LEO A. ROY & LOWER LOCKS PARKING GARAGE RESTORATION

LOWELL, MASSACHUSETTS

PROJECT NUMBER: 16-2526.01

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SHEET NO.	TITLE
R-001	GENERAL NOTES, LEGEND & WORK ITEM SCHEDULE
R-101	LRPG - GROUND LEVEL FLOOR PLAN
R-102	LRPG - SECOND LEVEL FLOOR PLAN
R-103	LRPG - THIRD LEVEL FLOOR PLAN
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RA-101	LEO A. ROY & LOWER LOCKS STAIR REPAIRS
RG-101	LRPG - GROUND LEVEL STRIPING PLAN
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RG-103	LRPG - THIRD LEVEL STRIPING PLAN
RG-104	LRPG - FOURTH LEVEL STRIPING PLAN
RG-105	LRPG - ROOF LEVEL STRIPING PLAN
RG-201	LLPG - FIRST LEVEL STRIPING PLAN
RG-202	LLPG - SECOND LEVEL STRIPING PLAN
RG-203	LLPG - THIRD LEVEL STRIPING PLAN
RG-204	LLPG - FOURTH LEVEL STRIPING PLAN
RG-205	LLPG - FIFTH LEVEL STRIPING PLAN
FP0.00	FIRE PROTECTION LEGENDS, NOTES AND DETAILS
FP0.01	FIRE PROTECTION SPECIFICATIONS
FPD2.00	FIRE PROTECTION GROUND FLOOR DEMOLITION PLAN - LRPG
FPD2.01	FIRE PROTECTION 2ND, 3RD & 4TH FLOOR DEMOLITION PLAN - LRPG
FPD2.02	FIRE PROTECTION ROOF FLOOR DEMOLITION PLAN - LRPG
FPD2.03	FIRE PROTECTION FIRST LEVEL DEMOLITION PLAN - LLPG
FPD2.04	FIRE PROTECTION SECOND FLOOR DEMOLITION PLAN - LLPG
FPD2.05	FIRE PROTECTION THIRD FLOOR DEMOLITION PLAN - LLPG
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FPD2.07	FIRE PROTECTION FIFTH FLOOR DEMOLITION PLAN - LLPG
FP2.00	FIRE PROTECTION GROUND LEVEL NEW WORK PLAN LRPG
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FP2.02	FIRE PROTECTION ROOF LEVEL NEW WORK PLAN LRPG
FP2.03	FIRE PROTECTION FIRST LEVEL NEW WORK PLAN LLPG
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FP2.06	FIRE PROTECTION FOURTH LEVEL NEW WORK PLAN LLPG
FP2.07	FIRE PROTECTION FIFTH LEVEL NEW WORK PLAN LLPG
FP5.00	FIRE PROTECTION RISER DIAGRAM LRPG
FP5.01	FIRE PROTECTION RISER DIAGRAM LLPG
FA0.00	FIRE ALARM LEGENDS, NOTES, SPECIFICATIONS AND DETAILS
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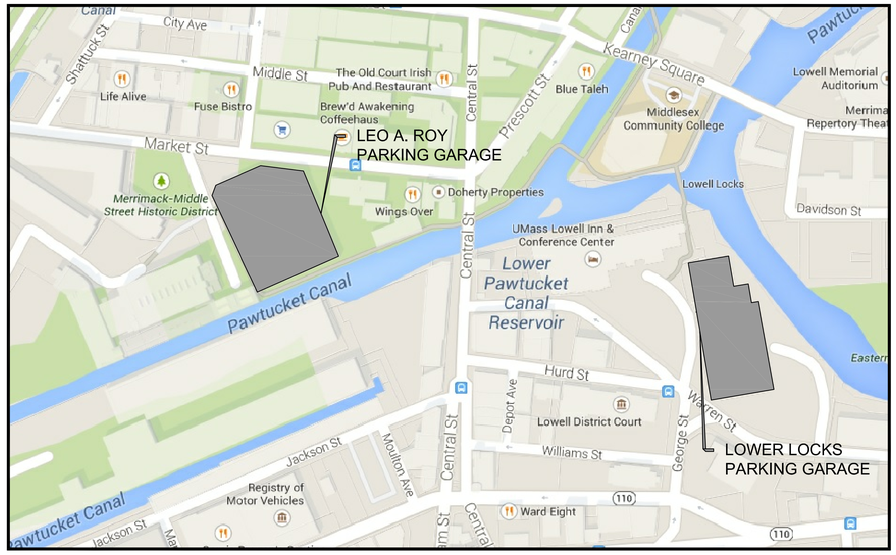
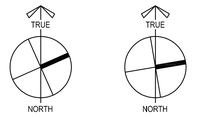
FA1.01	FIRE ALARM PART PLANS AND RISER DIAGRAM LRPG
FA2.00	FIRE ALARM 1ST FLOOR AND RISER DIAGRAM - LLPG



LOCATION MAP



LEO A. ROY LOWER LOCKS

CITY OF LOWELL
IFB16-22

ISSUED FOR BIDDING
AUGUST 5, 2015

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GENERAL RESTORATION NOTES

A. Construction

1. Construction shall be in accordance with all applicable Federal, State of Massachusetts and City of Lowell codes and ordinances, including Fire Codes.
2. This design:

   a. Does not change use.
   b. Does not change egress.
   c. Does not change occupancy.
   d. Does not change building area.

3. All material properties shall be as noted in Specifications.
4. Prior to fabrication of any material or placement of concrete, FIELD VERIFY ALL EXISTING dimensions and conditions shown on Drawings. Report all discrepancies to the Engineer immediately.
5. Max Slab Loads During Construction:

   Live Loads: 40 psf
   Concentrated Wheel Load: 3,000 lb (on 4.5" x 4.5" area)

6. DO NOT SCALE DRAWINGS.

B. Investigation and Evaluation Report

Based on our investigation and evaluation of the facility, we offer the following to be in accordance with Chapter 34 of 780 CMR:

The following Chapters are from the International Existing Building Code - 2009 (IEBC).

1. Chapter 1 - Scope and Administration: Repairs for this project shall be per Section 101. 5.2 Work Area Compliance Method. Based on this, repairs shall be in compliance with the applicable requirements of Chapters 4 through 12 of the IEBC.
2. Chapter 4 - Classification of Work: The scope of work falls under the definition of repair. That is, the restoration to good or sound condition of any part of an existing building for the purpose of its maintenance. The majority of the work includes patching of the existing floor surface and repair of the existing equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements. As such, repairs shall comply with provisions of Chapter 5.

   In addition, there may be incidental or related work to non-damaged components that is necessary for or to get access to the required repair of the damaged components (piping, electrical conduit, light fixtures, etc.). Based on this, it should be considered part of the repair per Section 402.3, related work and as such not subject to Chapter 6 through 10.

3. Chapter 5 - Repairs; the following show compliance with Chapter 5:

   a. Section 501.2 - The work shall not make the building less conforming than it was before the repair was undertaken.
   b. Section 501.3 - Repairs are not constituted as substantial improvement and, therefore, do not apply.
   c. Section 502.2 - All materials that are being used for the patching and repair materials meet or exceed the requirements for materials permitted by the applicable code for new construction.
   d. Section 503 - No repairs are being made to any fire protection system.
   e. Section 504.1 - Repairs will not affect the means of egress and will be done in a manner that will maintain the level of protection provided for the means of egress.
   f. Section 505.1 - Accessibility will be maintained within the facility.
   g. Section 506.1 - Dangerous conditions (mostly tripping hazards or risk of falling loose concrete) will be eliminated in this repair program. All repairs will comply with the IBC for new buildings or similar structures.
   h. Sections 506.2.1 applies for this work because all work is being performed for repairs for less than substantial structural damage based on the definition in Chapter 2. Therefore, all of the elements will be restored to their pre-damage condition.
   i. Section 507 - Electrical, will only apply if work is required to be removed and replaced to make structural repairs on the project.
   j. Section 508 - Mechanical does not apply.
   k. Section 509 - Plumbing, plumbing materials and supplies shall be in accordance with the International Plumbing Code and will be repaired or replaced with like material to make the plumbing system not less conforming than it was before the repair was undertaken.

C. Construction Documents

1. Construction Documents entitled "Leo A. Roy & Lower Locks Parking Garage Restoration" includes these Drawings and separately bound Specifications. For purposes of performing the work, Drawings and Specifications shall be a single unit.
2. Dimensions shown on plans are based on original construction documents. The contractor is required to field verify all conditions for the purpose of preparing the bid and performing the work.
3. Refer to Specification Section 020010 - "Work Items" for scope, description and requirements of work.

C. Details and Symbols

1. All repair details are shown on drawing series R-500 and R-600.
2. Details labeled "FOR CLARIFICATION ONLY" do not represent a separate pay Item. These details supplement the basic detail to provide additional information. In some cases these details show variation of the typical condition.
3. Details labeled "INCIDENTAL" provide information only about incidental work and do not have pay units.
4. Where the Work Item bubble is noted "TYP," it means the work item occurs at all locations where the applicable deterioration or designation symbol occurs on that plan.
5. Where "T.A.R." is noted, it means there may be areas of this work in addition to the particular designated areas.
6. Where two or more Work Item Bubbles are grouped together, it means any or all of the designated work items may be applicable. Coordination of Work Items Is Contractor's responsibility.
7. 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.

D. Concrete Protection for Reinforcement:

1. The minimum concrete protection for reinforcement shall be per ACI 318-08, Section 7.7.
2. Minimum cover for reinforcing in non-pre-stressed concrete and non-post-tensioned members.

	Concrete Cover (inches)
a. Slab top reinforcement	1-1/2
b. Slab bottom reinforcement	3/4

E. Epoxy coating for reinforcement and anchors.

1. Coat all existing reinforcement exposed during demolition, except welded wire reinforcement, in cast in place concrete with approved cementitious-epoxy bonding agent and rebar coating.

F. Shoring and Bracing

1. Contractor shall provide all shoring construction, bracing, etc. required for safety and proper execution of their work.

G. Existing Services and Utilities

1. Contractor shall review the entire site to determine the feasibility of use of all existing Electrical and Water services during the repair work.
2. Contractor shall submit the methods and schedule of connections for the owner's approval prior to commencement.
3. Contractor shall maintain all Electrical and Mechanical services In ALL areas not being worked in at ALL times.
4. The floor slab may have surface mounted conduits with live electrical circuits that are located in and around floor repair sites. Contractor shall exercise extreme caution when chipping and saw-cutting so as to not to damage the existing conduits. Chipping with 15 lb hammers may be required by Engineer.
5. Contractor is responsible to protect all exposed and visible electrical and mechanical utilities that are affected by the repairs.

I. General Concrete Requirements

Refer to Section 020010 for specific uses.

1. CAST-IN-PLACE REPAIR MORTAR (033761)
2. CAST-IN-PLACE CONCRETE RESTORATION (033770)

COMPRESSIVE STRENGTH	5,000 PSI @ 28 DAYS
WATER-CEMENT RATIO	0.40 MAX.
MAX. SIZE AGGREGATE	1/2 IN.
FIBERS	1.0 LB./C.Y.
AIR CONTENT	7% - 8 1/2%
CORROSION INHIBITOR	SEE SECTION 033021

J. Abbreviations

1.	APPROX	=	Approximately
2.	CIP	=	Cast in Place
3.	CJ	=	Construction Joint/Control Joint
4.	CLR	=	Clearance
5.	COL	=	Column
6.	CONC	=	Concrete
7.	EA	=	Each
8.	EJ	=	Expansion Joint
9.	EXIST	=	Existing
10.	LF	=	Linear Foot
11.	LS	=	Lump Sum
12.	MAX	=	Maximum
13.	MIN	=	Minimum
14.	N/A	=	Not Applicable
15.	OC	=	On Center
16.	P/C	=	Precast
17.	REINF	=	Reinforcement
18.	REQ'D	=	Required
19.	SF	=	Square Foot
20.	SIM	=	Similar
21.	SOG	=	Slab on Grade
22.	TAR	=	Typical as Required
23.	TAS	=	Typical as Shown
24.	TYP	=	Typical
25.	UN or UNO	=	Unless Noted Otherwise
26.	WI	=	Work Item
27.	WWR	=	Welded Wire Reinforcement

PHASING INSTRUCTIONS AND NOTES

A. DEFINITIONS

1. Work Zone: 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 contractor is in control of the area.
2. Protection Zone: An area that is taken out of service and isolated from normal pedestrian and vehicle operations to protect the patrons from hazards resulting from work being performed above. Work that requires protection zones on the level below includes concrete demolition, concrete placements, and installation of waterproofing membrane/sealer.
3. Barricades: Partition 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 into the occupied areas of the garage. See specification Section 011110 and 015000 for specifics.

B. GENERAL PHASING

1. It shall be the owner or owner's agent's responsibility to clear a Work Zone and Protection Zone in the current phase area of vehicles prior to contractor starting work in that phase.
2. Contractor shall give Owner notice of areas to be cleared of cars at least 5 working days in advance of actual Work.
3. Temporary signage shall be installed by Contractor and adjusted as needed under the direction of the Owner during the work / protection zone capture effort.
4. Contractor cannot capture new parking spaces until prior work zone is returned to service so that the maximum limit for spaces out of service is not exceeded. Contractor must allow 24 hours between returning spaces to service and occupying equal number of spaces for the next phase of work.
5. The contractor shall coordinate closure of egress stairs doors with Owner. Stair doors may be closed only when working on that floor. The contractor shall install and maintain signage that clearly directs patrons to and from these destinations while work is being carried out.
6. 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.
7. Work zone and protection zone 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 partitions that are intended to prevent the escape of dust and other debris from the work zone.
8. Lower Locks Work Zone/Protector Zone: Contractor is allowed to capture 1/3 of a floor for work area at the equivalent area of the floor below for a protection zone.
9. Leo Roy Work Zone: Contractor Is allowed to capture 75 spaces for a work area on any floor and 75 spaces on the floor below for a protective zone. During coating work, Contractor is allowed to capture 150 spaces for a work area on any floor.

C. MISCELLANEOUS NOTES

1. 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 projects or presents hazard to the patrons of the garage. The Contractor shall not be entitled to additional compensation.
2. Work zones shall not be returned to service when 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.
3. Contractor shall make every effort to contain all construction processes from allowing dust and debris from entering areas where vehicles are permitted to park during construction work. Contractor will be responsible for provisions to cover the costs of either onsite or offsite professional car cleaning for vehicles that become contaminated by construction debris and dust during the construction work process. The Contractor will be responsible to process any related damage claims to vehicles as a result of the Contractor's work inside the garage.
4. Contractor shall follow all work and noise restrictions in effect by the City of Lowell and the Police Department. The foregoing regulated activity includes, but is not limited to, the use of equipment powered by electric or internal combustion engines.
5. Upon application, the Chief of Police, or his designee, may issue permits for the conduct of necessary commercial outdoor activity involving construction or the pick up of equipment or supplies for use therein, which could not be performed during the otherwise permitted times without serious suffering, loss, damage, or public inconvenience.
6. Contractor shall arrange with the Owner the location storage areas to store materials and equipment outside of the work and safety zones. Otherwise, Contractor will be responsible to have all material and equipment stored within the work and safety zones in the phased work area(s).
7. Contractor shall be responsible to maintain the floor drainage system in good working order. The complete system shall be cleaned and hydro-flushed at the end of the project. During each construction year/phasing, prior to the start and during the work process, the Contractor shall provide protection and cleaning as necessary to maintain proper function of the drain system.

D. ALTERNATE PHASING

1. Contractor may propose alternate phasing adhering to the parameters noted In above. Proposed alternate phasing shall be submitted by the Contractor to Engineer and Owner for review and approval. Phasing shall be as approved by the Owner.
2. Garage shall remain operational at all times In areas not captured for work.
3. The following parameters shall be considered when developing alternate phasing plans.

   a. Pedestrian Path Width (minimum): 6'-0"
   b. Pedestrian Path Headroom (minimum): 7' -6"
   c. Temporary Vehicle One-Way Travel Lane (minimum): 12'-0" *
   d. Temporary Vehicle Two-Way Travel Lane (minimum): 22'-0" *
   e. Temporary Vehicle Lane Headroom Height: As posted at garage entrance

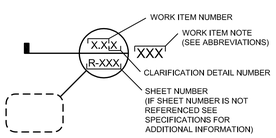
WORK ITEM SCHEDULE - LEO A. ROY PARKING GARAGE

WORK ITEM	DESCRIPTION	UNITS	QUANTITY
1.0	**GENERAL REQUIREMENTS**		
1.1	Project Mobilization	L.S.	1
1.2	Concrete Formwork	Incidental to All Work Item Series	
1.3	Concrete Shores and Reshores	Incidental to All Work Item Series	
1.4	Concrete Reinforcement	LBS.	2,000
1.5	Temporary Signage	Incidental to All Work Item Series	
1.6	Scaffolding	L.S.	1
1.7	Overhead Protection / Traffic Control	L.S.	1
3.0	**CONCRETE FLOOR REPAIR**		
3.2 LR	Floor Repair - Partial Depth (P/T)	S.F.	11,500
3.3 LR	Floor Repair - Full Depth (P/T)	S.F.	1,000
3.4	Floor Repair - Curbs / Walks	S.F.	50
3.5	Floor Repair - Partial Depth (CIP)	S.F.	250
3.6	Floor Repair - Full Depth (CIP)	S.F.	1,000
3.8 LR	Floor Repair - Scaled Concrete Surface	S.F.	20,000
3.9 LR	Floor Repair - Deep Scaled Concrete Surface	S.F.	2,000
3.10 LR	Floor Repair - Stair Nosing	S.F.	60
3.11 LR	Floor Repair - Replace Pedestrian Bridge Deck Slab	L.S.	1
4.0	**CONCRETE CEILING REPAIR**		
4.1	Ceiling Repair - Partial Depth / Shallow	S.F.	500
4.2	Ceiling Repair - Partial Depth / Deep	S.F.	1800
5.0	**CONCRETE BEAM REPAIR**		
5.1	Beam Repair - Partial Depth / Shallow	S.F.	200
5.2	Beam Repair - Partial Depth / Deep	S.F.	100
5.5 LR	Beam Repair - Partial Depth / Shallow @ Expansion Joint	S.F.	50
6.0	**CONCRETE COLUMN REPAIR**		
6.1	Column Repair - Partial Depth / Shallow	S.F.	300
6.2	Column Repair - Partial Depth / Deep	S.F.	400
6.3 LR	Column Repair - Partial Depth / Shallow @ Expansion Joint	S.F.	30
6.4 LR	Column Repair - Partial Depth / Deep @ Expansion Joint	S.F.	20
7.0	**CONCRETE WALL REPAIR**		
7.1	Wall Repair - Partial Depth / Shallow	S.F.	200
9.0	**CRACKS AND JOINTS - EXPANSION JOINT EDGE PREPARATION**		
9.3 LR	Repair Concrete Wash and Blockout	L.F.	1,000
10.0	**EXPANSION JOINT REPAIR AND REPLACMENT**		
10.3	Expansion Joint - Elastomeric Concrete Edged	L.F.	1,000
10.5 LR	Expansion Joint - Adhered Vertical Wall Joint	L.F.	50
11.0	**CRACK AND JOINT REPAIR**		
11.1	Rout & Seal Random Cracks	L.F.	500
11.3	Replace Crack / Joint Sealant	L.F.	2,200
11.4	Tool and Seal Patch Perimeter	Incidental to Work Item Series 3.0 and 16.0	
11.5	Tool and Seal Control Joints	Incidental to Work Item Series 3.0 and 16.0	
11.7	Cove Sealant	L.F.	2,500
12.0	**BITUMINOUS / ASPHALT REPAIR**		
12.1	Bituminous Asphalt Patching	S.F.	600
15.0	**PROTECTIVE SEALER**		
15.1 LR	Concrete Sealer - Floors	S.F.	73,500
16.0	**TRAFFIC TOPPING**		
16.1	Traffic Topping - Vehicular	S.F.	200,000
16.8 LR	Traffic Topping - Steep Ramps	S.F.	25,000
21.0 LR	**P/T SYSTEM REPAIR - MONOSTRAND**		
21.1 LR	Replace Grout @ P/T Anchorages	EA.	50
21.2 LR	Protect Exposed P/T Tendon(s)	Incidental to Work Item Series 3.0, 4.0, 5.0	
21.3 LR	New P/T Tendon End Anchorage (Live)	EA.	10
21.4 LR	New P/T Tendon End Anchorage (Dead)	EA.	10
21.6 LR	Tendon Splice Coupling (Center-Pull)	EA.	10
21.7 LR	Tendon Splice Coupling (Single)	EA.	10
21.8 LR	Tendon Splice Coupling (Double)	EA.	5
21.9 LR	P/T Tendon Material	L.F.	200
25.0	**MECHANICAL - DRAINAGE**		
25.2	Mechanical - Replace Existing Floor Drains	EA.	100
25.3	Mechanical - Pipe and Hangers	L.F.	1,700
25.4	Mechanical - Supplementary Floor Drains	EA.	20
25.6	Mechanical - Clean Existing Drains and Pipes	L.S.	1
26.0	**MECHANICAL - FIRE PROTECTION**		
26.1LR	Mechanical - Demolish and Replace Fire Standpipe	L.S.	1
34.0	**ELECTRICAL - FIRE ALARM**		
34.1LR	Electrical - Fire Alarm System Replacement	L.S.	1
35.0	**BRICK / MASONRY REPAIRS**		
35.1	Tuckpointing	S.F.	500
35.2	Brick Masonry Unit Replacement	EA.	120
35.4	Capstone Joint Repair	Incidental to Work Item Series 35.6	
35.5	Concrete Masonry Unit Replacement	EA.	10
35.6	Capstone Flashing And Resetting	L.F.	450
34.0	**ELECTRICAL - FIRE ALARM**		
34.1LR	Electrical - Fire Alarm System Replacement	L.S.	1
37.0	**DOORS, FRAMES AND HARDWARE**		
37.1	Door and Frame Replacement	EA.	10
41.0	**STEEL STAIRS**		
41.1 LR	Replace Stair Riser / Pan / Fill	EA.	55
41.2	Replace Stair Nosing	EA.	10
41.4	Replace Stair Landing / Fill	EA.	3
45.0	**PAINTING**		
45.1	Paint Traffic Markings	L.S.	1
45.3	Clean and Paint Doors & Frames	L.S.	1
45.6	Clean and Paint Stair Risers, Railings, and Framing	L.S.	1
45.7 LR	Clean and Paint Shelf Angles	L.S.	1
45.9 LR	Clean and Paint Level 4 Pedestrian Bridge Structural Steel Framing	L.S.	1

WORK ITEM SCHEDULE - LOWER LOCKS PARKING GARAGE

WORK ITEM	DESCRIPTION	UNITS	QUANTITY
1.0	**GENERAL REQUIREMENTS**		
1.1	Project Mobilization	L.S.	1
1.2	Concrete Formwork	Incidental to All Work Item Series	
1.3	Concrete Shores and Reshores	Incidental to All Work Item Series	
1.4	Concrete Reinforcement	LBS.	2,000
1.5	Temporary Signage	Incidental to All Work Item Series	
1.6	Scaffolding	L.S.	1
1.7	Overhead Protection / Traffic Control	L.S.	1
2.0	**FLOOR SURFACE PREPARATION**		
2.6 LL	Floor Preparation - Traffic Topping Removal	S.F.	5,650
3.0	**CONCRETE FLOOR REPAIR**		
3.4	Floor Repair - Curbs / Walks	S.F.	250
3.5	Floor Repair - Partial Depth (CIP)	S.F.	3,800
3.6	Floor Repair - Full Depth (CIP)	S.F.	5,000
3.7LL	Floor Repair - Concrete Washes	S.F.	8,000
4.0	**CONCRETE CEILING REPAIR**		
4.1	Ceiling Repair - Partial Depth / Shallow	S.F.	500
4.2	Ceiling Repair - Partial Depth / Deep	S.F.	1000
5.0	**CONCRETE BEAM REPAIR**		
5.1	Beam Repair - Partial Depth / Shallow	S.F.	50
5.2	Beam Repair - Partial Depth / Deep	S.F.	100
5.3 LL	Beam Repair - Partial Depth / Shallow	S.F.	25
5.4 LL	Beam Repair - Partial Depth / Deep	S.F.	75
6.0	**CONCRETE COLUMN REPAIR**		
6.1	Column Repair - Partial Depth / Shallow	S.F.	150
6.2	Column Repair - Partial Depth / Deep	S.F.	350
6.6 LL	Column Repair - Haunches	S.F.	50
7.0	**CONCRETE WALL REPAIR**		
7.1	Wall Repair - Partial Depth / Shallow	S.F.	10
8.0	**PRECAST TEE BEAM REPAIR**		
8.1 LL	Tee Stem Repair - Partial Depth / Shallow	S.F.	50
8.2 LL	Tee Stem Repair - Partial Depth / Deep	S.F.	150
8.3 LL	Tee Stem Repair - Encasement	EA.	4
8.4 LL	Tee Flange Repair - Partial Depth	S.F.	600
8.5 LL	Tee Flange Repair - Full Depth	S.F.	3,000
9.0	**CRACKS AND JOINTS - EXPANSION JOINT EDGE PREPARATION**		
9.1 LL	New Blockout	L.F.	720
9.2 LL	New Wash with Blockout	L.F.	240
10.0	**EXPANSION JOINT REPAIR AND REPLACMENT**		
10.3	Expansion Joint - Elastomeric Concrete Edged	L.F.	960
11.0	**CRACK AND JOINT REPAIR**		
11.1	Rout & Seal Random Cracks	Incidental to Work Item Series 16.0	
11.2 LL	Replace Joint Sealant in Precast Floor System	L.S.	1
11.3	Replace Crack / Joint Sealant	Incidental to Work Item Series 16.0	
11.4	Tool and Seal Patch Perimeter	Incidental to Work Item Series 3.0 & 8.0	
11.5	Tool and Seal Control Joints	Incidental to Work Item Series 3.0 & 16.0	
11.7	Cove Sealant	Incidental to Work Item Series 16.0	
16.0	**TRAFFIC TOPPING**		
16.1	Traffic Topping - Vehicular	S.F.	40,000
25.0	**MECHANICAL - DRAINAGE**		
25.2	Mechanical - Replace Existing Floor Drains	EA.	160
25.3	Mechanical - Pipe and Hangers	L.F.	2,000
25.4	Mechanical - Supplementary Floor Drains	EA.	4
25.6	Mechanical - Clean Existing Drains and Pipes	L.S.	1
26.0	**MECHANICAL - FIRE PROTECTION**		
26.2LL	Mechanical - Demolish and Replace Fire Standpipe	L.S.	1
34.0	**ELECTRICAL - FIRE ALARM**		
34.2LL	Electrical - Fire Alarm Modifications	L.S.	1
35.0	**BRICK / MASONRY REPAIRS**		
35.1	Tuckpointing	S.F.	3,000
35.2	Brick Masonry Unit Replacement	EA.	25
35.3 LL	Capstone Replacement	EA.	15
35.4	Capstone Joint Repair	Incidental to Work Items 35.6 & 35.7	
35.5	Concrete Masonry Unit Replacement	EA.	50
35.6	Capstone Flashing And Resetting	L.F.	225
35.7 LL	Capstone Resetting and Pointing	L.F.	1,000
35.8 LL	Concrete Masonry Unit Soap Repair	EA.	100
37.0	**DOORS, FRAMES AND HARDWARE**		
37.1	Door and Frame Replacement	EA.	2
40.0	**CONNECTIONS / BEARINGS**		
40.1 LL	Shear Transfer Device	EA.	150
40.3 LL	Re-Weld Shear Connector	EA.	350
40.4 LL	Shear Connector Replacement	EA.	100
41.0	**STEEL STAIRS**		
41.2	Replace Stair Nosings	EA.	80
41.4	Replace Stair Landing / Fill	EA.	10
45.0	**PAINTING**		
45.1	Paint Traffic Markings	L.S.	1
45.3	Clean and Paint Door & Frames	L.S.	1
45.4LL	Clean and Paint Pipe Guards	EA.	38
45.6	Clean and Paint Stair Risers, Railings, and Framing	L.S.	1
90.0	**FAÇADE CLEANING**		
90.1	Clean Façade - Detergent and Pressure Washing	L.S.	1

