe (all sizes)</i>
PV-Lok PVP-X	PV-Lok PVP-X	One-Lok SLDH with corrsafe (new pipe) or One-Lok SSLDH with corrsafe (existing pipe)

Please contact me at sareynolds@santafenm.gov or at (505) 955-4278 if you have any questions or comments.

Sincerely,

Stephanie A. Reynolds, P.E.
Engineer Associate
Water Division, City of Santa Fe





City of Santa Fe, New Mexico

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- Miguel M. Chavez, Dist. 3
- Carmichael A. Dominguez, Dist. 3
- Matthew E. Ortiz, Dist. 4
- Ronald S. Trujillo, Dist. 4

July 29, 2010

Mr. John Fiorillo
 Star Pipe Products
 8019 S. Marshall St.
 Littleton, CO 80128

RE: Product Review Submittal for Star Pipe Products

Dear Mr. Fiorillo,

Thank you for submitting products to the Sangre de Cristo Water (SDCW) Division's Product Review Committee, which met on April 1, 2010. The products evaluated from Star Pipe Products are as follows:

- a. Stargrip Series 3000, 3000S, and 4000 (Mechanical Joint Restraints for Ductile Iron and PVC)
- b. Stargrip Series 1100, 3100P, and 3100S (Joint Harnesses for Ductile Iron and PVC)

The items listed below are approved for use in the SDCW transmission and distribution system provided they come with a corrosion resistant "Star-Bond" coating. The Product Review Committee determined that these items are acceptable and "equal" to the current list of approved products, and therefore waived the conditional approval process for these items. These products will be added to the standards as follows:

Retainer Rings / Bolt-on-Flanges

<i>AWWA C900 PVC (4" - 12")</i>	<i>AWWA C905 PVC (14" - 36")</i>	<i>Ductile Iron Pipe (all sizes)</i>
PVC Stargrip Series 4000 with Star-Bond	PVC Stargrip Series 4000 with Star-Bond	Stargrip Series 3000 (new pipe) with Star-Bond Stargrip Series 3000S (existing pipe) with Star-Bond

Joint Harnesses

<i>AWWA C900 PVC (4" - 12")</i>	<i>AWWA C905 PVC (14" - 36")</i>	<i>Ductile Iron Pipe (all sizes)</i>
Pipe Restraints Series 1100 with Star-Bond	Pipe Restraints Series 1100 with Star-Bond	Stargrip Series 3100P (new pipe) with Star-Bond Stargrip Series 3100S (existing pipe) with Star-Bond

Please contact me at sareynolds@santafenm.gov or at (505) 955-4278 if you have any questions or comments.

Sincerely,

Stephanie A. Reynolds, P.E.
 Engineer Associate
 Water Division, City of Santa Fe



EXHIBIT VI – ADDENDUM

GCCC Photovoltaic Project

Addendum No. 1 – Clarification of questions raised at December 3, 2013 pre-bid meeting

Project Manager: Nick Schiavo 505-955-4201 Dee Beingessner, 505-955-4231

This addendum includes eight items: Clarification of substitutions, responsibility for PNM agreement, staging area location, construction of 96kW system prior to 528kW system, car charging station clarification, equipment manufacturer bid requirement, previous work experience required of the bidder, and the final date for written questions to be received by the Water Division.

1. Substitutions will not be accepted for the following equipment: Photovoltaic panels and Inverters.
2. The winning bidder will not be responsible for submittal of the PNM interconnect agreement.
3. The location of the staging area for the project is at the southeast corner of the parking lot as shown on the Parking Lot Detail drawing which is the last page of the bid documents.
4. The 96kW Photovoltaic system housed on the northwest canopy shall be constructed first.
5. The components that the bidder is responsible for with regard to the car charging stations are provided on drawing E-3 of the bidding documents. Conduits will be constructed to all vehicle charging stations but only the northeast charging station requires wiring to the station.
6. Bidders must submit the name of the manufacturer for the following components: Canopy structure, Photovoltaic Panels, Inverters. This information will be required on the form provided on the second page of this addendum.
7. Section 1.02 C. Qualifications of Exhibit II, shall be modified to read: The Contractor shall have installed at least one grid interconnected photovoltaic system with a size that is greater than 500KW and have installed a carport structure that houses a photovoltaic system.
8. All additional questions are due to be submitted in writing by January 13, 2014 according to section 3.2 on page 8.

Equipment Manufacturer
This page is required to be submitted with bid.

Equipment

Manufacturer Name

Canopy Structure

Photovoltaic Panels

Inverters

GCCC Photovoltaic Project

Addendum No. 2 – Clarification of Manufacturer Change for Inverter and Inverter Warranty

Project Manager: Nick Schiavo 505-955-4201 Dee Beingessner, 505-955-4231

This addendum is to clarify that the specified inverter is being sold by another company. The specified Refusol Inverter is now manufactured and sold as a product of Advanced Energy. In lieu of the specified Refusol Inverter, provide the latest substitute product manufactured by Advanced Energy as the intended replacement, AE-3TL-23.

In addition, to clarify the warranty on the Static Power Converter (Inverter), page 151 of the bid documents, section 2.2 M is modified to read “Minimum 20 year warranty.”

GCCC Photovoltaic Project

Addendum No. 3 – Answers to questions received by December 13, 2013 deadline

Project Manager: Nick Schiavo 505-955-4201 Dee Beingessner, 505-955-4231

This addendum is to address the questions received by the December 13, 2013 deadline.

1. Section 1.1.3 The Work on page 56 indicates that the design is included in the contractor's work. Our understanding is that the design is provided in the specifications and design work is not included in the contractor's work.

The contractor is not responsible for design work.

2. How are the racking and solar to be included in the bid sheet? Should the racking be included in the structural and PV in electrical?

The price for racking and PV should be under bid items #10 and #50 respectively.

3. The replacement of the main electrical services at the facility requires power to be interrupted to the facility twice for 4-12 hours each time. Are there any requirements for timing of this shutdown? Performance of this activity outside of normal working hours will increase the cost. Also, are there special startup procedures that should be considered when power is reconnected? If so, please provide them.

Specification section 01001, paragraph 1.3 is modified to read:

CONTRACTOR USE OF PREMISES: For purposes of this paragraph, normal working hours shall be defined as 6:00 A.M. through 10:00 P.M., Seven Days per week.

Work that requires Disruption of power at the entire facility must be performed outside of normal working hours. Length of power disruption shall be limited to 4 hours at a time. Contractor shall schedule all outages with owner 14 days in advance.

For power outages longer than 4 hours, contractor shall provide a portable generator with sufficient capacity to operate a 150 ton Ice Rink chiller. For bidding use, 400KW site rated generator operating at 277/480 Volts. Include portables cables, connection to chiller control panel, and re-termination to main switchboard after outage is complete. Location of chiller is within 50 feet of main switchboard shown on sheet EB-4.

Proper shutdown and startup procedures of facility plant equipment will be the responsibility of the owner and engineer. These procedures will be performed prior to releasing the contractor to shut down power. Startup will occur after the contractor has restored power and utility power is deemed stable.

4. Drawing E-4 shows Unistrut welded to the carport column assembly. Would tek screws be an acceptable alternate?

The use of tek screws for attachment of a Unistrut is permissible.

5. The drawings indicate an expected AC voltage drop of 1.36% - 1.85% between the inverters and main electrical service. Can this be verified by the engineer?

The voltage drop from the furthest inverter to the main service (through the combining panel) is expected not to exceed 3 percent worst case based on distances and wire sizes indicated on the drawings.

6. Two different specifications in Section 16123 for PV Wire, (2.2) XLPE and (3.3) USE-2. Are both types approved?

USE PV Cable as manufactured by Southwire, 90 Deg C XLP or XLPE insulated intended for Solar Applications and rated USE-2 when direct buried.

7. Clarify that all panels are 480/277 VAC, Panel MDP Drawing EA-3 has 120/208 VAC in table.

The schedule on page EA-3 is incorrect. Panel MDP shall be rated 277/480 Volts, 3 Phase, 4 wire as indicated on the one-line diagram.

8. Clarify "Install rod and buried electrodes on locations indicated." There is no indication of where on the plans. Will one ufer and two ground rods per carport structure be sufficient? There are four carports. Will the inverters be allowed to be connected to the purlins for ground, or do the inverters each need to have two ground rods and a cadweld ufer connection?

Provide grounding and bonding at equipment shown on one line diagrams and three line diagrams. Steel rebar in the foundation may be used as the sole grounding electrode if it meets the requirements of NEC 250, otherwise the foundation steel will have to be supplemented with a NMEC modified ground ring consisting of 20 Feet of bare #2 cu. with a ground rod at each end.

The steel structure is also required to be bonded to the grounding electrode PeNEC 250.

A single grounding electrode system can be shared between modules and inverters provided the inverter is within 50 feet of the grounding electrode connection.

9. 3.2 Installation (p152) - point C2 - Can you please clarify what you mean by "Secure panel racks to building structure and metal decking." By "building structure" do you mean the canopy? I do not think there is any metal decking requested on canopy.

Secure all PV panels to the mounting rails on the parking structure canopy.
Specification Section 16625 Photovoltaic Systems, 3.2 Installation, Paragraph C.2.: Delete reference to metal decking.

10. Canopy design & PV panel - Is it acceptable to submit a structure covering the two head-to-head parking rows and the internal drive aisle? By covering this extra space in between the rows of parking, we would be able to propose an alternative to the SunPower panel and still meet system size and panel warranty.

No, as the PV system design has already been approved by Public Service Company of NM.

2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS

11. 2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS Section A - Please confirm we can add the words "or equivalent beams" after the word trusses used in both sentences

Yes, the City will allow equivalent structural beams in lieu of trusses.

12. 2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS Section F Columns - we would like to propose an equivalent alternative to RFP call for "HSS column sections" that "shall be ASTM A500 Grade B steel tubing with a minimum yield stress of 46ksi"

- a. With your consent we will propose I-beam columns (A-992 Grade 50 --- 50 ksi)

The proposed equivalent alternative is acceptable.

13. 2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS Section G
“Truss chords and web struts” - we would like to propose an equivalent alternative to the
“truss style” crossbeam
- a. With your consent we will propose I-beam crossbeams (A-992 Grade 50 --- 50 ksi)

The proposed equivalent alternative is acceptable.

14. 2.02 GENERAL STRUCTURE DESIGN AND COMPONENT DETAILS Section H
Purlins - we would like to propose two equivalent alternatives to RFP call for “ASTM
A500 steel tubing”:
Why are C purlins not permitted? We understand they are not used in ProTek’s
design, however C and Z purlins are a long-established structural members for solar
parking canopies, in use in canopies across the country, including areas with significant
snow loads.
- a. We would recommend as an alternative roll-formed light gauge C purlins, most likely 12 gauge Grade 55 steel, with a G90 hot dip galvanized finish.
 - b. If C purlins are not an option, please confirm we can propose I-beams (A-992 Grade 50 --- 50 ksi)

Either of the proposed alternatives is acceptable. However, the proposed finishing method is unacceptable.

15. 2.03 DESIGN PERFORMANCE COATING: Does the canopy have to be powder coated? Please confirm we can propose an alternative, as follows:

columns and crossbeams will be painted using a 3 coat, exterior marine grade finish.

The system we are proposing is typically used for bridges, tankers and other steel exposed in corrosive environments. The method we use has been approved by the Northeast Protective Coating Committee (NEPCOAT), an affiliation of northeast states (CT, MA, ME, NH, NJ, NY, PA, RI, and VT) for the purpose of developing acceptance/testing criteria of protective coating for use on highway bridge steel.

- a. one advantage over powder coating is that field touch-ups are much easier and look better when done over paint as opposed to powder coating.

purlins - we recommend purlins are either painted or hot-dip galvanized, a very durable, corrosion-resistant solution that requires virtually no maintenance or touch-up.

Proposed 3 coat paint system (optional):

- b. a. Metal Preparation Process - All structural components; columns, base plates, crossbeams and purlins shall be abrasively cleaned after fabrication using a method that meets SSPC- SP6 Commercial Blast Cleaning.
- c. b. Three-coat System
 - i. Primer – zinc rich primer – Sherwin Williams Zinc Clad 200 or equivalent
 - ii. Intermediate Coat – epoxy – Sherwin Williams Macropoxy 646 Fast Cure Epoxy or equivalent
 - iii. Exterior Coat – marine grade polyurethane – Sherwin Williams Acrolon 218 or equivalent

Proposed Hot dip galvanization for Structural Steel (optional) – per ASTM 123 (steel beams) and ASTM 153 (bolts)

Yes, the canopy must be powder coated. No alternatives will be accepted.

16. Light Fixtures - Is there a specific light fixture you would like used under the parking canopies? Are you open to alternative LED fixtures? Do you have photometric requirements that need to be met?

The specifications for the lighting fixtures are located on pages 158 – 163. Alternative fixtures will not be considered. The photometric design will be met with the designed layout and fixtures.

17. Please clarify in an addendum the fact that this is a construction contract and that there is no design obligation whatsoever, notwithstanding any language to the contrary.

The contractor is not responsible for design work.

18. Please consider carefully the overall warranty provisions that last beyond one year (not referring to specific materials or equipment warranties) which tend to complicate the surety underwriting process - because they are a departure from the standard - and issue an addendum if you agree.

The City has considered all warranty requirements and has decided not to modify the requirements within the RFB.

EXHIBIT VII - CONSTRUCTION DRAWINGS

FILE NAME: S:\PROTEK PARK PROJECTS\2013\130610 - GCCC - SANTA FE, NM\DRAWINGS\SUBMITTAL DRAWINGS\130610 - GCCC - SANTA FE, NM (03).DWG SHEET DATE: 08-28-13



SUPPLIER:

5513 VINE STREET CINCINNATI, OH 45217 www.protekparksolar.com Voice: 800.543.7351 Fax: 513.242.0816 Email: info@protekparksolar.com

GCCC SOLAR CANOPY PROJECT SANTA FE, NM

ProtekPark SOLAR 5513 VINE STREET CINCINNATI, OH 45217 Voice: (800)543-7351 Fax: (513)242-0816 info@protekparksolar.com

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GOVERNING CODE:

INTERNATIONAL BUILDING CODE 2009

DESIGN LOADS:

- DEAD LOADS:
 - STRUCTURE: 4.0 psf
 - GLAZING: 4.0 psf
 - $\Sigma = 8.0$ psf
- ROOF LIVE LOAD = 0 PSF
- SNOW LOAD:
 - P_g = 30 psf (GROUND SNOW)
 - P_f = 20.8 psf (FLAT ROOF SNOW)
 - C_e = 1.0
 - C_t = 1.1
 - I_s = 1.0
- WIND LOAD: (MAIN WIND FORCE RESISTING SYSTEM)
 - V = 90 MPH
 - EXPOSURE: C
 - OCCUPANCY CATEGORY: II
 - I_w = 1.0
 - G_Cp_i = 0.0 (OPEN STRUCTURE)
- SEISMIC:
 - S_b = 0.424 S_{ds} = 0.413
 - S_1 = 0.136 S_{d1} = 0.205
 - SEISMIC IMPORTANCE FACTOR: 1.00
 - OCCUPANCY CATEGORY: II
 - SITE CLASS: D
 - DESIGN CATEGORY: C
 - DESIGN BASE SHEAR:
 - V = 1.024 psf
 - C_e = 1.128
 - R_p = 1.25
 - SEISMIC ANALYSIS METHOD = EQUIVALENT LATERAL FORCE METHOD
 - SEISMIC RESISTING SYSTEM = CANTILEVERED COLUMN SYSTEMS

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST VERSION OF AISC "MANUAL OF STEEL CONSTRUCTION." LIGHT GAGE COLD-FORMED SECTIONS SHALL CONFORM TO LATEST VERSION OF AISI SPECIFICATIONS FOR COLD-FORMED STEEL STRUCTURAL MEMBERS.
- MATERIALS:
 - ROLLED SHAPES: ASTM A992 OR A572 GRADE 50, F_y = 50 KSI MINIMUM
 - PLATES: ASTM A36
 - TUBULAR SHAPES: ASTM A500 GRADE C F_y = 50 KSI MINIMUM
 - HSS SECTIONS: ASTM A500 GRADE B F_y = 46 KSI MINIMUM
 - FIELD BOLTS: $1/2$ " DIAMETER TO $7/8$ " DIAMETER - SAE J429 GRADE 5 (TYP. U.N.O) $7/8$ " DIAMETER OR LARGER - ASTM A490 TYPE 1 (AS INDICATED ON DRAWINGS) $1/4$ " DIAMETER OR LARGER - ASTM F593 GRADE 304
 - SCREWS: SHEET METAL SCREWS, #8 & #10 TEKS - STAINLESS STEEL #12 TEKS - GALVANIZED $1/4$ "-20 TEK SELECT - CLIMASEAL
- FIELD CONNECTIONS SHALL BE BOLTED EXCEPT WHERE WELDED CONNECTIONS ARE INDICATED ON THE STRUCTURAL DRAWINGS. ALL BOLTED CONNECTIONS SHALL BE INSTALLED TO THE "SNUG TIGHT" CONDITION DEFINED AS THE FULL EFFORT OF A MAN USING A NORMAL SPUD WRENCH OR A FEW IMPACTS OF AN IMPACT WRENCH. THE "SNUG TIGHT" CONDITION WILL ENSURE THE PLIES OF CONNECTED MATERIAL ARE IN FIRM CONTACT.
- ALL WELDING OF STEEL SHALL BE DONE IN ACCORDANCE WITH THE LATEST VERSION OF THE AMERICAN WELD SOCIETY'S SPECIFICATIONS - AWS D1.1. ELECTRODES SHALL BE E70 SERIES UNLESS NOTED OTHERWISE.
- STEEL COATED WITH PROTEK PARK HIGH PERFORMANCE POWDER OVER ELECTROCOAT (POE) COATING SYSTEM.

MISCELLANEOUS FASTENER NOTES:

- ANCHOR RODS SHALL BE ASTM A193 B7 UNLESS NOTED OTHERWISE.
- MECHANICAL AND/OR EPOXY ANCHORS SHALL BE THE TYPE, SIZE, AND EMBEDMENT INDICATED ON DRAWINGS, AND SHALL BE INSTALLED PER ANCHOR MANUFACTURER'S INSTRUCTIONS, INCLUDING HOLE PREPARATION/CLEANING AND SPECIAL INSPECTIONS DURING ANCHOR INSTALLATION.
- EPOXY ANCHORS SHALL BE HILTI HY200 (ESR-3187).
- ALL BOLTS SHALL BE THE TYPE AND SIZE INDICATED ON DRAWINGS. ALL HOLES SHALL BE BOLT DIAMETER + $1/16$ " MAX. EXCEPT HOLES IN BASE PLATE WHERE SIZES ARE INDICATED ON DRAWINGS.

