

WAYNE STATE UNIVERSITY 2024 PARKING STRUCTURES #2 & #4 REPAIRS AND MAINTENANCE

DETROIT, MICHIGAN



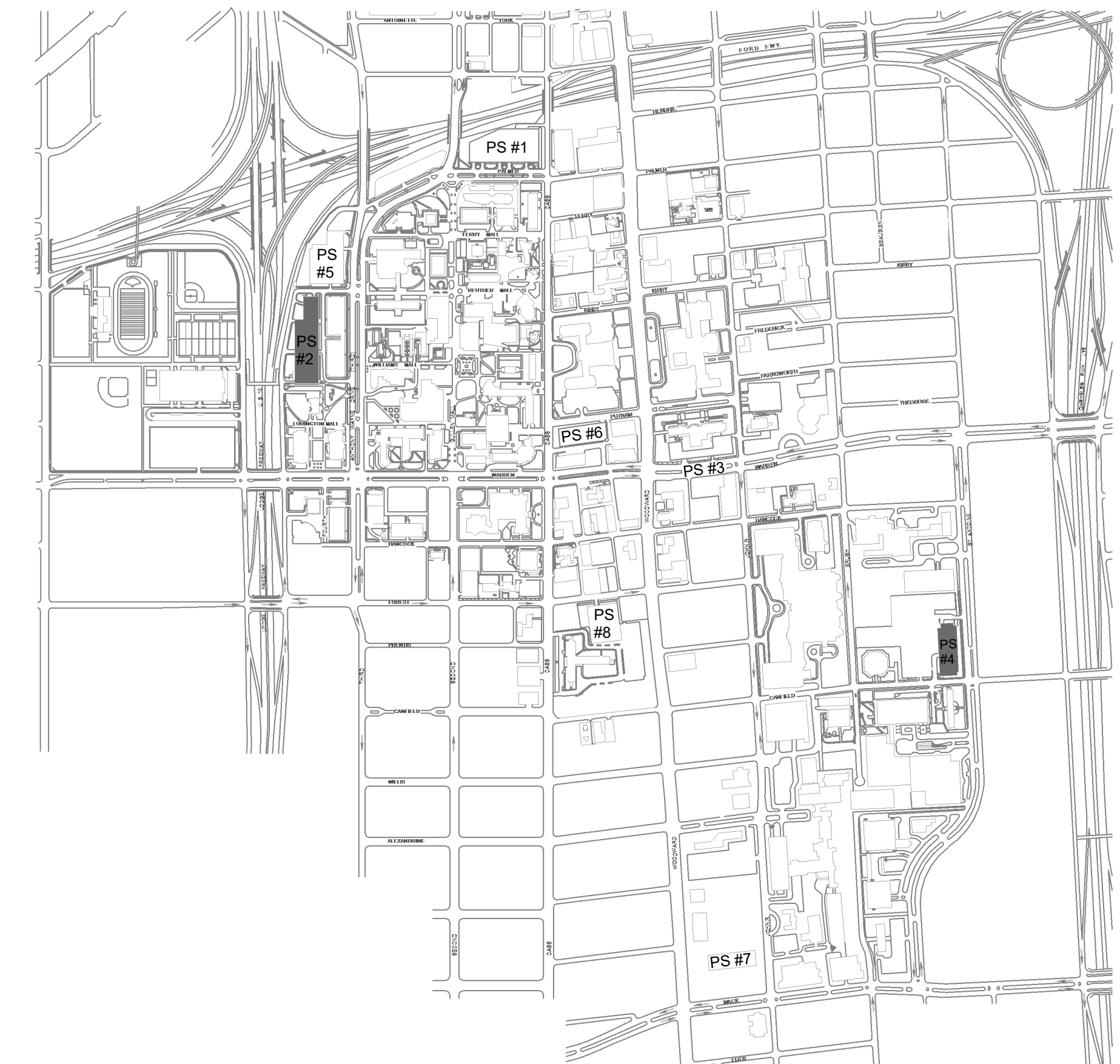
WALKER
CONSULTANTS

WSU PROJECT NO: 056-408900 (PS #2) 613-350365 (PS #4)

BIDDING & CONSTRUCTION

PROJECT NO: 20-002556.00

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SITE LOCATION MAP

ENGINEER



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GENERAL RESTORATION NOTES

A. CONSTRUCTION

- 1. CONTRACTOR SHALL PERFORM ALL CONSTRUCTION IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE OF MICHIGAN, AND CITY OF DETROIT CODES AND ORDINANCES, INCLUDING FIRE CODES. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF ANY KNOWN NONCONFORMITY WITH THE INTENT OF THE CONSTRUCTION DOCUMENTS AND AS-BUILT CONDITIONS TO THE APPLICABLE CODES, LAWS OR ORDINANCES AND REQUEST CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH WORK WHICH IS DEEMED IN CONFLICT WITH THE APPLICABLE CODES, LAWS OR ORDINANCES.

B. CONSTRUCTION DOCUMENTS

- 1. CONSTRUCTION DOCUMENTS ENTITLED "WAYNE STATE UNIVERSITY 2024 PARKING STRUCTURES #2 AND #4 REPAIRS AND MAINTENANCE" INCLUDES THESE DRAWINGS AND SEPARATELY BOUND SPECIFICATIONS. FOR PURPOSE OF PERFORMING THE WORK DRAWINGS AND SPECIFICATIONS SHALL BE A SINGLE UNIT.

C. EXISTING STRUCTURE

- 1. CONSTRUCTION DOCUMENTS RELY ON THE ORIGINAL DRAWINGS. CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD.

D. DETAILS AND SYMBOLS

- 1. ALL REPAIR DETAILS ARE SHOWN ON DRAWING SERIES R-500.

E. CONCRETE PROTECTION FOR REINFORCEMENT

- 1. THE FOLLOWING APPLIES FOR FULL SECTION CONCRETE REPLACEMENT OR PARTIAL DEPTH REPAIRS AS SHOWN ON THE DRAWINGS.

F. EPOXY COATING FOR REINFORCEMENT AND ANCHORS

- 1. EPOXY COAT ALL REINFORCEMENT, EXCEPT WELDED WIRE REINFORCEMENT, IN CAST IN PLACE CONCRETE

G. SHORING AND BRACING

- 1. THE SCOPE OF THIS PROJECT INVOLVES A SELECTIVE DEMOLITION AND REPAIR OF STRUCTURAL BUILDING ELEMENTS THAT WILL REQUIRE TEMPORARY SHORING OF EXISTING AND NEW CONSTRUCTION TO REMAIN. CONTRACTOR SHALL GENERATE A CONSTRUCTION SHORING PROGRAM AND SUBMIT TO ENGINEER FOR RECORD TWO (2) WEEKS PRIOR TO THE COMMENCEMENT OF WORK.

H. EXISTING SERVICES AND UTILITIES

- 1. 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 FACILITIES OR OTHER AREAS (NOT IN CONTRACT) AFFECTED BY WORK. THE CONTRACTOR SHALL SUBMIT THE METHODS AND SCHEDULE OF TEMPORARY CONNECTIONS FOR THE OWNER'S APPROVAL PRIOR TO COMMENCEMENT.

- 16. EXIST = EXISTING
17. FIN = FINISHED
18. FL = FLOOR
19. IN = INCHES
20. INC = INCIDENTAL
21. LF = LINEAR FOOT
22. LS = LUMP SUM
23. MAX = MAXIMUM
24. MIN = MINIMUM
25. NA = NOT APPLICABLE
26. NC = ON CENTER
27. OH = OPPOSITE HAND
28. P/C = PRECAST
29. REIN = REINFORCEMENT
30. REQ'D = REQUIRED
31. SF = SQUARE FOOT
32. SIM = SIMILAR
33. SOG = SLAB ON GROUND
34. SPEC = SPECIFICATION
35. SUPT = SUPPORTED
36. T = TOP
37. TAR = TYPICAL AS REQUIRED
38. TYP = TYPICAL
39. UN OR UNO = UNLESS NOTED OTHERWISE
40. W = WORK
41. WWR = WELDED WIRE REINFORCEMENT

I. CONSTRUCTION PHASING, SEQUENCING AND TRAFFIC MAINTENANCE

- 1. WORK SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE AND ALL IDENTIFIED PROJECT REPRESENTATIVES.

J. CONCRETE REQUIREMENTS (SEE SECTION 02010 FOR SPECIFIC USES)

- 1. CAST IN PLACE CONVENTIONAL CONCRETE
a. COMPRESSIVE STRENGTH 5000 PSI AT 28 DAYS
b. WATER-CEMENT RATIO 0.40 MAX
c. MAX SIZE AGGREGATE 1 1/2 INCH FOR PARTIAL DEPTH
3/4 INCH FOR FULL DEPTH
6" WITH SUPER PLASTICIZER (AFTER WATER REDUCER ADDITION) 7% ± 1.5%

K. GENERAL P-T TENDON REPAIR NOTES:

- 1. TENDONS ARE NEAR THE FLOOR SURFACE AT SPALLS AND DELAMINATIONS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING SAWCUTTING AND REMOVALS SO AS NOT TO DAMAGE EXISTING TENDON SITES 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.

L. ABBREVIATIONS

- 1. APPROX = APPROXIMATELY
2. AGG = AGGREGATE
3. BM = BEAM
4. BOT = BOTTOM
5. CIP = CAST IN PLACE
6. CJ = CONSTRUCTION JOINT/CONTROL JOINT
7. CLR = CLEARANCE
8. COL = COLUMN
9. CONC = CONCRETE
10. DET = DETAIL
11. EA = EACH
12. E.E. = EACH END
13. E.S. = EACH SIDE
14. EMBED = EMBEDMENT LENGTH
15. EJ = EXPANSION JOINT

- 16. EXIST = EXISTING
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M. POST-INSTALLED ANCHORS

- 1. WEDGE BOLTS - HILTI KWIK BOLT TZ, UNLESS NOTED.
2. ADHESIVE ANCHORS - HILTI HY200, UNLESS NOTED.
3. CONTRACTOR SHALL LOCATE EXISTING EMBEDDED REINFORCEMENT USING NON-DESTRUCTIVE TESTING PRIOR TO FABRICATION OF ATTACHMENTS OR DRILLING OF HOLES. NOTIFY ENGINEER OF OBSTRUCTIONS THAT WILL PREVENT INSTALLATION OF ANCHORS AT DESIGN LOCATIONS.

N. NON-SHRINK GROUT

- 1. COMPRESSIVE STRENGTH: 8000 PSI MIN.

O. TESTING & INSPECTION NOTES

- 1. FOLLOWING TESTS AND INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT TESTING AND INSPECTION AGENCY EMPLOYED BY OWNER AND APPROVED BY ENGINEER. TEST AND INSPECTION REPORTS SHALL BE SUBMITTED FOR APPROVAL TO OWNER AND ENGINEER.

P. PHASING INSTRUCTION AND NOTES

- 1. DEFINITIONS
a. 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 STRUCTURES DURING RESTORATION. 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.

- 3. MISCELLANEOUS NOTES
a. OWNER AND THE ENGINEER RESERVE THE RIGHT TO ISSUE A STOP WORK ORDER FOR SPECIFIC WORK ITEMS IF IN THE OPINION OF EITHER ONE OF THESE PARTIES THE 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.

PS#2 - WORK ITEM SCHEDULE - BASE BID

Table with columns: WORK ITEM, DESCRIPTION, UNITS, QUANTITY. Includes items like Project Mobilization, Temporary Signage & Barriers, Floor Repair - Partial Depth, etc.

PS#2 WORK ITEM SCHEDULE - ALTERNATES

Table with columns: WORK ITEM, DESCRIPTION, UNITS, QUANTITY. Includes items like Pavement Repair - Full Depth, Pavement Repair - Crack Seal, etc.

Additional Temporary Signage, Temporary Barriers, and Traffic Markings required to perform any Alternate Work Items shall be incidental.

PS#4 - WORK ITEM SCHEDULE - BASE BID

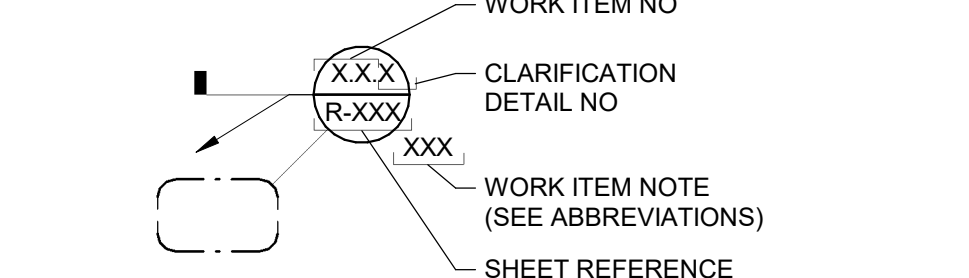
Table with columns: WORK ITEM, DESCRIPTION, UNITS, QUANTITY. Includes items like Project Mobilization, Temporary Signage & Barriers, Mearns of Access - Exterior Façade, etc.

PS#4 WORK ITEM SCHEDULE - ALTERNATES

Table with columns: WORK ITEM, DESCRIPTION, UNITS, QUANTITY. Includes items like Floor Repair - Partial Depth (P/T), Ceiling Repair - Partial Depth (P/T), etc.

Additional Temporary Signage, Temporary Barriers, and Traffic Markings required to perform any Alternate Work Items shall be incidental.

WORK ITEM LEGEND:



NOTES:

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



WAYNE STATE UNIVERSITY
2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

Table with columns: MARK, DATE, BIDDING & CONSTRUCTION DESCRIPTION, ISSUE.

PROJECT NO: 20-002556-00
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CHECKED BY: DJP

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SHEET TITLE:
GENERAL NOTES,
LEGENDS & WORK
ITEM SCHEDULE

R-001

PS #2 PHASING NOTES:

1. CONTRACTOR SHALL BE ALLOWED TO CLOSE A MAXIMUM OF 800 SPACES AT ONE TIME.
2. ALL VEHICLE ENTRY/EXITS MUST REMAIN OPEN THROUGHOUT DURATION OF PROJECT. WORK AFFECTING STAIRTOWERS, VEHICLE ENTRY/EXITS, & ELEVATORS SHALL BE PERFORMED DURING OFF HOURS. COORDINATE WITH OWNER.
3. CONTRACTOR SHALL SUBMIT PHASING PLAN FOR OWNER/ENGINEER APPROVAL PRIOR TO START OF WORK.
4. PROVIDE OWNER A MINIMUM OF (10) DAYS ADVANCE NOTICE PRIOR TO CLOSING PARKING SPACES.
5. PHASE REPAIRS TO AVOID CREATING DEAD ENDS IN STRUCTURE.
6. INSTALL ALL NECESSARY SIGNAGE AND BARRIERS AS REQUIRED PER W.I. 1.5 PRIOR TO START OF WORK.
7. CONTRACTOR STAGING/PARKING WITHIN THE STRUCTURE SHALL BE IN DESIGNATED WORK AREAS ONLY. SUBJECT TO MAXIMUM PARKING SPACE CLOSURE REQUIREMENTS.
8. CONTRACTOR REQUIRED TO CLEAN EACH WORK AREA TO OWNERS SATISFACTION PRIOR TO RE-OPENING.

SCHEDULE: PS#2

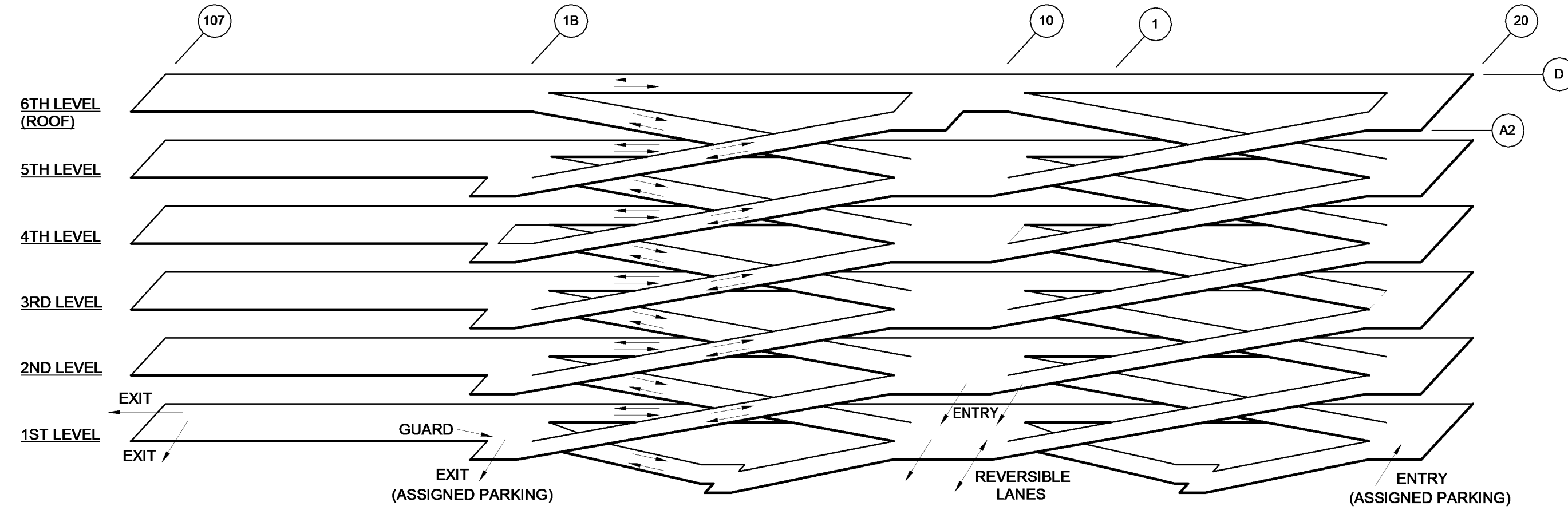
- PHASE 1**
- A. CONSTRUCTION START DATE: AS SOON AS POSSIBLE AFTER AWARD OF CONTRACT IN 2024.
- B. PHASE 1 COMPLETION DATE: THE STRUCTURE MUST BE COMPLETELY REOPENED FOR PARKING BY END-OF-DAY JUNE 25, 2024 TO BE USED FOR EVENT PARKING FROM JUNE 26, 2024 THRU JUNE 30, 2024.
1. THE SCOPE OF THE PHASE 1 WORK WILL BE DETERMINED BY WSU, ENGINEER, AND CONTRACTOR BASED ON DATE OF CONTRACT AWARD AND THE ACTUAL CONSTRUCTION START DATE. INTENT IS TO COMPLETE AS MUCH CONCRETE REPAIRS AS POSSIBLE WHILE ALLOWING FOR CURE TIME TO REOPEN THE ENTIRE STRUCTURE BY END-OF-DAY JUNE 25, 2024. WATERPROOFING WORK IN THE PHASE 1 REPAIR AREAS CAN BE COMPLETED DURING PHASE 2.
- PHASE 2**
- A. CONSTRUCTION START DATE: JULY 1, 2024
- B. SUBSTANTIAL COMPLETION DATE: AUGUST 16, 2024
1. THE SCOPE OF THE PHASE 2 WORK WILL BE DETERMINED BY WSU, ENGINEER, AND CONTRACTOR BASED ON PROGRESS OF THE WORK THROUGH PHASE 1. INTENT IS TO COMPLETE AS MUCH CONCRETE AND WATERPROOFING REPAIRS AS POSSIBLE PRIOR TO THE REQUIRED SUBSTANTIAL COMPLETION DATE.
- C. FINAL COMPLETION DATE: AUGUST 23, 2024

PS #4 PHASING NOTES:

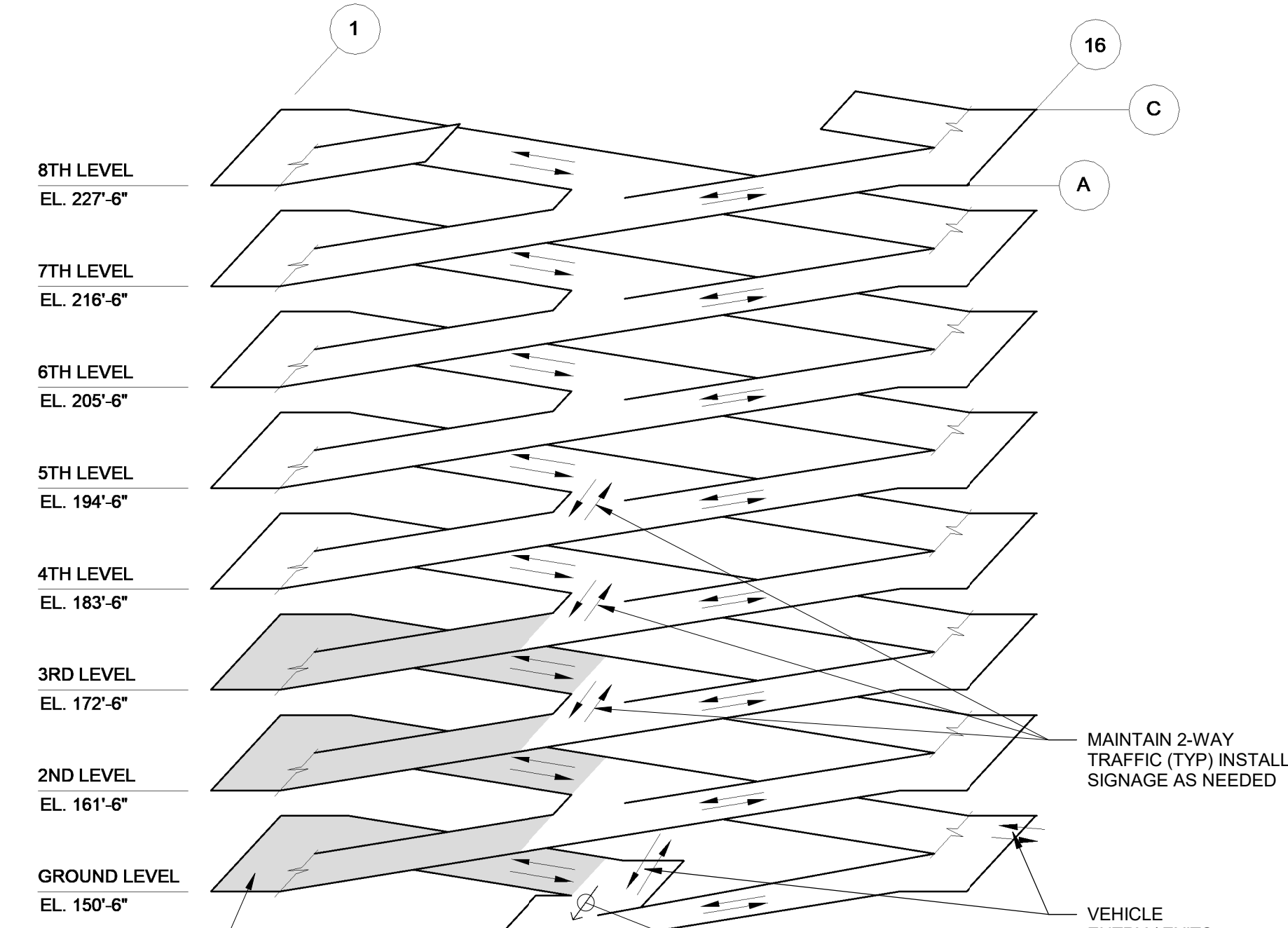
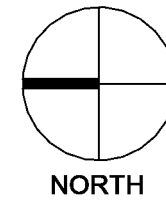
1. CONTRACTOR SHALL BE ALLOWED TO CLOSE A MAXIMUM OF 600 SPACES AT ONE TIME.
2. ALL VEHICLE ENTRY/EXITS MUST REMAIN OPEN DURING DAY TIME HOURS THROUGHOUT DURATION OF PROJECT. WORK AFFECTING STAIRTOWERS, VEHICLE ENTRY/EXITS, & ELEVATOR SHALL BE PERFORMED DURING OFF HOURS. COORDINATE WITH OWNER.
3. CONTRACTOR SHALL SUBMIT PHASING PLAN FOR OWNER/ENGINEER APPROVAL PRIOR TO START OF WORK.
4. PROVIDE OWNER A MINIMUM OF (10) DAYS ADVANCE NOTICE PRIOR TO CLOSING PARKING SPACES.
5. PHASE REPAIRS TO AVOID CREATING DEAD ENDS IN STRUCTURE. SEE TYPICAL WORK AREA ON ISOMETRIC DRAWING TO THE RIGHT.
6. INSTALL ALL NECESSARY SIGNAGE AND BARRIERS AS REQUIRED PER W.I. 1.5 PRIOR TO START OF WORK.
7. CONTRACTOR STAGING/PARKING WITHIN THE STRUCTURE SHALL BE IN DESIGNATED WORK AREAS ONLY. SUBJECT TO MAXIMUM PARKING SPACE CLOSURE REQUIREMENTS.
8. CONTRACTOR REQUIRED TO CLEAN EACH WORK AREA TO OWNERS SATISFACTION PRIOR TO RE-OPENING.

SCHEDULE: PS#4

- A. CONSTRUCTION START DATE: AS SOON AS POSSIBLE AFTER AWARD OF CONTRACT IN 2024.
- B. SUBSTANTIAL COMPLETION DATE: NOVEMBER 1, 2024
- C. FINAL COMPLETION DATE: NOVEMBER 15, 2024



ISOMETRIC VIEW OF STRUCTURE



STRUCTURE #4 ISOMETRIC

TYPICAL WORK AREA CLOSURE, MAY BE MULTIPLE LEVELS / LOCATIONS, SEE NOTE 1 (NO DEAD ENDS)

COORDINATE WITH WSU TO OPEN GATE ARM TO ALLOW VEHICLES ENTERING THE STRUCTURE THROUGH THE EXISTING VIP AREA TO CIRCULATE INTO THE STRUCTURE.

LEGEND

■ TYPICAL WORK AREA



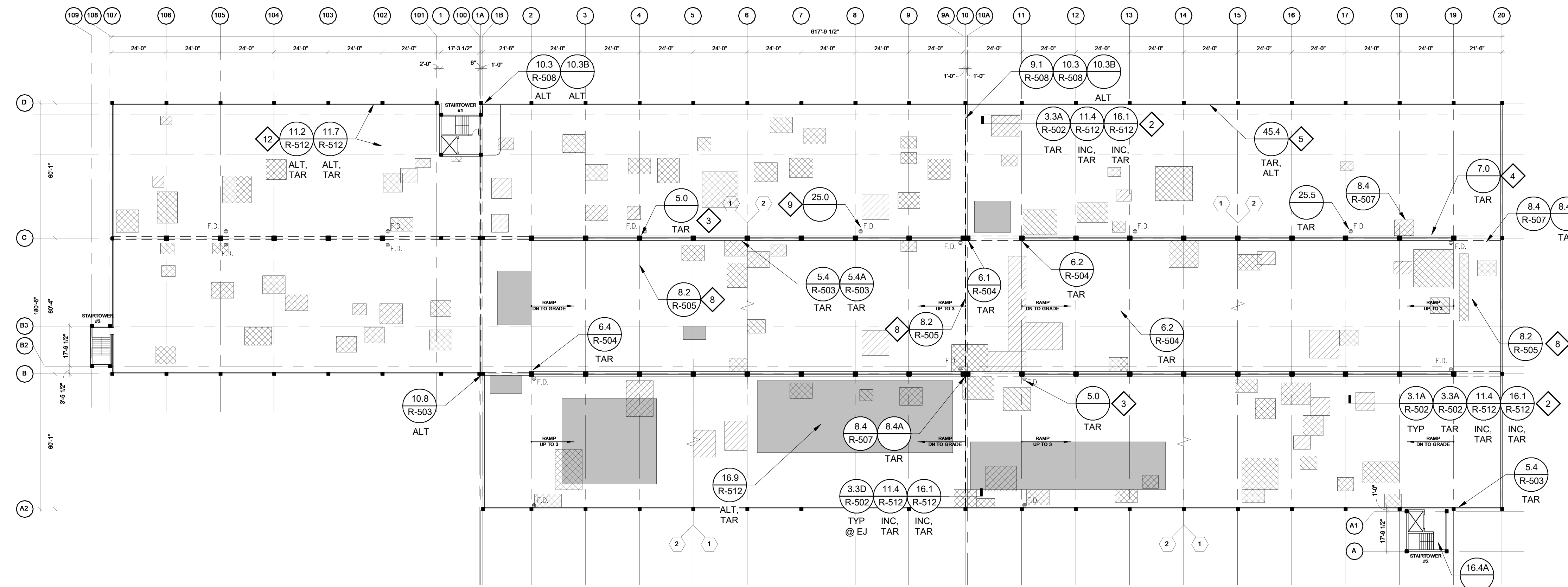
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#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

MARK	DATE	BIDDING & CONSTRUCTION DESCRIPTION	ISSUE:
	05/21/2024		

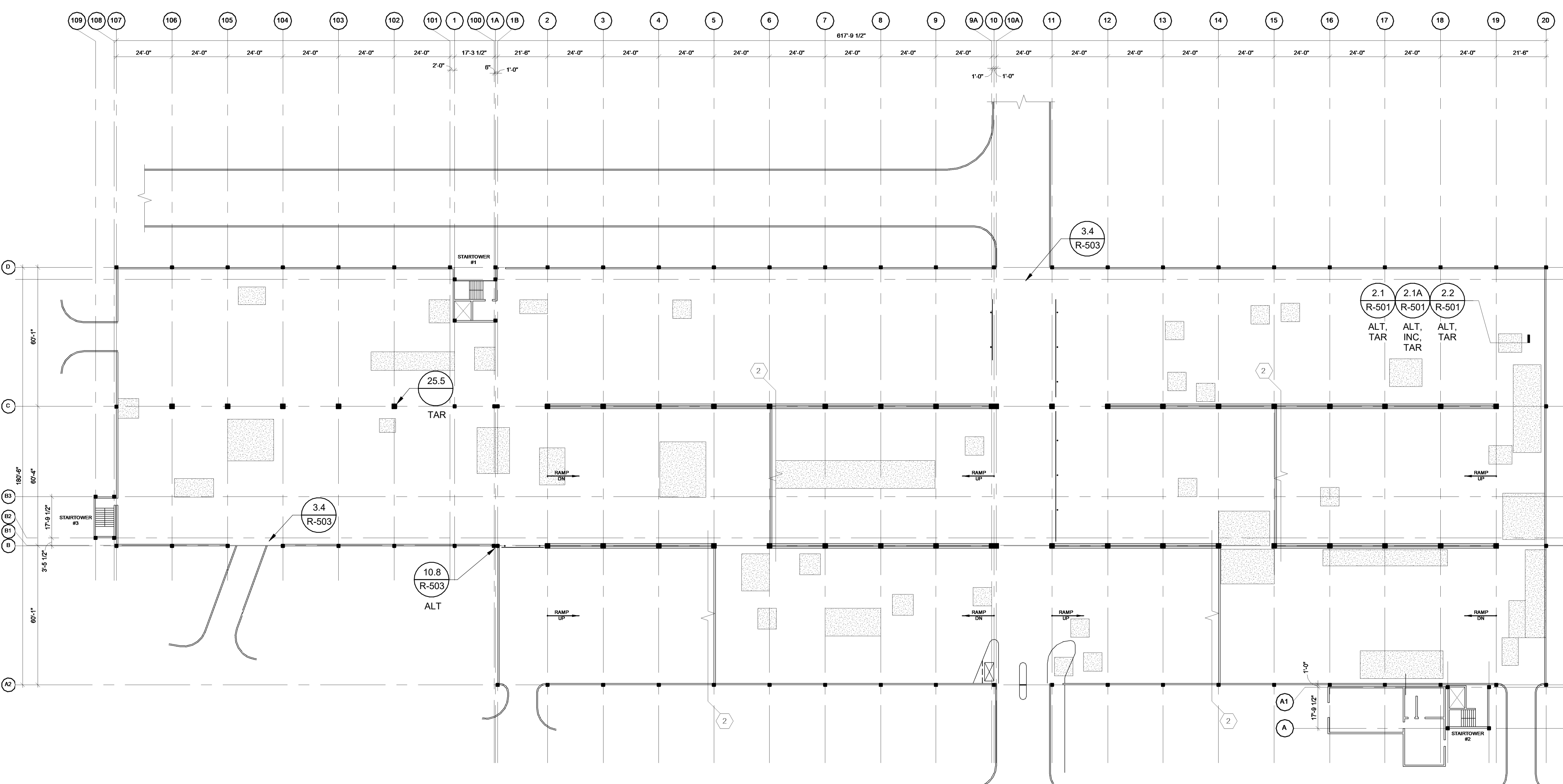
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SHEET TITLE:
PHASING PLANS AND NOTES

R-002



2 STRUCTURE #2 LEVEL 2 FLOOR PLAN



1 STRUCTURE #2 LEVEL 1 FLOOR PLAN

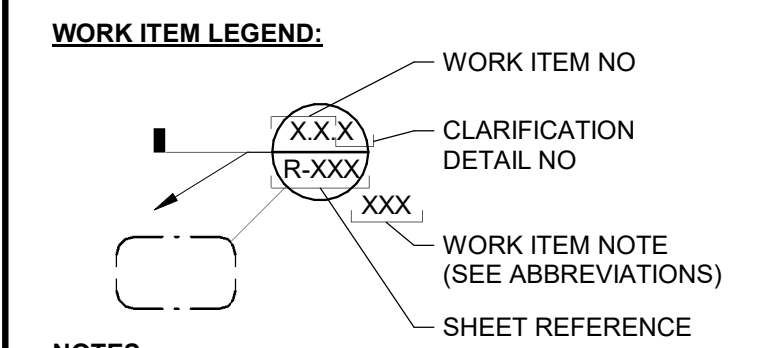
SHEET NOTES

- REFERENCES:**
- 1. GENERAL NOTES, LEGEND, AND WI SCHEDULE R-001
 - 2. FLOOR PLANS R-100 SERIES
 - 3. REPAIR DETAILS R-500 SERIES

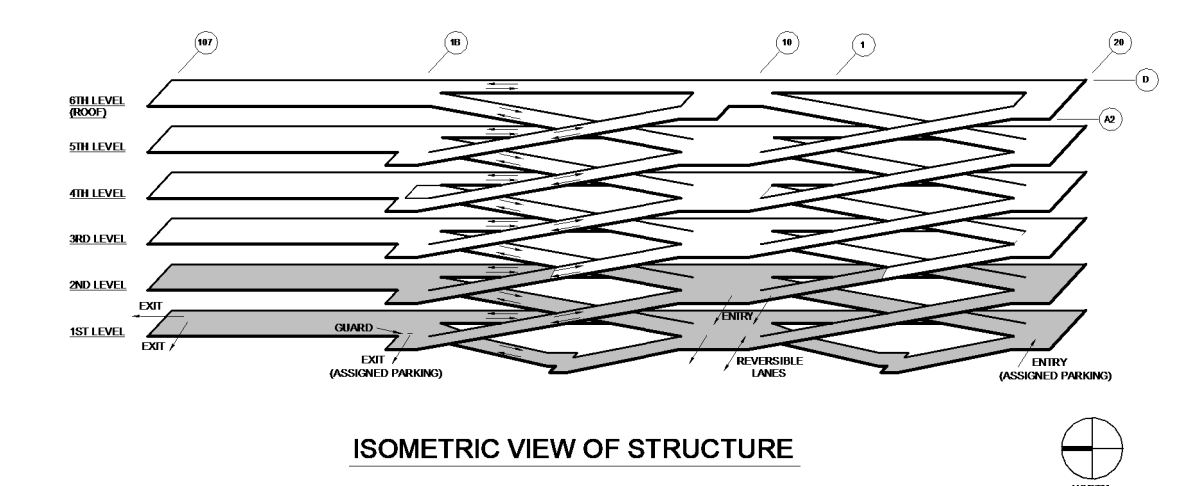
- NOTES:**
1. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL EXTENT AND LOCATIONS OF REPAIR AREAS IN ACCORDANCE WITH THE SPECIFICATIONS. WORK ITEM IS SHOWN ONLY TO REPRESENT THE TYPES OF DETERIORATION.
 2. REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK.
 3. WORK ITEM 5.1, 5.2, 5.3, AND 5.4 MAY APPLY AS REQUIRED. VERIFY IN FIELD WITH ENGINEER.
 4. WORK ITEM 7.1 AND 7.2 MAY APPLY AS REQUIRED. VERIFY IN FIELD WITH ENGINEER.
 5. EPOXY COAT EXPOSED PORTION OF WALLS AND BEAMS TO PROVIDE UNIFORM COATED APPEARANCE.
 6. ALL WORK ITEMS TYPICAL ON ROOF LEVEL.
 7. FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED.
 8. AFTER TEST OPENINGS ARE COMPLETED PER WORK ITEM 8.2 AND REVIEWED WITH THE ENGINEER, VARIOUS REPAIR TYPES WITHIN WORK ITEM SERIES 8.0 MAY APPLY.
 9. WORK ITEM SERIES 25.0: LOCATE DRAIN/PIPING REPAIRS IN FIELD WITH ENGINEER.
 10. WORK ITEM 45.1: RESTRIPE ALL TRAFFIC MARKINGS AFFECTED BY WORK.
 11. WORK ITEM 4.9: REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
 12. ALTERNATE WORK ITEM 11.2 AND 11.7 APPLY AT FAILED SEALANTS AT LOWER LEVELS. VERIFY LOCATIONS IN FIELD DURING RAIN DAY.
 13. AT ROOF LEVEL, ALL CONCRETE REPAIRS ARE BASE BID SCOPE. AT LOWER LEVELS, WORST AREAS OF DETERIORATION ARE BASE BID SCOPE. REMAINDER OF CONCRETE FLOOR REPAIRS SHALL BE ALTERNATE. COORDINATE IN FIELD WITH ENGINEER.
 14. WORK ITEM SERIES 3.0, 4.9, 5.0, 6.0, 7.0, AND 8.0 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
 15. WORK ITEM 1.5: INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED BY SPECIFICATION PRIOR TO START OF WORK.
 16. WORK ITEM 4.9: REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
 17. WORK ITEM'S 41.1/41.2: LOCATE CONCRETE STAIR REPAIRS IN FIELD WITH ENGINEER.
 18. WORK ITEM 45.1: RESTRIPE PAVEMENT MARKINGS AS REQUIRED IN SPECIFICATIONS (SEE SECTION 020010 FOR FURTHER INFORMATION).

