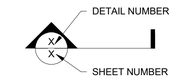
LAKE COUNTY PARKING GARAGE BARRIER CABLE REPAIR

STRUCTURAL ABBREVIATIONS

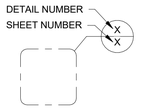
ABBREV	ABBREVIATION
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDITIVE
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE/ALTERNATIVE
ALUM	ALUMINUM
ARCH	ARCHITECTURE/ARCHITECTURAL
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BCX	BOTTOM CHORD EXTENSION
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BOT	BOTTOM
BP	BASE PLATE/BEARING PLATE
BRG	BEARING
BTWN	BETWEEN
C	CHANNEL
CB	CONCRETE BEAM
CC	CONCRETE COLUMN
CF	CUBIC FEET (FOOT)
CIP	CAST IN PLACE
CJ	CONTRACTION JOINT
CL	CENTERLINE
CLR	CLEAR/CLEARANCE
CM	CONCRETE MASONRY
CMU	CONCRETE MASONRY UNIT
CO	COMPANY
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CONN	CONNECTION
CONST	CONSTRUCTION
COORD	COORDINATE
CSJ	CONSTRUCTION JOINT
CTR	CENTER
CTRD	CENTERED
CY	CUBIC YARD
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EHPA	EMERGENCY HURRICANE PROTECTION AREA
EJ	EXPANSION JOINT
ELEC	ELECTRIC/ELECTRICAL
EL. ELEV	ELEVATION
ENGR	ENGINEER
EOD	EDGE OF DECK
EOR	ENGINEER OF RECORD
EQ SP	EQUAL SPACED
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	FOUNDATION
FD	FLOOR DRAIN
FDN	FOUNDATION
FF	FINISHED FLOOR
FIN	FINISH
FIN GR	FINISH GRADE
FLR	FLOOR
FS	FAR SIDE
FT	FEET/FOOT
FTG	FOOTING
GA	GAGE/GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GEN	GENERAL
GL	GRID LINE
GS	GALVANIZED STEEL
HD	HOT DIPPED
HDG	HOT DIPPED GALVANIZED
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
I	MOMENT OF INERTIA
ID	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP (1000 LB)
KLF	KIPS PER LINEAL FOOT
KSI	KIPS PER SQUARE INCH
KWY	KEYWAY

ABBREV	ABBREVIATION
LB	POUND
LGTH	LENGTH
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG.	LONGITUDINAL
LSL	LAMINATED STRAND LUMBER
LT WT	LIGHT WEIGHT
LVL	LAMINATED VENEER LUMBER
MATL	MATERIAL
MAX	MAXIMUM
MB	MASONRY BEAM
MC	MISCELLANEOUS CHANNEL/MASONRY COLUMN
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURE/MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MPH	MILES PER HOUR
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
NO.	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTERS
OD	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
P/C	PRECAST CONCRETE/PILE CAP
P/T	POST TENSIONED
PAR	PARALLEL
PCB	PRECAST CONCRETE BEAM
PCC	PRECAST CONCRETE COLUMN
PCF	POUNDS PER CUBIC FEET
PEMB	PRE-ENGINEERED METAL BUILDING
PEN	PENETRATION
P.J.	PANEL JOINT CENTERLINE
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PLMG	PLUMBING
PLY.	PLYWOOD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
R/W	REINFORCED WITH
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
REV	REVISION
RTU	ROOF TOP UNIT
SB	SOFFIT BEAM
SCHED	SCHEDULE
S.F.	SQUARE FEET
SF	STRIP FOUNDATION
SIM	SIMILAR
SPC	SPACE/SPACES
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SYM	SYMMETRICAL
T/	TOP OF
TB	TIE BEAM
T&B	TOP AND BOTTOM
TCX	TOP CHORD EXTENSION
TDS	TURN DOWN SLAB
TE	THICKENED EDGE
TEMP	TEMPERATURE
TENS	TENSION
THD	THREAD/THREADED
THK	THICK
TOL	TOLERANCE
TRANS	TRANSVERSE
TS	TUBE STEEL
T.S.	THICKENED SLAB
TWF	THICKENED WALL FOUNDATION
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WIDE FLANGE SECTION
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WALL FOOTING
WP	WATERPROOF
W.P.	WORKING POINT
WS	WELDED STUD
WT	WEIGHT/STRUCTURAL TEE SECTION
WWF	WELDED WIRE FABRIC
@	AT DESIGNATION
#	POUNDS / REBAR SIZE NUMBER
+/-	PLUS OR MINUS
L	ANGLE
C.L.	CENTER LINE
&	AND
Sx	SECTION MODULUS
Ix	MOMENT OF INERTIA

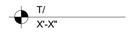
STRUCTURAL SYMBOLS AND LEGEND



SECTION / DETAIL MARK



PLAN / DETAIL MARK



ELEVATION MARK

SLOPED SURFACE

PLAN NOTE

SPOT ELEVATION, TYPICALLY TOP OF ITEM TAGGED (T/WALL, T/FOUNDATION, ETC)

EXISTING TILT-UP/PRECAST CONCRETE WALL

SPAN DIRECTION


NORTH ARROW

COLUMN GRID LINE


TILT-UP/PRECAST CONCRETE COLUMN ABOVE


PRECAST CONCRETE PLANK

NOTE: SYMBOLS AND LEGEND SHOWN ARE GENERIC AND DO NOT NECESSARILY INDICATE ACTUAL OCCURRENCES IN THESE DRAWINGS.

