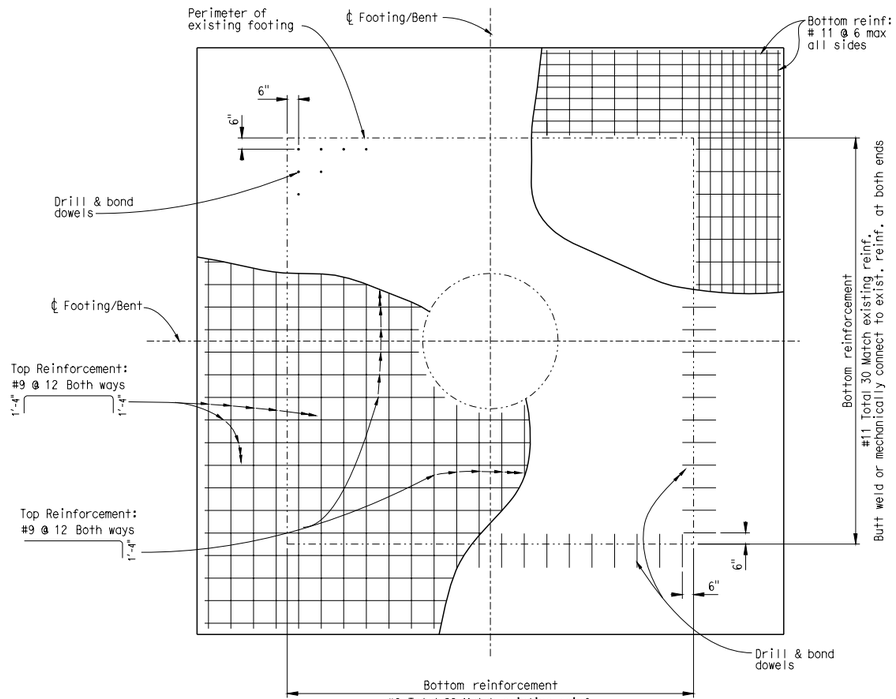
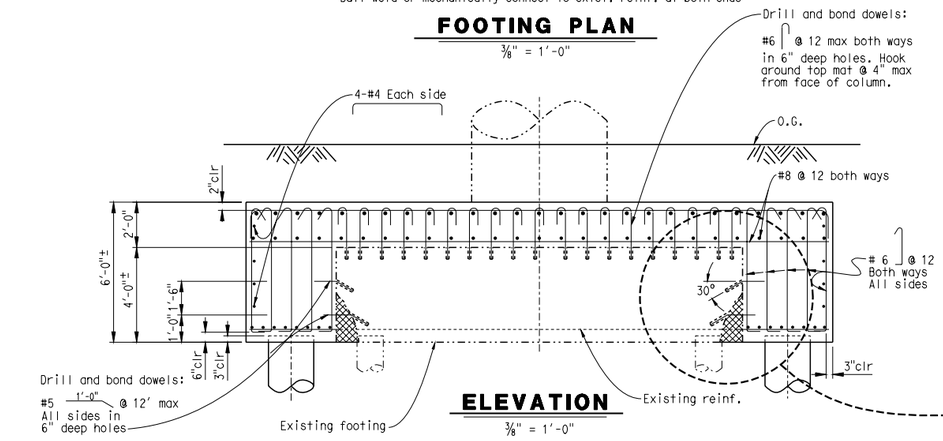
14-5 EXAMPLE SEISMIC RETROFIT DETAILS

