REPAIR PARKING DECK
JOSEPH P TEASDALE STATE OFFICE BUILDING

RAYTOWN, MISSOURI

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

BID DOCUMENTS
NOVEMBER 4, 2022

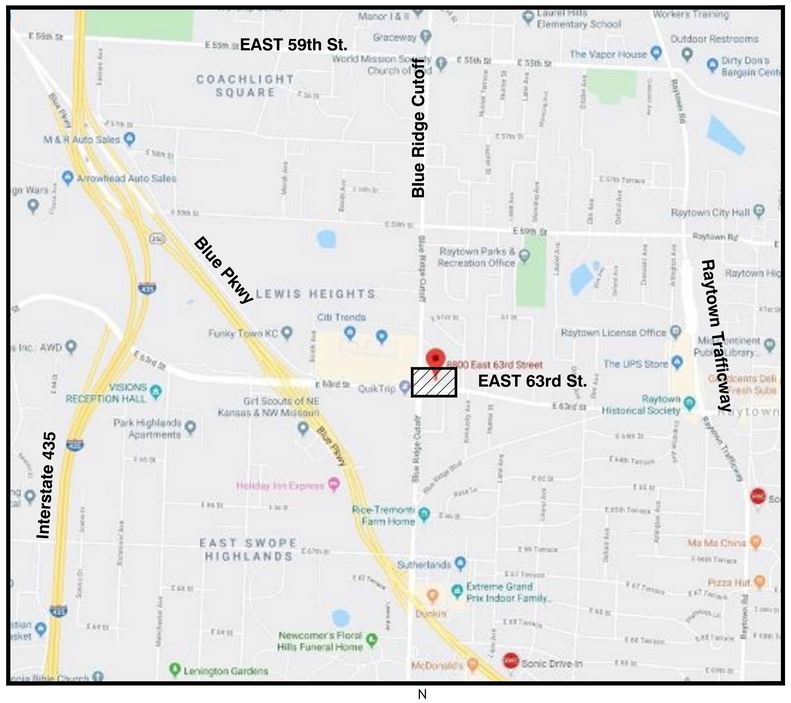
STRUCTURAL ENGINEERING ASSOCIATES

DESIGNER: STRUCTURAL ENGINEERING ASSOCIATES
1000 WALNUT, SUITE 1570
KANSAS CITY, MISSOURI 64106

MEP: CUSTOM ENGINEERING, LLC
12760 E US HIGHWAY 40
INDEPENDENCE, MISSOURI 64055

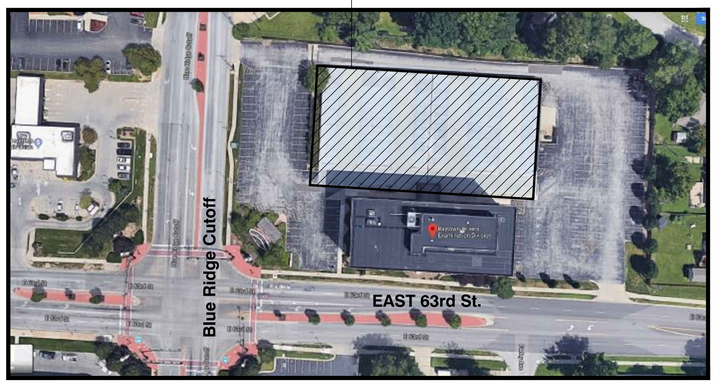
PROJECT NUMBER: O1903-01

SITE NUMBER: 1043
ASSET NUMBER: 3101043002



VICINITY MAP

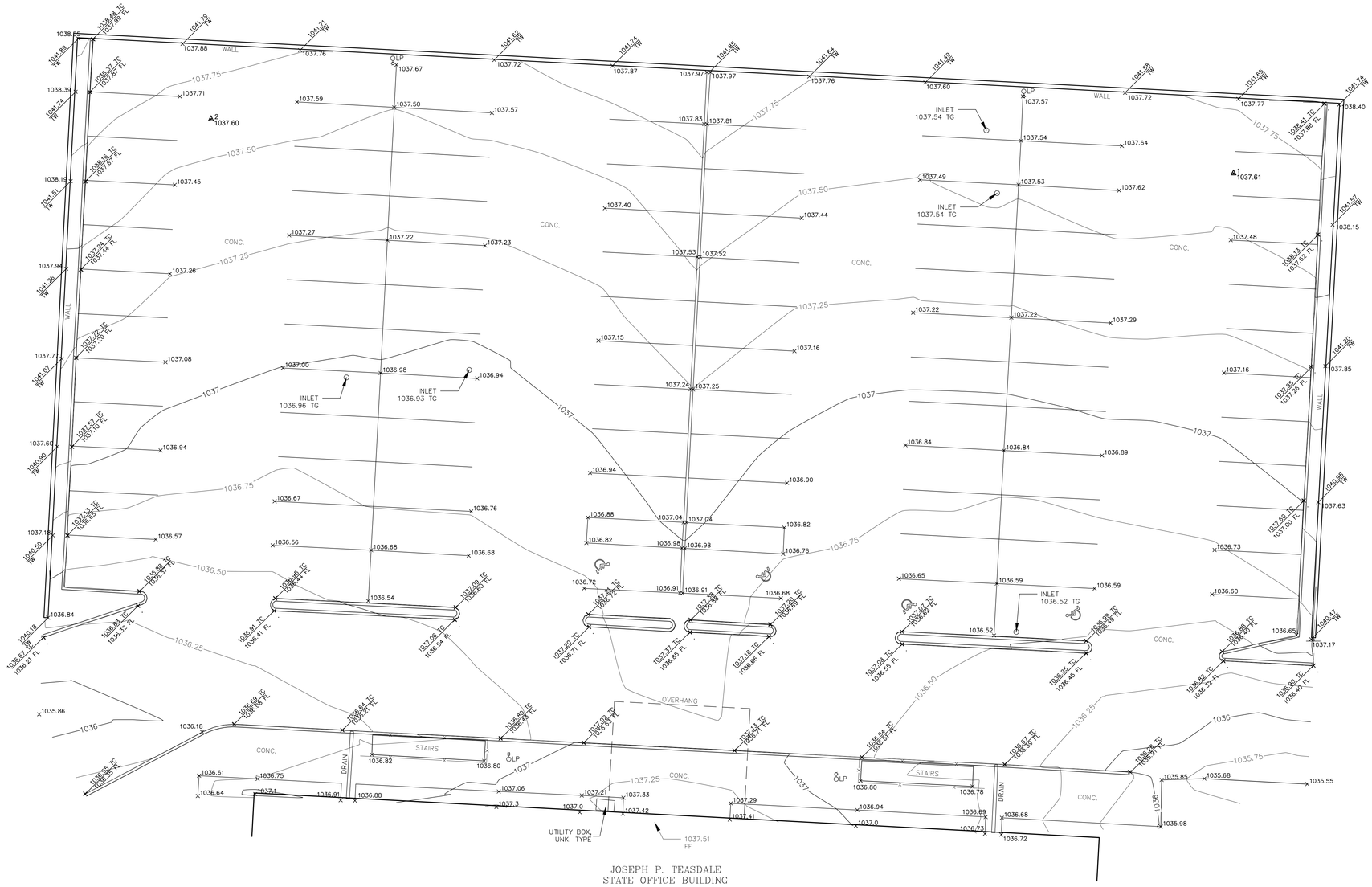
PROJECT LOCATION



LOCATION MAP

SHEET INDEX:

SHEET NUMBER:
G-000
1 OF 24 SHEETS
11/04/2022



GRAPHIC SCALE
0' 5' 10' 20'
(IN FEET)
1 inch = 10 ft.

UPPER LEVEL EXISTING GARAGE ELEVATIONS

NOTES:
1. THE FIELD WORK FOR THIS SURVEY WAS PERFORMED IN DECEMBER 2021 AT A SCALE OF 1"=10', WITH A CONTOUR INTERVAL OF 1 FOOT.
2. ONLY THE TOP LEVEL OF THE PARKING GARAGE WAS SURVEYED.

LEGEND:

	LIGHT POLE
	SIGN
FF	FINISHED FLOOR
FL	FLOWLINE
LP	LIGHT POLE
TC	TOP OF CURB
TW	TOP OF WALL

BASIS OF BEARINGS:
MISSOURI COORDINATE SYSTEM OF 1983, WEST ZONE.

HORIZONTAL DATUM:
MISSOURI STATE PLANE (WEST ZONE)
CAF = 0.9998968

SCALED AROUND 0,0
1 METER = 3.28083333 U.S. SURVEY FEET
ALL DISTANCES SHOWN ARE GROUND DISTANCES

VERTICAL DATUM:
THE VERTICAL DATUM IS ASSUMED BASED ON AN ASSUMED ELEVATION OF 1037.51 FEET AT THE FINISHED FLOOR OF THE GROUND LEVEL OF THE JOSEPH P. TEASDALE STATE OFFICE BUILDING, TAKEN AT THE NORTH ENTRANCE.

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI
ANNE M. SMOKE
NUMBER PLS-2016019010
PROFESSIONAL LAND SURVEYOR
4-22

STRUCTURAL ENGINEERING ASSOCIATES
1000 Walnut
Suite 1570
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MINNEY SURVEYING

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P. TEASDALE STATE OFFICE BUILDING

RAYTOWN, MO

PROJECT # O1903-1
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE:O1903-01 C-100.DWG
DRAWN BY: AMS
CHECKED BY: AMS
DESIGNED BY: AMS

SHEET TITLE:
UPPER LEVEL EXISTING GARAGE ELEVATIONS

SHEET NUMBER:
C-100

GENERAL NOTES

A. GENERAL

1. These notes shall be read in conjunction with the Specifications and the Drawings. In the event of a conflict, notify the Engineer for clarification.
2. Before executing anything shown herein, examine actual job conditions. Report any discrepancy, dimensional or otherwise, and any other error, omission, or difficulty affecting the work to the Structural Engineer for review.
3. Any condition encountered in the existing structural system which is different from that indicated in Drawings or which might create a failure or hazard shall be brought to the immediate attention of the Engineer.
4. The existing conditions indicated on the Drawings are based on surveys made by the consultant(s) as well as on material provided by the Owner and no claim is made as to its absolute completeness and/or accuracy. Prior to the start of construction operations, field-verify existing conditions and dimensions pertaining to this Contract. Notify the Engineer immediately of any discrepancies found at the site in relation to the information provided on the Drawings.
5. The Owner or his Representative reserves the right to inspect any material, fabrication, or workmanship at any time in field or shop for conformance to the Specifications and Drawings.
6. All details and sections are intended to be typical and shall be construed to apply to any similar situation elsewhere, except where a different detail is shown.
7. Do not scale drawings.
8. Hazardous Materials: Present in buildings and structures to be selectively demolished.
   a. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
   b. Owner will provide material safety data sheets for suspected hazardous materials that are know to be present in buildings and stuctures to be selectively demolished because of building operations or processes performed there.

B. DESIGN

1. Codes, specifications and standards (latest editions, U.N.O.)
   a. All design and construction shall conform to the International Building Code (2012) as amended and adopted by the City of Raytown, Missouri.
   b. All construction shall comply with the provisions of the following codes, specifications and standards, as referenced in the general building code, except where noted to the contrary on drawings and specifications or where more stringent requirements are specified or shown:
      ACI 117 "Standard Specifications for Tolerance for Concrete Construction and Materials"
      ACI 301 "Specifications for Structural Concrete for Buildings"
      ACI 318 "Building Code Requirements for Reinforced Concrete"
      ASCE 7 "Minimum Design Loads and Associated Criteria for Buildings and Other Structures"

C. EARTHWORK

1. Refer to Drawings and Specifications for details of fill and compaction requirements.
2. Foundation wall backfill shall not be unbalanced by more than two (2) feet on either side at any time or placed before the interior floor slab is placed unless temporary shoring is provided by the contractor.
3. At stepped footings, place the lower footing first and run footing a minimum of 1 foot under upper footing.
4. Clean footing excavations immediately before concrete is placed to remove all material softened or loosened.
5. Place footings against undisturbed earth (i.e. bottom & sides).
6. Refer to the geotechnical report for engineered fill recommendations.

D. CONCRETE

1. All concrete shall have a minimum 28-day ultimate compressive strength of 5000 psi.
2. Portland Cement: ASTM C 150, Type 1.
3. Water-reducing admixtures: ASTM C 494.
4. Normal Weight Aggregates: ASTM C 33.
5. In case of integral construction, higher strength and lighter weight governs.
6. Air entrain all exterior concrete (admixture: ASTM C 260).
7. Do not use calcium chloride admixtures under any circumstances.
8. Reinforcing bars: ASTM A 615 Specifications, Grade 60, deformed. Bend bars cold.
9. Epoxy-coated reinforcing bars: ASTM A 775.
10. Epoxy-coated steel wire and welded wire fabric: ASTM A 884, Class A.
11. Welded wire fabric (WWR): ASTM A 1064.
12. Anchor bolts: Refer to "Steel" notes. Accurately locate anchor bolts with templates, and hold securely in position prior to and while placing concrete. Protect anchor bolts from construction activity until the structure above is in place. Inserting anchor bolts into partially hardened concrete is prohibited.
13. Maintain minimum concrete coverage for reinforcing as indicated, unless noted otherwise.
   a. 3 in. clear where concrete is deposited directly against earth.
   b. 2 in. clear where concrete is exposed to earth or weather but poured against forms for bars larger than #5.
   c. 1-1/2 in. clear where concrete is exposed to earth or weather, but poured against forms for bars #5 or smaller.
   d. 3/4 in. clear for slabs and walls formed above grade not exposed to weather.
   e. 1-1/2 in. clear for beam and columns formed above grade and not exposed to weather.
14. Lap all bars at splices in accordance with ACI 318, but not less than 40 bar diameters nor less than 18 inches unless noted otherwise. All horizontal wall bars shall be developed at corners either by bending not less than 18 inches around corners or with properly placed hooked and lapped corner bars.
15. Top and bottom bars in continuous grade beams shall run continuous through multiple spans, where possible. Provide Class 'A' lap splices where lap splices occur, unless noted otherwise. Lap top bars at mid-span and bottom bars over supports unless otherwise indicated.
16. Pour columns, walls, and pilasters to be monolithic.
17. Limit maximum length of continuous wall pour to 60 feet, except when control joints are provided or unless noted otherwise.
18. All concrete walls shall be properly braced and held in line until supporting slabs or floors are in place, unless noted otherwise.
19. All bar steel and WWR shall be properly supported and held accurately in place as recommended by the Concrete Reinforcing Steel Institute, except that maximum spacing of any bar or welded wire fabric support shall be 3 feet.
   a. Support top slab bars with continuous high chairs.
   b. Support beam bars on heavy beam bolsters.
   c. Support footing and grade beam bottom reinforcing on concrete bricks, concrete blocks, or mounds of poured concrete. Do not use any other support materials without the approval of the Engineer.
   d. Support WWR in slab-on-grade properly supported at the mid-depth of the slab. Hooking and pulling up mesh after concrete has started to take its initial set is prohibited.
   e. Supports for reinforcement for exposed-to-view concrete surfaces shall have legs that are in contact with forms plastic protected (CRSI, Class 1) or stainless steel (CRSI, Class 2).
20. Openings in slabs and walls: Provide 2 – #5 extra bars each side of opening extending 2 feet past the opening, unless noted otherwise. Do not provide or cut any openings or sleeves in slabs or walls other than those shown on the Structural Drawings, unless approved by the Structural Engineer.
21. Interior slabs-on-grade: 4 in. minimum thickness, reinforced with 6x6xW2.1xW2.1 WWR, and placed on 6 in. free draining granular sub-base covered with vapor barrier. Control joints shall be installed at maximum spacing as defined by ACI 360R.
22. Where slabs-on-grade make an abrupt change in direction, such as at doors and corners or ends of walls, provide 1–#4 by 4 feet across the reentrant corner.
23. Construction joints, other than those shown, shall be held to a minimum but where necessary shall be at points of minimum shear.
24. All slab reinforcing, beam top bars, and stirrups at parking levels shall be epoxy coated.
25. Horizontal construction joints are not permitted unless shown on the drawings. Deviations are not allowed unless approved by the Engineer in writing.
26. For anchor bolts placed at the top of concrete columns, pedestals or walls, provide (3) #3 ties or (2) #4 ties enclosing anchor bolts and at least 4 vertical reinforcing bars. Ties are to be spaced within 5 inches of the top of concrete.
27. Mechanical housekeeping pads and curbs not shown on the drawings shall be reinforced with 6x6 W2.9XW2.9 welded wire reinforcement.
28. All reinforcing steel used in parking garages and structural plaza decks shall be epoxy coated.

E. POST-INSTALLED ANCHORS

1. Except where indicated on the drawings, post-installed anchors shall consist of the following anchor types:
   a. Anchorage to concrete
      i. Adhesive anchors shall have been tested in accordance with ACI 355.4 and/or ICC-ES AC308 for cracked concrete and seismic applications. Adhesive anchors shall be installed by a certified adhesive anchor installer Where designated on the contract documents. Pre-approved products include:
         1. Hilti HIT-HY 200 SAFE SET System with Hilti HIT-Z Rod per ICC ESR-3187.
         2. Hilti HIT-HY 200 SAFE SET System with Hilti hollow drill bit system with HAS-E threaded rod per ICC ESR-3187.
         3. Hilti HIT-HY 200 SAFE SET System without Hilti hollow drill bit system with HAS-E threaded rod per ICC ESR-3187. Follow manufacturer recommended hole cleaning practice for this option.
         4. DeWalt PURE110+ Epoxy Adhesive Anchor System in cracked concrete per ICC ESR-3298.
         5. DeWalt AC200+ Acrylic Adhesive, fast cure in cracked concrete per ICC ESR-4027.
         6. Simpson Strong-Tie SET-3G adhesive anchoring system per ICC ESR-4057.
         7. Hilti HIT-RE500V3 epoxy adhesive anchoring system per ICC ESR-3814 for slow cure applications.
      ii. Mechanical anchors shall have been tested in accordance with ACI 355.2 and/or ICC-ES AC193 for cracked concrete and seismic applications. Pre-approved products include:
         1. Hilti KWIK BOLT-TZ expansion anchors per ICC ESR-1917
         2. Simpson Strong-Tie STRONG-BOLT 2 expansion anchors per ICC ESR-3037
         3. DeWalt Power-Stud+ SD1 and SD2 expansion anchors per ICC ESR-2818 and ESR-2502 respectively. (For interior applications only, not approved for exterior application)
         4. Hilti KWIK HUS EZ and KWIK HUS EZ-I screw anchors per ICC ESR-3027. (For interior applications only, not approved for exterior application)
         5. Simpson Strong-Tie TITEN-HD screw anchors per ICC ESR-2713. (For interior applications only, not allowed for exterior application)
         6. DeWalt Screw-Bolt+ screw anchors per ICC ESR-3889. (For interior applications only, not approved for exterior application)
         7. DeWalt Power-Stud+ SD4, Type 304 SS and S6, Type 316 SS expansion anchors per ICC ESR-2502.
   b. Anchorage to Hollow/Multi-Wythe Masonry
      i. Adhesive Anchors to Use:
         1. Hilti Hit-HY 270 Masonry Adhesive anchoring system per ICC ESR-3342. Steel Anchor element shall be Hilti HAS-E continuously threaded Rod. The appropriate size screen tube shall be used per adhesive manufacturer's recommendation.
         2. DeWalt AC100+ GOLD Masonry Adhesive anchoring system per ICC ESR-3200. Steel Anchor element shall be continuously threaded Rod. The appropriate size stainless steel screen tube shall be used per adhesive manufacturer's recommendation.
         3. Simpson Strong-Tie AT Masonry Adhesive anchoring system per ICC ESR-3342. Steel Anchor element shall be continuously threaded Rod. The appropriate size stainless steel screen tube shall be used per adhesive manufacturer's recommendation.
2. All anchors shall be installed in strict accordance with Manufacturer's Printed Installation Instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings.
3. Drill holes for anchors using a bit incapable of cutting steel. Do not cut existing concrete reinforcing steel. If, while drilling, reinforcing steel is encountered, notify the Structural Engineer for approval of new location. Clean and patch the abandoned hole with grout. Always follow manufacturer's written instructions.
4. Adhesive anchors must be installed in concrete aged a minimum of 21 days per ACI 318-14 17.1.2
5. Where adhesive anchors are indicated to be installed at "reduced installation torque" on these drawings, follow above referenced ICC ESR reports to determine required installation torque.
6. Provide special inspection for all mechanical and adhesive anchors per the applicable building code and per the current ICC-ES report (IBC 2012 TABLE 1705.3 NOTE B).
7. Anchor capacity used in design shall be based on the technical data published by Hilti, Simpson, DeWalt or such other method as approved by the Structural Engineer of Record. Substitution requests for alternate products must be approved in writing by the Structural Engineer of record prior to use. Contractor shall provide calculations demonstrating that the substituted product is capable of achieving the performance values of the specified product. Substitutions will be evaluated by their having an ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and availability of comprehensive installation instructions. Adhesive anchor evaluation will also consider creep, in-service temperature and installation temperature.
8. Adhesive anchors installed in Horizontal and vertically overhead orientation to support sustained tension load shall be done by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI according to ACI 318-14 17.8.2.2. Proof of current certification shall be submitted to engineer for approval prior to commencement of installation.
9. The contractor shall arrange for an anchor manufacturer's representative to provide onsite installation training for all of their anchoring products specified. The Structural Engineer of Record must receive documented confirmation that all of the contractor's personnel who install anchors are trained prior to the commencement of installing anchors.
10. Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.
11. Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. Unless noted on the drawings that the bars can be cut, the contractor shall review the existing structural drawings and shall undertake to locate the position of the reinforcing bars at the locations of the concrete anchors, by Hilti Ferroscan, G.P.R., X-ray, chipping or other means.
12. If a specific epoxy adhesive anchoring system is noted in a particular detail of this construction drawings, other alternative product options listed above in item 1 shall not apply.

