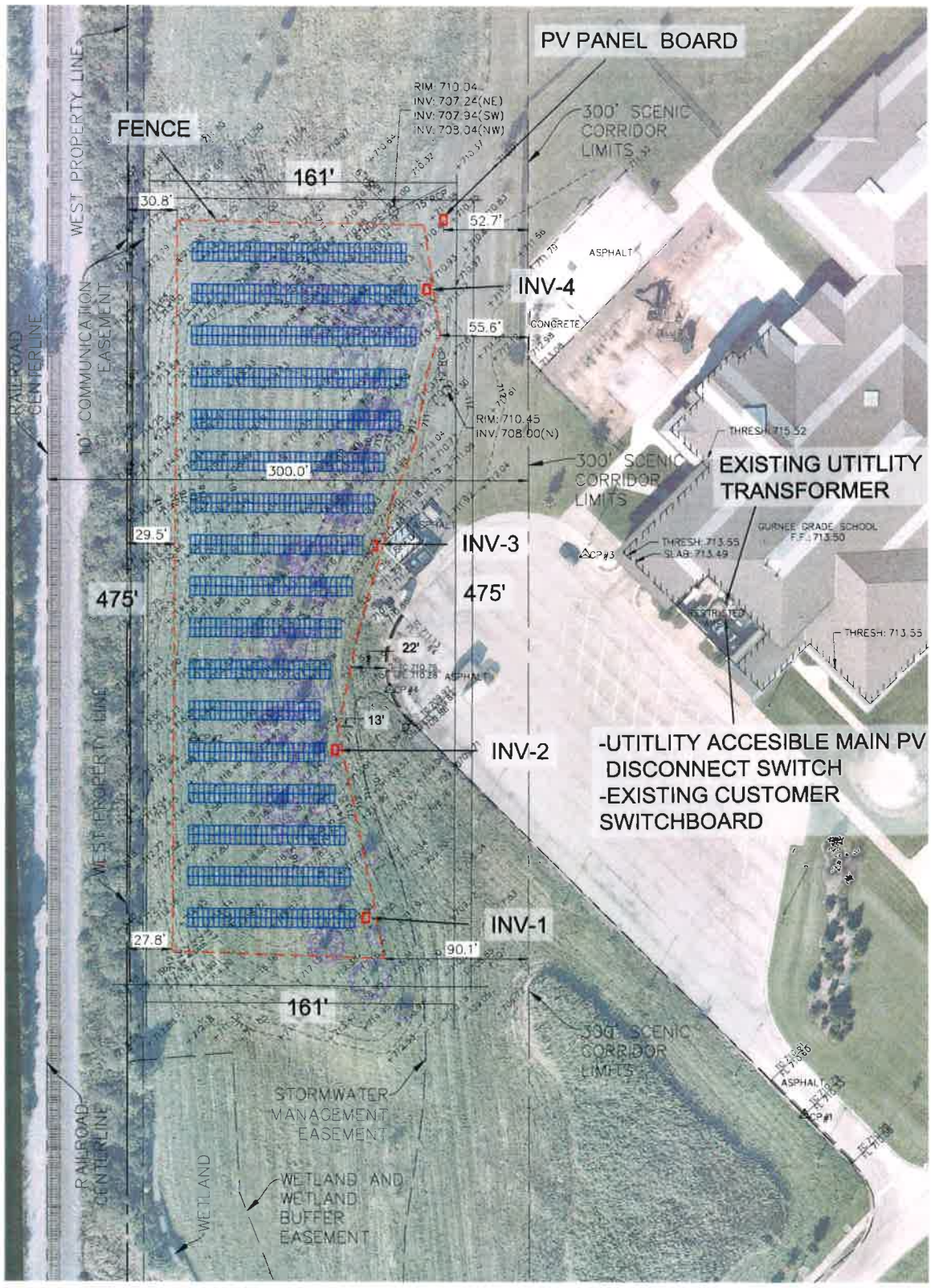


DATE	REVISIONS	BY

PRAIRIE TRAIL SCHOOL - SOLAR PANELS

VILLAGE OF WADSWORTH, ILLINOIS

SITE PLAN

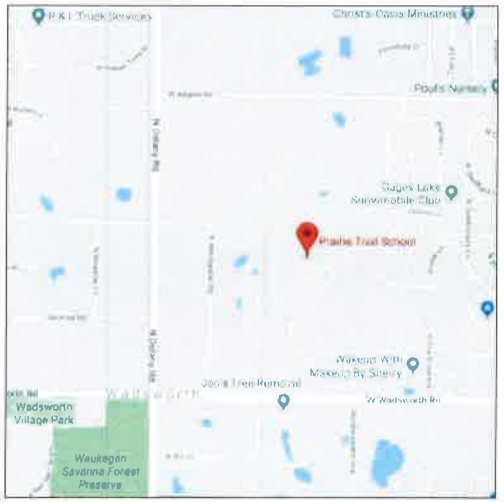
RELEASE DATE:	SCALE:
03-17-2020	1"=60'

PRAIRIE TRAIL SCHOOL _WADSWORTH SCHOOL

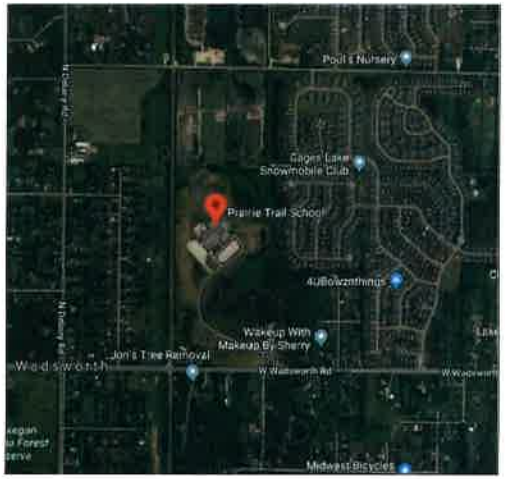
13600 W Wadsworth Rd, Wadsworth,
IL 60083, United States

474.8 KW DC STC/ 400 KW AC
GRID-INTERACTIVE PHOTOVOLTAIC SYSTEM

REGIONAL MAP



AERIAL MAP



PROJECT INFORMATION	
NAME	PRAIRIE TRAIL SCHOOL_WADSWORTH SCHOOL
DESCRIPTION	GROUND MOUNTED
ADDRESS	13600 W Wadsworth Rd
CITY	Wadsworth
STATE	IL
ZIP	60083
GEO LOCATION	42.4333766, -87.896965
UTILITY	Commonwealth Edison

INVERTER INFORMATION	
INVERTERS	INVERTER
MAKE	CHINT POWER SYSTEM
MODEL	CPS SCH100KTL-DO/US-600
QUANTITY	4
POWER RATING (KW)	100
MAX INPUT V	1500
OUTPUT V	528-660VAC
OUTPUT A	96.2/106.8
SUB AC RATING (KW)	400
TOT AC RATING (KW)	400

MODULE INFORMATION	
MODULES	MODULE #1
MAKE	LG
MODEL	LG415N2W-V5
QUANTITY	1144
POWER RATING (W)	415
Vmp	41.8
Imp	9.94
Voc	49.6
Isc	10.59
TEMP. COEFF.	-0.36
SUB DC RATING (KW)	474.8
TOT DC RATING (KW)	474.8

RACKING INFORMATION	
RACK	RACK #1
TILT	25
AZIMUTH	180

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
G-100	COVER SHEET
E-100	ELECTRICAL SITE PLAN
E-600	SINGLE LINE DIAGRAM
E-800	DATASHEETS

GENERAL NOTES

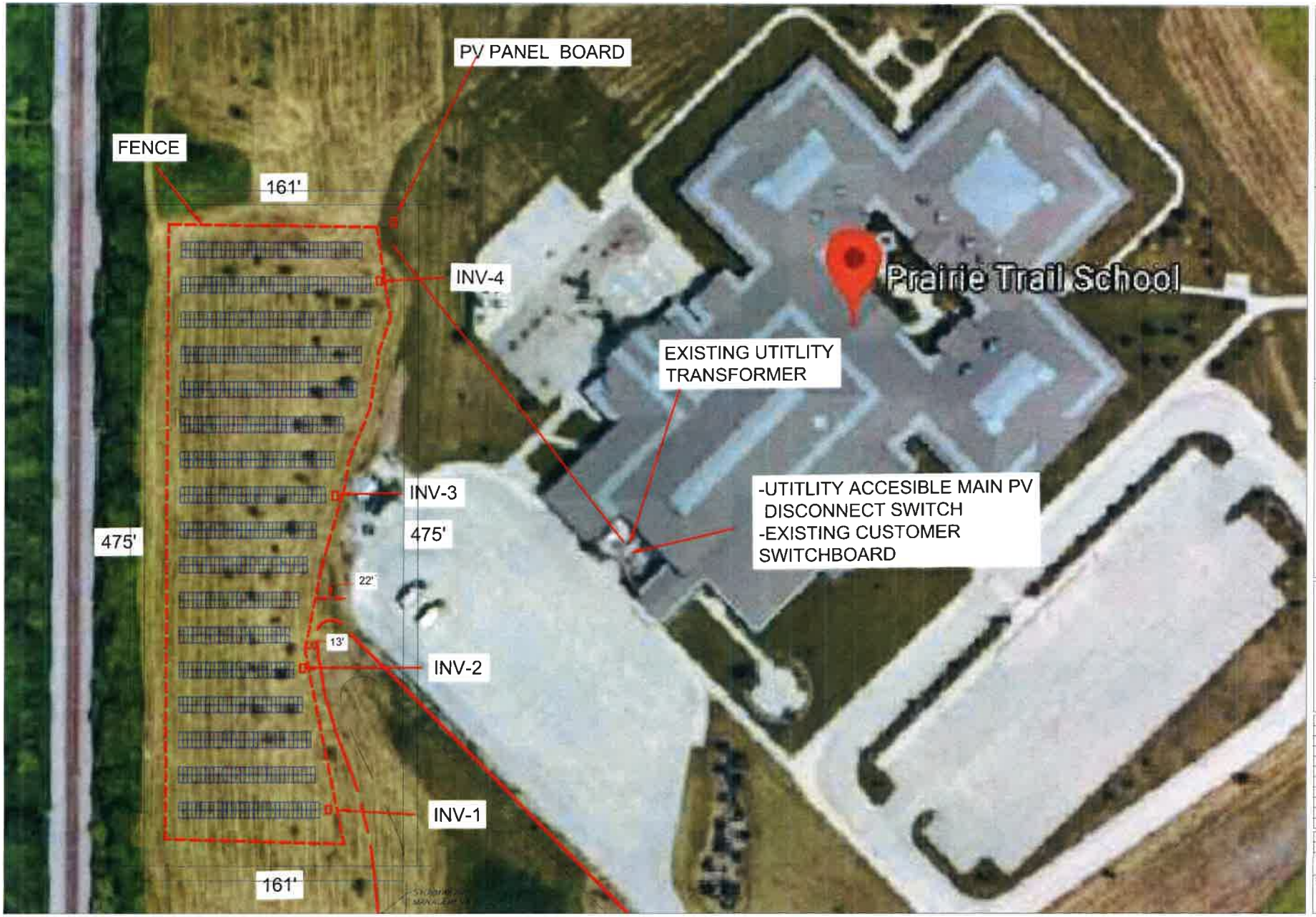
TRANE CHICAGO
7100 S. MADISON STEET
WILLOWBROOK, IL 60527

OGNI INC
140 E COMMERCIAL ST SUITE 1
BASEMENT, WOOD DALE, IL 60191
PHONE 708-236-9411

REVISIONS

DATE : 01-31-2020

SHEET
G-001



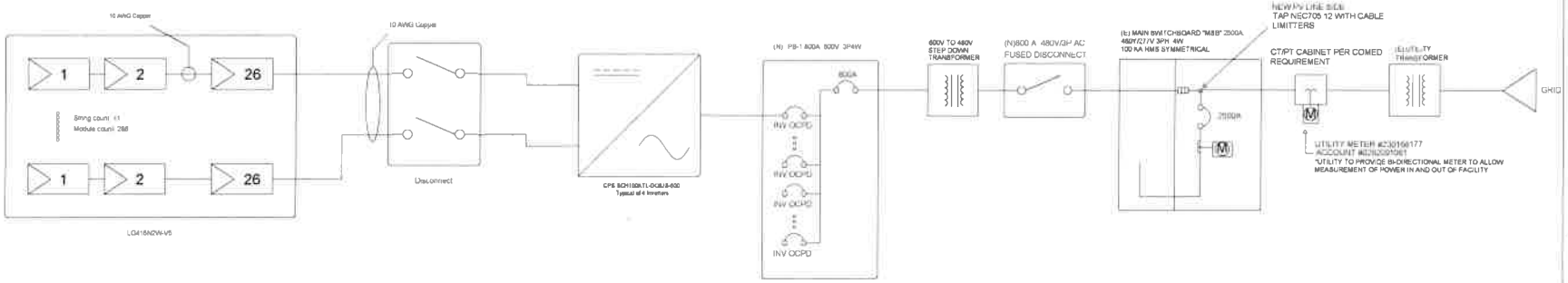
GENERAL NOTES

CONTRACTOR
LIFE COMMERCIAL SOLAR
BASEMENT WOOD DATE 11-16-91
PHONE 708-236-9411

REVISIONS

DATE 03-04-2020
JOB NO. MKS-17-138
NAME PRAIRIE TRAIL SCHOOL

SHEET
E-001



Module Specifications	
1144x LG LG415N2W-V5	
STC Rating	415 W
Vmp	41.8 V
Imp	9.94 A
Voc	49.6 V
Isc	10.59 A

Wire Schedule		
Tier	Wire	Length
String	44x 10 AWG	6093ft

Inverter Specifications	
4x Chint Power Systems CPS SCH100KTL-DO/US-600	
Max AC Power Rating	100 kW
Max Input Voltage	1,500 V
Min AC Power Rating	0 W
Min Input Voltage	870 V

STRING CONFIGURATON TABLE				
INVERTER	AZIMUTH	#STR	MOD/STR	MOD
1	180	11	26	286
2	180	11	26	286
3	180	11	26	286
4	180	11	26	286

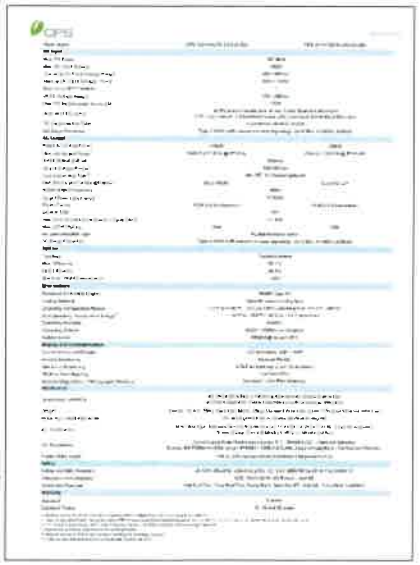
GENERAL NOTES

TRANE CHICAGO
7100 S. MADISON STEET
WILLOWBROOK, IL 60527

OGNI INC
140 E COMMERCIAL ST SUITE 1
BASEMENT, WOOD DALE, IL 60191
PHONE 708-236-9411

REVISIONS

SHEET
E-006-SLD



GENERAL NOTES

TRANE CHICAGO
7100 S. MADISON STEET
WILLOWBROOK, IL 60527

OGNI GROUP
140 E COMMERCIAL ST Ste 1
BASEMENT WOOD DALE, IL 60191
PHONE 708-236-9411

REVISIONS

DATE : 01-31-2020

SHEET

E-800-DATA SHEET

STRUCTURAL PRINT PACKAGE - RR25IL-003

ILLINOIS

Timothy J Worline

RACKING PROVIDER	STRUC. ENGINEER OF RECORD	RACKING PRODUCT LINE
APA SOLAR RACKING 20-345 COUNTY ROAD X RIDGEVILLE CORNERS, OHIO 43555 (P) 419.267.5280 (F) 419.267.5214 WWW.APALTERNATIVES.COM	the jdl group architects & engineers 360 W. DUSSEL DR MAUMEE, OH 43537 [P] 419.725.7161 [F] 419.725.7160	READYRACK