WORK ITEM IDENTIFICATION LEGEND



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

GENERAL LEGEND

- - - -	EXPANSION JOINT
	FLOOR SPALL OR DELAMINATION (WORK ITEM SERIES 3.0 OR 8.0)
	CEILING SPALL OR DELAMINATION (WORK ITEM SERIES 4.0 AND 5.0)
	SCALED CONCRETE SURFACE (WORK ITEM 3.8 OR 3.9)
	AREA TO BE TRAFFIC COATED (WORK ITEM SERIES 16.0)
FD	EXISTING FLOOR DRAIN (FD)
SFD	SUPPLEMENTAL FLOOR DRAIN (SFD)
DR	DRAIN RISER (DR)

TEMPORARY CONSTRUCTION SIGN SCHEDULE

SIZE W	SIZE L	TEXT/MESSAGE	BACKGROUND COLOR	LETTERS/SYMBOLS H	LETTERS/SYMBOLS COLOR	REMARKS
2'-0"	3'-0"	CAUTION UNDER CONSTRUCTION WATCH FOR SIGNS	ORANGE	4"	BLACK	
2'-0"	3'-0"	NO PARKING THIS AREA	ORANGE	4"	BLACK	
2'-0"	3'-0"	PARKING	ORANGE	6"	BLACK	MANUFACTURE SIGN WITH A ROTATABLE ARROW THAT CAN BE LOCKED INTO POSITION.
2'-0"	3'-0"	EXIT	ORANGE	6"	BLACK	MANUFACTURE SIGN WITH A ROTATABLE ARROW THAT CAN BE LOCKED INTO POSITION.
2'-0"	3'-0"	STAIR CLOSED USE OTHER STAIR	WHITE	4"	BLACK	
3'-0"	3'-0"	DO NOT ENTER	RED	4"	WHITE	

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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/06/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
GENERAL NOTES, LEGEND, & WORK ITEM SCHEDULE

R-001

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CD'S\ACAD\REST\2526_R001.DWG 7/30/2015 1:26:02 PM CLEMENTIN, DONALD

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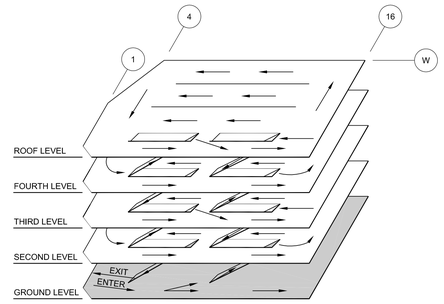

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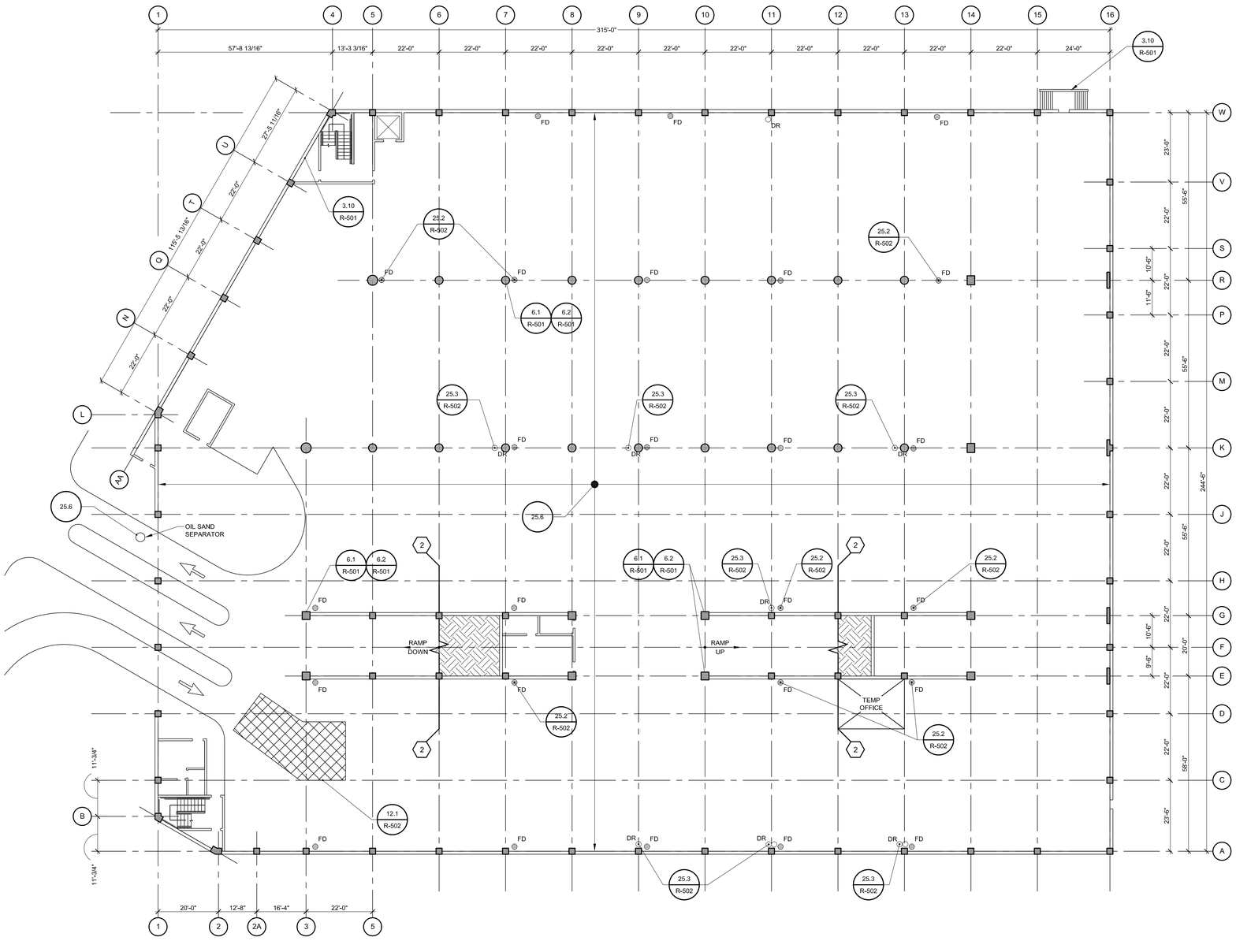

NOTE:
CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL EXTENT AND LOCATIONS OF REPAIR AREAS IN ACCORDANCE WITH THE SPECIFICATIONS. WORK ITEM IS SHOWN ONLY TO REPRESENT THE TYPES OF DETERIORATION.

GENERAL LEGEND

- BITUMINOUS ASPHALT PATCHING
- FD — EXISTING FLOOR DRAIN (FD)
- DR — DRAIN RISER (DR)

1 LEO A. ROY PARKING GARAGE
GROUND LEVEL FLOOR PLAN

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/06/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	ADH
CHECKED BY:	DWJ
SHEET TITLE:	LRPG GROUND LEVEL FLOOR PLAN

R-101

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R101.DWG 7/30/2015 1:48:02 PM CLEMENTIN, DONALD

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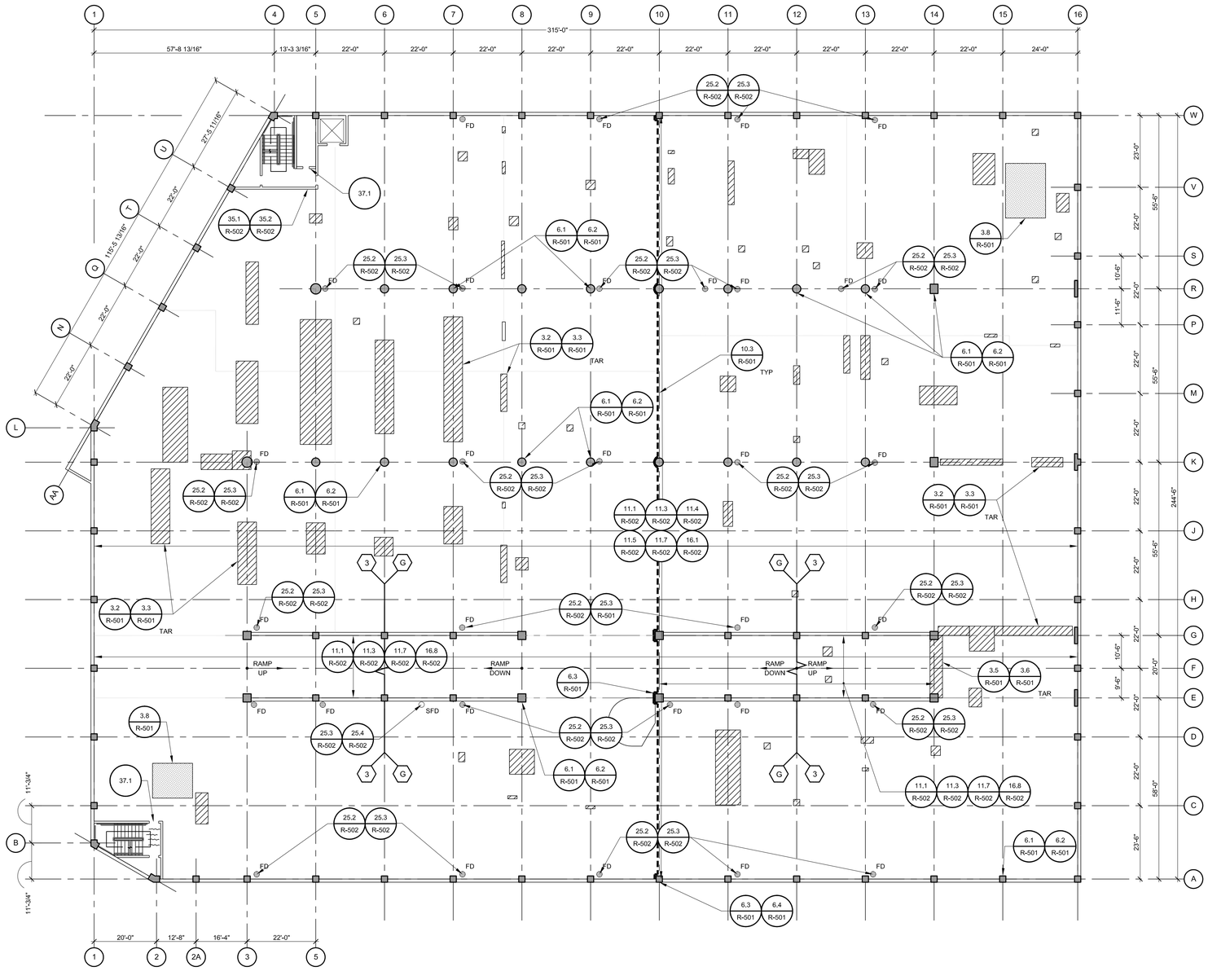
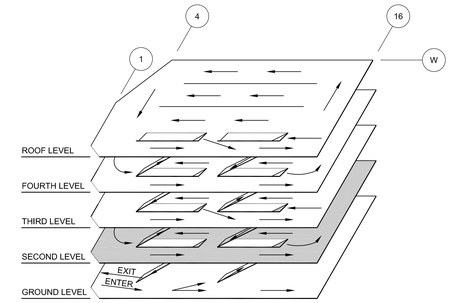


LEO A. ROY PARKING GARAGE
SECOND LEVEL FLOOR PLAN

1/16" = 1'-0"



ISOMETRIC

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.

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- SCALED CONCRETE
- FD EXISTING FLOOR DRAIN (FD)
- SFD SUPPLEMENTAL FLOOR DRAIN (SFD)
- DR DRAIN RISER (DR)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:

LRGP
SECOND LEVEL
FLOOR PLAN

R-102

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R102.DWG 7/29/2015 11:34:54 AM CLEMENTIN, DONALD

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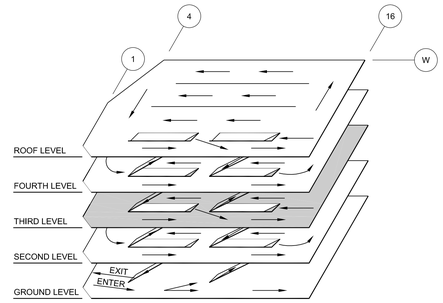

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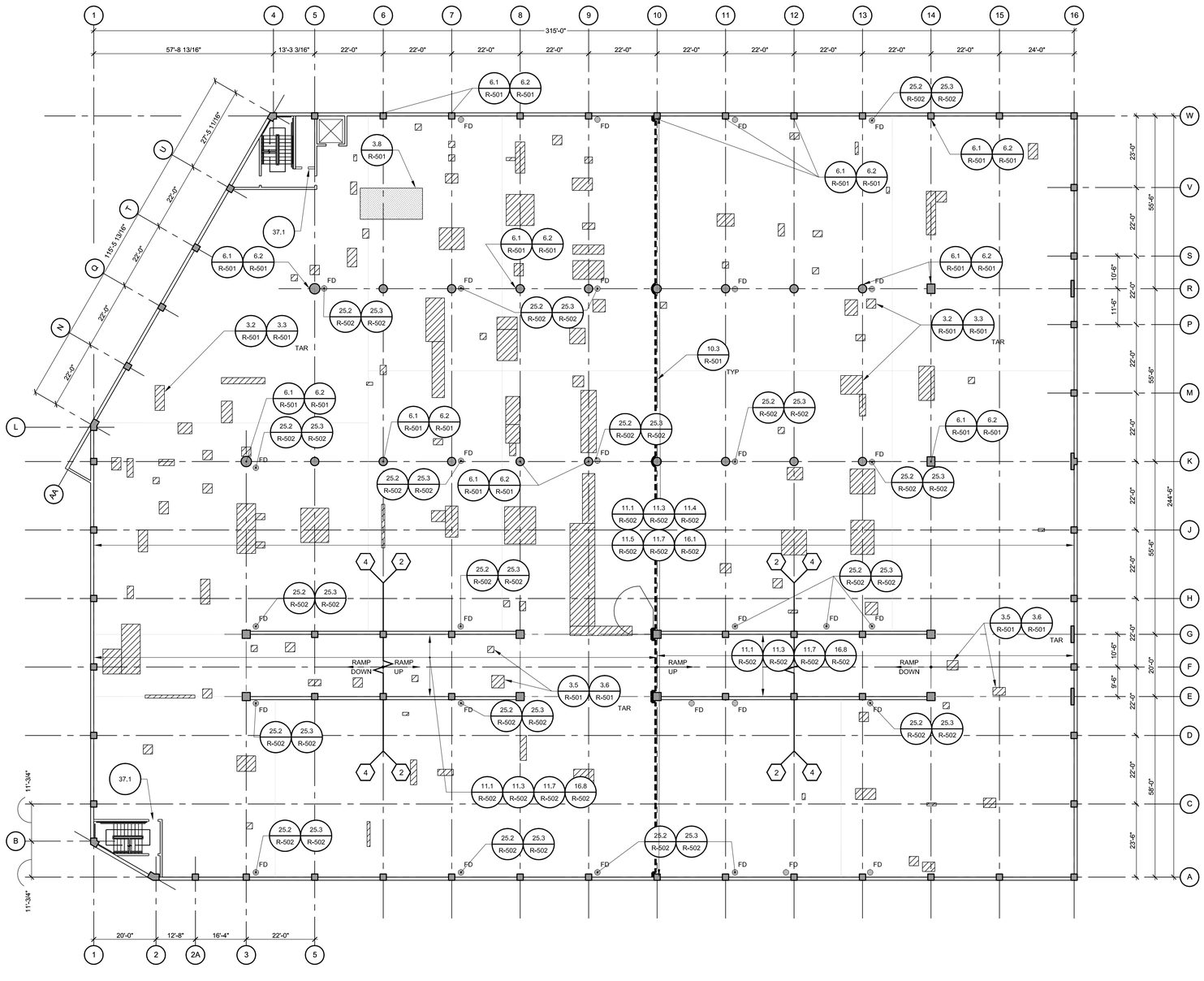

LEO A. ROY PARKING GARAGE THIRD LEVEL FLOOR PLAN

1

NORTH

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.

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- SCALED CONCRETE
- FD — EXISTING FLOOR DRAIN (FD)
- SFD — SUPPLEMENTAL FLOOR DRAIN (SFD)
- DR — DRAIN RISER (DR)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:	08/06/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	ADH
CHECKED BY:	DWJ
SHEET TITLE:	LRGP THIRD LEVEL FLOOR PLAN

R-103

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R103.DWG 7/29/2015 11:34:39 AM CLEMENTIN, DONALD

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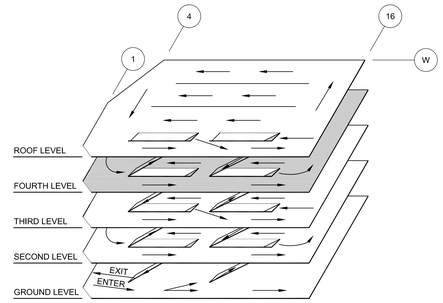

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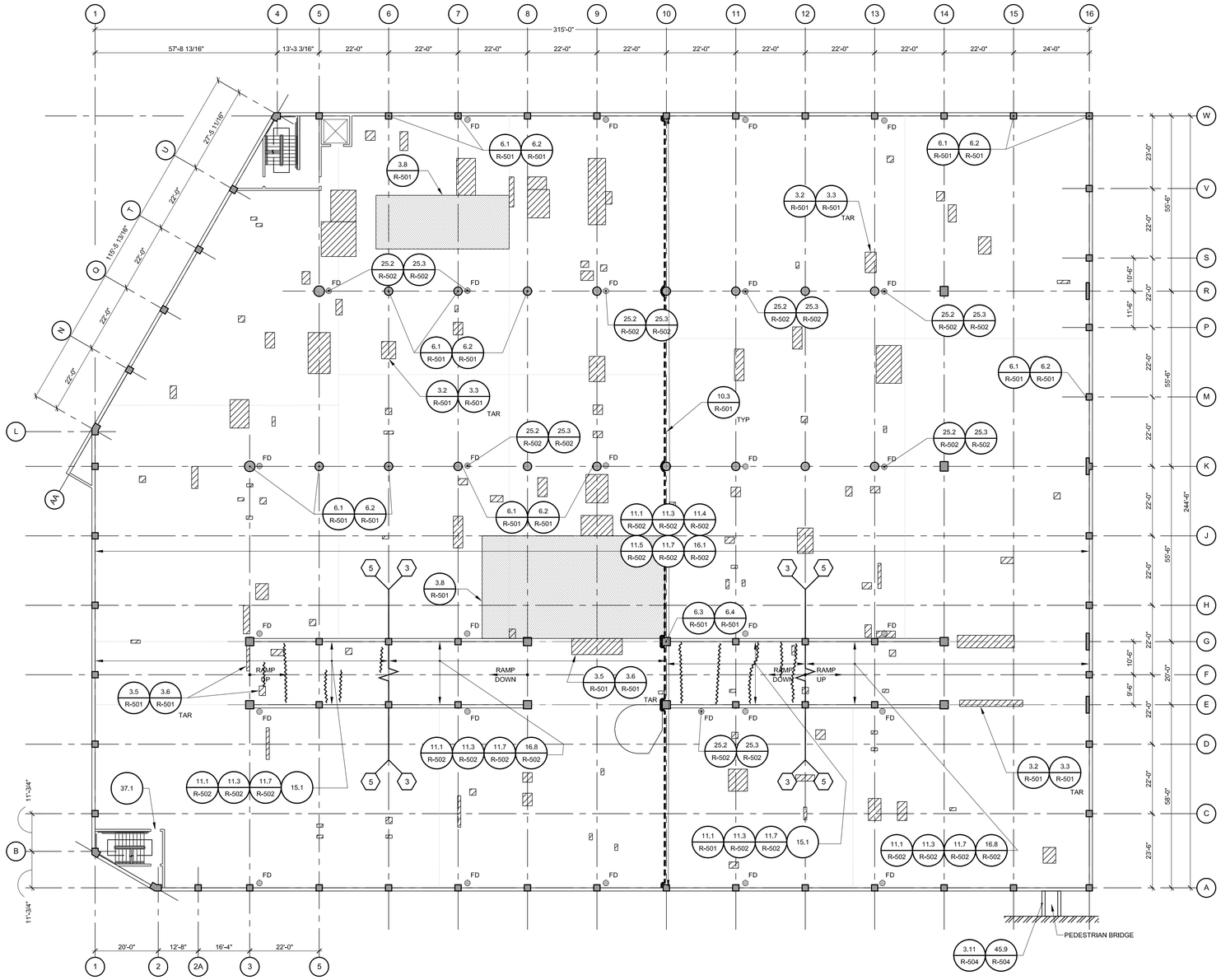
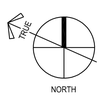


LEO A. ROY PARKING GARAGE
FOURTH LEVEL FLOOR PLAN

1/16" = 1'-0"



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.

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- SCALED CONCRETE
- FD — EXISTING FLOOR DRAIN (FD)
- SFD — SUPPLEMENTAL FLOOR DRAIN (SFD)
- DR — DRAIN RISER (DR)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/06/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRGP
FOURTH LEVEL
FLOOR PLAN

R-104

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R104.DWG 7/27/2015 1:16:09 PM CLEMENTIN, DONALD

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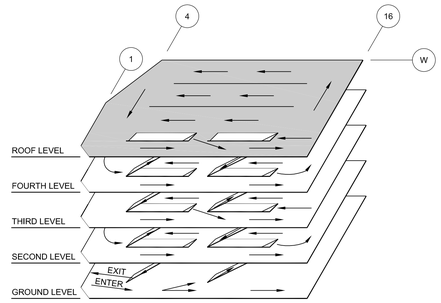

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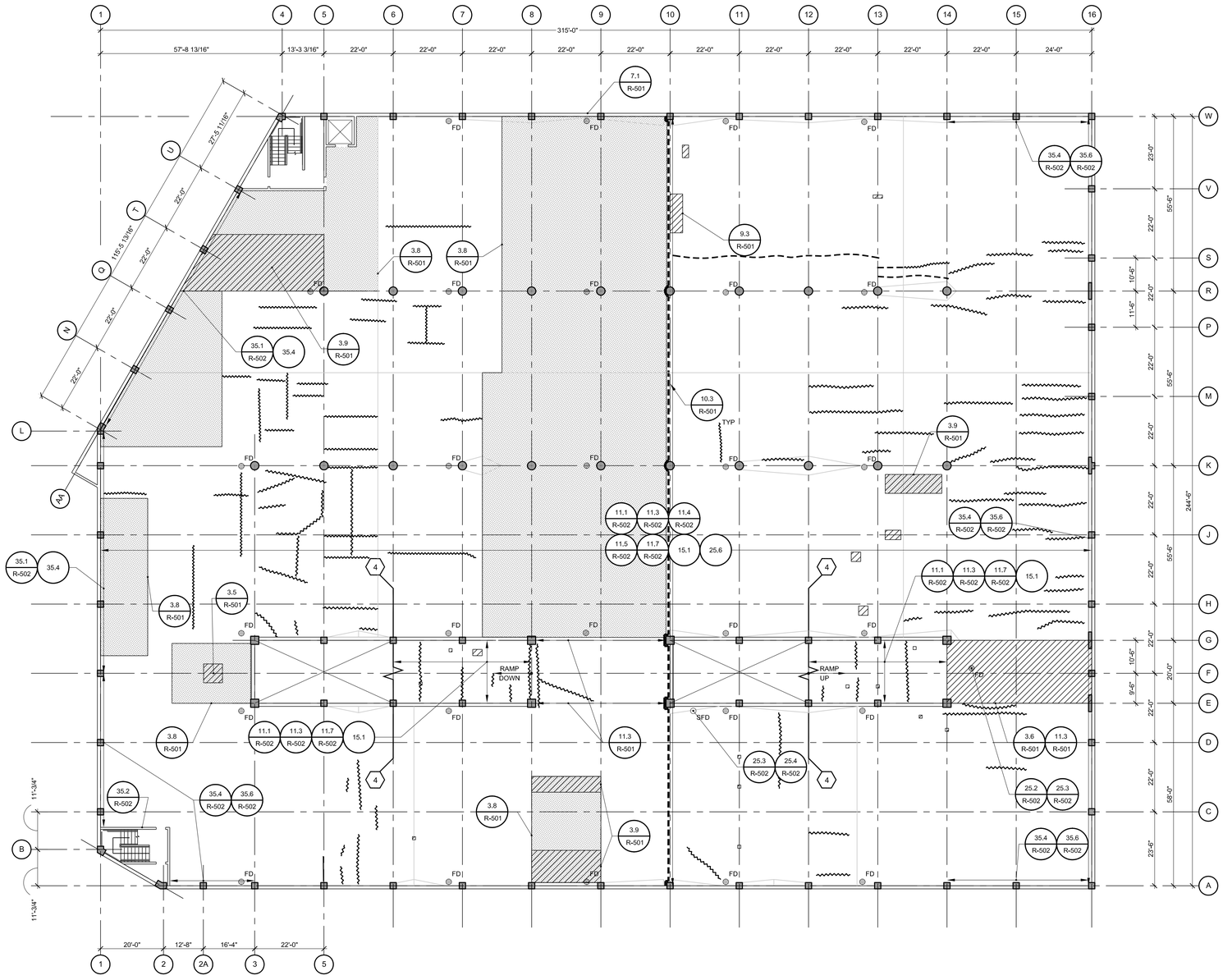

LEO A. ROY PARKING GARAGE ROOF LEVEL FLOOR PLAN

1

NORTH

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.

