



# FIRE DAMAGE-RELATED REPAIRS TO THREE PEDESTRIAN BRIDGES

**FEMA PUBLIC ASSISTANCE ID: 36379**

CONTRACT No. C02229

## GENERAL NOTES

1. ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CITY OF SANTA ROSA STANDARD PLANS, THE CONSTRUCTION SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, THE SPECIAL PROVISIONS FOR THIS PROJECT AND THE STATE STANDARD SPECIFICATIONS AND STANDARD PLANS. THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING ALL STANDARDS PERTAINING TO THIS PROJECT.
2. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-642-2444 NO LESS THAN 2 WORKING DAYS PRIOR TO ANY EXCAVATION FOR MARK OUTS OF EXISTING UNDERGROUND FACILITIES IN ACCORDANCE WITH SECTION 5-1.36E OF THE SPECIAL PROVISIONS.
3. THE LOCATIONS OF UNDERGROUND UTILITIES AND OTHER OBSTACLES SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL POTHOLE AND DETERMINE THE EXACT LOCATION OF ALL POTENTIAL CONFLICTS IN ACCORDANCE WITH USA LAWS AND THESE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS. IF ANY UNMARKED UTILITIES ARE ENCOUNTERED, OR IF UNABLE TO LOCATE A MARKED UTILITY AFTER POTHOLES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THAT UTILITY AND THE ENGINEER, PER SECTION 15-7 OF THE SPECIAL PROVISIONS.
4. ALL SEWER MANHOLES, MAINLINE CLEANOUTS AND WATER VALVES THAT ARE ON ACTIVE SYSTEMS SHALL BE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES AND SHALL BE BROUGHT TO GRADE WITHIN 48 HOURS OF PAVING, PER SECTION 15-2.10B OF THE SPECIAL PROVISIONS. *per*
5. THE CONTRACTOR SHALL PROTECT AND PRESERVE CITY MONUMENTS. ~~THE CONTRACTOR SHALL COORDINATE WITH THE CITY ENGINEER 10 WORKING DAYS IN ADVANCE FOR REFERENCING OF EXISTING MONUMENTS TO BE DISTURBED. THE CONTRACTOR SHALL RECONSTRUCT DISTURBED MONUMENTS IN ACCORDANCE WITH CITY STANDARD 280.~~ *per*
6. OVERHEAD UTILITY SERVICE DROPS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL INVESTIGATE THE SITE AND BE AWARE OF LIMITED CLEARANCES UNDER OVERHEAD UTILITY LINES AND LOW HANGING TREE BRANCHES. THE CONTRACTOR'S TRUCKS AND EXCAVATION EQUIPMENT SHALL BE SIZED SO THAT OVERHEAD WIRES AND TREE BRANCHES ARE NOT DAMAGED.
7. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF AS GENERATED AND AT NO TIME SHALL THE CONTRACTOR PLACE EXCAVATED MATERIAL AT THE WORK SITE, PER SECTION 71-1.03 OF THE SPECIAL PROVISIONS. *per*
8. THE CONTRACTOR SHALL ONLY REMOVE EXISTING TREES OR SHRUBS AS NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. FOR CLARITY OF EXISTING SUBSURFACE CONDITIONS, NOT ALL CROSSWALKS, STOP BARS, OR EXISTING PAVEMENT MARKINGS ARE SHOWN ON THE PLANS. TRAFFIC STRIPES, RAISED PAVEMENT MARKERS AND PAVEMENT MARKINGS DAMAGED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED PER CITY OF SANTA ROSA TRAFFIC STANDARDS PART III, TRAFFIC MARKINGS. PATCHING OF DAMAGED MARKINGS WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER. ALL DAMAGED RAISED PAVEMENT (NOT REFLECTIVE) MARKERS MUST BE CERAMIC. *per*



BEFORE EXCAVATING  
CALL U.S.A.  
UNDERGROUND SERVICE ALERT  
800-642-2444  
TWO WORKING DAYS BEFORE ALL  
PLANNED WORK OPERATIONS

# INDEX TO SHEETS

SHEET NO.	TITLE
CVR	COVER SHEET, NOTES & ABBREVIATIONS
SN1	STRUCTURAL NOTES AND SPECIFICATIONS
SD1	STRUCTURAL DETAILS - FRANCES NIELSEN
SD2*	STRUCTURAL DETAILS - PARKER HILL