USE WITH THE FOLLOWING PRINTS & PACKAGES INCLUDE WITH SUBMISSION TO PERMIT/INSPECTION AGENCY:

- ☑ CALCULATION PACKAGE: RR25IL-003 CALC SET - STAMPED
- ☑ ANCHOR/FOUNDATION TESTING REPORT (SITE SPECIFIC, & ONLY WHERE REQUIRED BY EOR OR AHJ)
- ☑ CONFORMANCE LETTER (SITE SPECIFIC)

REVISION: A

PERMIT SET/
STRUCTURAL PACKET

APPROVED

SOLAR PHOTOVOLTAIC GROUND MOUNT

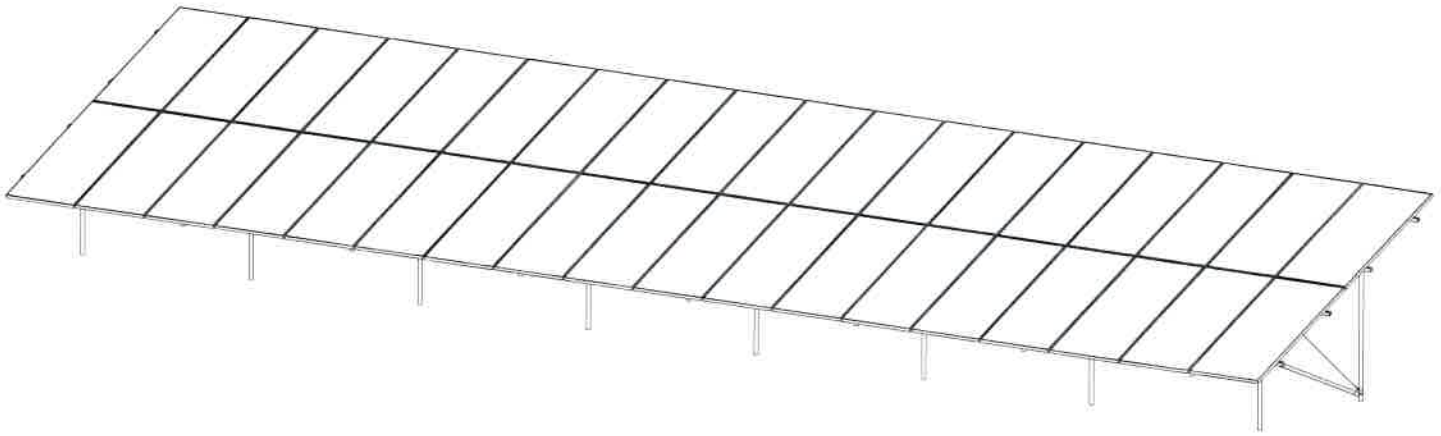


IMAGE FOR REFERENCE ONLY

SHEET INDEX

STRUCTURAL		
S-000	A	STRUCTURAL COVER
S-100	A	RACKING SPECIFICATIONS OVERVIEW
S-200	A	ANCHOR POSTS & RUBES
S-300	A	STRUCTURAL PURLINS
S-400	A	GENERAL CONNECTIONS
S-500	A	MAJOR BRACING
S-700	A	STRUCTURAL DESIGN & ANALYSIS SUMMARY

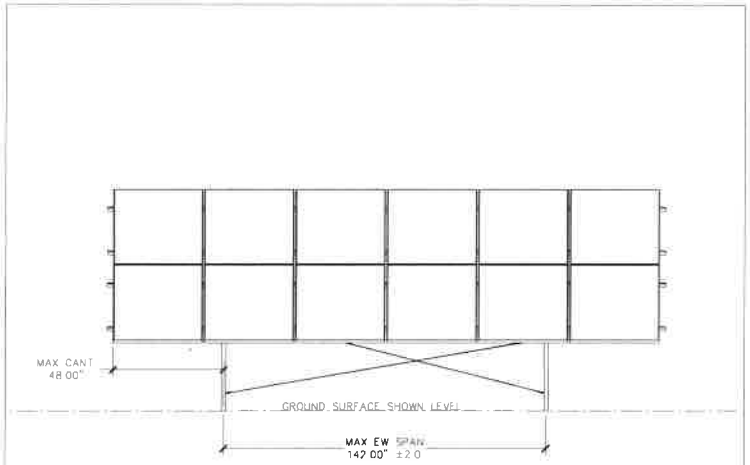
COVERNING STRUCTURAL CODE/S

2015 INTERNATIONAL BUILDING CODE

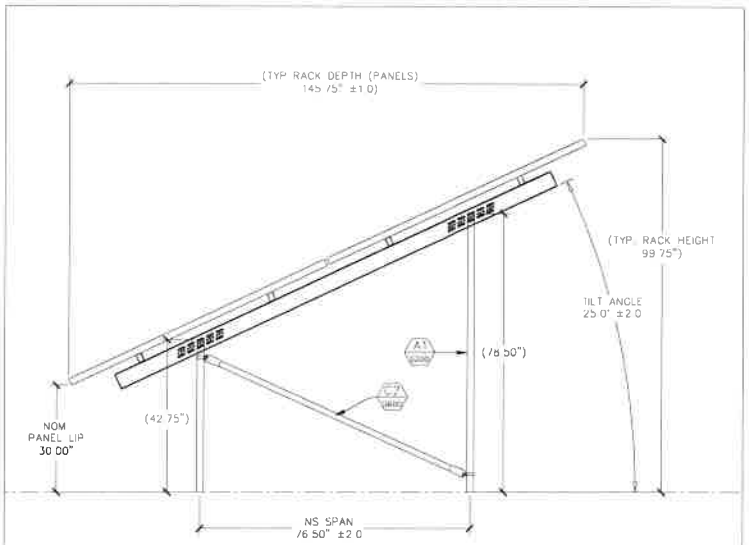
PACKAGE COVERAGE - LOADING AND SETUP RANGES & CONSTANTS

TILT ANGLES:	25°
MAX GROUND SNOW LOAD (PSF):	25
MAX WIND LOADS (MPH):	115
WIND EXPOSURE CATEGORY	C
MAX SEISMIC Ss:	3.730 g
MAX SEISMIC S1:	1.390 g
PV MODULE	
MAX PANEL WIDTH	40.50"
MAX PANEL LENGTH:	80.00"
MAX PANEL HEIGHT	2.00"
MAX PANEL WEIGHT	60.00 LBS
RISK CATEGORY:	I
FRONT LIP CLEARANCE:	30"

*PER USGS MIN/MAX DESIGN VALUES FOR REGIONS. VALUES BASED ON MAX VALUES IN UNITED STATES. SEISMIC DOES NOT CONTROL



C1 | SINGLE CENTER RACK: ELEVATION VIEW



C3 | SINGLE CENTER RACK: PROFILE VIEW

NOTES:

1 STANDARD FRONT LIP HEIGHT AND TILT ANGLES MEASURED FROM LEVEL GROUND

2 ANCHOR TESTING: WHERE REQUIRED, SHALL BE DONE ACCORDING TO THE "QUICK TEST METHOD" PER ASTM D1143 & D3689

3 PRINT DIMENSIONS: DIMENSIONS SHOWN REFLECT POST HEIGHTS ON LEVEL GROUND. ON UNEVEN TERRAIN, REAR ANCHOR HEIGHT WILL BE DICTATED BY FRONT LIP HEIGHT, PANEL TILT, AND NORTH/SOUTH ANCHOR SPACING

4 ADDITIONAL TOLERANCES: POST PLUMBNESS SHOULD BE WITHIN ±2°

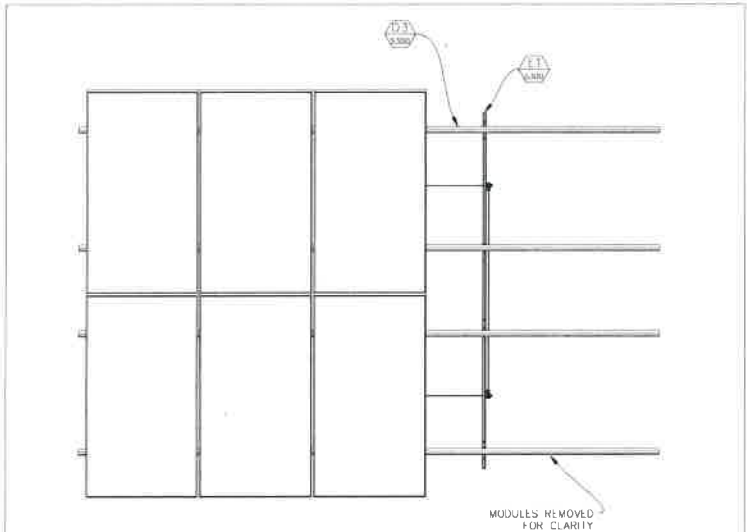
5 SPECIAL INSPECTIONS (WHERE REQUIRED):

SPECIAL INSPECTIONS ARE NOT REQUIRED BY AP ALTERNATIVES OR THE STRUCTURAL ENGINEER OF RECORD, THE "R" GROUP. WHERE REQUIRED BY OWNER, CUSTOMER, AND/OR AUTHORITY HAVING JURISDICTION, MINIMUM INSPECTION SHALL FOLLOW IBC OR LOCAL AHJ SPECIAL INSPECTIONS GUIDELINES, PER NOTES AND TABLE BELOW

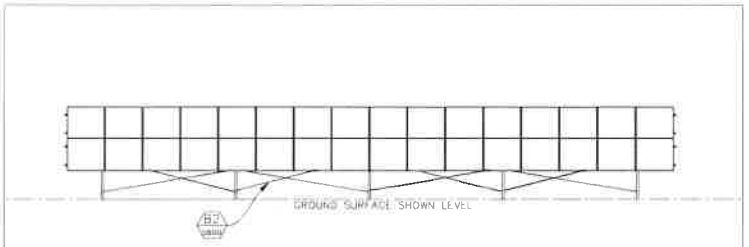
1.1 ALL SPECIAL INSPECTORS SHALL BE RETAINED BY OWNER/CUSTOMER. THE EXTENT OF THE INSPECTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS, THE BUILDING CODE REQUIREMENTS, AND LOCAL JURISDICTION. IT IS THE OWNER/CUSTOMER'S RESPONSIBILITY TO GIVE PROPER NOTIFICATION TO THE SPECIAL INSPECTOR AND PROCEED WITH THE WORK ONLY AFTER THE SPECIAL INSPECTOR'S APPROVAL

1.2 FAILURE TO NOTIFY THE SPECIAL INSPECTOR MAY RESULT IN OWNER/CUSTOMER HAVING TO REMOVE WORK FOR THE PURPOSE OF INSPECTION AT THE OWNER'S/CUSTOMERS EXPENSE

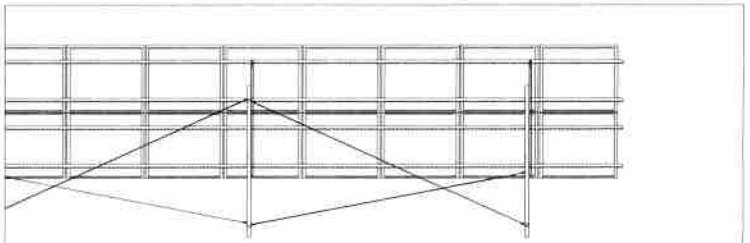
1.3 SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS. RECORDS SHALL BE FURNISHED TO THE OWNER, ENGINEER OF RECORD, AND LOCAL JURISDICTION AS REQUIRED



A1 | SINGLE CENTER RACK: PLAN VIEW



B3 | MULTIPLE SECTIONS OF RACKING: SOUTH ELEVATION VIEW



A3 | MULTIPLE SECTIONS OF RACKING: NORTH ELEVATION VIEW

SPECIAL INSPECTION & TESTING SCHEDULE
(WHEN REQUIRED, SEE ABOVE)

	CONTINUOUS	PERIODIC
STRUCTURAL STEEL FABRICATION		
MATERIAL IDENTIFICATION		x
HIGH STRENGTH BOLTS - MATERIAL IDENTIFICATION OF BOLTS, NUTS, & WASHERS		x
WELD FILLER MATERIALS - IDENTIFICATION AND CERTIFICATIONS OF COMPLIANCE WITH DESIGN DOCUMENTS		x
STRUCTURAL STEEL ERECTION		
MATERIAL IDENTIFICATION		x
INSTALLATION OF HIGH STRENGTH BOLTS		x
WELDED CONNECTIONS		x
MEMBER SIZES AND PLACEMENT		x
GENERAL COMPLIANCE WITH DESIGN DOCUMENTS		x
DRIVEN DEEP FOUNDATION ELEMENTS		
VERIFY ELEMENT MATERIALS, SIZE (ENSURE COMPLY WITH DESIGN DOCUMENTS)	x	
DETERMINE CAPACITIES OF TEST ELEMENTS & CONDUCT ADDITIONAL LOAD TESTS, AS REQ	x	
OBSERVE DRIVING OPERATIONS, MAINTAIN RECORDS	x	
VERIFY PLACEMENT LOCATIONS & PLUMBNESS	x	
HELICAL PILE FOUNDATIONS		
RECORD INSTALLATION EQUIPMENT USED, PILE DIMENSIONS, TOP ELEVATIONS, FINAL DEPTH	x	

THIS TABLE PER IBC 2015, SEC 1705

APA SOLAR RACKING
70-345 COUNTY ROAD 1
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5200
(F) 419.267.5274
WWW.APALTERNATIVES.COM

READYRACK

the R group
architecture & engineering

STRUCTURAL PRINT PACKAGE
ILLINOIS

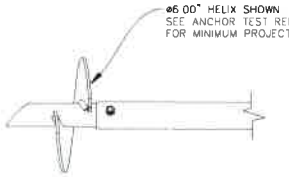
APPROVED

JK	JK	JDI	E

RACKING OVERVIEW

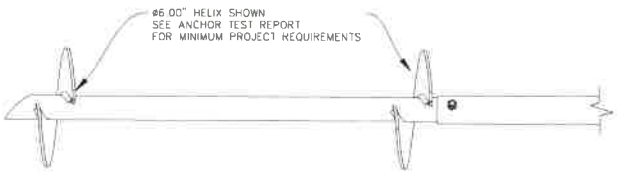
RR25IL-003

S.100 | A



NOTES:
1 VIEW NOT REPRESENTATIVE OF REQUIRED HELIX DIAMETER

E1 | ASSEMBLY: SINGLE HELIX WELDMENT–TO–ANCHOR POST



NOTES:
1 VIEW NOT REPRESENTATIVE OF REQUIRED HELIX DIAMETER OR SPAN

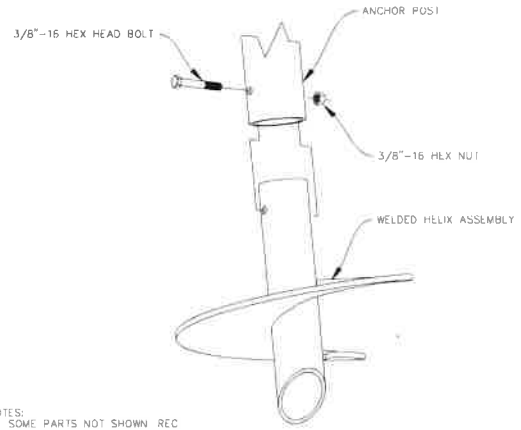
E3 | ASSEMBLY: DOUBLE HELIX WELDMENT–TO–ANCHOR POST

