GENERAL NOTES:

1. THE NOTES ON THESE DRAWINGS ARE NOT INTENDED TO REPLACE THE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES. INCONSISTENCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH THE AFFECTED WORK.

2. ALL WORK SHALL COMPLY WITH THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) AND 2009 INTERNATIONAL EXISTING BUILDING CODE (IEBC). THE SCOPE OF WORK OUTLINED HAS BEEN EVALUATED AS A REPAIR WITH LESS THAN SUBSTANIAL STRUCTURAL DAMAGE PER THE IEBC.
   A. ORIGINAL DESIGN LOADS (CODE): 50 PSF (BOCA 1990)
   B. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EQUIPMENT USED DOES NOT EXCEED EXISTING BUILDING DESIGN LOADS.

3. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

4. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS.

5. THE REPAIRS TO THIS STRUCTURE HAVE BEEN DESIGNED TO RE-ESTABLISH THE STRUCTURAL INTEGRITY OF THE STRUCTURE AFTER THE REPAIRS ARE COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE PROCEDURES AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND IT'S COMPONENTS DURING THE RESTORATION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, TEMPORARY PARTITIONS, VEHICLE AND PEDESTRIAN PROTECTION, GUYS OR TIE DOWNS. SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF PROJECT.

6. SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL FOR SIMILAR CONDITIONS AS DETERMINED BY THE STRUCTURAL ENGINEER.

7. THE CONTRACTOR SHALL SUBMIT COMPLETE SUBMITTALS (AS NOTED IN THE SPECIFICATIONS) FOR ALL PARTS OF THE WORK INCLUDING DESCRIPTION OF SHORING AND CONSTRUCTION METHODS AND SEQUENCING, WHERE APPLICABLE. NO PERFORMANCE OF THE WORK INCLUDING, BUT NOT LIMITED TO, DEMOLITION OF EXISTING STRUCTURE OR FABRICATION OR ERECTION OF NEW STRUCTURAL ELEMENTS, SHALL COMMENCE WITHOUT REVIEW OF THE SHOP DRAWINGS BY THE STRUCTURAL ENGINEER

8. ALL APPLICABLE FEDERAL, STATE, AND MUNICIPAL REGULATIONS SHALL BE FOLLOWED, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO VEHICLES, PROPERTY AND PUBLIC CAUSED BY THEIR WORK.

10. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, LICENSES AND GOVERNMENT FEES AS REQUIRED. THE CONTRACTOR SHALL COMPLY WITH CODES, ORDINANCES, RULES, REGULATIONS, ORDERS AND OTHER LEGAL REQUIREMENTS OF THE PUBLIC AUTHORITY, WHICH BEAR ON THE PERFORMANCE OF THE WORK.

11. CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL DURING THE PROJECT. A SCHEDULE FOR SPACES REQUIRED SHALL BE PRESENTED TO THE OWNER OR GARAGE MANAGER ONE WEEK IN ADVANCE AND UPDATED WEEKLY DURING THE PROJECT.

12. THE EXISTING BUILDING SHALL REMAIN IN OPERATION FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CONTROLS NECESSARY TO ALLOW FOR THE BUILDING OPERATIONS.

13. CONTRACTOR SHALL PROVIDE AND MAINTAIN REQUIRED DUST BARRIERS, BARRICADES, PROTECTION AND WARNING LIGHTS IN GOOD WORKING CONDITION UNTIL COMPLETION OF WORK REQUIRING SUCH PROTECTION AND THEN REMOVE THE SAME. ALL SIGNS, BARRIERS, AND BARRICADES SHALL COMPLY WITH FEDERAL STATE AND LOCAL LAWS AND REGULATIONS.

14. CONTRACTOR SHALL MAINTAIN PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL AND RUBBISH. PRECAUTIONS SHOULD BE TAKEN TO MINIMIZE DUST FROM ENTERING THE BUILDING. ALL DUST AND DEBRIS CREATED BY THE WORK WITHIN THE BUILDING SHALL BE REMOVED AND THE WORK AREAS CLEANED.

15. CONTRACTOR SHALL DETERMINE THE NEED FOR ALL DISCONNECTION AND/OR TEMPORARY OR PERMANENT REROUTING OF EXISTING UTILITIES, INCLUDING ELECTRICAL AND PLUMBING AND COORDINATE WITH THE GARAGE OWNER/MANAGER.

16. IF WORK RESTRICTS ACCESS TO ANY MEANS OF EGRESS CONTRACTOR SHALL SUPPLY ALL TEMPORARY SIGNAGE, BARRIERS TO REDIRECT PATRONS TO THE NEAREST EXIT OR DOWN THE RAMP. A MINIMUM OF ONE STAIR TOWER MUST REMAIN COMPLETELY ACCESSIBLE DURING THE WORK. IF ACCESSE TO THE ELEVATOR IS RESTRICTED AT ANY LEVEL PROVIDE SIGNAGE INDICATING NO ACCESSIBLE PARKING ON THAT LEVEL.

17. 50 PARKING SPACES WILL BE AVAILABLE TO THE CONTRACTOR MONDAY THROUGH FRIDAY. ADDITIONAL PARKING SPACES ARE AVAILABLE ON THE WEEKEND OR AFTER NORMAL BUSINESS HOURS. CONTRACTOR TO PROVIDE ALL TRAFFIC CONTROL DURING CONSTRUCTION.

CONCRETE NOTES

1. CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318, LATEST EDITION)," AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301, LATEST EDITION)."

2. GENERAL CONTRACTOR, CONSTRUCTION MANAGER OR OWNER'S CLERK OF THE WORKS SHALL HAVE AVAILABLE ON SITE AT ALL TIMES A COPY OF ACI "FIELD REFERENCE MANUAL SP-15".

3. CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN GROUND.

4. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS AND SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315, LATEST EDITION.

5. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND BE PROVIDED IN FLAT SHEETS.

6. MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
   A) CONCRETE SLABS: 1.5"

7. WELDING OF REINFORCEMENT IS NOT PERMITTED.

ABBREVIATIONS:

CIP – CAST IN PLACE CONCRETE

CJ – CONTROL/CONSTRUCTION JOINT

DT – PRECAST DOUBLE TEE

EJ – EXPANSION JOINT

FD – FLOOR DRAIN

IT BM – PRECAST INVERTED TEE BEAM

LBS – PRECAST LOAD BEARING SPANDREL

LW – PRECAST LITEWALL

NLBS – PRECAST NON LOAD BEARING SPANDREL

PC – PRECAST

SOG – SLAB ON GRADE

SW – PRECAST SHEAR WALL

DT-DT SHEAR CONNECTION REPAIR WORK CODES
XD – DOUBLE BAR SHEAR CONNECTION

XB – BROKEN OVERHEAD CONNECTION

XR – RUSTED OVERHEAD CONNECTION

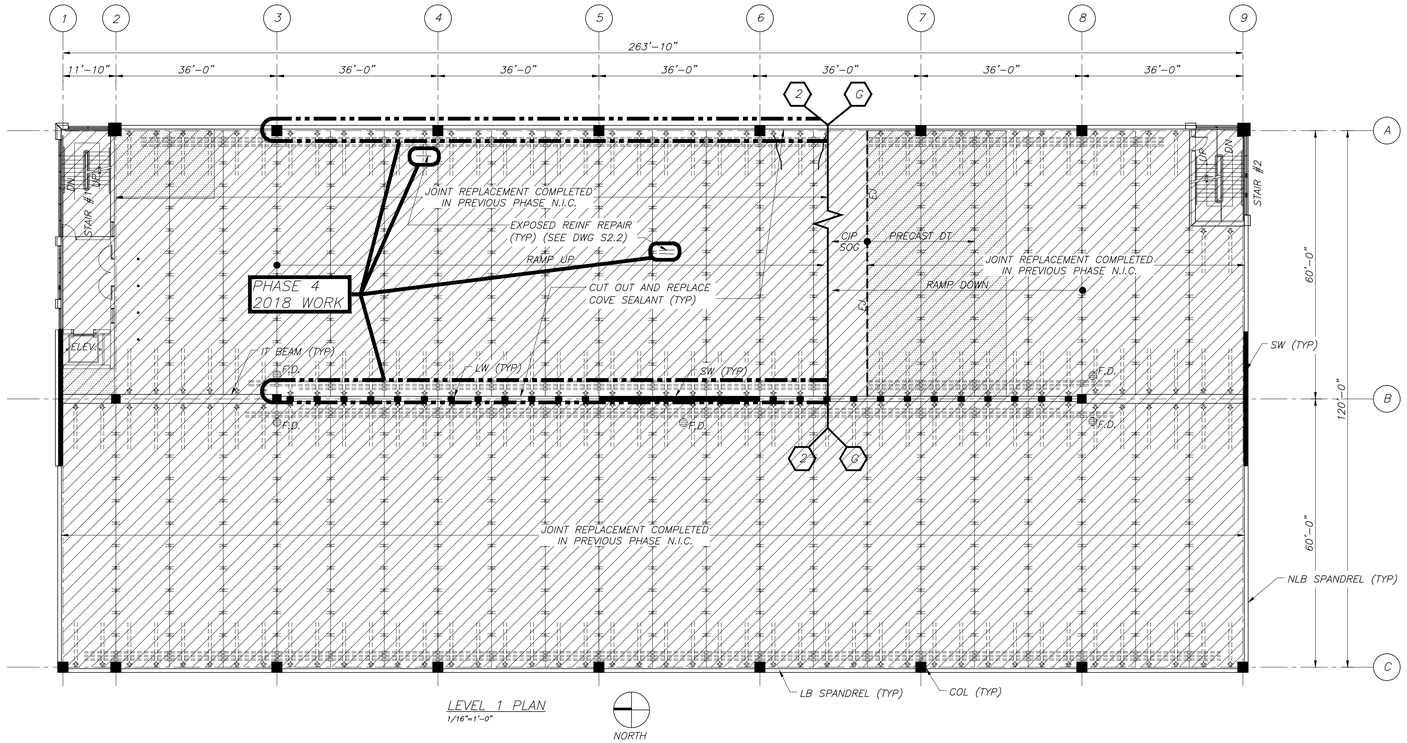
BECKER
STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For	Appvd
	1/19/18	FOR BID	