CONCRETE:

- ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS THE LATEST VERSION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE".
- CONCRETE FOUNDATIONS DESIGN BASED ON RECOMMENDATIONS IN GEOTECH REPORT DATED 07/09/2013 PROVIDED BY GEO-TEST.
- OWNER/CUSTOMER/GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS ARE CONSISTENT WITH FINDINGS INCLUDED IN GEOTECH REPORT. VARIATIONS IN SOIL CONDITIONS SHALL BE REPORTED TO GEOTECH ENGINEER AND ENGINEER OF RECORD RESPONSIBLE FOR FOUNDATION DESIGN PRIOR TO INSTALLATION OF ANY FOUNDATION MATERIALS.
- INSTALLER/CONTRACTOR SHALL COORDINATE PLACEMENT OF FOUNDATIONS AND/OR ANCHOR BOLTS IN ACCORDANCE WITH DESIGN DOCUMENTS. ANCHOR BOLTS TO BE SET WITHIN TOLERANCES SET FORTH IN APPLICABLE DESIGN AND CONSTRUCTION CODES. FAILURE TO ENSURE PROPER LOCATION OF ANCHOR RODS WILL RESULT IN REMEDIAL ACTION TO PROVIDE APPROPRIATE ANCHORAGE AT THE CONTRACTOR'S EXPENSE.
- CONCRETE MIX DESIGNS SHALL BE SUBMITTED TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY CONCRETE WORK.
- CONCRETE SHALL BE THOROUGHLY CONSOLIDATED DURING PLACEMENT BY MECHANICAL VIBRATION OR OTHER SUITABLE MEANS. CONCRETE SHALL BE THOROUGHLY WORKED AROUND EMBEDDED ANCHORS AND REINFORCING STEEL.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BILLET STEEL.
- MINIMUM CONCRETE COVER TO REINFORCING STEEL SHALL BE AS FOLLOWS:
 - CONCRETE CAST AGAINST EARTH = 3.0"
- CONCRETE STRENGTH: 4 ksi AT 28 DAYS MINIMUM (WITH +/- 6" SLUMP)
- CONCRETE MIX SPECIFICATIONS PER LOCAL CONCRETE SUPPLIER TO MEET MINIMUM PROTEK PARK STRENGTH AND SLUMP REQUIREMENTS.
- REINFORCEMENT DETAILS PER ACI 318 AND IBC 2009
- BASE PLATE GROUT: NON-SHRINK, MINIMUM 8000 psi STRENGTH
- NOMINAL MAXIMUM AGGREGATE SIZE: $3/4$ "
- ALTERING OR SUBSTITUTING OF REINFORCEMENT MUST HAVE ENGINEER OF RECORD APPROVAL.
- PROPER CONCRETE CURING TO FOLLOW ACI 308 AND ACI 318.
- CONCRETE TESTING MUST FOLLOW ACI 318, SECTION 5.6.
- PLACEMENT OF CONDUIT MUST HAVE APPROVAL OF ENGINEER OF RECORD.

GEOTECHNICAL INFORMATION:

- BEARING CAPACITY OF SOIL AT PIER TIP OR BOTTOM OF FOOTING: 3,000 psf

MATERIAL FINISHES:

- FABRICATED COLUMN STEEL FINISH: RAL-9018
- FABRICATED TRUSS STEEL FINISH: RAL-9018
- FABRICATED PURLIN STEEL FINISH: RAL-9018
- STRUCTURE HARDWARE: HOT DIP GALVANIZED
- ANCHOR RODS: HOT DIP GALVANIZED
- PANEL CONNECTION HARDWARE: DURACON OR EQUIVALENT

CONSTRUCTION AND SAFETY:

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE CONSTRUCTION CODE, LOCAL ORDINANCES, STATE AND FEDERAL REQUIREMENTS INCLUDING OSHA GUIDELINES, AND THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL PROVIDE TEMPORARY BRACING AS REQUIRED TO MAINTAIN STABILITY UNTIL STRUCTURE IS COMPLETE AND FUNCTIONING AS THE DESIGNED UNIT.
- PROTEK PARK SOLAR, INC. AND THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY CONTRACTOR.
- CONTRACTOR SHALL FIELD MEASURE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. ANY UNEXPECTED CONDITIONS OR DISCREPANCIES WITH THE DESIGN DOCUMENTS SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION OR ERECTION OF MATERIALS.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. WHEN ON SITE, THE PROTEK PARK SOLAR, INC. REPRESENTATIVE AND/OR THE ENGINEER IS RESPONSIBLE FOR HIS OWN SAFETY BUT HAS NO RESPONSIBILITY FOR THE SAFETY OF OTHER PERSONNEL OR SAFETY CONDITION AT THE SITE.
- NO PERSONNEL SHALL STEP NOR STAND ON SOLAR PANELS AT ANY TIME. CANOPY STRUCTURE AND SOLAR PANELS ARE NOT DESIGNED FOR LIVE LOADS AND MAY VOID WARRANTY.

SPECIAL FIELD INSPECTION:

- ALL SPECIAL INSPECTORS SHALL BE RETAINED BY OWNER/CUSTOMER. THE EXTENT OF THE INSPECTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS, THE BUILDING CODE REQUIREMENTS AND LOCAL JURISDICTION. IT IS THE OWNER/CUSTOMER'S RESPONSIBILITY TO GIVE PROPER NOTIFICATION TO THE SPECIAL INSPECTOR AND PROCEED WITH THE WORK ONLY AFTER THE SPECIAL INSPECTOR'S APPROVAL.
- FAILURE TO NOTIFY THE SPECIAL INSPECTOR MAY RESULT IN OWNER/CUSTOMER HAVING TO REMOVE WORK FOR THE PURPOSE OF INSPECTION AT THE OWNER/CUSTOMER'S EXPENSE.
- PREMATURE NOTIFICATION FOR INSPECTION WILL RESULT IN AN ADDITIONAL INSPECTION WITH ALL EXPENSES AND FEES PAID BY THE OWNER/CUSTOMER.
- SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS. RECORDS SHALL BE FURNISHED TO THE OWNER, ENGINEER OF RECORD AND LOCAL JURISDICTION AS REQUIRED. ANY AND ALL DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR. CORRECTIONS SHALL BE MADE AND A FINAL REPORT OF INSPECTIONS SHALL BE PROVIDED NOTING COMPLETION OF INSPECTIONS AND CORRECTIONS OF DISCREPANCIES. FAILURE TO CORRECT DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD AND THE LOCAL JURISDICTION AND MAY RESULT IN REMOVAL OF COMPLETED WORK AND ADDITIONAL WORK TO CORRECT DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
- MINIMUM REQUIRED INSPECTIONS:

THIS PROJECT MUST CONFORM TO ALL SPECIAL INSPECTIONS OUTLINED IN THE PROTEK PARK SOLAR, INC. DOCUMENT STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY THE APPLICABLE BUILDING CODE. BELOW ARE MINIMUM INSPECTIONS LISTED FOR A QUICK REFERENCE AND ARE NOT COMPLETE INSPECTION REQUIREMENTS TO BE FOLLOWED. REFER TO STATEMENT OF SPECIAL INSPECTIONS AND RELATED DOCUMENTS LISTED IN THE STATEMENT FOR COMPLETE INSPECTION REQUIREMENTS.

- STRUCTURAL STEEL/ALUMINUM
 - FABRICATION
 - MATERIAL IDENTIFICATION
 - HIGH STRENGTH BOLTS - MATERIAL IDENTIFICATION OF BOLTS, NUTS, AND WASHERS
 - WELD FILLER MATERIAL - IDENTIFICATION AND CONFIRMATION OF COMPLIANCE WITH DESIGN DOCUMENTS
 - ERECTION
 - MATERIAL IDENTIFICATION
 - INSTALLATION OF HIGH STRENGTH BOLTS
 - WELDED CONNECTIONS
 - MEMBER SIZES AND PLACEMENT
 - GENERAL CONFORMANCE WITH DESIGN DOCUMENTS
- CONCRETE CONTRUCTION
 - MATERIAL IDENTIFICATION
 - MIX DESIGN VERIFICATION
 - SIZE AND PLACEMENT OF REINFORCING STEEL
 - PLACEMENT OF CONCRETE USING PROPER TECHNIQUES
 - CONCRETE SAMPLES FOR SLUMP, AIR CONTENT, TEMPERATURE, STRENGTH TESTS, ETC. IN ACCORDANCE WITH ACI 318
 - PROPER MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES
- FOUNDATIONS
 - SIZE AND LOCATION OF FOUNDATION EXCAVATIONS
 - PLACEMENT OF REINFORCING STEEL AS REQUIRED
 - PLACEMENT OF CAST-IN-PLACE ANCHOR RODS AS REQUIRED
 - PLACEMENT OF EPOXY ANCHORS PER MANUFACTURER'S INSTRUCTIONS

ENGINEERS STAMP:

ENGINEERS SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	8-28-13	ADD A 4th CANOPY
		Genoveva Community Center

GENOVEVA CHAVEZ COMMUNITY CENTER SOLAR PROJECT

3221 W RODEO RD. SANTA FE, NM 87507

PROJ. NO.: 130510
ISSUE BY: CTN
DOCUMENT DATE: 08/28/13
SHEET TITLE: TITLE SHEET

0.0

FILE NAME: S:\PROTEK\PROJECTS\2013\138510 - GCCC - SANTA FE, NM\DRAWINGS\SUBMITTAL DRAWINGS\138510 - GCCC - SANTA FE, NM (REF:28)C1.DWG

SAVE DATE: 08-13-13

ORIGIN



ProtekPark
SOLAR

5513 VINE STREET
CINCINNATI, OH 45217
Voice (800)543-7351
Fax (513)242-0816
info@protekparksolar.com

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ENGINEERS STAMP:

ENGINEER SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	2-28-13	ADD A 2ND CANOPY

GCCC

3221 W RODEO RD.
SANTA FE, NM

PROJECT NO.: 138510
DRAWN BY: CTN
DOCUMENT DATE: 08/28/13
SHEET TITLE: CIF SITE PLAN & SOLAR CANOPY LAYOUT [40'-0" @ 7.4']

SHEET: 0.1



SITE LAYOUT NOTES:

COLUMN HEIGHTS TO BE CUSTOM CUT AND SHOP FABRICATED TO ALLOW CANOPY TO MAINTAIN A CONTINUOUS SLOPE THAT APPROXIMATELY MATCHES THE EXISTING SLAB.

NOTE:
SOLAR PANEL COUNT = 1,824 SOLAR PANELS BY SUNPOWER (320 WATT)
-XXX ACTIVE PANELS (583.68 kW)
-XX DUMMY PANELS

GCCC PARKING LOT SITE PLAN & LAYOUT
SCALE: 1" = 200'

FILE NAME: S:\PROTEK PARK PROJECTS\2013\130510 - 0202 - SANTA FE, NM DRAWINGS\SUBMITTAL DRAWINGS\130510 - 0202 - SANTA FE, NM (02)1.DWG
 DATE: 08/28/13
 DRAWN BY: CTN
 CHECKED BY: [Blank]
 PROJECT: GENEVEVA CHAVEZ COMMUNITY CENTER SOLAR PROJECT

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ENGINEERS STAMP:
 ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	2-28-13	ISSUE A 4th CANOPY
		Chavez Community Center

GENEVEVA CHAVEZ COMMUNITY CENTER SOLAR PROJECT

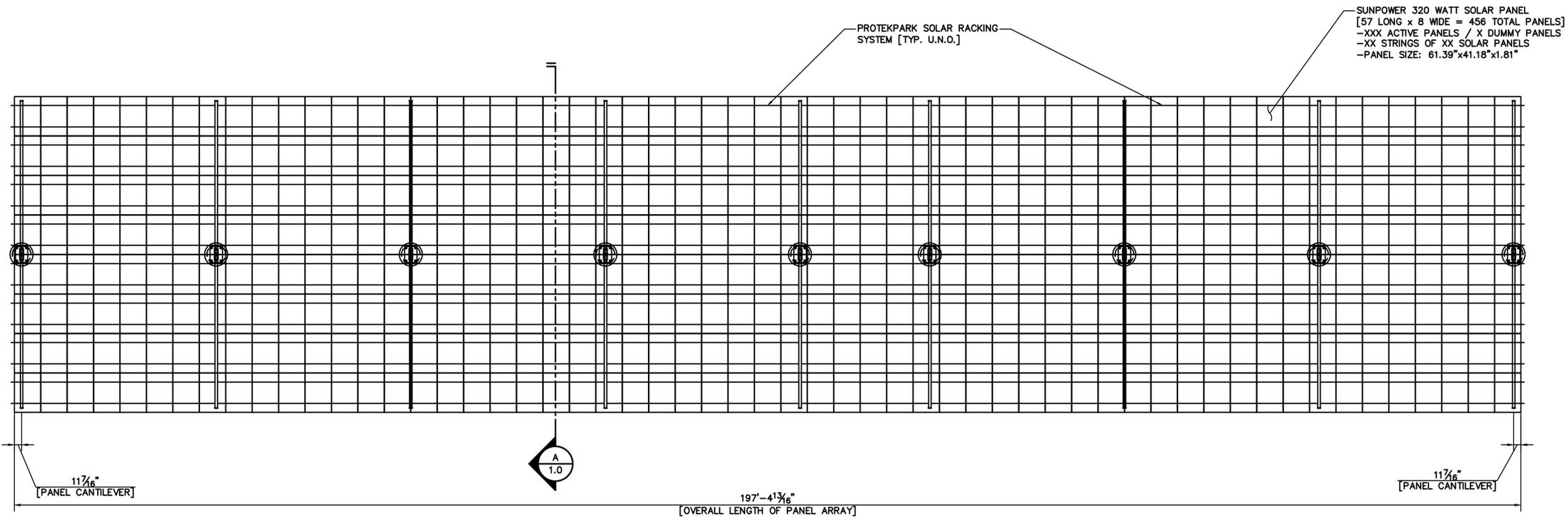
3221 W RODEO RD.
 SANTA FE, NM 87507

GENEVEVA CHAVEZ COMMUNITY CENTER SOLAR PROJECT

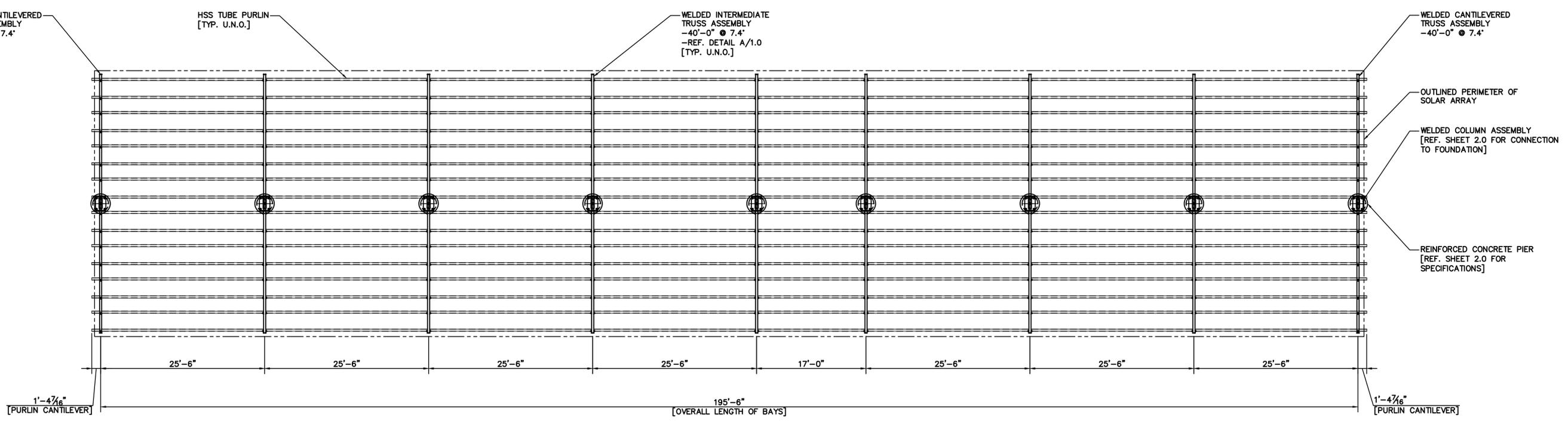
3221 W RODEO RD.
 SANTA FE, NM 87507

GENEVEVA CHAVEZ COMMUNITY CENTER SOLAR PROJECT

3221 W RODEO RD.
 SANTA FE, NM 87507



A
 0.2
CANOPIES 1-4 SOLAR PANEL ARRAY LAYOUT
 SCALE: 1/8" = 1'-0"



B
 0.2
CANOPIES 1-4 BAY & PURLIN LAYOUT
 SCALE: 1/8" = 1'-0"

