

GENERAL

- THE INTENT OF THIS PROJECT IS TO STRENGTHEN EXISTING BUILDING BUILT UP FRAME COLUMNS THAT HAVE EXPERIENCED SECTION LOSS DUE TO CORROSION AS NOTED IN THESE PLANS. STRENGTHENING WILL BE DONE BY WELDING ON NEW STEEL PLATES TO THE EXISTING COLUMN MEMBERS AND PARTIAL REPLACEMENT OF EXISTING COLUMN MEMBERS. DETERIORATION IS LOCATED AT THE BASE OF THE COLUMNS. THE BASE OF THE EXISTING COLUMNS AND BASE PLATES WILL ALSO BE CLEANED AND PAINTED AS NOTED IN THESE PLANS. DURING COLUMN STRENGTHENING OPERATIONS, THE EXISTING OVERHEAD HOIST SHALL NOT BE USED IN EITHER BAY ADJACENT TO THE FRAME THAT IS BEING STRENGTHENED. LOCATE HOIST A MINIMUM OF TWO BAYS AWAY DURING STRENGTHENING OPERATIONS.
- ALL ELEVATIONS REFERENCED TO FINISHED FIRST FLOOR (+0'-0").
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND MEMBER SIZES PRIOR TO COMMENCING CONSTRUCTION.
- ALL OF THE WORK TO BE DONE UNDER THIS CONTRACT SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS, THE GENERAL REQUIREMENTS OF DIVISION ONE, THE GENERAL CONDITIONS, THE SPECIFICATIONS, AND ANY ADDENDA THERETO.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT THEMSELVES AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING/BRACING OF COLUMNS, BEAMS, JOISTS, ETC., AS REQUIRED BY ALL FEDERAL, STATE AND LOCAL AGENCIES HAVING JURISDICTION, UNTIL ALL PERMANENT FRAMING IS INSTALLED.
- DRAWINGS OF THE EXISTING BUILDING ARE AVAILABLE.
- UTILITY LOCATIONS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UTILITIES BE FOUND DIFFERENT THAN LOCATED OR SHOWN ON THE DRAWINGS, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
- ALL CONSTRUCTION SHALL CONFORM TO INTERNATIONAL BUILDING CODE 2012 UNLESS NOTED OTHERWISE. DESIGN LOADS: SNOW: SNOW DRIFT PER IBC 2012
Pg = 25 PSF
Pf = 20 PSF
Is = 1.00
Cs = 1.0
Ct = 1.0 WIND: ULTIMATE DESIGN WIND SPEED V_{ult} (3-SECOND GUST) = 115 MPH
NOMINAL DESIGN WIND SPEED V_{asd} = 89 MPH
RISK CATEGORY II
EXPOSURE B
- IF CONFLICTS ARE FOUND BETWEEN DETAILS OR DIMENSIONS SHOWN ON STRUCTURAL PLANS AND THOSE SHOWN ON ARCHITECTURAL OR OTHER DISCIPLINES PLANS, NOTIFY ARCHITECT AND ENGINEER IMMEDIATELY FOR CLARIFICATION PRIOR TO PERFORMING WORK.

STEEL

- STRUCTURAL STEEL TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH 'SPECIFICATIONS FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, CURRENT EDITION.'
- STEEL PLATES IN ACCORDANCE WITH ASTM A572 - GRADE 50.
- STEEL CHANNELS AND ANGLES IN ACCORDANCE WITH ASTM A36.
- STEEL PIPE IN ACCORDANCE WITH ASTM A53 GRADE B ($F_y = 35$ KSI).
- STEEL TUBES IN ACCORDANCE WITH ASTM A500 GRADE B ($F_y = 46$ KSI).
- ALL WELD ELECTRODES E70 SERIES.
- ALL WELDING IN ACCORDANCE WITH AWS D1.1 CURRENT EDITION.
- ALL WELDING SHALL BE COMPLETED BY A CERTIFIED WELDER.
- ALL FULL PENETRATION WELDS SHALL BE MADE USING RUN OFF TABS WHICH SHALL BE REMOVED AND GROUND SMOOTH AFTER WELD IS COMPLETED.
- ALL WELD BACKUP BARS SHALL BE REMOVED AND GROUND SMOOTH AFTER WELDING IS COMPLETE.
- ANCHOR RODS - ASTM F 1554 (GRADE 36).
- NO HOLES ALLOWED IN BEAMS, JOISTS OR COLUMNS UNLESS SPECIFICALLY NOTED OR DETAILED ON STRUCTURAL DRAWINGS.

