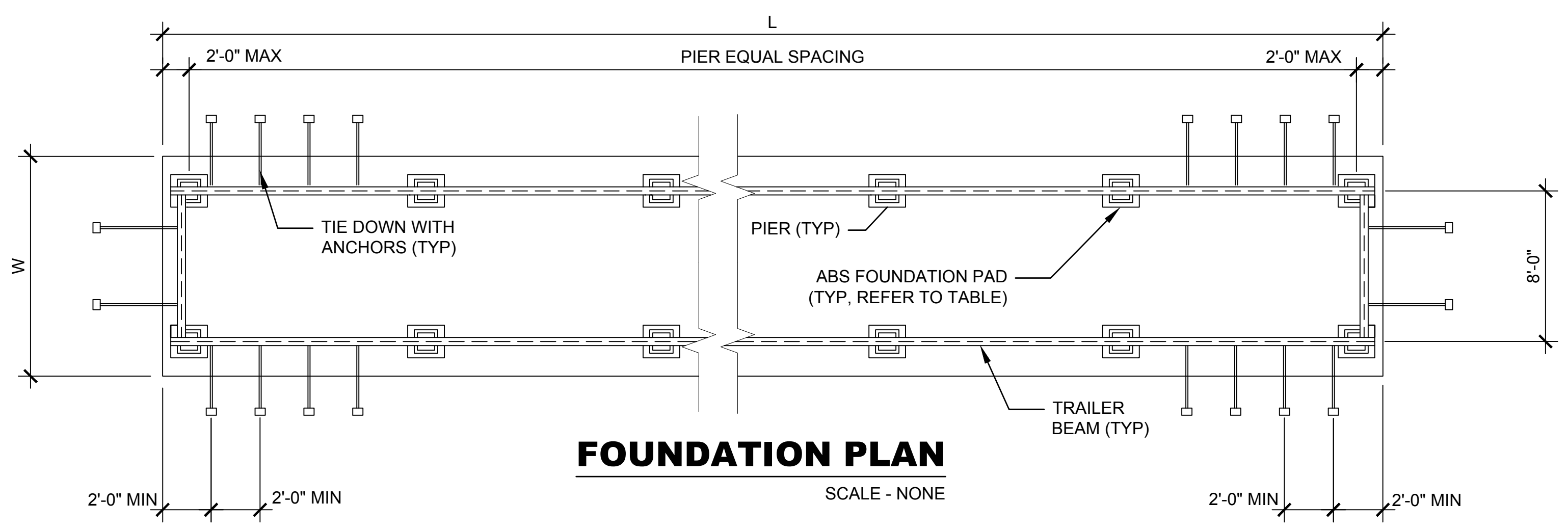
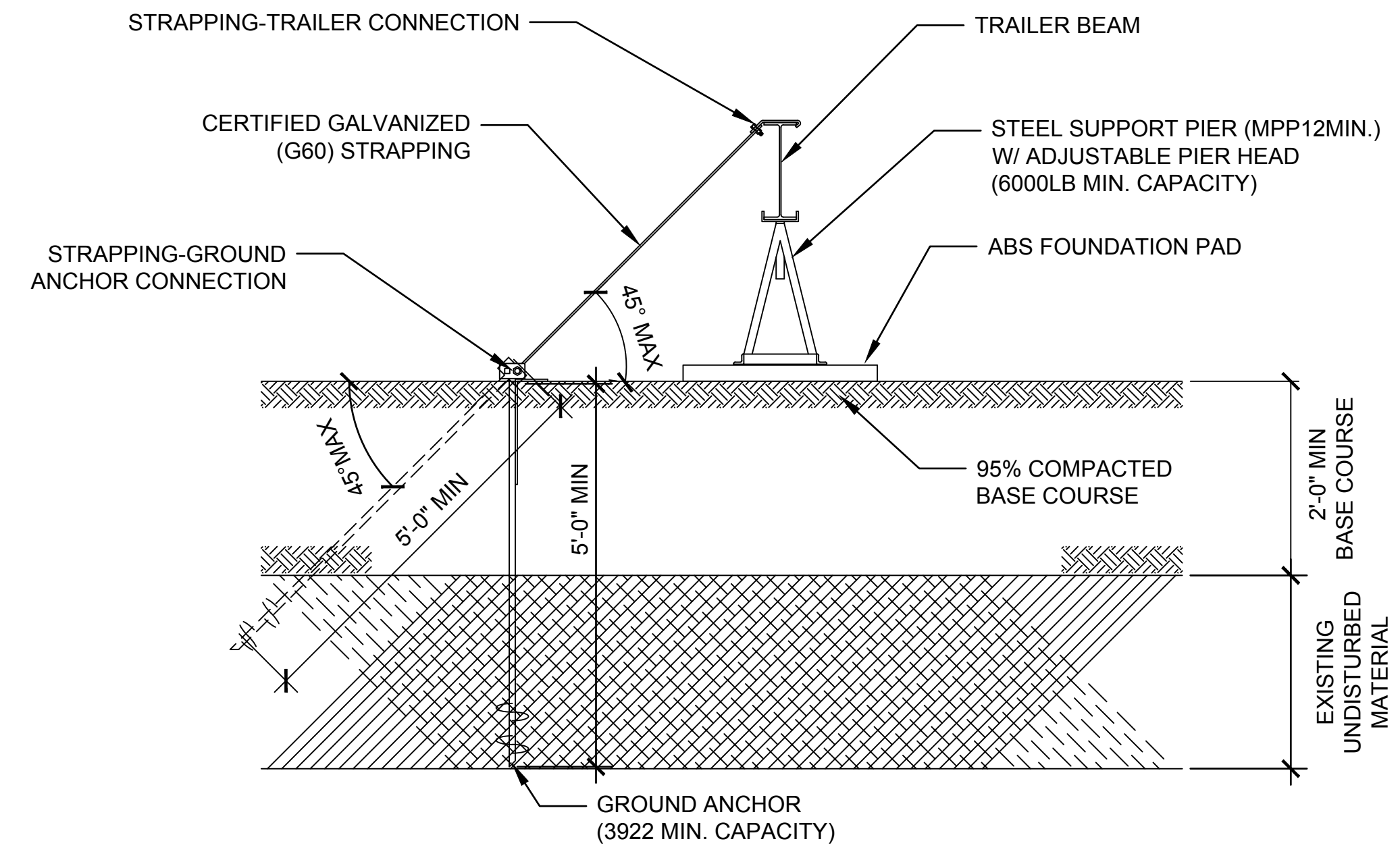


