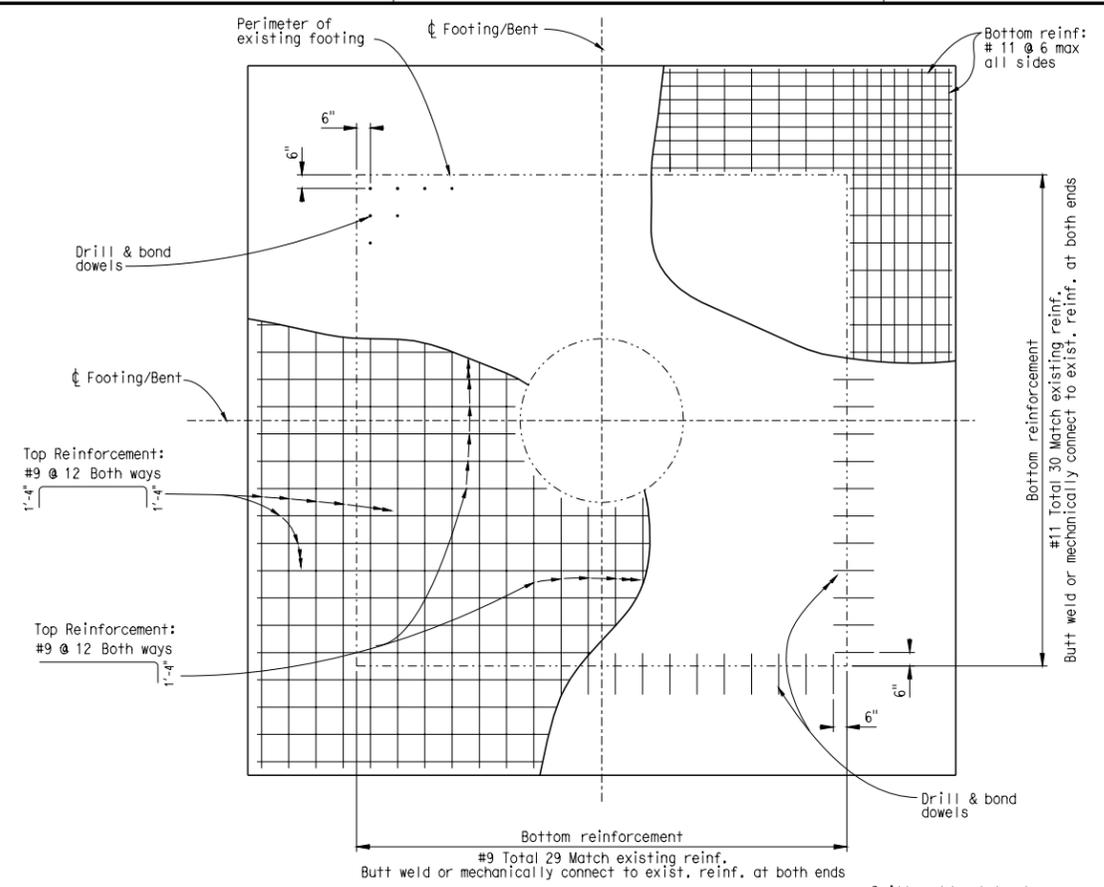


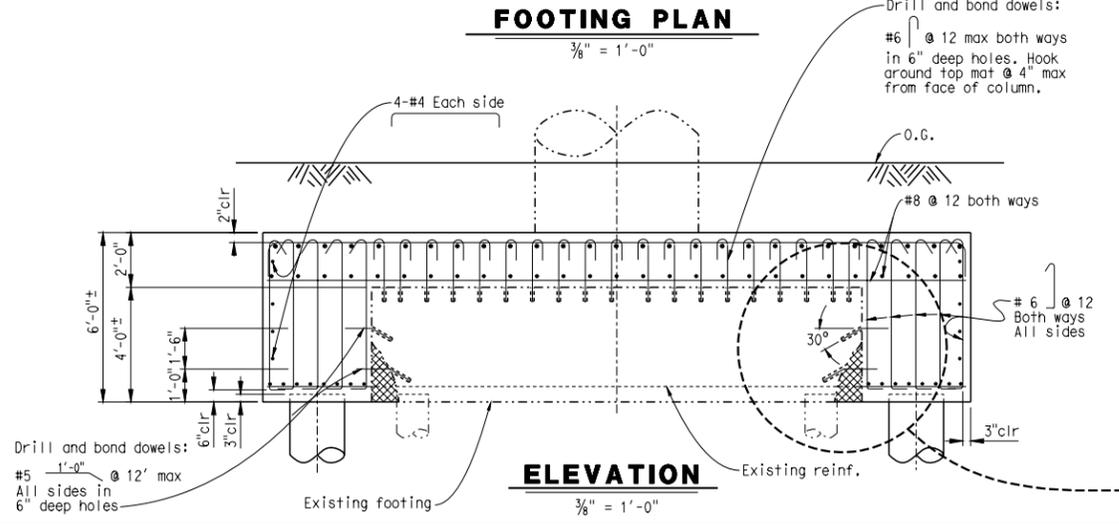


14-5 EXAMPLE SEISMIC RETROFIT DETAILS

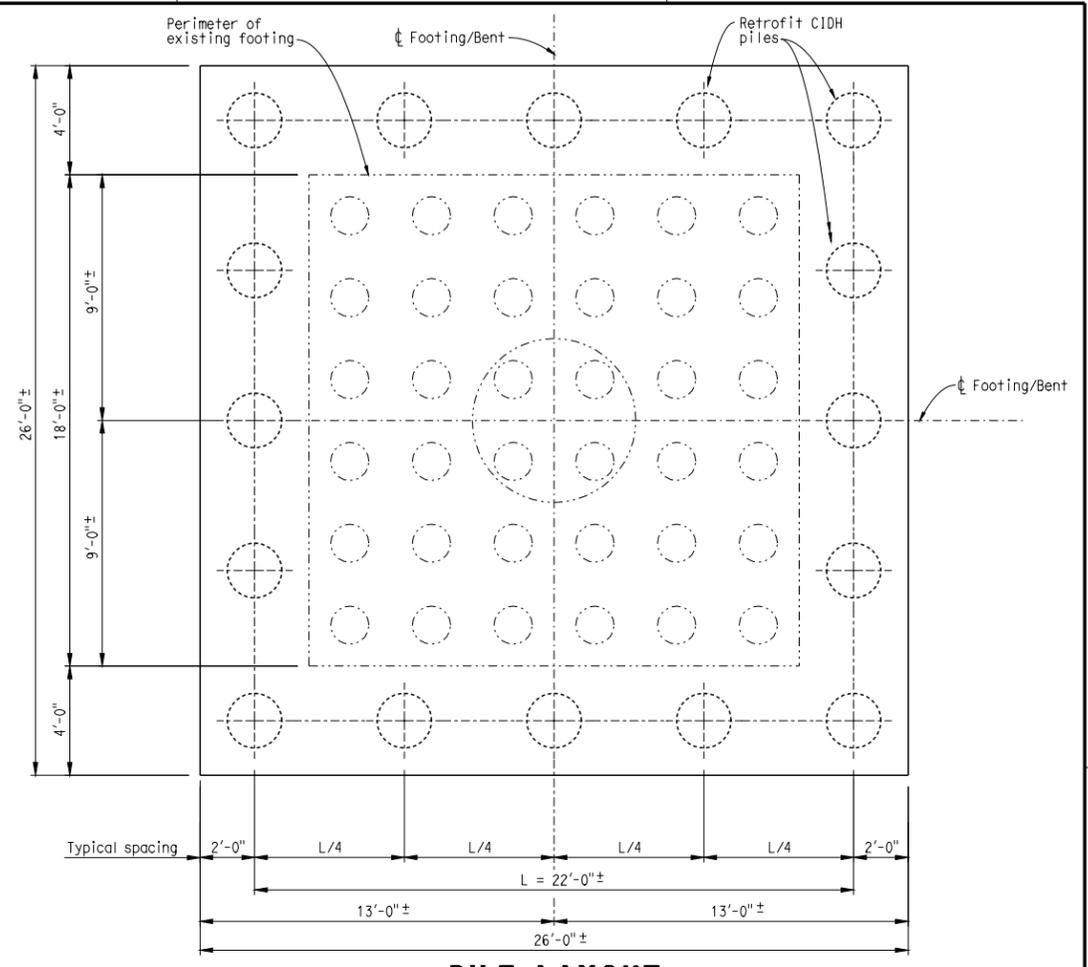
Memo to Designers (MTD) 20-4 established the policies, procedures and guidelines used by Caltrans for seismic retrofit. The primary purpose of this Bridge Design Aid is to assist the engineer in implementing those policies and procedures by providing the following example details. However, the engineer 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.