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS
GENERAL NOTES

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S1.1



LEVEL 1 PLAN
1/16"=1'-0"

SCOPE OF WORK LEVEL 1 – PHASE 4

ITEM	DESCRIPTION	WORKCODE	QUANTITY	UNIT	NOTES
1	DT CONNECTION POCKET REPAIR		42	EA	
2	JOINT & COVE SEALANT REPLACEMENT		275	LF	INCLUDES AROUND DRAINS AND CIP JOINTS
3	EXPOSED DT FLANGE REINFORCEMENT REPAIR		2	EA	

NOTE:

A. NOT ALL DT–DT SHEAR CONNECTION REPAIR LOCATIONS ARE IDENTIFIED ON THE DRAWINGS. CONTRACTOR IS REQUIRED TO INSPECT EACH EXPOSED DT–DT SHEAR CONNECTION. REFERENCE DT–DT SHEAR CONNECTION REPAIR DETAIL ON DWG S2.1 FOR CONNECTION CONDITIONS THAT REQUIRE REPAIR.

B. CONTRACTOR IS REQUIRED TO PROVIDE AS–BUILT DRAWINGS AND DOCUMENT WHERE SHEAR CONNECTIONS HAVE BEEN REPAIRED. SUBMIT AS–BUILT DRAWINGS TO THE CITY AND CITY'S REPRESENTATIVE AT THE CONCLUSION OF THE PROJECT.

DT CONNECTION REPAIR WORK CODES
REF DWG S2.1
XD – DOUBLE BAR SHEAR CONNECTION

XB – BROKEN OVERHEAD CONNECTION

XR – RUSTED OVERHEAD CONNECTION

KEY

- F.D. FLOOR DRAIN
- CONCRETE REPAIR
- DT TO DT SHEAR CONNECTION
- DT TO DT CHORD TIE CONNECTION
- DT TO SW/LW/IT BM/LB SPANDREL CONNECTION
- DT TO SW/STAIR/NLB SPANDREL CONNECTION (UNDERSIDE OF DT)
- EXPOSED REINFORCEMENT REPAIR AT DT FLANGE
- CRACK CHASE REPAIR
- NOT IN CONTRACT
- PHASE 4 REPAIR SCOPE OF WORK

EJ – EXPANSION JOINT

DT – PRECAST DOUBLE TEE

PC – PRECAST

LW – PRECAST LITEWALL

SW – PRECAST SHEARWALL

CJ – CONTROL/CONSTRUCTION JOINT

CIP – CAST IN PLACE CONCRETE

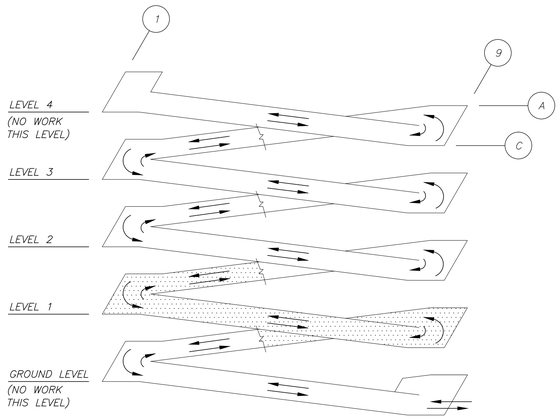
SOG – SLAB ON GRADE

IT BM – PRECAST INVERTED TEE BEAM

LBS – PRECAST LOAD BEARING SPANDREL

NLBS – PRECAST NON–LOAD BEARING SPANDREL

SW – PRECAST SHEAR WALL



ISOMETRIC

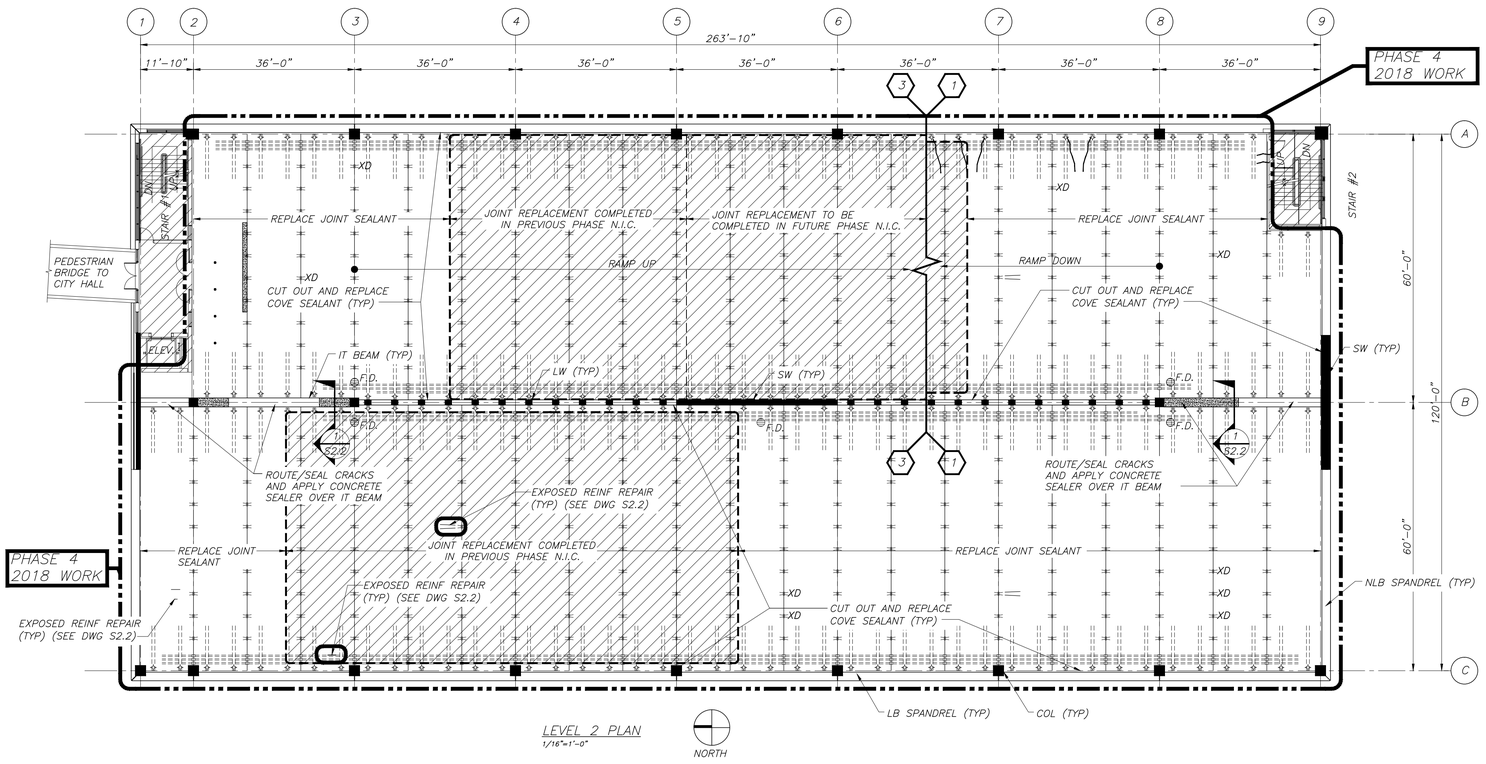
BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For
	1/19/18	FOR BID
		Apprd