F. CONSTRUCTION

1. See mechanical, electrical, and plumbing requirements for embedded items not shown herein and to verify size and location of all openings.
2. Coordinate the sizes and locations of all miscellaneous metal items required for mechanical and electrical.
3. Requirements for embedded items, sleeves, block outs, duct openings, etc., in the concrete frame shall be submitted (plans and details) to the Structural Engineer for approval at least two weeks prior to the proposed date of casting concrete. No such items, other than those shown, shall be provided in the structure without the approval of the structural engineer.
4. Provide adequate shoring or bracing during construction to resist forces such as wind and unbalanced loading due to construction.
5. Protect existing building as required until all new construction is complete.
6. Verify all dimensions at or to existing construction. Any variation from that shown on plans shall be brought to the attention of the Engineer before proceeding.
7. Haul off and properly dispose of all material demolished from the site unless specifically directed otherwise by the Owner.
8. Field verify the location and depth (or height) of all utilities prior to beginning construction in order to provide adequate clearances and to ensure noninterruption of service.
9. Before core drilling any holes, locate the reinforcing steel in the existing concrete with R-meter. Relocate the hole to avoid cutting any rebars. Do not drill holes through existing rebars unless acceptable to the Structural Engineer. Do not overcut any holes.
10. Cut openings in existing concrete slabs and walls with a power saw to prevent vibration and damage of surrounding structure.
11. Core drill corners of openings in existing concrete slabs and walls prior to saw cutting. Size of core shall be sufficient to prevent saw overrun.
12. During welding or any other construction activity that generates sparks or intense heat, the Contractor shall provide adequate fire protection to the existing structure and contents. At a minimum provide the following:
   a. Remove combustible materials from areas of welding and sparks.
   b. Provide fire proof blankets and shields to contain sparks where combustible materials cannot be removed.
   c. Provide a fire safety observer with a fire extinguisher on both the roof and below the roof during welding near the roof structure.
13. Dust control measures will be necessary during work inside existing building. Install plastic barrier to isolate construction activities from the remainder of building. Air will need to be exhausted and filtered through building openings.
   a. Coordinate all activities through existing building with owner's representative prior to occurrence.

G. SPECIAL INSPECTION

1. The following tests and inspection shall be performed by an independent inspection agency employed by the owner and approved by the structural engineer and the building official. Test and inspection reports shall be submitted to the owner, architect, structural engineer, and building official. Special inspection shall conform to Chapter 17 of the 2015 International Building Code, as well as conforming to the items listed below.

Special Inspection requirements:	Continuous	Periodic
2. Reinforced concrete – 2018 IBC Table 1705.3		
a. Verification of required mix design.	X	
b. Sampling concrete, compressive strength cylinders, slump, air content.		X
c. Inspection of concrete placement.	X	
d. Inspection of curing techniques.		X
3. Post-Installed Anchors		
a. Epoxy adhesive anchors in continuous tension	X	
b. Epoxy adhesive anchors not in continuous tension		
c. Mechanical post-installed anchors		X

CONCRETE REPAIR NOTES

IDENTIFYING REPAIR AREAS

a. Contractor shall sound concrete and mark limits of delamination/debonding in accordance with ASTM D4580. Extend repair margins 4 inches beyond limits of sounding perimeter or larger as required to expose non-corroded reinforcing steel or confirm that there is no visible evidence of delamination cracking in concrete perimeter.
b. Expand limits of concrete removal to avoid irregular patch geometry such as re-entrant corners and long, narrow patches. Provide general geometry in accordance with ICRI 310.1R.

PREPARATION

a. Remove all unsound concrete and sound concrete as required to maintain minimum depths and adequate cover around reinforcing steel. Extend concrete removal a minimum of 4 inches beyond delaminated area.
b. Saw-cut around the perimeter of the patch area 3/4 inches deep. Determine depth of reinforcing steel prior to saw-cutting. Adjust depth as required to avoid cutting of or damage to reinforcing steel or other embedded items.
c. Where half or more of the perimeter of reinforcing bar is exposed, bond is broken around reinforcing steel, or the reinforcing steel bar is corroded, remove concrete from the entire perimeter of the bar to provide at least 3/4 inches clear.
d. Roughen concrete surface in patch area to achieve a minimum concrete surface profile in accordance with ICRI CSP-7 as described in the latest edition of ICRI 310.2.R.
e. Remove bruised concrete substrate weakened by microcracking by abrasive blasting or high-pressure water blasting with or without abrasive. When water blasting, provide 5000 psi water pressure or higher if required to satisfy the tensile bond requirements. Keep nozzle not less than 6 inches and no more than 12 inches away from the surface.
f. Remove concrete fragments, corrosion product, mill scale, and other contaminants from reinforcing bars by commercial blast cleaning in accordance with SSPC-SP6 until a bare metal finish has been achieved on the reinforcing.
g. Where section loss of reinforcing bars is more than 20% of the cross-sectional area, splice replacement bars to existing bars as directed by the Engineer. Remove additional concrete as necessary to provide at least 3/4 inches clearance beyond existing and replacement or supplemental bars. Splice replacement bars to existing bars according to ACI 301 or in accordance with General Notes by lapping, welding, or using non corrosive mechanical couplings. Welding, when approved by the Design Professional, shall be in accordance with AWS D1.4.
h. At areas around the repair perimeters where the development length cannot be achieved with the repair, drill in sound concrete as shown on the drawings or as directed by the Engineer to provide the required bar development and splice length, or remove additional concrete to allow for the splice.
i. Clean repair area with high pressure, oil free air.
j. Verify limits of concrete removal with Engineer prior to placing repair material.
k. Repairs will be paid on a unit price basis. Repair areas will be measured to the nearest 1 square foot.

MIGRATING CORROSION INHIBITOR

a. After preparation apply migrating corrosion inhibitor to surface of repair area.
b. Apply migrating corrosion inhibitor at application rates and in strict accordance with Manufacturer's Printed Installation Instructions.
c. Confirm with Manufacturer that application of migrating corrosion inhibitor will not affect bond of repair material to substrate.

SACRIFICIAL ANODES

a. Install sacrificial anodes in strict accordance with Manufacturer's Printed Installation Instructions. Install 2 anodes at each PT anchor and high points of girders and joists as shown on drawings. All reinforcement passing between the repair material and the existing concrete shall be electrically continuous with the anodes.
b. Remove concrete as required to provide the Manufacturer's written recommended clearance around and coverage over the anodes.
c. Clean exposed reinforcing steel of corrosion, mortar, coating, etc. to provide a bright metal surface that will provide sufficient electrical connection. Place the anodes as close as practical to the edge of repair (within 6 inches).
d. Embed anodes in specified conductive mortar prior to placing repair material.
e. Make connection to mild steel by mechanical means. Connect anodes to to post tension cables with conductive epoxy.

BONDING

a. Saturated Surface Dry Substrate: For ready mixed concrete, pre-dampen concrete substrate surfaces to saturated surface-dry (SSD) condition immediately prior to placement of patch material. Apply water to the surface of the patch area for a minimum of 2 hours prior to placement of repair material, or longer as required to achieve SSD. Remove excess water immediately prior to placement of patch material by high pressure, oil free air.
b. Mortar Scrub Coat: For ready mixed concrete, install a mortar scrub coat onto saturated surface-dry substrate just prior to placing the repair material. Agitate thick slurry periodically to avoid settling of components in the container.
c. Mortar Scrub Coat with Latex Admixture: Install a mortar scrub coat onto saturated surface-dry substrate just prior to placing the repair material. The mortar scrub coat shall be one part Portland Cement and one part fine aggregate mixed with mixing liquid to form a thick slurry. Mixing liquid shall consist of the specified latex admixture diluted with clean potable water at Manufacturer's recommended dilution ratio. Agitate thick slurry periodically to avoid settling of components in the container.
d. Proprietary Bonding Agent: For ready mixed concrete. Just prior to the installation of the bonding agent, thoroughly clean the repair area with oil-free compressed air. Install the bonding agent in strict accordance with the Manufacturer's Printed Installation Instructions.
e. Bonding for Pre-packaged Concrete Mix: Prepare substrates and apply bonding agents in strict accordance with Manufacturer's Printed Installation Instructions.
f. The bond strength shall be a minimum of 200 psi.

PLACEMENT OF PATCH MATERIAL

a. Refer to specifications or General Notes for ready mixed concrete mix design requirements, or requirements for prepackaged concrete repair materials.
b. Mixing, conveying and placement of ready mixed concrete shall conform to the requirement of ACI 301, except as modified within these general notes or specifications.
c. Place repair material within open time of any mortar scrub coat or bonding agent.
d. Mix and place pre-packaged repair material in strict accordance with Manufacturer's Printed Installation Instructions.
e. Ready mixed concrete shall be batched, mixed and delivered in accordance with the requirements of ASTM C94.
f. Fully consolidate all concrete using mechanical vibrators except in the case of self-consolidating concrete.
g. Three days after completion of repairs, sound repair areas in the presence of the design professional to verify patch is bonded and there are no additional delaminations present in or around repair area. If delaminations are present in the repair area, repair additional delaminations at no additional cost to the owner.

CURING

a. Wet cure all ready-mixed concrete repair locations with water or water soaked absorptive cover or moisture retaining cover curing.
b. Cure all repair locations for a minimum of 72 hours.
c. Cure pre-packaged concrete repair materials in strict accordance with Manufacturer's Printed Installation Instructions.
d. If cracking occurs in repair areas, modify preparation, placement and curing procedures as required to eliminate cracking and perform repairs again at no additional cost to owner.

PRODUCTION BOND TESTS

a. After a minimum of 7 days cure, provide access and assist (Engineer or testing laboratory) in performance of bond testing of repair area.
b. Refer to specifications for bond test requirements.

MOCK-UPS

a. Provide mock-ups of typical repair prior to beginning work.
b. Provide mock-ups to exhibit each of the stages for repair identified above and each repair material and surface prep to be used.
c. Provide Engineer sufficient notice to allow Engineer to observe each stage of mock-up.
d. Provide access and assist (Engineer, testing laboratory) in performance of bond testing of repair area.
e. Prepare areas as required for testing prior to mock-up repair and after completion of repair.
f. Refer to specifications for mock-up requirements.

PRECAUTIONS

a. Provide dust partitions or plywood enclosures as required to protect surrounding pedestrians, motor vehicles, mechanical, electrical and plumbing equipment, surrounding construction, project site, landscaping and surrounding buildings from damage or injury resulting from concrete rehabilitation work.
b. Perform all work in accordance with OSHA guidelines and regulations and all other city, state and federal regulations.

STRUCTURAL LEGEND

- = CONCRETE MASONRY UNIT (CMU) (CMU) WALL
- = CONCRETE WALL
- = CAST IN PLACE JOIST SYSTEM
- = OPENING
- = STRUCTURAL STEEL BEAM
- = STRUCTURAL STEEL JOIST
- = SLAB SPAN DIRECTION
- = ELEVATION
- DET NUMBER (TOP) SHT NUMBER (BOT)
- COL GRID LINE
- CONC GRADE BM/WALL
- COL/FTG/PED
- KEYED NOTE
- SHAFT DIA / BOT EL — CONC DRILLED PIER DIA AND TOP EL
- SPOT EL
- GUARDRAIL

STRUCTURAL ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE	JT	JOINT
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	K	KIP = 1000 LBS
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	K-FT	KIP-FEET (Moment)
AB	ANCHOR BOLT	LOC	LOCATION
ADJ	ADJACENT	LLH	LONG LEG HORIZONTAL
AFF	ABOVE FINISHED FLOOR	LLV	LONG LEG VERTICAL
AHU	AIR HANDLING UNIT	MAX	MAXIMUM
ALT	ALTERNATE	MECH	MECHANICAL
L	ANGLE	MIN	MINIMUM
ARCH	ARCHITECT	MISC	MISCELLANEOUS
BFF	BELOW FINISHED FLOOR	MFR	MANUFACTURER
BLDG	BUILDING	MO	MASONRY OPENING
BLKG	BLOCKING	MTL	METAL
BM	BEAM	#	NUMBER OR POUND
BOC	BOTTOM OF CAISSON	NIC	NOT IN CONTRACT
BOT	BOTTOM	NTS	NOT TO SCALE
BRG	BEARING	NWT	NORMAL WEIGHT
BTWN	BETWEEN	o.c.	ON CENTER
C	COMPRESSION	OPNG	OPENING
CNTR	CENTER	OPP	OPPOSITE HAND
CNTRD	CENTERED	P.C.	PRECAST CONCRETE
CL	CENTER LINE	PL	PLATE
CJ	CONTROL/CONST JOINT	plf	POUNDS PER FOOT
CLR	CLEAR	PROJ	PROJECTION
CMU	CONCRETE MASONRY UNIT	psf	POUNDS PER SQUARE FOOT
COL	COLUMN	psi	POUNDS PER SQUARE INCH
CONC	CONCRETE	R	RADIUS
CONN	CONNECTION	RD	ROOF DRAIN
CONT	CONTINUOUS	RE	REFERENCE
DBA	DEFORMED BAR ANCHOR	REINF	REINFORCEMENT
Dia or Ø	DIAMETER	REQD	REQUIRED
DIM	DIMENSION	REV	REVISION
DET	DETAIL	RTU	ROOF TOP UNIT
DN	DOWN	RXN	REACTION
DWG	DRAWING	SCHED	SCHEDULE
DWL	DOWEL	SECT	SECTION
EA	EACH	SHT	SHEET
EE	EXTENDED ENDS	SIM	SIMILAR
EF	EACH FACE	SJI	STEEL JOIST INSTITUTE
EL	ELEVATION	SOG	SLAB ON GRADE
ELEV	ELEVATION	SPA	SPACING
EMBED	EMBEDMENT LENGTH	SPECS	SPECIFICATIONS
EQ	EQUAL/EQUIVALENT	STD	STANDARD
EW	EACH WAY	STIFF	STIFFENER
EXIST	EXISTING	STL	STEEL
EXP	EXPANSION	SQ	SQUARE
EXT	EXTERIOR	SYM	SYMMETRICAL
FIN	FINISH	T	TENSION
FD	FLOOR DRAIN	T&B	TOP AND BOTTOM
FLG	FLANGE	THK	THICK OR THICKNESS
FLR	FLOOR	T.O.	TOP OF
FND	FOUNDATION	TOBL	TOP OF BRICK LEDGE
F.O.	FACE OF	TOC	TOP OF CONCRETE
FTG	FOOTING	TOF	TOP OF FOOTING
GA	GAGE	TOM	TOP OF MASONRY
GALV	GALVANIZED	TOS/TOB	TOP OF STEEL/BEAM
GC	GENERAL CONTRACTOR	TOSS	TOP OF STRUCTURAL STEEL
GDR	GIRDER	TOW	TOP OF WALL
GYP	GYPSUM	TRS	TRUSS
H.A.S.	HEADED ANCHOR STUD	TYP	TYPICAL
HK	HOOK	UNO	UNLESS NOTED OTHERWISE
HOR	HORIZONTAL	VERT	VERTICAL
INCL	INCLUDING	VIF	VERIFY IN FIELD
INSUL	INSULATION	W	WITH
INT	INTERIOR	WP	WORKING POINT
JST	JOIST	WWF	WELDED WIRE FABRIC
		WWR	WELDED WIRE REINFORCING

SEA 2019075

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-001
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
GENERAL NOTES
CONCRETE REPAIR NOTES

SHEET NUMBER:
S-001

3 OF 24 SHEETS
11/04/2022

NOTE:
RE: SHEET P-100 LOWER LEVEL PLUMBING NEW WORK PLAN FOR ALT. #1

STRUCTURAL REPAIRS SCHEDULE

REPAIR MARK	REPAIR TYPE	REPAIR DETAILS	BASE BID QUANTITY
R-1	**NOT USED:**	NA	NA
R-2	**SHALLOW DEPTH CONCRETE SLAB REPAIR AT BEAMS:** a. Contractor to mark out areas of repair and confirm with EOR prior to performing repairs. b. Perform repairs in accordance with "Concrete Repair Notes" and specifications. c. Prior to placing concrete, contractor to clean and coat exposed reinforcing per details and specifications if concrete placement is delayed more than specified period by coating manufacturer bars are to be re-cleaned and re-coated.	6/S-300 2/S-301 3/S-301 4/S-301 5/S-301 6/S-301	575 SF
R-3	**REMOVE AND REPLACE ELEVATED SLAB:** a. Release tension in post tensioning slab cables prior to performing demolition. b. Remove existing concrete slab at top level of parking garage per phasing plan S-100, minimize damage to existing structural joists and beams by saw cutting slab and using 10 pound chipping hammers for removal. c. Contractor to place concrete per details and specifications. d. Install sealant in all construction joints re: specifications. e. Notify EOR if conditions exist that are not covered by details and specifications.	1/S-300 2/S-300 12/S-300 13/S-300 14/S-300 15/S-300 17/S-301	LUMP SUM
R-4	**VERTICAL REPAIRS TO CONCRETE WALLS AND/OR COLUMNS** a. Contractor to mark out areas of repair and confirm with EOR prior to performing repairs. Install Sacrificial Anodes. b. Perform repairs in accordance with "Concrete Repair Notes" and specifications.	3/S-300 9/S-300 3/S-301 4/S-301 5/S-301 6/S-301	235 SF
R-5	**PARTIAL DEPTH REPAIRS ON SOFFIT AREAS:** a. Contractor to mark out areas of repair and confirm with EOR prior to performing repairs. Install Sacrificial Anodes. b. Perform repairs in accordance with "Concrete Repair Notes" and specifications. c. If contractor chooses to use shotcrete material, applicator must have minimum 5 years experience on similar applications, and be ACI certified nozzelman	5/S-300 3/S-301 4/S-301 5/S-301 6/S-301	105 SF
R-6	**REPAIR OF CONCRETE JOISTS, DISTRIBUTION RIBS, BEAMS,** a. Locate damaged or deteriorated joists,distribution ribs, and beams on site and notify EOR for verification. b. If during repairs damaged or deteriorated concrete reach's more than 1/3 of total length of joist notify EOR and stop repairs. EOR to determine if additional repair will be needed, along with shoring. Install Sacrificial Anodes. c. Follow manufacturers recommendations for installation of all patching materials, and specified corrosion inhibitors. d. Perform repairs in accordance with "Concrete Repair Notes" and specifications.	5/S-300 7/S-300 8/S-300 3/S-301 4/S-301 5/S-301 6/S-301	120 SF
R-7	**EPOXY INJECT COLUMNS:** a. Install ports in concrete as recommended by manufacturer. b. Flush out joints with water prior to injection if recommended by manufacturer. c. Inject specified epoxy material at pressures recommended by the manufacturer.	2/S-303	175 LF
R-8	**REMOVE AND REPLACE SIDEWALKS, CURBS, AND ISLANDS:** a. Remove existing sidewalk, curbs, and islands as indicated on details. b. Re-grade substrate to provide uniform surface for concrete placement. c. Install epoxy coated 4x4-2.9x2.9 WWF. d. Replace sidewalk, curbs, and islands in kind matching existing tooled joint pattern and thickness of concrete. e. Concrete to be KCMMB mix design. Contractor to submit mix design to E.O.R. for approval prior to placement. f. Contractor to coordinate sidewalk removal and replacement to ensure emergency exist at all times.	–	LUMP SUM
R-9	**REMOVE AND REPLACE EXPANSION JOINT:** a. Size the opening at a 70°temperature. b. The joint interface walls must be constructed equidistant from one another, straight, parallel to one another and plumb. Concrete saws and diamond grinding disks should be used to correct any deviations. Locate post tensioning cables and reinforcing bars prior to cutting. c. Edge spalling, sharp projections and concrete voids shall also be repaired prior to proceeding with the joint installation. All repair materials used should have reached full cure conditions as specified by the repair material manufacturer before installation of the joint system begins. d. Comply with manufacturers recommendations for installation procedures.	8/S-301	LUMP SUM
R-10	**REPAIR OF TREADS AND RISERS FOR EAST AND WEST STAIRS:** a. Contractor to mark out areas of repair and confirm with EOR prior to performing repairs. b. Perform repairs in accordance with "Concrete Repair Notes" and specifications. c. Prior to placing concrete, contractor to clean and coat exposed reinforcing per details and specifications if concrete placement is delayed more than specified period by manufacturer bars are to be re-cleaned and re-coated. d. If repairs require forming of step, Contractor to match existing stair profile.	1/S-301	115 SF
R-11	**OVER EXCAVATE AND INSTALL WATERPROOFING AROUND FOUNDATION WALLS AT SW AND SE ENDS:** a. Excavate to bottom of footing. take care to ensure existing footing or adjacent footings are not undermined. b. Do not leave excavation open and footings exposed any longer than required to install sheet-applied waterproofing. c. Protect excavation from rain, surface water, etc. Contractor shall never let water stand in excavation. d. Prep foundation walls, apply sheet-applied waterproofing, prefabricated drainage composite and foundation drain per manufacturers instructions. e. Backfill in accordance with the specifications.	15/S-300 17/S-301 8/S-303	LUMP SUM
R-12 (ALT. #1)	**NEW MEMBRANE SYSTEMS:** a. Remove existing membrane for areas of slab not removed. Contractor to prep existing and new concrete per manufacturers recommendations. b. Contractor to perform bond tests per manufacturers recommendations prior to placing traffic coating membrane materials. c. Install specified primer, base coat, intermediate coats, and top coat. (RE: specifications for millage requirements.) d. Sealing of all horizontal cracks in these areas are incidental to deck coating installation.	9/S-301 10/S-301 11/S-301 12/S-301 13/S-301 14/S-301 15/S-301 16/S-301	LUMP SUM
R-13 (ALT. #3)	**REMOVE AND REPLACE STORAGE AREAS:** a. Remove existing storage areas and properly dispose of debris, re: specifications. b. Install new interior partition walls, fencing, doors, and garage doors to match existing. traffic coating membrane materials. c. Notify EOR if modifications are warrented prior to installation.	3/S-303 4/S-303 5/S-303 6/S-303 17/S-303	LUMP SUM
R-14 (ALT. #2)	**EMBEDDED GALVANIC ANODES:** a. Provide certified cathodic protection technician during anchor planning and installation. b. Perform testing to locate and mark all post tension cable (P.T.) and mild reintorcing steel prior to beginning anode installation. c. Verify continuity between P.T. and mild reinforcing. If mild steel and P.T. is not continuous, expose P.T. and mild reinforcing as required to establish continuity. d. Drill holes for anodes. Do not damage P.T. or mild reinforcing f. Install anodes in conductive mortar. g. Patch holes and trenches.	3/S-302 4/S-302 5/S-302 6/S-302 7/S-302 8/S-302	1,864/EA.
R-15 (ALT. #3)	**RE-COAT EXISTING HANDRAIL/GUARDRAIL AT STAIRS:** a. Clean all handrail and guardrail. b. Confirm existing paint is acrylic. c. Where corrosion is present, clean metal to SSPC-SP3 clean. d. Prime with Tnemec 135 to 4 to 6 dry mil thickness. e. Apply two coats of Tnemec 1029 at 2 to 3 dry mils each. f. Repaint all steel to match existing.	–	LUMP SUM

SEA 2019075

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OFFICE OF ADMINISTRATION
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DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:

ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-001
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

