

SITE DATA

ZONING DISTRICT: PS
 FLOOD ZONE: AE8
 F.I.R.M. - COMMUNITY #120168; PANEL #1509; SUFFIX "K"; DATED: 02-18-2005
 LEGAL DESCRIPTION: KW 2.30AC PLAT OF SURVEY OF LANDS ON ISLAND OF KEY WEST
 MONROE COUNTY FLA PT TR16A WEST 500 FT PB3-35 G72-293-294

DESIGN DATA

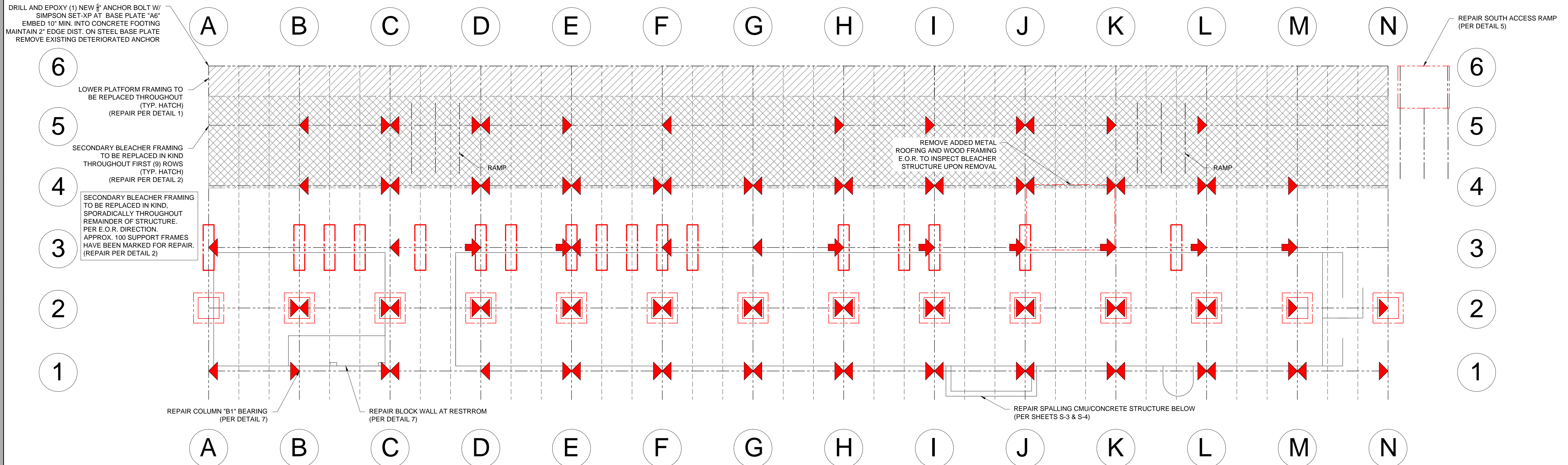
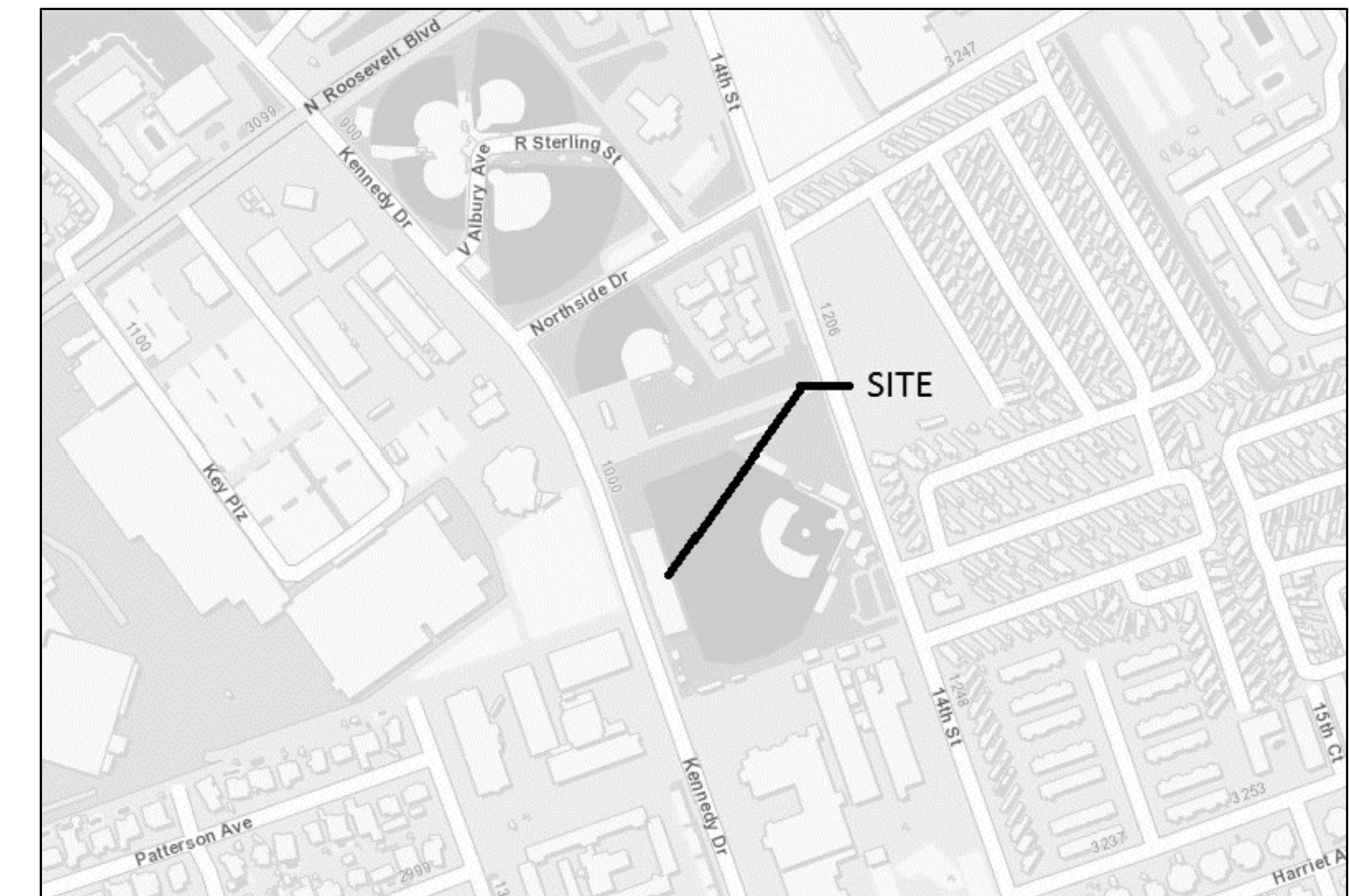
THE WORK DEPICTED HEREIN WAS DESIGNED TO MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, 6TH EDITION (2017) - EXISTING BUILDING CODE ASCE 7-10, ASCE 24-14
 THE WORK DEPICTED HEREIN WILL NOT YIELD ADDITIONAL IMPERVIOUS COVERAGE
 OCCUPANCY CLASSIFICATION: A-5
 CONSTRUCTION TYPE: V
 THE FOLLOWING LOADINGS WERE USED:
 WIND LOAD: 180 MPH (ASCE 7-10) 3 SECOND GUST, EXPOSURE D, RISK CATEGORY II
 FLOOR LIVE LOAD: 100 PSF
 SEAT LOADS: 120PLF VERTICAL, 24 PLF HORIZONTAL

INDEX OF DRAWINGS

- T-1 - REPAIR PLAN
- S-1 - REPAIR DETAILS
- S-2 - REPAIR DETAILS
- S-3 - SPALLING REPAIR PLAN
- S-2 - SPALLING REPAIR DETAILS

BLEACHER REPAIRS

1244 GLYNN R ARCHER JUNIOR DR. KEY WEST, FLORIDA



GENERAL NOTES

1. THESE PLANS ARE FOR THE WORK AT THE LOCATION SO DESIGNATED HEREIN.
2. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT AND SUPERVISION NECESSARY TO COMPLETE THE WORK AND MAKE STRUCTURE READY FOR USE.
3. THERE SHALL BE NO DEVIATION FROM THESE PLANS WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD.
4. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS BEFORE BID. CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK SITE AND REPORT ANY DISCREPANCIES, DIFFERENCES OR CONDITIONS THAT ARE UNSATISFACTORY OR UNSAFE.
5. NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY DISCREPANCIES, DIFFERENCES, UNSATISFACTORY OR UNSAFE CONDITIONS. ANY MODIFICATIONS OR CHANGES MADE WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER AND ENGINEER OF RECORD SHALL NOT BE ALLOWED. ANY REWORK, RESTORATION OR OTHER IMPACT AS A RESULT OF NOT OBTAINING SUCH PRIOR APPROVAL WILL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR COMPENSATION FROM THE OWNER.
6. THE CONTRACTOR SHALL PROVIDE FOR THE SAFETY, PREVENTION OF INJURY OR OTHER LOSS AT THE JOB TO ALL PERSONS EMPLOYED IN THE WORK, PERSONS VISITING THE WORK AND THE GENERAL PUBLIC. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PREVENTION OF DAMAGE, DUE TO THE WORK, TO MATERIALS OR EQUIPMENT AND OTHER PROPERTY AT THE SITE OR ADJACENT THERETO.
7. NO RESEARCH AS TO THE PRESENCE OF UNDERGROUND UTILITIES HAS BEEN INCLUDED ON OR PERFORMED FOR THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING SUNSHINE UTILITY LOCATE SERVICE PRIOR TO ANY CONSTRUCTION WITHIN ANY PUBLIC RIGHT-OF-WAY OR OTHER AREAS WHERE UNDERGROUND UTILITIES MAY BE PRESENT (I.E. IN AND AROUND UTILITY EASEMENTS, ETC.)

8. THE GENERAL CONTRACTOR SHALL PROVIDE AN ON-SITE DUMPSTER IN A LOCATION COORDINATED WITH THE OWNER FOR THE DISPOSAL OF REMOVED MATERIAL AND CONSTRUCTION DEBRIS. THE DUMPSTER SHALL BE EMPTIED AT APPROPRIATE INTERVALS TO PREVENT OVERFLOW AND UNSIGHTLY CONDITIONS.
9. THE CONTRACTOR SHALL PERFORM ALL WORK IN STRICT CONFORMANCE WITH THE PLANS, THE FLORIDA BUILDING CODE, 6TH EDITION (2017), LOCAL CODES AND ORDINANCES, MANUFACTURER RECOMMENDATIONS AND ACCEPTABLE TRADE PRACTICES. ANY CONFLICT BETWEEN THESE REQUIREMENTS AND THE MOST STRINGENT REQUIREMENTS SHALL GOVERN THE WORK.
10. SHOP DRAWINGS OF ALL PREFABRICATED STRUCTURAL FLOOR AND ROOF SYSTEMS AND MECHANICAL SYSTEMS SHALL BEAR THE SEAL OF A FLORIDA PROFESSIONAL ENGINEER AS REQUIRED BY THE FLORIDA BUILDING CODE, 6TH EDITION (2017) AND SHALL BE SUBMITTED TO THE ENGINEER OF RECORD BY THE CONTRACTOR FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION.
11. THE CONTRACTOR SHALL NOT SCALE DRAWINGS. ANY INFORMATION THAT THE CONTRACTOR CANNOT OBTAIN FROM DIMENSIONS, DETAIL OR SCHEDULE SHALL BE OBTAINED FROM THE ENGINEER OF RECORD.
12. THE CONTRACTOR SHALL COORDINATE THE WORK OF ALL TRADES TO PREVENT ANY CONFLICTS.
13. THE CONTRACTOR SHALL FURNISH ALL SUBCONTRACTORS WITH A COMPLETE SET OF PLANS. ALL CHANGES SHALL BE NOTED ON THE DRAWINGS AND (2) COMPLETE AS-BUILT SETS SHALL BE DELIVERED TO THE OWNER AFTER COMPLETION OF WORK.

REPAIR PLAN - LAYOUT

SCALE: 1"=20'-0"

LEGEND

- ROOF PASS THROUGH TO BE INSPECTED/REPAIRED (DETAIL 8)
- PRIMARY BEAM SPLICE TO BE REPAIRED (DETAIL 3)
- COLUMN BEARING BRACKET TO BE REPLACED/INSTALLED (DETAIL 4)
- COLUMN BEARING BRACKET/LATERAL BRACE (DETAIL 9)

NOTE: THESE PLANS INTEND TO REPLACE ALL DETERIORATED STRUCTURAL MEMBERS. IF ADDITIONAL DETERIORATED MEMBERS, ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD.

CIVIL ENGINEERING - REGULATORY PERMITTING - CONSTRUCTION MANAGEMENT
PEREZ ENGINEERING & DEVELOPMENT, INC.
 1010 East...
 Key West, Florida 33040
 Tel: (305) 293-9440
 CERTIFICATE OF AUTHORIZATION No. 8579

JAMES C. REYNOLDS, P.E.
 No. 48685
 Florida P.E. No. 48685
 October 4, 2018
 CERTIFICATE OF AUTHORIZATION No. 26597