LEGEND

- SCALED SURFACE REPAIR (EPOXY/SAND)
- ASPHALT REPAIR (ALT)
- PARTIAL DEPTH FLOOR REPAIR
- FULL DEPTH FLOOR REPAIR
- TRAFFIC TOPPING - RECOAT (BASE BID)
- TRAFFIC TOPPING - WORK ITEM 16.4 (ALT)
- EXISTING EXPANSION JOINT
- EXISTING FLOOR DRAIN



- NOTES:**
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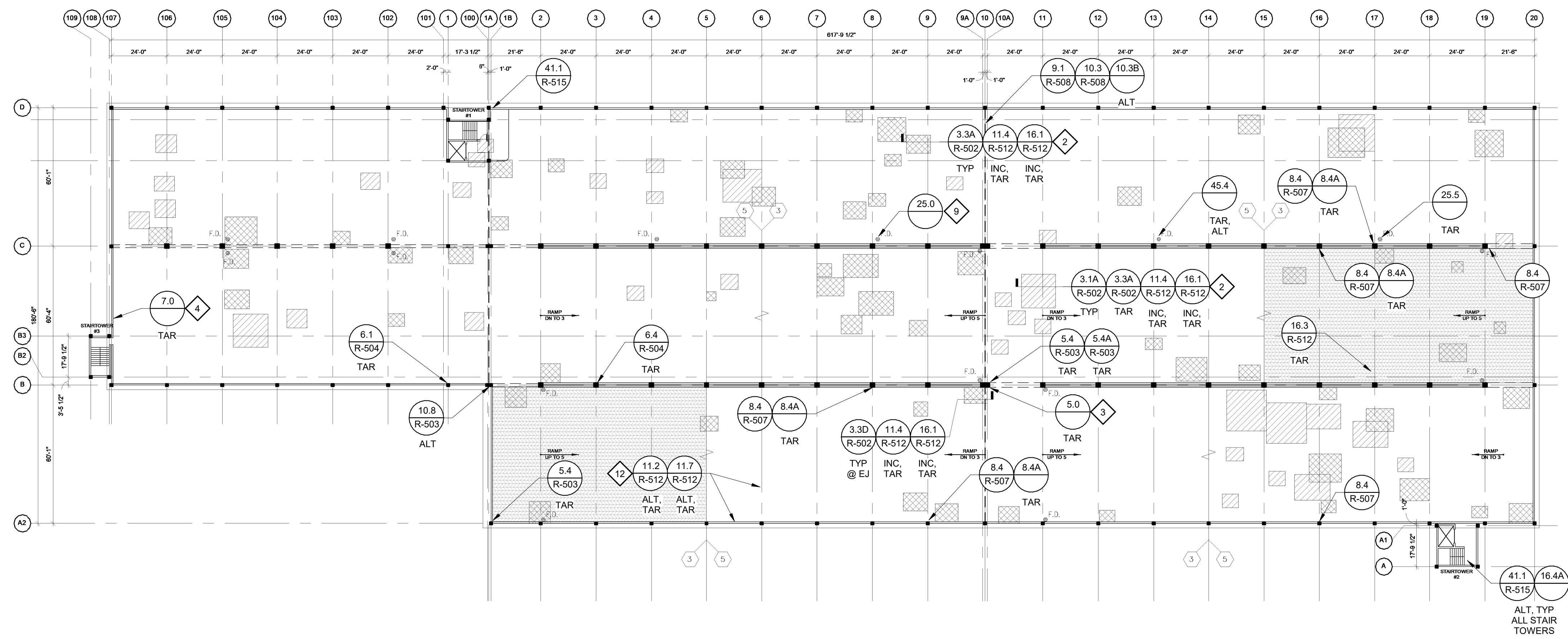
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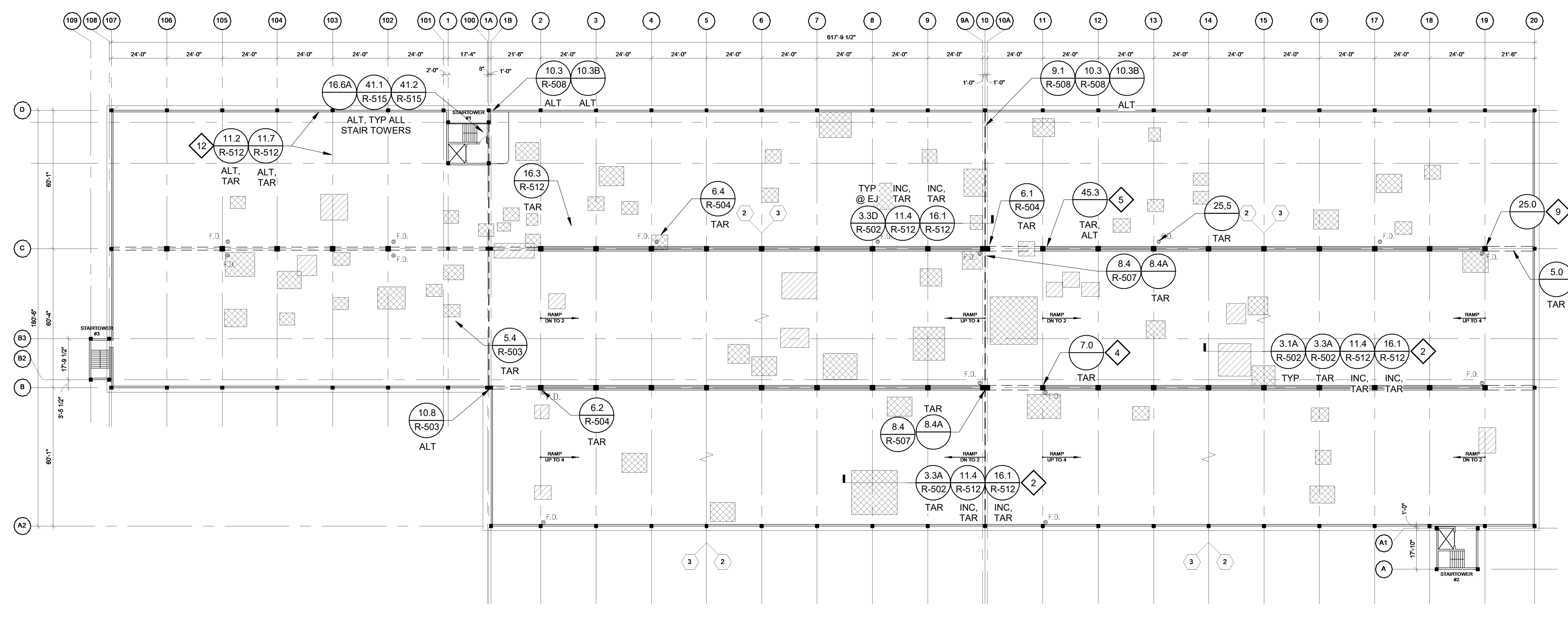
SHEET TITLE:
STRUCTURE #2
LEVELS 1 & 2 FLOOR PLANS

R-101

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2 STRUCTURE #2 LEVEL 4 FLOOR PLAN
1" = 30'-0"



1 STRUCTURE #2 LEVEL 3 FLOOR PLAN
1" = 30'-0"

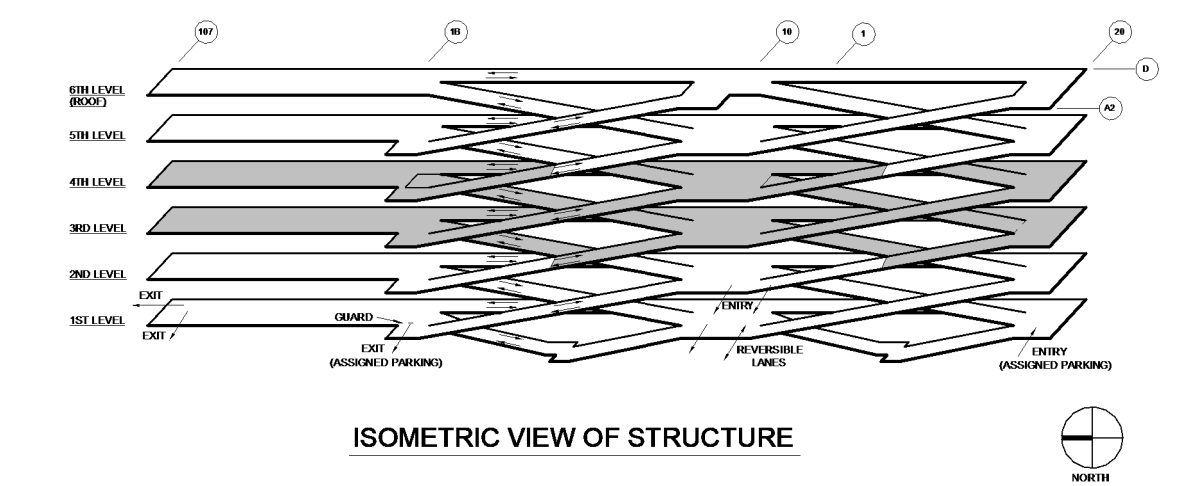
SHEET NOTES

- REFERENCES:**
- 1. GENERAL NOTES, LEGEND, AND W/ SCHEDULE R-001
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 - EPOXY COAT EXPOSED PORTION OF WALLS AND BEAMS TO PROVIDE UNIFORM COATED APPEARANCE.
 - ALL WORK ITEMS TYPICAL ON ROOF LEVEL.
 - FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED.
 - AFTER TEST OPENINGS ARE COMPLETED PER WORK ITEM 8.2 AND REVIEWED WITH THE ENGINEER, VARIOUS REPAIR TYPES WITHIN WORK ITEM SERIES 8.0 MAY APPLY.
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 - WORK ITEM 45.1: RESTRIPE ALL TRAFFIC MARKINGS AFFECTED BY WORK.
 - WORK ITEM 4.9: REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
 - ALTERNATE WORK ITEM 11.2 AND 11.7 APPLY AT FAILED SEALANTS AT LOWER LEVELS. VERIFY LOCATIONS IN FIELD DURING RAIN DAY.
 - AT ROOF LEVEL, ALL CONCRETE REPAIRS ARE BASE BID SCOPE. AT LOWER LEVELS, WORST AREAS OF DETERIORATION ARE BASE BID SCOPE. REMAINDER OF CONCRETE FLOOR REPAIRS SHALL BE ALTERNATE. COORDINATE IN FIELD WITH ENGINEER.
 - WORK ITEM SERIES 3.0, 4.9, 5.0, 6.0, 7.0, AND 8.0 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
 - WORK ITEM 1.5: INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED BY SPECIFICATION PRIOR TO START OF WORK.
 - WORK ITEM 4.9: REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
 - WORK ITEM'S 41.1/41.2: LOCATE CONCRETE STAIR REPAIRS IN FIELD WITH ENGINEER.
 - WORK ITEM 45.1: RESTRIPE PAVEMENT MARKINGS AS REQUIRED IN SPECIFICATIONS (SEE SECTION 020010 FOR FURTHER INFORMATION).

LEGEND

- SCALED SURFACE REPAIR (EPOXY/SAND)
 - ASPHALT REPAIR (ALT)
 - PARTIAL DEPTH FLOOR REPAIR
 - FULL DEPTH FLOOR REPAIR
 - TRAFFIC TOPPING - RECOAT (BASE BID)
 - TRAFFIC TOPPING - WORK ITEM 16.4 (ALT)
 - EXISTING EXPANSION JOINT
 - EXISTING FLOOR DRAIN
- WORK ITEM LEGEND:**
- WORK ITEM NO
 - CLARIFICATION DETAIL NO
 - WORK ITEM NOTE (SEE ABBREVIATIONS)
 - SHEET REFERENCE

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



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WAYNE STATE UNIVERSITY
2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

MARK	DATE	BIDDING & CONSTRUCTION	DESCRIPTION	ISSUE:

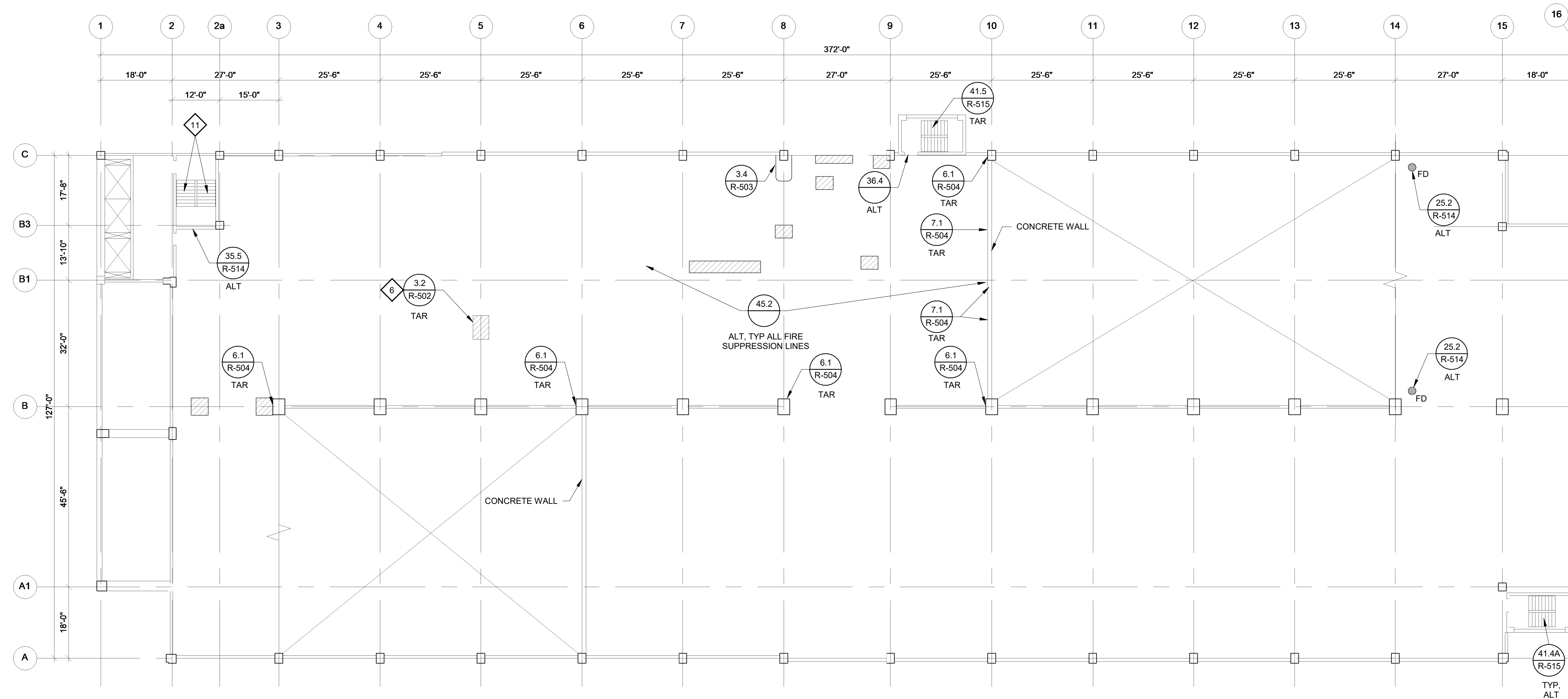
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SHEET TITLE:
STRUCTURE #2
LEVELS 3 & 4 FLOOR PLANS

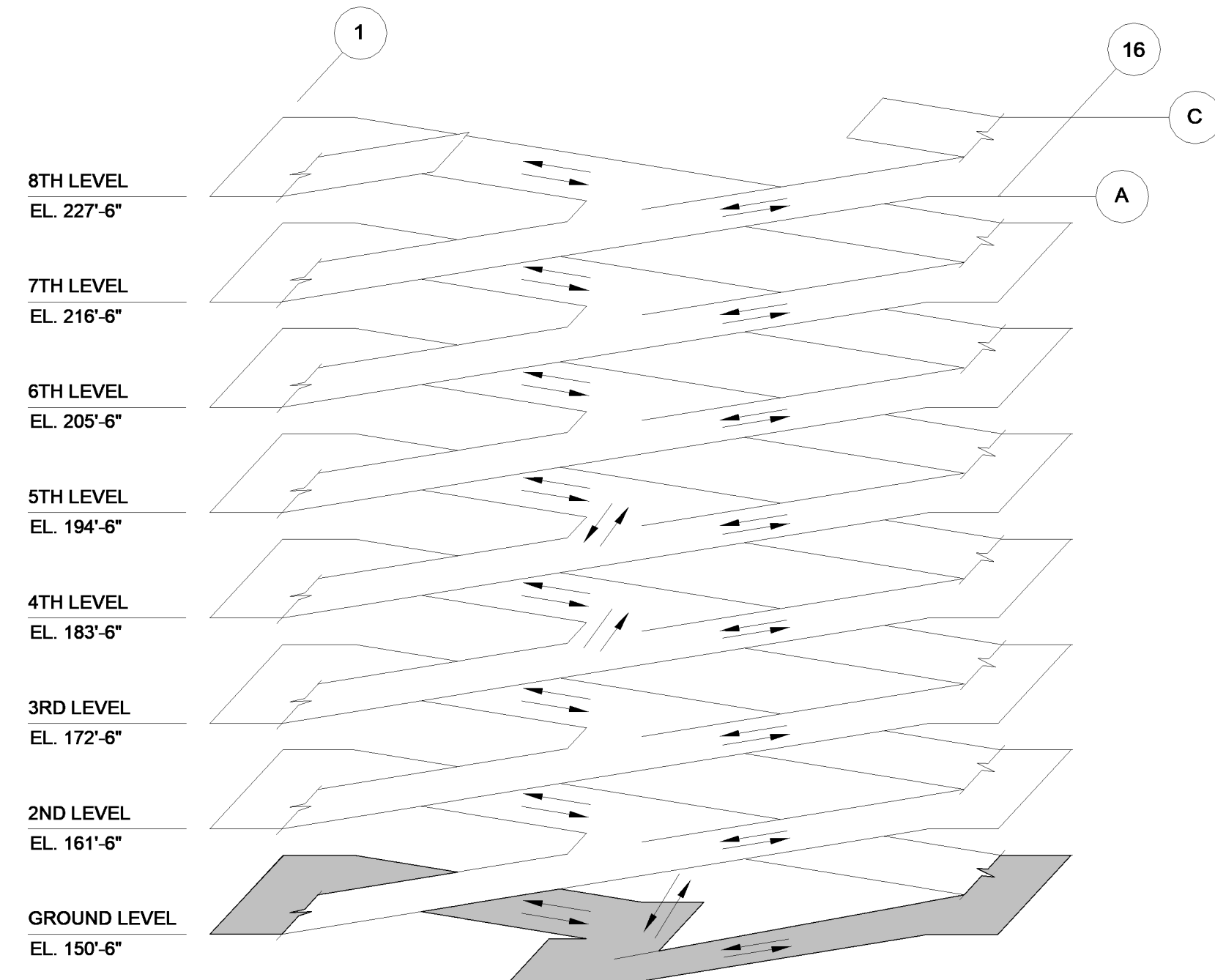
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1 STRUCTURE #4 LEVEL 1 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



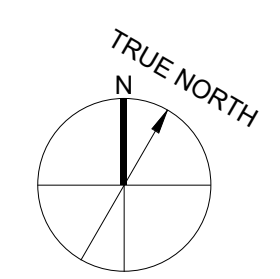
STRUCTURE #4 ISOMETRIC

SHEET NOTES

- REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
- ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
- WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
 - CONCRETE REPAIR - OVERHEAD
 - TRAFFIC TOPPING - RECOAT
 - EXISTING EXPANSION JOINT
 - EXISTING FLOOR DRAIN
- WORK ITEM LEGEND:**
- WORK ITEM NO
 - CLARIFICATION DETAIL NO
 - WORK ITEM NOTE (SEE ABBREVIATIONS)
 - SHEET REFERENCE
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
 - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

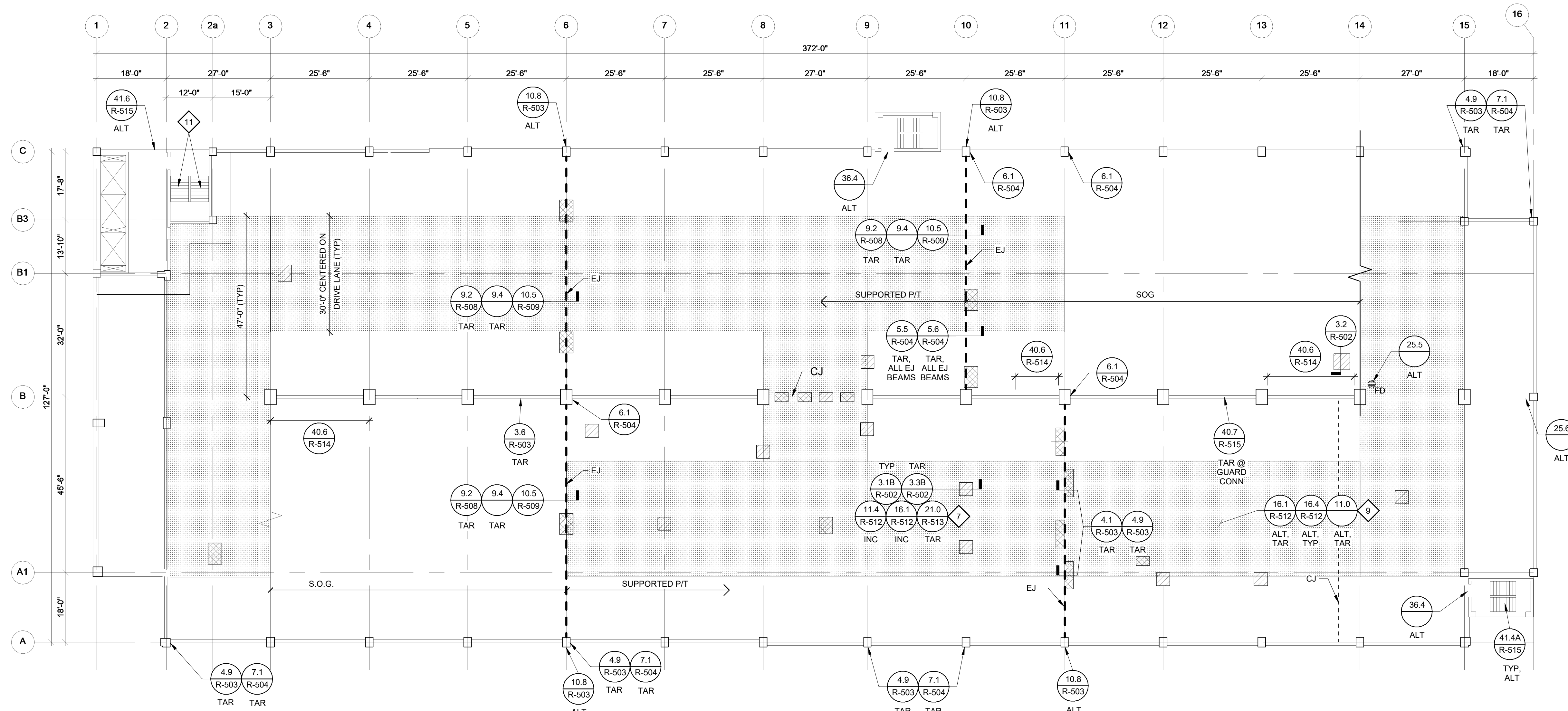
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SHEET TITLE:
STRUCTURE #4
LEVEL 1 FLOOR
PLAN

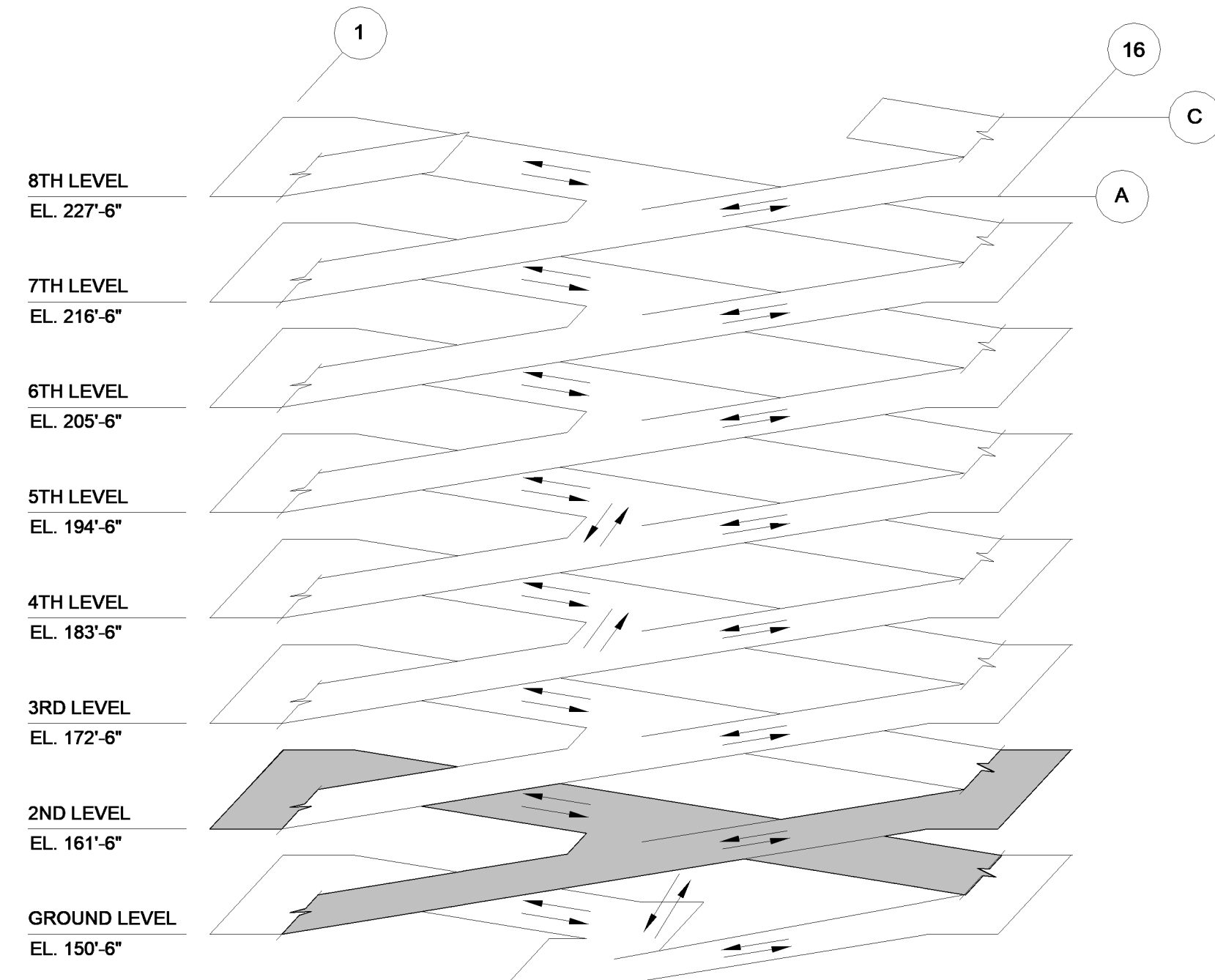
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1 STRUCTURE #4 LEVEL 2 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

SHEET NOTES

- REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
- ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
- WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
 - CONCRETE REPAIR - OVERHEAD
 - TRAFFIC TOPPING - RECOAT
 - EXISTING EXPANSION JOINT
 - EXISTING FLOOR DRAIN
- WORK ITEM LEGEND:
- WORK ITEM NO
 - CLARIFICATION DETAIL NO
 - WORK ITEM NOTE (SEE ABBREVIATIONS)
 - SHEET REFERENCE
- NOTES:
- NOT ALL WORK ITEMS HAVE DETAILS.
 - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

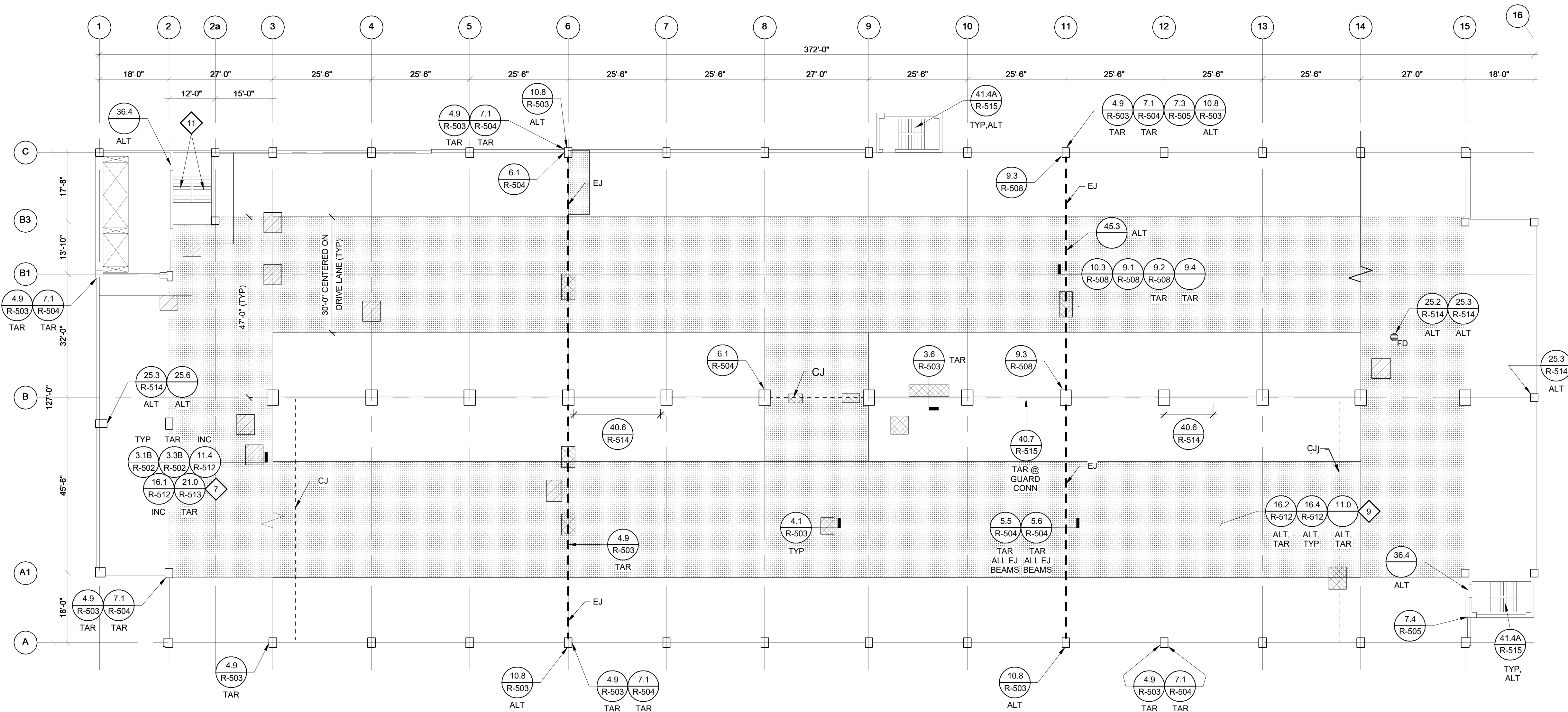


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DETROIT, MICHIGAN

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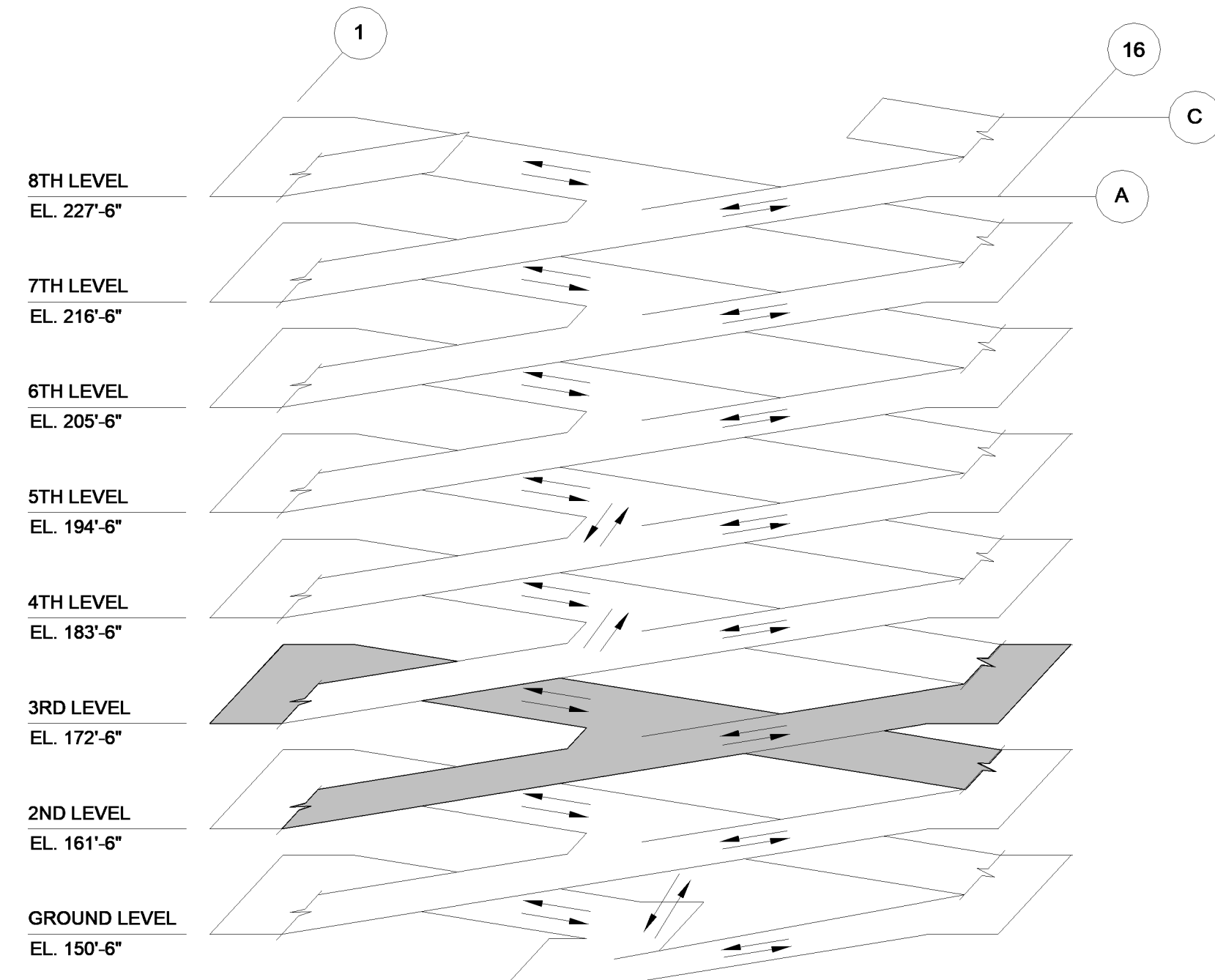
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SHEET TITLE: STRUCTURE #4 LEVEL 2 FLOOR PLAN
R-105

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1 STRUCTURE #4 LEVEL 3 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

SHEET NOTES

- REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONING TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
- ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
- WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
 - CONCRETE REPAIR - OVERHEAD
 - TRAFFIC TOPPING - RECOAT
 - EXISTING EXPANSION JOINT
 - EXISTING FLOOR DRAIN
- WORK ITEM LEGEND:
- WORK ITEM NO
 - CLARIFICATION DETAIL NO
 - WORK ITEM NOTE (SEE ABBREVIATIONS)
 - SHEET REFERENCE
- NOTES:
- NOT ALL WORK ITEMS HAVE DETAILS.
 - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



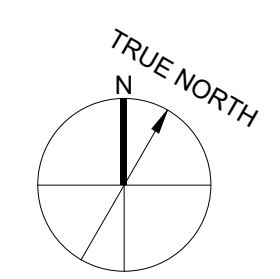
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2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

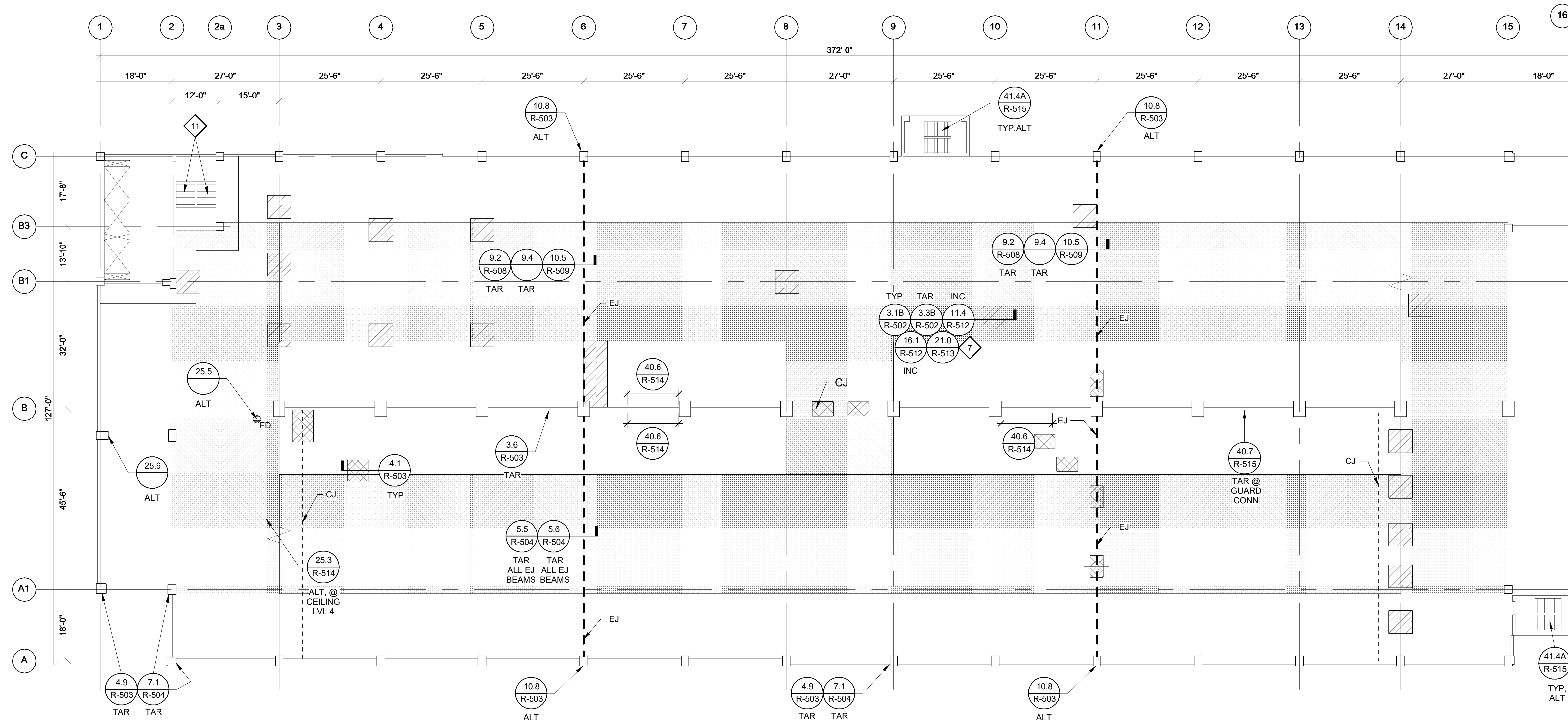
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SHEET TITLE:
STRUCTURE #4
LEVEL 3 FLOOR
PLAN

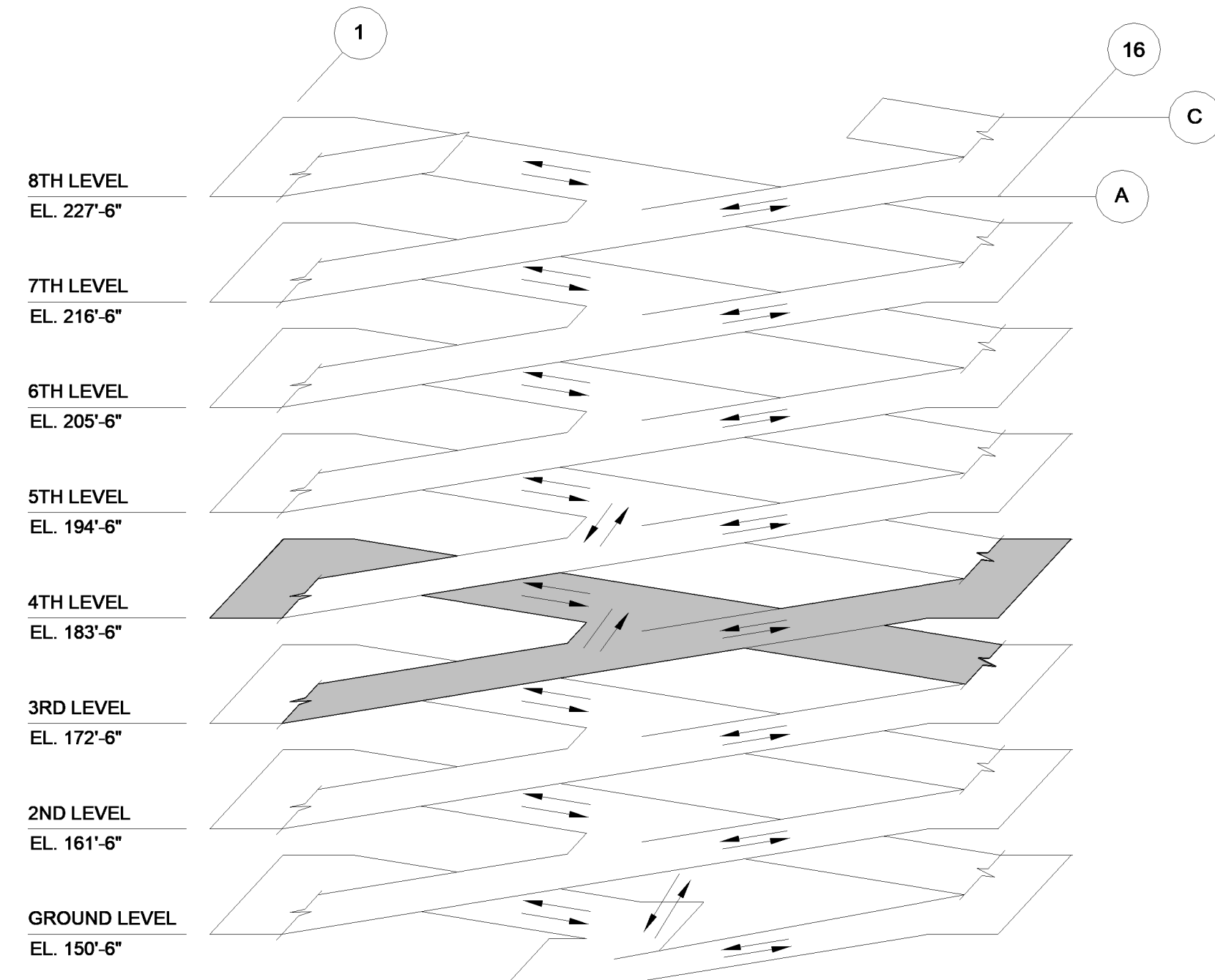
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1 STRUCTURE #4 LEVEL 4 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