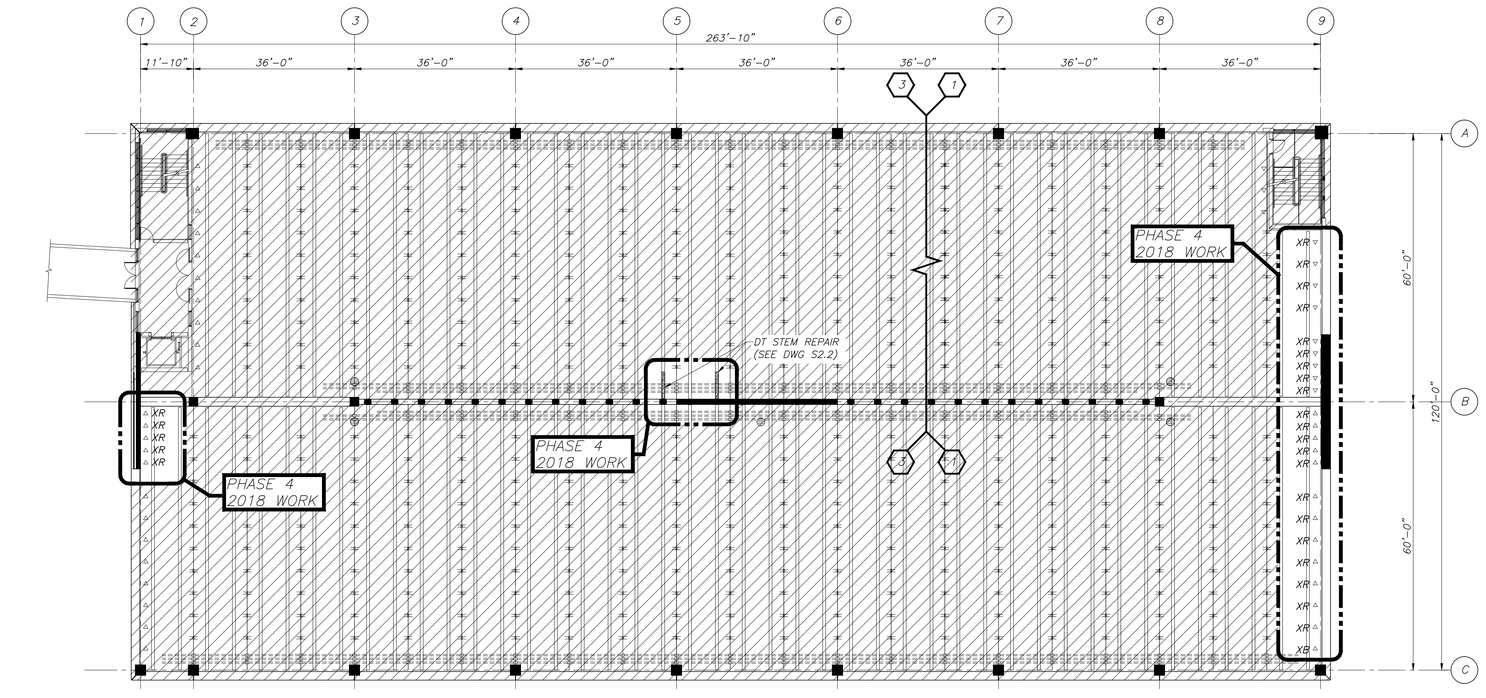
MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS
LEVEL 1 PLAN

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S1.2



LEVEL 2 PLAN
1/16"=1'-0"



LEVEL 2 REFLECTED CEILING PLAN
1/16"=1'-0"

SCOPE OF WORK LEVEL 2 – PHASE 4					
ITEM	DESCRIPTION	WORKCODE	QUANTITY	UNIT	NOTES
1	DT–DT SHEAR CONNECTION REPAIR	XD	87	EA	ESTIMATED QUANTITY, 9 SHOWN ON PLAN
2	DT CONNECTION POCKET REPAIR		138	EA	
3	OVERHEAD CONNECTION REPAIR	XR, XB	27	EA	
4	JOINT & COVE SEALANT REPLACEMENT		2,500	LF	INCLUDES AROUND DRAINS AND CIP JOINTS
5	OVERHEAD SUPPLEMENTAL STEEL CONNECTION		4	EA	ESTIMATED QUANTITY
6	CIP/PC DECK REPAIR		100	SF	
7	CRACK CHASE		150	LF	ESTIMATED QUANTITY
8	CONCRETE PENETRATING SEALER		200	SF	
9	DT STEM REPAIR		2	EA	
10	EXPOSED DT FLANGE REINFORCEMENT REPAIR		5	EA	

NOTE:
A. NOT ALL DT–DT SHEAR CONNECTION REPAIR LOCATIONS ARE IDENTIFIED ON THE DRAWINGS. CONTRACTOR IS REQUIRED TO INSPECT EACH EXPOSED DT–DT SHEAR CONNECTION. REFERENCE DT–DT SHEAR CONNECTION REPAIR DETAIL ON DWG S2.1 FOR CONNECTION CONDITIONS THAT REQUIRE REPAIR.

B. CONTRACTOR IS REQUIRED TO PROVIDE AS–BUILT DRAWINGS AND DOCUMENT WHERE SHEAR CONNECTIONS HAVE BEEN REPAIRED. SUBMIT AS–BUILT DRAWINGS TO THE CITY AND CITY'S REPRESENTATIVE AT THE CONCLUSION OF THE PROJECT.

DT CONNECTION REPAIR WORK CODES
REF DWG S2.1
XD – DOUBLE BAR SHEAR CONNECTION

XB – BROKEN OVERHEAD CONNECTION

XR – RUSTED OVERHEAD CONNECTION

KEY

F.D. FLOOR DRAIN

CONCRETE REPAIR

DT TO DT SHEAR CONNECTION

DT TO DT CHORD TIE CONNECTION

DT TO SW/LW/IT BM/LB SPANDREL CONNECTION

DT TO SW/STAIR/NLB SPANDREL CONNECTION (UNDERSIDE OF DT)

