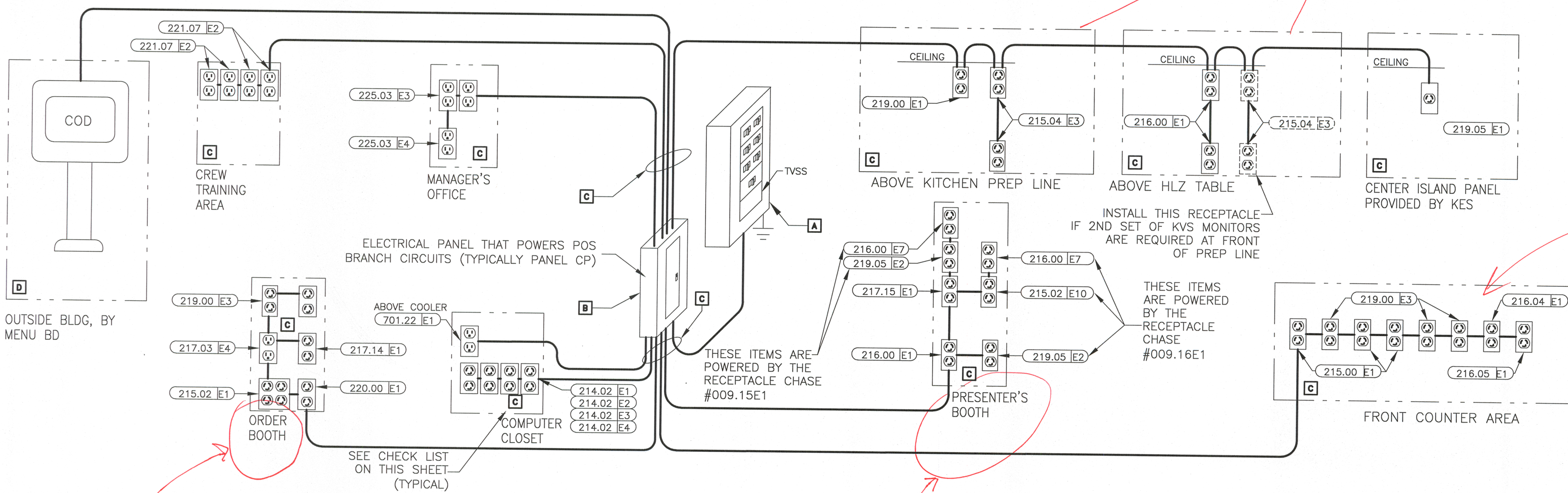
THE PURPOSE OF THIS SHEET IS TO PROVIDE A CHECKLIST AND VISUAL GUIDE SO THE INSTALLING EC CAN VERIFY THE WORK IS IN COMPLIANCE WITH MCDONALD'S SPECIFICATIONS THAT ARE CRITICAL TO THE PROPER FUNCTIONING OF OUR POINT OF SALE (POS) COMPUTER SYSTEMS.

SEE OWNER FOR LAYOUT



SEE OWNER FOR LAYOUT

SEE OWNER FOR LAYOUT

POS ELECTRICAL RISER DIAGRAM

THIS RISER DIAGRAM SHOWS THE ELECTRICAL ROUGH-INS REQUIRED FOR A TYPICAL POINT OF SALE (POS) SYSTEM IN A FREE STANDING FAST FORWARD RESTAURANT. VERIFY ALL POS ROUGH-INS AND MOUNTING HEIGHTS WITH THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION DRAWINGS.