STRUCTURAL SHEET INDEX	
SHEET #	SHEET TITLE
S-001	STRUCTURAL ABBREVIATIONS AND SYMBOLS
S-002	STRUCTURAL NOTES
S-101	OVERALL BUILDING PLAN
S-102	FRAMING PLAN - LEVEL 8 ZONE A
S-201	STRUCTURAL DETAILS

VICINITY MAP

200 N. Sinclair Avenue
Tavares, FL 32778

TLC ENGINEERING SOLUTIONS
7370 Cabot Court, Suite 103
Melbourne, FL 32940
P 321.636.0274
www.tlc-engineers.com
COA 15

TLC Project No.: 521316

THINK. LISTEN. CREATE.

Lake County Parking Garage
Barrier Cable Repair

200 N. Sinclair Avenue
Tavares, FL 32778

Consultants:

Revisions:

No.	Date	Description

Seal

GARY C. KRUEGER LICENSE No 40788 STATE OF FLORIDA PROFESSIONAL ENGINEER

Gary C. Krueger, P.E.
Florida License #40788

Project No.: 521316

Issue Date: 12/29/2021

Drawn By: MTO

Approved By: DCV

Scale: As indicated

Drawing Title:
STRUCTURAL ABBREVIATIONS AND SYMBOLS

Drawing No.:
S-001

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010000 GENERAL NOTES

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND VENDOR DRAWINGS. CONSULT THESE DRAWINGS FOR OPENINGS, EMBEDDED ITEMS AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.
2. DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
3. NO STRUCTURAL MEMBER OR COMPONENT SHALL BE CUT, NOTCHED, OR OTHERWISE ALTERED UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS INCURRED BY THE ENGINEER OF RECORD FOR REVIEW OF ANY SUCH DEVIATIONS.
4. DO NOT SCALE DRAWINGS.
5. DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. THE APPLICABILITY OF THE DETAIL TO ITS LOCATION ON THE DRAWINGS CAN BE DETERMINED BY THE TITLE OF DETAIL. SUCH DETAILS SHALL APPLY WHETHER OR NOT THEY ARE REFERENCED AT EACH LOCATION. QUESTIONS REGARDING APPLICABILITY OF TYPICAL DETAILS SHALL BE DETERMINED BY THE ENGINEER OF RECORD.
6. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCE AND SAFETY. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THE STRUCTURAL ENGINEER'S OBLIGATIONS TO REVIEW SHOP DRAWINGS AND OTHER SUBMITTALS AND TO RETURN THEM IN A TIMELY MANNER ARE CONDITIONED UPON THE PRIOR REVIEW AND APPROVAL OF THE SHOP DRAWINGS OR SUBMITTALS BY THE CONTRACTOR AS REQUIRED IN THE CONSTRUCTION CONTRACT AND THE CONTRACTOR'S SUBMITTAL OF THE SHOP DRAWINGS AND OTHER SUBMITTALS IN ACCORDANCE WITH A WRITTEN SCHEDULE DISTRIBUTED IN ADVANCE TO THE ENGINEER IDENTIFYING THE DATES FOR THE SUBMITTAL OF THE VARIOUS SHOP DRAWINGS AND SUBMITTALS.
8. PERIODIC SITE OBSERVATION BY FIELD REPRESENTATIVES OF TLC ENGINEERING SOLUTIONS, INC IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN GENERAL ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHALL NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK.
9. ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXCEED LIFE SPAN AND TO ENSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE OWNER. THIS PROGRAM SHALL INCLUDE ITEMS SUCH AS, BUT NOT LIMITED TO, PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATINGS FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.
10. IN THE PROFESSIONAL OPINION OF TLC ENGINEERING SOLUTIONS, INC. THE STRUCTURAL CONTRACT DOCUMENTS FOR THIS PROJECT HAVE BEEN PREPARED IN ACCORDANCE WITH THE DESIGN CRITERIA AS SET FORTH IN THE FLORIDA BUILDING CODE (FBC) 7th EDITION (2020).
11. THE USE OF REPRODUCTIONS OF THESE CONTRACT DOCUMENTS AND USE OF CAD FILES BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFY HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON.

010002 DESIGN LOADS

1. THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 7th EDITION (2020), AND AS SUPPLEMENTED BY LOCAL AMENDMENTS.
2. THE FOLLOWING SUPERIMPOSED LOADINGS HAVE BEEN UTILIZED:
   A. STEEL BARRIER CABLE SYSTEMS SHALL BE DESIGNED AS A VEHICLE BARRIER SYSTEM IN ACCORDANCE WITH SECTION 1607.8.3 OF FBC 2020 AND SECTION 4.5.3 OF ASCE 7-16. VEHICULAR BARRIER SYSTEMS SHALL BE DESIGNED TO RESIST A SINGLE LOAD OF 6,000 LBS APPLIED HORIZONTALLY IN ANY DIRECTION TO THE BARRIER SYSTEM AND SHALL HAVE ANCHORAGES OR ATTTACHEMENTS CAPABLE OF TRANSFERRING LOAD TO THE STRUCTURE.