Reynolds Engineering Services, Inc.
 ORIGINAL: SEPTEMBER 2018

1	
2	
3	
4	
5	
6	

BLEACHER REPAIRS
 TOMMY ROBERTS STADIUM
 KENNEDY DRIVE
 KEY WEST, FL 33040

MONROE COUNTY
 SCHOOL DISTRICT
 241 TRUMBO RD
 KEY WEST, FL 33040

JOB NO. 181042
 DRAWN JDH
 DESIGNED JDH
 CHECKED JCR
 SHEET T-1

DEMOLITION NOTES

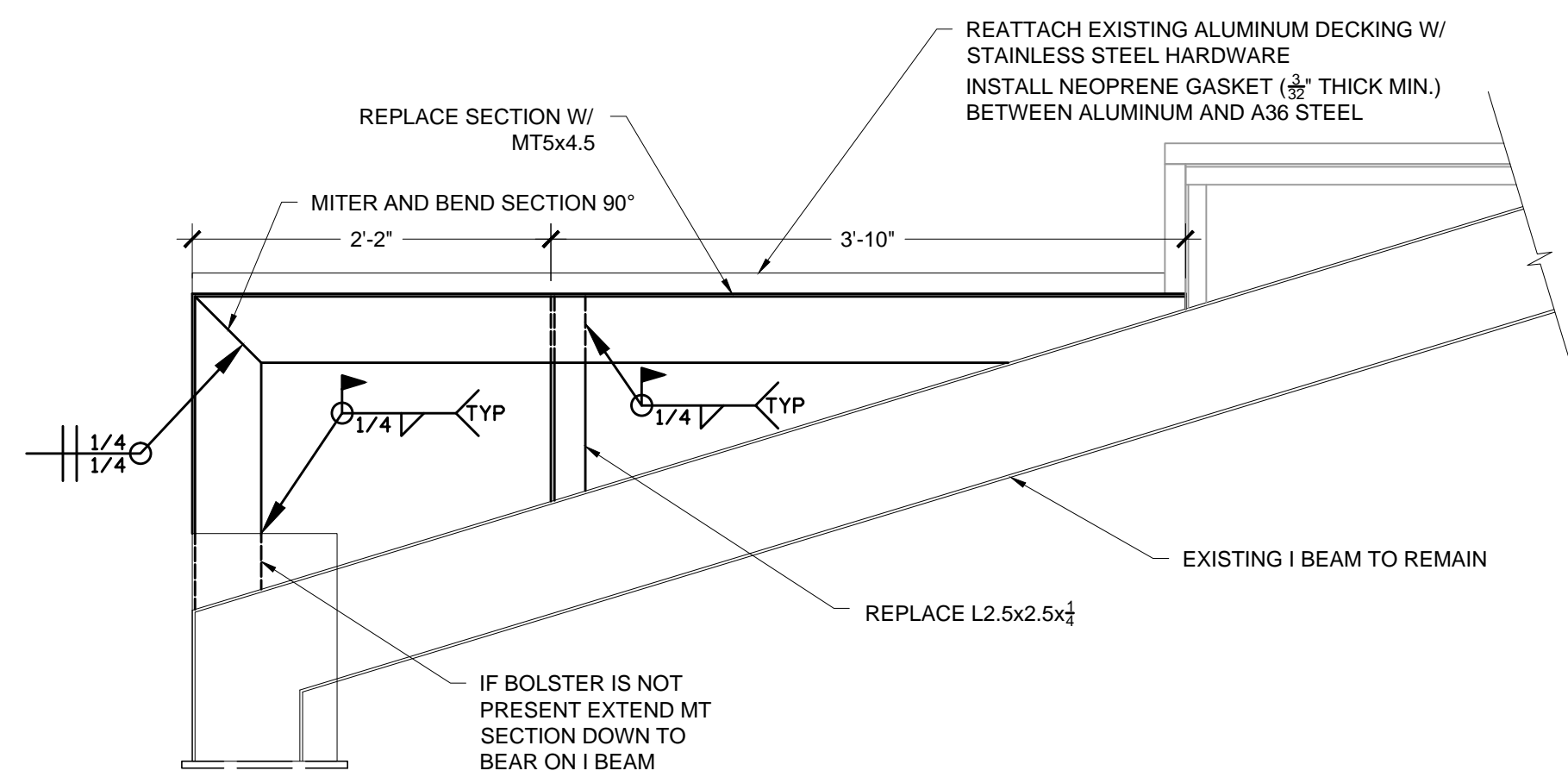
1. PRIOR TO SUBMITTING A BID, VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS ON THE JOB SITE, AND ALSO AFTER AWARD, BUT PRIOR TO THE START OF CONSTRUCTION.
2. ALL DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE, AND SHALL BE PROPERLY REMOVED FROM THE SITE, COMPLY WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE PROJECT.
3. ALL COST OF DEMOLITION INCLUDING PERMIT FEES, DISPOSAL FEES, ETC. ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF AND TO CONFORM WITH ALL APPLICABLE DEMOLITION AND DISPOSAL CODES, SAFETY REQUIREMENT, AND ENVIRONMENTAL PROTECTION REGULATIONS OF ANY GOVERNMENTAL BODY HAVING JURISDICTION OVER THE WORK.
5. PROVIDE SAFETY BARRICADES AS REQUIRED TO PROTECT THE SAFETY OF THE GENERAL PUBLIC AND WORKERS ASSOCIATED WITH THE PROJECT.
6. PROVIDE BRACING AND SHORING AS REQUIRED TO TEMPORARILY SUPPORT STRUCTURAL MEMBERS DURING CONSTRUCTION. BRACING & SHORING OF STRUCTURAL MEMBERS SHALL BE DESIGNED AND/OR APPROVED BY A PROFESSIONAL ENGINEER.
7. DEMOLISHED MATERIAL CLASSIFIED AS CLEAN FILL MAY BE DISTRIBUTED ONSITE WHEN SPECIFICALLY APPROVED BY THE ENGINEER.

STRUCTURAL STEEL NOTES

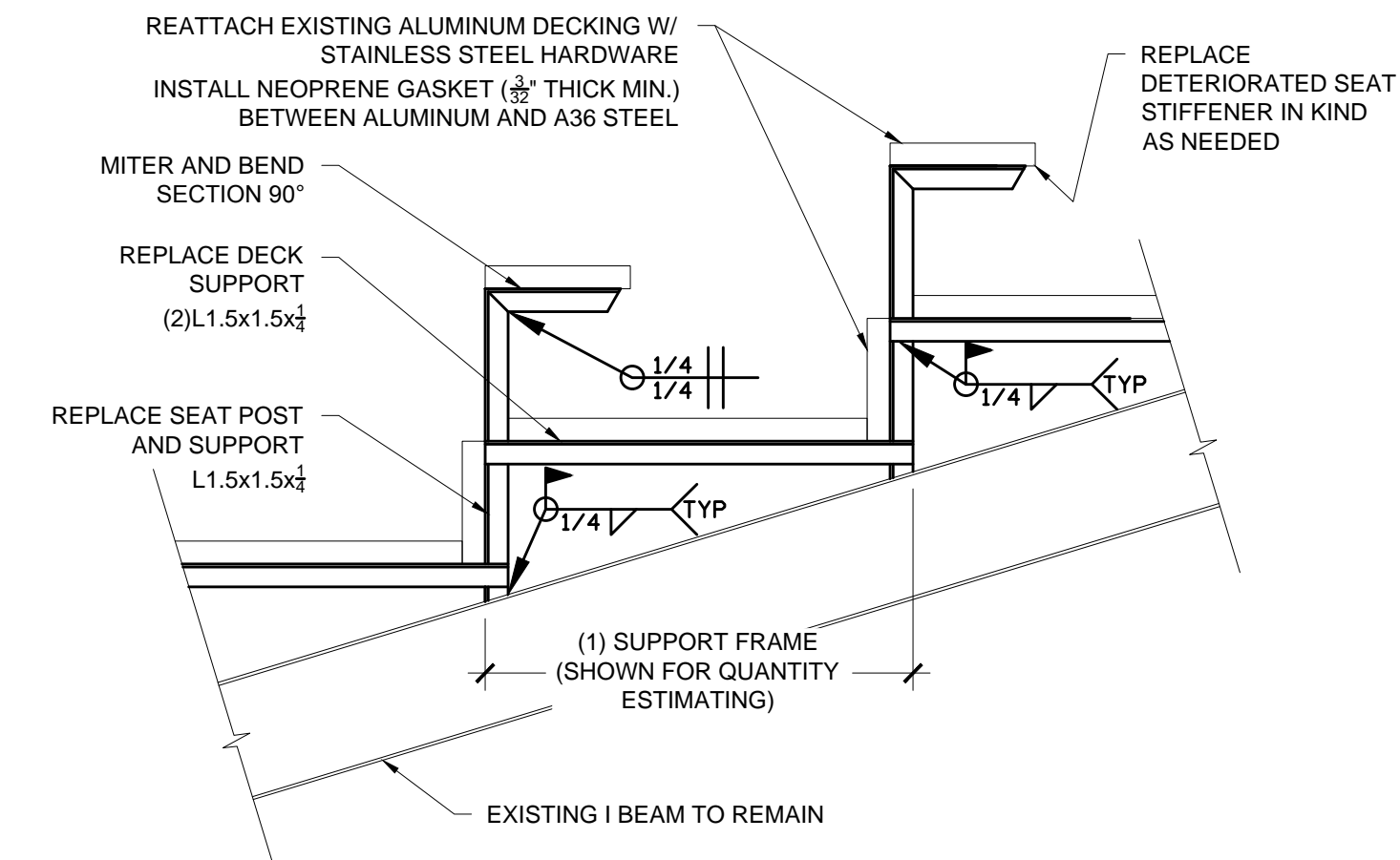
1. STRUCTURAL STEEL COMPONENTS SHALL BE AS DESCRIBED IN "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AISC 2010 OR LATER EDITION.
2. HSS SHAPES (STRUCTURAL TUBING) SHALL BE ASTM A500 (Fy = 46 KSI)
3. STEEL PLATES, FLANGES AND MISCELLANEOUS ELEMENTS SHALL BE ASTM A 36 (Fy = 36 KSI) UNLESS NOTED OTHERWISE.
4. W-SHAPES, C-SHAPES AND OTHER FORMED STEEL SHALL BE ASTM A992 (Fy = 50 KSI)
5. ALL WELDING SHALL BE IN CONFORMANCE WITH THE LATEST SPECIFICATIONS AWS D1.1/D1.1M:2010, STRUCTURAL WELDING CODE - STEEL.

STRUCTURAL STEEL COATING NOTES

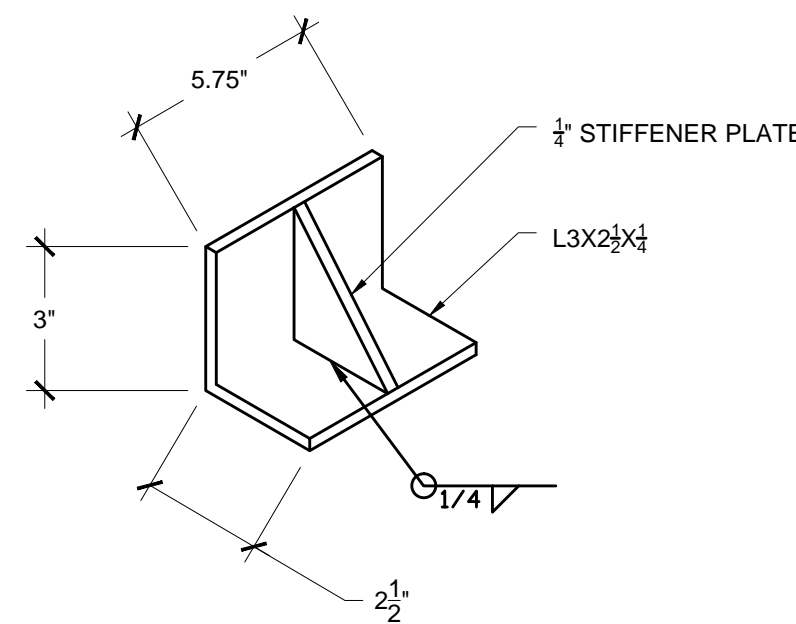
1. ALL SURFACES SHALL BE ABRASIVE BLAST CLEANED TO NEAR WHITE METAL (PER SSPC-SP10), EXPOSED STEEL.
2. ALL SURFACES SHALL BE PRIMED WITH POLYAMIDE EPOXY - ONE COAT (8.0 MILS DFT)
3. APPLY SEALANT AT ALL LOCATIONS WHERE STEEL IS WELDED, LAPPED, ETC. SEALANT MATERIAL SHALL BE COMPATIBLE WITH THE PAINTING SYSTEM.
4. TOP LAYER SHALL BE TWO (2) COAT POLYURETHANE (3.0 MILS DFT EACH).
5. TOP PAINT SHALL BE UV RESISTANT OR HAVE A UV RESISTANT COATING.
6. COLORS SHALL MATCH EXISTING OR BE SELECTED BY THE OWNER.
7. DENOLISHED MATERIAL CLASSIFIED AS CLEAN FILL MAY BE DISTRIBUTED ONSITE WHEN SPECIFICALLY APPROVED BY THE ENGINEER.



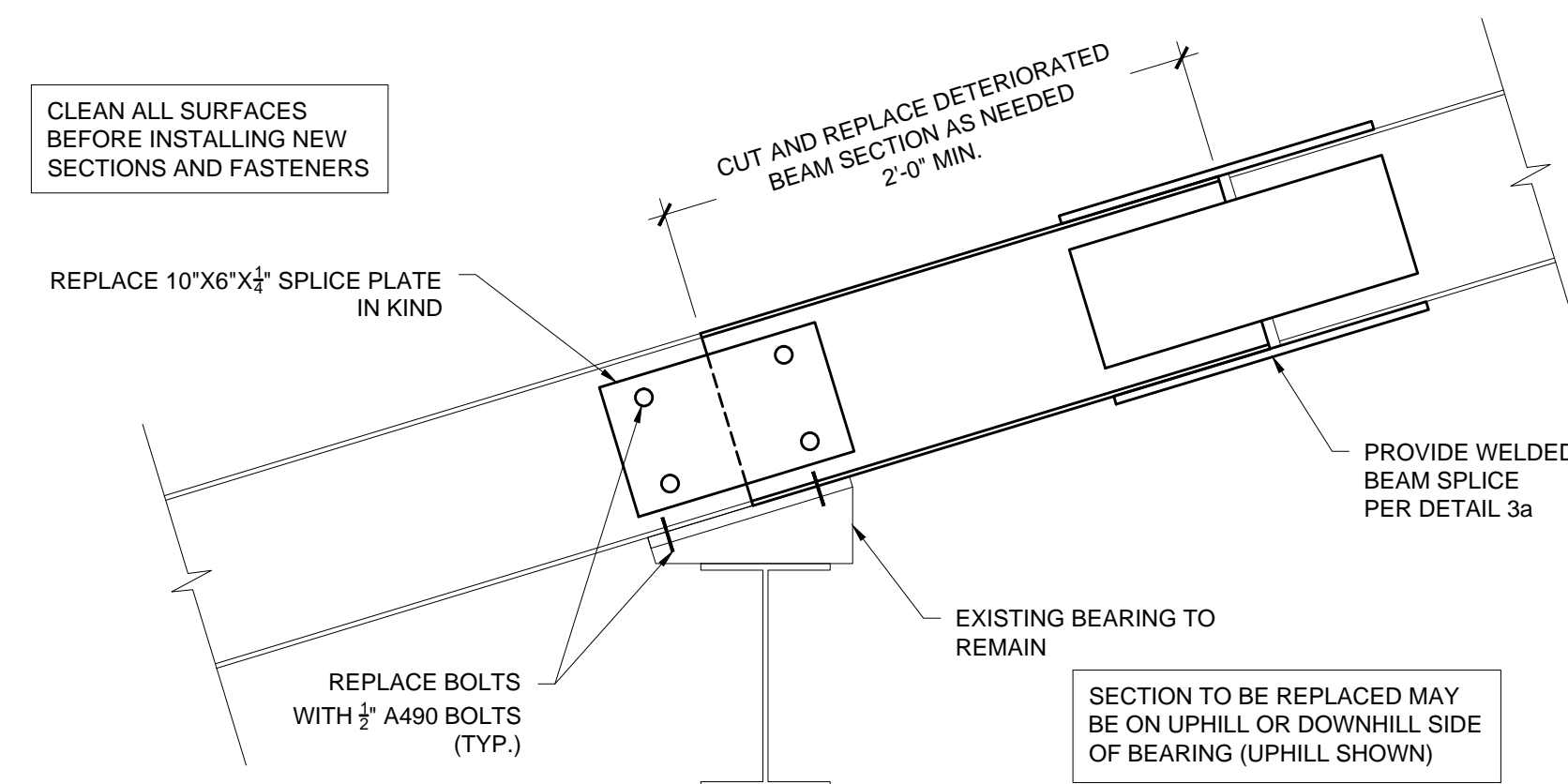
1 DETAIL - LOWER PLATFORM FRAMING
SCALE: 1"=1'-0"