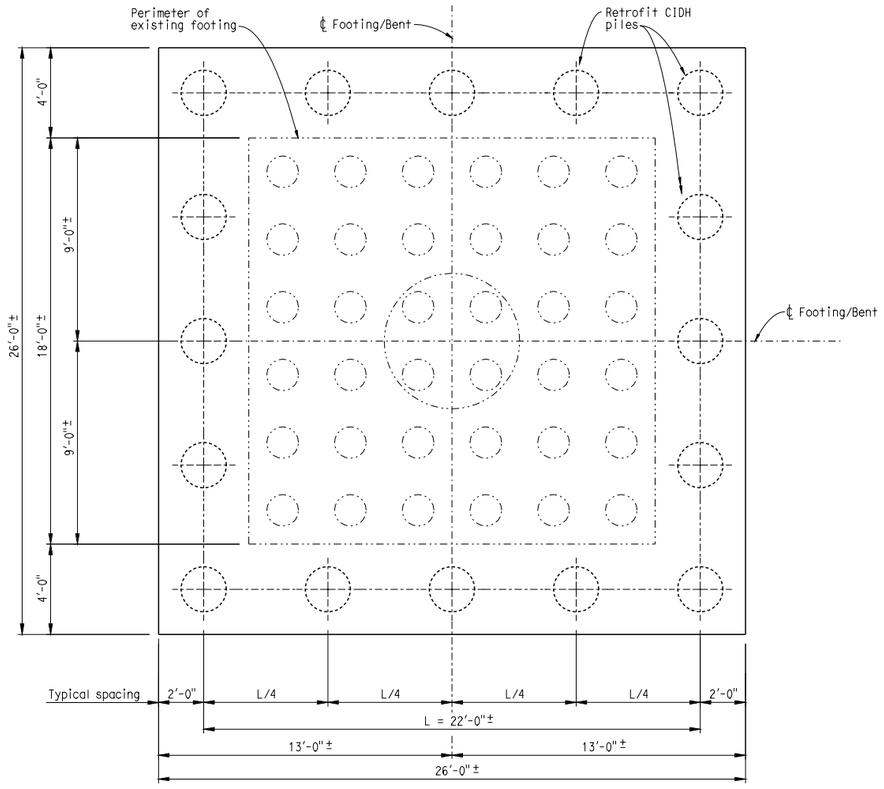
Memo to Designers (MTD) 20-4 established the policies, procedures and guidelines used by Caltrans for seismic retrofit. The primary purpose of this Bridge Design Aid is to assist the engineer in implementing those policies and procedures by providing the following example details. However, the engineer is cautioned that these example details are intended for illustration purposes, and significant modification may be required in order to meet the performance standard specified in MTD 20-4.



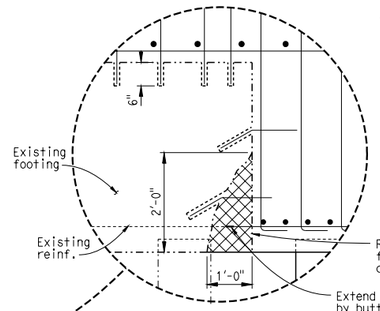
FOOTING PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"



PILE LAYOUT
3/8" = 1'-0"



LEGEND

- Indicates New Construction
- Indicates Existing Structure
- Indicates Limits of Concrete Removal

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

These details are for example purposes only.
Details must be adjusted for specific projects.

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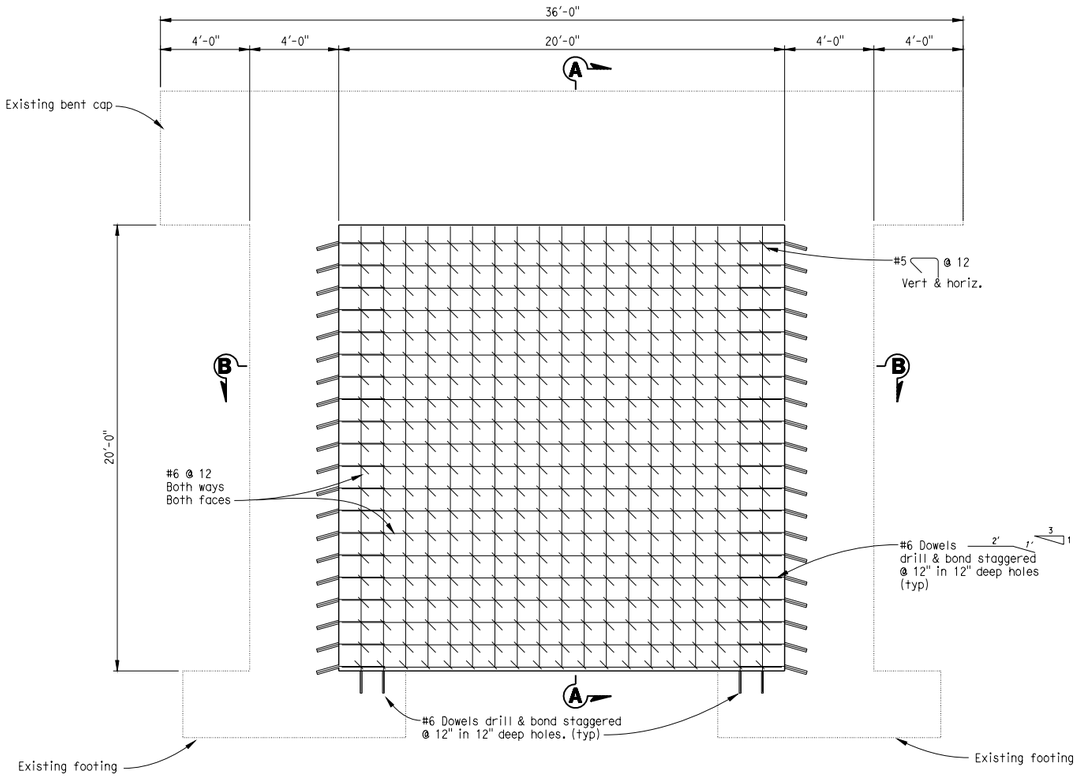
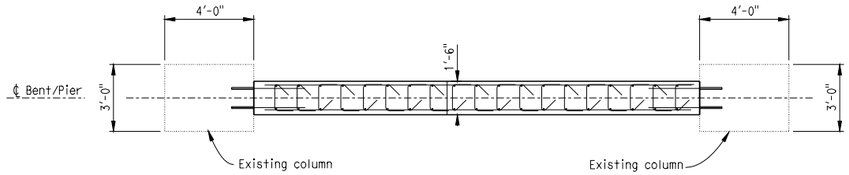
EXAMPLE FOOTING RETROFIT