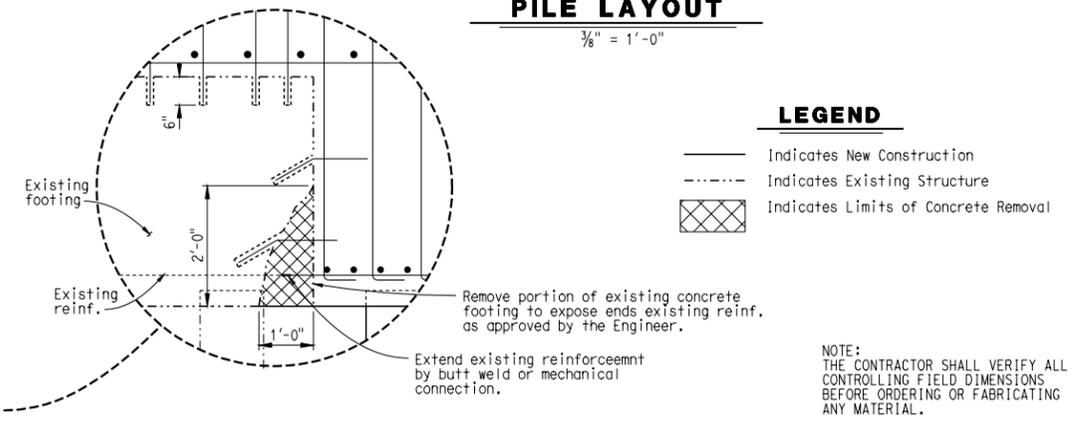
FOOTING PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"