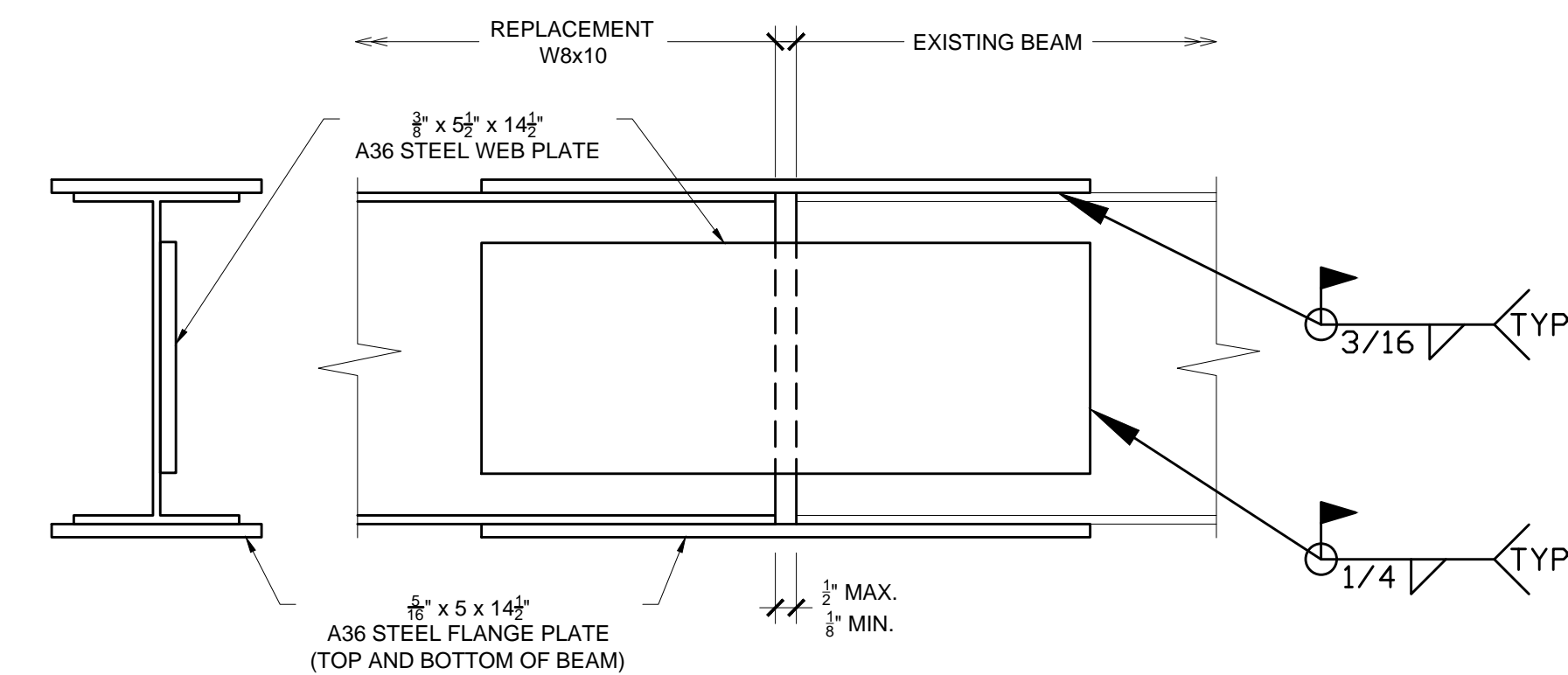
2 DETAIL - SECONDARY BLEACHER FRAMING
SCALE: 1"=1'-0"



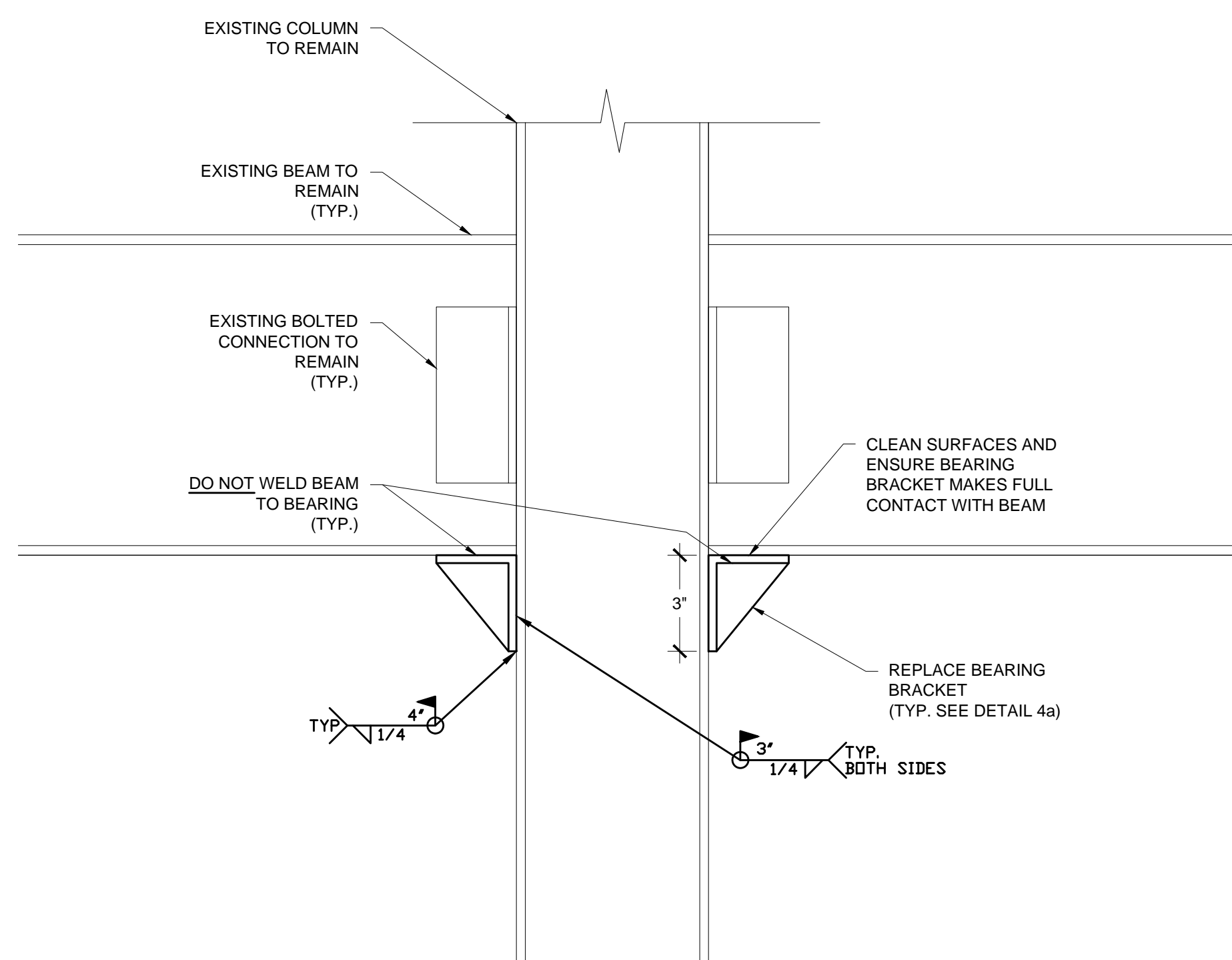
4a STEEL BEARING BRACKET
SCALE: N.T.S.



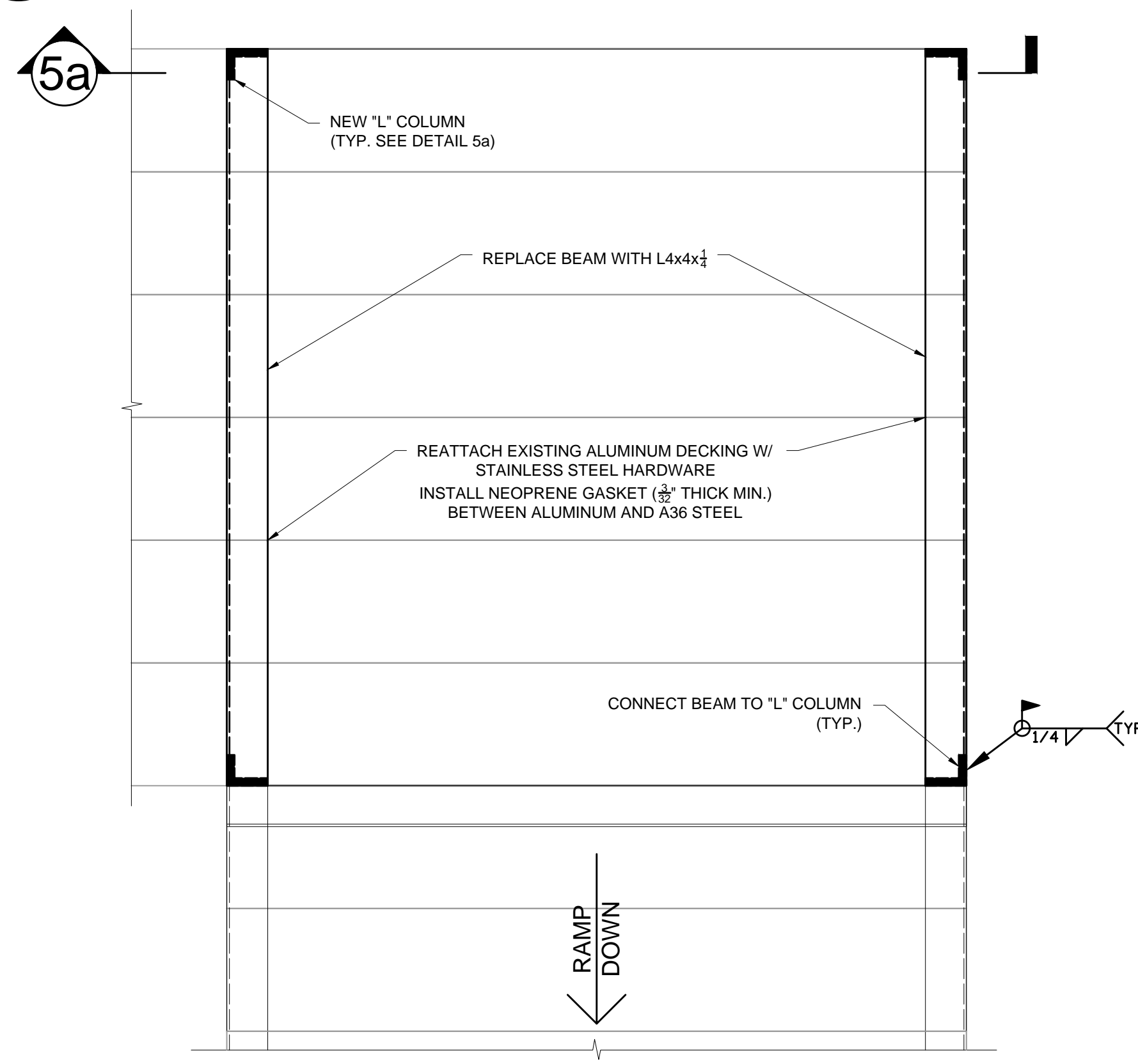
3 DETAIL - PRIMARY BEAM SPLICE
SCALE: 1-1/2"=1'-0"



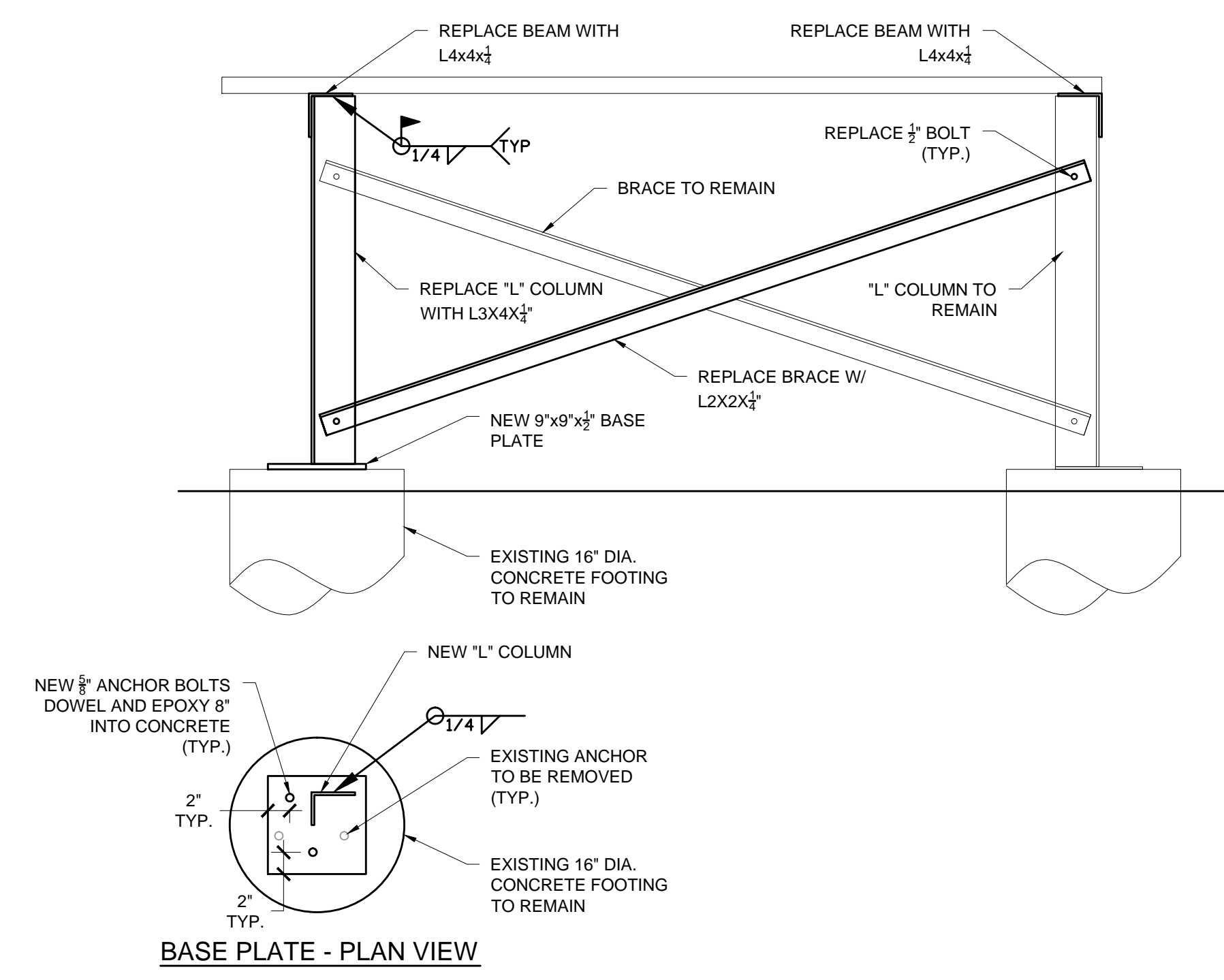
3a WELDED BEAM SPLICE
SCALE: 3"=1'-0"



4 DETAIL - BEARING BRACKET
SCALE: 3"=1'-0"



5 DETAIL - SOUTH ACCESS RAMP
SCALE: 1"=1'-0"



5a DETAIL - SOUTH ACCESS RAMP
SCALE: 1"=1'-0"

CIVIL ENGINEERING - REGULATORY PERMITTING - CONSTRUCTION MANAGEMENT

PEREZ ENGINEERING & DEVELOPMENT, INC.
CERTIFICATE OF AUTHORIZATION No. 8579

Key West Office
1010 East Kennedy Drive, Suite 202
Key West, Florida 33040
Tel: (305) 293-9440

REYNOLDS ENGINEERING SERVICES, INC.
Florida P.E. No. 46885
October 4, 2018
CERTIFICATE OF AUTHORIZATION No. 26397

REYNOLDS ENGINEERING SERVICES, INC.
Engineering Services, Inc.

