

GENERAL:

- THE STRUCTURAL DESIGN IS BASED ON THE DESIGN REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE MODELED ON THE INTERNATIONAL BUILDING CODE, 2015 EDITION.
- ROOF DESIGN LOADS
 - LIVE LOAD 20 PSF
 - SNOW LOADS AND COEFFICIENTS
 - SNOW EXPOSURE FACTOR 1.0
 - GROUND SNOW 10 PSF
 - ROOF SNOW 10 PSF
 - IMPORTANCE FACTOR 1.0
 - THERMAL FACTOR 1.0
- LATERAL LOADS
 - WIND LOADS AND COEFFICIENTS
 - ULTIMATE DESIGN WIND VELOCITY 120 MPH
 - NOMINAL DESIGN WIND VELOCITY 93 MPH
 - EXPOSURE C
 - RISK CATEGORY B
 - INTERNAL PRESSURE COEFFICIENT ±0.18
 - SEISMIC DESIGN
 - IMPORTANCE FACTOR 1.0
 - RISK CATEGORY II
 - S₁ 0.212
 - S₂ 0.085
 - SDS 0.227
 - SD1 0.151
 - SEISMIC DESIGN CATEGORY C
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE SUPPORT AND STABILITY OF EXISTING STRUCTURE DURING ALL PHASES OF CONSTRUCTION.
- COORDINATE ALL DIMENSIONS WITH FLOOR PLAN. NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
- COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH CONCRETE, MASONRY, OR STUD WALLS AND CONCRETE FLOORS WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.
- SHOP DRAWINGS MUST INDICATE CHANGES TO CONSTRUCTION DOCUMENTS, AND THE CHANGES MUST BE CLEARLY IDENTIFIED.
- VERIFY ALL CONDITIONS, EXISTING AND NEW, SHOWN ON THE CONSTRUCTION DOCUMENTS PRIOR TO PROCEEDING WITH WORK. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR ENGINEER IN WRITTEN FORM. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR WORK DONE IN THESE AREAS WITHOUT CLARIFICATION IN WRITING FROM THE ARCHITECT/ENGINEER.
- ALL PHASES OF CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS OF THE BUILDING CODE(S) NOTED ABOVE.
- DIMENSIONS SHOWN ON CONSTRUCTION DOCUMENTS TAKE PRIORITY OVER SCALED DIMENSIONS. IN SOME CASES PLANS AND DETAILS MAY NOT BE DRAWN TO SCALE FOR CLARITY.
- DETAILS LABELED "TYPICAL" ON THESE DRAWINGS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SUCH DETAILS APPLY WHETHER OR NOT DETAILS ARE REFERENCED AT EACH LOCATION. NOTIFY ENGINEER OF ANY CONDITIONS NOT APPLICABLE TO THESE "TYPICAL" DETAILS.
- DO NOT LOAD THE CONCRETE SLAB ON GRADE WITH THE ERECTION EQUIPMENT. THE SLABS HAVE NOT BEEN DESIGNED FOR ERECTION EQUIPMENT LOADS. SHOULD THE CONTRACTOR REQUIRE ERECTION EQUIPMENT TO BE PLACED ON SLAB ON GRADE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE SLAB IN THE AFFECTED AREAS.
- DO NOT STACK CONSTRUCTION MATERIALS ON FLOORS OR ROOFS DURING CONSTRUCTION IN EXCESS OF 80 PERCENT OF THE DESIGN LIVE LOAD NOTED ON THESE PLANS.
- THESE STRUCTURAL CONSTRUCTION DOCUMENTS ARE TO BE USED IN CONJUNCTION WITH ANY ARCHITECTURAL, MECHANICAL, PLUMBING, ELECTRICAL, FIRE PROTECTION, LANDSCAPE AND CIVIL CONSTRUCTION DOCUMENTS FOR THIS PROJECT. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING THE INFORMATION SHOWN ON ALL REFERENCED PLANS. THE ARCHITECT/ENGINEER SHALL BE NOTIFIED IN WRITING SHOULD DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS BE FOUND PRIOR TO COMMENCING WITH WORK IN THE AREA WHERE THE DISCREPANCY OCCURS. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR WORK DONE IN THESE AREAS WITHOUT CLARIFICATION IN WRITING FROM THE ARCHITECT/ENGINEER.
- PRIOR TO SUBSTITUTING MANUFACTURED OR PRE-ENGINEERED PRODUCTS INDICATED IN CONSTRUCTION DOCUMENTS, APPROVAL FROM THE ARCHITECT/ENGINEER IS REQUIRED. ALL NECESSARY INFORMATION REQUIRED FOR THE PROFESSIONAL TO DETERMINE THE EQUIVALENCY OF THE SUBSTITUTED PRODUCT SUCH AS ICC EVALUATION REPORTS, ASTM REPORTS, ETC., SHALL BE PROVIDED. THE ARCHITECT/ENGINEER SHALL NOT BE RESPONSIBLE FOR SUCH REVIEWS.
- CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, AS WELL AS SEQUENCE OF CONSTRUCTION THAT DOES NOT IMPACT THE FINAL DESIGN AS SHOWN ON CONSTRUCTION DOCUMENTS.
- MECHANICAL UNITS AND OTHER SYSTEMS SHOWN ON THE STRUCTURAL PLANS INDICATE A SPECIFIC WEIGHT AND LOCATION. SHOULD THE CONTRACTOR INSTALL UNITS WITH DIFFERENT WEIGHTS OR LOCATIONS THAN SHOWN THEY SHALL PROVIDE THIS INFORMATION TO ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING BUILDING DURING CONSTRUCTION.