WELD INSPECTION

- CONTRACTOR SHALL PROVIDE THE FOLLOWING TESTING FOR ALL FIELD WELDS (INCLUDING TEMPORARY SHORING FIELD WELDS) BY TESTING AGENCY OR QUALIFIED PERSONNEL:

ALL FULL PENETRATION WELDS SHALL BE INSPECTED USING EITHER RADIOGRAPH (RT) OR ULTRASONIC (UT) TESTING PROCEDURES.

ALL FILLET WELDS SHALL BE VISUALLY INSPECTED.

PAINT

- PAINT SHALL BE TNEMEC OR APPROVED EQUAL.
- PAINT SYSTEM SHALL CONSIST OF THE FOLLOWING:

COLOR - MATCH EXISTING COLUMN COLOR AS CLOSE AS POSSIBLE (WHITE)

PRIME COAT - TNEMEC OMNITHANE SERIES 1 AT 2 TO 3 MILS DRY FILM THICKNESS

INTERMEDIATE COAT - TNEMEC SERIES 66 HI-BUILD EPOXOLINE AT 4 TO 5 MILS DRY FILM THICKNESS

TOP COAT - TNEMEC SERIES 66 HI-BUILD EPOXOLINE AT 4 TO 5 MILS DRY FILM THICKNESS
- SURFACE PREPARATION - SSPC SP 3 HAND TOOL CLEAN.
- ALL PRIME AND INTERMEDIATE COATS SHALL BE BRUSHED INTO ALL CRACKS, CREVICES, AROUND BOLTS AND INTO GAPS BETWEEN THE STEEL BASE PLATE AND THE CONCRETE FOUNDATION.

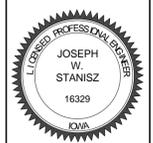
DEMOLITION AND REMODELING

- THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT PARTS OF THE STRUCTURE TO BE PRESERVED ARE NOT DAMAGED BY THE APPLICATION OF EXCESSIVE LOADS OR BY ANY OTHER MEANS, AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED.
- ENSURE SAFE PASSAGE OF PERSONS AROUND AREA OF DEMOLITION AND CONSTRUCTION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, EQUIPMENT AND OTHER FACILITIES AND PERSONS.
- EXISTING STRUCTURE SHALL BE TEMPORARILY SHORED AS REQUIRED TO PERFORM CONSTRUCTION SHOWN HEREIN.
- IN THE EVENT OF CONFLICTS, NOTIFY ENGINEER PRIOR TO FIELD MODIFICATIONS OF DETAILS, CONNECTIONS, OR DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS.