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

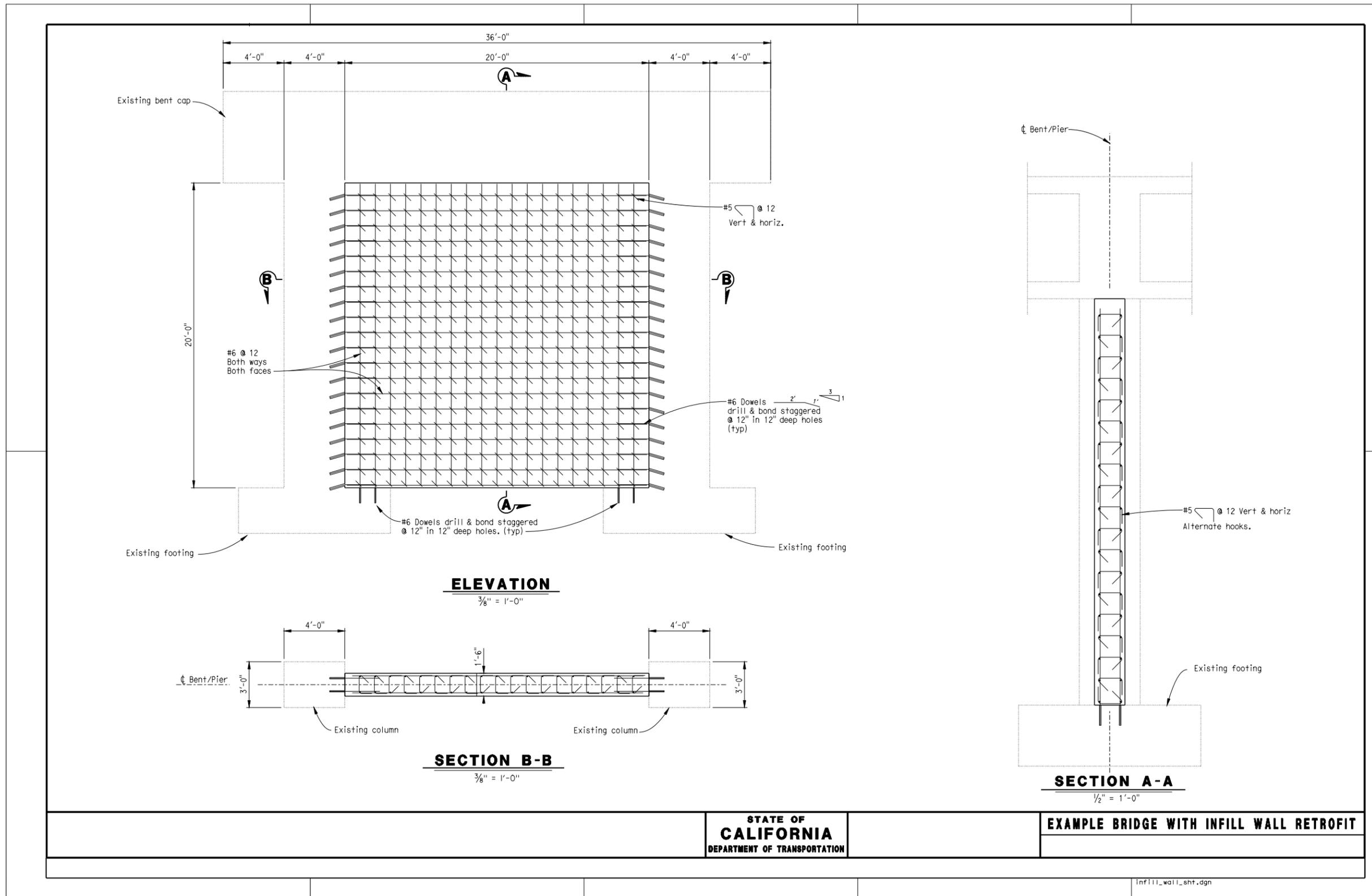


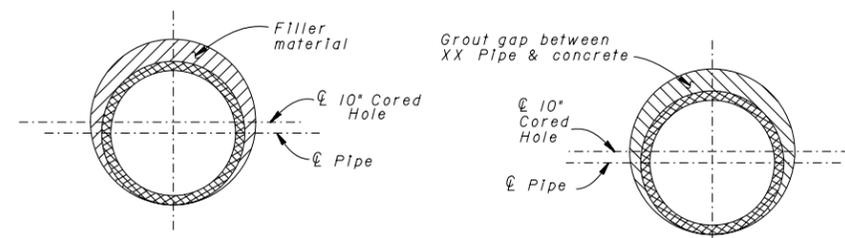
These details are for example purposes only.
Details must be adjusted for specific projects.

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EXAMPLE FOOTING RETROFIT

FILE => cidh-ftg_retrofit.dgn

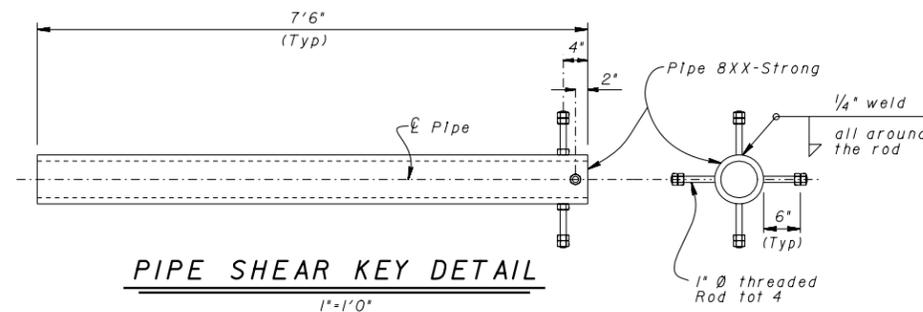




SECTION A-A
No Scale

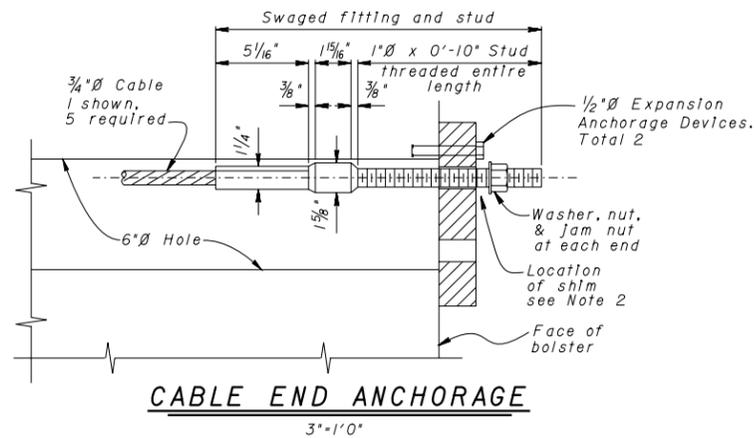
SECTION B-B
No Scale

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.