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- SCALED CONCRETE
- SEALED CRACK
- NEW CRACK
- FD — EXISTING FLOOR DRAIN (FD)
- SFD — SUPPLEMENTAL FLOOR DRAIN (SFD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRGP
ROOF LEVEL
FLOOR PLAN

R-105

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R105.DWG 7/27/2015 11:16:24 PM CLEMENTIN, DONALD

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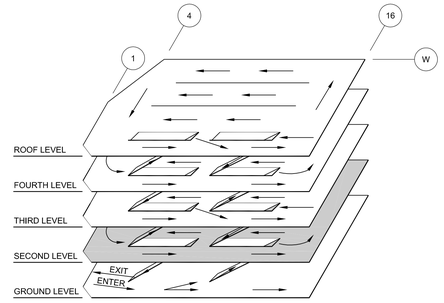

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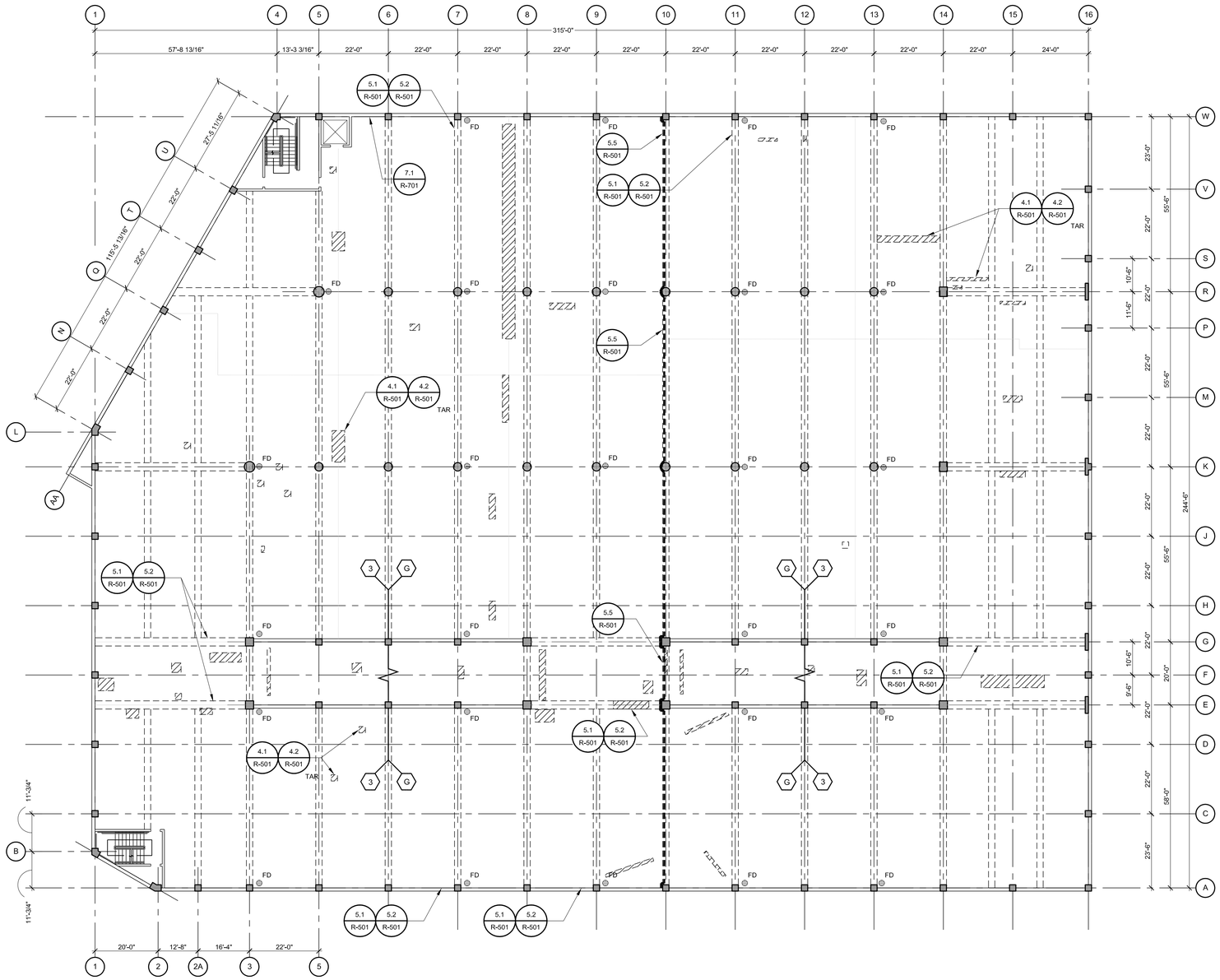

LEO A. ROY PARKING GARAGE
GROUND LEVEL
REFLECTED CEILING PLAN

1

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

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.

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GENERAL LEGEND

- - - - - - EXPANSION JOINT (EJ)
REFLECTED CEILING SPALL OR DELAMINATION
● FD EXISTING FLOOR DRAIN (FD)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRGP
GROUND LEVEL
REFLECTED CEILING PLAN

R-106

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R106.DWG 7/21/2015 3:14:14 PM CLEMENTIN, DONALD

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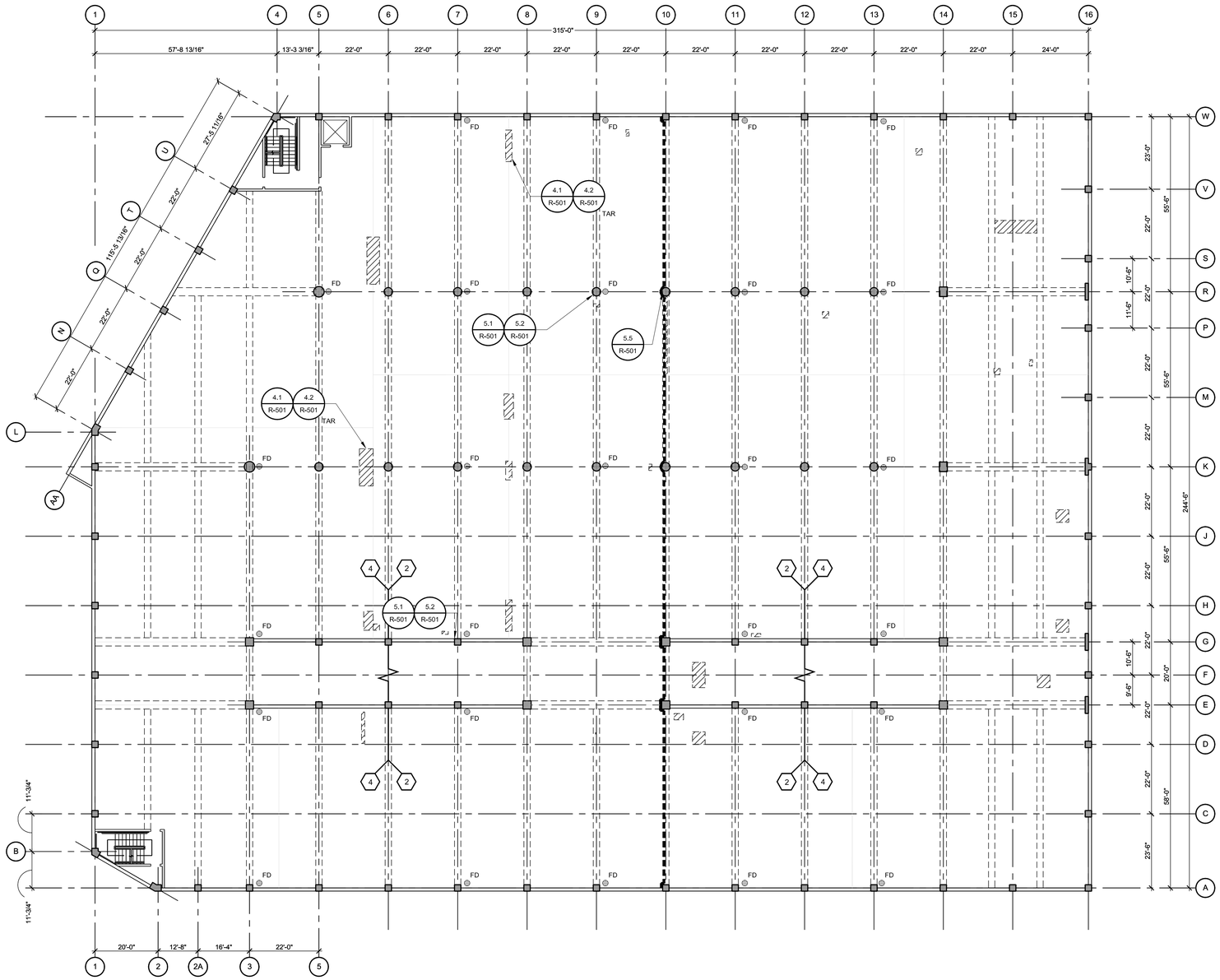
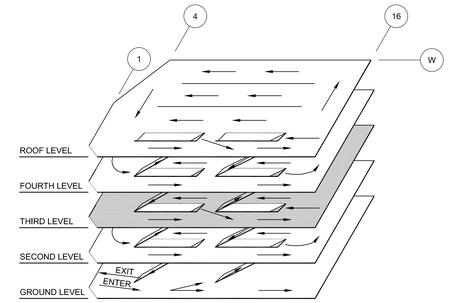


LEO A. ROY PARKING GARAGE
SECOND LEVEL
REFLECTED CEILING PLAN

1

1/16" = 1'-0"



ISOMETRIC

CAUTION NOTE:
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GENERAL LEGEND

- - - - -	EXPANSION JOINT (EJ)
▨	REFLECTED CEILING SPALL OR DELAMINATION
● FD	EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRGP
SECOND LEVEL
REFLECTED CEILING PLAN

R-107

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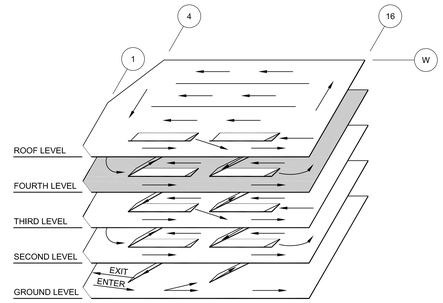

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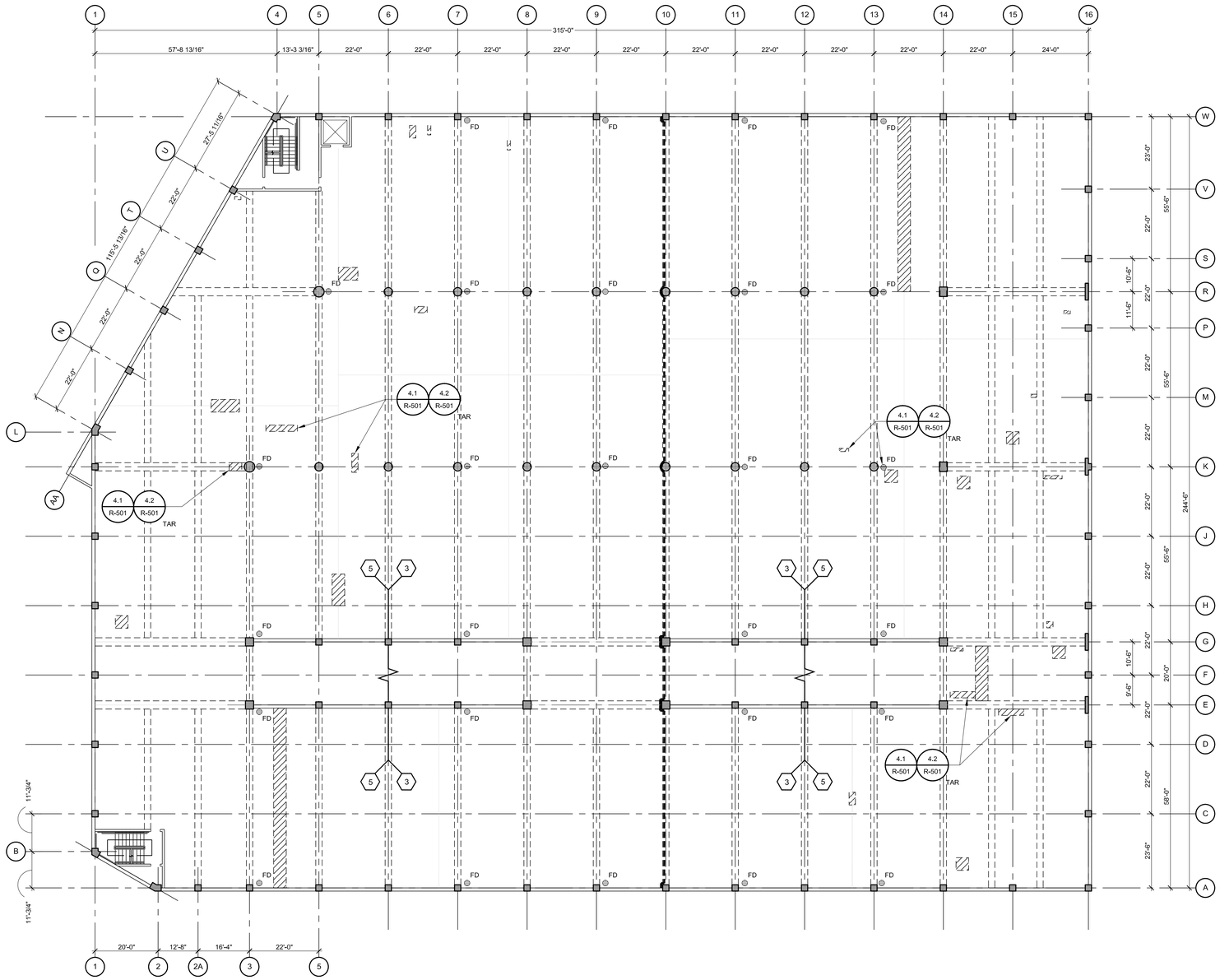

LEO A. ROY PARKING GARAGE
THIRD LEVEL
REFLECTED CEILING PLAN

1

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

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.

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- REFLECTED CEILING SPALL OR DELAMINATION
- FD EXISTING FLOOR DRAIN (FD)

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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRGP
THIRD LEVEL
REFLECTED CEILING PLAN

R-108

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R108.DWG 7/21/2015 3:13:55 PM CLEMENTIN, DONALD

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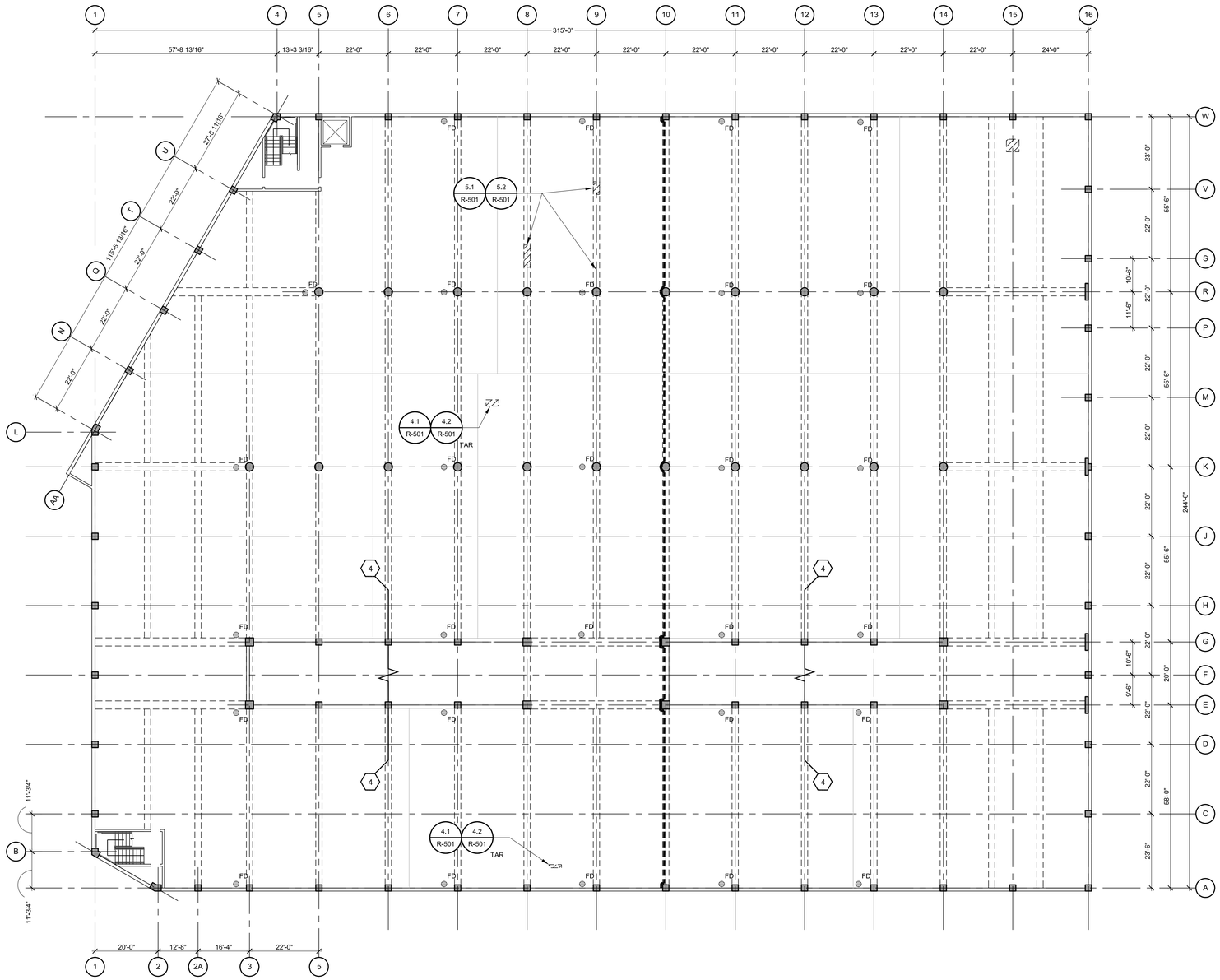
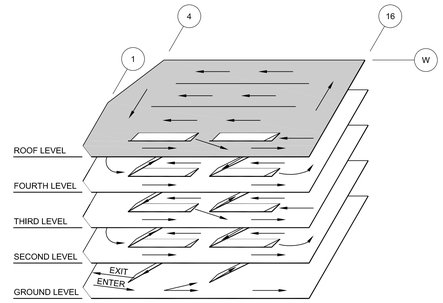


LEO A. ROY PARKING GARAGE
FOURTH LEVEL
REFLECTED CEILING PLAN

1

1/16" = 1'-0"



ISOMETRIC

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.

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GENERAL LEGEND

- EXPANSION JOINT (EJ)
- REFLECTED CEILING SPALL OR DELAMINATION
- FD — EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	ADH
CHECKED BY:	DWJ
SHEET TITLE:	LRGP FOURTH LEVEL REFLECTED CEILING PLAN

R-109

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R109.DWG 7/8/2015 8:47:01 AM CLEMENTIN, DONALD

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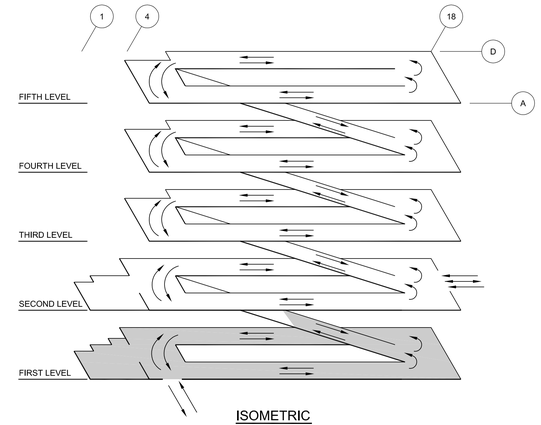

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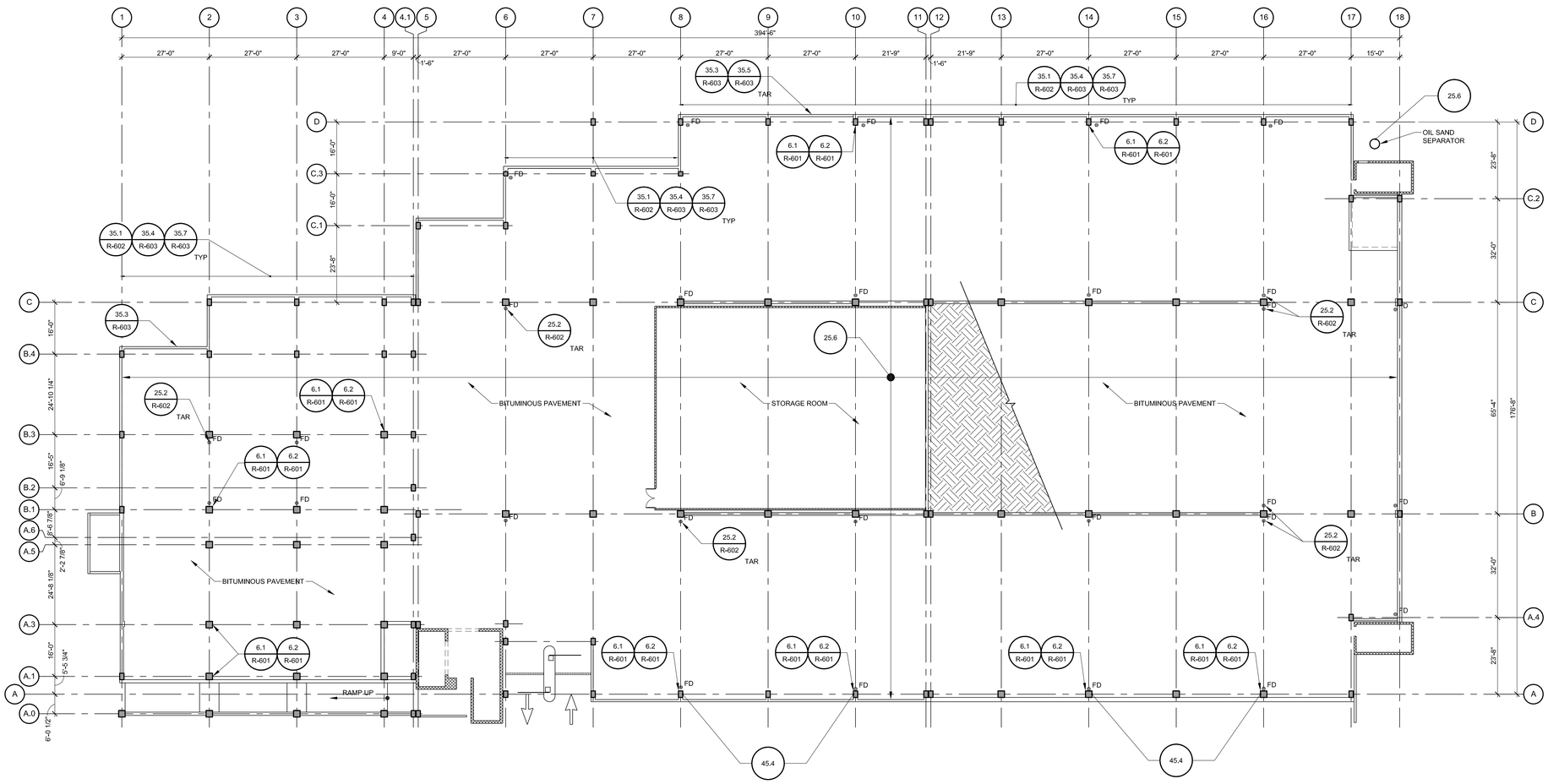

LOWER LOCKS PARKING GARAGE
1st LEVEL FLOOR PLAN

1

1/16" = 1'-0"

NORTH

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- FD — EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG
1st LEVEL
FLOOR PLAN

R-201

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R201.DWG 7/21/2015 4:01:38 PM CLEMENTIN, DONALD

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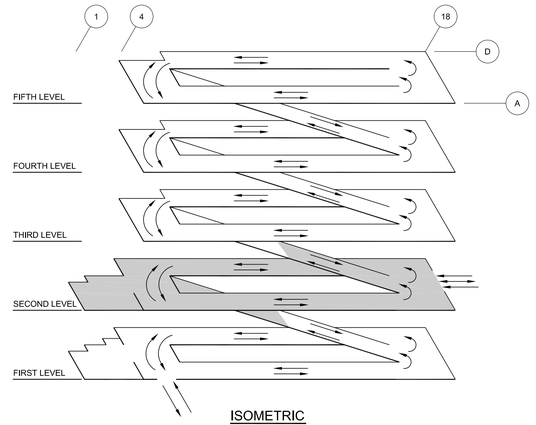

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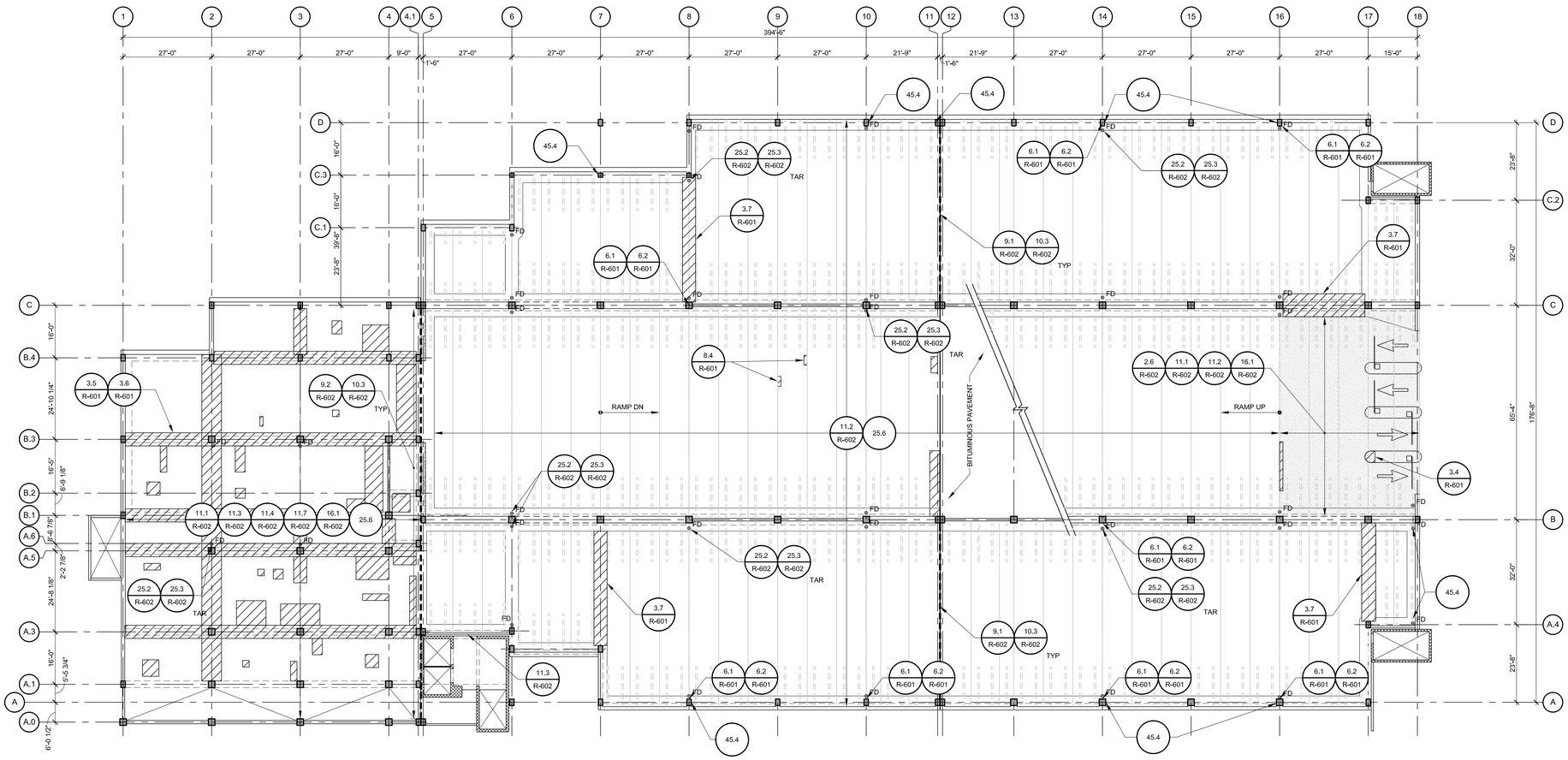

1 LOWER LOCKS PARKING GARAGE
2nd LEVEL FLOOR PLAN

1/16" = 1'-0"

NORTH

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- FD EXISTING FLOOR DRAIN (FD)

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ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LLPG 2nd LEVEL FLOOR PLAN

R-202

J:\16-2526-01-LOWER_LOCKS_& _LEO_ROY_CDS\ACAD\REST\2526_R202.DWG 7/21/2015 4:01:34 PM CLEMENTIN, DONALD

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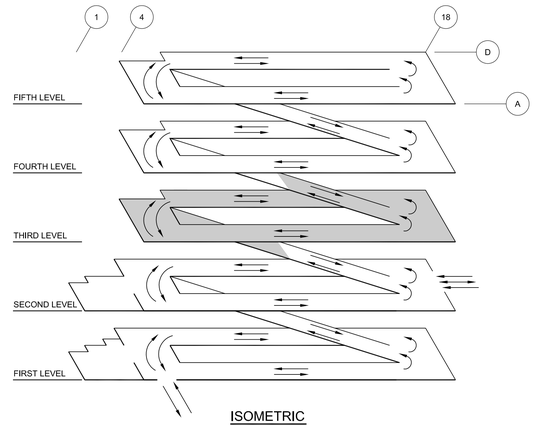