CONCRETE:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH THE FOLLOWING:

SLABS	3500 PSI
FOOTINGS	3000 PSI
ALL OTHER CONCRETE	3000 PSI

2. CALCIUM CHLORIDE IS NOT TO BE USED AS AN ADMIXTURE. ALL ADMIXTURES SHALL BE FREE OF ALL CHLORIDES.

3. PROVIDE CONCRETE MIX DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER FOR REVIEW PRIOR TO IMPLEMENTATION FOR EACH DIFFERENT MIX.

4. CONCRETE MIX DESIGN FOR CONCRETE SLABS ON GRADE SHALL CONTAIN A WATER REDUCING AND DENSIFYING ADMIXTURE TO REDUCE THE PERMEABILITY OF THE CONCRETE. PORTLAND CEMENT SHALL CONFORM TO ASTM C150 TYPE I OR II, LOW ALKALI UNLESS NOTED OTHERWISE. ADEQUATE FOR REGULAR WEIGHT CONCRETE SHALL CONFORM TO ASTM C33.

5. REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACEMENT OF CONCRETE. STABBING OF REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS IS NOT ALLOWED.

6. COORDINATE WITH OTHER TRADES TO ENSURE THE PROPER PLACEMENT OF OPENINGS, SLEEVES, CURBS, INSERTS, DEPRESSIONS, ETC., AS SHOWN ON CONSTRUCTION DOCUMENTS.

7. CONCRETE EXPOSED TO WEATHER IN AREAS SUBJECT TO FROST SHALL BE AIR-ENTRAINED WITH AN AIR CONTENT BETWEEN 4 AND 6 PERCENT.