DETAILS DEVELOPED FOR ML-4, RC II INSTALLATIONS WITH ULTIMATE WIND SPEED OF 115 MPH



**FOUNDATION PLAN**  
SCALE - NONE



**ANCHORAGE OPTIONS**

**NOTES FOR EOR**  
(DO NOT INCLUDE ON CONSTRUCTION DRAWINGS)

- PROVIDE THE TABULATED TIE-DOWN QUANTITIES FROM ST-Z1052-3 ASSOCIATED WITH THE APPLICABLE VALUE OF THE TOPOGRAPHIC FACTOR,  $K_{ZT}$ . IF PROJECT SPECIFIC  $K_{ZT}$  VALUE DOES NOT MATCH A TABLE VALUE, USE THE TABLE WITH A HIGHER  $K_{ZT}$ .
- PROVIDE THE TIE-DOWN AND PIER SPACING. ALSO, IF NECESSARY, EDIT THE 5'-0" GROUND-ANCHOR LENGTH AND THE 3922-LB MIN. CAPACITY (FOR M607) STATED IN THE "OPTION DETAILS".
- THE CONTENT OF THE TABLE IN THE DRAWING IS BASED ON LANL CALCULATION CAL-11-00-000-0008 REV 1.
- OTHER THAN THE 6'-0" MIN. TIE-DOWN SPACING (REF. DESIGN CRITERION #4 a.), THE DIMENSIONS INDICATED ON THE FOUNDATION PLAN FOR TIE-DOWN AND PIER LOCATIONS ARE HISTORICAL RECOMMENDATIONS.
- THE BASIS FOR THE CONTENT OF THE DESIGN CRITERIA PERTAINING TO SC & BC IS, IN SHORT, A RESULT OF THE FOLLOWING FACTORS:
  - PER MHII, THE CAPACITY OF A GIVEN FOUNDATION-PAD SIZE IS BASED ON THREE VALUES FOR BC; HENCE, AS INDICATED IN THE TABLE, A BC VALUE IS REQUIRED IN ORDER TO DETERMINE THE NUMBER OF PIERS THAT MUST BE INSTALLED.
  - PER MHII, THE CAPACITY OF A GIVEN GROUND-ANCHOR SIZE IS BASED ON FIVE VALUES OF SC.
  - THE BASIS FOR THE 5 VALUES OF SC- A TABLE IN 24 CFR PART 3285- HAS A DIFFERENT "RELATIONSHIP" WITH BC THAN THAT OF IBC TABLE 1806.2.
  - A STANDARD DETAIL THAT INVOLVES SOIL IS MOST USABLE/USER FRIENDLY IF IT'S APPLICABLE TO PROJECTS THAT DON'T REQUIRE/WANT A GEOTECHNICAL INVESTIGATION.
- MANUFACTURED BUILDINGS/TRAILERS MUST BE DESIGNED/BUILT TO MEET LANL REQUIREMENTS, ESPECIALLY ESM CHAPTERS 5 AND 16.

- DESIGN CRITERIA:**  
THIS STANDARD DRAWING (ST-Z1052-1) INCLUDES A FOUNDATION SUPPORT SYSTEM FOR TEMPORARY (PER LANL ESM CH. 16 SECT. IBC-GEN PARA 9.0), WOOD FRAMED, SINGLE-WIDE, MANUFACTURED BUILDING WITH AN EIGHT FOOT WIDE, STRUCTURAL STEEL, TRAILER.
- THE INTENDED USE OF THE BUILDING(S) MUST BE SUCH THAT CATEGORIZATION UNDER IBC RISK CATEGORY I OR II IS APPROPRIATE (e.g., MINOR STORAGE FACILITY, BUSINESS-OFFICE BUILDING, ETC).
