

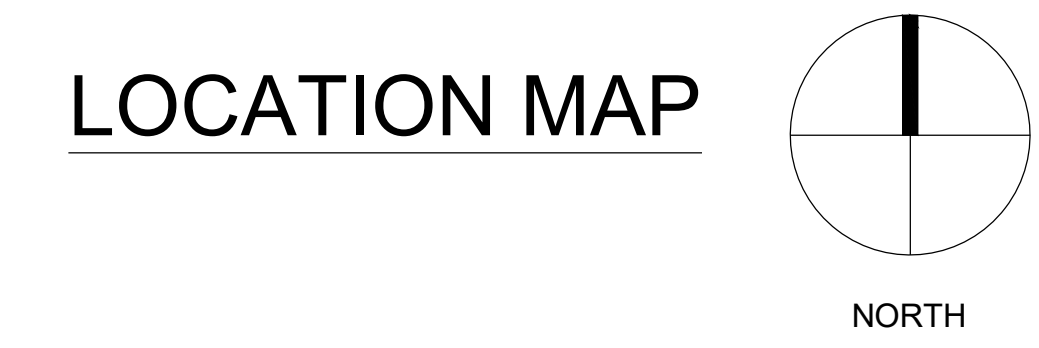
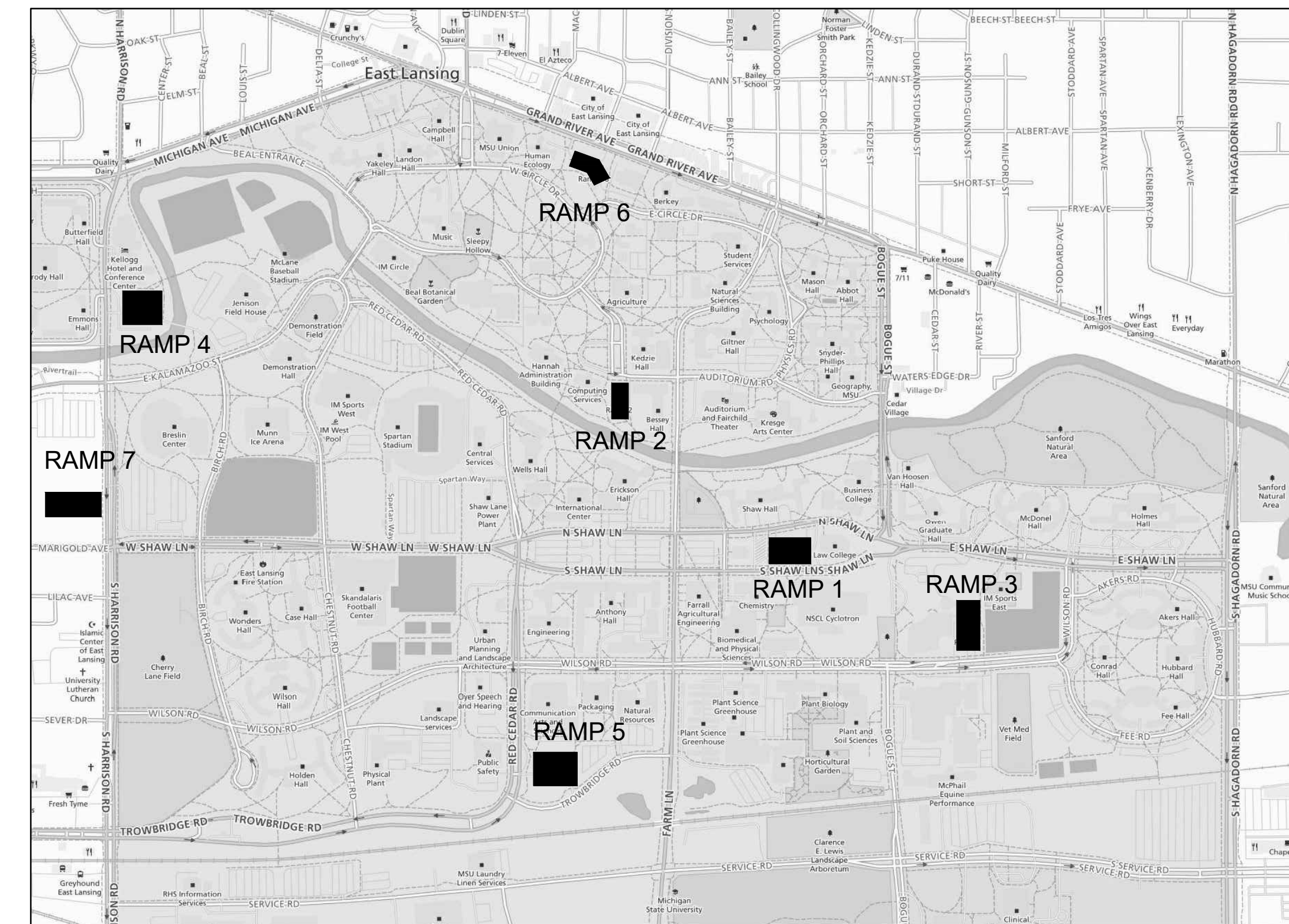
# MICHIGAN STATE UNIVERSITY

## PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS - ANNUAL PARKING RAMP MAINTENANCE '25

EAST LANSING, MICHIGAN

### SHEET LIST

- 1 R-000 COVER SHEET
- 2 R-001 GENERAL NOTES
  
- 3 R-111 RAMP NO. 1 - TYPICAL LEVEL PLAN
- 4 R-121 RAMP NO. 2 - BASEMENT & LEVEL 1 PLANS
- 5 R-122 RAMP NO. 2 - LEVEL 2 & 3 PLANS
- 6 R-123 RAMP NO. 2 - LEVEL 4 & 5 PLANS
  
- 7 R-131 RAMP NO. 3 - TYPICAL LEVEL PLAN
- 8 R-132 RAMP NO. 3 - HELIX RAMP PLANS
  
- 9 R-141 RAMP NO. 4 - LEVEL G PLAN
- 10 R-142 RAMP NO. 4 - LEVEL 1 PLAN
- 11 R-143 RAMP NO. 4 - LEVEL 3 PLAN
- 12 R-144 RAMP NO. 4 - LEVEL 4 PLAN
  
- 13 R-501 REPAIR DETAILS
- 14 R-502 REPAIR DETAILS



**FOR BID AND CONSTRUCTION**  
**03/20/2025**

**MICHIGAN STATE UNIVERSITY**  
**PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS - ANNUAL PARKING RAMP MAINTENANCE '25**

MSU PROJ. NO. CP24073
PR. MGR. AL
ARCH. N/A
MECH. N/A
ELEC. N/A
CIVIL SML
L.A. N/A
INT. DES. N/A
CONST. REP. AL
APPR. MSG
DATE 03/20/2025
SCALE AS SHOWN
ISSUED
FOR BID & CONST - 03/20/2025
COVER SHEET
<b>R-000</b>
1 OF 14



GENERAL RESTORATION NOTES

A. CONSTRUCTION

- CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE OF MICHIGAN, AND CITY OF EAST LANSING CODES AND ORDINANCES, INCLUDING FIRE CODES.
- ALL MATERIAL PROPERTIES SHALL BE AS NOTED IN SPECIFICATIONS.
- PRIOR TO FABRICATION OF ANY MATERIAL OR PLACEMENT OF CONCRETE, FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS AS SHOWN ON DRAWINGS. REPORT ALL DISCREPANCIES IN THE FIELD TO ENGINEER IMMEDIATELY.
- DO NOT SCALE DRAWINGS

B. CONSTRUCTION DOCUMENTS

- CONSTRUCTION DOCUMENTS INCLUDES THESE DRAWINGS AND SEPARATELY BOUND SPECIFICATIONS. FOR PURPOSES OF PERFORMING THE WORK, DRAWINGS AND SPECIFICATIONS SHALL BE A SINGLE UNIT.
- DIMENSIONS SHOWN ON PLANS ARE BASED ON ORIGINAL CONSTRUCTION DOCUMENTS. THE CONTRACTOR IS REQUIRED TO FIELD VERIFY ALL CONDITIONS FOR THE PURPOSES OF PREPARING THE BID IN PERFORMING THE WORK.
- REFER TO SPECIFICATION SECTION 020010 FOR SCOPE, DESCRIPTION, AND REQUIREMENTS OF THE WORK.

C. DETAILS AND SYMBOLS

- CLARIFICATION DETAILS DO NOT REPRESENT A SEPARATE PRICE ITEM. THESE DETAILS SUPPLEMENT THE BASIC DETAIL TO PROVIDE ADDITIONAL INFORMATION. IN SOME CASES THESE DETAILS SHOW VARIATIONS OF THE TYPICAL CONDITION.
- WHEN THE WORK ITEM BUBBLE IS NOTED (TYP), IT MEANS THE WORK ITEM OCCURS AT ALL LOCATIONS WITH THE APPLICABLE DETERIORATION OR DESIGNATION SYMBOL OCCURS ON A PLAN.
- WHERE (T. A. R.) IS NOTED IT MEANS THERE MAY BE AREAS OF THIS WORK IN ADDITION TO THE PARTICULAR DESIGNATED AREAS.
- WHERE TWO OR MORE WORK ITEM BUBBLES ARE SHOWN GROUPED TOGETHER IT MEANS ANY OR ALL OF THE DESIGNATED WORK MAY BE APPLICABLE. COORDINATION OF WORK ITEMS IS THE CONTRACTOR'S RESPONSIBILITY.
- WHEN WORK ITEM DETAILS ARE LISTED AS INCIDENTAL, THIS WORK IS INCLUDED IN THE PAYMENT OF THE OTHER WORK ITEM AND DOES NOT HAVE A SEPARATE PRICE.
- WHEN THE DETAIL IS LABELED FOR REFERENCE ONLY IT PROVIDES INFORMATION ABOUT INCIDENTAL WORK AND DOES NOT HAVE A PAY UNIT.
- CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL EXTENT AND LOCATIONS OF REPAIR AREAS IN ACCORDANCE WITH THE SPECIFICATIONS; WORK ITEMS ARE SHOWN ONLY TO REPRESENT THE TYPES OF DETERIORATION.
- SEE WORK ITEM SPECIFICATION FOR INFORMATION REGARDING DETAILS.

D. CONCRETE PROTECTION FOR REINFORCEMENT

- THE FOLLOWING APPLIES FOR FULL SECTION CONCRETE REPLACEMENT OR PARTIAL DEPTH REPAIRS AS SHOWN ON THE DRAWINGS.
- THE MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE PER ACI 318-14, SECTION 7.7.
- MINIMUM COVER FOR REINFORCING IN NON-PRESTRESSED CONCRETE AND NON-POST-TENSION MEMBERS.

CONCRETE COVER (INCHES)

- a. SLAB TOP REINFORCEMENT 1 1/2
  - b. SLAB BOTTOM REINFORCEMENT 3/4
  - c. BEAM TOP REINFORCEMENT U.N. 3"
  - d. BEAM STIRRUPS AT SIDES AND BOTTOM OF BEAM 1 1/2
  - e. BEAM STIRRUPS AT TOP OF BEAM 2 1/2
  - f. COLUMN TIES 1 1/2
- \*OR 3X BAR DIAMETER, WHICHEVER IS GREATER.

E. EPOXY COATING FOR REINFORCEMENT AND ANCHORS.

- EPOXY COAT ALL REINFORCEMENT, EXCEPT WELDED WIRE REINFORCEMENT.

F. SHORING AND BRACING

- CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SHEETING, ETC. REQUIRED FOR SAFETY AND PROPER EXECUTION OF THE WORK.
- CONTRACTOR IS SOLELY RESPONSIBLE TO PREPARE SHOP DRAWINGS FOR BRACING ENSURING MEMBERS DESIGNED AND STAMPED/SEALED BY A REGISTERED PROFESSIONAL ENGINEER (REGISTERED IN THE STATE OF MICHIGAN) AND SUBMIT THEM TO THE ENGINEER FOR RECORD.

G. EXISTING SERVICES AND UTILITIES

- CONTRACTOR SHALL REVIEW ALL EXISTING CONDITIONS TO DETERMINE ALL ELECTRICAL AND MECHANICAL SERVICES AND UTILITIES AFFECTED BY THE REPAIR WORK. MAKE ALL NECESSARY TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SERVICES TO ALL AREAS OF THE BUILDINGS OR OTHER AREAS (NOT IN CONTACT) AFFECTED BY THE WORK. THE CONTRACTOR SHALL SUBMIT THE METHODS AND SCHEDULE TEMPORARY CONNECTIONS FOR THE OWNER'S APPROVAL PRIOR TO COMMENCEMENT.

H. CONSTRUCTION PHASING, SEQUENCING AND TRAFFIC MAINTENANCE

- WORK SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE OR ALL IDENTIFIED PROJECT REPRESENTATIVES.
- THE OWNER WILL CONTINUE TO USE EACH STRUCTURE DURING CONSTRUCTION. CONTRACTOR MUST PHASE AND ARRANGE WORK SO AS TO MAINTAIN ACCESS AT ALL TIMES TO ALL AREAS THAT ARE NOT UNDER CONSTRUCTION FOR BOTH VEHICLES AND PEDESTRIANS.

I. CONCRETE REINFORCEMENT REQUIREMENTS SEE SECTION 020010 FOR SPECIFIC USES.

- CAST IN PLACE CONVENTIONAL CONCRETE
  - a. COMPRESSIVE STRENGTH 5000 PSI AT 28 DAYS (2500 @3 DAYS)
  - b. WATER - CEMENT RATIO 0.40 MAX
  - c. MAX. SIZE AGGREGATE 1/2 INCH
  - d. SLUMP (MAXIMUM) 6" WITH SUPER PLASTICIZER (AFTER WATER REDUCER ADDITION)
  - e. AIR CONTENT 7% ± 1-1/2%
  - f. CEMENTITIOUS MATERIAL CONTENT 580 LB/C.Y. MIN.
- MAXIMUM PERMISSIBLE CEMENTITIOUS CONTENT
  - a. FLY ASH: 25%
  - b. SLAG: 50%
  - c. FLY ASH & SLAG: 50%

- NOTE: Cementitious material includes cement, silica fume, and fly ash (if permitted).

J. GENERAL P-T TENDON REPAIR NOTES:

- TENDONS ARE NEAR THE FLOOR SURFACE. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING SAWCUTTING AND REMOVALS SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE DURING REMOVALS OR WHEN CUT. CHIPPING WITH 15LB. HAMMERS SHALL BE USED IN LIEU OF SAWCUTTING NEAR SHALLOW TENDONS.
- CAUTION IS REQUIRED WHEN PERFORMING CONCRETE REMOVALS. ELEVATIONS OF P-T TENDONS IN BEAMS VARY. COORDINATE INSPECTION OF EXPOSED TENDONS FOLLOWING CONCRETE REMOVALS.
- THE SLAB MAY CONTAIN LIVE EMBEDDED ELECTRICAL CONDUIT. DAMAGE TO CONDUITS DURING DEMOLITION IS TO BE REPAIRED AT THE COST OF THE CONTRACTOR.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR THE FOLLOWING:
  - a. TRAINING AND MONITORING HIS WORK FORCE CONCERNING THE SAFETY PROCEDURES THAT SHOULD BE EMPLOYED IN THE EXECUTION OF THIS WORK.
  - b. MAINTAINING STABILITY OF THE STRUCTURE AND ELEMENTS WITHIN THE STRUCTURE, DURING REPAIR WORK, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF SHORING AND BRACING.

- CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AVAILABLE ORIGINAL DRAWINGS. REVIEW ORIGINAL DRAWINGS AND COORDINATE REPAIR PROCEDURES PRIOR TO PROCEEDING WITH THE WORK. REPRESENTATIVE LOCATIONS OF EXISTING P-T TENDONS AND ANCHORS ARE SHOWN. EXACT LOCATIONS SHALL BE VERIFIED IN FIELD BY CONTRACTOR PRIOR TO CONCRETE REMOVALS. EXISTING REINFORCING STEEL IS NOT SHOWN ON THE REPAIR DETAILS (UNO). DO NOT CUT ANY REINFORCING, UNLESS DIRECTED BY ENGINEER IN WRITING.

- P-T REPAIRS AND DE-TENSIONING PROCEDURES SHALL BE REVIEWED AT PRECONSTRUCTION OR PREINSTALLATION MEETING. NO DEVIATION FROM WRITTEN, AGREED-UPON PROCEDURES WILL BE ALLOWED UNLESS DIRECTED IN WRITING BY THE ENGINEER. AS A MINIMUM, DURING DETENSIONING OPERATIONS, CLOSE ALL FLOOR SPANS INCLUDING LEVEL BELOW, BEING DETENSIONED, TO PREVENT INJURY IN THE EVENT OF A TENDON POPPING OUT OF THE SLAB.

- NOT ALL TENDON FAILURES ARE IN AREAS OF FLOOR DELAMINATION. PERFORM REMOVAL OF ALL SOUND CONCRETE AS REQUIRED TO EXPOSE TENDONS AND ANCHORS.

- MAINTAIN ORIGINAL TENDON PROFILES WITHIN CONCRETE REMOVAL AREAS. DO NOT REMOVE CONCRETE BELOW TENDONS UNLESS REQUIRED FOR SPLICING REPAIRS OR TO REPLACE DAMAGED SHEATHING.

- TENDONS MAY OCCUR INDIVIDUALLY OR BUNDLED.

- DO NOT DAMAGE TENDONS IN REPAIR AREA. CONTRACTOR-CAUSED DAMAGE TO TENDONS SHALL BE REPAIRED AS DIRECTED BY ENGINEER AT NO COST TO OWNER.

- CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF FAILED OR DAMAGED P/T TENDONS ARE DISCOVERED DURING REMOVALS. ALL P-T REPAIRS SHALL BE REVIEWED BY ENGINEER PRIOR TO COMMENCING WORK RELATED TO THE P-T REPAIR.

- CONTRACTOR SHALL LIMIT REPAIR OPENING SIZE TO MINIMUM SIZE REQUIRED TO PERFORM REPAIRS. EXCESS REMOVALS WILL NOT BE COVERED BY WORK ITEM 3.1.

J. ELECTRICAL CAUTIONARY NOTES

- UNKNOWN IF SLAB CONTAINS EMBEDDED ELECTRICAL CONDUIT. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID CUTTING/DAMAGING CONDUIT. IF CONDUIT IS DAMAGE AS RESULT OF CONSTRUCTION OPERATIONS NOTIFY OWNER AND ENGINEER IMMEDIATELY. CONDUIT DAMAGE BY CONSTRUCTION OPERATION SHALL BE REPAIRED BY CONTRACTOR NO COST OWNER. DAMAGED CONDUIT THAT IS NOT A RESULT OF CONSTRUCTION OPERATIONS SHALL BE REPAIRED/REPLACED PER ELECTRICAL ALLOWANCE.

L. PHASING INSTRUCTION AND NOTES

1. DEFINITIONS

- CONSTRUCTION PHASING, SEQUENCING AND TRAFFIC MAINTENANCE WORK SEQUENCE SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND ALL IDENTIFIED PROJECT REPRESENTATIVES. OWNER WILL CONTINUE TO USE STRUCTURE DURING RESTORATION CONSTRUCTION. CONTRACTOR MUST PHASE AND ARRANGE WORK SO AS TO MAINTAIN ACCESS AT ALL TIMES TO AREAS THAT ARE NOT UNDER CONSTRUCTION FOR BOTH VEHICLES AND PEDESTRIANS.
- PROTECTION ZONE: THIS IS AN AREA THAT IS TAKEN OUT OF SERVICE AND ISOLATED FROM THE GARAGES NORMAL PEDESTRIAN AND VEHICULAR CIRCULATION TO PROTECT THE PATRONS FROM HAZARDS RESULTING FROM WORK BEING PERFORMED ABOVE. WORK THAT REQUIRES PROTECTION ZONES SHALL INCLUDE SHOT BLAST/SEALER APPLICATION, CONCRETE DEMOLITION, CONCRETE PLACEMENT, CEILING REMOVAL/SURFACE PREP, WELDING AND SEALANT REPLACEMENT.
- WORK ZONE: THIS IS AN AREA THAT IS CAPTURED FOR THE PURPOSE OF PERFORMING PROJECT RELATED WORK ITEMS. THE AREA SHALL BE BARRICADED TO PREVENT GARAGE PATRONS/VEHICLES FROM ENTERING/PARKING WHILE CONTRACTORS IN CONTROL OF THE AREA.
- WORK PHASE AREA: THIS INCLUDES ALL AREAS AFFECTED BY A PARTICULAR PHASE INCLUDING THE WORK ZONE, PROTECTION ZONE, AND THEIR USE FOR TEMPORARY PEDESTRIAN AND VEHICLE CIRCULATION.
- PROTECTION PARTITION/BARRICADES: THIS DESCRIBES THE BARRICADES AND PROTECTION ENCLOSURES THAT WILL BE INSTALLED AROUND THE WORK AND PROTECTION ZONES TO KEEP GARAGE PATRONS AND THEIR VEHICLES OUT OF THOSE RESPECTIVE AREAS. IN ADDITION THESE ELEMENTS MUST KEEP DUST AND OTHER CONSTRUCTION RELATED DEBRIS FROM MIGRATING IN THE OCCUPIED AREAS OF THE GARAGE.

2. PHASING

- PARKING RAMP SHALL REMAIN OPERATIONAL AT ALL TIMES. FOR BIDDING PURPOSES, PHASING RESTRICTIONS ARE AS FOLLOWS:
  - a.a. FOR TRAFFIC TOPPING REPAIR AND RE-COATING WORK (WORK ITEM SERIES 16), THE CONTRACTOR MAY OCCUPY ONE FULL LEVEL OF ONE STRUCTURE AT A TIME. THE CONTRACTOR SHALL MAINTAIN A VEHICULAR PATHWAY THROUGH THE CLOSURE AREA AS NECESSARY TO MAINTAIN ACCESS TO ALL AREAS OF THE RAMP.
  - a.b. THE CONTRACTOR MAY OCCUPY UP TO 50 PARKING STALLS AT A TIME IN EACH STRUCTURE TO PERFORM ALL OTHER WORK WHILE THE GARAGE IS OPERATING.
  - a.c. THE CONTRACTOR SHALL COORDINATE ALL CLOSURES WITH THE OWNER AND ENGINEER. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED BEFORE CHANGING OF PHASES AND/OR OCCUPYING ANY RESERVED PARKING SPACE.
  - a.d. THE ACTUAL NUMBER OF SPACES TAKEN OUT OF SERVICE AT ANY ONE TIME WILL VARY DEPENDING UPON THE AREA EVENT SCHEDULE AND INDIVIDUAL RAMP PARKING DEMAND.

- PHASING SHALL BE AS SCHEDULED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER/OWNER.
- THE CONTRACTOR SHALL PROVIDE UNOBSTRUCTED PEDESTRIAN ACCESS (PROTECTED WHEN NECESSARY) TO ALL EMERGENCY EGRESS STAIRS AT ALL TIMES. THE CONTRACTOR SHALL INSTALL AND MAINTAIN SIGNAGE THAT CLEARLY DIRECTS PATRONS TO AND FROM THESE DESTINATIONS. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY LIGHTING FOR THESE PATHS IN THE EVENT THE GARAGE LIGHTING IS BLOCKED OR REDUCED BY PROJECT RELATED WORK.
- IT SHALL BE THE OWNER OR HIS AGENTS RESPONSIBILITY TO CLEAR WORK PHASE AREA OF VEHICLES. THE CONTRACTOR SHALL WORK IN UNISON WITH THE CLEARING OPERATION TO CAPTURE THE AREAS BY INCREMENTALLY INSTALLING BARRICADES TO PREVENT VEHICLES FROM REENTERING THE AREA AS IT IS CLEARED. IN ADDITION TEMPORARY SIGNAGE SHALL BE INSTALLED AND ADJUSTED BY THE CONTRACTOR DURING THE WORK. PROTECTION ZONE CAPTURE EFFORT. NOTE THAT NEW AREAS CANNOT BE CAPTURED PRIOR TO WORK ZONES OR PORTIONS THEREOF BEING RETURNED TO SERVICE SO THAT THE MAXIMUM LIMIT FOR SPACES OUT OF SERVICE SHALL NOT BE EXCEEDED. ALLOW 24 HOURS BETWEEN RETURNING SPACES TO SERVICE AND OCCUPYING EQUAL NUMBER OF SPACES FOR THE NEXT PHASE OF WORK.
- BARRICADES SHALL BE OF SUFFICIENT CONSTRUCTION TO PREVENT INADVERTENT ACCESS BY PATRON VEHICLES AND PEDESTRIANS. THE BARRICADES CAN BE INCORPORATED INTO THE WORK ZONE PROTECTION THAT ARE INTENDED TO PREVENT THE ESCAPE OF DUST AND OTHER DEBRIS FROM THE WORKS ZONE.
- THE FOLLOWING PARAMETERS SHALL BE CONSIDERED WHEN DEVELOPING PHASING PLANS.

- PEDESTRIAN PATH WIDTH (MINIMUM): 6'-0"
- PEDESTRIAN PATH HEADROOM (MINIMUM): 7'-0"
- TEMPORARY VEHICLE ONE - WAY TRAVEL (MINIMUM): 12'-0"
- TEMPORARY VEHICLE HEADROOM HEIGHT: AS POSTED AT GARAGE ENTRANCE.

- CONTRACTOR SHALL BE RESPONSIBLE TO LOCKOUT STAIR ACCESS INTO WORK WORK PHASE, AND AREAS UNDER CONSTRUCTION TO PREVENT UNAUTHORIZED PATRON ACCESS. DOOR SHALL BE SEALED OFF TO PREVENT AIRBORNE DUST FROM ENTERING INTO STAIRWAYS AND ELEVATOR SHAFTS.

M. MISCELLANEOUS NOTES

- OWNER AND THE ENGINEER RESERVE THE RIGHT TO ISSUE A STOP WORK ORDER FOR SPECIFIC AREAS/WORK ITEMS IF IN THE OPINION OF EITHER ONGOING WORK DOES NOT MEET THE PHASING PARAMETERS OF THE PROJECT OR PRESENT HAZARDS TO THE PATRONS OF THE GARAGE. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION. WORKS ZONE SHALL NOT BE RETURNED TO SERVICE IF HAZARDOUS CONDITIONS ARE PRESENT.
- DO NOT RETURN AREAS TO SERVICE UNLESS EXISTING STRIPING AFFECTED BY WORK HAS BEEN RESTORED OR NEW STRIPING HAS BEEN APPLIED.