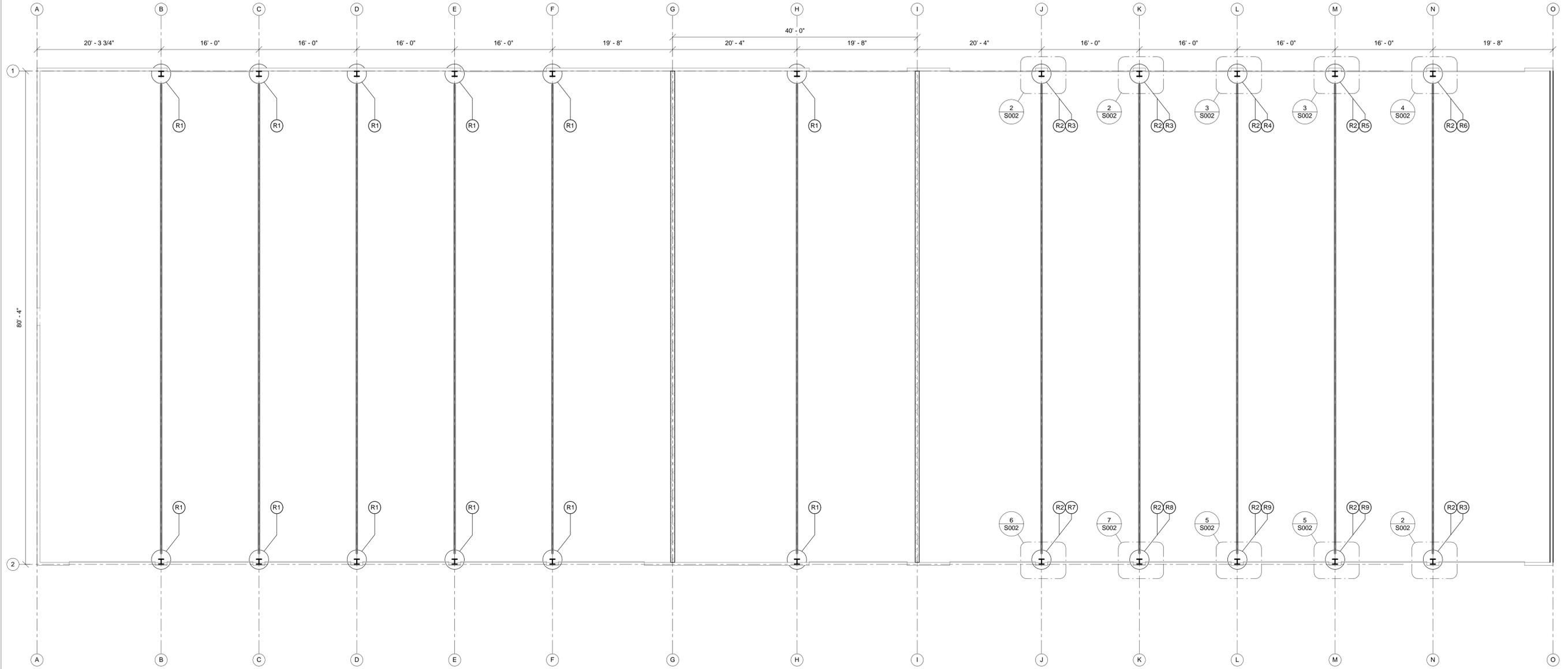
TEMPORARY SHORING

- THE CONTRACTOR SHALL INSTALL TEMPORARY SHORING AT ALL LOCATIONS REQUIRING REMOVAL AND REPLACEMENT OF BUILT UP STEEL COLUMN MEMBERS.
- SHORING SHALL BE PROVIDED TO SUPPORT BOTH HORIZONTAL AND VERTICAL LOADS OF THE EXISTING BUILDING FRAMES. SEE DETAILS IN PLAN SET.
- FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO FABRICATING TEMPORARY SHORING STRUCTURAL STEEL.

NO SNOW SHALL BE ON THE ROOF DURING COLUMN REPAIRS.

	I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA 12-24-15 JOSEPH W. STANISZ, P.E. IOWA REG. NO. 16329 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2017
	PAGES OR SHEETS COVERED BY THIS SEAL: S000, S001, S002, S003, S004 _____ _____ _____

DATE:	12/24/2015
DRAWN BY:	DESIGN TEAM
APPROVED:	
REVISIONS:	
SHEET OF	S000

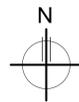


REPAIR ITEMS:

- R1. CLEAN CORROSION AND FAILED PAINT OFF OF EXISTING COLUMNS. PAINT BASE PLATE AND 4' OF COLUMN ABOVE BASE PLATE.
SEE PAINTING NOTES FOR FURTHER REQUIREMENTS.
- R2. SAND BLAST BASE PLATE AND LOWER AREA OF COLUMN TO REMOVE EXISTING CORROSION IN AREA OF REPAIR.
PAINT BASE PLATE AND 4' OF COLUMN ABOVE BASE PLATE AFTER SUPPLEMENTAL/REPLACEMENT STEEL IS INSTALLED.
SEE PAINTING NOTES FOR FURTHER REQUIREMENTS.
- R3. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE AND REPLACE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
INSTALL SUPPLEMENTAL PLATES ON SHORT LEGS OF ANGLES AT BASE OF COLUMN. NEW PLATE SHALL EXTEND A MINIMUM OF 1' ABOVE BASE PLATE.
- R4. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE BOTTOM 2.5' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
REMOVE BOTTOM 1' OF EXISTING ANGLES. AND REPLACE WITH NEW.
REMOVE EXISTING BASE PLATE AND REPLACE WITH NEW. USE EXISTING ANCHOR RODS.
- R5. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
REMOVE BOTTOM 1' OF EXISTING ANGLES. AND REPLACE WITH NEW.
REMOVE EXISTING BASE PLATE AND REPLACE WITH NEW. USE EXISTING ANCHOR RODS.

- R6. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE AND REPLACE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
INSTALL SUPPLEMENTAL PLATE ON NORTHWEST ANGLE LEG AT BASE OF COLUMN. NEW PLATE SHALL EXTEND A MINIMUM OF 1' ABOVE BASE PLATE.
- R7. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE AND REPLACE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
INSTALL SUPPLEMENTAL PLATES ON ALL ANGLE LEGS AT BASE OF COLUMN. NEW PLATE SHALL EXTEND A MINIMUM OF 1' ABOVE BASE PLATE.
- R8. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE AND REPLACE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
- R9. INSTALL TEMPORARY SHORING PRIOR TO BEGINNING ANY REMOVALS.
REMOVE AND REPLACE BOTTOM 2' OF CHANNEL ON COLUMN AND REPLACE WITH NEW. EXISTING L3-1/2X2-1/2X3/8 ANGLES ARE ATTACHED TO THE BACK SIDE OF THE C10X15.3 CHANNEL WITH 3" STITCH WELDS SPACED AT 12" O.C. ON THE 2-1/2" ANGLE LEGS. BREAK THESE WELDS FREE PRIOR TO REMOVING EXISTING C10X15.3 SECTION. AFTER NEW SECTION OF C10X15.3 IS INSTALLED, RE-INSTALL STITCH WELDS TO MATCH EXISTING.
INSTALL SUPPLEMENTAL PLATE ON SOUTHEAST ANGLE LEG AT BASE OF COLUMN. NEW PLATE SHALL EXTEND A MINIMUM OF 1' ABOVE BASE PLATE.