013100 REQUEST FOR INTERPRETATION

1. RFI SHALL ORIGINATE WITH CONTRACTOR AND SHALL BE SUBMITTED IN THE FORM SPECIFIED WITHIN CONTRACT DOCUMENTS. RFI SHALL BE SUBMITTED IN A PROMPT MANNER AS TO AVOID DELAYS IN CONTRACTORS WORK.
2. RFI SHALL BE SUBMITTED AS SPECIFIED WITHIN THE CONTRACT DOCUMENTS AND SHALL BE FORWARDED TO THE ENGINEER VIA THE ARCHITECT OR DIRECTLY TO THE ENGINEER BY THE CONTRACTOR WHEN APPROVED BY THE ARCHITECT.
3. ENGINEER SHALL TAKE UP TO 5 BUSINESS DAYS TO REVIEW AND RETURN RFI'S. HOWEVER, THE ENGINEER WILL ATTEMPT TO EXPEDITE THE REVIEW OF ALL RFI'S WITHIN A REASONABLE TIME FRAME.
4. RFI RESPONSES ARE NOT INTENDED TO AUTHORIZE ANY INCREASE IN CONSTRUCTION COST, SCHEDULE OR TIME EXTENSIONS, OR CONSTRUCTION IN CONFLICT WITH ANY APPLICABLE CODES OR SPECIFIED DESIGN STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DESIGN TEAM IMMEDIATELY OF ANY PERCEIVED SCOPE, SCHEDULE, OR COST IMPACTS OR ADJUSTMENTS. IF CONTRACTOR REQUESTS ANY ADDITIONAL COST, INCREASE IN SCHEDULE OR ADJUSTMENT IN SCOPE, THE CONTRACTOR SHALL NOT PROCEED WITH ADDITIONAL WORK UNTIL APPROVED IN WRITING BY THE CONSTRUCTION ADMINISTRATOR.

013301 SHOP DRAWING REVIEW

1. SHOP DRAWINGS SHALL ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC. REVIEW OF SUBMITTALS AND SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF THE SHOP DRAWINGS.
2. SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR AND MARKED "APPROVED" PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. NON-CONFORMING DRAWING SUBMITTALS WILL BE RETURNED WITHOUT REVIEW.
3. THE CONTRACT DOCUMENTS WILL GOVERN OVER THE SHOP DRAWINGS UNLESS OTHERWISE SPECIFIED IN WRITING BY THE ENGINEER OF RECORD.
4. CHANGES AND ADDITIONS MADE ON RE-SUBMITTALS SHALL BE CLEARLY FLAGGED AND NOTED. THE PURPOSE OF THE RE-SUBMITTALS SHALL BE CLEARLY NOTED ON THE LETTER OF TRANSMITTAL. ARCHITECT/ENGINEER OF RECORD REVIEW WILL BE LIMITED TO THOSE ITEMS CAUSING THE RE-SUBMITTAL. CONTRACTOR IS RESPONSIBLE FOR COSTS CAUSED BY MULTIPLE RE-SUBMITTALS (MORE THAN ONE) AT ARCHITECT/ENGINEERS' CURRENT HOURLY RATES.

013302 SHOP DRAWINGS FOR SPECIALTY ENGINEERED PRODUCTS

1. THE FOLLOWING SYSTEMS AND COMPONENTS AS A MINIMUM REQUIRE FABRICATION AND ERECTION DRAWINGS PREPARED BY A DELEGATED ENGINEER:
   A. STEEL BARRIER CABLE SYSTEMS
1. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES. LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND DRAWINGS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. SHOP DRAWINGS AND CALCULATIONS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED. GENERIC PRODUCTS WILL NOT BE ACCEPTED.
2. SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED UNDER THE DIRECT SUPERVISION AND CONTROL OF THE DELEGATED ENGINEER.
3. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA. COMPUTER PRINTOUTS ARE AN ACCEPTABLE SUBSTITUTE FOR MANUAL COMPUTATIONS PROVIDED THEY ARE ACCOMPANIED BY SUFFICIENT DESCRIPTIVE INFORMATION TO PERMIT THEIR PROPER EVALUATION. SUCH DESCRIPTIVE INFORMATION SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA AS AN INDICATION THAT HE/SHE HAS ACCEPTED RESPONSIBILITY FOR THE RESULTS. THE STRUCTURAL ENGINEER WILL RETAIN ONE SIGNED AND SEALED SET FOR THEIR RECORDS.
4. DRAWINGS PREPARED SOLELY TO SERVE AS A GUIDE FOR FABRICATION AND INSTALLATION (SUCH AS REINFORCING STEEL SHOP DRAWINGS OR STRUCTURAL STEEL ERECTION DRAWINGS) AND REQUIRING NO ENGINEERING, DO NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.
5. CATALOG INFORMATION ON STANDARD PRODUCTS DOES NOT REQUIRE THE SEAL OF A DELEGATED ENGINEER.
6. REVIEW BY THE STRUCTURAL ENGINEER OF RECORD OF SUBMITTALS IS LIMITED TO VERIFYING THE FOLLOWING:
   A. THAT THE SPECIFIED STRUCTURAL SUBMITTALS HAVE BEEN FURNISHED.
   B. THAT THE STRUCTURAL SUBMITTALS HAVE BEEN SIGNED AND SEALED BY THE DELEGATED ENGINEER.
   C. THAT THE DELEGATED ENGINEER HAS UNDERSTOOD THE DESIGN INTENT AND HAS USED THE SPECIFIED STRUCTURAL CRITERIA. NO DETAILED CHECK OF CALCULATIONS WILL BE MADE.
   D. THAT THE CONFIGURATION SET FORTH IN THE STRUCTURAL SUBMITTALS IS CONSISTENT WITH THE CONTRACT DOCUMENTS. NO DETAILED CHECK OF DIMENSIONS OR QUANTITIES WILL BE MADE.
7. SUBMITTALS NOT MEETING THE ABOVE CRITERIA WILL NOT BE REVIEWED AND WILL BE RETURNED.