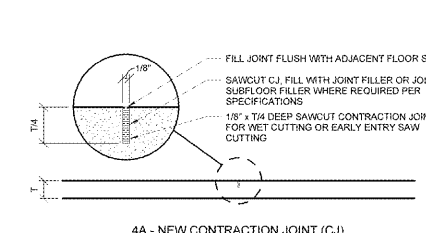
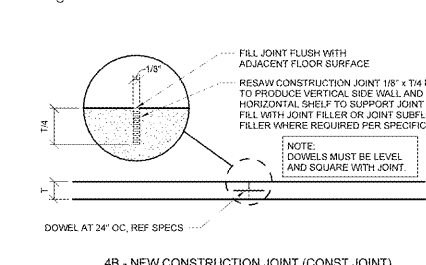
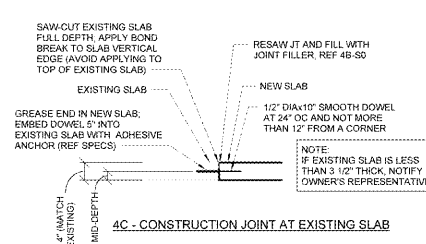
8. FOR PLACEMENT OF CONCRETE IN EITHER HOT OR COLD WEATHER CONDITIONS FOLLOW ACI STANDARD PROCEDURES.

9. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 (F_y = 36 KSI).

10. C_J INDICATES SAWCUT CONTROL JOINT. CONST JOINT INDICATES PREFERRED LOCATIONS FOR CONSTRUCTION JOINTS. IF A CONSTRUCTION JOINT IS NOT REQUIRED BY THE CONTRACTOR, A SAWCUT CONTROL JOINT MAY BE SUBSTITUTED AT THOSE LOCATIONS. EPOXY GROUT OR ADHESIVE SHALL BE HEALTHY HY 250 SAFESSET ADHESIVE OR EQUIVALENT, UNLESS NOTED OTHERWISE.

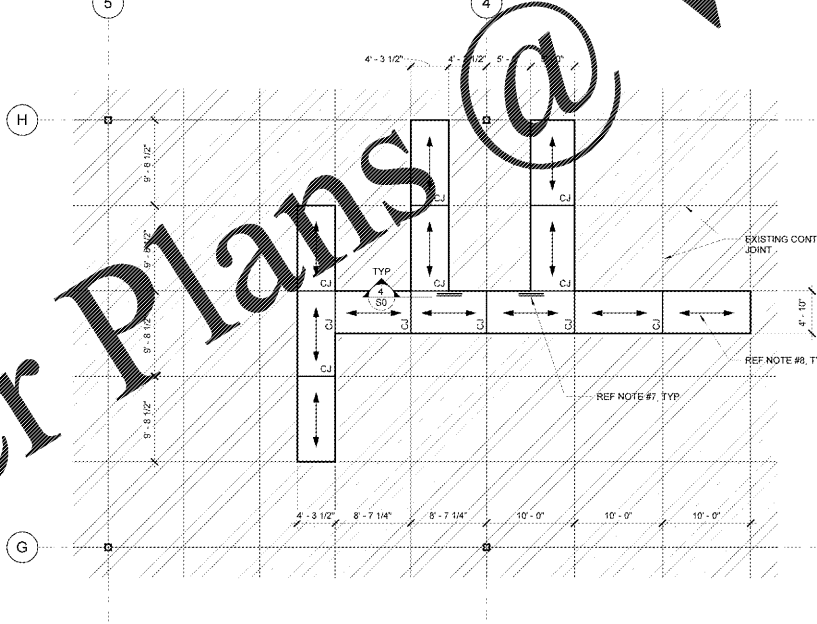
- REINFORCING STEEL:**
- ALL REINFORCING STEEL AND SUPPORTS SHALL BE DESIGNED, DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 318 AND ACI 315.
 - ALL REINFORCING BARS SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 OR ASTM A706 GRADE 60 FOR WELDED BARS.
 - WELDED WIRE REINFORCEMENT SHALL BE NEW BILLET STEEL, COLD DRAWN CONFORMING TO THE ASTM SPECIFICATION A185 AND A82. LAP WELDED WIRE REINFORCEMENT A MINIMUM OF 12".
 - ALL CONCRETE SLAB ON GRADE, RAISED CONCRETE SLAB, AND MAT REINFORCING SHALL BE SUPPORTED ON BOLSTERS OR BRICK SPACED NO FURTHER THAN 4 FEET ON CENTER.
 - ALL REINFORCING SHALL BE COLD BENT.
 - PROVIDE CLASS B SPLICERS IN REINFORCING FOR CONTINUOUS REINFORCING. PROVIDE STANDARD 90 DEGREE HOOKS IN ACCORDANCE WITH ACI 318 UNLESS SPECIFICALLY DETAILED. REFER TO CONSTRUCTION DOCUMENTS FOR REQUIRED LAP LENGTHS. PROVIDE CONTINUOUS HORIZONTAL WALL AND CONTINUOUS FOOTING REINFORCEMENT WITH 90 DEGREE BENDS AT CORNERS AND INTERSECTIONS AS SHOWN ON CONSTRUCTION DOCUMENTS.
 - MAINTAIN THE FOLLOWING REINFORCEMENT COVERAGE FOR REINFORCING STEEL UNLESS NOTED OTHERWISE: CONCRETE CAST AGAINST SOIL.
 - CONCRETE CAST AGAINST SOIL: 3 INCHES
 - CONCRETE EXPOSED TO WEATHER: NO. 6 AND LARGER: 2 INCHES; NO. 5 AND SMALLER: 1 1/2 INCHES
 - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH SOIL: NO. 11 AND SMALLER: 1 INCH WALL; 1 1/2 INCH SLAB