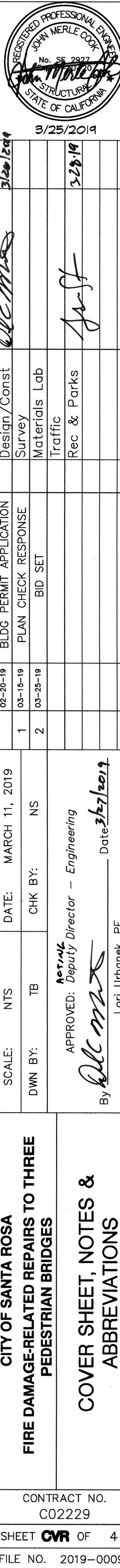
\* - SHEET SD2 IS NOT PART OF APPROVED CITY BUILDING PERMIT PLANS

## ABBREVIATIONS

ADA	AMERICAN DISABILITY ACT	NAD	NORTH AMERICAN DATUM
AGG	AGGREGATE	NGVD	NATIONAL GEODETIC VERTICAL DATUM
BM	BENCHMARK	NTS	NOT TO SCALE
BSW	BACK OF SIDEWALK	O.C.	ON CENTER
CL	CENTER LINE	OHW	OVERHEAD WIRES
CY	CUBIC YARDS	PED.	PEDESTRIAN
C.S.P.	CALTRANS STANDARD PLANS	PB	PULLBOX
CSR	CITY OF SANTA ROSA	PCC	PORTLAND CEMENT CONCRETE
E	EASTING	PG&E	PACIFIC GAS & ELECTRIC COMPANY
ELECT	ELECTRICAL	PT#	POINT NUMBER
EX.	EXIST	R	RADIUS
GALV	GALVANIZED	RC	RELATIVE COMPACTION
HMA	HOT MIX ASPHALT	SL	STREET LIGHT
LF	LINEAR FEET	STD	STANDARD
LG	LIP OF GUTTER	TC	TOP OF CURB
MAX	MAXIMUM	TYP	TYPICAL
MIN	MINIMUM	USA	UNITED STATES OF AMERICA
MON	MONUMENT	W/ WTR	WATER
N	NORTHING	WV	WATER VALVE

## RECORD PLAN DATA

PROJECT START:	WATER SERVICE TYPE: NONE
PROJECT END:	MANUFACTURER: N/A
GEN. CONTRACTOR:	FIRE HYDRANT TYPE: NONE
SUPERINTENDENT:	MANUFACTURER: N/A
UNDERGROUND	INSPECTOR:
CONTRACTOR:	CONSTRUCTION
FOREMAN:	MANAGER:
SEWER PIPE TYPE: NONE	RECORD PLANS BY:
MANUFACTURER: N/A	
SEWER FITTINGS	ADDITIONAL INFO:
MANUFACTURER: NONE	
M.H. MANUFACTURER: NONE	
WATER PIPE TYPE: NONE	
MANUFACTURER: NONE	
WATER VALVE	
MANUFACTURER: NONE	
WATER FITTINGS	
MANUFACTURER: NONE	