N. ABBREVIATIONS

- APPROX = APPROXIMATELY
- AGG = AGGREGATE
- BM = BEAM
- BOT = BOTTOM
- CIP = CAST IN PLACE
- CJ = CONSTRUCTION JOINTS/CONTROL JOINTS
- CLR = CLEARANCE
- COL = COLUMN
- CONC = CONCRETE
- DET = DETAIL
- EA = EACH
- EJ = EXPANSION JOINT
- EXIST = EXISTING
- FIN = FINISHED
- FL = FLOOR
- IN = INCHES
- INC = INCIDENTAL
- LF = LINEAR FOOT
- LS = LUMP SUM
- LVL = LEVEL
- MAX = MAXIMUM
- MIN = MINIMUM
- NA = NOT APPLICABLE
- OC = ON CENTER
- OH = OPPOSITE HAND
- P/C = PRECAST
- RC = REFLECTED CEILING
- REINF = REINFORCEMENT
- REQ'D = REQUIRED
- SF = SQUARE FOOT
- SIM = SIMILAR
- SOG = SLAB ON GRADE
- SPEC = SPECIFICATION
- SUPT = SUPPORTED
- TAR = TYPICAL AS REQUIRED
- TYP = TYPICAL
- UN OR UNO = UNLESS NOTED OTHERWISE
- WI = WORK ITEM
- WWR = WELDED WIRE REINFORCEMENT



650 Trade Centre Way  
Suite 325  
Portage, MI 49002  
269.381.6000 Ph  
www.walkerconsultants.com

MICHIGAN STATE UNIVERSITY

PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS - ANNUAL PARKING RAMP MAINTENANCE '25

MSU PROJ. NO. CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

GENERAL NOTES

R-001

RAMP #1 (SHAW LANE) WORK ITEM TABLE

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	30

RAMP #2 (AUDITORIUM) WORK ITEM TABLE

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PIT	SF	500
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	300
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	120
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-
20.2	PROTECT EXPOSED P/T TENDONS	INCIDENTAL	-
20.6	TENDON SPLICE COUPLING (CENTER PULL)	EA	6
20.8	TENDON SPLICE COUPLING (DOUBLE)	EA	6
20.9	PIT TENDON MATERIAL	LF	100

RAMP #3 (WHARTON CENTER) WORK ITEM TABLE

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.13	FLOOR REPAIR STAR STRINGER	LS	1
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	130
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	60
5.2	HELIX BEAM REPAIR - PARTIAL DEPTH	SF	300

RAMP #4 (KELLOGG CENTER) WORK ITEM TABLE

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PC	SF	1700
3.06	FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT	SF	1000
3.12	FLOOR REPAIR - STAR STRINGER	LF	100
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-



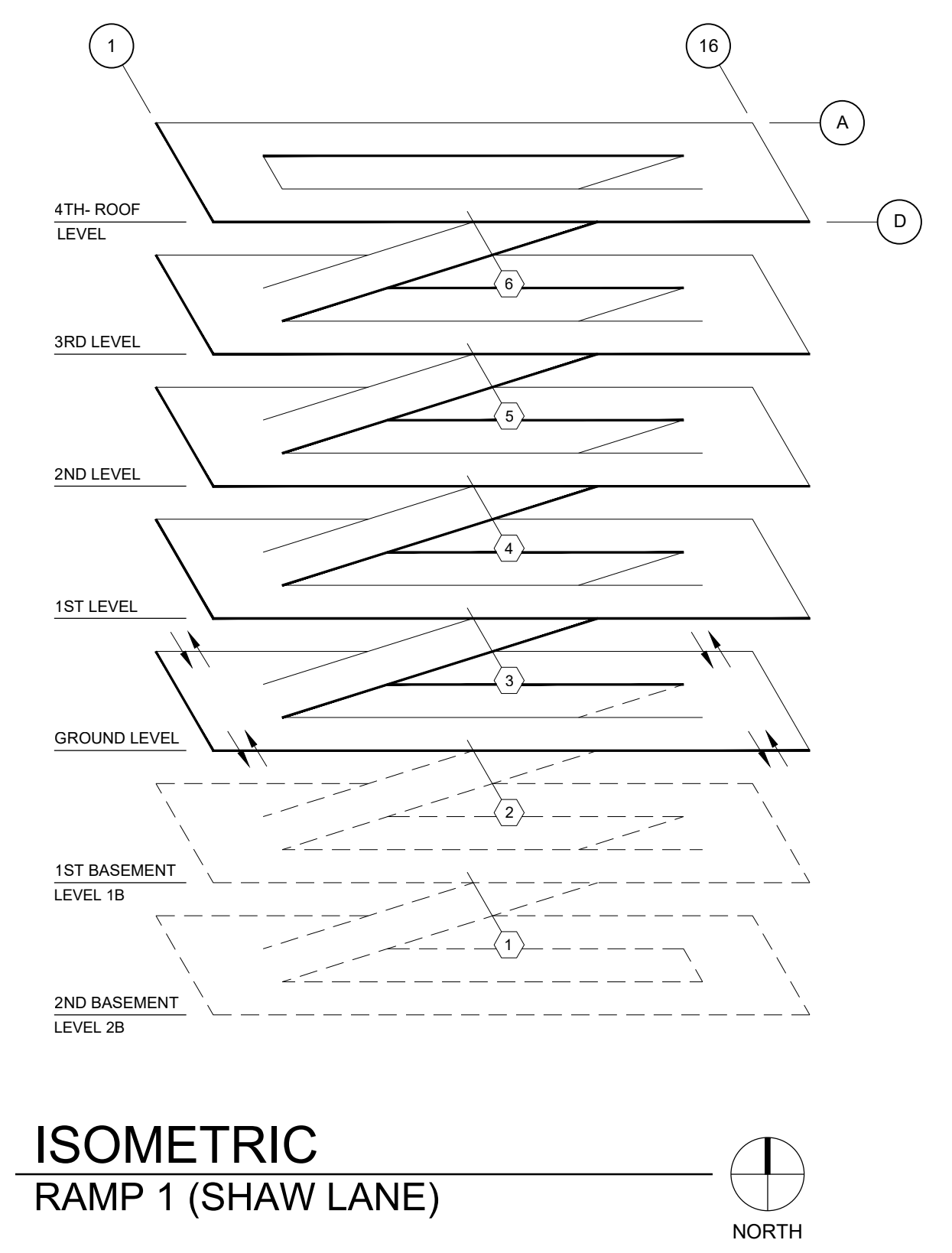
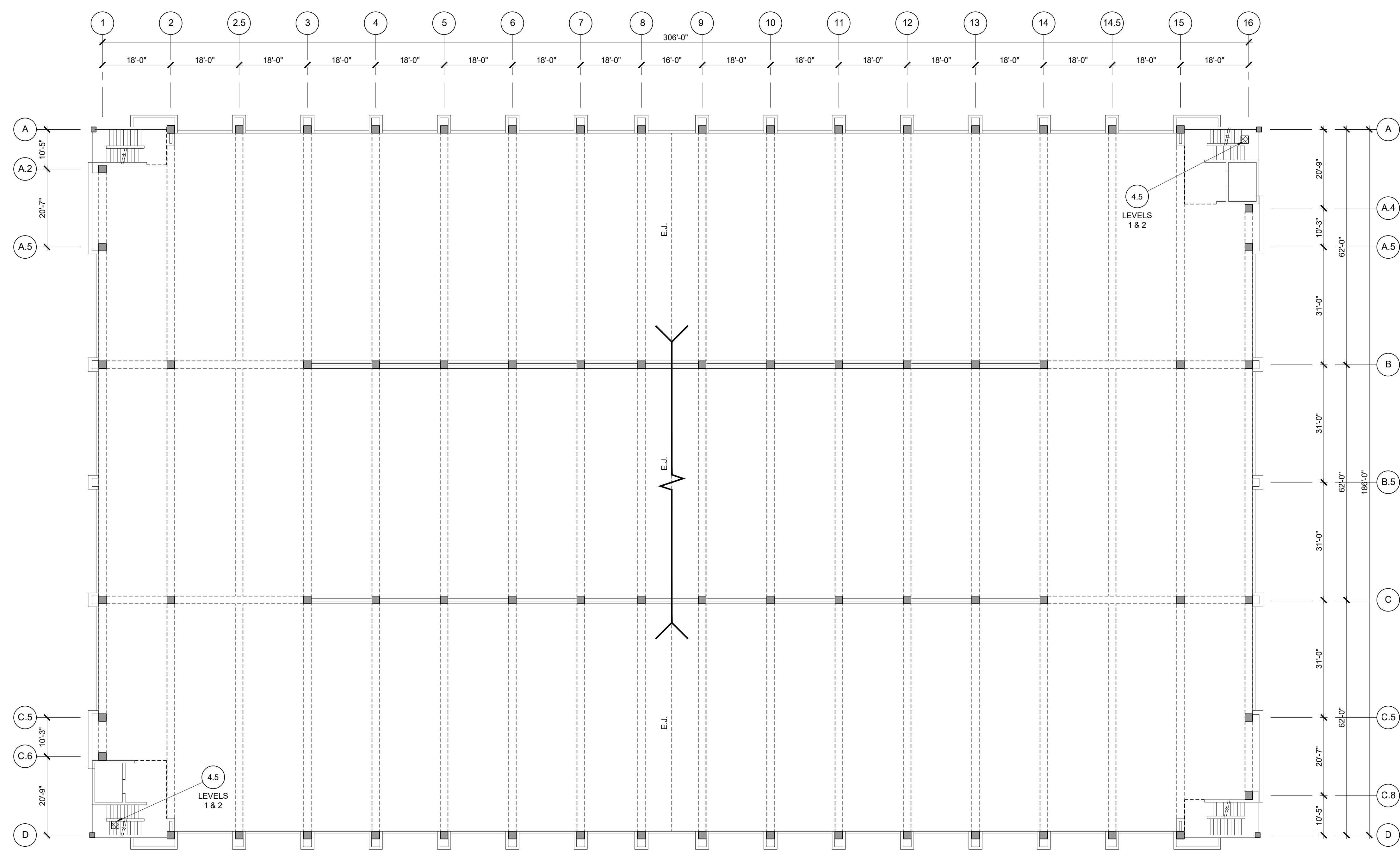
**MICHIGAN STATE UNIVERSITY**  
 PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS -  
 ANNUAL PARKING RAMP MAINTENANCE '25

MSU PROJ. NO.  
 CP24073

PR. MGR. AL  
 ARCH. N/A  
 MECH. N/A  
 ELEC. N/A  
 CIVIL SML  
 L.A. N/A  
 INT. DES. N/A  
 CONST. REP. AL  
 APPR. MSG  
 DATE 03/20/2025  
 SCALE AS SHOWN  
 ISSUED

FOR BID & CONST. - 03/20/2025

RAMP NO. 1  
 TYPICAL LEVEL PLAN



**1 TYPICAL LEVEL PLAN**  
 RAMP 1 (SHAW LANE)

SCALE: 1/16" = 1'-0"

- SHEET NOTES:**
- REFER TO DRAWING R-001 FOR GENERAL NOTES.
  - REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
  - COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
  - CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
  - CONTRACTOR SHALL FURNISH AND APPLY PAINT / CONCRETE STAIN, APPROVED BY ENGINEER, TO ALL VERTICAL AND OVERHEAD CONCRETE REPAIRS, INCIDENTAL. COATINGS SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.

**LEGEND:**

- [Hatched Box] = WI 3.3, 3.09 - FLOOR REPAIR FULL DEPTH
- [Cross-hatched Box] = WI 4.1, 4.5 - CEILING REPAIR PARTIAL DEPTH

WORK ITEM NUMBER: XXX

WORK ITEM NOTE (SEE ABBREVIATIONS): XXX

CLARIFICATION DETAIL NUMBER: XXX

**NOTES:**

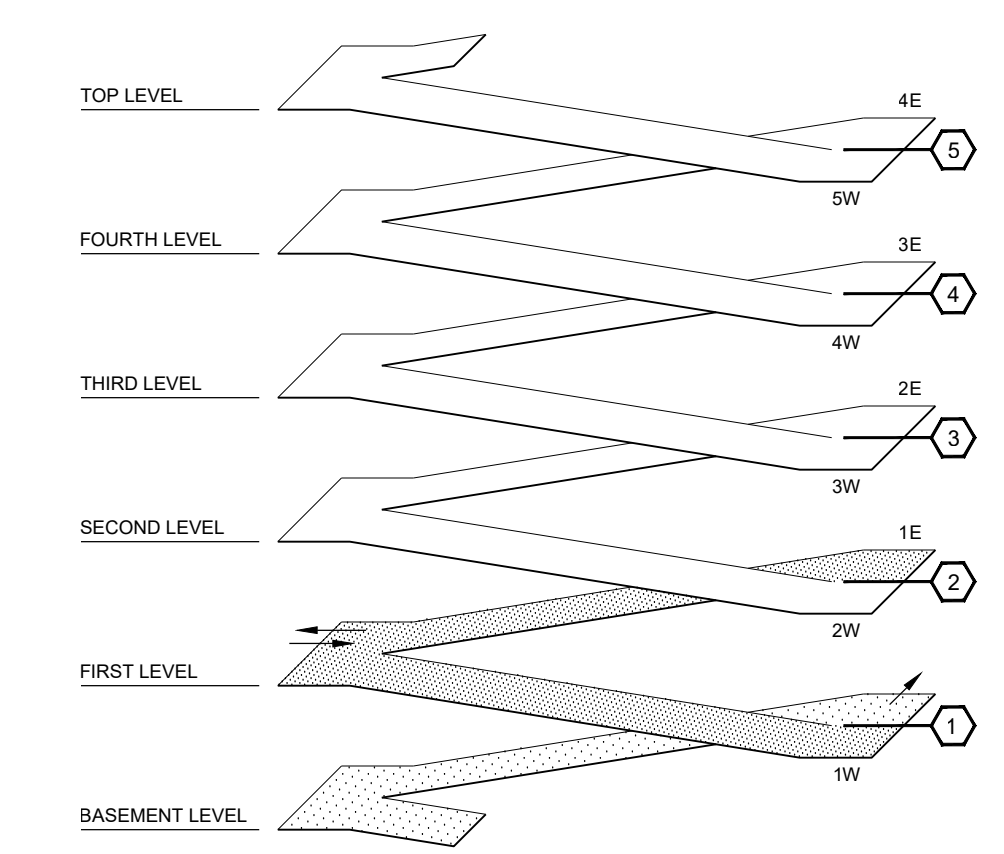
- NOT ALL WORK ITEMS HAVE DETAILS.
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**RAMP #1 (SHAW LANE) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
4.5	CEILING REPAIR - PARTIAL DEPTH - STAIR	SF	30

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.

J:\MICHIGAN\20-002685-00-MSU\_2025\_RAMP\_RPRSAACAD\0-002685-R111.DWG 2/19/2025 3:30:36 PM TYLER, JOSH



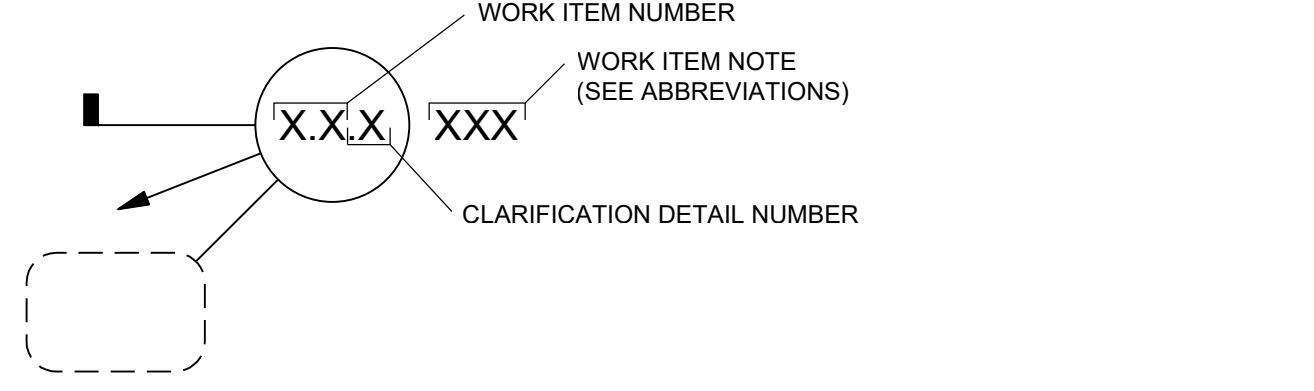
**ISOMETRIC RAMP 2 (AUDITORIUM)**

**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- CONTRACTOR SHALL FURNISH AND APPLY PAINT / CONCRETE STAIN, APPROVED BY ENGINEER, TO ALL VERTICAL AND OVERHEAD CONCRETE REPAIRS, INCIDENTAL. COATINGS SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM 3.3:** WORK ITEM IS INTENDED FOR USE AT FULL DEPTH SLAB REPAIR AREAS ASSOCIATED WITH POST TENSIONING REPAIR WORK. WORK ITEM SERIES 20.0.
- WORK ITEM 16.1:** WORK ITEM IS INTENDED TO BE PERFORMED IN CONJUNCTION WITH CONCRETE SLAB REPAIRS (WORK ITEM 3.3), INCIDENTAL. COATING SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM SERIES 20.0:** POST TENSIONING REPAIR LOCATIONS ARE NOT SPECIFICALLY IDENTIFIED IN THESE DOCUMENTS. CONTRACTOR SHALL USE CAUTION DURING ALL SLAB DEMOLITION WORK, AS TO NOT CAUSE DAMAGE TO THE EXISTING POST TENSIONING SYSTEM. ANY DAMAGE FOUND TO BE CAUSED BY DEMOLITION SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PERFORM DEMOLITION WORK AND REMOVE DEBRIS. CONTRACTOR SHALL REVIEW EACH REPAIR LOCATION WITH ENGINEER IN THE FIELD TO IDENTIFY POST TENSIONING SYSTEM DAMAGE AND REPAIR REQUIREMENTS.

**LEGEND:**

- [Hatched Box] = WI 3.3, 3.09 - FLOOR REPAIR FULL DEPTH
- [Cross-hatched Box] = WI 4.1, 4.5 - CEILING REPAIR PARTIAL DEPTH

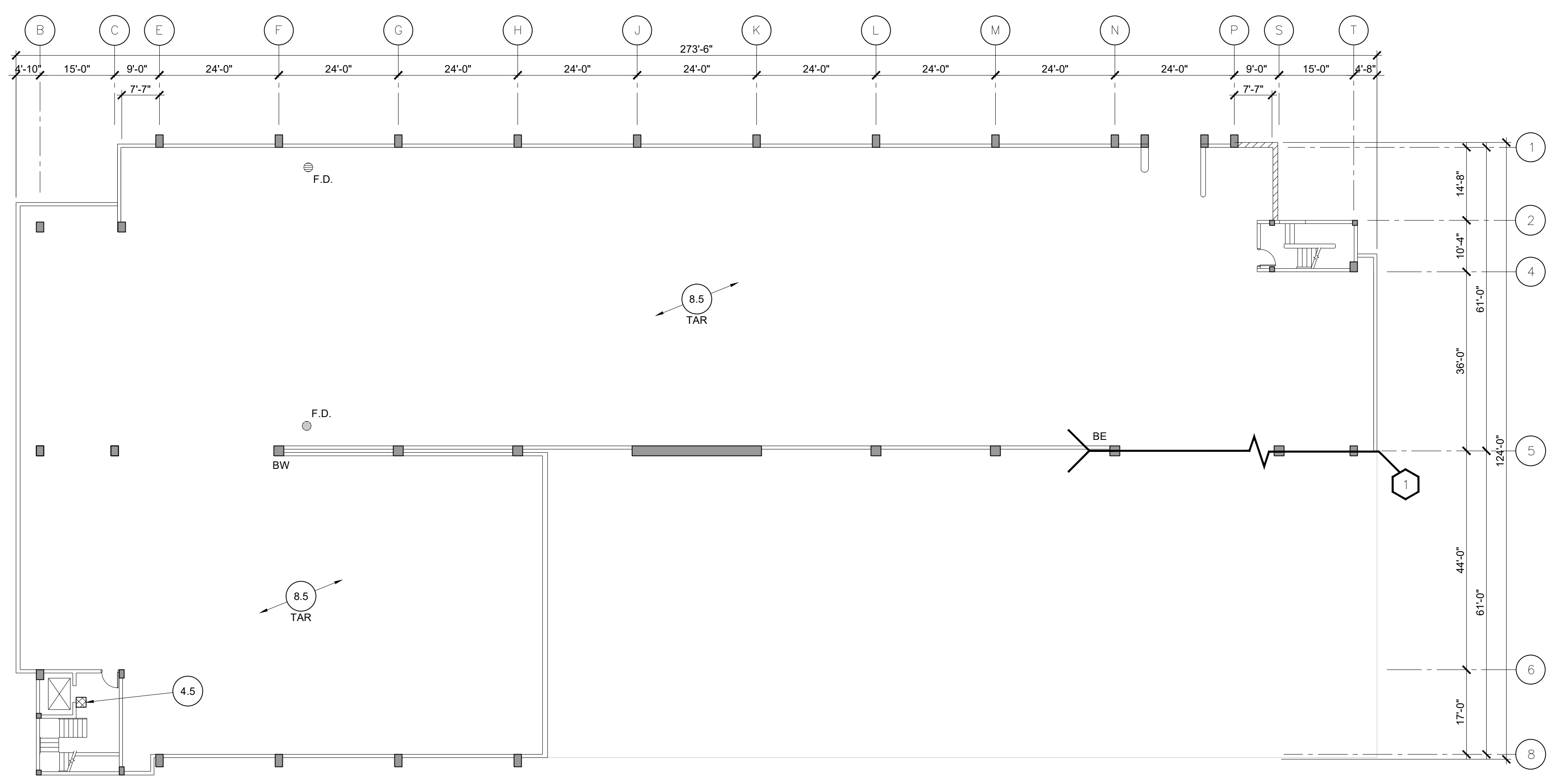


- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

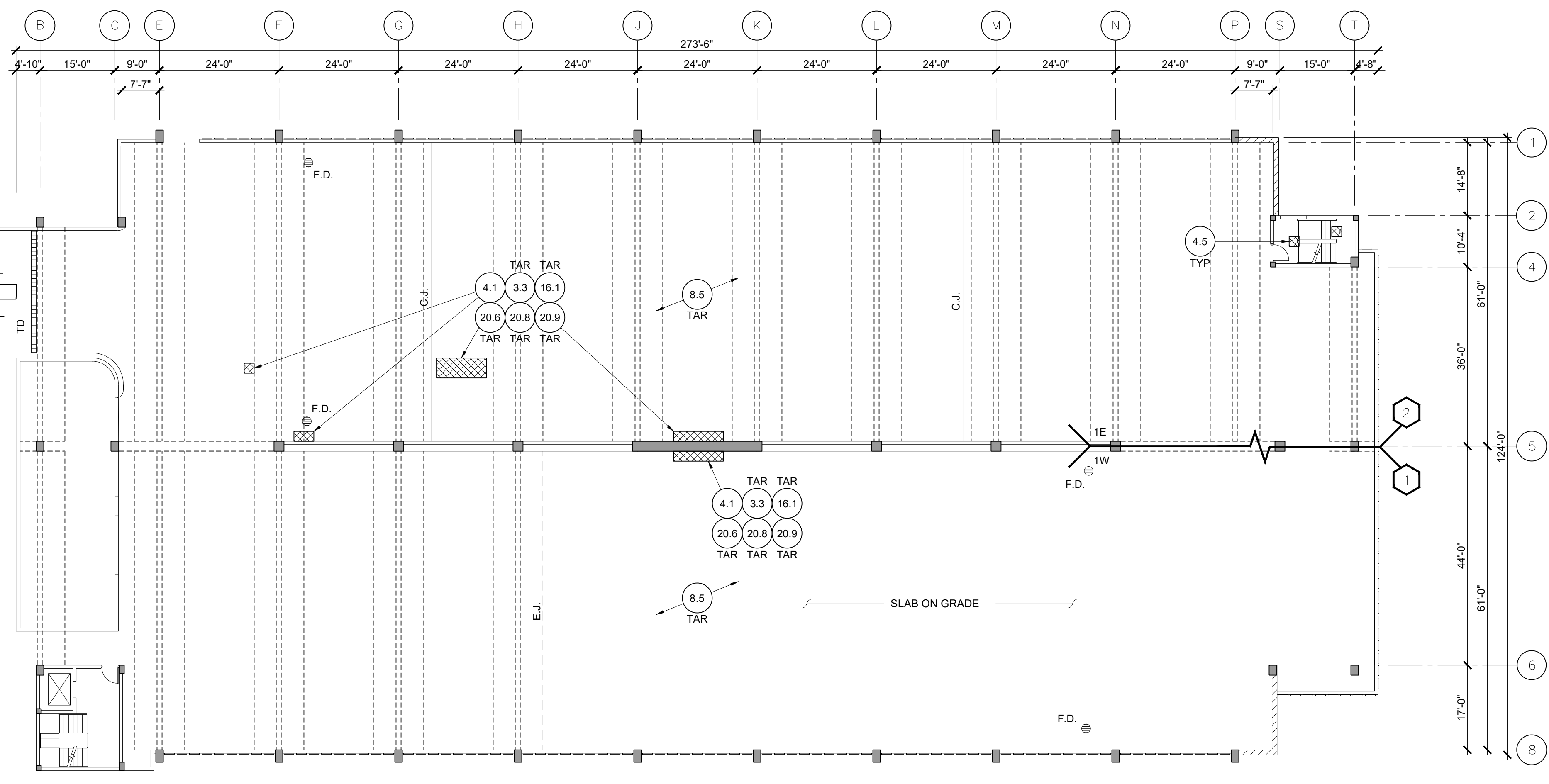
**RAMP #2 (AUDITORIUM) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PIT	SF	500
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	300
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	120
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING-VEHICULAR	INCIDENTAL	-
20.2	PROTECT EXPOSED PIT TENDONS	INCIDENTAL	-
20.6	TENDON SPLICE COUPLING (CENTER PULL)	EA	6
20.8	TENDON SPLICE COUPLING (DOUBLE)	EA	6
20.9	PIT TENDON MATERIAL	LF	100

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.



**1 BASEMENT LEVEL PLAN RAMP 2 (AUDITORIUM)**



**2 LEVEL 1 PLAN RAMP 2 (AUDITORIUM)**

J:\MICHIGAN\20-002683-00-MSU\_RAMP\_RPRS\ACAD\0-002683-R121.DWG 2/19/2025 3:31:15 PM TYLER, JOSH

MSU PROJ. NO.  
CP24073

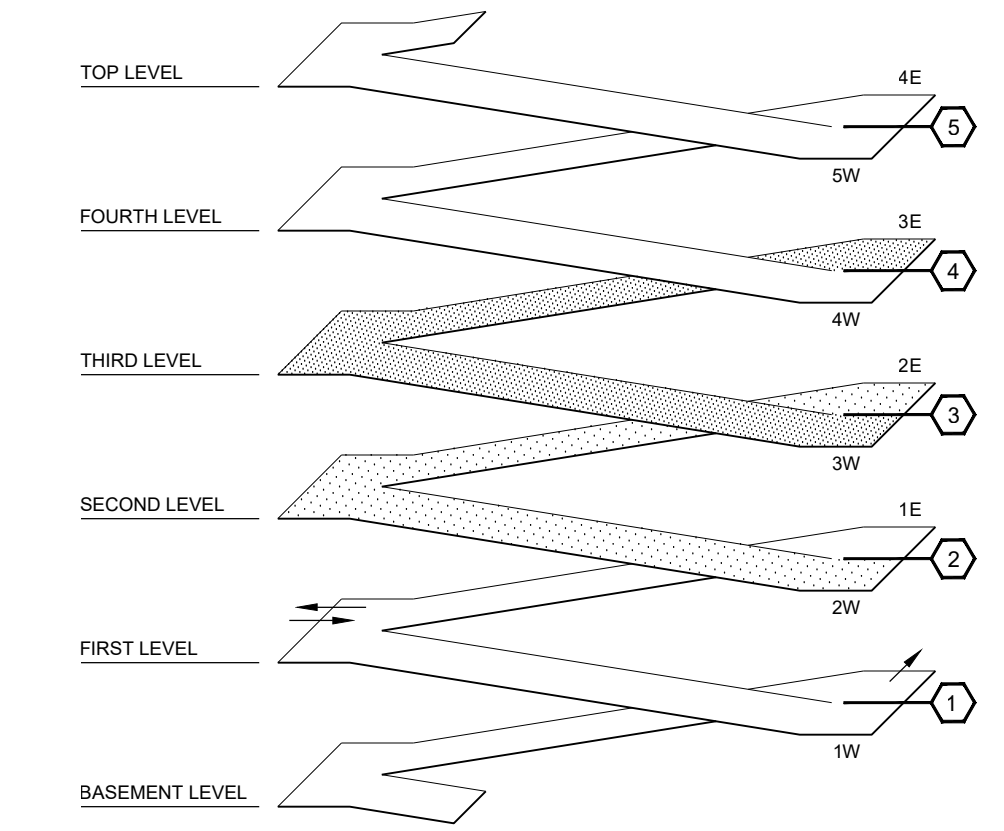
PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

FOR BID & CONST. - 03/20/2025

RAMP NO. 2  
BASEMENT & LEVEL 1 PLANS

**R-121**





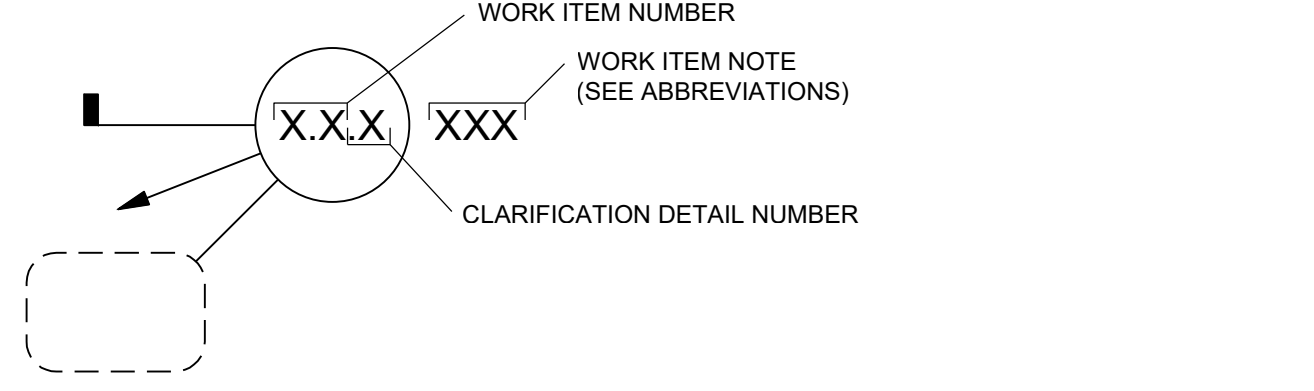
**ISOMETRIC RAMP 2 (AUDITORIUM)**

**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- CONTRACTOR SHALL FURNISH AND APPLY PAINT / CONCRETE STAIN, APPROVED BY ENGINEER, TO ALL VERTICAL AND OVERHEAD CONCRETE REPAIRS, INCIDENTAL. COATINGS SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM 3.3:** WORK ITEM IS INTENDED FOR USE AT FULL DEPTH SLAB REPAIR AREAS ASSOCIATED WITH POST TENSIONING REPAIR WORK. WORK ITEM SERIES 20.0.
- WORK ITEM 16.1:** WORK ITEM IS INTENDED TO BE PERFORMED IN CONJUNCTION WITH CONCRETE SLAB REPAIRS (WORK ITEM 3.3), INCIDENTAL. COATING SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM SERIES 20.0:** POST TENSIONING REPAIR LOCATIONS ARE NOT SPECIFICALLY IDENTIFIED IN THESE DOCUMENTS. CONTRACTOR SHALL USE CAUTION DURING ALL SLAB DEMOLITION WORK, AS TO NOT CAUSE DAMAGE TO THE EXISTING POST TENSIONING SYSTEM. ANY DAMAGE FOUND TO BE CAUSED BY DEMOLITION SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PERFORM DEMOLITION WORK AND REMOVE DEBRIS. CONTRACTOR SHALL REVIEW EACH REPAIR LOCATION WITH ENGINEER IN THE FIELD TO IDENTIFY POST TENSIONING SYSTEM DAMAGE AND REPAIR REQUIREMENTS.