ISOLATED GROUND SYMBOLS	
SYMBOL	DESCRIPTION
	IG4710
	IG4700A
	IG5261
	IG5262

* Elect. under front counter to be Duel point. SEE OWNER for layout
* Add 110 Dirty at each register (3)
* Install (4) 4x4 boxes under front counter: (1) at each reg plus (1) at pick up.
* Install (1) 4x4 box in CBB ceil. connect all boxes with 2' conduit stubbed in ceiling

LOW VOLTAGE CABLE MANAGEMENT SPECIFICATION

GENERAL/MATERIALS

1. THE GC OR EC SHALL FURNISH AND INSTALL A COMPLETE LOW VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZING CADDY-ERICO TYPE CAT-32 J-HOOK SUPPORTS (2-INCH DIAMETER LOOP MINIMUM). ALL J-HOOKS SHALL;
   - HAVE A MINIMUM BEARING SURFACE OF 1⅜",
   - HAVE FLARED EDGES TO PREVENT DAMAGE TO HIGH PERFORMANCE CABLES,
   - HAVE AN ELECTRO-GALVANIZED FINISH,
   - HAVE 3/8" WIDE CABLE RETAINING STRAPS,
   - BE UL LISTED AND LABELED,
   - BEAR THE UL SYMBOL MARKING ON THE PART FOR IDENTIFICATION
   - BE INSTALLED PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. THE ENTIRE INSTALLATION SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NEC SECTION 800, BICSI STANDARDS 568 & 569, ALL APPLICABLE NATIONAL, STATE, LOCAL, AND SAFETY CODES, AND McDONALD'S SPECIFICATIONS.

INSTALLATION

1. LOW VOLTAGE J-HOOK CABLE PATHWAY (FOR POS CABLING SYSTEM) SHALL BE PROVIDED FROM THE MANAGERS OFFICE (OR COMPUTER CLOSET) DATA CONDUIT STUB-UP LOCATION TO THE FOLLOWING DATA CONDUIT STUB-UP LOCATIONS (AS APPLICABLE):
   - FRONT COUNTER.
   - PRESENTERS BOOTH.
   - CASHIERS BOOTH.
   - THIRD DRIVE-THRU WINDOW(IF PRESENT).
   - CREW ROOM.
   - VALENCE WALL.
   - REMOTE ORDERING STATIONS.
   - NETPOP TELEPHONE PANEL LOCATION.

   CABLE SUPPORTS SHALL BE PROVIDED WITHIN 24 INCHES OF THESE STUB-UP LOCATIONS. ALL STUB-UP CONDUITS SHALL BE PROVIDED WITH AN INSULATED BUSHING TO PROTECT CABLES DURING INSTALLATION.
2. THE LOCATION AND ROUTING OF THE LOW VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE COORDINATED WITH ALL OTHER CONSTRUCTION TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH THE OTHER TRADES FINAL INSTALLATIONS, BOTH BEFORE AND AFTER THE CABLE MANAGEMENT SYSTEM AND THE POS CABLING ARE INSTALLED. FINAL INSTALLATION LOCATION SHALL BE READILY ACCESSIBLE TO ALLOW FOR EASE IN INSTALLATION OF THE POS CABLING BY THE POS VENDOR'S INSTALLER.
3. LOW VOLTAGE J-HOOK CABLE SUPPORTS AND APPURTENANCES SHALL BE FASTENED TO THE BUILDING STRUCTURAL AND/OR FRAMING MEMBERS. LOW VOLTAGE J-HOOK CABLE SUPPORTS SHALL NOT BE FASTENED OR UTILIZE THE CEILING GRID SUSPENSION WIRES OR T-BAR GRID FOR INSTALLATION. CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACKETS, HANGERS, RODS, CLAMPS, FLANGES, SUPPORTS, ETC. FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM. THE INSTALLATION OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM SHALL BE DONE SO THAT THE ROUTING OF THE CABLES IS PARALLEL TO AND/OR PERPENDICULAR TO FRAMING AND STRUCTURAL BUILDING MEMBERS.
4. LOW VOLTAGE J-HOOK **CABLE SUPPORTS** SHALL BE INSTALLED A MAXIMUM OF 36 INCHES APART. AT TRANSITION LOCATIONS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL J-HOOKS TO ALLOW FOR A MINIMUM ONE-FOOT RADIUS BEND AND FOR ADDITIONAL CABLE SUPPORT AT THESE TRANSITION POINTS.
5. TO AVOID **ELECTROMAGNETIC INTERFERENCE** (EMI), ALL PATHWAYS SHALL PROVIDE A MINIMUM CLEARANCE OF 4 FEET (1.2 METERS) FROM MOTORS AND TRANSFORMERS AND A MINIMUM CLEARANCE OF 1 FOOT (0.3 METERS) FROM CONDUIT AND CABLES UTILIZED FOR ELECTRICAL POWER DISTRIBUTION, OR FROM FLUORESCENT OR HID TYPE LIGHTING FIXTURES AND OTHER NON-POS LOW VOLTAGE CONDUCTORS.
6. ANY **CEILING TILES** IN THE AREA WHERE THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM IS LOCATED SHALL NOT BE INSTALLED UNTIL THE POS VENDOR'S CONTRACTOR COMPLETES THE INSTALLATION OF ALL POS CABLING.
7. ALL NON-POS LOW VOLTAGE CABLING SHALL BE INSTALLED IN A SEPARATE CABLE MANAGEMENT SYSTEM INDEPENDENT OF THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM UTILIZED FOR THE POS CABLING.
8. THE POS INSTALLER SHALL BE RESPONSIBLE TO FURNISH AND INSTALL ALL LOW VOLTAGE CABLING REQUIRED FOR THE COMPLETE AND FULLY FUNCTIONAL OPERATION OF THE POS SYSTEM. ALL POS CABLING SHALL BE INSTALLED WITHIN THE LOW-VOLTAGE CABLE MANAGEMENT SYSTEM.