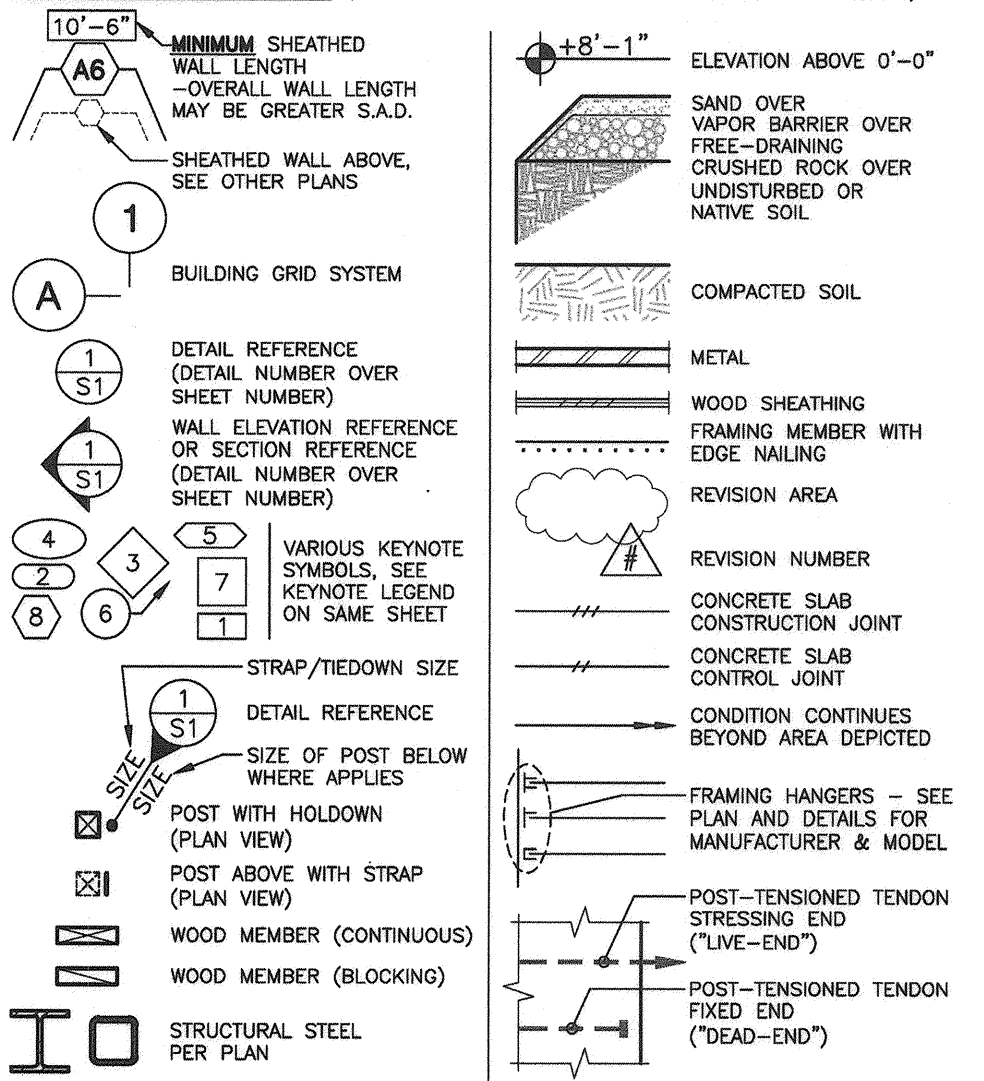




## ABBREVIATIONS

∠ or L	Angle	FIN OR	Finish Grade	OPT	Optional
∠	At	FHMS	Flat Head	O.S.B.	Oriented Strand Board
A.B.	Anchor Bolt(s)	FHWS	Flat Head	PHSMS	Pan Head Sheet Metal Screw
ABV	Above	F.J.	Floor Joist	PARL	Parallel
AC	Asphaltic Concrete	F.O.C.	Face of Concrete	PERP	Perpendicular
ADDL	Additional	F.O.P.	Face of Post	P.D.F.	Powder Driven Fastener
ADJ	Adjacent	F.O.S.	Face of Sill	PERF	Perforated
AFF	After Finish	F.O.H.C.	Free of Heart	PLY	Plywood
ALT	Alternate	FRMG	Form	P.P.	Partial Penetration
APA	American Plywood Association	F.S.	For-Side	P.L.F.	Pounds Per Lineal Foot
APRX	Approximate	FT	Foot / Feet	P.S.I.	Pounds Per Square Inch
ASTM	American Society for Testing and Materials	FTG	Footing	P.S.F.	Pounds Per Square Foot
A.T.R.	All-Threaded Rod	GA	Gauge or Gage	P.T.	Preservative Treated
AYC	Alaska Yellow Cedar	GALV	Galvanized	P-T	Post-Tension(ed) (ing)
		GR.BM.	Grade Beam	(#)	Quantity (Number of items)
		G.T.	Girder Truss	R	Radius
		GYP BD	Gypsum Board	R.C.	Relative Compaction
BFF	Below Finish Floor	H.D.G.	Hot-Dipped Galvanized	REIN	Reinforcing
BLDG	Building	HDR	Hanger	RETD	Required
BLK	Block(ing)	HGR	Horizontal	REV	Revision
BLW	Below	HORIZ	Horizontal	RO	Rough Opening
BM	Beam	H.S.	High Strength	RHWS	Round Head Machine Screw
B.N.	Boundary Nail	HSS	Hollow Structural Section (Tube)	RHWS	Round Head Wood Screw
BOT	Bottom	HT	Height	RWD	Redwood
BRC	Bearing			S.A.D.	See Architectural Drawings
BTWN	Between			S.C.D.	See Civil Drawings
CANT	Can't			S.M.D.	See Mechanical Drawings
CBC	California Building Code			SCHD	Schedule
C.J.	Center Joint			S.S.D.	See Structural Drawings
C.L.G.	Ceiling			SCL	Structural Composite Lumber (See CARPENTRY Notes)
CLR	Clear			SHT	Sheet
C.M.U.	Concrete Masonry Unit			SHTC	Sheet Metal Flashing
COL	Column			SMF	Similar
COLL	Collector			SIM	Similar
COMB	Combination			SPCS	Specifications
CONC	Concrete			SQ	Square
COND	Condition			S.S.	See Structural
CONN	Connection			STAG	Staggered
CONST	Construction			STD	Standard
CONT	Continuous			STF	Stiffener
C.P.	Complete Penetration			STL	Stainless Steel
CSK	Countersink			STL	Steel
				STR	Structural
				SIP	Structural Insulated Panel
				S.W.	Structural Sheathed Wall
				SYMM	Symmetrical
				T&B	Top & Bottom
				T&G	Tongue & Groove
				THK	Thick or Thickness
				THRD	Threaded
				T-U	Tilt-Up (Concrete Panel)
				TYP	Typical
				U.O.N.	Unless Otherwise Noted
				U.R.M.	Unreinforced Masonry
				VERT	Vertical
				V.I.F.	Verify in Field
				W/	With
				WO	Wood
				W.P.	Work Point
				WT	Weight
				WWF	Welded Wire Fabric

