

GENERAL NOTES:

- ALL CONSTRUCTION FOR UNIRAC'S "GROUND FIXED TILT" (GFT) RACKING SYSTEM AND FOUNDATION REQUIREMENTS SHALL CONFORM TO THE 2009, 2012, 2015 & 2018 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC).
- WHEREVER THE TERM CONTRACTOR IS USED IN THE CONSTRUCTION DOCUMENTS, IT SHALL BE DEFINED TO MEAN THE GENERAL CONTRACTOR AND ANY SUB-CONTRACTOR COLLECTIVELY AS APPLICABLE AND AS REQUIRED.
- THE CONTRACT "STRUCTURAL RACKING" DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS, METHOD, OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE RACKING SYSTEM FROM THE POINT OF MATERIAL DELIVERY THROUGH THE COMPLETION OF CONSTRUCTION. UNIRAC AND THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION. UNIRAC AND THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR CONSTRUCTION SITE SAFETY, OR SAFETY PRECAUTIONS AND PROGRAMS INCIDENT HERETO.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ENSURE THAT ALL WORK IS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY STRUCTURAL INSPECTION/OBSERVATION PROVIDED BY OTHERS DOES NOT RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY.
- ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS THAT ARE ENCOUNTERED AT A LATER DATE AND ARE DECLARED TO BE SIGNIFICANT BY THE RACKING DISTRIBUTOR SHALL BE CORRECTED BY THE CONTRACTOR (AT THE CONTRACTOR'S EXPENSE).
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATE SITE CONDITIONS WITH THESE DRAWINGS PRIOR TO BIDDING OR THE START OF CONSTRUCTION. ANY CONFLICTS, DISCREPANCIES, OR OMISSIONS SHALL BE RESOLVED THROUGH YOUR RACKING DISTRIBUTOR PRIOR TO PROCEEDING.
- DO NOT SCALE OFF OF THESE DRAWINGS. WRITTEN DIMENSIONS SHALL BE USED OR WHERE NO DIMENSION IS PROVIDED CONSULT WITH YOUR RACKING DISTRIBUTOR FOR CLARIFICATION BEFORE PROCEEDING WITH THE BID OR THE WORK.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EQUIPMENT AND INSTALLATION PROCESS (MEANS AND METHODS) ARE APPROPRIATE FOR THE FOUNDATIONS AND THAT THE PILES ARE INSTALLED TO THE SPECIFIED TOLERANCES. UNIRAC IS NOT RESPONSIBLE FOR DAMAGED AND/OR OUT-OF-TOLERANCE PILES DUE TO IMPROPER INSTALLATION EQUIPMENT, METHODS, AND SOIL RELATED ISSUES INCLUDING DENSE SOILS, GRAVEL, OR BEDROCK.
- WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER (MOST CONSERVATIVE) REQUIREMENTS SHALL GOVERN. WHERE NO SPECIFIC DETAIL IS SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, OR IF THERE IS NO SIMILAR WORK, THEN CONSTRUCTION SHALL CONFORM TO INDUSTRY STANDARDS. CONTRACTOR MUST INFORM UNIRAC OF ANY DISCREPANCIES.
- REFER TO SITE PLAN, PILE LAYOUT DRAWING, ELECTRICAL DRAWINGS AND/OR OTHER CIVIL DRAWINGS FOR SPECIFIC PILE LOCATIONS, NORTH-SOUTH PILE SPACING, LOCATION AND DETAILS OF CURBS, INVERTER/EQUIPMENT PADS, TRENCHING/CONDUIT LOCATIONS, JUNCTION BOXES, SITE WORK ITEMS, ETC. AND DIMENSIONS NOT SHOWN ON STRUCTURAL RACKING DRAWINGS.
- CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, EXISTING FOUNDATIONS, OR OTHER.
- ASTM SPECIFICATIONS ON THE DRAWINGS SHALL BE OF THE LATEST ASTM STANDARD SPECIFICATION.
- ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF THE LOCAL JURISDICTION.
- THE FOLLOWING DESIGN CRITERIA ARE EXCLUDED FROM THE RACKING AND FOUNDATION DESIGN: FLOOD LOADING, DEBRIS LOADING, DYNAMIC ANALYSIS, ACTS OF GOD (TORNADO, HURRICANE, WATER INUNDATION LOADING, ETC.), EROSION, EXPANSIVE SOILS, FROST HEAVE, SOIL LIQUEFACTION, DYNAMIC LOADING FROM SEISMIC EVENTS AND CONDITIONS. THE DESIGN CAN CONSIDER THESE CRITERIA FOR SPECIFIC PROJECTS IN A SEPARATE DOCUMENT FROM UNIRAC OR BY A THIRD PARTY ENGINEER.
- DESIGN CRITERIA PER ASCE 7-05, 7-10, OR ASCE 7-16":
 DESIGN WIND SPEED = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 GROUND SNOW LOAD = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 ICE THICKNESS = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 ICE LOAD WIND SPEED = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 SEISMIC S_s = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 SEISMIC S₁ = VARIES (SEE DESIGN PACKAGE AND STATE LETTER)
 SOIL SITE CLASS = D
 WIND EXPOSURE CATEGORY = B OR C (SEE LETTER)
 HURRICANE ZONE = SEE LETTER
 RISK CATEGORY = I OR II (SEE LETTER)
 MINIMUM OF 20' OFFSET FROM NEAREST ADJACENT BUILDING (TO AVOID SNOW DRIFT.)
- "DESIGN WIND PRESSURES PER ASCE 7-05, SECTION 6.5.13, "WIND LOADS ON OPEN BUILDINGS WITH MONOSLOPE, PITCHED OR TROUGHED ROOFS", AND SECTION 6.5.13.3, "COMPONENTS AND CLADDING" FOR MONOSLOPE FREE ROOFS, ASCE 7-10, SECTION 27.4.3, "WIND LOAD ON OPEN BUILDING WITH MONOSLOPE, PITCHED OR TROUGHED FREE ROOFS", AND SECTION 30.7.1, "COMPONENTS AND CLADDING" FOR MONOSLOPED PITCHED OR TROUGHED ROOFS, OR ASCE 7-16, SECTION 27.3.2, "WIND LOAD ON OPEN BUILDING WITH MONOSLOPE, PITCHED OR TROUGHED ROOFS", AND SECTION 30.7.2, "COMPONENTS AND CLADDING" FOR MONOSLOPE, PITCHED OR TROUGHED ROOFS.
- SOLAR REQUIREMENTS: FROM OWNER
- CORROSION PROTECTION REQUIREMENTS:
 COLD-FORMED STEEL MEMBERS = SEE MEMBER SECTION TABLE
 HARDWARE = STAINLESS STEEL OR DELTA PROTEKT
- ABOVE GRADE CORROSION PROTECTION WILL SUFFICE FOR MOST ENVIRONMENTAL CONDITIONS. BELOW GRADE CORROSION PROTECTION WILL SUFFICE FOR MOST SOILS WITH RESISTIVITY VALUES GREATER THAN 10,000 OHM/CM. IT IS THE OWNER'S RESPONSIBILITY TO DETERMINE IF THE SOILS ARE MORE CORROSIVE AND FURTHER CORROSION PROTECTION WILL BE REQUIRED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SPLICE EAST-WEST BEAMS (AS REQUIRED) TO COMPLETE THE TABLE AND AVOID SPLICE CONFLICTS SPECIFIED IN DETAIL 501 ON SHEET SR-500.
- EACH ROW CANNOT EXCEED 100 FEET IN LENGTH WITHOUT HAVING A THERMAL BREAK.