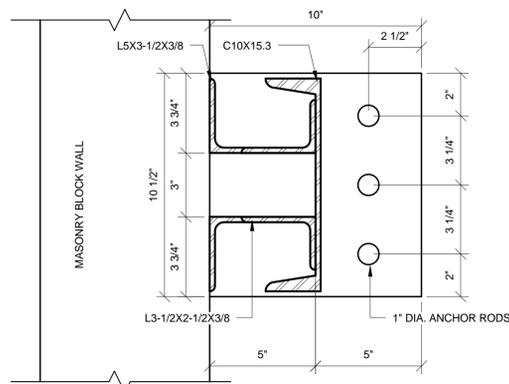
REMOVE AND REPLACE EXISTING WATER HOSE SUPPORT AND WATER LINE AS REQUIRED TO INSTALL TEMPORARY SHORING AT COLUMNS K-1, K-2, M-1, AND M-2.



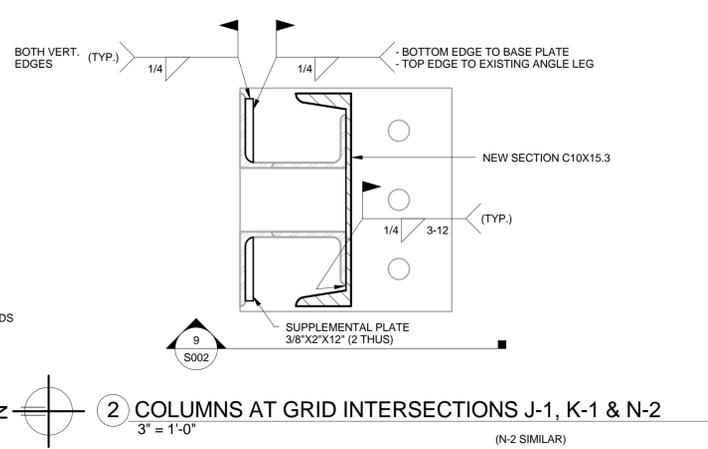
COLUMN REPAIR PLAN

1/8" = 1'-0"

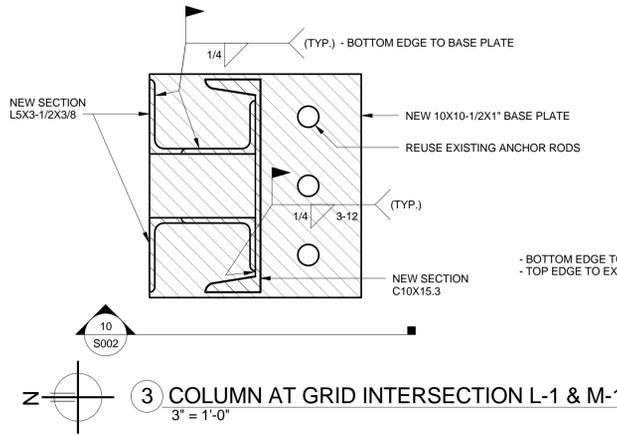
C:\Users\jbrunson\Documents\152286 Coralville Garage Repair_Corallville.rvt



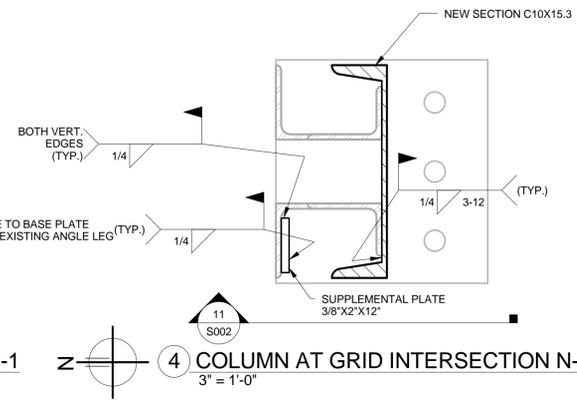
1 EXISTING CONDITION
3' = 1'-0"