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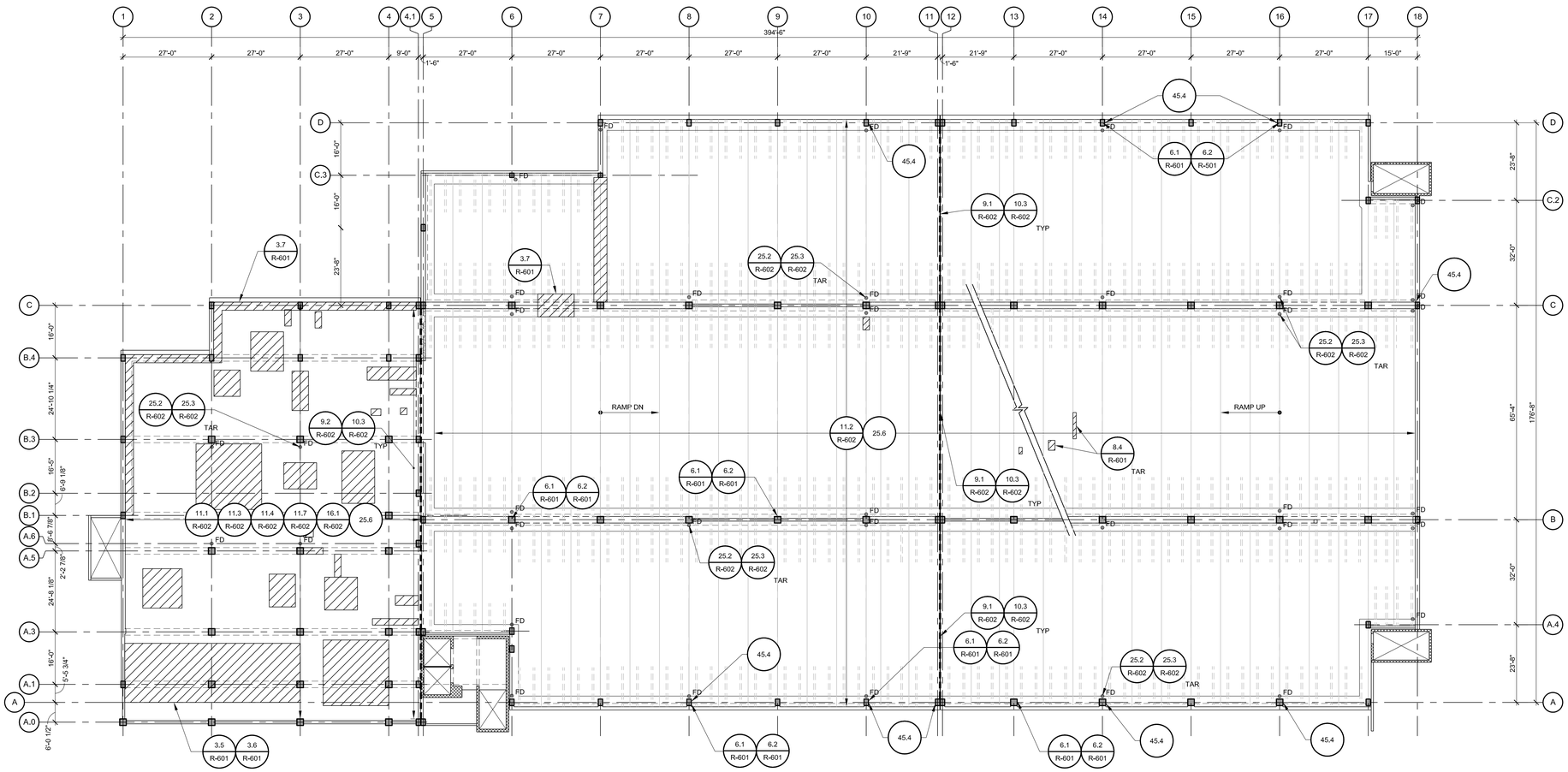

1 LOWER LOCKS PARKING GARAGE
3rd LEVEL FLOOR PLAN

1/16" = 1'-0"

NORTH

NOTE:
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GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- FD — EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG
3rd LEVEL
FLOOR PLAN

R-203

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R203.DWG 7/21/2015 4:01:29 PM CLEMENTIN, DONALD

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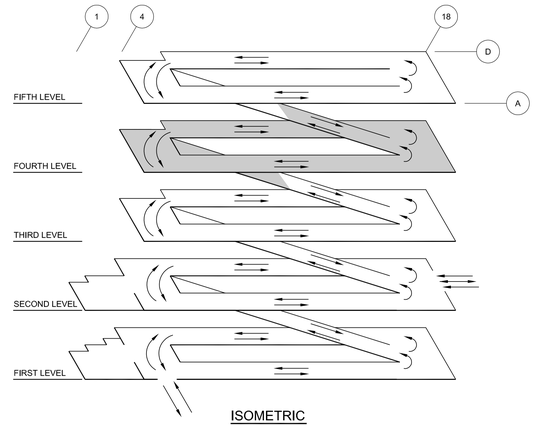

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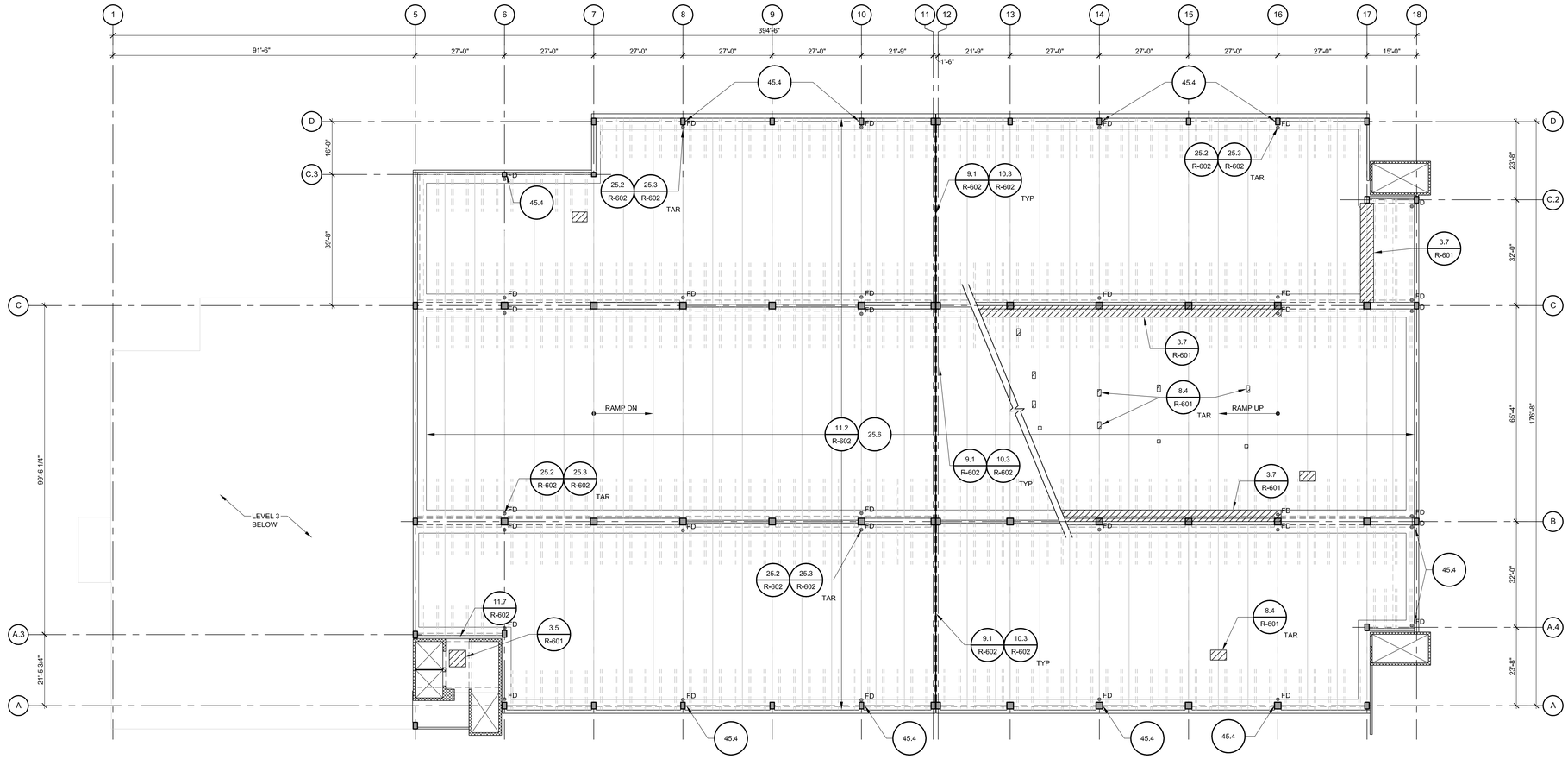

LOWER LOCKS PARKING GARAGE
4th LEVEL FLOOR PLAN

1

1/16" = 1'-0"

NORTH

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- FD — EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LLPG 4th LEVEL FLOOR PLAN

R-204

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R204.DWG 7/21/2015 4:01:26 PM CLEMENTIN, DONALD

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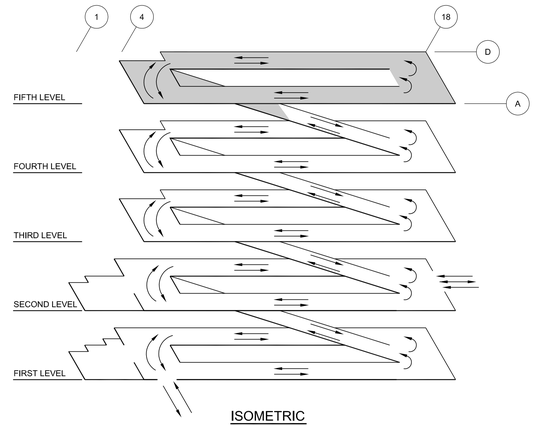

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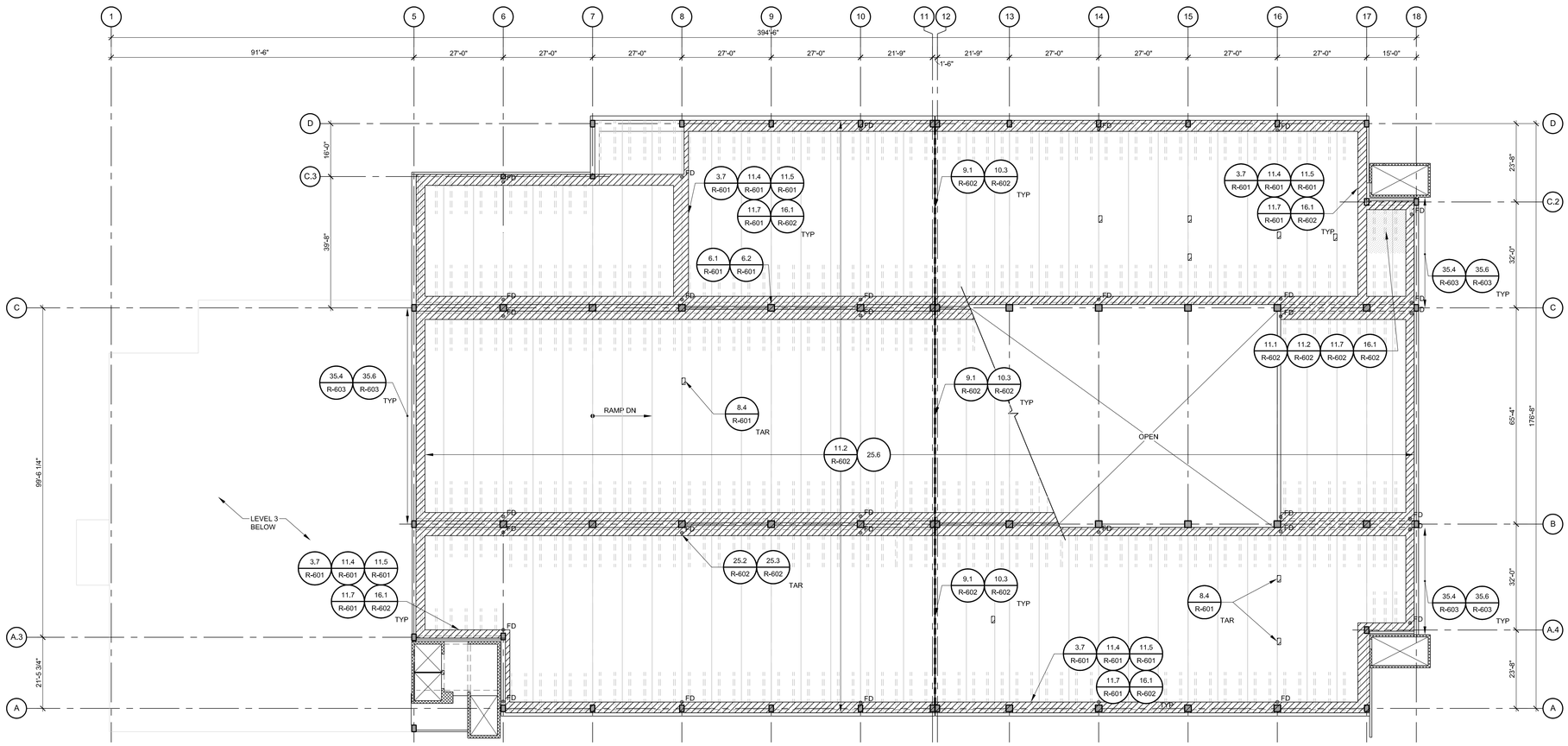

1 LOWER LOCKS PARKING GARAGE
5th LEVEL FLOOR PLAN

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

NOTE:
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.

GENERAL LEGEND

- EXPANSION JOINT (EJ)
- FLOOR SPALL OR DELAMINATION
- FD EXISTING FLOOR DRAIN (FD)

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	

LLPG
5th LEVEL
FLOOR PLAN

R-205

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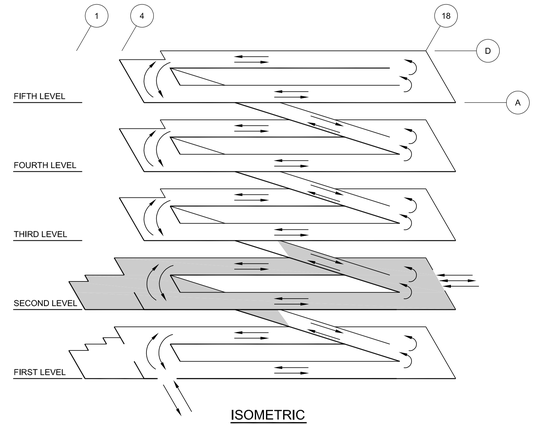

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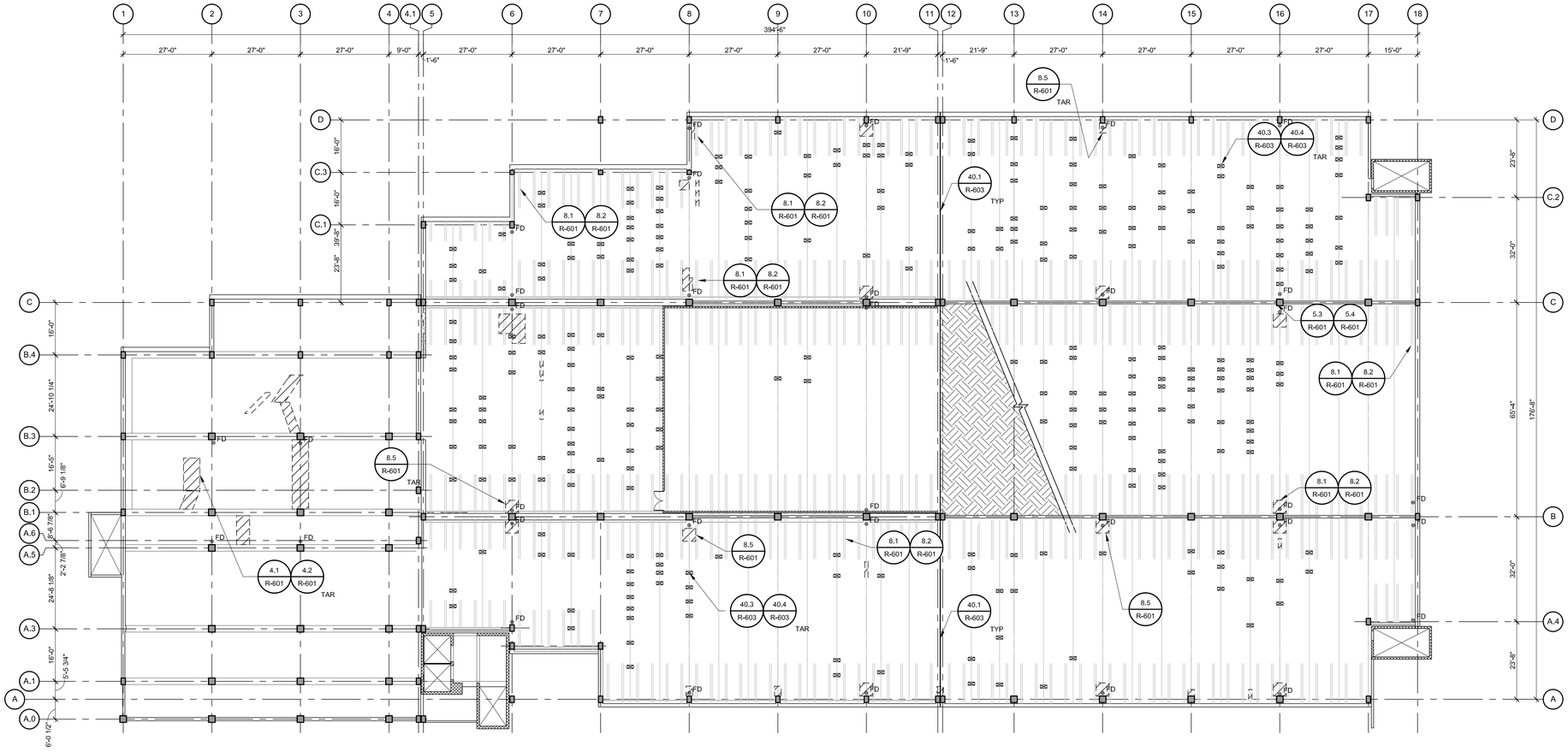

LOWER LOCKS PARKING GARAGE
FIRST LEVEL REFLECTED CEILING PLAN

1

0 8' 16' 32'

1/16" = 1'-0"

NORTH

NOTE:
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GENERAL LEGEND

———	EXPANSION JOINT (EJ)
▨	CEILING SPALL OR DELAMINATION
● FD	EXISTING FLOOR DRAIN (FD)

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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG FIRST LEVEL REFLECTED CEILING PLAN

R-206

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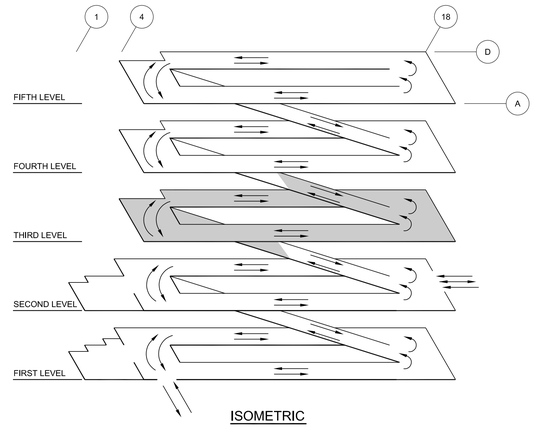

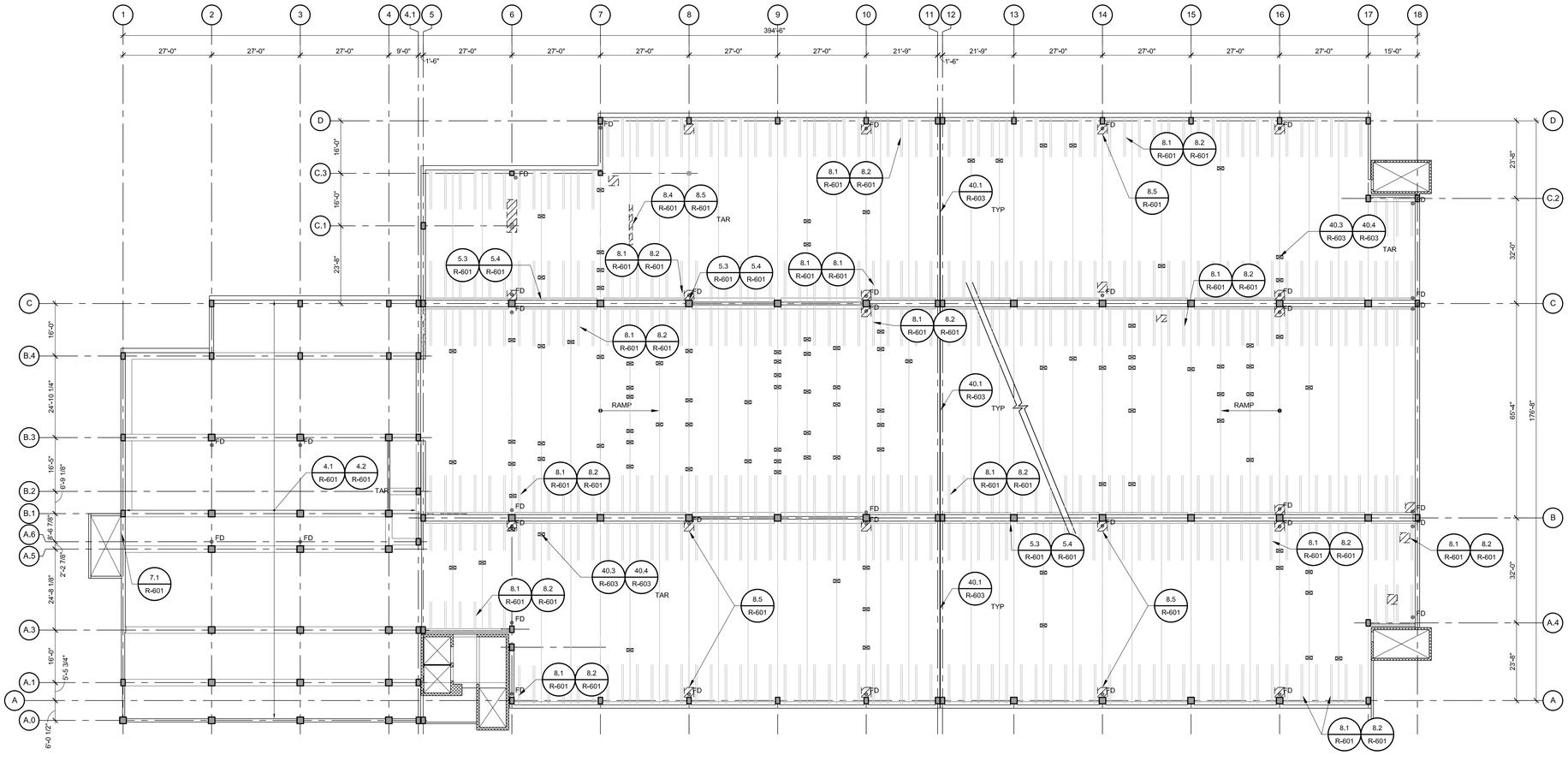

1 LOWER LOCKS PARKING GARAGE
SECOND LEVEL REFLECTED CEILING PLAN

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

NOTE:
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GENERAL LEGEND

———	EXPANSION JOINT (EJ)
▨	CEILING SPALL OR DELAMINATION
● FD	EXISTING FLOOR DRAIN (FD)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/06/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LLPG SECOND LEVEL REFLECTED CEILING PLAN

R-207

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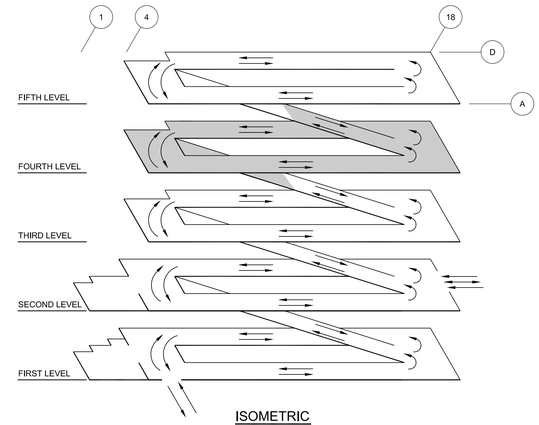

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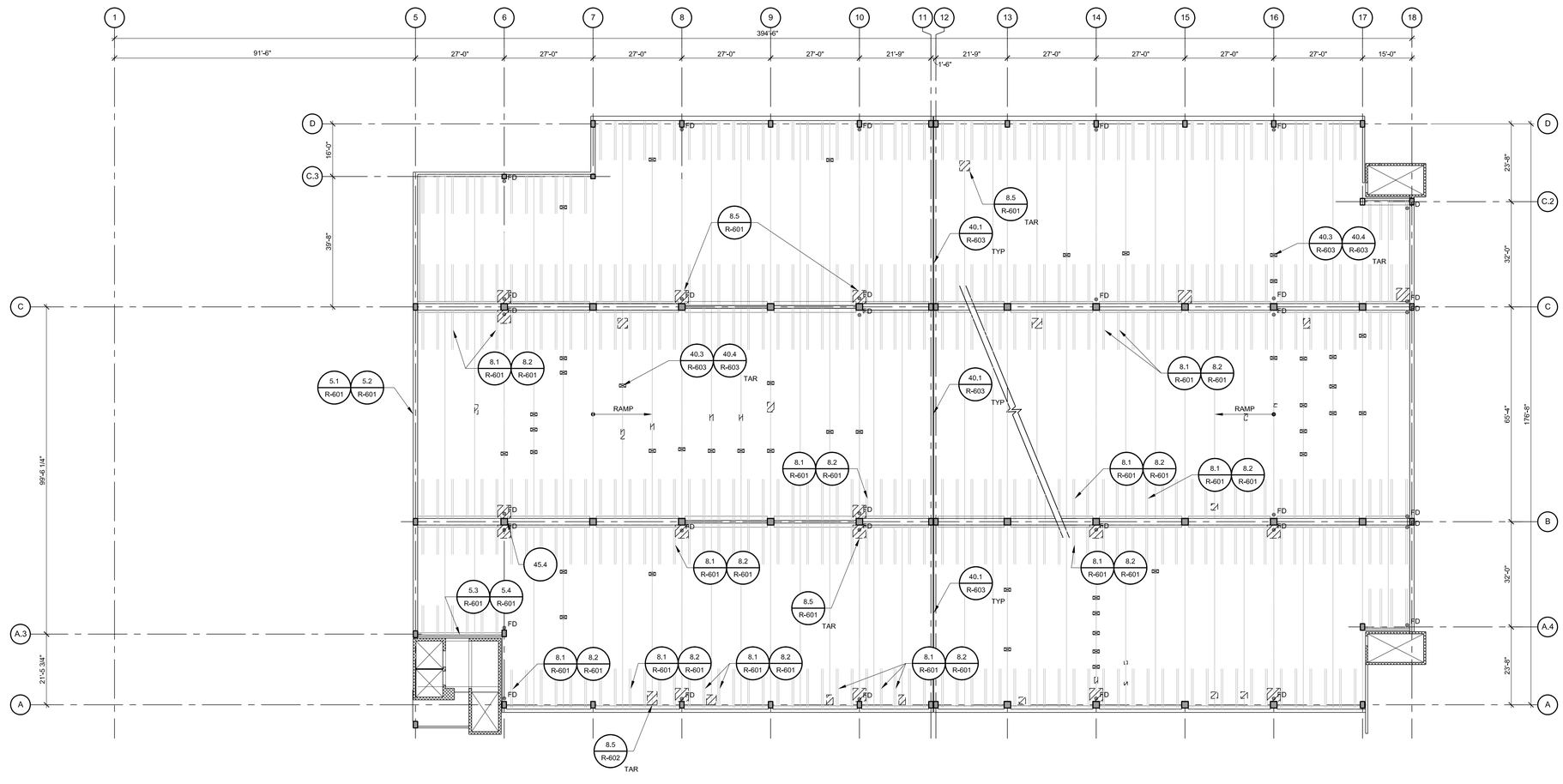