REVISIONS: ORIGINAL - SEPTEMBER 2018

1	
2	
3	
4	
5	
6	

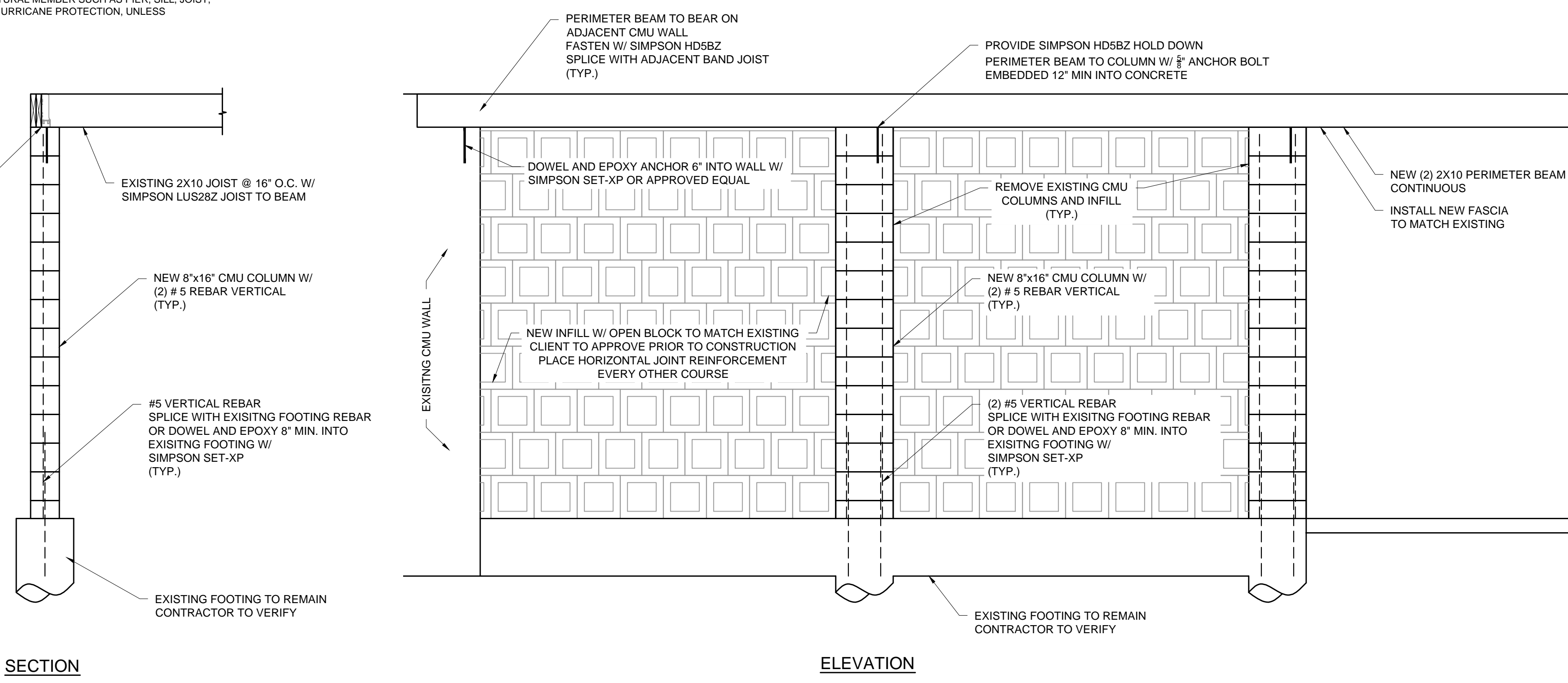
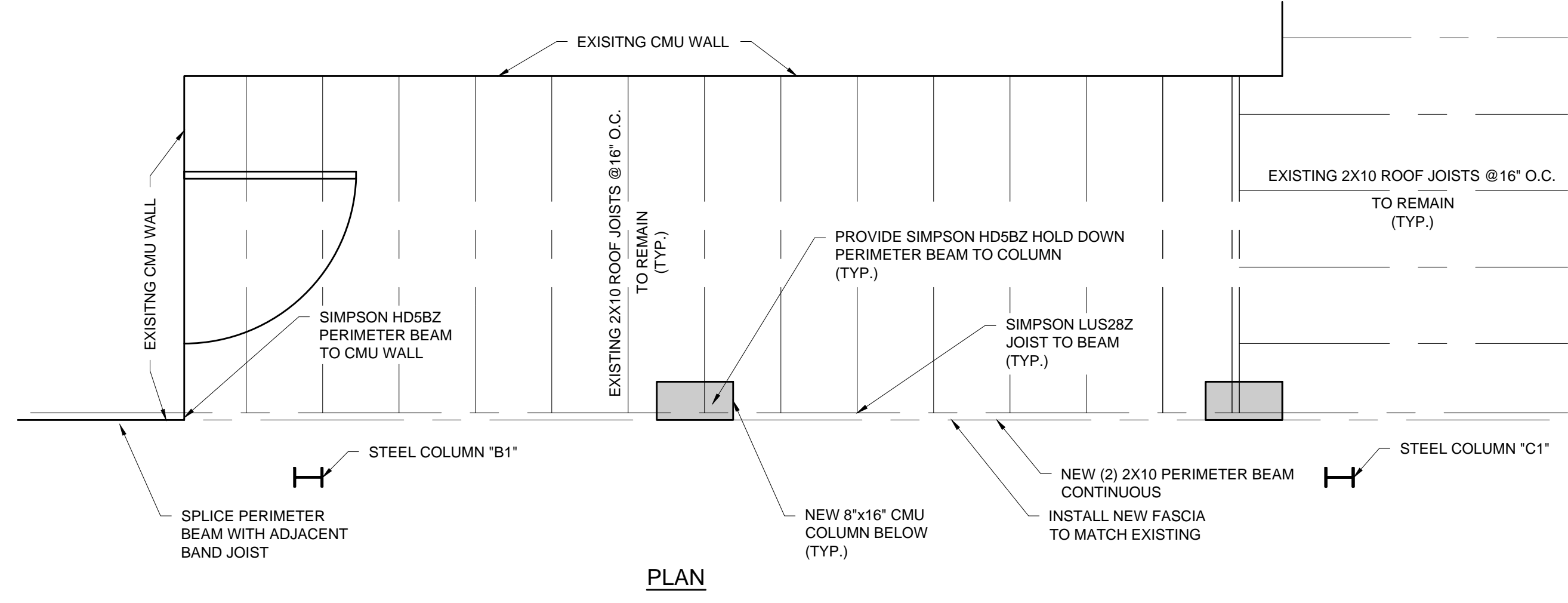
BLEACHER REPAIRS
TOMMY ROBERTS STADIUM
KENNEDY DRIVE
KEY WEST, FL 33040

MONROE COUNTY
SCHOOL DISTRICT
241 TRUMBO RD
KEY WEST, FL 33040

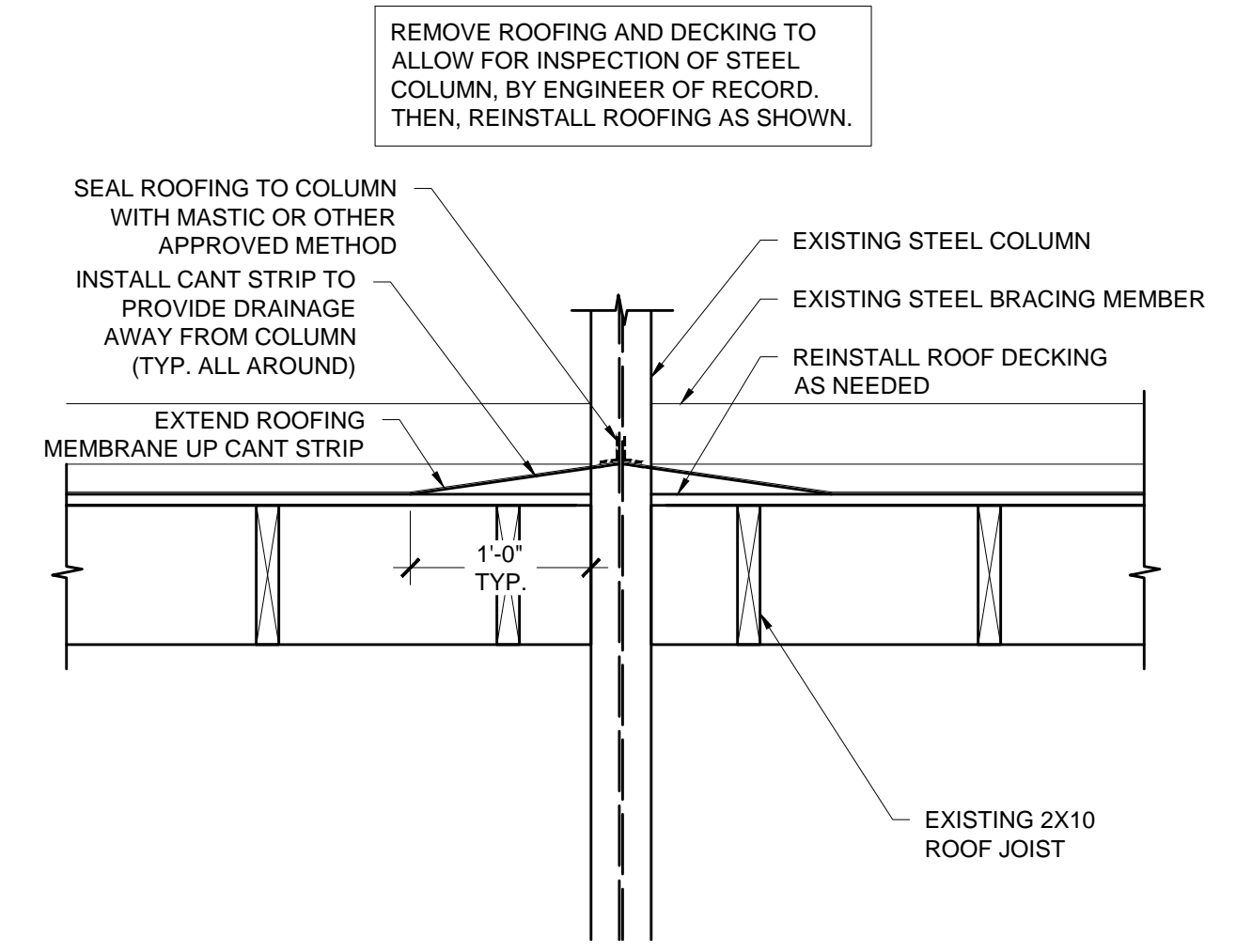
JOB NO.	181042
DRAWN	JDH
DESIGNED	JDH
CHECKED	JCR
SHEET	S-1