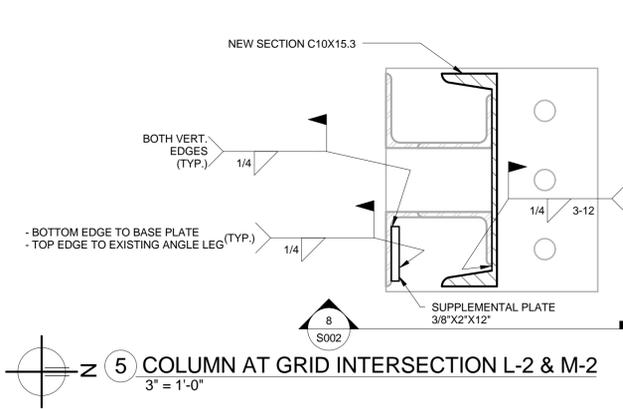
2 COLUMNS AT GRID INTERSECTIONS J-1, K-1 & N-2
3' = 1'-0"
(N-2 SIMILAR)



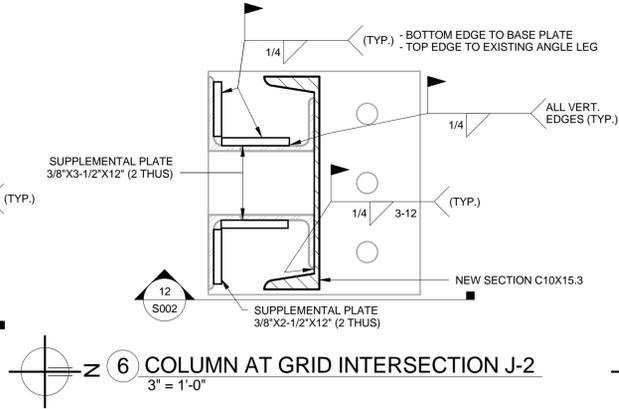
3 COLUMN AT GRID INTERSECTION L-1 & M-1
3' = 1'-0"



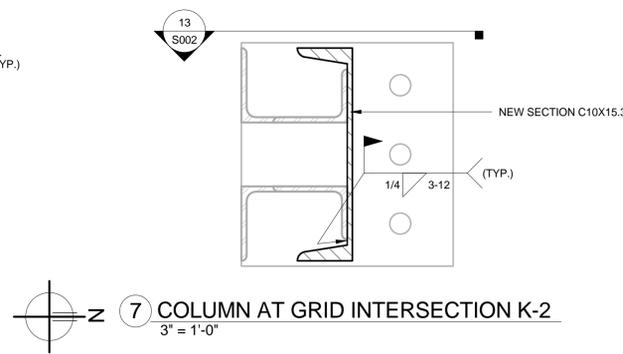
4 COLUMN AT GRID INTERSECTION N-1
3' = 1'-0"



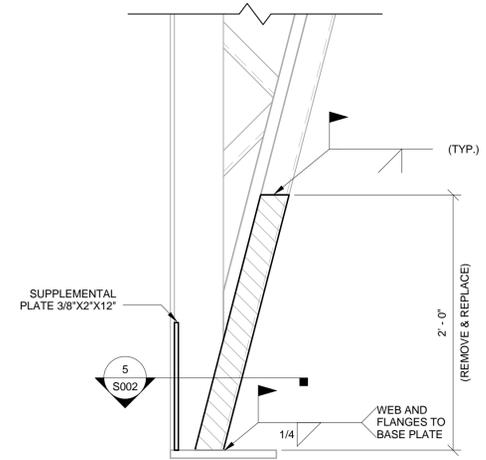
5 COLUMN AT GRID INTERSECTION L-2 & M-2
3' = 1'-0"



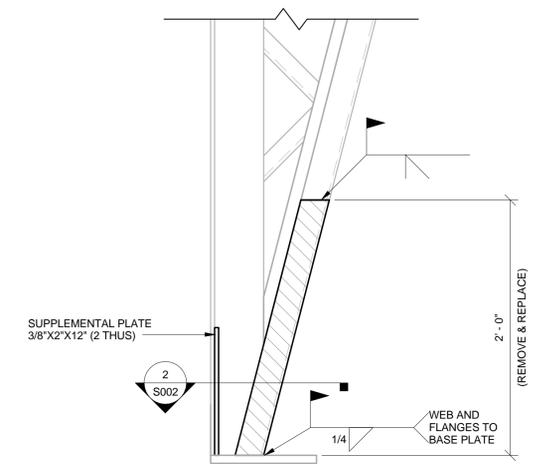
6 COLUMN AT GRID INTERSECTION J-2
3' = 1'-0"



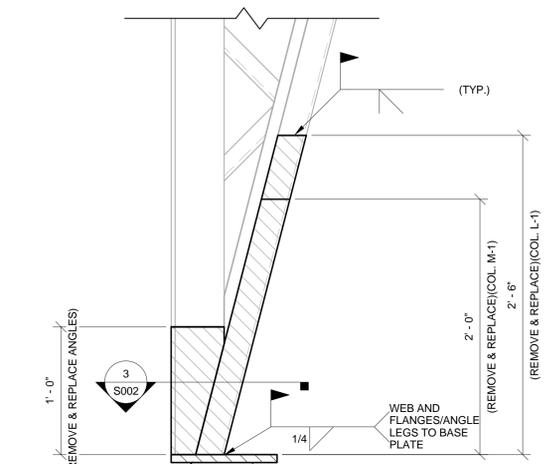
7 COLUMN AT GRID INTERSECTION K-2
3' = 1'-0"