1 LOWER LOCKS PARKING GARAGE
THIRD LEVEL REFLECTED CEILING PLAN

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

NOTE:
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GENERAL LEGEND

———	EXPANSION JOINT (EJ)
▨	CEILING SPALL OR DELAMINATION
● FD	EXISTING FLOOR DRAIN (FD)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/06/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LLPG THIRD LEVEL REFLECTED CEILING PLAN

R-208

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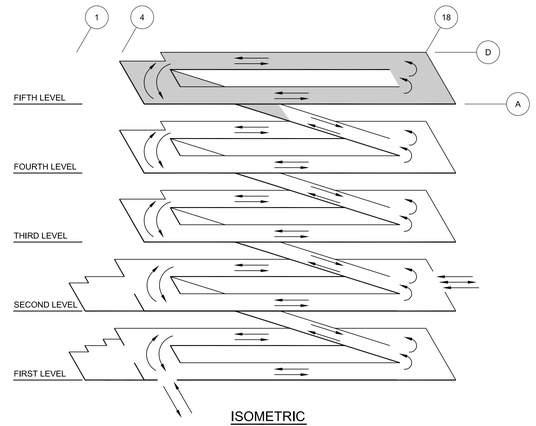

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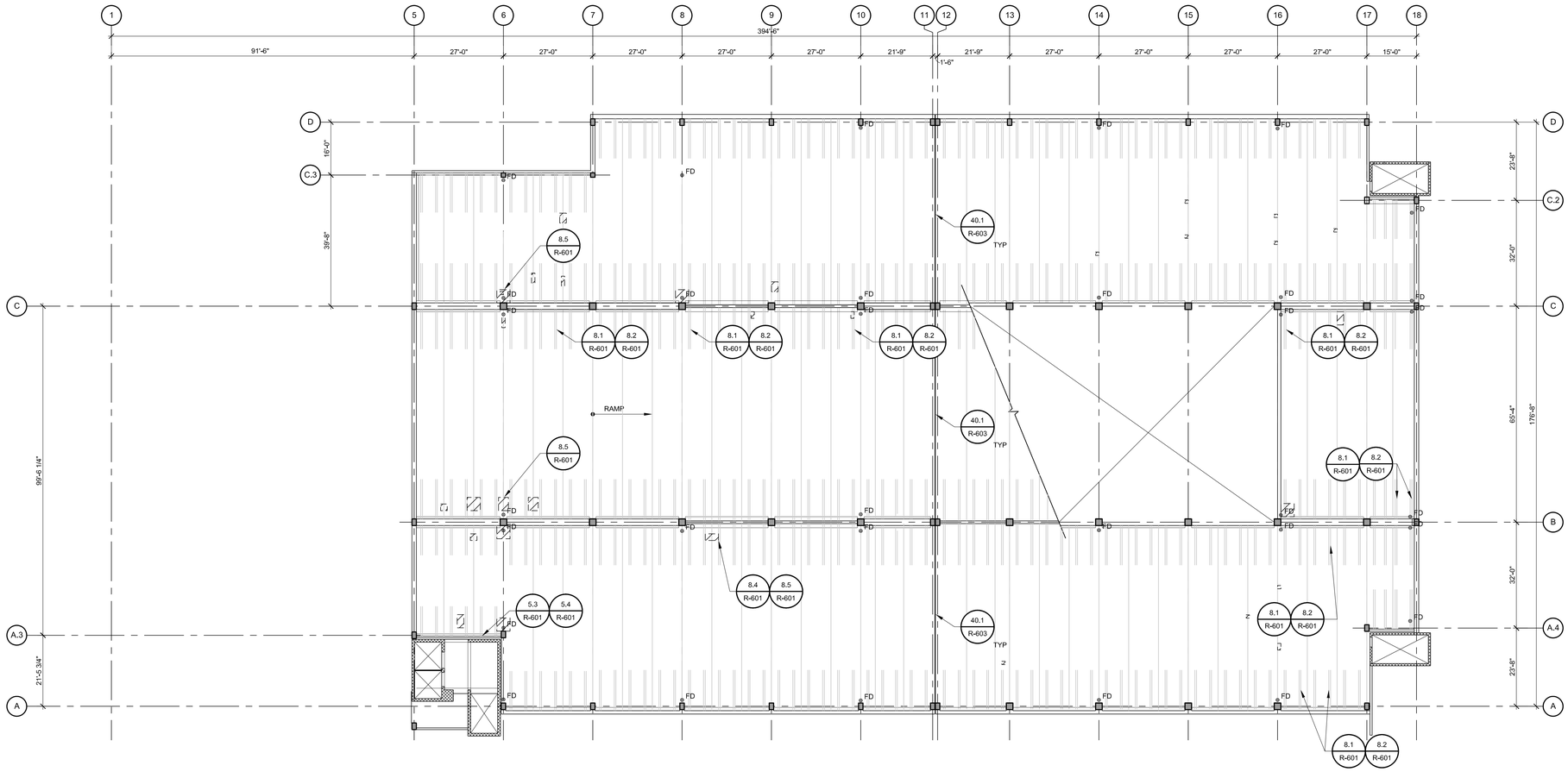

1 LOWER LOCKS PARKING GARAGE
FOURTH LEVEL REFLECTED CEILING PLAN

0 8' 16' 32'
1/16" = 1'-0"

TRUE NORTH

NOTE:
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GENERAL LEGEND

———	EXPANSION JOINT (EJ)
▨	CEILING SPALL OR DELAMINATION
● FD	EXISTING FLOOR DRAIN (FD)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/06/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LLPG FOURTH LEVEL REFLECTED CEILING PLAN

R-209

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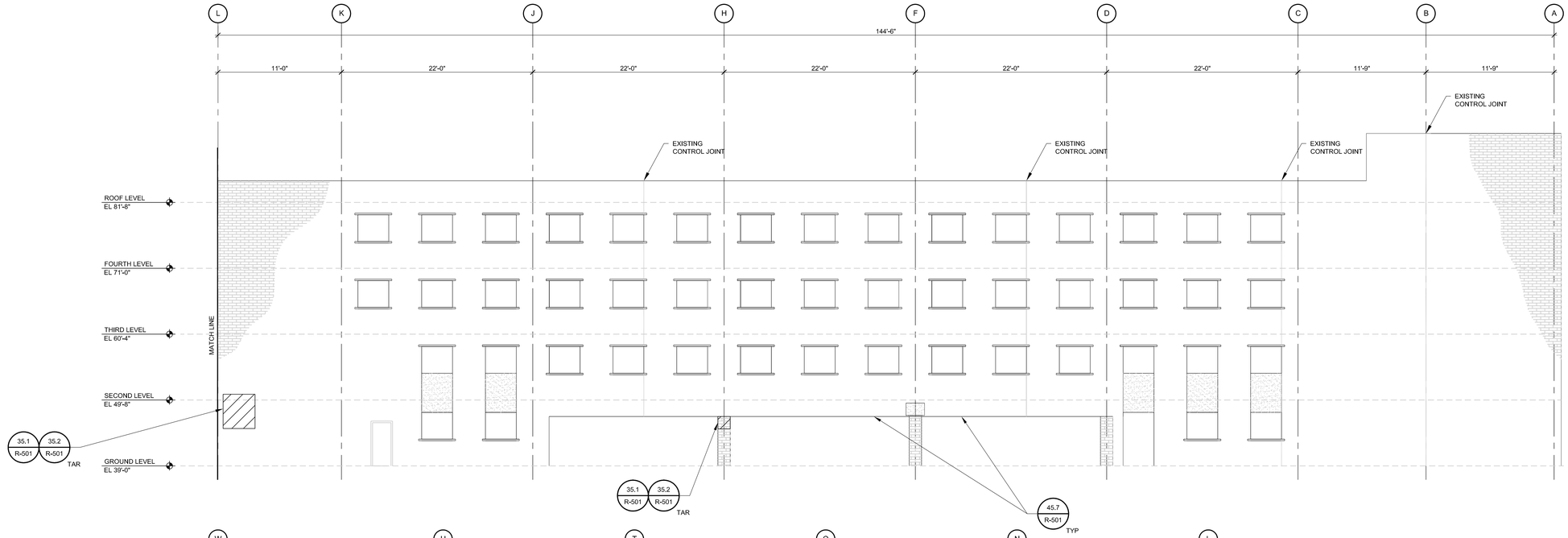

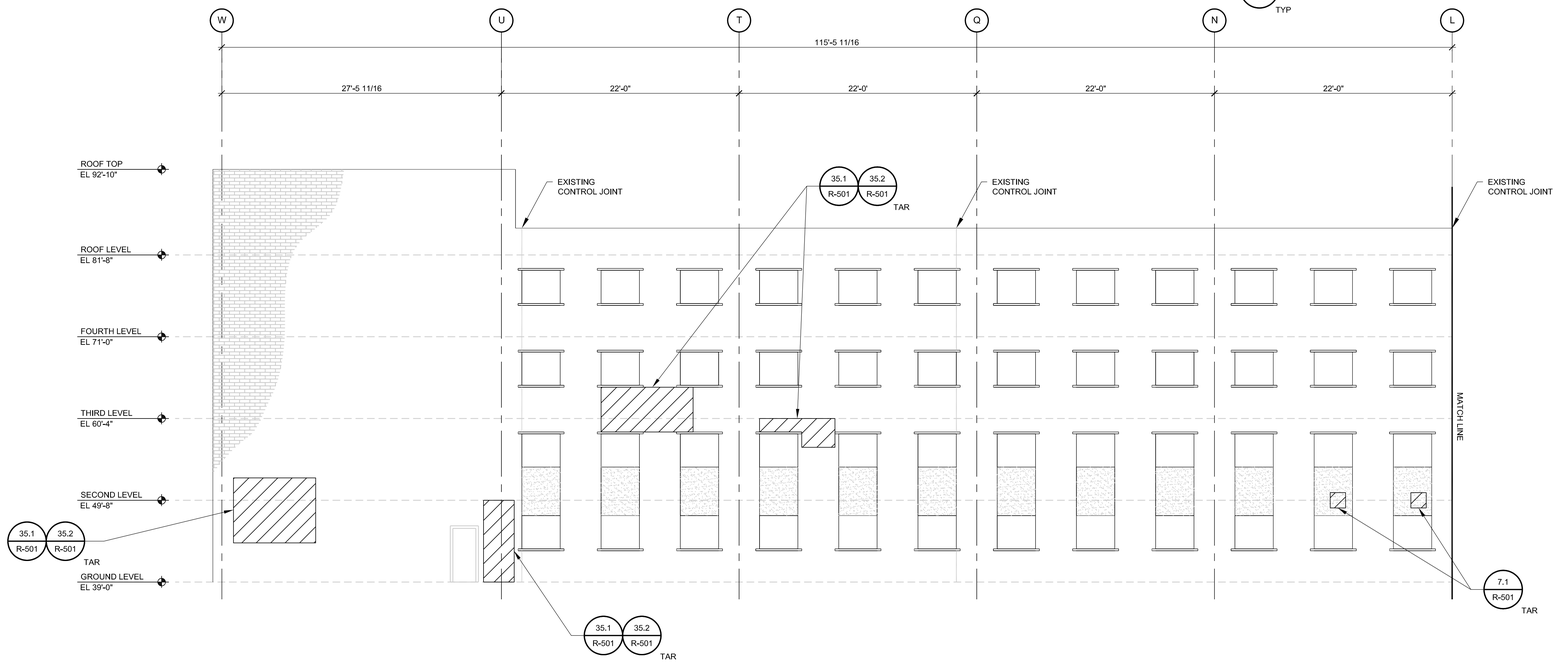

1 LEO A. ROY PARKING GARAGE
NORTH ELEVATION

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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	ADH
CHECKED BY:	DWJ
SHEET TITLE:	

LRPG
NORTH
ELEVATION

R-301

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R301.DWG 7/8/2015 1:43:14 PM CLEMENTIN, DONALD

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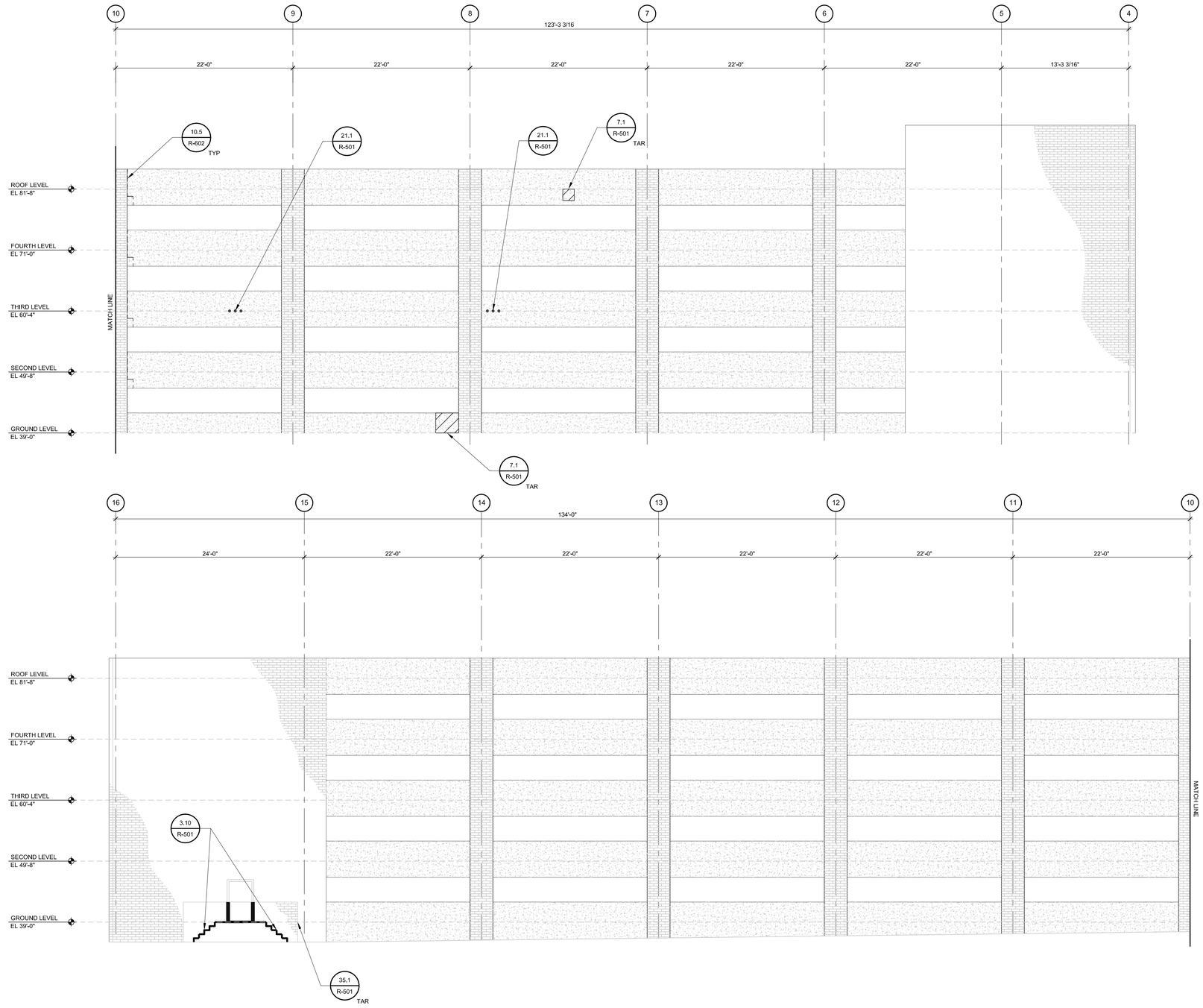

1 LEO A. ROY PARKING GARAGE
EAST ELEVATION

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
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PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:
LRPG
EAST
ELEVATION

R-302

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R302.DWG 7/21/2015 4:07:15 PM CLEMENTIN, DONALD

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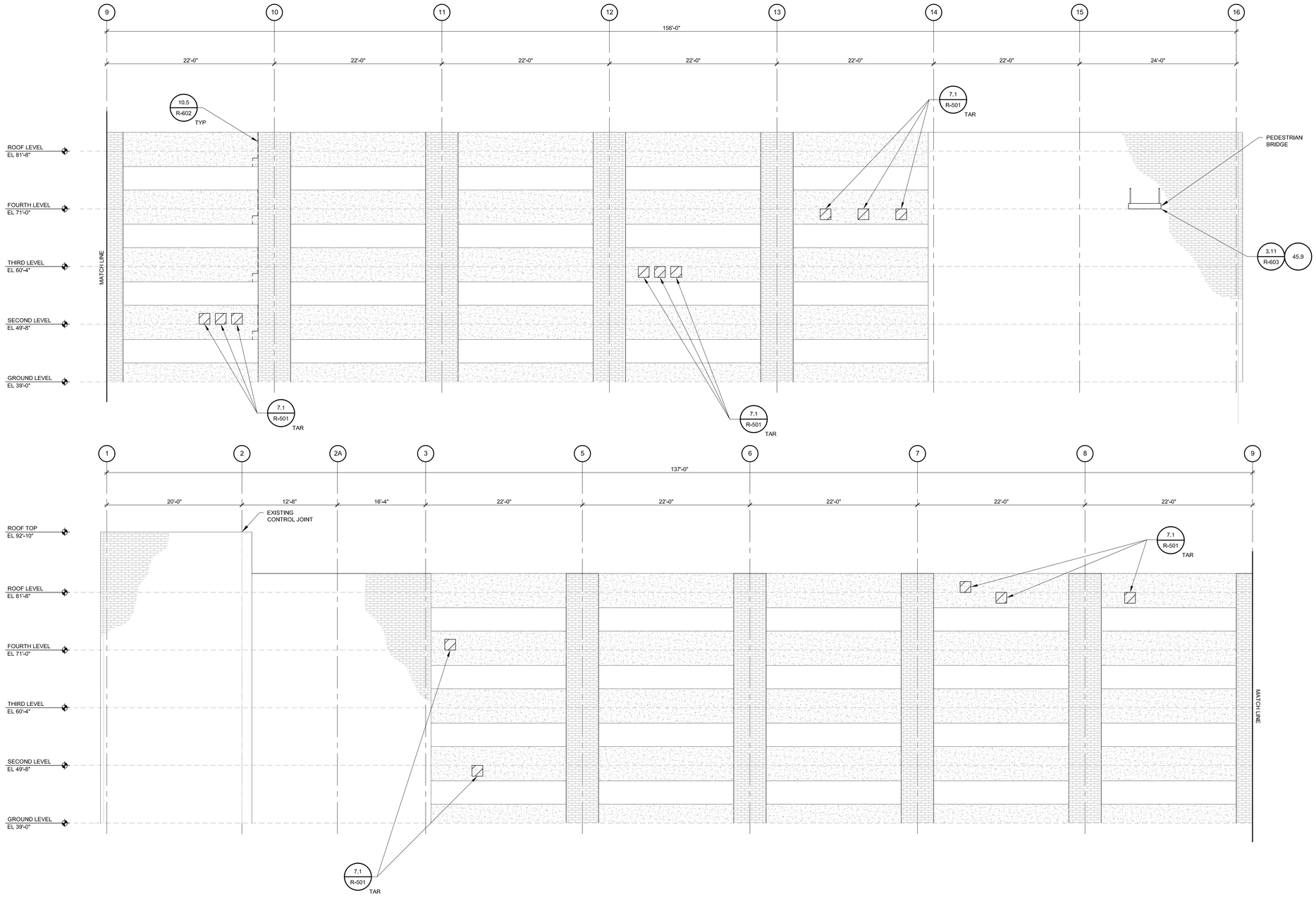

1 LEO A. ROY PARKING GARAGE
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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
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ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:

LRPG
WEST
ELEVATION

R-303

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R303.DWG 7/8/2015 2:03:51 PM CLEMENTIN, DONALD

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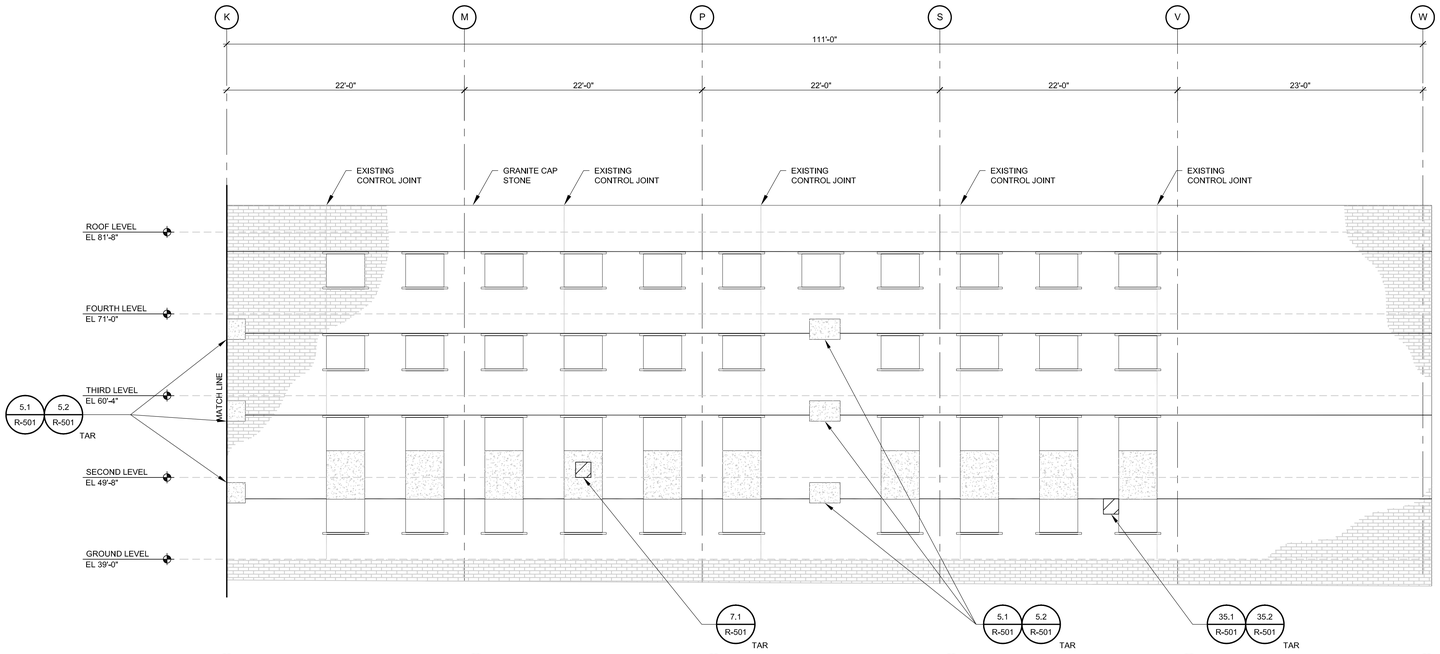

1 LEO A. ROY PARKING GARAGE
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NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: ADH
CHECKED BY: DWJ
SHEET TITLE:

LRPG
SOUTH
ELEVATION

R-304

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R304.DWG 7/8/2015 2:01:38 PM CLEMENTIN, DONALD

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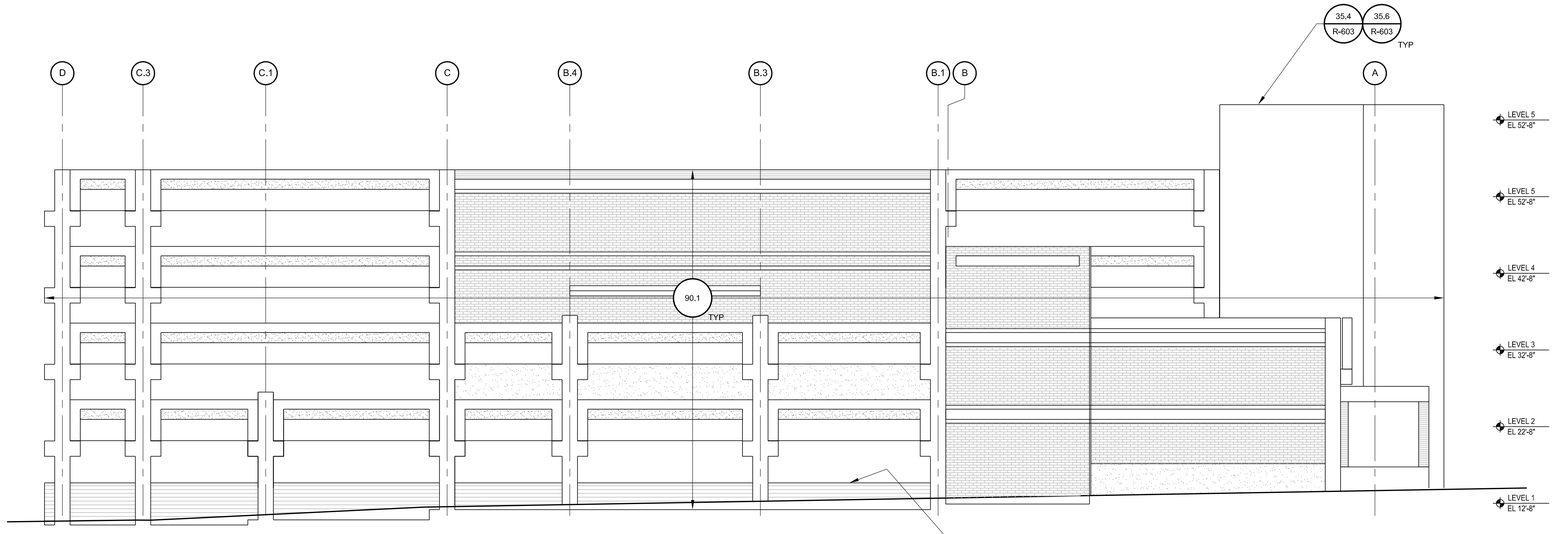
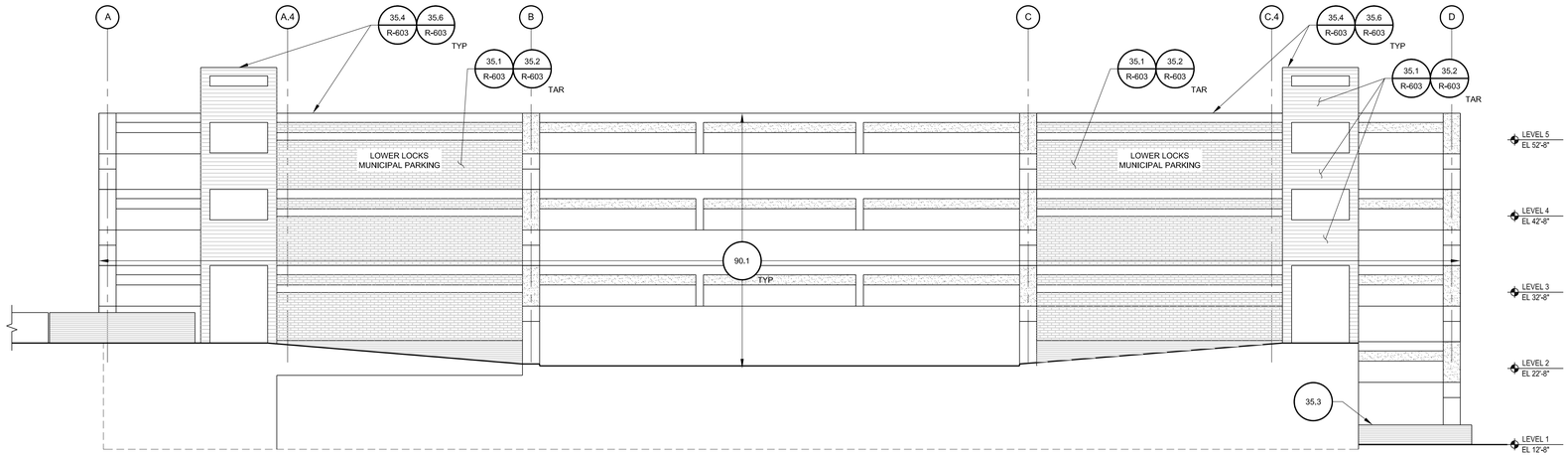