EXPOSED REINFORCEMENT REPAIR AT DT FLANGE

CRACK CHASE REPAIR

NOT IN CONTRACT

PHASE 4 REPAIR SCOPE OF WORK

EJ – EXPANSION JOINT

DT – PRECAST DOUBLE TEE

PC – PRECAST

LW – PRECAST LITEWALL

SW – PRECAST SHEARWALL

CJ – CONTROL/CONSTRUCTION JOINT

CIP – CAST IN PLACE CONCRETE

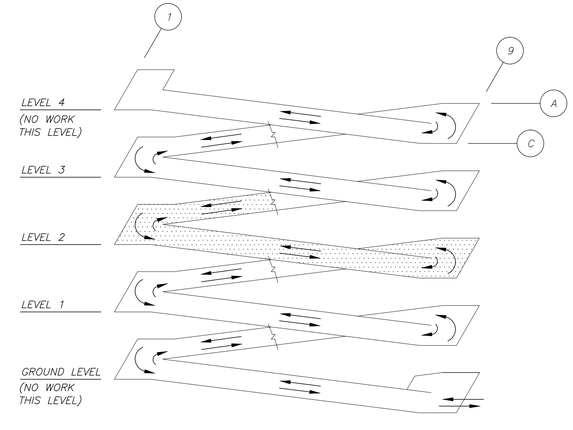
SOG – SLAB ON GRADE

IT BM – PRECAST INVERTED TEE BEAM

LBS – PRECAST LOAD BEARING SPANDREL

NLBS – PRECAST NON–LOAD BEARING SPANDREL

SW – PRECAST SHEAR WALL



ISOMETRIC

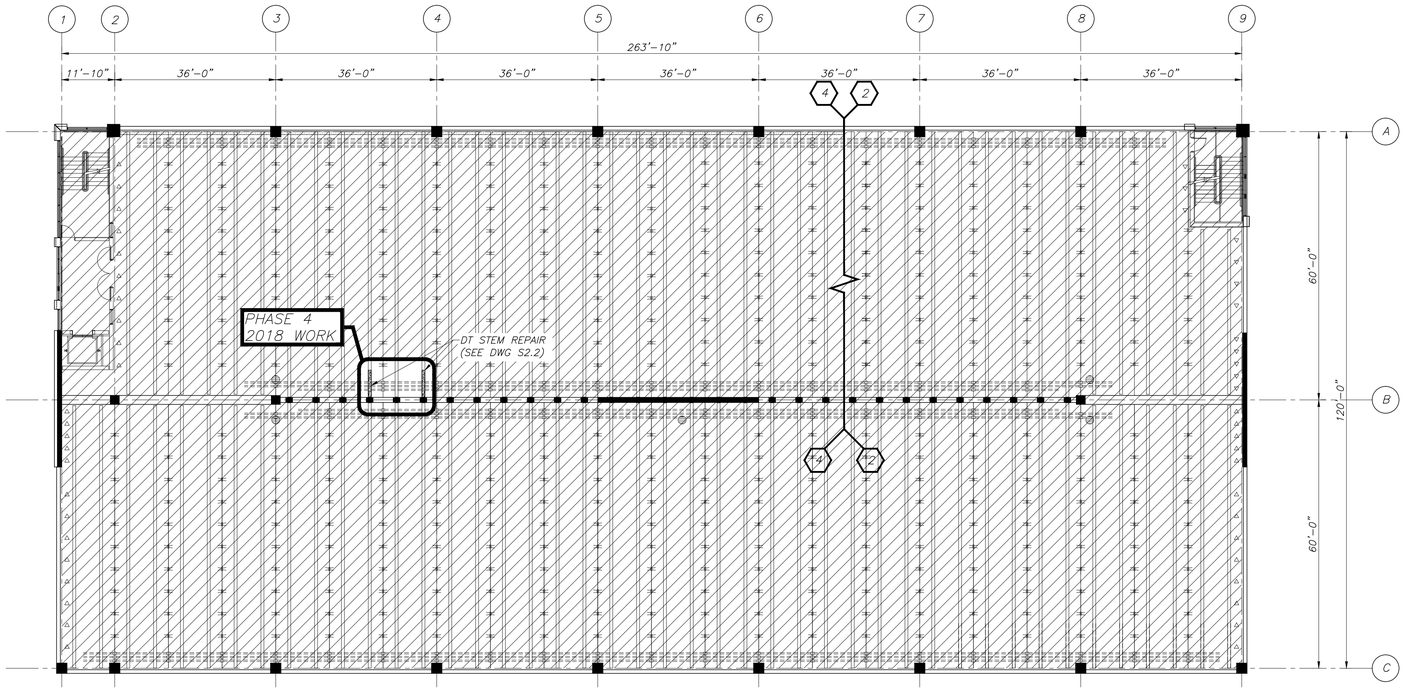
BECKER
STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For
	1/19/18	FOR BID
		Apprd

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS
LEVEL 2 PLAN

Designed ATS	Scale AS NOTED
Drawn ATS	Date 1/19/17
Checked JMM	Becker Job Number 4166

S1.3



LEVEL 3 REFLECTED CEILING PLAN
1/16"=1'-0"

NORTH

SCOPE OF WORK LEVEL 3 – PHASE 4

ITEM	DESCRIPTION	WORKCODE	QUANTITY	UNIT	NOTES
1	DT STEM REPAIR		2	EA	

NOTE:
A. NOT ALL DT–DT SHEAR CONNECTION REPAIR LOCATIONS ARE IDENTIFIED ON THE DRAWINGS. CONTRACTOR IS REQUIRED TO INSPECT EACH EXPOSED DT–DT SHEAR CONNECTION. REFERENCE DT–DT SHEAR CONNECTION REPAIR DETAIL ON DWG S2.1 FOR CONNECTION CONDITIONS THAT REQUIRE REPAIR.

B. CONTRACTOR IS REQUIRED TO PROVIDE AS–BUILT DRAWINGS AND DOCUMENT WHERE SHEAR CONNECTIONS HAVE BEEN REPAIRED. SUBMIT AS–BUILT DRAWINGS TO THE CITY AND CITY'S REPRESENTATIVE AT THE CONCLUSION OF THE PROJECT.

DT CONNECTION REPAIR WORK CODES
REF DWG S2.1
XD – DOUBLE BAR SHEAR CONNECTION

XB – BROKEN OVERHEAD CONNECTION

XR – RUSTED OVERHEAD CONNECTION

KEY

F.D. FLOOR DRAIN

CONCRETE REPAIR

DT TO DT SHEAR CONNECTION

DT TO DT CHORD TIE CONNECTION

DT TO SW/LW/IT BM/LB SPANDREL CONNECTION

DT TO SW/STAIR/NLB SPANDREL CONNECTION (UNDERSIDE OF DT)

EXPOSED REINFORCEMENT REPAIR AT DT FLANGE

CRACK CHASE REPAIR

NOT IN CONTRACT

PHASE 4 REPAIR SCOPE OF WORK

EJ – EXPANSION JOINT

DT – PRECAST DOUBLE TEE

PC – PRECAST

LW – PRECAST LITEWALL

SW – PRECAST SHEARWALL

CJ – CONTROL/CONSTRUCTION JOINT

CIP – CAST IN PLACE CONCRETE

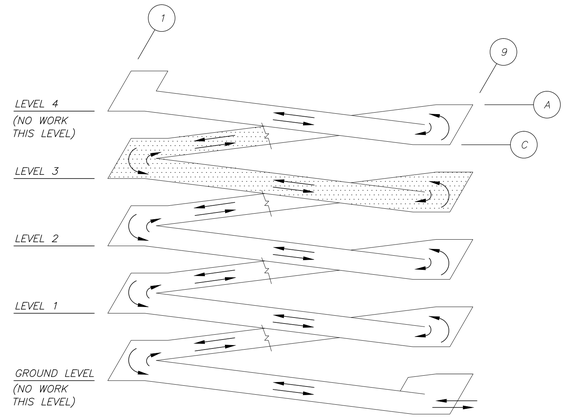
SOG – SLAB ON GRADE

IT BM – PRECAST INVERTED TEE BEAM

LBS – PRECAST LOAD BEARING SPANDREL

NLBS – PRECAST NON–LOAD BEARING SPANDREL

SW – PRECAST SHEAR WALL



ISOMETRIC

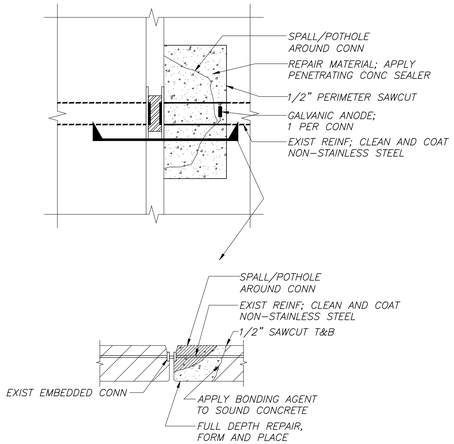
BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For
Apprd		
	1/19/18	FOR BID

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS
LEVEL 3 PLAN

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S1.4

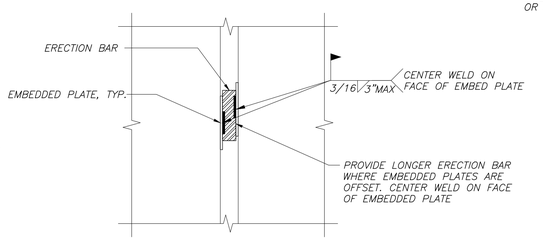


DT–DT FULL DEPTH CONNECTION REPAIR

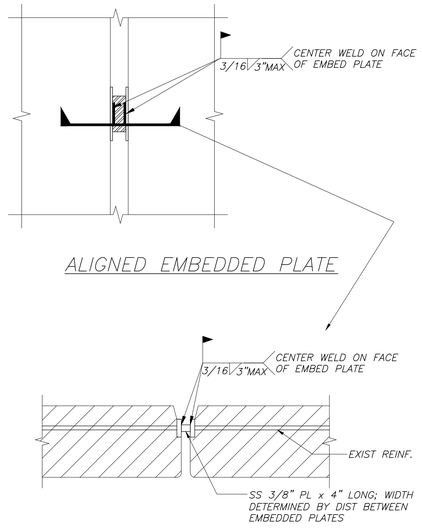
N.T.S.

NOTES:
PREPARATION/INSPECTION:
1. SOUND OUT DETERIORATED CONCRETE.
2. PROVIDE 1/2" DEEP SAWCUT ALONG PERIMETER OF REMOVAL AREA AT TOP AND BOTTOM OF PRECAST FLANGE.
3. REMOVE DETERIORATED CONCRETE UNTIL SOUND CONCRETE IS REACHED.