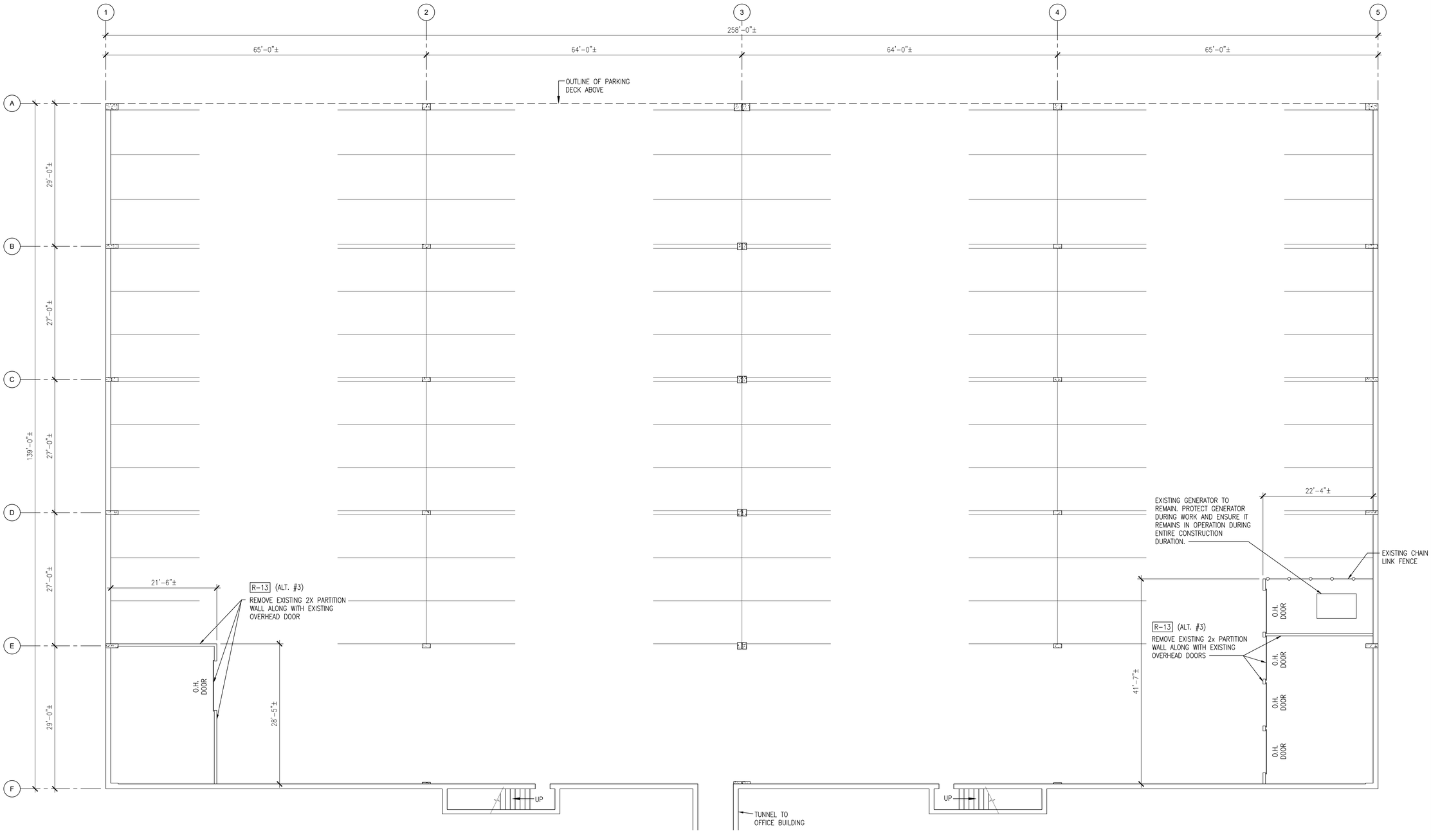
SHEET TITLE:

STRUCTURAL REPAIR SCHEDULE

SHEET NUMBER:

S-002

4 OF 24 SHEETS
11/04/2022



N

1 LOWER LEVEL DEMO PLAN (ALT. #4)

1/8" = 1'-0"

SEA 2019075

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REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI 64133

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
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REVISION:
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REVISION:
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ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 SD-100
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

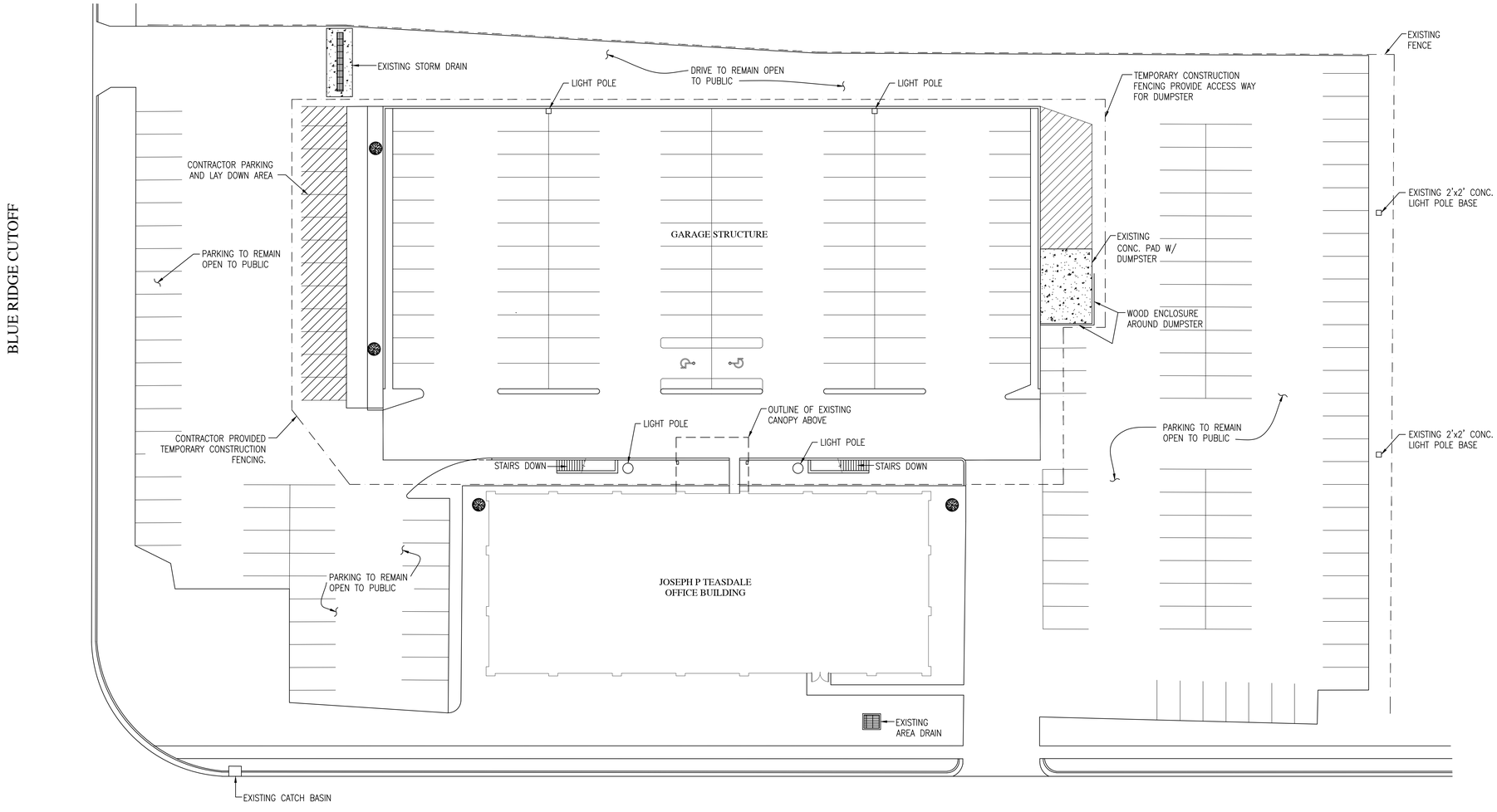
SHEET TITLE:

LOWER LEVEL DEMO PLAN

SHEET NUMBER:

SD-100

5 OF 24 SHEETS
11/04/2022



1 OVERALL SITE PLAN

SCALE: 1" = 20'-0"

SEA 2019075

STATE OF MISSOURI
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REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O1903-01
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ASSET # 3101043002

REVISION:
DATE:
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REVISION:
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ISSUE DATE: 11/04/2022

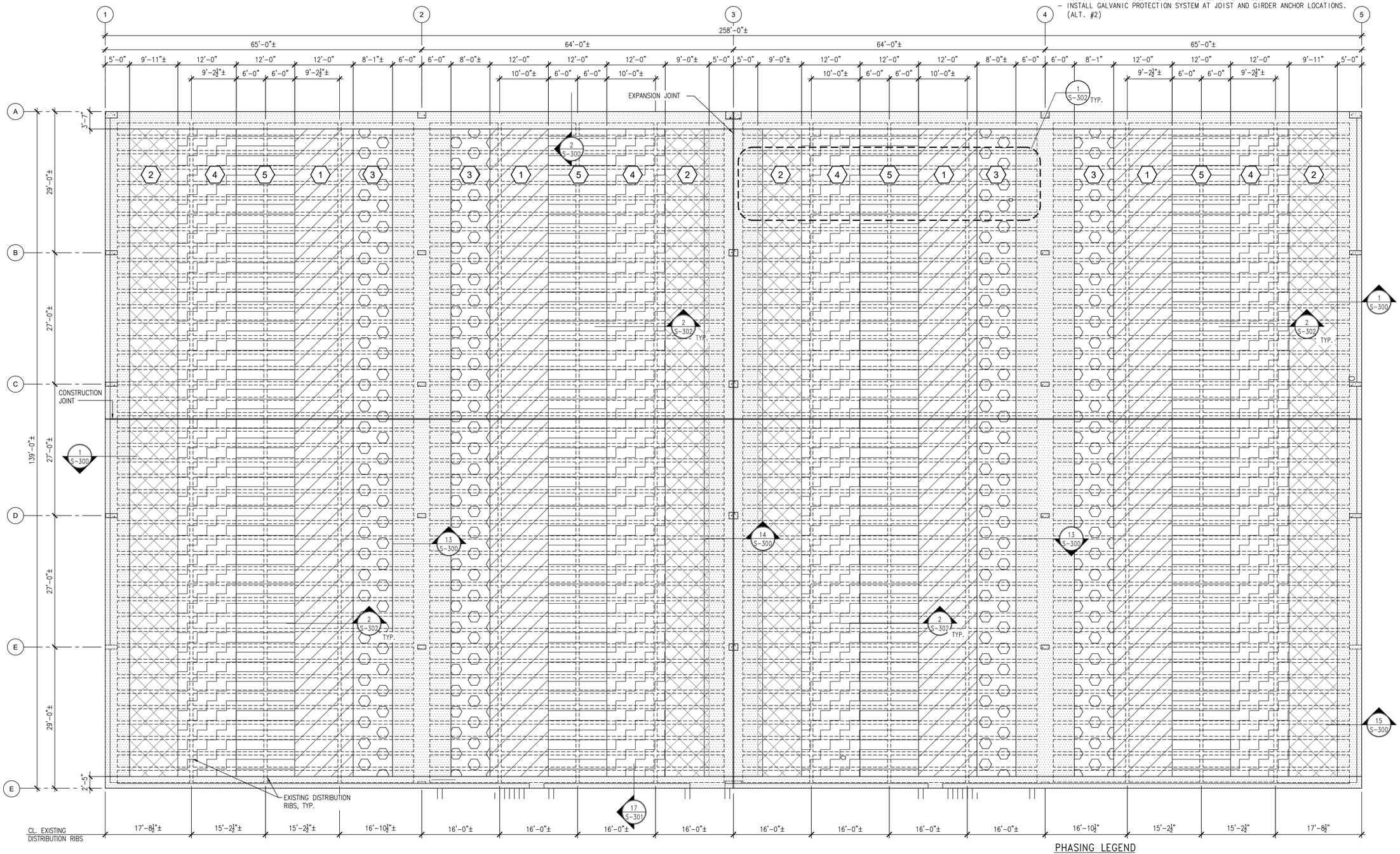
CAD DWG FILE: O1903-01 S-100
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
OVERALL
SITE PLAN

SHEET NUMBER:
S-100

6 OF 24 SHEETS
11/04/2022

NOTES:
- FIELD MEASURE EXISTING STRIPING LAYOUT AND SUBMIT TO ENGINEER PRIOR TO BEGINNING WORK.
- DETENSION SLAB TENDONS FOR EACH STRIP.
- REMOVE SLAB IN STRIPS (STAY AWAY FROM ANCHOR HEADS AND PT CABLES IN JOISTS AND GIRDERS.)
- REPLACE SLAB WITH W/ CONV. REINF. SLAB.
- AFTER COMPLETION OF FIRST STRIP AND MINIMUM 80% OF DESIGN STRENGTH OF CONCRETE, REMOVE SECOND STRIP.
- REMOVAL AND REPLACEMENT TO BE PERFORMED IN 5 SEPARATE PHASES.
- AFTER COMPLETION OF ALL PHASES WATER TEST DECK TO IDENTIFY PONDING AREAS. ADD DRAINS TO PONDED AREAS AS DIRECTED BY ENGINEER.
- INSTALL GALVANIC PROTECTION SYSTEM AT JOIST AND GIRDER ANCHOR LOCATIONS. (ALT. #2)



N

1 REPAIR PHASING PLAN FOR ELEVATED SLAB (R-3)
1/8" = 1'-0"

PHASING LEGEND

1. PHASE ONE
2. PHASE TWO
3. PHASE THREE
4. PHASE FOUR
5. PHASE FIVE

FRAMED SLAB TO REMAIN

SEA 2019075

STATE OF MISSOURI
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REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
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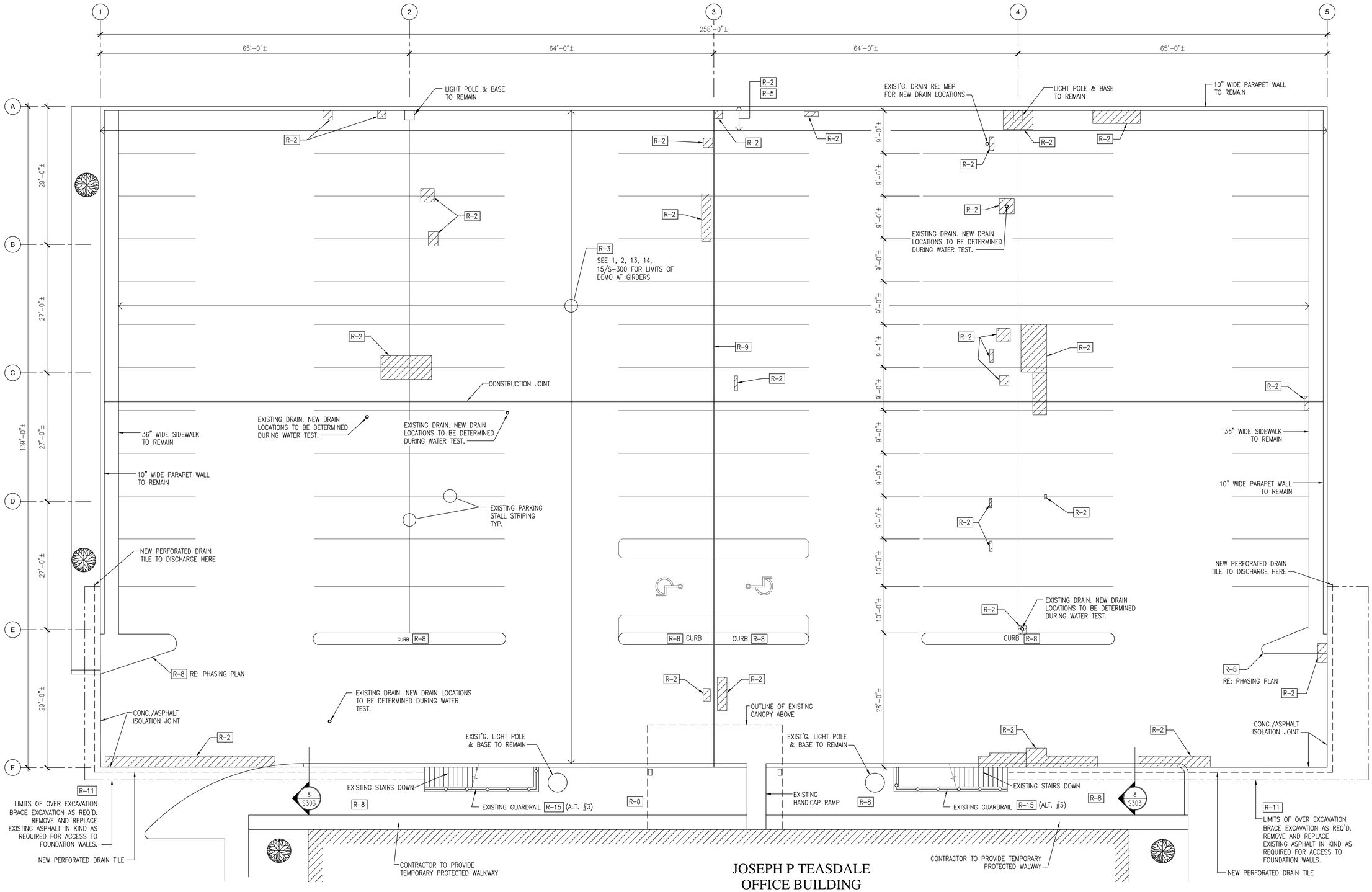
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-101
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
PHASING PLAN FOR ELEVATED SLAB

SHEET NUMBER:
S-101

NOTE: FIELD MEASURE EXISTING STRIPING LAYOUT AND SUBMIT TO ENGINEER PRIOR TO BEGINNING WORK.



JOSEPH P TEASDALE
OFFICE BUILDING

NOTE:
RE: MEP FOR DRAINS AND ELECTRICAL

N

1 UPPER LEVEL PLAN
1/8" = 1'-0"

SEA 2019075

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STATE OFFICE BUILDING

RAYTOWN, MISSOURI

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REVISION:
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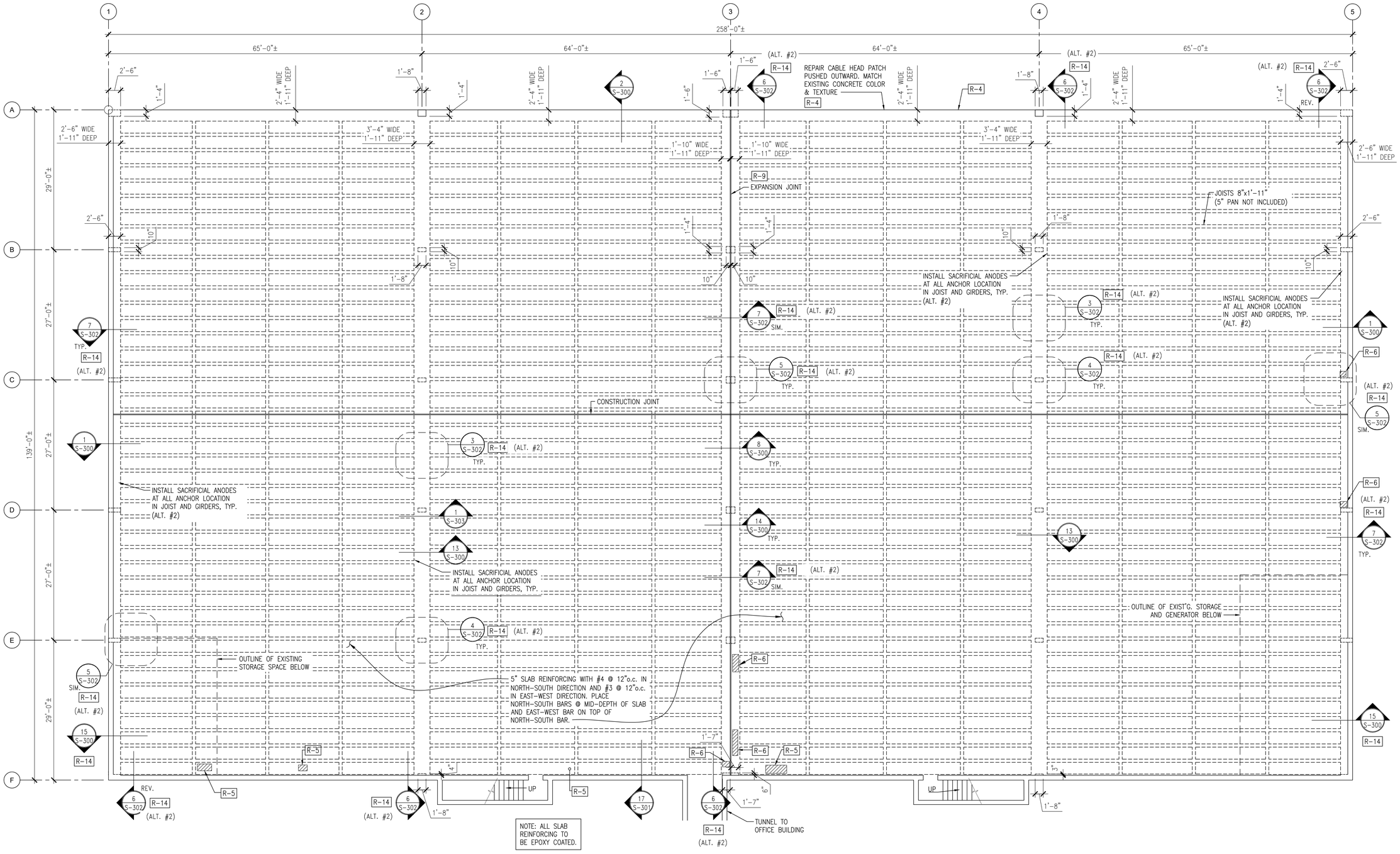
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-102
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
UPPER LEVEL PLAN

SHEET NUMBER:
S-102

8 OF 24 SHEETS
11/04/2022



N

1 UPPER LEVEL FRAMING PLAN

1/8" = 1'-0"

NOTE:
RE: MEP FOR DRAINS & ELECTRICAL

SEA 2019075

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REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI 64133

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
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REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-103
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