NOTES:

1 TUBE MATERIAL 50 KSI MIN YIELD STRENGTH, 1010 STEEL
2 TUBE AND ANCHOR SYSTEM TO BE HOT DIPPED GALVANIZED TO ASTM A123 OR INLINE GALVANIZED TO ASTM A1057
3 ALL HARDWARE IS 300 SERIES STAINLESS STEEL
4 RECOMMENDED TORQUE VALUES FOR STAINLESS STEEL HARDWARE
3/8–16 HARDWARE TO 19.6 FT–LBS
5 MIN/MAX TORQUE VALUES FOR STAINLESS STEEL HARDWARE)
3/8–16 17.5 – 50.0 FT–LBS
6 REQUIRED MINIMUM HELIX SIZE INDICATAED IN ANCHOR TEST REPORT
7 ANCHOR HELIX SHALL PENETRATE THE SOIL TO A DEPTH PAST THE FROST LINE, OR TO THE DEPTH INDICATED AS MINIMUM PER THE STAMPED ANCHOR TEST REPORT, WHICHEVER IS DEEPER
8 ANCHOR SHALL EXTEND ABOVE GROUND LEVEL AT MINIMUM OF INDICATED FRONT LIP CLEARANCE, PLUS THE ADDITIONAL LENGTH REQUIRED TO ACHEIVE THE INDICATED TILT ANGLE
9 INSTALLERS SHALL REFER TO STRUT AND POST SETUP SHEETS FOR LENGTH AND PLACEMENT DETAILS
10 HELIX WELDMENTS MAY BE EITHER SINGLE HELIX, DOUBLE HELIX, OR GREATER REFER TO ANCHOR TEST REPORT

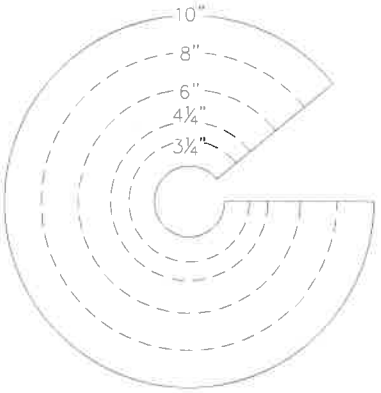
ANCHOR POST INSTALLATION

11. ACCURATELY LOCATE AND INSTALL ANCHOR POSTS BY SUCH METHODS AND EQUIPMENT SO AS NOT TO IMPAIR THE ANCHOR STRENGTH OR DAMAGE ANCHORS ON ADJACENT CONSTRUCTION
12 INSTALLATION CONTRACTOR RESPONSIBLE FOR ALL CONSTRUCTION EQUIPMENT, METHODS, AND SEQUENCES
13 DISTURBED GALVANIZED SURFACES SHALL BE TOUCHED UP WITH AN APPROVED COLD GALVANIZING COMPOUND
14 INSTALL ANCHORS TO MINIMUM DEPTH AS INDICATED THIS SHEET OR AS REQUIRED PER THE STAMPED ANCHOR TEST REPORT

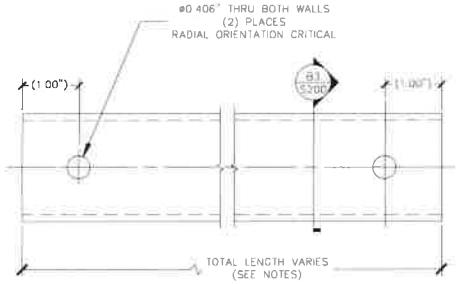


NOTES:
1 SOME PARTS NOT SHOWN REC

C1 | CONNECTION: ANCHOR POST–TO–HELIX ASSEMBLY

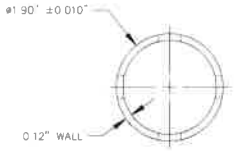


C3 | TOP VIEW: HELIX DIAMETERS



NOTES
1 LENGTHS VARY, SEE SHEET NOTES

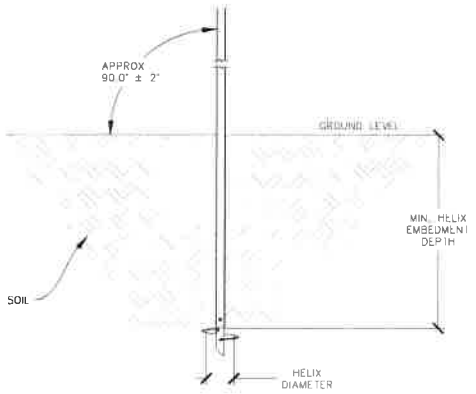
A1 | PART: ANCHOR POST



B3 | SECTION: ANCHOR POST

NOTE REGARDING ANCHOR LENGTHS, EMBEDMENTS, HELIX DIAMETERS, & CONFIGURATIONS

- ANCHOR SETUPS MAY VARY, EVEN ON THE SAME PROJECT. REFER TO SITE SPECIFIC ANCHOR TEST REPORTS, AND IT'S ACCOMPANYING MAPS, AND RECOMMENDATIONS, AS WELL AS ANCHOR LAYOUT CONSTRUCTION BUILD PLANS AND ANY OTHER DOCUMENTS SPECIFYING PLACEMENT AND QUANTITY OF ANCHORS



NOTES:
1 LENGTH & DIAMETERS VARY, SEE SHEET NOTES

A5 | VIEW: POST EMBEDMENT

APA SOLAR RACKING
20–345 COUNTY ROAD 4
NEWVILLE, CORNERS, OHIO 43553
(P) 419.267.5200
(F) 419.267.5214
WWW.APAALTERNATIVES.COM

READYRACK

the dlt group
architects & engineers
380 W. DUSSEL DR.
MAUMEE, OH 43537
(P) 419.725.7150

STRUCTURAL PRINT PACKAGE
STATE OF ILLINOIS

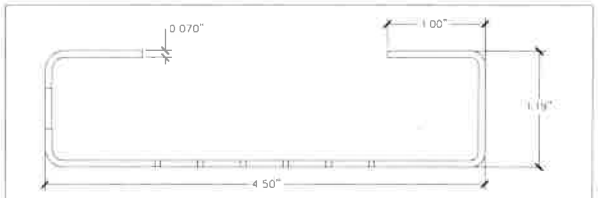
APPROVED

JR	JR	JDI	

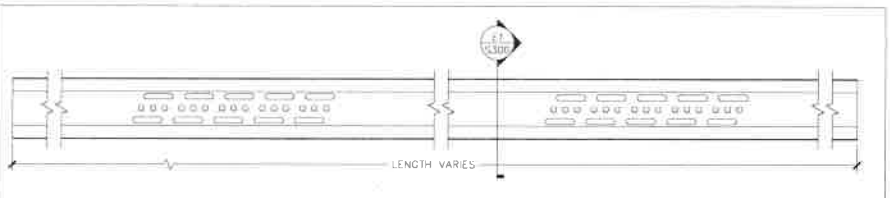
ANCHOR POSTS & HELIXES

RR25IL-003

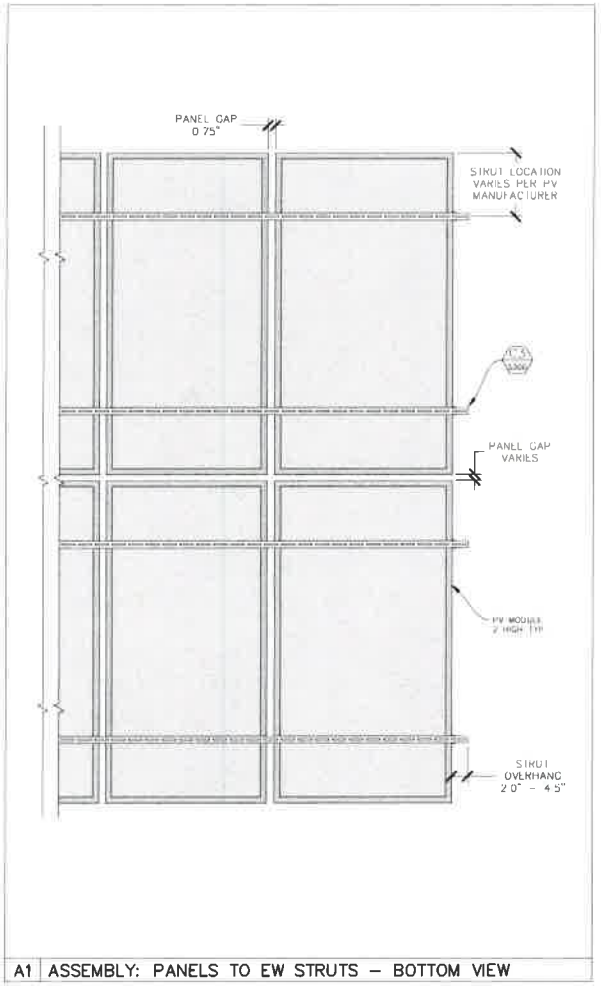
S.200 A



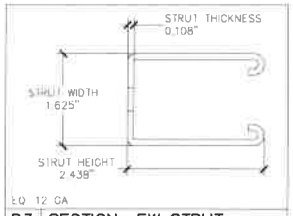
E1 PART: NS (VERTICAL) CEE PURLIN



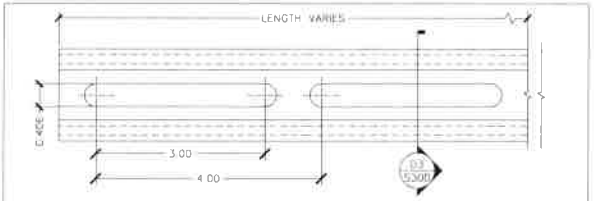
E3 VIEW: NS CEE PURLINS



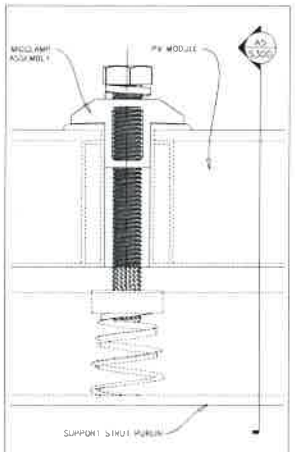
A1 ASSEMBLY: PANELS TO EW STRUTS – BOTTOM VIEW



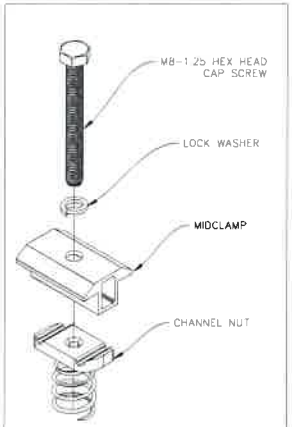
D3 SECTION: EW STRUT



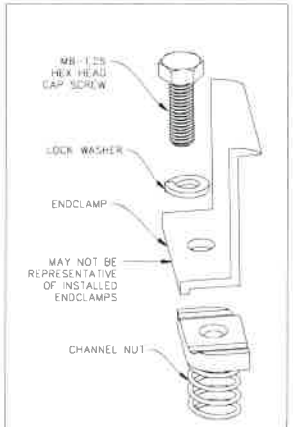
C3 PART: STRUT CHANNEL WITH LONG SLOTS



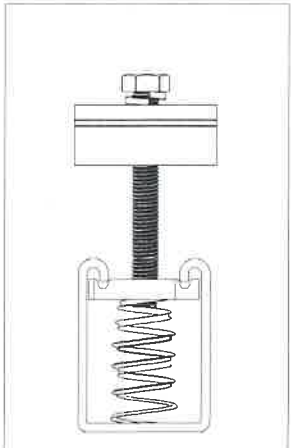
C5 CONNECTION: PV–TO–STRUT



A3 CONNECTION: MIDCLAMP



A4 CONNECTION: ENDCLAMP



A5 CONNECTION: PV–TO–STRUT

NOTES

1. STRUT PURLIN MATERIAL AND FINISH ARE MANUFACTURED TO SPECIFICATIONS THAT EXCEED OUR STANDARD PRODUCT WARRANTY
2. STRUT PURLIN GALVANIZED TO CONFORM TO A MINIMUM THICKNESS DESIGNATION EQUAL TO G90 OR INLINE GALVANIZED TO COMPARABLE THICKNESS AS PER ASTM A1057
3. ALL PURLINS MANUFACTURED USING ASTM A1011/A1011M STRUCTURAL STEEL
4. MINIMUM STEEL Fy YIELD STRENGTH OF STRUT PURLINS TO BE 50 KSI
5. MINIMUM STEEL Fy YIELD STRENGTH OF CEE CHANNEL TO BE 50 KSI
6. SLOT DIMENSIONS FOR REFERENCE ONLY. ALTERNATE HOLE PATTERNS MAY BE SUBSTITUTED
7. LENGTH OF PURLINS VARIES BY PROJECT AND LOCATION WITHIN ARRAY. LENGTH OF PURLINS DOES NOT AFFECT STRUCTURAL CAPACITY
8. PANEL DIMENSIONS VARY. REFER TO MANUFACTURER'S SPEC SHEET
9. STRUT PLACEMENT IN RELATIONSHIP TO PANEL DICTATED BY MANUFACTURER, SEE MANUFACTURER'S INSTALL MANUAL
10. CLAMP PLACEMENT DETERMINED BY STRUT PLACEMENT
11. ENDCLAMPS MUST BE INSTALLED AT BOTH ENDS OF THE ROW, AT THE EAST AND WEST END (TYP.) OF EACH STRUT
12. STAINLESS STEEL HARDWARE)

NOMINAL TORQUE VALUE
M8-1.25: 15.6 FT-LBS

MIN/MAX TORQUE VALUES
M8-1.25: 14.0 - 32 FT-LBS

APA SOLAR RACKING
70-345 COUNTY ROAD 4
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5780
(F) 419.267.5214
WWW.APALTERNATIVES.COM