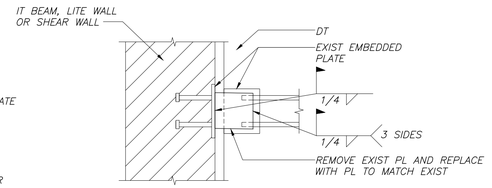
REPAIR:
1. CLEAN ALL STEEL SURFACES REMOVING ALL RUST, SCALE AND DETERIORATED COATING TO SSPC–SP3 (POWER TOOL CLEAN).
2. ALL NON–STAINLESS STEEL REINFORCEMENT SHALL BE PRIMED OR EPOXY COATED WITH A PRODUCT COMPATIBLE WITH THE CONCRETE REPAIR MATERIAL.
3. FORM WORK SHALL BE DESIGNED AND CONSTRUCTED TO SUPPORT THE REPAIR MATERIALS AND VEHICLE LOADS IF REQD.
4. FORMS SHALL BE CONSTRUCTED TO FIT TIGHTLY AGAINST EXISTING CONCRETE SURFACES.
5. REPAIR AREA SHALL BE COMPLETED WITH A PRE–PACKAGED MATERIAL WITH SHRINKING COMPENSATING AND CORROSION INHIBITING ADDITIVES.
6. PROVIDE TOOLED JOINT AROUND REPAIR PERIMETER AREA AND SEAL WITH SEALANT.
7. MATERIAL SHALL BE PLACED AS PER SPECIFICATIONS AND PER MANUFACTURERS RECOMMENDATIONS.
8. FORM WORK, SHORING AND TEMPORARY PROTECTION SHALL REMAIN IN–PLACE UNTIL MATERIAL ACHIEVES A MINIMUM STRENGTH OF f'c=4,000 PSI MIN.



OFFSET EMBEDDED PLATE



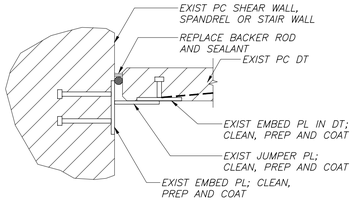
ALIGNED EMBEDDED PLATE



TYPICAL DT CONNECTION JUMPER PLATE REPLACEMENT DETAIL (XB)

N.T.S.

PLATE REPLACEMENT NOTES:
1. GRIND THE WELDS AROUND THE JUMPER PLATE. AVOID GOUGING THE EMBEDDED STEEL.
2. GRIND THE WELDING SURFACE OF THE EMBEDDED ANGLE SMOOTH TO REMOVE THE REMNANT OF THE WELD.
3. ABRASIVE BLAST THE HORIZONTAL AND VERTICAL SURFACES OF THE EMBEDDED ANGLE AND ALL SURFACES OF THE REPLACEMENT PLATE TO SSPC–SP3, (POWER TOOL CLEAN).
4. AFTER WELDING THE REPLACEMENT PLATE, CLEAN WELDED AREA BY REMOVING WELD SLAG WITH STIFF WIRE BRUSH, GRINDING ANY WELD SPLATTER AND SHARP SURFACE TEXTURES SMOOTH, ABRASIVE BLASTING AND WIPING WITH SOLVENT TO BE SURE NO OIL, DUST OR GREASE REMAINS.
5. IMMEDIATELY COAT ALL EXPOSED STEEL SURFACES WITH (2) COATS OF COLD GALVANIZING COATING PER MANUFACTURERS RECOMMENDATIONS.
6. REFERENCE CONNECTION REPAIR DETAIL FOR CONCRETE REPAIRS AND SEALANT INSTALLATION.

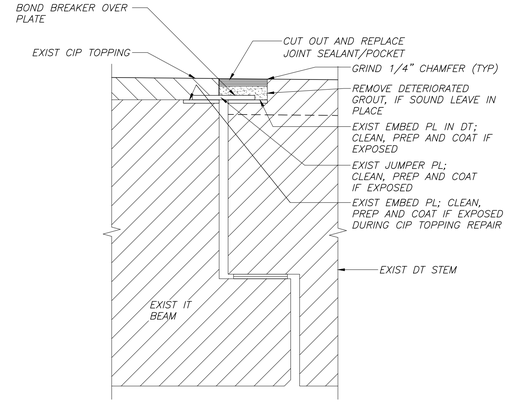


DT–SPANDREL, SHEAR AND STAIR WALL OVERHEAD CONNECTION REPAIR (XR)

N.T.S.

DT–SPANDREL,SHEAR AND STAIR WALL CONNECTION REPAIR NOTES
PREPARATION/INSPECTION:
1. INSPECT EXISTING PL'S AND WELDS. NOTIFY ENGINEER IF THERE IS ANY VISIBLE DAMAGE. IF REPLACEMENT IS REQUIRED, REFERENCE "TYPICAL DT CONNECTION JUMPER PLATE REPLACEMENT DETAIL", THIS DWG.

REPAIR:
1. CLEAN ALL STEEL SURFACES REMOVING ALL RUST, SCALE AND DETERIORATED COATING TO SSPC–SP3 (POWER TOOL CLEAN).
2. IMMEDIATELY COAT ALL EXPOSED REINF STEEL SURFACES WITH (2) COATS OF COLD GALVANIZING COATING PER MANUFACTURERS RECOMMENDATIONS.

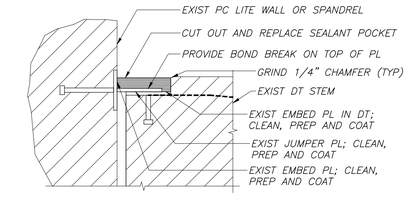


DT–IT BEAM CONNECTION POCKET REPAIR

N.T.S.

DT–IT BEAM CONNECTION REPAIR NOTES
PREPARATION/INSPECTION:
1. REMOVE ALL EXISTING SEALANT FROM JOINT AND CONNECTION POCKET.
2. INSPECT EXISTING PL'S AND WELDS. NOTIFY ENGINEER IF THERE IS ANY VISIBLE DAMAGE. IF REPLACEMENT IS REQUIRED, REFERENCE SIMILAR DETAIL "TYPICAL DT CONNECTION JUMPER PLATE REPLACEMENT DETAIL", THIS DWG.
3. INSPECT ALL CONCRETE SURFACES PRIOR TO APPLICATION OF PRIMERS/ADHESIVES TO INSURE PROPER PREPARATION AND SURFACE DRYING.
4. GRIND END OF DT AND CIP TOPPING AND ALL EDGES OF THE CONNECTION POCKET.

REPAIR:
1. CLEAN ALL PL SURFACES REMOVING ALL RUST, SCALE AND DETERIORATED COATING TO SSPC–SP3 (POWER TOOL CLEAN).
2. IMMEDIATELY COAT ALL EXPOSED STEEL SURFACES WITH (2) COATS OF ZRC COLD GALVANIZING PER MANUFACTURERS RECOMMENDATIONS.
3. INSTALL BOND BREAKER OVER CONNECTION PL.
4. INSTALL SEALANT, REFERENCE TYPICAL DETAIL DWG S2.3 FOR JOINT.

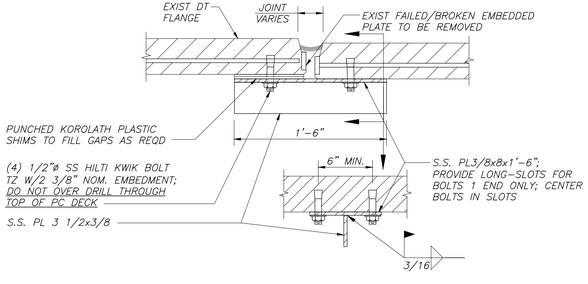


DT–SPANDREL AND LITEWALL CONNECTION POCKET REPAIR

N.T.S.

DT–SPANDREL & LITEWALL CONNECTION REPAIR NOTES
PREPARATION/INSPECTION:
1. REMOVE ALL EXISTING SEALANT FROM JOINT AND CONNECTION POCKET.
2. INSPECT EXISTING PL'S AND WELDS. NOTIFY ENGINEER IF THERE IS ANY VISIBLE DAMAGE. IF REPLACEMENT IS REQUIRED, REFERENCE "TYPICAL DT CONNECTION JUMPER PLATE REPLACEMENT DETAIL", THIS DWG.
3. GRIND END OF DT AND ALL EDGES OF THE CONNECTION POCKET.