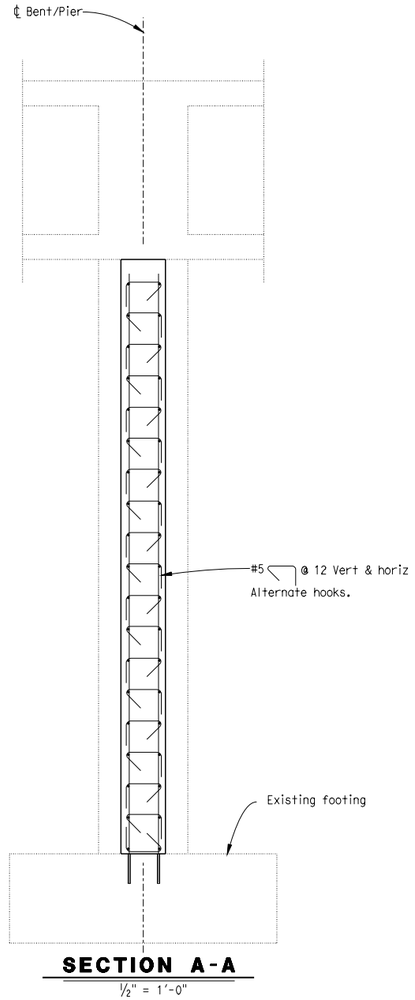
FILE => cidh-ftg_retrofit.dgn



ELEVATION
3/8" = 1'-0"



SECTION B-B
3/8" = 1'-0"



SECTION A-A
1/2" = 1'-0"

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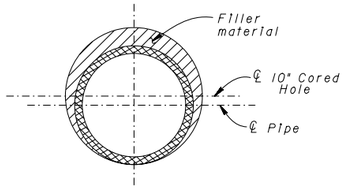
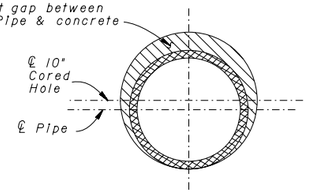
EXAMPLE BRIDGE WITH INFILL WALL RETROFIT

infill_wall_sht.dgn



SECTION A-A

No Scale

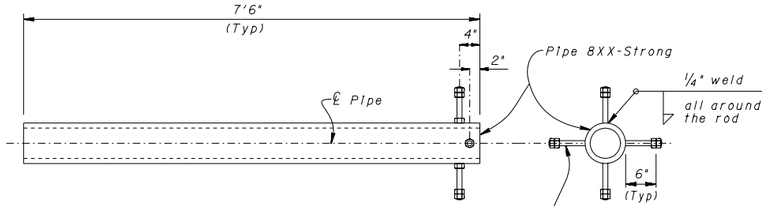


SECTION B-B

No Scale

Note:
Place 8XX-Strong Pipe parallel to girders

Cable restrainers inside pipe not shown.