SHEET NOTES

- REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
- ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
- WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
 - CONCRETE REPAIR - OVERHEAD
 - TRAFFIC TOPPING - RECOAT
 - EXISTING EXPANSION JOINT
 - EXISTING FLOOR DRAIN
- WORK ITEM LEGEND:**
- WORK ITEM NO
 - CLARIFICATION DETAIL NO
 - WORK ITEM NOTE (SEE ABBREVIATIONS)
 - SHEET REFERENCE
- NOTES:**
- NOT ALL WORK ITEMS HAVE DETAILS.
 - SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

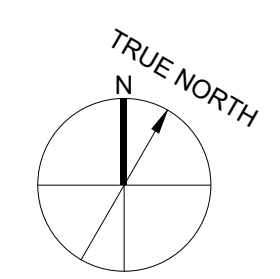
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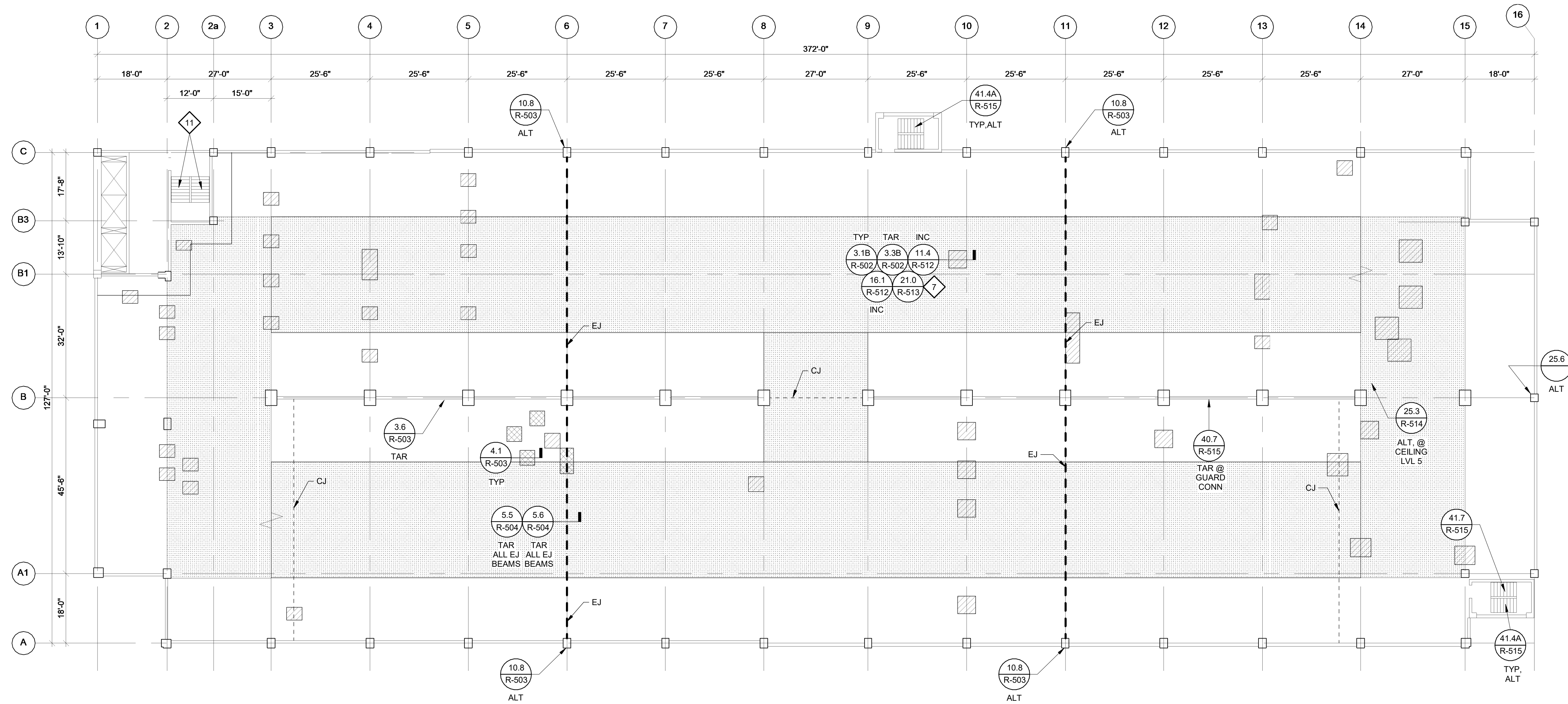
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SHEET TITLE:
STRUCTURE #4
LEVEL 4 FLOOR
PLAN

R-107

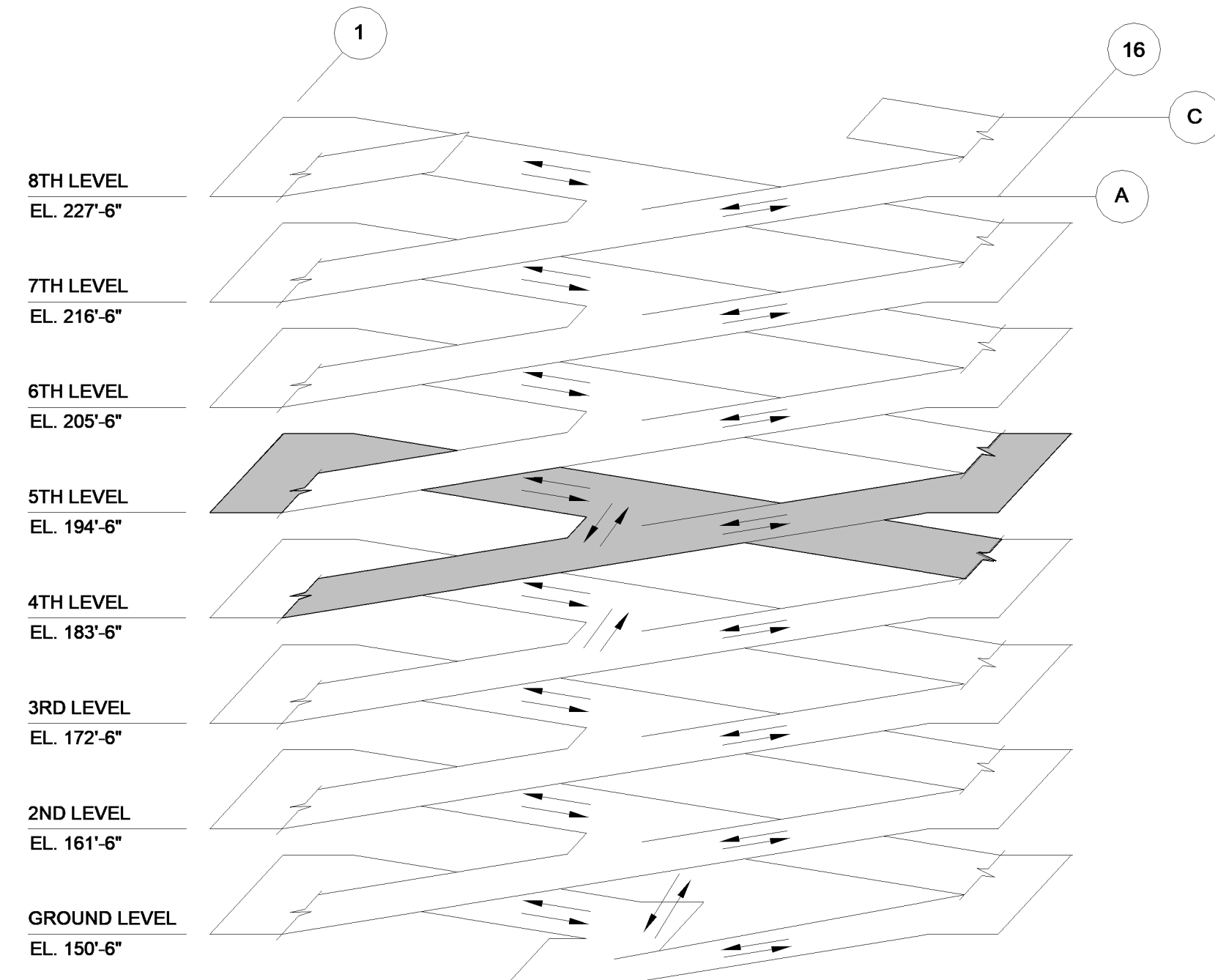


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1 STRUCTURE #4 LEVEL 5 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

SHEET NOTES

1. REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
2. PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
3. REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
4. REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
5. WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
6. SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
7. FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONING TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
8. ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
9. RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
10. SEE SHEET R-002 FOR PHASING NOTES.
11. WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
12. ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
13. WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
14. ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
- CONCRETE REPAIR - OVERHEAD
- TRAFFIC TOPPING - RECOAT
- EXISTING EXPANSION JOINT
- EXISTING FLOOR DRAIN

WORK ITEM LEGEND:

- WORK ITEM NO
- CLARIFICATION DETAIL NO
- WORK ITEM NOTE (SEE ABBREVIATIONS)
- SHEET REFERENCE

NOTES:

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



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2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

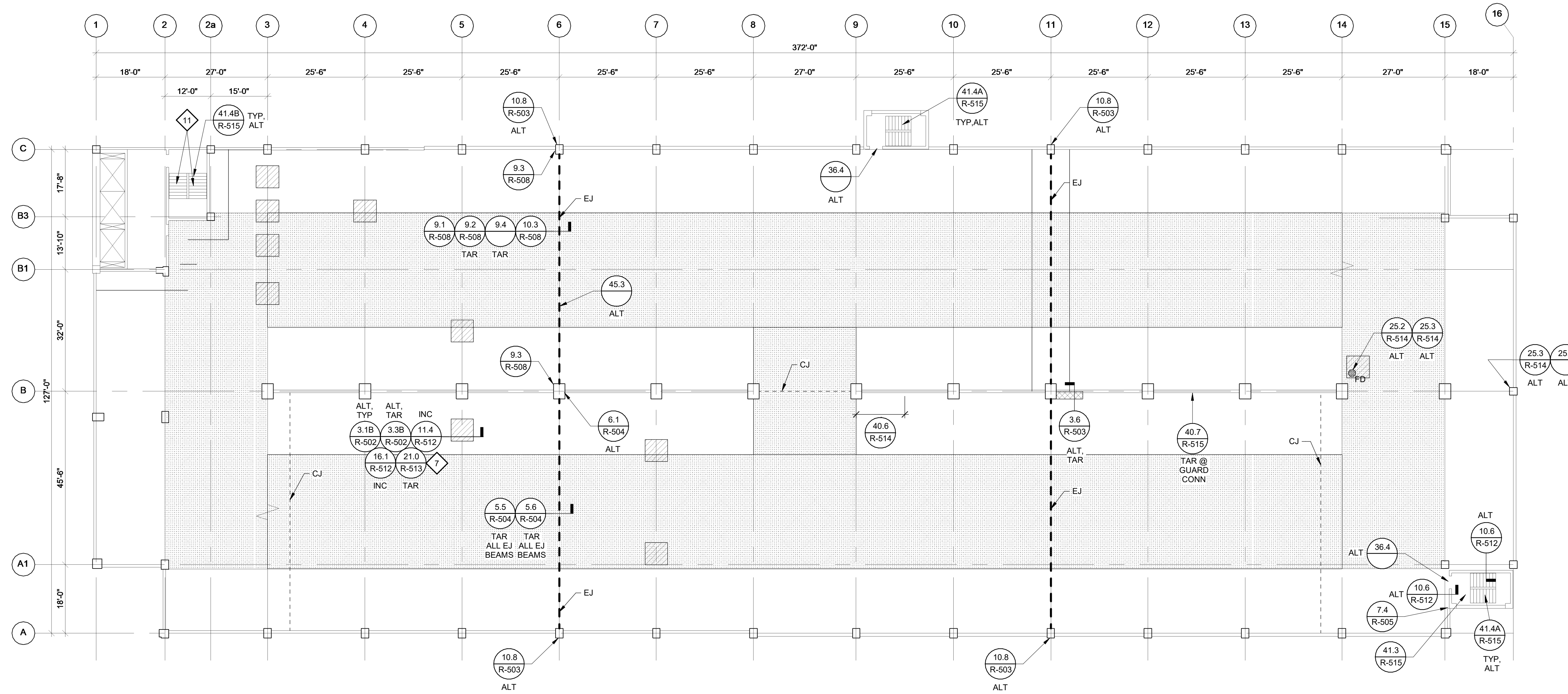
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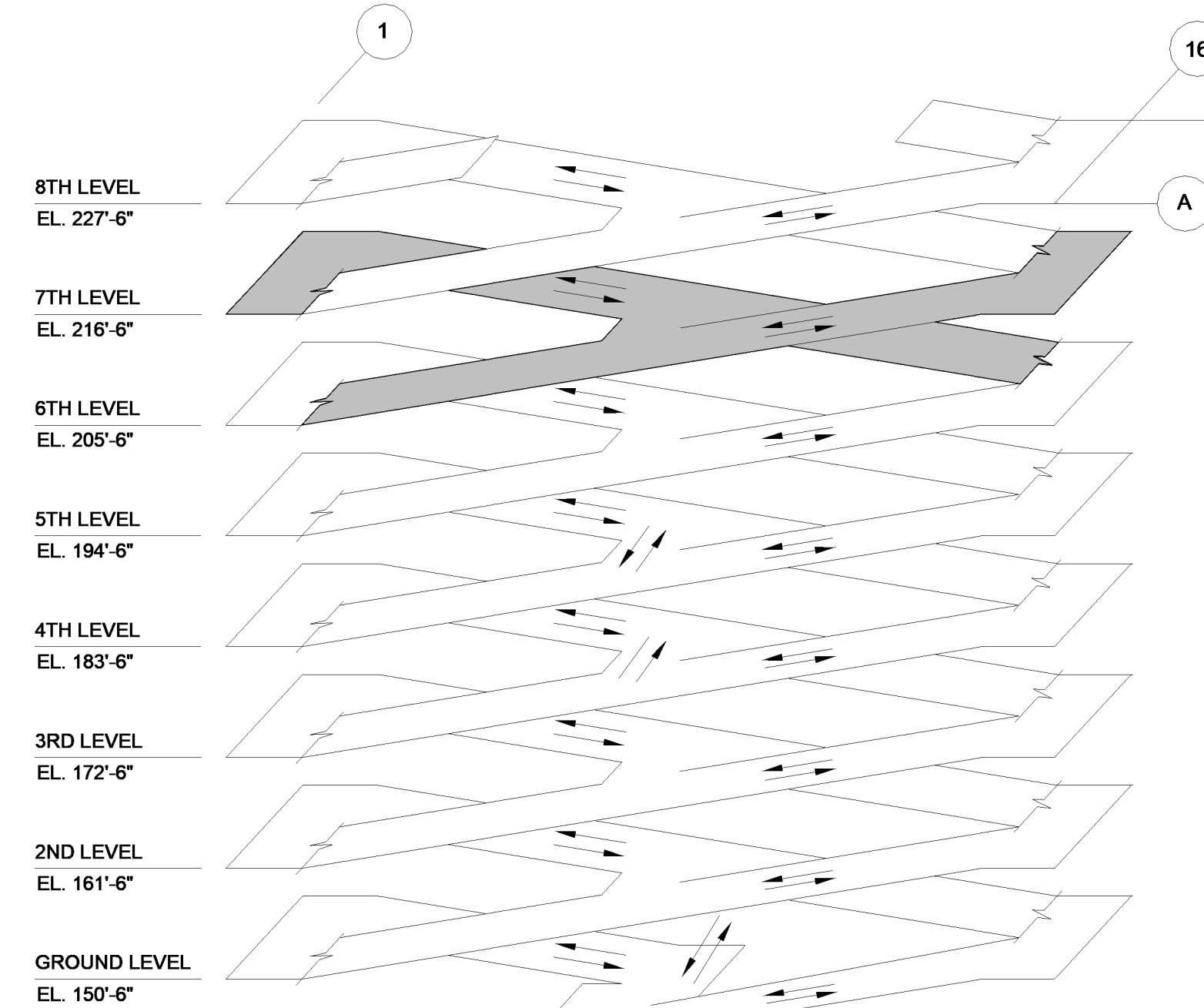
SHEET TITLE:
STRUCTURE #4
LEVEL 5 FLOOR
PLAN
R-108

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1 STRUCTURE #4 LEVEL 7 FLOOR PLAN

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

SHEET NOTES

- REPRESENTATIVE AND GENERAL REPAIR LOCATIONS SHOWN. ACTUAL EXTENT AND EXACT LOCATIONS SHALL BE IDENTIFIED IN FIELD WITH ENGINEER PRIOR TO START OF WORK. INSTALL TEMPORARY SIGNAGE AND BARRICADES AROUND ALL WORK AREAS AND AS REQUIRED PER WORK ITEM 1.5 PRIOR TO START OF WORK.
- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
- ALTERNATE WORK ITEM 16.3: IF ACCEPTED, WORK ITEM SHALL BE USED TO REPAIR MISCELLANEOUS FAILED TRAFFIC TOPPING MEMBRANE THAT OCCURS THROUGHOUT THE STRUCTURE. LOCATE IN FIELD WITH ENGINEER.
- WORK ITEM 45.1: BASE BID SCOPE IS SPOT RESTRIPE AT AREAS AFFECTED BY REPAIR WORK. ALTERNATE SCOPE IS TO RESTRIPE FULL STRUCTURE. IF ALTERNATE IS ACCEPTED, IT WILL REPLACE THE BASE BID ITEM. (NO DOUBLE PAYMENT FOR BASE BID AND ALTERNATE WORK ITEM 45.1) SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.
- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

- CONCRETE REPAIR - FLOOR
- CONCRETE REPAIR - OVERHEAD
- TRAFFIC TOPPING - RECOAT
- EXISTING EXPANSION JOINT
- EXISTING FLOOR DRAIN

WORK ITEM LEGEND:

- WORK ITEM NO
- CLARIFICATION DETAIL NO
- WORK ITEM NOTE (SEE ABBREVIATIONS)
- SHEET REFERENCE

NOTES:

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



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#2 & #4 REPAIRS AND MAINTENANCE
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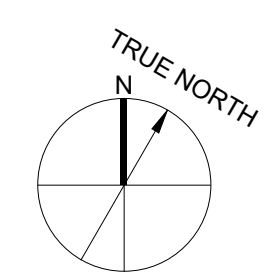
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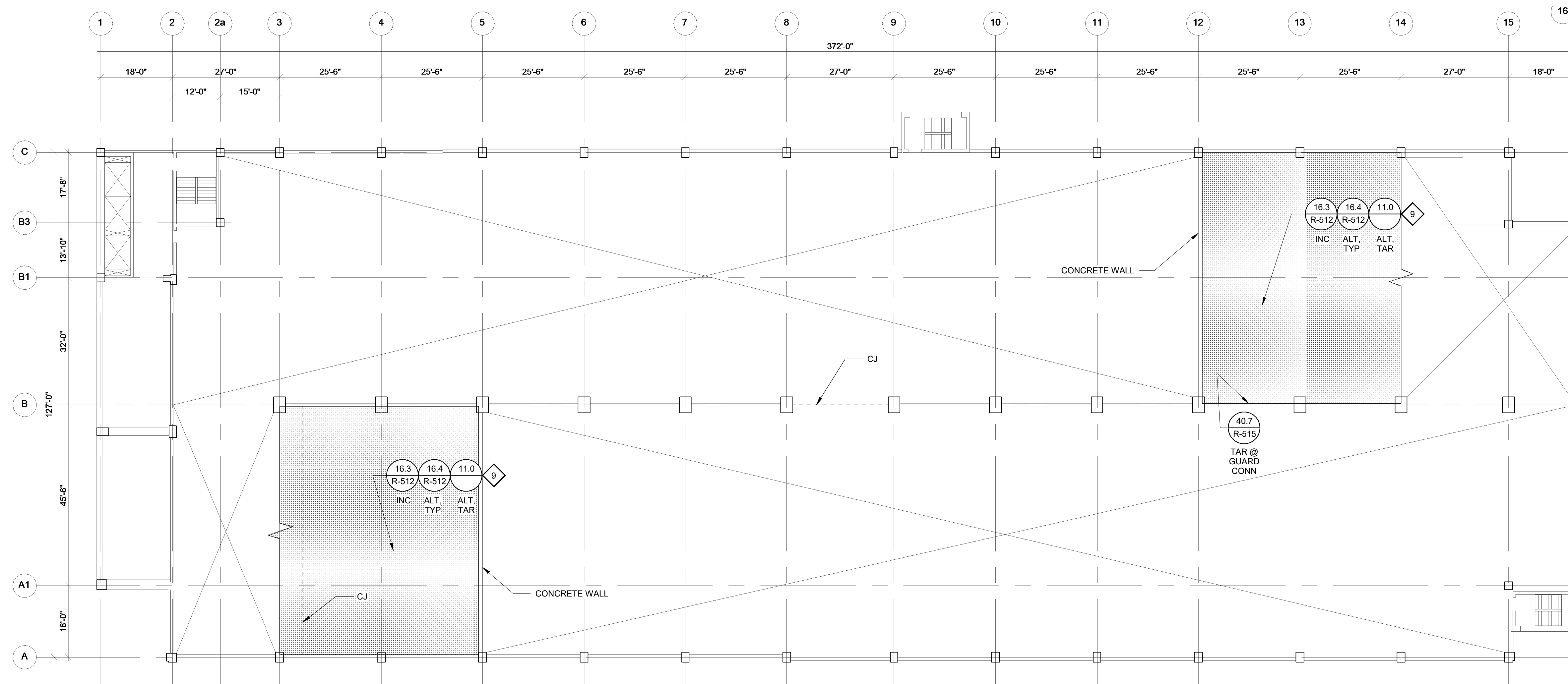
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SHEET TITLE:
STRUCTURE #4
LEVEL 7 FLOOR
PLAN

R-110

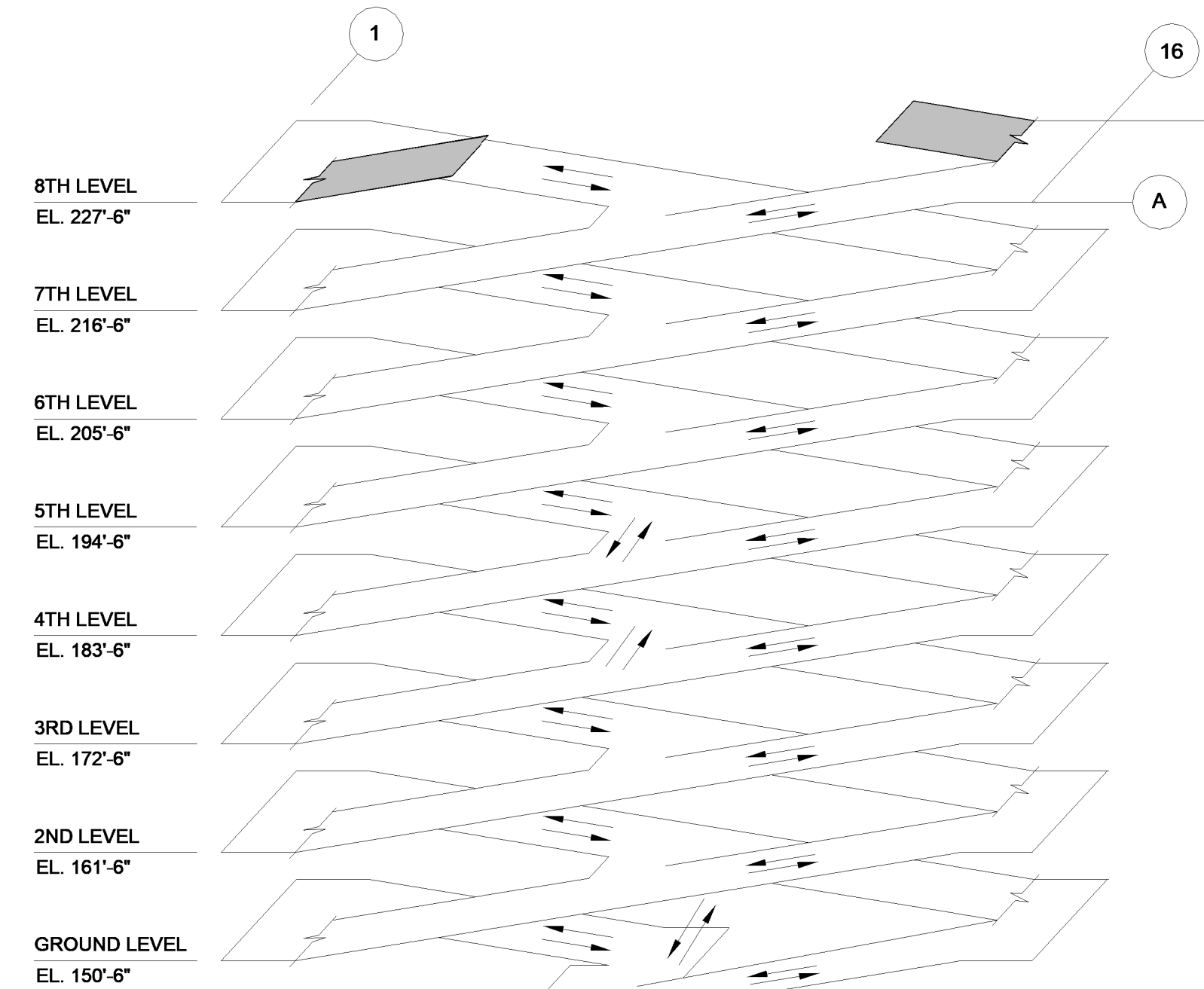


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1 STRUCTURE #4 LEVEL 9 FLOOR PLAN
1/16" = 1'-0"

WARNING: THE FLOOR SLAB HAS POST-TENSIONING TENDONS NEAR BOTH SURFACES OF THE SLAB. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE SLAB SO AS NOT TO DAMAGE THE TENDONS OR TENDON SHEATHING. TENDONS MAY BREAK WITH EXPLOSIVE FORCE WHEN CUT. NO ANCHORS MAY BE DRILLED OR SHOT INTO THE SLAB WITHOUT FIRST LOCATING THE TENDONS AND THEN THE ANCHORS CAN NOT BE MORE THAN 1" LONG.



STRUCTURE #4 ISOMETRIC

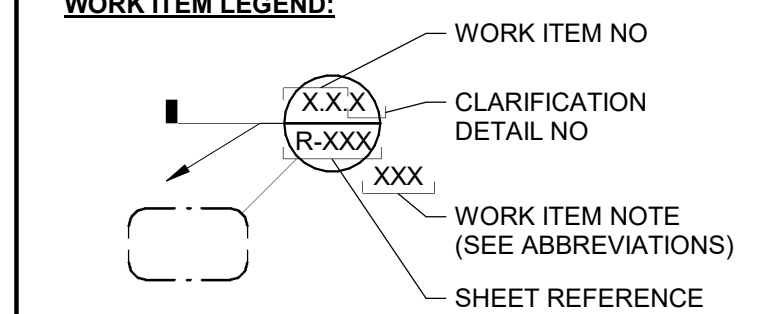
SHEET NOTES

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- PERFORM SEALANT WORK (WORK ITEM'S 11.1, 11.2, 11.4 & 11.7) IN TRAFFIC TOPPING REPAIR AREAS AS NEEDED.
- REPLACE ALL TRAFFIC MARKINGS THROUGHOUT STRUCTURE PER WORK ITEM 45.1. SEE SECTION 020010 FOR SPECIFIC REQUIREMENTS.
- REMOVE ALL LOOSE SECTIONS OF OVERHEAD CONCRETE THROUGHOUT ENTIRE STRUCTURE PER WORK ITEM 4.9 AT START OF PROJECT. INCLUDES EXTERIOR FACADE.
- WORK ITEM'S 3.6, 4.1, 5.5, & 5.6 OCCUR ON UNDERSIDE OF LEVEL SHOWN (TYP). REMAINING WORK ITEMS OCCUR ON TOPSIDE OF LEVEL SHOWN.
- SLAB ON GROUND CONTAINS EMBEDDED CONDUIT/WIRING. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. PROCEED WITH CAUTION TO NOT NICK, CUT, OR DAMAGE.
- FLOOR SLABS CONTAIN EMBEDDED POST-TENSIONED TENDONS. EMBEDDED CONDUIT/WIRING IS PRESENT IN THE SLAB-ON-GRADE CONCRETE. LOCATE PRIOR TO START OF WORK & PERFORM CONCRETE REMOVALS WITH CAUTION TO NOT DAMAGE. NOTIFY ENGINEER OF ANY P/T SYSTEM DETERIORATION UNCOVERED. PERFORM P/T REPAIRS AS NEEDED PER WORK ITEM SERIES 21.0.
- ALL CONCRETE DEMO & PLACEMENT, AND ALL P/T SYSTEM RELATED WORK AND REPAIRS SHALL BE PERFORMED & SUPERVISED BY FIRM CERTIFIED BY PTL.
- RESEAL JOINTS/CRACKS PER WORK ITEM SERIES 11.0 WHEN EXPOSED DURING TRAFFIC TOPPING REMOVAL OPERATIONS.
- SEE SHEET R-002 FOR PHASING NOTES.
- WORK ITEM 4.9: REMOVE LOOSE RUST SCALE FROM UNDERSIDE OF STAIR TREADS, TYPICAL.
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- ALTERNATE WORK ITEM'S 3.13, 21.6, AND 21.7 SHALL BE USED, IF NEEDED, TO ACCOMMODATE ADDITIONAL POST-TENSIONING REPAIR WORK ASSOCIATED WITH WORK ITEM 10.5 IF THE SLAB POST-TENSIONING DIFFERS FROM THAT ANTICIPATED. SEE SPECIFICATION SECTION 020010 FOR ADDITIONAL INFORMATION.

LEGEND

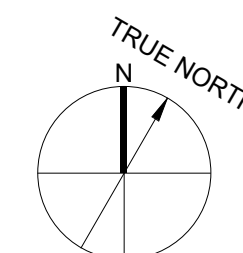
- CONCRETE REPAIR - FLOOR
- CONCRETE REPAIR - OVERHEAD
- TRAFFIC TOPPING - RECOAT
- EXISTING EXPANSION JOINT
- EXISTING FLOOR DRAIN

WORK ITEM LEGEND:



NOTES:

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



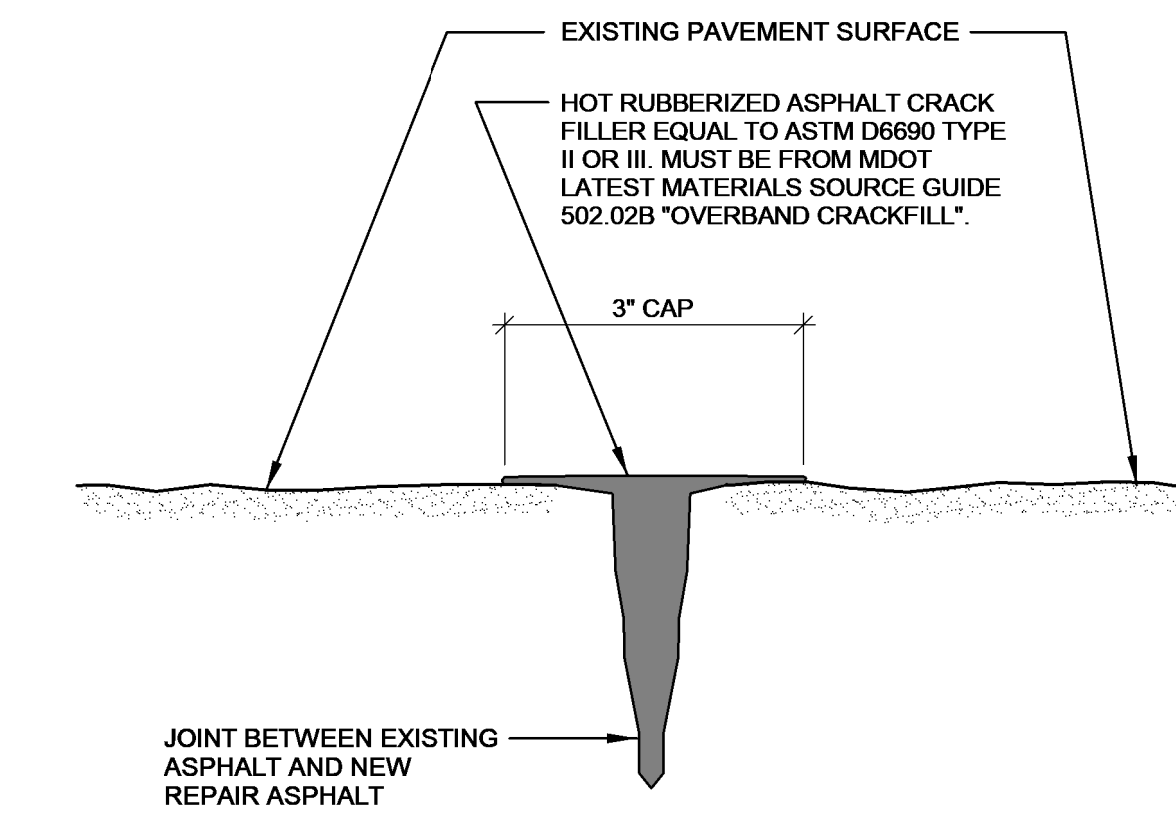
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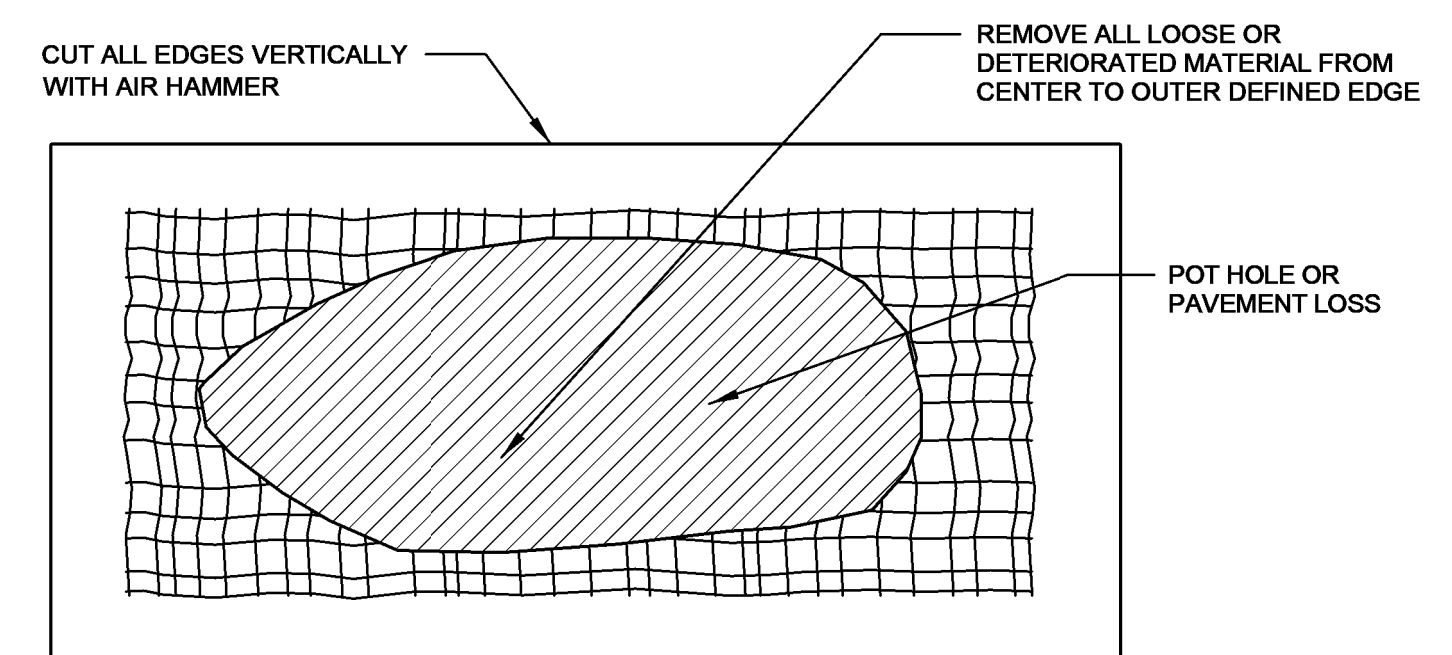
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STRUCTURE #4
LEVEL 9 FLOOR
PLAN
R-112

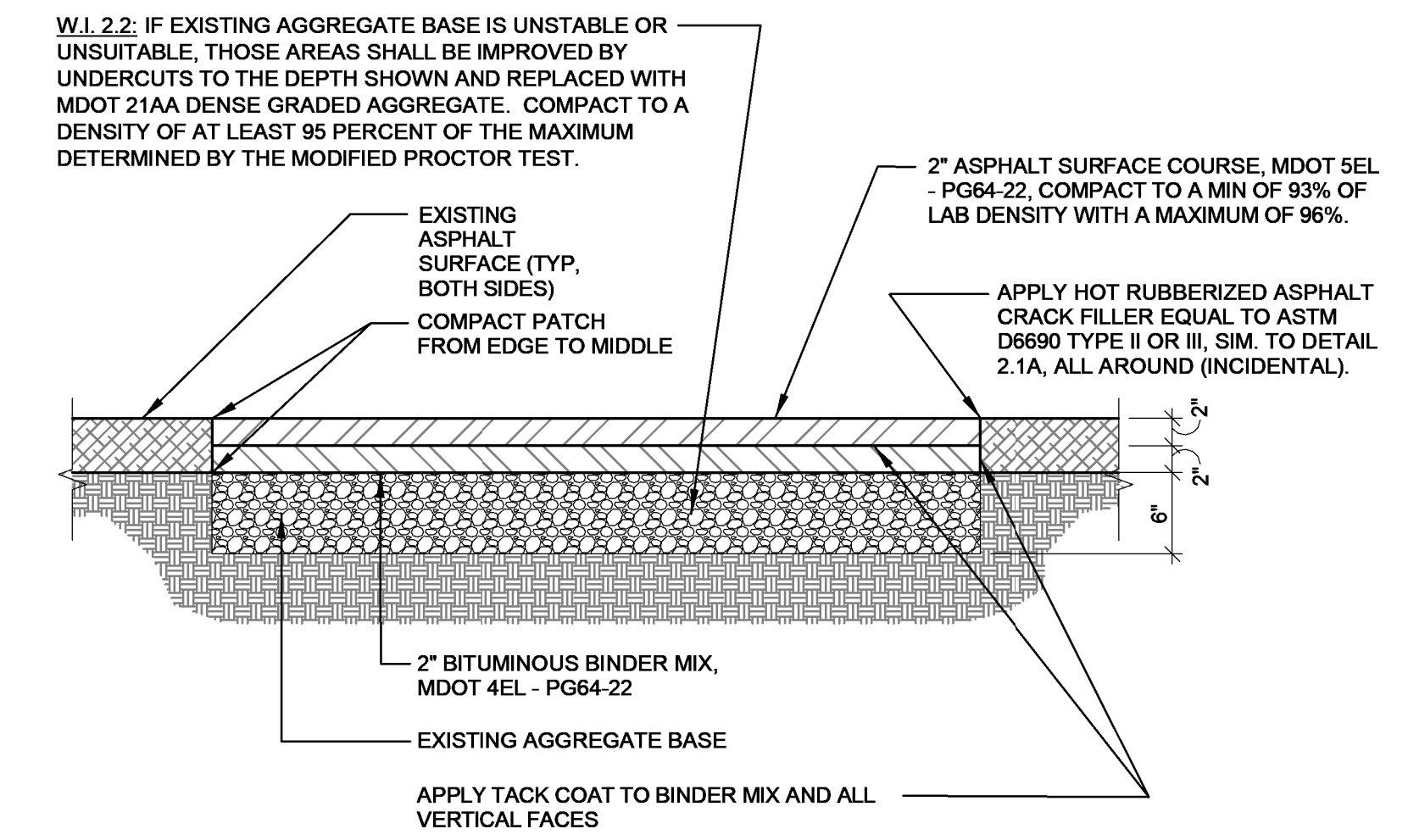


PAVEMENT REPAIR - CRACK SEAL
(FOR REFERENCE ONLY)

2.1A (PS #2)



PLAN



SECTION

W.I. 2.2: IF EXISTING AGGREGATE BASE IS UNSUITABLE OR UNSUITABLE, THOSE AREAS SHALL BE IMPROVED BY UNDERCUTS TO THE DEPTH SHOWN AND REPLACED WITH MDT 21AA DENSE GRADED AGGREGATE. COMPACT TO A DENSITY OF AT LEAST 95 PERCENT OF THE MAXIMUM DETERMINED BY THE MODIFIED PROCTOR TEST.