**LEGEND:**

- [Hatched Box] = WI 3.3, 3.09 - FLOOR REPAIR FULL DEPTH
- [Cross-hatched Box] = WI 4.1, 4.5 - CEILING REPAIR PARTIAL DEPTH

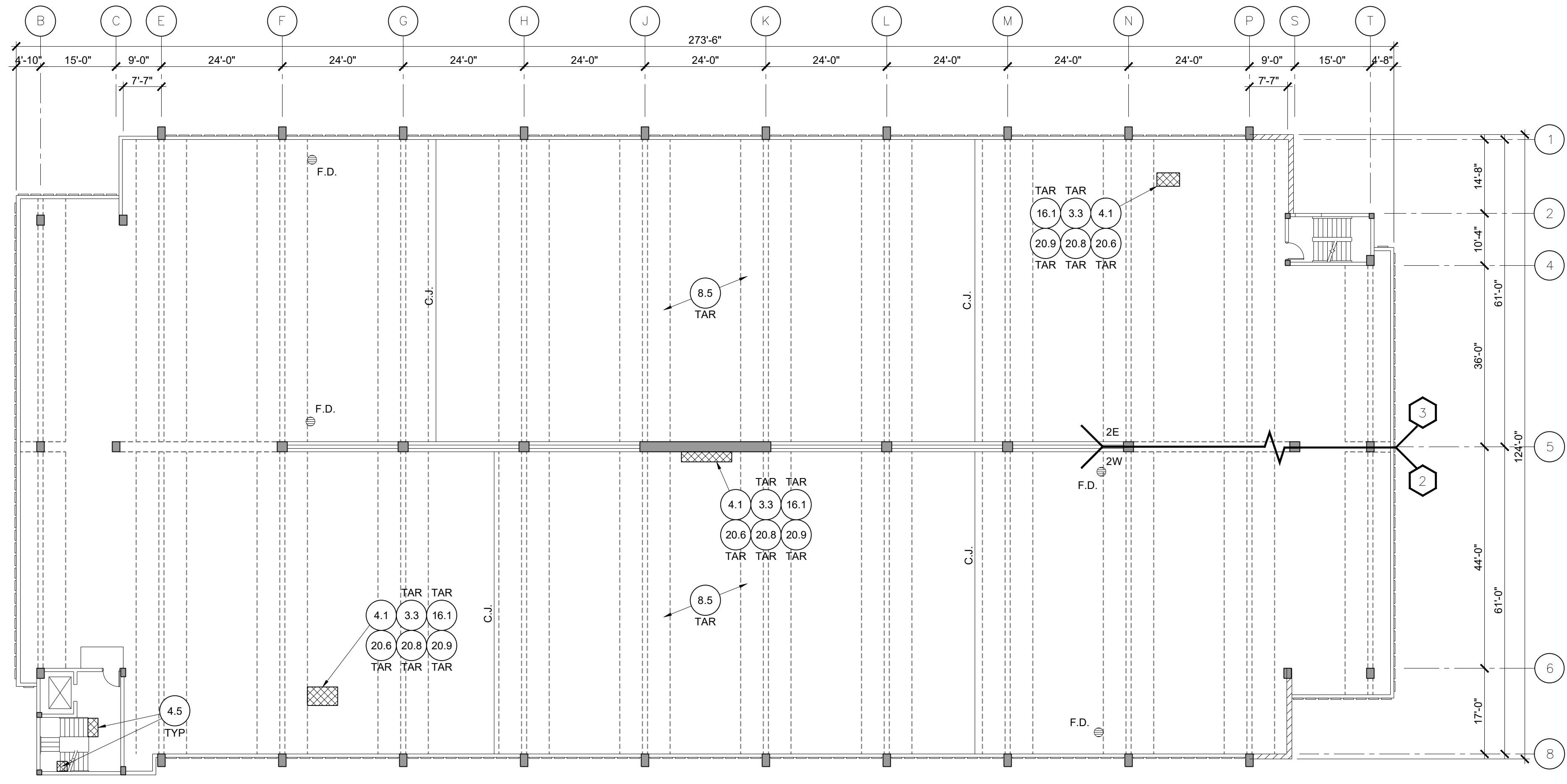


- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

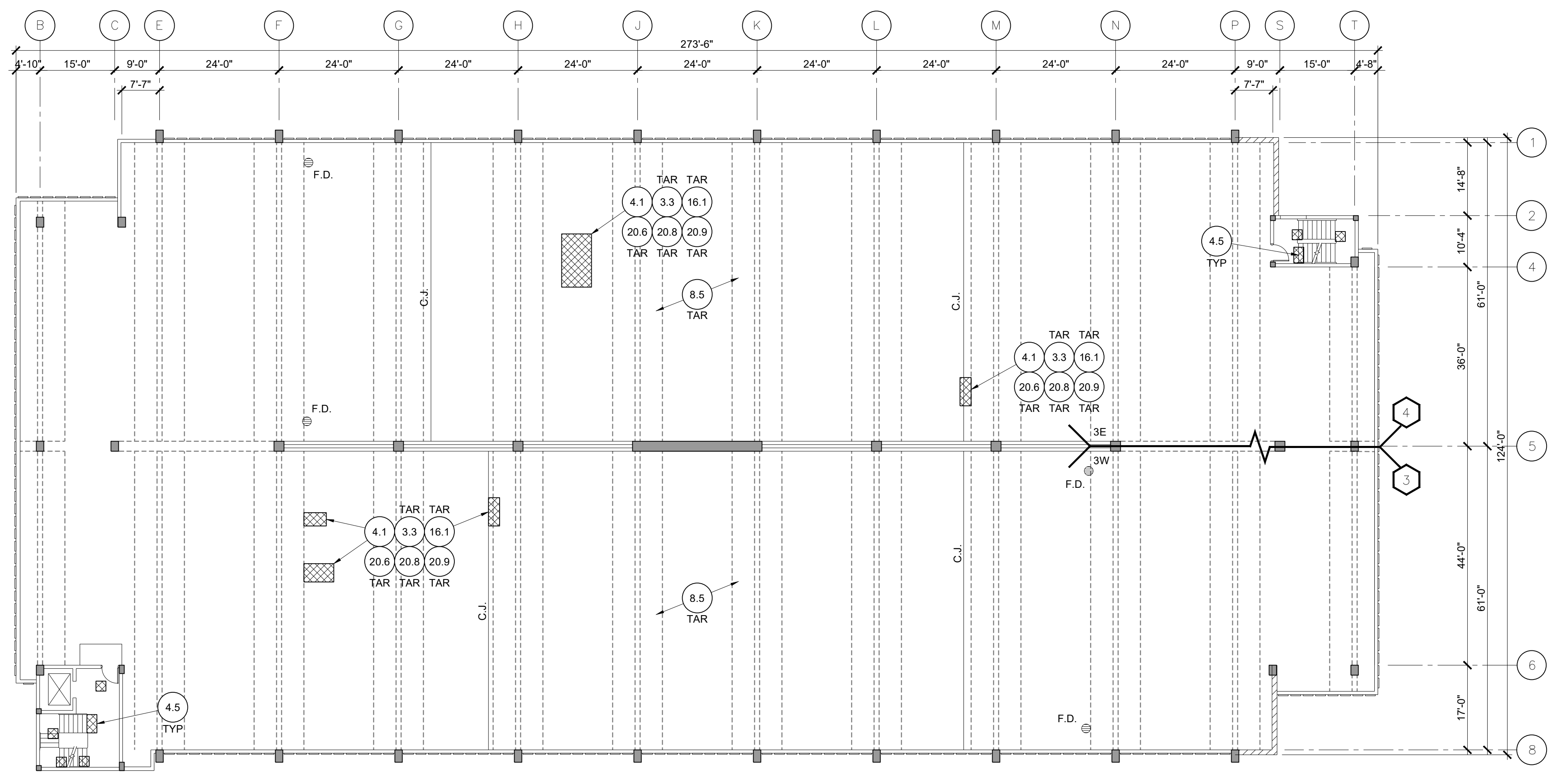
**RAMP #2 (AUDITORIUM) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PIT	SF	500
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	300
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	120
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING-VEHICULAR	INCIDENTAL	-
20.2	PROTECT EXPOSED PIT TENDONS	INCIDENTAL	-
20.6	TENDON SPLICE COUPLING (CENTER PULL)	EA	6
20.8	TENDON SPLICE COUPLING (DOUBLE)	EA	6
20.9	PIT TENDON MATERIAL	LF	100

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.



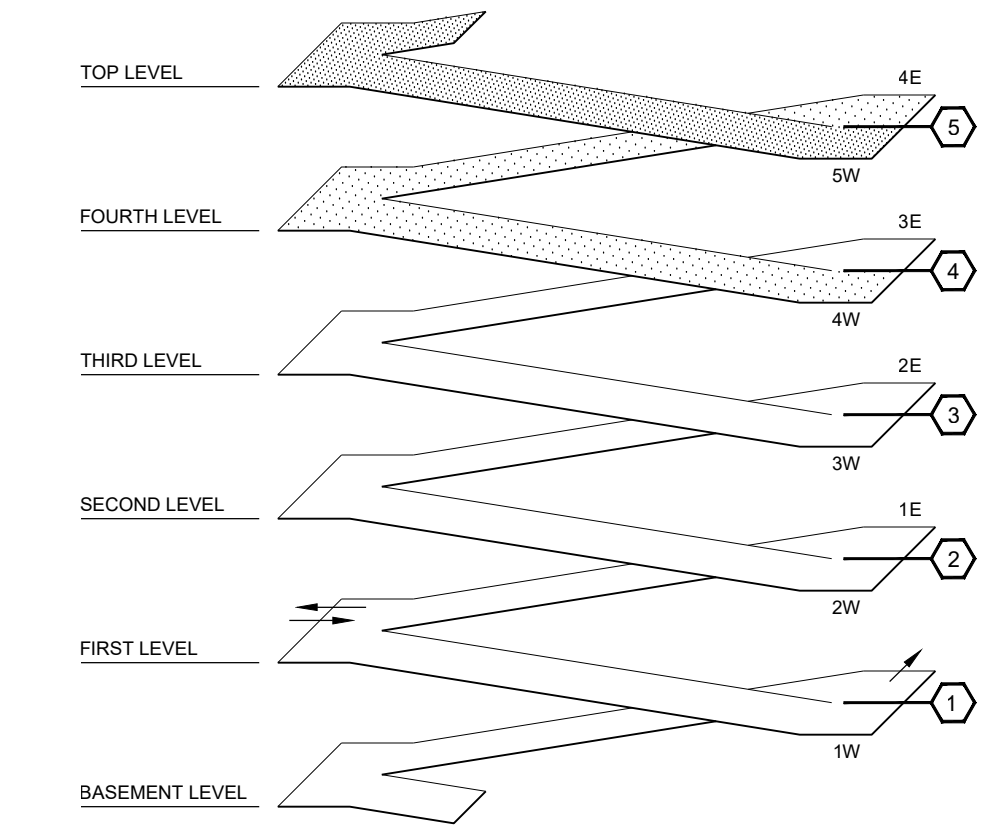
**1 LEVEL 2 PLAN RAMP 2 (AUDITORIUM)**



**2 LEVEL 3 PLAN RAMP 2 (AUDITORIUM)**

J:\MICHIGAN\20-002683-00-MSU\_RAMP\_RPRS\ACAD\0-002683-R122.DWG 2/19/2025 3:37:06 PM TYLER, JOSH



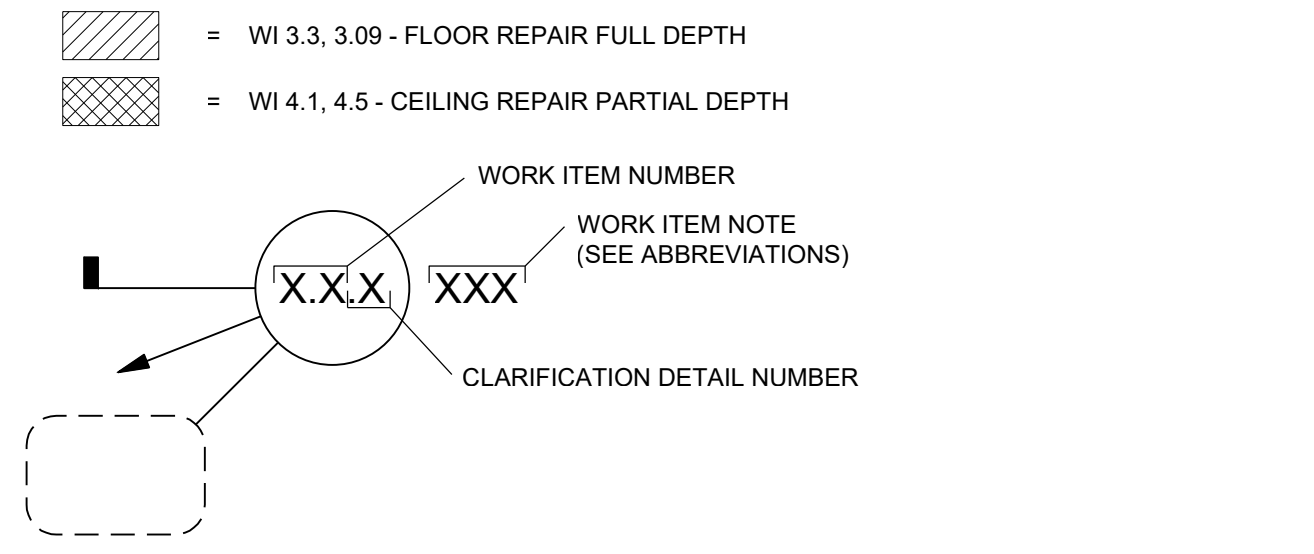


**ISOMETRIC**  
 RAMP 2 (AUDITORIUM)

**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- CONTRACTOR SHALL FURNISH AND APPLY PAINT / CONCRETE STAIN, APPROVED BY ENGINEER, TO ALL VERTICAL AND OVERHEAD CONCRETE REPAIRS, INCIDENTAL. COATINGS SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM 3.3: WORK ITEM IS INTENDED FOR USE AT FULL DEPTH SLAB REPAIR AREAS ASSOCIATED WITH POST TENSIONING REPAIR WORK. WORK ITEM SERIES 20.0.
- WORK ITEM 16.1: WORK ITEM IS INTENDED TO BE PERFORMED IN CONJUNCTION WITH CONCRETE SLAB REPAIRS (WORK ITEM 3.3), INCIDENTAL. COATING SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM SERIES 20.0: POST TENSIONING REPAIR LOCATIONS ARE NOT SPECIFICALLY IDENTIFIED IN THESE DOCUMENTS. CONTRACTOR SHALL USE CAUTION DURING ALL SLAB DEMOLITION WORK, AS TO NOT CAUSE DAMAGE TO THE EXISTING POST TENSIONING SYSTEM. ANY DAMAGE FOUND TO BE CAUSED BY DEMOLITION SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL PERFORM DEMOLITION WORK AND REMOVE DEBRIS. CONTRACTOR SHALL REVIEW EACH REPAIR LOCATION WITH ENGINEER IN THE FIELD TO IDENTIFY POST TENSIONING SYSTEM DAMAGE AND REPAIR REQUIREMENTS.

**LEGEND:**

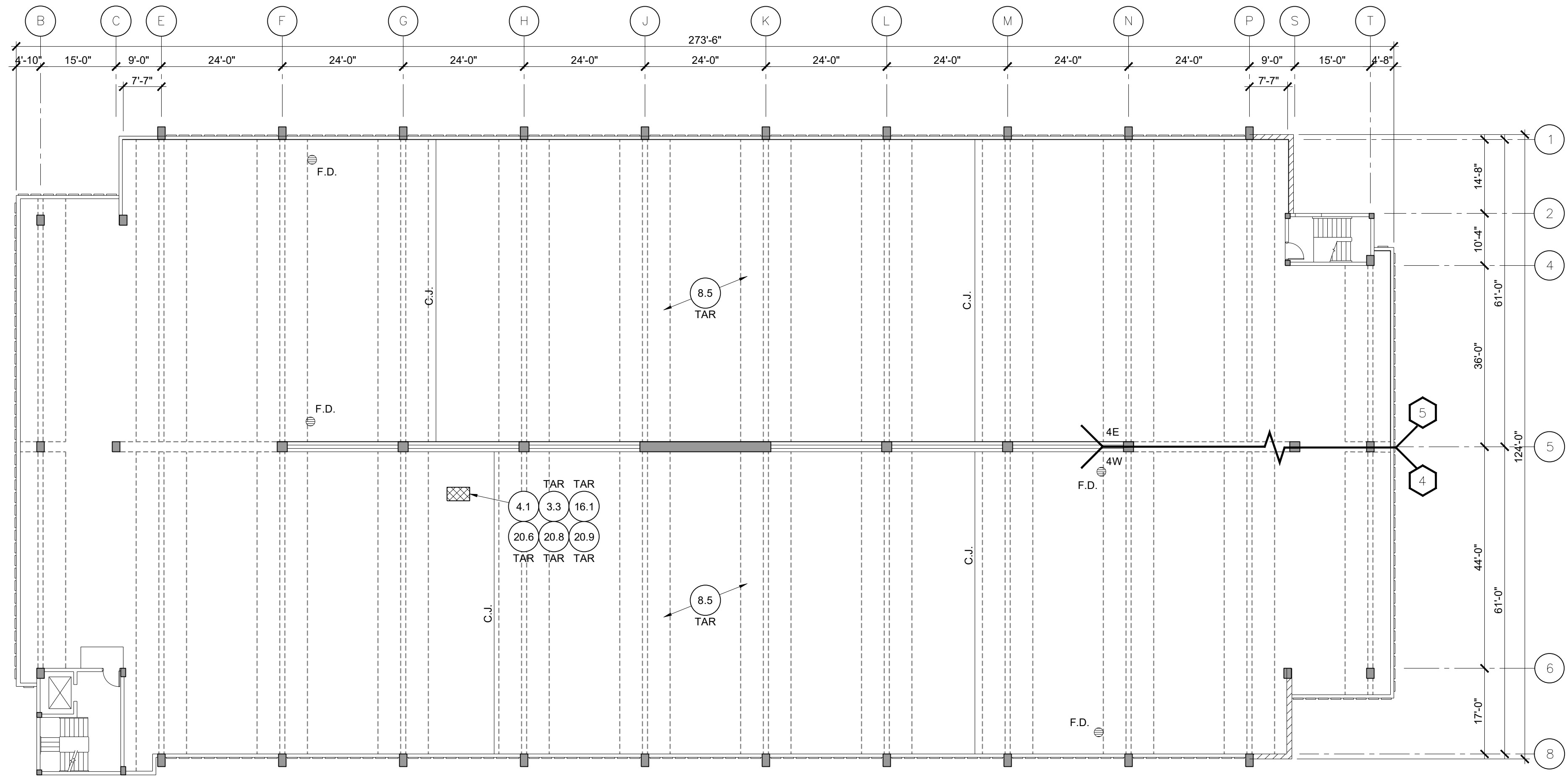


- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

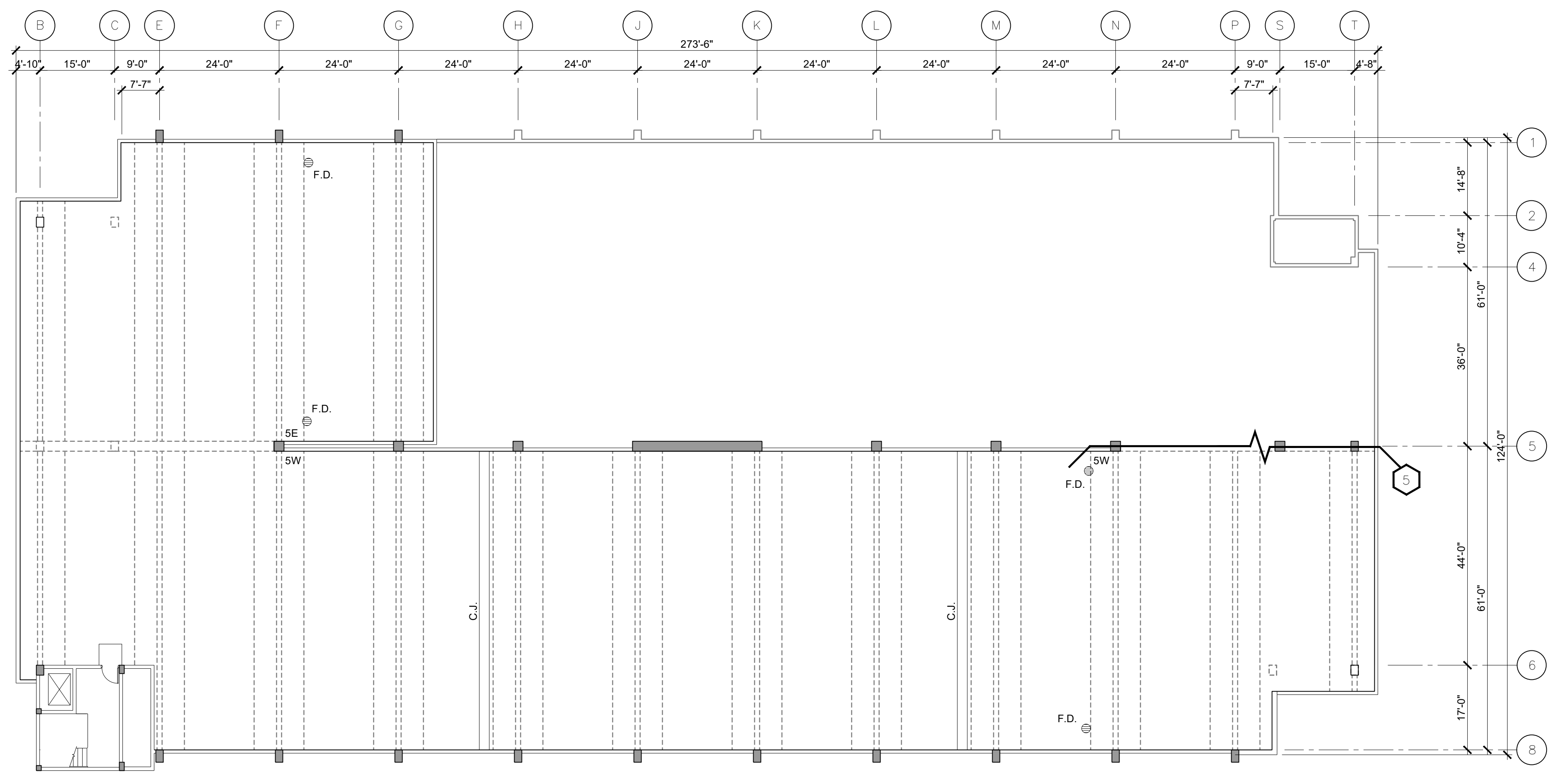
**RAMP #2 (AUDITORIUM) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PIT	SF	500
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	300
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	120
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING-VEHICULAR	INCIDENTAL	-
20.2	PROTECT EXPOSED PIT TENDONS	INCIDENTAL	-
20.6	TENDON SPLICE COUPLING (CENTER PULL)	EA	6
20.8	TENDON SPLICE COUPLING (DOUBLE)	EA	6
20.9	PIT TENDON MATERIAL	LF	100

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.