- SLABS ON GRADE:**
- CONCRETE SLABS ON GRADE SHALL BEAR ON 6 INCH AGGREGATE BASES, INFORMING TO RECORD SPECIFICATIONS.
 - CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT FOR FOUNDATION WALLS, EXCAVATIONS BACKFILL UNTIL THE CONCRETE SLAB ON GRADE IS IN PLACE AND THE CONCRETE HAS GAINED ITS FULL 28 DAY STRENGTH.
 - CONTRACTOR SHALL INSTALL ALL UNDERSLAB PIPING AND ELECTRICAL WORK AND RECOMPACT ANY DISTURBED STRUCTURAL FILL BEFORE INSTALLATION OF SLAB.
 - THE SIZE AND LOCATION OF ALL EQUIPMENT PENETRATIONS THROUGH FOUNDATION SHALL BE VERIFIED BY THE MECHANICAL, ELECTRICAL AND PLUMBING CONTRACTORS. ALL PENETRATIONS SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER.
 - THE BASE OF ALL FOOTING EXCAVATIONS SHALL BE FREE OF ALL WATER AND LOOSE SOIL. PRIOR TO CONCRETE PLACEMENT, THE CONCRETE SHALL BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION SO THAT EXCESSIVE DRYING OF THE BEARING MATERIALS DOES NOT OCCUR.



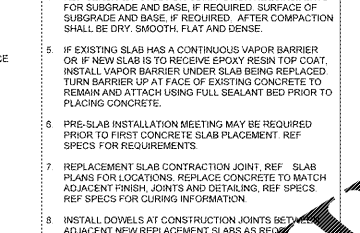
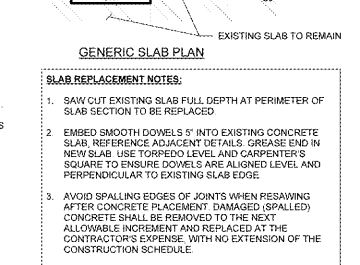
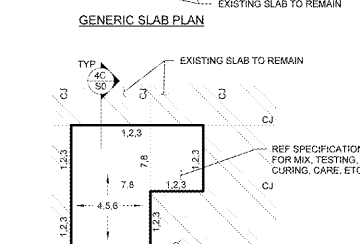
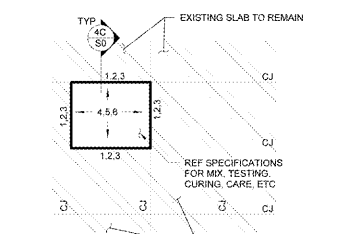
4 SLAB REPLACEMENT DETAILS