    - TIE-DOWN: CERTIFIED GALVANIZED STRAPPING; HUD-APPROVED GROUND ANCHOR; ANCHOR-STABILIZER PLATE (FOR VERTICAL ANCHOR OPTION); AND HARDWARE TO CONNECT THE STRAPPING TO THE TRAILER, AND THE STRAPPING TO THE GROUND ANCHOR. CAPACITY = 4125 LB OR 3150 LB WORKING LOAD W/A 1.5 FACTOR OF SAFETY.
    - PIER: STEEL SUPPORT PIER, PIER HEAD, AND ACRYLONITRILE BUTADIENE STYRENE (ABS) FOUNDATION PAD.
    - COMPONENT CAPACITIES INDICATED IN THE DRAWING ARE IN TERMS OF "WORKING (VS. ULTIMATE) LOAD."
  - SOME OF THE TERMINOLOGY USED IN THE DRAWING COMES FROM THE TIE-DOWN ENGINEERING PUBLICATION MANUFACTURED HOUSING INSTALLATION (MHII, 5/7/2015), AND THE REST COMES FROM THE SYSTEMS BUILDING RESEARCH ALLIANCE (FORMERLY MHRA) PUBLICATION *GUIDE TO FOUNDATION AND SUPPORT SYSTEMS FOR MANUFACTURED HOMES*.
    - TIE-DOWNS MUST BE SEPARATED BY A MINIMUM OF 6'-0" IN ANY DIRECTION.
    - IF REQUIRED BY THE BUILDING MANUFACTURE'S INSTALLATION INSTRUCTIONS, INCREASE THE NUMBER OF PIERS.
  - USE THE TABLE ON DRAWING ST-Z1052-3 TO DETERMINE THE TOTAL NUMBER OF TIE-DOWNS AND PIERS, AND THEIR RESPECTIVE LOCATIONS/SPACING.
    - IF SC & BC ARE DETERMINED THEN THE GROUND-ANCHOR MODEL SELECTED SHALL BE THAT OF A HUD-APPROVED GROUND ANCHOR PERMITTED FOR USE WITH THE PARTICULAR SC (PER MHII, OR APPROVED EQUAL).
    - IF SC & BC ARE ASSUMED THEN THE GROUND-ANCHOR MODEL SELECTED FOR USE SHALL BE M607 (FROM MHII), OR APPROVED EQUAL.
  - SOIL CLASS AND BEARING CAPACITY (SC & BC): SELECTION OF THE PART/MODEL NUMBER OF TIE-DOWN GROUND ANCHOR, AND THE NUMBER OF PIERS, SHALL BE BASED ON EITHER THE DETERMINATION OR THE ASSUMPTION OF SC & BC IN ACCORDANCE WITH A AND B BELOW.
    - IF SC & BC ARE DETERMINED THEN THE NUMBER OF PIERS SELECTED FOR USE SHALL BE BASED ON ANY OF THE FOUR ABS FOUNDATION PAD SIZES, AND BC=1500 PSF, OR 3000 PSF, WHICHEVER IS COMMENSURATE WITH THE ACTUAL BC.
    - IF SC & BC ARE ASSUMED THEN THE NUMBER OF PIERS SELECTED FOR USE SHALL BE BASED ON ANY OF THE FOUR ABS FOUNDATION PAD SIZES AND BC=1500 PSF.