2 NORTH ELEVATION

0 4' 8' 16'
1/8" = 1'-0"



1 SOUTH ELEVATION

0 4' 8' 16'
1/8" = 1'-0"

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:

LLPG NORTH AND SOUTH ELEVATIONS

R-401

J:\16-2526-01-LOWER_LOCKS &_LEO_ROY_CDS\ACAD\REST\2526_R401.DWG 7/30/2015 3:16:41 PM CLEMENTIN, DONALD

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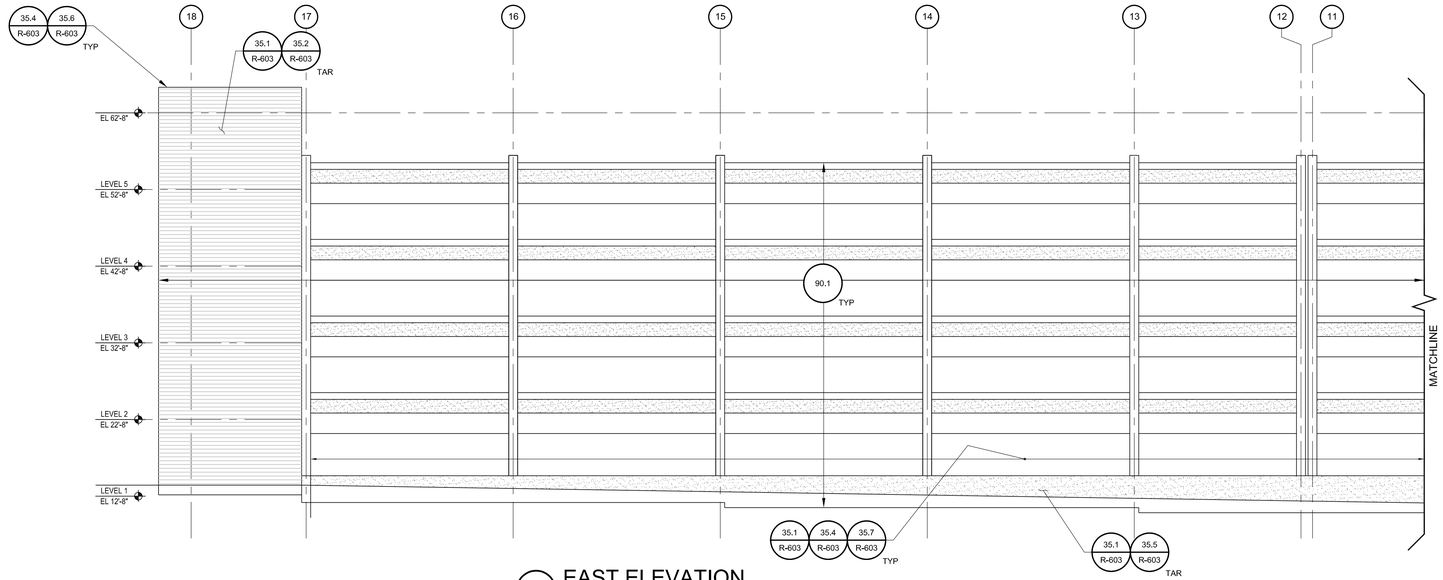

1 EAST ELEVATION

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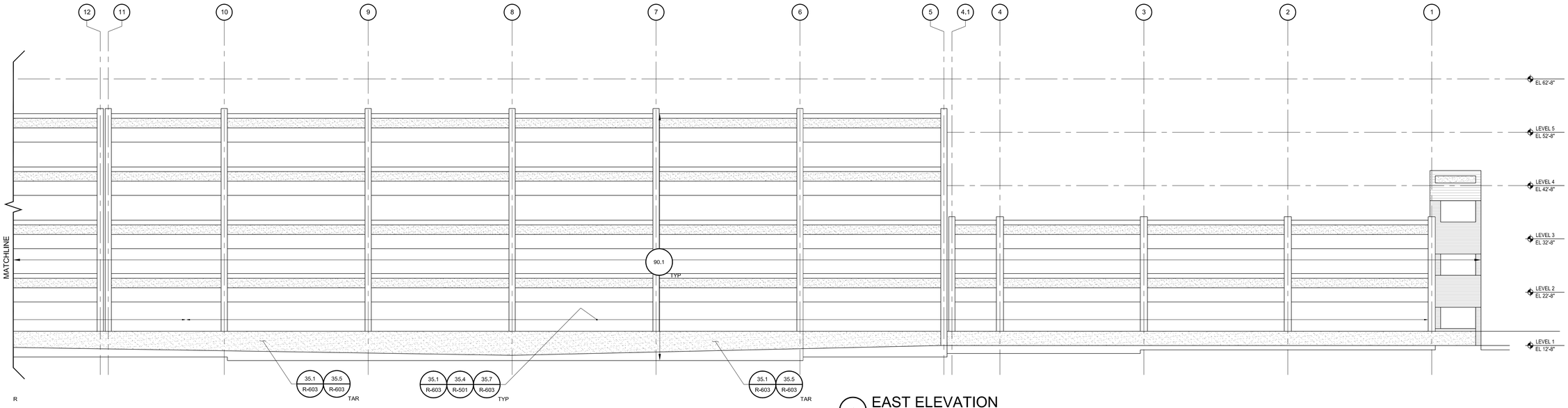
1/8" = 1'-0"



1 EAST ELEVATION

0 4' 8' 16'
1/8" = 1'-0"

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NO.	DATE	DESCRIPTION
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	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG
EAST ELEVATION

R-402

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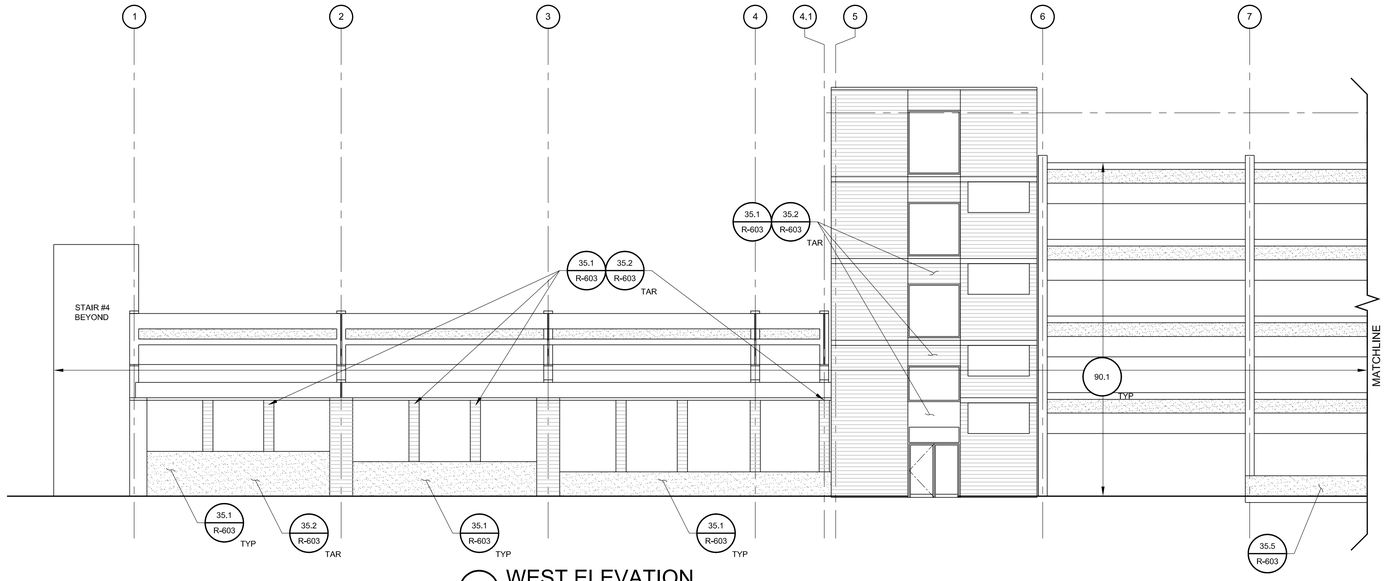
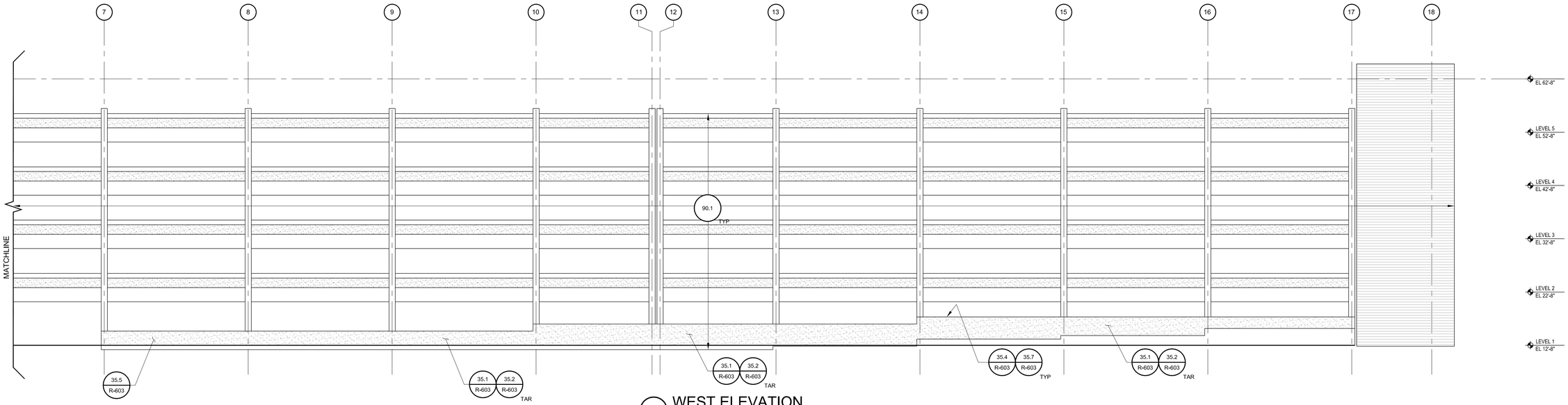


1 WEST ELEVATION

0 4' 8' 16'
1/8" = 1'-0"



1 WEST ELEVATION

0 4' 8' 16'
1/8" = 1'-0"

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
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	08/05/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	

LLPG
WEST ELEVATION

R-403

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R403.DWG 7/21/2015 4:24:19 PM CLEMENTIN, DONALD

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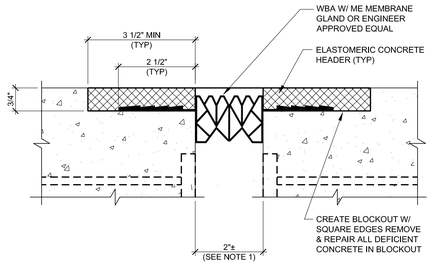
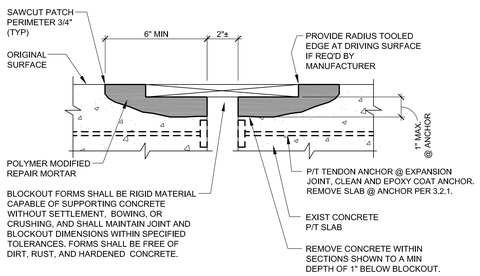


FLOOR TO FLOOR

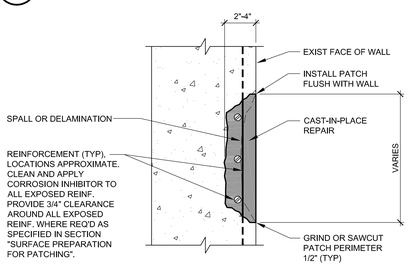
NOTE:
1. CONTRACTOR SHALL, WITH MANUFACTURER, VERIFY FIELD INSTALLATION WIDTH BASED ON TEMPERATURE CONDITIONS.
2. PROVIDE SHOP DRAWINGS SHOWING JOINT INTERSECTIONS AND WALL TERMINATIONS.

10.3 EXPANSION JOINT-ELASTOMERIC CONCRETE EDGED

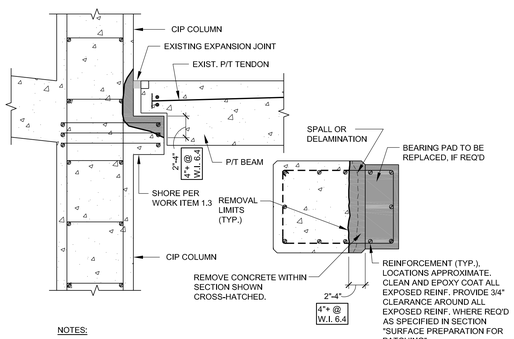


NOTES:
1. MAINTAIN EXPANSION JOINT OPENING CLEAR OF DEBRIS. VERTICAL SURFACE MUST BE PLUMB AND SHALL NOT VARY MORE THAN 1/8" IN 6".
2. EDGE STRAIGHTNESS TOLERANCE SHALL NOT VARY MORE THAN 1/4" IN 20'-0"
3. METHOD OF FORMING JOINT SHALL BE APPROVED BY ENGINEER PRIOR TO CONCRETE PLACEMENT.
4. CONCRETE ELEVATIONS ON EACH SIDE OF JOINT SHALL MATCH.

9.3 EXPANSION JOINT PREPARATION-BLOCKOUT REPAIR

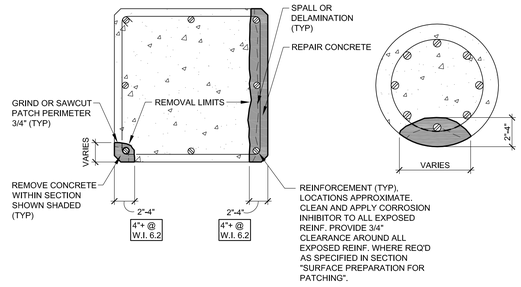


7.1 WALL REPAIR - PARTIAL DEPTH



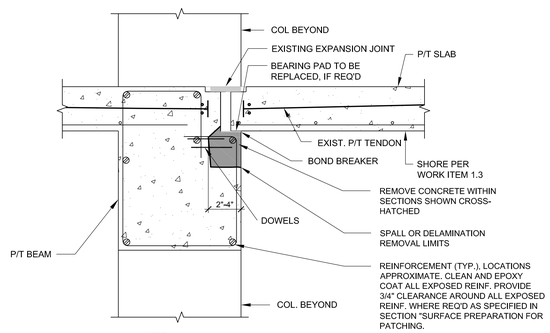
NOTES:
1. COORDINATE COLUMN REPAIRS WITH FLOOR SLAB EXP. JT. REPAIRS.
2. GRIND OR SAWCUT PATCH PERIMETER 1/2" (TYP.)
3. COLUMN TIES WHICH HAVE LOST MORE THAN 15% OF ORIGINAL CROSS SECTION AREA SHALL BE SUPPLEMENTED AS ENGINEER DIRECTS.
4. SHORING IS INCIDENTAL TO THIS WORK ITEM.

6.3 6.4 COLUMN REPAIR - PARTIAL DEPTH @ EXP. JT.



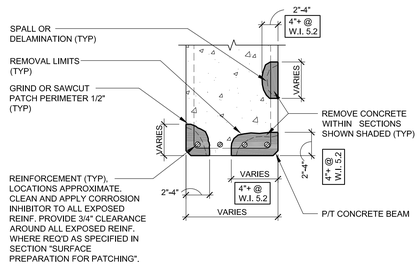
NOTES:
1. COLUMN TIES WHICH HAVE LOST MORE THAN 15% OF ORIGINAL CROSS SECTIONAL AREA SHALL BE SUPPLEMENTED AS ENGINEER DIRECTS.
2. NUMBER AND LOCATION OF REINFORCEMENT SHOWN MAY DIFFER FROM ACTUAL FIELD CONDITIONS.

6.1 6.2 COLUMN REPAIR-PARTIAL DEPTH

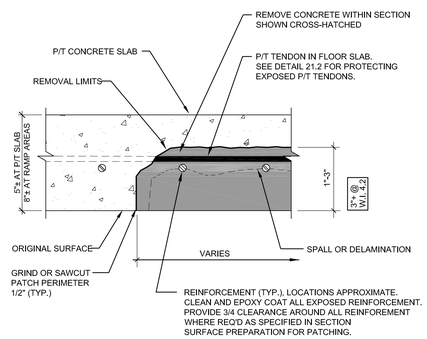


NOTE:
1. COORDINATE BEAM REPAIRS WITH FLOOR SLAB EXP. JT. REPAIRS.
2. GRIND OR SAWCUT PATCH PERIMETER 1/2" (TYP.)
3. WORK ITEM 21.2 IS INCIDENTAL TO THIS WORK.
4. SHORING IS INCIDENTAL TO THIS WORK.

5.5 BEAM REPAIR PARTIAL DEPTH @ EXP JT

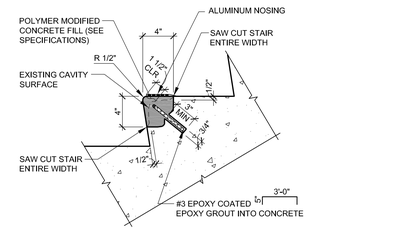


5.1 5.2 BEAM REPAIR-PARTIAL DEPTH



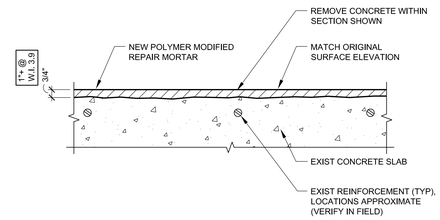
NOTE:
1. WORK ITEM 21.2 IS INCIDENTAL TO THIS WORK.
2. WORK ITEM 4.2 DOES NOT APPLY TO THE P/T SLAB AREAS.

4.1 4.2 CEILING REPAIR-PARTIAL DEPTH

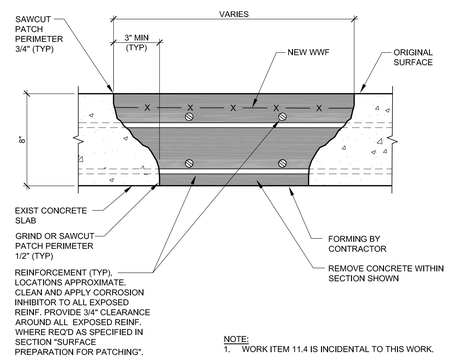


NOTES:
1. REMOVE EXISTING CAST IRON NOSING AND ANCHOR DEVICES.
2. REMOVE AND REPLACE ALL SOUND AND UNSOUND CONCRETE WITHIN SECTION SHOWN CROSS-HATCHED.

3.10 STAIR NOSING REPAIR



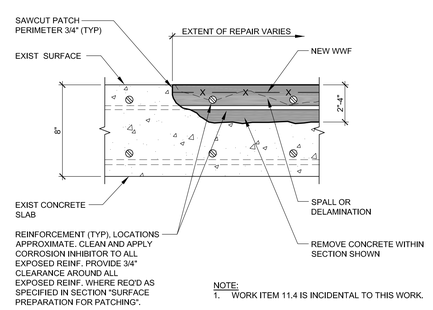
3.8 3.9 FLOOR REPAIR - SCALED CONCRETE SURFACE



NOTE:
1. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

3.6 FLOOR REPAIR-FULL DEPTH (CIP)

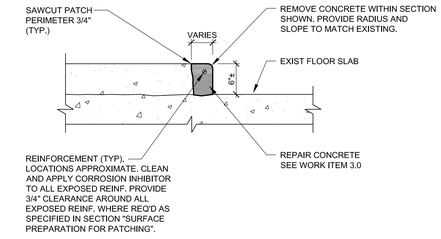
(FOR USE AT THE RAMP AREAS BETWEEN COLUMN GRIDS E & G)



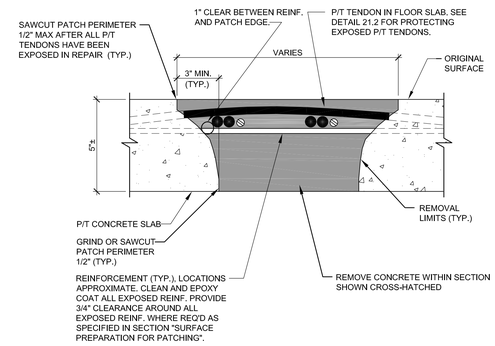
NOTE:
1. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

3.5 FLOOR REPAIR - PARTIAL DEPTH (CIP)

(FOR USE AT THE RAMP AREAS BETWEEN COLUMN GRIDS E & G)

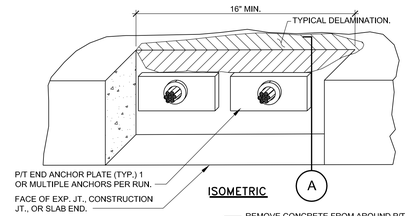


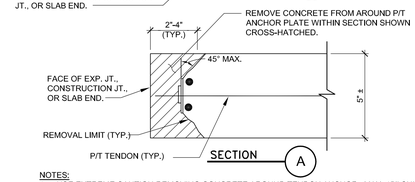
3.4 FLOOR REPAIR-CURBS/WALKS



NOTE:
1. WORK ITEM 21.2 IS INCIDENTAL TO THIS WORK.
2. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

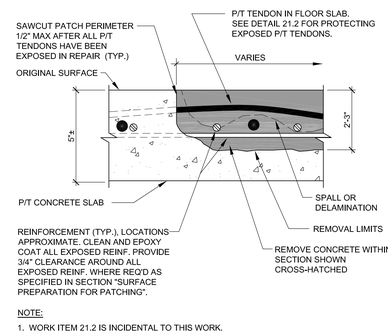
3.3 FLOOR REPAIR - FULL DEPTH (P/T)





NOTES:
1. USE EXTREME CAUTION REMOVING CONCRETE AROUND TENDON ANCHOR. MAX. 15# CHIPPING HAMMERS SHALL BE USED IN REMOVING CONCRETE. MULTIPLE/BUNDLED TENDONS WILL REQUIRE LARGER REMOVAL.
2. IF DETERIORATION EXTENDS BELOW TOP OF ANCHOR PLATE, STOP REMOVAL OPERATION AND CONTACT ENGINEER.

3.2.1 FLOOR REPAIR - PARTIAL DEPTH @ P/T TENDON ANCHORAGE



NOTE:
1. WORK ITEM 21.2 IS INCIDENTAL TO THIS WORK.
2. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

3.2 FLOOR REPAIR - PARTIAL DEPTH (P/T)

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
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	08/26/15	ISSUED FOR BIDDING

PROJECT NO:	16-2526.01
DRAWN BY:	DWC
CHECKED BY:	DWJ
SHEET TITLE:	LRPG REPAIR DETAILS

R-501

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\REST\2526_R501.DWG 7/27/2015 2:05:15 PM CLEMENTIN, DONALD

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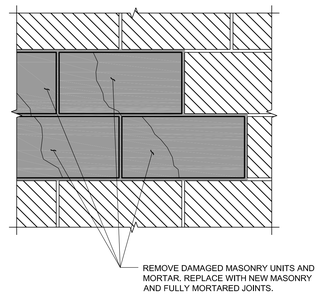
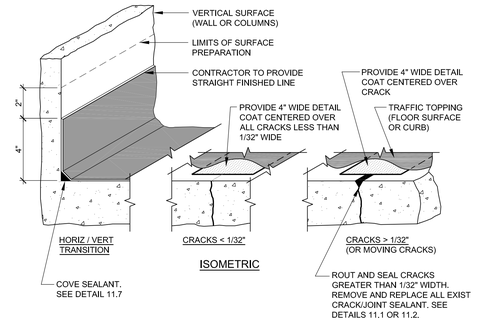


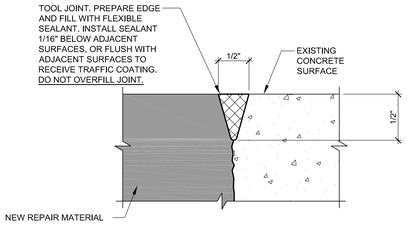
NOTES:
1. PAY UNIT INCLUDES PROVIDING CORNER UNITS, BOND BEAM UNITS, ETC. AS REQUIRED TO REPAIR ALL DAMAGED MASONRY.
2. INCIDENTAL TO THIS WORK IS PROVIDING NEW TRUSS OR LADDER TYPE REINFORCEMENT TO MATCH EXISTING. LAP MINIMUM ONE BLOCK LENGTH.
3. CONTRACTOR SHALL SUPPORT REMAINING AREAS OF MASONRY DURING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

35.2 35.5 MASONRY UNIT REPAIR/REPLACEMENT



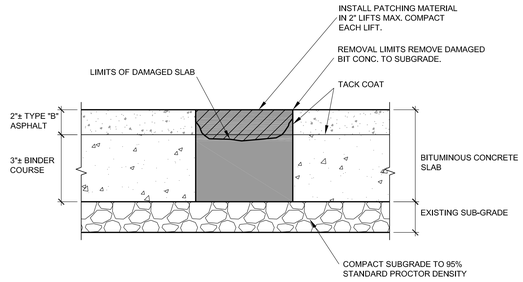
NOTE:
1. QUANTITIES BASED ON HORIZONTAL APPLICATION AREA. VERTICAL DETAILING, ADDITIONAL DETAIL COAT OVER CRACKS, ROUTING AND SEALING CRACKS, INSTALLATION OF COVE SEALANT, AND REMOVAL AND REPLACEMENT OF EXISTING SEALANTS ARE INCIDENTAL TO THIS WORK.