FOUNDATION & CONCRETE NOTES

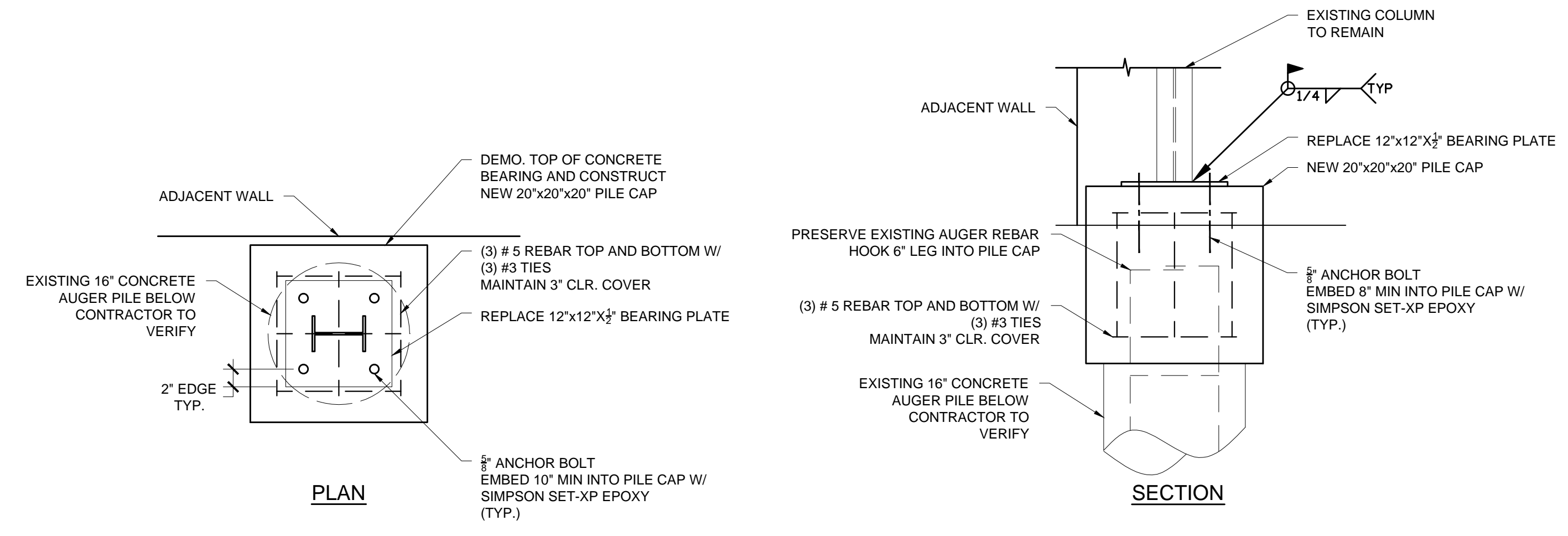
- ALL FOOTINGS ARE TO BE PLACED ON FIRM, UNDISTURBED, NATURAL ROCK UNLESS OTHERWISE NOTED.
- AUGER PILE DIAMETERS AND EMBEDMENT INTO ROCK SHALL BE NO LESS THAN 16" DIAMETER NOR LESS THAN 3' INTO ROCK WITH (4) 2x4 #4 BENT BARS WITH SHORT LEG TIED TO #5S AND LONG LEGS EXTENDED INTO SLAB IN FOUR DIRECTIONS UNLESS OTHERWISE NOTED. CONCRETE SHALL NOT BE MIXED IN PLACE IN A WET AUGER HOLE.
- CENTER ALL FOOTINGS UNDER WALLS, COLUMNS OR GRID LINES UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL FURNISH FIELD DENSITY TESTS ON COMPACTED FILL UNDER FOOTINGS AND SLABS PRIOR TO PLACING CONCRETE. A MINIMUM OF 3 REPRESENTATIVE TESTS SHALL BE TAKEN FOR EACH FOOTING AND SLAB POUR.
- ALL CAST-IN-PLACE CONCRETE SHALL BE MADE WITH TYPE III PORTLAND CEMENT, STONE AGGREGATE AND SHALL DEVELOP AT LEAST 4000 PSI COMPRESSIVE STRENGTH IN 28 DAYS. (UNLESS OTHERWISE NOTED.)
- SLABS, TOPPING, FOOTINGS, BEAMS AND WALLS SHALL NOT HAVE JOINTS IN THE HORIZONTAL PLANE. ANY STOP IN CONCRETE WORK MUST BE MADE AT THE CENTER OF SPAN WITH VERTICAL BULKHEADS AND SHEAR KEYS. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION JOINTS SHALL BE AS DETAILED OR OTHERWISE APPROVED BY THE ENGINEER.
- ALL CONCRETE WORK AND REINFORCING DETAILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318. EXPOSED EDGES OF CONCRETE SHALL HAVE 1/2" CHAMFER. USE STANDARD HOOKS ON DOWELS UNLESS OTHERWISE NOTED.
- CONCRETE FORMS SHALL BE WETTED IMMEDIATELY PRIOR TO PLACING CONCRETE.
- MIXING, PLACING AND CURING OF ALL CONCRETE MUST BE IN ACCORDANCE WITH ACI 309R. HOT WEATHER CONCRETING, NEW CONCRETE EXPOSED TO DIRECT SUNLIGHT SHALL BE SPRAYED OR MOPPED WITH A CURING COMPOUND TO SEAL IN MOISTURE AFTER THE FINISH HAS SET, OR THE CONCRETE COVERED AND SPRAYED.
- PROVIDE PLASTIC SLEEVES IN MASONRY PARTITIONS AND CONCRETE FOUNDATIONS AS INDICATED AND REQUIRED FOR UTILITY SERVICES. NO OTHER PIPE, CONDUIT OR ACCESSORY SHALL BE PLACED IN STRUCTURAL SLABS, COLUMNS OR BEAMS UNLESS SPECIFICALLY SHOWN ON STRUCTURAL DRAWINGS.
- PROVIDE MASONRY FILLED CELL OR CONCRETE COLUMN WITH (1) #5 REBAR FROM BEAM TO BEAM ON BOTH SIDES OF ALL EXTERIOR OPENINGS.
- ALL REINFORCING SHALL BE HIGH STRENGTH DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND SHALL BE LAPPED ONE FULL MESH AND AT SIDE AND END SPLICES AND WIRED TOGETHER.
- REINFORCEMENT COVERAGE SHALL BE 2" MINIMUM WHEN FORMS ARE USED AND 3" MINIMUM WHEN POURED AGAINST THE EARTH. UNLESS OTHERWISE NOTED.
- LAP SPLICES SHALL BE A MINIMUM OF 48 BAR DIAMETERS. MAKE ALL BARS CONTINUOUS AROUND CORNERS.
- PROVIDE ALL ACCESSORIES NECESSARY TO SECURE REINFORCING IN PROPER POSITION AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH ACI 318. ALL ACCESSORIES TO BE GALVANIZED.
- ALL UNIT MASONRY CONSTRUCTION AND DETAILS SHALL BE IN ACCORDANCE WITH ACI 530.
- CONCRETE BLOCK SHALL CONFORM WITH ASTM C90. MORTAR SHALL BE TYPE S, ASTM C270. GROUT SHALL CONFORM TO ASTM C47G, fg = 3,000 PSI.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE MINIMUM 3/4" GALVANIZED STEEL AND EMBEDDED MINIMUM 7" INTO CONCRETE. UNLESS NOTED OTHERWISE.
- MANUFACTURED STRAPS AND ANCHORS SHALL BE GALVANIZED AND SHALL BE FASTENED PER THE MANUFACTURER RECOMMENDATIONS. IN NO EVENT SHALL A STRUCTURAL MEMBER SUCH AS PIER, SILL, JOIST, PLATE, RAFTER OR TRUSS BE WITHOUT ANCHORAGE DEVICES FOR HURRICANE PROTECTION, UNLESS SPECIFICALLY NOTED AND ADDRESSED BY OTHER MEANS.



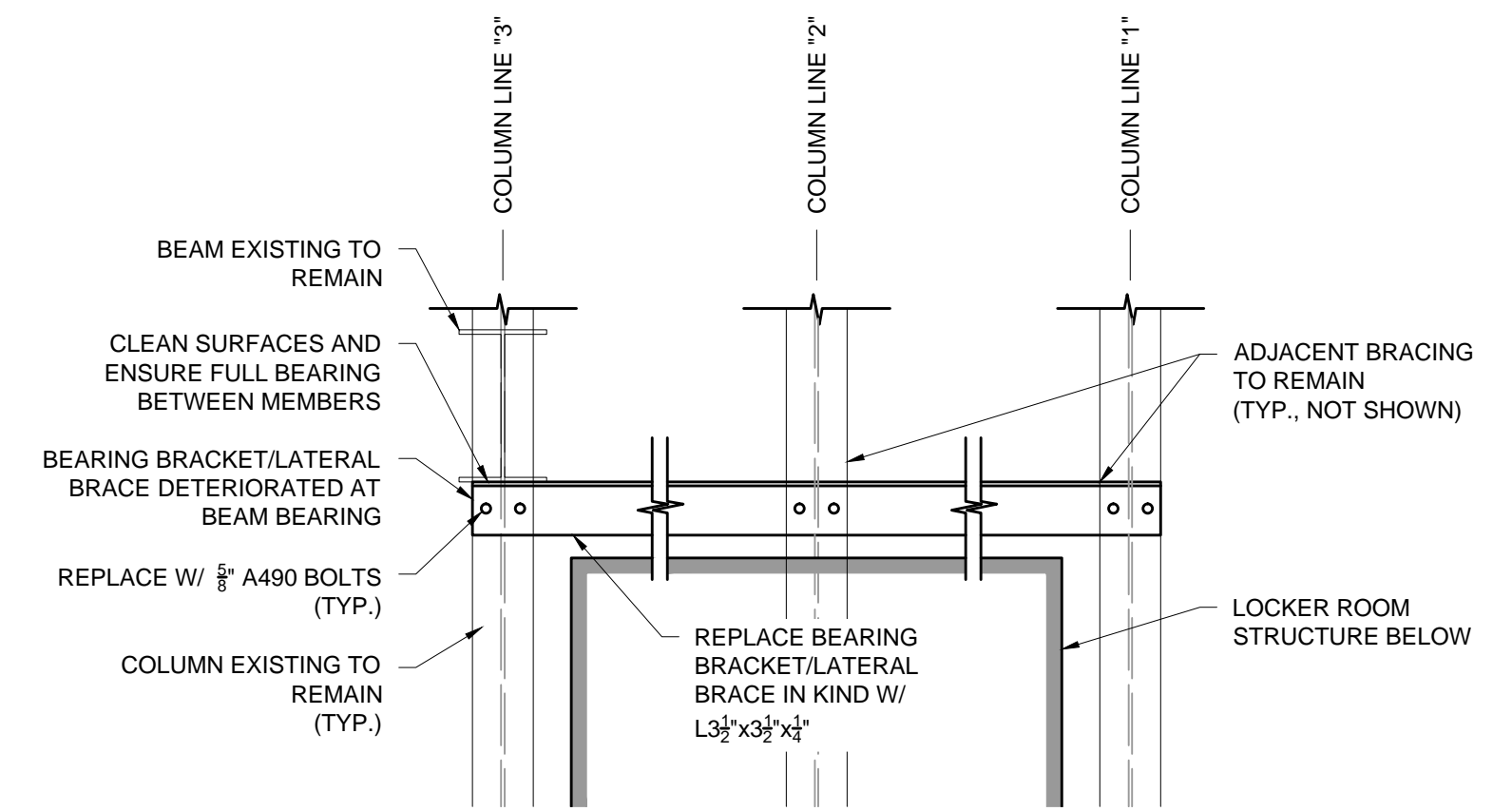
6 DETAIL - BLOCK WALL AT RESTROOM
SCALE: 1/2"=1'-0"



8 DETAIL - COLUMN ROOF PASS THROUGH
SCALE: 1"=1'-0"



7 DETAIL - COLUMN "B1" BEARING
SCALE: 1"=1'-0"



9 DETAIL - BEARING BRACKET/LATERAL BRACE
SCALE: 1"=1'-0"

Key West Office
1010 East Kennedy Drive, Suite 202
Key West, Florida 33040
Tel: (305) 293-9440

CIVIL ENGINEERING - REGULATORY PERMITTING - CONSTRUCTION MANAGEMENT
PEREZ ENGINEERING
& DEVELOPMENT, INC.
CERTIFICATE OF AUTHORIZATION No. 8579

JAMES C. REYNOLDS, P.E.
Florida P.E. NO. 46685
October 4, 2018
CERTIFICATE OF AUTHORIZATION No. 26997

Reynolds Engineering Services, Inc.

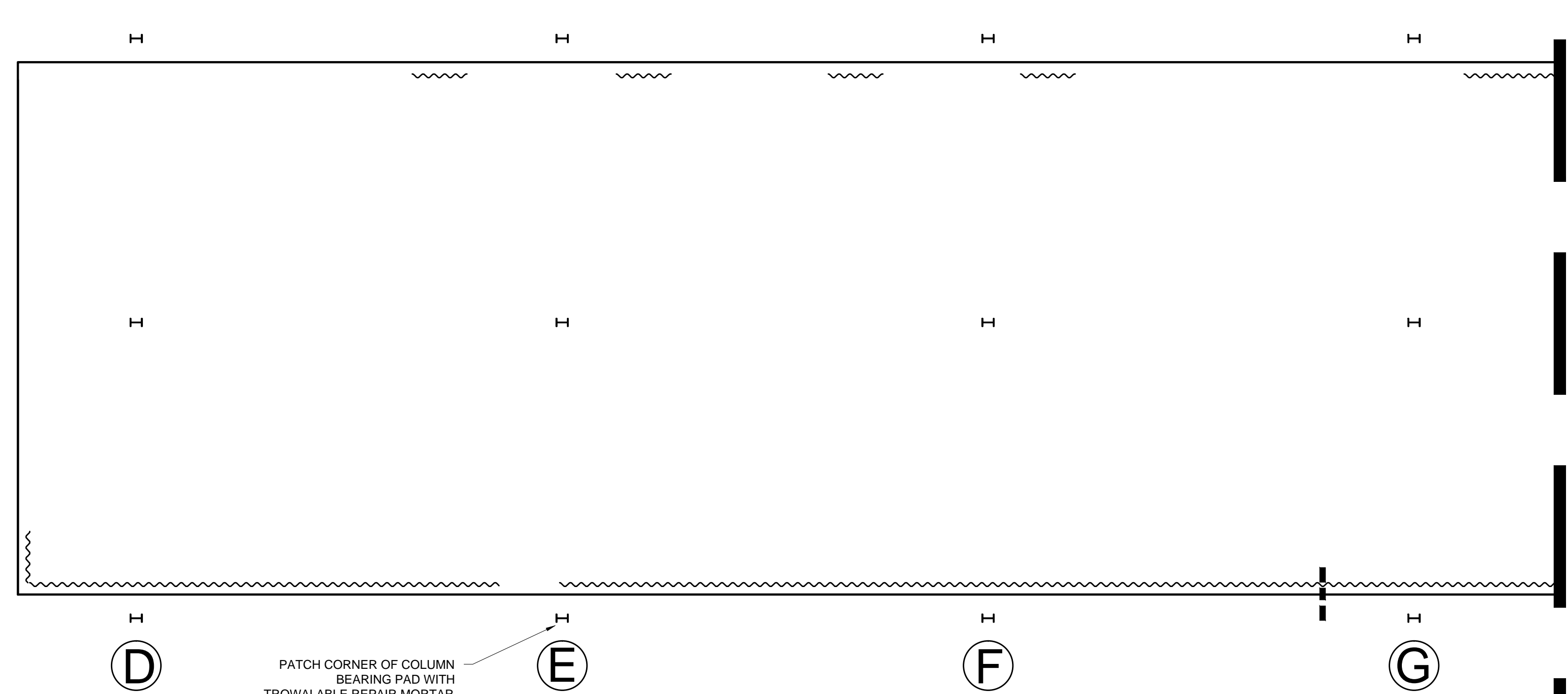
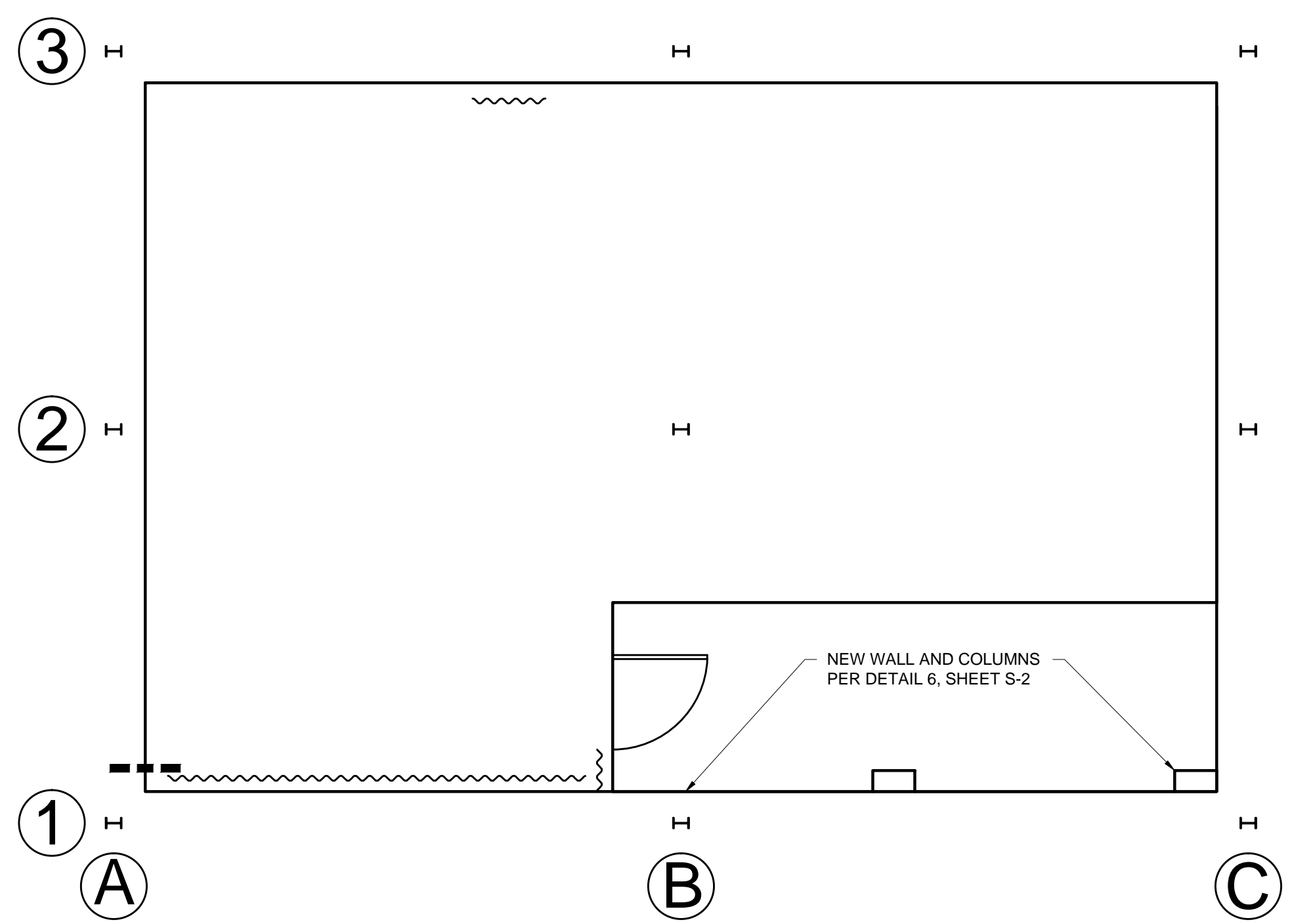
REVISIONS: ORIGINAL - SEPTEMBER 2018