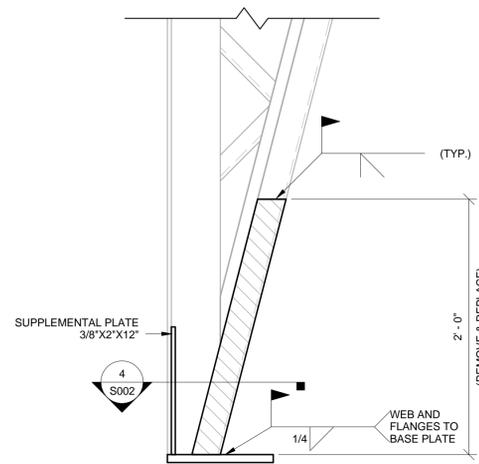
8 COLUMN AT GRID INTERSECTION L-2 & M2
1 1/2' = 1'-0"



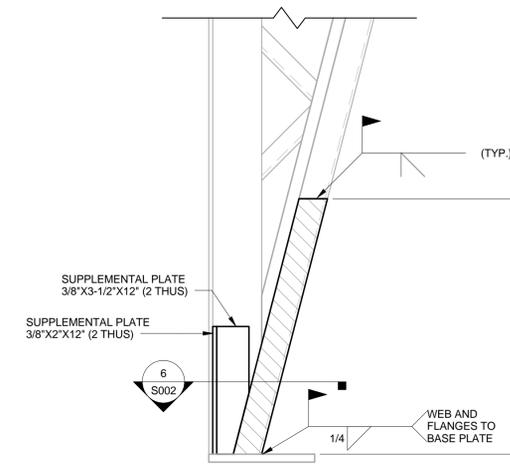
9 COLUMNS AT GRID INTERSECTION J-1, K-1, & N-2
1 1/2' = 1'-0"
(N-2 SIMILAR)



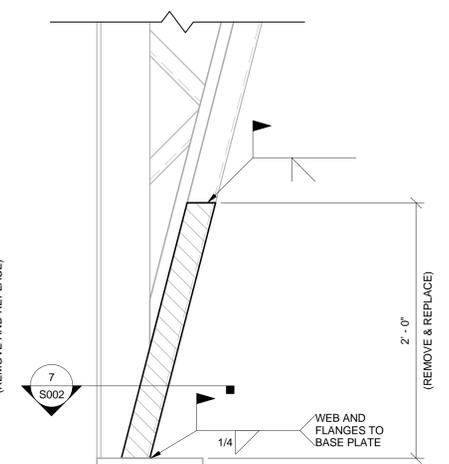
10 COLUMN AT GRID INTERSECTION L-1 & M-1
1 1/2' = 1'-0"



11 COLUMN AT GRID INTERSECTION N-1
1 1/2' = 1'-0"



12 COLUMN AT GRID INTERSECTION J-2
1 1/2' = 1'-0"



13 COLUMNS AT GRID INTERSECTIONS K-2
1 1/2' = 1'-0"



① SOUTH SIDE EXTERIOR



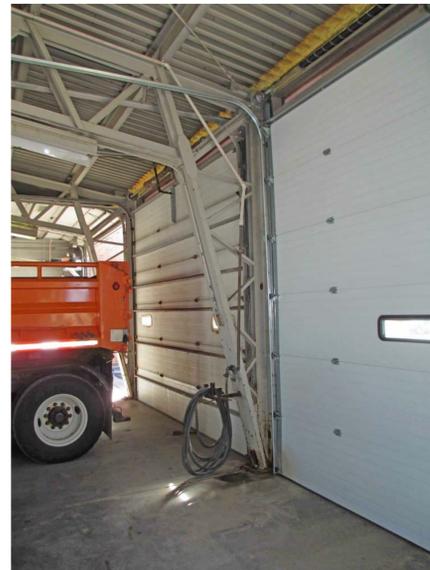
② NORTH SIDE EXTERIOR



③ EAST END INTERIOR



④ EAST END INTERIOR
1/4" = 1'-0"



⑤ EAST END TYPICAL FRAME COLUMN
1/4" = 1'-0"