16.1 16.8 TRAFFIC TOPPING

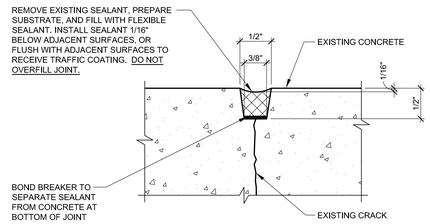


11.4 TOOL AND SEAL PATCH PERIMETER

(INCIDENTAL TO WORK ITEM SERIES 3.0, 15.0, AND 16.0)

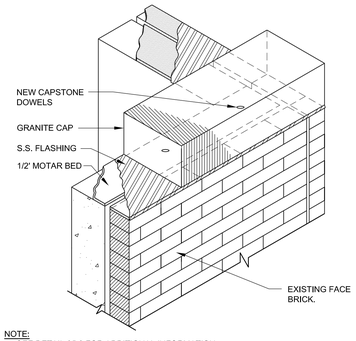


12.1 BITUMINOUS ASPHALT PATCHING



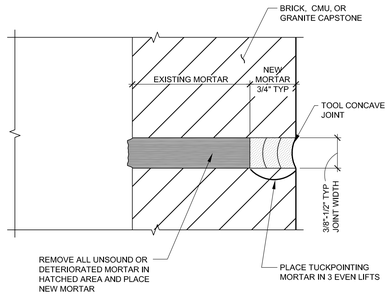
11.3 REPLACE CRACK/JOINT SEALANT

(INCIDENTAL TO WORK ITEM SERIES 16.0)



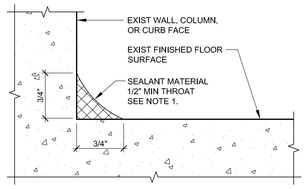
NOTE:
1. SEE DETAIL 35.6 FOR ADDITIONAL INFORMATION

35.6.1 CORNER CAPSTONE FLASHING



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 TUCKPOINTING



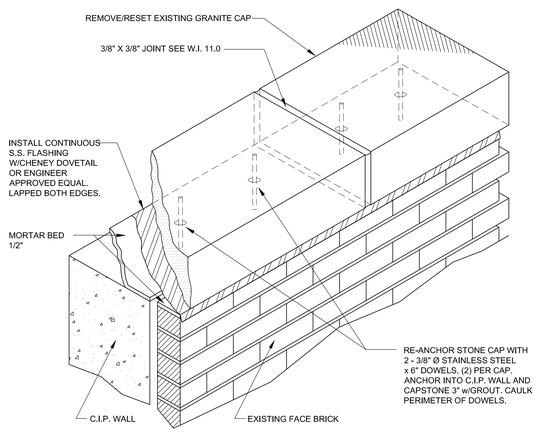
NOTE:
1. REMOVE EXISTING COVE SEALANT MATERIAL IF PRESENT. PREPARE SURFACE PER SPECIFICATIONS.

11.7 COVE SEALANT

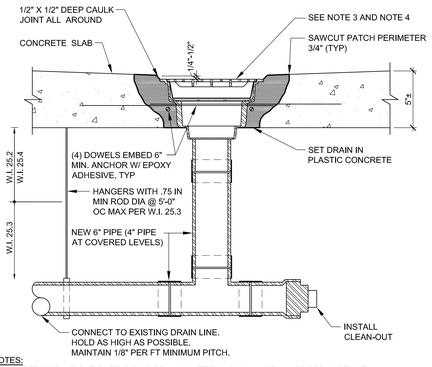
(INCIDENTAL TO WORK ITEM SERIES 16.0)

11.1 ROUT & SEAL RANDOM CRACKS (CRACKS 0.030" OR GREATER)

(INCIDENTAL TO WORK ITEM SERIES 16.0)

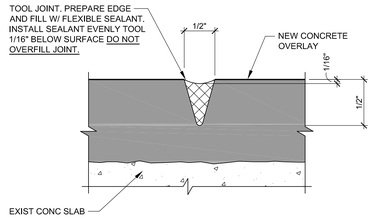


35.6 CAPSTONE FLASHING



NOTES:
1. USE SERVICE WEIGHT CAST IRON PIPE. 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. ROOF LEVEL DRAINS:
   a. SMITH 2295-Y-U-FBS
   b. WADE 2380-5
   c. OR ENGINEER APPROVED EQUIVALENT
4. COVERED LEVEL DRAINS:
   a. SMITH 2140-C-U-M-B
   b. WADE 1200-5-27-31
   c. OR ENGINEER APPROVED EQUIVALENT
5. GC TO REMOVE EXISTING DRAIN AND CAST NEW SECTION SLAB PER WORK ITEM SERIES 3.0.

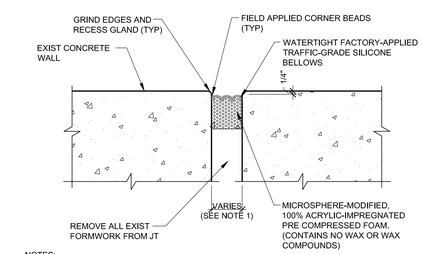
25.2 25.3 25.4 MECHANICAL - FLOOR DRAINS / PIPE AND HANGERS



NOTES:
1. PLACE CONTROL JOINTS AT EXISTING JOINT PATTERN LOCATIONS.
2. ADDITIONAL OVERLAY CONTROL JOINTS WILL BE REQUIRED OVER ALL ORIGINAL CONSTRUCTION JOINTS. CONTRACTOR SHALL LOCATE ALL SUCH JOINTS PRIOR TO OVERLAY INSTALLATION.
3. 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.

11.5 TOOL AND SEAL CONTROL JOINTS

(INCIDENTAL TO WORK ITEM SERIES 3.0 AND 16.0)



NOTES:
1. CONTRACTOR SHALL, WITH MANUFACTURER, VERIFY FIELD INSTALLATION WIDTH BASED ON TEMPERATURE CONDITIONS.
2. WALL JOINT SHALL RUN VERTICALLY ON BOTH FACES OF WALL AND HORIZONTALLY ON TOP OF WALL.
3. ALL INTERSECTIONS AND 90° CORNERS TO BE FIELD FABRICATED PER MANUFACTURER'S DETAILS AND WRITTEN INSTRUCTIONS.

10.5 EXPANSION JOINT-ADHERED WALL JOINT

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LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LRPG
REPAIR DETAILS

R-502

J:\16-2526-01-LOWER_LOCKS & LEO_ROY_CDS\ACAD\REST\2526_R501.DWG 7/27/2015 2:05:15 PM CLEMENTIN, DONALD

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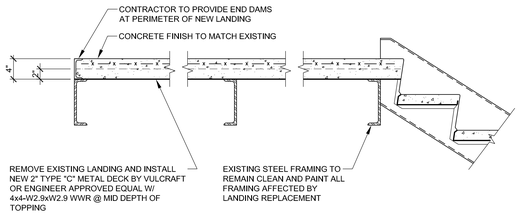
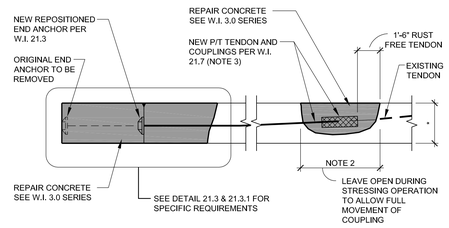


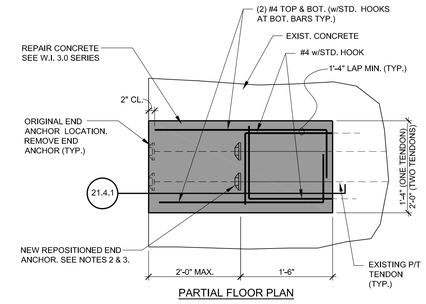
NOTE:
1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION OF METAL STAIR LANDING.
2. ALL IN PLACE CONSTRUCTION AFFECTED BY STAIR LANDING REPLACEMENT TO BE CLEANED AND PAINTED.

41.4 REPLACE STEEL STAIR LANDING & CONCRETE FILL



NOTES:
1. REMOVE CONC. WITHIN SECTIONS SHOWN SHADED.
2. LENGTH OF REMOVAL SHALL BE AS REQUIRED TO ALLOW COUPLING MOVEMENT DURING STRESSING OPERATION.
3. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER W.I. 21.9 OR 21.10 AS APPROPRIATE.

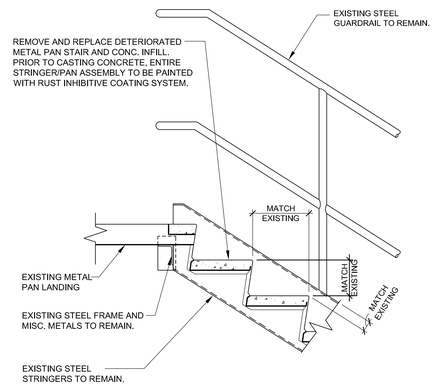
21.7 TENDON SPLICE COUPLING (SINGLE)



PARTIAL FLOOR PLAN

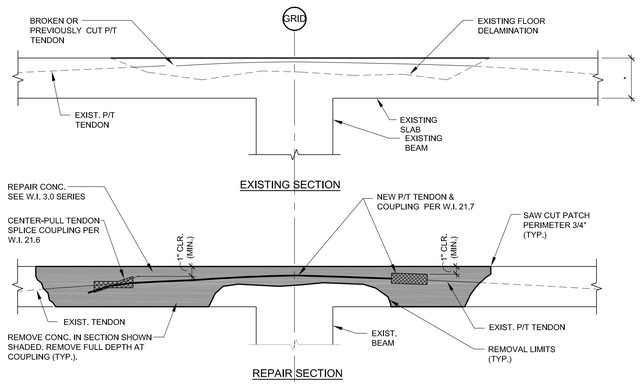
NOTES:
1. THIS DETAIL TYPICALLY APPLIES WHEN A TENDON FAILURE OCCURS NEAR AN EXISTING END ANCHOR AND STRESSING OF THE TENDON WILL OCCUR AT A DIFFERENT LOCATION AS DETERMINED BY ENGINEER. SEE DETAIL 21.4.1 FOR ADDITIONAL INFORMATION.
2. DEPENDING ON EXTENT OF TENDON DAMAGE, THIS REPAIR WILL BE PERFORMED IN COMBINATION WITH EITHER W.I. 21.3 OR W.I. 21.6 FOR STRESSING OF THE TENDON.
3. IF THIS REPAIR IS PERFORMED IN COMBINATION WITH A CENTER-PULL SPLICE (W.I. 21.6) REPAIR, THEN PULL TENDON BACK TO ALLOW ANCHOR INSTALLATION AT ORIGINAL LOCATION (W.I. 21.8).

21.4 P/T TENDON END ANCHORAGE (DEAD)



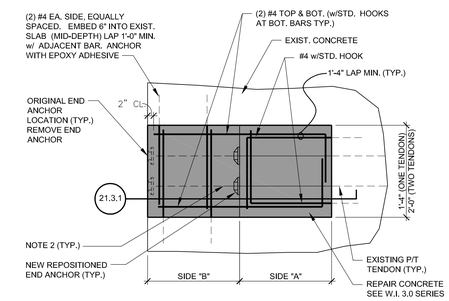
NOTE:
1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION OF METAL STAIR PANS.
2. ALL IN PLACE CONSTRUCTION AFFECTED BY STAIR PAN REPLACEMENT TO BE CLEANED AND PAINTED. TO MATCH EXISTING FINISH

41.1 REPLACE STEEL STAIR RISER TREAD & CONCRETE



NOTES:
1. SEE DETAILS 21.6 AND 21.7 FOR REMAINING INFORMATION. 2. MAINTAIN ORIGINAL TENDON PROFILE.

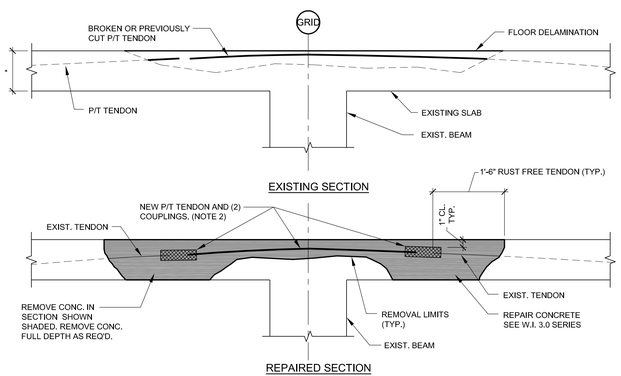
21.6.1 21.7.1 TENDON SPLICE COUPLING OVER BEAM



PARTIAL FLOOR PLAN

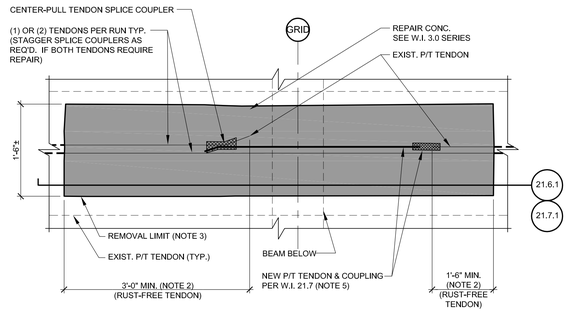
NOTES:
1. THIS DETAIL TYPICALLY APPLIES WHEN A TENDON FAILURE OCCURS NEAR THE EXISTING END ANCHOR. SEE DETAIL 21.3.1 FOR ADDITIONAL INFORMATION.
2. IF NECESSARY, PULL TENDON INTO SIDE 'B' TO PROVIDE TAIL FOR STRESSING. (MAKE ADJUSTMENT AT TENDON SPLICE REPAIR LOCATION).
3. DEPENDING ON EXTENT OF TENDON DAMAGE, THIS REPAIR MAY NEED TO BE PERFORMED IN COMBINATION WITH OTHER TENDON REPAIRS.

21.3 P/T TENDON END ANCHORAGE (LIVE)



NOTES:
1. IF TWO OR MORE FAILED TENDONS PER RUN, STAGGER THE COUPLERS AS REQ'D. FOR STRESSING OPERATIONS. STRESS TENDON(S) PER W.I. 21.3 OR 21.6 AS DIREDTED BY ENGINEER.
2. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER W.I. 21.9.

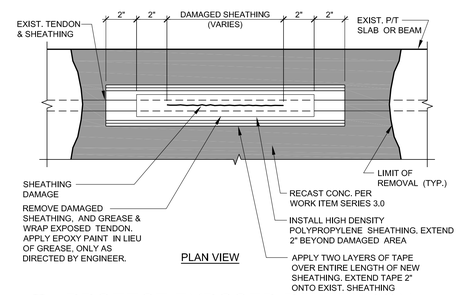
21.8 TENDON SPLICE COUPLING (DOUBLE)



PARTIAL FLOOR PLAN

NOTES:
1. SEE DETAILS SERIES 21.6 AND 21.7 FOR ADDITIONAL INFORMATION.
2. INCREASE CONCRETE REMOVAL LENGTH AS REQ'D BY STRESSING AND INSTALLATION METHODS..
3. STAGGER SPLICE COUPLERS IF MORE THAN (1) TENDON PER RUN REQUIRES REPAIR. ALTERNATE CENTER-PULL COUPLERS ON OPPOSITE SIDES OF GRIS LINE.
4. LOCATE SPLICE COUPLINGS ALONG EXIST. TENDON PROFILE AT SLAB MID-DEPTH (APPROX. * TO * FROM GRID LINE).
5. NEW TENDON LENGTH BEYOND 10'-0" SHALL BE PAID FOR UNDER W.I. 21.9.

21.6 21.7 TENDON SPLICE COUPLING (CENTER-PULL) TENDON SPLICE COUPLING (SINGLE)



PLAN VIEW

21.2 PROTECT EXPOSED P/T TENDON

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NO.	DATE	DESCRIPTION
ISSUED:		
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PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LRPG P/T REPAIR DETAILS

R-503

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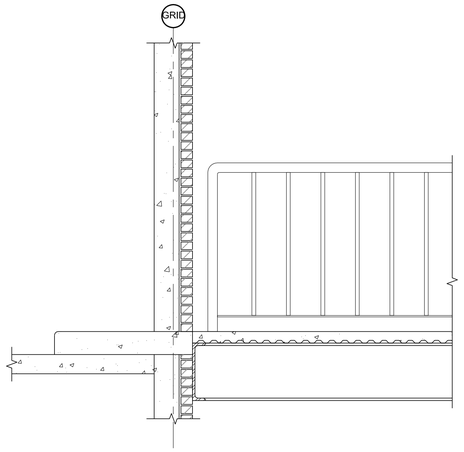
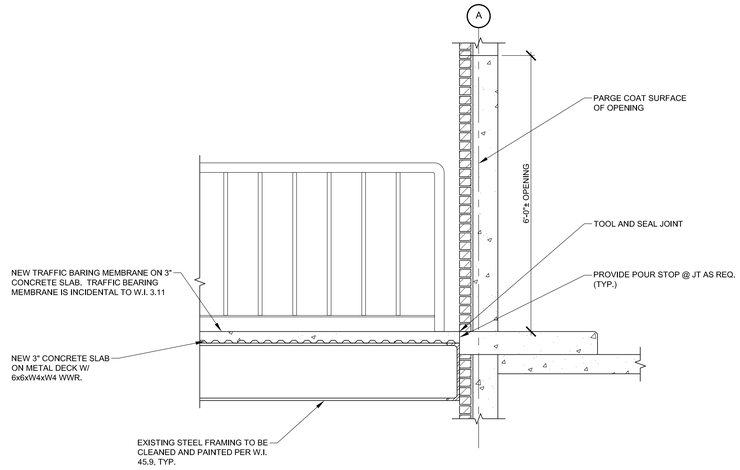


SECTION

NOTES:
1. SIMILAR TO DETAIL 3.11.1.

FLOOR REPAIR - REPLACE BRIDGE DECK SLAB

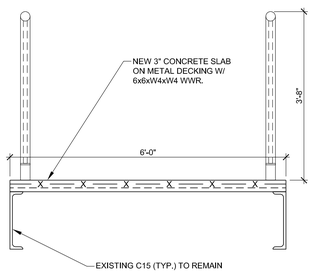
3.11.3



SECTION

FLOOR REPAIR - REPLACE BRIDGE DECK SLAB

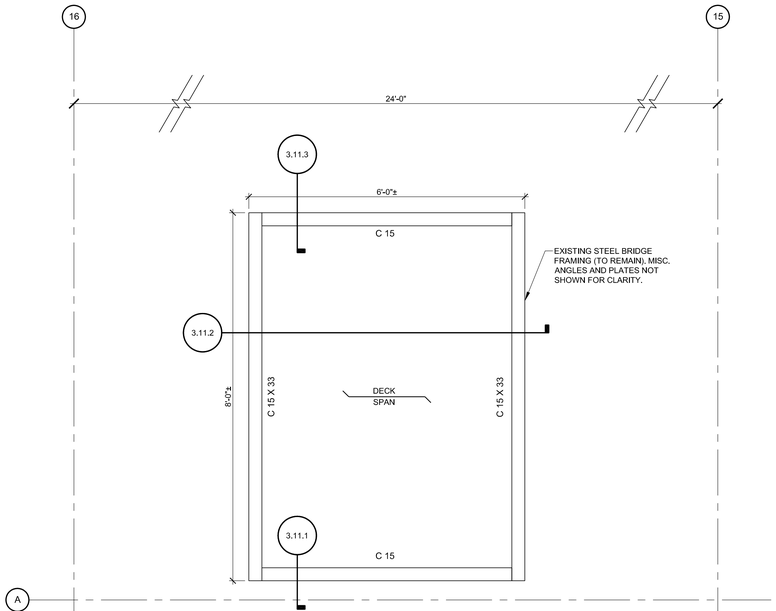
3.11.1



SECTION

FLOOR REPAIR - REPLACE BRIDGE DECK SLAB

3.11.2



FRAMING PLAN

NOTES:
1. DECK SHALL BE GALVANIZED 1.0C20 BY VULCRAFT OR ENGINEER APPROVED EQUAL. PROVIDE PUDDLE WELDS TO STEEL SUPPORTS @ 12" OC (MAX)

FLOOR REPAIR - REPLACE BRIDGE DECK SLAB

3.11

SHEET NOTES:

1. CONTRACTOR SHALL USE DEMOLITION METHODOLOGY TO REMOVE CONCRETE SLAB AT METAL PANS THAT DOES NOT RESULT IN INCIDENTAL DAMAGE TO STEEL FRAMING.
2. ENGINEER TO REVIEW ALL EXISTING CONDITIONS AFTER DEMOLITION HAS BEEN COMPLETED.
3. CONTRACTOR SHALL SECURE STEEL POST RAILINGS AS NECESSARY TO PREVENT SHIFTING OR ROTATION AFTER SLAB REMOVAL.
4. ALL EXISTING STEEL AND RAILINGS SHALL BE CLEANED AND PAINTED UNDER WORK ITEM 45.9.

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NO.	DATE	DESCRIPTION
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PROJECT NO:	16-2526.01
DRAWN BY:	ADH
CHECKED BY:	DWJ

SHEET TITLE:
LRPG
BRIDGE DECK
REPAIR DETAILS

R-504

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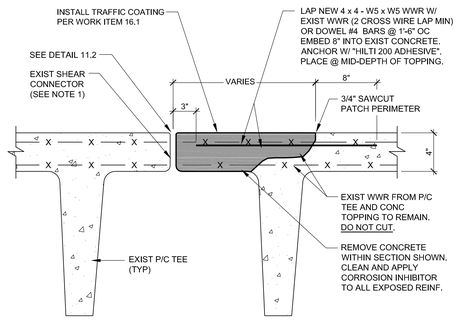
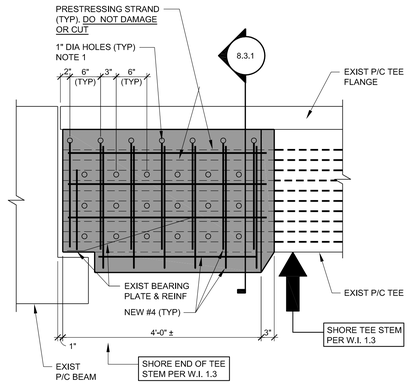


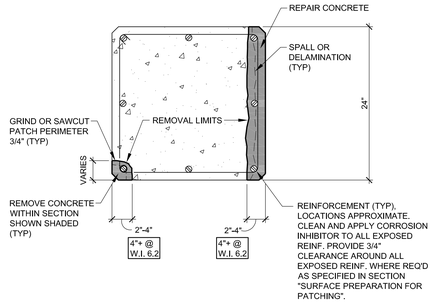
NOTE:
1. SANDBLAST, REWELD AS REQ'D, AND APPLY CORROSION INHIBITOR TO ALL BROKEN TEE FLANGE SHEAR CONNECTORS PER W.I. 40.3. SHEAR CONNECTORS AND TEE REINFORCEMENT SHOWN MAY DIFFER FROM ACTUAL FIELD CONDITIONS.

8.5 TEE FLANGE REPAIR-FULL DEPTH



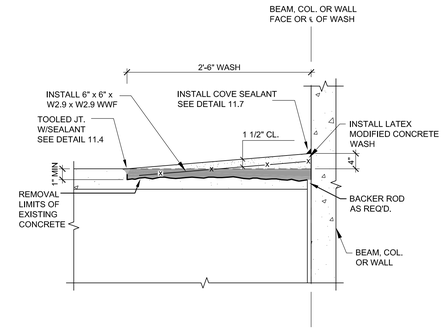
NOTE:
1. CONTRACTOR TO LOCATE AND MARK EXIST PRESTRESSING TENDONS PRIOR TO DRILLING HOLES.

8.3 TEE BEAM REPAIR - ENCASEMENT

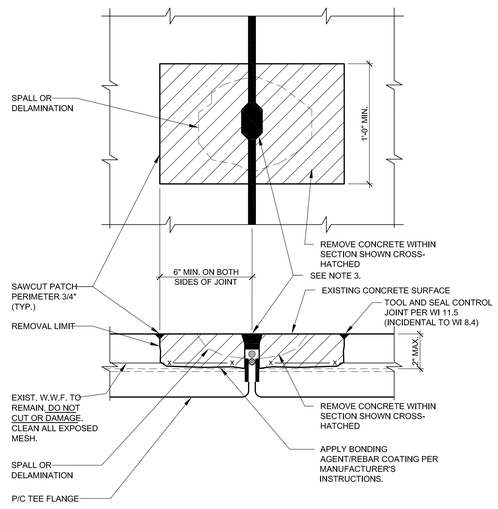


NOTES:
1. COLUMN TIES WHICH HAVE LOST MORE THAN 15% OF ORIGINAL CROSS ECTIONAL AREA SHALL BE SUPPLEMENTED AS ENGINEER DIRECTS.
2. NUMBER AND LOCATION OF REINFORCEMENT SHOWN MAY DIFFER FROM ACTUAL FIELD CONDITIONS.

6.1 6.2 COLUMN REPAIR-PARTIAL DEPTH

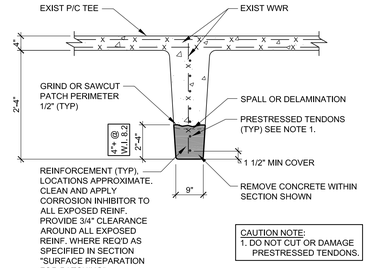


3.7 FLOOR REPAIR - CONCRETE WASH

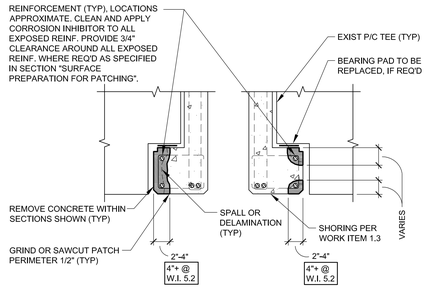


NOTE:
1. THIS REPAIR OCCURS WHEN BAR ANCHORS ARE NOT EXPOSED DURING DEMOLITION. THIS SHALL BE A PARTIAL DEPTH REPAIR.
2. FORM JOINT SO THAT FLANGE CONNECTOR PLATE IS NOT COVERED WITH REPAIR MORTAR.
3. REMOVAL WIDTH SHALL BE SUFFICIENT ENOUGH TO COMPLETE WELD REPAIR TO FLANGE CONNECTIONS PER WI 40.3.
4. EDGE OF PATCH TO BE CHAMFERED OR TOOLED TO MATCH ADJACENT EDGE OF EXISTING CONCRETE.
5. ALL EXPOSED CONNECTIONS SHALL BE CLEANED AND COATED WITH A COLD GALVANIZING COMPOUND.

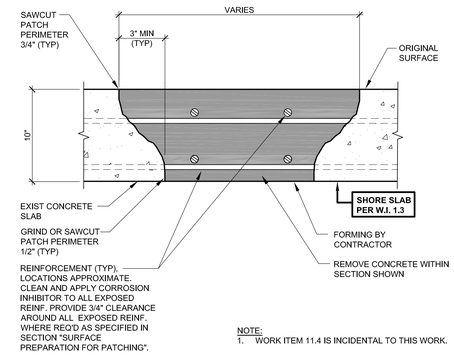
8.4 FLOOR REPAIR AT FLANGE CONNECTOR - SHALLOW



8.1 8.2 TEE BEAM REPAIR - PARTIAL DEPTH



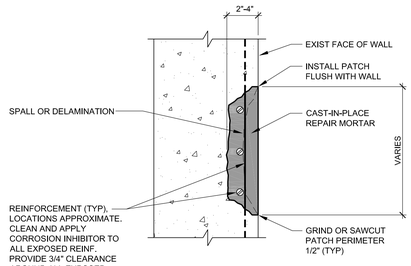
5.3 5.4 BEAM REPAIR-PARTIAL DEPTH



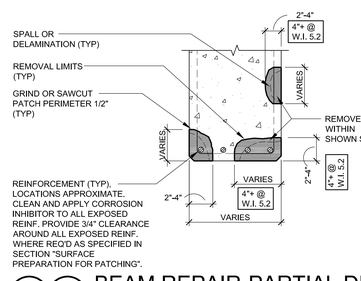
NOTE:
1. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

3.6 FLOOR REPAIR-FULL DEPTH (CIP)

(FOR USE AT THE CIP AREAS ON LEVEL 2 AND LEVEL 3)

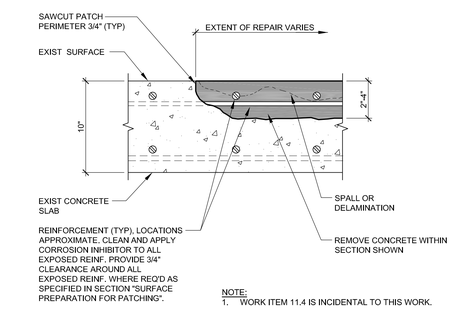


7.1 WALL REPAIR-PARTIAL DEPTH



5.1 5.2 BEAM REPAIR-PARTIAL DEPTH

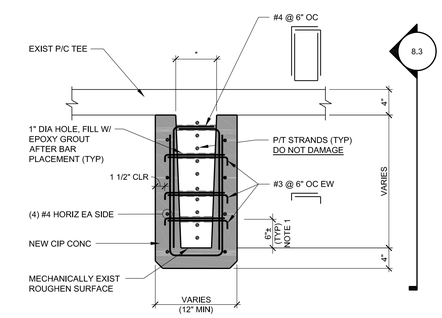
(FOR USE AT THE CIP AREAS ON LEVEL 2 AND LEVEL 3)



NOTE:
1. WORK ITEM 11.4 IS INCIDENTAL TO THIS WORK.