013303 SUBMITTALS

1. ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL.
2. THE GENERAL CONTRACTOR SHALL SUBMIT FOR ENGINEER REVIEW SHOP DRAWINGS FOR THE FOLLOWING ITEMS:

   ITEMS MARKED (D) SHALL HAVE SHOP DRAWINGS SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

   A. CONCRETE REPAIR PRODUCTS
   B. STRUCTURAL STEEL
   C. BARRIER CABLE SYSTEMS (D)
3. MANUFACTURER'S LITERATURE. SUBMIT TWO COPIES OF MANUFACTURER'S LITERATURE FOR ALL MATERIALS AND PRODUCTS USED IN CONSTRUCTION ON THE PROJECT.

024117 EXISTING STRUCTURE

1. INFORMATION SHOWN FOR THE EXISTING STRUCTURE ON THESE DRAWINGS WAS TAKEN FROM THE DRAWINGS THAT WERE PREPARED FOR:

PREPARED BY:	HEERY INTERNATION INC.
ENTITLED:	LAKE COUNTY PARKING GARAGE
DATED:	DECEMBER 10, 2007

2. WORK SHOWN ON THESE DRAWINGS ASSUMES THAT THE ORIGINAL CONSTRUCTION WAS PERFORMED IN ACCORDANCE WITH THE ABOVE INDICATED ORIGINAL DRAWINGS INCLUDING (BUT NOT LIMITED TO) DIMENSIONS, ELEVATIONS, MEMBER SIZES, MATERIALS, DETAILS, ETC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE CONDITIONS RELATING TO THE EXISTING STRUCTURE AND TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS.

036001 CHEMICAL (ADHESIVE) ANCHORS

1. SHALL BE A TWO PART EPOXY POLYMER INJECTION SYSTEM, SUCH AS HILTI HIT HY200, HILTI RE500 SD, DEWALT PURE 110+, DEWALT AC200+, OR SIMPSON SET ADHESIVE SYSTEM, OR ENGINEER APPROVED SUBSTITUTION.
2. EPOXY TYPES AND BRANDS VARY IN THEIR BOND STRENGTH AND SUITABILITY OF USE, DEPENDING ON TYPE OF LOADING, ANCHOR SPACING, ETC. WHEN A PARTICULAR TYPE OF EPOXY IS SPECIFIED IN THESE DRAWINGS, A UNIQUE CALCULATION HAS BEEN MADE BASED ON THE PROPERTIES OF THAT SPECIFIC TYPE OF EPOXY FOR THE SPECIFIC CONDITION SHOWN IN THE DETAIL. SUBSTITUTION OF EPOXY TYPE IS NOT ALLOWED WHERE DETAIL SPECIFIES ONLY ONE TYPE OF EPOXY, WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER OF RECORD. NOT ALL EPOXY BRANDS OR TYPES WILL BE ALLOWED AS SUBSTITUTES. ICC-ES REPORTS FOR PROPOSED ANCHOR SUBSTITUTIONS MUST BE SUBMITTED TO EOR FOR REVIEW. EOR MAY REQUIRE ENGINEERED CALCULATIONS FOR REVIEW AND APPROVAL.
3. SUBSTITUTION OF EPOXIES IN ONE CONDITION SHALL NOT BE CONSTRUED AS APPROVAL TO MAKE SIMILAR SUBSTITUTION OF EPOXIES IN OTHER DIFFERING CONDITIONS. EACH SUBSTITUTION MUST RECEIVE PRIOR WRITTEN APPROVAL BY THE ENGINEER OF RECORD.
4. INSTALL ANCHORS IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS (MPII) IN CONJUNCTION WITH EDGE DISTANCE, SPACING, AND EMBEDMENT SPECIFIED ON DRAWINGS.
5. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION TO SUPPORT SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI/CRSI (ACI 318-14 D.9.2.2). PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.
6. THE MANUFACTURER'S REPRESENTATIVE SHALL TRAIN INSTALLERS FOR ALL PRODUCTS TO BE USED PRIOR TO COMMENCEMENT OF WORK. ONLY TRAINED INSTALLERS SHALL PERFORM POST INSTALLED ANCHOR INSTALLATION. A RECORD OF TRAINING SHALL BE MADE AVAILABLE TO THE EOR AS REQUESTED.
7. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL HOLE CLEAN-OUT REQUIREMENTS ARE FULLY COMPLETED BY THE INSTALLERS PRIOR TO INJECTING EPOXY INTO THE HOLES IN ACCORDANCE WITH THE MANUFACTURERS MPII.
8. NO LOAD SHALL BE APPLIED TO THE EPOXY ANCHORS UNTIL THE EPOXY HAS FULLY CURED AND HAS ACHIEVED IT'S SPECIFIED STRENGTH. CURE TIME SHALL BE PER MANUFACTURERS PUBLISHED VALUES FOR SPECIFIC PRODUCT BEING USED.
9. IF DETAIL SHOWS EPOXY ANCHORS IN SLOTTED HOLES, IT IS IMPERATIVE THAT ANY EXCESS EPOXY IS CLEANED UP FROM AROUND THE ANCHOR ROD, SO THAT IT DOES NOT INTERFERE WITH ADJUSTABILITY OF ANCHOR ROD IN SLOTTED HOLE.
10. ADHESIVE ANCHORS IN CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193 FOR CRACKED, UNCRACKED, AND SEISMIC CONCRETE RECOGNITION.
11. ADHESIVE ANCHORS IN MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ICC-ES AC70.
12. EXISTING REINFORCING IN CONCRETE AND/OR MASONRY CONSTRUCTION SHALL NOT BE CUT UNLESS APPROVED BY THE EOR.
13. ADHESIVE ANCHORS IN CONCRETE AND/OR MASONRY CONSTRUCTION SHALL NOT BE INSTALLED UNTIL CONCRETE AND/OR MASONRY HAS CURED FOR AT LEAST 21-DAYS.
14. PROVIDE SPECIAL INSPECTION FOR ALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODE AND THE CURRENT ICC-ES REPORT (IBC 2018 TABLE 1705.3 NOTE B).
15. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION BY AN INSPECTOR SPECIALLY APPROVED FOR THAT PURPOSE BY THE BUILDING OFFICIAL (ACI 318-14 CHAPTER 17).