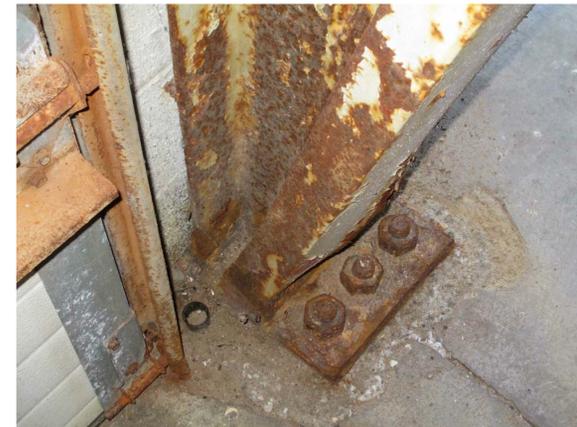
⑥ EAST END TYPICAL FRAME COLUMN
1/4" = 1'-0"



⑦ EAST END TYPICAL COLUMN BASE
1/4" = 1'-0"



⑧ EAST END TYPICAL COLUMN BASE DETERIORATION
1/4" = 1'-0"



⑨ EAST END TYPICAL COLUMN BASE DETERIORATION
1/4" = 1'-0"



⑩ EAST END BASE OF FRAME COLUMN
1/4" = 1'-0"



⑪ EAST END RIGID FRAME COLUMN W/ NO DETERIORATION
1/4" = 1'-0"

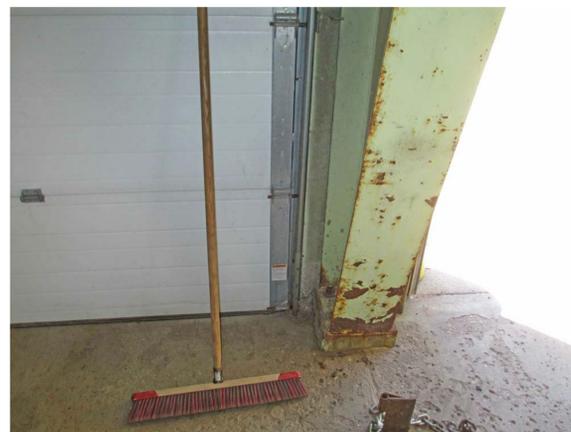


⑫ EAST END BASE OF FRAME COLUMN
1/4" = 1'-0"

C:\Users\KBR\Documents\150226 Coralville Garage_CBRN.rvt



1 WEST END INTERIOR OF GARAGE
1/4" = 1'-0"



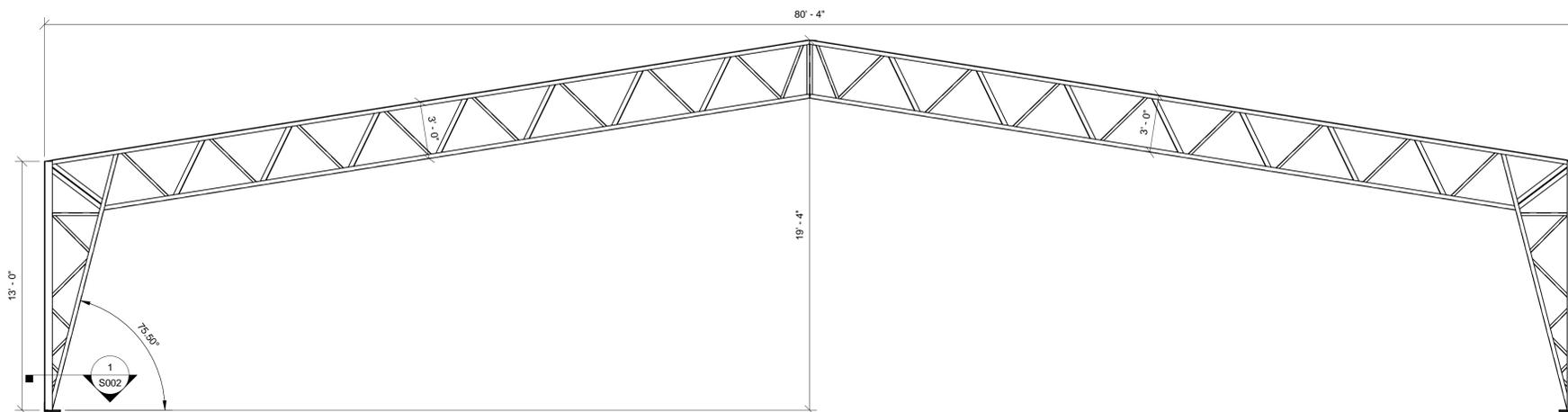
2 WEST END TYPICAL FRAME COLUMN
1/4" = 1'-0"