ELECTRICAL POS CERTIFICATION

AS OF THE DATE BELOW, I HEREBY CERTIFY THAT ALL ELECTRICAL WORK, ELECTRICAL SERVICE AND ELECTRICAL SYSTEMS, MATERIALS AND LABOR RELATED TO THE POS ELECTRICAL INSTALLATION IN WHICH THE UNDERSIGNED ARE DIRECTLY OR INDIRECTLY RESPONSIBLE HAVE BEEN PROPERLY INSTALLED IN FULL COMPLIANCE WITH ALL CONSTRUCTION DOCUMENTS AND ALL NFPA, BUILDING, ELECTRICAL AND OTHER APPLICABLE CODES, ALONG WITH ALL OF THE REQUIREMENTS OUTLINED ON THIS DRAWING. I FURTHER CERTIFY THAT THE ELECTRIC SERVICE POWERING THE POS SYSTEM HAS BEEN PROPERLY INSTALLED BY A QUALIFIED ELECTRICIAN. SKILLED, KNOWLEDGEABLE AND TRAINED TO INSTALL ALL THE REQUIRED ELECTRICAL DISTRIBUTION COMPONENTS NECESSARY TO POWER THE POINT OF SALE (POS) SYSTEM.

GENERAL CONTRACTOR: ____________________

BY: ____________________

DATE: ____________________

ELECTRICAL CONTRACTOR: ____________________

BY: ____________________

DATE: ____________________

ALL WORK IS NOT CONSIDERED TO MEET MCDONALD'S SPECIFICATIONS UNTIL THE INSTALLED ELECTRICAL SYSTEM SUPPORTS A "YES" ANSWER FOR ALL QUESTIONS ASKED.

AS PART OF THIS PROCESS, THE EC AND THE GC WILL BE REQUIRED TO SIGN THE ELECTRICAL CERTIFICATION DOCUMENT INDICATING THAT THE INSTALLED ELECTRICAL SYSTEM MEETS MCDONALD'S SPECIFICATIONS.

NOTICE:

CHANGES SHALL NOT BE MADE TO THE POS ELECTRICAL SYSTEM AFTER THE POS EQUIPMENT HAS BEEN INSTALLED WITHOUT FIRST NOTIFYING THE POS VENDOR.

IF CHANGES ARE MADE TO THE POS ELECTRICAL SYSTEM **AFTER** THE CERTIFICATION PROCESS HAS BEEN COMPLETED, THEN A SYSTEM RE-CERTIFICATION SHALL BE REQUIRED.