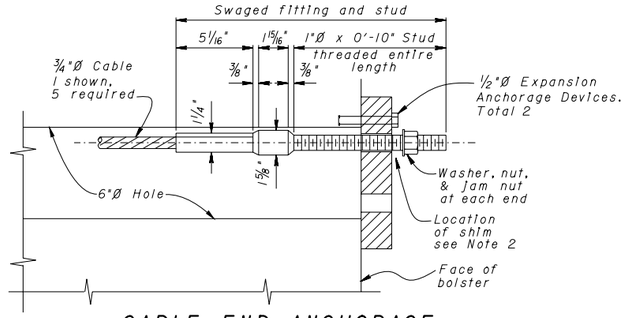


PIPE SHEAR KEY DETAIL

1"=1'0"

Note:

⊛ Surface of Anchorage zone to be placed normal to restrainer cable unit typical.



CABLE END ANCHORAGE

3"=1'0"

Note 1 For Shim thickness (dimension "a"), see table.

Cable Installation Notes:

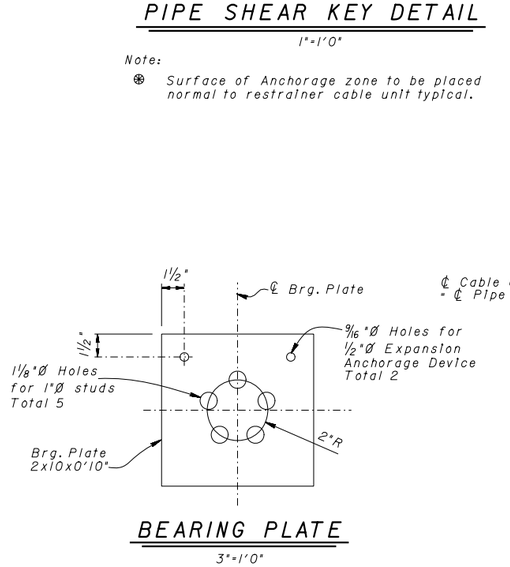
1- At Bent side

Place Anchor Plate flush against Bolster face. Tighten nuts snug against Anchor Plate. Place thread locking compound

2- At Hinge side

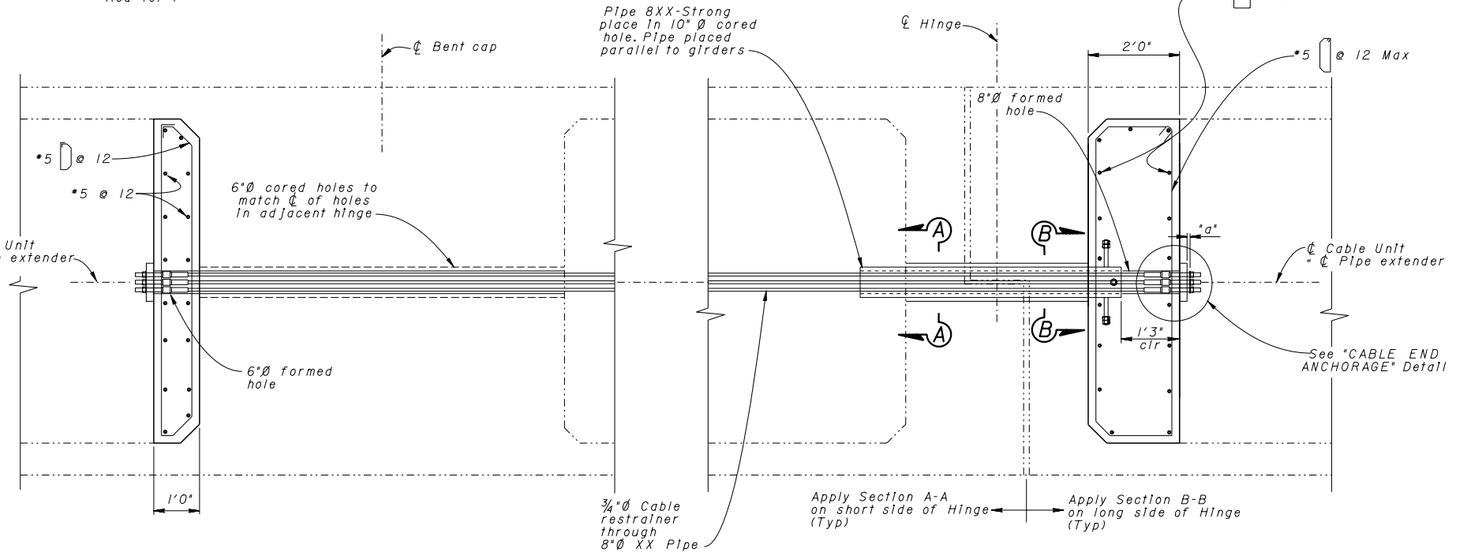
Place Shims between Anchor Plate and Bolster face. Tighten nuts to 100 ft-lbs torque
Place thread locking fluid
Remove shims
Shim thickness to be in accordance with table