READYRACK

the jtl group
architects & engineers
360 W. DUSSEL DR
MAUMEE, OH 43537

STRUCTURAL PRINT PACKAGE
ILLINOIS

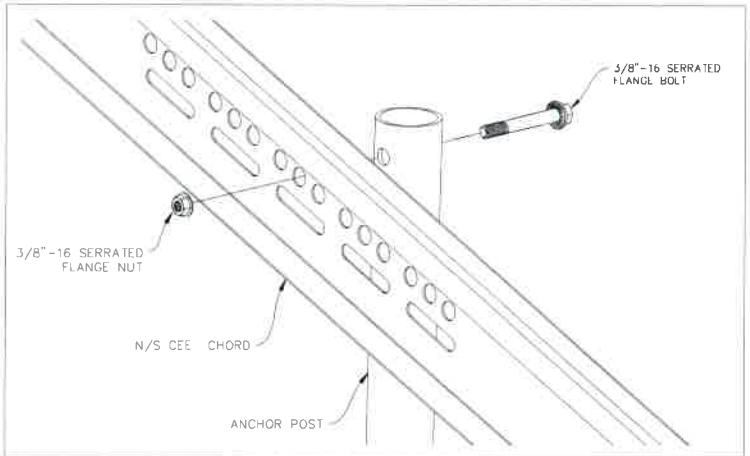
APPROVED

JK	JR	JDI	D

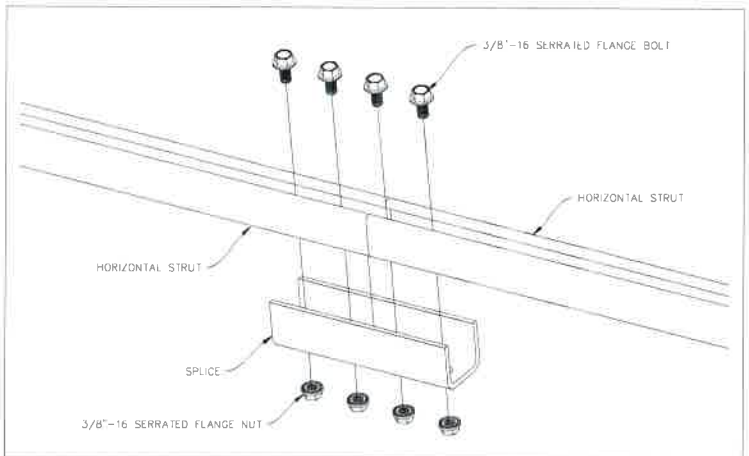
STRUCTURAL PURLINS

RR25IL-003

S.300 A



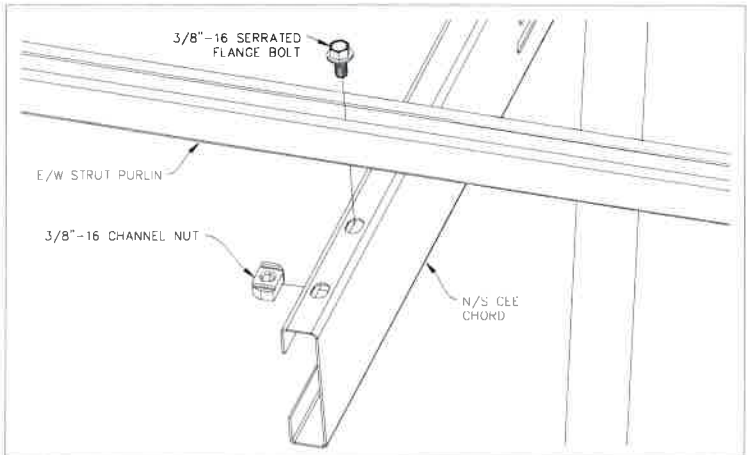
D1 | CONNECTION: CEE-TO-POST



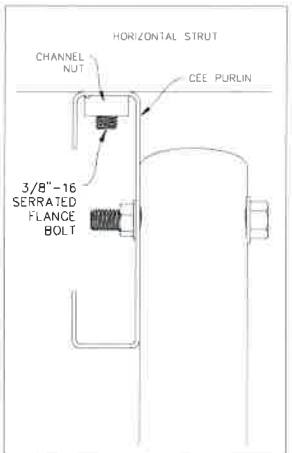
D3 | CONNECTION: STRUT-TO-STRUT SPLICE

NOTES

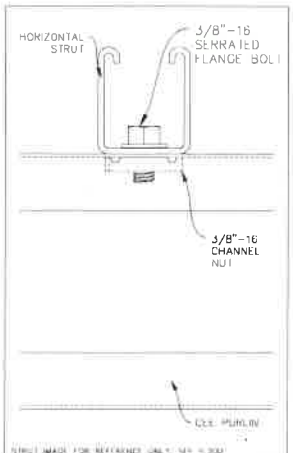
1. RECOMMENDED TORQUE VALUES (FOR STAINLESS STEEL HARDWARE)
   1.1 3/8-16 19.6 FT-LBS
2. MIN/MAX TORQUE VALUES (FOR STAINLESS STEEL HARDWARE)
   2.1 3/8-16: 17.5 - 50.0 FT-LBS
3. DEPICTED HARDWARE AND PART PLACEMENT NOT INDICATIVE OF PREFERRED OR REQUIRED POSITIONS
4. TILT ANGLE IS SETUP BY ANCHOR POST HEIGHTS
5. CEE CHANNEL ALLOWS FOR HEIGHT ADJUSTMENT, FORWARD/REAR ADJUSTMENT, AND MULTIPLE TILT ANGLES.
6. OTHER SPECIFIC CONNECTIONS ELSEWHERE IN PRINT SET
7. STRUT PURLINS MUST CONNECT TO THE CORRECT HOLES IN CEE CHANNEL, AS DEFINED IN CONSTRUCTION PRINTS (INNER, MIDDLE, OR OUTER TYPICALLY), AND AS DETERMINED BY PV MODULE MANUFACTURERS
8. USE CORRECT NOMINAL HOLES IN CEE TO CONNECT TO ANCHOR POST, AS INDICATED IN CONSTRUCTION PRINTS. ADJACENT HOLES AND SLOTS ONLY FOR IN-FIELD ADJUSTMENTS
9. SERRATED HARDWARE MAY BE REPLACED WITH EQUIVALENT HARDWARE WITH WASHERS IF NECESSARY



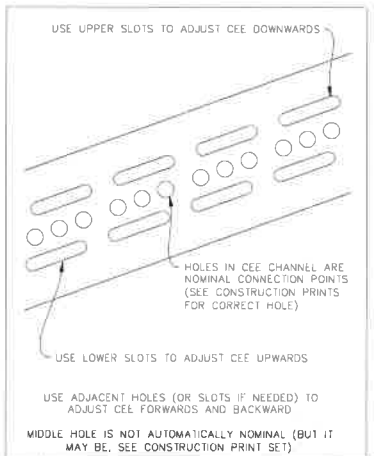
B1 | CONNECTION: STRUT-TO-CEE



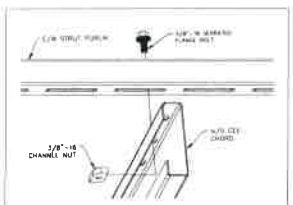
B3 | DETAIL B1 FRONT VIEW



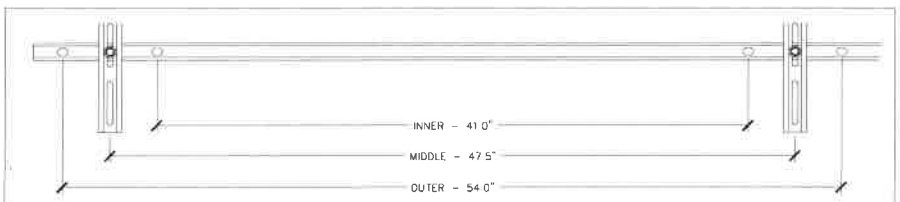
B4 | DETAIL B1 SIDE VIEW



B5 | DETAIL: CEE-TO-POST ADJUSTMENT



A1 | DETAIL B1 UNDERSIDE



A2 | DETAIL: STRUT-TO-CEE CONNECTION ZONES

RACKING PROVIDER
APA SOLAR RACKING
20-345 COUNTY ROAD 6
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5280
(F) 419.267.5214
WWW.APASOLARRACKING.COM

RACKING TYPE
READYRACK

STRUCTURAL ENGINEER OF RECORD
the SEI group
ARCHITECTS & ENGINEERS
360 W. DUSSEL DR.
MAUMEE, OH 43537
(P) 419.725.7181 (F) 419.725.7180

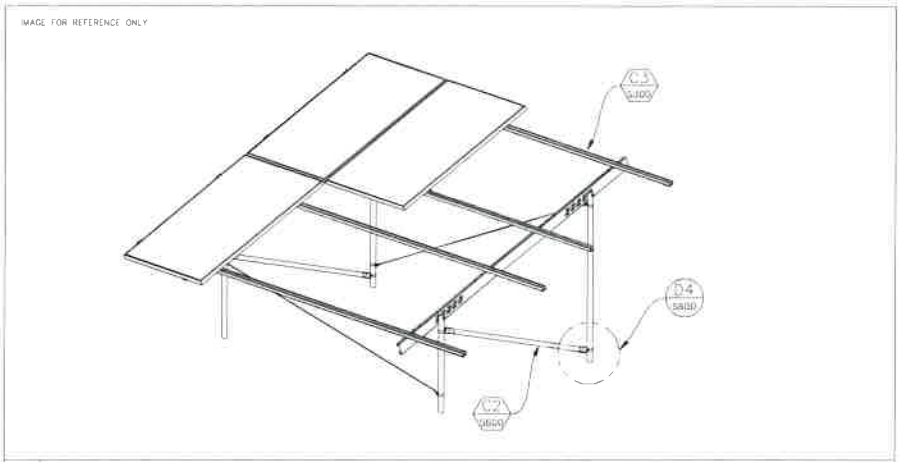
STRUCTURAL PRINT PACKAGE
STATE: ILLINOIS

APPROVED

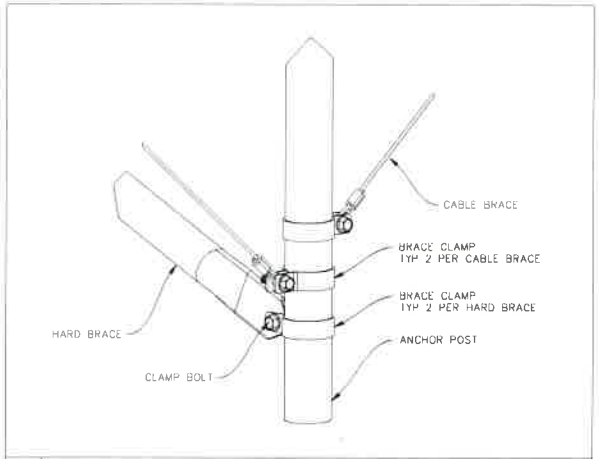
CONNECTIONS OVERVIEW

PROJECT NUMBER: RR25IL-003

DRAWING NUMBER: S.500 REV: A



D1 VIEW: TYPICAL END OF ROW BRACING



D4 DETAIL: BRACING CONNECTIONS

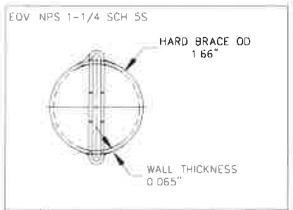
NOTES

1. NORTH/SOUTH HARD BRACING TO BE INSTALLED BETWEEN EVERY NORTH AND SOUTH ANCHOR (100%)
2. EAST/WEST CABLE BRACING (B1) TO BE INSTALLED IN THE SPACE BETWEEN ANCHOR SETS (BAY)
3. VEE CABLES TO BE INSTALLED ACCORDING TO CABLE SCHEDULE SHOWN IN A1
4. MINIMUM CABLE BREAKING STRENGTH DETERMINED BY PROJECT SPECIFIC STRUCTURAL CALCULATIONS
5. BRACE CLAMPS TO BE LOCATED NO FURTHER THAN 3 INCHES FROM MIDPLANE OF CLAMP TO NOMINAL LEVEL GROUND
6. CABLE TO BE STAINLESS STEEL AIRCRAFT CABLE
7. CABLE MAY BE OF ANY CONFIGURATION (IE 7X7 OR 7X19) AS LONG AS IT MEETS THE REQUIREMENTS LISTED ON THIS SHEET
8. LENGTH OF BRACES WILL VARY DEPENDENT ON PROJECT SPECIFICS

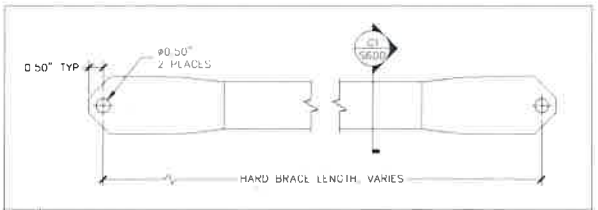
8.1 HARD BRACE:
8.1.1 TOP 4.0"
8.1.2 BOTTOM 3.0"

8.2 FRONT CABLES:
8.2.1 TOP 7.0"
8.2.2 BOTTOM: 7.0"

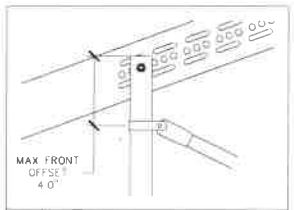
8.3 REAR CABLES
8.3.1 TOP: 8.0"
8.3.2 BOTTOM 7.0"



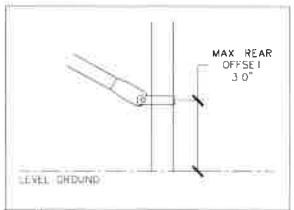
C1 SEC.: HARD BRACE



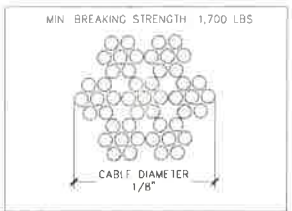
C2 PART: HARD BRACE



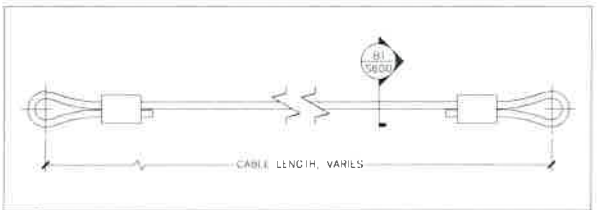
C4 HARD BRACE OFFSET



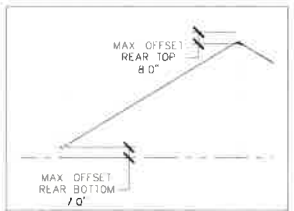
C5 HARD BRACE OFFSET



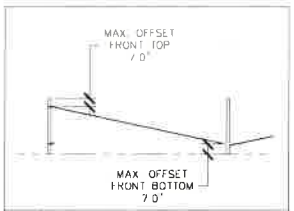
B1 SEC.: CABLE BRACE



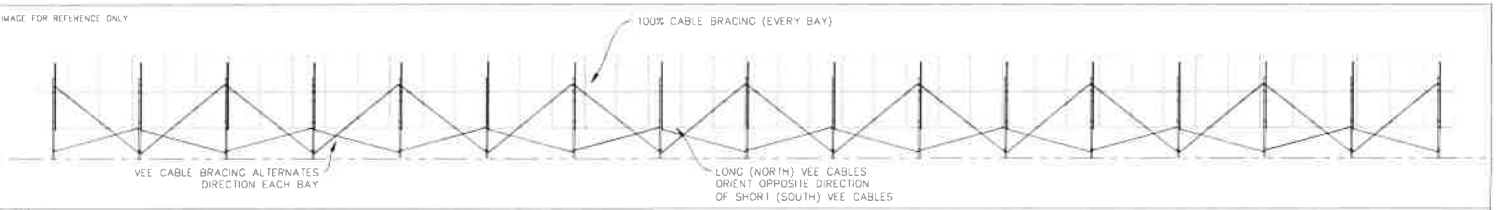
B2 PART: CABLE BRACE



B4 REAR CABLE OFFSET



B5 FRONT CABLE OFFSET



A1 VIEW: TYPICAL END AND MID ROW CONDITIONS

APA SOLAR RACKING
20-345 COUNTY ROAD X
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5280
(F) 419.267.5214
WWW.APALTERNATIVES.COM

READYRACK

the jdi group
architects & engineers
360 W. DUSSEL DR
MAUMEE, OH 43537
(P) 419.725.7161 (F) 419.725.7160

STRUCTURAL PRINT PACKAGE
ILLINOIS

APPROVED

JK | JR | JDI

ANCHOR BRACING OVERVIEW

RR25IL-003

S.600 | A

1. MODULE CONSTANTS

MAX MODULE DIMS				
WIDTH	40.50	IN	3.38	FT
LENGTH	80.00	IN	6.67	FT
HEIGHT	2.00	IN	0.17	FT
WEIGHT	60.00	LBS		
AREA	21.53	SQ FT		