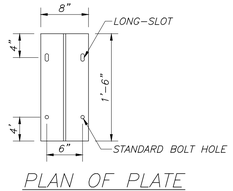
REPAIR:
1. CLEAN ALL PL SURFACES REMOVING ALL RUST, SCALE AND DETERIORATED COATING TO SSPC–SP3 (POWER TOOL CLEAN).
2. IMMEDIATELY COAT ALL EXPOSED STEEL SURFACES WITH (2) COATS OF ZRC COLD GALVANIZING PER MANUFACTURERS RECOMMENDATIONS.
3. INSTALL BOND BREAKER OVER CONNECTION PL. FOR DEEPER POCKETS INSTALL GROUT CAP OVER CONNECTION TO WITHIN 1/2" OF TOP SURFACE.
4. INSTALL SEALANT, REFERENCE TYPICAL DETAIL DWG S2.3 FOR JOINT.



OVERHEAD SUPPLEMENTAL STEEL CONNECTION REPAIR

N.T.S.

NOTES:
1. INSPECT EXISTING DT–DT SHEAR CONNECTIONS. NOTIFY ENGINEER OF CONDITION AND ALLOW ENGINEER TO INSPECT PRIOR TO INSTALLATION OF SEALANT.
2. CONTRACTOR TO DOCUMENT LOCATIONS WHERE SUPPLEMENTAL STEEL IS TO BE INSTALLED.
3. INSTALL REPLACEMENT CONNECTION AS DETAILED ABOVE. ANCHOR BOLTS TO AVOID EXISTING REINFORCING. NOTIFY OWNER IF ELECTRICAL CONDUIT OR OTHER ELEMENTS ARE OBSTRUCTING INSTALLATION.
4. IF THE ELEVATION OF THE TWO DTs ARE DIFFERENT, PROVIDE PUNCHED PLASTIC SHIMS CENTERED OVER BOLT. PROVIDE LONGER ANCHOR BOLTS TO ACQUIRE 2 3/8" EMBEDMENT.



PLAN OF PLATE

N.T.S.

BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

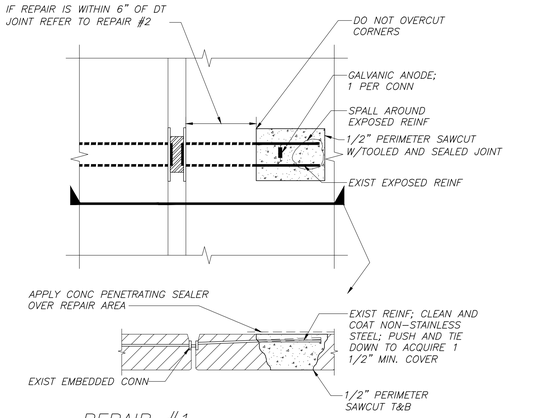
Rev. No.	Date	Issued For
	1/19/18	FOR BID
		Appvd

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS

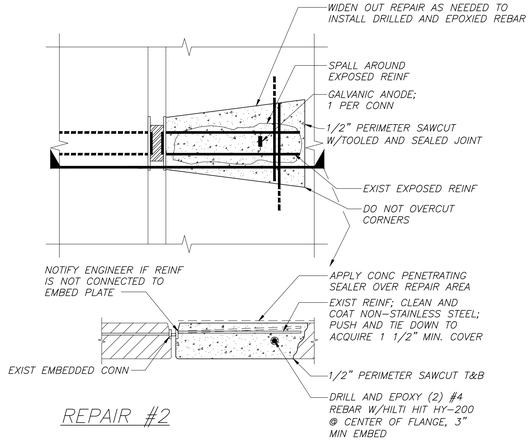
REPAIR SECTIONS AND DETAILS

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S2.1



REPAIR #1



REPAIR #2

DT CONN EXPOSED REINFORCEMENT REPAIR

N.T.S.

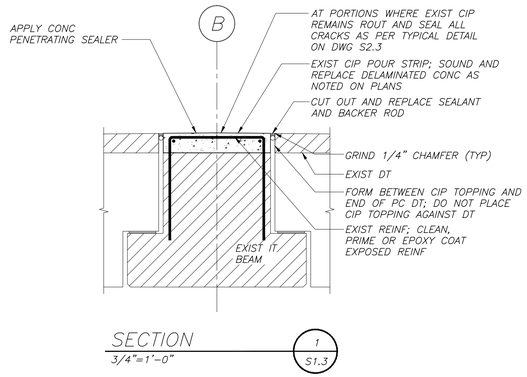
NOTES:

PREPARATION/INSPECTION:

1. SOUND OUT DETERIORATED CONCRETE.
2. PROVIDE 1/2" DEEP SAWCUT ALONG PERIMETER OF REMOVAL AREA AT TOP AND BOTTOM OF PRECAST FLANGE.
3. REMOVE DETERIORATED CONCRETE UNTIL SOUND CONCRETE IS REACHED.
4. EXTENTS OF EXISTING FLANGE REINFORCEMENT IS UNKNOWN. PROTECT EXISTING REINFORCEMENT AGAINST DAMAGE DURING DEMOLITION INCLUDING WELDED WIRE REINFORCEMENT.

REPAIR:

1. EXTEND REPAIR UNTIL NO RUST OR SCALE IS OBSERVED ON THE REINFORCEMENT.
2. CLEAN ALL STEEL SURFACES REMOVING ALL RUST, SCALE AND DETERIORATED COATING TO SSPC-SP3 (POWER TOOL CLEAN).
3. ALL NON-STAINLESS STEEL REINFORCEMENT SHALL BE PRIMED OR EPOXY COATED WITH A PRODUCT COMPATIBLE WITH THE CONCRETE REPAIR MATERIAL.
4. FORM WORK SHALL BE DESIGNED AND CONSTRUCTED TO SUPPORT THE REPAIR MATERIALS AND VEHICLE LOADS IF REQD.
5. FORMS SHALL BE CONSTRUCTED TO FIT TIGHTLY AGAINST EXISTING CONCRETE SURFACES.
6. REPAIR AREA SHALL BE COMPLETED WITH A PRE-PACKAGED MATERIAL WITH SHRINKAGE COMPENSATING AND CORROSION INHIBITING ADDITIVES.
7. PROVIDE TOOLED JOINT AROUND REPAIR PERIMETER AREA AND SEAL WITH SEALANT.
8. MATERIAL SHALL BE PLACED AS PER SPECIFICATIONS AND PER MANUFACTURERS RECOMMENDATIONS.
9. FORM WORK, SHORING AND TEMPORARY PROTECTION SHALL REMAIN IN-PLACE UNTIL MATERIAL ACHIEVES A MINIMUM STRENGTH OF f'c=4,000 PSI MIN.
10. CURE REPAIR ACCORDING TO PRE-PACKAGED CONCRETE MANUFACTURER.
11. APPLY CONCRETE PENETRATING SEALER OVER REPAIR AREA, EXTEND 6 INCHES INTO EXISTING CONCRETE.

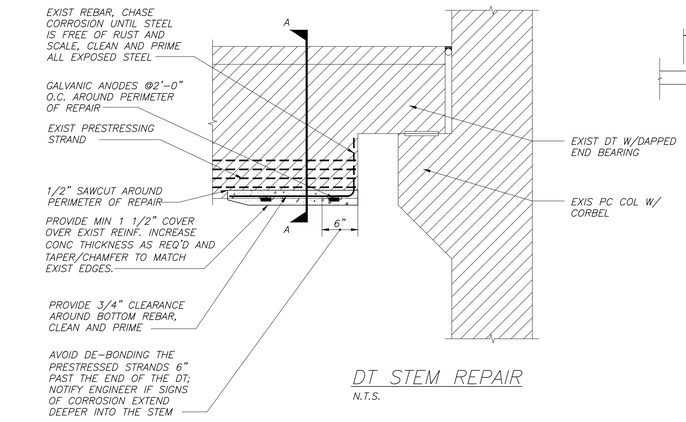


SECTION

3/4"=1'-0" — 1 / S1.3

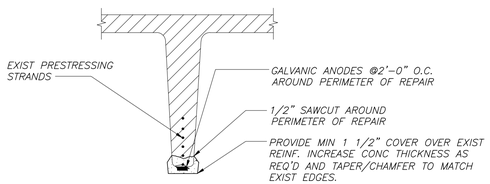
IT BEAM REPAIR NOTES:

1. CUT OUT AND REPLACE SEALANT IN CONNECTION POCKET. REFER DWG S2.1



DT STEM REPAIR

N.T.S.