SPECIAL INSPECTION (PER CHAPTER 17 OF THE IBC):

STRUCTURAL ONLY: SPECIAL INSPECTION IS TO BE PROVIDED FOR THE ITEMS LISTED BELOW IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE BUILDING JURISDICTION. "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE BUILDING JURISDICTION INSPECTIONS REQUIRED.

- DRIVEN DEEP ELEMENTS: PERIODICALLY DURING THE PLACEMENT OF ALL DRIVEN DEEP FOUNDATION ELEMENTS ON STRUCTURAL DRAWINGS.
 - VERIFICATION OF ELEMENT MATERIALS, SIZES, AND LENGTHS.
 - OBSERVATION AND DOCUMENTATION OF DRIVING OPERATIONS. MAINTAIN A

COMPLETE AND ACCURATE RECORD FOR EACH PILE DRIVEN.
 C. VERIFICATION OF PLACEMENT LOCATIONS AND PLUMBNESS, TYPE OF PILE DRIVER, ELEVATION OF TIP AND BUTT, ANY DAMAGE TO FOUNDATION ELEMENT, ETC.

2. BOLTING: VERIFICATION OF TORQUE PER TORQUE TABLE SHOWN.

TORQUE REQUIREMENTS:		SOCKET SIZE
1/4"Ø HARDWARE :		
BEAM CLAMP	= 9 - 11 FT-LBS	9/16"
STANDARD MID 7 END CLAMPS	= 9 - 11 FT-LBS	9/16"
PRO-SERIES MID-CLAMPS	= 10 - 12 FT-LBS	1/2"
PRO-SERIES END CLAMP	= 3 FT-LBS	
5/8"Ø HARDWARE	= 54 - 66 FT-LBS	15/16"
3/4"Ø HARDWARE	= 99 - 121 FT-LBS	1-1/8"

3. CONCRETE: SEE CHAPTER 17 OF MOST CURRENT IBC FOR REQUIRED INSPECTIONS.

ALUMINUM:

- ALL ALUMINUM EAST-WEST BEAM MEMBERS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "ALUMINUM DESIGN MANUAL" BY THE ALUMINUM DESIGN ASSOCIATION, CURRENT EDITION.
- ALL ALUMINUM EAST-WEST BEAMS CONFORM TO ONE OF THE FOLLOWING:
 ALLOY: 6005A TEMPER: T61 (F_{tu} = 38 KSI, F_{cy} = 35 KSI)
 ALLOY: 6351 TEMPER: T5 (F_{tu} = 38 KSI, F_{cy} = 35 KSI)
 ALLOY: 6061 TEMPER: T6 (F_{tu} = 38 KSI, F_{cy} = 35 KSI)
- ALL ALUMINUM EAST-WEST BEAMS HAVE A MILL FINISH.
- WELDING IS NOT REQUIRED OR PERMITTED UNLESS SPECIFICALLY APPROVED BY UNIRAC AND THE ENGINEER OF RECORD.
- FIELD CUTTING OF ALUMINUM MEMBERS IS PERMITTED WHEN REQUIRED TO ACCOMMODATE PROJECT SPECIFIC MODULE WIDTHS.

HARDWARE:

- ALL 1/4"Ø HARDWARE SHALL CONFORM TO 18/8 STAINLESS STEEL (AISI 300 SERIES STAINLESS, 304) OF DIMENSIONS PER ASME B18.2.1.
- ALL 1/4"Ø SELF DRILLING SCREW HARDWARE SHALL CONFORM TO GRADE 5 SAE J429 AND ASTM A449.
- ALL 5/8"Ø AND 3/4"Ø BOLTS SHALL CONFORM TO GRADE 2 SAE J429 OR ASTM A307.
- ALL 5/8"Ø AND 3/4"Ø SERRATED FLANGE NUTS SHALL CONFORM TO ASME B.18.16.4.
- ALL 5/8"Ø AND 3/4"Ø WASHERS SHALL CONFORM TO USS TYPE A WIDE OR ANSI TYPE A-WIDE.
- UNIRAC T-BOLTS, MID CLAMPS, AND END CLAMPS ARE PROPRIETARY. TECHNICAL DATA SHEETS WITH TESTED CAPACITIES CAN BE PROVIDED UPON REQUEST.
- CORROSION PROTECTION FOR HARDWARE CAN BE FOUND IN THE GENERAL NOTES SECTION OF THIS DOCUMENT, NOTE 17.
- ALL HARDWARE RECEIVED ON SITE SHALL BE CHECKED BY CONTRACTOR AGAINST THE SPECIFICATIONS ON THIS SHEET SR-100, DIAMETERS AND LENGTHS CALLED OUT ON RACKING DETAILS SHEET SR-500, AS WELL AS THE PROJECT BILL OF MATERIAL. ANY CONFLICTS, DISCREPANCIES, OR OMISSIONS MUST BE RESOLVED WITH THE RACKING DISTRIBUTOR AS SOON AS POSSIBLE AND PRIOR TO PROCEEDING.

SOLAR DESIGN:

UNIRAC IS NOT THE SOLAR DESIGN ENGINEER OF RECORD AND IS NOT RESPONSIBLE FOR ANY SOLAR DESIGN, OUTPUT EFFICIENCIES, SHADING, ROW SPACING, POWER PRODUCTION, ETC.