051200 STRUCTURAL STEEL

1. STEEL WORK SHALL BE NEW AND CONFORM TO THE ANSI/AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
   A. MATERIAL SHALL CONFORM TO THE FOLLOWING, EXCEPT AS NOTED:

THREADED RODS	ASTM A36 (Fy=36 KSI)
HEAVY HEX NUTS	ASTM A563
HARDENED STEEL WASHERS	ASTM F436
ANCHOR RODS	ASTM F1554 GR. 36 (Fy=36 KSI)

2. WHERE FULLY PRETENSIONED OR SLIP CRITICAL BOLTS ARE REQUIRED, TIGHTENING SHALL BE ACHIEVED USING EITHER TWIST-OFF TENSION CONTROL BOLTS OR DIRECT TENSION INDICATING WASHERS.
3. ALL STRUCTURAL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 AND ALL FASTENERS AND HARDWARE SHALL BE HOT DIPPED GALVANIZED PER ASTM A153.
4. GROUT UNDER BEARING PLATES SHALL BE NON-METALLIC, NON-SHRINK TYPE WITH A COMPRESSIVE STRENGTH OF AT LEAST 5,000 PSI IN 28 DAYS.

055220 BARRIER CABLE SYSTEMS

1. BARRIER CABLE SYSTEMS SHALL MEET THE LOADING REQUIREMENTS AS MENTIONED ON THE STRUCTURAL DRAWINGS.
2. THE SYSTEM SHALL BE ENGINEERED HOLISTICALLY UNDER THE RESPOSIBILITY OF A SPECIALTY BARRIER CABLE SYSTEM COMPANY MANUFACTURING AND CERTIFYING ITS INSTALLATION IN THE FIELD TO COMPLY WITH THE PLANS AND CODES AS STATE ON THE STRUCTURAL DRAWINGS.
3. PRESTRESSING STEEL USED FOR BARRIER CABLE SHALL BE WIRED STEEL STRAN WHICH CONSISTS OF ONE CENTER WIRE WITH 6 WIRES SPRIALLY WRAPPED AROUND IT.
4. ALL EXPOSED BARRIER CABLE SHALL BE GALVANIZED OR ZINC PLATED. ZINC COATING SHALL BE PRODUCED TO COMPLY WITH ASTM SPECIFICATION A-475 CLASS A, TABLE 4 COATING WEIGHT. GALVANIZED COATING SHALL BE APPLAIED TO ENSURE COMPLETE ZINC COATING AROUND EACH INDIVIDUAL WIRE OF THE STAND. ALL CABLES AND COMPNENTS DAMAGED DURING CONSTRUCTION SHALL BE REAPIRED WITH A COLD GALVANIZING SPRAY.
5. ALL FIXED AND STRESSING ANCHORAGES SHALL BE BACK STRESSED TO A FORCE EQUAL TO 80% OF THE MINIMUM ULTIMATE TENSILE STRENGTH OF THE STRAND AND NO LESS THAN 25 KIPS.
6. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND INCLUDE PLANS, ELEVATIONS, SECTION, DETAILS AND NOTED PREPARED BY OR UNDER THE SUPERVISION OF A QUALIFIED INSTALLER DETAILING BARRIER CABLE LAYOUT, INSTALLATION PROCEDURES, STRESSING PROCEDURES AND JACKING FORCES, AND STRESSING RECORDS.
7. CALCULATIONS FOR THE CABLE SYSTEM MUST BE STAMPED BY AN EXPERIENCED PROFESSIONAL ENGINEER AND PRODUCED IN ACCORDANCE WITH FBC AND POST TENSIONING INSTITUTE (PTI) AND MUST INCLUDE THE FOLLOWING.
   A. CALCULATION OF TENDON MINIMUM FORCE FOR ANTI-SAG CRITERIA
   B. CALUCLATION OF TENDON MAXIMUM FORCE UNDER IMPACE AND VERIFICATION OF ACCEPTANCE CRITERIA FOR EACH CABLE RUN, VERIFICATION OF THE MAXIMUM DEFLECTION CRITERIA FOR THE BARRIER UNDER IMPACT FOR EACH SIGNIFICANT CABLE
   C. DETERMINATION OF THE PRE-TENSIONING REQUIREMENTS TO COVER ALL CRITERIA ABOVE INCLUDING LOSSES UNLESS A SPECIFIC PROCEDURE IS IN PLACE TO COMPENSATE FOR SEATING LOSSES.
   D. DESIGN CALULATIONS FOR ALL STEEL MEMBERS AND HARDWARE USED IN TEH CONSTRUCTION OF THE BARRIER CABLE.
8. THE SYSTEM INSTALLER SHALL PROVIDE A SYSTEM MAINTENANCE AND OPERATIONS GUIDE TO THE OWNER PROVIDING RECOMMENDED INSPECTION PERIODICITY AND PROCEDURES, MAINTENANCE AND REPAIR PROCEDURES FOR MINOR DAMAGE, AND ACTION PLAN IN CASE OF MAJOR DAMAGE IMPAIRING THE SYSTEM FUNCTIONALITY.