2. DESIGN CONSTANTS

SNOW LOAD CONSTANTS		
TERRAIN TYPE	C	
EXPOSURE CONDITION	FULLY EXPOSED	
EXPOSURE FACTOR	0.90	C_e
THERMAL CONDITION	UNHEATED	
THERMAL FACTOR	1.20	C_t
IMPORTANCE CATEGORY		
IMPORTANCE FACTOR	0.80	I_s
ROOF SURFACE TYPE	SLIPPERY	
VENTILATION	VENTILATED	

WIND LOAD CONSTANTS		
RISK CATEGORY	I	
VELOCITY PRESSURE COEFF	85	Kd
EXPOSURE CATEGORY	C	
GUST EFFECT FACTOR	0.85	
TOPOGRAPHY FACTOR	1.0	Kzt

SEISMIC LOAD CONSTANTS		
RISK CATEGORY	I	
RESPONSE MODIFICATION FACTOR	1.25	
SYSTEM OVERSTRENGTH FACTOR	1.25	
DEFLECTION AMPLIFICATION FACTOR	1.25	
SEISMIC FORCE-RESISTING SYSTEM	CANTILEVERED COLUMN SYSTEMS: STEEL ORDINARY CANTILEVER	
SEISMIC IMPORTANCE FACTOR	1.00	
STRUCTURE TYPE	ALL OTHER SYSTEMS	
LONG-PERIOD TRANSITION PERIOD	8.00	SEC

3. SITE DESIGN LOADS

DEAD LOADS PER PANEL		
MODULES WEIGHT	60.00	LBS
EW STRUTS WEIGHT	12.15	LBS
MISC HARDWARE WEIGHT	5.00	LBS
TOTAL DEAD LOAD	77.15	LBS
PRESSURE	3.43	PSF
DISTRIBUTED LOAD	14.42	LB/FT

LIVE ROOF LOADS PER PANEL		
LOAD	112.50	LBS
PRESSURE	5.00	PSF
DISTRIBUTED LOAD	18.87	LB/FT

SNOW LOADS PER PANEL		
GROUND SNOW LOAD	25	PSF
TILT ANGLE	25	DEGREES
WIDTH	3.38	FT
DEPTH	6.04	FT
SLOPED SNOW LOAD	12.37	PSF
AREA	20.39	SQ FT
RESULTANT FORCE	252.27	LBS
DISTRIBUTED LOAD	37.37	LB/FT

WIND LOADS PER CARTRIDGE		
ENVELOPE WIDTH	3.38	FT
ENVELOPE HEIGHT	2.82	FT
AR/a	9.51	SQ FT
WIND SPEED (3-SEC PEAK GUST), Vult	115	MPH
VELOCITY PRESSURE	24.93	PSF
RESULTANT FORCE	300.00	LBS
DISTRIBUTED LOAD	44.44	LB/FT

SEISMIC LOADS PER CARTRIDGE		
MAX SHORT PERIOD ACCELERATION, Ss	3.730	G
MAX 1 SEC PERIOD ACCELERATION, S1	1.390	G
SITE COEF SHORT PERIOD, Fa	1	
SITE COEF 1 SEC PERIOD, Fv	1.5	
SITE CLASS	D	
DESIGN CATEGORY	E	
MAX HEIGHT	8.13	FT
Cs	0.160	
WEIGHT OF STRUCTURE	8.795	LB
SEISMIC BASE SHEAR	7.036	LBS
SEISMIC BASE SHEAR - PER RACK	7.036	LBS
LOAD PER POST	206.94	LBS

4. LOAD COMBINATIONS

LOAD COMBINATIONS LRFD	
CODE	FORMULA
01	1.4DL
02	1.2DL+0.5LLR
03	1.2DL+0.5SL
04	1.2DL+1.6LLR
05	1.2DL+1.6SL
06	1.2DL+0.5WLH2
07	1.2DL+0.5WLH3
08	1.2DL+1.6LLR+0.5WLH1
09	1.2DL+1.6LLR+0.5WLH2
010	1.2DL+1.6SL+0.5WLH1
011	1.2DL+1.6SL+0.5WLH2
012	1.2DL+WLH1
013	1.2DL+WLH2
014	1.2DL+0.5LLR+WLH1
015	1.2DL+0.5LLR+WLH2
016	1.2DL+0.5SL+WLH1
017	1.2DL+0.5SL+WLH2
018	1.2DL+0.2SL
019	1.2DL+EL1
020	1.2DL+EL2
021	1.2DL+EL3
022	1.2DL+EL4
023	1.2DL+0.2SL+EL1
024	1.2DL+0.2SL+EL2
025	1.2DL+0.2SL+EL3
026	1.2DL+0.2SL+EL4
027	0.9DL+WLH1
028	0.9DL+WLH2
029	0.9DL+EL1
030	0.9DL+EL2
031	0.9DL+EL3
032	0.9DL+EL4

LOAD COMBINATIONS ASD	
CODE	FORMULA
01	DL
02	DL+LLR
03	DL+SL
04	DL+0.75LL
05	DL+0.75LLR
06	DL+0.75SL
07	DL+0.6WLH2
08	DL+0.7EL1
09	DL+0.7EL2
010	DL+0.7EL3
011	DL+0.7EL4
012	DL+0.75LL+0.45WLH1
013	DL+0.75LL+0.45WLH2
014	DL+0.75LLR+0.45WLH1
015	DL+0.75LLR+0.45WLH2
016	DL+0.75SL+0.45WLH1
017	DL+0.75SL+0.45WLH2
018	DL+0.75LL+0.525EL1
019	DL+0.75LL+0.525EL2
020	DL+0.75LL+0.525EL3
021	DL+0.75LL+0.525EL4
022	DL+0.75LLR+0.525EL1
023	DL+0.75LLR+0.525EL2
024	DL+0.75LLR+0.525EL3
025	DL+0.75LLR+0.525EL4
026	0.6DL+0.6WLH1
027	0.6DL+0.6WLH2
028	0.6DL+0.7EL1
029	0.6DL+0.7EL2
030	0.6DL+0.7EL3
031	0.6DL+0.7EL4

5. FINAL DESIGN LOADS

FORCES				
ABBRV	NAME	RESULTANT LOAD	DISTRIBUTED LOAD (LB/FT/PC.)	DIR
DL	DEAD LOAD	77.15	-14.43	-Y
LLR	ROOF LIVE LOAD	112.5	-18.87	-Y
SL	SNOW LOAD	252.27	-37.37	-Y
WLH	WIND HORIZONTAL AT (LRFD)	300.00	44.44	+Z
WLH2	WIND HORIZONTAL AWAY (LRFD)	300.00	-44.44	-Z
		LB/POST		
EL1	SEISMIC LEFT	206.94		+X
EL2	SEISMIC RIGHT	-206.94		-X
EL3	SEISMIC NORTH	206.94		+Z
EL4	SEISMIC SOUTH	-206.94		-Z

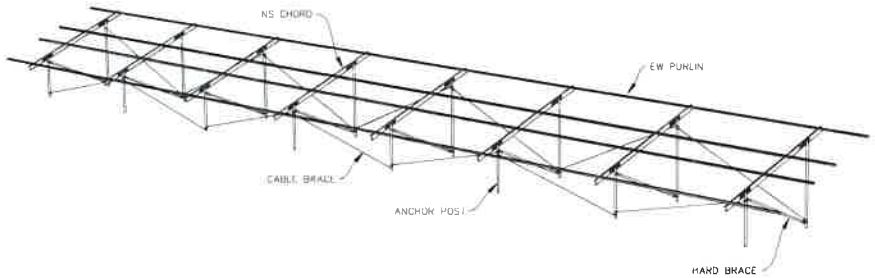
6. ANALYSIS RESULTS: LRFD

STEEL CODE CHECK SUMMARY					
DESC	CTRL EQ	@ DIST	RATIO	STATUS	REF
ANCHOR POST	D18	2.0IN	.59	OK	CS.2.2-1
VEE CABLE	D23	0.00IN	.36	OK	EQ. SEC. D2
HARD BRACE	D16	0.00IN	.65	OK	CA.1
EW STRUT	D11	100.00IN	.85	OK	CS.2.2-3
NS CHORD	D10	82.50IN	.80	OK	CS.5.3-1

7. ANALYSIS RESULTS: ASD

MAX/MIN SUPPORT REACTIONS			
DIR	SIGN	LOAD (LBS)	LOAD COMB
X	MAX	371.3	D9
	MIN	-371.3	D8
Y	MAX	1765.5	D12
	MIN	-439.9	D24
Z	MAX	1345.1	D35
	MIN	-1345.0	D6

IMAGE FOR REFERENCE ONLY



MEMBER SUMMARY		
DESC	SECTION	MATERIAL
COLUMNS	ANCHOR POST 1 BKO 12G	A1011 GR50 COLD FORM
EW STRUT	STRUT 1-5/8 X 2-7/16	A1011 GR50 COLD FORM
NS CHORD	CEE 4-1/2 X 1-5/16	A1011 GR50 COLD FORM
CENTER BRACE	HARD BRACE 1 BKO 08G	A1011 GR50 COLD FORM
CABLE BRACE	CABLE BRACE 1/8	A36

READY RACK
25° TILT
25 PSF SNOW
115 WIND

ARA SOLAR RACKING
20-345 COUNTY ROAD N
KRAKLVILLE CORNERS OHIO 43555
(P) 419.767.2480
(F) 419.767.5714
WWW.ARALTERNATIVES.COM

the 1 group
architects & engineers
360 W. DUSSEL DR
MAUMEE, OH 43537
P: 419.725.7161 F: 419.725.7160

STRUCTURAL PRINT PACKAGE
ILLINOIS

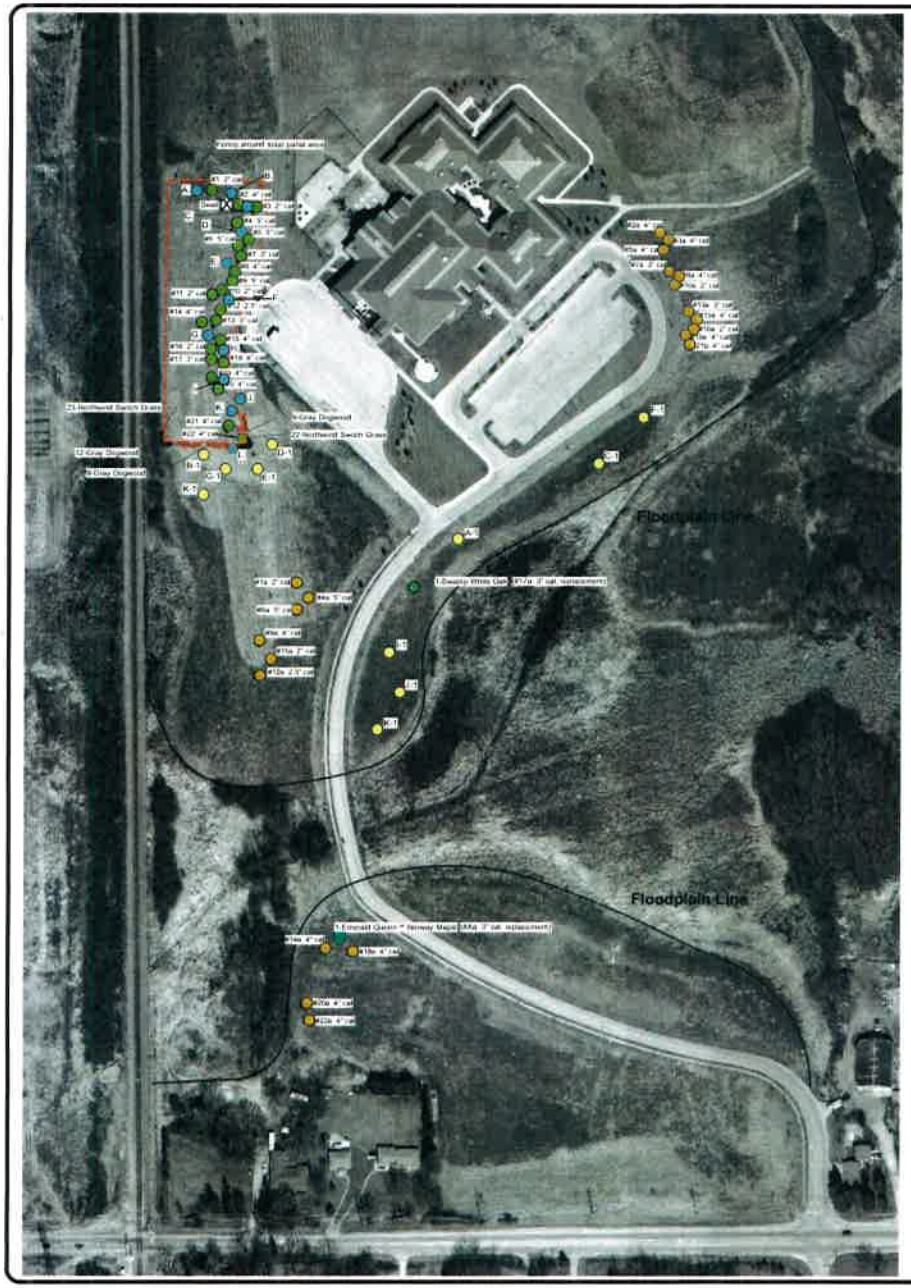
APPROVED

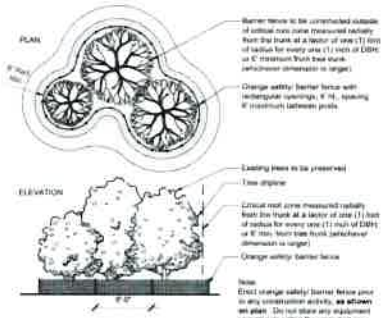
DESIGN & ANALYSIS SUMMARY

PROJECT NUMBER
RR25IL-003

DRAWING NUMBER
S.700

REV
A





1 TREE PROTECTION PLAN

N.T.S.

Root Pruning

Existing tree roots greater than one (1) inch in diameter, measured at the edge of excavation, shall be pruned within 24 hours of the time they have been damaged by construction activity. The severed root shall be pruned at the edge of excavation, or one (1) inch beyond the entire damaged portion of the tree root, if damaged root extends beyond the edge of excavation into undisturbed soil.

All cuts shall be cleanly made with sharp tools.

The excavated area around the existing tree roots shall be backfilled as soon as construction activities permit.

Amended existing soil shall be used as backfill material within the disturbed root zone areas not receiving drainage or subbase stone dams. Amended existing soil shall be amended with peat or compost in the ratio of one part organic to seven parts existing soil.

Vulnerable Area Protection Methods

All tree root zones designated as "Vulnerable" shall receive special care and attention during construction. These areas contain roots for large trees that are within the construction area. Since these trees have high value to the project, efforts shall be made to preserve these trees, however the property owner will not be held liable if the trees do not survive.

An arborist should be consulted prior to construction to provide advice on preservation techniques. Each tree and construction condition is unique so an arborist is best qualified to provide a recommendation for each tree. Preservations may include root pruning, crown pruning, hormone treatment, fertilizers, soil amendments, excavation techniques, etc.