ELECTRICAL DESIGN:

UNIRAC IS NOT THE ELECTRICAL ENGINEER OF RECORD AND IS NOT RESPONSIBLE FOR THE ELECTRICAL DESIGN FOR THIS PROJECT. THE UNIRAC GFT RACKING SYSTEM IS CERTIFIED TO UL-2703 WHEN PROPERLY INSTALLED. SEE THE GFT INSTALLATION GUIDE FOR MORE DETAIL.

CIVIL/GRADING/SITE WORK:

UNIRAC IS NOT THE CIVIL ENGINEER OF RECORD FOR THIS PROJECT AND IS NOT RESPONSIBLE FOR ANY SITE GRADING, SURVEYING, TRENCHING, EARTHWORK, LAYOUT, STORM WATER POLLUTION PREVENTION PLANS, SURFACE WATER MITIGATION, PERMITTING, OR EROSION CONTROL PLANS.

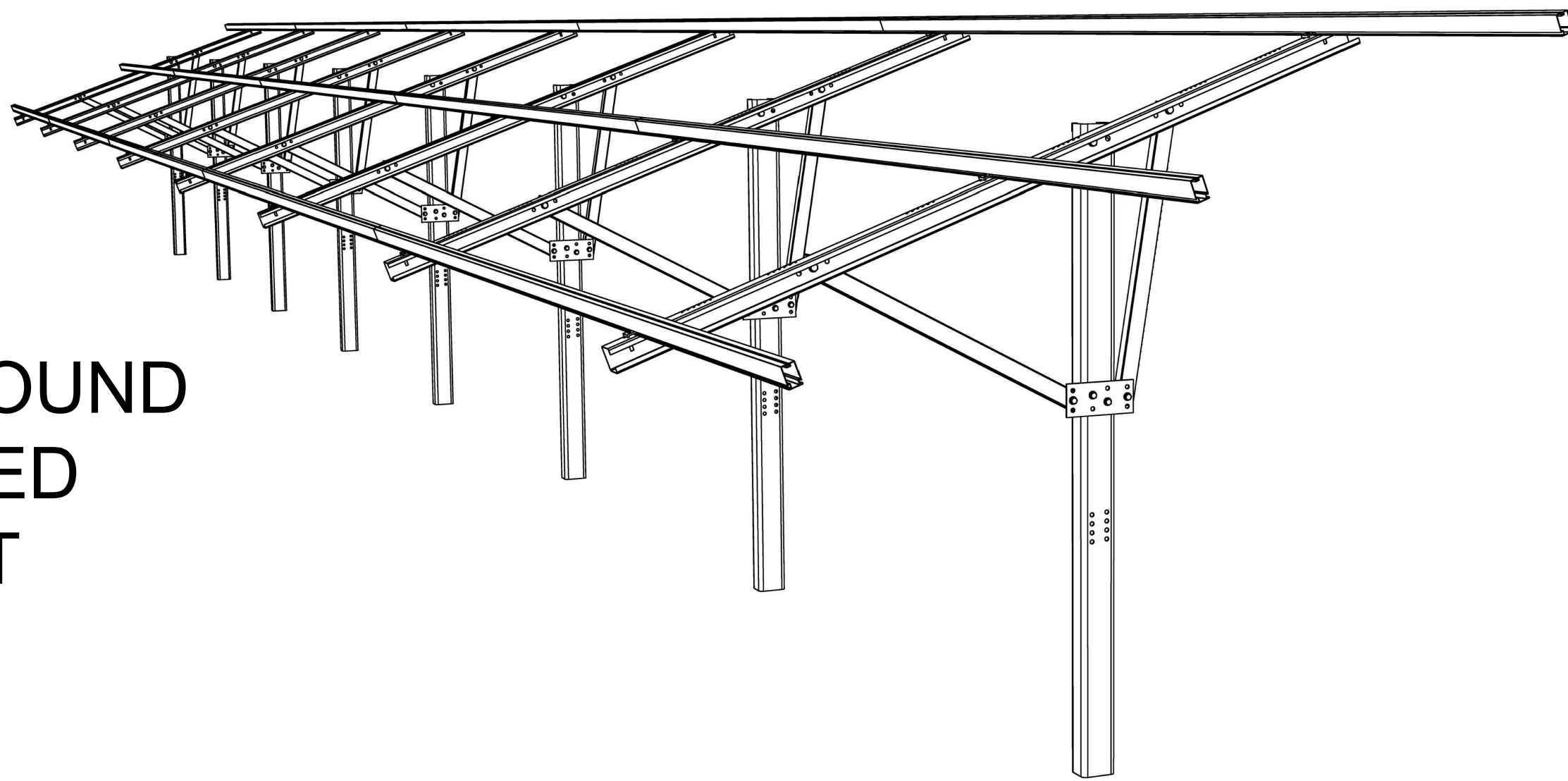
MATERIAL MANAGEMENT:

PRIOR TO INSTALLATION, ALL MATERIALS MUST BE STORED PROPERLY. MATERIALS REMAINING IN PLACE FOR MORE THAN ONE WEEK MUST BE IN OPEN AIR CONDITIONS (I.E. OFF THE GROUND). IF TARPS OR OTHER PROTECTIVE COVERS ARE USED, THE ENDS SHALL BE LEFT OPEN FOR VENTILATION. TIGHT FITTING COVERINGS ARE NOT RECOMMENDED AS MATERIAL COATINGS ARE NOT DESIGNED FOR THIS CONDITION. LONG GOODS STORED HORIZONTALLY FOR MORE THAN ONE WEEK SHOULD NOT REMAIN BUNDLED TO PREVENT ACCELERATED CORROSION. BLOCKING IS REQUIRED BENEATH THE LONG GOODS AT PROPER INTERVALS TO ENSURE THE PRODUCT IS OFF THE GROUND.

FOUNDATION NOTES:

- SEE THE "COLD FORMED STEEL" SECTION FOR STEEL AND GALVANIZATION REQUIREMENTS FOR FOUNDATIONS.
- UNIRAC SHALL NOT BE HELD LIABLE FOR ANY UTILITY LINES DAMAGED DURING FOUNDATION INSTALLATION. IT SHALL BE THE RESPONSIBILITIES OF OTHERS TO DETERMINE THE PLACEMENT OF EXISTING AND NEW UTILITY LINES.
- PILES ARE DESIGNED TO SOIL CONDITIONS STATED IN IBC. IT IS THE CLIENTS RESPONSIBILITY TO VERIFY SOILS MEET THE MINIMUM REQUIREMENTS. UNIRAC AND OR THE ENGINEER OF RECORD WILL NOT BE HELD RESPONSIBLE FOR FOUNDATIONS INSTALLED IN SOILS WITH LOWER CAPACITY OR FOR IMPROPER FOUNDATION INSTALLATION OR CHOICE.
- SOIL CONDITIONS ARE ASSUMED TO HAVE PROPERTIES OF CLASS 4 OR BETTER STATED IN IBC.

NOTE: SEE GFT INSTALLATION GUIDE FOR SYSTEM ADJUSTMENTS AND TOLERANCES



UNIRAC GFT FIXED TILT

- THE RACKING DISTRIBUTOR SHALL NOT BE HELD RESPONSIBLE FOR DAMAGE TO THE PILE AFTER IT ARRIVES TO THE SITE OR THE POINT OF AGREED DROP OFF.
- IF DAMAGE OCCURS WHERE GALVANIZATION IS REMOVED FROM THE PILE, THE PILE SHALL BE TOUCHED UP WITH GALVANIZATION OF EQUAL THICKNESS PRIOR TO INSTALLATION AT THE CONTRACTOR'S EXPENSE.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT VIBRATIONS FROM DRIVING EQUIPMENT AND PILE INSTALLATION DO NOT AFFECT ANY ADJACENT PROPERTY STRUCTURES. THE CONTRACTOR SHALL BE HELD LIABLE FOR DAMAGE TO THE ADJACENT PROPERTY IF DAMAGE OCCURS.
- ANY EXCAVATIONS NEAR THE PILE SHALL NOT BE MADE CLOSER THAN 2 FEET FROM PILE OR DEEPER THAN 2 FEET FROM GRADE. IF EXCAVATIONS ARE NECESSARY, THEY SHALL BE ON THE EAST OR WEST SIDE OF THE PILE. SHALL BE TEMPORARY, AND SHALL BE COMPACTED PER THE ENGINEER OF RECORD'S RECOMMENDATIONS. NORTH SOUTH EXCAVATIONS SHALL BE A MINIMUM OF 3 FEET FROM THE PILE. IF EXCAVATIONS EXCEED THESE DIMENSIONAL REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY UNIRAC. THE ENGINEER OF RECORD SHALL BE INFORMED OF ANY EXCAVATION AND COMPACTION EFFORTS ON THE SITE.
- PILES MAY NOT BE ALTERED IN ANY WAY WITHOUT UNIRAC WRITTEN APPROVAL. UNLESS IT IS TO CUT A PILE FOR USE IN THE CONCRETE FOUNDATION OPTION.
- PILES HAVE BEEN DESIGNED FOR STATIC LOADING UNDER THE DESIGN CRITERIA IN GENERAL NOTE 15.