REWORK ELECTRICAL SYSTEM TO BRING INTO COMPLIANCE WITH MCDONALD'S SPECIFICATIONS

ARE **ALL** BOXES CHECKED "YES"? — YES / NO

FINISHED

START HERE

A VISUALLY INSPECT THE MAIN ELECTRICAL PANEL (MDP)

yes no

- ☐ ☐ 1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
- ☐ ☐ 2. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
- ☐ ☐ 3. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
- ☐ ☐ 4. DOES THE ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIPE) TERMINATE ON THE EQUIPMENT GROUND BAR?
- ☐ ☐ 5. IS THERE AN APPROPRIATE ELECTRICAL CONNECTION (BOND) BETWEEN THE NEUTRAL BAR AND THE EQUIPMENT GROUND BAR?
- ☐ ☐ 6. DOES THE GROUNDING SYSTEM COMPLY WITH MCDONALD'S "BUILDING ELECTRICAL GROUNDING DETAIL"?
- ☐ ☐ 7. IS A SURGE PROTECTOR INSTALLED THAT COMPLIES WITH MCDONALD'S "TVSS INSTALLATION GUIDE" OR DETAIL?
- ☐ ☐ 8. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
- ☐ ☐ 9. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?

B VISUALLY INSPECT THE PANEL "CP" THAT POWERS POS

yes no

- ☐ ☐ 1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
- ☐ ☐ 2. IS AN **ISOLATED GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **INSULATED** FROM THE PANEL?
- ☐ ☐ 3. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
- ☐ ☐ 4. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
- ☐ ☐ 5. DO ALL ISOLATED GROUND CONDUCTORS (GREEN W/YELLOW STRIPE) TERMINATE ONLY TO THE ISOLATED GROUND BAR?
- ☐ ☐ 6. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
- ☐ ☐ 7. ARE ALL POS AND COD CIRCUIT BREAKERS ON THE SAME PANEL?
- ☐ ☐ 8. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
- ☐ ☐ 9. DO ALL POS & COD CIRCUIT BREAKERS HAVE A LOCKING MECHANISM ON THEIR HANDLES TO PREVENT THEM FROM BEING SHUT OFF BY MISTAKE?
- ☐ ☐ 10. DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL ONE EQUIPMENT GROUND AND ONE ISOLATED GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED (SEE POS & COD ISO GND/DED CKT DETAIL)?

VISUALLY INSPECT ALL REMAINING ELECTRICAL SUBPANELS

yes no (N/A)

- ☐ ☐ 1. IS AN **EQUIPMENT GROUND BAR** INSTALLED SUCH THAT IT IS ELECTRICALLY **CONNECTED** TO THE PANEL?
- ☐ ☐ 2. DO ALL NEUTRAL CONDUCTORS TERMINATE ONLY TO THE NEUTRAL BAR?
- ☐ ☐ 3. DO ALL EQUIPMENT GROUND CONDUCTORS TERMINATE ONLY TO THE EQUIPMENT GROUND BAR?
- ☐ ☐ 4. ARE ALL ELECTRICAL CONNECTIONS (WIRING & BUSING) PROPERLY TIGHTENED?
- ☐ ☐ 5. ARE ALL CIRCUIT BREAKERS CLEARLY LABELED?
- ☐ ☐ 6. DOES THE FEEDER CIRCUIT FOR THIS SUBPANEL CONTAIN PHASE, NEUTRAL AND ONE EQUIPMENT GROUND CONDUCTORS THAT ARE PROPERLY TERMINATED? (SEE BUILDING ELECTRICAL GROUNDING DETAIL)