074213 ALUMINUM PANELS AND PLATES

1. SHEETS AND PLATES FOR COVERINGS SHALL MEET THE REQUIREMENTS OF ASTM B209, ALUMINUM ASSOICATION ALLOY 6061-T6, 5154-H38, OR 5052-H38.
2. THE MINIMUM THICKNESS FOR ALUMIMUM SHEETS AND PLATES SHALL BE 0.08 INCHES, UNLESS NOTED OTHERWISE.
3. ALUMINUM SHEETS AND PLATE SURFACES SHALL HAVE A BRUSH FINISH.

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Lake County Parking Garage
Barrier Cable Repair

200 N. Sinclair Avenue
Tavares, FL 32778

Consultants:

Revisions:

No.	Date	Description

Seal

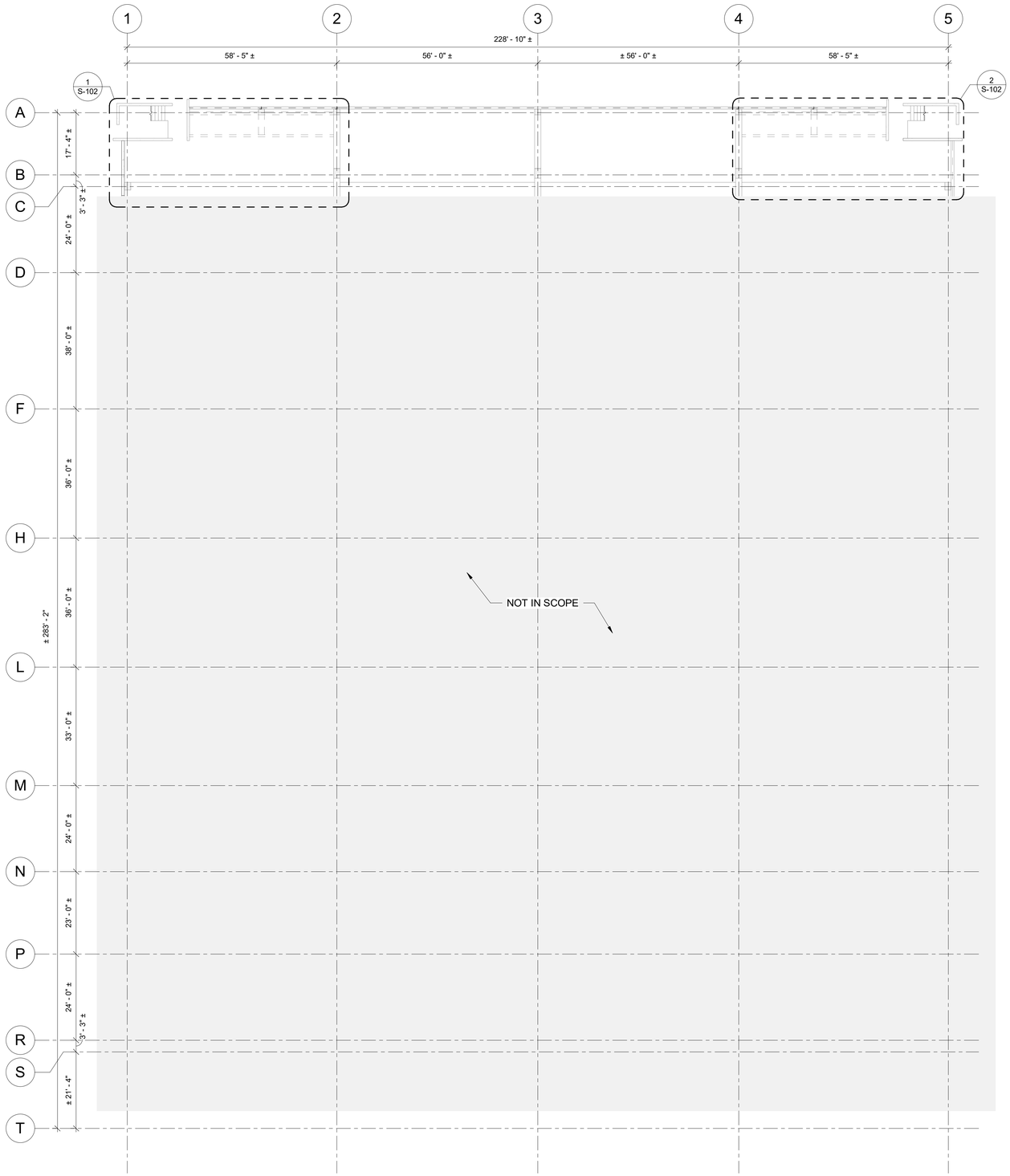
GARY C. KRUEGER LICENSE No 40788 STATE OF FLORIDA PROFESSIONAL ENGINEER

Gary C. Krueger, P.E.
Florida License #40788

Project No.:	521316
Issue Date:	12/29/2021
Drawn By:	MTO
Approved By:	DCV
Scale:	3/4" = 1'-0"

Drawing Title:
STRUCTURAL NOTES

Drawing No.:
S-002



1 OVERALL BUILDING PLAN
1/16" = 1'-0"

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Project No.:	521316
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Drawn By:	MTO
Approved By:	DCV
Scale:	1/16" = 1'-0"