- NOTES:**
1. ALL REPAIR AREAS TO BE A MINIMUM DEPTH OF 4" ± 1/2".
 2. BINDER AND SURFACE COURSE TO MEET REQUIREMENTS OF MDT SECTION 501.
 3. SLOPE OF PATCHED AREA SHALL BE DESIGNED TO AVOID ANY WATER PONDING IN REPAIR PATCH OR SURROUNDING AREAS.
 4. CONTRACTOR SHALL MAINTAIN PROPER DRAINAGE TO SURFACE LOT ACROSS REPAIRED AREAS.
 5. FIRST FLOOR CLEAR HEIGHT = 84". ENSURE ALL MACHINES USED ARE BELOW THE STATED CLEAR HEIGHT.

2.1 PAVEMENT REPAIR - FULL DEPTH
(PS #2)

2.2 PAVEMENT REPAIR - AGGREGATE BASE
(PS #2)

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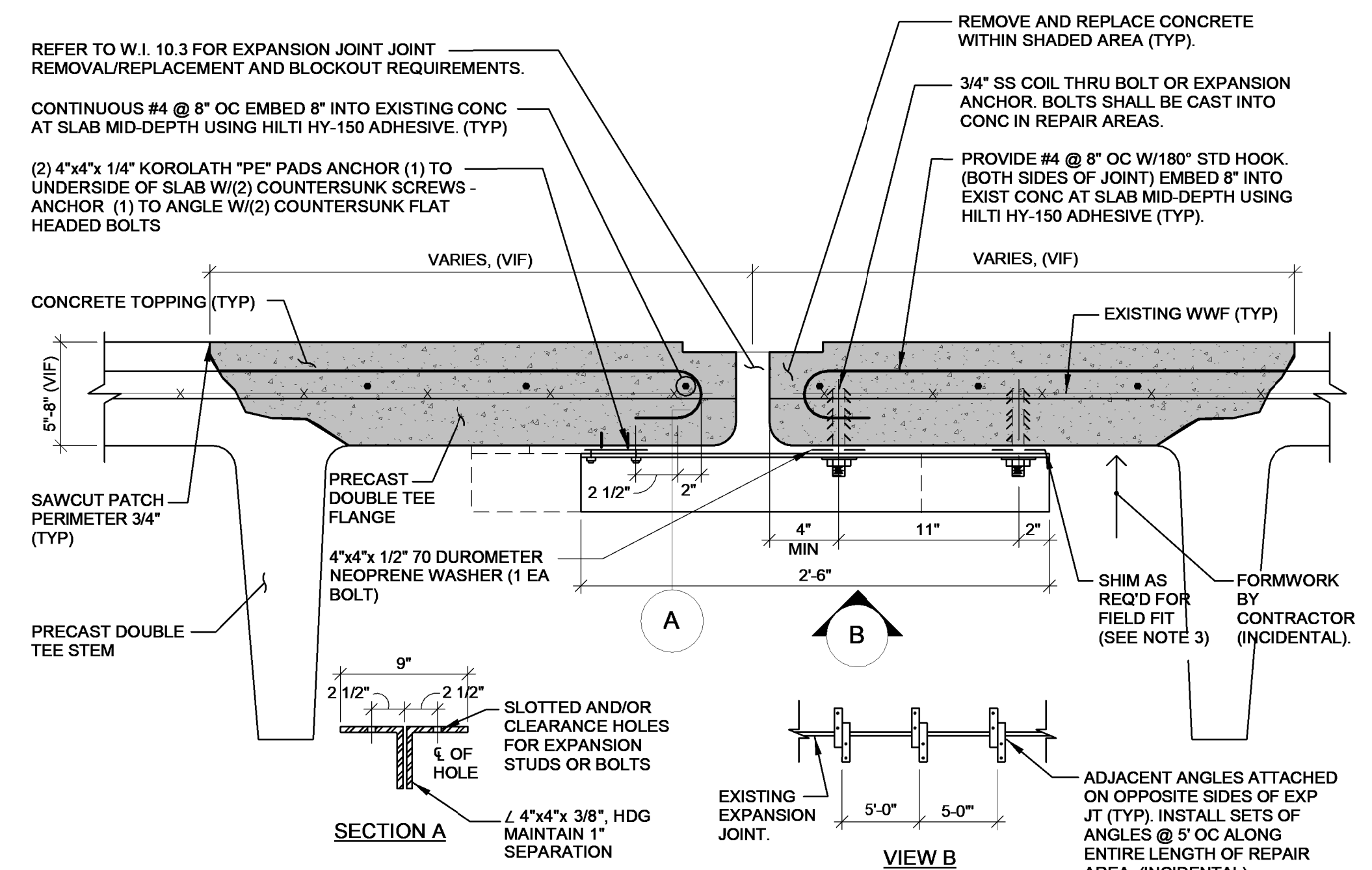
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SHEET TITLE:
REPAIR DETAILS

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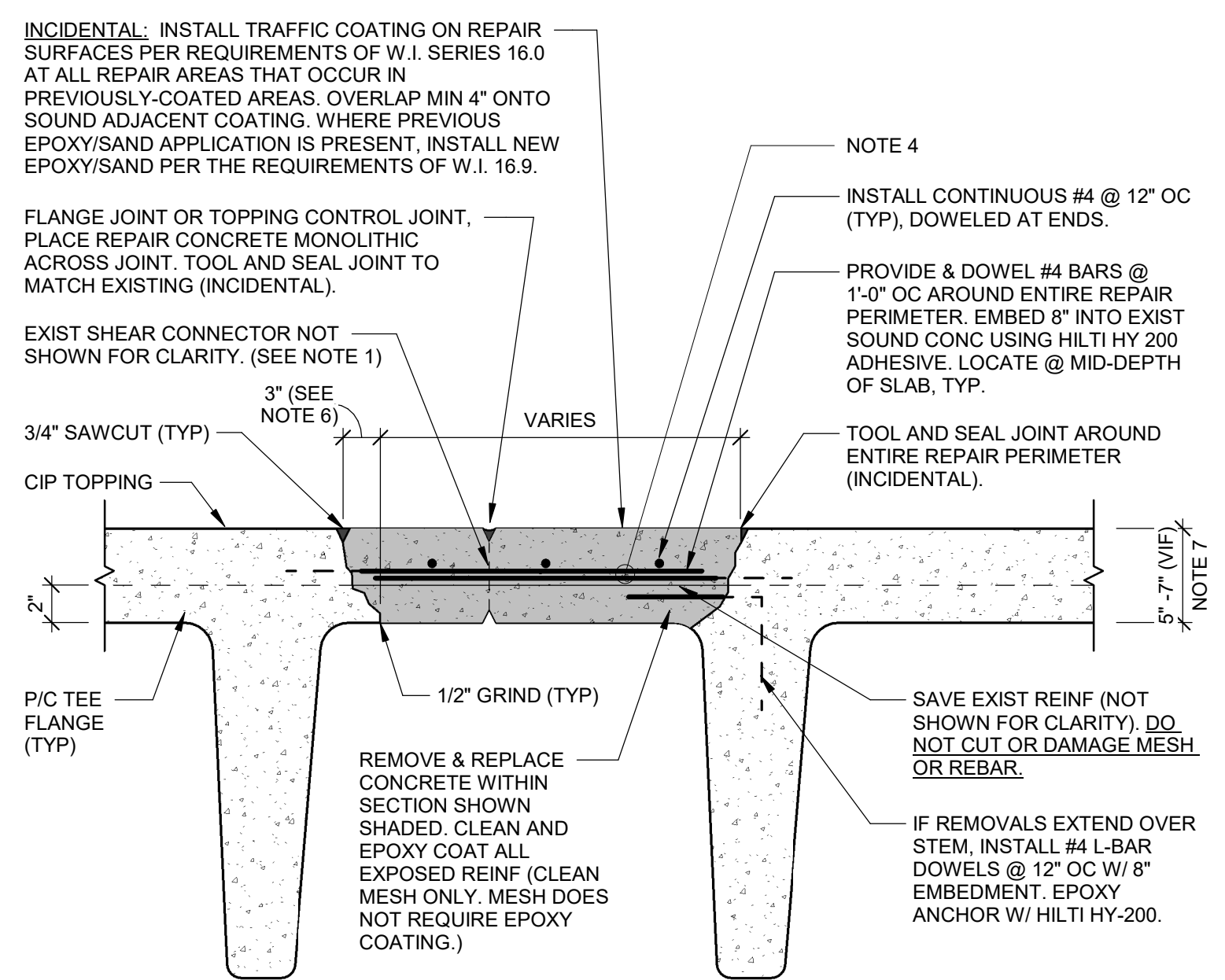
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 SHEET TITLE: REPAIR DETAILS
 R-502



- NOTES:**
- ANGLES SHALL BE ACCURATELY ALIGNED WITH THE DIRECTION OF MOVEMENT (PERPENDICULAR TO JOINT) TO ALLOW FREE MOVEMENT.
 - ANGLES AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED.
 - USE GALVANIZED STEEL SHIMS AS REQ'D FOR FIELD FIT. SHIM STACK TO BE TACK WELDED INTO SINGLE UNIT.
 - CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING STEEL ANGLES THAT OCCUR WITHIN THE REPAIR AREA (INCIDENTAL).
 - CONCRETE SURFACE PREPARATION SHALL BE PERFORMED TO ENGINEERS SATISFACTION PRIOR TO INSTALLING REINFORCEMENT (INCIDENTAL).
 - LOCATE REPAIRS IN FIELD WITH ENGINEER PRIOR TO START OF WORK.
 - PERFORM ANY DRILLING REQUIRED FOR GALVANIZED ANGLE INSTALLATION IN A MANNER TO MINIMIZE CONCRETE SPALLING. ALL SPALLING CREATED SHALL BE REPAIRED BY CONTRACTOR TO ENGINEER'S SATISFACTION AT NO ADDITIONAL COST TO OWNER.

FLOOR REPAIR - FULL DEPTH AT EXPANSION JOINT

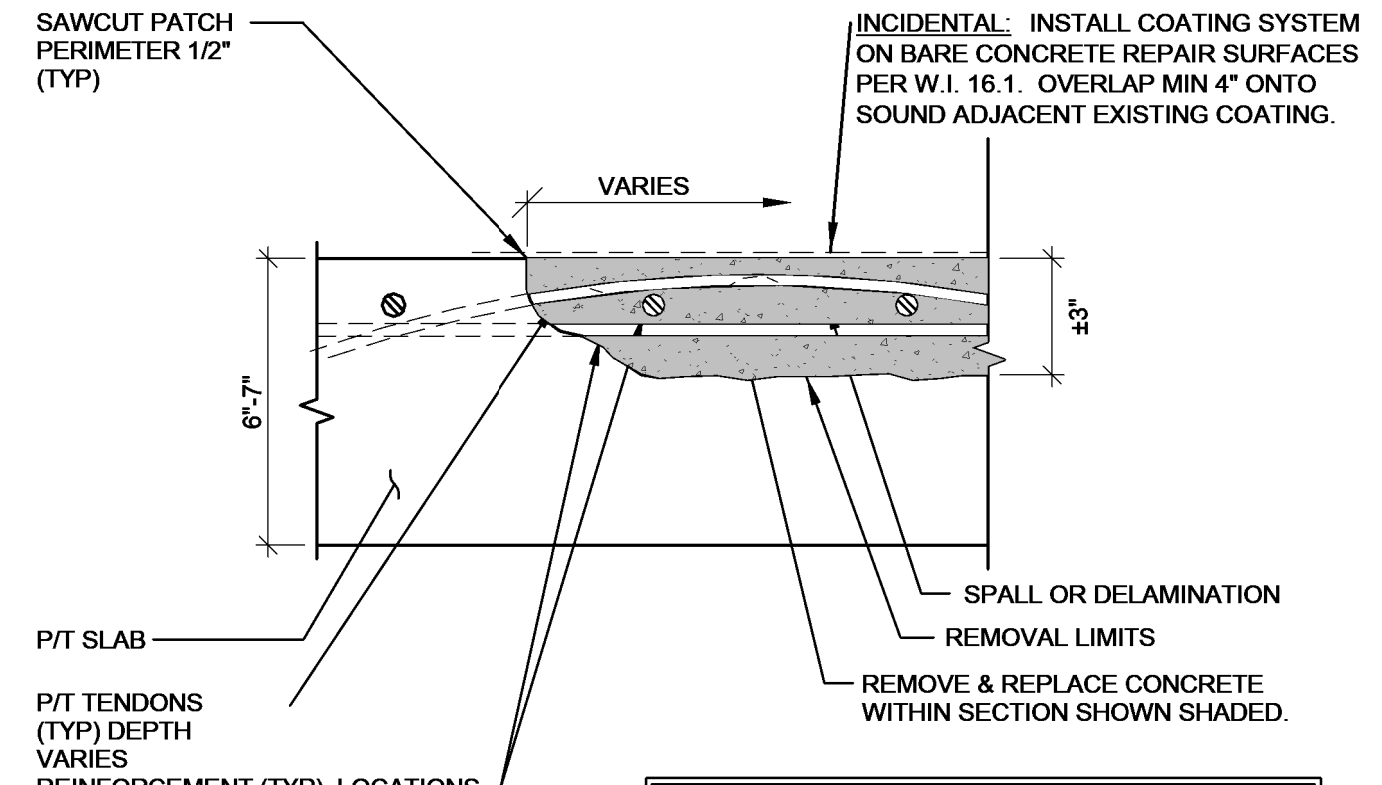
3.3D (PS #2)



- NOTES:**
- SANDBLAST AND EPOXY COAT ALL BROKEN TEE FLANGE SHEAR CONNECTORS, (OR REMOVE) AND EPOXY ANCHOR (2) ADDITIONAL #4 BY 3'-0\"/>
 - PROVIDE 1 1/2\"/>
 - REINFORCING STEEL INSTALLATION REQUIRED ON THIS DETAIL IS INCIDENTAL TO THIS WORK ITEM.
 - MINIMUM LAP SPLICE FOR #4 BARS IS 20\"/>
 - CAUTION: JUNCTION BOXES AND CONDUIT / WIRING ARE PRESENT IN TOPPING CONCRETE. LOCATE CONDUIT PRIOR TO START OF WORK AND PERFORM REMOVALS IN MANNER TO NOT DAMAGE. COORDINATE WITH WSU TO POWER OFF CIRCUITS PRIOR TO START OF WORK. PERFORM ANY NECESSARY ELECTRICAL REPAIRS UNDER ALLOWANCE WORK ITEM 25.1. TEST AND CONFIRM ALL CIRCUITS AND LIGHTS ARE WORKING PRIOR TO PLACING CONCRETE.
 - PERFORM FULL DEPTH REMOVALS TO MAINTAIN AN INWARD ANGLE AROUND THE REPAIR PERIMETER AS SHOWN.
 - ACTUAL THICKNESS OF SLAB VARIES. CONTRACTOR RESPONSIBLE FOR REMOVAL DEPTHS UP TO 7\"/>

FLOOR REPAIR - FULL DEPTH (P/C FIELD-TOPPED)

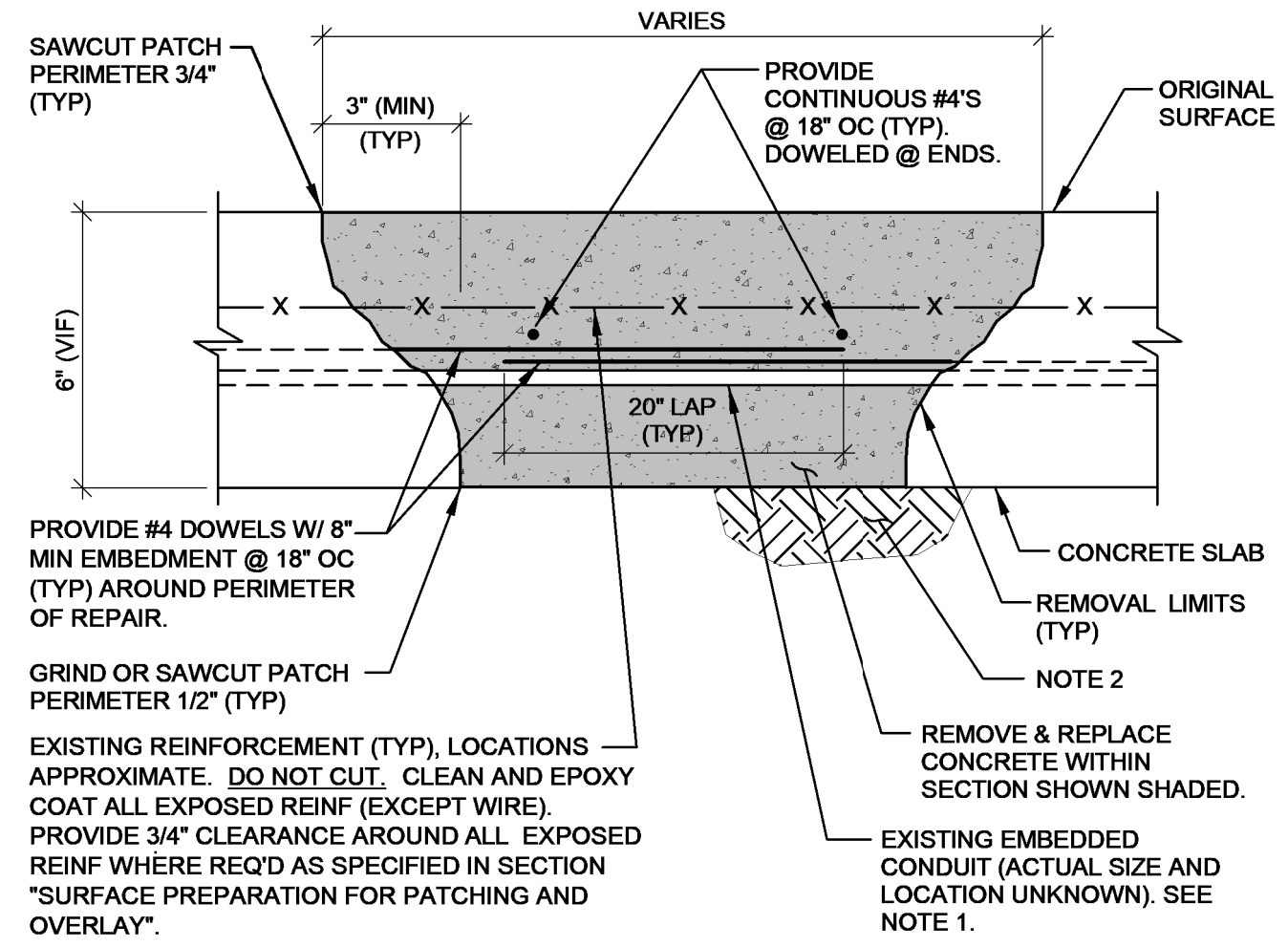
3.3A (PS #2) (BASE BID AND ALTERNATE)



- NOTES:**
- REFER TO DETAIL SERIES 21.0 FOR P/T REPAIR REQUIREMENTS.
 - SPACING & LOCATION OF P/T TENDONS UNKNOWN. CONTRACTOR TO VERIFY IN FIELD.
 - P/T TENDONS AND ANCHORS EXIST IN SLAB (NOT SHOWN ABOVE). USE CAUTION DURING REMOVALS NOT TO DAMAGE P/T SYSTEM ELEMENTS. CONTRACTOR CAUSED DAMAGE TO P/T SYSTEM SHALL BE REPAIRED BY CONTRACTOR AT NO COST TO THE OWNER.
 - EMBEDDED CONDUIT MAY BE ENCOUNTERED IN SLAB, LOCATE PRIOR TO REMOVALS. USE CAUTION DURING REMOVALS NOT TO DAMAGE.
 - SANDBLAST AND PREPARE REPAIR SURFACES PER REQUIREMENTS OF SECTION *025140*.
 - TOOL AND SEAL CONTROL JOINTS IN REPAIR AREAS AS NEEDED TO MATCH EXISTING JOINT LAYOUT PER WORK ITEM 11.4.

FLOOR REPAIR - PARTIAL DEPTH (P/T)

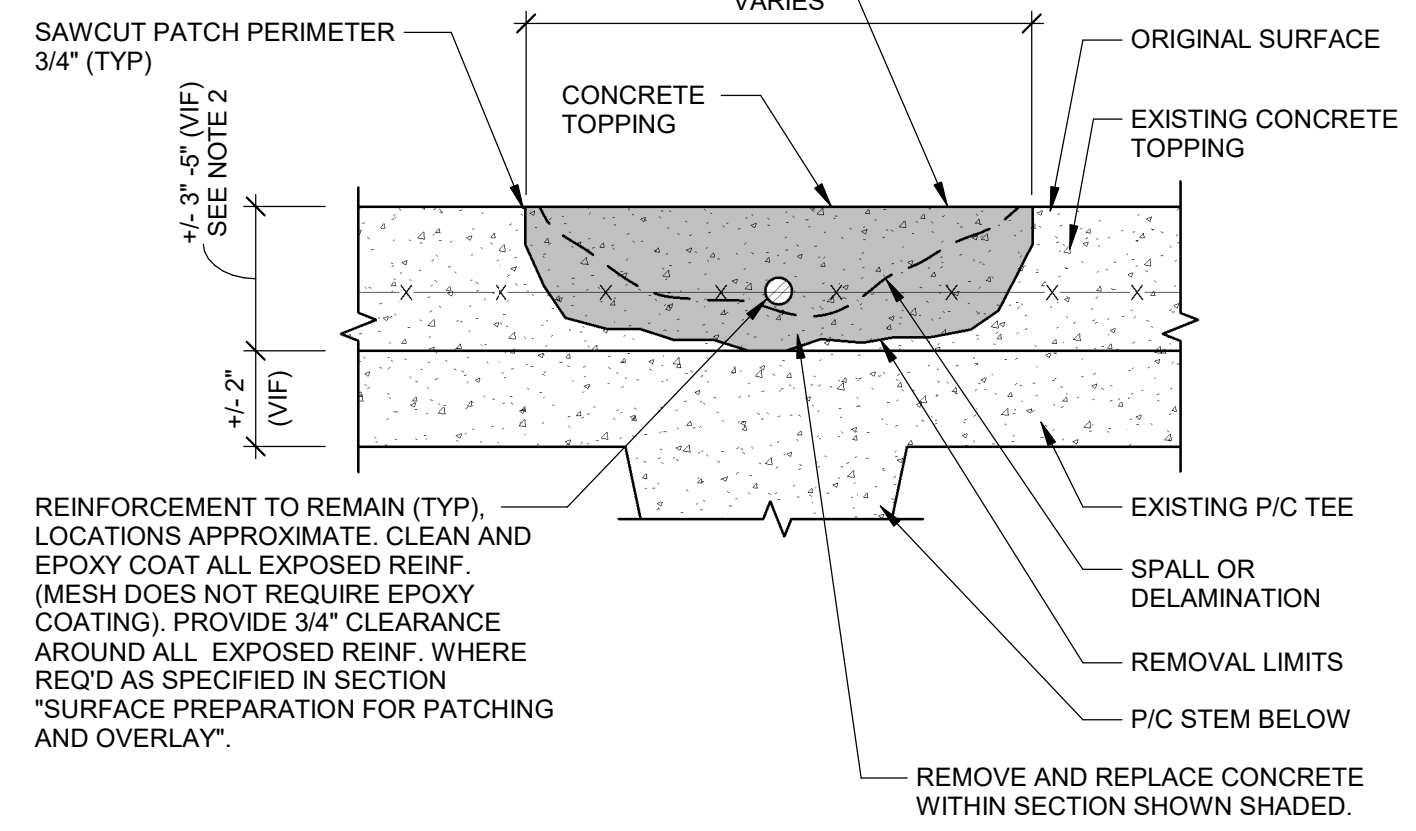
3.1B (PS #4) (BASE BID AND ALTERNATE)



- NOTES:**
- LOCATE EXISTING EMBEDDED CONDUIT / WIRING PRIOR TO START OF REMOVALS. PROCEED WITH CAUTION TO NOT DAMAGE, CUT OR NICK.
 - CONTRACTOR SHALL PROVIDE/REMOVE FILL AS NECESSARY & COMPACT PRIOR TO POURING CONCRETE. (INCIDENTAL TO THIS WORK)

FLOOR REPAIR - SLAB-ON-GRADE

3.2 (PS #4)



- NOTES:**
- PROVIDE TOOLED JOINTS IN REPAIR AREAS AS REQUIRED TO MAINTAIN EXISTING JOINT LAYOUT PER WORK ITEM 11.4.
 - ACTUAL DEPTH OF REQUIRED REMOVALS VARIES. CONTRACTOR RESPONSIBLE FOR REMOVAL DEPTHS UP TO 5\"/>
 - CAUTION: JUNCTION BOXES AND CONDUIT / WIRING MAY BE PRESENT IN TOPPING CONCRETE. LOCATE PRIOR TO START OF WORK AND PERFORM REMOVALS IN MANNER TO NOT DAMAGE EMBEDDED CONDUIT / WIRING. COORDINATE WITH WSU TO POWER OFF CIRCUITS PRIOR TO START OF WORK. PERFORM ANY NECESSARY ELECTRICAL REPAIRS UNDER ALLOWANCE WORK ITEM 25.1. TEST AND CONFIRM ALL CIRCUITS AND LIGHTS ARE WORKING PRIOR TO PLACING CONCRETE.

FLOOR REPAIR - PARTIAL DEPTH (PC FIELD-TOPPED)

3.1A (PS #2) (BASE BID AND ALTERNATE)

FLOOR REPAIR - FULL DEPTH (P/T)

3.3B (PS #4) (BASE BID AND ALTERNATE)

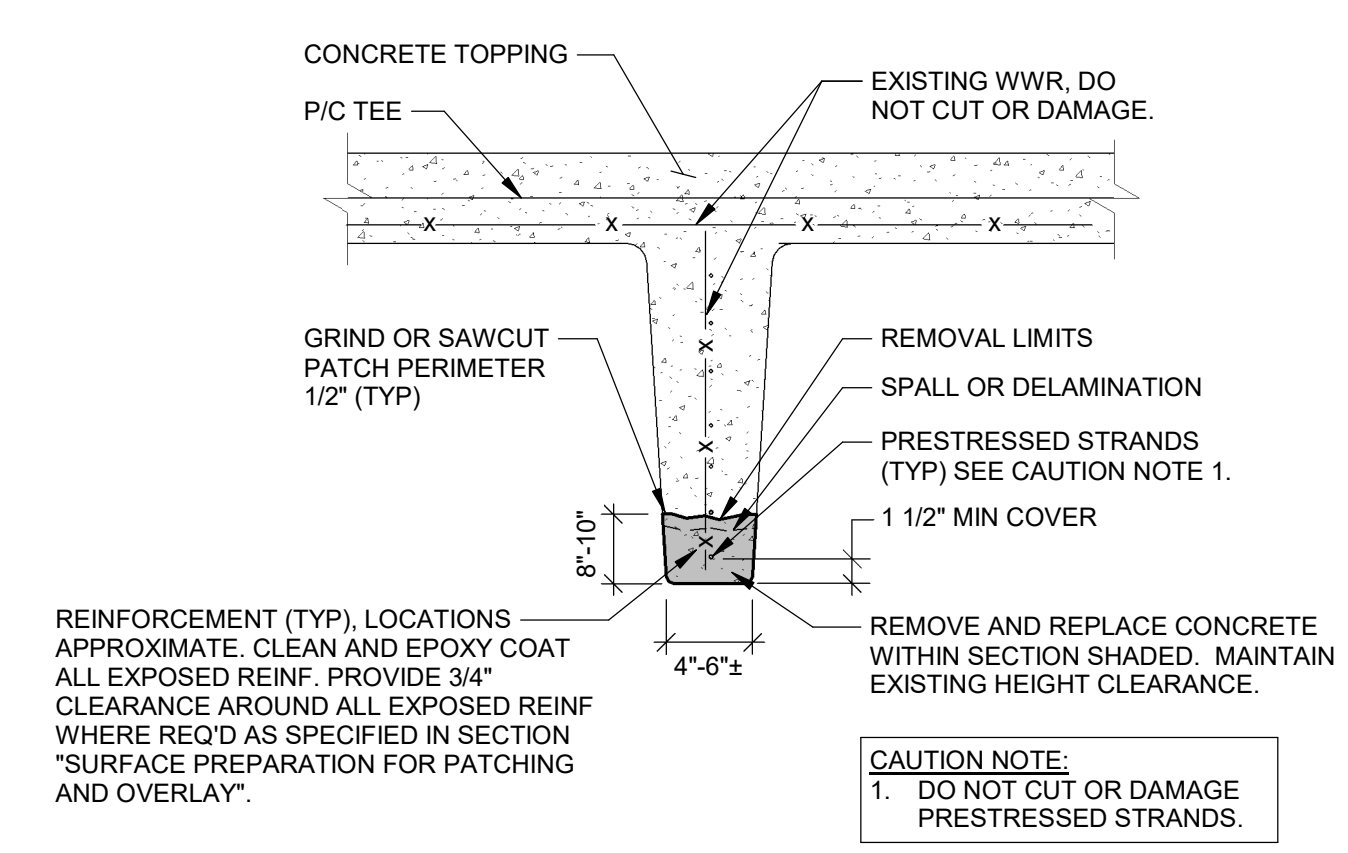
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SHEET TITLE:
REPAIR DETAILS

R-505

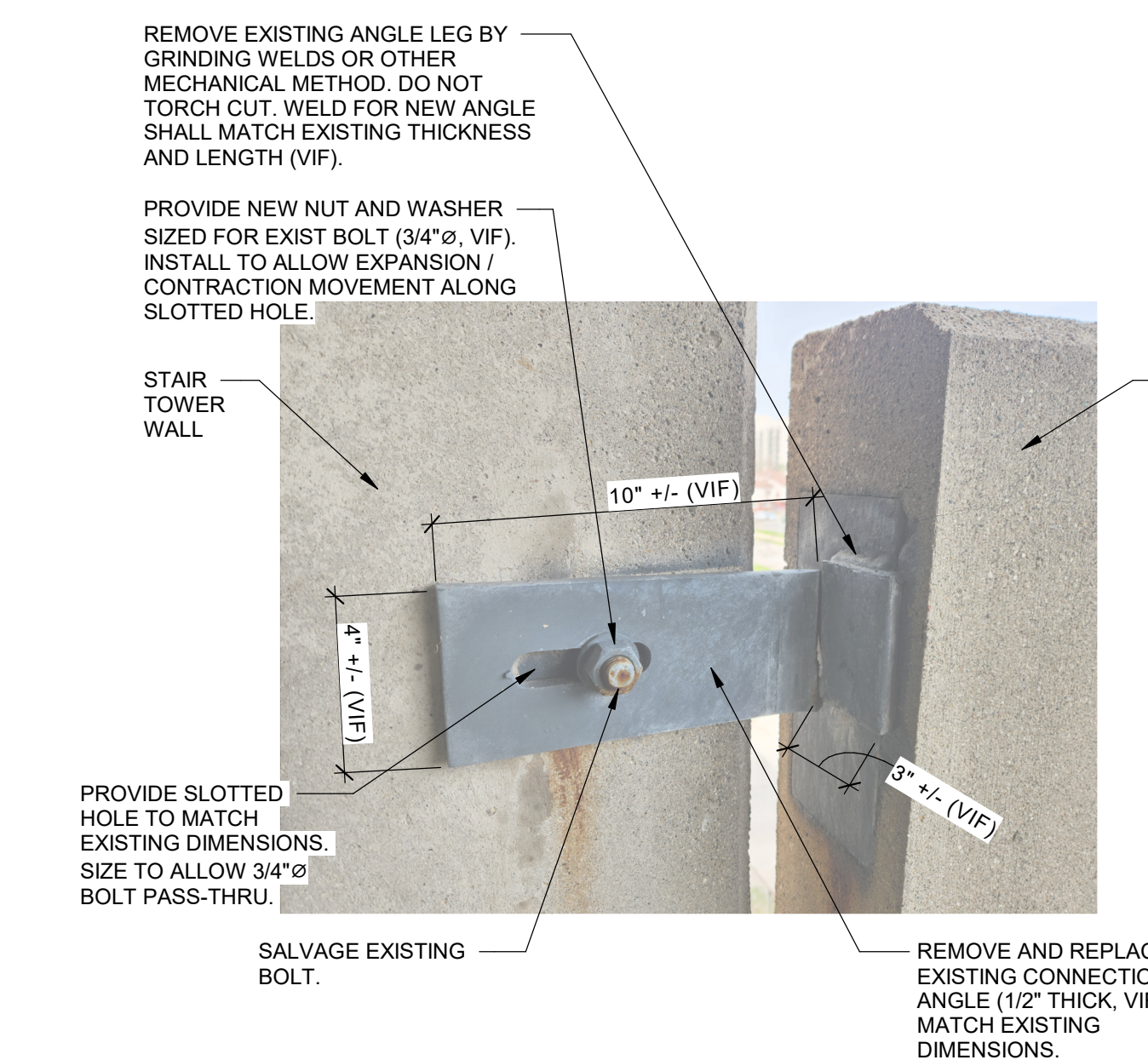


REINFORCEMENT (TYP), LOCATIONS APPROXIMATE. CLEAN AND EPOXY COAT ALL EXPOSED REINF. PROVIDE 3/4\"/>

CAUTION NOTE:
1. DO NOT CUT OR DAMAGE PRESTRESSED STRANDS.

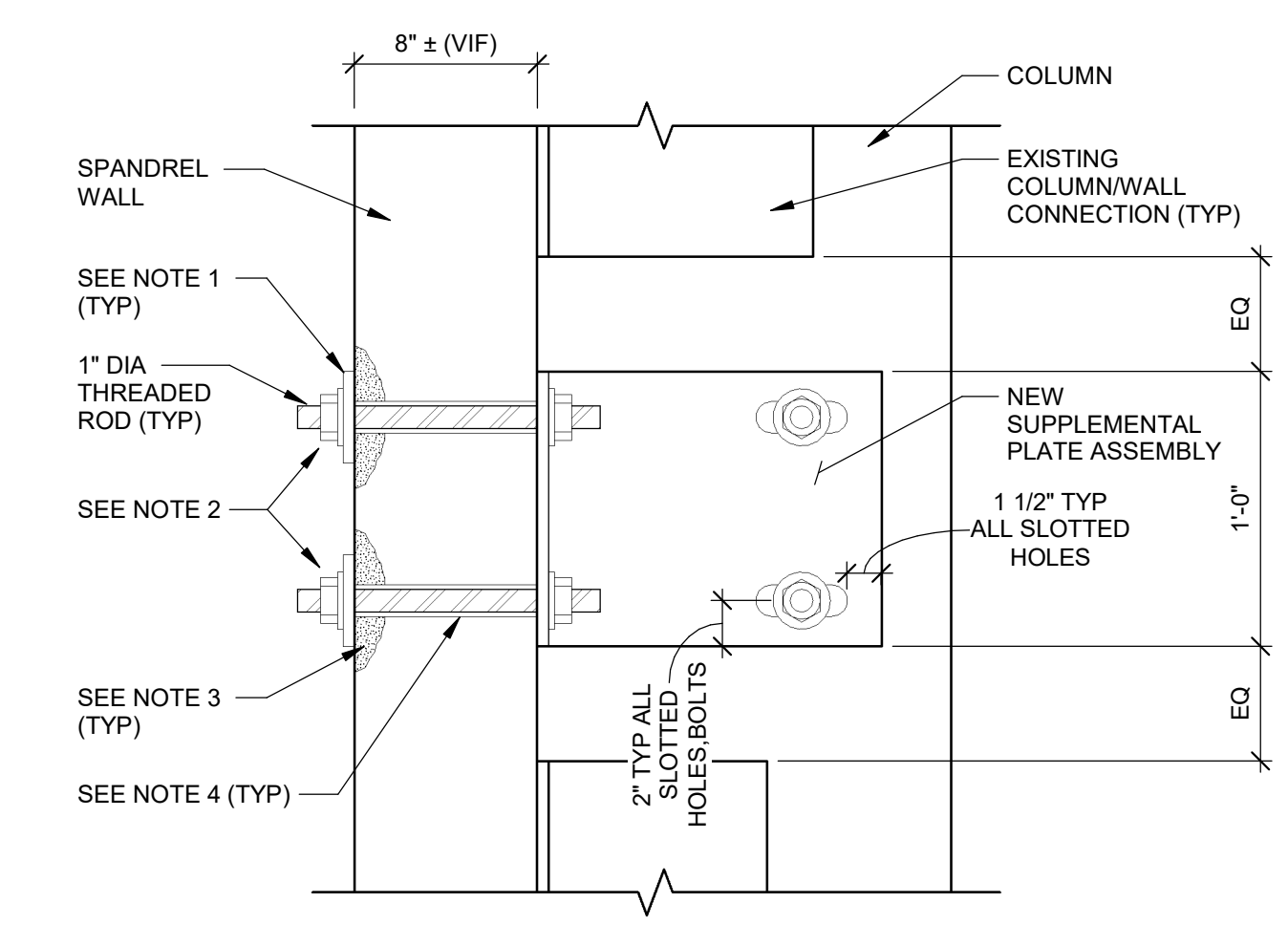
NOTES:
1. REVIEW CONCRETE REMOVAL REQUIREMENTS IN FIELD WITH ENGINEER PRIOR TO START OF REMOVALS.
2. AFTER REMOVALS ARE PERFORMED, ENGINEER SHALL OBSERVE CONDITION OF EMBEDDED STRANDS PRIOR TO PROCEEDING WITH WORK.

8.1
TEE STEM REPAIR - PARTIAL DEPTH
(PS #2)



NOTES:
a. PROVIDE TEMPORARY SHORING / STABILIZATION OF SPANDREL WALL PANEL DURING REPAIRS (INCIDENTAL).
b. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF NEW ASSEMBLY FOR ENGINEER REVIEW PRIOR TO FABRICATING.
c. MATERIALS:
a. ANGLE (OR BUILT-UP PLATES): ASTM A36
b. NUT: ASTM A563
c. WASHER: ASTM F436
d. NUT AND WASHER MUST DEVELOP FULL STRENGTH OF THREADED ROD.
e. WELDS: IN ACCORDANCE WITH AWS D1.1; E70XX ELECTRODES
f. ALL REPLACEMENT STEEL AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED. REPAIR FIELD WELDS WITH ZINC-RICH COLD-GALVANIZING REPAIR PRODUCT.