## SYMBOLS LEGEND



## DESIGN CRITERIA

- VERTICAL LOADS
  - Pedestrian Bridge Deck Live Load = 85 psf
- LATERAL LOADS
  - Wind (Analytical Method):
    - Ultimate Design Wind Speed:  $V_{ult} = 110$  mph
    - Nominal Design Wind Speed:  $V_{ad} = 85$  mph
    - Exposure Category = "B"
    - Risk Category = "II"
    - Design Wind Pressure  $V = 50$  psf
  - Earthquake:
    - Mapped Spectral Response Accelerations,  $S_s = 2.479$ ,  $S_1 = 1.028$
    - Site Class = "D"
    - Spectral Response Coefficients,  $S_{DS} = 1.652$ ,  $S_{D1} = 0.891$
    - Risk Category = "II"
    - Seismic Performance Zone: 4
    - Additional design parameters - See Structural Calculations

## GENERAL

- All work to be in conformance with the 2016 California Building Code (CBC) as adopted by the local governing agency, and any applicable local ordinances.
- All conditions and dimensions shown on the plans to be verified by the Contractor, any discrepancies that require clarification or revisions to be brought to the attention of the Architect/Engineer before commencing with the work.
- Contractor to provide the requirements of all structural detail callouts denoted as "TYPICAL" or "TYP" at specifically noted conditions and at all like conditions throughout the project, unless otherwise noted. All details on detail sheets titled as "TYPICAL", and not directly referenced on plans, to be incorporated at occurring locations throughout the project. Requirements of details not denoted or titled as "TYPICAL" to be provided at the specific location shown on the plan and adjacent areas as applicable. Requirements of details denoted as "SIMILAR" or "SIM" to be provided with differences as indicated or implied on referenced details and plans.
- Details may be depicted diagrammatically. For example, roof pitches, floor/roof/wall thicknesses, framing members, etc., may differ in scale from actual proposed conditions. Details to be understood in context with other drawings conveying structural and architectural design intent.
- Structural design or review of temporary shoring, additional reinforcing, bracing, formwork, scaffolding, erection methods, etc. required for proper construction of the project to be the responsibility of the Contractor.
- Drawings to not be scaled.
- Shop drawings are an aid for field placement and are superseded by the structural drawings. It is the responsibility of the General Contractor to make certain that all construction is in full agreement with the latest approved contract documents.
- Dimensions, unless otherwise shown, are to centerline of columns and beams, or to the face of concrete surfaces and rough framing.
- All referenced publications to be the latest edition, unless otherwise noted.
- The contract structural drawings and specifications represent the finished structure, and, except where specifically shown, do not indicate the method or means of construction. The Contractor to supervise and direct the work and to be solely responsible for all construction means, methods, procedures, techniques, safety and sequence.