1/8" = 1'-0"



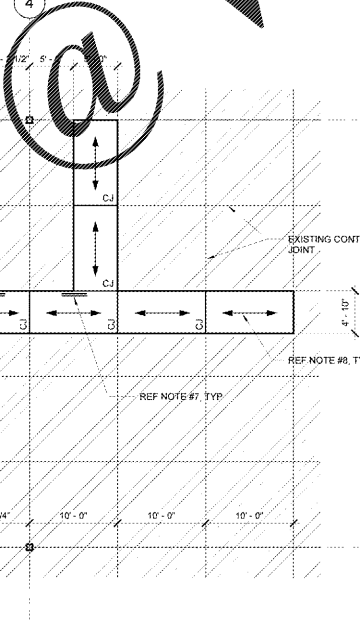
2 PARTIAL SLAB PLAN

1/8" = 1'-0"



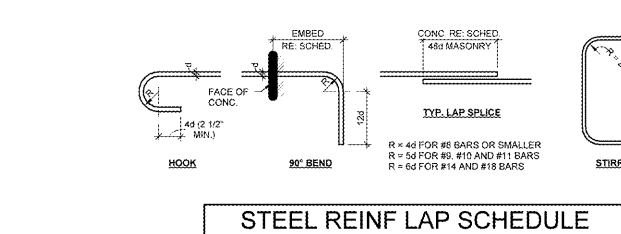
3 RE-ENTRANT CORNER REINFORCING

1/8" = 1'-0"

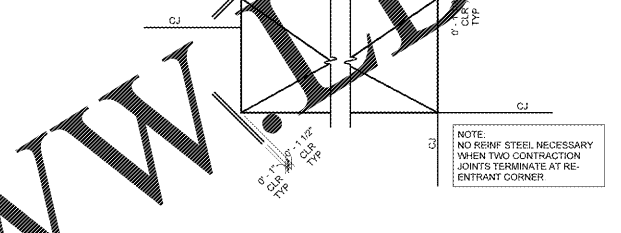
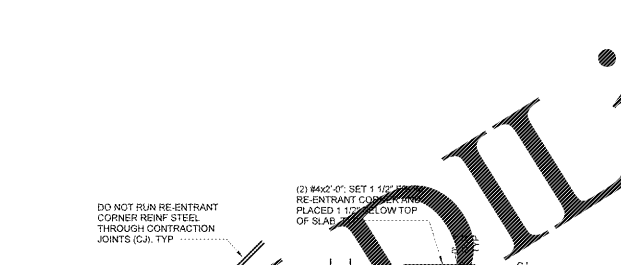


3 RE-ENTRANT CORNER REINFORCING

1/8" = 1'-0"

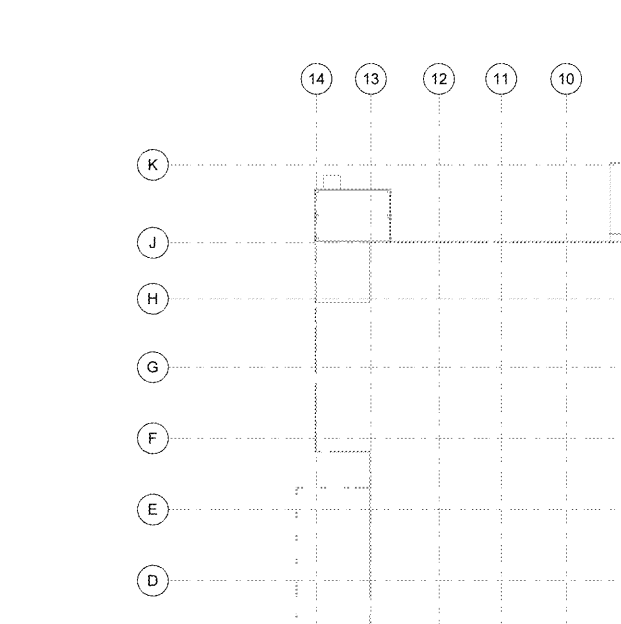


BAR SIZE	CONCRETE LAP SPLICE (CLASS B) (IN)				CMU LAP SPLICE (IN)
	TOP	OTHER	TOP	OTHER	
3	17	16	16	16	20
4	23	18	21	16	20
5	28	22	26	20	25
6	34	26	31	24	29
7	40	30	35	28	33
8	46	34	40	32	37