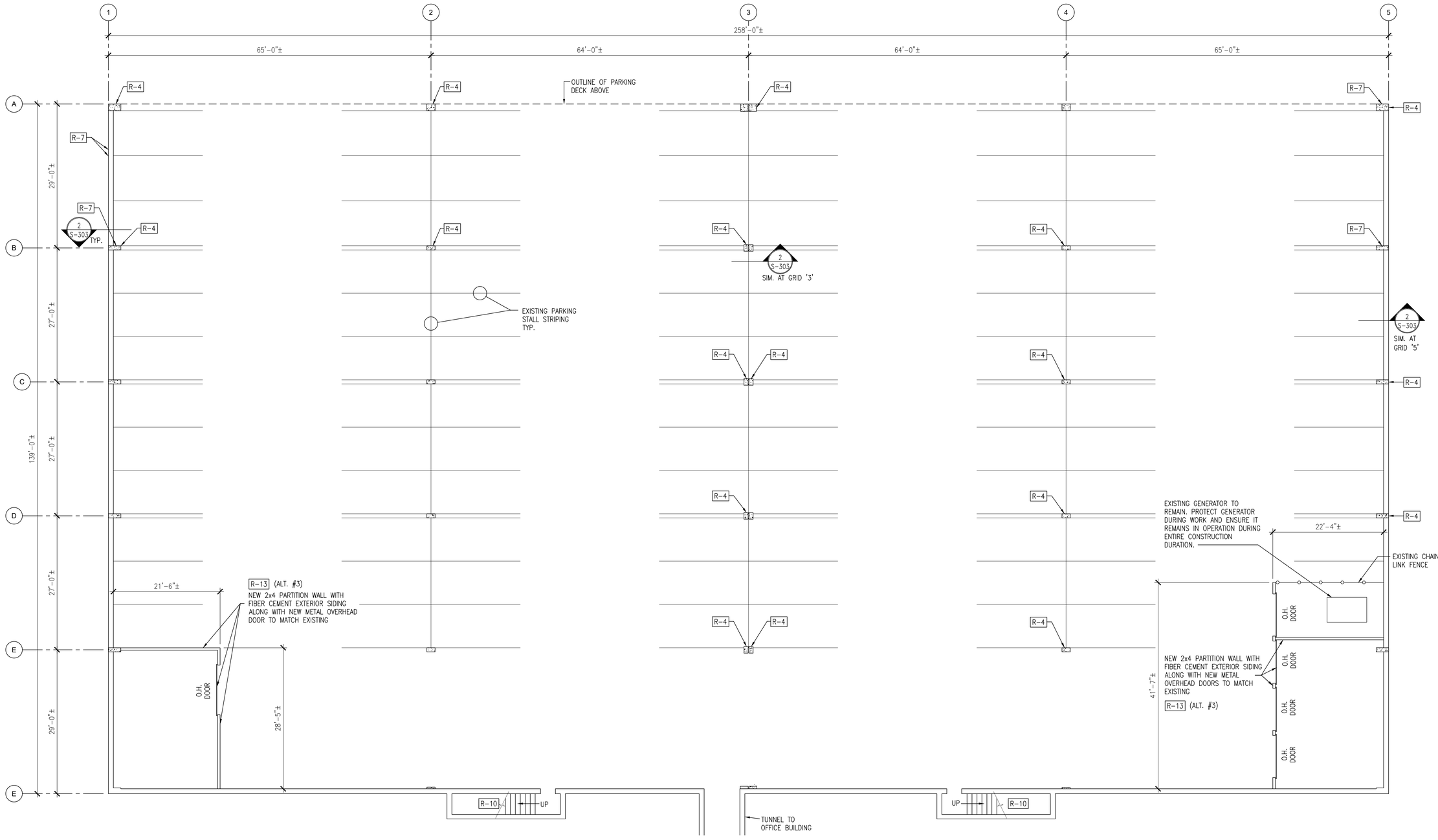
SHEET TITLE:

UPPER LEVEL FRAMING PLAN

SHEET NUMBER:

S-103

9 OF 24 SHEETS
11/04/2022



N

1 LOWER LEVEL PLAN
1/8" = 1'-0"

SEA 2019075

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PROJECT # O1903-01
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REVISION:
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REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-104
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

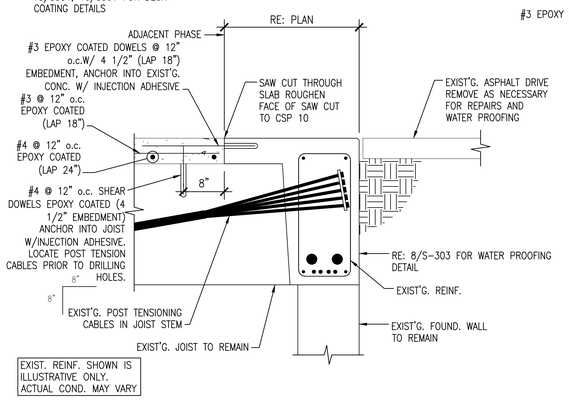
SHEET TITLE:

LOWER LEVEL PLAN

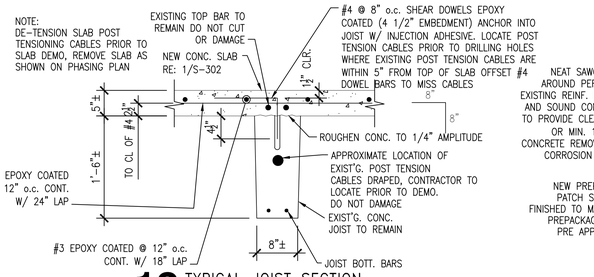
SHEET NUMBER:

S-104

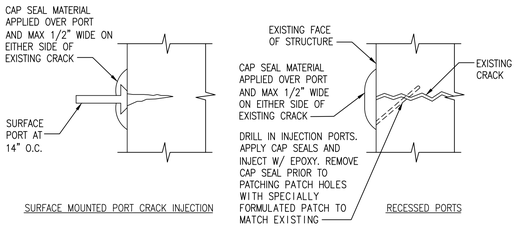
10 OF 24 SHEETS
11/04/2022



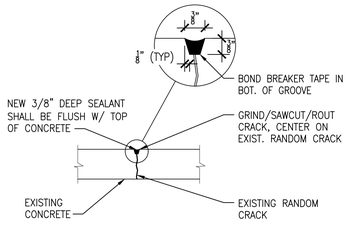
15 TYPICAL SECTION AT DRIVE ENTRY
NTS



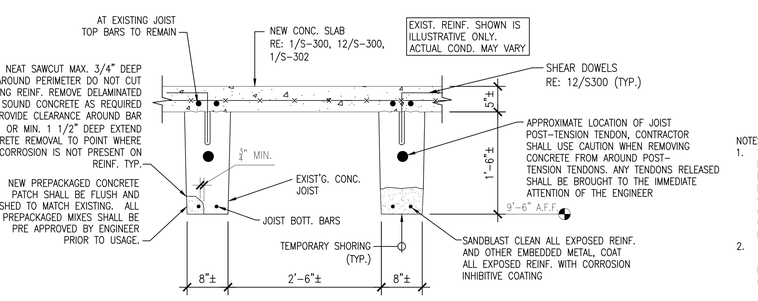
12 TYPICAL JOIST SECTION
NTS



11 TYPICAL CRACK INJECTION
N.T.S.

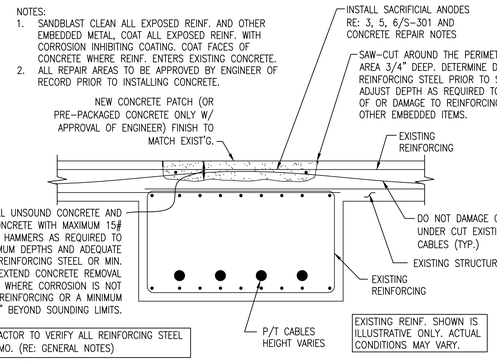


10 TYPICAL RANDOM WALL CRACK REPAIR
NTS

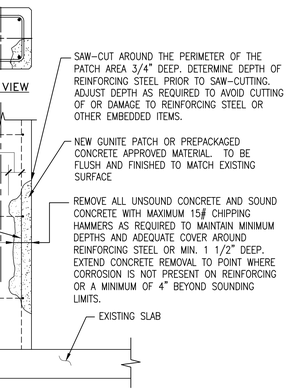


CONTRACTOR HAS OPTION TO USE GUNITE INSTEAD OF PREPACKAGED PATCH MATERIAL. WITH THE FOLLOWING SPECIFICATION:
1. GUNITE SHALL HAVE A MINIMUM 28-DAY ULTIMATE COMPRESSIVE STRENGTH OF 5000-PSI.
2. 5% SILICA FUME BY WEIGHT OF CEMENT.
3. APPLY GUNITE IN SUCH A FASHION TO ENSURE SPECIFIED COMPRESSIVE STRENGTHS

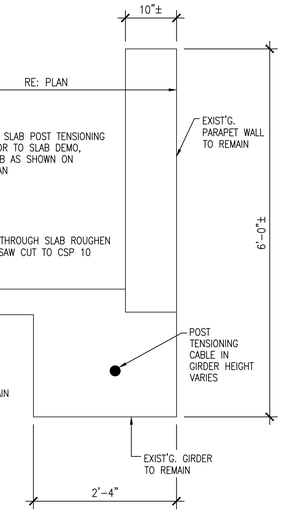
7 TYP. JOIST STEM REPAIR
NTS



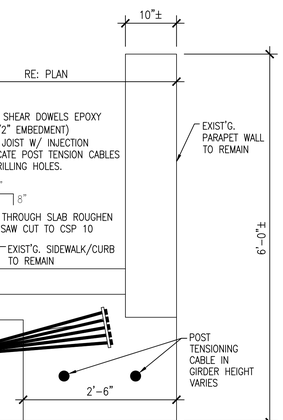
6 PARTIAL DEPTH POST TENSION FLOOR SLAB REPAIR
NTS



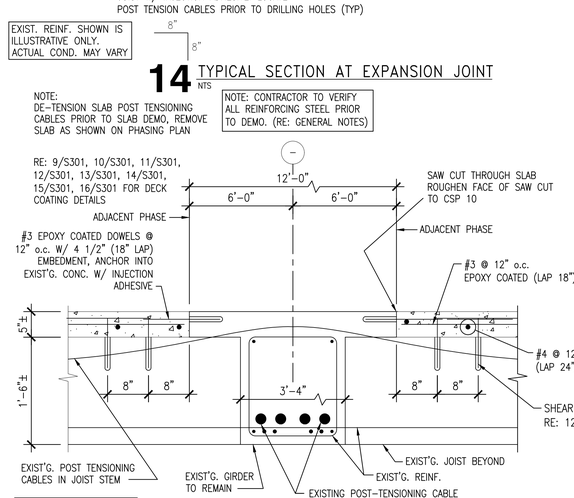
3 TYP. COLUMN REPAIR
NTS



2 SECTION AT NORTH WALL TYP.
NTS

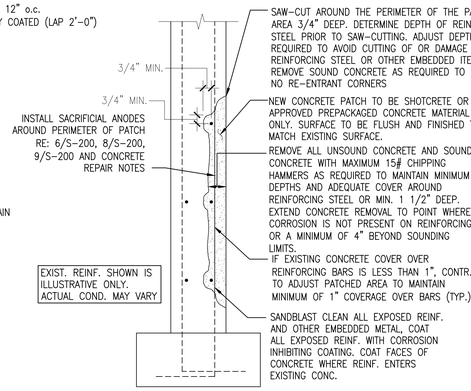


1 SECTION AT EAST & WEST WALLS TYP.
NTS

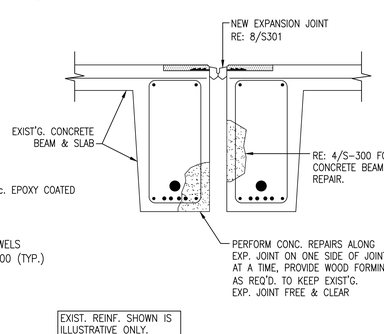


14 TYPICAL SECTION AT EXPANSION JOINT
NTS

13 SECTION AT INTERIOR GIRDER
NTS



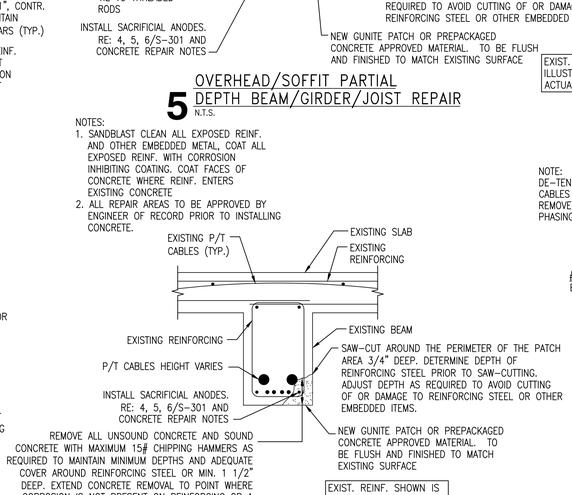
9 CONCRETE WALL/ VERTICAL REPAIR
NTS



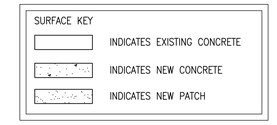
8 CONCRETE BEAM REPAIRS ALONG EXPANSION JOINT
NTS

OVERHEAD/SOFFIT PARTIAL DEPTH BEAM/GIRDER/JOIST REPAIR
N.T.S.

NOTES:
1. SANDBLAST CLEAN ALL EXPOSED REINF. AND OTHER EMBEDDED METAL, COAT ALL EXPOSED REINF. WITH CORROSION INHIBITING COATING. COAT FACES OF CONCRETE WHERE REINF. ENTERS EXISTING CONCRETE
2. ALL REPAIR AREAS TO BE APPROVED BY ENGINEER OF RECORD PRIOR TO INSTALLING CONCRETE.



4 TYPICAL CONCRETE BEAM REPAIR
N.T.S.



STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI RALPH C. JONES NUMBER PE-22413 PROFESSIONAL ENGINEER 11-4-22

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PE NO. 22413

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1903-01 S-300
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
REPAIR DETAILS

SHEET NUMBER:
S-300
11 OF 24 SHEETS
11/04/2022

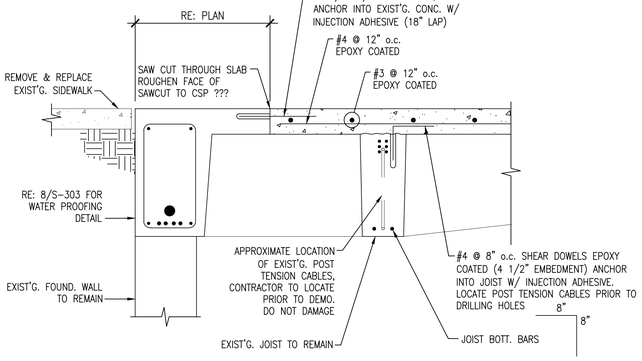
SEA 2019075

NOTE:
DE-TENSION SLAB POST TENSIONING CABLES PRIOR TO SLAB DEMO, REMOVE SLAB AS SHOWN ON PHASING PLAN

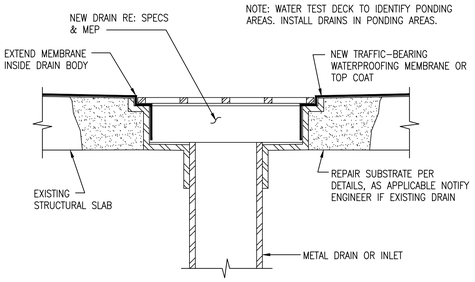
RE: 9/S-301, 10/S-301, 11/S-301, 12/S-301, 13/S-301, 14/S-301, 15/S-301, 16/S-301 FOR DECK COATING DETAILS

NOTE: CONTRACTOR TO VERIFY ALL REINFORCING STEEL PRIOR TO DEMO. (RE: GENERAL NOTES)

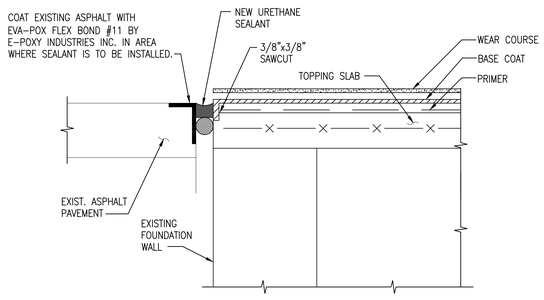
NOTE:
EXISTING REINFORCING SHOWN IS ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.



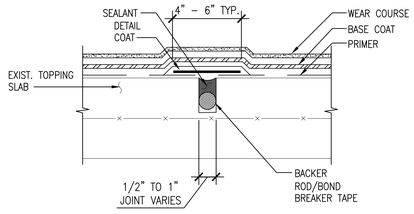
17 TYPICAL SECTION AT SOUTH FOUNDATION WALL
NTS



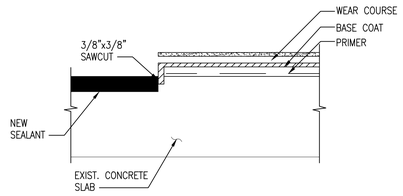
16 TRAFFIC-BEARING WATERPROOFING MEMBRANE FLOOR DRAIN DETAIL (TYP. ALL)
NTS (ALT. #1)



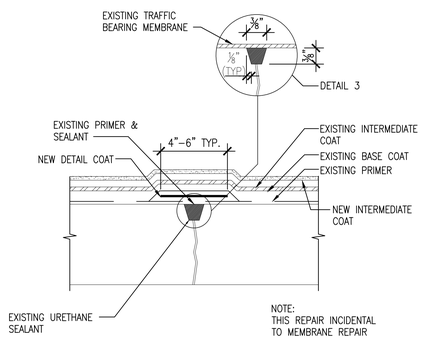
15 DECK COATING HORIZONTAL TERMINATION DETAIL AT DRIVE ENTRANCE
N.T.S. (ALT. #1)



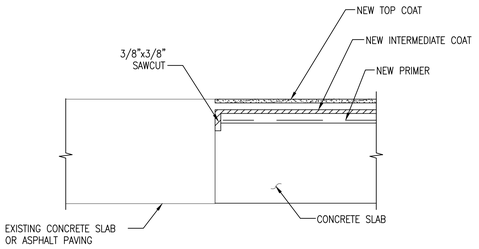
14 DECK COATING CONTROL JOINT DETAIL
N.T.S. (ALT. #1)



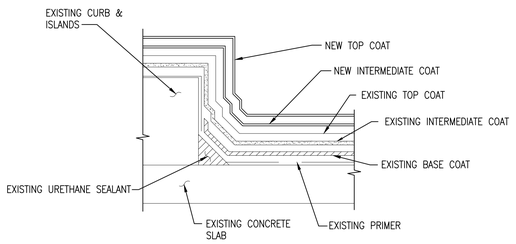
13 DECK COATING HORIZONTAL TERMINATION DETAIL
NTS (ALT. #1) AND TERMINATION DETAIL AT EXISTING BUILDING



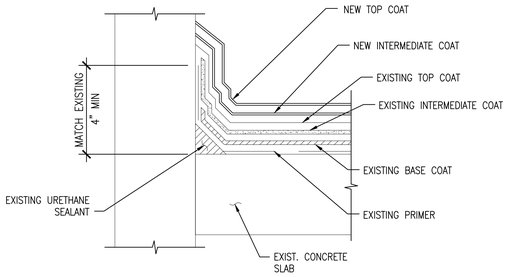
12 DECK COATING CRACK TREATMENT DETAIL (TYP.)
NTS (ALT. #1)



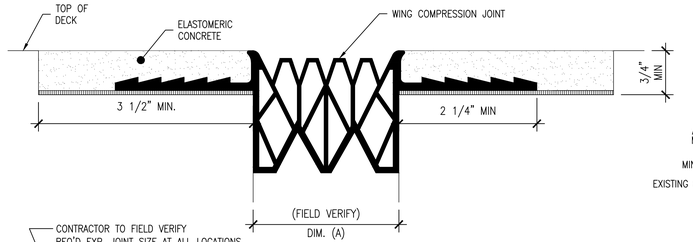
11 DECK COATING HORIZONTAL TERMINATION DETAIL
NTS (ALT. #1)



10 DECK COATING VERTICAL TRANSITION DETAIL (TYP.)
N.T.S. (ALT. #1)



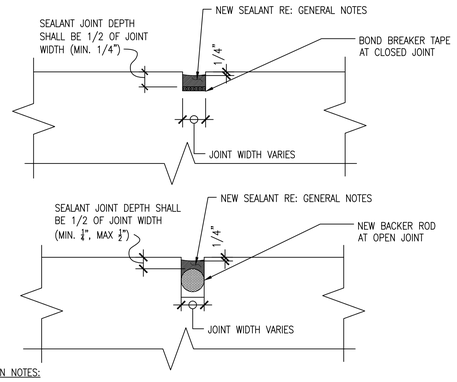
9 DECK COATING VERTICAL TERMINATION AT JOINT (TYP.)
N.T.S. (ALT. #1)



TOTAL	JOINT OPENING			INSTALLATION SIZE	
MOVEMENT	NOMINAL (A)	MIN (A)	MAX (A)	MIN.	MAX.
2" (51mm)	2" (51mm)	1 1/4" (32mm)	3 1/4" (83mm)	1 3/4" (44mm)	2 3/4" (70mm)

NOTE: COORDINATE REQUIRED JOINT TERMINATIONS WITH TRAFFIC MEMBRANE MANUFACTURER.

8 HORIZONTAL EXPANSION JOINTS
NTS

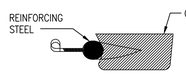


INSTALLATION NOTES:

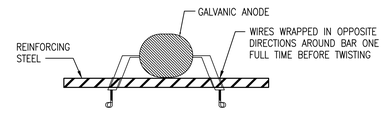
1. REMOVE EXISTING SEALANT AND BACKER ROD, IF EXISTS.
2. PREP AND PRIME SURFACES TO RECEIVE NEW SEALANT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. INSTALL NEW BACKER RODS AT OPEN JOINTS (HORIZONTALLY) OR BOND BREAKER TAPE AT CLOSED JOINTS (HORIZONTALLY AND VERTICALLY), AND APPLY PRIMER IF REQUIRED BY MANUFACTURER.
4. INSTALL NEW SEALANT (RE: GENERAL NOTES)

7 TYPICAL SEALANT JOINT
NTS

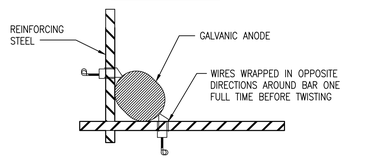
GALVANIC ANODE PROPERTIES	
MINIMUM WEIGHT OF ZINC CORE	100g
OVERALL LENGTH OF TIE WIRES	350mm
NOMINAL DIMENSIONS OF ANODE	80mm x 65mm x 30mm
ANODE TYPE/CLASS	1A/C
ALKALI ACTIVATED CORROSION CONTROL	



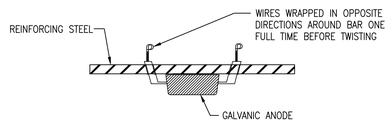
SECTION OF TYPICAL CONNECTION TO SIDE OF REBAR



PLAN OF TYPICAL INSTALLATION TO SIDE OF REBAR

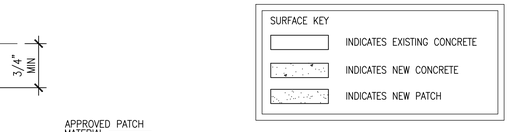


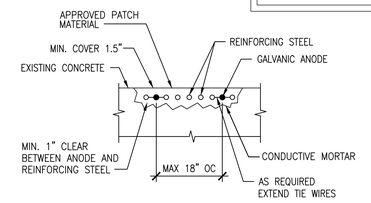
PLAN OF TYPICAL INSTALLATION AT REBAR INTERSECTION



ELEVATION OF TYPICAL INSTALLATION BELOW REBAR

6 TYPICAL GALVANIC ANODE INSTALLATION DETAILS @ 18" MAX. o.c. (ALT. #2)
NTS

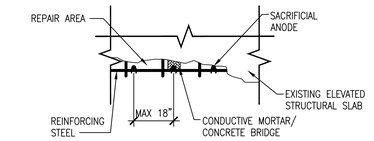




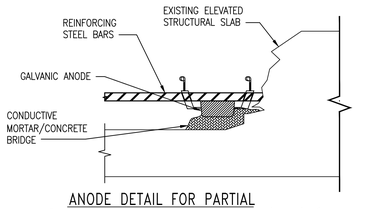
GALVANIC ANODE NOTES:

1. REMOVE DAMAGED CONCRETE AS WITH STANDARD REPAIR METHODS.
2. REPLACE/CLEAN CORRODED REINFORCING STEEL.
3. ENSURE ALL EXPOSED REINFORCING STEEL IS SECURELY FASTENED TOGETHER WITH TIE WIRE TO PROVIDE GOOD CONTINUITY.
4. ATTACH GALVANIC ANODES TO CLEAN REINFORCING STEEL AT SPACING OUTLINED IN CONTRACT SPECIFICATION. ATTACH EACH END OF GALVANIC ANODE TO ADJACENT PARALLEL REINFORCING STEEL BARS EXTEND TIE WIRES WITH REBAR WIRE AS REQUIRED. ENSURE MINIMUM SPACING OF 1" BETWEEN ANODES AND ANY REINFORCING STEEL, MINIMUM SPACING OF ¾" BETWEEN ANODES AND ANY EXISTING CONCRETE AND PROVIDE A MINIMUM OF 1.5" CONCRETE COVER.
5. IF DEPTH OF PATCH IS LESS THAN MIN REQUIRED, CONTRACTOR TO REMOVE ADDITIONAL CONCRETE AS REQUIRED TO ACCOMMODATE ANODES.
6. CONTRACTOR TO INSTALL NON-CONDUCTIVE MORTAR MATERIAL AS SPECIFIED BY ANODE MANUFACTURER.