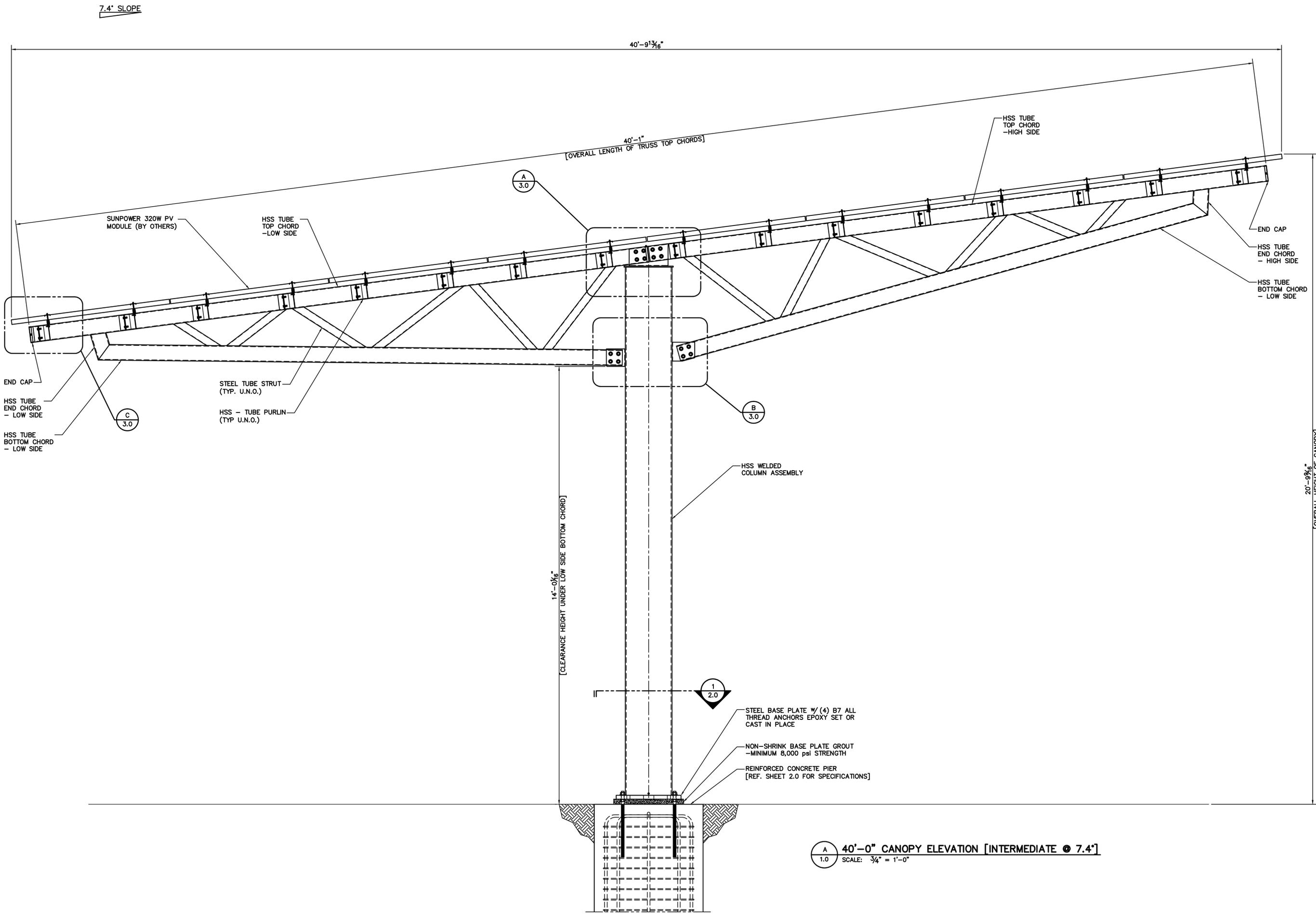
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 DATE: 08-28-13
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ENGINEERS STAMP:
 ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	7-29-13	ADDED A 4th CANOPY



A 40'-0" CANOPY ELEVATION [INTERMEDIATE @ 7.4']
 SCALE: 3/4" = 1'-0"

GCCC
 3221 W RODEO RD.
 SANTA FE, NM

PROJECT NO.: 138510
 DRAWN BY: CTN
 DOCUMENT DATE: 08/28/13
 SHEET TITLE: INTERMEDIATE TRUSS & COLUMN ELEVATION [40'-0" @ 7.4']

FILE NAME: S:\PROTEK PARK PROJECTS\2013\130810 - GCCC - SANTA FE, NM\DRAWINGS\SUBMITTAL DRAWINGS\130810 - GCCC - SANTA FE, NM\REFERENCE.DWG
 SHEET NO.: 1.1
 SHEET TITLE: CANTILEVERED TRUSS & COLUMN ELEVATION [40'-0" @ 7.4']

7.4° SLOPE

40'-9 1/16"

40'-1" [OVERALL LENGTH OF TRUSS TOP CHORDS]

HSS TUBE TOP CHORD - LOW SIDE

SUNPOWER 320W PV MODULE (BY OTHERS)

HSS TUBE TOP CHORD - LOW SIDE

END CAP

HSS TUBE END CHORD - HIGH SIDE

HSS TUBE BOTTOM CHORD - LOW SIDE

END CAP

HSS TUBE END CHORD - LOW SIDE

HSS TUBE BOTTOM CHORD - LOW SIDE

STEEL TUBE STRUT (TYP. U.N.O.)

HSS - TUBE PURLIN (TYP. U.N.O.)

HSS WELDED COLUMN ASSEMBLY

13'-6" [CLEARANCE HEIGHT UNDER LOW SIDE BOTTOM CHORD]

20'-9 1/16" [OVERALL HEIGHT OF CANOPY]

STEEL BASE PLATE W/ (4) B7 ALL THREAD ANCHORS EPOXY SET OR CAST IN PLACE

NON-SHRINK BASE PLATE GROUT - MINIMUM 8,000 PSI STRENGTH

REINFORCED CONCRETE PIER [REF. SHEET 2.0 FOR SPECIFICATIONS]

40'-0" CANOPY ELEVATION [CANTILEVERED @ 7.4°]
 SCALE: 3/4" = 1'-0"

ProtekPark
 SOLAR
 5513 VINE STREET
 CINCINNATI, OH 45217
 Voice: (800)543-7351
 Fax: (513)242-0816
 info@protektpark.com

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ENGINEERS STAMP:

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

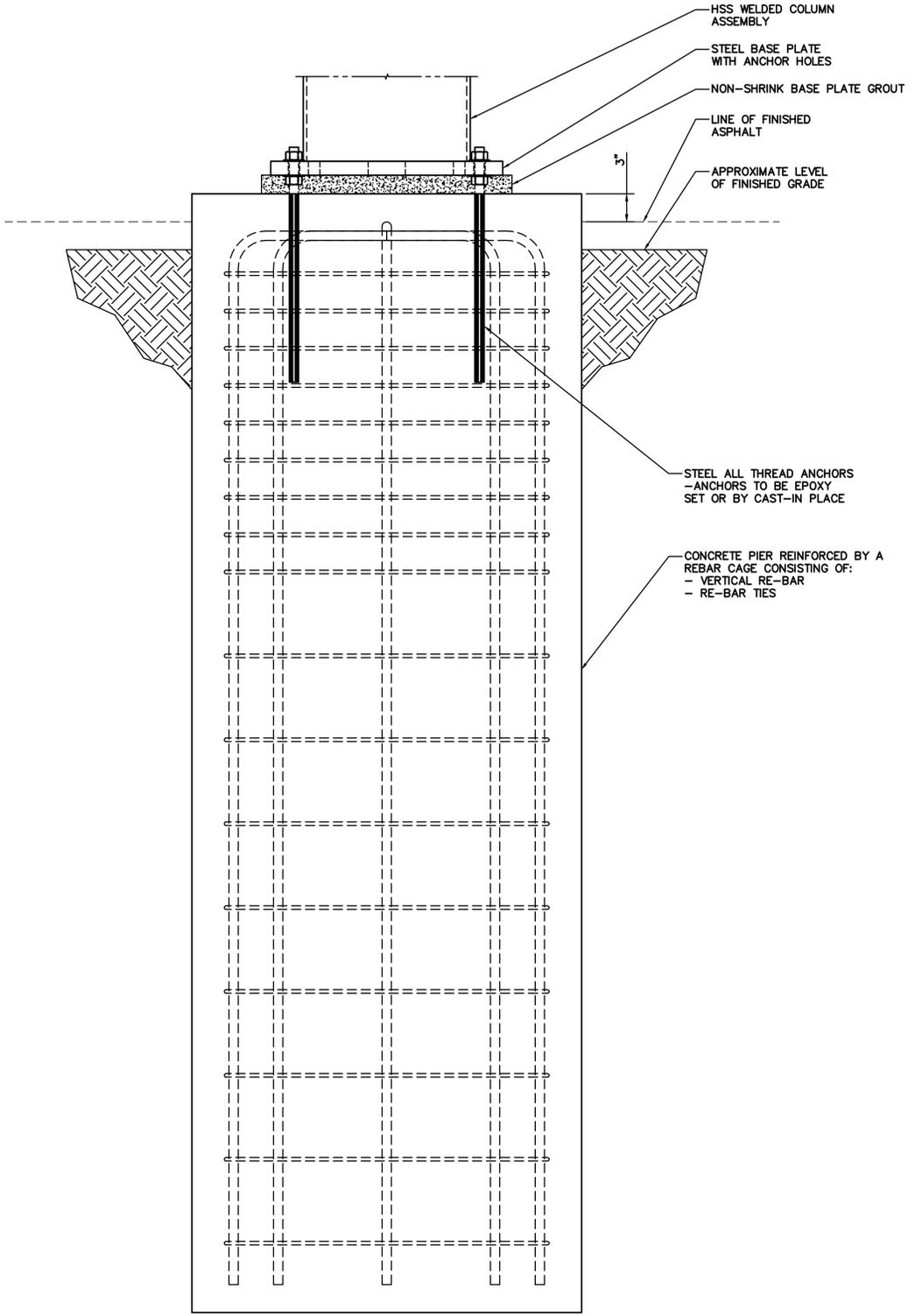
REVISION RECORD

NO.	DATE	DESCRIPTION
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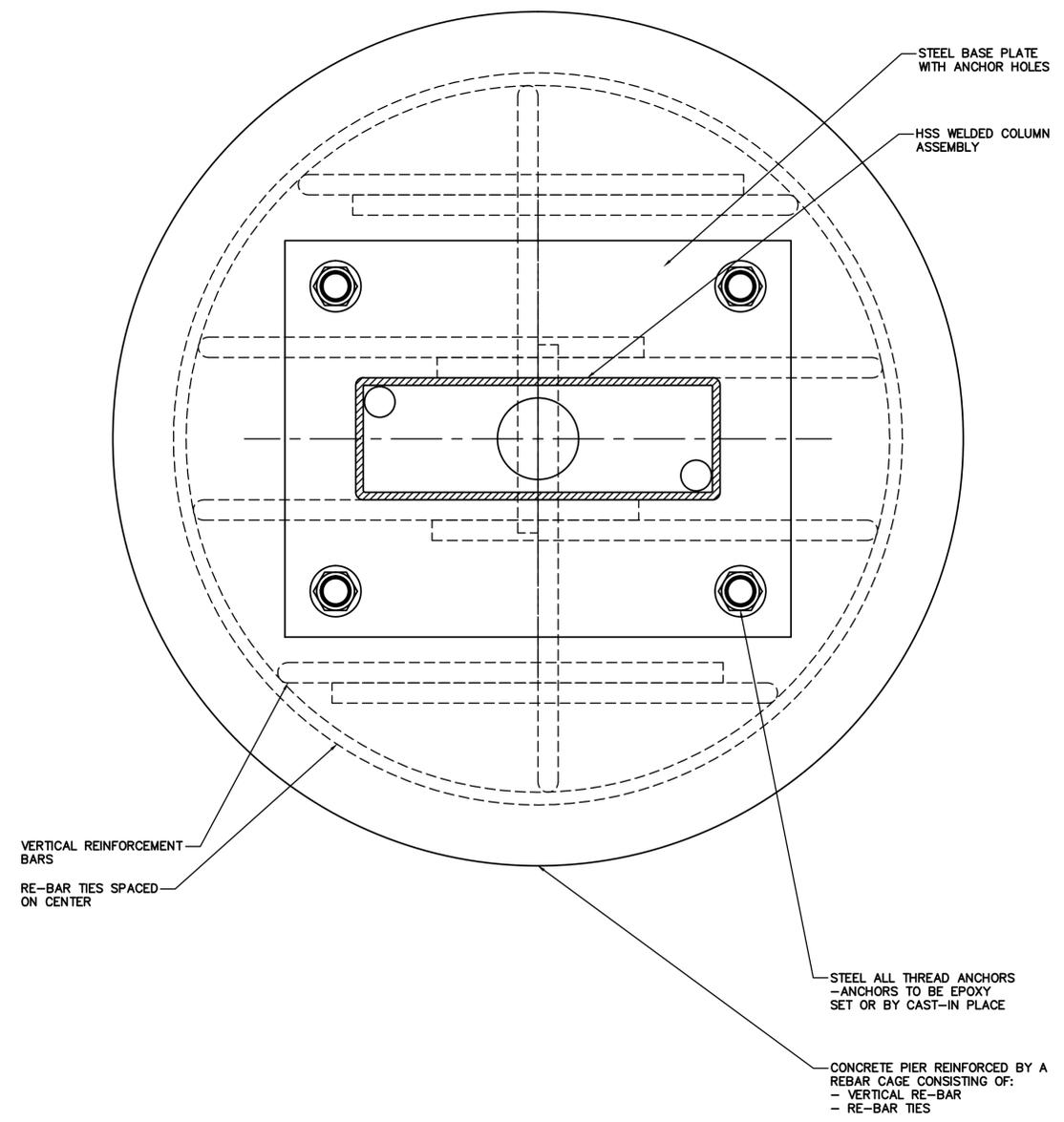
GCCC
 3221 W RODEO RD.
 SANTA FE, NM

PROJECT NO.: 130810
 DEPT. EX: CTN
 DOCUMENT DATE: 08/28/13
 SHEET TITLE: CANTILEVERED TRUSS & COLUMN ELEVATION [40'-0" @ 7.4']

1.1



A DRILLED PIER & BASE PLATE DETAIL [SIDE VIEW]
 2.0 SCALE: 1 1/2" = 1'-0"



1 DRILLED PIER & BASE PLATE DETAIL [TOP VIEW]
 2.0 SCALE: 3" = 1'-0"

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ENGINEERS STAMP:

ENGINEER SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	2-28-13	ADD A 4th COLUMN

GCCC

3221 W RODEO RD.
 SANTA FE, NM

PROJ. NO.:	138510
DRAWN BY:	CTN
DATE:	08/28/13
SHEET TITLE:	DRILLED PIER & BASE PLATE DETAILS [40'-0" @ 7.4']

FILE NAME: S:\PROTEK PARK PROJECTS\2013\130610 - GCCC - SANTA FE, NM\DRAWINGS\SUBMITTAL DRAWINGS\130610 - GCCC - SANTA FE, NM\REFERENCES\DWG
 SHEET: 3.1
 SHEET TITLE: CANTILEVERED TRUSS CONNECTION DETAILS [38'-6" @ 7.4"]

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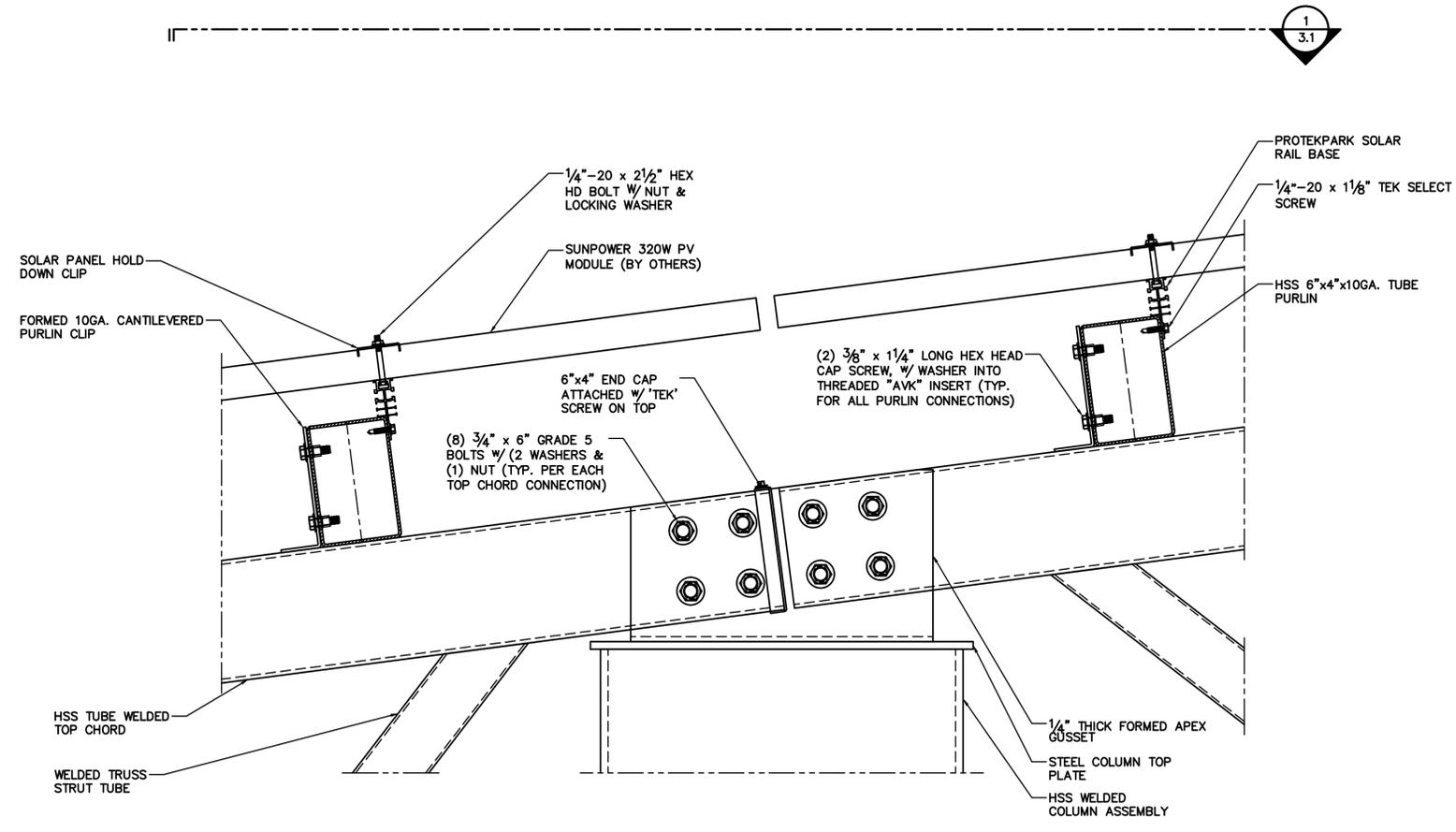
ENGINEERS STAMP:
 ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