4 SLAB REPLACEMENT DETAILS

1/8" = 1'-0"

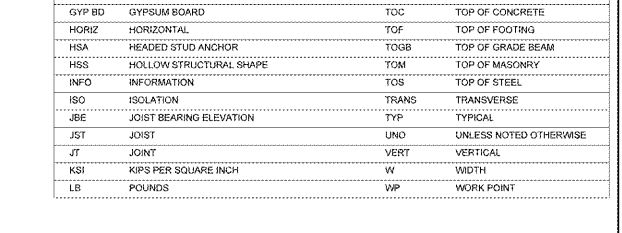
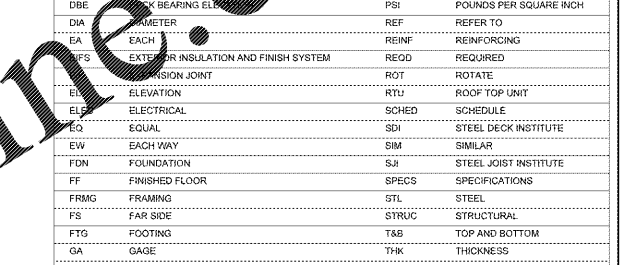
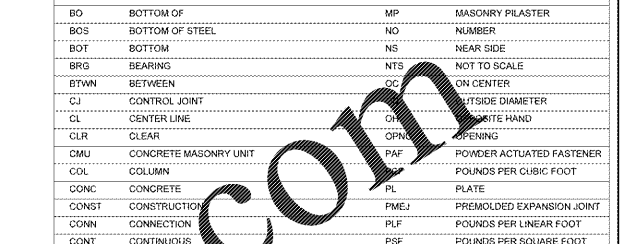


4 KEY PLAN

1/8" = 1'-0"

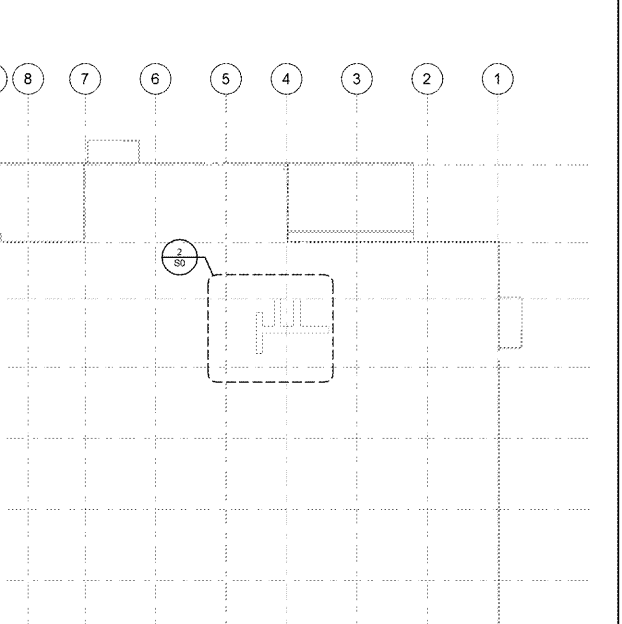
ABBREVIATION LEGEND
NOT ALL ABBREVIATIONS USED ON DRAWINGS