7.4
WALL REPAIR - CONNECTION BRACKET REPAIR
(PS #4)

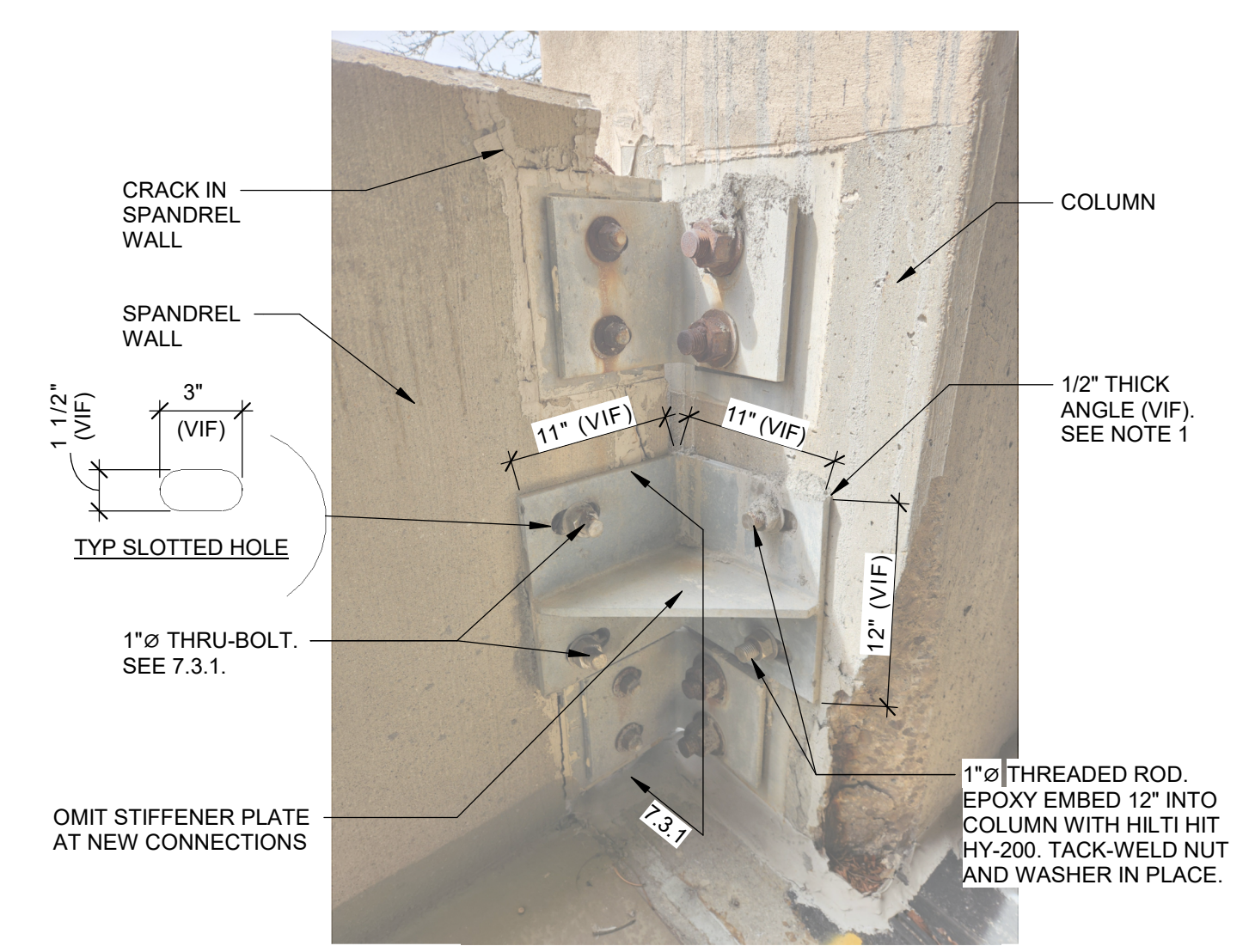


NOTES:
1. 4\"/>

2. NUT AND WASHER SIZED FOR 1\"/>

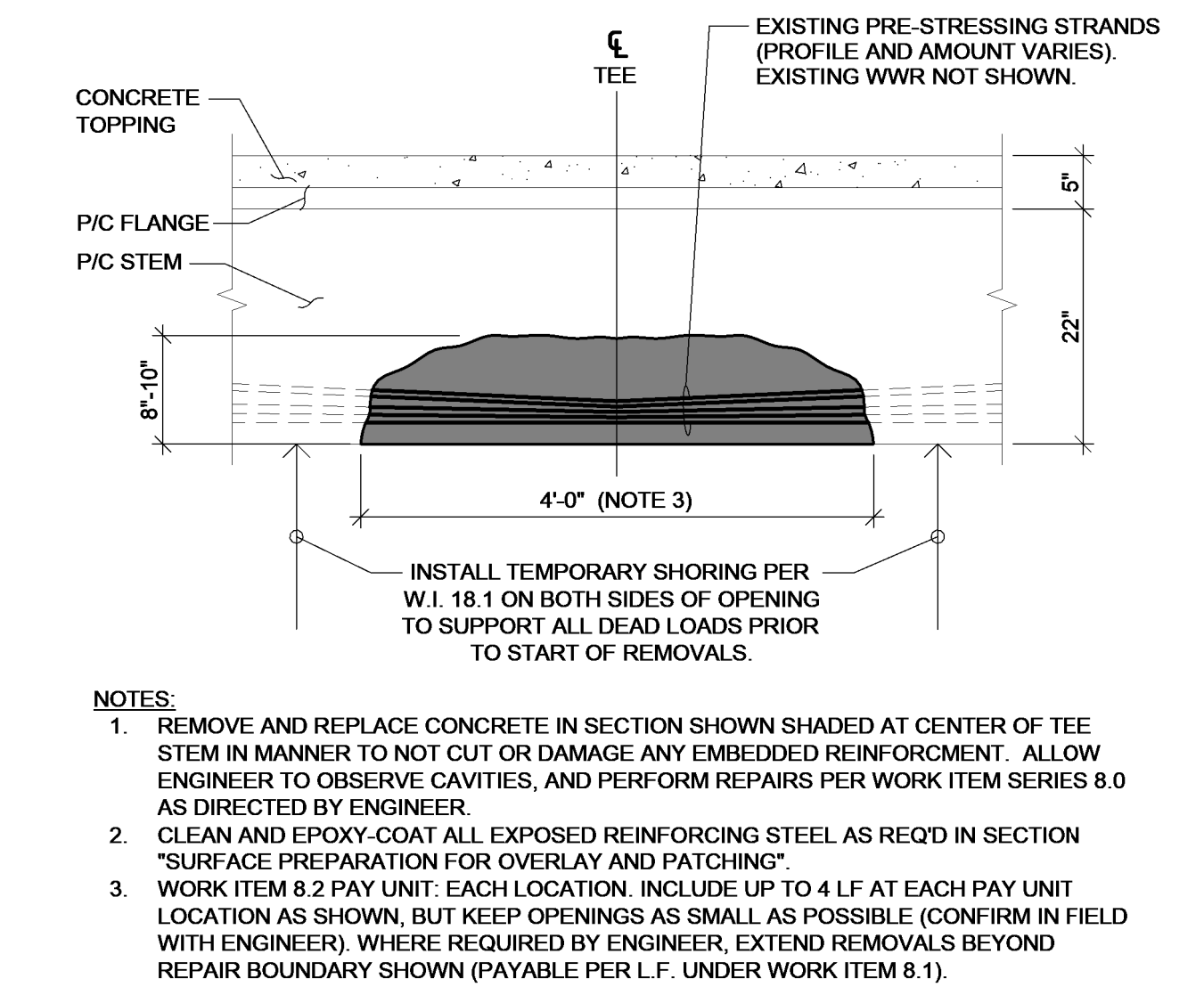
3. FILL ANY SPALLS CAUSED BY DRILLING/CORING WITH NSNS GROUT TO PROVIDE EVEN BEARING FOR WASHER PLATE.
4. DRILL OR CORE 1-1/4\"/>

7.3.1
WALL REPAIR - SUPPLEMENTAL WALL/COLUMN CONNECTION BRACKET
(PS #4)



NOTES:
1. EXISTING PREVIOUSLY INSTALLED SUPPLEMENTAL WALL/COLUMN CONNECTION BRACKET IS SHOWN. CURRENT WORK ITEM IS TO INSTALL A SUPPLEMENTAL BRACKET TO MATCH THAT SHOWN IN PHOTO DETAIL AT OTHER LOCATIONS OF SPANDREL WALL CRACKING IN ORDER TO SUPPLEMENT THE EXISTING CONNECTIONS AT TOP & BOTTOM OF WALL.
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF NEW ASSEMBLY FOR ENGINEER REVIEW PRIOR TO FABRICATING.
3. MATERIALS:
a. ANGLE (OR BUILT-UP PLATES): ASTM A36
b. NUT: ASTM A563
c. WASHER: ASTM F436
d. NUT AND WASHER MUST DEVELOP FULL STRENGTH OF THREADED ROD.
e. WELDS: IN ACCORDANCE WITH AWS D1.1; E70XX ELECTRODES
f. ALL REPLACEMENT STEEL AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED. REPAIR FIELD WELDS WITH ZINC-RICH COLD-GALVANIZING REPAIR PRODUCT.

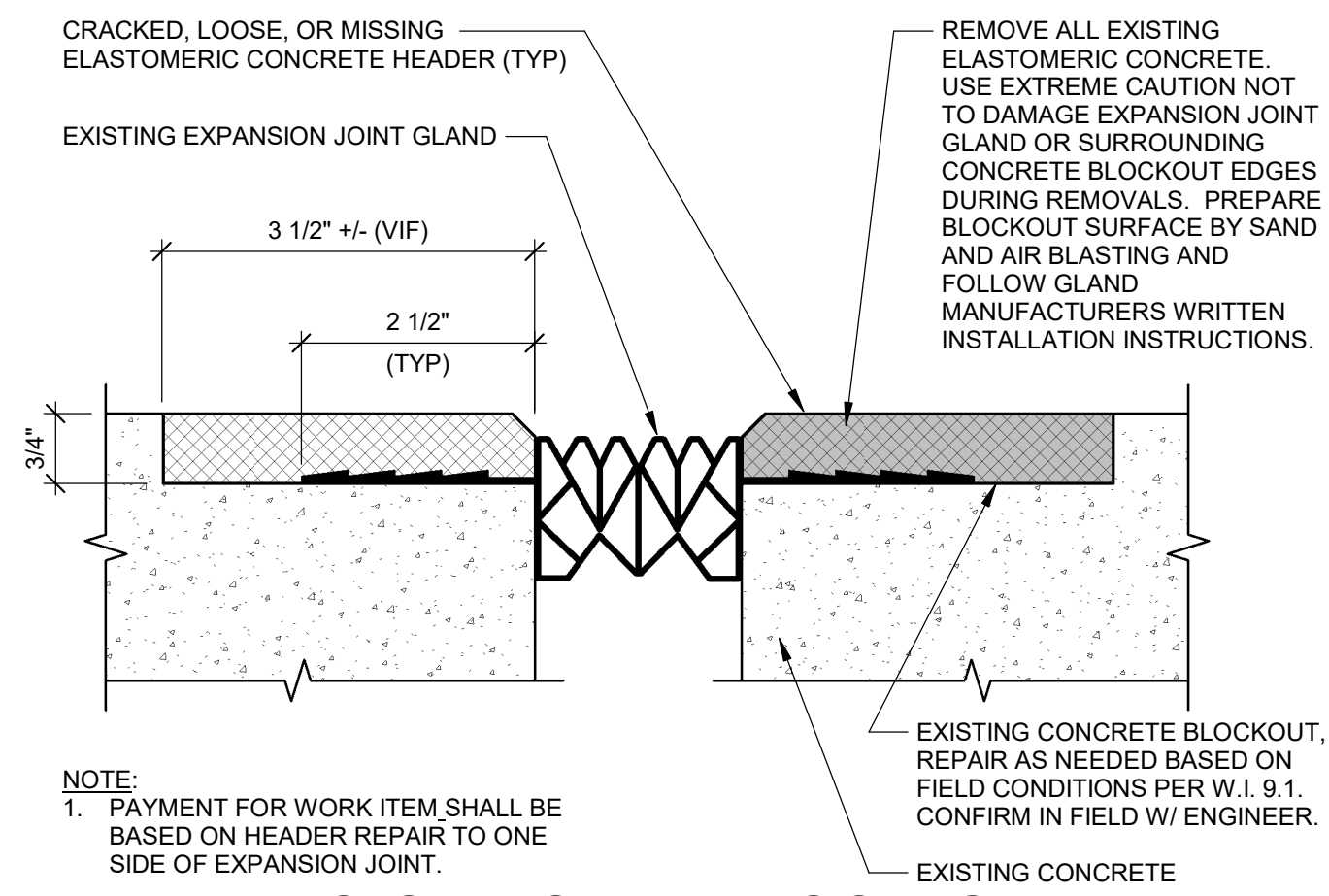
7.3
WALL REPAIR - SUPPLEMENTAL WALL/COLUMN CONN BRACKET
(PS #4)



NOTES:
1. REMOVE AND REPLACE CONCRETE IN SECTION SHOWN SHADED AT CENTER OF TEE STEM IN MANNER TO NOT CUT OR DAMAGE ANY EMBEDDED REINFORCEMENT. ALLOW ENGINEER TO OBSERVE CAVITIES, AND PERFORM REPAIRS PER WORK ITEM SERIES 8.0 AS DIRECTED BY ENGINEER.
2. CLEAN AND EPOXY-COAT ALL EXPOSED REINFORCING STEEL AS REQ'D IN SECTION *SURFACE PREPARATION FOR OVERLAY AND PATCHING*.
3. WORK ITEM 8.2 PAY UNIT: EACH LOCATION. INCLUDE UP TO 4 LF AT EACH PAY UNIT LOCATION AS SHOWN, BUT KEEP OPENINGS AS SMALL AS POSSIBLE (CONFIRM IN FIELD WITH ENGINEER). WHERE REQUIRED BY ENGINEER, EXTEND REMOVALS BEYOND REPAIR BOUNDARY SHOWN (PAYABLE PER L.F. UNDER WORK ITEM 8.1).

8.2
TEE STEM - TEST OPENING
(PS #2)

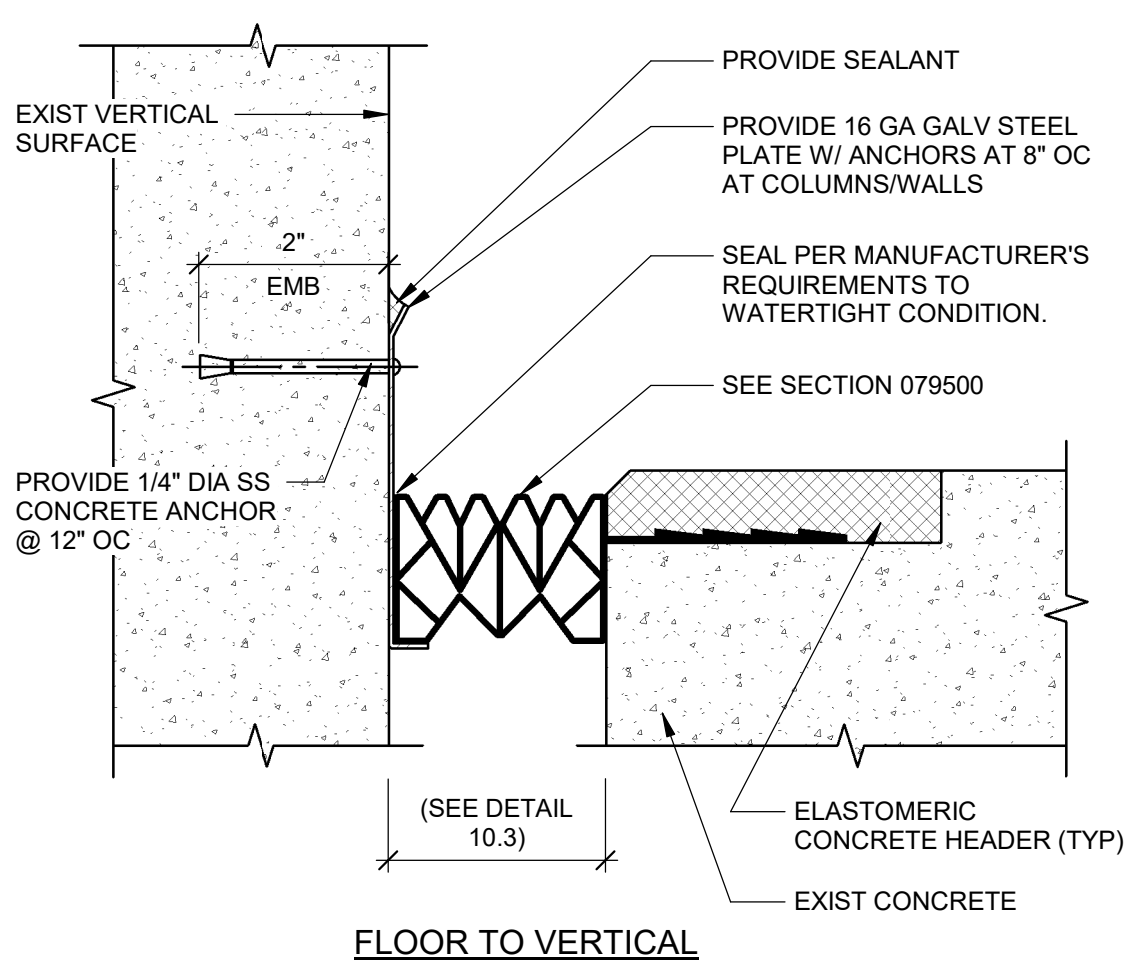
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NOTE:
1. PAYMENT FOR WORK ITEM SHALL BE BASED ON HEADER REPAIR TO ONE SIDE OF EXPANSION JOINT.

EXPANSION JOINT - NOSING REPAIR

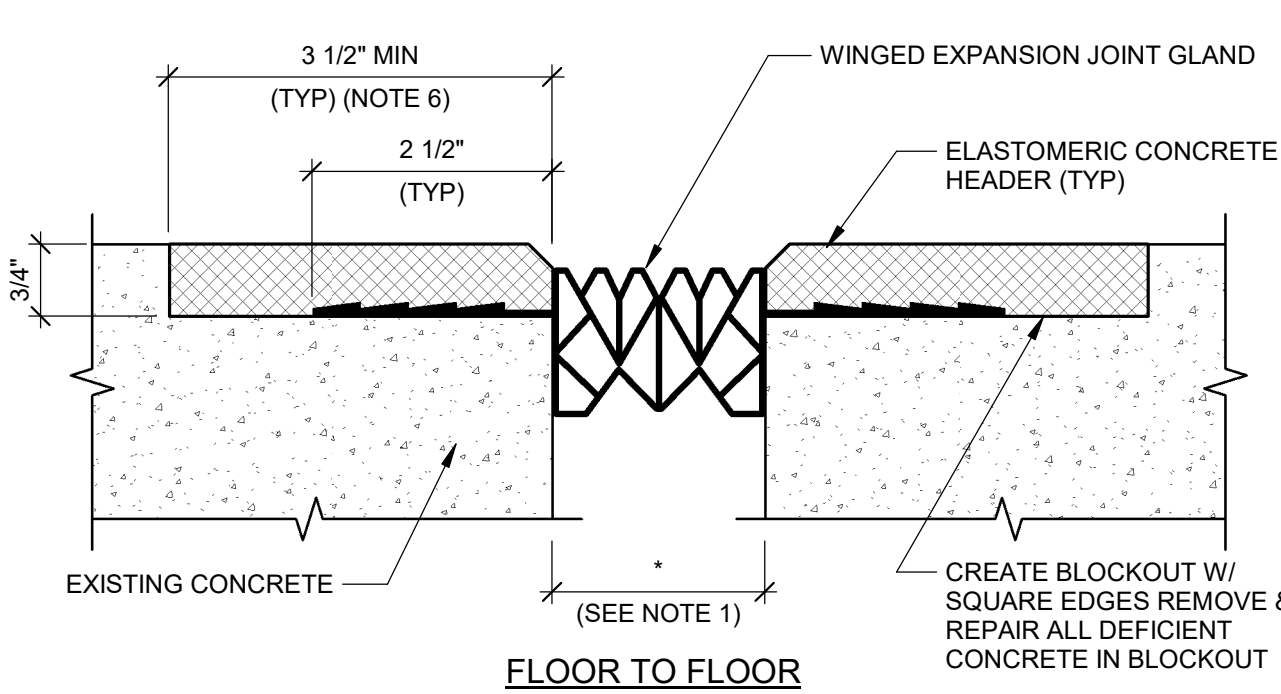
10.4 (PS #4)



NOTES:
1. GENERAL REQUIREMENTS SHOWN. SUBMIT SHOP DRAWINGS OF MANUFACTURER'S PROPOSED SYSTEM FOR APPROVAL.
2. SEE DETAIL 10.3 FOR REMAINING INFORMATION.
3. THIS OCCURS AT ALL COLUMNS/WALL (TYPICAL). CONTRACTOR TO VIF.

EXPANSION JOINT - ELASTOMERIC CONCRETE EDGED

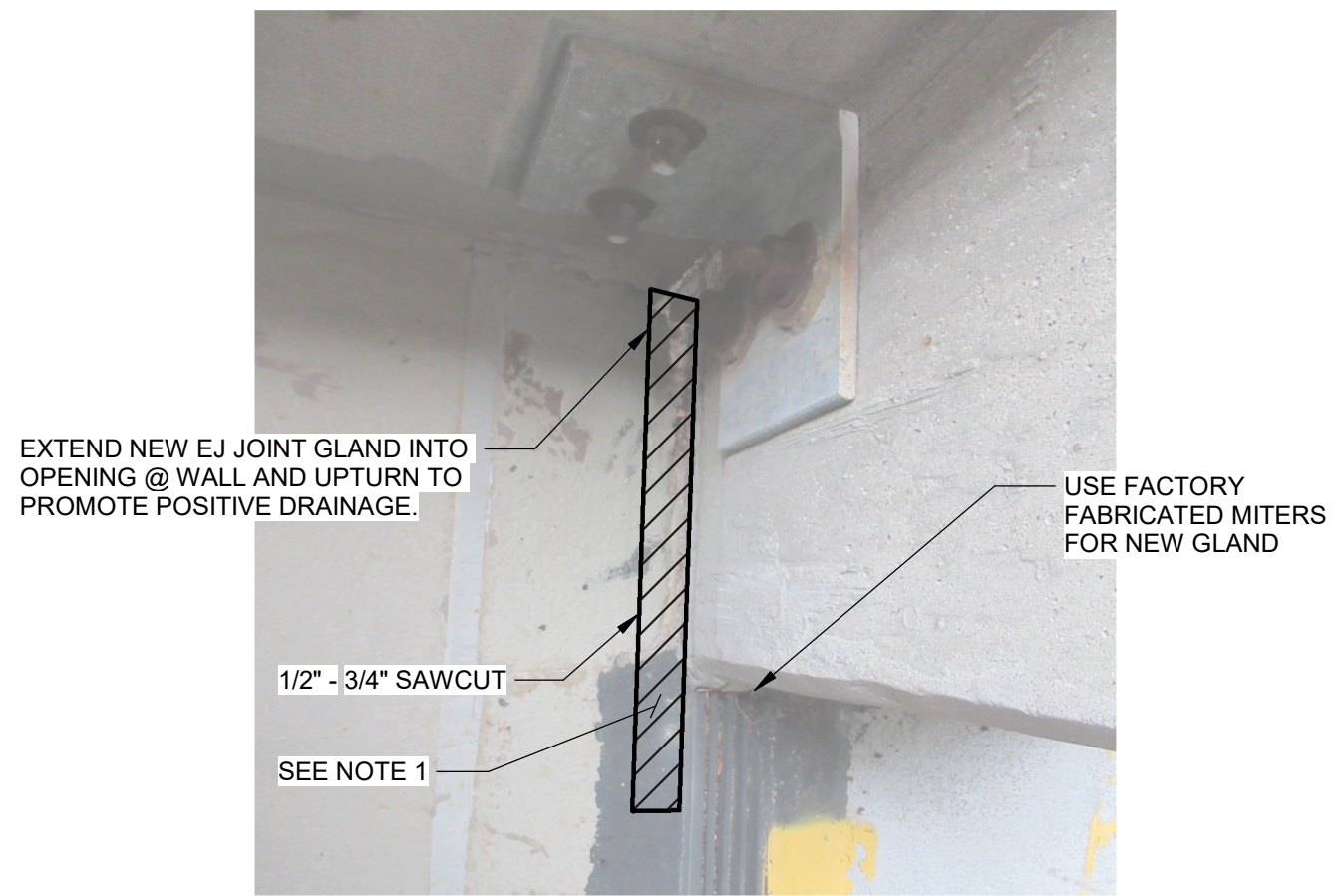
10.3.1 (PS #4)



NOTES:
1. CONTRACTOR SHALL, WITH MANUFACTURER, VERIFY FIELD INSTALLATION WIDTH BASED ON TEMPERATURE CONDITIONS. EXISTING BLOCKOUT WIDTHS VARY. CONTRACTOR TO VERIFY IN FIELD.
2. TOTAL ANTICIPATED JOINT MOVEMENT:
• PS #4: 1 1/4"
3. PROVIDE SHOP DRAWINGS SHOWING ALL JOINT INTERSECTIONS, SPLICES, AND TERMINATIONS AS APPLICABLE. INCLUDE DETAIL AT AND AROUND COLUMNS. (SEE 10.3.1).
4. TURNS AND CORNERS SHALL BE FACTORY-MITERED.
5. GLAND SHALL BE TURNED UP INTO WALL AT ENDS TO PROMOTE POSITIVE DRAINAGE AND PROVIDE WATERTIGHT CONDITION. (INCIDENTAL).
6. EXISTING HEADER WIDTHS VARY. CONTRACTOR TO VIF. REPAIR AS NEEDED PER WORK ITEM SERIES 9.0. CONFIRM WITH ENGINEER & JOINT MANUFACTURER PRIOR TO START OF WORK. ADDITIONAL ELASTOMERIC HEADER MATERIAL REQUIRED AT SOUND BLOCKOUTS WIDER THAN 3 1/2\"/>

EXPANSION JOINT - ELASTOMERIC CONCRETE EDGED

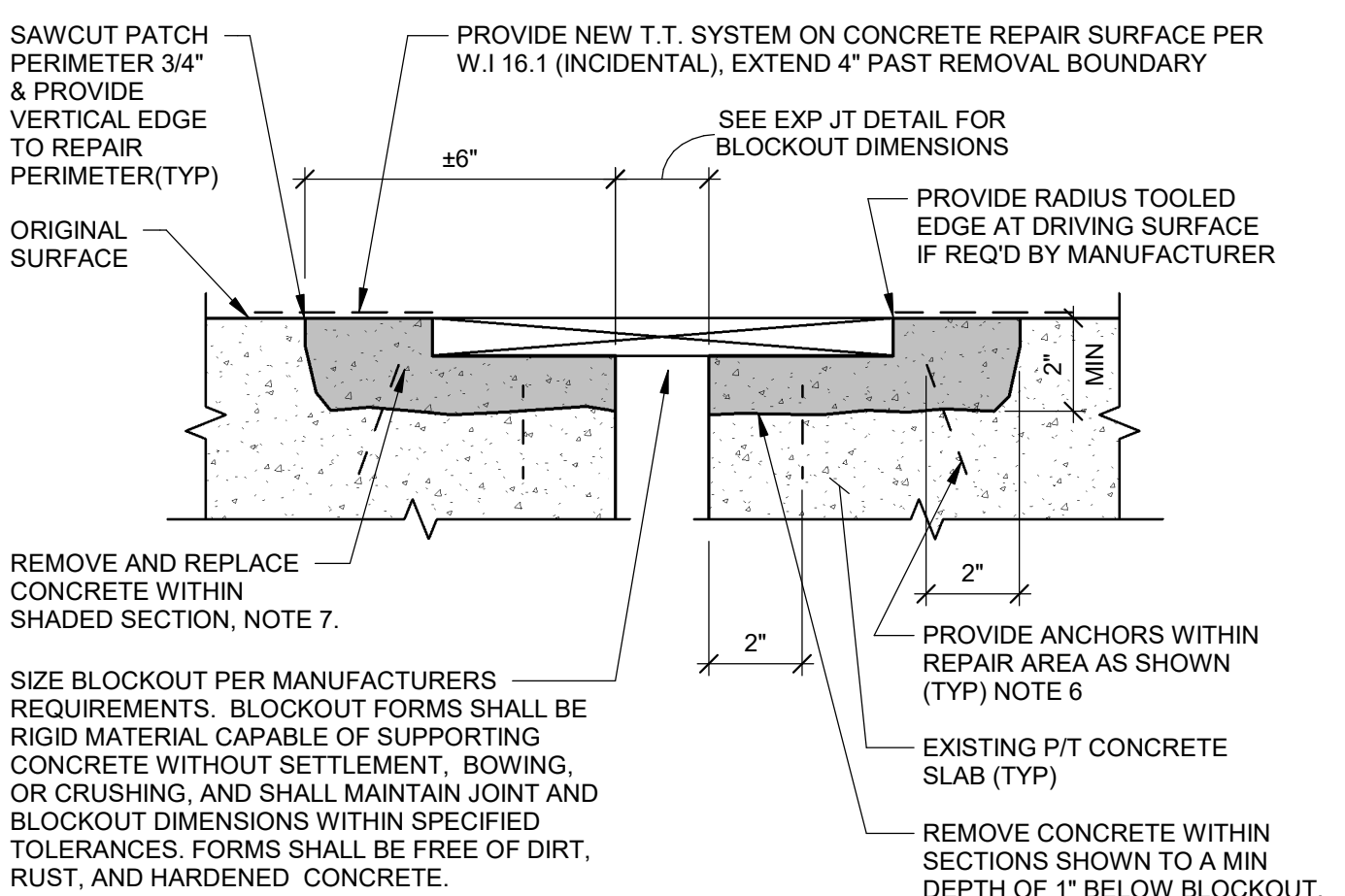
10.3 (PS #2 & PS #4)



NOTES:
1. EXISTING SLAB IS POURED TIGHT TO COLUMN. REMOVE CONCRETE TO CREATE NEW BLOCKOUT TO EXTEND EJ SYSTEM AROUND COLUMN TO WALL. SEE DETAIL 10.3.1 FOR EJ DETAIL @ COLUMN.
2. P/T ANCHORS OCCUR ALONG EXPANSION JOINTS. LOCATE PRIOR TO SAWCUTTING OR CONCRETE REMOVALS. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK.

EXPANSION JOINT - NEW BLOCKOUT AT ENDS

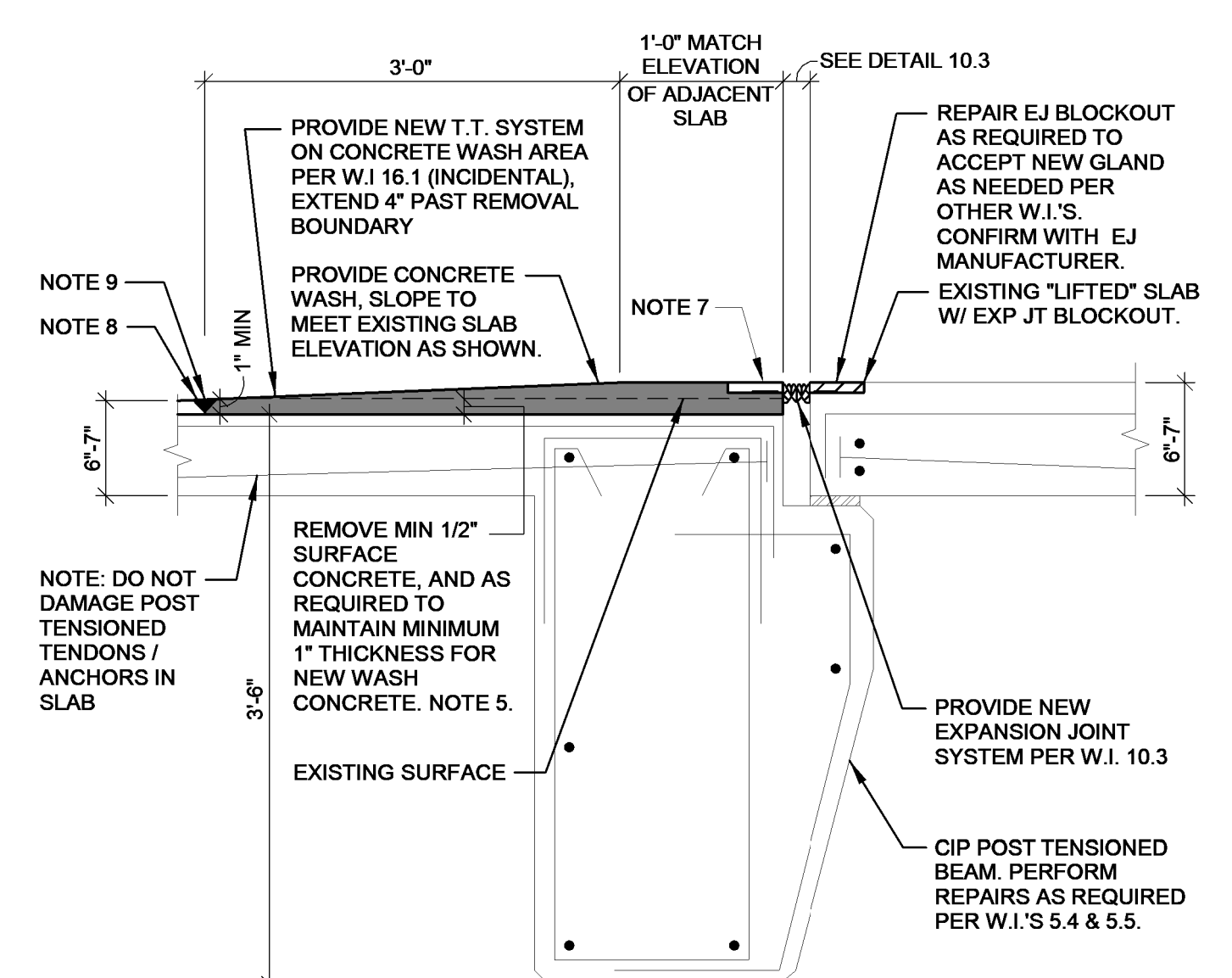
9.3 (PS #4)



NOTES:
1. REMOVAL OF EXISTING EXPANSION JOINT SYSTEM (NOT SHOWN) IS INCIDENTAL TO THIS WORK.
2. MAINTAIN EXPANSION JOINT OPENING CLEAR OF DEBRIS. VERTICAL SURFACE MUST BE PLUMB AND SHALL NOT VARY MORE THAN 1/8\"/>

EXPANSION JOINT - NEW CONCRETE BLOCKOUT

9.2 (PS #4)



NOTES:
1. COORDINATE WITH WORK ITEM 10.3.
2. REMOVAL OF EXISTING EXPANSION JOINT SYSTEM INCIDENTAL. PERFORM IN MANNER TO NOT DAMAGE SOUND BLOCKOUTS TO REMAIN.
3. INSTALL NEW EXPANSION JOINT SYSTEM PER WORK ITEM 10.3.
4. INSTALL NEW TRAFFIC TOPPING ON WASH AREA PER WORK ITEM 16.1. (INCIDENTAL)
5. CONFIRM P/T TENDON AND ANCHOR LOCATIONS & DEPTH PRIOR TO START OF WORK. DO NOT DAMAGE OR UNDERMINE.
6. PREPARE SURFACE PER SECTION 025140. SEE SECTION 020010 FOR FURTHER INFORMATION.
7. PROVIDE BLOCKOUT IN WASH. (INCIDENTAL) SIZED PER MANUFACTURER SPECIFICATION.
8. PROVIDE 1/2\"/>

EXPANSION JOINT - NEW CONCRETE WASH WITH BLOCKOUT

9.1 (PS #2 & PS #4)

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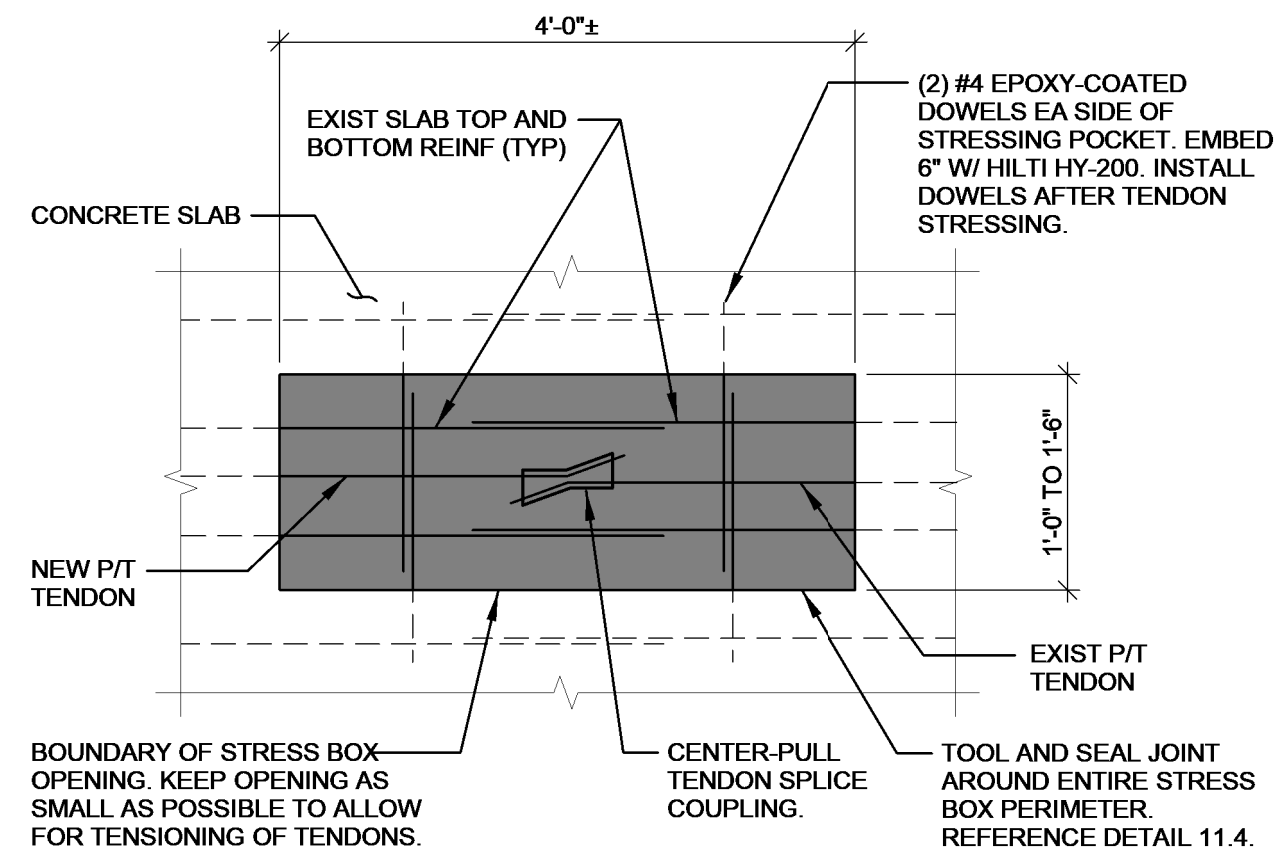
SHEET TITLE:
REPAIR DETAILS



NOTE:
1. BEAM SHOWN IN THE PHOTO IS THE EXPANSION JOINT BEAM SUPPORTING LEVEL 2 FLOOR SLAB WHERE WI 10.5 OCCURS. CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PLUMBING AND UTILITY LINES PASSING THROUGH THE BEAM (OR REPLACEMENT AT CONTRACTORS OPTION AT NO ADDITIONAL COST). CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF ANY DAMAGED LINES AT NO EXTRA COST TO OWNER.