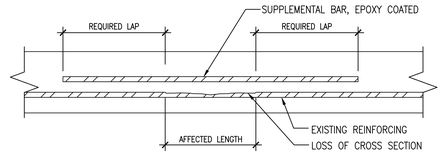
5 ANODE INSTALLATION (ALT. #2)
NTS



4 ANODE DETAIL SOFFIT DELAMINATION (ALT. #2)
NTS



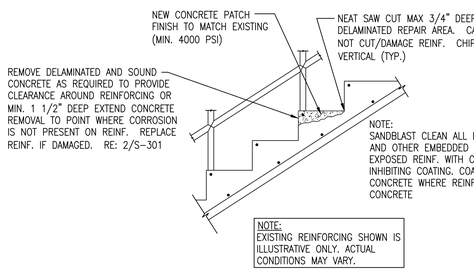
ANODE DETAIL FOR PARTIAL DEPTH FLOOR DELAMINATION (TYP.) (ALT. #2)
3 NTS



NOTE: WHERE A LOSS OF 10% OR MORE OF EXISTING REINFORCING SECTION IS IDENTIFIED, NOTIFY ENGINEER FOR ANALYSIS OF EXISTING CONDITIONS. FOR REPAIR, SPLICE EXISTING BAR WITH NEW EPOXY COATED BAR AT DETERIORATED OR DAMAGED LOCATION, TYING NEW BAR DIRECTLY TO EXISTING AND MAINTAIN EXISTING CONCRETE COVER. ADDITIONAL CONCRETE REMOVAL MAY BE NECESSARY TO PROPERLY SPLICE THE NEW REINFORCING BAR.

REQUIRED LAP, IN INCHES			
BAR SIZE	1" COVER	1 ½" COVER	2" COVER
#3	13	13	13
#4	22	17	17
#5	32	22	22
#6	43	26	26
#7	59	42	38
#8	86	54	43
#9	104	66	53
#10	125	81	66
#11	146	97	79

2 TYPICAL REINFORCING REPAIR DETAIL
NTS



1 PARTIAL DEPTH STAIRS DELAMINATION REPAIRS
NTS

SEA 2019075

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

RALPH C. JONES
NUMBER PE-22413
PROFESSIONAL ENGINEER
11-4-22

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OFFICE OF ADMINISTRATION
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DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE
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RAYTOWN, MISSOURI

PROJECT # O1903-01
SITE # 1043
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CAD DWG FILE: O1903-01 S-301
DRAWN BY: LGC
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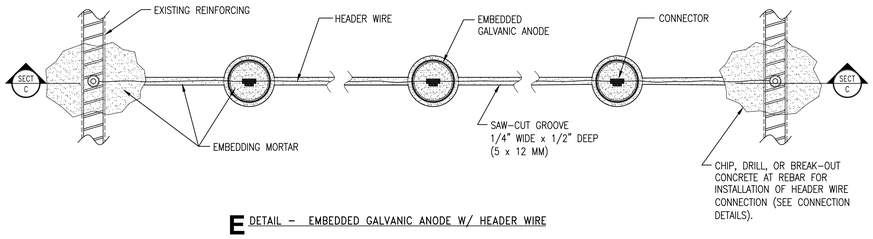
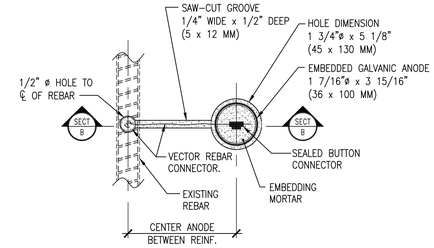
SHEET TITLE:
REPAIR DETAILS

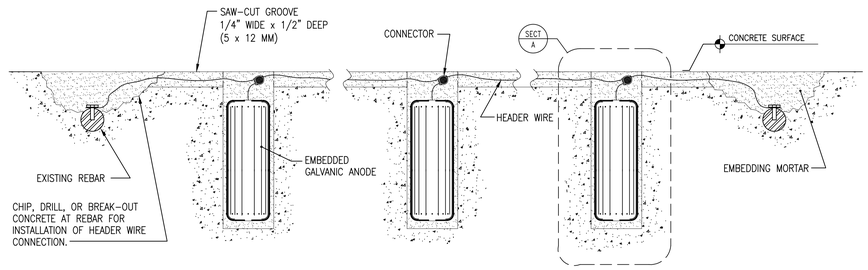
SHEET NUMBER:
S-301
12 OF 24 SHEETS
11/04/2022



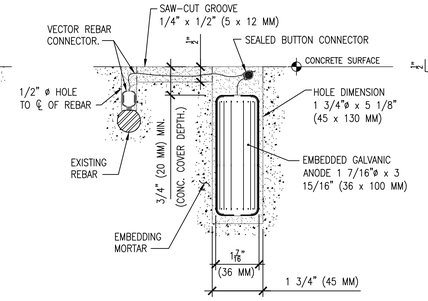
E DETAIL – EMBEDDED GALVANIC ANODE W/ HEADER WIRE



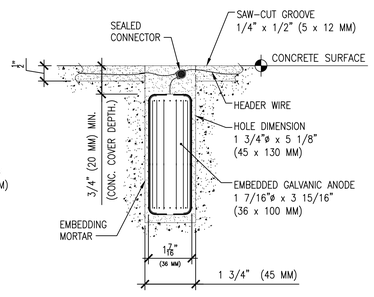
D DETAIL – EMBEDDED GALVANIC ANODE – DIRECT CONNECTION



C SECTION – EMBEDDED GALVANIC ANODE – HEADER WIRE



B SECTION – EMBEDDED GALVANIC ANODE – INSTALL WITH WIRE

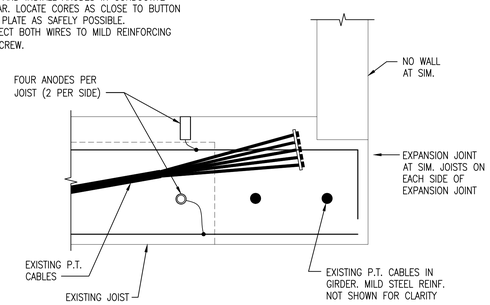


A SECTION – EMBEDDED GALVANIC ANODE – DIRECT CONNECTION

8 EMBEDDED GALVANIC ANODE DETAILS (ALT. #2)
N.T.S.

1. VERIFY CONTINUITY BETWEEN MILD REINFORCING AND P.T. IF MILD STEEL & P.T. IS NOT CONTINUOUS, MOVE TO LOW SPOT OF P.T. CABLES AND ESTABLISH CONTINUITY WITH UNCOATED TIE WIRE. CONNECT (1) WIRE TO P.T. DUCT OR (1) WIRE TO MILD REINFORCING WITH SCREW. DO NOT DAMAGE P.T.
2. CORE AND INSTALL ANODES IN CONDUCTIVE MORTAR. LOCATE CORES AS CLOSE TO BUTTON HEAD PLATE AS SAFELY POSSIBLE.
3. CONNECT BOTH WIRES TO MILD REINFORCING W/ SCREW.

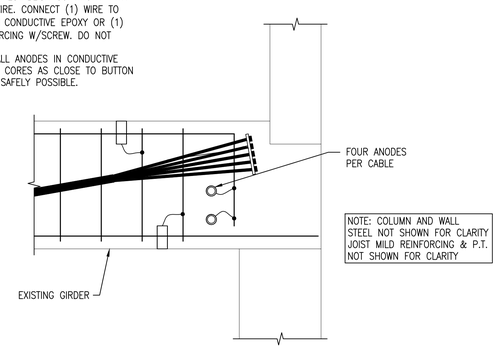
NOTE: EXISTING REINFORCING SHOWN IS ILLUSTRATIVE ONLY ACTUAL CONDITIONS MAY VARY.



7 ANODE INSTALLATION AT JOIST ENDS (GRIDS A–1 THROUGH F–1, A–5 THROUGH F–5) (SIM. AT GRID A–3 THROUGH F–3) (ALT. #2)
NTS

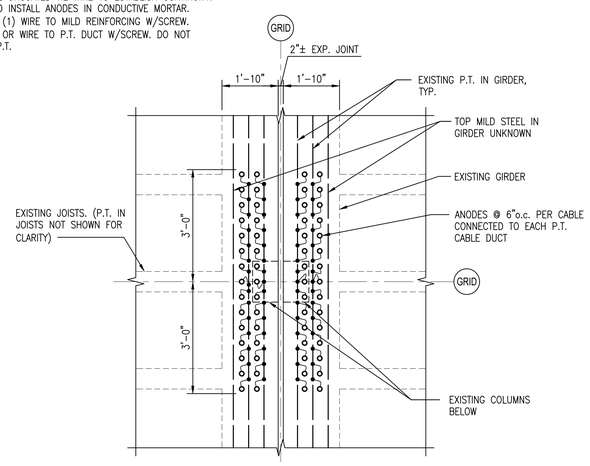
1. VERIFY CONTINUITY BETWEEN MILD REINFORCING AND P.T. IF MILD STEEL & P.T. IS NOT CONTINUOUS, MOVE TO LOW SPOT OF P.T. CABLES AND ESTABLISH CONTINUITY WITH UNCOATED TIE WIRE. CONNECT (1) WIRE TO P.T. CABLE WITH CONDUCTIVE EPOXY OR (1) WIRE TO REINFORCING W/SCREW. DO NOT DAMAGE P.T.
2. CORE AND INSTALL ANODES IN CONDUCTIVE MORTAR. LOCATE CORES AS CLOSE TO BUTTON HEAD PLATE AS SAFELY POSSIBLE.

NOTE: EXISTING REINFORCING SHOWN IS ILLUSTRATIVE ONLY ACTUAL CONDITIONS MAY VARY.



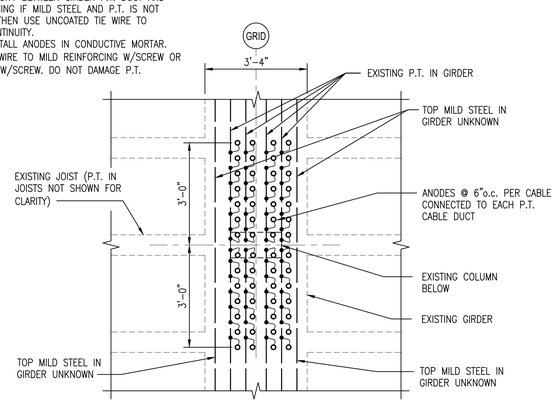
6 ANODE INSTALLATION AT GIRDER ENDS (GRIDS A–1 THROUGH A–5, E–1 THROUGH E–5) (ALT. #2)
NTS

1. VERIFY CONTINUITY BETWEEN GIRDER P.T. DUCT AND MILD REINFORCING IF MILD STEEL AND P.T. IS NOT CONTINUOUS, THEN USE UNCOATED TIE WIRE TO ESTABLISH CONTINUITY.
2. CORE AND INSTALL ANODES IN CONDUCTIVE MORTAR.
3. CONNECT (1) WIRE TO MILD REINFORCING W/SCREW. CONNECT OR WIRE TO P.T. DUCT W/SCREW. DO NOT DAMAGE P.T.



5 ANODE INSTALLATION AT GIRDER P.T. HIGH POINTS (AT GRIDS B–3, C–3, D–3, E–3) (SIM. AT GRIDS B–1 THROUGH E–1 AND B–5 THROUGH E–5) (ALT. #2)
N.T.S.

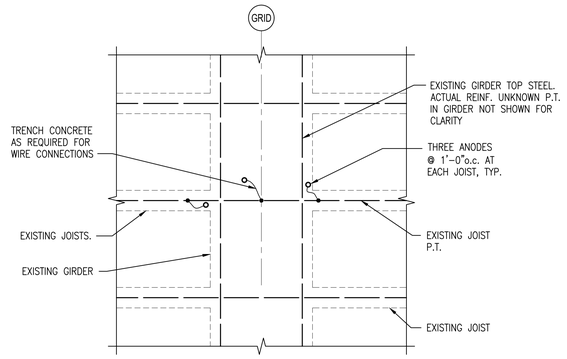
1. VERIFY CONTINUITY BETWEEN GIRDER P.T. DUCT AND MILD REINFORCING IF MILD STEEL AND P.T. IS NOT CONTINUOUS, THEN USE UNCOATED TIE WIRE TO ESTABLISH CONTINUITY.
2. CORE AND INSTALL ANODES IN CONDUCTIVE MORTAR.
3. CONNECT (1) WIRE TO MILD REINFORCING W/SCREW OR TO P.T. DUCT W/SCREW. DO NOT DAMAGE P.T.



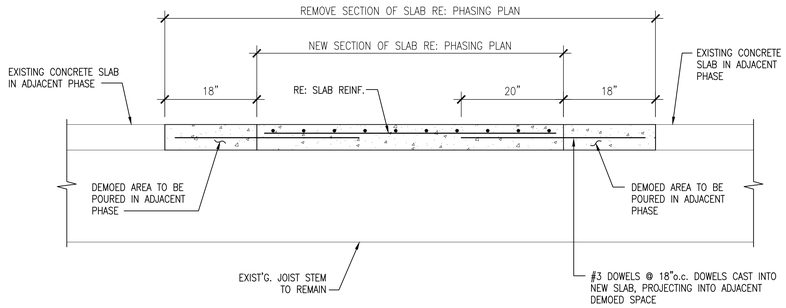
4 ANODE INSTALLATION AT GIRDER P.T. HIGH POINTS (AT GRIDS B–2, C–2, D–2, E–2, B–4, C–4, D–4, E–4) (ALT. #2)
N.T.S.

1. VERIFY CONTINUITY BETWEEN JOIST P.T. AND JOIST REINFORCING AND GIRDER REINFORCING. IF MILD STEEL & P.T. IS NOT CONTINUOUS, THEN USE UNCOATED TIE WIRE TO ESTABLISH CONTINUITY.
2. CORE AND INSTALL ANODE(S) IN CONDUCTIVE MORTAR.
3. CONNECT (1) WIRE TO MILD REINFORCING W/SCREW OR CONNECT (1) WIRE TO P.T. WITH CONDUCTIVE EPOXY.

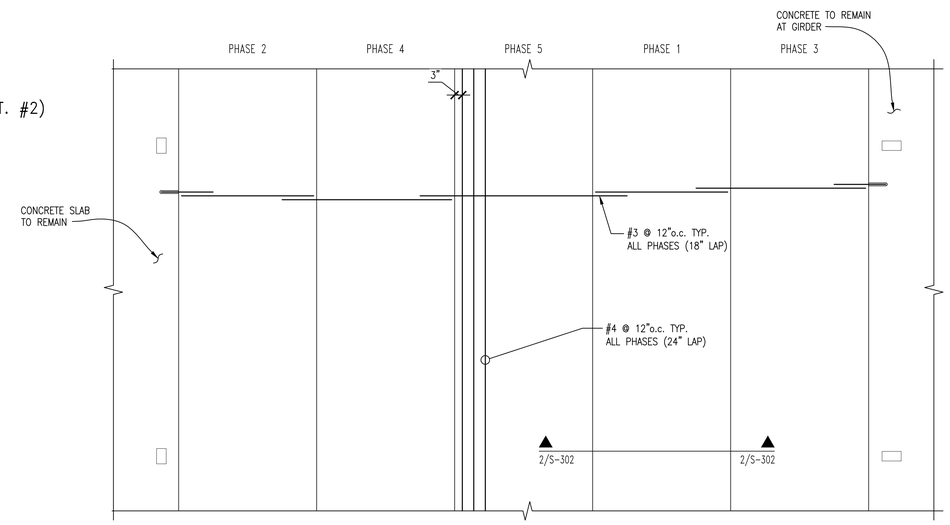
NOTE: LOCATE ALL P.T. AND MILD REINFORCING IN AREA – PRIOR TO STARTING REPAIR/INSTALLATION.



3 ANODE INSTALLATION AT JOIST P.T. HIGH POINTS (AT GRIDS 2 AND 4) (ALT. #2)
N.T.S.



2 TYPICAL DEMO AND SLAB REPLACEMENT SECTION
NTS



1 SLAB REINFORCING STEEL LAYOUT (TYP.) TYP. AT GRID 1–2 AND 3–4 REV. AT GRIDS 2–3 AND 4–5
N.T.S.

SEA 2019075

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

RALPH C. JONES
NUMBER PE-22413
PROFESSIONAL ENGINEER
11.4.22

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Missouri Certificate of Authority Number: 000396

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF
Client Division
Client Division
Client Division

REPAIR PARKING DECK

JOSEPH P TEASDALE STATE OFFICE BUILDING

RAYTOWN, MISSOURI

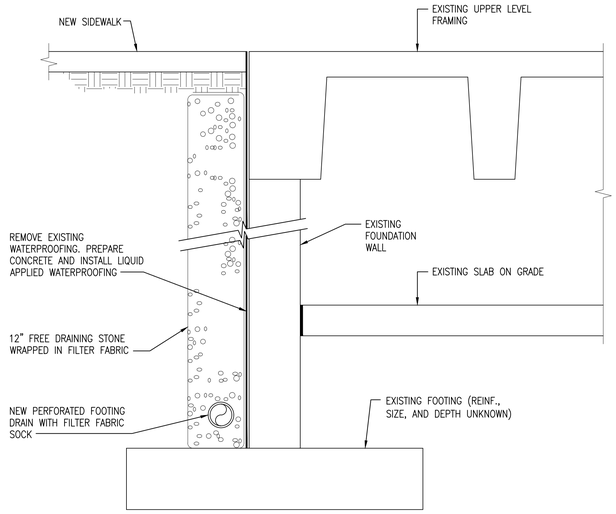
PROJECT # O1903-01
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

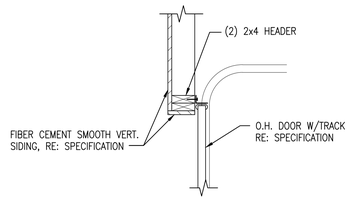
CAD DWG FILE: O1903-01 S-302
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
REPAIR DETAILS

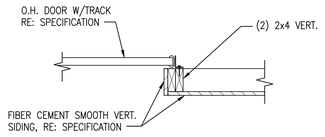
SHEET NUMBER:
S-302
13 OF 24 SHEETS
11/04/2022



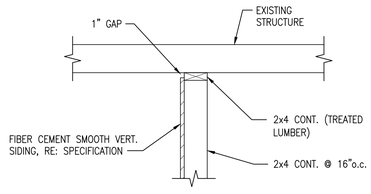
8 FOUNDATION WALL BELOW GRADE WATERPROOFING DETAIL
NTS



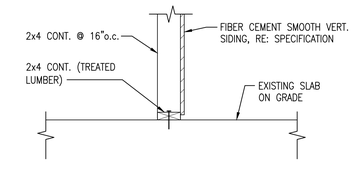
7 SECTION AT O.H. DOOR HEADER (ALT. #3)
NTS



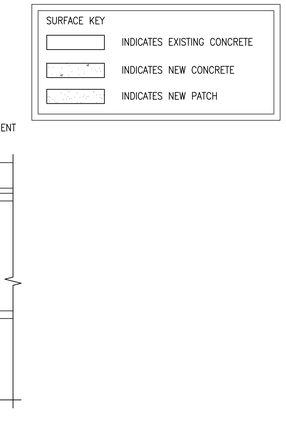
6 SECTION AT O.H. DOOR JAMB (ALT. #3)
NTS



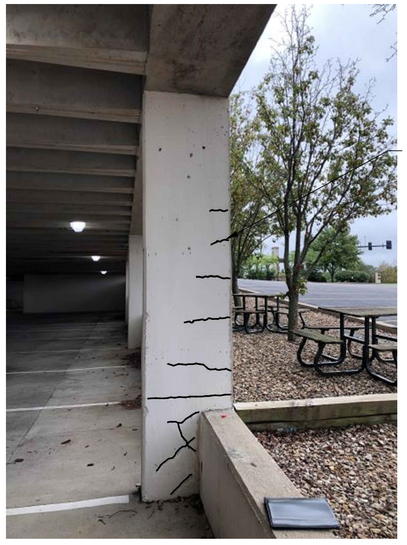
5 TOP OF WALL PARALELL TO JOIST STEMS (ALT. #3)
NTS



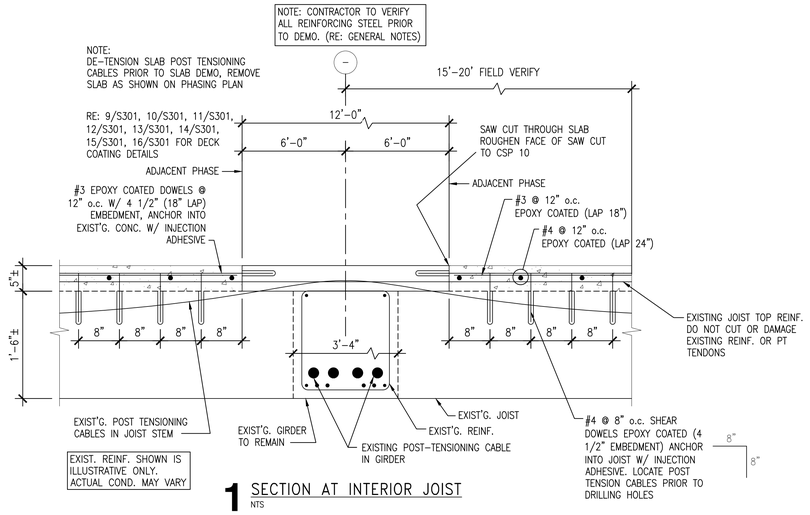
4 TYP. SECTION AT BASE OF WALL (ALT. #3)
NTS