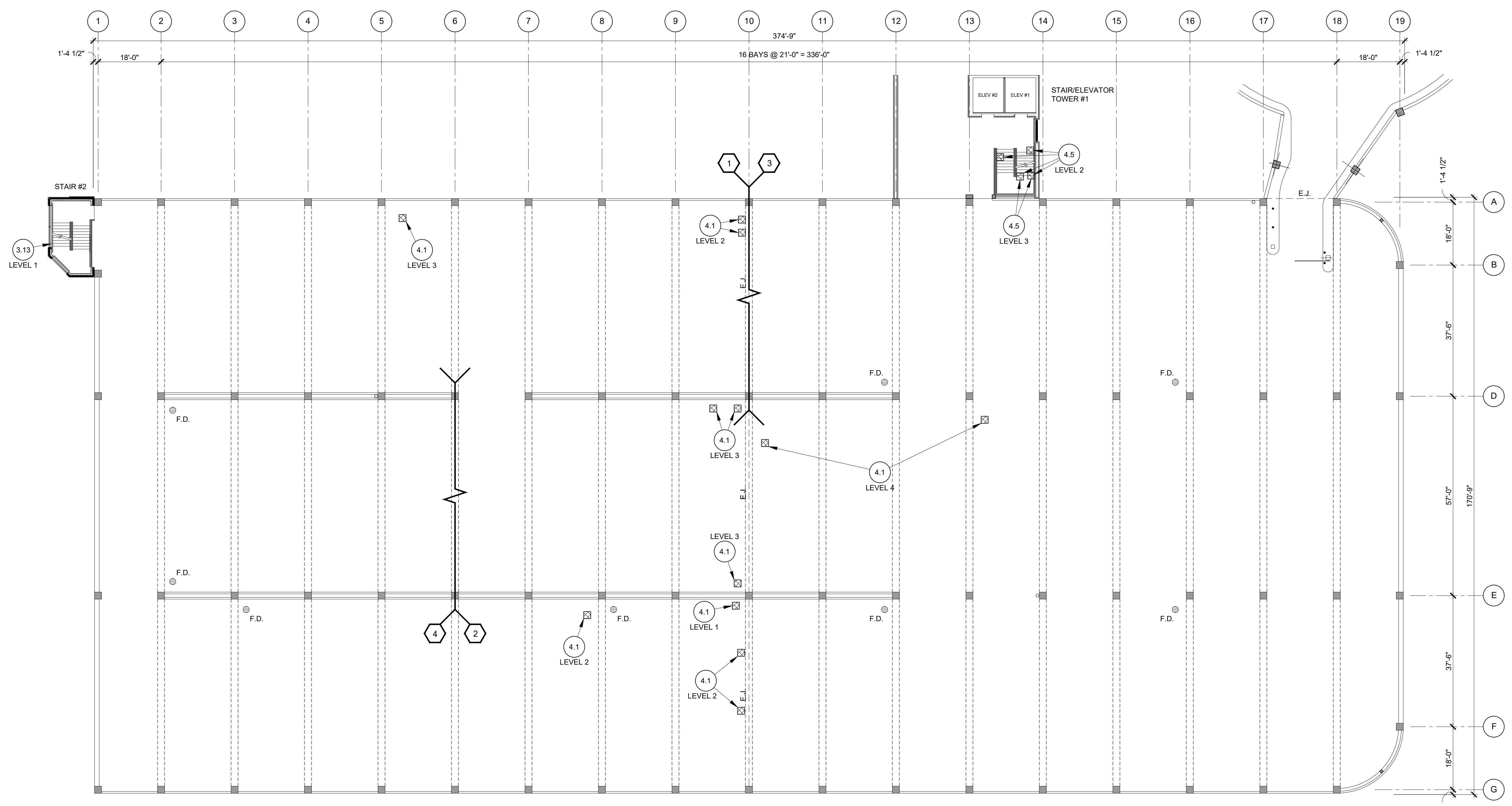


**1 LEVEL 4 PLAN**  
 RAMP 2 (AUDITORIUM)

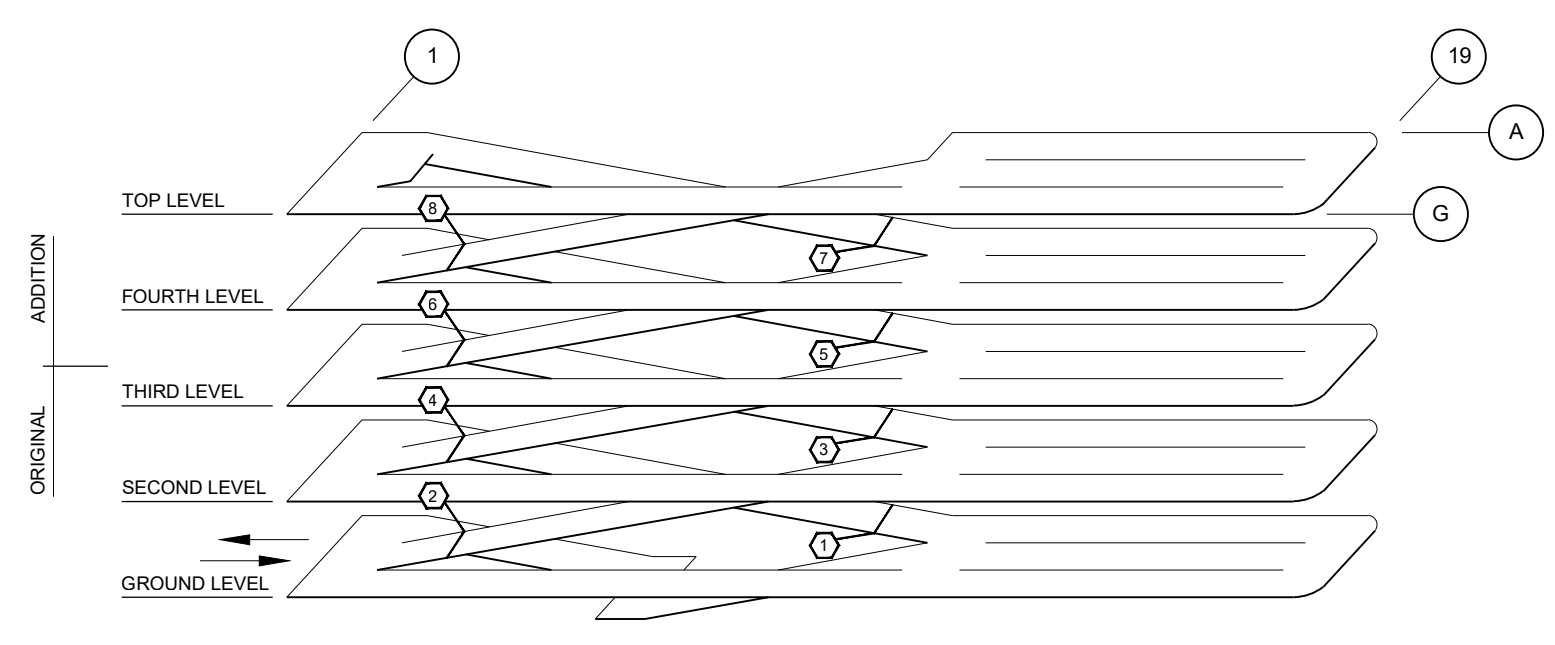


**2 LEVEL 5 PLAN**  
 RAMP 2 (AUDITORIUM)

J:\MICHIGAN\20-002863-00-MSU\_2025\_RAMP\_RPRSIACAD\002863-R123.DWG 2/19/2025 3:37:52 PM TYLER, JOSH

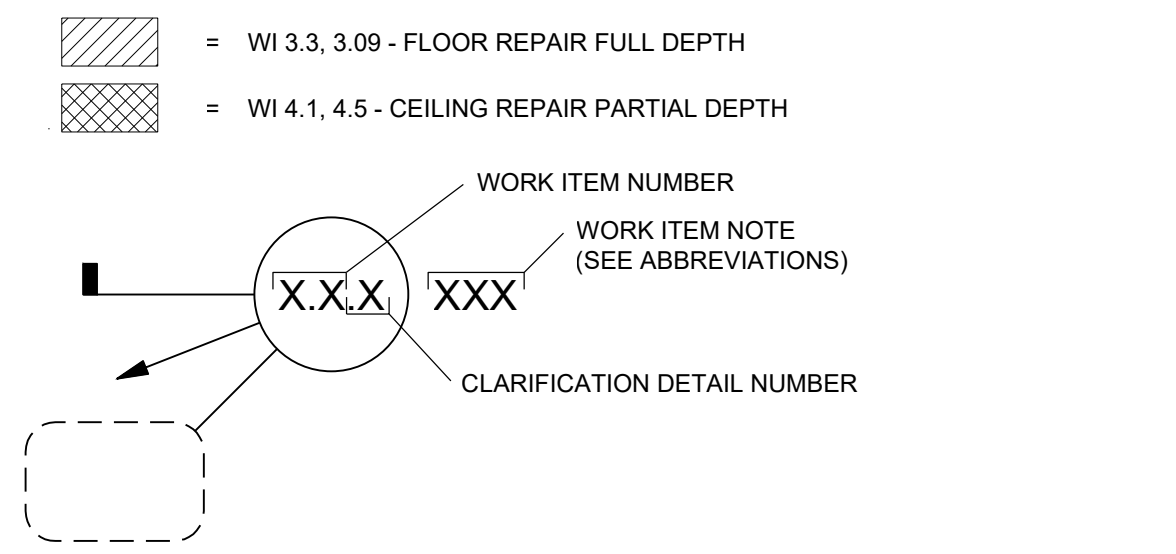


**1 TYPICAL LEVEL PLAN**  
 RAMP 3 (WHARTON)



**ISOMETRIC**  
 RAMP 3 (WHARTON)

**LEGEND:**



**NOTES:**  
 1. NOT ALL WORK ITEMS HAVE DETAILS.  
 2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- CONTRACTOR SHALL FURNISH AND APPLY PAINT / CONCRETE STAIN, APPROVED BY ENGINEER, TO ALL VERTICAL AND OVERHEAD CONCRETE REPAIRS, INCIDENTAL. COATINGS SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.
- WORK ITEM 16.1: AT ALL CONCRETE FLOOR SLAB REPAIRS (WORK ITEM SERIES 3.0 AND 4.0) CONTRACTOR SHALL INSTALL FULL SYSTEM TRAFFIC TOPPING, INCIDENTAL TO CONCRETE WORK. COATING SHALL NOT BE APPLIED UNTIL REPAIR LOCATIONS HAVE APPROPRIATELY CURED.

**RAMP #3 (WHARTON CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.13	FLOOR REPAIR STAR STRINGER	LS	1
4.1	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	130
4.5	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	60
5.2	HELIX BEAM REPAIR - PARTIAL DEPTH	SF	300

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.

MSU PROJ. NO.  
CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

FOR BID & CONST. - 03/20/2025

RAMP NO. 3  
 TYPICAL LEVEL PLAN

**R-131**



MSU PROJ. NO.  
CP24073

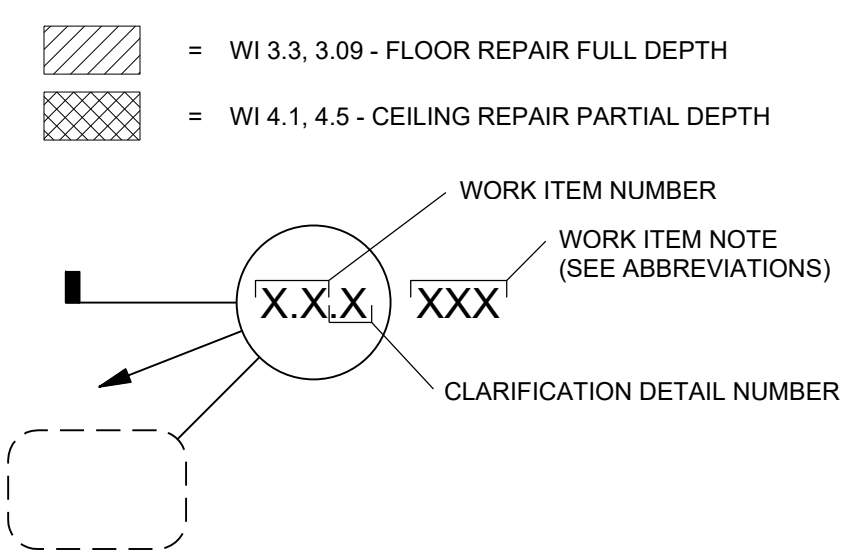
PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

FOR BID & CONST. - 03/20/2025

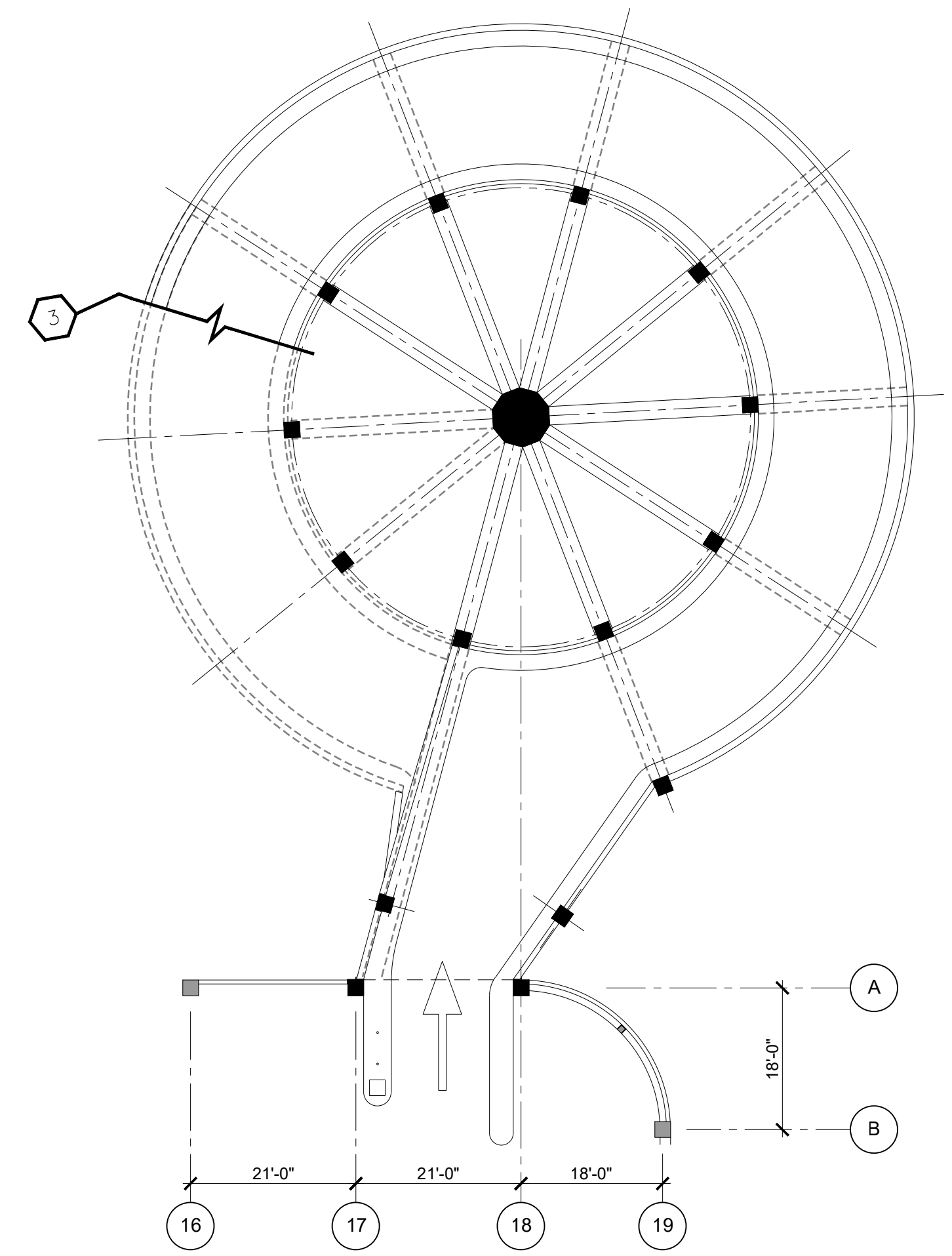
**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.

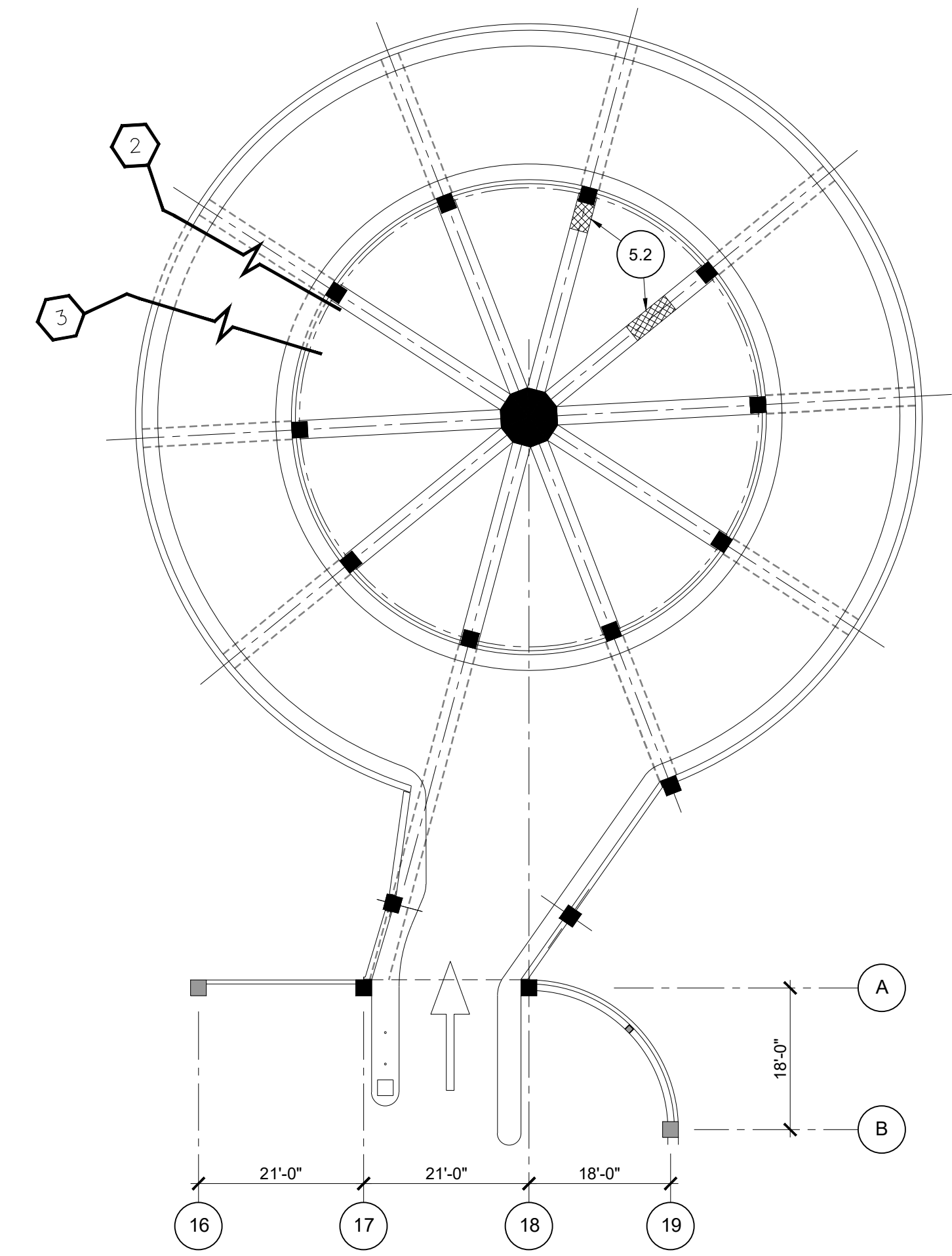
**LEGEND:**



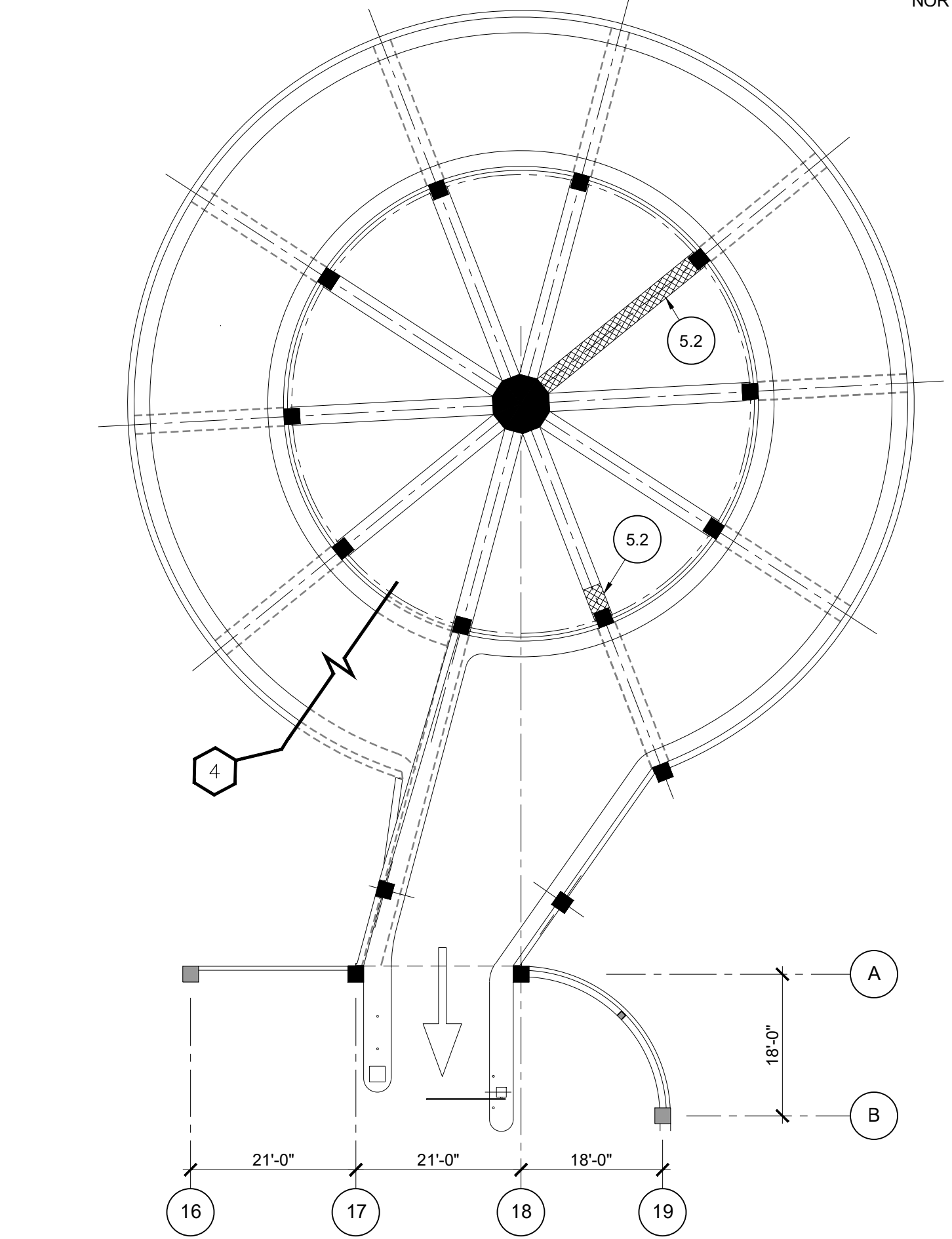
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



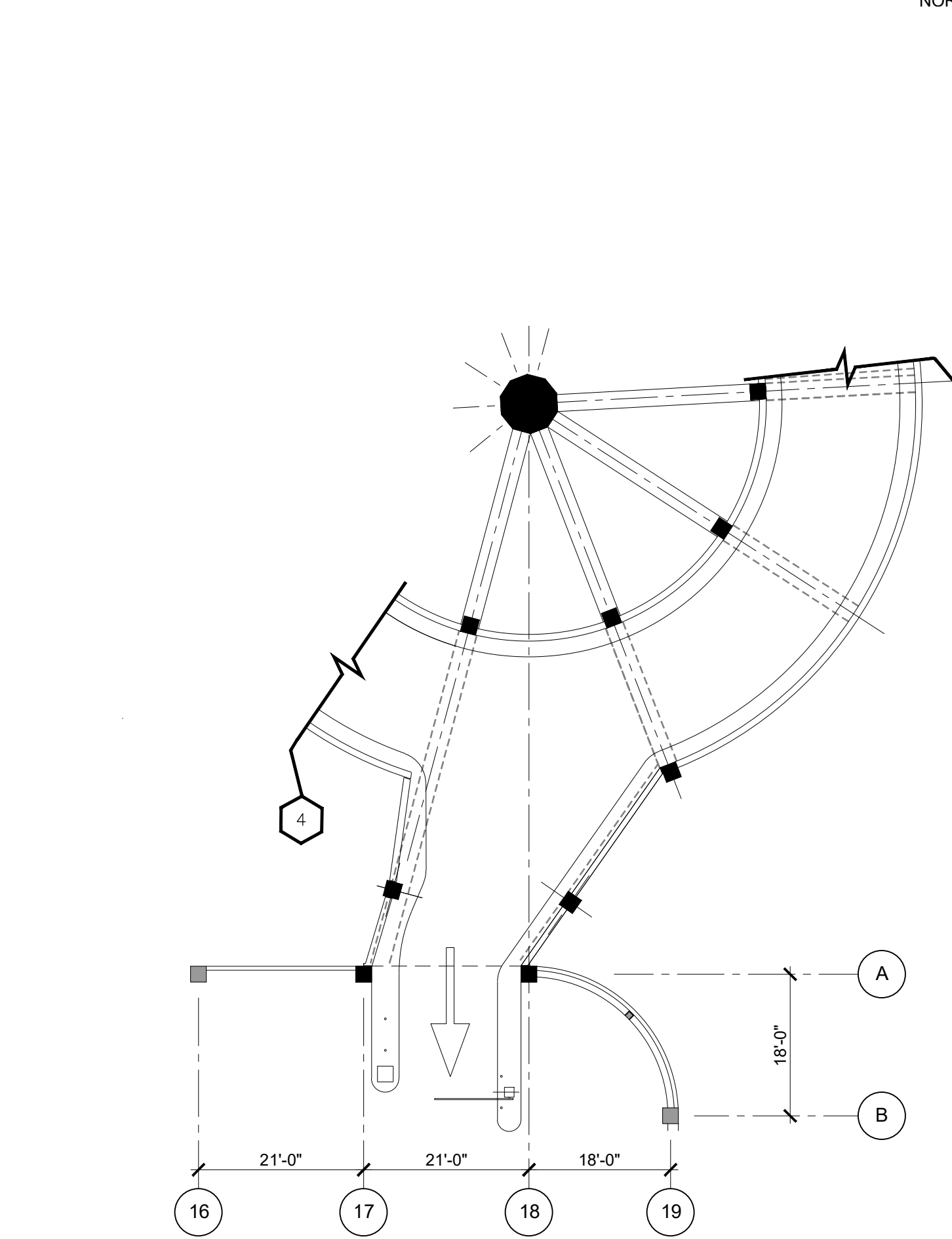
**5 LEVEL 5 PLAN (OUTBOUND)**  
 RAMP 3 (WHARTON)  
 SCALE: 1/16" = 1'-0"  
 NORTH



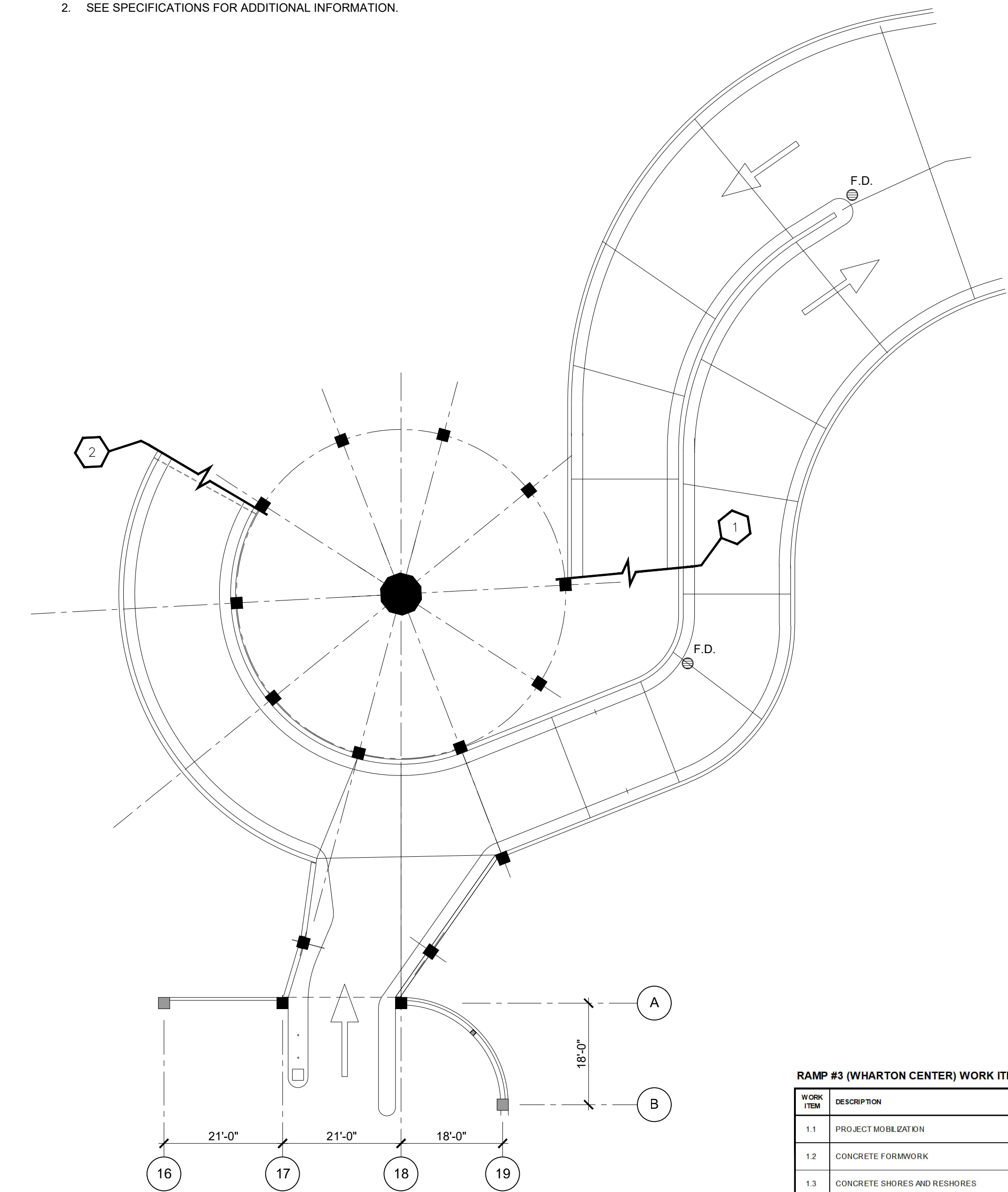
**3 LEVEL 3 PLAN (OUTBOUND)**  
 RAMP 3 (WHARTON)  
 SCALE: 1/16" = 1'-0"  
 NORTH



**4 LEVEL 4 PLAN (INBOUND)**  
 RAMP 3 (WHARTON)  
 SCALE: 1/16" = 1'-0"  
 NORTH



**2 LEVEL 2 PLAN (INBOUND)**  
 RAMP 3 (WHARTON)  
 SCALE: 1/16" = 1'-0"  
 NORTH



**1 LEVEL 1 PLAN (OUTBOUND)**  
 RAMP 3 (WHARTON)  
 SCALE: 1/16" = 1'-0"  
 NORTH

**RAMP #3 (WHARTON CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
11	PROJECT MOBILIZATION	LS	1
12	CONCRETE FORMWORK	INCIDENTAL	-
13	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
14	CONCRETE REINFORCEMENT	INCIDENTAL	-
15	TEMPORARY SIGNAGE	INCIDENTAL	-
313	FLOOR REPAIR - STAR STRINGER	LS	1
41	CEILING REPAIR - PARTIAL DEPTH - PIT	SF	130
45	CEILING REPAIR - PARTIAL DEPTH - STAR	SF	60
52	HELIX BEAM REPAIR - PARTIAL DEPTH	SF	300

**CAUTION NOTE:**  
 THE FLOOR SLAB HAS POST-TENSIONING TENDONS. THESE TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN SAW-CUTTING SO AS NOT TO DAMAGE EXISTING TENDONS OR TENDON SHEATHS. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. CHIPPING WITH 15 LB HAMMERS SHALL BE USED IN LIEU OF SAW-CUTTING NEAR SHALLOW TENDONS.