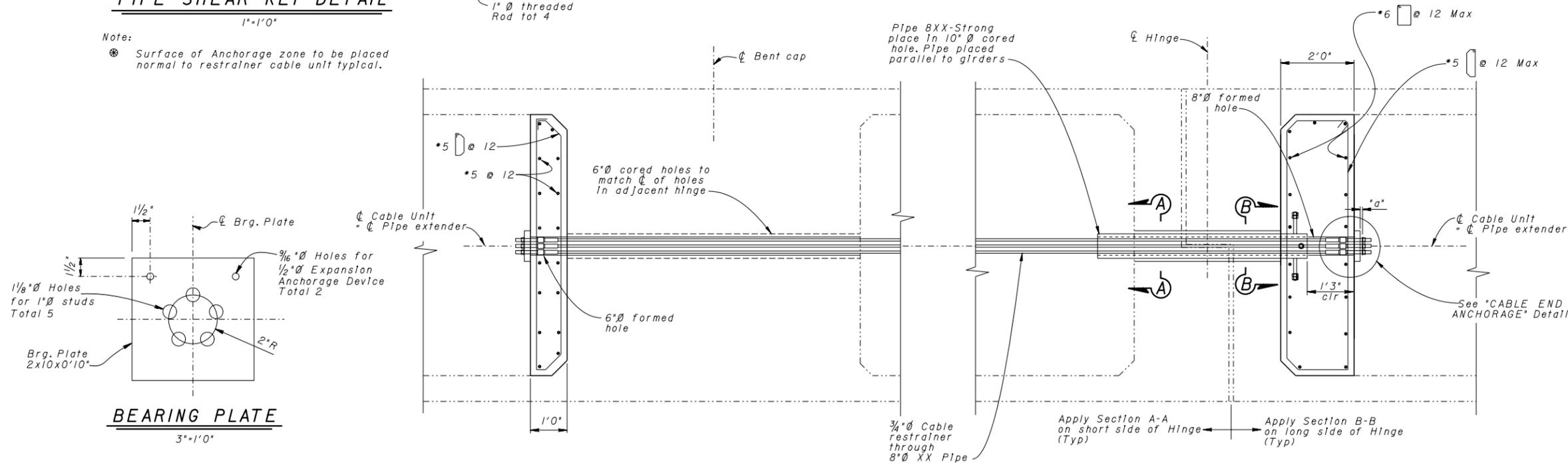
CABLE END ANCHORAGE
3'-1'0"

Note 1 For Shlm 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
Shlm thickness to be in accordance with table

Structure Temp. (°F)	Shlm 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

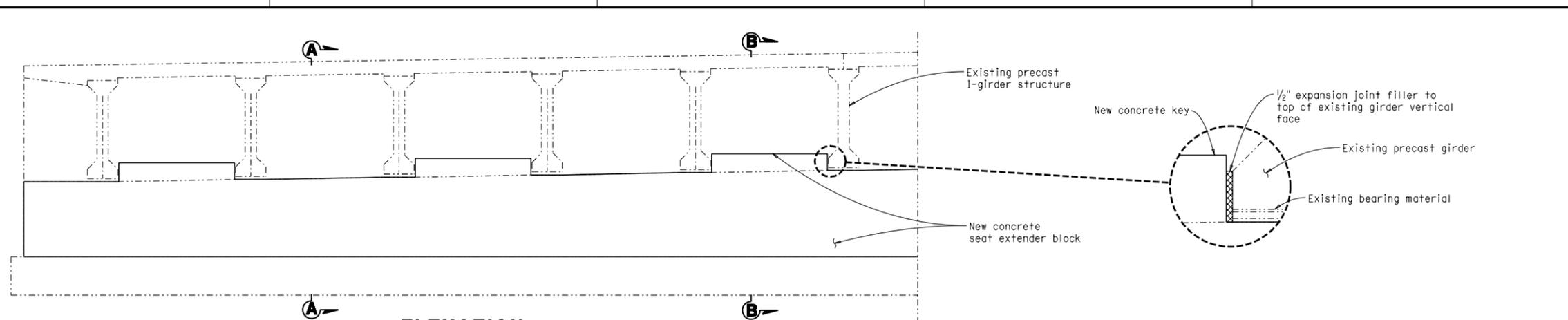


BEARING PLATE
3'-1'0"