Legend

Existing Tree Locations
- G
- #16: 2" cal

New Locations for Trees
- #12a: 2.5"cal
- K-1

Existing Tree Inventory

Plan #	Common Name	Botanic Name	Size (dia.)	Condition	Disposition
1	Cockspur Hawthorn	Crataegus crus-galli	3"	good	Transplant - on site (1A)
2	Norway Maple	Acer platanoides	4"	good	Transplant - on site (2A)
3	Canadian Hemlock	Tsuga canadensis	2"	good	Transplant - on site (3A)
4	Cockspur Hawthorn	Crataegus crus-galli	4"	good	Transplant - on site (4A)
5	Colorado Blue Spruce	Picea pungens	4"	good	Transplant - on site (5A)
6	Norway Maple	Acer platanoides	5"	good	Transplant - on site (6A)
7	Eastern Red Cedar	Juniperus virginiana	3"	good	Transplant - on site (7A)
8	Colorado Blue Spruce	Picea pungens	4"	good	Transplant - on site (8A)
9	Red Oak	Quercus rubra	3"	fair	Transplant - on site (9A)
10	Canadian Hemlock	Tsuga canadensis	2"	good	Transplant - on site (10A)
11	Norway Maple	Acer platanoides	4"	good	Transplant - on site (11A)
12	Cockspur Hawthorn	Crataegus crus-galli	2 1/2"	fair	Transplant - on site (12A)
13	Eastern Red Cedar	Juniperus virginiana	3"	good	Transplant - on site (13A)
14	Red Oak	Quercus rubra	4"	good	Transplant - on site (14A)
15	Colorado Blue Spruce	Picea pungens	4"	fair	Transplant - on site (15A)
16	Canadian Hemlock	Tsuga canadensis	2"	fair	Transplant - on site (16A)
17	Swamp White Oak	Quercus bicolor	5"	poor	Replace in new 3" min. (17A)
18	Norway Maple	Acer platanoides	4"	good	Transplant - on site (18A)
19	Colorado Blue Spruce	Picea pungens	4"	fair	Transplant - on site (19A)
20	Common Hackberry	Celtis occidentalis	4"	fair	Transplant - on site (20A)
21	Eastern Red Cedar	Juniperus virginiana	4"	good	Transplant - on site (21A)
22	Common Hackberry	Celtis occidentalis	4"	fair	Transplant - on site (22A)
A	"Lisa" - Norway Maple	Acer platanoides	2 1/2"	poor	Replace in new 3" min. (A)

Plan #	Common Name	Botanic Name	Size (dia.)	Condition	Disposition
H	Common Hackberry	Celtis occidentalis	21" dbh	good	Transplant - on site (H-1)
B	Eastern Redbud	Cercis canadensis	10" ht.	good	Transplant - on site (B-1)
C	Flowering Crabapple	Malus spp.	10" ht.	good	Transplant - on site (C-1)
D	Sweet Gum	Acer saccharum	10" ht.	good	Transplant - on site (D-1)
I	Eastern Redbud	Cercis canadensis	10" ht.	good	Transplant - on site (I-1)
J	Flowering Crabapple	Malus spp.	8" ht.	good	Transplant - on site (J-1)
G	Eastern Redbud	Cercis canadensis	10" ht.	good	Transplant - on site (G-1)
H	Eastern Redbud	Cercis canadensis	10" ht.	good	Transplant - on site (H-1)
J	Flowering Crabapple	Malus spp.	10" ht.	fair	Transplant - on site (J-1)
I	Eastern Redbud	Cercis canadensis	10" ht.	good	Transplant - on site (I-1)
K	Flowering Crabapple	Malus spp.	10" ht.	fair	Transplant - on site (K-1)
L	Flowering Crabapple	Malus spp.	8" ht.	good	Transplant - on site

Proposed Plant List

QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
Deciduous Trees				
Deciduous Shrubs				
Ornamental Grasses				

Note:

Existing tree locations based on GeoVal Hamilton Existing Site Plan (dated 3/11/2020) and site inspection by Balanced Environments Inc.

Balanced Environments Inc.
Craig M. Patten
Landscape Architecture
1275 Moon Road
Hoffman Estates, IL 60169
630-643-3067

North

Scale: 1" = 100'-0"

Craig M. Patten
Landscape Architect
License #001800710 - Expires August 31, 2021

Tree Preservation & Landscape Plan

Prairie Trail School

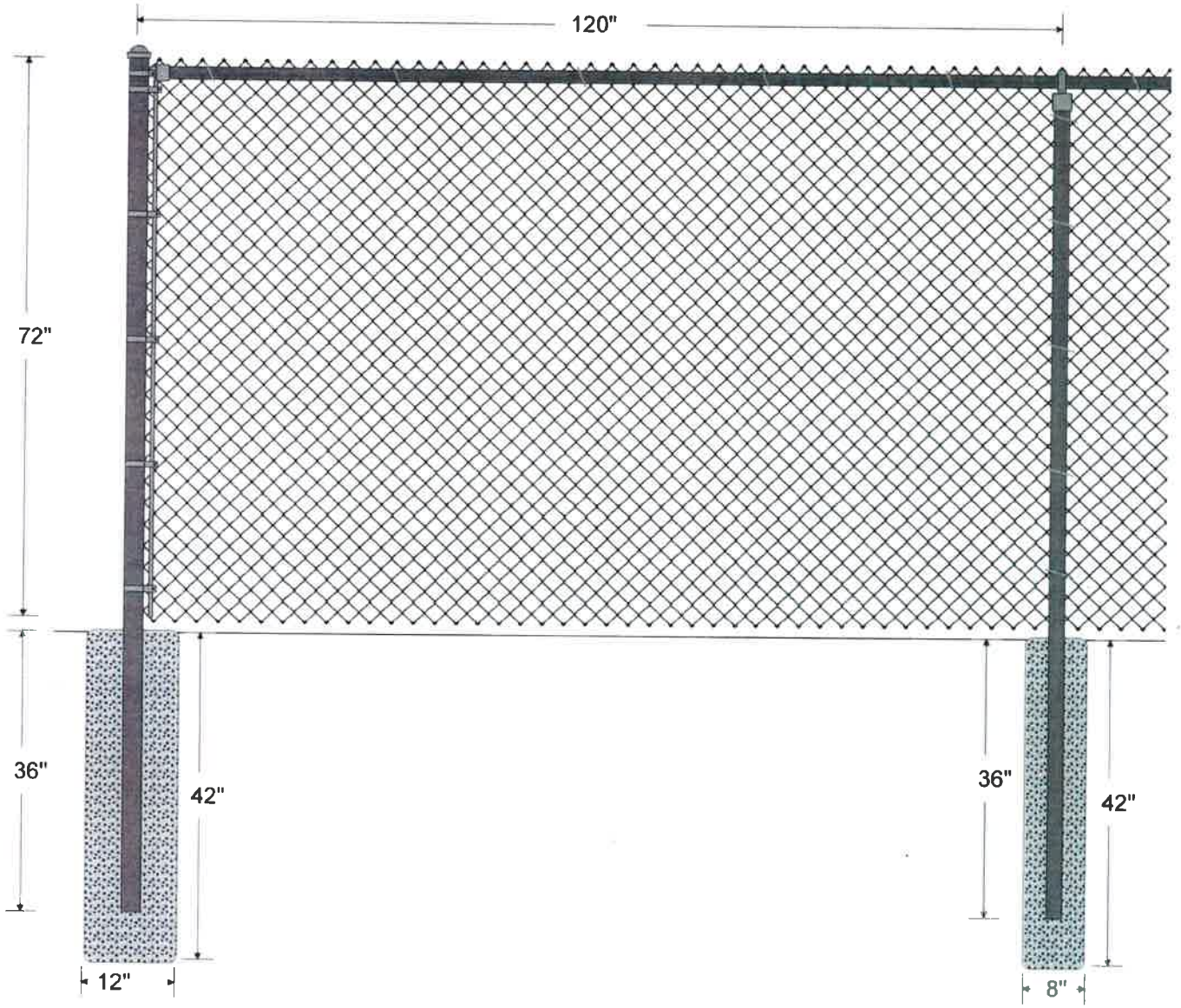
Village of Wadsworth, IL

Date: June 29, 2020
Drawn By: C. M. Patten
Project No.:

REVISIONS

DATE	DESCRIPTION

Sheet No 1 / 1



FABRIC: 72" 9 GA. ALUMINIZED (2" Mesh) K&K CHAIN-LINK FABRIC.

TOP RAIL: 1 5/8" O.D. SS-40 PIPE, 0.00 lbs. per foot. Top rail 21' in length, joined with 1 5/8" SLEEVE.

LINE POST: 2" O.D. SS-40 PIPE, 2.28 lbs. per foot. Line posts set 10' on center maximum spacing.

TERMINAL POST: 2 1/2" O.D. SS-40 PIPE, 3.12 lbs. per foot.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT, PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 8 1/4" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

All posts in concrete footings.

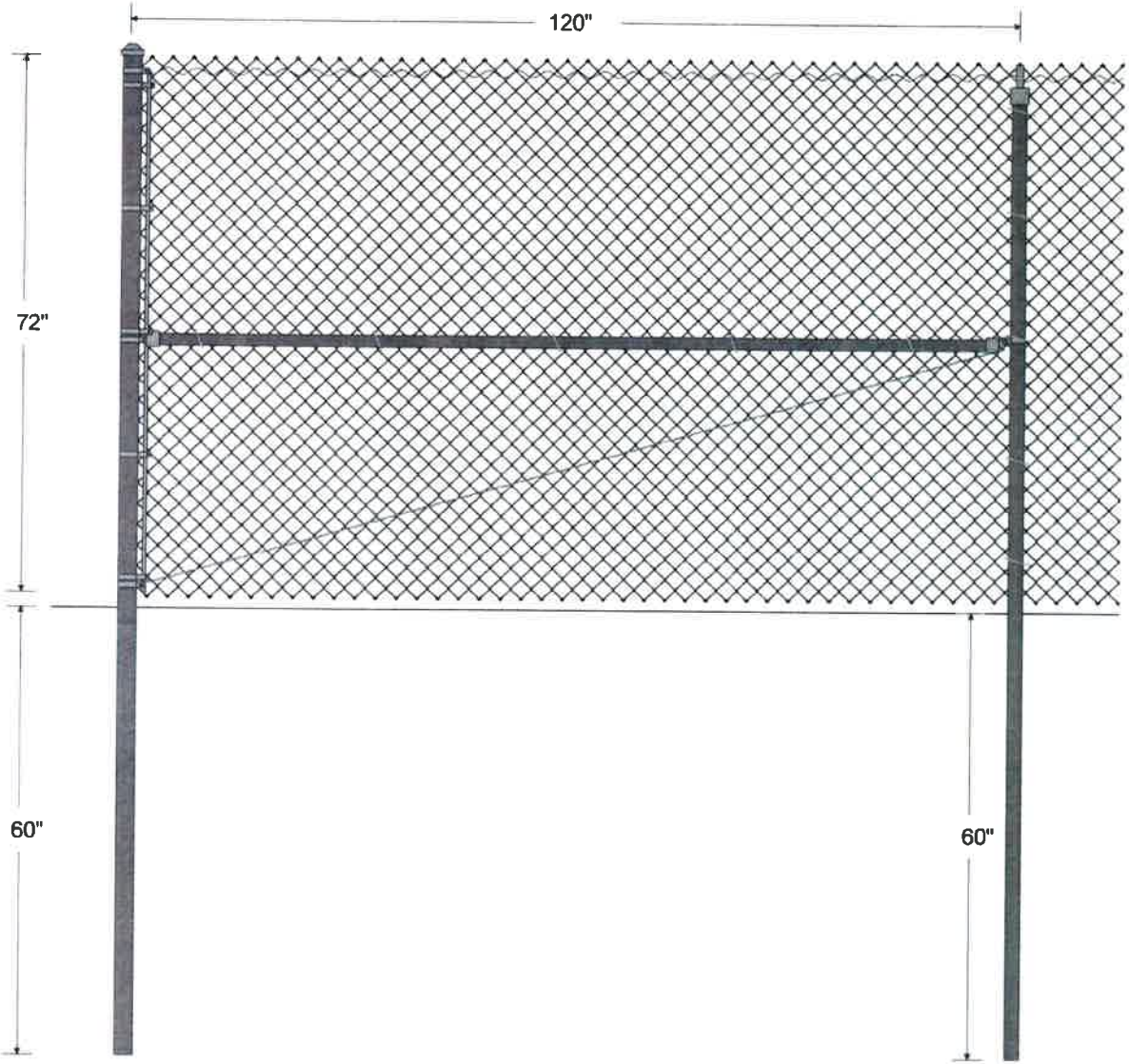
PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School 6 ft. high
Trane Chicago
Gurnee, IL

LINE OF FENCE

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 6



FABRIC: 72" 9 GA. ALUMINIZED (2" Mesh) K&T CHAIN-LINK FABRIC.

TOP RAIL: None

LINE POST: 2" O.D. SS-40 PIPE, 2.28 lbs. per foot. Line posts set 10' on center maximum spacing.

TERMINAL POST: 2 1/2" O.D. SS-40 PIPE, 3.12 lbs. per foot.

BRACING: Terminal posts braced and trussed to the nearest line post with 1 5/8" O.D. SS-40 PIPE and 3/8" TRUSS ROD & IND. TRUSS ROD TIGHTENER.

TENSION WIRE: 7 GA. COIL SPRING ALUMINIZED TENSION WIRE attached to top of fence fabric with 9 GA. ALUMINUM HOG RING spaced 24" on center.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT, PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 8 1/4" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

Driven line posts. Terminals and gate posts in footings.

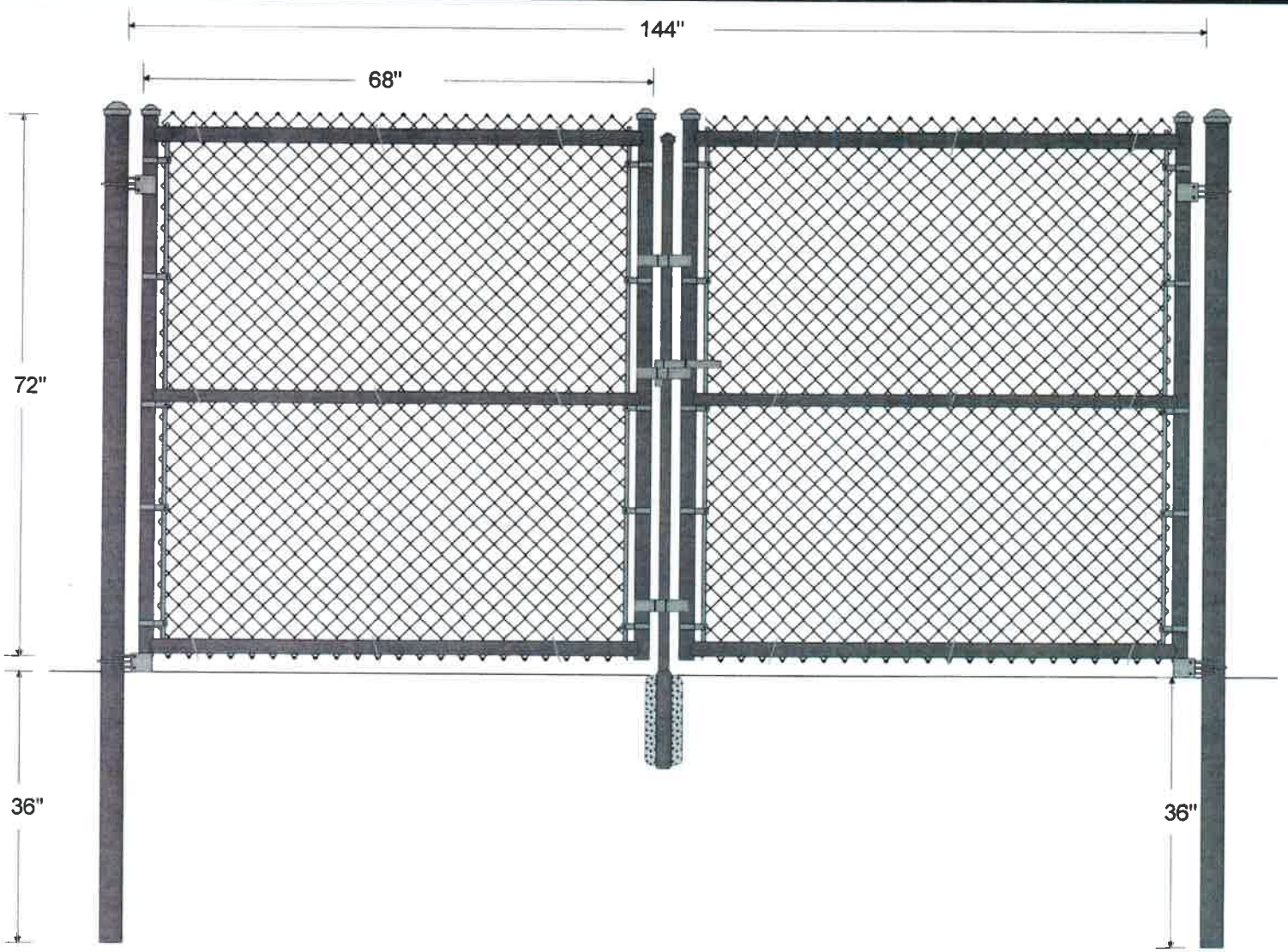
PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School Solar 6 ft. high driven
Trane Chicago
Gurnee, IL

LINE OF FENCE

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 6



FABRIC: 72" 9 GA. ALUMINIZED (2" Mesh) K&T CHAIN-LINK FABRIC.