J:\MICHIGAN\20-002683-00-MSU\_RAMP\_RPRS\ACAD\0-02683-R132.DWG 2/19/2025 3:33:53 PM TYLER, JOSH



**MICHIGAN STATE UNIVERSITY**  
 PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS -  
 ANNUAL PARKING RAMP MAINTENANCE '25

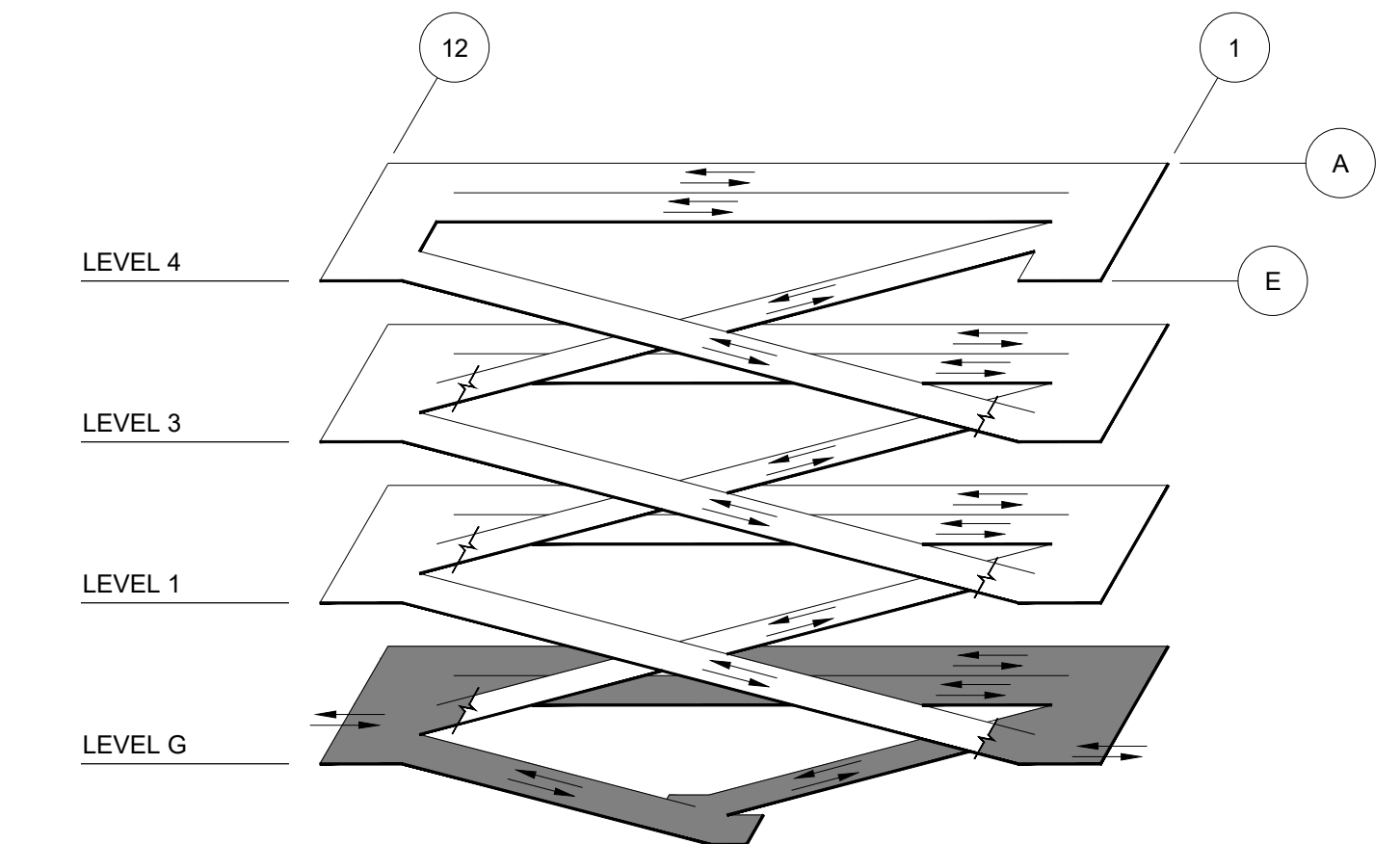
MSU PROJ. NO.  
 CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

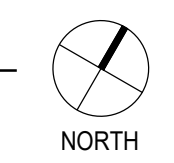
FOR BID & CONST - 03/20/2025

RAMP NO. 4  
 LEVEL G PLAN

**R-141**



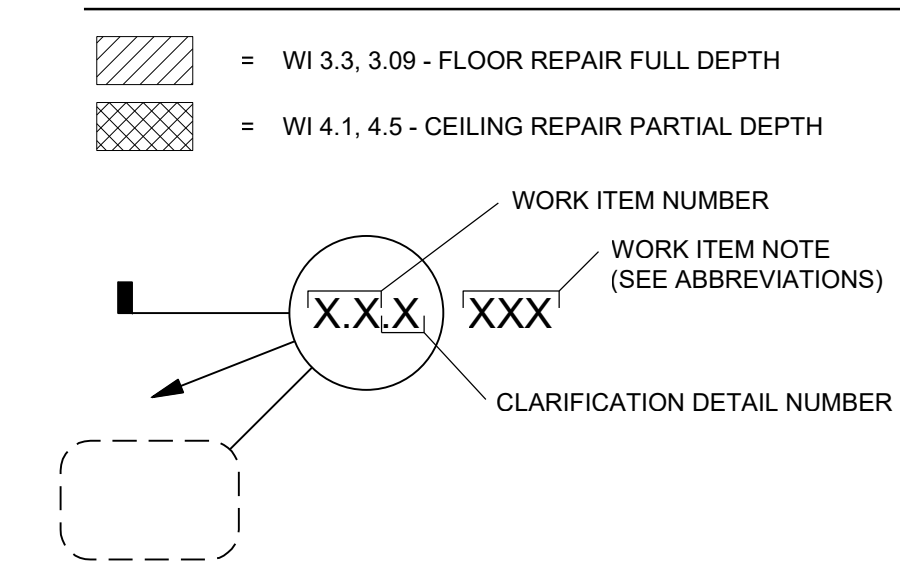
**ISOMETRIC**



**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- WORK ITEM 3.3: WORK ITEM IS INTENDED FOR USE AT ISOLATED FULL DEPTH SLAB REPAIR AREAS, TYPICALLY LOCATED ALONG TEE-TO-TEE JOINTS. REPAIR AREAS AS SHOWN ON THE DOCUMENTS MAY NOT BE VISIBLE FROM THE TOP OF SLAB AS DETERIORATION IS LOCATED AT THE UNDERSIDE OF THE SLAB. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK.
- WORK ITEM 3.09: WORK ITEM IS INTENDED FOR USE AT LARGER AREAS OF FULL DEPTH SLAB REPAIR, WHERE THE PRECAST SLAB WILL BE COMPLETELY REMOVED FROM TEE-TO-TEE JOINT TO THE TEE STEM. REFER TO PLAN DRAWINGS FOR ANTICIPATED WORK ITEM LOCATIONS. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK. THIS WORK IS TO BE PERFORMED IN MULTIPLE PHASES TO ALLOW FOR VEHICULAR TRAFFIC FLOW.
- WORK ITEM 8.5: CONTRACTOR SHALL REMOVE ALL LOOSE VERTICAL AND OVERHEAD CONCRETE MATERIALS THROUGHOUT THE ENTIRE FACILITY. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE WITH ENGINEER IN THE FIELD TO REVIEW LIMITATIONS.
- WORK ITEMS 11.4, 11.7, AND 16.1: CONTRACTOR SHALL INSTALL SEALANT AND TRAFFIC TOPPING AT NEW CONCRETE REPAIRS TO MATCH EXISTING AS DETAILED, INCIDENTAL. EXISTING TRAFFIC TOPPING IS LIMITED TO ONLY CROSSOVER AREAS ON LOWER LEVELS.

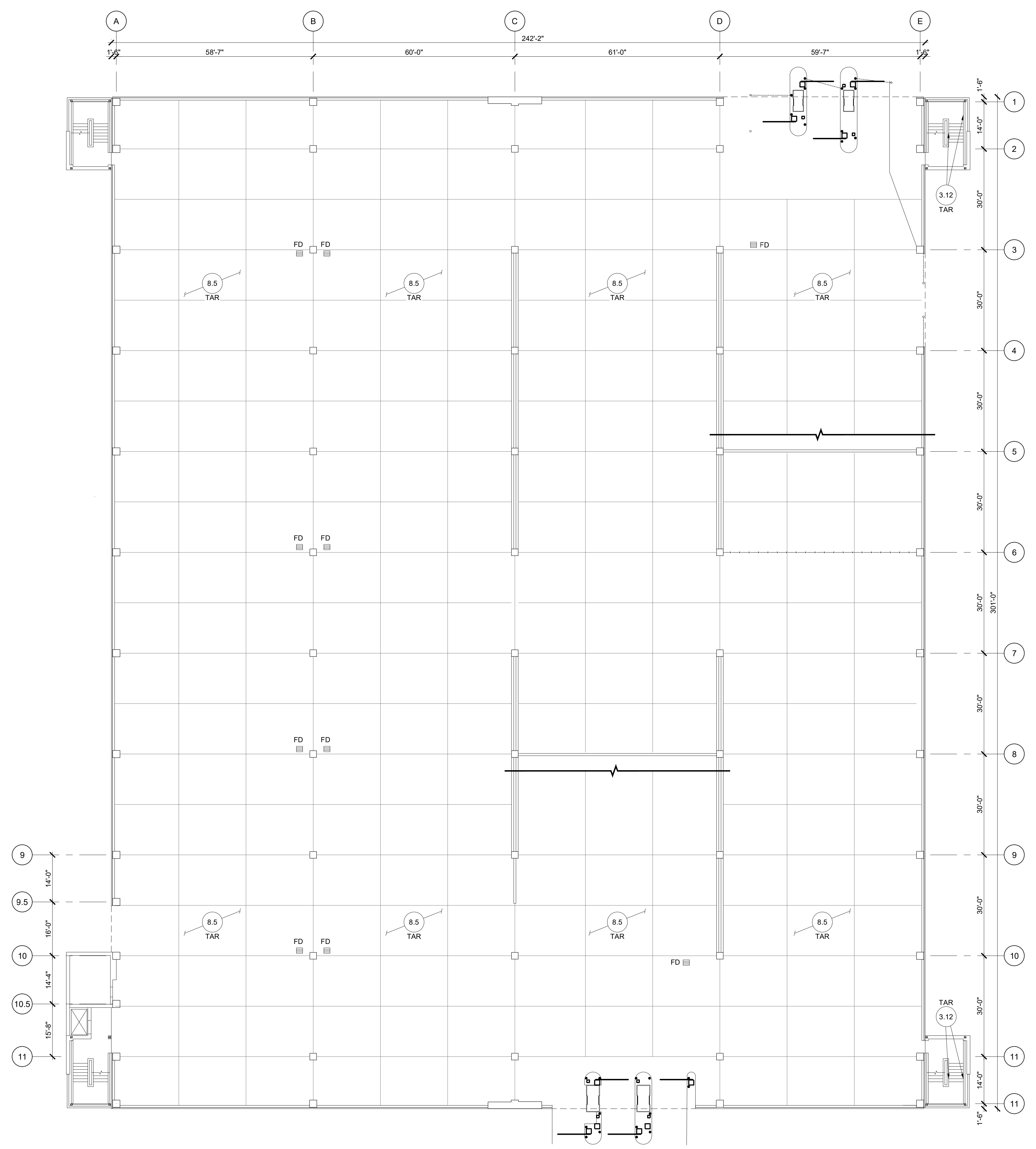
**LEGEND:**



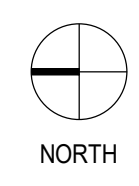
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**RAMP #4 (KELLOGG CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PC	SF	1700
3.09	FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT	SF	1000
3.12	FLOOR REPAIR - STAR STRINGER	LF	100
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-



**1 LEVEL G PLAN**  
**RAMP 4 (KELLOGG CENTER)**



J:\MICHIGAN\20-002863-00-MSU\_2025\_RAMP\_RPRS\ACAD\0-002863-R141.DWG 2/19/2025 3:46:53 PM TYLER, JOSH



**MICHIGAN STATE UNIVERSITY**  
 PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS -  
 ANNUAL PARKING RAMP MAINTENANCE '25

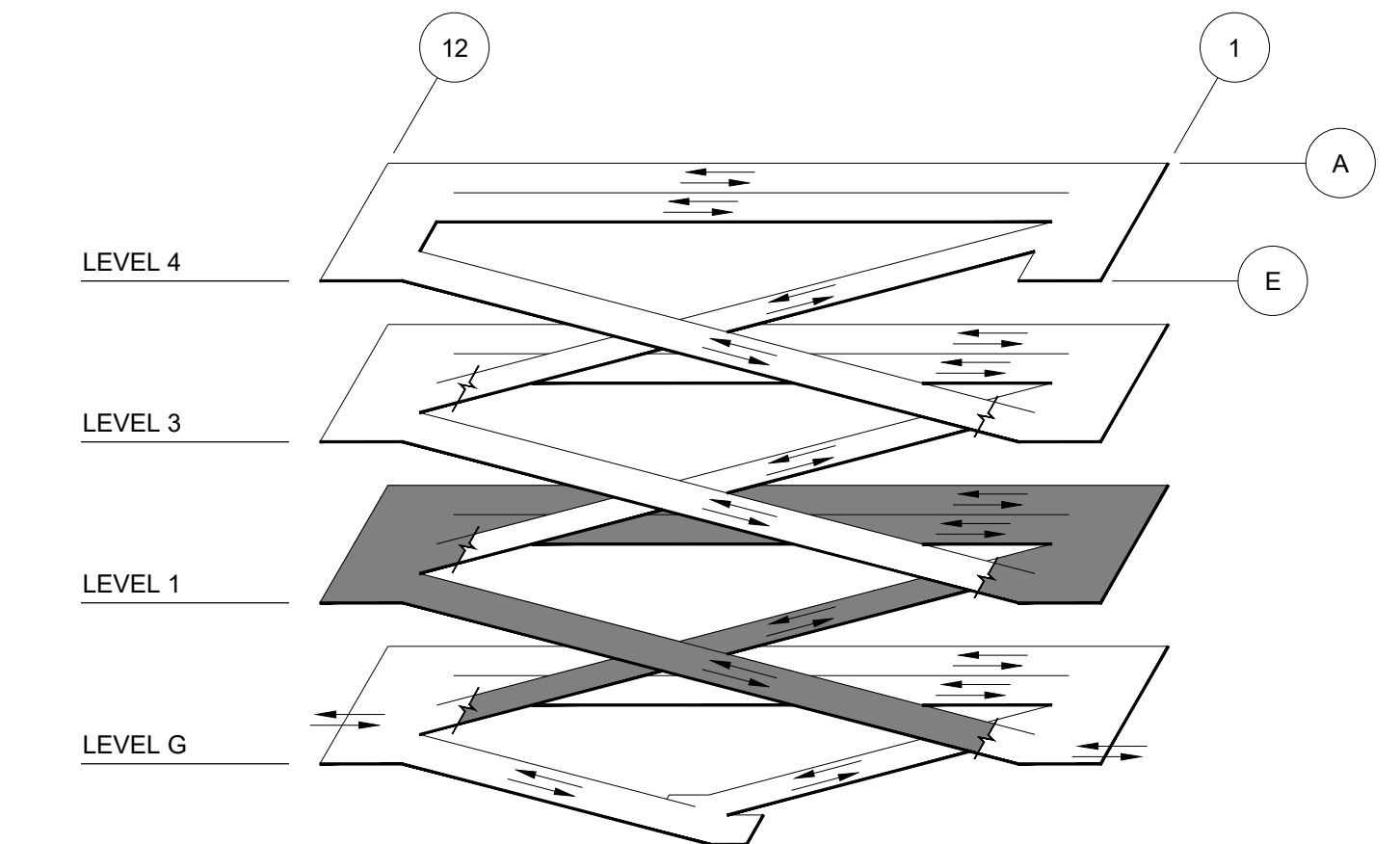
MSU PROJ. NO.  
 CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

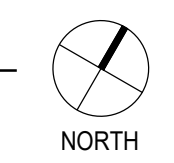
FOR BID & CONST - 03/20/2025

RAMP NO. 4  
 LEVEL 1 PLAN

**R-142**



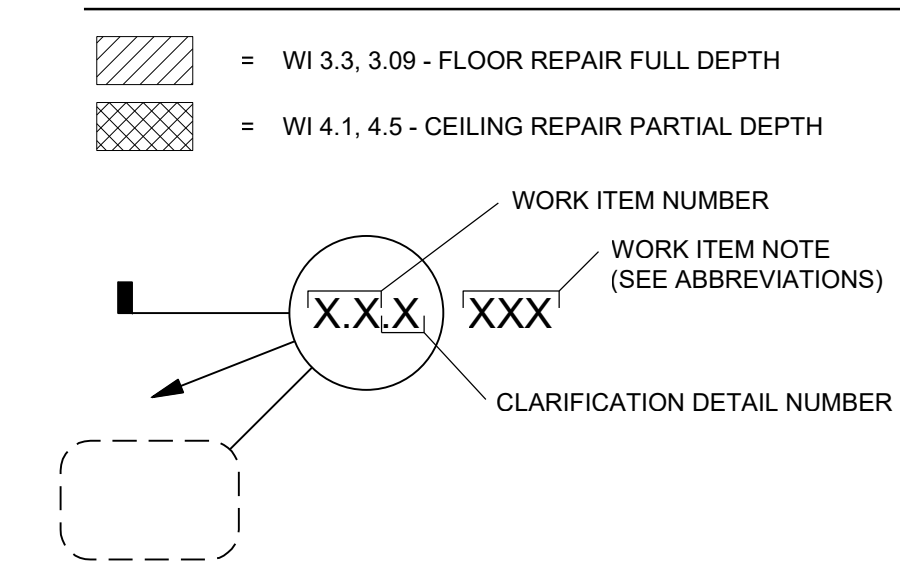
**ISOMETRIC**



**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '02010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- WORK ITEM 3.3: WORK ITEM IS INTENDED FOR USE AT ISOLATED FULL DEPTH SLAB REPAIR AREAS, TYPICALLY LOCATED ALONG TEE-TO-TEE JOINTS. REPAIR AREAS AS SHOWN ON THE DOCUMENTS MAY NOT BE VISIBLE FROM THE TOP OF SLAB AS DETERIORATION IS LOCATED AT THE UNDERSIDE OF THE SLAB. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK.
- WORK ITEM 3.09: WORK ITEM IS INTENDED FOR USE AT LARGER AREAS OF FULL DEPTH SLAB REPAIR, WHERE THE PRECAST SLAB WILL BE COMPLETELY REMOVED FROM TEE-TO-TEE JOINT TO THE TEE STEM. REFER TO PLAN DRAWINGS FOR ANTICIPATED WORK ITEM LOCATIONS. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK. THIS WORK IS TO BE PERFORMED IN MULTIPLE PHASES TO ALLOW FOR VEHICULAR TRAFFIC FLOW.
- WORK ITEM 8.5: CONTRACTOR SHALL REMOVE ALL LOOSE VERTICAL AND OVERHEAD CONCRETE MATERIALS THROUGHOUT THE ENTIRE FACILITY. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE WITH ENGINEER IN THE FIELD TO REVIEW LIMITATIONS. WORK ITEMS 11.4, 11.7, AND 16.1: CONTRACTOR SHALL INSTALL SEALANT AND TRAFFIC TOPPING AT NEW CONCRETE REPAIRS TO MATCH EXISTING AS DETAILED, INCIDENTAL. EXISTING TRAFFIC TOPPING IS LIMITED TO ONLY CROSSOVER AREAS ON LOWER LEVELS.

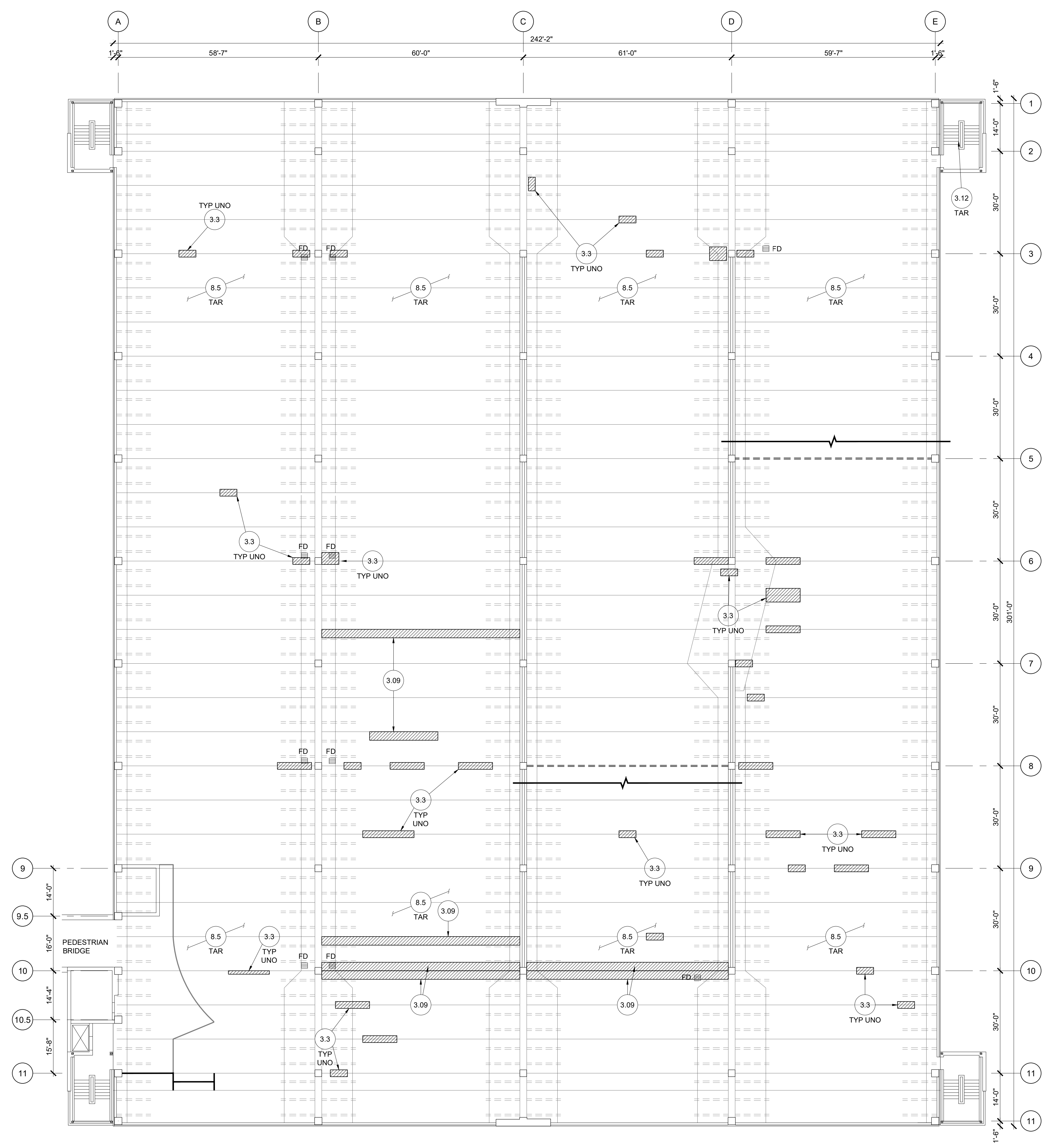
**LEGEND:**



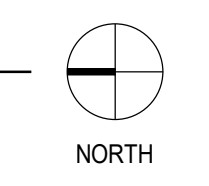
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**RAMP #4 (KELLOGG CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PC	SF	1700
3.09	FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT	SF	1000
3.12	FLOOR REPAIR - STAR STRINGER	LF	100
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-