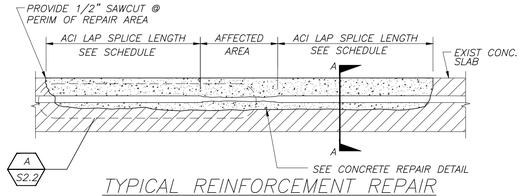


SECTION A-A

N.T.S.

NOTES:

1. REFER TO DRAWING S2.2 FOR CONCRETE DEMO AND REPAIR NOTES.
2. DO NOT CUT PRESTRESSING STRANDS. REINFORCEMENT AND PRESTRESSING STRANDS ARE ASSUMED. ACTUAL QUANTITY AND LOCATION MAY VARY. CONTRACTOR TO VERIFY IN FIELD.
3. PROBE AND REMOVE CONCRETE TO DETERMINE DEPTH AND EXTENTS OF RPESTRESS STRANDS. AVOID DEBONDING OF PRESTRESS STRANDS.
4. NOTIFY ENGINEER IF SIGNS OF CORROSION ARE VISIBLE ON PRESTRESS STRANDS.
5. NOTIFY ENGINEER TO INSPECT THE EXISTING REINFORCEMENT AFTER INITIAL DEMOLITION HAS BEEN COMPLETED.



TYPICAL REINFORCEMENT REPAIR

N.T.S.

PREPARATION:

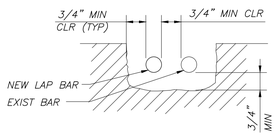
1. SEE TYPICAL CONCRETE REPAIR FOR REMOVAL/REPLACEMENT OF CONCRETE.

INSPECTION:

1. IF REINFORCEMENT HAS LOST MORE THAN 25% OF ITS CROSS SECTIONAL AREA, NOTIFY STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH REPAIR.

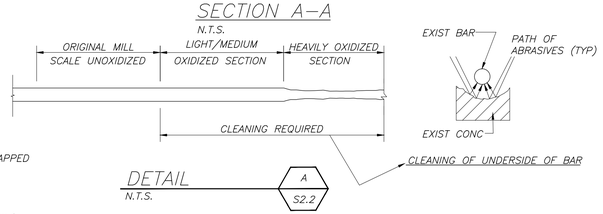
REPAIR:

1. LAP BARS AS NOTED ABOVE.
2. SEE TYPICAL CONCRETE REPAIR.



SECTION A-A

N.T.S.

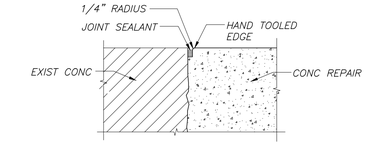


DETAIL

N.T.S. — A / S2.2

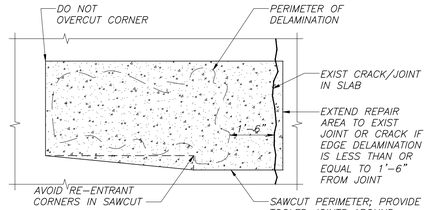
REBAR LAP SPLICE TABLE

BAR SIZE	LAP LENGTH
#3	30"
#4	36"
#5	48"
#6	56"
#7	81"



TYPICAL TOOLED JOINT DETAIL

N.T.S



PARTIAL SLAB PLAN

N.T.S.

INDICATES AREA OF CONCRETE REPAIR

SLAB REPAIR NOTES

GENERAL:

1. ALL PRECAST DECK REPAIRS ARE ASSUMED TO BE FULL DEPTH AND CIP REPAIRS ARE ASSUMED TO BE TO 3" DEEP.
2. DUST AND MOISTURE PROTECTION SHALL BE PROVIDED AT AND BELOW THE LEVELS OF REPAIR.
3. AT CIP TOPPING REMOVING TOPPING COMPLETELY DOWN TO PC SUBSTRATE.

CONCRETE REMOVAL:

1. REFERENCES: ICRI 03730, 03732, ACI 546R.
2. AT EACH REPAIR AREA, REMOVE SMALL AREA OF CONCRETE TO CONFIRM DEPTH OF REINFORCEMENT PRIOR TO CUTTING.
3. SAW CUT PERIMETER OF REPAIR AREA TO A DEPTH OF 1/2". REFERENCE PARTIAL SLAB PLAN THIS SHEET FOR ADDITIONAL INFORMATION. NOTE THAT PERIMETER MAY NEED TO BE EXTENDED TO CREATE A RECTANGULAR AREA.
4. REMOVE ALL DETERIORATED, DELAMINATED AND UNSOUND CONCRETE. CONCRETE SHALL BE REMOVED BY A METHOD THAT LIMITS THE DAMAGE TO SURROUNDING SOUND CONCRETE AND WITH MINIMAL DAMAGE TO EXISTING PRECAST/PRESTRESSED UNITS. REMOVAL METHOD SHALL BE SUBMITTED FOR REVIEW.
5. CONTINUOUS MATERIAL REMOVAL SHALL CONTINUE UNTIL AGGREGATE PARTICLES ARE BEING BROKEN RATHER THAN BEING REMOVED FROM THE CEMENT MATRIX.
6. USE OF MECHANICAL IMPACT CHIPPING HAMMERS SHALL BE LIMITED TO 30lb WITH A 15lb RECOMMENDED. ALL NECESSARY PRECAUTIONS MUST BE TAKEN TO AVOID MICRO CRACKING (BRUISING) OF THE PRECAST/PRESTRESSED UNITS.

PREPARATION:

1. REMOVE ALL RUST AND SCALE.
2. ALL EXPOSED REINFORCEMENT SHALL BE PRIMED OR EPOXY COATED WITH A PRODUCT COMPATIBLE WITH THE CONCRETE REPAIR MATERIAL.
3. PRIOR TO PROCEEDING WITH REPAIR, INSPECT ALL CONCRETE SURFACES. INSTALLATION OF REPAIR MATERIAL INDICATES ACCEPTANCE OF ALL SUBSTRATE CONDITIONS.
4. INSTALL GALVANIC ANODE AT LOCATIONS SHOWN ON DRAWINGS. ATTACH ANODE TO CLEAN REINFORCING STEEL. LOCATE THE ANODE ON THE SIDE OR BENEATH THE REINFORCING STEEL PROVIDING MINIMUM 3/4" COVER AND 1/4" CLEARANCE TO SUBSTRATE CONCRETE.
5. APPLY POLYMER ADHESIVE/BONDING AGENT TO ALL CONCRETE SURFACES.
6. REPAIR MATERIAL FOR LARGE AREAS (TOTAL PLACEMENTS OVER 1 YARD)
   - COMPRESSIVE STRENGTH (f'c) = 5,000 PSI (MIN)
   - AIR CONTENT = 6 1/2 ±2%
   - WATER/CEMENT RATIO (W/C) = 0.40 (MAX)
   - AGGREGATE = 3/8" MIN
7. REPAIR MATERIAL FOR SMALL PLACEMENTS (PLACEMENT LESS THAN 1 YARD) SHALL BE A ONE-COMPONENT, EARLY STRENGTH GAINING, CEMENTITIOUS REPAIR MATERIAL WITH THE FOLLOWING PROPERTIES (REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION):
   - COMPRESSIVE STRENGTH: = 5,000 PSI (MIN)
   - ADMIXTURES:
   - SHRINKAGE REDUCER = AS PER MANUFACTURER
   - CORROSION INHIBITOR = AS PER MANUFACTURER

CONCRETE CURING:

1. WET CURE FOR MINIMUM OF 3 DAYS (72 HOURS). REFERENCE THE SPECIFICATIONS FOR FURTHER CURING INFORMATION.

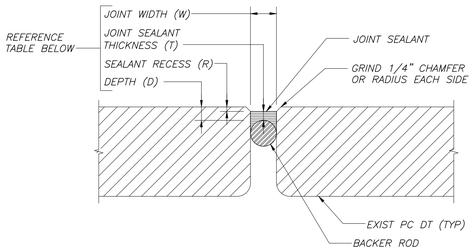
BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For	Apprd
	1/19/18	FOR BID	

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS
REPAIR SECTIONS AND DETAILS

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S2.2



TYPICAL JOINT SEALANT REPLACEMENT DETAIL

JOINT SEALANT NOTES
SEALANT REMOVAL:

1. REMOVE ALL TRACES OF EXISTING JOINT SEALANT.
2. REMOVE ALL EXISTING BACKER/BOND BREAKER MATERIAL

PREPARATION:

1. SOUND ALL EXISTING CONCRETE ON EDGES OF EXISTING JOINTS. REMOVE ALL EXISTING DELAMINATED CONCRETE FOUND AND AS NOTED ON DRAWINGS. KEEP RECORDS OF CONCRETE REMOVED, INCLUDING AREA (SF).
2. REPAIR ALL EXISTING CONCRETE AS PER DETAILS. ALLOW REPAIR TO PROPERLY CURE PRIOR TO INSTALLING JOINT SEALANT. COORDINATE REQUIREMENTS WITH SEALANT MANUFACTURER'S RECOMMENDATIONS.
3. JOINT DIMENSIONS: EXISTING PREPARED JOINTS SHALL CONFORM TO TABLE.