3 TYP. WALL FRAMING AROUND JOIST STEMS (ALT. #3)
NTS



2 COLUMN CRACKING



1 SECTION AT INTERIOR JOIST
NTS

SEA 2019075

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

STATE OF MISSOURI RALPH C. JONES NUMBER PE-22413 PROFESSIONAL ENGINEER 11.4.22

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REVISION:
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CAD DWG FILE: O1903-01 S-303
DRAWN BY: LGC
CHECKED BY: RCJ
DESIGNED BY: RCJ

SHEET TITLE:
REPAIR DETAILS

SHEET NUMBER:
S-303

14 OF 24 SHEETS
11/04/2022

DEFINITIONS

1. TO "FURNISH" IS TO SUPPLY AND DELIVER TO THE PROJECT SITE READY FOR UNLOADING. THE FURNISHER SHALL COORDINATE DELIVERY AND NEGOTIATE UNLOADING WITH INSTALLER. UNLESS STATED OTHERWISE, FURNISHED PRODUCTS AND MATERIALS SHALL BE NEW.
2. TO "INSTALL" IS TO UNLOAD, UNPACK, ASSEMBLE, ERECT, PLACE, ANCHOR, APPLY, WORK TO DIMENSION, FINISH, CURE, PROTECT, CLEAN, PIPE, DUCT, CIRCUIT, INTERFACE TO SERVICES, AND OTHERWISE MAKE COMPLETE AND READY FOR INTENDED USE.
3. TO "PROVIDE" IS TO "FURNISH" AND "INSTALL" AS DEFINED ABOVE.
4. TO "REINSTALL" IS TO CLEAN, REFURBISH TO FULL FUNCTIONALITY, REASSEMBLE, ERECT, PLACE, ANCHOR, FINISH, PROTECT, PIPE, DUCT, CIRCUIT, INTERFACE TO SERVICES, AND OTHERWISE MAKE COMPLETE AND READY FOR INTENDED USE.
5. TO "SALVAGE" IS TO REMOVE BY DECONSTRUCTING IN A CONTROLLED MANNER LEAVING PRODUCT OR MATERIAL UNDAMAGED AND READY FOR REUSE. BEFORE PROCEEDING WITH SALVAGE OPERATION, INSPECT CONDITION AND TEST FUNCTIONALITY OF PRODUCTS AND MATERIALS TO BE SALVAGED; AND INSPECT CONDITION OF ADJACENT PRODUCTS AND SURFACES NOT SLATED FOR DEMOLITION. REPORT EXISTING DEFICIENCIES OR DAMAGE AND WAIT FOR RESPONSE BEFORE PROCEEDING. IF DAMAGED WHILE SALVAGING, PRODUCT OR MATERIAL SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
6. TO "DEMOLISH" IS TO REMOVE WITHOUT REGARD TO CONDITION OF PRODUCT OR MATERIAL, AND RECYCLE OR LAWFULLY DISPOSE OFF-SITE AS WASTE. CONTRACTOR MAY OPT TO SALVAGE AND TAKE OWNERSHIP, BUT THE ADDITIONAL COSTS ASSOCIATED WITH SALVAGE EFFORT SHALL BE BORNE BY CONTRACTOR. BEFORE PROCEEDING WITH DEMOLITION OPERATION, INSPECT CONDITION OF ADJACENT PRODUCTS AND SURFACES NOT SLATED FOR DEMOLITION. REPORT EXISTING DAMAGE AND WAIT FOR RESPONSE BEFORE PROCEEDING. IF DAMAGED DURING DEMOLITION, ADJACENT PRODUCTS AND SURFACES SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE.
7. TO "CUT" IS TO REMOVE IN-PLACE CONSTRUCTION AS NECESSARY FOR EXECUTION OF SPECIFIED OR INDICATED WORK.
8. TO "PATCH" IS TO FIT, REPAIR AND REFINISH CONSTRUCTION AS NECESSARY FOR RESTORATION TO ORIGINAL CONDITIONS, AND FIRE AND SMOKE RATING.
9. "PIPING" AND A "PIPE" IS A COMPLETE SYSTEM FOR CONTAINING AND DISTRIBUTING FLUIDS INCLUDING PIPES, TUBES, HOSES, FITTINGS, CONNECTORS, COUPLINGS, VALVES, SEALS, SEALANTS, GASKETS, PENETRATION SEALING SYSTEMS, INSULATION, VAPOR BARRIERS, JACKETING, HANGERS, CLAMPS, SUPPORTS, FASTENERS, ANCHORS, PAINT, AND LABELS AS SPECIFIED IN SPECIFICATIONS, INDICATED ON DRAWINGS, RECOMMENDED BY MANUFACTURER'S INSTRUCTIONS, OR REQUIRED BY APPLICABLE CODES AND STANDARDS FOR THE LOCATION AND APPLICATION.
10. TO "PIPE" IS TO PROVIDE "PIPING" OR A "PIPE" AS DEFINED ABOVE.
11. WITH RESPECT TO PIPING DEMOLITION, THE "SOURCE" FOR A LOAD IS THE FITTING, TAP, MANIFOLD, AND SO FORTH THAT ORIGINATES THE PIPE DEDICATED TO EXCLUSIVELY SERVING THE SPECIFIC LOAD.

COMPLIANCE

1. APPLICABLE CODES, STANDARDS AND REGULATIONS:
   A. ADA STANDARDS FOR ACCESSIBLE DESIGN, 2010
   B. OSHA 29 CFR 1910 - OCCUPATIONAL SAFETY AND HEALTH STANDARDS
   C. OSHA 29 CFR 1926 - SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION
   D. INTERNATIONAL BUILDING CODE (IBC), 2018
   E. INTERNATIONAL PLUMBING CODE (IPC), 2018
2. PERFORM WORK IN ACCORDANCE WITH THE ABOVE AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCALLY ADOPTED CODES, STANDARDS AND REGULATIONS.
3. THE RESULTING FACILITY SHALL ACCOMMODATE THE DISABLED AND BE IN CONFORMANCE WITH ADA STANDARDS FOR ACCESSIBLE DESIGN.
4. THE RESULTING FACILITY SHALL BE A SAFE WORK PLACE IN CONFORMANCE WITH OSHA 29 CFR 1910.
5. A COMPLETE LIST OF SYMBOLS AND ABBREVIATION USED BY CUSTOM ENGINEERING ARE SHOWN ON THIS SHEET. NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED ON THIS PROJECT.
6. DRAWINGS ARE SCHEMATIC IN NATURE AND ARE INTENDED TO DEPICT GENERAL SCOPE OF PROJECT.
7. DRAWINGS, SPECIFICATIONS, REFERENCED STANDARDS, AND SO FORTH ARE COMPLIMENTARY OF ONE ANOTHER. IN THE EVENT OF CONFLICTING REQUIREMENTS, THE ENGINEER SHALL BE CONTACTED FOR RESOLUTION.
8. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS. NOTIFY AE PROJECT MANAGER OF ANY DISCREPANCIES. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS, ELBOWS, AND SO FORTH WHICH MAY BE REQUIRED FOR PROPER INSTALLATION OF WORK. PROVIDE ADDITIONAL BENDS AND OFFSETS AS REQUIRED TO COMPLETE WORK AT NO ADDITIONAL COST TO OWNER.
9. EACH BIDDER SHALL INSPECT SITE FOR EXISTING CONDITIONS. FAILURE TO OBTAIN SUCH KNOWLEDGE SHALL NOT RELIEVE THE SUCCESSFUL BIDDER OF RESPONSIBILITY FOR ACCOMMODATIONS WITH THESE CONDITIONS AND PERFORMING WORK UNDER THIS CONTRACT.
10. INCLUDE IN BID AND PAY PERMITTING COSTS ASSOCIATED WITH WORK.

COORDINATION AND HYGIENE

1. THE AGREEMENT BETWEEN THE CONTRACTOR AND THE OWNER IS A SINGLE-PRIME CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE SCOPE OF WORK, INCLUDING ANY REQUIRED COORDINATION WITH SUBCONTRACTORS. THE CONSTRUCTION DOCUMENTS AND ENGINEER DO NOT DELINEATE BETWEEN SUBCONTRACTORS RESPONSIBILITY, AND ANY INFERENCE TO DIVISION OF WORK IS A SUGGESTION ONLY. NEITHER THE OWNER NOR THE ENGINEER WILL OFFER ANY OPINIONS OR PROPOSED RESOLUTION CONCERNING ASSIGNMENT OF WORK TO SUBCONTRACTORS. IN THE EVENT OF MISSING OR CONFLICTING SCOPE PROVIDED BY THE CONTRACTOR OR ANY SUBCONTRACTORS, THE CONTRACTOR IS STILL RESPONSIBLE FOR ALL WORK.
2. THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS, MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THEIR WORK.
3. SAFELY EXECUTE THIS WORK ACCORDING TO OSHA 29 CFR 1926.
4. PROVIDE A FIRE WATCH IN ACCORDANCE WITH NFPA-101 WHERE THE FIRE ALARM OR FIRE SUPPRESSION SYSTEM IS OUT OF SERVICE. COORDINATE SPECIFICS WITH OWNER.
5. OBTAIN A HOT-WORK PERMIT FROM OWNER AND PROVIDE FIRE WATCH FOR WELDING, CUTTING, AND BRAZING PROCEDURES IN ACCORDANCE WITH OSHA 29 CFR 1910.252.
6. HAZARDOUS-MATERIAL ABATEMENTS SHALL BE COORDINATED WITH OWNER.
7. COORDINATE WORK SCHEDULE WITH OWNER. PERFORM WORK DURING OWNER APPROVED WORK WINDOW.
8. COORDINATE OUTAGES WITH OWNER. SUBMIT REQUESTS FOR ALL PLANNED OUTAGES BEFORE START OF PROJECT. WORK SHALL BE EXECUTED IN A MANNER THAT MINIMIZES QUANTITY AND DURATION OF OUTAGES THAT AFFECT CURRENT OCCUPANTS AND THEIR OPERATIONS. FOR EACH INDIVIDUAL UTILITY SERVICE, CONSOLIDATE ALL WORK REQUIRING ITS OUTAGE INTO A SINGLE SHUTDOWN EVENT. LIMIT OUTAGES TO ONE DAY FOR EACH CUT-IN. SCHEDULE OUTAGES AFTER HOURS OR ON WEEKENDS, UNLESS APPROVED IN ADVANCE BY OWNER.
9. COORDINATE WORK WITH ALL OTHER TRADES. EACH SUBCONTRACTOR SHALL REVIEW ENTIRE DRAWING SET AND AVOID CONFLICTS WITH OTHER TRADES.
10. CONSTRUCTION WASTE MUST BE CLEANED UP DAILY. FOLLOW THE OWNER FURNISHED CONSTRUCTION PLAN.

SUBSTITUTIONS AND SUBMITTALS

1. DESIGN DOCUMENTS WERE BASED UPON INDICATED, SCHEDULED AND SPECIFIED PRODUCTS. WHILE SUBSTITUTIONS MAY BE ACCEPTED, ANY CHANGES, POSSIBLY BORNE BY OTHER TRADES, THAT BECOME NECESSARY AS A RESULT OF THE SUBSTITUTION AND THE ASSOCIATED COSTS SHALL BE FULLY BORNE BY THE CONTRACTOR AND MUST BE INCLUDED IN THEIR BID.
2. "EQUAL" OR "APPROVED EQUAL" SUBSTITUTIONS SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER.
3. SUBSTITUTION REQUESTS MUST BE HIGHLIGHTED IN BID AND CLEARLY IDENTIFIED AS SUBSTITUTIONS. SUBMIT RFI TO ARCHITECT IF PROPOSED SUBSTITUTION REQUIRES ARCHITECTURAL CHANGES TO ACCOMMODATE SUBSTITUTION AND ITS WORKING CLEARANCES. OCNTRACTOR TO SUBMIT ALL SUBSITUTIONS ON STATE OF MISSOURI SUBSTITUTION REQUEST FORMS.
4. PROVIDE (1) ELECTRONIC COPY OF SUBMITTALS FOR ALL EQUIPMENT, DEVICES, MATERIALS, AN SO FORTH TO THE ENGINEER. PROVIDE FINAL RED LINE AS-BUILT DRAWINGS TO OWNER.
5. SHOP DRAWINGS, SAMPLES, AND COORDINATION DRAWINGS. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, ELECTRONIC COPIES OF MANUFACTURER'S SHOP DRAWINGS FOR ALL MAJOR ITEMS OF EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT, AND ALL MAJOR ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS. BEFORE SUBMITTING SHOP DRAWINGS AND MATERIAL LISTS, THE CONTRACTOR SHALL VERIFY THAT ALL THE EQUIPMENT IS COMPATIBLE AND SUITABLE FOR INTENDED USE, FITS THE AVAILABLE SPACE AND PROVIDES AMPLE ROOM FOR MAINTENANCE. THE ENGINEER'S CHECKING AND SUBSEQUENT APPROVAL OF SUCH SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, QUANTITIES, OMISSIONS OF COMPONENTS OR FITTINGS, OR FOR COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS. THE CONTRACTOR SHALL PROCEED WITH THE PROCUREMENT AND INSTALLATION OF EQUIPMENT/MATERIAL ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS RELATIVE TO EACH ITEM.
   ALL SUBMITTALS TO BE SUBMITTED AND APPROVED VIA E- BUILDER.
6. ACCEPTANCE OF THE WORK SHALL BE SUBJECT TO THE ENGINEERS APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS DETAIL DRAWINGS OF EQUIPMENT AND MATERIAL, AND CONTRACTORS SHOP DETAILS FOR INSTALLATION OF MATERIAL AND EQUIPMENT. DESCRIPTIVE LITERATURE SHALL INCLUDE CATALOG DATA COVERING DESIGN, SIZE AND CAPACITY OF MATERIAL AND EQUIPMENT. SUBMITTALS SHALL INCLUDE THE MANUFACTURERS MODEL NUMBER, CAPACITY, PERFORMANCE DATA, ELECTRICAL CHARACTERISTICS, AND SO FORTH, ALL CLEARLY SHOWN AND MARKED FOR THE SPECIFIC ITEM OF EQUIPMENT BEING FURNISHED ON THIS PROJECT.
7. RECORD DRAWINGS: THE CONTRACTOR SHALL KEEP DAY-TO-DAY RECORD OF ALL CHANGES OR VARIATIONS MADE FROM THE CONTRACT DOCUMENTS AND AT THE END OF THE PROJECT SHALL PROVIDE THE OWNER, ARCHITECT AND ENGINEER WITH REPRODUCIBLE SETS AS REQUESTED.
8. OPERATION AND MAINTENANCE INSTRUCTIONS: THE CONTRACTOR SHALL, DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE A COMPLETE BROCHURE OF ALL EQUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. THIS BROCHURE SHALL INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, MANUFACTURERS CATALOG SHEETS, WIRING DIAGRAMS, PARTS LISTS, APPROVED SHOP DRAWINGS, AND DESCRIPTIVE LITERATURE ALL AS FURNISHED BY THE EQUIPMENT MANUFACTURER. MANUAL SHALL INCLUDE AN INSIDE COVER SHEET THAT LIST THE PROJECT NAME, DATE, OWNER, ARCHITECT, MECHANICAL CONSULTANT, ELECTRICAL CONSULTANT, GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, AND AN INDEX OF CONTENTS. ALL LITERATURE SHALL BE BOUND IN APPROVED BINDERS AND THREE (3) HARD COPIES AND (3) ELECTRONIC COPIES ON CD'S SHALL BE SUBMITTED TO THE OWNER AT THE TERMINATION OF THE WORK. CONTRACTOR SHALL ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATION TO OWNER'S REPRESENTATIVE AT THE TERMINATION OF THE WORK.

DEMOLITION, CUTTING, PATCHING AND PENETRATIONS

1. EXISTING PIPING AND SO FORTH NOT BEING REUSED SHALL BE DEMOLISHED IN THEIR ENTIRETY BACK TO SOURCE.
2. REMOVE OR MODIFY EXISTING EQUIPMENT, APPLIANCES, DEVICES, DUCTWORK, PIPING, CONDUIT, CIRCUITRY, AND SO FORTH AS REQUIRED TO ACCOMMODATE CONSTRUCTION. REINSTALL AND RECONNECT AFFECTED EXISTING-TO-REMAIN SYSTEMS.
3. NEATLY CUT AND SEALED OPENINGS AND PENETRATIONS FOR AN AIR TIGHT ASSEMBLY.
4. PATCH AND PAINT PENETRATIONS AND FLAWS RESULTING FROM OR REVEALED BY THE REMOVAL OF EQUIPMENT, APPLIANCE, DEVICES, DUCTWORK, PIPING, AND SO FORTH WITH MATERIALS MATCHING ADJACENT SURFACE.
5. PROVIDE ESCUTCHEON PLATES AT FINISHED WALL PIPING AND CONDUIT PENETRATIONS.
6. SEAL EXTERIOR PENETRATIONS WEATHER TIGHT.
7. MAINTAIN FIRE-RATED ASSEMBLIES:
   A. MAINTAIN FIRE-RATED ASSEMBLIES WITH FIRE STOPS AT MEMBRANE AND ASSEMBLY PENETRATIONS.
   B. FABRICATE AND INSTALL FIRE-STOP ACCORDING TO AN APPROPRIATE DETAIL IN THE UL FIRE RESISTANCE DIRECTORY, OR
   C. PROVIDE UL-LISTED FIRE-STOP KIT.
   D. FABRICATE, INSTALL AND LABEL FIRE-STOPS IN ACCORDANCE WITH FCIA FIRESTOP MANUAL OF PRACTICE.
   E. UTILIZE 3M CP-25 FIRE-BARRIER CAULK WITH THICKNESS AS RECOMMENDED BY 3M OR AS REQUIRED BY UL DETAIL.

PLUMBING

1. PLUMBING SHALL BE INSTALLED IN ACCORDANCE WITH IPC.
2. SOME PIPING MAY HAVE BEEN SHOWN OFFSET FOR CLARITY.
3. PROVIDE OFFSETS AND TRANSITIONS AS NECESSARY TO AVOID OBSTRUCTIONS.
4. FIELD VERIFY EXACT ROUTING OF PIPING. MOUNT PIPING FROM STRUCTURE ABOVE AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE. ROUTE PIPING PARALLEL OR PERPENDICULAR TO BUILDING LINES.
5. PROVIDE TYPE-L COPPER TUBING FOR DOMESTIC WATER.
6. SLOPE STORM PIPING AT 1/16" PER FOOT.
7. ALL BRAZING & WELDING SHALL REQUIRE A HOT WORK PERMIT. COORDINATE ALL NECESSARY REQUIREMENTS WITH OWNER.
8. INSULATE DOMESTIC COLD WATER PIPING WITH PLENUM-RATED ELASTOMERIC FOAM TO PREVENT CONDENSATION.
9. USE CLEVIS-STYLE HANGERS TO SUPPORT PIPING EVERY 6'-0" WITH INSULATION PROTECTION SHIELDS AND ALL-THREAD RODS FROM STRUCTURE ABOVE, NOT FROM OTHER PIPING, DUCTWORK, CONDUIT, AND SO FORTH. DO NOT SUPPORT OTHER PIPING, CEILING GRID, DUCTWORK, CONDUIT, AND SO FORTH FROM PIPING.
10. PROVIDE DIELECTRIC CONNECTIONS BETWEEN FERROUS AND NONFERROUS PIPING.
11. PROVIDE WATER-HAMMER ARRESTORS WITHIN 20' OF THE END OF EACH DOMESTIC HOT AND COLD WATER PIPING BRANCH SIZED IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE "STANDARD P.D.I. WH201".

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

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REVISION:
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ISSUE DATE: 11/04/2022

CAD DWG FILE: Q1930-01-P000
DRAWN BY: BAH
CHECKED BY: JRW
DESIGNED BY: BAH

SHEET TITLE:

PLUMBING LEGEND

SHEET NUMBER:

P-000

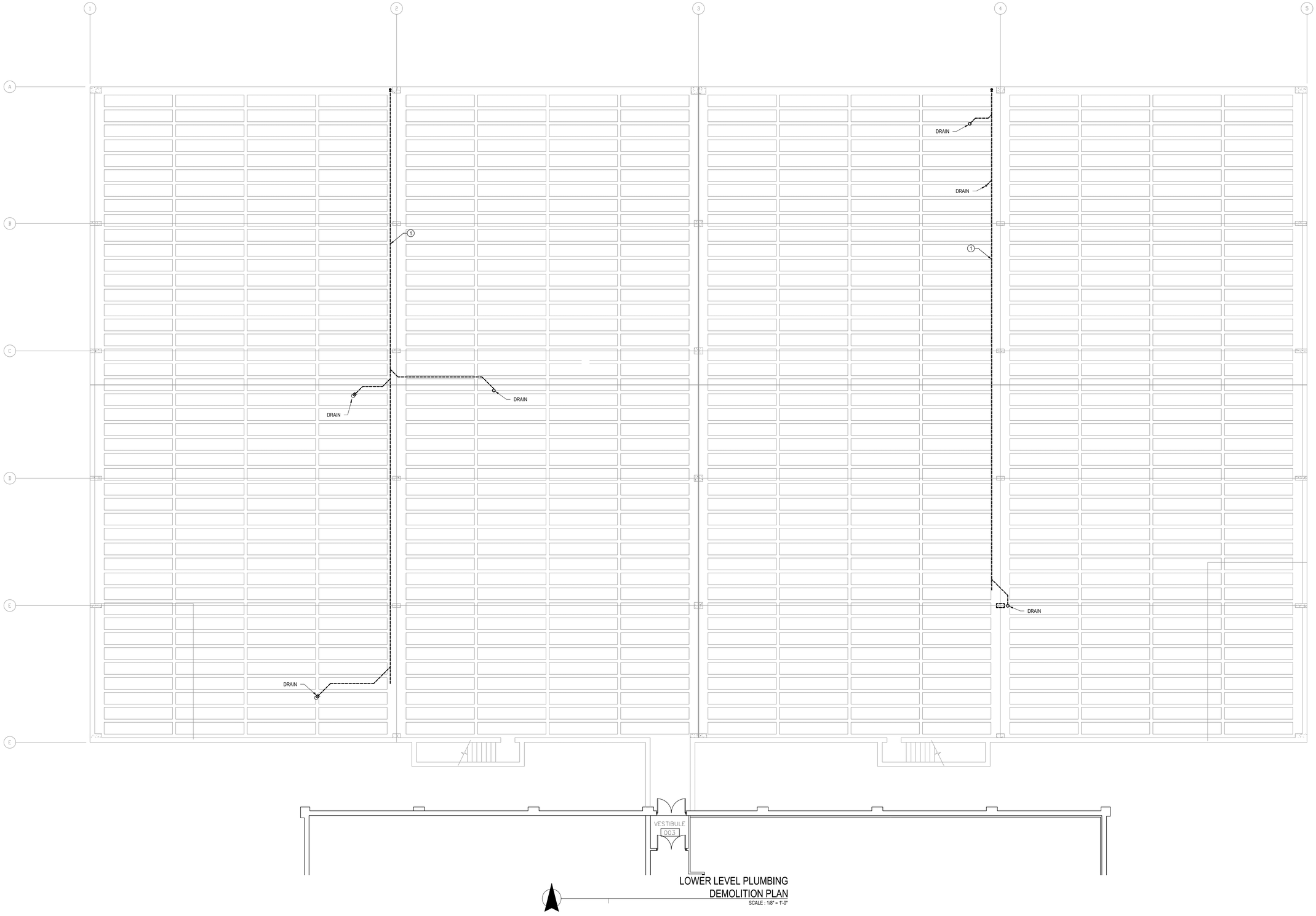
15 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO P000 FOR REMAINING PLUMBING NOTES, LEGENDS, DETAILS & SCHEDULES.