Drawing Title:
OVERALL BUILDING PLAN

Drawing No.:
S-101

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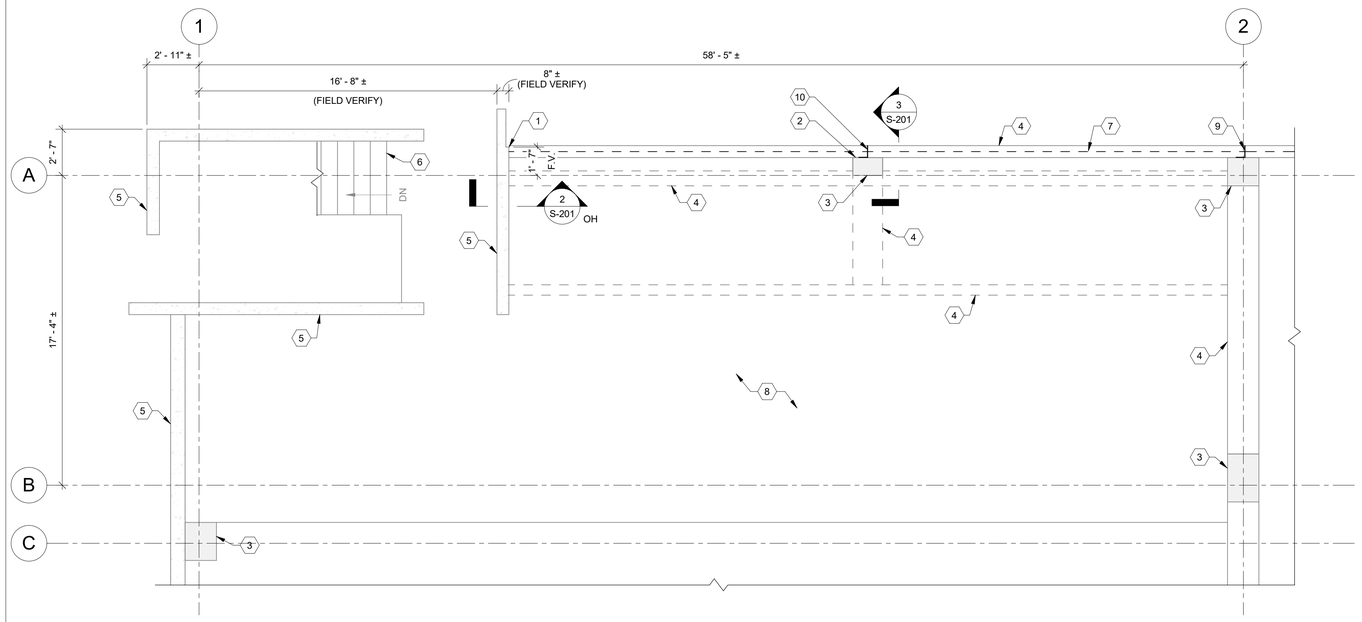
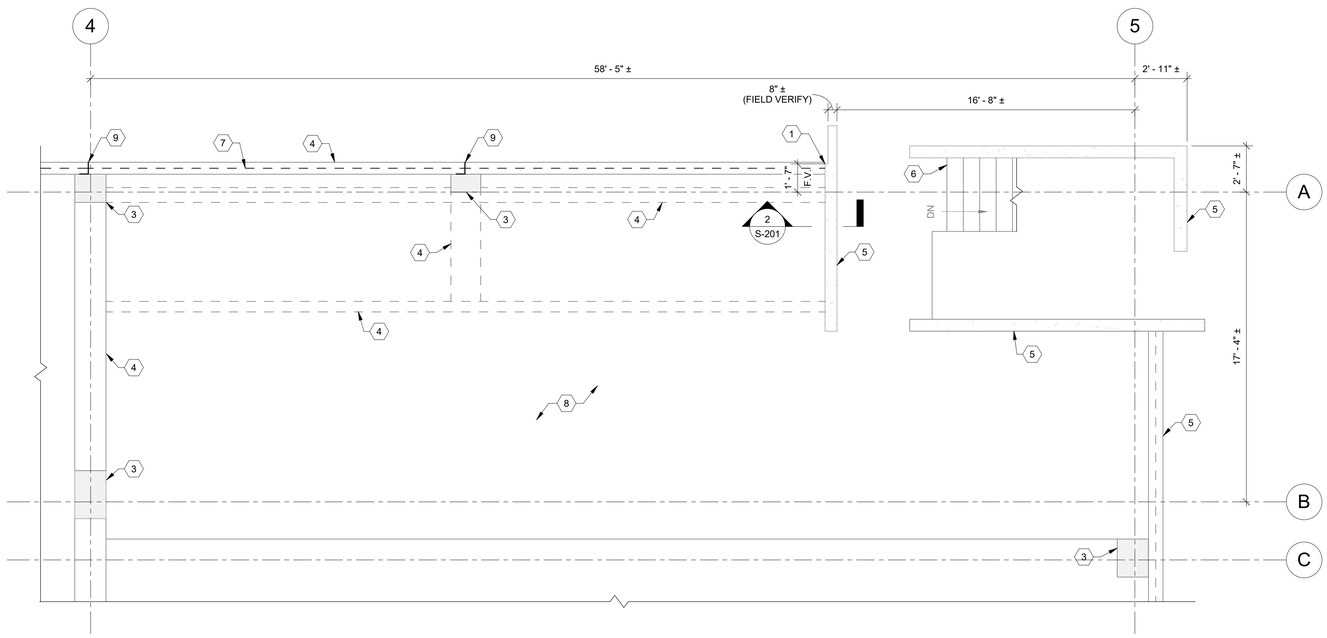