REVISION RECORD

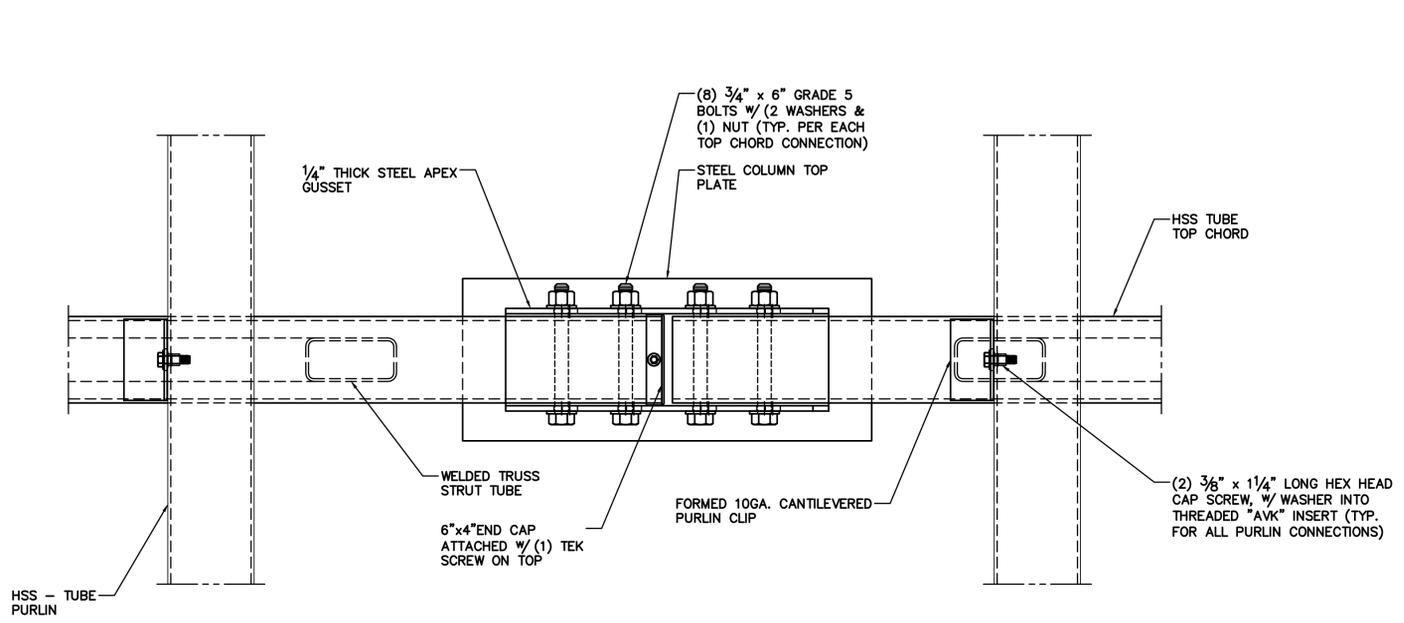
NO.	DATE	DESCRIPTION
1	7-29-13	ADDED A 4th CANOPY

GCCC
 3221 W RODEO RD.
 SANTA FE, NM

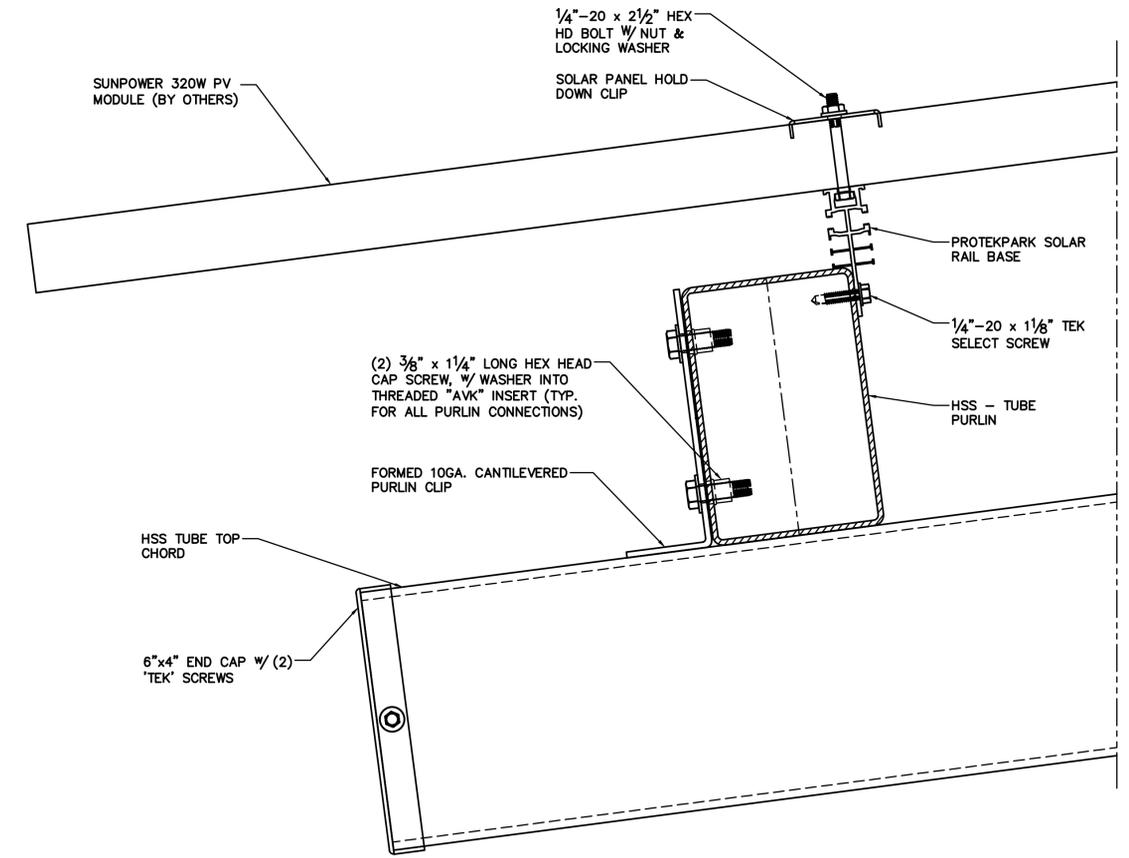
PROJECT NO.: 138510
 DEPT. EX: CTN
 DOCUMENT DATE: 08/28/13
 SHEET TITLE: CANTILEVERED TRUSS CONNECTION DETAILS [38'-6" @ 7.4"]



A TOP CHORD/PURLIN CONNECTION DETAIL [CANTILEVERED TRUSS]
 3.1 SCALE: 3" = 1'-0"



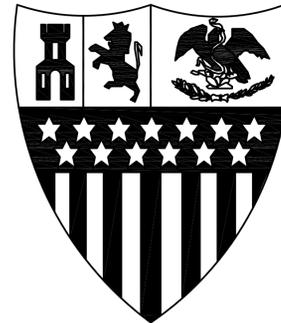
1 TOP VIEW OF TOP CHORD/PURLIN CONNECTION [CANTILEVERED TRUSS]
 3.1 SCALE: 3" = 1'-0"



C END CAP CONNECTION DETAIL [CANTILEVERED TRUSS]
 3.1 SCALE: 6" = 1'-0"

CITY OF SANTA FE

HOUSING AND COMMUNITY DEVELOPMENT



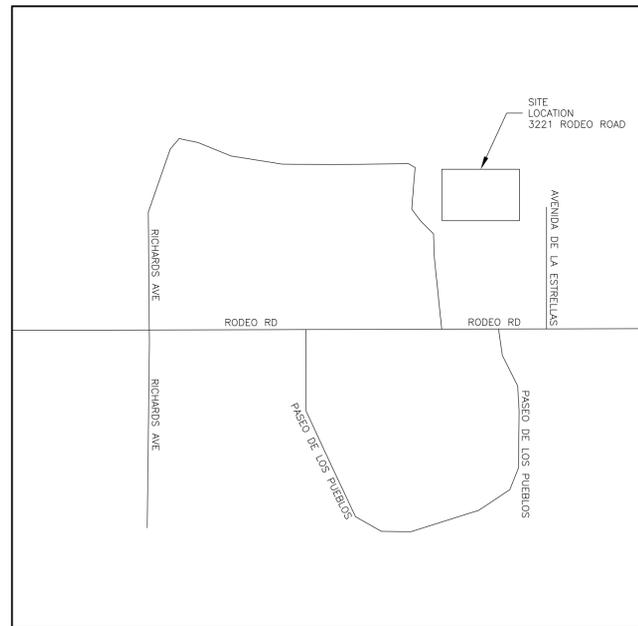
GENOVEVA CHAVEZ COMMUNITY CENTER

96KW PHOTOVOLTAIC SYSTEM

528KW PHOTOVOLTAIC SYSTEM

SITE LIGHTING AND POWER IMPROVEMENTS

OCTOBER 4, 2013



VICINITY MAP

LIST OF DRAWINGS

E-0	PROJECT TITLE SHEET
E-1	SITE LIGHTING DEMOLITION
E-2	SITE LIGHTING NEW WORK
E-3	ELECTRICAL POWER PLAN
E-4	ELECTRICAL DETAILS
EA-1	96KW ELECTRICAL SITE PLAN
EA-2	96KW PV MODULE STRINGING PLAN
EA-3	96KW SYSTEM ONE LINE DIAGRAM
EA-4	96KW SYSTEM THREE LINE DIAGRAM
EB-1	528KW PV SYSTEM - ELECTRICAL SITE PLAN
EB-2	528KW PV SYSTEM - STRINGING PLAN - WEST
EB-3	528KW PV SYSTEM - STRINGING PLAN - EAST
EB-4	528KW SYSTEM - ELECTRICAL PLAN
EB-5	528KW ONE-LINE CARPORT #1 AND #2
EB-6	528KW ONE-LINE CARPORT #3 AND #4
EB-7	528KW SYSTEM - ELECTRICAL SERVICE PLAN
EB-8	528KW SYSTEM - THREE-LINE CARPORT #2
EB-9	528KW SYSTEM - THREE-LINE CARPORT #1
EB-10	528KW SYSTEM - THREE-LINE CARPORT #3
EB-11	528KW SYSTEM - THREE-LINE CARPORT #4
EB-12	528KW MAIN SERVICE THREE-LINE DIAGRAM

CASH ALLOWANCES

CONTINGENCY CASH ALLOWANCE	
CONTRACTOR SHALL INCLUDE IN HIS BID A CASH ALLOWANCE OF \$10,000 TO COVER CONSTRUCTION CONTINGENCIES.	
SUMS FROM THIS CASH ALLOWANCE TO BE EXPENDED BY CHANGE ORDER AT OWNER'S DISCRETION.	
UTILITY PAYMENT CASH ALLOWANCE	
CONTRACTOR SHALL INCLUDE IN HIS BID A CASH ALLOWANCE OF \$10,000 FOR PAYMENT TO THE ELECTRICAL UTILITY FOR FIELD SERVICE COSTS RELATED TO THIS PROJECT.	
SUMS FROM THIS CASH ALLOWANCE TO BE EXPENDED BY CHANGE ORDER BASED ON UTILITY INVOICES.	

- ### GENERAL ELECTRICAL NOTES
- WORK COVERED BY THESE DRAWINGS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS, AND PERFORMING ALL OPERATIONS, INCLUDING CUTTING, CHANNELING, AND UNDERGROUND SYSTEMS AS INDICATED.
 - ALL ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMAN LIKE MANNER IN FULL ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC), NATIONAL ELECTRIC SAFETY CODE (NESC), AND LOCAL AND STATE SAFETY CODES.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION WITH UTILITY COMPANIES. VERIFY EXACT REQUIREMENTS PRIOR TO ROUGH-IN. THERE SHALL BE NO EXTRA COSTS TO THE OWNER FOR CONTRACTOR'S FAILURE TO COORDINATE UTILITY REQUIREMENTS.
 - SHOULD THE CONTRACTOR DETECT ANY DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND LEGAL OR SAFETY REQUIREMENTS FOR THE PROJECT, HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING. ONCE NOTIFIED, THE ENGINEER SHALL MODIFY THE CONTRACT DOCUMENTS ACCORDINGLY. IF THE CONTRACTOR PROCEEDS WITH ANY WORK WHICH IS IN VARIANCE OF KNOWN LEGAL OR SAFETY REQUIREMENTS, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THIS WORK AND SHALL PROMPTLY CORRECT THE WORK WHEN NOTIFIED WITHOUT ADDITIONAL COST TO THE OWNER.
 - ALL WIRE AND CABLE SHALL BE INSTALLED IN APPROVED RACEWAY. UNLESS OTHERWISE SPECIFIED, RACEWAY SHALL BE EMT CONDUIT, 1/2 INCH.
 - NOT USED
 - ALL WIRING SHALL BE COPPER, THHN/THWN INSULATION. MINIMUM CONDUCTOR SIZE SHALL BE #12.
 - EXTERIOR WIRING AND DEVICES SHALL BE INSTALLED IN CONDUIT WITH WEATHER-TIGHT FITTINGS AND IN WEATHER-TIGHT BOXES.
 - ALL METALLIC RACEWAY IN CONTACT WITH EARTH SHALL BE COATED. PROVIDE EITHER PLASTIBOND OR 2 LAYERS SCOTCH #51 HALF-LAPPED.

SCOPE OF WORK - CHARGING STATIONS	
1. PROVIDE UNDERGROUND RACEWAY SYSTEM FOR FUTURE ELECTRIC VEHICLE CHARGING STATIONS. 2. RACEWAY SHALL INCLUDE PROVISIONS FOR BOTH POWER AND COMMUNICATIONS.	

SCOPE OF WORK - 96KW SYSTEM	SCOPE OF WORK - 528KW SYSTEM
1. FURNISHED AND INSTALL A NOMINAL 96KW GRID INTERACTIVE PHOTOVOLTAIC SYSTEM. 2. PHOTOVOLTAIC MODULES SHALL BE INSTALLED ON NEW CARPORT STRUCTURES IN EXISTING PUBLIC PARKING AREAS. 3. SYSTEM SHALL INCLUDE CARPORT MOUNTED PV MODULES, DISTRIBUTED INVERTERS, AC CIRCUIT BREAKER PANELS, AND ALL OTHER EQUIPMENT, DEVICES, RACEWAY, AND CABLE FOR A COMPLETE WORKING SYSTEM. 4. PROVIDE NETWORK CABLE AND RACEWAY TO EACH INVERTER FOR MONITORING OF SYSTEM PERFORMANCE AT THE INVERTER LEVEL. 5. REMOVE EXISTING POLE MOUNTED LUMINAIRES IN THE PARKING LOT TO ACCOMMODATE THE NEW CARPORT CONSTRUCTION. 6. ADD NEW UNDER CANOPY LED LUMINAIRES UNDER CARPORT DECK FOR PARKING AREA LUMINATION.	1. FURNISHED AND INSTALL A NOMINAL 528KW GRID INTERACTIVE PHOTOVOLTAIC SYSTEM. 2. PHOTOVOLTAIC MODULES SHALL BE INSTALLED ON NEW CARPORT STRUCTURES IN EXISTING PUBLIC PARKING AREAS. 3. SYSTEM SHALL INCLUDE CARPORT MOUNTED PV MODULES, DISTRIBUTED INVERTERS, AC CIRCUIT BREAKER PANELS, AND ALL OTHER EQUIPMENT, DEVICES, RACEWAY, AND CABLE FOR A COMPLETE WORKING SYSTEM. 4. PROVIDE NETWORK CABLE AND RACEWAY TO EACH INVERTER FOR MONITORING OF SYSTEM PERFORMANCE AT THE INVERTER LEVEL. 5. REMOVE EXISTING POLE MOUNTED LUMINAIRES IN THE PARKING LOT TO ACCOMMODATE THE NEW CARPORT CONSTRUCTION. 6. ADD NEW UNDER CANOPY LED LUMINAIRES UNDER CARPORT DECK FOR PARKING AREA LUMINATION.

ENGINEER
 PEAK POWER ENGINEERING, INC
 1309 AGUA FRIA
 SANTA FE, NEW MEXICO 87505
 TELE. # (505)-982-7071
 FAX # (505)-982-2274

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT: 13026
 FILE: 13026
 DATE: 10/4/13

DESIGNED BY: D.G.
 DRAWN BY: A.S.
 CHECKED BY: D.G.
 SCALE: AS NOTED

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: PROJECT SYSTEM
 TITLE SHEET

SHEET NO.
E-0

APPROXIMATE LOCATION
PANEL L4 AND
LIGHTING CONTROLS

EXISTING
CIRCUIT TO
PANEL L4

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

EXISTING FIXTURES	
XA	EXISTING POLE MOUNTED AREA LIGHT, 2 LUMINAIRES PER POLE. APPROXIMATE POLE HEIGHT = 30 FEET
XB	EXISTING POLE MOUNTED AREA LIGHT, 1 LUMINAIRE PER POLE. APPROXIMATE POLE HEIGHT = 30 FEET

EXISTING
CIRCUIT TO
PANEL L4

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

REMOVE
POLE FIXTURE
AND SALVAGE
TO OWNER.

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

EXISTING POLE MOUNTED
LIGHT FIXTURE TO REMAIN.
PROTECT FIXTURE AND
CIRCUIT DURING
CONSTRUCTION

ELECTRICAL LIGHTING PLAN - DEMOLITION
SCALE: 1" = 20'-0"

PEAK POWER ENGINEERING, INC.

1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-7071
FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

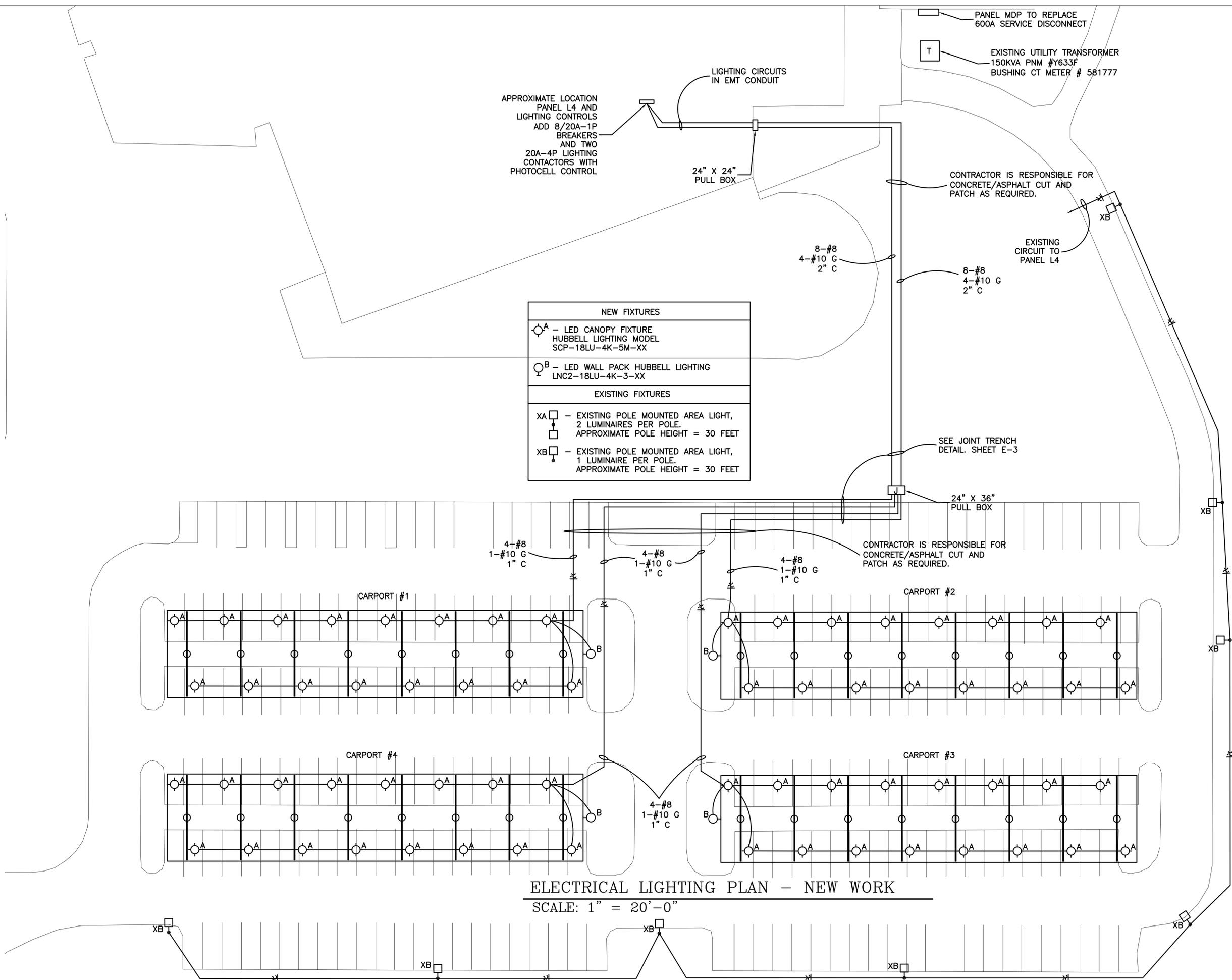
PROJECT: **CITY OF SANTA FE
CHAVEZ CENTER PV**

SHEET TITLE: **ELECTRICAL LIGHTING PLAN
DEMOLITION**



SHEET NO.