KEY NOTES

(1) DEMOLISH STORM DRAINAGE PIPING.



LOWER LEVEL PLUMBING
DEMOLITION PLAN
SCALE : 1/8" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

BRUCE A. HELLMER
NUMBER E-23984
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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O190301
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE: O1930-01-PD-100
DRAWN BY: BAH
CHECKED BY: JRW
DESIGNED BY: BAH

SHEET TITLE:

LOWER LEVEL PLUMBING DEMOLITION PLAN

SHEET NUMBER:

PD-100

16 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO P000 FOR REMAINING PLUMBING NOTES, LEGENDS, DETAILS & SCHEDULES.

KEY NOTES

(1) DEMOLISH DRAIN.

UPPER LEVEL PLUMBING
DEMOLITION PLAN
SCALE : 3/32" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

REGISTERED PROFESSIONAL ENGINEER
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11-7-22
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CAD DWG FILE:O1930-01-PD-101
DRAWN BY: BAH
CHECKED BY: JRW
DESIGNED BY: BAH

SHEET TITLE:

UPPER LEVEL PLUMBING DEMOLITION PLAN

SHEET NUMBER:

PD-101

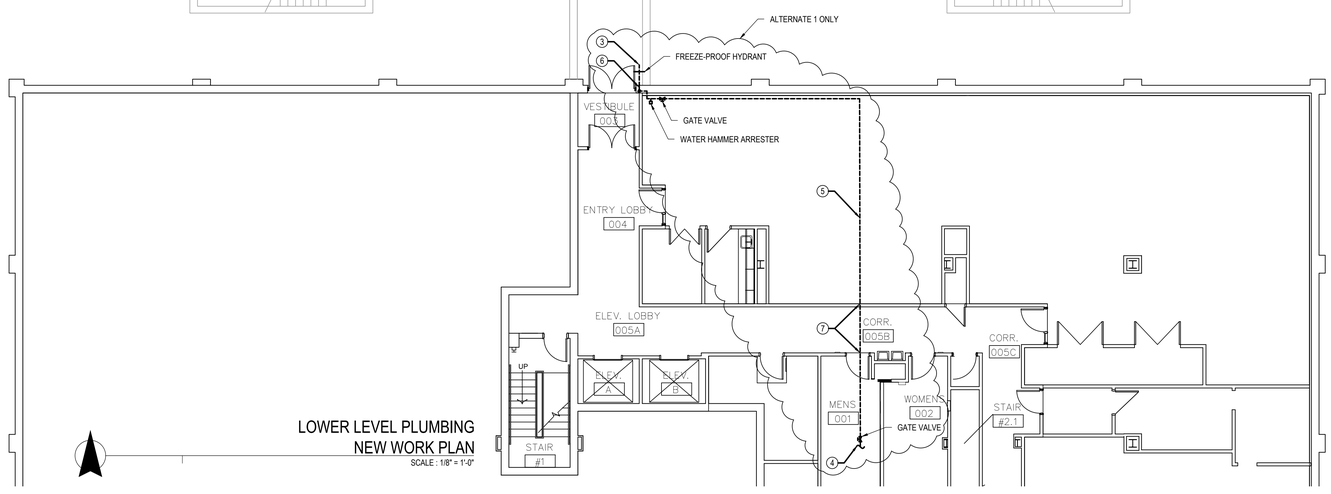
17 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO P000 FOR REMAINING PLUMBING NOTES, LEGENDS, DETAILS & SCHEDULES.

KEY NOTES

1. PROVIDE STORM WATER PIPING AT INDICATED SIZE AS SPECIFIED IN SECTION 221413. SUPPORT PIPING AS SPECIFIED IN SECTION 220529.
2. PROVIDE DOWNSPOUT NOZZLE AS SPECIFIED IN SECTION 221423.
3. PROVIDE 1" HYDRANT AND SIZE-B WATER HAMMER ARRESTER AS SPECIFIED IN SECTION 221119. PROVIDE GATE VALVE AS SPECIFIED IN SECTION 220523.15 AT HYDRANT FOR SHUTOFF. (ALTERNATE 1 ONLY)
4. PROVIDE GATE VALVE AS SPECIFIED IN SECTION 220523.15 AT SOURCE TAP. (ALTERNATE 1 ONLY)
5. PROVIDE 1" COLD DOMESTIC WATER PIPING AS SPECIFIED IN SECTION 221116 TO SERVE HYDRANT FROM CONVENIENT TAP IN COMMUNAL RESTROOM. INSULATE PIPING AS SPECIFIED IN SECTION 220719 TO PREVENT CONDENSATION. SUPPORT PIPING AS SPECIFIED IN SECTION 220529. (ALTERNATE 1 ONLY)
6. PROVIDE GROUT IN ANNULAR SPACE SURROUNDING PIPE FOR THE ENTIRE THICKNESS OF THE CONCRETE PORTION OF THE WALL FOR FIRE STOPPING AS SPECIFIED IN SECTIONS 220517. PROVIDE ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS AS SPECIFIED IN SECTIONS 220518. PATCH WALL OPENINGS THAT ARE CUT AS REQUIRED FOR THIS CONSTRUCTION. (ALTERNATE 1 ONLY)
7. PROVIDE FIRE STOPPING TO MAINTAIN FIRE RATING OF WALLS AS SPECIFIED IN SECTIONS 078413. ASSUME 2-HOUR RATING, UNLESS WALL HAS BEEN DETERMINED TO BE OTHERWISE. PROVIDE ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS AS SPECIFIED IN SECTIONS 220518. PATCH WALL OPENINGS THAT ARE CUT AS REQUIRED FOR THIS CONSTRUCTION. (ALTERNATE 1 ONLY)



LOWER LEVEL PLUMBING
NEW WORK PLAN
SCALE : 1/8" = 1'-0"

STATE OF MISSOURI
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LOWER LEVEL
PLUMBING
NEW WORK PLAN

SHEET NUMBER:

P-100

18 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO P000 FOR REMAINING PLUMBING NOTES, LEGENDS, DETAILS & SCHEDULES.

KEY NOTES

(1) PROVIDE FLOOR DRAIN AS SPECIFIED IN SECTION 221423. EXACT LOCATION WILL BE DETERMINED AFTER DECK HAS BEEN CAST AND CURED SUFFICIENTLY FOR A WATER EXPOSURE. HOSE DECK WITH WATER AND LOCATE DRAINS AT THE DEEPEST STANDING WATER PUDDLES. REFER TO STRUCTURE DRAWINGS FOR DETAILS ON CUTTING, DOWELING, REINFORCING, AND CASTING OF CONCRETE PATCHES FOR DRAINS. INCLUDE SIX DRAINS IN BASE BID AND PROVIDE UNIT PRICING FOR ADDITIONAL DRAINS.

UPPER LEVEL PLUMBING
NEW WORK PLAN
SCALE : 3/32" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

BRUCE A. HELLMER NUMBER E-23984 REGISTERED PROFESSIONAL ENGINEER STATE OF MISSOURI

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UPPER LEVEL PLUMBING NEW WORK PLAN

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P-101

19 OF 24 SHEETS
11/04/2022

ELECTRICAL SHOP DRAWING REQUIREMENTS:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW, COMMENT AND APPROVAL PRIOR TO ORDERING FOR ANY AND ALL ELECTRICAL EQUIPMENT TO INCLUDE BUT NOT LIMITED TO CONDUIT, CONDUCTORS, LIGHT FIXTURES, LIGHTING CONTROLS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ELECTRICAL EQUIPMENT WARRANTY REQUIREMENTS:

1. CONTRACTOR SHALL WARRANTY ALL ELECTRICAL MATERIAL, LABOR AND WORKMANSHIP FOR A PERIOD OF 1 YEAR AFTER DATE OF PROJECT SUBSTANTIAL COMPLETION. WARRANTY SHALL INCLUDE THE COST OF TOOLS, RENTAL EQUIPMENT, DRIVE TIME, VEHICLE RENTALS, HOTELS, MEALS, MILEAGE AND FUEL. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

RECONSTRUCTION NOTE:

1. ELECTRICAL DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND MAY NOT REFLECT AS-BUILT CONDITIONS. ALL ELECTRICAL INSTALLATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS SHALL BE FIELD VERIFIED PRIOR TO BID AND DEMOLITION. ALL ELECTRICAL SYSTEMS SHALL BE INTERPRETED AS NEW UNLESS OTHERWISE INDICATED.

ELECTRICAL TESTING REQUIREMENTS:

1. TEST GROUND WITH OHM-METER. FOR VALUES ABOVE 5 OHMS CONTACT ENGINEER.

2. TEST LIGHTING CONTROLLERS WITH OWNER PRESENT. REPORT RESULTS TO ENGINEER.

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL CONFORM WITH THE 2017 NATIONAL ELECTRICAL CODE (AS ADOPTED BY CITY OF RAYTOWN, MO) AND ALL STATE AND LOCAL CODES AND ORDINANCES AND O.S.H.A. WHERE MINIMUM CODE REQUIREMENTS ARE EXCEEDED BY THE REQUIREMENTS INDICATED IN THE SPECIFICATIONS AND ON THESE DRAWINGS, THE DRAWINGS AND SPECIFICATIONS SHALL TAKE PRECEDENCE. (IN THE CASE OF CODE CONFLICT DIRECTION SHALL BE TAKEN FROM THE MORE STRICT OF THE CONFLICTING CODES).
2. CAREFULLY REVIEW CONTRACT DOCUMENTS INCLUDING DRAWINGS & PROJECT MANUAL. INFORMATION REGARDING WORK OF THE VARIOUS TRADES & SUBCONTRACTORS ARE DISPERSED THROUGHOUT THE DOCUMENTS & CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE FULL SET OF DOCUMENTS. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF THE MECHANICAL, PLUMBING, & ETC. CONDUIT & PIPE TO BE RUN TO MAXIMIZE USE OF CEILING SPACE FOR USE BY OTHER TRADES.
3. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE OR STRING.
4. AT THE CONCLUSION OF THIS PROJECT PROVIDE AN UPDATED TYPEWRITTEN, AS-BUILT DIRECTORY INSIDE EACH PANELBOARD PROPERLY IDENTIFYING EACH CIRCUIT USED & THE SPECIFIC LOAD SERVED. ALSO PROVIDE SCHEDULES ON CD DISK.
5. OPENINGS SHALL BE CUT TO THE EXACT SIZE REQUIRED IN ORDER TO MAINTAIN ANY MATERIAL RATINGS AND SEALED TO MAINTAIN RATING.
6. CONCEAL ALL ELECTRICAL WIRING AND RACEWAYS WHERE CONSTRUCTION PERMITS. EXPOSED RACEWAY SHALL BE MINIMIZED WHERE STRUCTURE IS EXPOSED TO VIEW. WHERE NECESSARY, CAREFULLY INSTALL RACEWAYS PARALLEL TO WALLS, BEAMS AND COLUMNS. EXPOSED RACEWAY SHALL BE HELD TIGHT TO STRUCTURE & LOCATED SO AS TO KEEP IT AS INCONSPICUOUS AS POSSIBLE.
7. ALL EXTERIOR MOUNTED ELECTRICAL DEVICES AND EQUIPMENT SHALL BE IN WEATHERPROOF ENCLOSURE AND U.L. LISTED FOR WET LOCATION AND/OR UL/NEMA 3R LISTED.
8. CONTRACTOR SHALL REFER TO ARCHITECTS DETAILS AND ELEVATIONS FOR COORDINATION OF LOCATION OF ALL WIRING DEVICES BEFORE ROUGH-IN OF J-BOXES.
9. PROVIDE FIRESTOPPING TO MAINTAIN FIRE RATINGS AT ALL PENETRATIONS OF RATED CONSTRUCTION.
10. PROVIDE ALL NECESSARY FLOOR CUTTING/PENETRATIONS AND ALL OF THE REPATCHING NECESSARY FOR THE PROPER EXECUTION OF THIS WORK.
11. ALL PANELBOARDS SHALL HAVE SEPARATE GROUNDING AND NEUTRAL BUSSES. ALL GROUNDING AND NEUTRAL WIRING SHALL BE TERMINATED ON THE PROPER BUS.
12. ALL EXTERIOR DEVICE FACEPLATES SHALL BE WEATHERPROOF DIE CAST METAL.
13. ALL FEEDERS SHALL HAVE A SEPARATE COPPER GROUNDING CONDUCTOR INSTALLED. IN NO CASE SHALL THE CONDUIT OR RACEWAY BE USED AS THE GROUNDING CONDUCTOR.
14. ALL SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUCTORS SHALL HAVE TYPE THWN/THHN (75 DEGREE) INSULATION.
15. COORDINATE ALL DEVICES AND WIRING WITH EQUIPMENT NAMEPLATE DATA. VERIFY THE ELECTRICAL LOADS, MOUNTING HEIGHTS AND NEMA CONFIGURATIONS WITH THE MECHANICAL, PLUMBING, AND OTHER CONTRACTORS AND SUPPLIERS PRIOR TO ROUGH-IN.
16. FURNISH AND INSTALL ALL WIRE, WIREWAY, CONDUIT, CONNECTORS, OUTLETS, ETC, NECESSARY TO ACHIEVE A COMPLETE AND WORKING INSTALLATION.

GENERAL CONSTRUCTION NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM WITH LOCAL AND STATE ELECTRICAL CODES, O.S.H.A., AND THE LATEST NATIONAL ELECTRICAL CODE AND ELECTRICAL SPECIFICATIONS.
2. ALL ELECTRICAL LIGHT AND POWER WIRE SHALL NOT BE SMALLER THAN #12 A.W.G. COPPER. ALUMINUM CONDUCTORS SHALL NOT BE PERMITTED. ALL SERVICE, FEEDER, AND BRANCH CIRCUIT CONDUCTORS SHALL HAVE TYPE THWN/THHN (90 DEGREE) INSULATION. LIGHTING FIXTURE WIRE INSULATION SHALL HAVE A TEMPERATURE RATING NOT LESS THAN THE INDIVIDUAL LIGHTING FIXTURE'S MANUFACTURER RECOMMENDED RATING. NON-METALLIC CABLE IS NOT PERMITTED.
3. CONTRACTOR SHALL FURNISH AND INSTALL, FOR WORK DESIGNATED AS HIS RESPONSIBILITY, ALL WIRE, WIREWAY, CONDUIT, CONNECTORS, OUTLETS, ETC. NECESSARY TO ACHIEVE A COMPLETE ELECTRICAL INSTALLATION. WHERE AN ELECTRICAL DEVICE IS REQUIRED BY CODE BUT NOT SHOWN, IT SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AS THOUGH FULLY SHOWN AND SPECIFIED.
4. ELECTRICAL CONNECTION TO ALL EQUIPMENT SUPPLIED BY OTHERS SHALL BE THE RESPONSIBILITY OF THE E.C. UNLESS OTHERWISE NOTED.

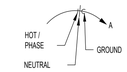
ELECTRICAL SPECIFICATIONS

1. ALL CONDUCTORS SHALL BE THHN COPPER ABOVE GRADE, XHHW-2 BELOW GRADE, MINIMUM #12 OR LARGER AS REQUIRED OR SHOWN.
2. ALL SERVICE WIRING, EXPOSED TO WEATHER, OR WIRING BELOW GRADE, SHALL BE IN RIGID GALVANIZED CONDUIT OR SCH. 40 PVC.
3. ALL OTHER WIRING SHALL BE IN EMT, SCHEDULE 40 PVC, OR MC CABLE, UNLESS PROTECTED AND ENCLOSED WITHIN BUILDING MATERIALS, IN WHICH CASE TYPE NM CABLE MAY BE USED.
4. THE ENTIRE SYSTEM SHALL BE ELECTRICALLY CONTINUOUS AND PROPERLY GROUNDED. EVERY FEEDER AND BRANCH CONDUIT SHALL HAVE CODE SIZED GREEN INSULATED GROUND CONDUCTOR.
5. FURNISH AND INSTALL ALL LIGHTING FIXTURES, LAMPS, FUSES, BREAKERS, ETC. TO COMPLETE THE BRANCH CIRCUITS INDICATED.
6. ALL 120V, 20A LIGHTING CIRCUIT REQUIRING MORE THAN 100' OF CONDUCTORS (ONE WAY) SHALL BE #10 CONDUCTORS, MINIMUM.
7. PROVIDE TYPEWRITTEN BREAKER SCHEDULE IN EACH PANELBOARD INDICATING ITEMS AND DEVICES SERVED BY ALL BREAKERS IN EACH PANEL.
8. UNDERGROUND SPLICES TO BE MADE WITH DEVICES RATED FOR THAT APPLICATION.

ELECTRICAL SYMBOLS

- 4' LED LIGHT FIXTURE - SURFACE / PENDANT MOUNTED.
- SURFACE LED LIGHT FIXTURE
- LED POLE TOP LIGHT FIXTURE
- PENDANT MOUNTED DIRECT / INDIRECT LED LIGHT FIXTURE
- WALL PACK LED LIGHT FIXTURE
- LED EXIT LIGHT - CEILING MOUNTED
- PCE — PHOTOCELL
- MS — MOTION SENSOR
- TIME CLOCK
- POWER / LIGHTING PANELBOARD
- J — JUNCTION BOX
- DEMOLITION HATCH

CIRCUITING SYMBOLS



HOME RUN TO PANELBOARD.
- ARROWS INDICATE NO. OF CIRCUITS OR POLES
- DIAGONAL LINES INDICATE NO. OF WIRES NOT INCL. GROUND.
- NO LINES INDICATE 1 PHASE WIRE, 1 NEUTRAL WIRE & 1 GROUND WIRE.
- LETTER INDICATES PANEL DESIGNATION.

- CONDUIT IN CEILING & WALL CONST. OR ABOVE LAY-IN CEILING
- CONDUIT IN FLOOR CONSTRUCTION
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- CONDUIT BELOW GRADE

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER OR APPROVED EQUAL	DESCRIPTION	CATALOG/SERIES NUMBER	BATTERY BACKUP	LAMP TYPE	TOTAL WATTS	VOLTAGE	TOTAL LUMENS	MOUNTING	FIXTURE FINISH	NOTES
B (B.O.D.)	H.E.WILLIAMS	LINEAR 4 FEET LENGTH LED GASKETED LIGHT FIXTURE	97-4-L50-8-40-FR-TP-OCCWS-DRV-120	EM/10W	LED	35	120	5118	SURFACE	COORDINATE FINISH WITH OWNER	
B (ALT. #1)	COOPER (METALUX) LIGHTING	LINEAR 4 FEET LENGTH LED GASKETED LIGHT FIXTURE	4APVTLD-40L840	EL10W	LED	39	120	5119	SURFACE	COORDINATE FINISH WITH OWNER	
B (ALT. #2)	LEDALUX LIGHTING	LINEAR 4 FEET LENGTH LED GASKETED LIGHT FIXTURE	LV4PS-42-U-5K-L3	EB (BODINE)	LED	42	120	4014	SURFACE	COORDINATE FINISH WITH OWNER	
G (B.O.D.)	COOPER (HALO) LIGHTING	LED ROUND SURFACE DOWNLIGHT	SMD6R-6-9S-WH		LED	9	120	777	SURFACE	COORDINATE FINISH WITH OWNER	
G (ALT. #1)	GENERATION LIGHTING	LED ROUND SURFACE DOWNLIGHT	5590193S-15		LED	14	120	800	SURFACE	COORDINATE FINISH WITH OWNER	
G (ALT. #2)	TERON LIGHTING	LED ROUND SURFACE DOWNLIGHT	FS11-L13.5-120-TW-40K-TP-WPL		LED	15	120	979	SURFACE	COORDINATE FINISH WITH OWNER	

NOTES:

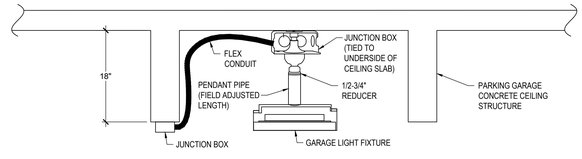
1. ALL EXTERIOR FIXTURES SHALL HAVE COLD WEATHER LED DRIVERS.
2. ALL EXTERIOR LAMPS SHALL BE APPROXIMATELY 4000K, U.N.O.

ABBREVIATIONS:

1) B.O.D. - BASIS OF DESIGN
2) ALT. #1 - ALTERNATE #1
3) ALT. #2 - ALTERNATE #2

ABBREVIATIONS

AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
DISP	DISPOSAL
DWG	DRAWING
EM	EMERGENCY
EXIST	EXISTING
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GND	GROUNDED
KVA	KILOVOLT
KW	KILOWATT
MDP	MAIN DISTRIBUTION PANEL
M.L.O.	MAIN LUGS ONLY
N.E.C.	NATIONAL ELECTRICAL CODE
NTS	NOT TO SCALE
PNL	PANELBOARD
S/E	SERVICE ENTRANCE LISTED LABELED
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
WP	WEATHERPROOF



COORDINATE MOUNTING LIGHT FIXTURE TO THE GARAGE CEILING WITH THE STRUCTURAL ENGINEER

MOUNTING DETAIL FOR GARAGE LIGHT FIXTURE

1 SCALE: NONE

STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

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Craig Brewster
Date 11-04-2022

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DESIGNED BY: BAS

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ELECTRICAL LEGEND

SHEET NUMBER:
E-000

20 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO E-000 FOR ELECTRICAL GENERAL, CONSTRUCTION AND MISCELLANEOUS NOTES, SYMBOL LEGENDS & ABBREVIATIONS.