## PRODUCT SUBSTITUTIONS

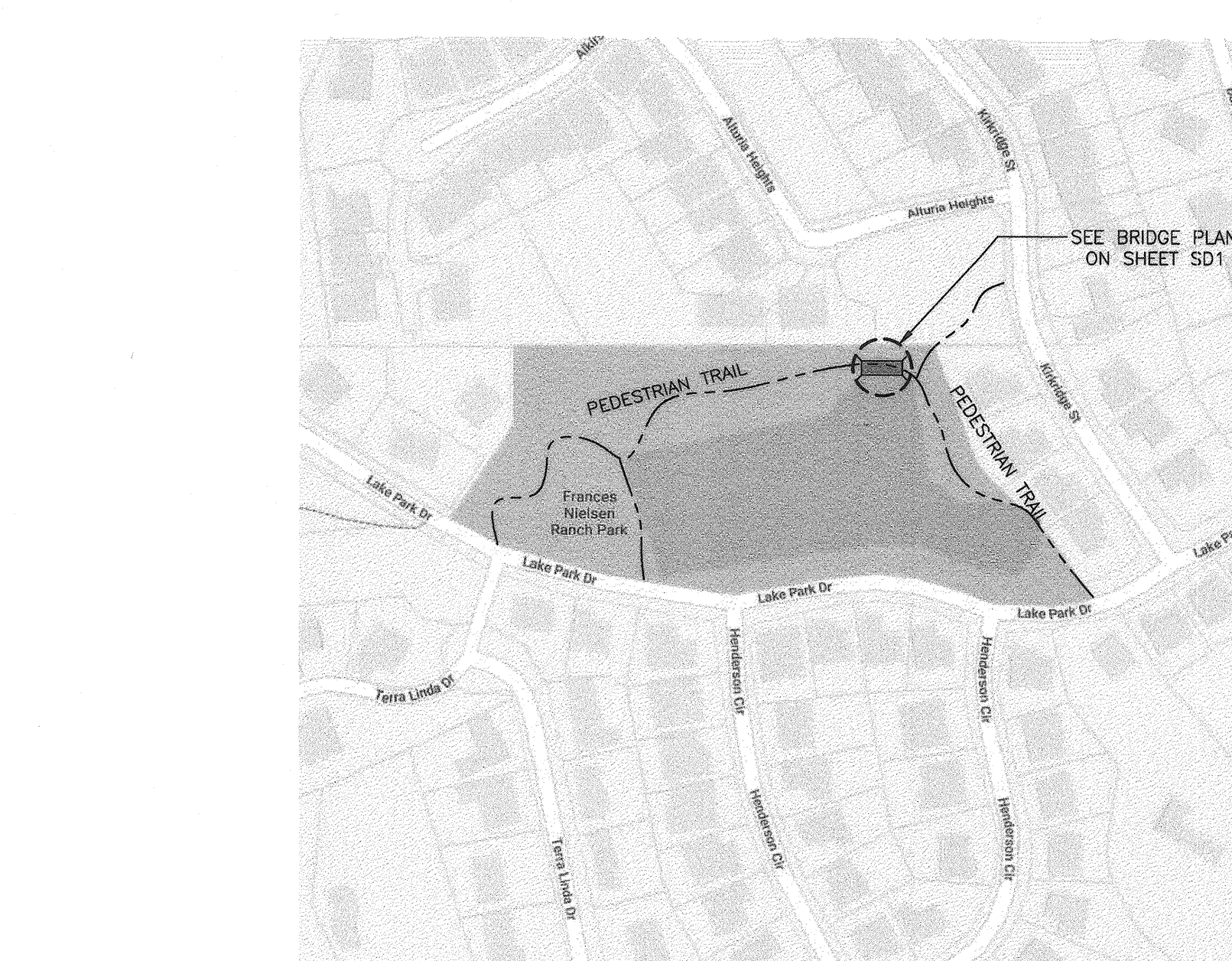
- Material substitutions shall be submitted to the Engineer for review prior to use. Substitution reviews may require additional design costs. These additional costs shall be paid by the person or company requesting the substitution.
- Substituted products shall have ICC-ES approval and shall be installed per product manufacturer's specifications. Substituted product materials, finishes, details, and installation shall be of a nature similar to originally specified product so as to not conflict with any intended structural or architectural design conditions, whether depicted or implied on plans or specifications. The substituted product shall have design values (i.e. design loads, impact resistance, etc.) which shall be equal to or greater than the originally specified product. Any and all warranties offered by the originally specified product manufacturer for the item to be substituted shall have similar warranties offered by the substituted product manufacturer.
- Submit to the Engineer a list of only the items to be substituted, complete with all pertinent material including but not limited to manufacturer's supplied design loads listed for the originally specified product and the proposed substitution product.