1	
2	
3	
4	
5	
6	

BLEACHER REPAIRS
TOMMY ROBERTS STADIUM
KENNEDY DRIVE
KEY WEST, FL 33040

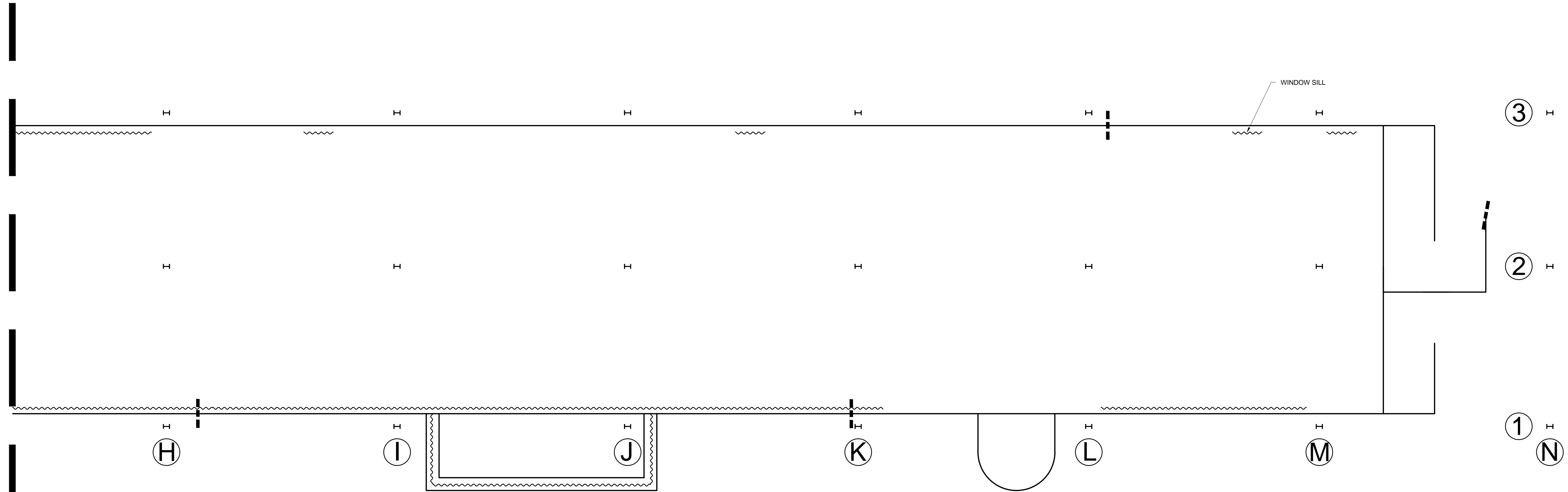
MONROE COUNTY
SCHOOL DISTRICT
241 TRUMBO RD
KEY WEST, FL 33040

JOB NO. 181042
DRAWN JDH
DESIGNED JDH
CHECKED JCR
SHEET S-2



CONCRETE DAMAGE LEGEND	
SYMBOL	DESCRIPTION
	BEAM/BOND BEAM
	COLUMN

PLAN - SPALLING REPAIR
NORTH END SCALE: N.T.S.



PLAN - SPALLING REPAIR
SOUTH END SCALE: N.T.S.

MATCH LINE

MATCH LINE

CIVIL ENGINEERING - REGULATORY PERMITTING - CONSTRUCTION MANAGEMENT
PEREZ ENGINEERING & DEVELOPMENT, INC.
 1010 East Kennedy Drive, Suite 202
 Key West, Florida 33040
 Tel: (305) 293-9440
 CERTIFICATE OF AUTHORIZATION No. 879

JAMES C. REYNOLDS, P.E.
 Florida P.E. NO. 46885
 October 4, 2018
 CERTIFICATE OF AUTHORIZATION No. 2897

Reynolds Engineering Services, Inc.
 PROFESSIONAL ENGINEER

REVISIONS: ORIGINAL - SEPTEMBER 2018

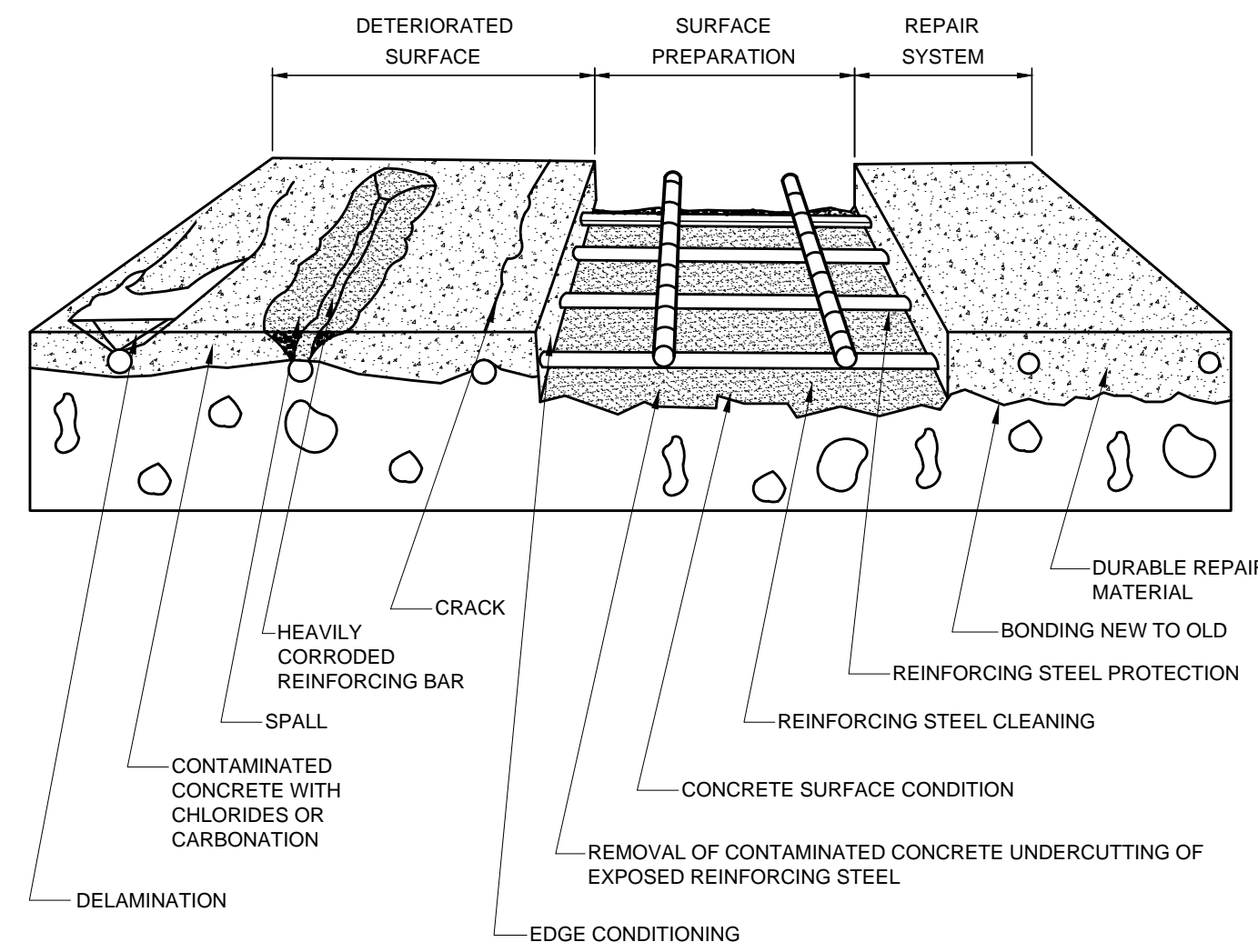
1	
2	
3	
4	
5	
6	

BLEACHER REPAIRS
TOMMY ROBERTS STADIUM
KENNEDY DRIVE
KEY WEST, FL 33040

MONROE COUNTY
SCHOOL DISTRICT
241 TRUMBO RD
KEY WEST, FL 33040

JOB NO.	181042
DRAWN	JDH
DESIGNED	JDH
CHECKED	JCR
SHEET	S-3

ANATOMY OF SURFACE REPAIRS



CONCRETE REPAIR SPECIFICATIONS

SECTION 1 - SCOPE OF WORK

- 1.1 THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, UTILITIES AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK DESCRIBED HEREIN. THE WORK INCLUDES REMOVING UNSOUND CONCRETE, CLEANING ALL AREAS UPON WHICH REPAIR MORTAR IS TO BE PLACED, CLEANING AND COATING REINFORCEMENT STEEL, REPLACING REINFORCEMENT STEEL, PLACING REPAIR MORTAR, SHORING AS REQUIRED AND ANY WORK NECESSARY TO PROVIDE THE WORK COMPLETE AND READY FOR USE.
- 1.2 THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE, INCLUDING ACCESS AND AVAILABILITY OF UTILITIES. ALL SITE CONDITIONS WILL BE VERIFIED AND ANY DEVIATIONS WILL BE REPORTED TO THE ENGINEER OF RECORD. THE CONTRACTOR SHALL VERIFY THAT NO CONCEALED ELECTRICAL CONDUITS OR PRE-STRESSING/TENSIONING TENDONS EXIST.
- 1.3 THE CONTRACTOR IS RESPONSIBLE FOR SECURING AND PROVIDING ALL PERMITS REQUIRED FOR THE WORK. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, REGULATIONS AND LAWS. IF THERE IS A CONFLICT BETWEEN THESE SPECIFICATIONS AND ANY SUCH CODES, ORDINANCES, REGULATIONS AND LAWS, THE MOST STRINGENT WILL GOVERN.
- 1.4 THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR ALL EXISTING FEATURES THAT ARE TO REMAIN AND APPROVED SHORING FOR TEMPORARY SUPPORT OF STRUCTURAL MEMBERS. SHORING SHALL BE ENGINEERED TO SAFELY AND ADEQUATELY SUPPORT STRUCTURAL LOADINGS TO BE ENCOUNTERED UNTIL THE WORK IS COMPLETE. THE CONTRACTOR WILL REMOVE ALL DEVICES USED FOR PROTECTION AFTER THE WORK IS COMPLETE AND WILL RETURN THE SITE TO ITS ORIGINAL CONDITION.
- 1.5 PROOF OF INSURANCE AND LICENSE WILL BE TENDERED TO THE OWNER PRIOR TO COMMENCING WORK.

SECTION 2 - MATERIALS

- 2.1 THE MATERIALS SHALL BE DELIVERED TO THE SITE IN ORIGINAL PACKAGING BEARING IDENTIFICATION OF THE PRODUCT, MANUFACTURER, BATCH NUMBER, AND EXPIRATION DATE AS APPLICABLE. THE PRODUCTS SHALL BE PROTECTED FROM DAMPNESS, CONSTRUCTION ACTIVITY, PRECIPITATION, AND DIRECT SUNLIGHT IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. HANDLE ALL PRODUCTS WITH APPROPRIATE PRECAUTIONS AND CARE AS DESCRIBED ON THE MATERIAL SAFETY DATA SHEET (MSDS).
- 2.2 THE STRUCTURAL REPAIR MORTAR SYSTEMS SHALL BE FACTORY PRE-MEASURED, POLYMER AND/OR SILICA FUME MODIFIED, SHRINKAGE-COMPENSATED, CEMENT BASED PRODUCTS OR PLANT MIX APPROVED BY ENGINEER. THE STRUCTURAL REPAIR MORTAR SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR THE SPECIFIC APPLICATION USED.
- 2.2.1 THE CURED REPAIR MORTAR SYSTEMS SHALL HAVE THE FOLLOWING PROPERTIES: (BASIS OF DESIGN: MASTEREMACO S 488CL OR MASTEREMACO S 440MC FOR FORM AND POUR APPLICATIONS)
 - a. DRYING SHRINKAGE (ASTM C686): MAXIMUM 0.1% AT 28 DAYS.
 - b. SLANT SHEAR BOND STRENGTH (ASTM C1042): MINIMUM 1 DAY 800 PSI, 7 DAY 1700 PSI, 28 DAY 2200 PSI.
 - c. MODULUS OF ELASTICITY (ASTM C469): MINIMUM 2.2 MILLION PSI, 28 DAYS.
 - d. RAPID CHLORIDE PERMEABILITY (ASTM C1202): MAXIMUM 1000 COULOMBS
 - e. COMPRESSIVE STRENGTH (ASTM C109): 28 DAY 6000 - 7000 PSI
 - f. FLEXURAL STRENGTH (ASTM C348): MINIMUM 1 DAY 650 PSI, 7 DAY 950 PSI, 28 DAY 1300 PSI.
 - g. SPLIT TENSILE STRENGTH (ASTM C496): MINIMUM 28 DAY 600 PSI.
- 2.3 REINFORCING STEEL
 - a. ASTM A615, GRADE 60
- 2.4 AGGREGATE,
 - A. PER MORTAR MANUFACTURER SPECIFICATIONS
 - B. CURING COMPOUND, PER MORTAR MANUFACTURER SPECIFICATIONS
 - C. CHEMICAL-TYPE HARDENING COMPOUND FUNCTIONAL AS A CONCRETE CURE AND SEAL.