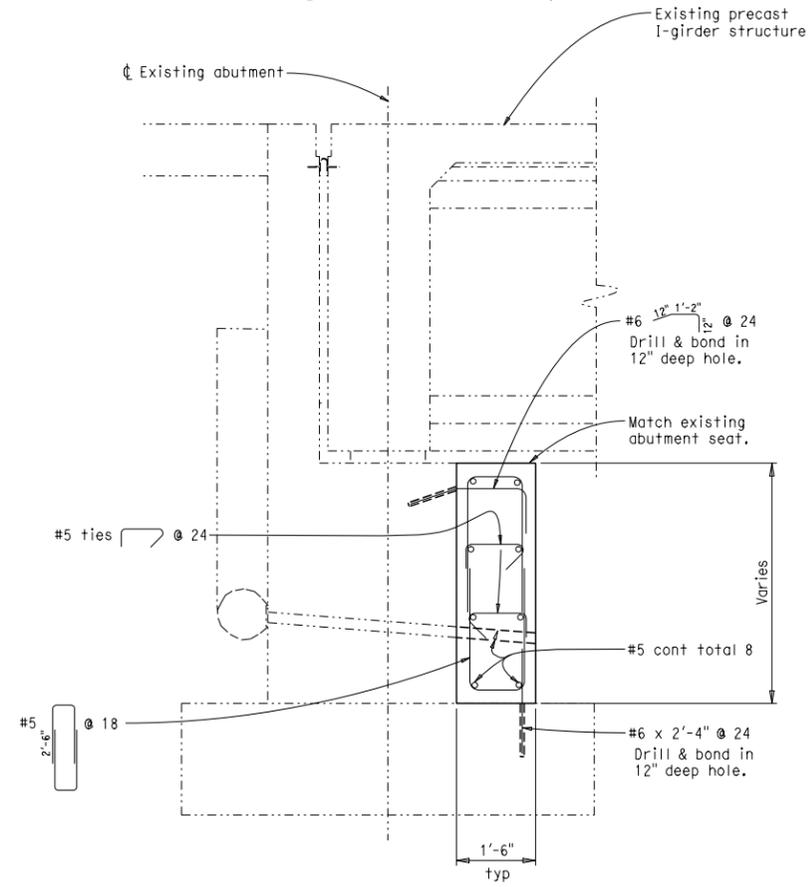
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EXAMPLE PIPE SEAT EXTENDER & CABLE RESTRAINER DETAIL