1 ENLARGED FRAMING PLAN - LEVEL 8 ZONE A
1/4" = 1'-0"



2 ENLARGED FRAMING PLAN - LEVEL 8 ZONE A
1/4" = 1'-0"

KEYNOTE LEGEND #

1. CONCRETE WALL REPAIR & NEW BARRIER CABLE BEARING PLATE
2. CONCRETE COLUMN REPAIR & NEW PLATE
3. INDICATES CONCRETE COLUMN (E)
4. INDICATES CONCRETE BEAM (E)
5. INDICATES CONCRETE WALL (E)
6. STAIR SYSTEM (E)
7. INDICATES NEW BARRIER CABLE
8. CONCRETE DOUBLE TEE DECK (E)
9. BARRIER CABLE GUIDE ANGLE AND EMBED PLATE (E)
10. BARRIER CABLE GUIDE ANGLE AND NEW PLATE

PLAN NOTES

1. REFER TO SHEET S-001 FOR STRUCTURAL ABBREVIATIONS AND SYMBOLS AND SHEET S-002 FOR STRUCTURAL GENERAL NOTES.
2. REFER TO SHEET S-101 FOR OVERALL BUILDING PLAN.
3. REFER TO SHEET S-201 FOR STRUCTURAL DETAILS AND SECTIONS.
4. ALL STEEL PLATES, BOLTS, HARDWARE, ETC. SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE W/ STRUCTURAL GENERAL NOTES.
5. REPAIR ALL CONCRETE BREAK OUT AREAS W/ SIKA SIKAREPAIR-223 IN ACCORDANCE W/ MANUFACTURER'S GUIDELINES. SEE DETAIL 1 ON SHEET S-201 FOR REPAIR REQUIREMENTS.
6. CABLE BARRIER SYSTEMS ARE TO BE DESIGNED BY OTHERS.
7. BEARING PLATES BY TLC ENGINEERING SOLUTIONS ARE DESIGNED FOR THE REACTIONS SHOWN IN SECTION 010002 DESIGN LOADS.
8. FINAL DESIGN FOR STRUCTURAL SUPPORTS ARE PENDING UNTIL SHOP DRAWINGS REVIEW FROM BARRIER CABLE SUPPLIER.

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Project No.: 521316
Issue Date: 12/29/2021
Drawn By: MTO
Approved By: DCV
Scale: As indicated

Drawing Title:
FRAMING PLAN - LEVEL 8 ZONE A

Drawing No.:
S-102

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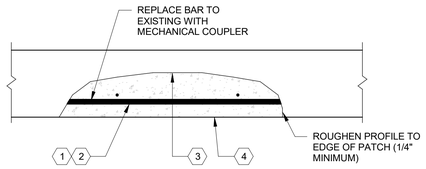
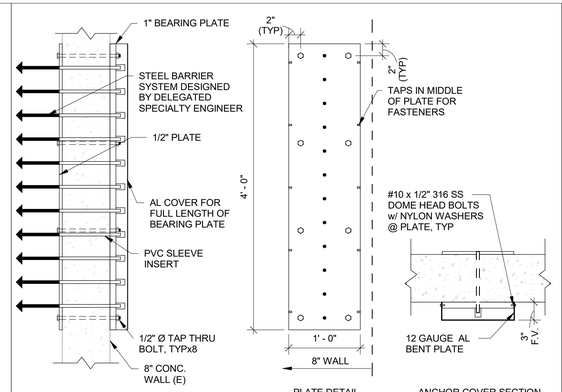


NOTES:

1. REMOVE MINIMUM 1/2" BEHIND STEEL FOR MORTAR.
2. SANDBLAST STEEL TO REMOVE CORROSION. SPLICE WHERE GREATER THAN 15% LOSS.
3. PREPARE SURFACE PER MANUFACTURERS RECOMMENDATIONS. APPLY BONDING AGENT IF RECOMMENDED BY MANUFACTURER.
4. TROWEL APPLY PATCHING MATERIAL PER MANUFACTURERS RECOMMENDATIONS. PATCHING MATERIAL SHALL BE SIKATOP 123 BY SIKA CORP. OR APPROVED EQUAL.

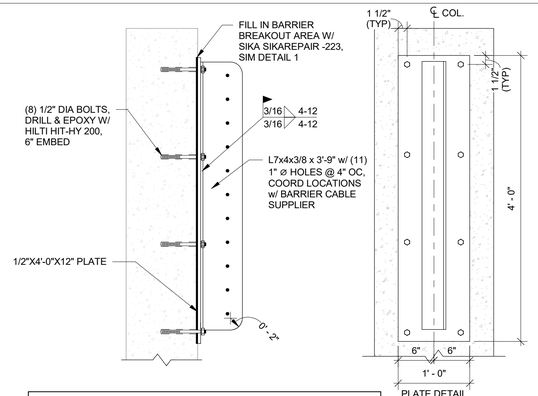
1 TYPICAL VERTICAL SPALL REPAIR
3/4" = 1'-0"



NOTES:

1. COORDINATE PLATE SIZES W/ STEEL CABLE BARRIER VENDOR.
2. CONTRACTOR SHALL IMPLEMENT NON DESTRUCTIVE TESTING AT CONCRETE WALL TO LOCATING EXISTING REINFORCEMENT. COORDINATE REQUIRED BOLT LOCATIONS WITH STEEL FABRICATOR AS TO NOT DAMAGE EXISTING REINFORCEMENT.

2 SECTION @ WALL BEARING PLATE
1" = 1'-0"



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3 SECTION @ COLUMN EMBED PLATE
1" = 1'-0"

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Project No.: 521316

Issue Date: 12/29/2021

Drawn By: MTO

Approved By: DCV

Scale: As indicated

Drawing Title:
STRUCTURAL DETAILS

Drawing No.:
S-201