BRACING: Terminal posts braced and trussed to the nearest line post with 1 5/8" O.D. SS-40 PIPE and 3/8" TRUSS ROD & IND. TRUSS ROD TIGHTENER.

GATES: Framework of 2" SS-20 PIPE, 1.74 lbs. per foot. Gates braced and trussed as necessary. Same fabric as fence.

GATE POST: 3" O.D. SS-40 PIPE, 4.64 lbs. per foot.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT, PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 8 1/4" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

Gate posts in concrete footings.

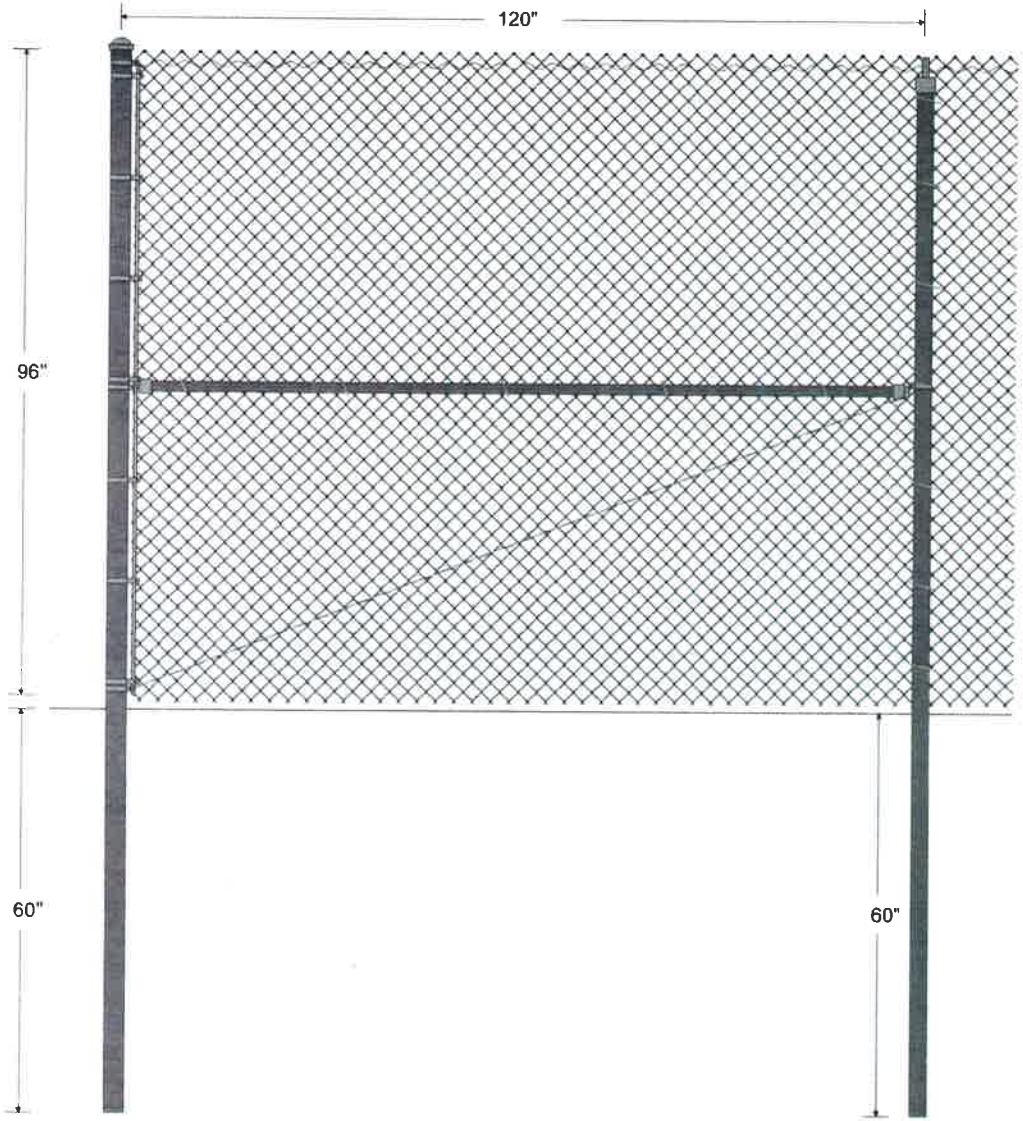
PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School 6 ft. high Double gate
Gurnee, IL

12' DOUBLE GATE, 2" SS-20 PIPE FRAME

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 6



FABRIC: 96" 9 GA. ALUMINIZED (2" Mesh) K&K CHAIN-LINK FABRIC.

TOP RAIL: None

LINE POST: 2 1/2" O.D. SS-40 PIPE, 3.12 lbs. per foot. Line posts set 10' on center maximum spacing.

TERMINAL POST: 3" O.D. SS-40 PIPE, 4.64 lbs. per foot.

BRACING: Terminal posts braced and trussed to the nearest line post with 1 5/8" O.D. SS-40 PIPE and 3/8" TRUSS ROD & IND. TRUSS ROD TIGHTENER.

TENSION WIRE: 7 GA. COIL SPRING ALUMINIZED TENSION WIRE attached to top of fence fabric with 9 GA. ALUMINUM HOG RING spaced 24" on center.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT, PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 9 1/2" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

Terminal posts in concrete footings.

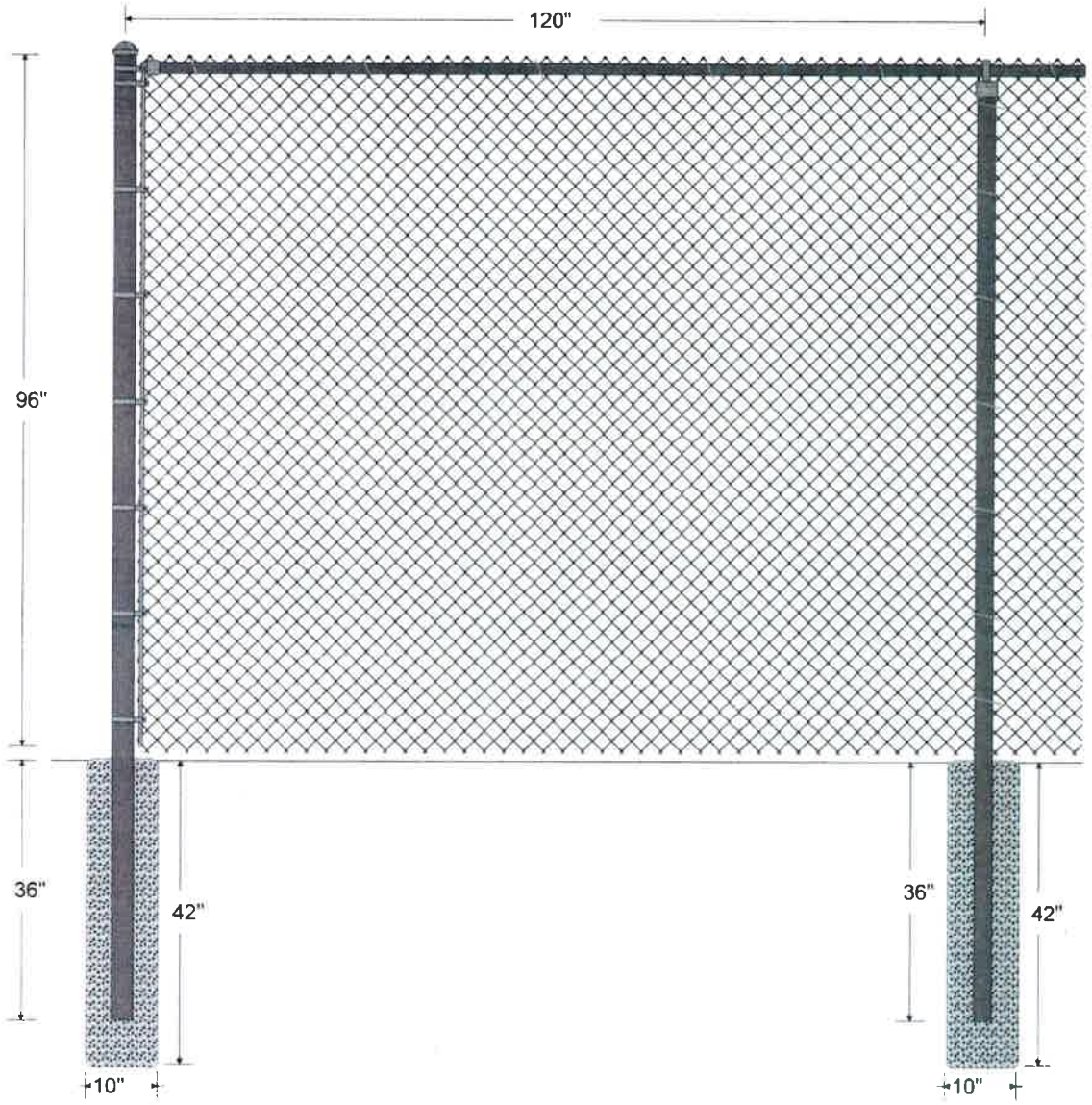
PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School 8 ft. Driven
Trane Chicago
Gurnee, IL

LINE OF FENCE

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 8



FABRIC: 96" 9 GA. ALUMINIZED (2" Mesh) K&T CHAIN-LINK FABRIC.

TOP RAIL: 1 5/8" O.D. SS-40 PIPE, 0.00 lbs. per foot. Top rail 21' in length, joined with 1 5/8" SLEEVE.

LINE POST: 2 1/2" O.D. SS-40 PIPE, 3.12 lbs. per foot. Line posts set 10' on center maximum spacing.

TERMINAL POST: 3" O.D. SS-40 PIPE, 4.64 lbs. per foot.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT, PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 9 1/2" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

All posts in concrete footings.

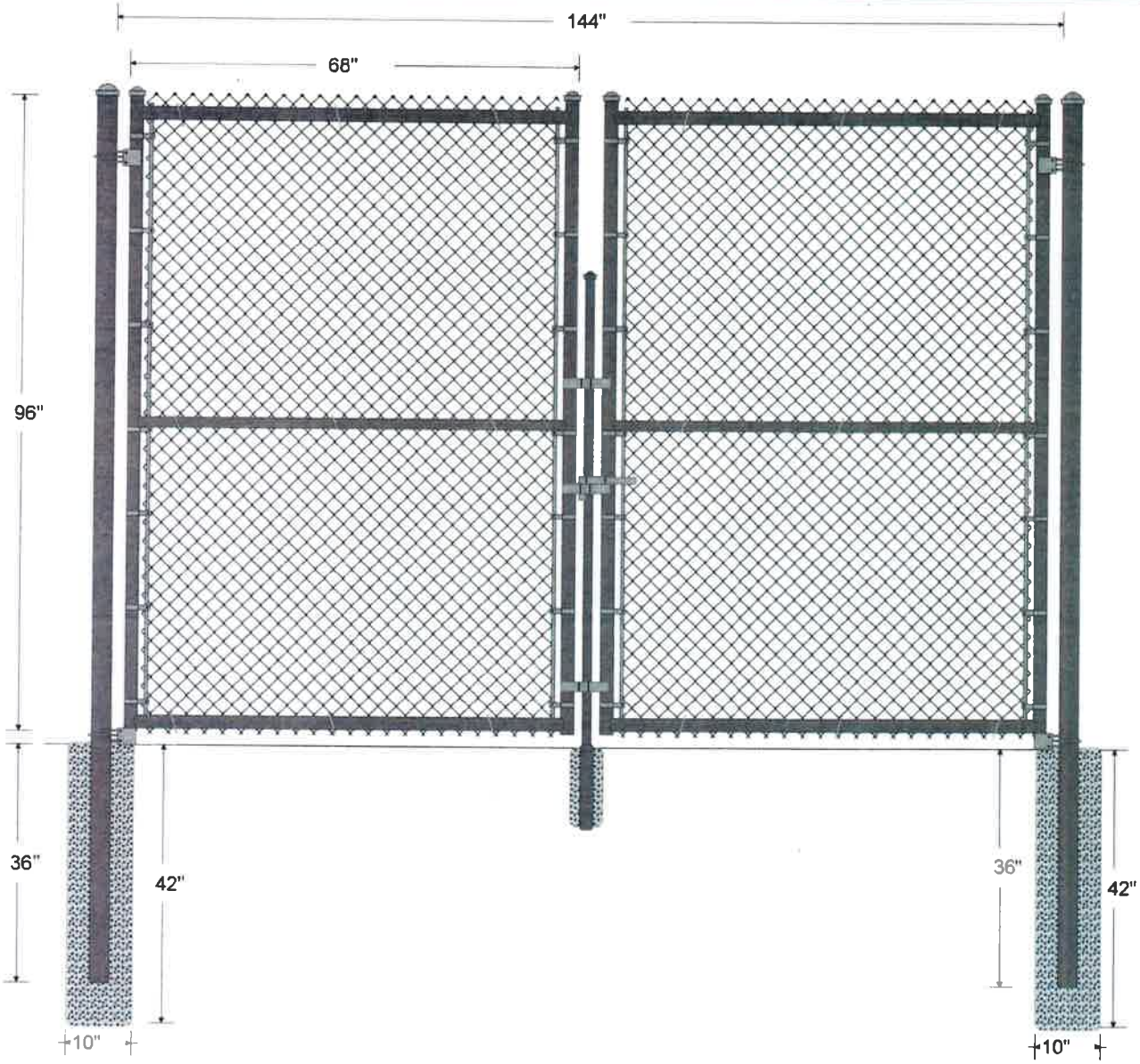
PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School 8 ft. high
Trane Chicago
Gurnee, IL

LINE OF FENCE

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 8



FABRIC: 96" 9 GA. ALUMINIZED (2" Mesh) K&T CHAIN-LINK FABRIC.

GATES: Framework of 2" SS-20 PIPE, 1.74 lbs. per foot. Gates braced and trussed as necessary. Same fabric as fence.

GATE POST: 3" O.D. SS-40 PIPE, 4.64 lbs. per foot.