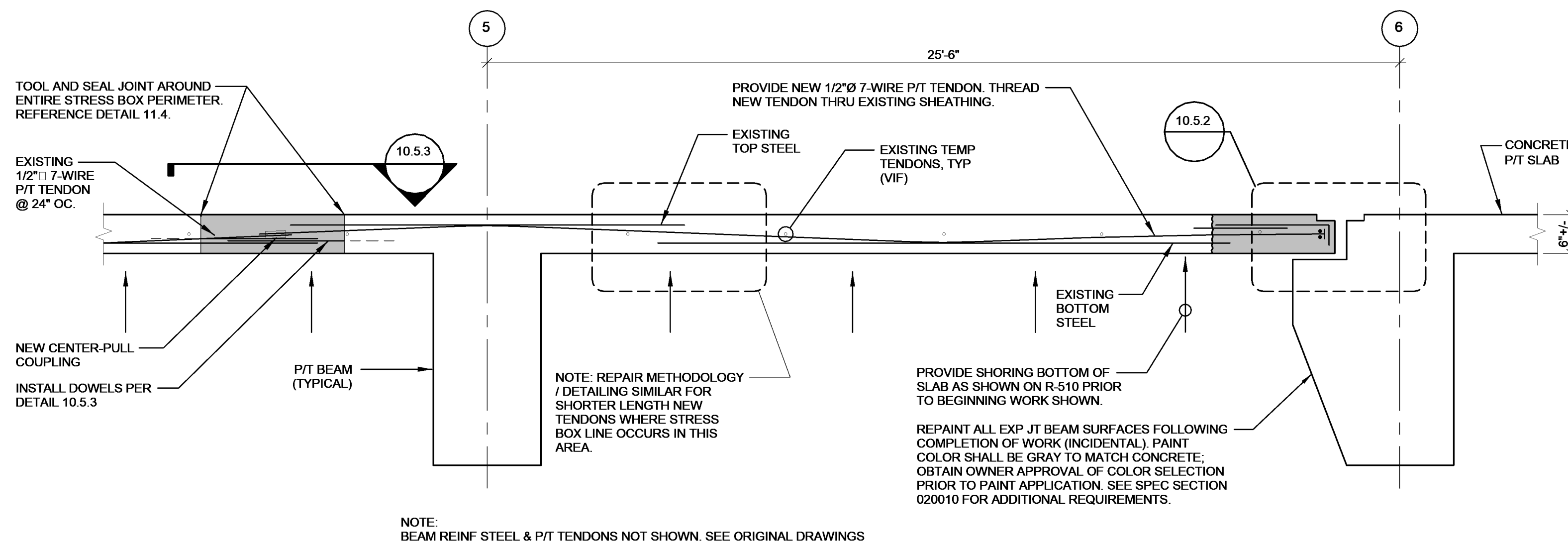
UTILITIES AT LEVEL 2 EXPANSION JOINT BEAM

10.5.4



FLOOR REPAIR - PLAN @ STRESSING POCKET

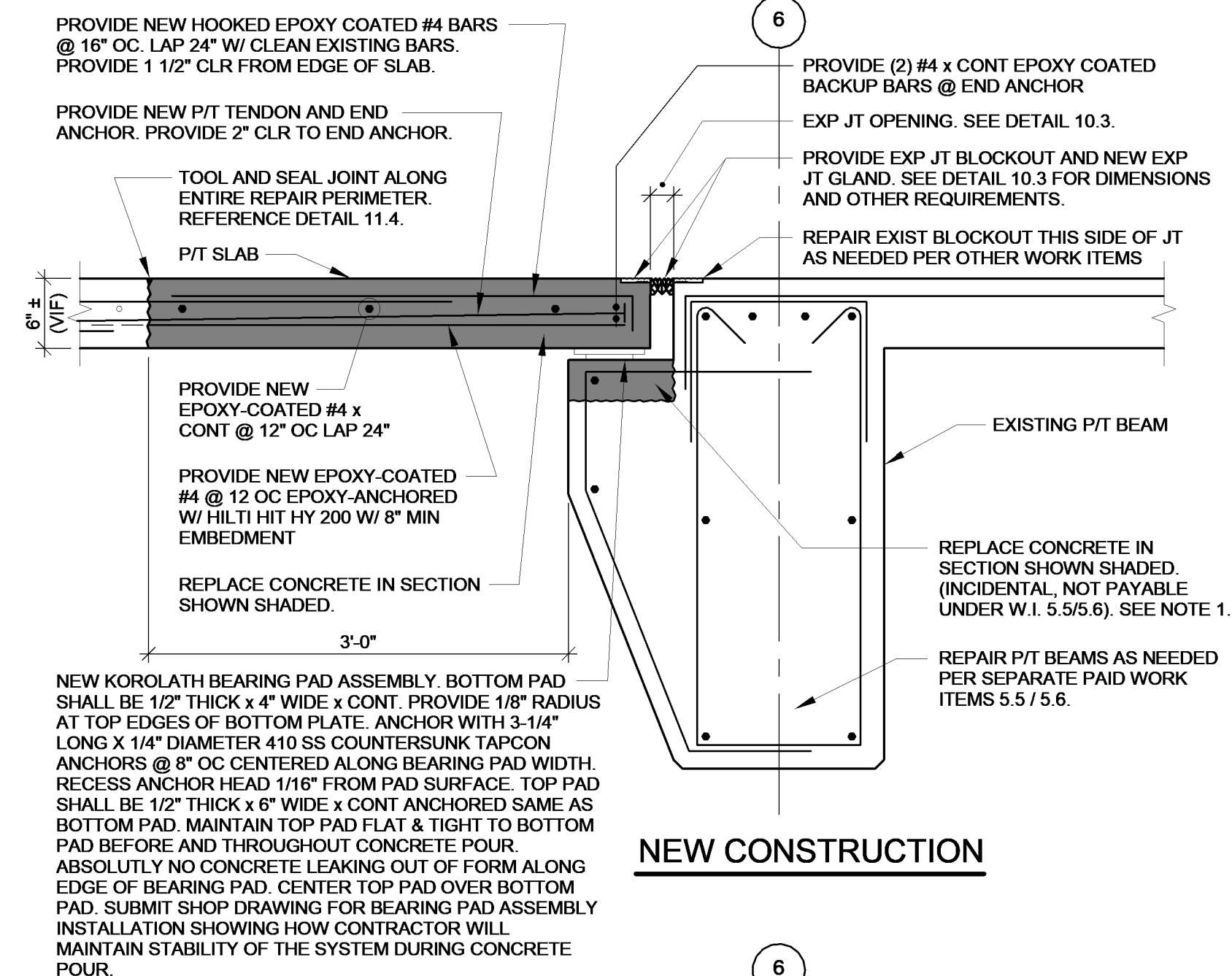
10.5.3



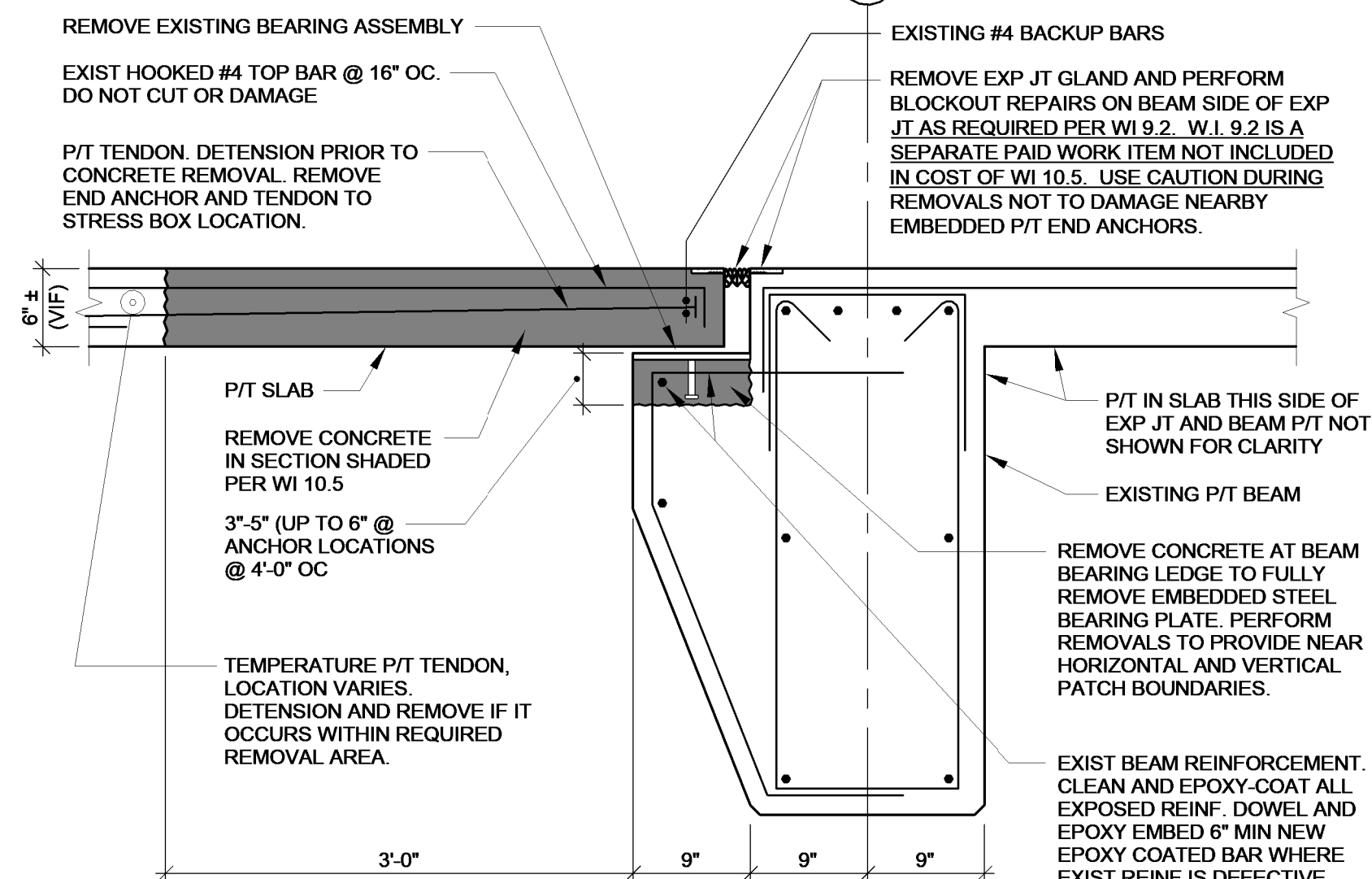
NOTE:
BEAM REINF STEEL & P/T TENDONS NOT SHOWN. SEE ORIGINAL DRAWINGS

EXPANSION JOINT - REPLACE STEEL BEARING ANGLES WITH SLIP BEARING SYSTEM

10.5.1
(SECTION AT NEW TENDON)



NEW CONSTRUCTION

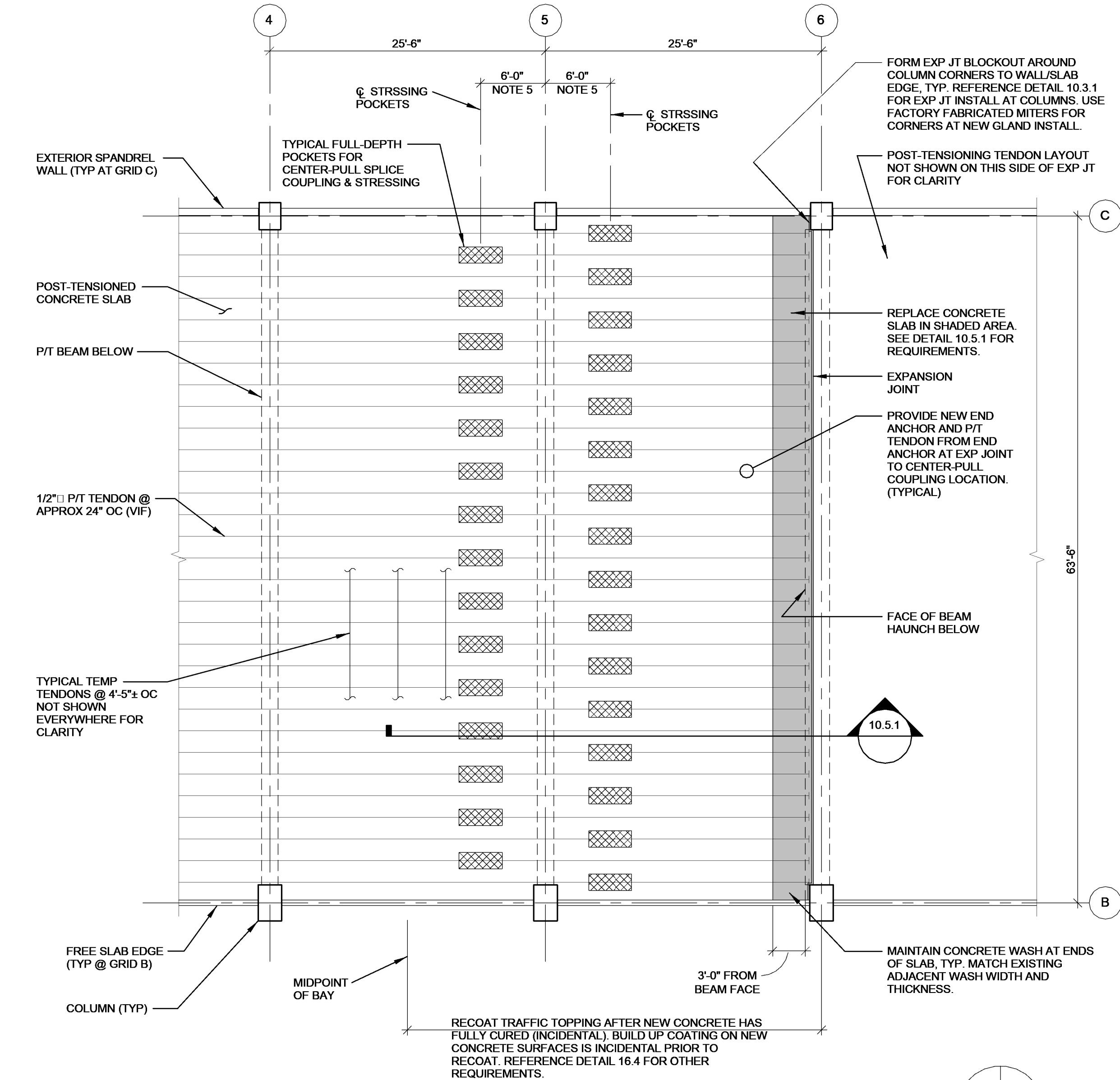


DEMOLITION

NOTES:
1. ALLOW ENGINEER TO OBSERVE EXISTING CONDITIONS AFTER FULL DEPTH SLAB REMOVALS AND PRIOR TO POURING HAUNCH CONCRETE.

EXP JT - REPLACE STEEL BEARING ANGLES W/ SLIP BEARING SYSTEM (SECTION AT SLAB REBUILD)

10.5.2



EXPANSION JOINT - REPLACE STEEL BEARING ANGLES WITH SLIP BEARING SYSTEM

10.5
(PS #4)

SHEET NOTES

- UNLESS SPECIFICALLY NOTED AS A SEPARATE PAID ITEM ON R-509, R-510, & R-511, ALL WORK SHOWN ON DRAWING SHEETS R-509, R-510, & R-511 SHALL BE INCLUDED IN A UNIT PRICE FOR "EACH EXPANSION JOINT" UNDER WORK ITEM 10.5. IN GENERAL, THIS INVOLVES DETENSIONING AND RE-BUILDING THE SLAB EDGE TO ALLOW FOR REPLACEMENT OF THE SLIDE BEARING SYSTEM. ADDITIONAL CONCRETE AND TENDON REPAIRS BEYOND WHAT ARE SHOWN ON DRAWING SHEET R-509 & R-511 SHALL BE PAID FOR SEPARATELY VIA UNIT PRICE WORK ITEMS.
- ORIGINAL DRAWINGS INDICATE ADD TENDONS ARE PRESENT, ALTHOUGH IT IS UNKNOWN IF OR WHERE THE ADD TENDONS MAY OCCUR. CONTRACTOR TO PERFORM GPR TESTING AND TEST OPENINGS PRIOR TO BEGINNING WORK TO LOCATE ALL SLAB POST-TENSIONING TENDONS. INCLUDING ADD TENDONS AND ANCHORS. NOTIFY ENGINEER OF GPR AND TEST OPENINGS FINDINGS AND TENDON/ANCHOR LOCATIONS AND LAYOUT FOR REVIEW PRIOR TO START OF WORK. ADDITIONAL POST TENSIONING AND CONCRETE REPAIRS BEYOND WHAT IS SHOWN MAY BE REQUIRED, DEPENDING ON THE FINDINGS OF THE TEST OPENINGS.
- CONTRACTOR SHALL COMPLETE WORK SHOWN IN FOLLOWING ORDER:
 - INSTALL ALL SHORING AS SHOWN ON R-510.
 - CONFIRM LOCATIONS OF ALL SLAB POST-TENSIONING TENDONS VIA GPR TESTING AND/OR TEST OPENINGS. IF ADDITIONAL TENDONS ARE PRESENT BEYOND WHAT IS DETAILED (AS DISCOVERED IN STEP 3B), CONFIRM LOCATIONS OF STRESS BOX OPENINGS IN FIELD WITH ENGINEER TO ENSURE THAT ALL TENDONS CAN BE DE-TENSIONED.
 - REMOVE CONCRETE SLAB FULL DEPTH ALONG EXPANSION JOINT EDGE AS SHOWN ON DETAIL 10.5.2. PERFORM CONCRETE REMOVALS AS NECESSARY ALONG BEAM BEARING LEDGE TO FULLY REMOVE EXISTING STEEL BEARING ASSEMBLY.
 - REPAIR BEAM BEARING LEDGE AS SHOWN IN DETAIL 10.5.2, INCLUDING INSTALLATION OF NEW SLIDE BEARING ASSEMBLY.
 - REPLACE SLAB AS SHOWN ON DETAILS 10.5.1 & 10.5.2, INCLUDING INSTALLATION OF NEW POST-TENSIONING HARDWARE. ONLY THE STRESS BOXES SHALL REMAIN OPEN AFTER THIS STEP; PLACE BULKHEADS AS NECESSARY TO ENSURE STRESS BOXES DO NOT EXCEED SPECIFIED SIZE.
 - STRESS TENDONS. IF ANY TENDONS DO NOT ACHIEVE THE CALCULATED THEORETICAL ELONGATION, ALLOW TO SIT FOR 24 HOURS AND RE-STRESS POST-TENSIONING TENDONS TO ENSURE DESIRED FORCE IS MAINTAINED.
 - PLACE CONCRETE AT ALL STRESSING BOXES. SHORING MAY BE REMOVED ONCE ALL CONCRETE HAS REACHED REQUIRED COMPRESSIVE STRENGTH.
 - ONCE ALL CONCRETE IS FULLY CURED, RECOAT TRAFFIC TOPPING AND INSTALL NEW EXPANSION JOINT. PAINT EXPANSION JOINT BEAM.
- MINIMUM INITIAL CONCRETE STRENGTH AT TIME OF STRESSING SHALL BE 3,500 PSI.
- STRESS BOXES ARE SHOWN AT ESTIMATED LOCATION WHERE TENDON IS AT SLAB MID-DEPTH. CONTRACTOR MAY SHIFT STRESS BOX OPENINGS ALONG TENDON RUN AS REQUIRED TO MAINTAIN CLEAR COVER FOR STRESSING HARDWARE.
- WHERE EXISTING TRAFFIC COATING IS DAMAGED OR EXCESSIVELY WORN AS A RESULT OF CONTRACTOR'S OPERATIONS, CONTRACTOR SHALL BE RESPONSIBLE FOR RECOATING TRAFFIC TOPPING. NO EXTRAS ALLOWED.



WAYNE STATE UNIVERSITY
2024 PARKING STRUCTURES
#2 & #4 REPAIRS AND MAINTENANCE
DETROIT, MICHIGAN

MARK	DATE	BIDDING & CONSTRUCTION DESCRIPTION	ISSUE:

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SHEET TITLE:
REPAIR DETAILS -
WORK ITEM 10.5

R-509

SHEET NOTES

1. INSTALL TEMPORARY SHORING PER REQUIREMENTS OF WORK ITEM 10.5 AND AS REQUIRED ON THIS SHEET. TYPICAL TEMPORARY SHORING LAYOUT PER WORK ITEM 10.5 SHOWN ON THIS PLAN APPLIES WHEREVER THE SLAB IS DENSIFIED AS PART OF WORK ITEM 10.5. TEMPORARY SHORING SHALL BE INSTALLED MINIMUM (3) LEVELS BELOW WORK ITEM 10.5 WORK AREAS. SEE 2R-510.
2. SHORING LAYOUT SHOWN IS FOR WORK IN THE SOUTHWEST QUADRANT OF THE STRUCTURE. USE SIMILAR SHORING PATTERN FOR WORK IN OTHER PORTIONS OF THE STRUCTURE (SHORES AT 5' OC MAX., 10'-0" DRIVE LANE MAX, ETC). ALL REQUIREMENTS NOTED ON THIS SHEET APPLY AT OTHER PORTIONS OF THE STRUCTURE WHEREVER WORK ITEM 10.5 IS PERFORMED.
3. SEE 3/R-510 FOR ISOMETRIC VIEW OF ALL WORK AREAS REQUIRING TEMPORARY SHORING AS SHOWN.
4. TEMPORARY SHORING MUST BE INSTALLED PRIOR TO PT TENDON DE-TENSIONING AT START OF CONCRETE DEMOLITION WORK.
5. SHORING SHOWN IS MINIMUM REQUIREMENTS AND IS BASED ON 25 PSF CONSTRUCTION LIVE LOAD AT ONE LEVEL PLUS DEAD LOAD AT ONE LEVEL. AT CONTRACTOR'S OPTION, ADDITIONAL SHORING TO SUPPORT CONSTRUCTION LIVE LOADS ABOVE 25 PSF SHALL BE DESIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER. NO EXTRA PAYMENT SHALL BE PROVIDED FOR THIS ADDITIONAL SHORING.
6. REFER TO R-002 "PHASING PLANS AND NOTES" FOR COORDINATION OF WORK.
7. UNFACTORED DESIGN LOAD PER SHORE INCLUDING DEAD LOAD AND CONSTRUCTION LIVE LOAD STATED IN NOTE 4 IS 5,000 LB AT REQUIRED SHORE HEIGHT (TYP)
8. SHORES ON CONSECUTIVE LEVELS SHALL BE PLUMB AND CONCENTRICALLY LOADED WITH SHORES ABOVE AND BELOW.
9. INSTALL SHORES TIGHT TO FLOOR AND CEILING. SECURE AT TOP AND BOTTOM TO MAINTAIN REQUIRED POSTIONING / STABILITY.
10. DO NOT REMOVE SHORES PRIOR TO RE-STRESSING FLOOR SLAB.

WORK SEQUENCE FOR WORK ITEM 10.5:

1. START FROM BOTTOM UP, COMPLETING WORK LEVEL 2 BEFORE INSTALLING SHORING FOR THE WORK ON LEVEL 4.
2. WORK ON ONE EXPANSION JOINT AT A TIME.



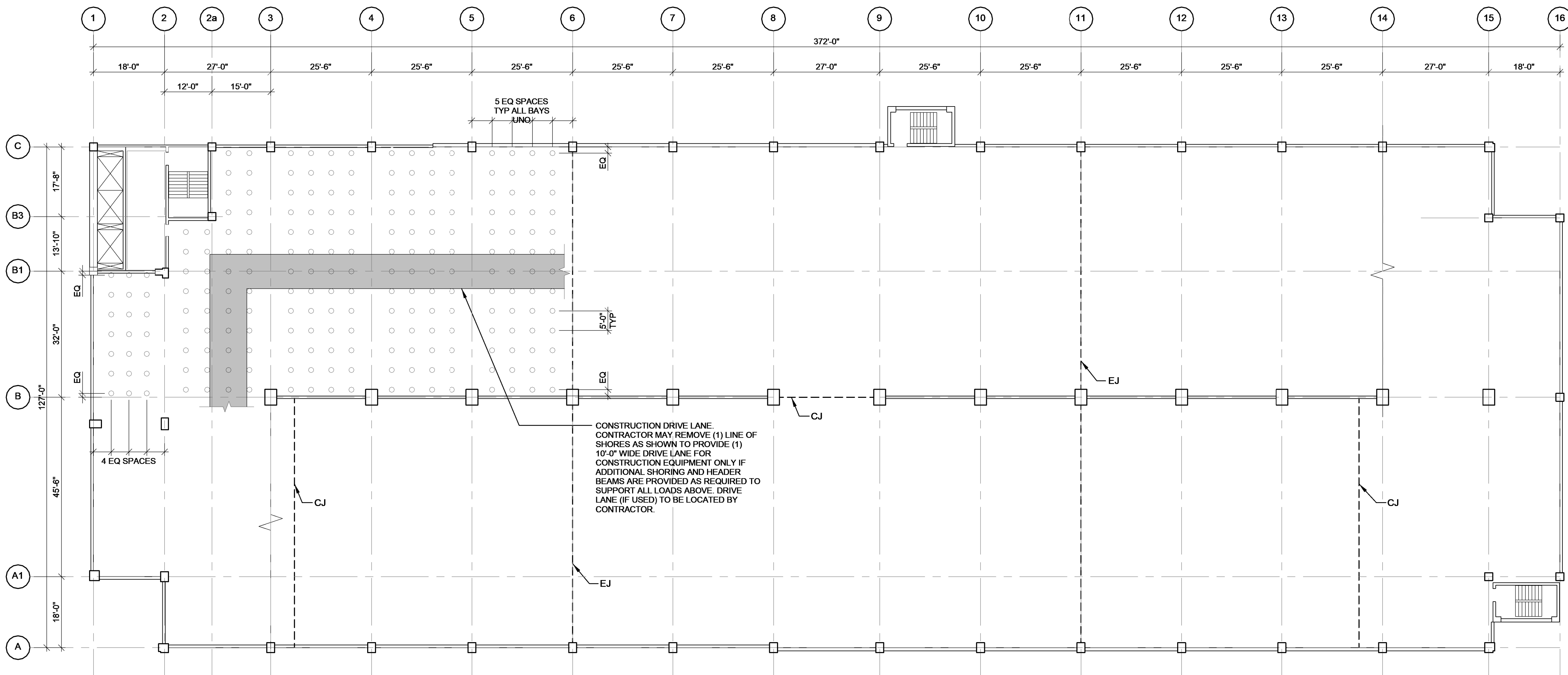
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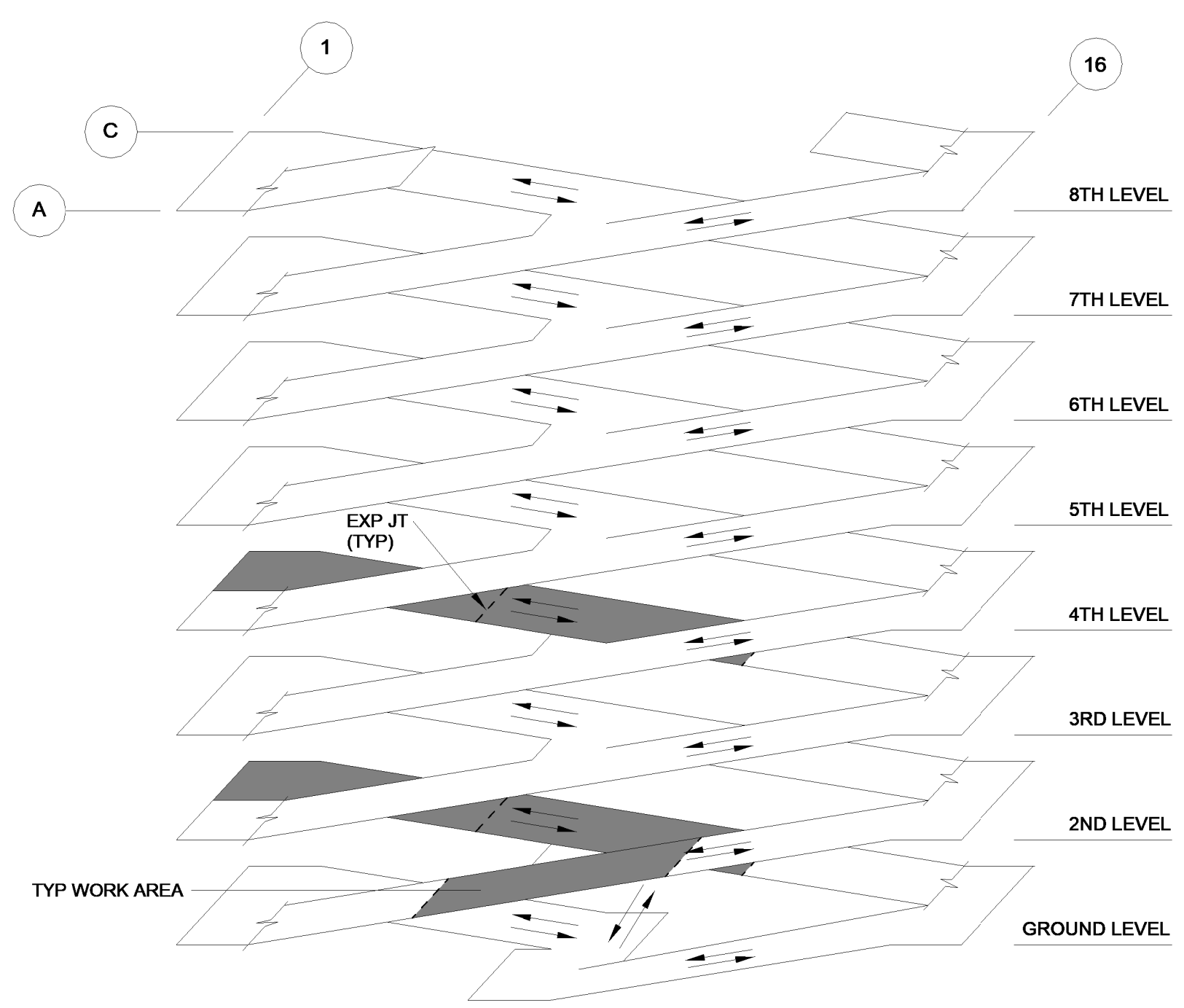
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SHEET TITLE:
REPAIR DETAILS - WORK ITEM 10.5
R-510

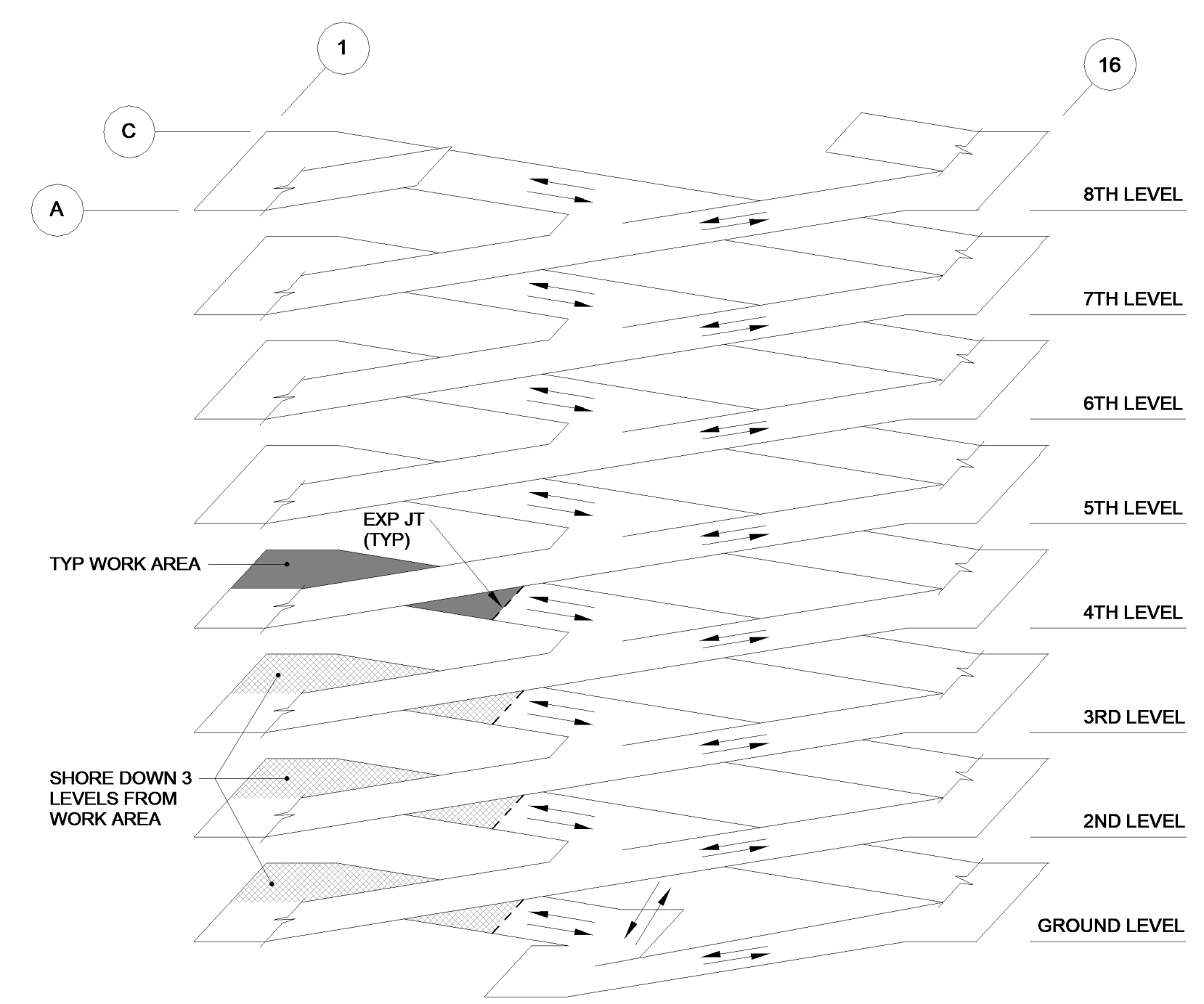


1 TYPICAL SHORING LAYOUT PLANS
(FOR WORK ITEM 10.5)



NOTES:
1. SHADED AREAS REPRESENT WORK AREAS THAT REQUIRE SLAB DE-TENSIONING PER W1 10.5 AND WILL REQUIRE SHORING PER DETAILS 1 & 2 ON THIS SHEET. SHORING IS REQUIRED 3 LEVELS BELOW EACH WORK AREA. NOTE THAT SOME REQUIRED SHORING AREAS WILL OVERLAP.

3 ISOMETRIC VIEW WORK AREA REQUIRING SHORING

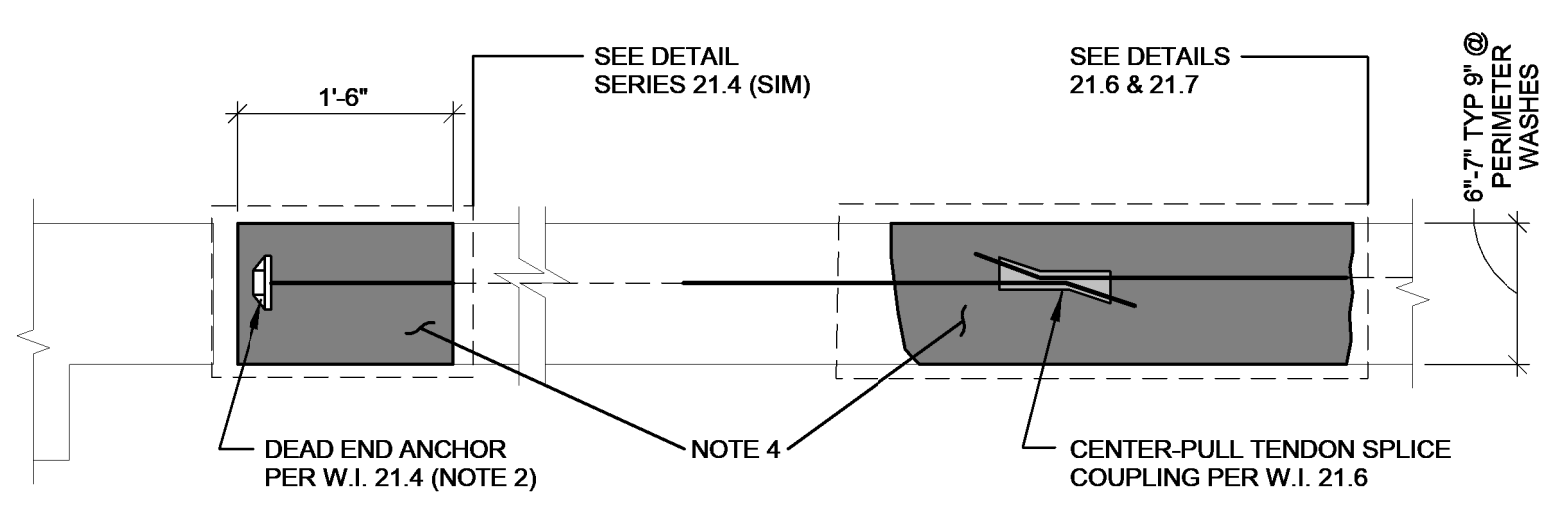


2 ISOMETRIC VIEW TYPICAL WORK AREA SHORING

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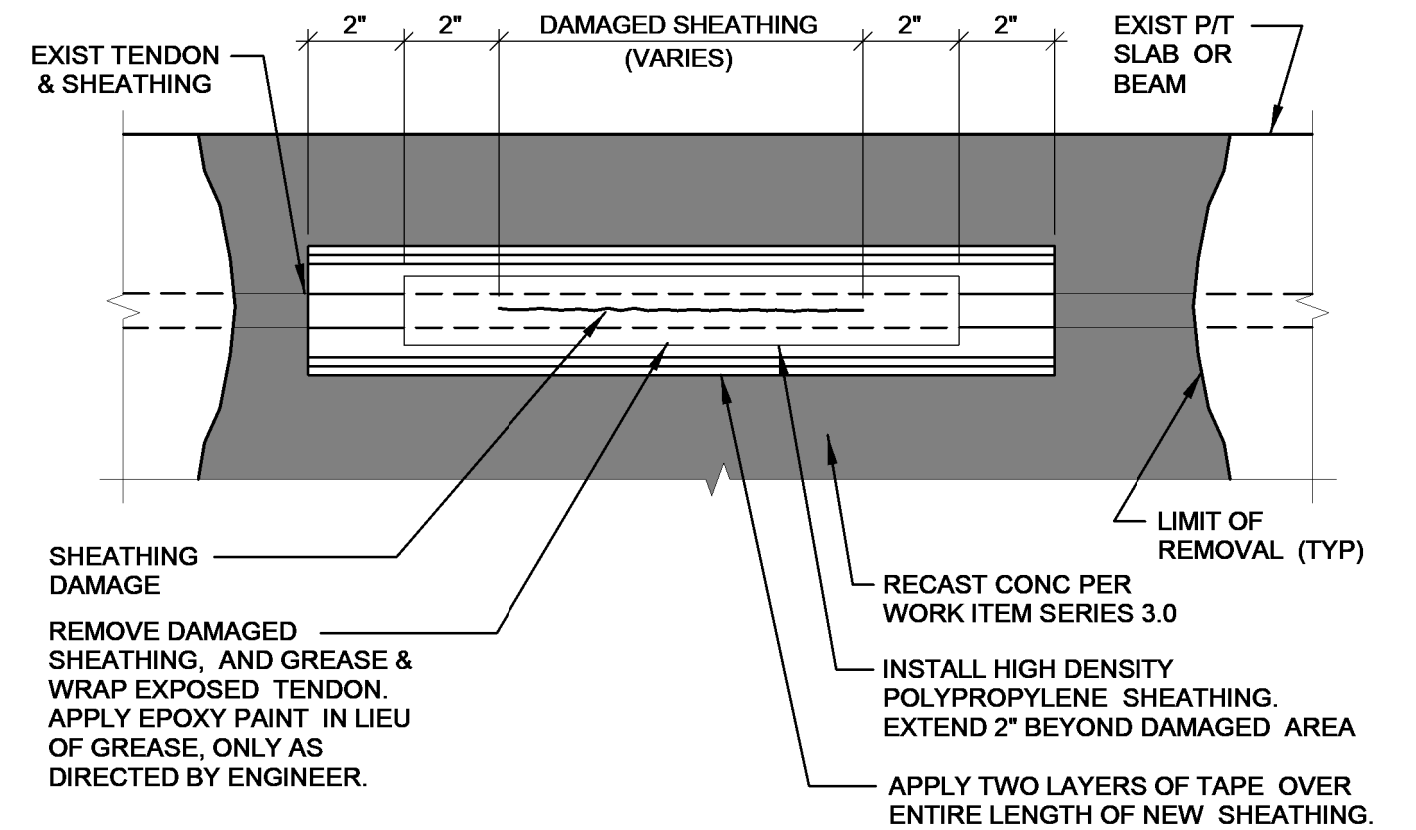
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SHEET TITLE:
REPAIR DETAILS
 R-513

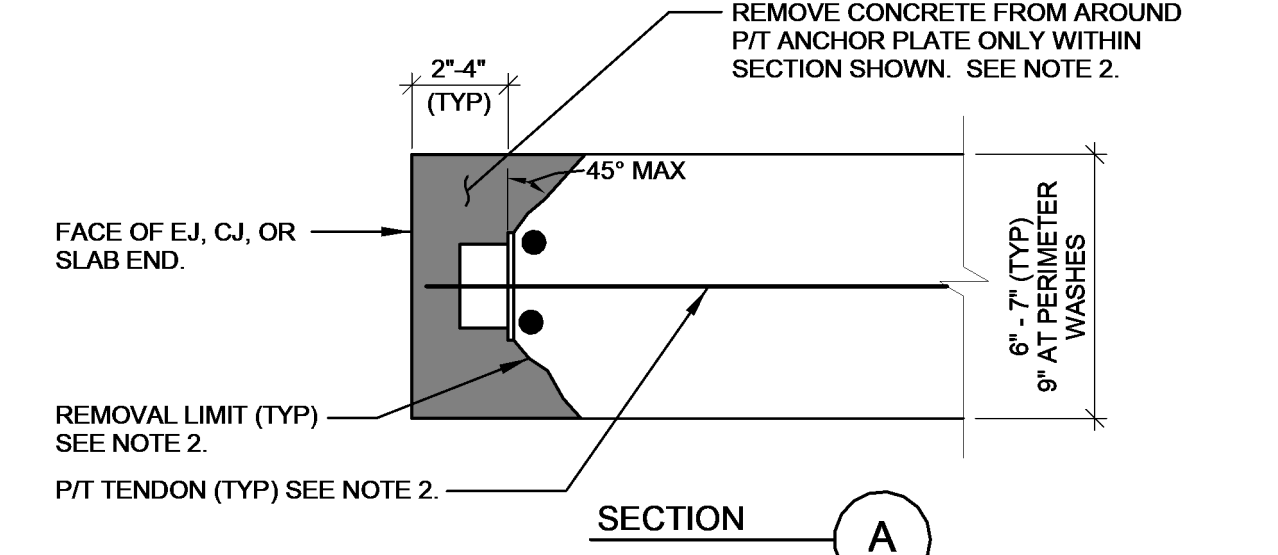
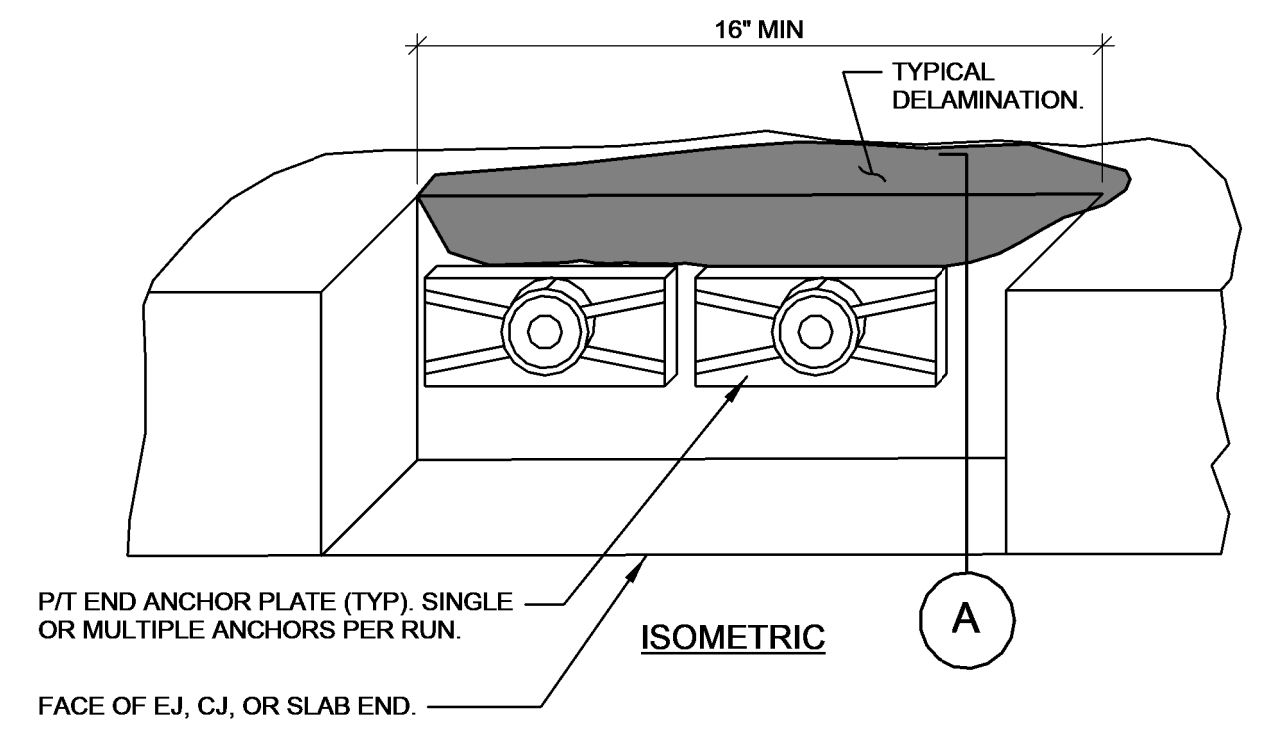


- NOTES:**
1. THE COMBINATION OF TENDON REPAIRS SHOWN ABOVE TYPICALLY OCCUR WHEN TENDON FAILURE OCCURS AT THE END ANCHOR ONLY OR WHEN TENDON FAILURE OCCURS AT THE END ANCHOR AND AT ANOTHER LOCATION ALONG THE SAME TENDON.
 2. STRESSING OCCURS AT CENTER-PULL COUPLING PER WORK ITEM 21.6.
 3. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER WORK ITEM 21.9 IF REQUIRED.
 4. REMOVE & REPLACE CONCRETE WITHIN SECTIONS SHOWN SHADED (PERFORMED & PAID FOR UNDER WORK ITEM SERIES 3.0).