ABBR	DEFINITION	ABBR	DEFINITION
AB	ANCHOR BOLT	LLV	LONG LEG VERTICAL
ACI	AMERICAN CONCRETE INSTITUTE	LLVH	LONG LEG VERTICAL
AFF	ABOVE FINISHED FLOOR	LONG	LONGITUDINAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	MATL	MATERIAL
AISI	AMERICAN IRON AND STEEL INSTITUTE	MAX	MAXIMUM
ARCH	ARCHITECTURAL	MECH	MECHANICAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MFR	MANUFACTURER
AWS	AMERICAN WELDING SOCIETY	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MISC	MISCELLANEOUS
BL	BLOCK LINTEL	ML	MASONRY LINTEL
BM	BEAM	MO	MASONRY OPENING
BO	BOTTOM OF	MP	MASONRY PILESTER
BOS	BOTTOM OF STEEL	NO	NUMBER
BOT	BOTTOM	NS	NEAR SIDE
BRG	BEARING	NTS	NOT TO SCALE
BTVN	BETWEEN	OC	ON CENTER
CJ	CONTRACTION JOINT	OD	OUTSIDE DIAMETER
CL	CENTER LINE	OW	ON WHITE HAND
CLR	CLEAR	OPN	OPENING
CMU	CONCRETE MASONRY UNIT	PAF	POWDER ACTUATED FASTENER
COL	COLUMN	P	POUNDS PER CUBIC FOOT
CONC	CONCRETE	PL	PLATE
CONST	CONSTRUCTION	PMEJ	PREMOULDED EXPANSION JOINT
CONN	CONNECTION	PLF	POUNDS PER LINEAR FOOT
CONT	CONTINUOUS	PSF	POUNDS PER SQUARE FOOT
DBE	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIA	DIA	REF	REFER TO
EA	EACH	REIN	REINFORCING
EFS	EXTERIOR INSULATION AND FINISH SYSTEM	REOD	REQUIRED
EJ	EXPANSION JOINT	ROT	ROTATE
EL	ELEVATION	RTU	ROOF TOP UNIT
ELE	ELECTRICAL	SCHED	SCHEDULE
EQ	EQUAL	SI	STEEL JOIST INSTITUTE
EW	EACH WAY	SIM	SIMILAR
FDN	FOUNDATION	SI	STEEL JOIST INSTITUTE
FF	FINISHED FLOOR	SPECS	SPECIFICATIONS
FRMG	FRAMING	STL	STEEL
FS	FAR SIDE	STRUC	STRUCTURAL
FTO	FOOTING	T&B	TOP AND BOTTOM
GA	GAGE	THK	THICKNESS
GC	GENERAL CONTRACTOR	TOP	TOP OF
GYP BD	GYPSUM BOARD	TOC	TOP OF CONCRETE
HORIZ	HORIZONTAL	TOF	TOP OF FOOTING
HSA	HEADED STUD ANCHOR	TOGB	TOP OF GRADE BEAM
HSS	HOLLOW STRUCTURAL SHAPE	TOM	TOP OF MASONRY
INFO	INFORMATION	TOS	TOP OF STEEL
ISO	ISOLATION	TRANS	TRANSVERSE
JBE	JOIST BEARING ELEVATION	TYP	TYPICAL
JST	JOIST	UNO	UNLESS NOTED OTHERWISE
JT	JOINT	VERT	VERTICAL
KSI	KIPS PER SQUARE INCH	W	WIDTH
LB	POUNDS	WP	WORK POINT



4 SLAB REPLACEMENT DETAILS

1/8" = 1'-0"



4 KEY PLAN

1/8" = 1'-0"

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 US\$RM07258 (P)RTO: SC
 JOB NUMBER:

ISSUE BLOCK

NO.	DATE	DESCRIPTION

CHECKED BY: LLV
 DRAWN BY: NW
 PHOTO DATE: 02/28/2020
 DOCUMENT DATE: 04/16/2020

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CA # P-3884
 EXPIRES 08/30/2020
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GENERAL STRUCTURAL INFORMATION

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