E-1



NEW FIXTURES	
⊙A	- LED CANOPY FIXTURE HUBBELL LIGHTING MODEL SCP-18LU-4K-5M-XX
⊙B	- LED WALL PACK HUBBELL LIGHTING LNC2-18LU-4K-3-XX
EXISTING FIXTURES	
XA	- EXISTING POLE MOUNTED AREA LIGHT, 2 LUMINAIRES PER POLE. APPROXIMATE POLE HEIGHT = 30 FEET
XB	- EXISTING POLE MOUNTED AREA LIGHT, 1 LUMINAIRE PER POLE. APPROXIMATE POLE HEIGHT = 30 FEET

ELECTRICAL LIGHTING PLAN - NEW WORK
SCALE: 1" = 20'-0"

PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-7071
FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

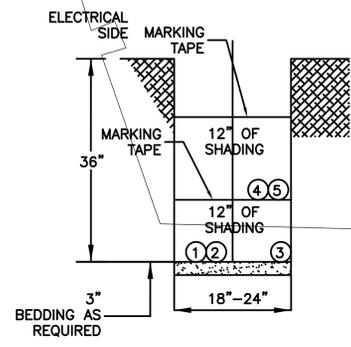
PROJECT: 13026	DESIGNED BY: D.G.	DRAWN BY: A.S.	CHECKED BY: D.G.
FILE: 13026	DATE: 10/4/13	SCALE: AS NOTED	

PROJECT: **CITY OF SANTA FE
CHAVEZ CENTER PV**

SHEET TITLE: **ELECTRICAL LIGHTING PLAN
NEW WORK**

DAVID M. GONZALES
NEW MEXICO
9261
10-4-13
PROFESSIONAL ENGINEER

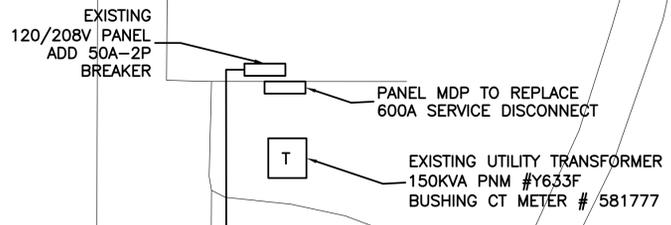
SHEET NO.
E-2



JOINT TRENCH DETAIL
SCALE: NONE

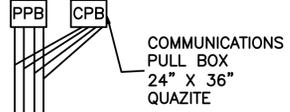
CONDUIT DESIGNATION	
①	480VAC INVERTER OUTPUT POWER IN CONDUIT.
②	277/480VAC LIGHTING CIRCUITS IN CONDUIT.
③	120/208V VEHICLE CHARGING CIRCUIT IN CONDUIT.
④	DATA CONDUITS.
⑤	COMMUNICATION CABLES IN CONDUIT.

APPROXIMATE LOCATION
PANEL L4 AND
LIGHTING CONTROLS



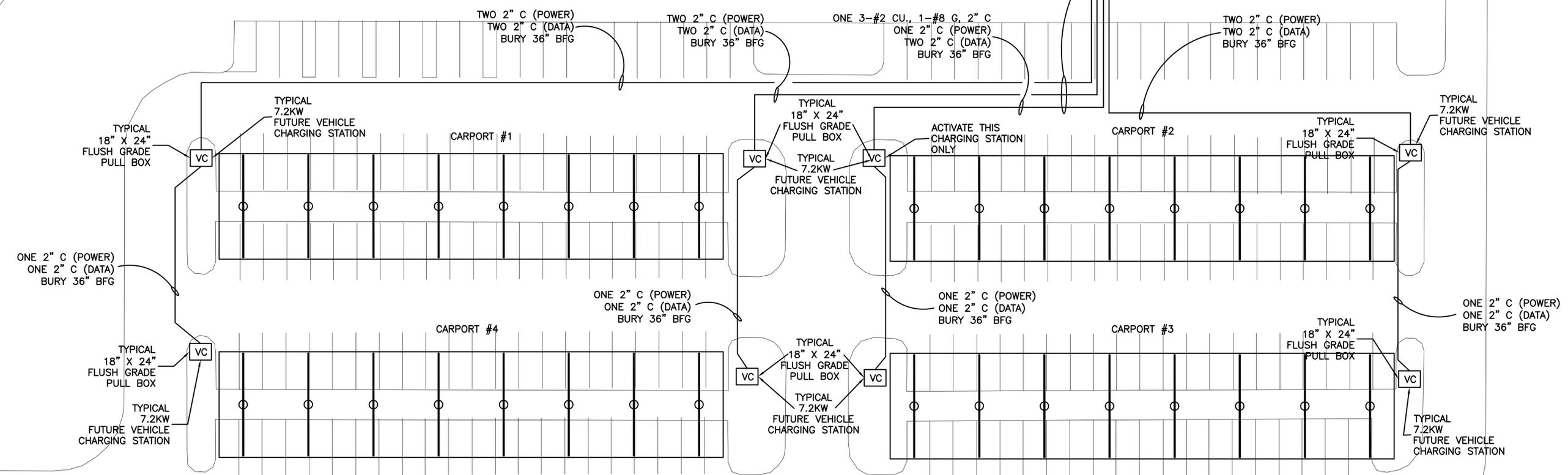
3-#2 CU.
1-#8 G
2" C

CONTRACTOR IS RESPONSIBLE
FOR CONCRETE/ASPHALT
CUT/PATCH AS REQUIRED.



CONTRACTOR IS RESPONSIBLE
FOR CONCRETE/ASPHALT
CUT/PATCH AS REQUIRED.

SEE JOINT TRENCH
DETAIL THIS SHEET



PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-7071
FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

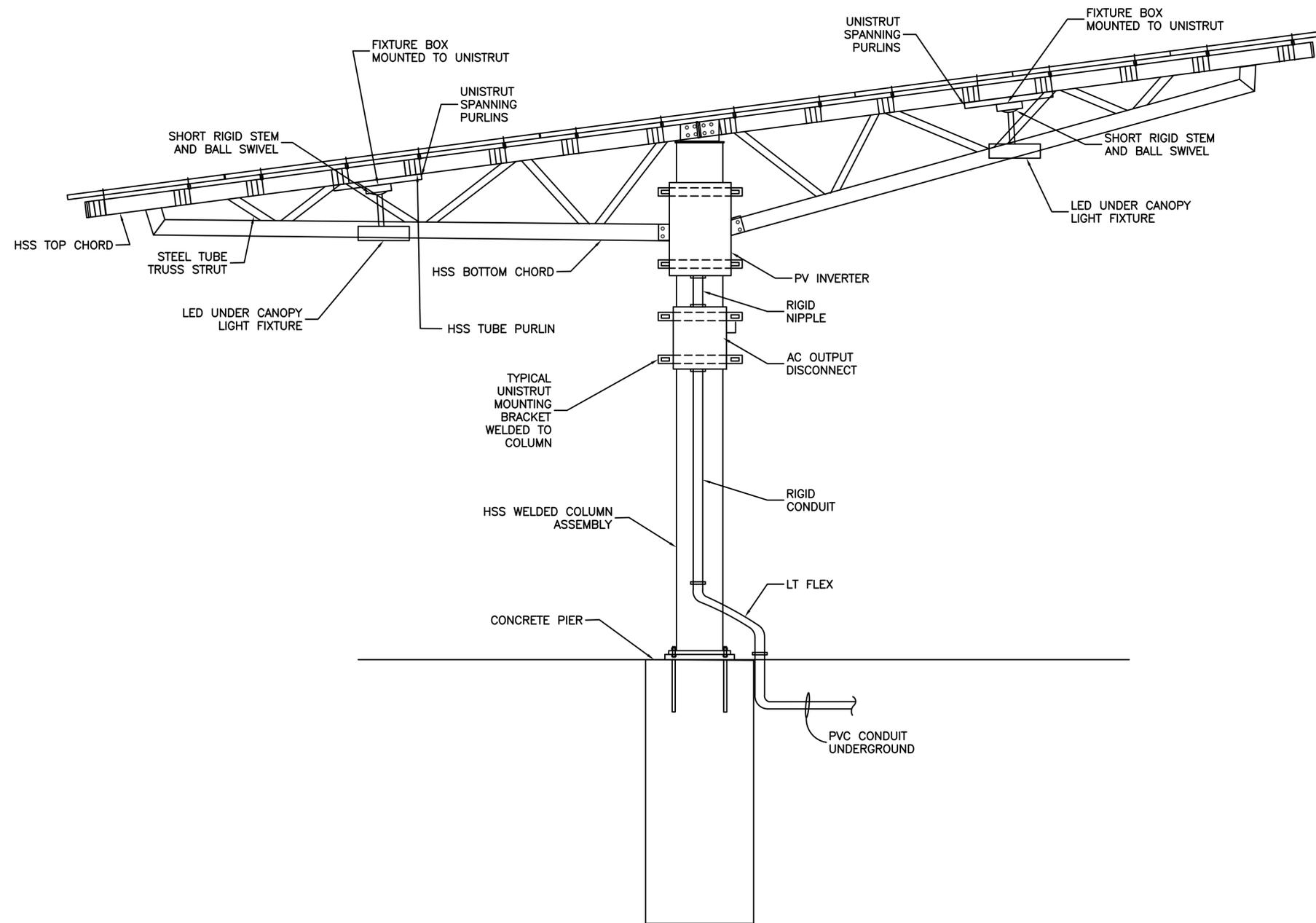
PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: **CITY OF SANTA FE
CHAVEZ CENTER PV**
SHEET TITLE: **ELECTRICAL POWER PLAN
NEW WORK**



SHEET NO.

ELECTRICAL POWER PLAN - NEW WORK
SCALE: 1" = 20'-0"



CANOPY ELECTRICAL DETAIL
 SCALE: 1/2" = 1'-0"

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: **CITY OF SANTA FE
 CHAVEZ CENTER PV**
 SHEET TITLE: **CANOPY
 ELECTRICAL DETAIL**



SHEET NO.
E-4



96KW ELECTRICAL SITE PLAN
 SCALE: 1" = 40'-0"

PEAK POWER ENGINEERING, INC.		1309 Agua Fria, Santa Fe, NM 87501		TEL 505-982-7071 FAX 505-982-2274	
No.	REVISION	BY	APP.	DATE	
PROJECT: CITY OF SANTA FE CHAVEZ CENTER PV		DESIGNED BY: D.G.			
SHEET TITLE: 96KW PV SYSTEM ELECTRICAL SITE PLAN		FILE: 13026	DRAWN BY: A.S.		
		DATE: 10/4/13	CHECKED BY: D.G.		
		SCALE: AS NOTED			
SHEET NO.					
EA-1					



PEAK POWER ENGINEERING, INC.

1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 96KW SYSTEM
 PV MODULE STRINGING PLAN



SHEET NO.

EA-2

96KW SYSTEM – PV MODULE STRINGING PLAN
 SCALE: 1" = 10'-0"

Nameplate		Voltage LL: 480 VOLTS		Voltage LN: 277 VOLTS		3 PHASE, 4 WIRE	
BUS Rating: 250 Amps		Enclosure: NEMA 3R		Mounting: SURFACE			
MCB or MLO: MCB		Manufacturer: SQUARE D		Model: NF			
MCB Rating: 150A-3P Amps		Branch Breaker: EDB					
AIC Rating: 18 K AIC							
Fed From		PANEL MDP					

CIRCUIT DESCRIPTION	D	LOAD AMPS			BKR	CCT	CCT	BKR	LOAD AMPS			D	CIRCUIT DESCRIPTION
		A	B	C					A	B	C		
INVERTER 1A	1	27.9			40	1	A	2	40	27.9		1	INVERTER 1C
	1		27.9		3P	3	B	4	3P		27.9	1	
	1			27.9	-	5	C	6	-			27.9	1
INVERTER 1B	1	27.9			40	7	A	8	40	27.9		1	INVERTER 1C
	1		27.9		3P	9	B	10	3P		27.9	1	
	1			27.9	-	11	C	12	-			27.9	1
BUSSED SPACE						13	A	14					BUSSED SPACE
BUSSED SPACE						15	B	16					BUSSED SPACE
BUSSED SPACE						17	C	18					BUSSED SPACE
BUSSED SPACE						19	A	20					BUSSED SPACE
BUSSED SPACE						21	B	22					BUSSED SPACE
BUSSED SPACE						23	C	24					BUSSED SPACE
BUSSED SPACE						25	A	26					BUSSED SPACE
BUSSED SPACE						27	B	28					BUSSED SPACE
BUSSED SPACE						29	C	30					BUSSED SPACE
Subtotal (Amps)		55.8	55.8	55.8						55.8	55.8	55.8	
Total (Amps)		111.6	111.6	111.6									

ACCESSORIES:	YES	NO
Copper Bus	X	
Service Entrance Rated	X	
Door in Door	X	
Thru-Feed Lugs	X	
Top Skirts	X	
Bottom Skirts	X	

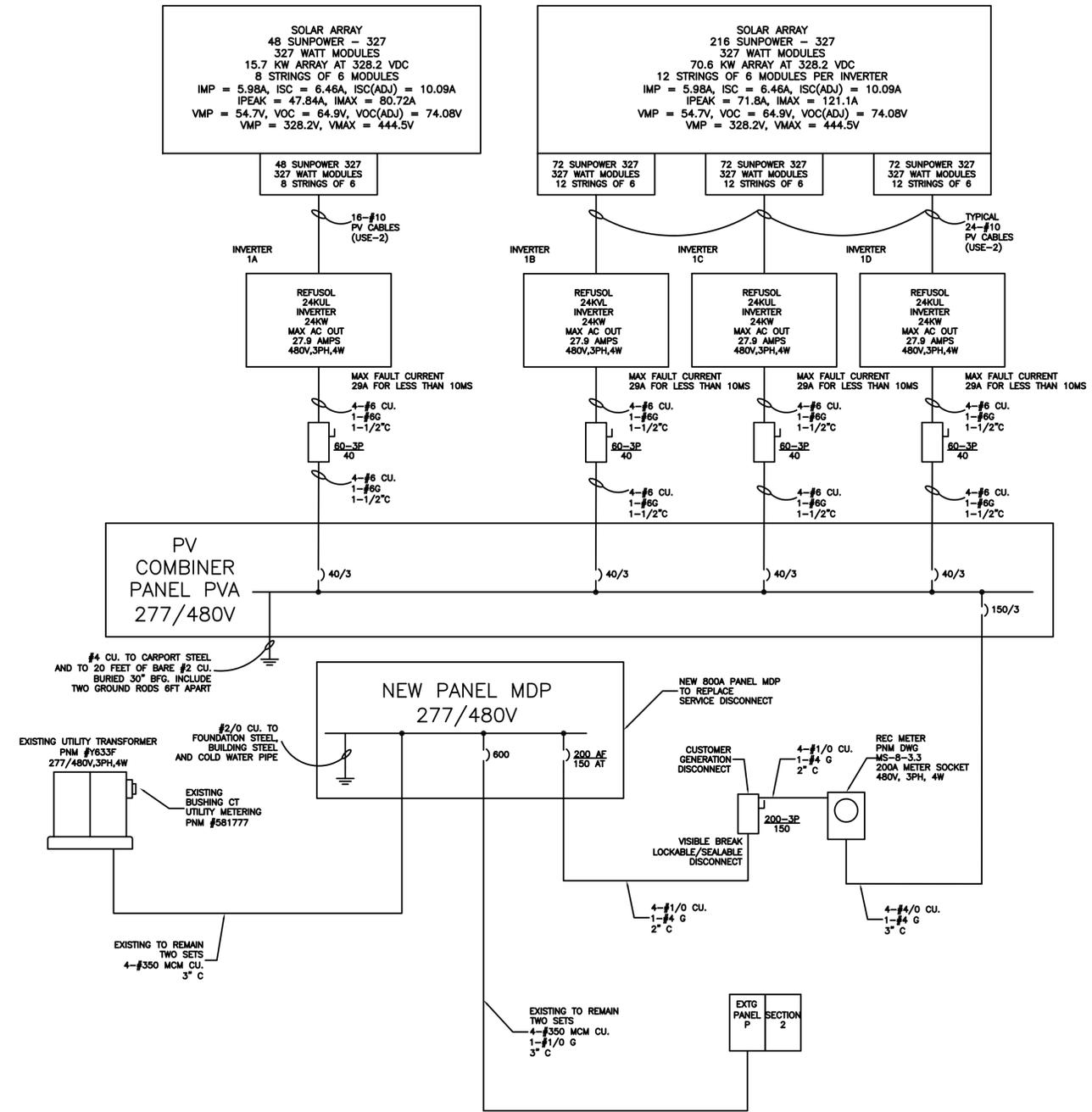
LOAD SUMMARY			
Load Category	Dem. (KVA)	Dem. Factor	Cnctd (KVA)
General	92.74	1.00	92.74
Lighting	0.00	1.25	0.00
Receptacles	0.00	1.00	0.00
Dental Equip.	0.00	0.80	0.00
User 2	0.00	1.00	0.00
Motors	0.00	1.00	0.00
Largest Motor	0.00	1.25	0.00
Total KVA	92.74		92.74
Total Amps	111.68		111.68