21.4.2 21.6.1 P/T TENDON END ANCHORAGE (DEAD) TENDON SPLICE COUPLING (CENTER-PULL) (FOR REFERENCE ONLY) (PS #4)

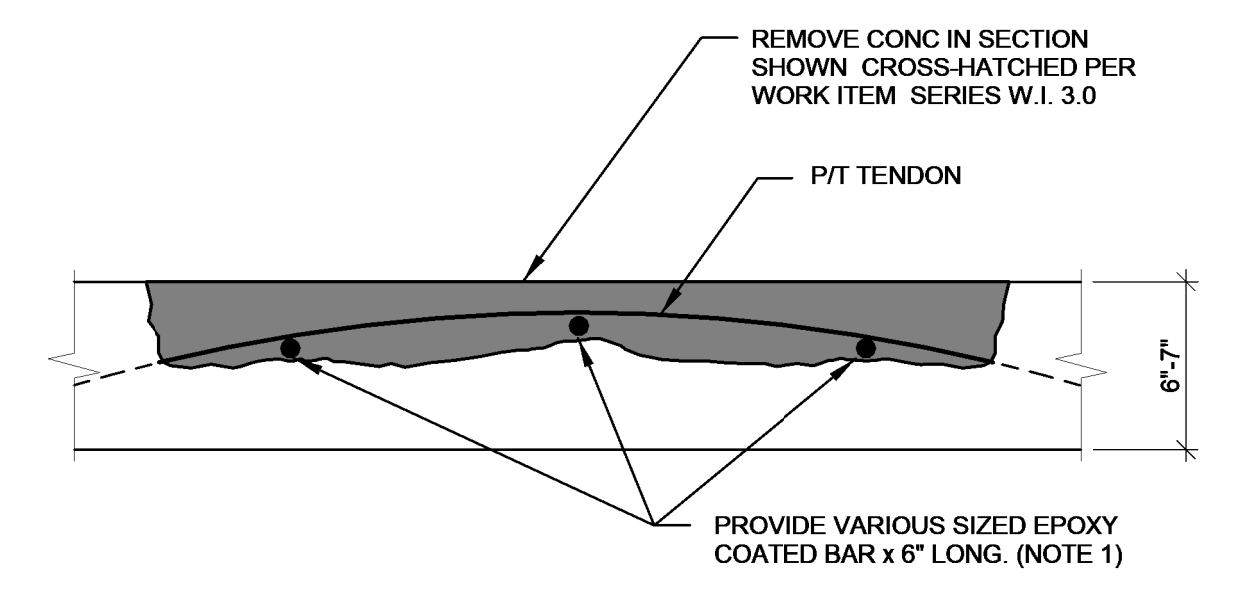


21.2 PROTECT EXPOSED P/T TENDON (INCIDENTAL) (PS #4)

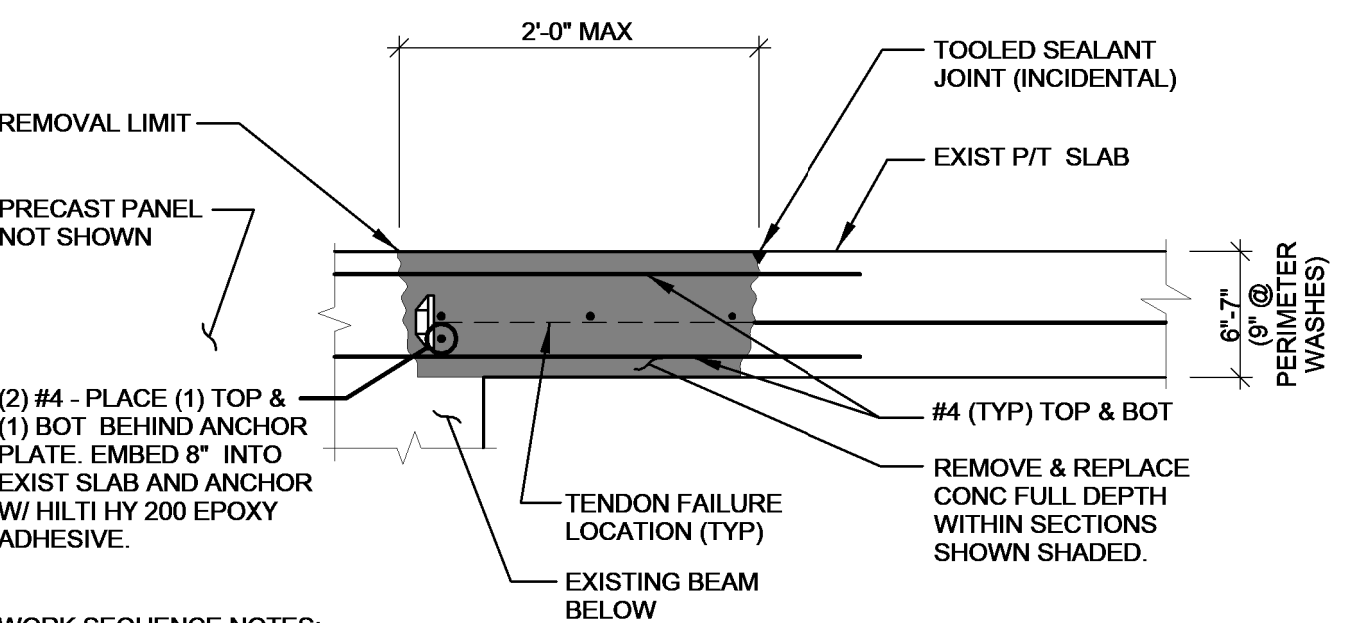


- NOTES:**
1. USE EXTREME CAUTION REMOVING CONCRETE AROUND TENDON ANCHOR. MAXIMUM 15# CHIPPING HAMMERS SHALL BE USED IN REMOVING CONCRETE. MULTIPLE/BUNDLED TENDON ANCHORS MAY BE ENCOUNTERED.
 2. IF DELAMINATIONS EXTEND BEYOND REMOVAL LIMITS SHOWN, P/T TENDON SHALL BE DE-TENSIONED PRIOR TO REMOVALS.

21.0.2 CONCRETE REMOVALS AT P/T TENDON ANCHORAGE (PS #4) (FOR REFERENCE ONLY)

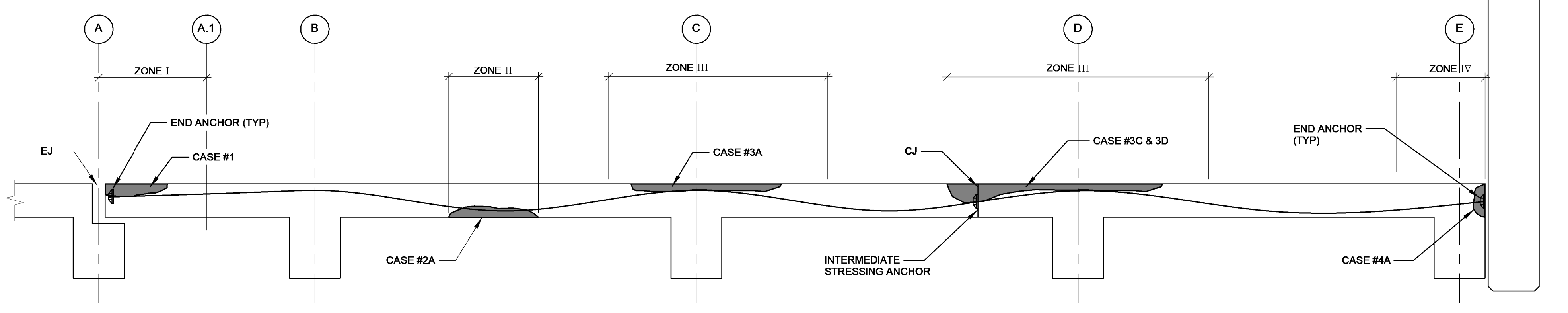


21.0.1 CONCRETE REMOVALS AT P/T CABLE (FOR REFERENCE ONLY)



- WORK SEQUENCE NOTES:**
1. VERIFY TENDON FULLY DETENSIONED
 2. REMOVE AND REPLACE CONCRETE FULL DEPTH PER WORK ITEM 3.3B
 3. INSTALL NEW END ANCHOR AND REINFORCEMENT
 4. PLACE CONCRETE AND ALLOW ADEQUATE CONC. STRENGTH GAIN PRIOR TO STRESSING.
 5. STRESS P/T TENDON. (NOT INCLUDED IN WORK ITEM 21.4).

21.4.1 P/T TENDON END ANCHORAGE (DEAD) (FOR REFERENCE ONLY) (PS #4)



ZONE I - END ANCHOR REPAIR @ EXPANSION JOINT
 CASE 1:
 A. REPLACE END ANCHOR (DEAD), AND TENDON SPLICE REPAIR.
 B. SEE DETAIL SERIES 21.4 & 21.6.

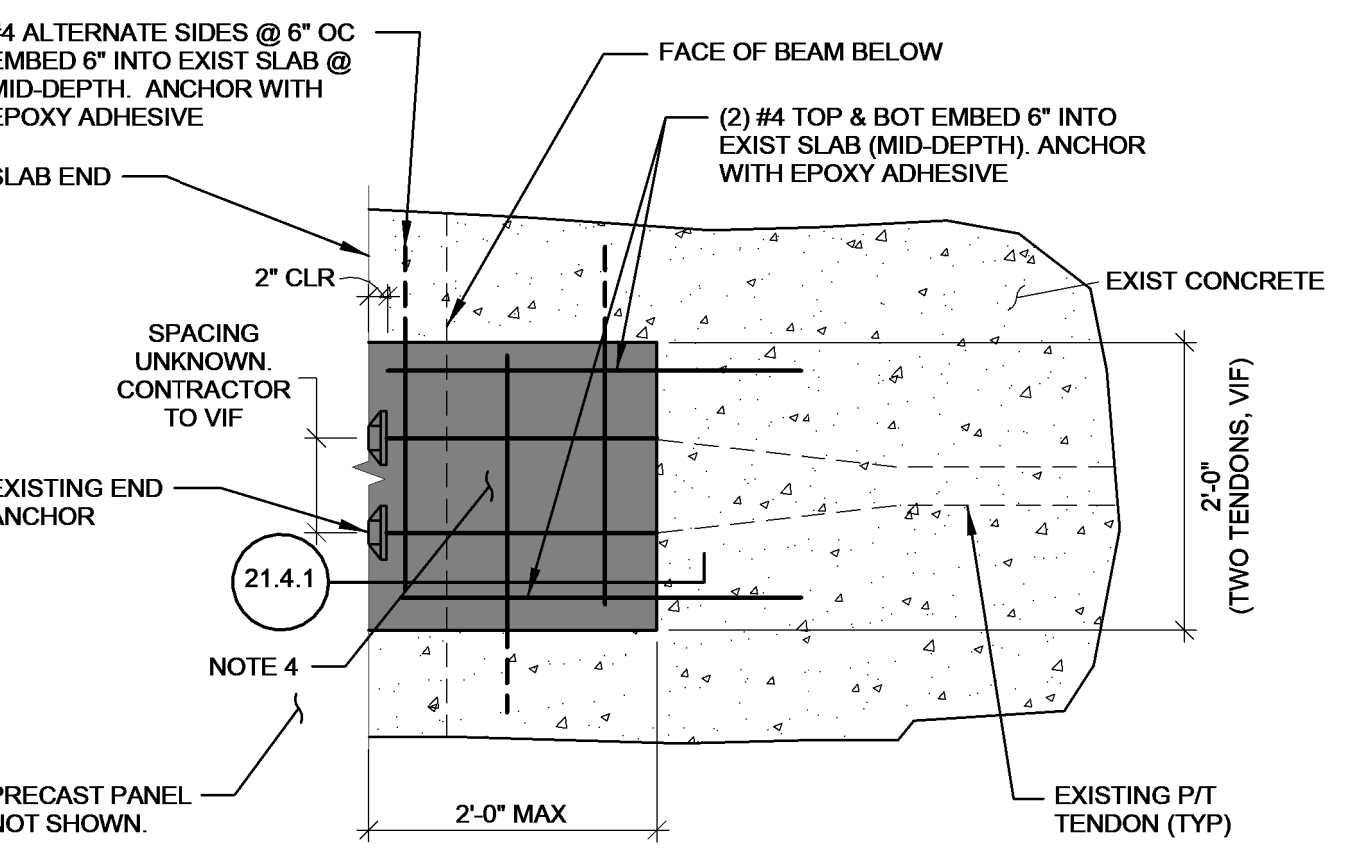
ZONE II - TENDON REPAIR @ SLAB SOFFIT
 CASE 2A:
 A. SINGLE COUPLING AND TENDON SPLICE REPAIR. B. SEE DETAIL SERIES 21.6 & 21.7.

ZONE III - TENDON REPAIR OVER BEAMS
 CASE 3A:
 A. SINGLE OR DOUBLE COUPLING AND TENDON SPLICE REPAIR.
 B. SEE DETAIL SERIES 21.6, 21.7, & 21.8.

CASE 3C:
 A. SINGLE COUPLING TENDON SPLICE WITH CENTER-PULL TENDON SPLICE COUPLING. (KEEP INTERMEDIATE ANCHOR)
 B. SEE DETAIL SERIES 21.6, & 21.7.

CASE 3D:
 A. SINGLE COUPLING TENDON SPLICE WITH CENTER-PULL TENDON SPLICE COUPLING. (REMOVE INTERMEDIATE ANCHOR)
 B. SEE DETAIL SERIES 21.6 & 21.7.

ZONE IV - END ANCHOR REPAIR AT WALL/BEAM
 CASE 4A:
 A. REPLACE END ANCHOR (DEAD) AND TENDON SPLICE REPAIR.
 B. SEE DETAIL SERIES 21.4, & 21.6.



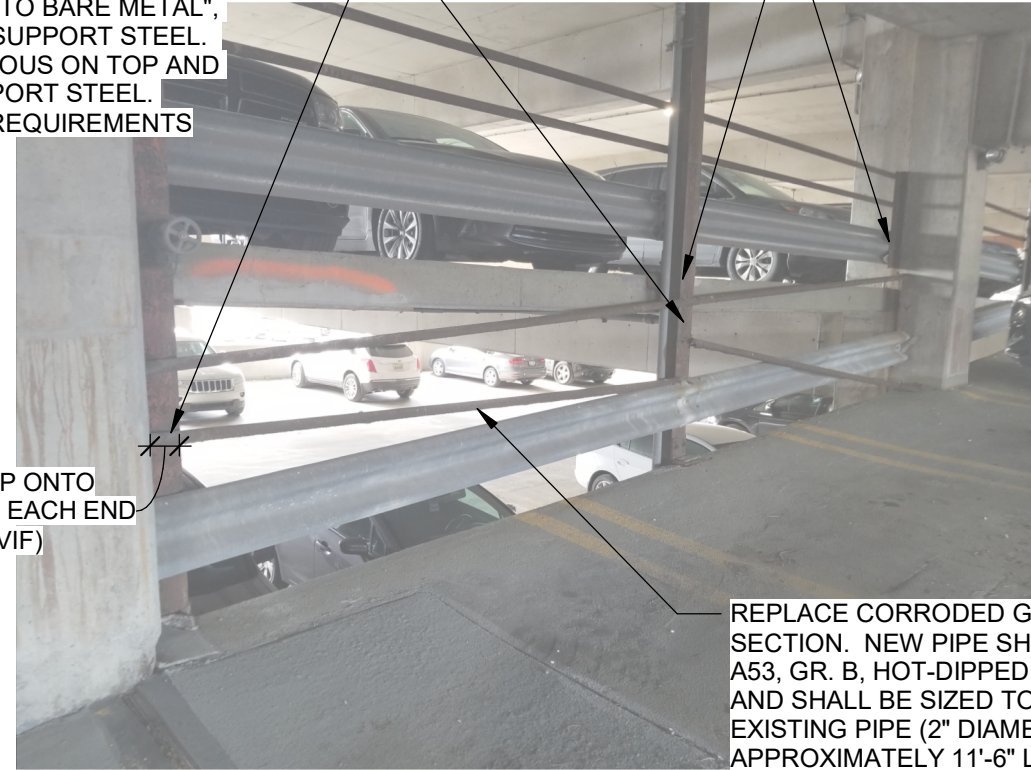
- NOTES:**
1. THIS DETAIL TYPICALLY APPLIES WHEN A TENDON FAILURE OCCURS NEAR AN EXISTING END ANCHOR AND STRESSING OF THE TENDON WILL OCCUR AT A DIFFERENT LOCATION AS DETERMINED BY ENGINEER. SEE DETAIL 21.4.1 FOR ADDITIONAL INFORMATION.
 2. THIS REPAIR WILL BE PERFORMED IN COMBINATION WITH WORK ITEM 21.5 FOR STRESSING OF THE TENDON.
 3. ANCHOR INSTALLATION SHALL BE AT ORIGINAL TENDON ANCHOR LOCATION.
 4. CONCRETE REPAIR WORK SHALL BE PERFORMED & PAID FOR UNDER WORK ITEM SERIES 3.0. SUPPLEMENTAL REINFORCEMENT SHOWN SHALL BE INCIDENTAL TO THIS WORK.

21.4 P/T TENDON END ANCHORAGE (DEAD) (PS #4)

- NOTES:**
1. TYPICAL CONCRETE DELAMINATIONS SHOWN IN CROSS-HATCHED AREAS ABOVE.
 2. SECTION ABOVE SHOWS TYPICAL P/T TENDON FAILURE AREAS ("ZONES"). CORRESPONDING REPAIR SCENARIOS ("CASES") ARE DESCRIBED ABOVE AND ASSOCIATED REPAIR DETAILS ARE REFERENCED.
 3. A COMBINATION OF REPAIR "CASES" MAY BE REQUIRED TO REPAIR A TENDON DEPENDING ON LOCATION AND NUMBER OF FAILURES ALONG A TENDON RUN.
 4. SEE "P/T REPAIR GENERAL NOTES" FOR FURTHER REQUIREMENTS.

21.0 P/T SLAB SECTION WITH TYPICAL TENDON FAILURE CONDITIONS AND REPAIR SCENARIOS (PS #4)

EXISTING PIPE IS WELDED TO SUPPORT STEEL AT EACH END. REMOVE EXISTING PIPE / WELD MATERIAL. CLEAN STEEL TO SSPC-SP11 "POWER TOOL CLEANING TO BARE METAL", AND WELD NEW PIPE TO SUPPORT STEEL. WELD SHALL BE CONTINUOUS ON TOP AND BOTTOM OF PIPE AT SUPPORT STEEL. WELDING SHALL BE PER REQUIREMENTS OF AWS D1.1.



NOTE:
1. PAY UNIT IS "EA" GUARD PIPE SECTION SPANNING FROM COLUMN TO CENTER SUPPORT STEEL (APPROXIMATE 11'-6" LONG).

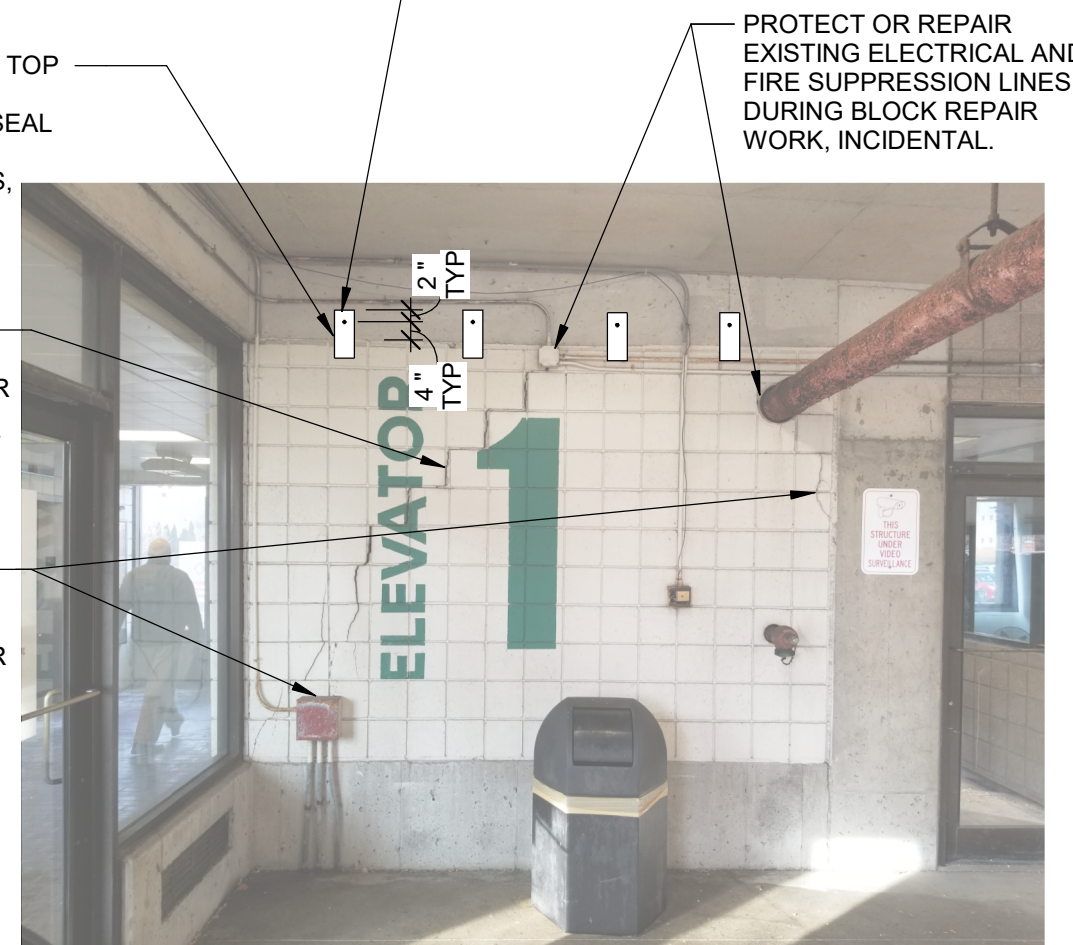
40.6 REPLACE CORRODED GUARD PIPE (PS #4)

PROVIDE AND INSTALL (8) HDG PLATES (6"x12"x3/8"), (4 PLATES ON EACH SIDE OF WALL) THRU-BOLTED WITH 3/8" DIA SS. THREADED ROD BOLTS THROUGH 8" THICK CONCRETE BEAM. LOCATE EMBEDDED REINFORCEMENT PRIOR TO DRILLING HOLES. CONFIRM LAYOUT IN FIELD WITH ENGINEER PRIOR TO ORDERING MATERIALS.

CUT 1" ISOLATION JOINT BETWEEN TOP OF BLOCK WALL AND BOTTOM OF CONCRETE BEAM. PREPARE AND SEAL ISOLATION JOINT WITH SILICONE SEALANT. FOR BIDDING PURPOSES, APPROXIMATELY 10 LF OF ISOLATION JOINT TO BE SEALED IN THIS LUMP SUM BID.

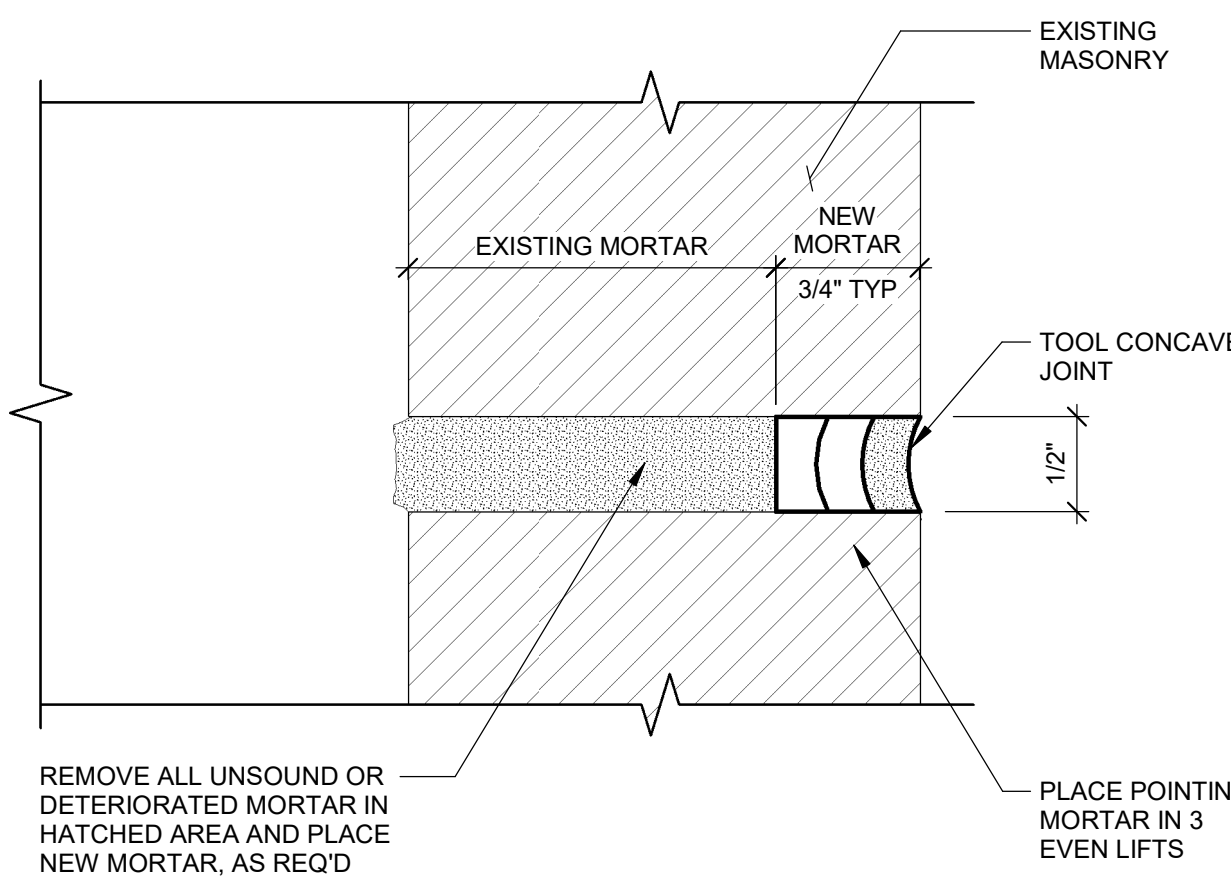
TUCKPOINT CRACKED MORTAR JOINTS. REFERENCE DETAIL 35.1 FOR SIMILAR REQUIREMENTS. FOR BID PURPOSES, CONTRACTOR SHALL INCLUDE TUCKPOINTING OF UP TO 30 LF OF CRACKED JOINTS IN THIS LUMP SUM BID.

REPLACE CRACKED MASONRY UNITS. REFERENCE DETAIL 80.3 FOR SIMILAR REQUIREMENTS. FOR BID PURPOSES, CONTRACTOR SHALL INCLUDE REPLACEMENT OF UP TO 15 BLOCK UNITS IN THIS LUMP SUM BID. MATCH EXISTING BLOCK SIZE, SHAPE AND ARCHITECTURAL FEATURES (WAFFLE GRID ON ONE FACE).



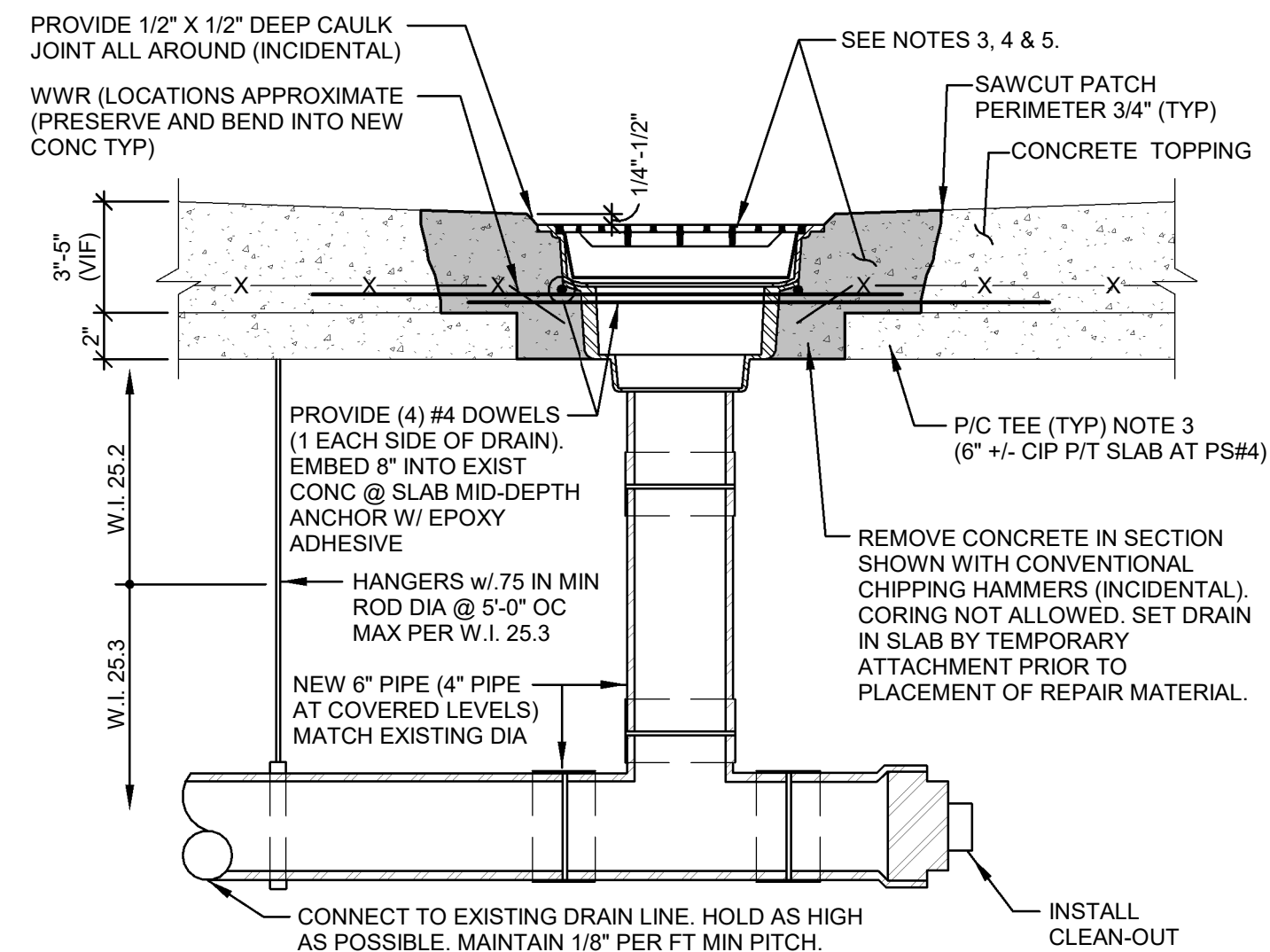
NOTES:
1. WORK LOCATION IS LEVEL 1 SOUTHEAST CORNER NEAR THE ELEVATOR LOBBY.
2. CONTRACTOR IS RESPONSIBLE TO PAINT NEW BLOCK/MORTAR TO MATCH EXISTING. SEE SECTION 020010 FOR MORE INFORMATION.
3. PERFORM WORK DURING OFF HOURS. COORDINATE WITH WSU.
4. RELOCATE EXISTING CONDUIT AS NEEDED TO FACILITATE WORK UNDER M/E ALLOWANCE W.I. 25.1.

35.5 MASONRY REPAIRS AT ELEVATOR TOWER (PS #4) (ALTERNATE)



NOTES:
1. REMOVE LOOSE MATERIAL FROM JOINT.
2. FILL AND Voids IN JOINT BEYOND POINTING WORK DEPTH.
3. GRIND BRICK SURFACES CLEAN OF EXISTING MORTAR. DO NOT DAMAGE ADJACENT MASONRY.
4. INSTALL MORTAR IN THREE LIFTS, COMPACTING EACH LIFT.
5. TOOL MORTAR JOINT CONCAVE.

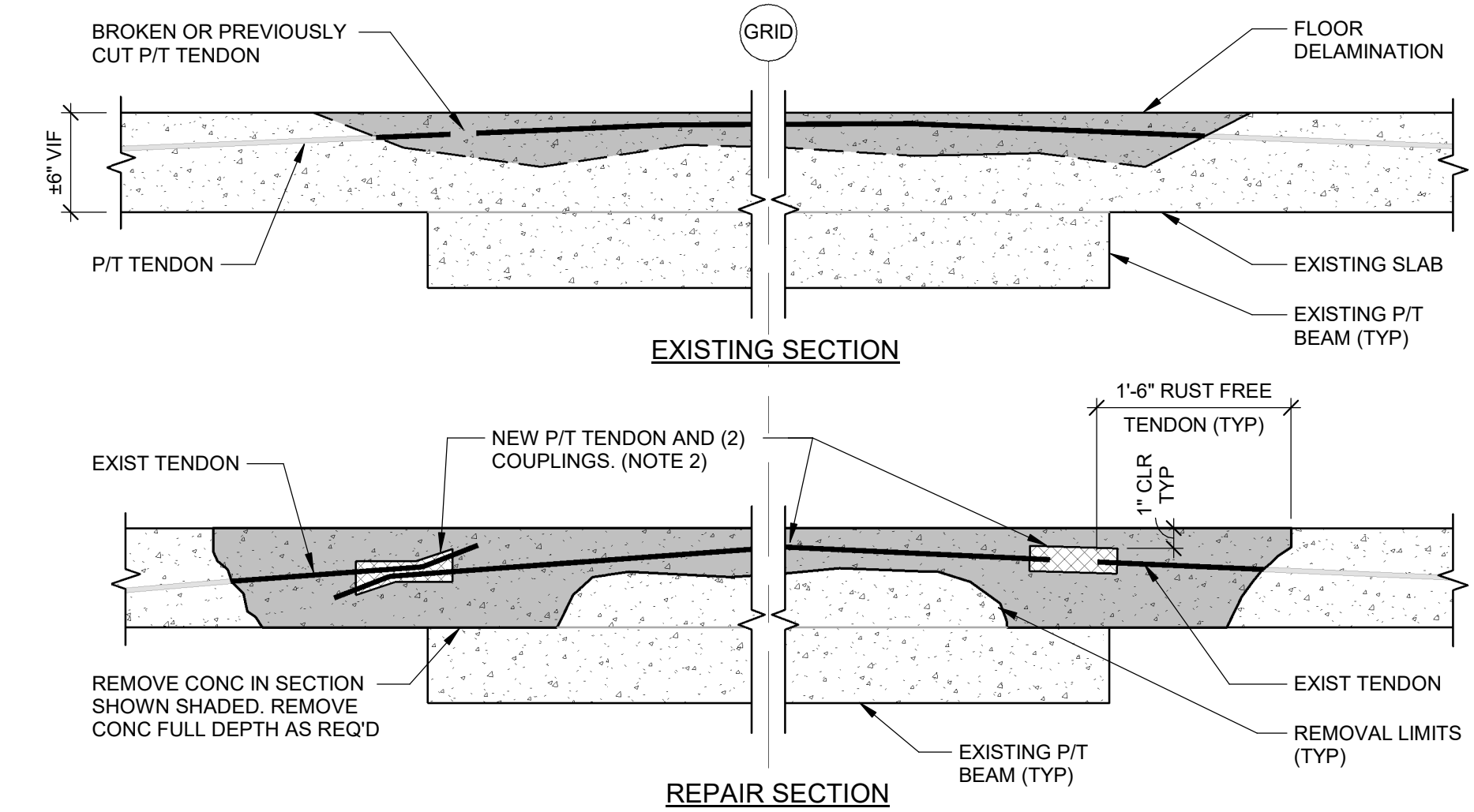
35.1 MASONRY TUCKPOINTING (PS #4) (FOR REFERENCE ONLY)



NOTES:
1. MATCH EXISTING PIPE MATERIAL AT REPLACEMENT LOCATIONS (CAST IRON OR SCHEDULE 80 PVC). ALL MATERIALS SHALL BE IN ACCORDANCE WITH PREVAILING BUILDING ORDINANCES.
2. INSTALL ADJUSTABLE HANGERS AS REQUIRED. VERIFY MINIMUM HEIGHT RESTRICTIONS OF PREVAILING BUILDING ORDINANCES PRIOR TO INSTALLATION.
3. FULL DEPTH CONCRETE & SUPPLEMENTAL REINFORCEMENT TO BE PAID UNDER WORK ITEM SERIES 3.0. DO NOT CUT OR DAMAGE ANY EMBEDDED ITEMS. PRECAST FIELD-TOPPED CONDITION SHOWN. SIMILAR REQUIREMENTS APPLY AT PS #2 / PS #4.
4. **REPLACEMENT/SUPPLEMENTAL DRAIN (PS #2):**
a. SMITH 2140-C-M-B (+2646Y)
b. WADE 1200-5-27-31
c. OR ENGINEER APPROVED EQUIVALENT
5. **REPLACEMENT/SUPPLEMENTAL DRAIN (PS #4):**
a. 8.5" DRAIN: SMITH 2120-C-M-B (+2646Y)
b. 14" DRAIN: SMITH 2143-C-M-B
c. OR ENGINEER-APPROVED EQUIVALENT
d. ALTERNATE: 1 DRAIN IS 8.5", 3 DRAINS ARE 14".
e. AT CONTRACTOR'S OPTION, 12" DRAIN SPECIFIED AT OTHER STRUCTURES MAY BE USED IN LIEU OF 8.5" DRAINS. 14" DRAIN CANNOT BE DOWNSIZED.