SECTION 3 - EXECUTION

- 3.1 CONCRETE REPAIR
 - 3.1.1 REMOVE UNSOUND CONCRETE AND ALL CONCRETE NECESSARY TO COMPLETELY EXPOSE ANY CORRODED STEEL. UNSOUND CONCRETE AND ANY LOOSE AND/OR DELETERIOUS MATERIAL SHALL BE MECHANICALLY REMOVED USING A 15-POUND CLASS PNEUMATIC HAMMER OR HYDRODEMOLITION. ALL CONCRETE ADJACENT TO CORRODED STEEL SHALL BE REMOVED TO A DEPTH THAT WILL PERMIT REPAIR MORTAR TO BOND TO THE ENTIRE PERIPHERY OF THE STEEL. A MINIMUM 3/4-INCH CLEARANCE SHALL BE REQUIRED OR 1/4-INCH LARGER THAN THE LARGEST REPAIR AGGREGATE, WHICHEVER IS GREATER.
 - 3.1.2 THE REINFORCING STEEL SHALL BE MECHANICALLY CLEANED TO BARE WHITE METAL BY SANDBLASTING OR WIREBRUSHING. THE STEEL SHALL BE FREE OF RUST, GREASE, OIL, AND OTHER BOND INHIBITING MATTER. STEEL THAT HAS LOST MORE THAN 15% OF ITS CROSS SECTIONAL AREA SHALL BE REPAIRED, BY MEANS OF REPLACEMENT OR SUPPLEMENTAL REINFORCEMENT. NEW STEEL SHALL BE CLEANED IN THE SAME MANNER DESCRIBED ABOVE. CARE SHALL BE EXERCISED TO PREVENT CUTTING, STRETCHING, OR DAMAGING ANY EXPOSED STEEL. ALL EXPOSED AND NEW STEEL SHALL BE COATED WITH CORROSION PROTECTION MATERIAL.
 - 3.1.3 THE REPAIR AREA PERIMETER SHALL BE SAW-CUT TO ELIMINATE FEATHERED EDGES. THE SAW-CUTS SHALL BE 1/2"-INCH DEEP OR LESS AS REQUIRED TO AVOID CUTTING REINFORCING STEEL (MINIMUM 1/4"-INCH).
 - 3.1.4 ALL WORK SHALL BE IN CONFORMANCE WITH THE INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI) AND THE MANUFACTURER'S RECOMMENDATIONS.
 - 3.1.5 REPORT ANY CRACKS THAT APPEAR IN THE INTERFACE AREA OF THE PATCH OR OVERLAY TO THE ENGINEER. REPAIR ALL CRACKS AND EXPANSION/CONTROL JOINTS AS DIRECTED BY THE ENGINEER.
- 3.2 MIXING

THE MIXERS SHALL BE CLEAN AND THE INGREDIENTS ACCURATELY PROPORTIONED. THE REPAIR MORTAR SHALL BE MIXED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AT THE SITE WITH THE SPECIFIC EQUIPMENT REQUIREMENTS. THE MATERIAL DISCHARGED FROM THE MIXER SHALL BE UNIFORM IN COMPOSITION AND CONSISTENCY.
- 3.3 PLACEMENT
 - 3.3.1 STRUCTURAL REPAIR MORTAR

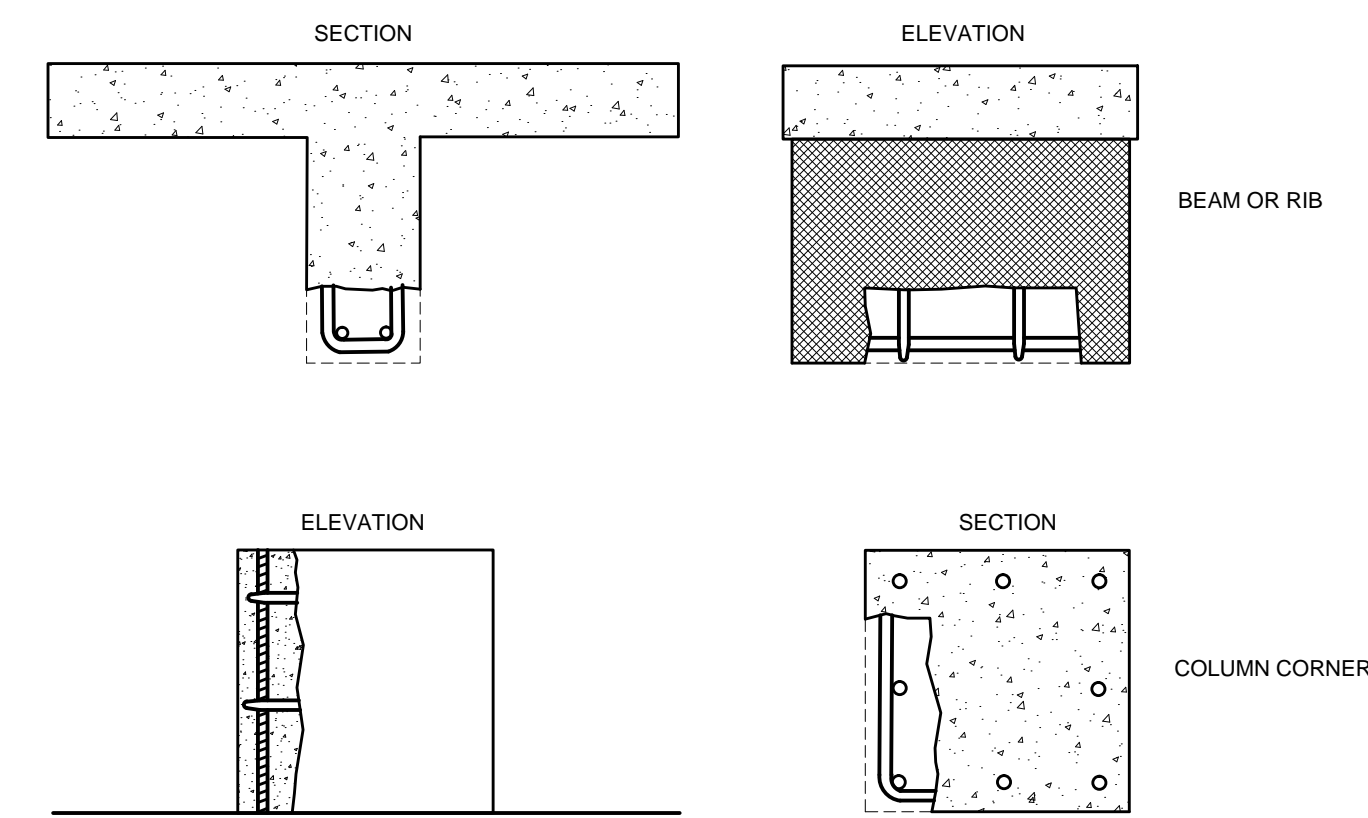
THE WORK SHALL NOT BE EXECUTED UNDER CONDITIONS OF PRECIPITATION OR TEMPERATURES ABOVE 90 DEGREES FAHRENHEIT. INSPECT ALL SURFACES TO RECEIVE REPAIR MORTARS TO ENSURE SUBSTRATE IS CLEAN, SOUND, PROPERLY CURED, AND FREE OF STANDING WATER, COATINGS, CURING COMPOUNDS, FOREIGN PARTICLES, OIL, DUST, GREASE, LAITANCE OR OTHER MATERIAL THAT WILL ADVERSELY AFFECT THE BONDING OF THE REPAIR MATERIALS. AT THE TIME OF APPLICATION, THE SUBSTRATE SHALL BE SATURATED SURFACE DRY WITH NO STANDING WATER. PLACEMENT OF REPAIR MORTAR SHALL BE AS SPECIFIED BY THE MATERIAL SUPPLIER, INCLUDING THE USE OF MANUFACTURER RECOMMENDED BONDING AGENT, IF APPLICABLE.
 - 3.4 CURING

ADHERE TO THE MANUFACTURER'S RECOMMENDATIONS, LIMITATIONS AND CAUTIONS FOR THE STRUCTURAL REPAIR MORTAR.
- 3.5 SAFETY

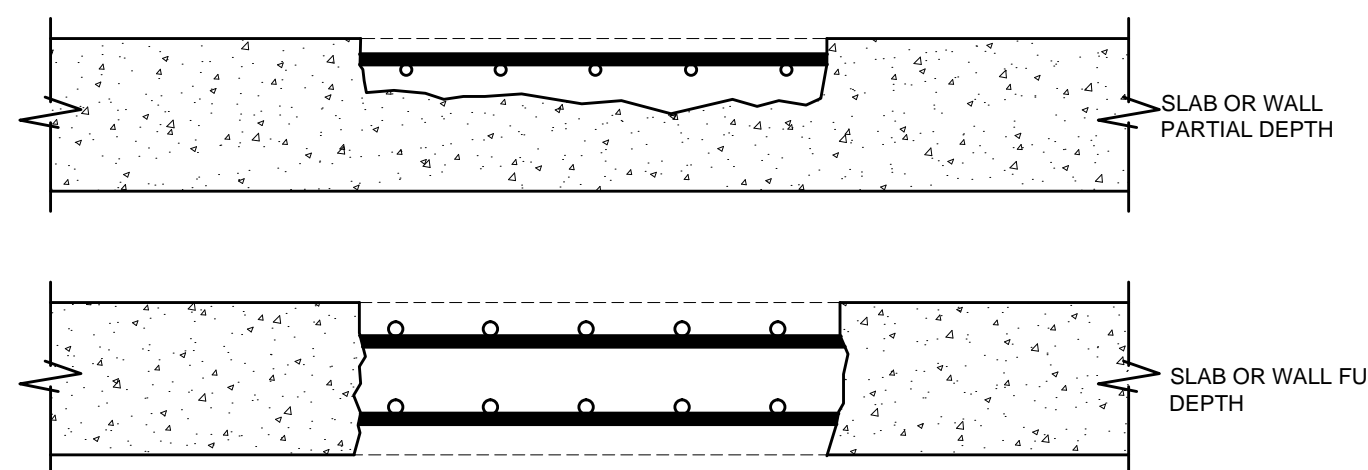
SHORING, SCAFFOLDING, LADDERS, BELTS, HARNESSSES, LIFELINES AND OTHER SAFETY EQUIPMENT (SUCH AS RESPIRATORY, SKIN, AND EYE PROTECTION) USED TO REDUCE HAZARDS TO WORKERS SHALL BE IN COMPLIANCE WITH THE REGULATIONS ESTABLISHED BY THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
- 3.6 QUALITY CONTROL

COMPRESSIVE STRENGTH TESTS: A MINIMUM OF ONE SET OF THREE CYLINDERS, FOR EACH 100 CUBIC FEET OF MATERIAL BATCHED, SHALL BE TESTED AT 28 DAYS. TESTING SHALL BE IN ACCORDANCE WITH ASTM C109. TEST RESULTS WILL BE RETURNED WITHIN 24 HOURS. ANY MATERIAL THAT FALLS BELOW THE SPECIFIED LEVELS SHALL BE REPLACED ENTIRELY.

REMOVAL GEOMETRY



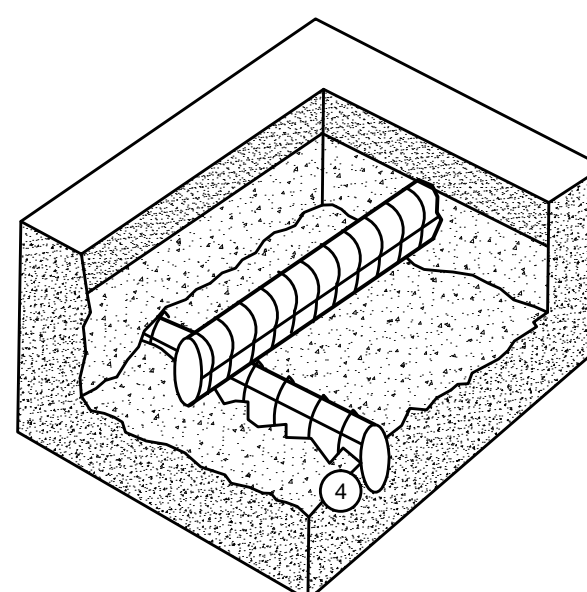
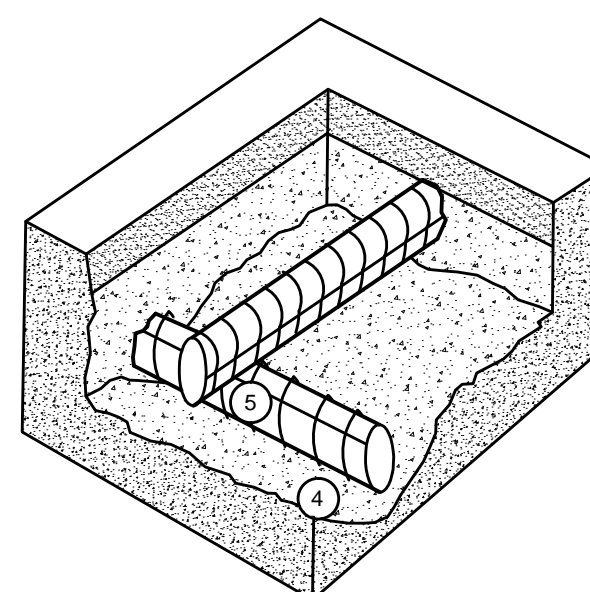
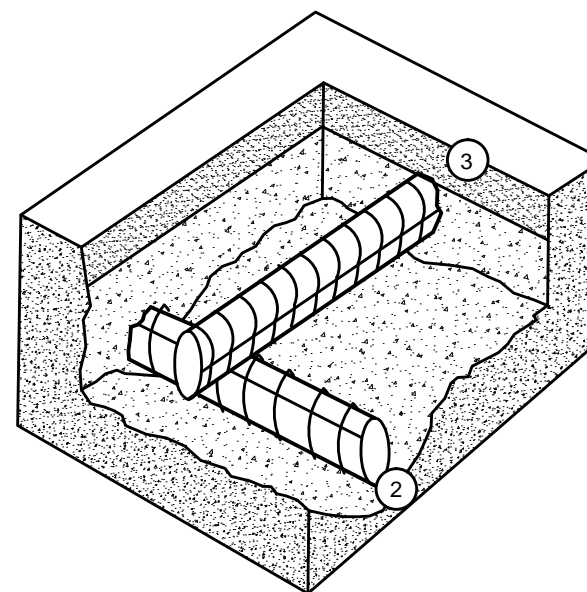
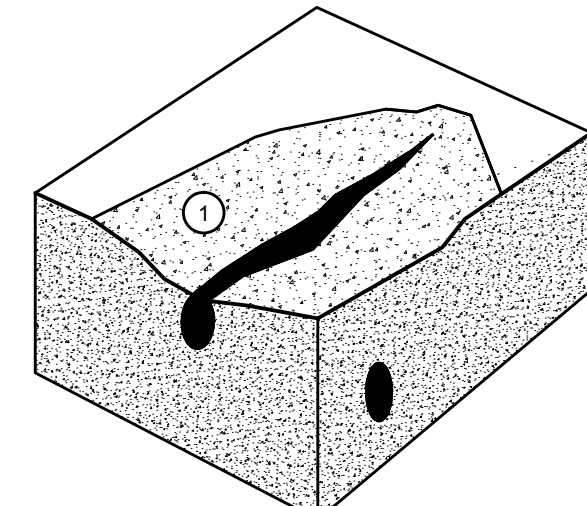
FOR COLUMNS, REMOVAL OF CONCRETE WITHIN THE CORE (AREA WITHIN THE REBAR TIES), SHALL BE THE MINIMUM REQUIRED TO REMOVE DELETERIOUS MATERIALS AND REHABILITATE REBAR. IF THE REPAIR REQUIRES REMOVAL OF MORE THAN 15% OF THE COLUMN CORE, CONTACT THE ENGINEER OF RECORD.