Nameplate		BUS Rating: 800 Amps		Enclosure: NEMA 3R	
NEW PANEL MDP		MCB or MLO: MLO		Mounting: SURFACE	
MCB Rating: Amps		Manufacturer: SQUARE D		Model: I-LINE	
Branch Breaker: BOLT-ON					
AIC Rating: 65 K AIC					
Fed From		UTILITY XFMR			

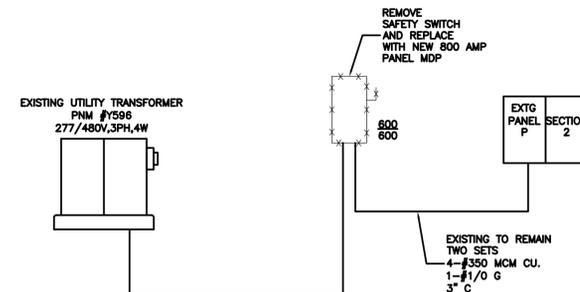
Circuit Description	D	LOAD AMPS			Breaker	Breaker
		A	B	C		
EXISTING PANEL P					600	600A-3P
PV SYSTEM INPUT					250	150A-3P
Total (Amps)						

ACCESSORIES:	YES	NO
Copper Bus	X	
Service Entrance Rated	X	
Door in Door		X

CARPORT 1 STRUCTURE



96KW SYSTEM - ONE-LINE DIAGRAM - NEW WORK
SCALE: NONE



96KW SYSTEM - ONE-LINE DIAGRAM - DEMOLITION
SCALE: NONE

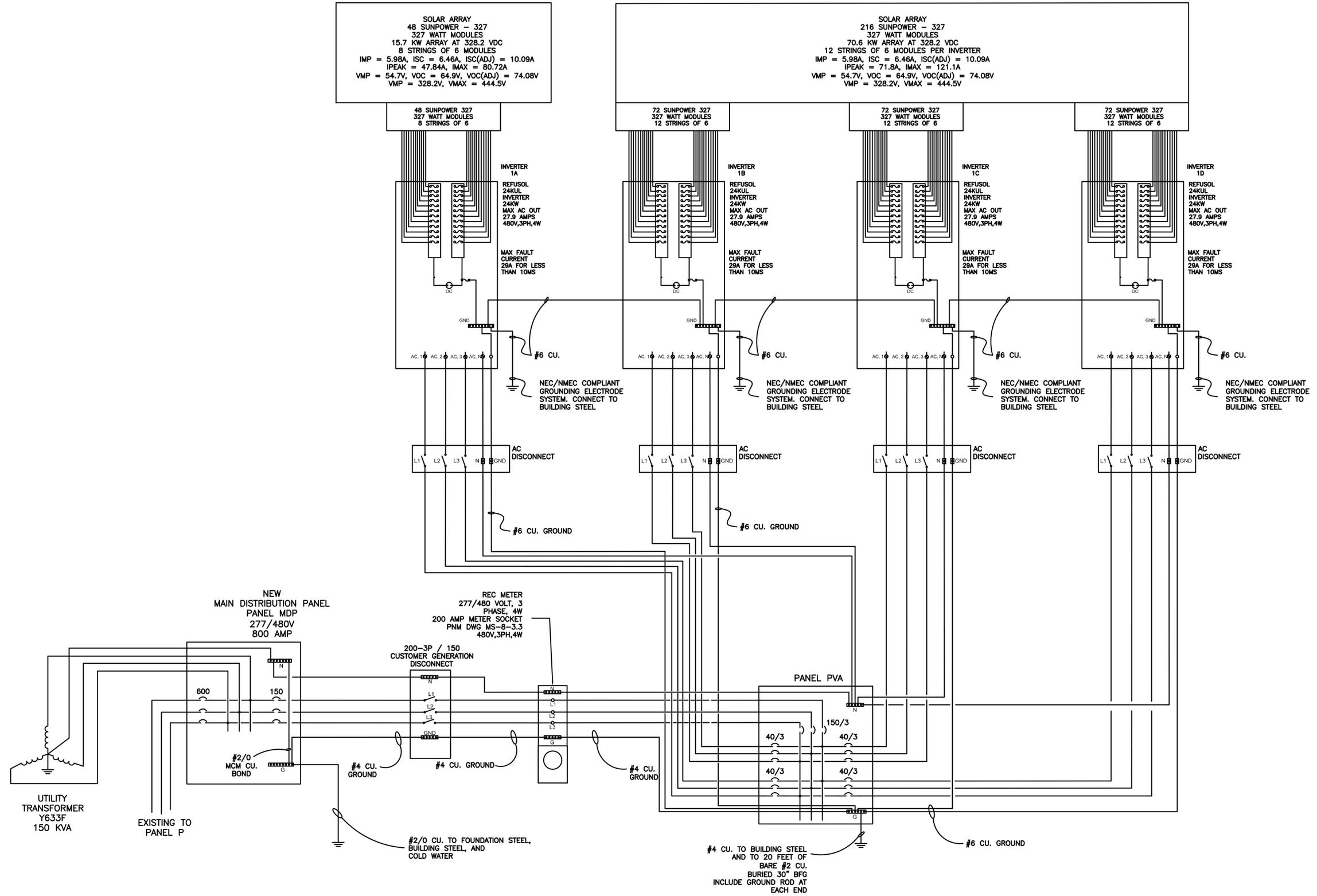
No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: CITY OF SANTA FE
CHAVEZ CENTER PV
SHEET TITLE: 96KW PV SYSTEM
ONE-LINE DIAGRAM



CARPORT 1 STRUCTURE



96KW SYSTEM - THREE-LINE DIAGRAM
SCALE: NONE

PEAK POWER ENGINEERING, INC.

1309 Agua Fria, Santa Fe, NM 87501

TEL 505-982-7071
FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: CITY OF SANTA FE
CHAVEZ CENTER PV

SHEET TITLE:
96KW PV SYSTEM
THREE-LINE DIAGRAM



SHEET NO.

EA-4



528 KW ELECTRICAL SITE PLAN
 SCALE: 1" = 40'-0"

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
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 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW PV SYSTEM
 ELECTRICAL SITE PLAN



SHEET NO.

EB-1



PEAK POWER ENGINEERING, INC.
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 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW PV SYSTEM
 STRINGING PLAN - WEST



SHEET NO.

EB-2

528KW SYSTEM STRINGING PLAN - WEST
 SCALE: 1" = 10'-0"



PEAK POWER ENGINEERING, INC.
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No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

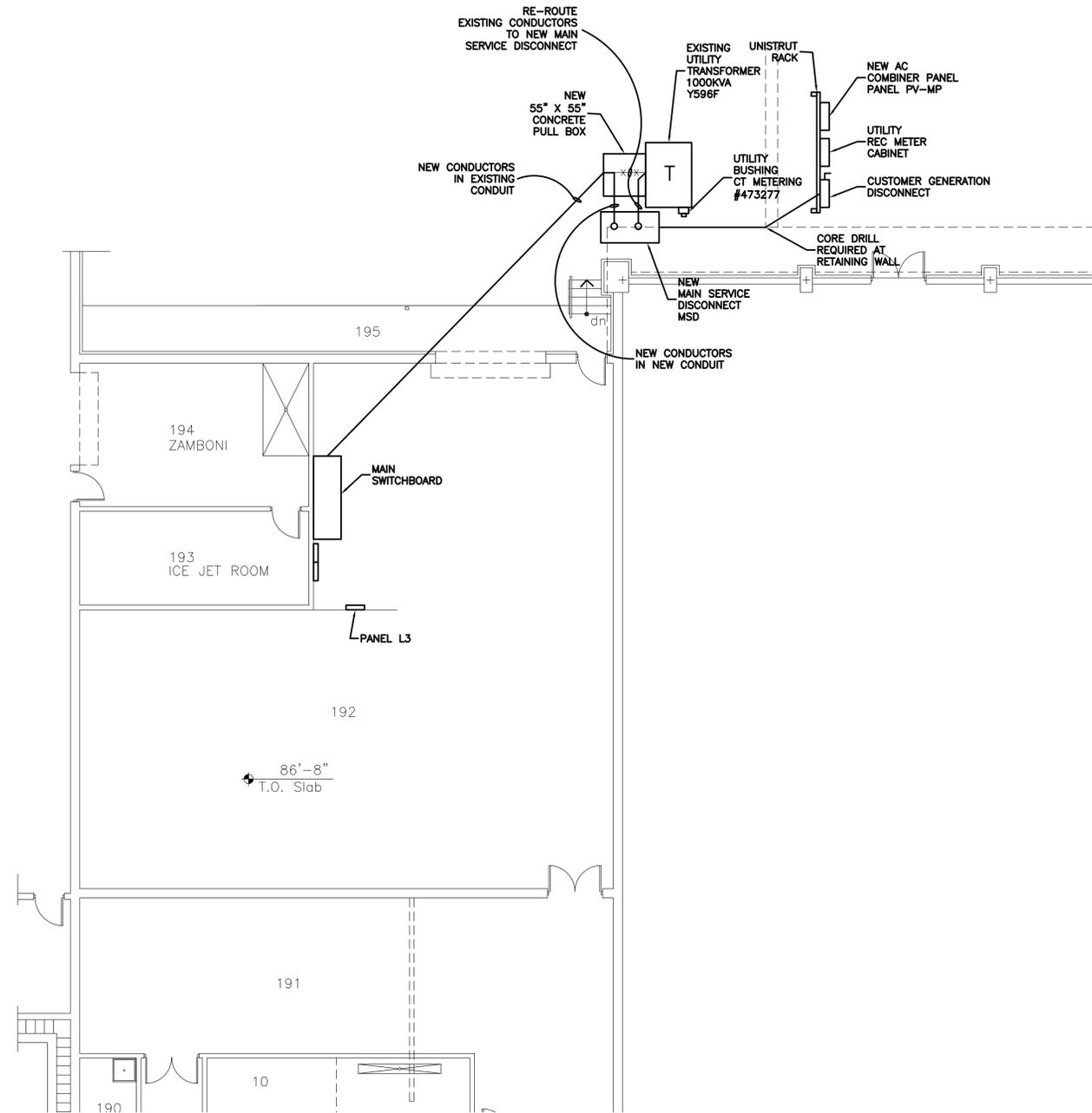
PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW PV SYSTEM
 STRINGING PLAN - EAST



SHEET NO.

EB-3

528KW PV SYSTEM STRINGING PLAN - EAST
 SCALE: 1" = 10'-0"



528KW SYSTEM – ELECTRICAL INTERCONNECT PLAN
 SCALE: 1/8" = 1'-0"

PEAK POWER ENGINEERING, INC.
 1309 Agua Fria, Santa Fe, NM 87501
 TEL 505-982-7071
 FAX 505-982-2274

No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
FILE:	13026	DRAWN BY:	A.S.
DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

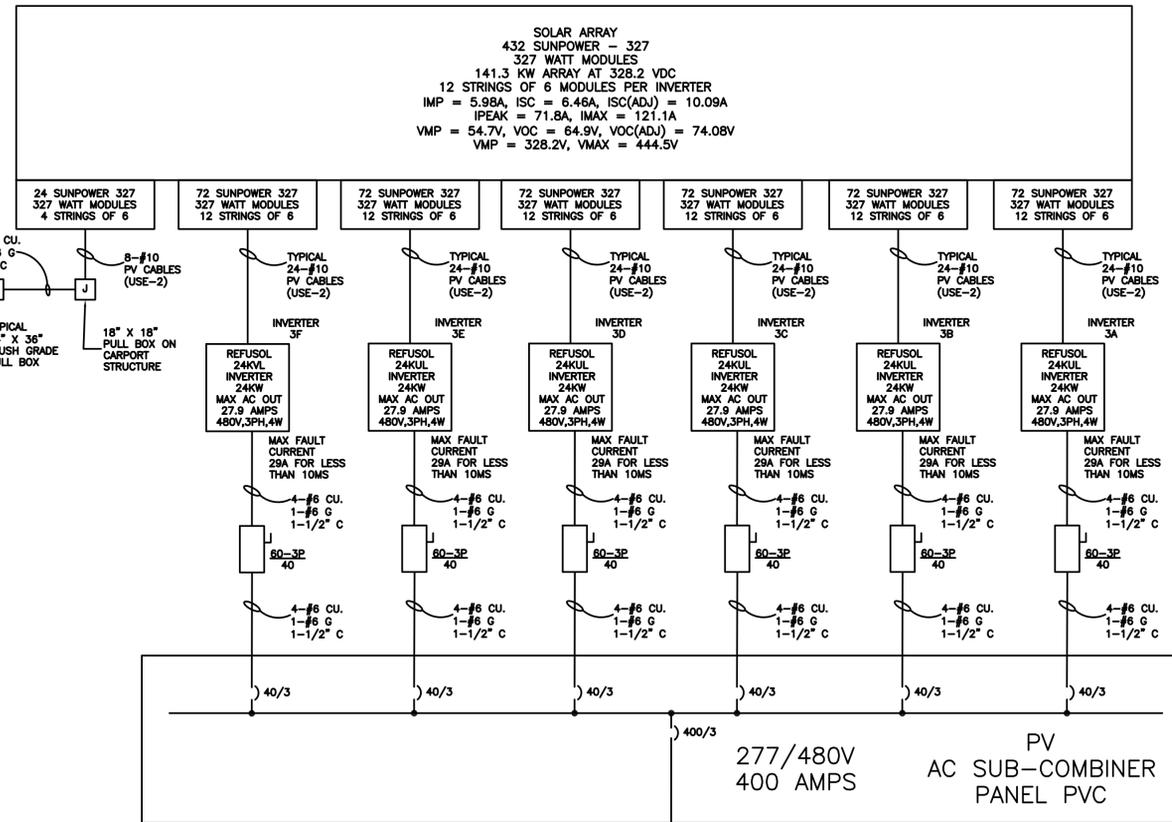
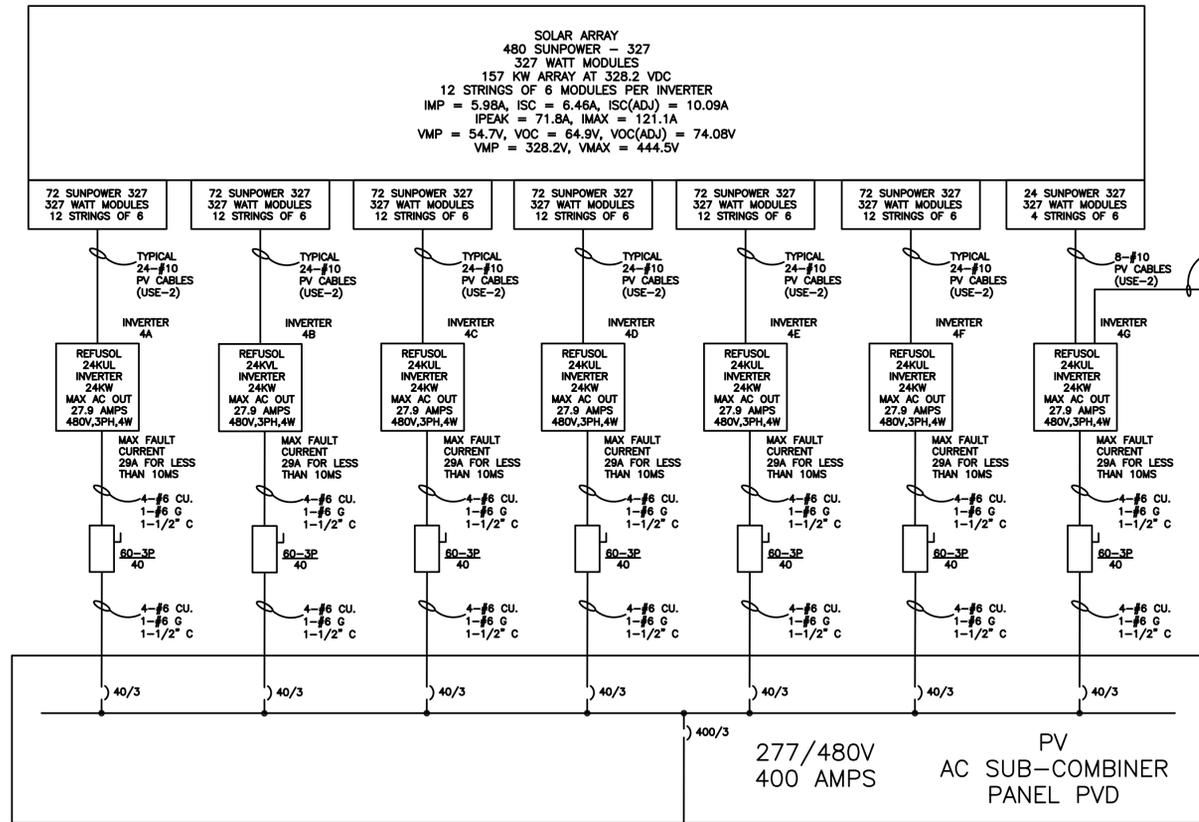
PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW SYSTEM
 INTERCONNECT PLAN