## STRUCTURAL SUBMITTALS

- Contractor to submit shop drawings and/or certifications to Architect/Engineer for review prior to fabrication for the following types of work:
  - Concrete mix designs
  - Structural and miscellaneous steel
  - Metal deck (see "METAL DECK" Section for additional submittal information).
- Items marked (\*) to have shop drawings and calculations submitted by the manufacturer prepared and signed by a licensed Civil Engineer in the state where the project is located. Submit calculations and shop drawings to the Architect or Engineer of Record prior to fabrication.
- The Architect or Engineer of Record to review the deferred submittal items and forward them to the building official with a notation indicating that the deferred submittal documents have been reviewed and that they have been found to be in general conformance with the design of the building. The deferred submittal items to not be installed until their design and submittal documents have been approved by the Building Official.
- All shop drawings must be reviewed and stamped by the General Contractor prior to submittal.
- Contractor to submit a minimum of two sets of prints for all shop drawings specified. The Engineer of Record to retain one copy of all shop drawings submitted.
- Typical loads to be used for the design of structural elements listed above are given in the "DESIGN CRITERIA" Section. Loads given do not include weights of mechanical units or special loading conditions. Contract documents should be reviewed for any areas of special loadings. The general contractor to submit weights to the structural engineer for all equipment placed in mechanical areas. Verification of loads used in the design. The general contractor to report any changes in location or weight of equipment shown on the contract drawings.
- The use of reproductions of these contract documents by any contractor, subcontractor, erector, fabricator, or material supplier in lieu of preparation of shop drawings signifies his acceptance of all information shown hereon as correct, and obligates himself to any job expense, real or implied, arising due to any errors that may occur hereon.

## EXISTING CONSTRUCTION

- The structural review provided by MKM & Associates is for the addition and portions of the existing building that have been structurally modified only. A complete review/retrofit of the existing structure is beyond the scope of services provided by MKM & Associates.
- Existing structural elements shown on these plans represent assumed conditions based on documentation by others, known standard construction practices, and visual observations limited to exposed areas. It is not warranted that the conditions shown are totally representative of those existing. Contractor to investigate existing conditions and verify all dimensions prior to start of construction.
- Contractor should be aware that exposed structural conditions may differ from those which are concealed by finishes, occur below grade or are subject to changes due to time, environment or modification by others.
- Existing structural conditions indicated as existing (E) or verify in field (V.I.F.) require that the Contractor either verify the presence of such conditions, provide new materials to create such conditions, or notify the Architect/Engineer of conflicting conditions.
- Contractor to immediately consult with the designer where visual observation or demolition exposes existing conditions which conflict with the construction documents or reveal damaged or deteriorated structural or architectural elements that are to remain as part of the finished product.
- Contractor should notify local governing authority if visual inspection or demolition reveals the presence of hazardous materials in any form at the project site, including but not limited to, asbestos, asbestos products, PCB's or other toxic substances.
- Contractor is responsible for the design of all temporary shoring and bracing of the existing structure during construction.
- Contractor to verify condition of existing footings and to notify the Engineer regarding damaged or deteriorated conditions.
- Contractor to locate and verify locations of all utilities prior to construction.
- Any removal or demolition of existing construction required to execute the work shown in these drawings to be the responsibility of the Contractor and to be restored to its original or better condition.



## STRUCTURAL OBSERVATION

- Structural conformance letters indicating general conformance to the structural contract documents can only be provided by MKM & Associates if structural observation has been performed by MKM & Associates or another Engineer designated by MKM & Associates.
- The Owner to employ MKM & Associates or another Engineer designated by MKM & Associates to perform structural observation as required by CBC Section 1704.6 and as defined in CBC Section 1702. Items to be reviewed are:
  - Required: Prior to and during the first time of significant weight passing over bridge.
  - Contractor to coordinate all required site reviews with his schedule and to not cover up any work until it has been reviewed. Contractor to provide at least four working days notice to MKM & Associates prior to all reviews.
- Structural observation is limited to the periodic visual observation of the structural system for general conformance to the approved plans and specifications at applicable construction stages and at completion of the structural system. Structural observation does not include or waive the responsibility for inspections required by the building department or special inspections required by the CBC.
- Job site visits by the Engineer are solely for the purpose of determining if the work of the Contractor is proceeding in accordance with the structural contract documents. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the Owner against defects or deficiencies in the work of the Contractor.