2. ALTHOUGH INTENDED TO CONVEY APPROPRIATE INFORMATION, THESE DRAWINGS HAVE BEEN PREPARED FROM LIMITED FIELD INVESTIGATION AND, AS SUCH, MAY CONTAIN DISCREPANCIES AND OMISSIONS DUE TO CONCEALED CONDITION AND UNVERIFIABLE EXISTING CONDITIONS BECAUSE OF INACCESSIBLE LOCATIONS &/OR INSTALLATIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS, PRIOR TO START OF ANY CONSTRUCTION WORK.

KEY NOTES

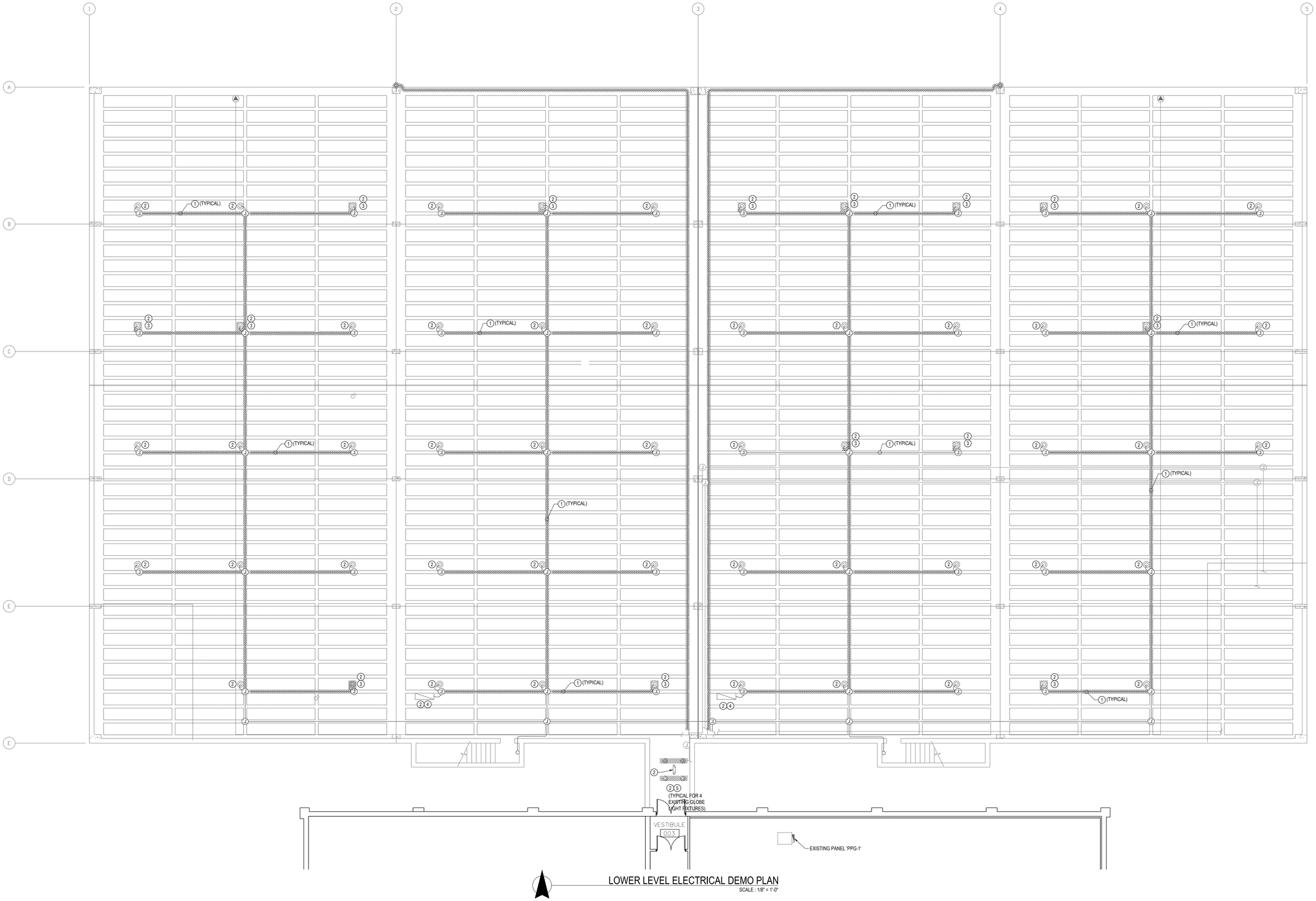
1. ALL BRANCH CIRCUIT CONDUIT AND WIRING, FEEDING EXISTING PARKING GARAGE LIGHTING SHALL BE DISCONNECTED AND REMOVED, BACK TO SOURCE, TO BE REPLACED WITH NEW (OF SAME CONDUIT & WIRING SIZES AND FOLLOWING THE SAME ROUTING, AS EXISTING).

2. ALL EXISTING LIGHT FIXTURES SHALL BE DISCONNECTED, REMOVED AND SAFELY STORED DURING THE STRUCTURAL REPAIRS TO THE GARAGE. FIXTURES SHALL BE CLEANED, REINSTALLED AND RECONNECTED (TO EXISTING CIRCUITS AND CONTROLS - IN WORKING ORDER), AFTER STRUCTURAL REPAIRS ARE DONE .

3. EXISTING LIGHT FIXTURE IS EITHER NOT WORKING OR IS A DIFFERENT MODEL (THAN THE MAJORITY OF EXISTING LIGHT FIXTURES). INDICATED LIGHT FIXTURE SHALL BE DISCONNECTED AND REMOVED, TO BE REPLACED WITH NEW OF SAME TYPE AS THE MAJORITY OF EXISTING LIGHT FIXTURES (REFER TO E-100, FOR ADDITIONAL DETAILS).

4. EXISTING 1 FT. X 4 FT. GASKET LIGHT FIXTURE TO BE DISCONNECTED AND REMOVED. CONTRACTOR TO MAINTAIN EXISTING LIGHT POINT, FOR INSTALLATION OF REPLACEMENT LIGHT FIXTURE.

5. EXISTING GLOBE LIGHT FIXTURE TO BE DISCONNECTED AND REMOVED. CONTRACTOR TO MAINTAIN EXISTING LIGHT POINT, FOR INSTALLATION OF REPLACEMENT LIGHT FIXTURE.



LOWER LEVEL ELECTRICAL DEMO PLAN
SCALE : 1/8" = 1'-0"

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Craig Brewster

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ED-100

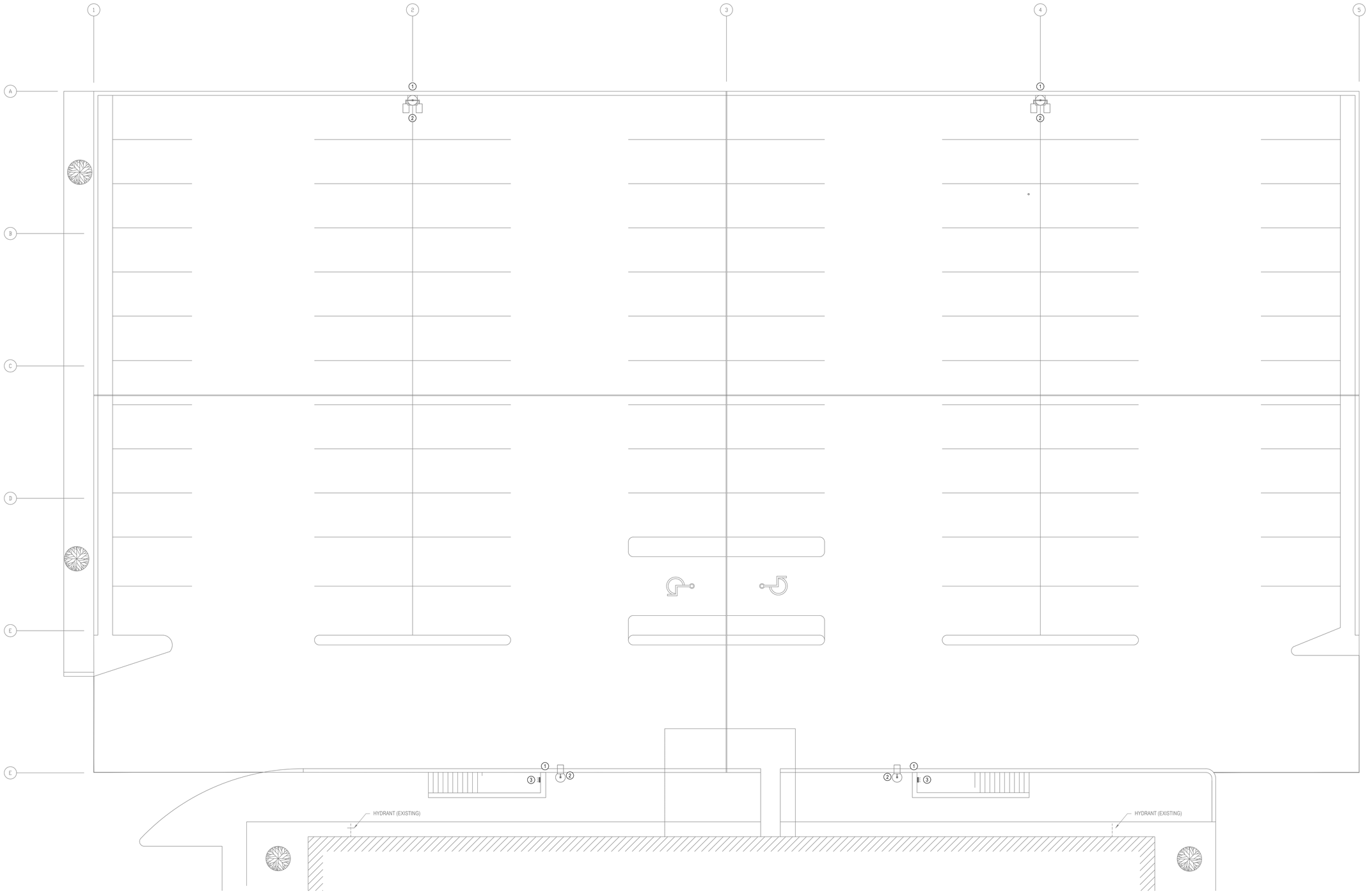
21 OF 24 SHEETS
11/04/2022

GENERAL NOTES

1. REFER TO E-000 FOR ELECTRICAL GENERAL, CONSTRUCTION AND MISCELLANEOUS NOTES, SYMBOL LEGENDS & ABBREVIATIONS.
2. ALTHOUGH INTENDED TO CONVEY APPROPRIATE INFORMATION, THESE DRAWINGS HAVE BEEN PREPARED FROM LIMITED FIELD INVESTIGATION AND, AS SUCH, MAY CONTAIN DISCREPANCIES AND OMISSIONS DUE TO CONCEALED CONDITION AND UNVERIFIABLE EXISTING CONDITIONS BECAUSE OF INACCESSIBLE LOCATIONS &/OR INSTALLATIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING CONDITIONS, PRIOR TO START OF ANY CONSTRUCTION WORK.

KEY NOTES

1. ALL BRANCH CIRCUIT CONDUIT AND WIRING, FEEDING EXISTING PARKING GARAGE LIGHTING SHALL BE DISCONNECTED AND REMOVED, BACK TO SOURCE, TO BE REPLACED WITH NEW (OF SAME CONDUIT & WIRING SIZES AND FOLLOWING THE SAME ROUTING, AS EXISTING).
2. EXISTING POLE TOP MOUNTED LIGHT FIXTURE, LIGHT POLE AND LIGHT POLE BASE TO REMAIN.
3. EXISTING WALL PACK LIGHT FIXTURE TO REMAIN.



UPPER LEVEL ELECTRICAL DEMO PLAN
SCALE : 1/8" = 1'-0"

STATE OF MISSOURI
MICHAEL L. PARSON,
GOVERNOR

STATE OF MISSOURI
CRAIG KEITH BREWSTER
NUMBER E-2000150002
REGISTERED PROFESSIONAL ENGINEER

Craig Brewster

Date 11-04-2022

STRUCTURAL ENGINEERING ASSOCIATES

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MISSOURI CERTIFICATE OF AUTHORITY #000239

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

REPAIR PARKING DECK

JOSEPH P TEASDALE
STATE OFFICE BUILDING

RAYTOWN, MISSOURI

PROJECT # O190301
SITE # 1043
ASSET # 3101043002

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 11/04/2022

CAD DWG FILE:Q1930-01-ED-101
DRAWN BY: BAS
CHECKED BY: CKB
DESIGNED BY: BAS

SHEET TITLE:

UPPER LEVEL ELECTRICAL DEMO PLAN

SHEET NUMBER:

ED-101

22 OF 24 SHEETS
11/04/2022

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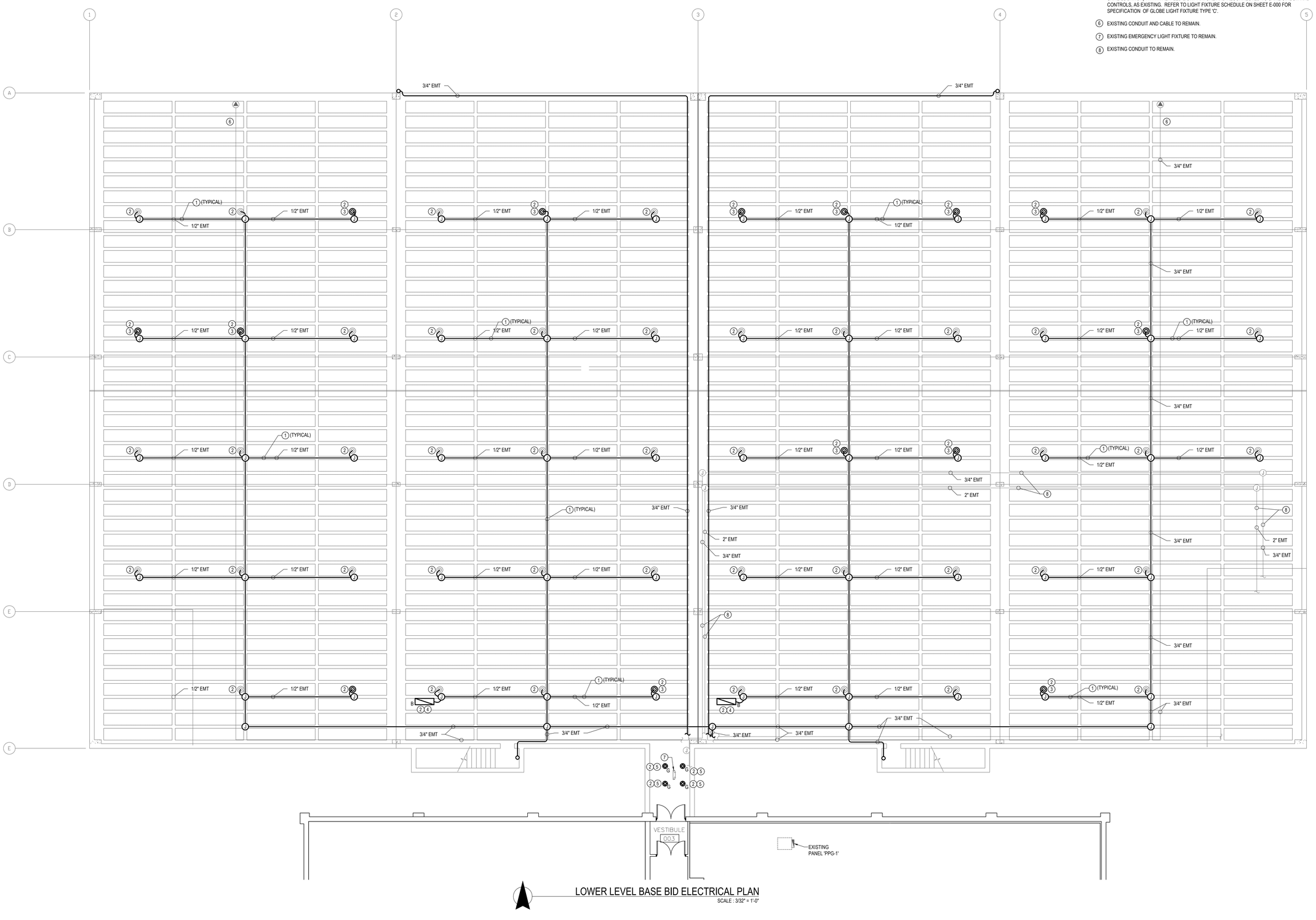
3. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E-200 FOR DETAILS ON NEW LIGHT FIXTURES.

KEY NOTES

1. PROVIDE NEW CONDUIT AND WIRING FOR ALL BRANCH CIRCUITS, FEEDING THE PARKING GARAGE LIGHTING. SIZES AND ROUTING OF ALL NEW CONDUIT AND WIRING RUNS SHALL BE THE SAME AS EXISTING.
2. ALL EXISTING TO REMAIN AND/OR EXISTING TO BE REPLACED LIGHT FIXTURES, THAT WERE REMOVED FOR STRUCTURAL REPAIRS TO GARAGE, SHALL BE REINSTALLED AND RECONNECTED (TO EXISTING CIRCUITS AND CONTROLS - IN WORKING ORDER), AFTER STRUCTURAL REPAIRS ARE DONE.
3. INDICATED LIGHT FIXTURE IS REPLACING THE EXISTING LIGHT FIXTURE (ONE-FOR-ONE, AT SAME LOCATION). REPLACEMENT LIGHT FIXTURE SHALL BE OF SAME TYPE, MAKE AND MODEL AS THE MAJORITY OF EXISTING LIGHT FIXTURES AND RECONNECTED TO SAME CIRCUIT AND CONTROLS, AS EXISTING. EXISTING GARAGE LIGHT FIXTURE MANUFACTURE AND CATALOG NUMBER IS GARDCO #SVPG-A03-750-5RD-SUR-UNV-BL20-MW-MG
4. INDICATED LIGHT FIXTURE IS REPLACING THE EXISTING 1 FT. X 4 FT. GASKET LIGHT FIXTURE (ONE-FOR-ONE, AT SAME LOCATION) WITH A NEW 1 FT. X 4 FT. GASKET LIGHT FIXTURE AND RECONNECTED TO SAME CIRCUIT AND CONTROLS, AS EXISTING. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E-000 FOR SPECIFICATION OF 1 FT. X 4. FT GASKET LIGHT FIXTURE TYPE 'B'
5. INDICATED LIGHT FIXTURE IS REPLACING THE EXISTING GLOBE LIGHT FIXTURE (ONE-FOR-ONE, AT SAME LOCATION) WITH A NEW LED LIGHT FIXTURE AND RECONNECTED TO SAME CIRCUIT AND CONTROLS, AS EXISTING. REFER TO LIGHT FIXTURE SCHEDULE ON SHEET E-000 FOR SPECIFICATION OF GLOBE LIGHT FIXTURE TYPE 'C'.
6. EXISTING CONDUIT AND CABLE TO REMAIN.
7. EXISTING EMERGENCY LIGHT FIXTURE TO REMAIN.
8. EXISTING CONDUIT TO REMAIN.



LOWER LEVEL BASE BID ELECTRICAL PLAN
SCALE : 3/32" = 1'-0"

STATE OF MISSOURI
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LOWER LEVEL ELECTRICAL PLAN

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23 OF 24 SHEETS
11/04/2022

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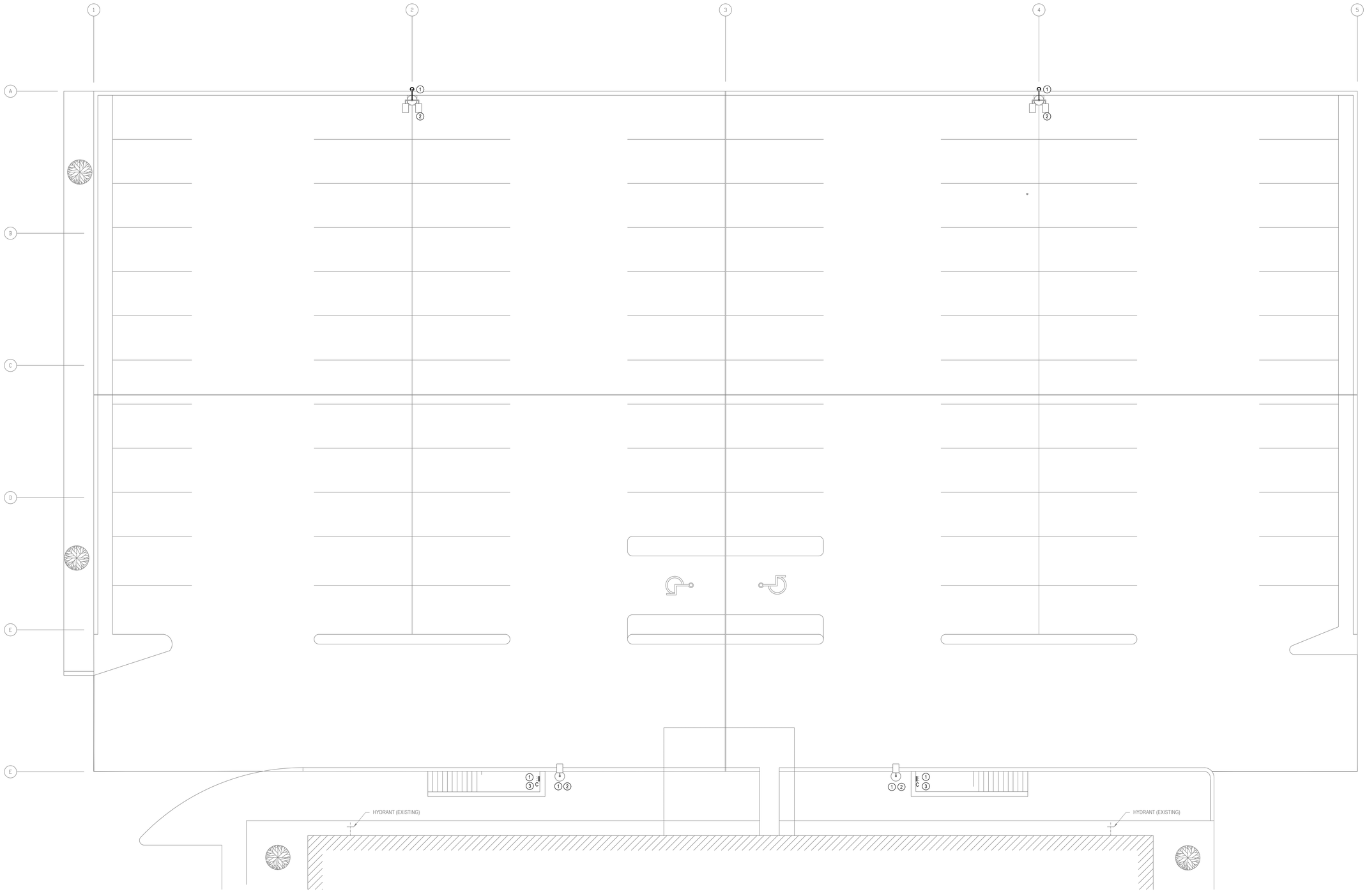

UPPER LEVEL BASE BID ELECTRICAL PLAN
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24 OF 24 SHEETS
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