SHEET NO.
EB-4

CARPOT 4 STRUCTURE

CARPOT 3 STRUCTURE



TO MAIN AC PV COMBINER PANEL PV-MP
 SEE SHEET EB-7

TO MAIN AC PV COMBINER PANEL PV-MP
 SEE SHEET EB-7

528KW ONE-LINE - CARPORT #3 AND #4
 SCALE: NONE

Nameplate		Voltage LL: 480 VOLTS	Voltage LN: 277 VOLTS	3 PHASE, 4 WIRE	Nameplate		Voltage LL: 480 VOLTS	Voltage LN: 277 VOLTS	3 PHASE, 4 WIRE		
PANEL PVD		BUS Rating: 400 Amps	MCB or MLO: MCB	Enclosure: NEMA3R	PANEL PVC		BUS Rating: 400 Amps	MCB or MLO: MCB	Enclosure: NEMA3R		
Fed From: PANEL PV-MP		MCB Rating: 400A-3P Amps	Manufacturer: SQUARE D	Mounting: SURFACE	Fed From: PANEL PV-MP		MCB Rating: 400A-3P Amps	Manufacturer: SQUARE D	Mounting: SURFACE		
AIC Rating: 18 K AIC		Model: NF	Branch Breaker: EDB		AIC Rating: 18 K AIC		Model: NF	Branch Breaker: EDB			
CIRCUIT DESCRIPTION											
D	C	A	B	C	TR	NO	TR	A	B	C	
INVERTER 4A	1	27.9	---	---	40	1	A	2	40	27.9	---
INVERTER 4B	1	27.9	---	---	40	7	A	8	40	27.9	---
INVERTER 4E	1	27.9	---	---	40	13	A	14	40	27.9	---
INVERTER 4G	1	27.9	---	---	40	31	A	20	---	---	---
BUSSED SPACE	1	---	---	---	33	B	22	---	---	---	---
BUSSED SPACE	1	---	---	---	35	C	24	---	---	---	---
BUSSED SPACE	1	---	---	---	31	A	26	---	---	---	---
BUSSED SPACE	1	---	---	---	33	B	28	---	---	---	---
BUSSED SPACE	1	---	---	---	35	C	30	---	---	---	---
BUSSED SPACE	1	---	---	---	31	A	32	---	---	---	---
BUSSED SPACE	1	---	---	---	33	B	34	---	---	---	---
BUSSED SPACE	1	---	---	---	35	C	36	---	---	---	---
BUSSED SPACE	1	---	---	---	37	A	38	---	---	---	---
BUSSED SPACE	1	---	---	---	39	B	40	---	---	---	---
BUSSED SPACE	1	---	---	---	41	C	42	---	---	---	---
Subtotal (Amps)	111.6	111.6	111.6					83.7	83.7	83.7	
Total (Amps)	195.3	195.3	195.3					167.4	167.4	167.4	
ACCESSORIES:		YES	NO	LOAD SUMMARY		ACCESSORIES:		YES	NO	LOAD SUMMARY	
Copper Bus	X			Load Category (KVA)	Dem. Factor	Dem. (KVA)	Cnctd (KVA)	Copper Bus	X		
Service Entrance Rated	X			General	162.29	1.00	162.29	Service Entrance Rated	X		
Door in Door		X		Lighting	0.00	1.25	0.00	Door in Door		X	
Thru-Feed Lugs		X		Receptacles	0.00	1.00	0.00	Thru-Feed Lugs		X	
Top Skins		X		Dental Equip	0.00	0.80	0.00	Top Skins		X	
Bottom Skins		X		User 2	0.00	1.00	0.00	Bottom Skins		X	
				Motors	0.00	1.00	0.00				
				Largest Motor	0.00	1.25	0.00				
				Total KVA	162.29		162.29				
				Total Amps	195.44		195.44				

PEAK POWER ENGINEERING, INC.
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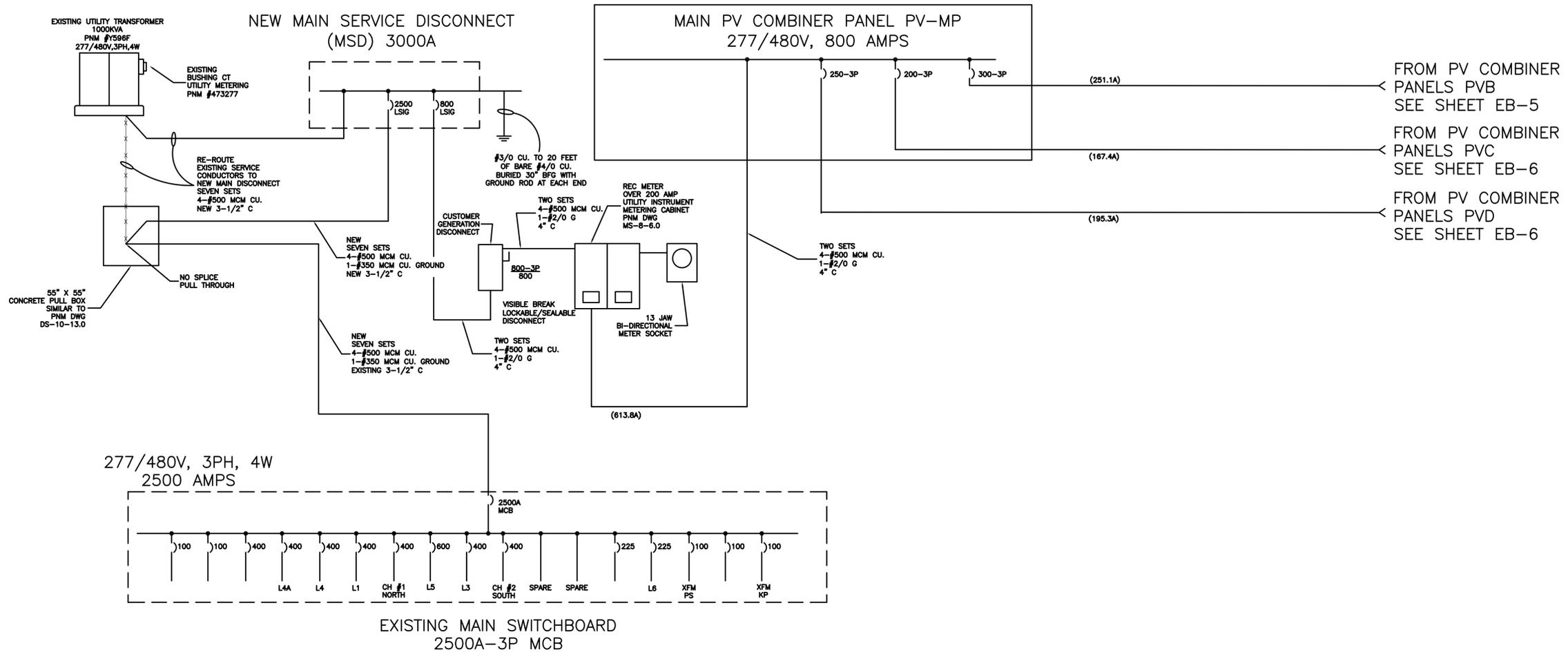
NO.	REVISION	BY	APP.	DATE

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW ONE-LINE CARPORT #3 AND #4

DESIGNED BY: D.G.
 DRAWN BY: A.S.
 CHECKED BY: D.G.
 SCALE: AS NOTED

9261
 10-4-13
 PROFESSIONAL ENGINEER

SHEET NO. **EB-6**



528KW ONE-LINE - ELECTRICAL INTERCONNECT
SCALE: NONE

Voltage LL: 480 VOLTS		Voltage LN: 277 VOLTS		3 PHASE, 4 WIRE		
Nameplate	BUS Rating: 800 Amps	Enclosure:	NEMA 3R	Mounting:	SURFACE	
PANEL PV-MP	MCB or MLO: MCB	Manufacturer:	SQUARE D	Model:	I-LINE	
Fed From	MCB Rating: 800A-3P Amps	Branch Breaker:	BOLT-ON			
MAIN DISC SW	AIC Rating: 42 K AIC					
MSD						
Circuit Description	D	LOAD AMPS			Breaker Frame	Breaker Trip
		A	B	C		
PANEL PVB		279	251.1	251.1	400	300-3P
PANEL PVC		167.4	167.4	167.4	250	200-3P
PANEL PVD		195.3	195.3	195.3	250	250-3P
Total (Amps)		641.7	613.8	613.8		
LOAD SUMMARY						
ACCESSORIES:	YES	NO	Dem. (KVA)	Dem. Factor	Cnctd (KVA)	Load Category
Copper Bus	X					
Service Entrance Rated		X	510.07	1.00	510.07	General
Door in Door		X	0.00	1.25	0.00	Lighting
			0.00	1.00	0.00	Receptacles
			0.00	1.00	0.00	Dental Equipment
			0.00	1.00	0.00	User 2
			0.00	1.00	0.00	Motors
			0.00	1.25	0.00	Largest Motor
			510.07		510.07	Total KVA
			614.24		614.24	Total Amps

Voltage LL: 480 VOLTS		Voltage LN: 277 VOLTS		3 PHASE, 4 WIRE		
Nameplate	BUS Rating: 3000 Amps	Enclosure:	NEMA 3R	Mounting:	FREE STANDING	
SWBD MSD	MCB or MLO: MLO	Manufacturer:	SQUARE D	Model:	I-LINE	
Fed From	MCB Rating: Amps	Branch Breaker:	BOLT-ON			
UTILITY XFMR	AIC Rating: 65 K AIC					
Circuit Description	D	LOAD AMPS			Breaker Frame	Breaker Trip
		A	B	C		
EXISTING SWITCHBOARD				2500	2500-3P	LSIG BREAKER
PANEL PV-MP (PV IN)				800	800-3P	LSIG BREAKER
Total (Amps)						
ACCESSORIES:						
YES	NO	Dem. (KVA)	Dem. Factor	Cnctd (KVA)	Load Category	
Copper Bus	X					
Service Entrance Rated		X				
Door in Door			X			

PEAK POWER ENGINEERING, INC.
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No.	REVISION	BY	APP.	DATE

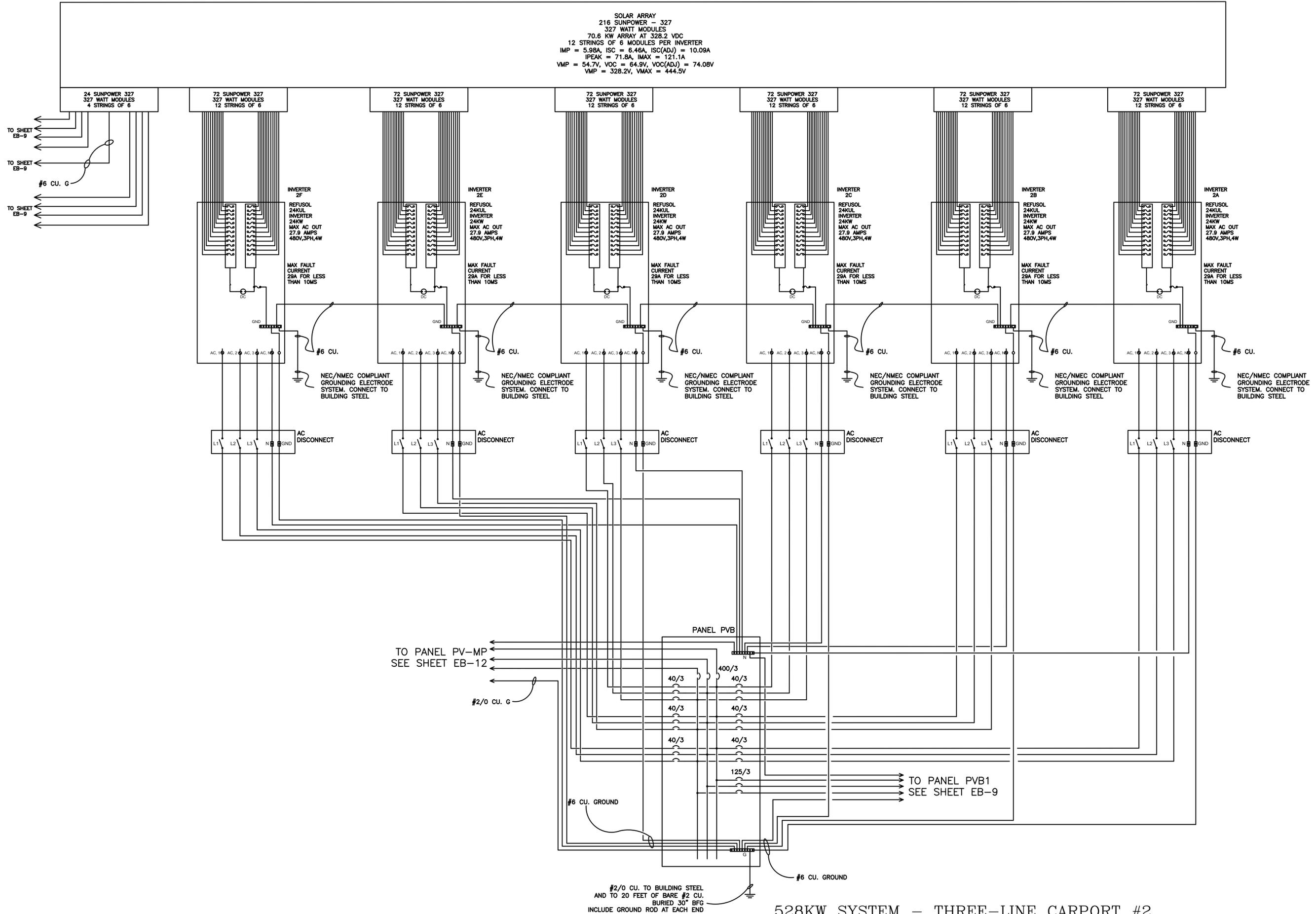
PROJECT: **CITY OF SANTA FE CHAVEZ CENTER PV**
SHEET TITLE: **528KW ONE-LINE ELECTRICAL INTERCONNECT**

DESIGNED BY: D.G.
DRAWN BY: A.S.
CHECKED BY: D.G.
DATE: 10/4/19
SCALE: AS NOTED

SHEET NO. **EB-7**

CARPORT 2 STRUCTURE

SOLAR ARRAY
 216 SUNPOWER - 327
 327 WATT MODULES
 70.6 KW ARRAY AT 328.2 VDC
 12 STRINGS OF 6 MODULES PER INVERTER
 IMP = 5.98A, ISC = 6.46A, ISC(ADJ) = 10.09A
 IPEAK = 71.8A, IMAX = 121.1A
 VMP = 54.7V, VOC = 64.9V, VOC(ADJ) = 74.08V
 VMP = 328.2V, VMAX = 444.5V



PEAK POWER ENGINEERING, INC.
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 FAX 505-982-2274

REVISION	BY	APP.	DATE

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW SYSTEM
 THREE-LINE CARPORT #2

DESIGNED BY: D.G.
 DRAWN BY: A.S.
 CHECKED BY: D.G.
 DATE: 10/4/13
 SCALE: AS NOTED

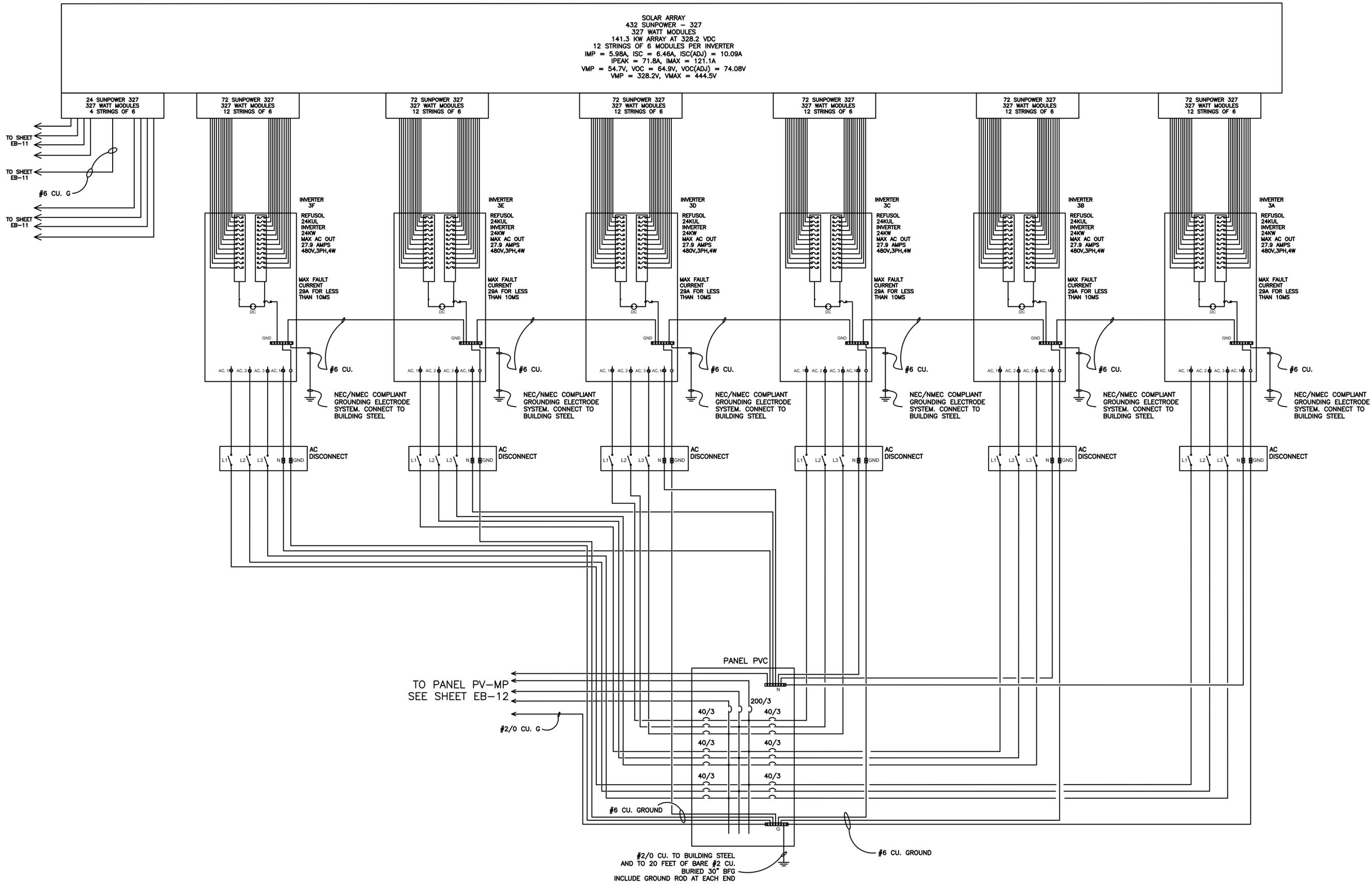
PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW SYSTEM
 THREE-LINE CARPORT #2

PROFESSIONAL ENGINEER
 DAVID M. GONZALES
 NEW MEXICO
 9261
 10-4-13

SHEET NO.
EB-8

528KW SYSTEM - THREE-LINE CARPORT #2
 SCALE: NONE

CARPORT 3 STRUCTURE



528KW SYSTEM - THREE-LINE CARPORT #3
SCALE: NONE

PEAK POWER ENGINEERING, INC.
1309 Agua Fria, Santa Fe, NM 87501
TEL 505-982-7071
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No.	REVISION	BY	APP.	DATE