QUALITY ASSURANCE AND SPECIAL INSPECTION:

- TESTING LABORATORY: RETAINED BY OWNER AND SATISFACTORY TO ENGINEER OF RECORD (THROUGH UNIRAC) AND GOVERNING CODE AUTHORITY TO PERFORM REQUIRED TESTS AND INSPECTIONS OF THIS CONTRACT AND APPLICABLE CODE. THE TYPE AND FREQUENCY OF SPECIAL INSPECTION, STRUCTURAL TESTING AND SUBSEQUENT REPORTING SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC).

CONCRETE:

- ALL ASPECTS OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318-14, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND THE LATEST EDITION OF "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" ACI 301, WITH MODIFICATIONS AS NOTED ON THE PROJECT DRAWINGS AND/OR SPECIFICATIONS.
- HOT WEATHER CONCRETING SHALL CONFORM TO ACI 305, "HOT WEATHER CONCRETING".
- COLD WEATHER CONCRETING SHALL CONFORM TO ACI 306, "COLD WEATHER CONCRETING".
- ALL MIX DESIGNS SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE WET STAMPED BY A CIVIL ENGINEER LICENSED IN THE JURISDICTION OF THE PROJECT, AS STIPULATED IN IBC CHAPTER 19.
- TYPE II PORTLAND CEMENT SHALL BE USED AT ALL CONCRETE ALTERNATE FOUNDATION LOCATIONS FOR THE RACKING SYSTEM - WHERE CONCRETE IS REQUIRED AS AN ALTERNATE SOLUTION. (TYPE V CEMENT SHALL BE USED WHERE THE CONCRETE IS IN CONTACT WITH SOIL CONTAINING SULFATES IN EXCESS OF 3000 PPM. CONCRETE THAT WILL BE EXPOSED TO SULFATE-CONTAINING SOLUTIONS SHALL COMPLY WITH IBC CHAPTER 19 AND ACI 318 SEVERE AND VERY SEVERE SULFATE EXPOSURES AS IDENTIFIED IN THE PROJECT GEOTECHNICAL REPORT. THE WATER-CEMENT RATIO SHALL NOT EXCEED 0.44.)
- IN THE PRESENCE OF REACTIVE AGGREGATE, CLASS F FLY ASH OR OTHER ASR MITIGATING ADMIXTURE SHALL BE INCORPORATED IN THE MIX SUCH THAT THE EXPANSION PRODUCED BY THE MORTAR-BAR METHOD (ASTM C1567) USING BLENDED AGGREGATES IS LESS THAN 0.1% AT 14 DAYS IMMERSED IN SOLUTION. WHERE CLASS F FLY ASH IS SELECTED AS A SUPPLEMENTAL ADMIXTURE, THE LOSS OF IGNITION SHALL BE LIMITED TO 2%. THE CONTRACTOR SHALL SUBMIT ALL CERTIFICATES SHOWING THE FLY ASH IS IN ACCORDANCE WITH ASTM 6618.
- DO NOT USE CONCRETE OR GROUT CONTAINING CHLORIDES. WATER SHALL CONTAIN A CHLORIDE CONTENT LESS THAN 1000 PPM AS C1. DO NOT USE CONCRETE CONTAINING ALKALI-CARBONATE AND BICARBONATES PRESENT IN AGGREGATE IN EXCESS OF 1000 PPM. TESTS FOR THEIR EFFECT ON SETTING TIME AND 28-DAY STRENGTH SHALL BE EVALUATED.
- HARD ROCK CONCRETE AGGREGATE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF THE ASTM C33 CLASS DESIGNATION 35 AND PROJECT SPECIFICATIONS. EXCEPTIONS MAY BE USED ONLY WITH APPROVAL OF THE STRUCTURAL ENGINEER. PROVIDE CONCRETE MIX DESIGN WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN 0.0005 INCHES/INCH.
- MAXIMUM SIZED AGGREGATE OF 0.75".
- SLUMP RANGE OF 3" ± 1" PER ASTM C143.
- CONCRETE PLACEMENT SHALL BE IN ACCORDANCE WITH ACI STANDARD 304 AND PROJECT SPECIFICATIONS.
- THE UNIRAC PILE SHALL BE CENTERED IN THE HOLE TO MAXIMIZE CONCRETE COVER AND THE HOLE SHALL BE CENTERED IN THE SPECIFIED LOCATION TO ALLOW FOR RACKING INSTALLABILITY.
- THE TOP OF THE CONCRETE SHALL BE SMOOTHED AND SLOPED AT 2% TO FACILITATE POSITIVE DRAINAGE AWAY FROM THE UNIRAC PILE.
- CONCRETE CHLORIDE PERMEABILITY SHALL BE CLASSIFIED AS HAVING "NEGGLIGIBLE" TO "VERY LOW" CHLORIDE ION PERMEABILITY PER ASTM C1202.
- CONCRETE SHOULD BE PLACED IN A CONTINUOUS FLOW WITHOUT SEGREGATING THE CONCRETE. DO NOT ALLOW CONCRETE TO FREE FALL MORE THAN 5 FEET UNLESS MEASURES ARE TAKEN TO ENSURE THAT CONCRETE DOES NOT HIT THE SIDES OF THE EXCAVATION DURING FREE FALL.
- MECHANICALLY VIBRATE THE CONCRETE AT EACH PIER.
- PRECAUTIONS SHOULD BE TAKEN DURING THE INSTALLATION OF PIERS TO MINIMIZE THE POSSIBILITY OF CAVING. PIER EXCAVATIONS SHOULD BE FILLED WITH CONCRETE AS SOON AFTER DRILLING AND INSPECTION AS POSSIBLE. SONOTUBES (OR EQUIVALENT) CAN BE UTILIZED, AS REQUIRED, ONLY IN THE UPPER 2 FT. OF THE AUGERED/DRILLED HOLE.
- CONCRETE MIXING OPERATION SHALL CONFORM TO ASTM C-94.
- AGGREGATE FOR HARDROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF THE ASTM C-33 AND PROJECT SPECIFICATIONS. EXCEPTIONS MAY BE USED ONLY WITH THE PERMISSION OF THE ENGINEER OF RECORD.
- THE DENSITY OF CONCRETE SHALL BE BETWEEN 140 PCF TO 150 PCF. THE 28-DAY STRENGTH OF CONCRETE SHALL BE 2500 PSI WITH A MAXIMUM WATER-CEMENT RATIO OF 0.40.