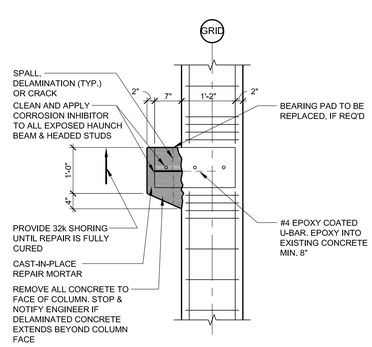
3.5 FLOOR REPAIR - PARTIAL DEPTH (CIP)

(FOR USE AT THE CIP AREAS ON LEVEL 2 AND LEVEL 3)

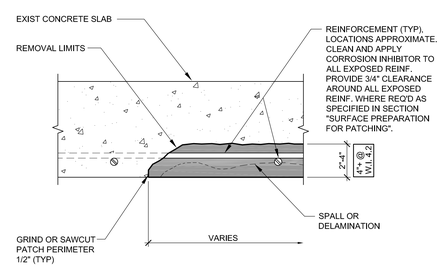


NOTES:
1. TEE STEM HAS EMBEDDED PRESTRESSING STRANDS. LOCATE STRANDS PRIOR TO DRILLING HOLES. HOLES TO BE LOCATED AT 6" OC TYPICALLY, BUT WILL VARY DEPENDING ON LOCATION OF TENDONS.
2. SEE DETAIL 8.3 FOR REMAINING INFORMATION.

8.3.1 TEE BEAM REPAIR - ENCASEMENT

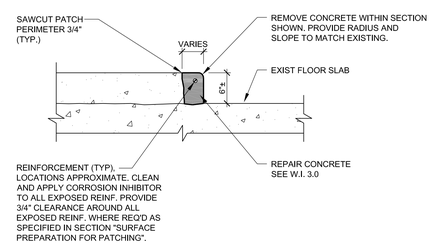


6.6 COLUMN REPAIR-HAUNCHES



4.1 4.2 CEILING REPAIR - PARTIAL DEPTH

(FOR USE AT THE CIP AREAS ON LEVEL 2 AND LEVEL 3)



3.4 FLOOR REPAIR-CURBS/WALKS

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DESIGN/BUILD/CONSULTANTS
20 Park Plaza
Suite 1002
Boston, MA 02116
617.350.5040 Ph
617.350.5048 Fax
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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/06/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG
REPAIR DETAILS

R-601

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CDS\ACAD\RESTI2526_R601.DWG 7/27/2015 2:17:59 PM CLEMENTIN, DONALD

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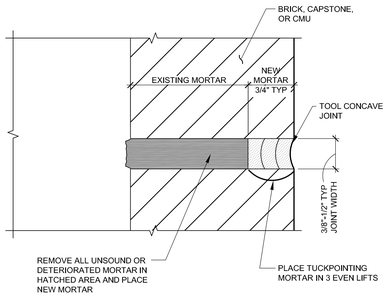
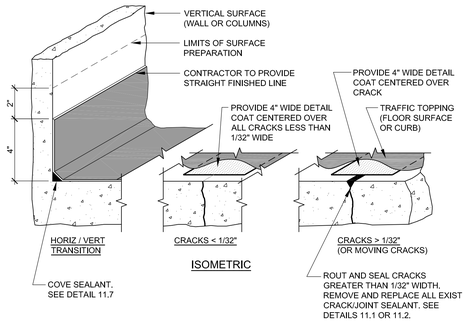


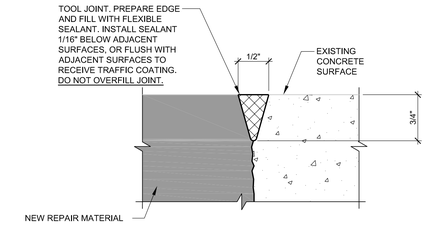
NOTES:
1. REMOVE LOOSE MATERIAL FROM JOINT.
2. FILL AND VOIDS IN JOINT BEYOND POINTING WORK DEPTH.
3. GRIND BRICK SURFACES CLEAN OF EXISTING MORTAR. DO NOT DAMAGE ADJACENT MASONRY.
4. INSTALL MORTAR IN THREE LIFTS, COMPACTING EACH LIFT.
5. TOOL MORTAR JOINT CONCAVE.

35.1 TUCKPOINTING



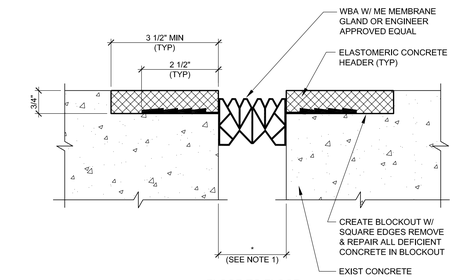
NOTE:
1. QUANTITIES BASED ON HORIZONTAL APPLICATION AREA. VERTICAL DETAILING, ADDITIONAL DETAIL COAT OVER CRACKS, ROUTING AND SEALING CRACKS, INSTALLATION OF COVE SEALANT, AND REMOVAL AND REPLACEMENT OF EXISTING SEALANTS ARE INCIDENTAL TO THIS WORK.

16.1 TRAFFIC TOPPING - VEHICULAR



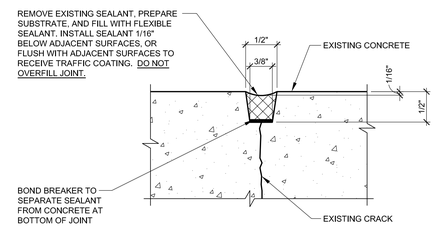
11.4 TOOL AND SEAL PATCH PERIMETER

(INCIDENTAL TO WORK ITEM SERIES 3.0)



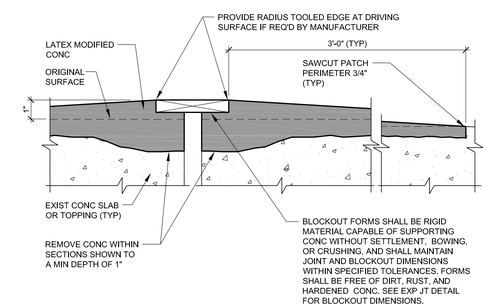
NOTE:
1. CONTRACTOR SHALL, WITH MANUFACTURER, VERIFY FIELD INSTALLATION WIDTH BASED ON TEMPERATURE CONDITIONS.
2. PROVIDE SHOP DRAWINGS SHOWING JOINT INTERSECTIONS AND WALL TERMINATIONS.

10.3 EXPANSION JOINT-ELASTOMERIC CONCRETE EDGED



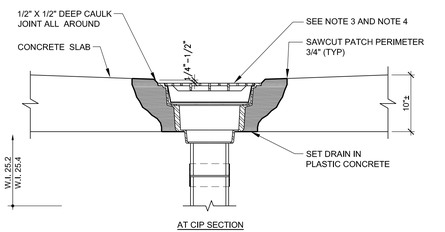
11.3 REPLACE CRACK/JOINT SEALANT

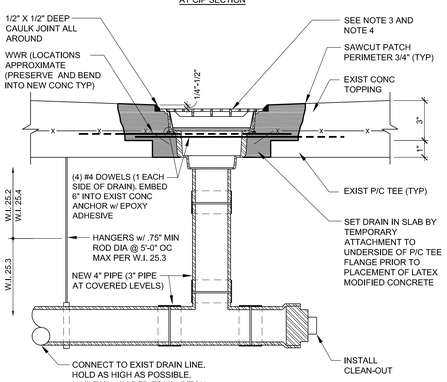
(INCIDENTAL TO WORK ITEM SERIES 16.0)



NOTES:
1. MAINTAIN EXPANSION JOINT OPENING CLEAR AS DIMENSIONED. VERTICAL SURFACE MUST BE PLUMB AND SHALL NOT VARY MORE THAN 1/8" IN 6".
2. EDGE STRAIGHTNESS TOLERANCE SHALL NOT VARY MORE THAN 1/4" IN 20'-0"
3. FORMING OF JOINT SHALL BE APPROVED BY ENGINEER PRIOR TO CONCRETE PLACEMENT.
4. CONCRETE ELEVATIONS ON EACH SIDE OF JOINT SHALL MATCH.

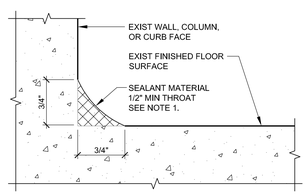
9.2 EXPANSION JOINT PREPARATION-NEW WASH WITH BLOCKOUT





NOTES:
1. USE SERVICE WEIGHT CAST IRON PIPE. 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. ROOF LEVEL DRAINS:
   a. SMITH 2140-U-M-B
   b. WADE 1200-13
   c. OR ENGINEER APPROVED EQUIVALENT
4. COVERED LEVEL DRAINS:
   a. SMITH 2110-U-M-B
   b. WADE 1310
   c. OR ENGINEER APPROVED EQUIVALENT
5. GC TO REMOVE EXISTING DRAIN AND CAST NEW SLAB SECTION PER WORK ITEM SERIES 3.0 OR 8.0.
6. FOR DRAINS INSTALLED ON SLAB ON GRADE, REPLACE ASPHALT WITH CONCRETE COLLAR.

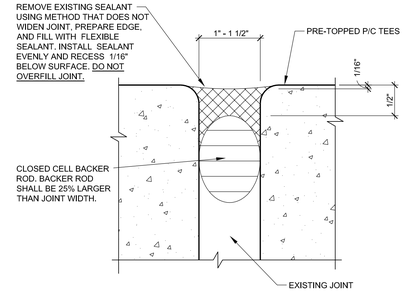
25.2 25.3 25.4 MECHANICAL - FLOOR DRAINS PIPE & HANGERS



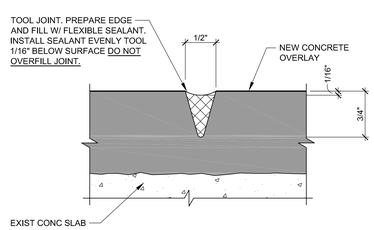
NOTE:
1. REMOVE EXISTING COVE SEALANT MATERIAL IF PRESENT. PREPARE SURFACE PER SPECIFICATIONS.

11.7 COVE SEALANT

(INCIDENTAL TO WORK ITEM SERIES 16.0)

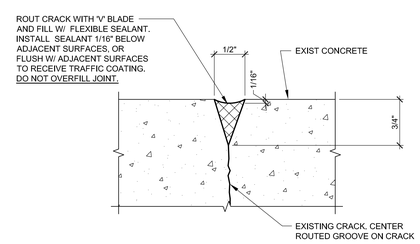


11.2 REPLACE JOINT SEALANT



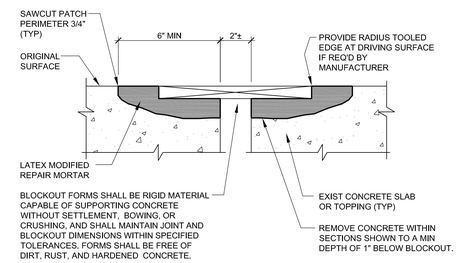
NOTES:
1. PLACE CONTROL JOINTS AS SHOWN ON PLANS.
2. ADDITIONAL OVERLAY CONTROL JOINTS WILL BE REQUIRED OVER ALL ORIGINAL CONSTRUCTION JOINTS. CONTRACTOR SHALL LOCATE ALL SUCH JOINTS PRIOR TO OVERLAY INSTALLATION.
3. CONTROL JOINT (C.J.) MUST BE TOOLED IN PLASTIC CONCRETE AND DIMENSIONS AS DETAILED WILL BE MAINTAINED IN SET CONCRETE. SAWCUTTING OF CONTROL JOINT IN HARDENED CONCRETE WILL NOT BE PERMITTED.

11.5 TOOL AND SEAL CONTROL JOINTS



11.1 ROUT & SEAL RANDOM CRACKS (CRACKS 0.030" OR GREATER)

(INCIDENTAL TO WORK ITEM SERIES 16.0)



NOTES:
1. MAINTAIN EXPANSION JOINT OPENING CLEAR OF DEBRIS. VERTICAL SURFACE MUST BE PLUMB AND SHALL NOT VARY MORE THAN 1/8" IN 6".
2. EDGE STRAIGHTNESS TOLERANCE SHALL NOT VARY MORE THAN 1/4" IN 20'-0"
3. METHOD OF FORMING JOINT SHALL BE APPROVED BY ENGINEER PRIOR TO CONCRETE PLACEMENT.
4. CONCRETE ELEVATIONS ON EACH SIDE OF JOINT SHALL MATCH.

9.1 EXPANSION JOINT PREPARATION-NEW BLOCKOUT

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617.350.5048 Fax
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LEO A. ROY & LOWER LOCKS
PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG REPAIR DETAILS

R-602

J:\16-2526-01-LOWER_LOCKS_& _LEO_ROY_CDS\ACAD\REST\2526_R601.DWG 7/27/2015 2:17:59 PM CLEMENTIN, DONALD

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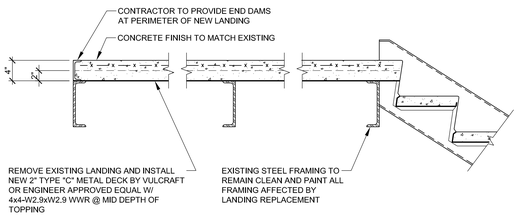
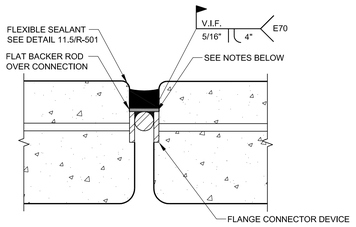


NOTE:
1. VERIFY ALL DIMENSIONS IN FIELD PRIOR TO FABRICATION OF METAL STAIR LANDING.
2. ALL IN PLACE CONSTRUCTION AFFECTED BY STAIR LANDING REPLACEMENT TO BE CLEANED AND PAINTED.

41.4 REPLACE STEEL STAIR LANDING & CONCRETE FILL



BAR STOCK CONNECTION

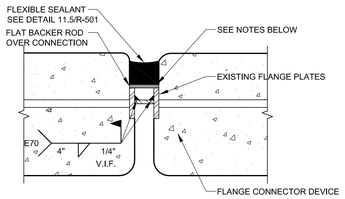
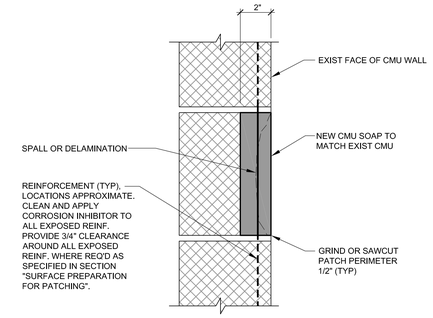


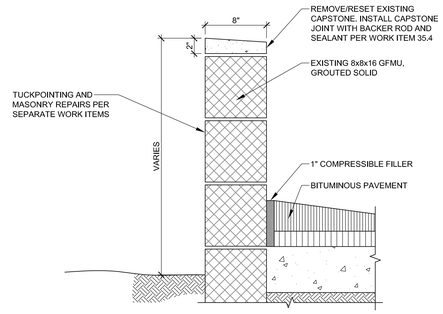
PLATE CONNECTION

NOTES:
1. REMOVE EXISTING STEEL PLATE OR BAR STOCK FLANGE CONNECTION BY MECHANICAL MEANS ONLY. CUTTING BY TORCH OR OTHER THERMAL MEANS IS PROHIBITED. VERIFY SIZE OF EXISTING PLATE OR BAR STOCK FOR NEW CONNECTION.
2. GRIND EXISTING WELDS OFF FLANGE CONNECTOR PLATES AND PREPARE SURFACE FOR NEW WELD CONNECTION.
3. CONNECT NEW STAINLESS STEEL PLATE OR BAR STOCK PER SPECIFIED WELD.
4. ANY SPALLING, DELAMINATION, OR OTHER CONCRETE FAILURES DUE TO REMOVAL OR RECONNECTION OF THE FLANGE CONNECTORS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR PER DETAIL 3.9/R-501.

40.3 RE-WELD SHEAR CONNECTOR



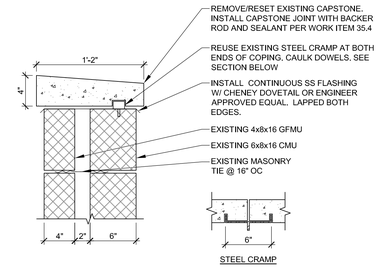
35.8 CONCRETE MASONRY UNIT SOAP REPAIR



NOTE:
1. IF CAPSTONE IS DAMAGED OR BROKEN, REPLACE IN LIKE KIND PER WORK ITEM 35.3.

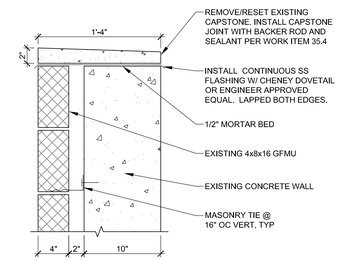
35.3 35.4 35.7 CAPSTONE RESETTING AND POINTING

(BASE WALL, TYPICAL)



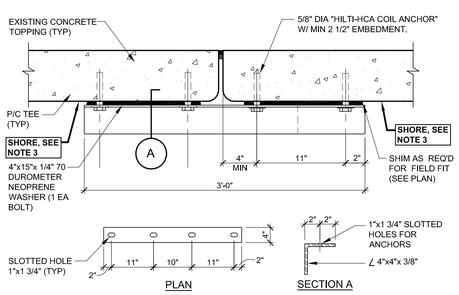
35.4 35.6 CAPSTONE FLASHING AND RESETTING

(PARAPET AT STAIRS, TYPICAL)



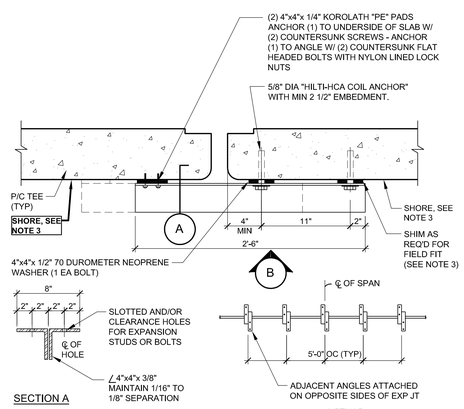
35.4 35.6 CAPSTONE FLASHING AND RESETTING

(PARAPET, TYPICAL)



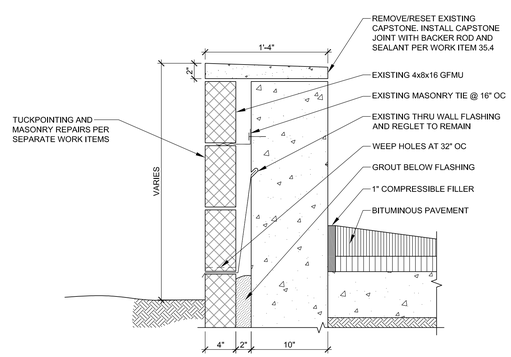
NOTES:
1. ANGLES SHALL BE ACCURATELY ALIGNED PERPENDICULAR TO JOINT
2. ANGLES, SHIMS AND HARDWARE SHALL BE GALVANIZED AND PAINTED WHITE AFTER INSTALLATION.
3. TEE FLANGES SHALL BE SHORED. IF THREE OR MORE CONNECTORS ARE BEING REMOVED AT THE SAME TIME.
4. CONCRETE TO BE REPAIRED PER WORK ITEM SERIES 8.0 AS REQUIRED.
5. AFTER REPAIRS HAVE BEEN COMPLETED, PAINT REPAIRED AREAS WHITE.

40.4 SHEAR CONNECTOR REPLACEMENT



NOTES:
1. ANGLES SHALL BE ACCURATELY ALIGNED WITH THE DIRECTION OF MOVEMENT (PERPENDICULAR TO JOINT) TO ALLOW FREE MOVEMENT.
2. ANGLES AND HARDWARE SHALL BE GALVANIZED.
3. USE GALVANIZED STL. SHIMS AS REQ'D FOR FIELD FIT. SHIM STACK TO BE TACK WELDED INTO SINGLE UNIT.

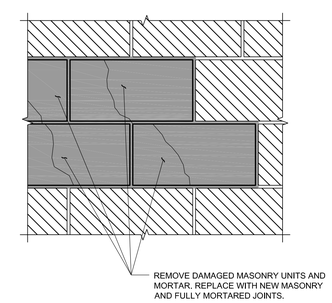
40.1 SHEAR TRANSFER DEVICE



NOTE:
1. IF CAPSTONE IS DAMAGED OR BROKEN, REPLACE IN LIKE KIND PER WORK ITEM 35.3.

35.3 35.4 35.7 CAPSTONE RESETTING AND POINTING

(RETAINING WALL, TYPICAL)



NOTES:
1. PAY UNIT INCLUDES PROVIDING CORNER UNITS, BOND BEAM UNITS, ETC. AS REQUIRED TO REPAIR ALL DAMAGED MASONRY.
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 MASONRY DURING REPAIRS.

35.2 35.5 BRICK/ CONCRETE MASONRY UNIT REPLACEMENT

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Boston, MA 02116
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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
ISSUED:		
	08/05/15	ISSUED FOR BIDDING

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:
LLPG
REPAIR DETAILS

R-603

J:\16-2526-01-LOWER_LOCKS_&_LEO_ROY_CD\SVACAD\REST\2526_R601.DWG 7/27/2015 2:17:59 PM CLEMENTIN, DONALD

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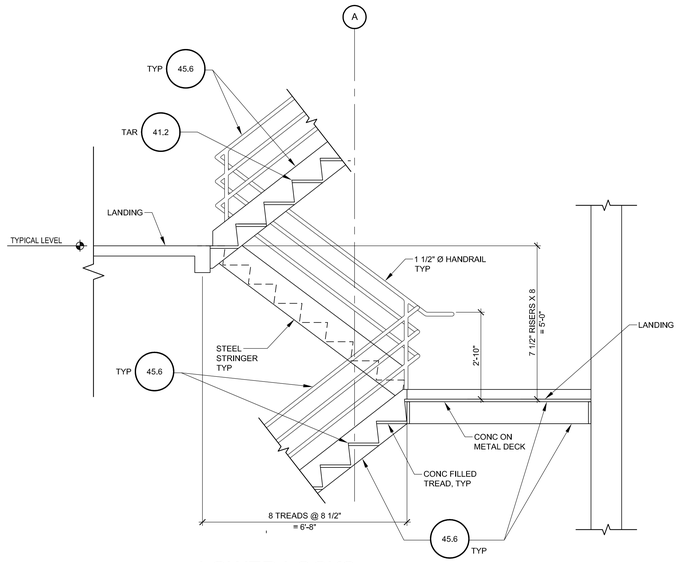
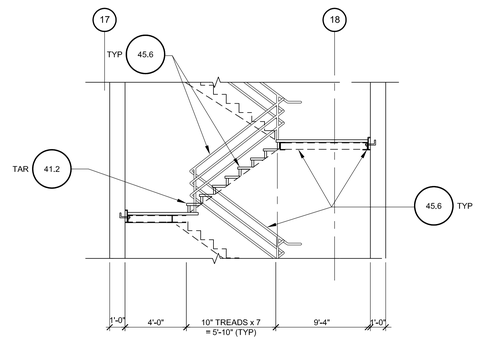


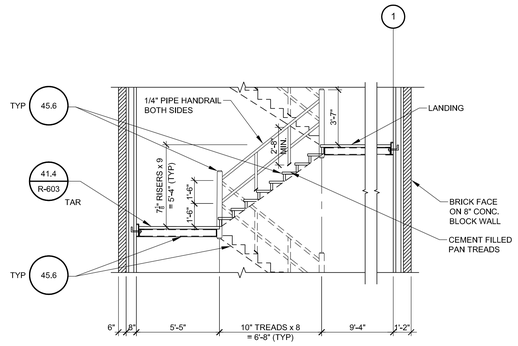
6 LOWER LOCKS
STAIR NO. 1 - SECTION

1/2" = 1'-0"



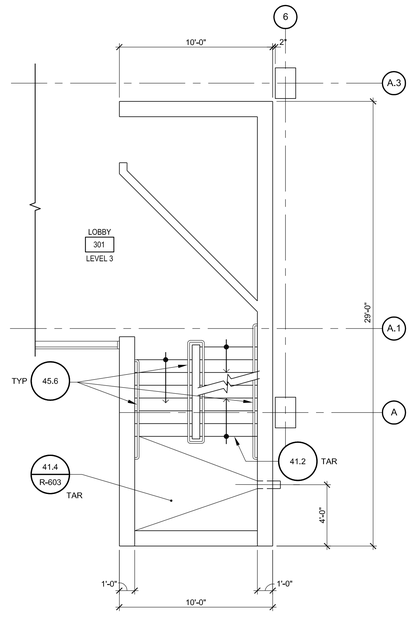
5 LOWER LOCKS
STAIR NO.3 PLAN - LEVEL 3

1/4" = 1'-0"



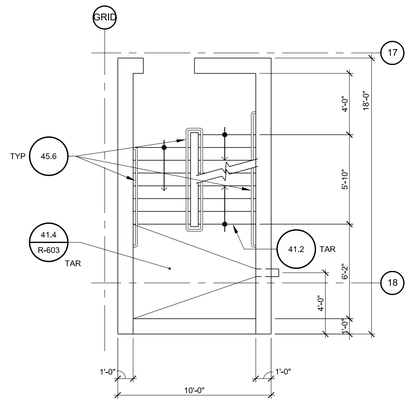
2 LEO ROY
STAIR NO. 1 - ELEVATION

1/4" = 1'-0"



4 LOWER LOCKS
STAIR NO.1 PLAN - LEVEL 3

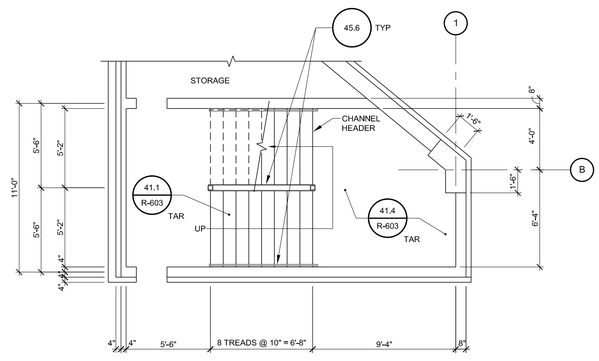
1/4" = 1'-0"



3 LOWER LOCKS
STAIR NO.3 PLAN - LEVEL 3

NOTE: STAIR TOWER 2 - OPPOSITE HAND

1/4" = 1'-0"



1 LEO ROY
STAIR NO.1 PLAN

1/4" = 1'-0"

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PARKING GARAGE RESTORATION
LOWELL MASSACHUSETTS

NO.	DATE	DESCRIPTION
	08/05/15	ISSUED FOR BIDDING

ISSUED:

PROJECT NO: 16-2526.01
DRAWN BY: DWC
CHECKED BY: DWJ
SHEET TITLE:

LEO A. ROY & LOWER LOCKS STAIR REPAIRS

RA-101

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