PROJECT: 13026 DESIGNED BY: D.G.
FILE: 13026 DRAWN BY: A.S.
DATE: 10/4/13 CHECKED BY: D.G.
SCALE: AS NOTED

PROJECT: CITY OF SANTA FE
CHAVEZ CENTER PV
SHEET TITLE: 528KW SYSTEM
THREE-LINE CARPORT #3

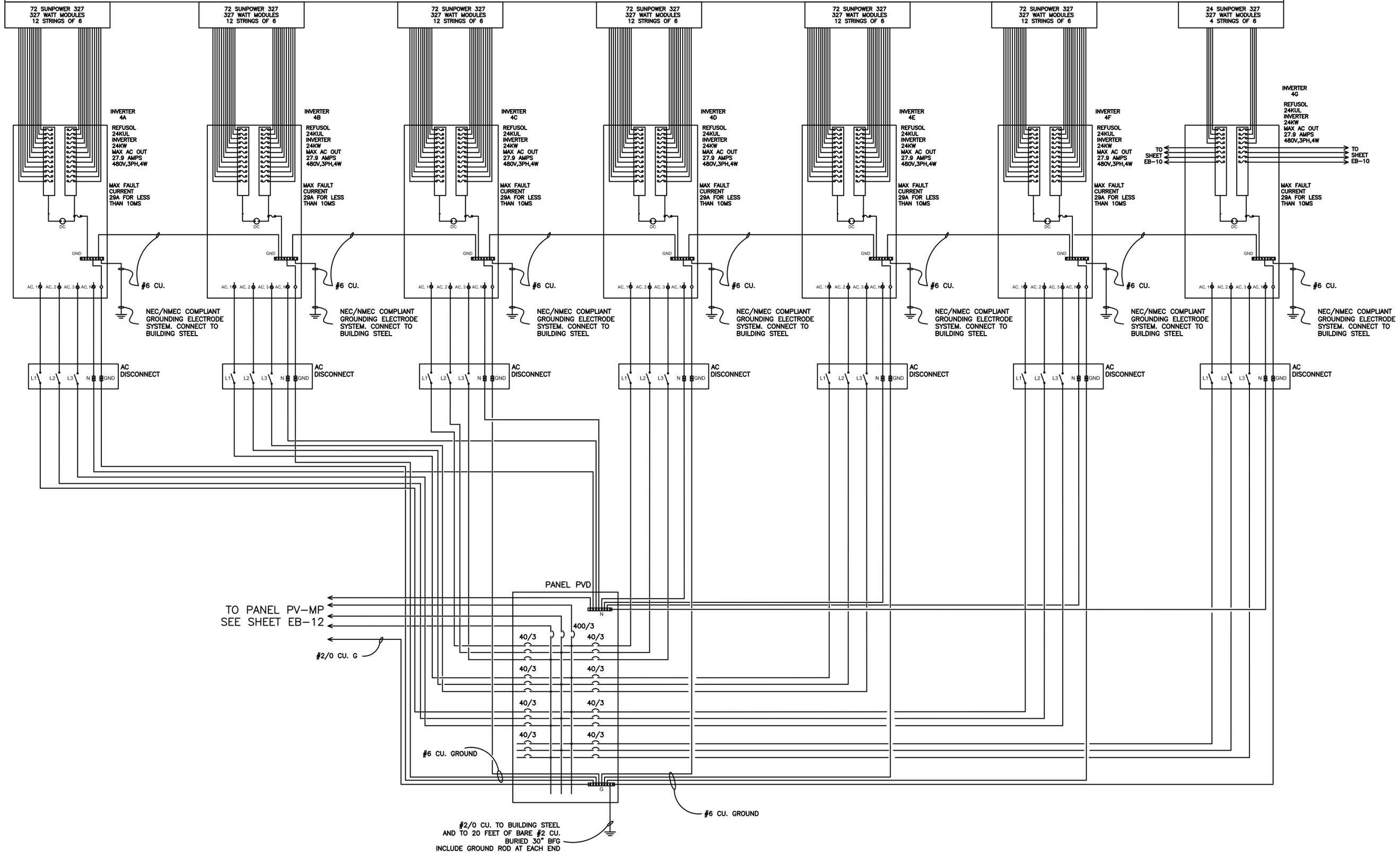


SHEET NO.

EB-10

CARPOT 4 STRUCTURE

SOLAR ARRAY
 480 SUNPOWER - 327
 327 WATT MODULES
 157 KW ARRAY AT 328.2 VDC
 12 STRINGS OF 6 MODULES PER INVERTER
 IMP = 5.98A, ISC = 6.46A, ISC(ADJ) = 10.09A
 IPEAK = 71.8A, IMAX = 121.1A
 VMP = 54.7V, VOC = 64.9V, VOC(ADJ) = 74.08V
 VMP = 328.2V, VMAX = 444.5V



528KW SYSTEM - THREE-LINE CARPORT #4
 SCALE: NONE

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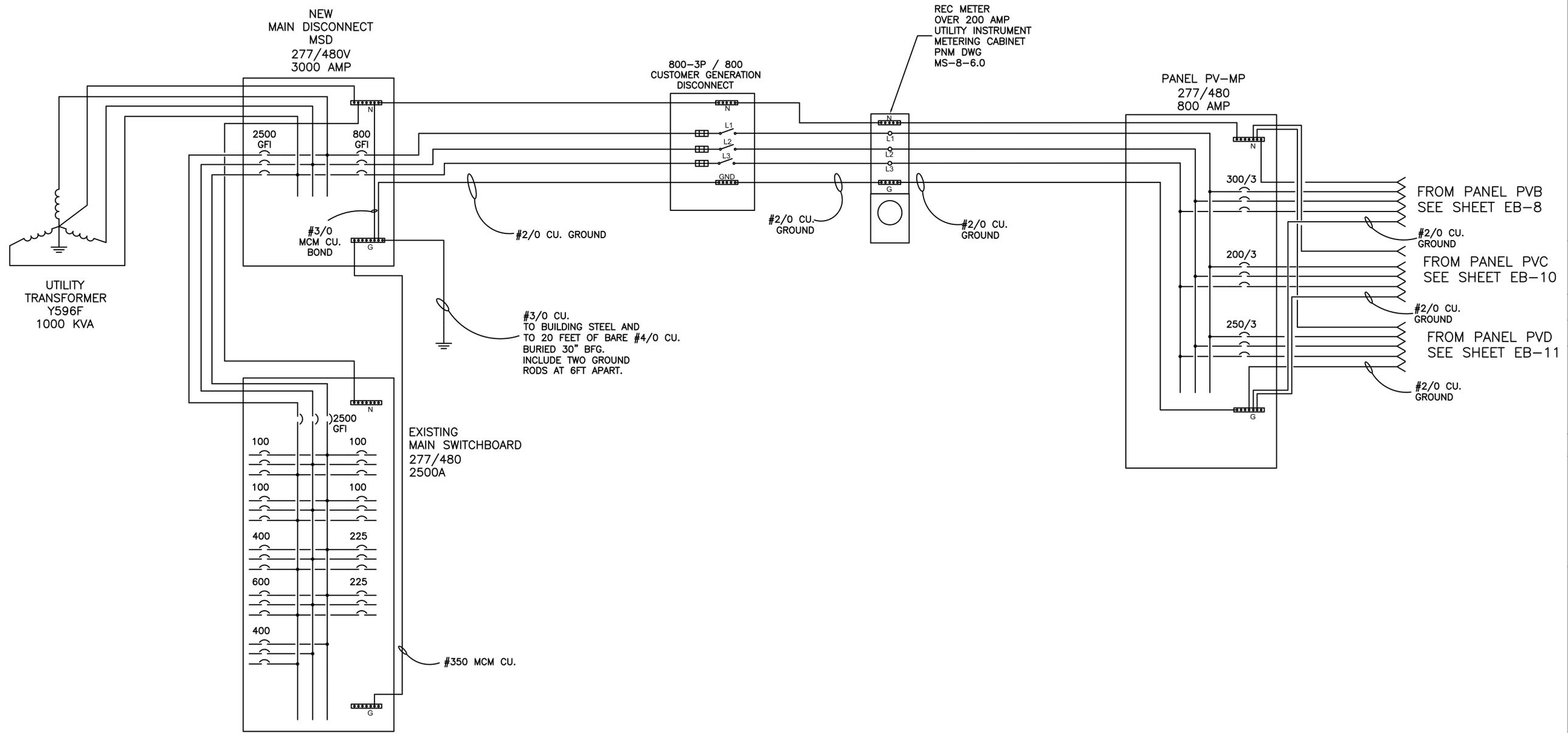
No.	REVISION	BY	APP.	DATE

PROJECT: 13026 DESIGNED BY: D.G.
 FILE: 13026 DRAWN BY: A.S.
 DATE: 10/4/13 CHECKED BY: D.G.
 SCALE: AS NOTED

PROJECT: CITY OF SANTA FE
 CHAVEZ CENTER PV
 SHEET TITLE: 528KW SYSTEM
 THREE-LINE CARPORT #4



SHEET NO.
EB-11



PEAK POWER ENGINEERING, INC.
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No.	REVISION	BY	APP.	DATE

PROJECT:	13026	DESIGNED BY:	D.G.
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DATE:	10/4/13	CHECKED BY:	D.G.
SCALE:			AS NOTED

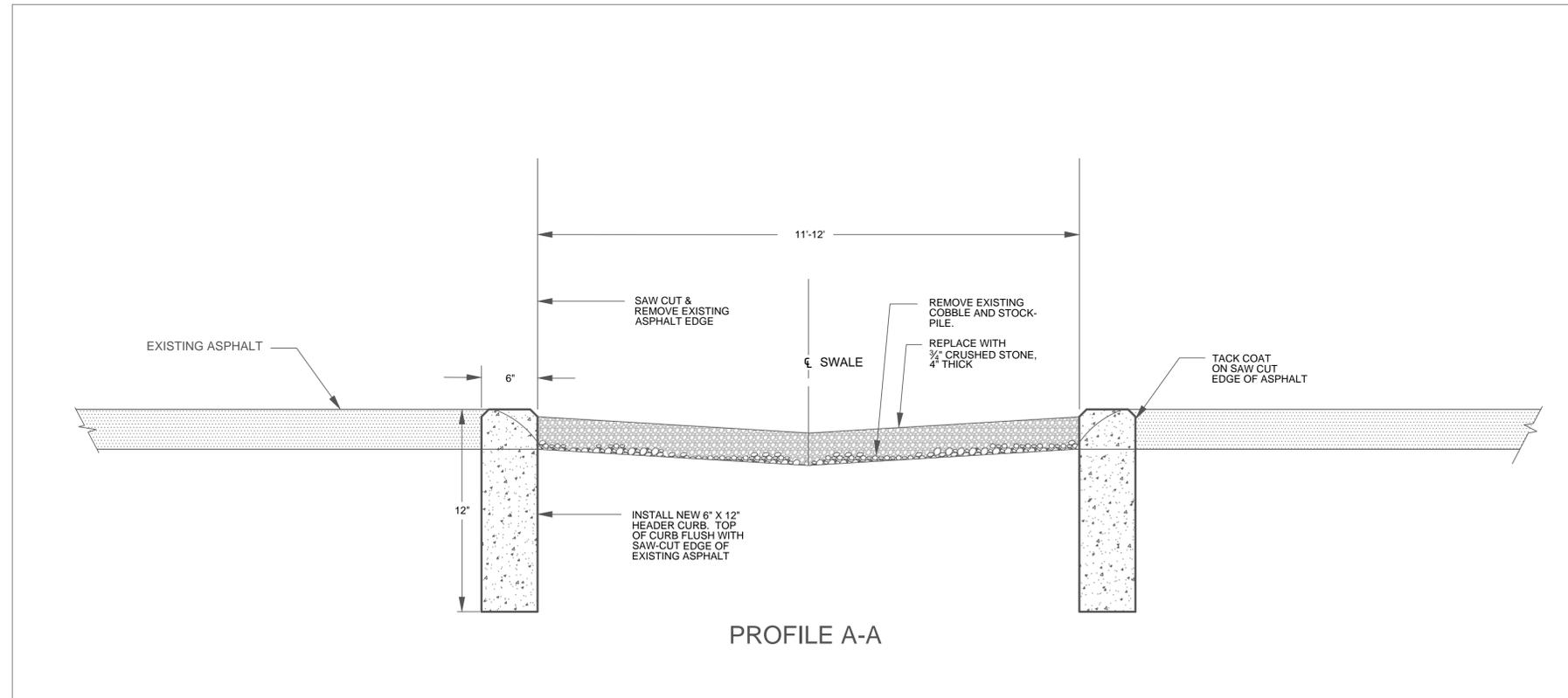
PROJECT: **CITY OF SANTA FE
CHAVEZ CENTER PV**

SHEET TITLE: **528KW MAIN SERVICE
THREE-LINE DIAGRAM**



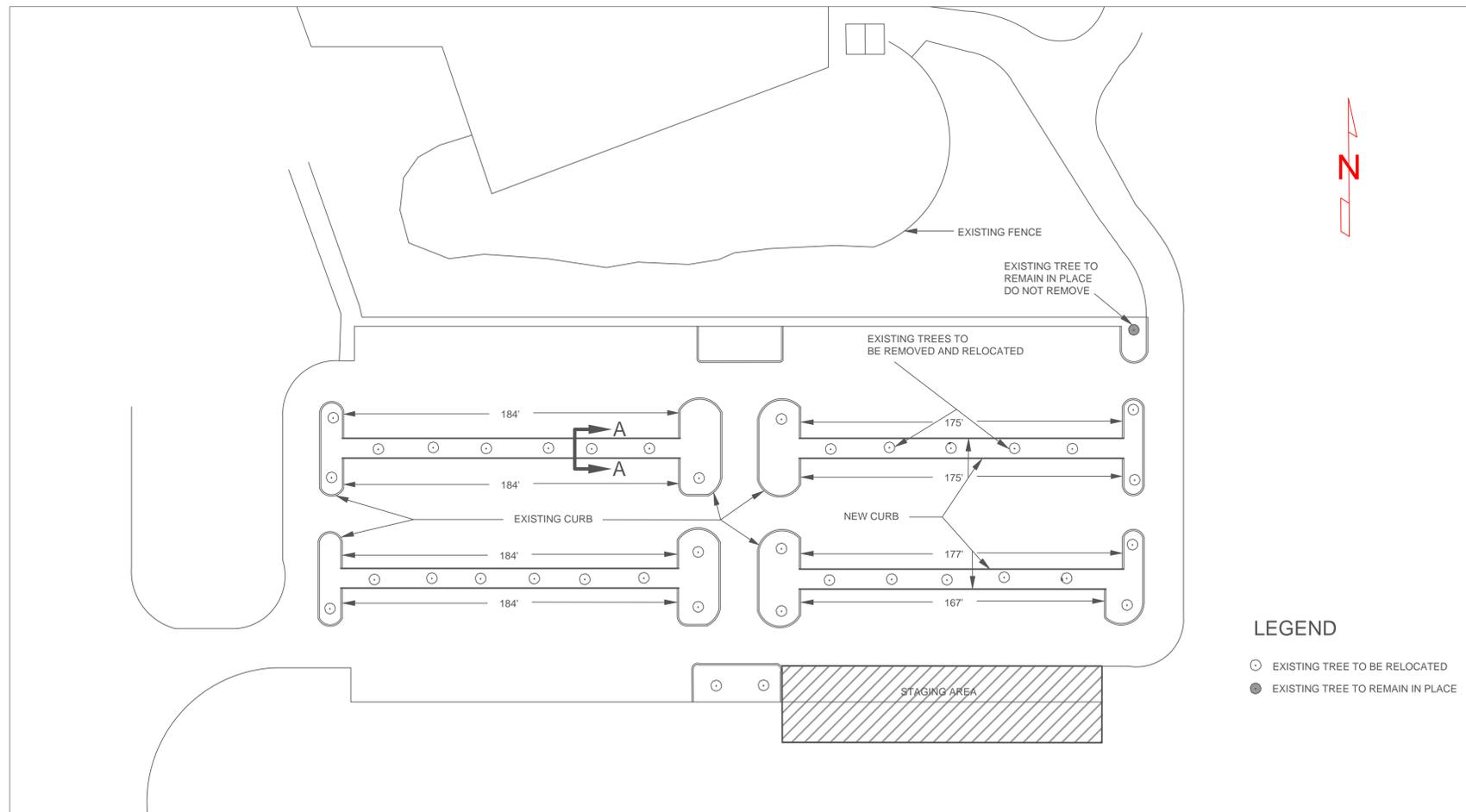
SHEET NO.

528KW MAIN SERVICE - THREE-LINE DIAGRAM
SCALE: NONE



PROFILE A-A

DRAWINGS NOT TO SCALE



LEGEND

- EXISTING TREE TO BE RELOCATED
- EXISTING TREE TO REMAIN IN PLACE

- NOTES:
1. CONTRACTOR WILL NOTIFY SDCW 5 DAYS PRIOR TO COMMENCEMENT OF WORK.
 2. CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE SANGRE DE CRISTO WATER (SDCW) CONSTRUCTION SPECIFICATIONS.
 3. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING UTILIZING THE APPROPRIATE RIGHT-OF-WAY MAPS, SIGNED PLATS AND SDCW COMPANY DRAWINGS.
 4. MATERIAL SUBMITTED SHALL BE APPROVED BY SDCW CO. PRIOR TO CONSTRUCTION.
 5. TREES CURRENTLY IN THE ISLANDS WILL BE REMOVED AND RELOCTED ONSITE TO AN AREA NORTHWEST OF THE BUILDING WITH THE EXCEPTION OF ONE TREE IN THE NORTHEAST CORNER OF THE PARKING LOT MARKED ON THE PLANS TO REMAIN IN PLACE.
 6. CONTRACTOR SHALL CONTACT NEW MEXICO ONE CALL AT 1-800-321-2537, TWO (2) WORKING DAYS IN ADVANCE OF CONSTRUCTION FOR UTILITY SPOTS.
 7. ANY CHANGES TO THESE PLANS MUST BE APPROVED BY SDCW CO.
 8. WORK ON THE PHOTOVOLTAIC SYSTEM SHALL NOT PROCEED UNTIL SDCW HAS ISSUED A NOTICE TO PROCEED TO THE CONTRACTOR
 9. RESTORE ALL PAVEMENT DISTURBED DURING CONSTRUCTION TO ITS ORIGINAL CONDITION OR BETTER.

				SANGRE DE CRISTO WATER SANTA FE	
				2014 CONSTRUCTION DRAWINGS	
TITLE GENOVEVA CHAVEZ COMMUNITY CENTER PHOTOVOLTAIC SYSTEM INSTALLATION - PARKING LOT DETAIL		DATE 08/21/12 BY <u>DMB</u> DATE <u> </u> CK <u> </u> DATE <u> </u> APP <u> </u>		SHEET NO. 0	
YEAR 14	AERIAL L16	TOWNSHIP RANGE SECTION 16.09.04	WORK ORDER NO.		
(1 OF 1)					