Structure Temp. (°F)	Shim Thickness (in)	
	Left Bridge	Right Bridge
30	0.5	0.5
50	1.25	1.25
70	2.0	2.0
90	2.75	2.75
110	3.5	3.5



BEARING PLATE

3"=1'0"



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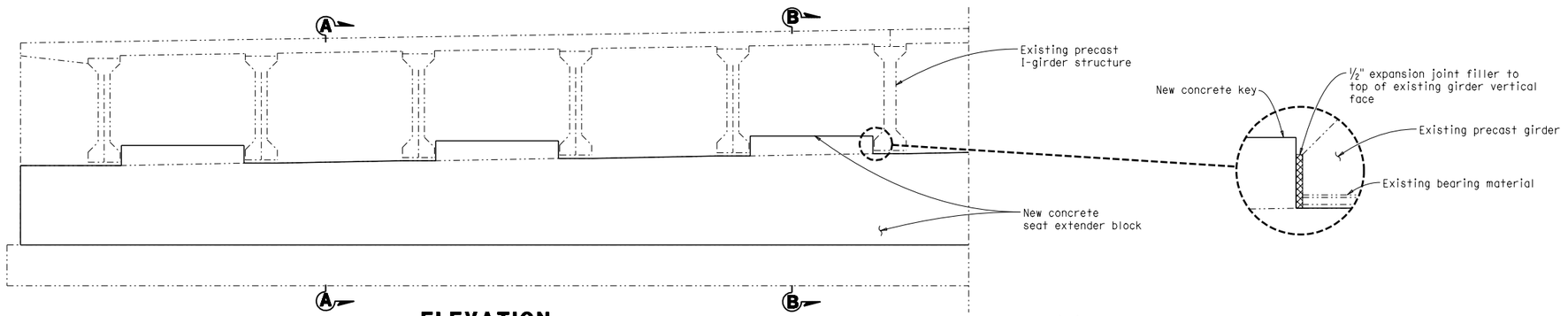
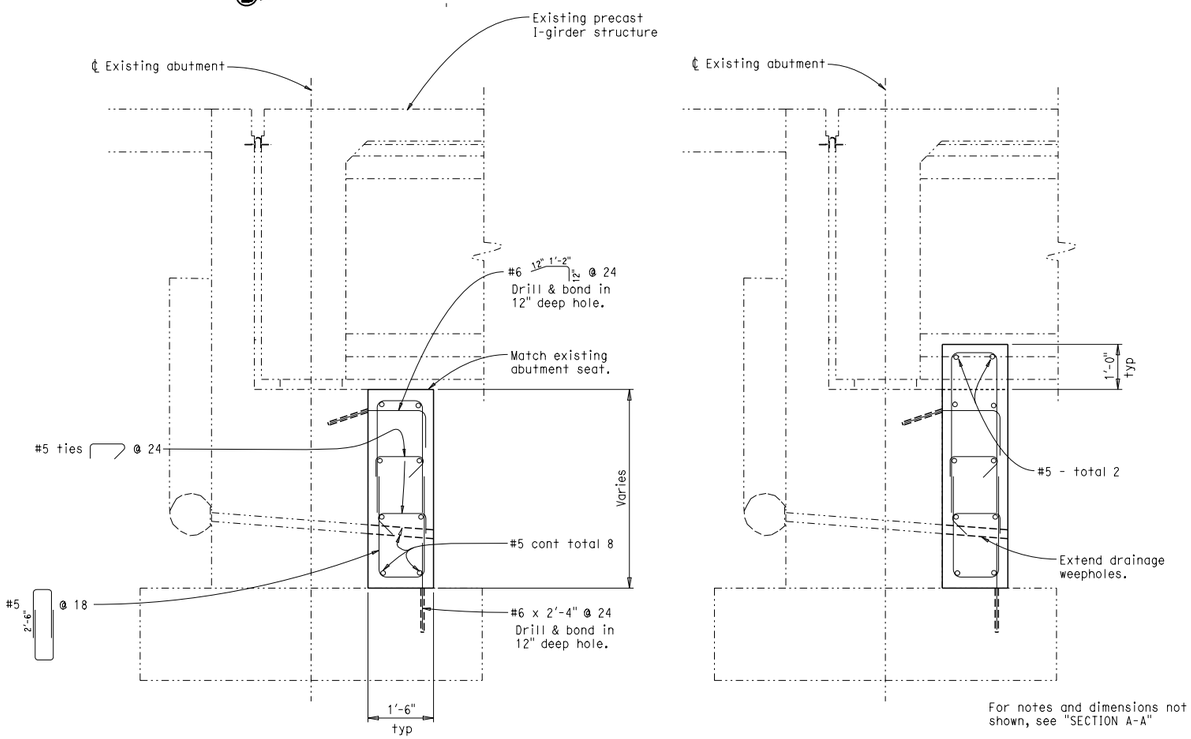
EXAMPLE PIPE SEAT EXTENDER & CABLE RESTRAINER DETAIL