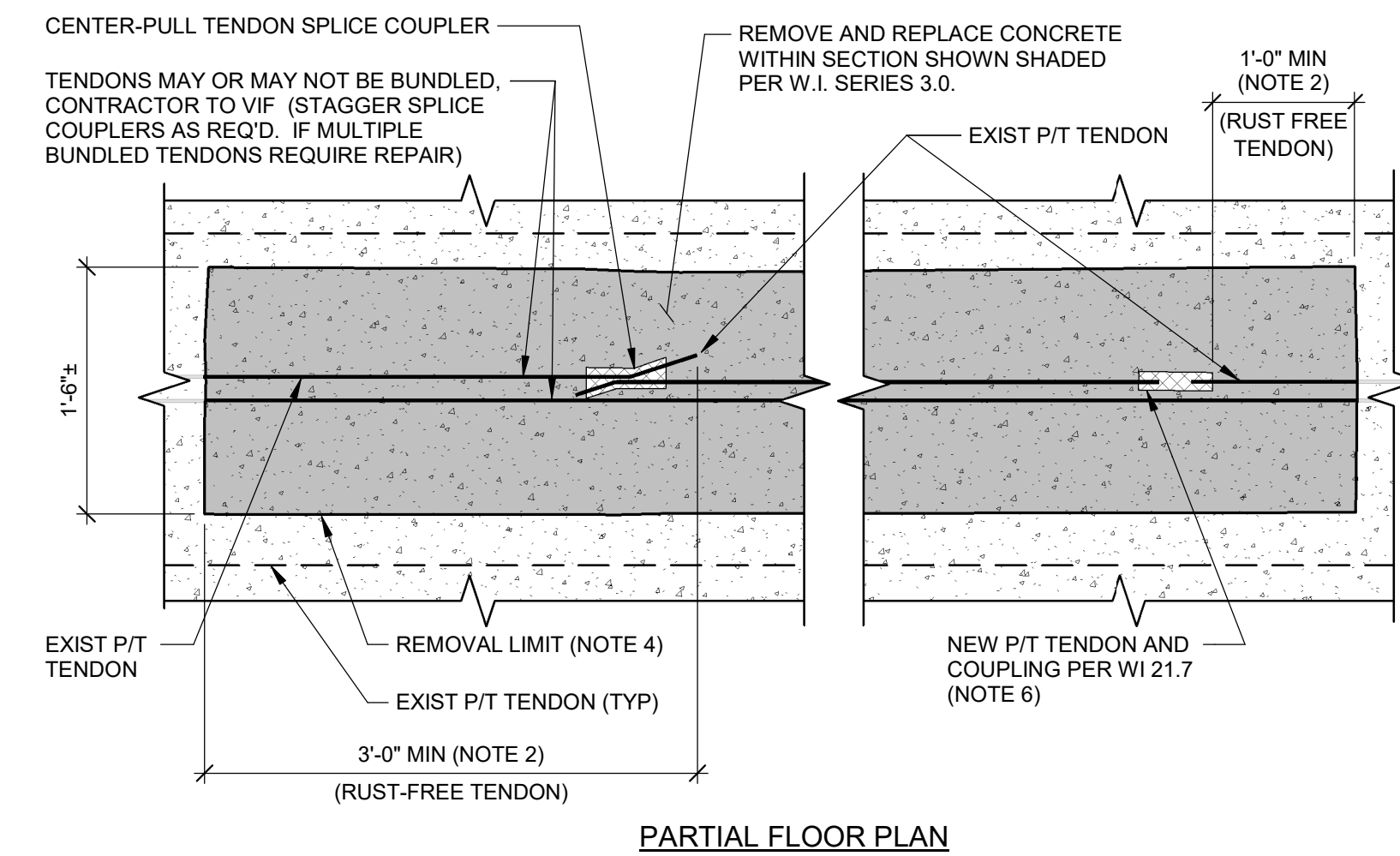
25.2 MECHANICAL - FLOOR DRAIN REPLACEMENT (PS #2 & PS #4) (BASE BID AND ALTERNATE)

25.3 MECHANICAL - PIPE & HANGERS (PS #2 & PS #4) (BASE BID AND ALTERNATE)



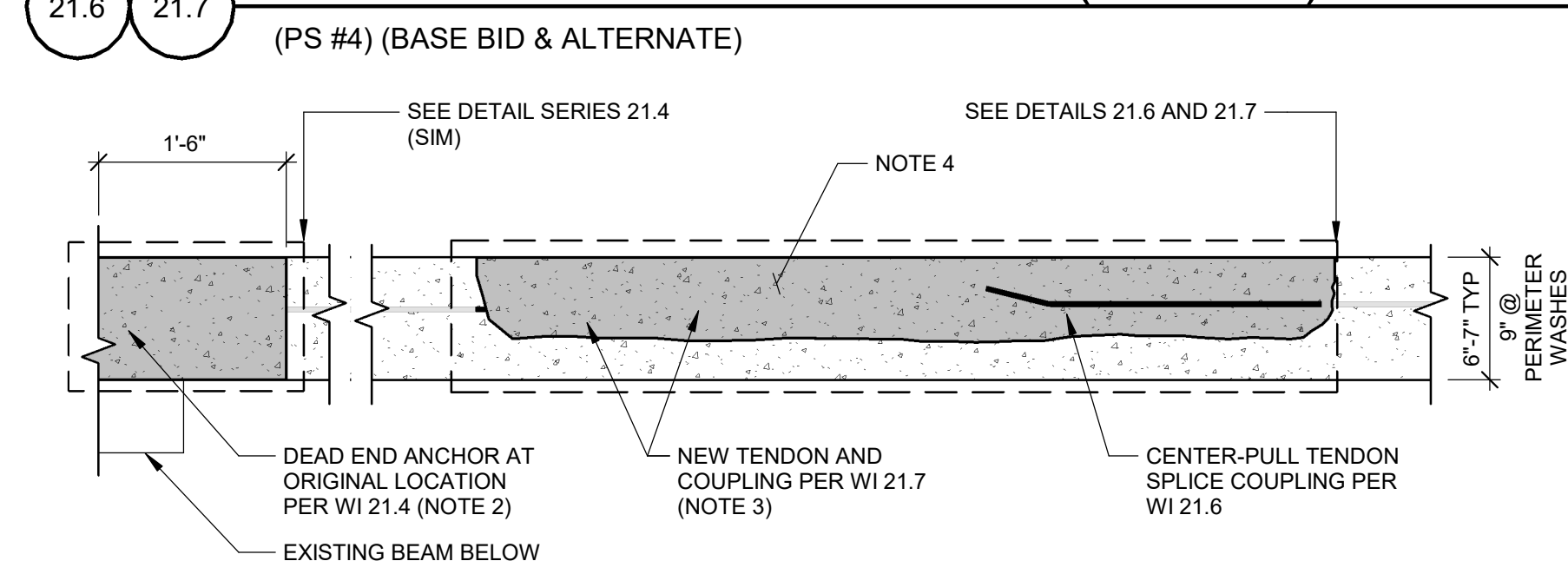
NOTES:
1. IF TWO OR MORE FAILED BUNDLED TENDONS ARE ENCOUNTERED, STAGGER THE COUPLERS AS REQ'D. FOR STRESSING OPERATIONS, STRESS TENDON(S) PER WORK ITEM 21.3 OR 21.6 AS DIRECTED BY ENGINEER.
2. PROVIDE UP TO 10'-0" OF NEW TENDON INCIDENTAL TO THIS WORK ITEM NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER WORK ITEM 21.9. CONCRETE REPAIR WORK SHALL BE PERFORMED AND PAID FOR UNDER WORK ITEM SERIES 3.0.

21.8 TENDON SPLICE COUPLING (DOUBLE) (PS #4)



NOTES:
1. SEE DETAILS 21.4, 21.4.1, 21.6.1 & 21.7.1 FOR ADDITIONAL INFORMATION.
2. INCREASE CONCRETE REMOVAL LENGTH AS REQ'D BY STRESSING AND INSTALLATION METHODS.
3. CONCRETE REPAIRS SHALL BE PERFORMED AND PAID FOR UNDER WORK ITEM SERIES 3.0.
4. STAGGER SPLICE COUPLERS IF MORE THAN (1) TENDON PER RUN REQUIRES REPAIR. MAY NEED TO ALTERNATE CENTER-PULL COUPLERS ON OPPOSITE SIDES OF GRID LINE.
5. LOCATE SPLICE COUPLERS ALONG EXIST. TENDON PROFILE AT SLAB MID-DEPTH (APPROX. 6'-0" FROM GRID LINE) (VIF).
6. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER W.I. 21.9.

21.6 TENDON SPLICE COUPLING (CENTER-PULL) (PS #4) (BASE BID & ALTERNATE)



NOTES:
1. THE COMBINATION OF TENDON REPAIRS SHOWN ABOVE TYPICALLY OCCUR WHEN TENDON FAILURE OCCURS AT THE END ANCHOR ONLY OR WHEN TENDON FAILURE OCCURS AT THE END ANCHOR AND AT ANOTHER LOCATION ALONG THE SAME TENDON.
2. PULL TENDON BACK IN ORDER TO POSITION NEW END ANCHOR IN ORIGINAL LOCATION. STRESSING OCCURS AT CENTER-PULL COUPLING PER WORK ITEM 21.6.
3. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER WORK ITEM 21.9 AS APPROPRIATE.
4. REMOVE & REPLACE CONCRETE WITHIN SECTIONS SHOWN SHADED (PERFORMED & PAID FOR UNDER WORK ITEM SERIES 3.0).

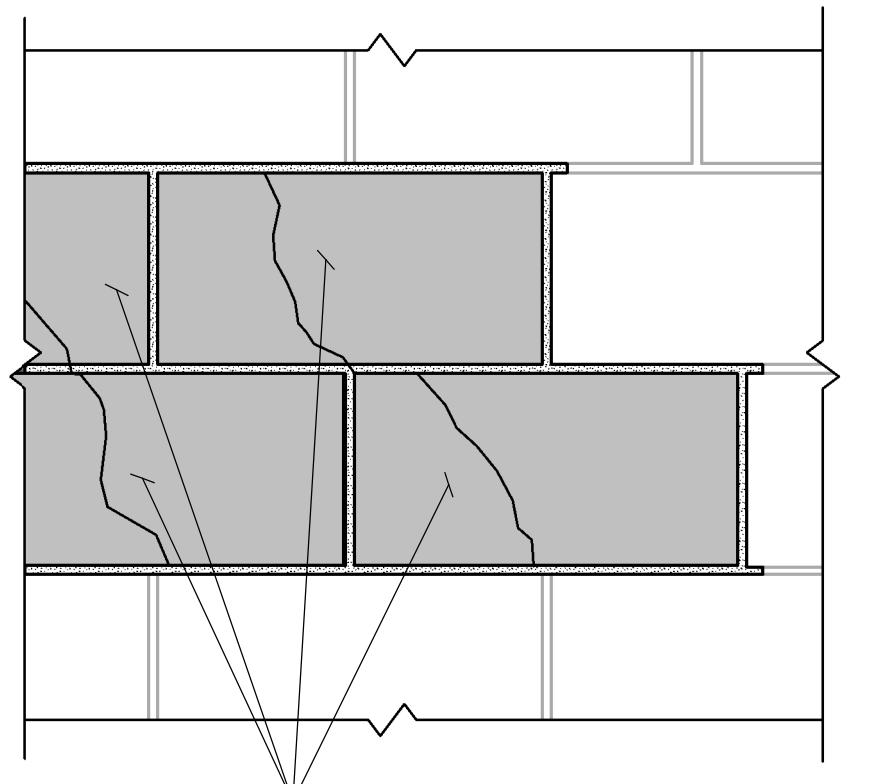
21.4.3 TENDON SPLICE COUPLING (CENTER-PULL) (FOR REFERENCE ONLY) (PS #4)

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SHEET TITLE:
REPAIR DETAILS



REMOVE DAMAGED CMU UNITS AND MORTAR. REPLACE WITH NEW CMU AND FULLY MORTARED JOINTS.

- NOTES:
1. PAY UNIT INCLUDES PROVIDING CORNER UNITS, BOND BEAM UNITS, ETC AS REQUIRED TO REPAIR ALL DAMAGED CMU.
 2. INCIDENTAL TO THIS WORK IS PROVIDING NEW TRUSS OR LADDER TYPE REINFORCEMENT TO MATCH EXISTING. LAP MINIMUM ONE BLOCK LENGTH.
 3. CONTRACTOR SHALL SUPPORT REMAINING AREAS OF CMU DURING REPAIRS.
 4. PAINT NEW UNITS TO MATCH COLOR OF EXISTING ADJACENT UNITS (INCIDENTAL).

REPLACE CONCRETE MASONRY UNITS

(PS #4) (FOR REFERENCE ONLY)

80.3



LOCATION: SOUTHWEST STAIR/ELEVATOR TOWER, WEST FACE, LEVEL 2. REPLACE MISSING GLASS LITE TO MATCH ORIGINAL CONSTRUCTION. INSTALL NEW GLASS LITE IN ACCORDANCE WITH MANUFACTURERS DIRECTION. FINAL INSTALLATION SHALL BE WATERTIGHT.

REPLACE WINDOW AT STAIR/ELEVATOR TOWER

(PS #4) (ALTERNATE)

41.6



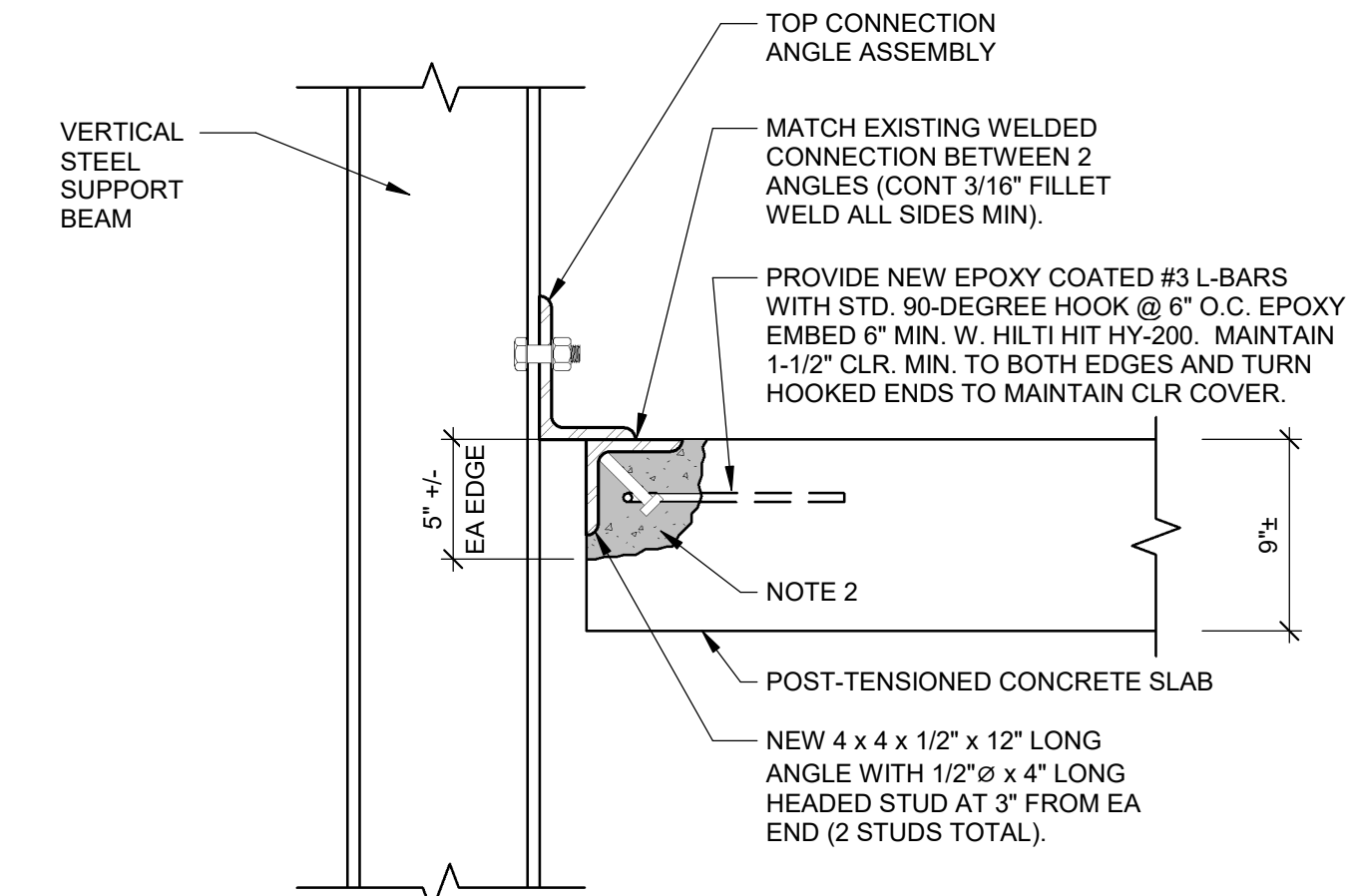
REPLACE LANDING STIFFENER ANGLES TO MATCH EXISTING (INCIDENTAL).

- NOTE:
1. LOCATION SHOWN IS NORTHEAST STAIR TOWER, LEVEL 8. OTHER REPLACEMENT LOCATION (LEVEL 7) IS SAME CONDITION. REFERENCE SPECIFICATION SECTION 020010 "WORK ITEMS" FOR WORK REQUIREMENTS.

STAIRS - REPLACE METAL PAN LANDING/CONCRETE

(PS #4)

41.3



- NOTES:
1. CONCRETE SLAB REINFORCING AND POST-TENSIONING NOT SHOWN FOR CLARITY. TEMPERATURE TENDON END ANCHORS MAY BE PRESENT AT OR NEAR CONCRETE REMOVAL AREAS. CONTRACTOR SHALL EXERCISE CAUTION DURING CONCRETE REMOVALS NOT TO DAMAGE POST-TENSIONING. DO NOT CHIP IN FRONT OF END ANCHORS. IF END ANCHORS PRESENT THAT PREVENT FULL CONCRETE REMOVALS NECESSARY TO REMOVE OLD ANGLE AND INSTALL NEW ANGLE, CONTRACTOR TO STOP WORK AND NOTIFY ENGINEER FOR ALTERNATE SOLUTION.
 2. REMOVE AND REPLACE CONCRETE SHOWN SHADED AS NECESSARY TO REMOVE OLD ANGLE, INSTALL NEW EMBEDDED ANGLE, AND REPAIR CURRENT SLAB EDGE CONCRETE DETERIORATION IN THE IMMEDIATE VICINITY OF THE EXISTING ANCHOR. NOTE 1. TYPICAL REMOVALS OF THE DEPTH SHOWN ON THIS DETAIL WILL BE APPROXIMATELY 18" LONG. CLEAN AND EPOXY COAT ANY EXPOSED REINFORCEMENT PER THE REQUIREMENTS OF SPECIFICATION SECTION "SURFACE PREPARATION FOR PATCHING AND OVERLAY."

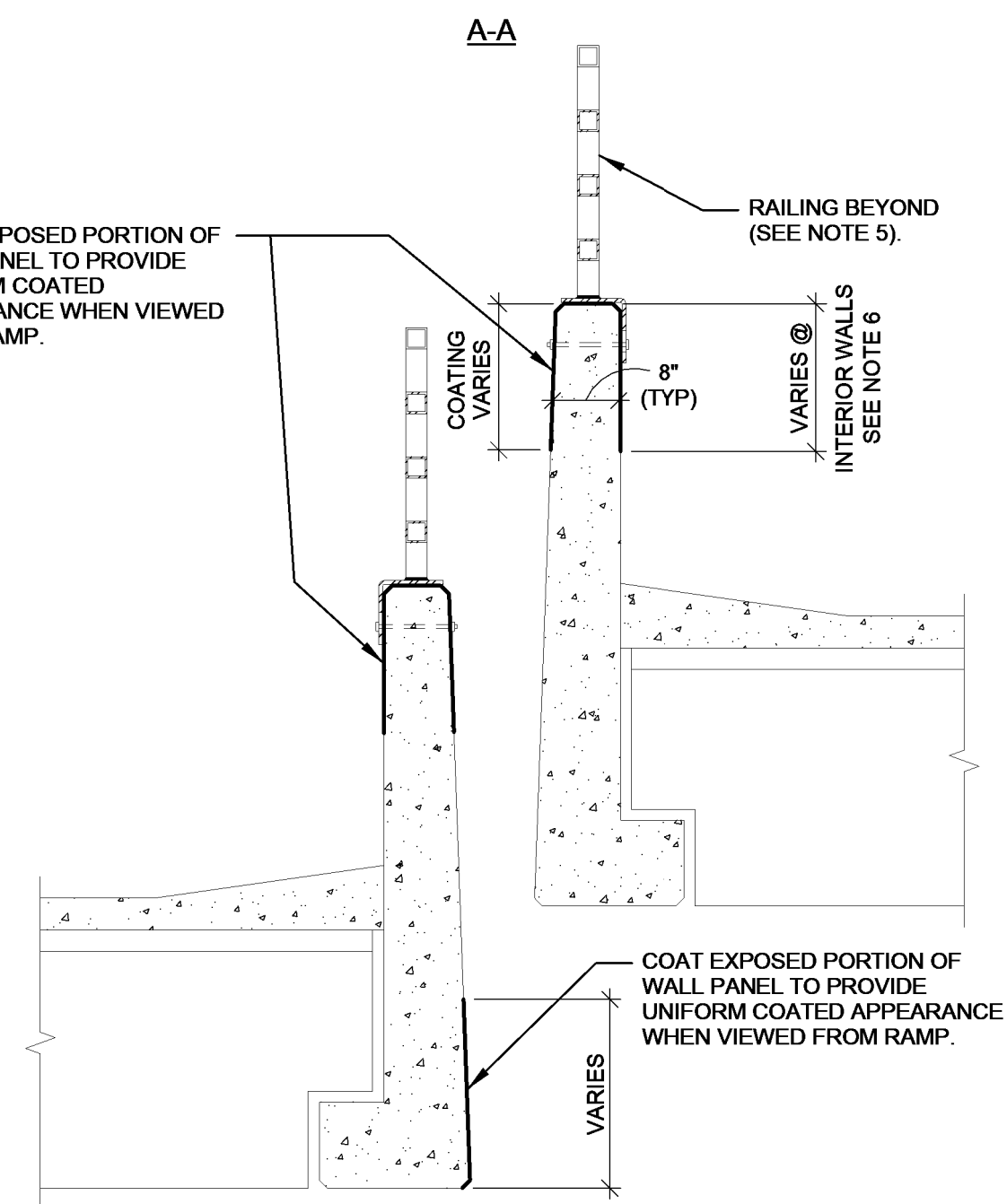
REPLACE CORRODED GUARD SUPPORT

(PS #4)

40.7.1



COAT EXPOSED PORTION OF WALL PANEL TO PROVIDE UNIFORM COATED APPEARANCE WHEN VIEWED FROM RAMP.

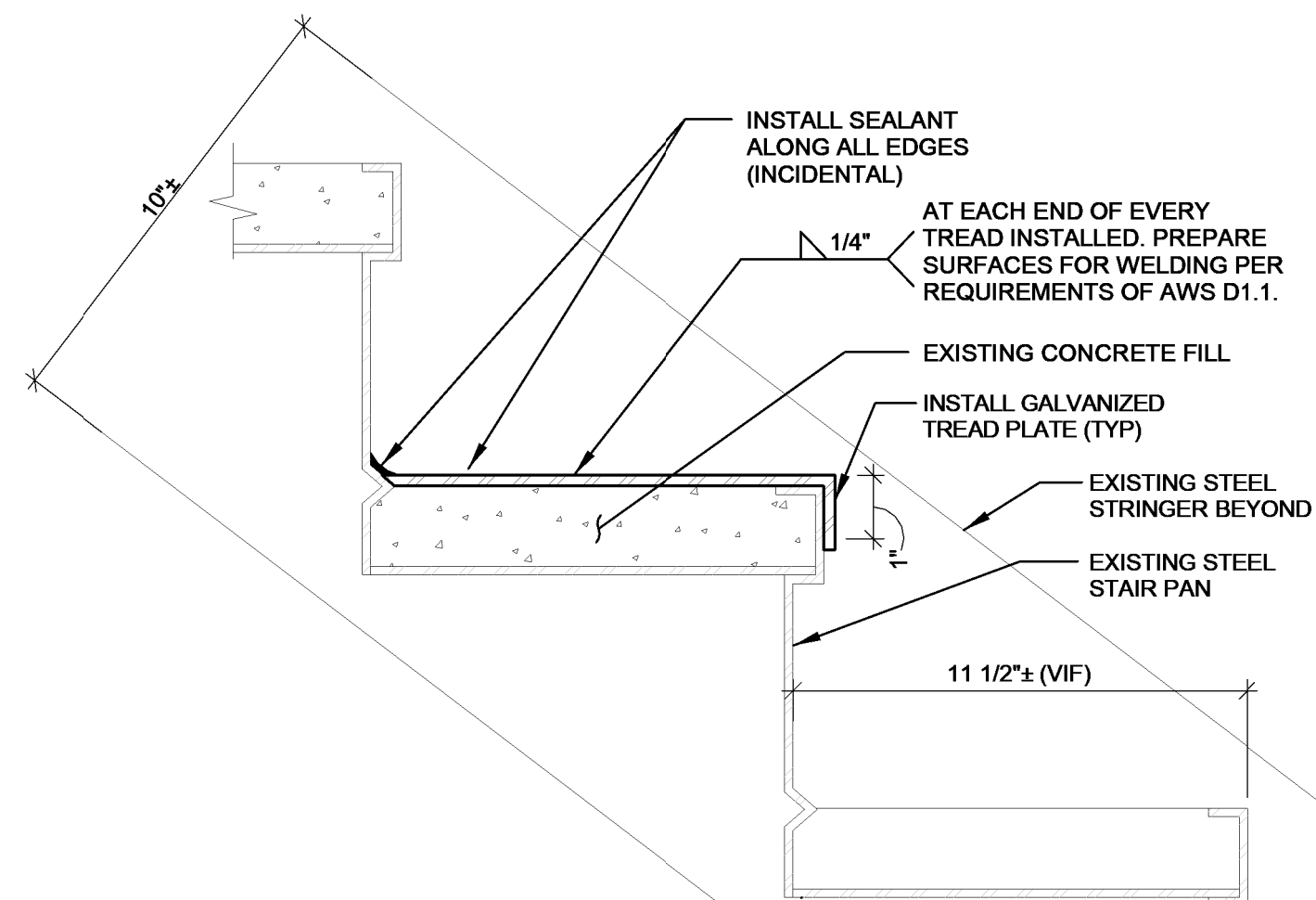


- NOTES:
1. INSTALL COATING ON TOP & DOWN BOTH SIDES OF BUMPER WALLS AS SHOWN. CONDITION @ INTERIOR WALLS SHOWN. SIMILAR REQUIREMENTS APPLY TO INTERIOR SIDE OF EXTERIOR WALLS.
 2. PAYMENT IS PER S.F. LOCATE IN FIELD WITH ENGINEER.
 3. SUBMIT COLOR SAMPLE & INSTALL MOCKUP FOR OWNER APPROVAL PRIOR TO START OF WORK.
 4. COMPLY WITH MANUFACTURERS WRITTEN RECOMMENDATIONS.
 5. PROTECT RAILING BASE AND COAT WALL AROUND RAILING.
 6. NO COATING ON EXTERIOR OF PARKING STRUCTURE. STOP AT CHAMFERED EDGE.

COAT BUMPER WALLS

(PS #2) (ALTERNATE)

45.5

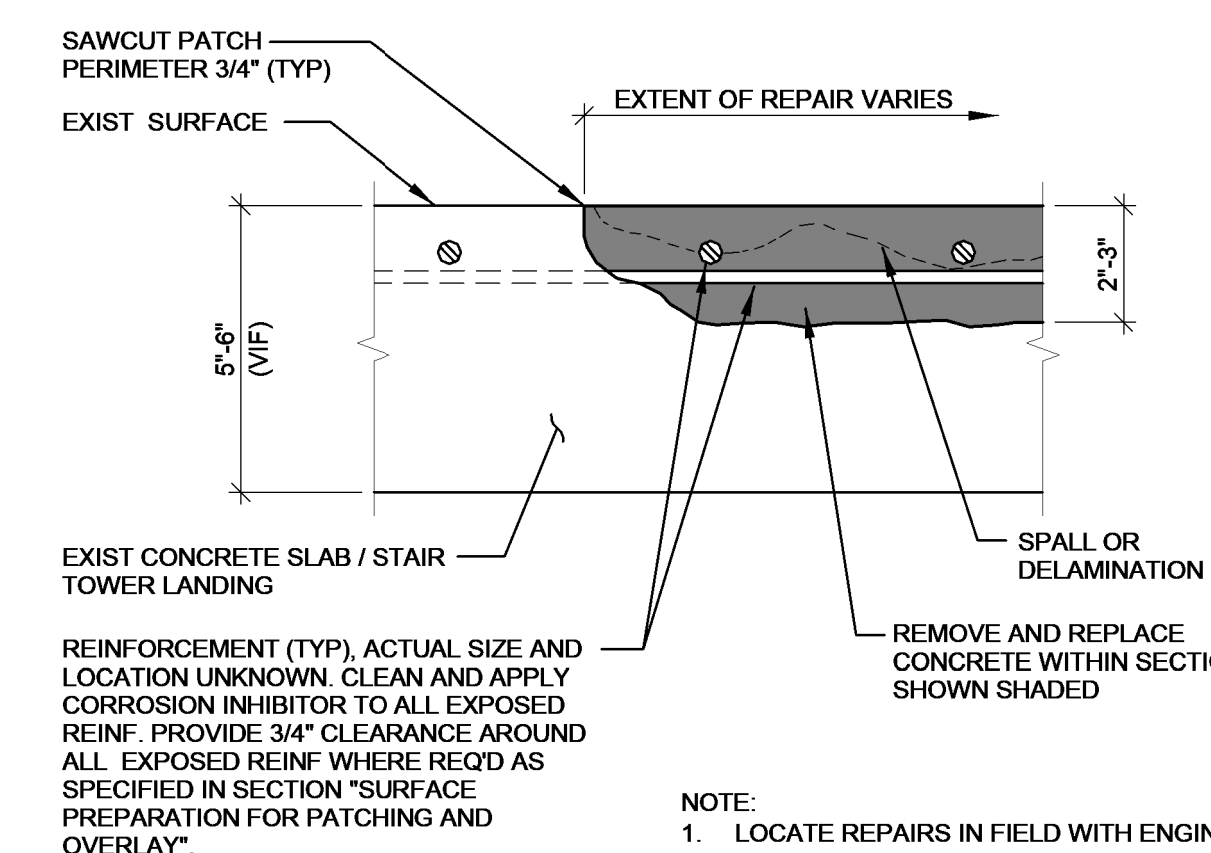


- EXIST REINFORCEMENT (TYP). LOCATIONS APPROXIMATE. CLEAN AND APPLY CORROSION INHIBITOR TO ALL EXPOSED REINF. PROVIDE 3/4" CLEARANCE AROUND ALL EXPOSED REINF.
- REMOVAL LIMITS (TYP)
- PROVIDE 1/4" THREADED STAINLESS STEEL DOWEL PIN AT 8" OC
- EMBED 3" W/ HILTI HY-200 EPOXY ADHESIVE.
- SIDE OF STAIR STRINGER
- 5'-7" (TYP)
- 5'-7" (TYP)
- REMOVE AND REPLACE CONCRETE WITHIN SECTIONS SHOWN SHADED (TYP)
- GRIND OR SAWCUT PATCH PERIMETER 1/2" (TYP)
- SPALL OR DELAMINATION (TYP)
- EXISTING CONCRETE FILL
- INSTALL GALVANIZED TREAD PLATE (TYP)
- EXISTING STEEL STRINGER BEYOND
- EXISTING STEEL STAIR PAN
- EXISTING STEEL STAIR PAN
- 11 1/2" (VIF)
- INSTALL SEALANT ALONG ALL EDGES (INCIDENTAL)
- AT EACH END OF EVERY TREAD INSTALLED. PREPARE SURFACES FOR WELDING PER REQUIREMENTS OF AWS D1.1.
- 1/4"
- 8" (TYP)
- RAILING BEYOND (SEE NOTE 5)
- INTERIOR WALLS (SEE NOTE 6)
- COATING VARIES
- COATING VARIES
- COAT EXPOSED PORTION OF WALL PANEL TO PROVIDE UNIFORM COATED APPEARANCE WHEN VIEWED FROM RAMP.
- VARIES @
- VARIES

STAIR REPAIR - STRINGER/LANDING EDGE

(PS #2)

41.2

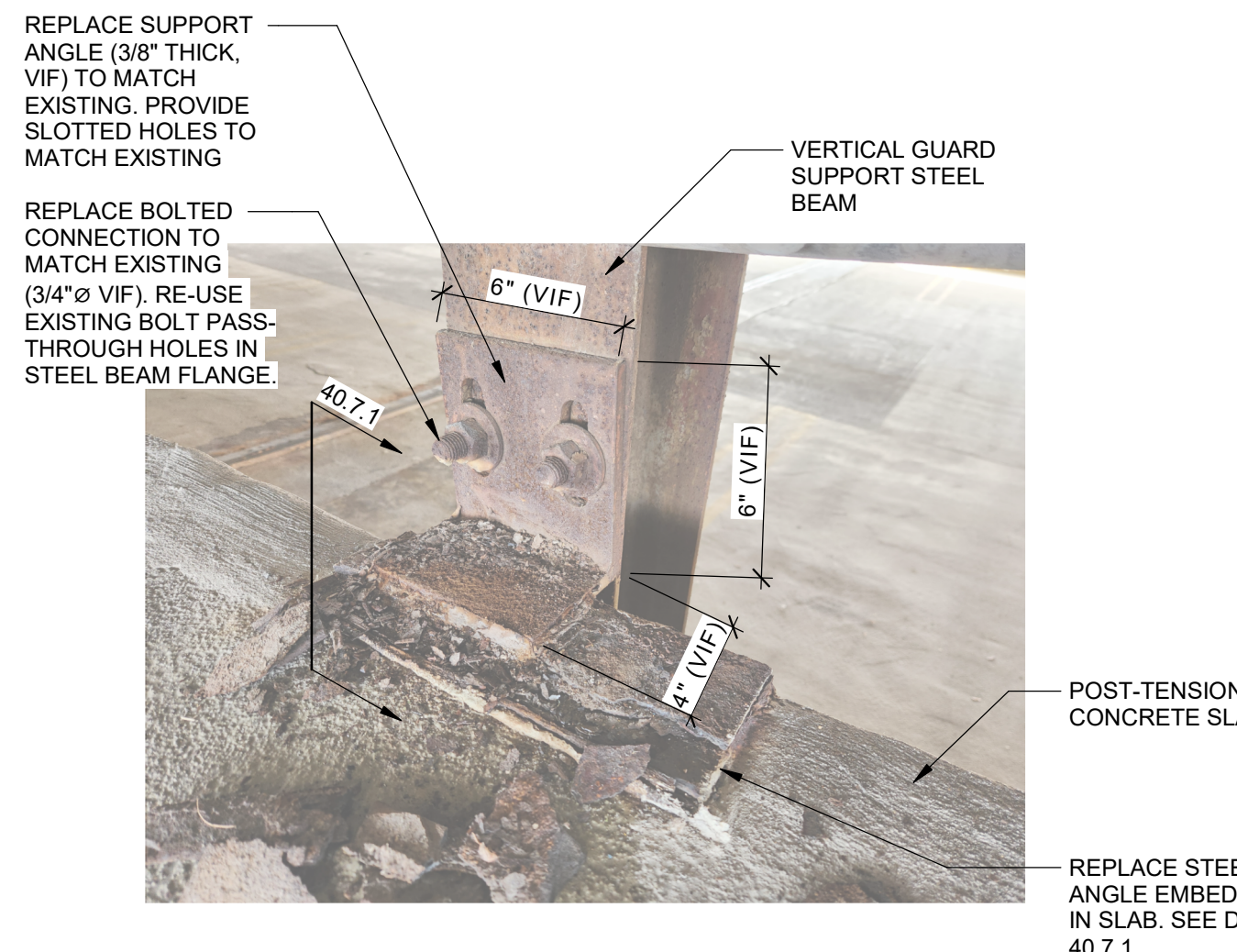


- SAWCUT PATCH PERIMETER 3/4" (TYP)
- EXIST SURFACE
- EXTENT OF REPAIR VARIES
- 5'-6" (VIF)
- 2'-3"
- EXIST CONCRETE SLAB / STAIR TOWER LANDING
- REINFORCEMENT (TYP). ACTUAL SIZE AND LOCATION UNKNOWN. CLEAN AND APPLY CORROSION INHIBITOR TO ALL EXPOSED REINF. PROVIDE 3/4" CLEARANCE AROUND ALL EXPOSED REINF WHERE REQ'D AS SPECIFIED IN SECTION "SURFACE PREPARATION FOR PATCHING AND OVERLAY."
- REMOVE AND REPLACE CONCRETE WITHIN SECTION SHOWN SHADED
- SPALL OR DELAMINATION
- NOTE:
1. LOCATE REPAIRS IN FIELD WITH ENGINEER.

STAIR REPAIR - LANDING

(PS #2)

41.1



- REPLACE SUPPORT ANGLE (3/8" THICK, VIF) TO MATCH EXISTING. PROVIDE SLOTTED HOLES TO MATCH EXISTING.
- REPLACE BOLTED CONNECTION TO MATCH EXISTING (3/4" Ø VIF). RE-USE EXISTING BOLT PASS THROUGH HOLES IN STEEL BEAM FLANGE.
- VERTICAL GUARD SUPPORT STEEL BEAM
- 6" (VIF)
- 6" (VIF)
- 4" (VIF)
- POST-TENSIONED CONCRETE SLAB
- REPLACE STEEL ANGLE EMBEDDED IN SLAB. SEE DETAIL 40.7.1.

- NOTES:
1. CONTRACTOR SHALL ONLY WORK ON ONE GUARD SUPPORT REPLACEMENT PER VERTICAL BEAM AT ONE TIME.
 2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF NEW ASSEMBLY FOR ENGINEER REVIEW PRIOR TO FABRICATING.
 3. MATERIALS:
 - a. ANGLE (OR BUILT-UP PLATES): ASTM A36
 - b. NUT: ASTM A563
 - c. WASHER: ASTM F436
 - d. NUT AND WASHER MUST DEVELOP FULL STRENGTH OF THREADED ROD.
 - e. WELDS: IN ACCORDANCE WITH AWS D1.1; E70XX ELECTRODES
 - f. ALL REPLACEMENT STEEL AND HARDWARE SHALL BE HOT-DIPPED GALVANIZED OR STAINLESS STEEL. REPAIR FIELD WELDS WITH ZINC-RICH COLD-GALVANIZING REPAIR PRODUCT.

REPLACE CORRODED GUARD SUPPORT

(PS #4)

40.7

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SHEET TITLE:
 REPAIR DETAILS