JOINT DIMENSIONS				
W	D	R	T	PRIMER
<1"	5/8"	1/8"	W/2*	REQ'D
1"–1 1/2"	7/8"	1/8"	1/2"	REQ'D
1 1/2"–2"	1 1/4"	1/4"	1/2"	REQ'D
>2"	NOTIFY ENGINEER			

4. GRIND EDGE OF EXISTING CONCRETE AND REPAIRS TO 1/4"± CHAMFER OR RADIUS.
5. ALL JOINT SURFACES MUST BE STRUCTURALLY SOUND, FULLY CURED, CLEAN, FREE OF DIRT, MOISTURE, LOOSE PARTICLES, OIL, GREASE, ASPHALT, TAR, PAINT, WAX, RUST, WATERPROOFING, CURING AND PARTING COMPOUNDS AND MEMBRANE MATERIALS.
6. CLEAN BY GRINDING, SANDBLASTING OR WIRE BRUSHING TO EXPOSE A SOUND SURFACE FREE OF CONTAMINATION AND LAITANCE.
7. ALL JOINTS SHALL BE FREE OF MOISTURE AND/OR FROST.
8. DT–DT CONNECTIONS EXPOSED DURING THE PREPARATION OF THE JOINT SUBSTRATE SHALL BE REPAIRED PER DETAILS ON S2.1.

PRIMER

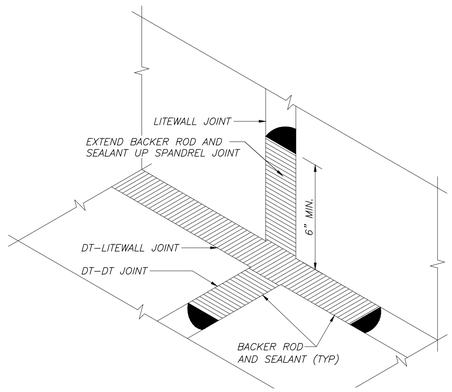
1. APPLICATION OF PRIMER IS A REQUIREMENT.
2. PREPARE AND ALLOW FOR PRIMER TO CURE PROPERLY, PRIOR TO INSTALLING SEALANT.
3. PROVIDE A PRIMER APPROVED BY SEALANT MANUFACTURER
4. INSTALLATION SHALL CONFORM TO MANUFACTURERS REQUIREMENTS.

SEALANT INSTALLATION

1. INSPECT ALL SURFACES PRIOR TO INSTALLING SEALANT. INSTALLATION OF SEALANT IMPLIES ACCEPTANCE OF SUBSTRATE CONDITIONS.
2. SUBSTRATE TEMPERATURE SHALL BE BETWEEN 40°F TO 70°F. INSTALLATION OF SEALANT OUTSIDE THIS RANGE SHALL BE PERMITTED ONLY IF WRITTEN INSTALLATION PROCEDURES ARE SUBMITTED FROM SEALANT MANUFACTURER WITH ASSURANCE THAT THIS INSTALLATION WILL NOT VOID MATERIAL & INSTALLATION WARRANTY.
3. INSTALL BACKER ROD AND BOND BREAKER TAPE OVER DT–DT FLANGE CONNECTIONS IF REQUIRED.
4. REFER TO MANUFACTURERS DATA SHEETS AND MATERIAL SAFETY DATA SHEETS FOR ANY NECESSARY PRECAUTIONS REGARDING EXPOSURE TO ALL MATERIALS.
5. MULTIPLE COMPONENT PRODUCTS SHALL BE MIXED IN STRICT ACCORDANCE WITH SEALANT MANUFACTURERS RECOMMENDATIONS. MIX ONLY AS MUCH SEALANT AS CAN BE INSTALLED WITHIN SPECIFIED POT–LIFE OF THE MATERIAL.
6. SELECT PROPER NOZZLE FOR JOINT BEING GUNNED AND HOLD GUN AT 45° ANGLE FROM JOINT. PLACE NOZZLE INTO BOTTOM OF JOINT AND FILL ENTIRE JOINT. KEEPING NOZZLE DEEP IN SEALANT, CONTINUE WITH STEADY FLOW OF SEALANT PRECEDING THE NOZZLE TO AVOID AIR ENTRAPMENT.
7. TOOL JOINTS AS REQUIRED WITH A DRY TOOL FREE OF TOOLING AIDS. PROVIDE A CONCAVE SHAPE WITH RECESS AS NOTED IN THE TABLE ABOVE.
8. INSTALL SEALANT EVENLY AND RECESS BELOW SURFACE PER TABLE. DO NOT OVERFILL JOINT.
9. CURING: ALL JOINTS MUST BE PROTECTED FROM TRAFFIC AND TOTAL WATER IMMERSION FOR THE DURATION OF THE MANUFACTURER'S SPECIFIED CURE TIME. CONTRACTOR SHALL SUPPLY ALL NECESSARY PROTECTION AGAINST MOISTURE AND ALLOW UNINTERRUPTED TRAFFIC FLOW THROUGH THE GARAGE.
10. CLEAN UP SHALL CONFORM TO MANUFACTURER'S RECOMMENDATIONS AND ALL GOVERNMENTAL REGULATIONS.
11. SELF LEVELING SEALANTS SHALL NOT BE AT JOINT SEALANTS.
12. WATER TEST EACH SEALANT JOINT SURFACE FOR LEAKS FOR A MINIMUM OF 4 HOURS ENSURING FULL COVERAGE OF JOINT SURFACE. REPAIR AND REPEAT WATER TESTS AT LEAKING JOINTS UNTIL SEALANT JOINT INSTALLATION IS WATERTIGHT.

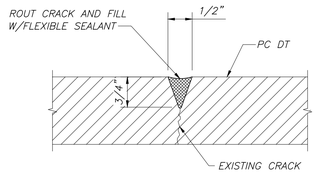
MOCKUP

1. A MOCKUP OF A TYPICAL JOINT SHALL BE COMPLETED PRIOR TO COMMENCING WORK. MOCKUP SHALL BE REVIEWED BY SEALANT MANUFACTURER, SEALANT INSTALLER, ENGINEER AND OWNER. PROVIDE 1/2 JOINT MOCKUP. CONTRACTOR SHALL ALLOW ENGINEER TO PERFORM ADHESION TESTING AS NEEDED. (REFERENCE SPECIFICATIONS).



DT–SPANDREL JOINT INTERSECTION

N.T.S.



TYPICAL CRACK/CONTROL JOINT REPAIR DETAIL

N.T.S

CRACK REPAIR NOTES
PREPARATION:

1. CENTER ROUTED GROOVE ON CRACK.
2. REMOVE ALL LOOSE AND DETERIORATED MATERIAL.
3. ALL JOINT SURFACES MUST BE CLEAN, SOUND, AND FROST FREE. JOINT WALLS MUST BE FREE OF OILS, GREASE, CURING COMPOUND RESIDUES AND ANY OTHER FOREIGN MATTER THAT MIGHT PREVENT BOND. THIS SHOULD BE ACCOMPLISHED BY BLAST CLEANING OR EQUIVALENT MECHANICAL MEANS.
4. CONFORM TO ALL MANUFACTURERS PREPARATION REQUIREMENTS.
5. JOINT PREPARATION SHALL BE CONFIRMED BY SEALANT INSTALLER. INSTALLATION OF SEALANT SHALL IMPLY PROPER JOINT PREPARATION.

CRACK SEALANT INSTALLATION:

1. INSTALLATION SHALL CONFORM TO MANUFACTURERS REQUIREMENTS.

BECKER STRUCTURAL ENGINEERS
75 York Street, Portland, Maine 04101
207.879.1838 • beckerstructural.com

Rev No	Date	Issued For
	1/19/18	FOR BID
		Apprd

MECHANICS ROW PARKING GARAGE
AUBURN, ME
PHASE 4 REPAIRS

REPAIR SECTIONS AND DETAILS

Designed	Scale
ATS	AS NOTED
Drawn	Date
ATS	1/19/18
Checked	Becker Job Number
JMM	4166

S2.3