hinge_rest_d.dgn



ELEVATION
⅜" = 1'-0"



SECTION A-A
¾" = 1'-0"

SECTION B-B
¾" = 1'-0"

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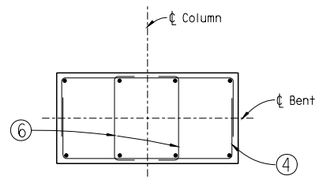
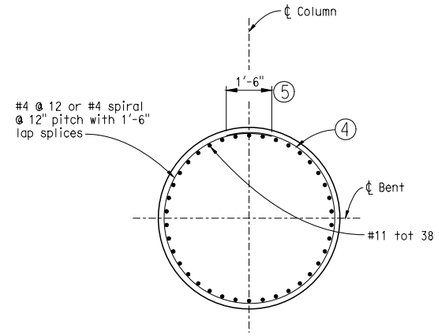
EXAMPLE ABUTMENT SEAT
EXTENDER RETROFIT



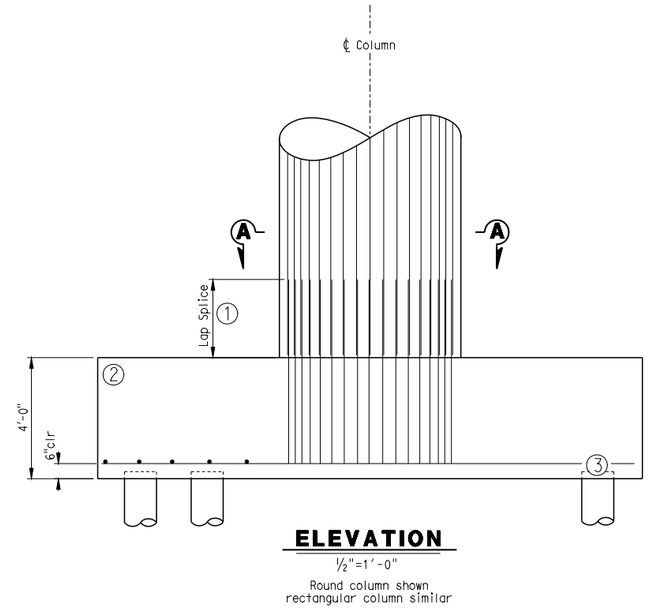
RECTANGULAR COLUMN



ROUND COLUMN

SECTION A-A
½"=1'-0"

① Lap splice at base of column.
② No top mat of reinforcement, no stirrups.
③ No tension tie from pile to footing.
④ Inadequate confinement/shear reinforcement in column.
⑤ Lap splice in transverse column reinforcement.
⑥ Non seismic hook in transverse reinforcement.



ELEVATION
½"=1'-0"
Round column shown
rectangular column similar

	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	EXAMPLE PRE-1971 COLUMN AND FOOTING DETAILS
		old-school_ftg.dgn