**1 LEVEL 1 PLAN**  
**RAMP 4 (KELLOGG CENTER)**



J:\MICHIGAN\20-002683-00-MSU\_RAMP\_RPRS\ACAD\0-002683-R142.DWG 2/19/2025 3:46:43 PM TYLER, JOSH



**MICHIGAN STATE UNIVERSITY**  
 PARKING RAMP 1 - SHAW LANE AND VARIOUS RAMPS -  
 ANNUAL PARKING RAMP MAINTENANCE '25

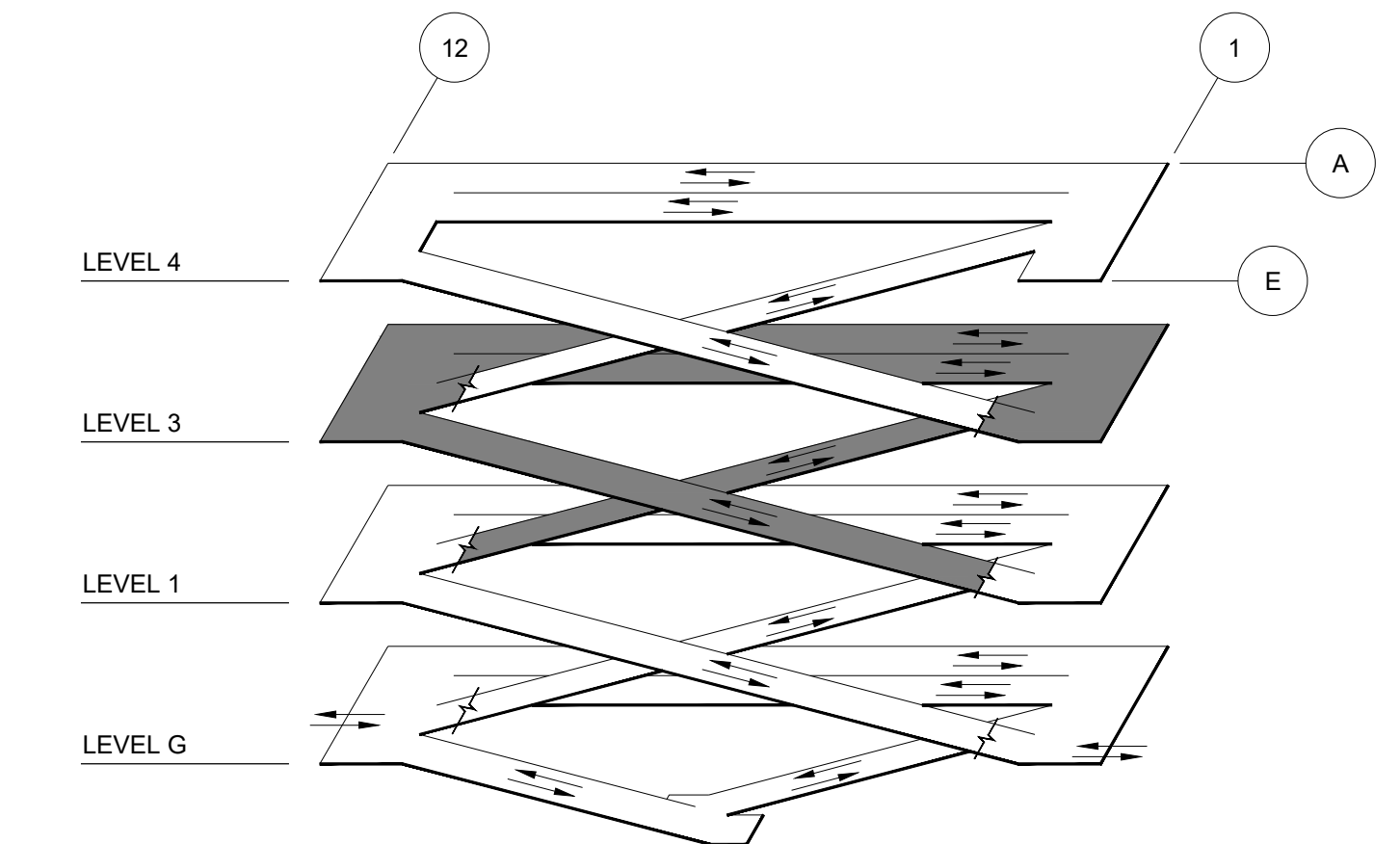
MSU PROJ. NO.  
 CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

FOR BID & CONST - 03/20/2025

RAMP NO. 4  
 LEVEL 3 PLAN

**R-143**

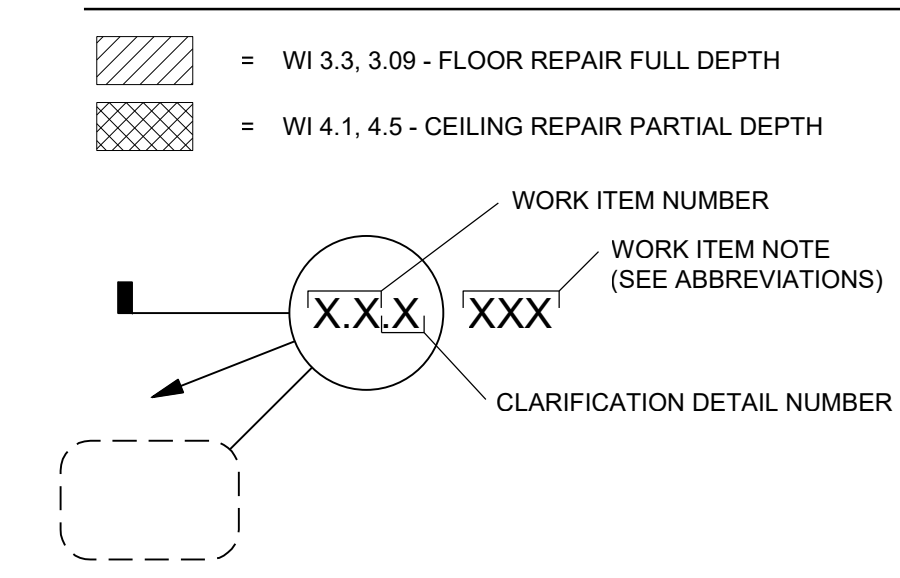


**ISOMETRIC**

**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '02010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- WORK ITEM 3.3: WORK ITEM IS INTENDED FOR USE AT ISOLATED FULL DEPTH SLAB REPAIR AREAS, TYPICALLY LOCATED ALONG TEE-TO-TEE JOINTS. REPAIR AREAS AS SHOWN ON THE DOCUMENTS MAY NOT BE VISIBLE FROM THE TOP OF SLAB AS DETERIORATION IS LOCATED AT THE UNDERSIDE OF THE SLAB. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK.
- WORK ITEM 3.09: WORK ITEM IS INTENDED FOR USE AT LARGER AREAS OF FULL DEPTH SLAB REPAIR, WHERE THE PRECAST SLAB WILL BE COMPLETELY REMOVED FROM TEE-TO-TEE JOINT TO THE TEE STEM. REFER TO PLAN DRAWINGS FOR ANTICIPATED WORK ITEM LOCATIONS. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK. THIS WORK IS TO BE PERFORMED IN MULTIPLE PHASES TO ALLOW FOR VEHICULAR TRAFFIC FLOW.
- WORK ITEM 8.5: CONTRACTOR SHALL REMOVE ALL LOOSE VERTICAL AND OVERHEAD CONCRETE MATERIALS THROUGHOUT THE ENTIRE FACILITY. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE WITH ENGINEER IN THE FIELD TO REVIEW LIMITATIONS.
- WORK ITEMS 11.4, 11.7, AND 16.1: CONTRACTOR SHALL INSTALL SEALANT AND TRAFFIC TOPPING AT NEW CONCRETE REPAIRS TO MATCH EXISTING AS DETAILED, INCIDENTAL. EXISTING TRAFFIC TOPPING IS LIMITED TO ONLY CROSSOVER AREAS ON LOWER LEVELS.

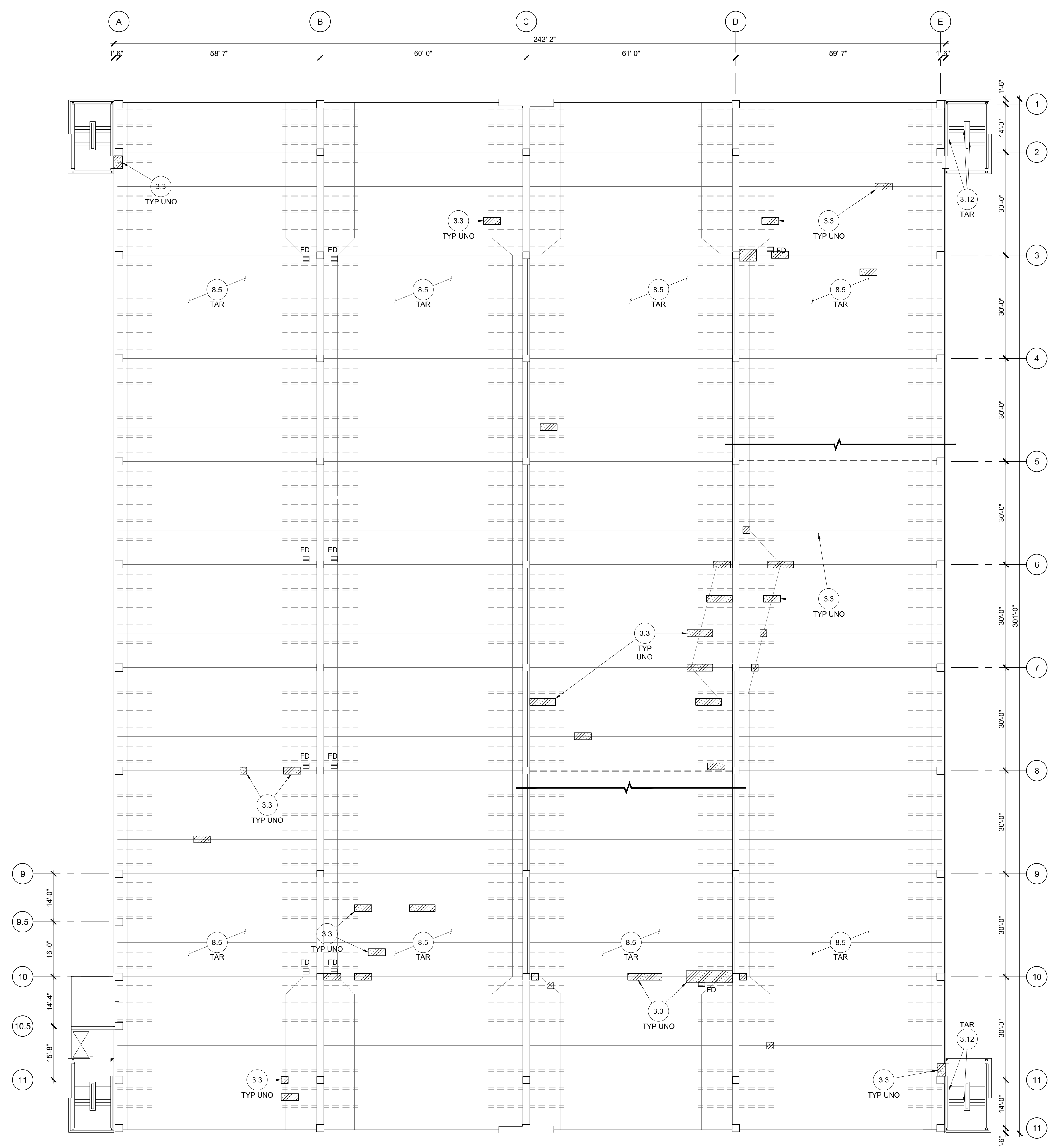
**LEGEND:**



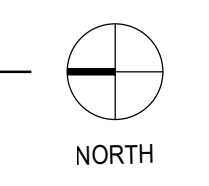
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**RAMP #4 (KELLOGG CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PC	SF	1700
3.09	FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT	SF	1000
3.12	FLOOR REPAIR - STAR STRINGER	LF	100
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-



**1 LEVEL 3 PLAN**  
**RAMP 4 (KELLOGG CENTER)**



J:\MICHIGAN\20-002863-00-MSU\_2025\_RAMP\_RPRS\ACAD\0-02863-R143.DWG 2/19/2025 3:46:28 PM TYLER, JOSH



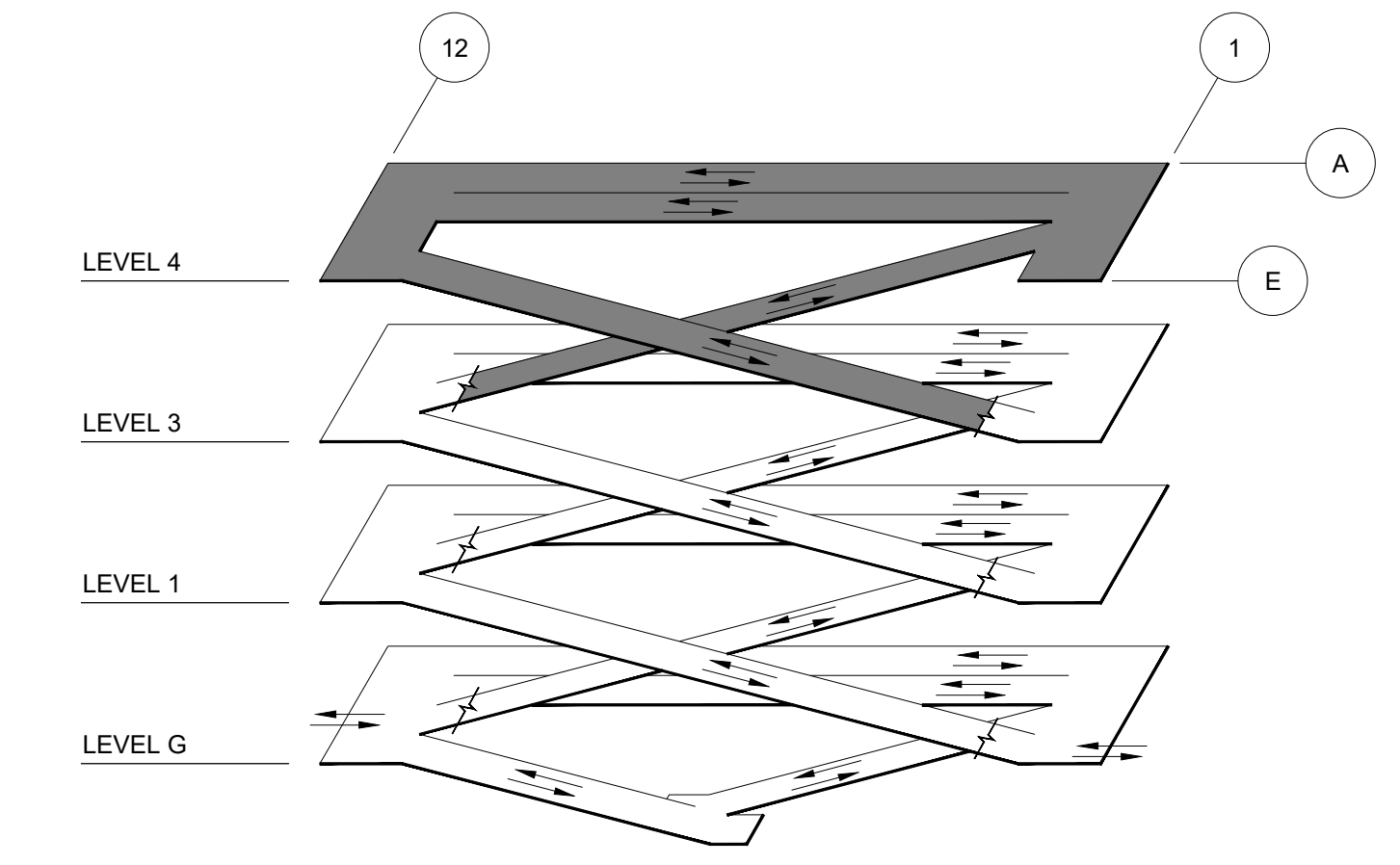
MSU PROJ. NO.  
 CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

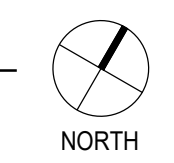
FOR BID & CONST - 03/20/2025

RAMP NO. 4  
 LEVEL 4 PLAN

**R-144**



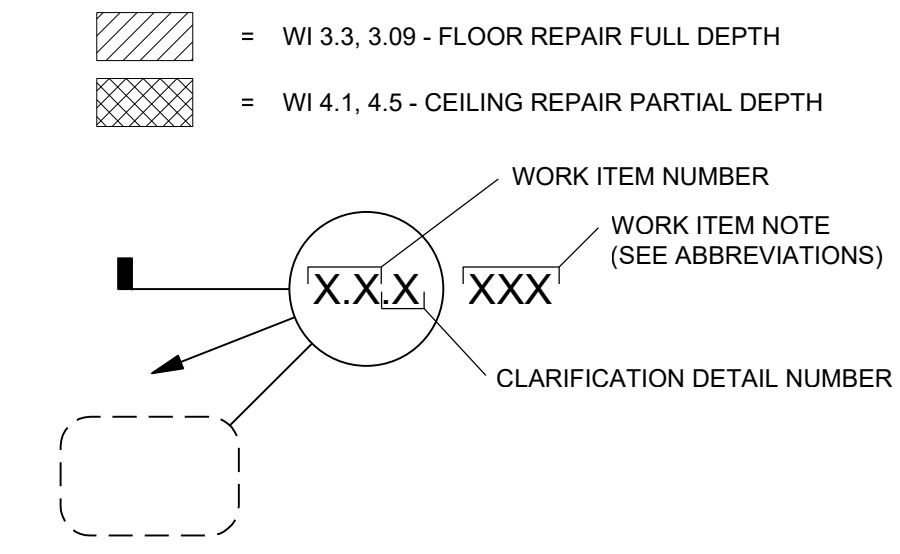
**ISOMETRIC**



**SHEET NOTES:**

- REFER TO DRAWING R-001 FOR GENERAL NOTES.
- REFER TO SPECIFICATION SECTION '020010 - WORK ITEMS' FOR WORK ITEM CLARIFICATIONS AND REQUIREMENTS.
- COORDINATE ALL PHASING WITH ENGINEER AND OWNERS REPRESENTATIVE PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR SOUNDING AND MARKING ALL REPAIR AREAS. LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. REPAIR LOCATIONS ARE TO BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO DEMOLITION.
- WORK ITEM 3.3: WORK ITEM IS INTENDED FOR USE AT ISOLATED FULL DEPTH SLAB REPAIR AREAS, TYPICALLY LOCATED ALONG TEE-TO-TEE JOINTS. REPAIR AREAS AS SHOWN ON THE DOCUMENTS MAY NOT BE VISIBLE FROM THE TOP OF SLAB AS DETERIORATION IS LOCATED AT THE UNDERSIDE OF THE SLAB. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK.
- WORK ITEM 3.09: WORK ITEM IS INTENDED FOR USE AT LARGER AREAS OF FULL DEPTH SLAB REPAIR, WHERE THE PRECAST SLAB WILL BE COMPLETELY REMOVED FROM TEE-TO-TEE JOINT TO THE TEE STEM. REFER TO PLAN DRAWINGS FOR ANTICIPATED WORK ITEM LOCATIONS. REVIEW REPAIR LOCATIONS WITH ENGINEER IN THE FIELD PRIOR TO BEGINNING DEMOLITION WORK. THIS WORK IS TO BE PERFORMED IN MULTIPLE PHASES TO ALLOW FOR VEHICULAR TRAFFIC FLOW.
- WORK ITEM 8.5: CONTRACTOR SHALL REMOVE ALL LOOSE VERTICAL AND OVERHEAD CONCRETE MATERIALS THROUGHOUT THE ENTIRE FACILITY. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE WITH ENGINEER IN THE FIELD TO REVIEW LIMITATIONS.
- WORK ITEMS 11.4, 11.7, AND 16.1: CONTRACTOR SHALL INSTALL SEALANT AND TRAFFIC TOPPING AT NEW CONCRETE REPAIRS TO MATCH EXISTING AS DETAILED, INCIDENTAL. EXISTING TRAFFIC TOPPING IS LIMITED TO ONLY CROSSOVER AREAS ON LOWER LEVELS.

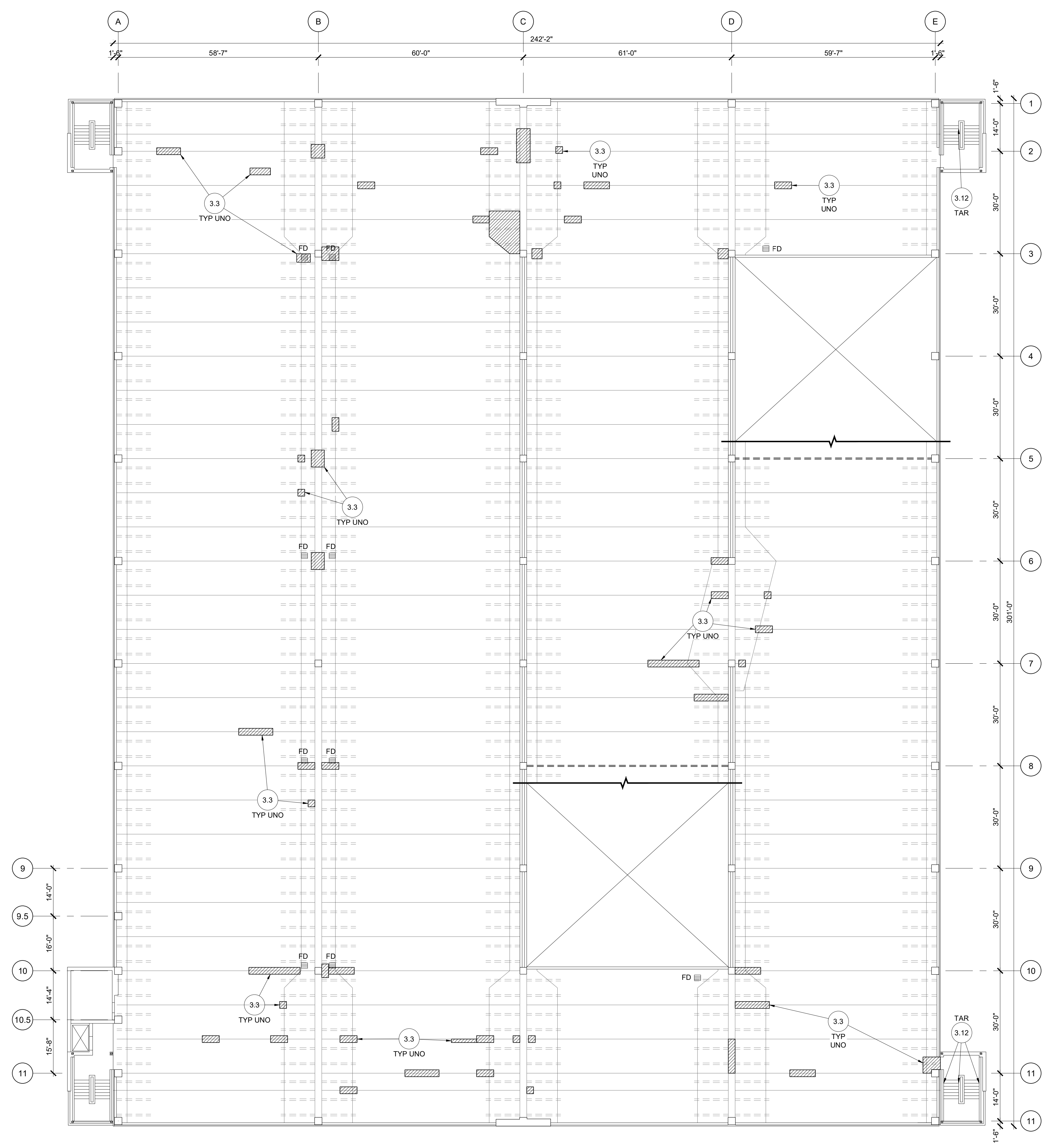
**LEGEND:**



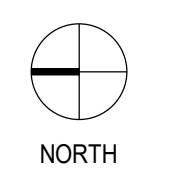
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
  - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**RAMP #4 (KELLOGG CENTER) WORK ITEM TABLE**

WORK ITEM	DESCRIPTION	UNITS	BID QUANTITY
1.1	PROJECT MOBILIZATION	LS	1
1.2	CONCRETE FORMWORK	INCIDENTAL	-
1.3	CONCRETE SHORES AND RESHORES	INCIDENTAL	-
1.4	CONCRETE REINFORCEMENT	INCIDENTAL	-
1.5	TEMPORARY SIGNAGE	INCIDENTAL	-
3.3	FLOOR REPAIR - FULL DEPTH - PC	SF	1700
3.09	FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT	SF	1000
3.12	FLOOR REPAIR - STAR STRINGER	LF	100
8.5	VERTICAL / OVERHEAD KNOCK DOWN	LS	1
11.4	TOO L AND SEAL JOINTS	INCIDENTAL	-
11.7	COVE SEALANT	INCIDENTAL	-
16.1	TRAFFIC TOPPING VEHICULAR	INCIDENTAL	-



**1 LEVEL 4 PLAN**  
**RAMP 4 (KELLOGG CENTER)**



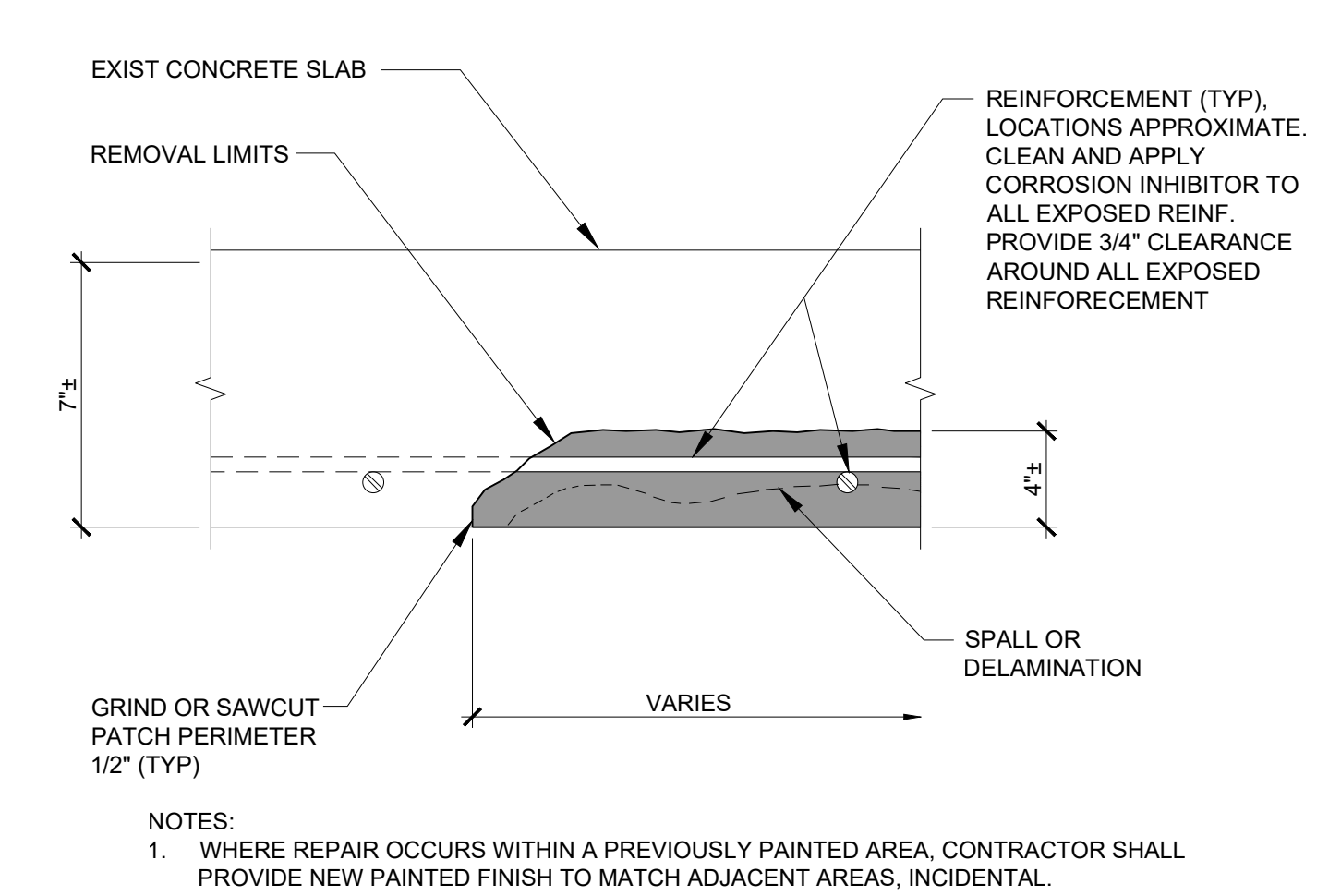
J:\MICHIGAN\20-002863-00-MSU\_RAMP\_RPRS\ACAD\0-002863-R144.DWG 2/19/2025 3:46:17 PM TYLER, JOSH