FITTINGS: REGULAR BRACE BAND & CARRIAGE BOLT. PRESSED STEEL RAIL-END, PRESSED STEEL LOOP CAP, PRESSED STEEL CAP, 3/16" X 3/4" TENSION BAR, REGULAR TENSION BAND & CARRIAGE BOLT.

TIE WIRE: 9 1/2" 9 GA. ALUMINUM TIE WIRE & 6 1/2" 9 GA. ALUMINUM TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

Posts in concrete footings.

PEERLESS FENCE & SUPPLY

PEERLESS FENCE CO.
33W401 ROOSEVELT ROAD
WEST CHICAGO, IL 60185
630-584-7710

Prairie Trail School 8 ft. double gate
Trane Chicago
Gurnee, IL

12' DOUBLE GATE, 2" SS-20 PIPE FRAME

Drawn: MH 08/07/2020
File: 20MH Trane Ch Prairie Tr 8

Product data sheet
Characteristics

H366N
Safety switch, heavy duty, fusible, 600A, 3 poles, 500 hp, 600 VAC/DC, neutral factory installed, NEMA1

Product availability : Stock - Normally stocked in distribution facility

Main

Product	Single Throw Safety Switch
Current Rating	600 A
Certifications	UL listed file E2875
Enclosure Rating	NEMA 1 steel
Factory Installed Neutral	Neutral (factory installed)
Disconnect Type	Fusible disconnect
Short Circuit Current Rating	10 kA H or K 200 kA R, J or L
Mounting Type	Surface
Number of Poles	3
Electrical Connection	Lugs
Duty Rating	Heavy duty
Voltage Rating	600 V AC/DC
Wire Size	AWG 3/0...500 kcmil copper or aluminium

Complementary

Maximum Horse Power Rating	150 hp 480 V AC 50...60 Hz 3 phase NEC 240.6 400 hp 480 V AC 50...60 Hz 3 phase NEC 430.52 200 hp 600 V AC 50...60 Hz 3 phase NEC 240.6 500 hp 600 V AC 50...60 Hz 3 phase NEC 430.52 50 hp 250 V DC 50 hp 600 V DC
Maximum Height	50.25 in (1276.35 mm)
Depth	10.13 in (257.30 mm)
Width	27.63 in (701.80 mm)
Tightening torque	375 lbf.in (42.37 N.m) AWG 3/0...500 kcmil)

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Ordering and shipping details

Category	00053 - H&HU SW,NEMA1,400-1200A
Discount Schedule	DE1
GTIN	00785901451990
Nbr. of units in pkg.	1
Package weight(Lbs)	175 lb(US) (79.38 kg)
Returnability	Yes
Country of origin	MX

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	14.02 in (35.6 cm)
Package 1 width	27.99 in (71.1 cm)
Package 1 Length	52.01 in (132.1 cm)

Offer Sustainability

Sustainable offer status	Green Premium product
REACh free of SVHC	Yes
EU RoHS Directive	Compliant EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile

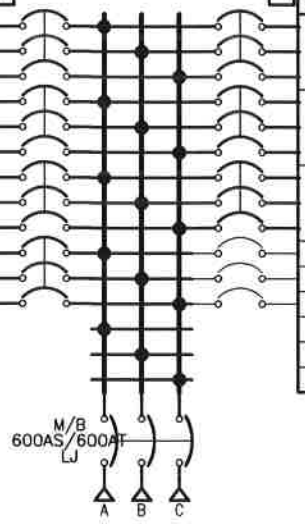
Contractual warranty

Warranty	18 months

REV	DESCRIPTION	BY	DATE				
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P	S/N
1		EJB	90/3 ~~80/3~~	
3				
5				
7		EJB	90/3 ~~80/3~~	
9				
11				
13		EJB	90/3 ~~80/3~~	
15				
17				
19		EJB	90/3 ~~80/3~~	
21				
23				
25	BLANK			
27	BLANK			
29	BLANK			

S/N	RATING AMP/P	TYPE	ACCESSORIES	CKT NO
	90/3 ~~80/3~~	EJB		2
				4
				6
	90/3 ~~80/3~~	EJB		8
				10
				12
	90/3 ~~80/3~~	EJB		14
				16
				18
	20/1	EJB		20
	20/1	EJB		22
	20/1	EJB		24
			BLANK	26
			BLANK	28
			BLANK	30



PHYSICAL DATA

ENCLOSURE Type 1
Surface with Door
FRONT CAT#: NC68VS3P
BOX CAT#: MH68D9

DIMENSIONS:
68"(1727mm)Hx20"(508mm)Wx8.75"(222mm)D

WIRE BENDING SPACE:
TOP – 18.25"(465)mm
BOTTOM – 14"(356)mm
SIDE – 4.1"(104)mm
PBA: 554

BUSSING: 600A RATED COPPER BUS
Silver/Tin Plated

OPTIONAL FEATURES:
Copper GROUND BAR
COPPER SOLID NEUTRAL

ELECTRICAL DATA

SYSTEM: 480Y/277V 3Ph 4W 60Hz
System Ampacity: 600A
65kA SYMS. SCCR

MAIN: MAIN BREAKER LJ 600AS/600AT
ACC: STD LI 80%
Bottom FEED
65kA AIR
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – (2) 2/0 – 500 kcmil
Phase Lugs:1 – (2) 2/0 – 500 kcmil

----------BRANCH SUMMATION----------

7 – ~~80A/3P~~ 90/3 EJB
3 – 20A/1P EJB

JOB NAME:	SOLAR PROJECT GROUP	EQUIPMENT DESIGNATION:	600A PANEL
JOB LOCATION:		EQUIPMENT TYPE:	NF (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	May 27 2020		
DRAWING STATUS:	QUOTE	DWG# 0Q-1718824-46060049-01	PG 1 OF 1 REV –

I-Line Power Panelboards

Our I-Line® power distribution panel is the most versatile on the market. It's used to feed NQ and NF lighting and appliance panelboards. I-Line panelboards can also feed large motors and HVAC systems.

Features

- 600Vac, 250Vdc maximum
- 1200A main circuit breaker or main lugs
- 1200A maximum branch circuit breaker
- 200,000A SCCR when using current limiting main or branch circuit breakers
- Fully rated and series rated systems available
- Interiors available in plated copper or aluminum bus
- Suitable for use as service entrance equipment
- Complete line of UL/cUL listed interiors with 200% rated neutrals for non-linear loads
- Sub-feed or through-feed lugs through 1200A
- Interiors accept plug-on thermal magnetic or solid state branch circuit breakers
- Interior, front and most circuit breakers only require a screwdriver for installation
- Branch circuit breaker mounting not restricted by location on bus stack
- Capable of mounting 15A branch circuit breaker across from or next to a 1200A branch circuit breaker
- Branch circuit breakers have no loose mounting hardware and install in as little as 20 seconds with only a screw driver
- Branch circuit breakers are simple to rearrange in the field, limited restrictions on mounting locations
- 100,000A – 240,000A field installable plug-in TVSS units
- Available with or without door, or with hinged trim
- Broad range of field installable kits available from stock

Factory Options

- Split bus bar
- Sub-feed/thru-feed lugs through 1200A
- Optional 200% rated neutrals through 1200A
- Thermal-mag or solid state circuit breakers
- Plated copper or aluminum bus
- Optional customer metering with PowerLogic® power meters or circuit monitors
- Plug-in TVSS modules
- 100,000A – 240,000A plug-in TVSS
- Door in door or hinged trim
- Six circuit QO 240V plug-in distribution module
- Ground fault protection available on main or branch circuit breakers
- Current density-rated panelboard bus

NF Lighting Panelboards

The NF panelboard offers superior performance and application flexibility for commercial and industrial electrical systems up to 600Y/347Vac. This versatile lighting and power distribution panelboard features a wide selection of circuit breakers, accessories and ready-to-install kits, as well as 200% rated neutrals for non-linear loads.

Features

- 600Y/347Vac maximum
- 600A maximum main circuit breaker, 800A maximum main lugs
- 14,000A through 200,000A SCCR
- Sub-feed circuit breakers are vertically mounted
- 125A maximum branch mounted circuit breakers (110A for 600Y/347V)
- Interiors are field convertible to top or bottom feed
- Bolt-on branch circuit breakers attach with captive screws
- Visi-Trip® indication on branch circuit breakers
- Suitable for use as service equipment
- Complete line of UL/cUL listed interiors with 200% rated neutrals for non-linear loads
- 20" wide trims and boxes common for NF and NQ panelboards
- Mono-flat or hinged trims
- Vertically mounted main breakers available, all amperages
- Branch circuit filler plates provide fast and easy installation

Factory Options

- 1P3W or 3P4W – 800A main lugs and 600A main breaker panelboards
- Sub-feed and thru-feed lugs
- Sub-feed circuit breakers
- Optional 200% rated neutrals through 600A
- Split bus bars
- TVSS
  - 100,000A – 240,000A surge current rating
  - All voltage systems
- Lighting contactors
- Customer equipment space

"Ready-to-Install" Panels and Kits Available from Stock

- 100A – 600A MLO 3P4W interiors
- Type 1 and 3R/12 enclosures
- 100A – 400A main circuit breaker kits
- 120,000A or 160,000A surge current ratings
- 100A – 400A sub-feed and thru-feed lugs
- Sub-feed circuit breaker kits
  - 1 – 250A sub-feed circuit breaker per 250A panelboard
  - 2 – 250A sub-feed circuit breakers per 400A or 600A panelboard
- 200% neutral kits up to 400A
- Copper neutrals and equipment ground bars

710
715
715
715
715
710
710
710

710
715
720

100/125kW, 1500Vdc String Inverters for North America

CPS SCH100/125KTL-DO/US-600

The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box inlcudes touch safe fusing for up to 20 strings. The CPS Flex Gateway enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2014 and 2017 compliant
- Touch safe DC Fuse holders adds convenience and safety
- CPS Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
- Generous 1.87 and 1.5 DC/AC Inverter Load Ratios
- Separable wire-box design for fast service
- Standard 5 year warranty with extensions to 20 years

100/125KTL Standard Wire-box

100/125KTL Centralized Wire-box

c SP us

FC This device complies with part 15 of the FCC Rules

© CHINT POWER SYSTEMS AMERICA 2020/01-MKT NA

Chint Power Systems America
6800 Koll Center Parkway, Suite 235 Pleasanton, CA 94566
Tel: 855-584-7168 Mail: AmericaSales@chintpower.com Web: www.chintpowersystems.com

Model Name	CPS SCH100KTL-DO/US-600	CPS SCH125KTL-DO/US-600
DC Input		
Max. PV Power	187.5kW	
Max. DC Input Voltage	1500V	
Operating DC Input Voltage Range	860-1450Vdc	
Start-up DC Input Voltage / Power	900V / 250W	
Number of MPP Trackers	1	
MPPT Voltage Range[1]	870-1300Vdc	
Max. PV Input Current (Isc x1.25)	275A	
Number of DC Inputs	20 PV source circuits, pos. & neg. fused (Standard Wire-box) 1 PV output circuit, 1-2 terminations per pole, non-fused (Centralized Wire-box)	
DC Disconnection Type	Load-rated DC switch	
DC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
AC Output		
Rated AC Output Power	100kW	125kW
Max. AC Output Power[2]	100kVA (111KVA @ PF>0.9)	125kVA (132KVA @ PF>0.95)
Rated Output Voltage	600Vac	
Output Voltage Range[3]	528-660Vac	
Grid Connection Type[4]	3Φ / PE / N (Neutral optional)	
Max. AC Output Current @600Vac	96.2/106.8A	120.3/127.2A
Rated Output Frequency	60Hz	
Output Frequency Range[3]	57-63Hz	
Power Factor	>0.99 (±0.8 adjustable)	>0.99 (±0.8 adjustable)
Current THD	<3%	
Max. Fault Current Contribution (1-cycle RMS)	41.47A	
Max. OCPD Rating	150A	175A
AC Disconnection Type	Load-rated AC switch	
AC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
System		
Topology	Transformerless	
Max. Efficiency	99.1%	
CEC Efficiency	98.5%	
Stand-by / Night Consumption	<4W	
Environment		
Enclosure Protection Degree	NEMA Type 4X	
Cooling Method	Variable speed cooling fans	
Operating Temperature Range	-22°F to +140°F / -30°C to +60°C (derating from +113°F / +45°C)	
Non-Operating Temperature Range[5]	-40°F to +158°F / -40°C to +70°C maximum	
Operating Humidity	0-100%	
Operating Altitude	8202ft / 2500m (no derating)	
Audible Noise	<65dBA@1m and 25°C	
Display and Communication		
User Interface and Display	LED Indicators, WiFi + APP	
Inverter Monitoring	Modbus RS485	
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)	
Modbus Data Mapping	SunSpec/CPS	
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)	
Mechanical		
Dimensions (WxHxD)	45.28x24.25x9.84in (1150x616x250mm) with Standard Wire-box 39.37x24.25x9.84in (1000x616x250mm) with Centralized Wire-box	
Weight	Inverter: 121lbs / 55kg; Wire-box: 55lbs / 25kg (Standard Wire-box); 33lbs / 15kg (Centralized Wire-box)	
Mounting / Installation Angle	15 - 90 degrees from horizontal (vertical or angled)	
AC Termination	M10 Stud Type Terminal Block [3Φ] (Wire range: 1/0AWG - 500kcmil CU/AL, Lugs not supplied) Screw Clamp Terminal Block [N] (#12 - 1/0AWG CU/AL)	
DC Termination	Screw Clamp Fuse Holder (Wire range: #12 - #6AWG CU) - Standard Wire-box Busbar, M8 PEMserts (Wire range: #1AWG - 250kcmil CU/AL, Lugs not supplied) - Centralized Wire-box	
Fused String Inputs	15A or 20A fuses provided (Determined by product SKU)	
Safety		
Safety and EMC Standard	UL1741-SA-2016, CSA-C22.2 NO.107.1-01, IEEE1547a-2014; FCC PART15	
Selectable Grid Standard	IEEE 1547a-2014, CA Rule 21, ISO-NE	
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAr, Freq-Watt, Volt-Watt	
Warranty		
Standard[6]	5 years	
Extended Terms	10, 15 and 20 years	

1) See user manual for further information regarding MPPT Voltage Range when operating at non-unity PF
2) "Max. AC Apparent Power" rating valid within MPPT voltage range and temperature range of -30°C to +40°C (-22°F to +104°F) for 100KW PF ≥0.9 and 125KW PF ≥0.95
3) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard
4) Wye neutral-grounded, Delta may not be corner-grounded
5) See user manual for further requirements regarding non-operating conditions
6) 5 year warranty effective for units purchased after October 1st, 2019

STORMWATER MANAGEMENT COMMISSION

WATERSHED DEVELOPMENT PERMIT NUMBER WDP-20-383 HAS BEEN SECURED

Project: Prairie Trail School Solar Facility

Date Issued: August 5, 2020

Lat/Long: 42.433028, -87.898105

PIN No.: 0325304001

Conditions:
- Install and maintain all SE/SC measures
- Minimize environmental impacts

Issued By: Robert D. Gardiner, PE, CFM
Permit Engineer

Kurt A. Woolford, PE, CFM, LEED AP
Chief Engineer

Notice to Contractors and Owners

Post this card at the site, visible from the street and so located as to permit the inspector to record the indicated inspections on the placard. Do not post in the interior of a building.

Inspectors and sheriff's deputies are instructed to stop all work where this permit card is not displayed.

Always mention the Watershed Development Permit number when referring to this project. If this card becomes mislaid or lost please contact Lake County Stormwater Management Commission for a replacement.

Lake County Stormwater Management Commission (847) 377-7700