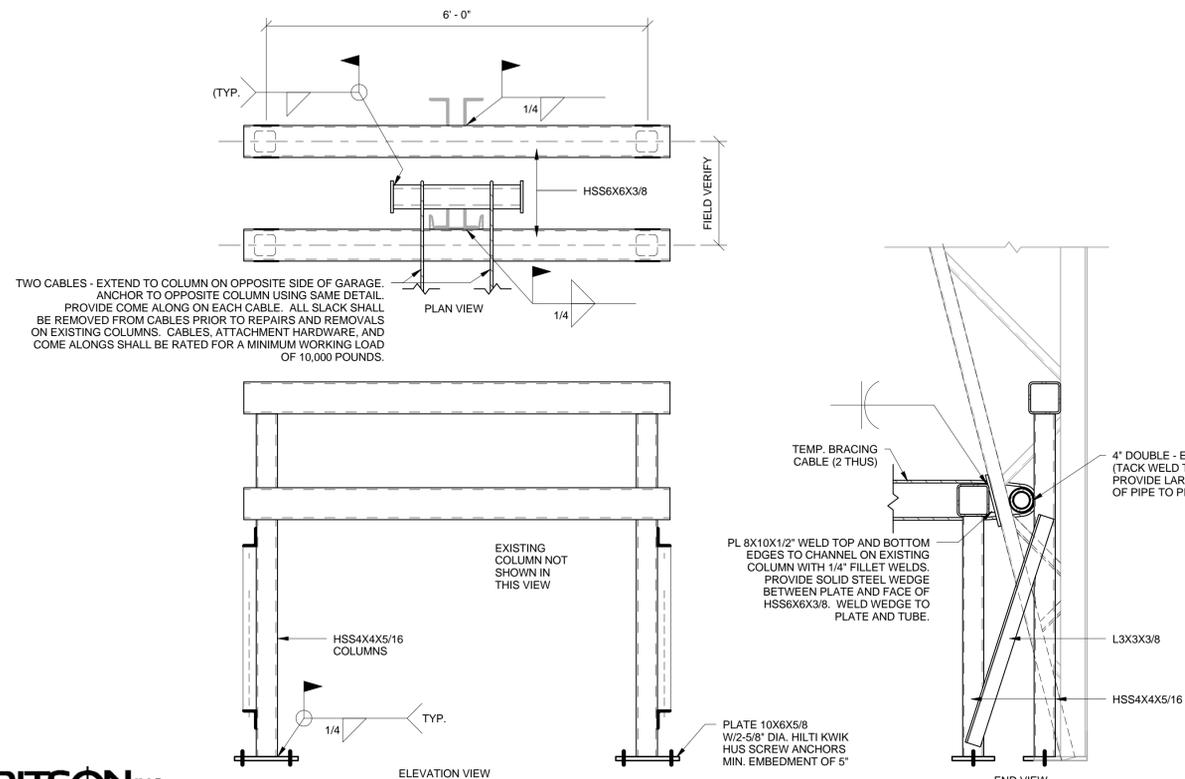
3 WEST END TYPICAL BASE OF COLUMN CORROSION
1/4" = 1'-0"



4 WEST END TYPICAL BASE OF COLUMN CORROSION
1/4" = 1'-0"



5 ELEVATION - TYPICAL BUILDING FRAME - EAST END
1/4" = 1'-0"



TWO CABLES - EXTEND TO COLUMN ON OPPOSITE SIDE OF GARAGE. ANCHOR TO OPPOSITE COLUMN USING SAME DETAIL. PROVIDE COME ALONG ON EACH CABLE. ALL SLACK SHALL BE REMOVED FROM CABLES PRIOR TO REPAIRS AND REMOVALS ON EXISTING COLUMNS. CABLES, ATTACHMENT HARDWARE, AND COME ALONGS SHALL BE RATED FOR A MINIMUM WORKING LOAD OF 10,000 POUNDS.

ALL TEMPORARY SHORING AND CABLES SHALL REMAIN IN PLACE UNTIL COLUMN AND BASE PLATE REPAIRS ARE COMPLETED AT EACH REPAIR LOCATION.
ONLY ONE COLUMN OF TWO IN A GIVEN FRAME SHALL BE REPAIRED AT A TIME.
FIELD VERIFY ALL EXISTING COLUMN DIMENSIONS PRIOR TO FABRICATING TEMPORARY SHORING STEEL.
AFTER TEMPORARY SHORING IS REMOVED, GRIND ALL TEMPORARY WELDS SMOOTH ON EXISTING COLUMN MEMBERS. FILL HOLES IN SLAB WITH NON-SHRINK GROUT AFTER REMOVING TEMPORARY ANCHORS.
TEMPORARY SHORING IS DESIGNED TO SUPPORT DEAD LOAD AND WIND LOAD. SHORING SHALL NOT BE INSTALLED WHILE THERE IS SNOW ON THE ROOF OF THE BUILDING.

6 TEMPORARY SHORING DETAILS
3/4" = 1'-0"

C:\Users\jbrunson\Documents\150286 Coralville Garage Repair - 012015.rvt