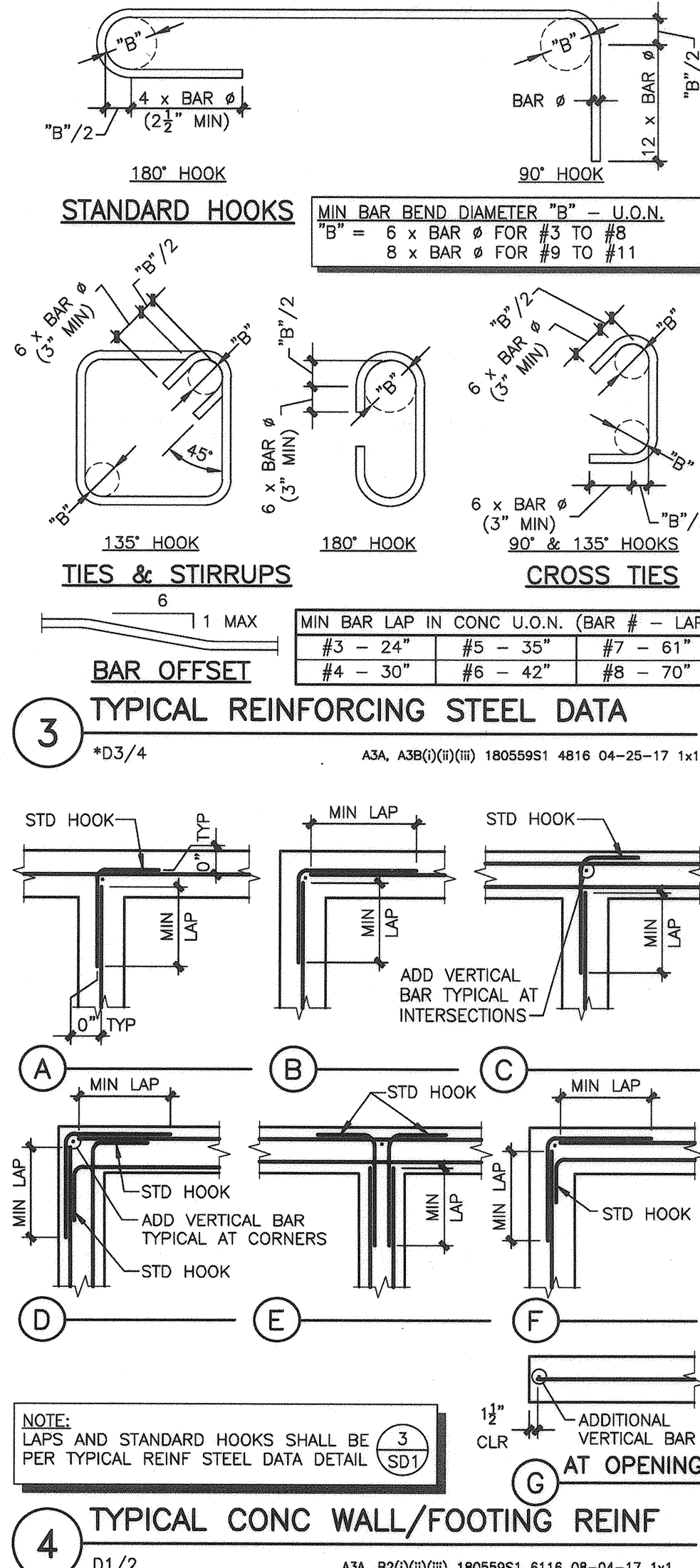
## ADHESIVE CONNECTIONS

- Installation of adhesive, anchors and dowels to be in accordance with the manufacturer's specifications and these notes. Where requirements of the manufacturer or these notes conflict the more restrictive provisions govern.
- Adhesive Systems
  - The following adhesive anchor systems are acceptable for use in concrete:
    - Hilti, Inc.: Hilti HIT-HY200 (ICC-ES ESR 3187)
    - Hilti, Inc.: HIT-RE500 V3 (ICC-ES ESR 3814)
    - Simpson Strong-Tie Co. Inc.: SET-XP (ICC-ES ESR-2508)
    - Powers Fasteners, Inc.: PURE110+ (ICC-ES ESR-3298)
- Holes for adhesive connections in concrete may be drilled with a rotary hammer. Holes for adhesive connections in masonry to be drilled with an electric rotary drill only. Hole diameter to be per manufacturer's specifications.
- Holes for adhesive connections to be thoroughly cleaned with the following procedure:
  - Blow out all dust and loose material with compressed air and extension nozzle.
  - Clean hole surfaces with a plastic wire bottle brush which is slightly larger than the hole diameter.
  - Blow out hole with compressed air.
  - Repeat procedure as required until all surfaces are clean and no residual dust remains on surfaces of hole.
- Items embedded in adhesive to be clean and free of any rust, petroleum based products or deleterious materials per adhesive manufacturer's recommendations.
- Adhesive to be installed to the end of the hole with a gun nozzle or other approved procedure prior to installation of anchor.
- Adhesive connections to have periodic special inspection per CBC Section 1704 unless otherwise noted. Holdown anchors and other tension ties to have continuous special inspection. The Special Inspector to verify:
  - Holes are correct diameter and depth.
  - Holes are clean.
  - Proper adhesive is used.
  - Adhesive is correctly mixed and installed per manufacturer's recommendations.
  - Threaded rods or dowels are clean and correct diameter.
  - Threaded rods or dowels are embedded to specified depths.
  - Expiration date on adhesive products has not passed.
  - In lieu of the special inspection procedures noted above, an in-situ load test (pull test) may be performed per table below:
 