- CONSTRUCTION CRITERIA:**
- AS INDICATED IN THE DETAIL, THE GROUND ANCHORS CAN BE VERTICAL OR IN-LINE.
  - EACH OF THE TIE-DOWN AND PIER COMPONENTS PROVIDED (REF. DESIGN CRITERION #2) SHALL BE IDENTIFIED BY PART/MODEL NUMBER FROM MHII (REF. DESIGN CRITERION #3), OR APPROVED BY A CERTIFICATION STAMP THAT INCLUDES TIE-DOWN ENGINEERING, OR APPROVAL EQUAL.
  - GRADE UNDER EACH FOUNDATION PAD SHALL BE LEVEL, SMOOTH AND EVENLY COMPACTED. THE DEFLECTION OF THE CENTER OF A PAD SHALL NOT EXCEED 3/8".
  - PLACE EACH FOUNDATION PAD WITH GRID SIDE UP/SMOOTH SIDE DOWN.
  - CENTER THE SUPPORT PIERS ON THEIR RESPECTIVE PADS, AND ENSURE THAT ALL TIE-DOWN STRAPPING IS TAUGHT.

NO	DATE	CLASS REV	DC	DESCRIPTION	DWN	DSGN	CHKD	SUB	APP
2	5-17-2018	UNCLASS	TO	MOVED TABULAR DATA TO NEW DRAWING ST-Z1052-3. UPDATED SHEET TO MEET LANL ESM CH. 5 SECT. II REV. 10.	BW	BW	GP	GP	TO
1	10-24-16	UNCLASS	ES	UPDATED TABLE TO CORRECT ERRORS FROM ORIGINAL CALC. ADMIN. CHANGES TO CAD MANUAL REV#5 FORMAT.	SR	GP	AM	GP	TO

**ENGINEERING STANDARDS**

**FOUNDATION SUPPORT SYSTEM FOR TEMPORARY TRAILERS**

**SINGLE WIDE TRAILER REQUIREMENTS FOR IN-SITU SOIL FOUNDATION PLAN AND ANCHOR DETAILS**

DRAWN	R.MARTINEZ
DESIGN	A.MOSIMANN
CHECKED	K.SOUZA
DATE	3-7-12

TA-XX BLDG XXXX

SUBMITTED DOUG VOLKMAN APPROVED FOR RELEASE STANDARDS MANAGER: TOBIN ORUCH

**Los Alamos NATIONAL LABORATORY**

P.O. Box 1663  
Los Alamos, New Mexico 87545

SHEET **1** OF **1**

D.C.: UNCLASSIFIED REVIEWER: TOBIN ORUCH DATE: 3-7-12

PROJECT ID DRAWING NO DATE: 3-7-12

**CHAPTER 5 ST-Z1052-1** REV **2**

00% REVIEW  
NOT FOR CONSTRUCTION

D  
C  
B  
A