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
SR - 100	GENERAL STRUCTURAL RACKING NOTES
SR - 200	GFT TABLE CROSS-SECTION AND PARTS LIST (20 DEGREE TILT)
SR - 201	GFT E-W BEAM LOCATION OPTIONS (20 DEGREE TILT)
SR - 300	GFT TABLE CROSS-SECTION AND PARTS LIST (30 DEGREE TILT)
SR - 301	GFT E-W BEAM LOCATION OPTIONS (30 DEGREE TILT)
SR - 400	FOUNDATION OPTION 1 DETAILS
SR - 401	FOUNDATION OPTION 2 DETAILS
SR - 402	FOUNDATION OPTION 3 DETAILS
SR - 403	FOUNDATION OPTION 4 DETAILS
SR - 404	FOUNDATION OPTION 5 DETAILS
SR - 500	RACKING DETAILS

REVISION BLOCK		
MARK	DATE	DESCRIPTION
0	08/14/2019	Original Release
1	08/22/2019	Rev-1
2	03/30/2020	Rev-2
3	07/30/2020	Rev-3

OWNER/CLIENT:

ENGINEERING CONSULTANT:

PROFESSIONAL SEAL

SEE STATE SPECIFIC STAMPED & SIGNED GFT CERTIFICATION LETTER

UNIRAC'S GFT
 GROUND FIXED TILT
 STRUCTURAL RACKING DRAWINGS

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 ENGINEERED BY: JRS
 DRAFTED BY: JRS
 REVIEWED BY: EP
 ORIGINAL RELEASE DATE: 08/14/2019
 DRAWING SHEET SIZE: D - 24x36

SHEET TITLE
GENERAL STRUCTURAL RACKING NOTES