Anchor Diameter	Test Load	Test Duration
1/2"	4.1 K	10 seconds
5/8"	6.5 K	10 seconds
3/4"	9.6 K	10 seconds
7/8"	13.3 K	10 seconds
1"	17.4 K	10 seconds
- Anchor to not be moved or loaded before curing time is reached.

## SPECIAL INSPECTION

- GENERAL
    - In addition to the inspections required by Section 110 of the CBC, the Owner shall employ a Special Inspector during construction on the types of work indicated below. All special inspection to be performed in accordance with Section 1704 of the CBC.
  - INSPECTIONS: Special inspections that are required by the building codes, local building departments, or these plans to be performed by the firm noted in "SCOPE OF WORK" below.
  - SPECIAL INSPECTOR DUTIES
    - After due notice from the Contractor, provide qualified personnel as necessary.
    - Perform inspections as follows:
      - Perform specified reviews, inspections, sampling and testing of materials as indicated below.
      - Verify conformance of all special inspected work with the approved plans.
      - Verify that the work complies with specified standards and methods of construction.
      - Ascertain compliance of materials with requirements of the approved plans.
    - Promptly notify Architect (Designer), Engineer and Contractor of observation irregularities or deficiencies within one working day. If irregularities or deficiencies are uncorrected, the Special Inspector to notify the Architect (Designer), Engineer and the governing agency.
    - Promptly submit written report of each test and inspection with a copy each to the Architect (Designer), Engineer, Owner, Contractor, Governing Agency and other designated persons within three working days. Each report to include:
      - Date issued.
      - Project title and number.
      - Testing laboratory name, address and telephone number.
      - Name and signature of laboratory test or inspection.
      - Date and time of sampling, test or inspection.
      - Type of inspection or test.
      - Location of sample or test in the project.
      - Test results. Report to indicate compliance or noncompliance with approved details and plans.
  - In addition to the above required reports, the Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of his knowledge, in conformance with the approved plans and the applicable provisions of the California Building Code.
- SCOPE OF WORK (By: Special Inspector Company/Firm)
  - Welding
    - By: RGH CONSULTANTS, INC.
    - All structural welding to have special continuous inspection. All full and partial penetration welds that are part of moment frames to be ultrasonically inspected. EXCEPTION: Single pass fillet welds  $\leq \frac{1}{8}$ " may have periodic inspection unless otherwise noted.
  - Adhesive Connections
    - By: RGH CONSULTANTS, INC.
    - During preparation, initial installation and final placement. See ADHESIVE CONNECTIONS section of STRUCTURAL NOTES.
  - Cold Formed Steel Deck
    - By: RGH CONSULTANTS, INC.
    - Special inspections and qualification of welding special inspectors for cold formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC



ESTABLISHED 1983

5880 Commerce Blvd, Suite 105  
Rohnert Park, CA 94928  
Phone: (707) 578-8185  
Fax: (707) 578-7153  
Internet: [www.mkmassociates.com](http://www.mkmassociates.com)

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MKM Job #: 180559

DATE: 3/25/2019

APPROVED: Deputy Director - Engineering  
Lori Urbanek, PE

CITY OF SANTA ROSA  
FIRE DAMAGE-RELATED REPAIRS TO THREE PEDESTRIAN BRIDGES

STRUCTURAL NOTES

CONTRACT NO. C02229

SHEET 311 OF 4

FILE NO. 2019-0009



CONTRACT NO. C02229	
SHEET <b>SD1</b> OF 4	
FILE NO. 2019-000	