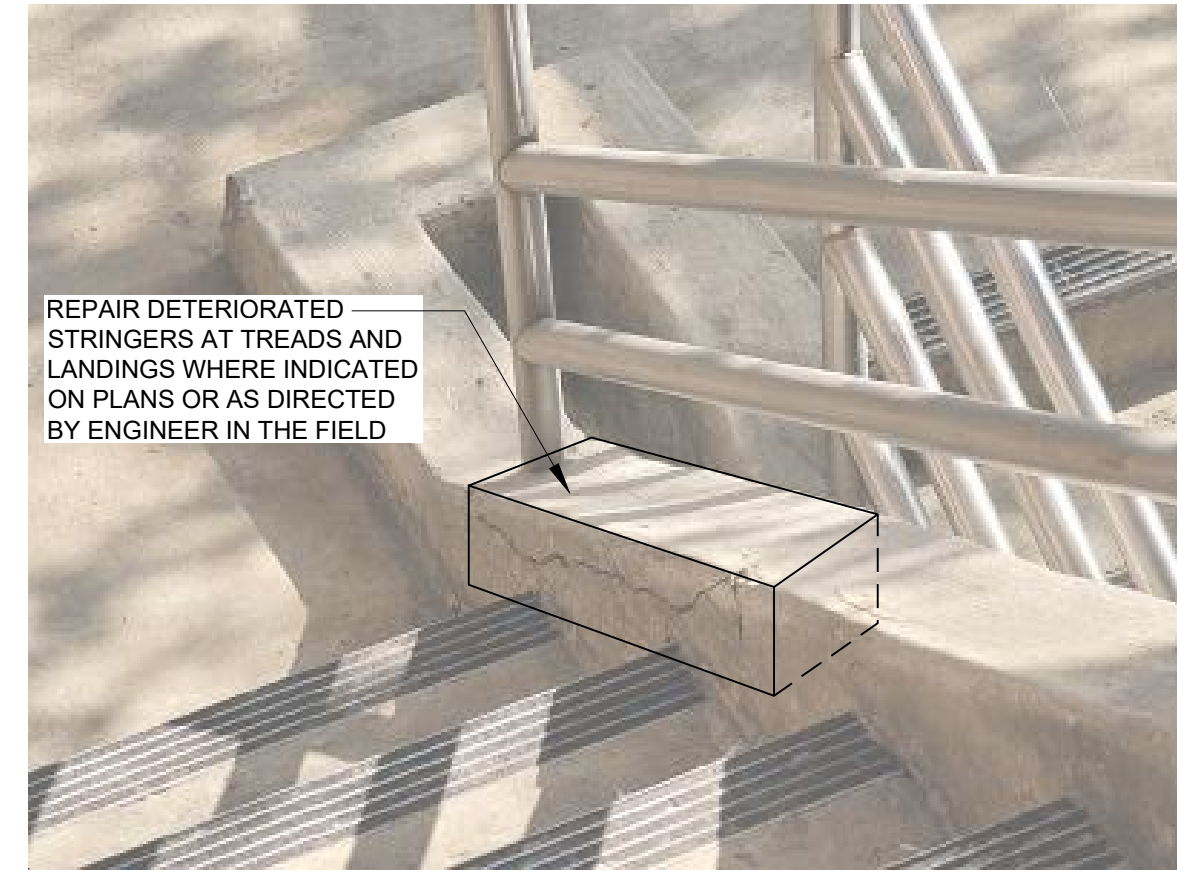
MSU PROJ. NO. CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

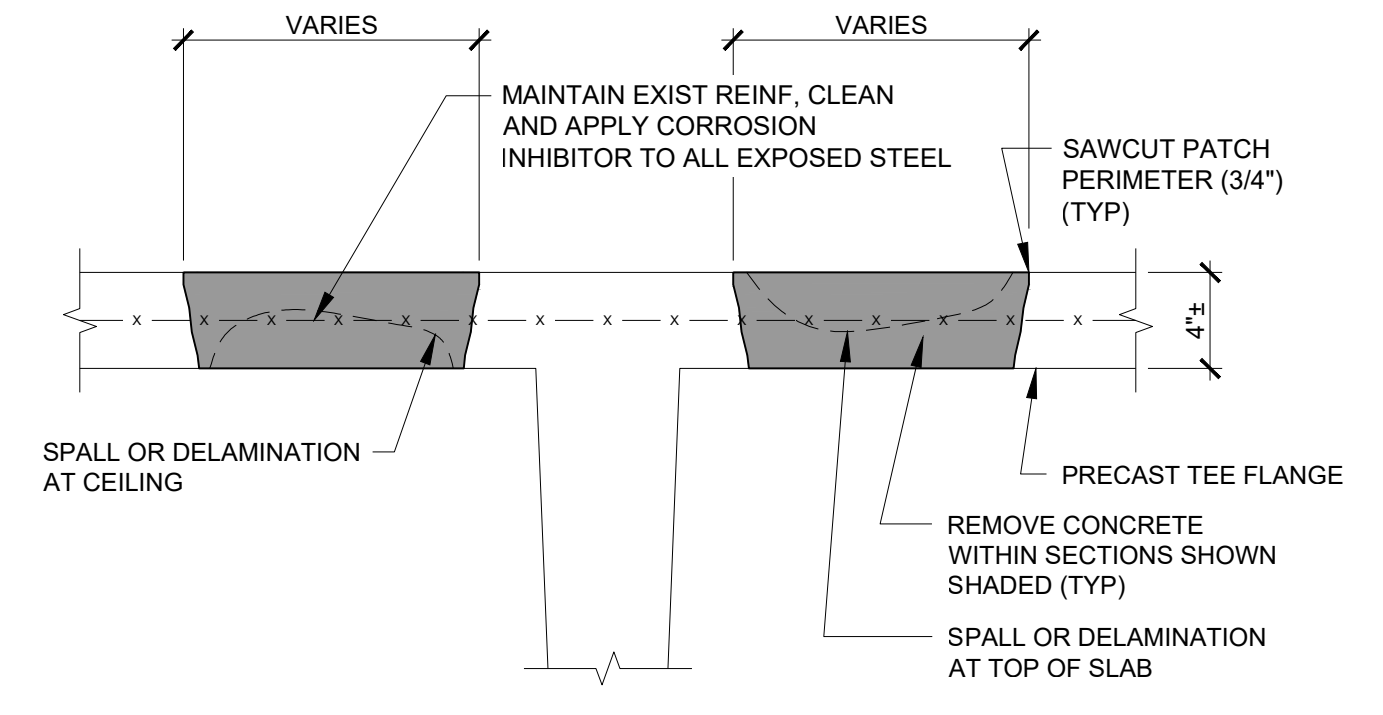
FOR BID & CONST. - 03/20/2025



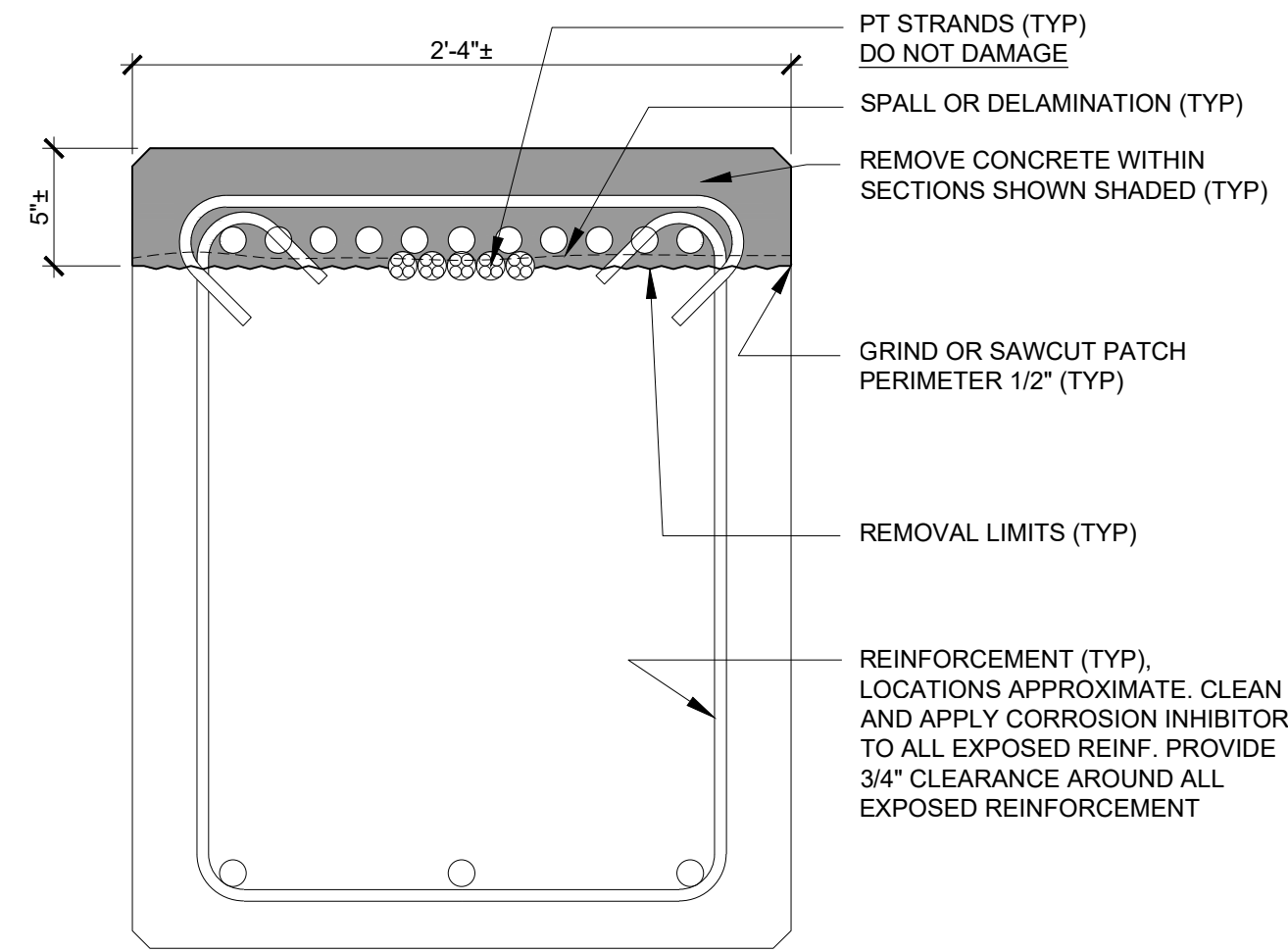
**4.1 CEILING REPAIR - PARTIAL DEPTH - P/T**  
 RAMPS 2 AND 3



**3.12 FLOOR REPAIR - STAIR STRINGER**  
 REFERENCE



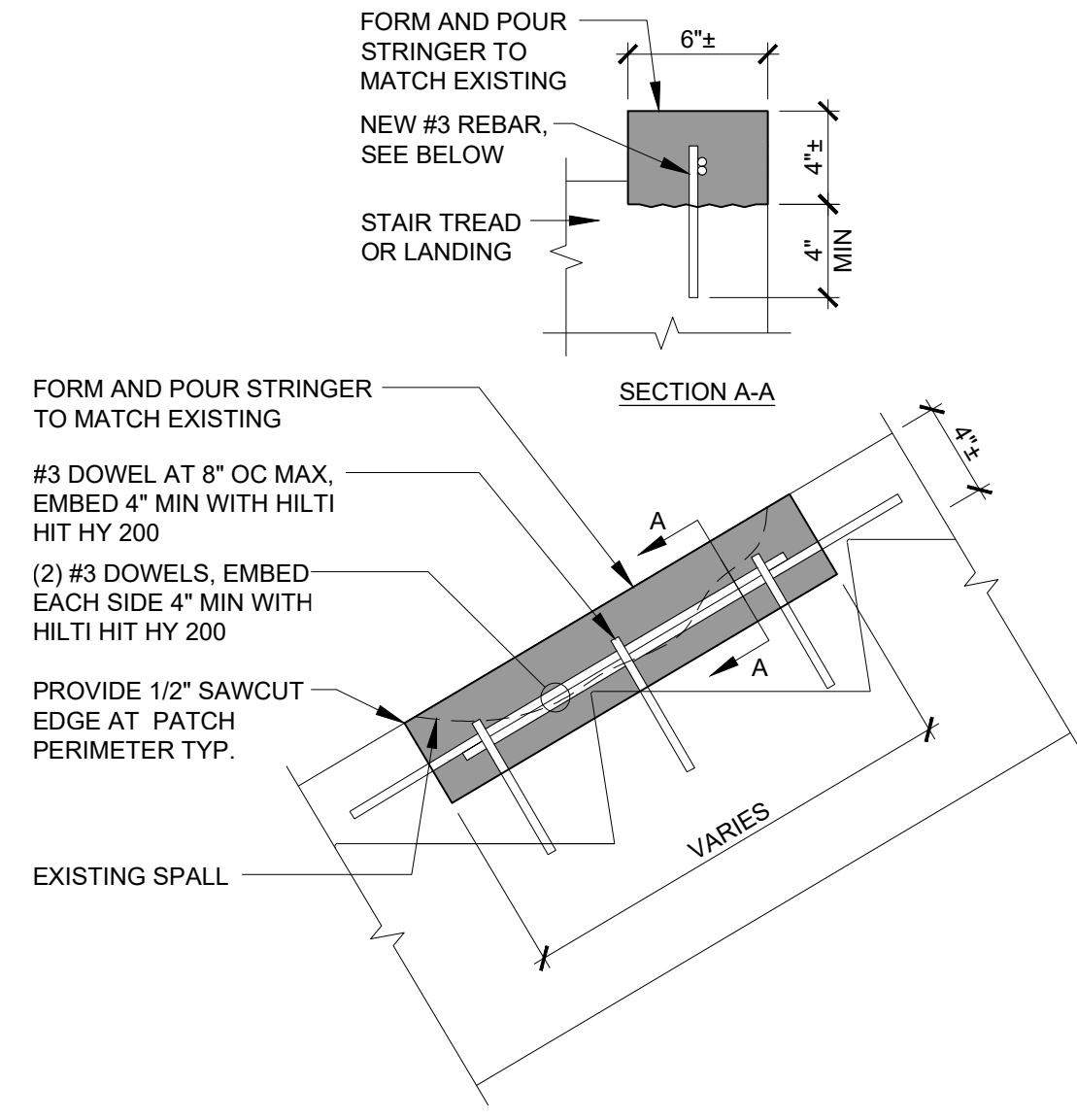
**3.3 FLOOR REPAIR - FULL DEPTH - PC**  
 RAMP 4 ONLY - REFERENCE



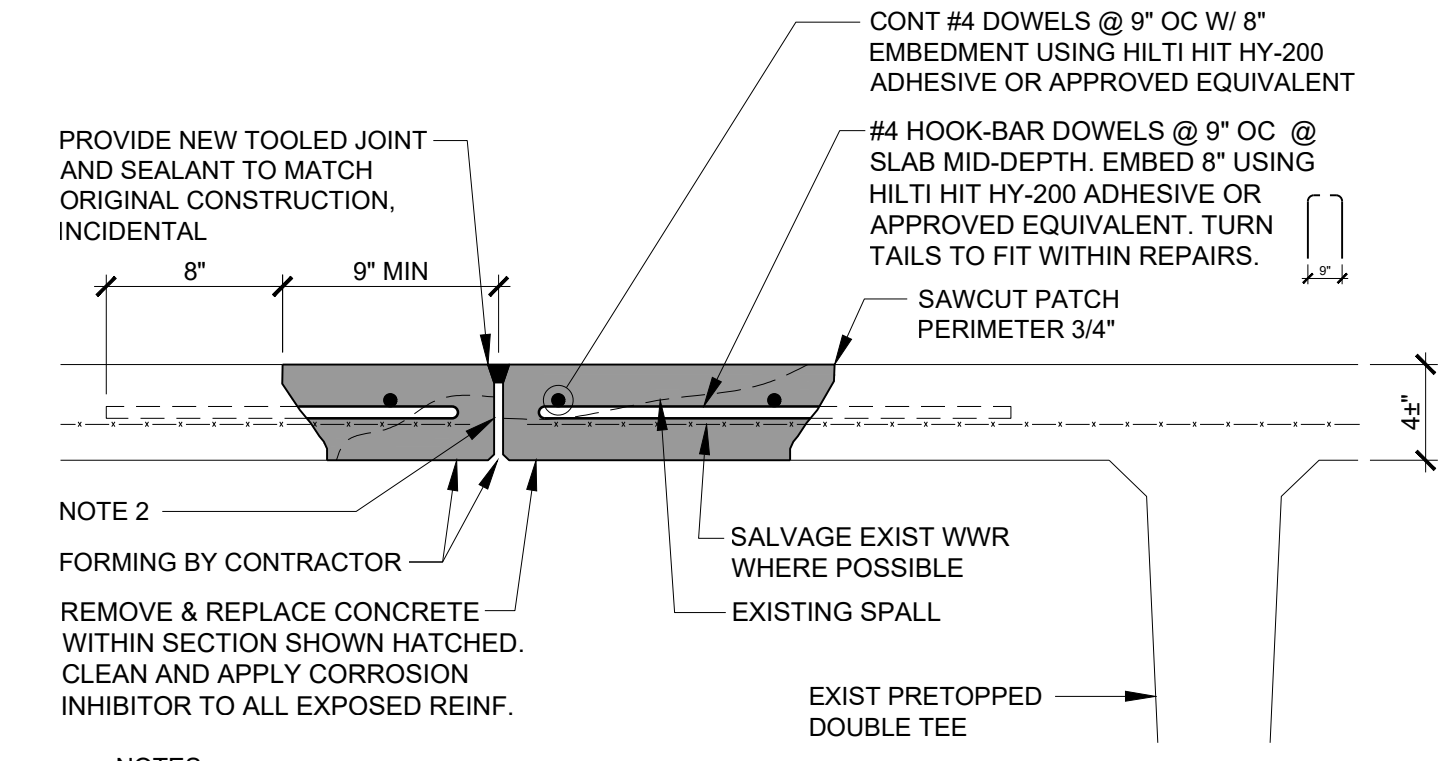
**5.2 HELIX BEAM REPAIR-PARTIAL DEPTH**



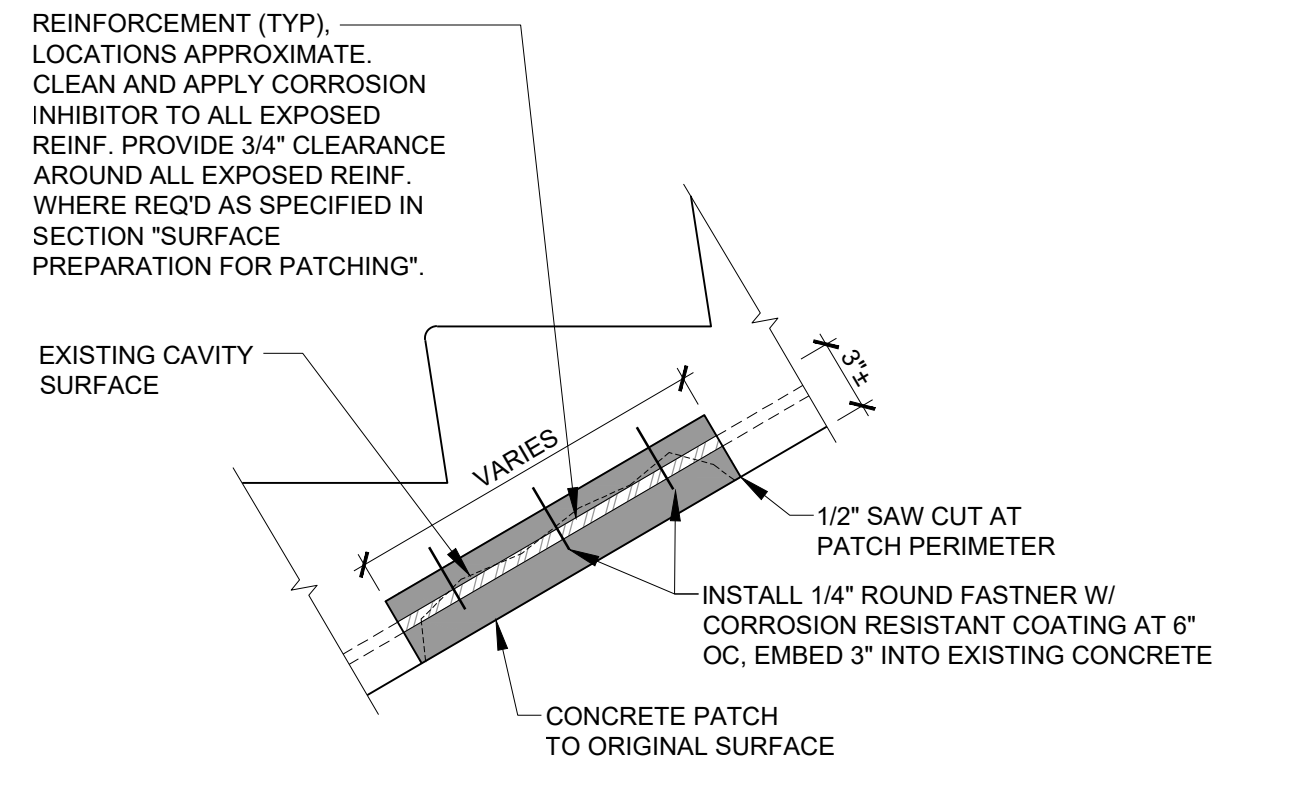
**3.13 FLOOR REPAIR - STAIR STRINGER**  
 RAMP 3



**3.12 STAIR STRINGER REPAIR**  
 RAMP 4



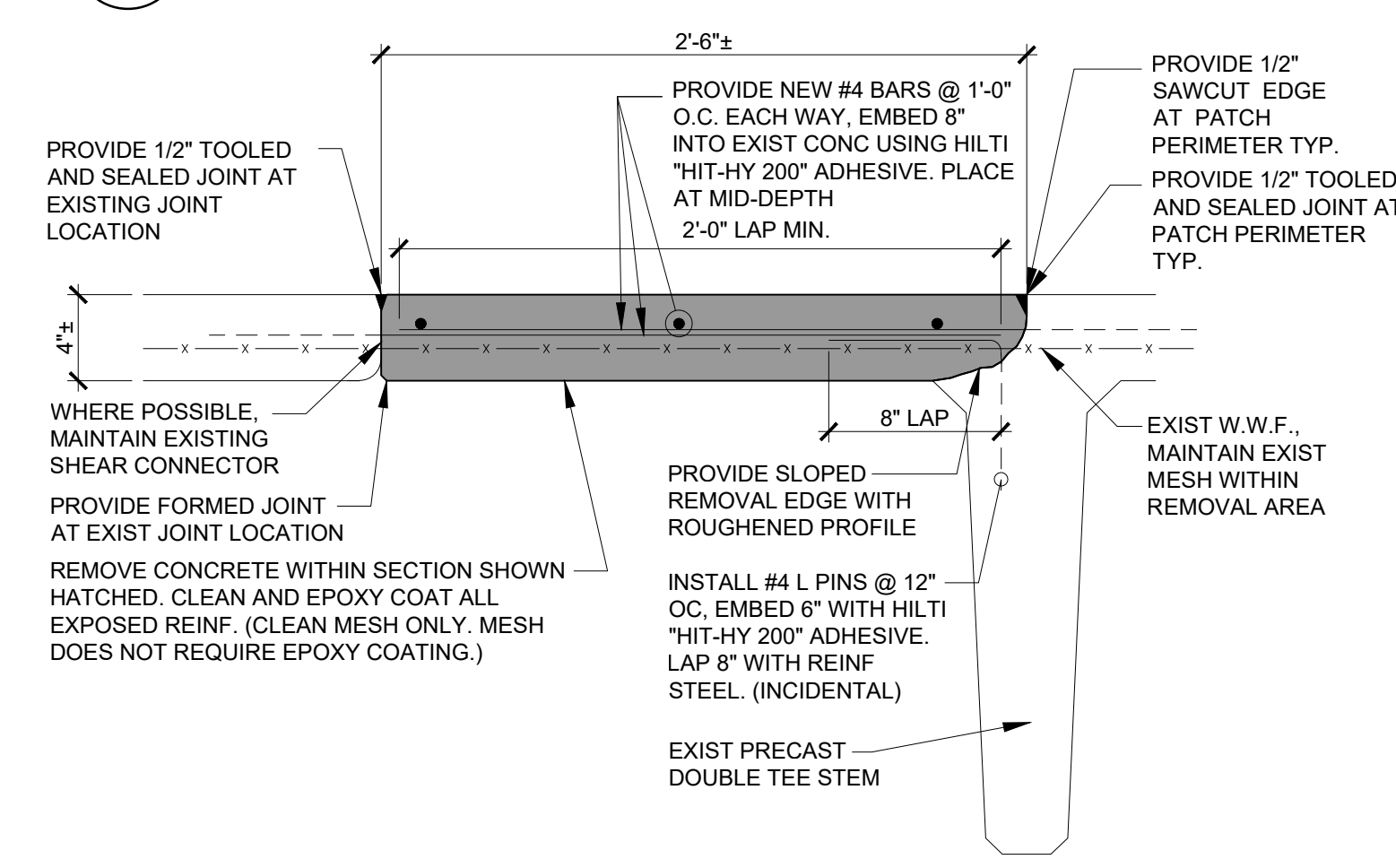
**3.3 FLOOR REPAIR - FULL DEPTH - PC**  
 RAMP 4 ONLY



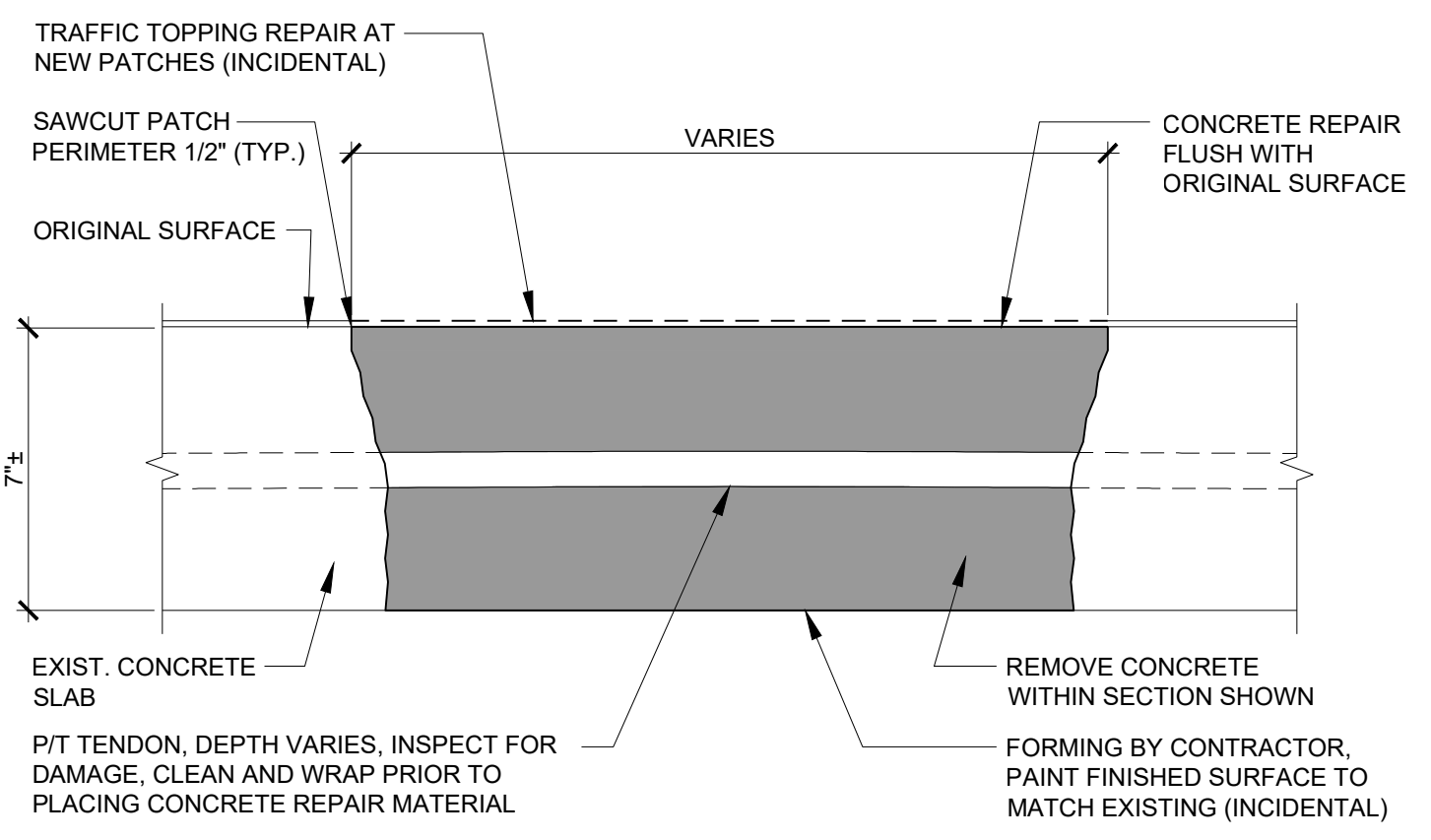
**4.5 CEILING REPAIR - PARTIAL DEPTH - STAIR**