C VISUALLY INSPECT THE POS BRANCH CIRCUITS

yes no

- ☐ ☐ 1. ARE THE POS BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
- ☐ ☐ 2. IF THE POS BRANCH CIRCUIT IS ROUTED ABOVE GRADE, IS IT IN A METALLIC CONDUIT?
- ☐ ☐ 3. DOES EACH POS BRANCH CIRCUIT CONTAIN: ONE PHASE (BLACK COLORED INSULATION) ONE NEUTRAL (WHITE COLORED INSULATION) ONE EQUIPMENT GROUND (GREEN COLORED INSULATION) ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
- ☐ ☐ 4. DO ALL POS BRANCH CIRCUITS TERMINATE AT EITHER AN IG4700, IG4710, IG5261, IG5262 RECEPTACLES OR ANY COMBINATION OF THESE?
- ☐ ☐ 5. ARE ALL ELECTRICAL TERMINATIONS TO IG RECEPTACLES MADE WITH SOLID #12 AWG WIRE CAPTURED AROUND THE SCREW BARREL AND SUITABLY TIGHTENED?
- ☐ ☐ 6. ARE ALL BRANCH CIRCUIT CONNECTIONS PROPERLY TIGHTENED?
- ☐ ☐ 7. ARE THE CORRECT AMOUNT AND TYPE OF IG RECEPTACLES PROVIDED AS SHOWN IN THE ELECTRICAL ROUGH-IN PLAN, NOTES AND INFORMATION?
- ☐ ☐ 8. DO ALL POS RECEPTACLES HAVE ORANGE "COMPUTER ONLY" COVERPLATES?
- ☐ ☐ 9. DO ALL POS BRANCH CIRCUITS COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?

D VISUALLY INSPECT THE POS BRANCH CIRCUIT FOR THE COD

yes no

- ☐ ☐ 1. ARE THE COD BRANCH CIRCUITS ROUTED IN THEIR OWN CONDUIT BY THEMSELVES?
- ☐ ☐ 2. DOES EACH COD BRANCH CIRCUIT CONTAIN;
  - ONE PHASE (BLACK COLORED INSULATION),
  - ONE NEUTRAL (WHITE COLORED INSULATION),
  - ONE EQUIPMENT GROUND (GREEN COLORED INSULATION),
  - ONE ISOLATED GROUND (GREEN W/YELLOW STRIPE COLORED INSULATION).
- ☐ ☐ 3. IS THE COD POWERED FROM THE SAME PANEL AS THE POS?
- ☐ ☐ 4. DOES THE BREAKER FOR THE COD HAVE A LOCKING MECHANISM ON ITS HANDLE THAT WILL PREVENT IT FROM BEING SHUT OFF?
- ☐ ☐ 5. DO THE COD BRANCH CIRCUIT(S) COMPLY WITH THE "POS & COD ISOLATED GROUND/DEDICATED CIRCUIT DETAIL?
- ☐ ☐ 6. IF THE COD HAS AN OPTICAL ISOLATOR, IS A STRAIGHT BLADE ISOLATED GROUND RECEPTACLE ON AN ISOLATE GROUND/DEDICATED CIRCUIT PROVIDED FOR IT?

REV	DATE	DESCRIPTION	BY

JOHN FERGUSON ELECTRICAL No. 112168 STATE OF TENNESSEE COMMERCE 09/02/14

PREPARED BY: CORE STATES GROUP
3401 Centerlake Drive, Suite 330
Ontario, CA 91761
Phone (909) 467-8907
Fax (909) 467-8917

PREPARED FOR: McDonald's USA, LLC

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DRAWN BY: DJ
STD ISSUE DATE: 2014_01
REVIEWED BY: SPM: PP
DATE ISSUED: 2/21/2014
C.S.G. PROJECT #: MCD-16680

TITLE: 2013 STANDARD BUILDING 45114-MASONRY/STEEL
DESCRIPTION: 8" MASONRY LOAD BEARING WALLS (QUIK-BRIK) STEEL TRUSS ROOF FRAMING CULTURED STONE ARCADE/ENTRY
SITE ID: 041-1135
SITE ADDRESS: WINCHESTER & MALCO WAY MEMPHIS, TN

41-1135.00.A
SHEET NO. E1.0
POS RISER DIAGRAM