EXPOSING AND UNDERCUTTING OF REINFORCING STEEL

THESE DETAILS ARE APPLICABLE TO HORIZONTAL, VERTICAL AND OVERHEAD LOCATIONS. THEY ARE ALSO APPLICABLE TO REMOVAL BY HYDRO-DEMOLITION, HYDROMILLING, AND ELECTRIC, PNEUMATIC OR HYDRAULIC IMPACT BREAKERS.

- 1 REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE CORRODED REINFORCING STEEL.
- 2 ONCE INITIAL REMOVALS ARE MADE, PROCEED WITH THE UNDERCUTTING OF ALL EXPOSED CORRODED BARS. UNDERCUTTING WILL PROVIDE CLEARANCE FOR UNDER BAR CLEANING AND FULL BAR CIRCUMFERENCE BONDING TO SURROUNDING CONCRETE. AND WILL SECURE THE REPAIR STRUCTURALLY. PROVIDE MINIMUM 3/4" (19MM) CLEARANCE BETWEEN EXPOSED REBARS AND SURROUNDING CONCRETE OR 1/4" (6MM) LARGER THAN THE LARGEST AGGREGATE IN REPAIR MATERIAL, WHICHEVER IS GREATER.
- 3 CONCRETE REMOVALS SHALL EXTEND ALONG THE BARS TO LOCATIONS ALONG THE BAR FREE OF BOND INHIBITING CORROSION, AND WHERE THE BARS IS WELL BONDED TO SURROUNDING CONCRETE.
- 4 IF NON-CORRODED REINFORCING STEEL IS EXPOSED DURING THE UNDERCUTTING PROCESS, CARE SHALL BE TAKEN NOT TO DAMAGE THE BAR'S BOND TO SURROUNDING CONCRETE. IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF THE BAR SHALL BE REQUIRED.
- 5 ANY REINFORCEMENT WHICH IS LOOSE SHALL BE SECURED IN PLACE BY TYING TO OTHER SECURED BARS OR BY OTHER APPROVED METHODS.

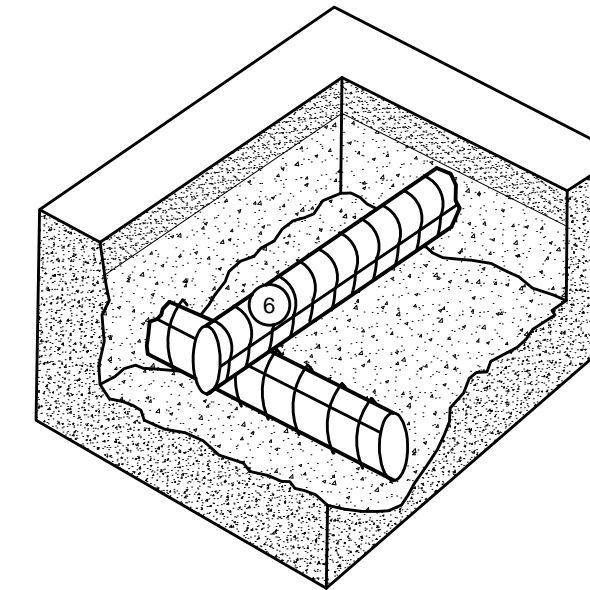
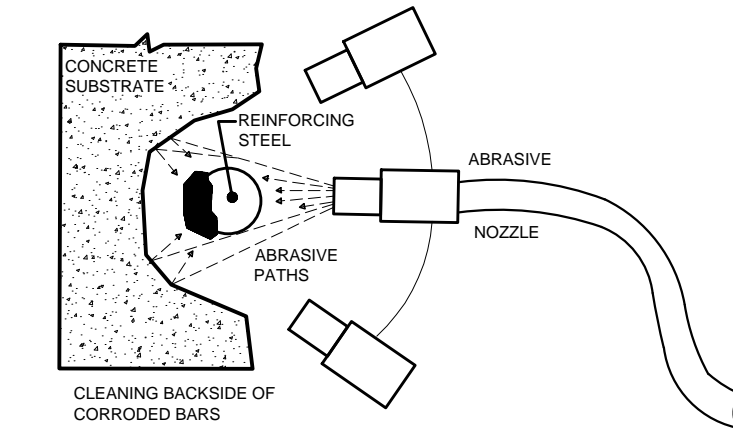


PROVIDE SHORING OF MEMBERS AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB/BEAM CONNECTION TO COLUMNS. SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER.

CLEANING AND REPAIR OF REINFORCING STEEL

CLEANING OF REINFORCING STEEL

- 6 ALL HEAVY CORROSION AND SCALE SHOULD BE REMOVED FROM THE BAR AS NECESSARY TO PROMOTE MAXIMUM BOND OF REPLACEMENT MATERIAL. OIL FREE ABRASIVE BLAST IS THE PREFERRED METHOD. A TIGHTLY BONDED LIGHT RUST BUILD-UP ON THE SURFACE IS USUALLY NOT DETRIMENTAL TO BOND. STEEL SHALL BE COATED WITH A CORROSION PROTECTION MATERIAL AND PREPARED PER THE MANUFACTURES SPECIFICATIONS.

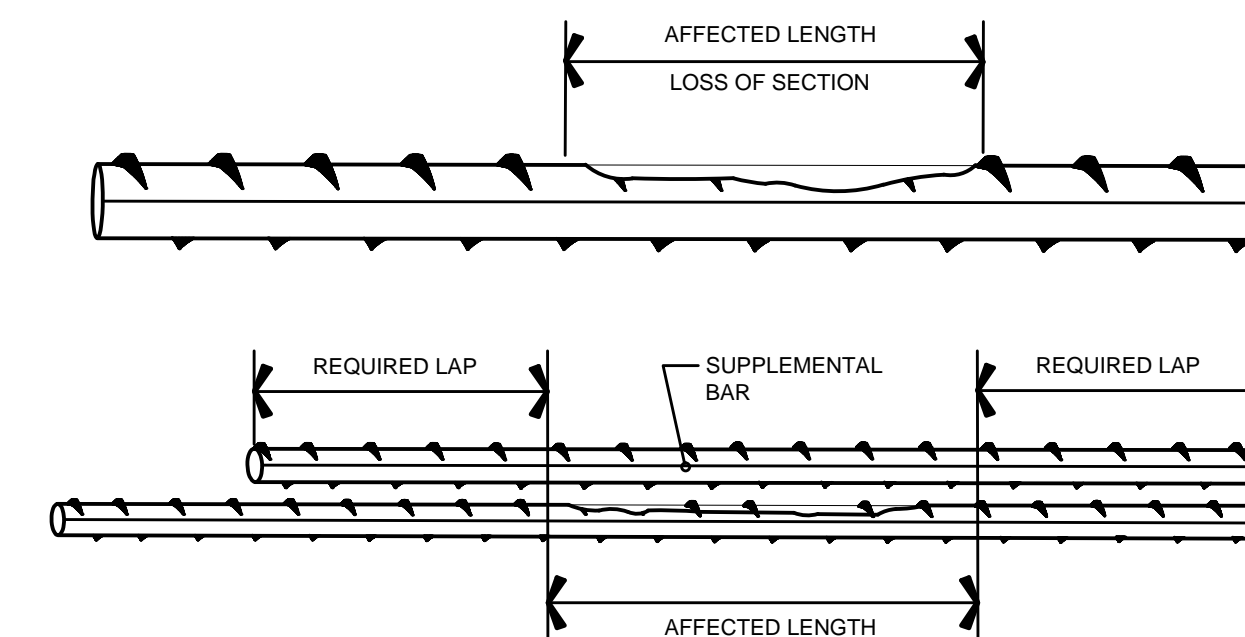


REPAIR OF REINFORCING STEEL DUE TO LOSS OF SECTION

IF REINFORCING STEEL HAS LOST MORE THAN 15% OF ITS CROSS SECTIONAL AREA, CONSULT THE ENGINEER OF RECORD. ONE OF THE FOLLOWING METHODS SHOULD BE USED TO REPAIR THE REINFORCING STEEL:

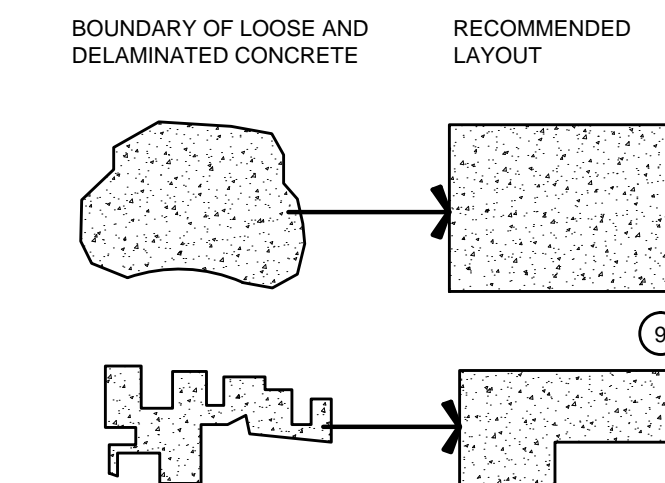
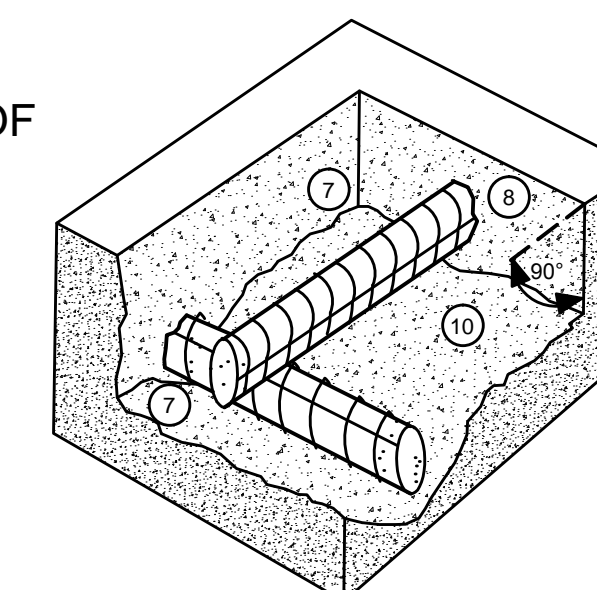
- COMPLETE BAR REPLACEMENT, OR
- ADDITION OF SUPPLEMENTAL BAR OVER AFFECTED SECTION.

NEW BARS MAY BE MECHANICALLY SPLICED OR LAP SPLICED TO OLD BARS. LAP LENGTHS SHALL BE DETERMINED IN ACCORDANCE WITH ACI 318. ALSO REFER TO CRSI AND AASHTO MANUAL.



EDGE AND SURFACE CONDITIONS OF CONCRETE

- 7 REMOVE DELAMINATED CONCRETE, UNDERCUT REINFORCING STEEL (REFER TO "EXPOSING AND UNDERCUTTING OF REINFORCING STEEL", REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
- 8 AT EDGE LOCATIONS, PROVIDE RIGHT ANGLE CUTS TO THE CONCRETE SURFACE WITH EITHER OF THE FOLLOWING METHODS:
 - SAWCUT 1/2" (13MM) OR LESS AS REQUIRED TO AVOID CUTTING REINFORCING STEEL.
 - USE POWER EQUIPMENT SUCH AS HYDRODEMOLITION OR IMPACT BREAKERS. AVOID FEATHER EDGES.
- 9 REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARED CORNERS.
- 10 AFTER REMOVALS AND EDGE CONDITIONING ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, CONCRETE SLURRY, LOOSELY BONDED AGGREGATES) BY ABRASIVE OR HIGH PRESSURE WATERBLASTING WITH OR WITHOUT ABRASIVE. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE, OR ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
- 7 IN HYDRODEMOLITION IS USED, CEMENT AND PARTICULATE SLURRY MUST BE REMOVED FROM THE PREPARED SURFACES BEFORE SLURRY HARDENS.



BAR SPLICING SCHEDULE

BEAMS & COLUMNS		SLABS, WALLS, AND FTGS.	
BAR SIZE	LAP SPLICE LENGTH (INCHES)	BAR SIZE	LAP SPLICE LENGTH (INCHES)
#3	15"	#3	12"
#4	20"	#4	16"
#5	26"	#5	20"
#6	33"	#6	26"
#7	45"	#7	36"
#8	59"	#8	47"
#9	74"	#9	60"
#10	95"	#5 (MASONRY)	30"

CIVIL ENGINEERING - REGULATORY PERMITTING - CONSTRUCTION MANAGEMENT

Key West Office
1010 East Kennedy Drive, Suite 202
Key West, Florida 33040
Tel: (305) 293-9440

PEREZ ENGINEERING & DEVELOPMENT, INC.
CERTIFICATE OF AUTHORIZATION No. 8579

James C. Reynolds, P.E.
Florida P.E. No. 46695
October 4, 2018
CERTIFICATE OF AUTHORIZATION No. 28997

Reynolds Engineering Services, Inc.

REVISIONS: ORIGINAL - SEPTEMBER 2018

1
2
3
4
5
6

BLEACHER REPAIRS
TOMMY ROBERTS STADIUM
KENNEDY DRIVE
KEY WEST, FL 33040

MONROE COUNTY
SCHOOL DISTRICT
241 TRUMBO RD
KEY WEST, FL 33040

JOB NO. 181042
DRAWN JDH
DESIGNED JDH
CHECKED JCR
SHEET S-4