**3.13 FLOOR REPAIR - STAIR STRINGER**  
 RAMP 3



**3.12 FLOOR REPAIR - FULL DEPTH - PC**  
 RAMP 4

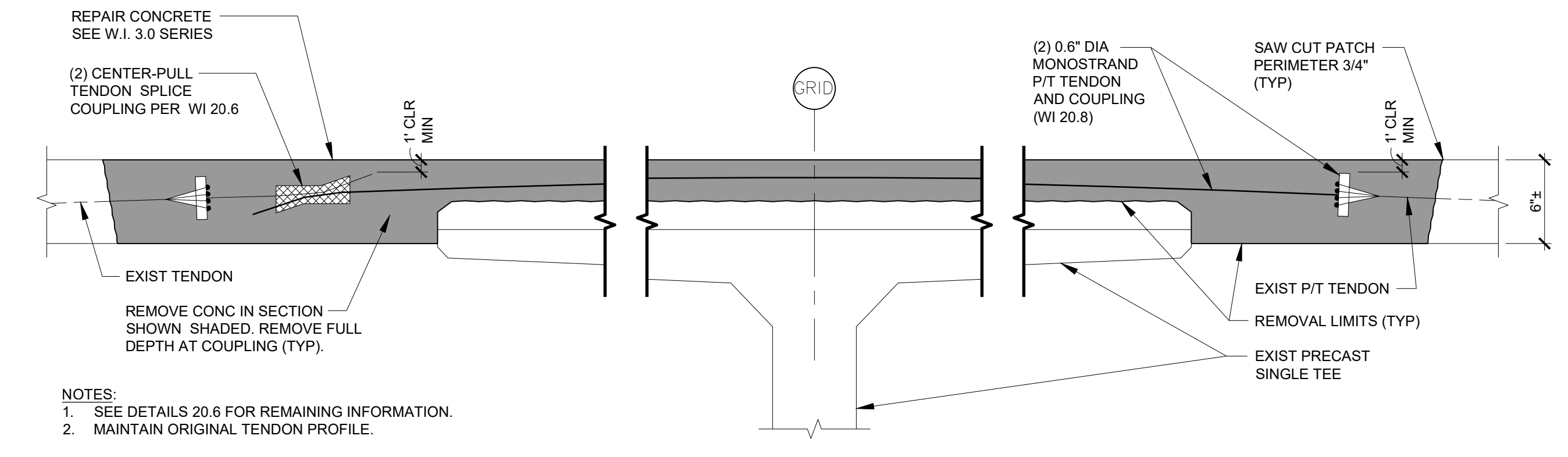


**3.3 FLOOR REPAIR - FULL DEPTH - P/T**  
 RAMP 2 ONLY

**3.09 FLOOR REPAIR - FULL DEPTH FLANGE REPLACEMENT**

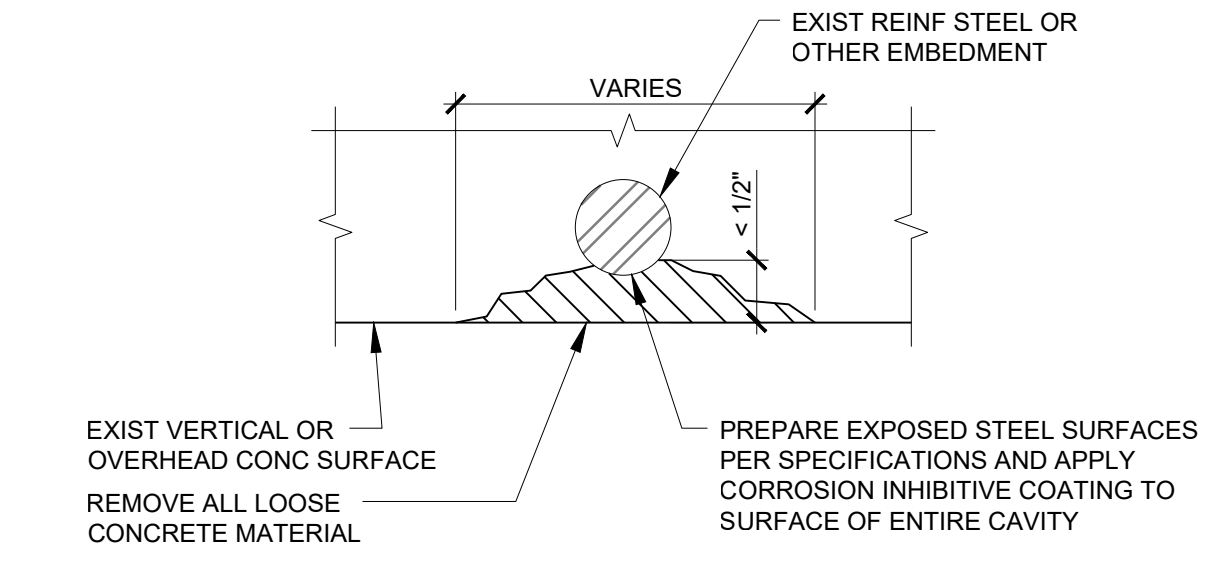
J:\MICHIGAN\20-002683-00-MSU\_2025\_RAMP\_RPRS\ACAD\002683-R501.DWG 2/19/2025 3:45:16 PM TYLER, JOSH





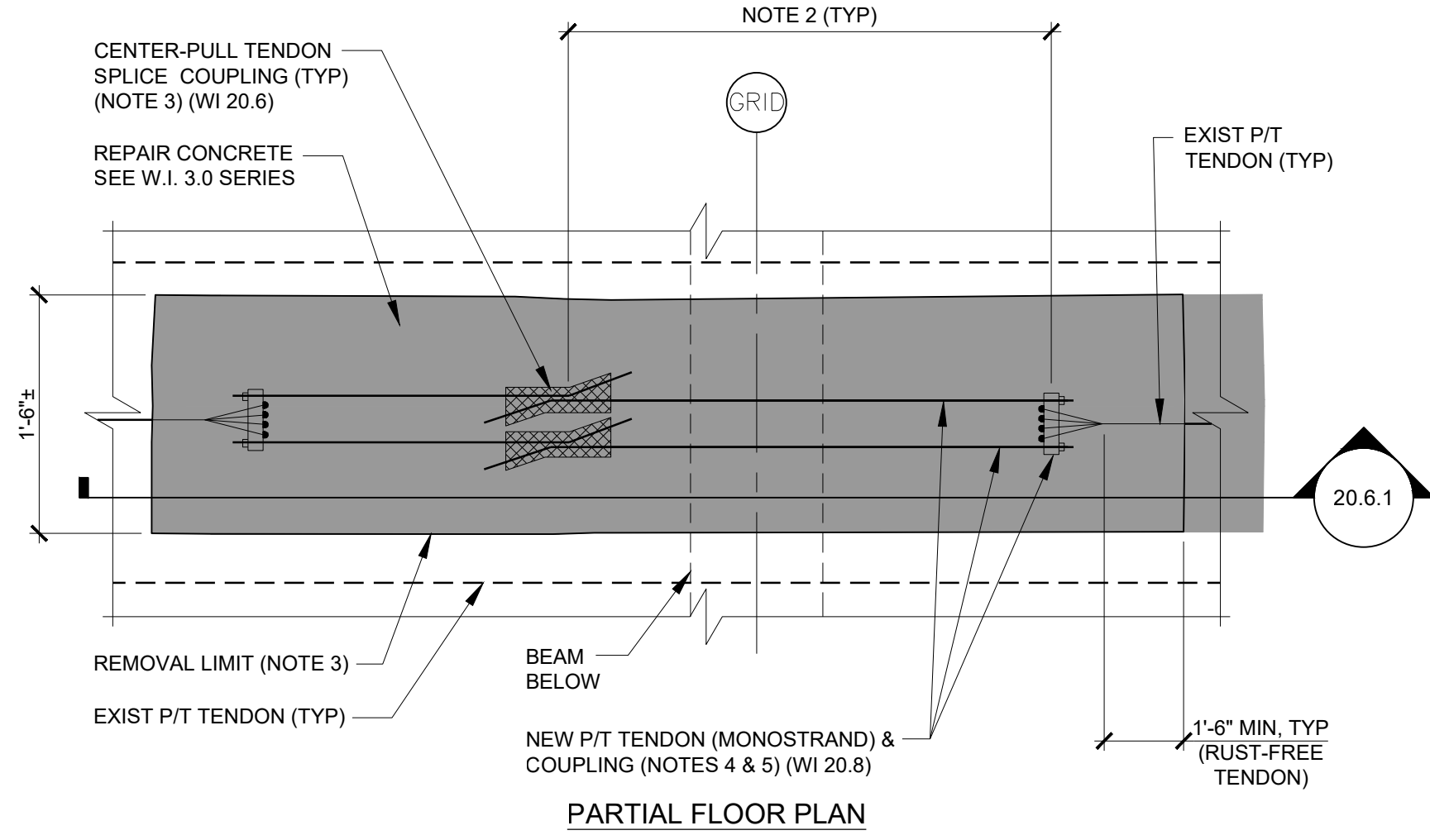
NOTES:  
 1. SEE DETAILS 20.6 FOR REMAINING INFORMATION.  
 2. MAINTAIN ORIGINAL TENDON PROFILE.

**20.6.1 TENDON SPLICE COUPLING OVER BEAM**



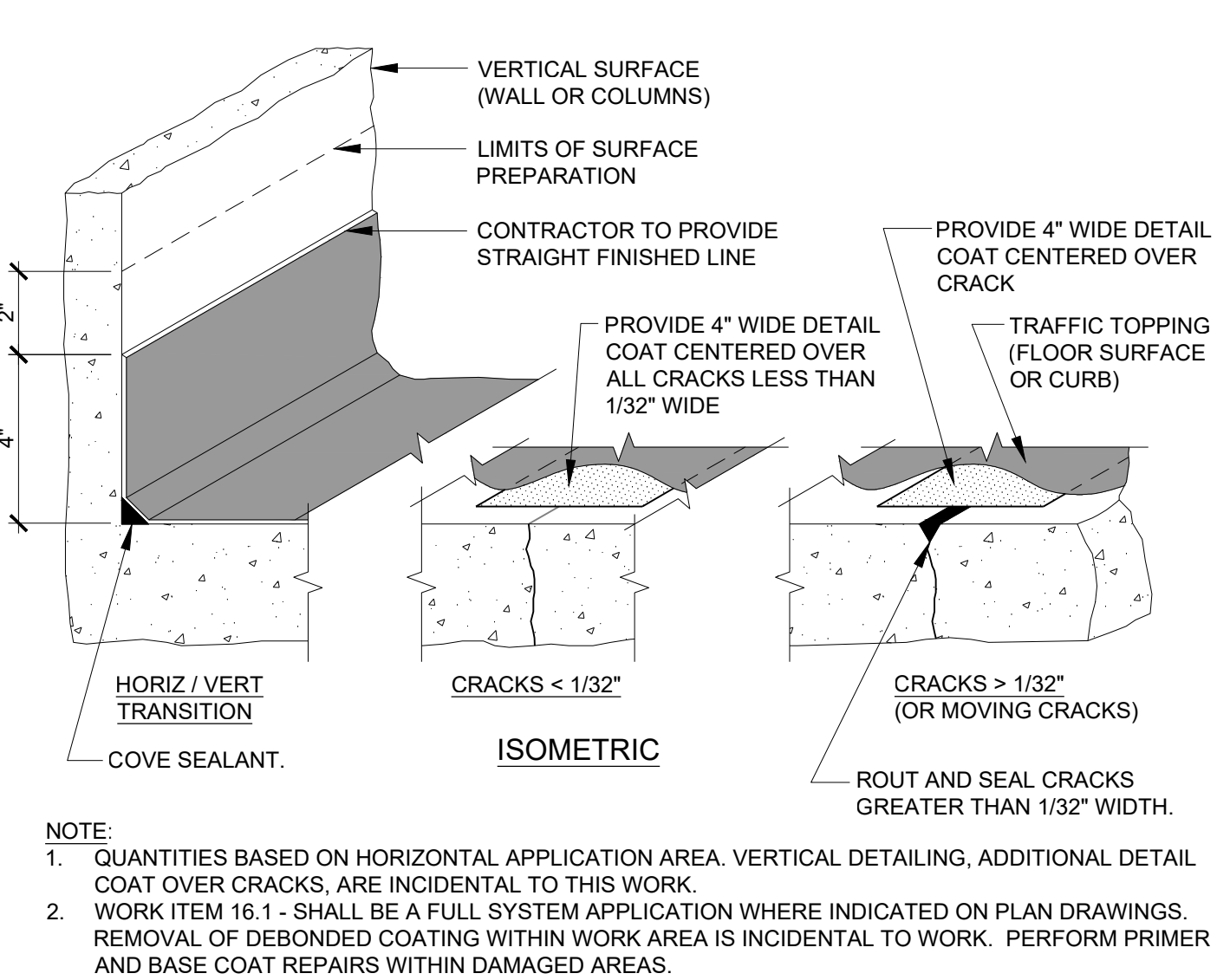
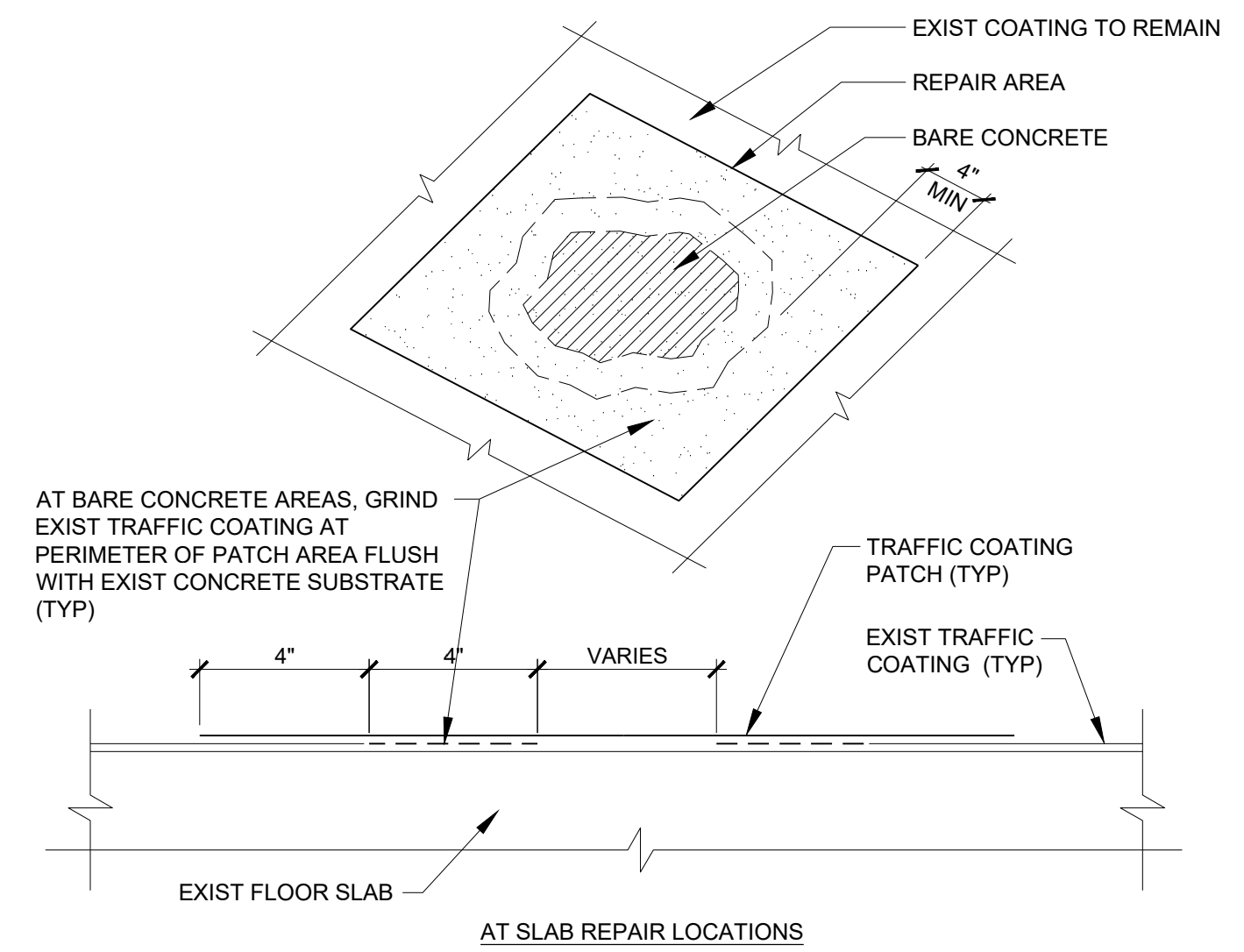
NOTES:  
 1. SANDBLAST CAVITY TO REMOVE MICROCRACKED CONCRETE AND LAITANCE.

**8.5 VERTICAL / OVERHEAD KNOCK DOWN**



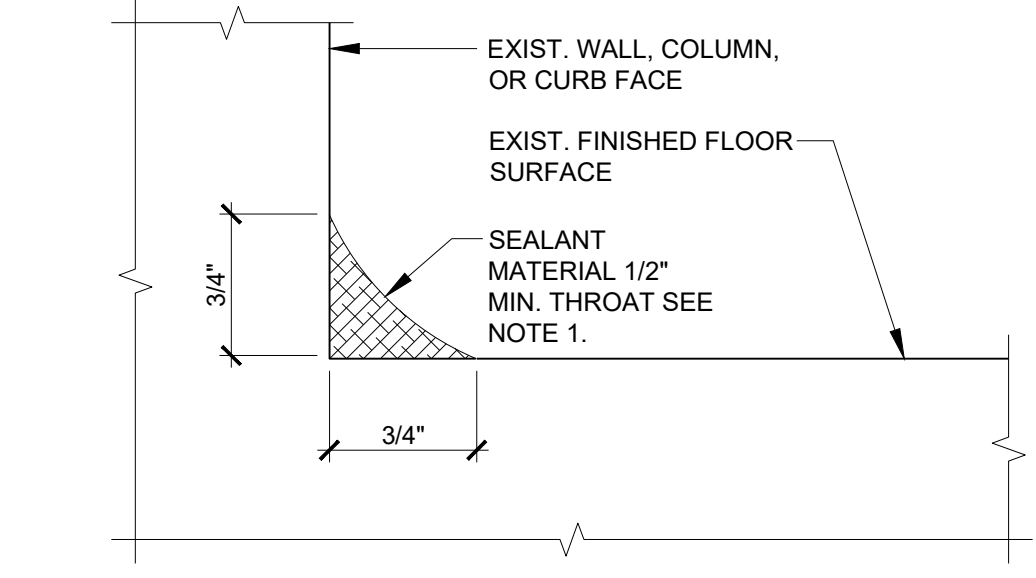
NOTES:  
 1. SEE DETAILS SERIES 20.6 FOR ADDITIONAL INFORMATION.  
 2. LOCATE COUPLINGS AS REQ'D BY STRESSING AND INSTALLATION METHODS, AND TO MINIMIZE CONCRETE REMOVALS.  
 3. STAGGER AND SPACE SPLICE COUPLINGS AS REQ'D TO FACILITATE STRESSING OPERATIONS.  
 4. LOCATE SPLICE COUPLINGS ALONG EXIST. TENDON PROFILE AT SLAB MID-DEPTH. CONTINUE WITH CONCRETE REMOVALS BEYOND THIS POINT IF TENDONS ARE NOT RUST-FREE ONLY AS DIRECTED BY THE ENGINEER.  
 5. NEW TENDON LENGTH BEYOND 10'-0\"/>

**20.6 20.8 TENDON SPLICE COUPLING (CENTER PULL) TENDON SPLICE COUPLING (DOUBLE)**



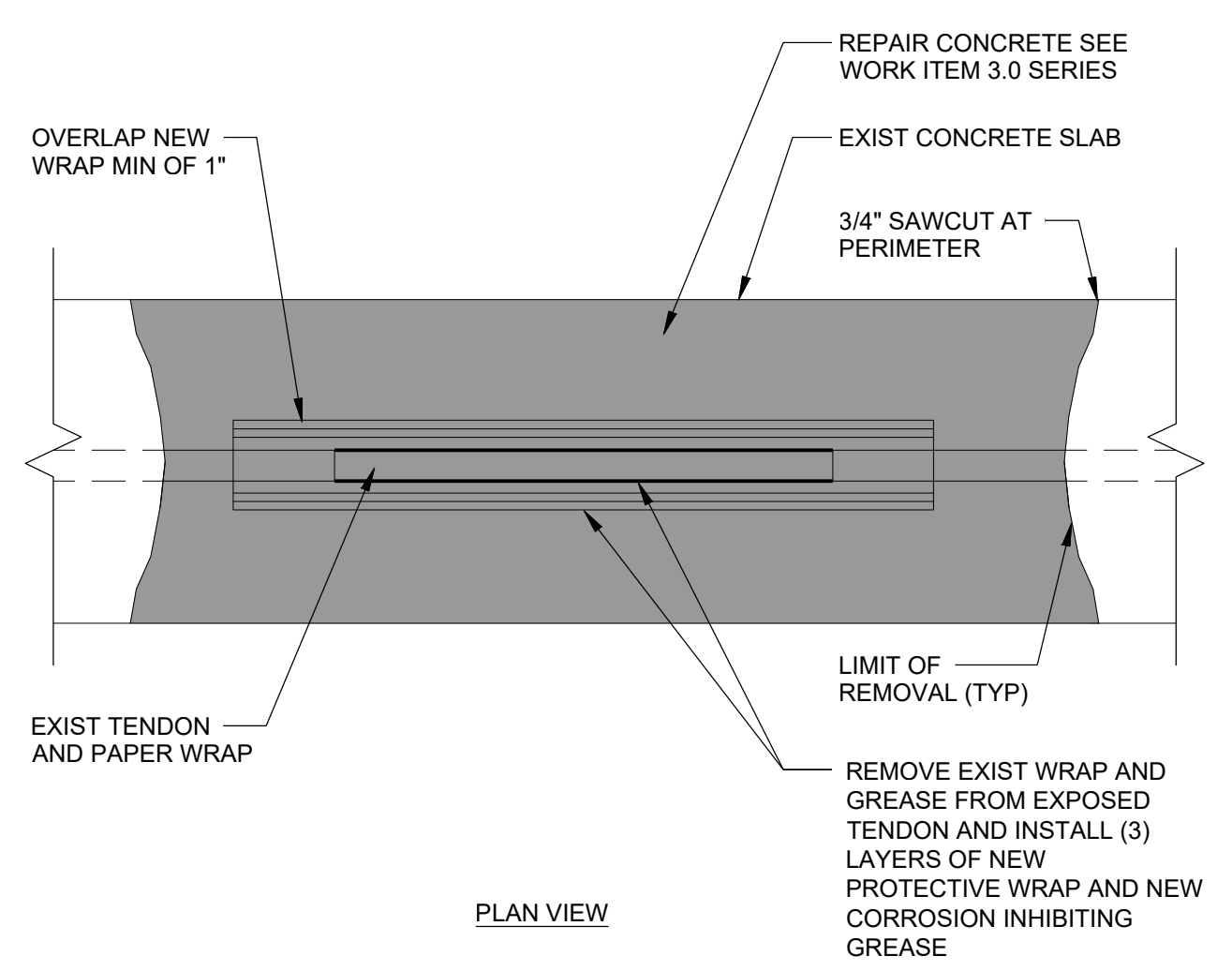
NOTES:  
 1. QUANTITIES BASED ON HORIZONTAL APPLICATION AREA. VERTICAL DETAILING, ADDITIONAL DETAIL COAT OVER CRACKS, ARE INCIDENTAL TO THIS WORK.  
 2. WORK ITEM 16.1 - SHALL BE A FULL SYSTEM APPLICATION WHERE INDICATED ON PLAN DRAWINGS. REMOVAL OF DEBONDED COATING WITHIN WORK AREA IS INCIDENTAL TO WORK. PERFORM PRIMER AND BASE COAT REPAIRS WITHIN DAMAGED AREAS.

**16.1 TRAFFIC TOPPING - VEHICULAR**  
 INCIDENTAL TO CONCRETE WORK

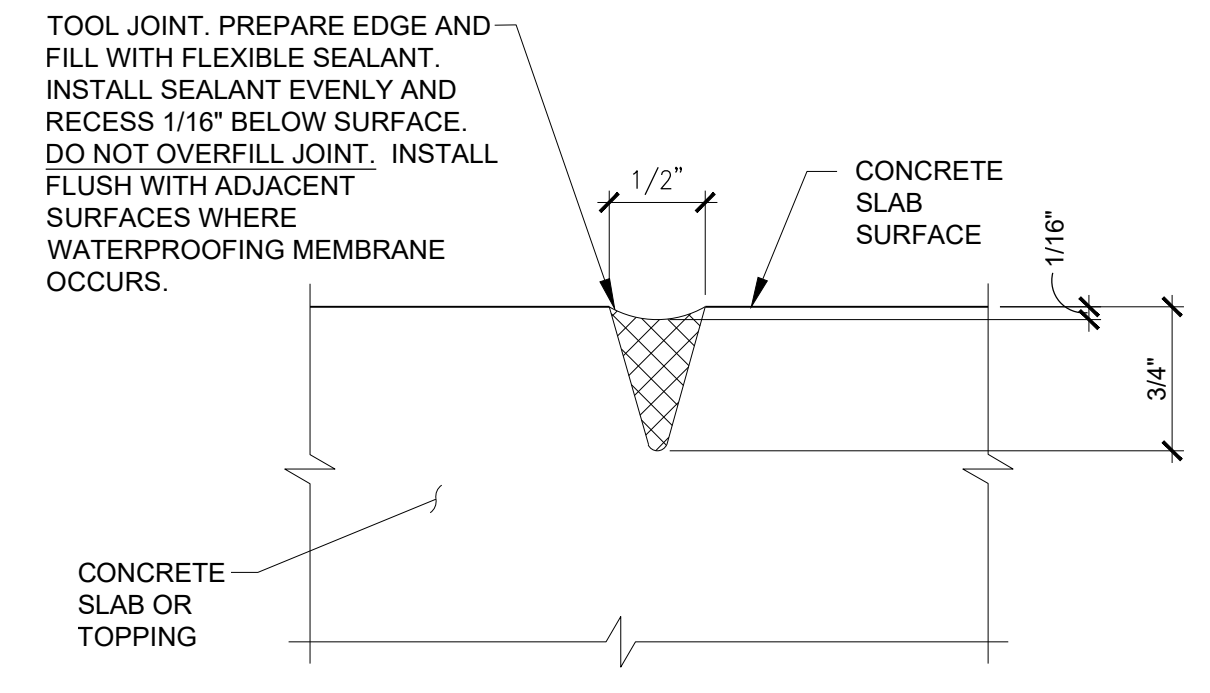


NOTE:  
 1. REMOVE EXISTING COVE SEALANT MATERIAL IF PRESENT. PREPARE SURFACE PER SPECIFICATIONS.

**11.7 COVE SEALANT**  
 INCIDENTAL TO CONCRETE WORK



**20.2 PROTECT EXPOSED P/T TENDONS**



NOTES:  
 1. MATCH EXISTING JOINTS LAYOUT. TOOLING AND SEALING CONTROL JOINTS IS INCIDENTAL TO ALL CONCRETE REPAIR WORK, AND IS NOT A SEPARATE PAY ITEM.  
 2. CONTROL JOINT (C.J.) MUST BE TOOLED IN PLASTIC CONCRETE AND DIMENSIONS AS DETAILED WILL BE MAINTAINED IN SET CONCRETE. SAWCUTTING OF CONTROL JOINT IN HARDENED CONCRETE WILL NOT BE PERMITTED.

**11.4 TOOL AND SEAL JOINTS**  
 INCIDENTAL TO CONCRETE WORK

MSU PROJ. NO. CP24073

PR. MGR.	AL
ARCH.	N/A
MECH.	N/A
ELEC.	N/A
CIVIL	SML
L.A.	N/A
INT. DES.	N/A
CONST. REP.	AL
APPR.	MSG
DATE	03/20/2025
SCALE	AS SHOWN
ISSUED	

FOR BID & CONST. - 03/20/2025

REPAIR DETAILS