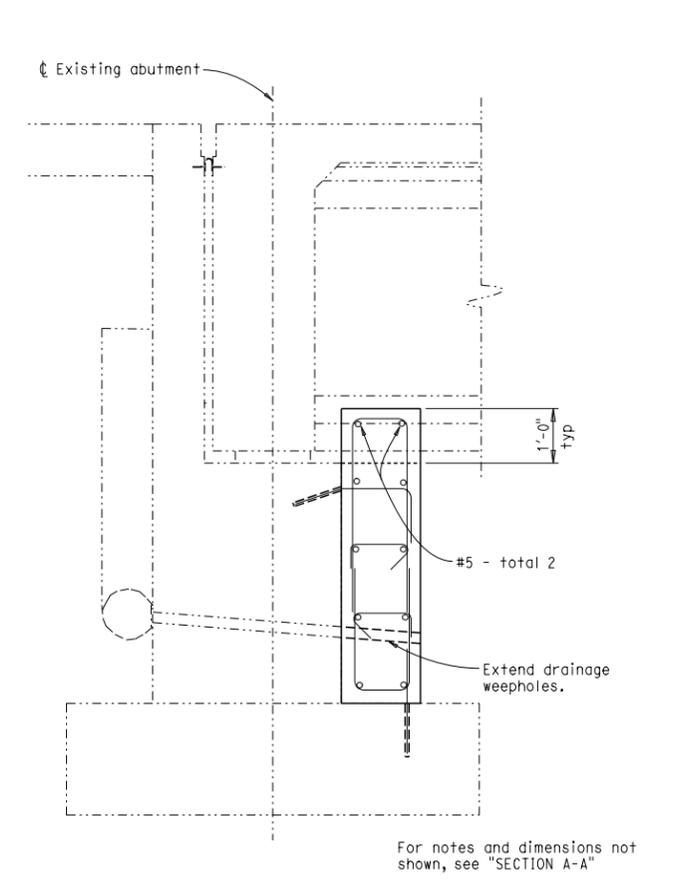
hInge_rest_d.dgn



ELEVATION
3/8" = 1'-0"



SECTION A-A
3/4" = 1'-0"

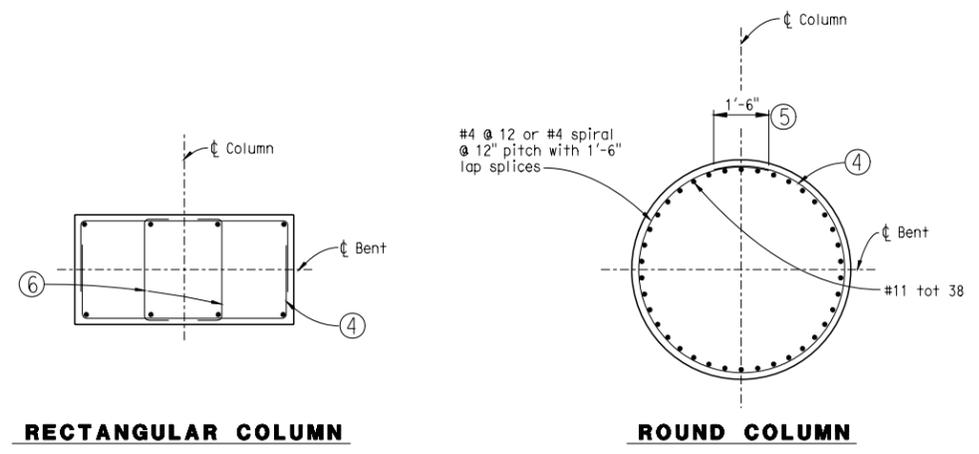


SECTION B-B
3/4" = 1'-0"

For notes and dimensions not shown, see "SECTION A-A"

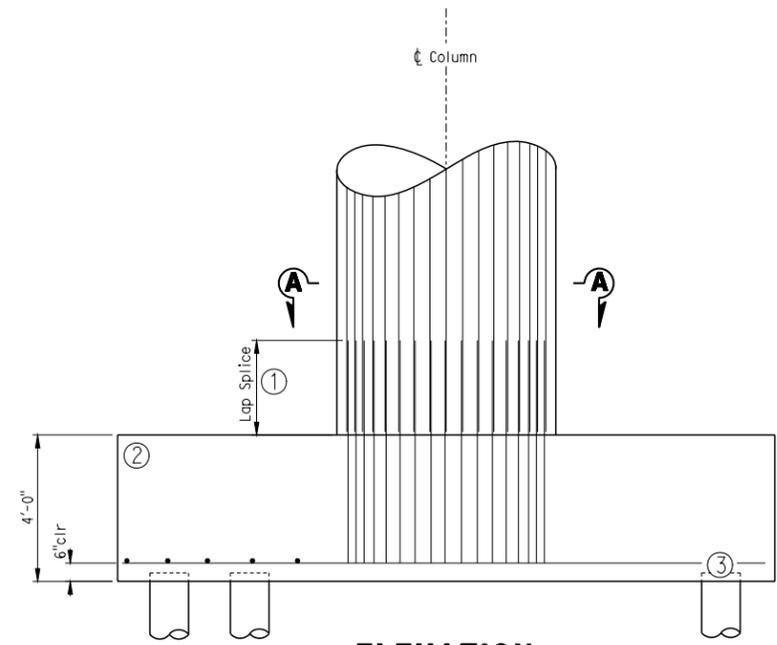
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EXAMPLE ABUTMENT SEAT
EXTENDER RETROFIT



SECTION A-A
1/2"=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.



1/2"=1'-0"

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EXAMPLE PRE-1971
COLUMN AND FOOTING DETAILS

old-school_ftg.dgn