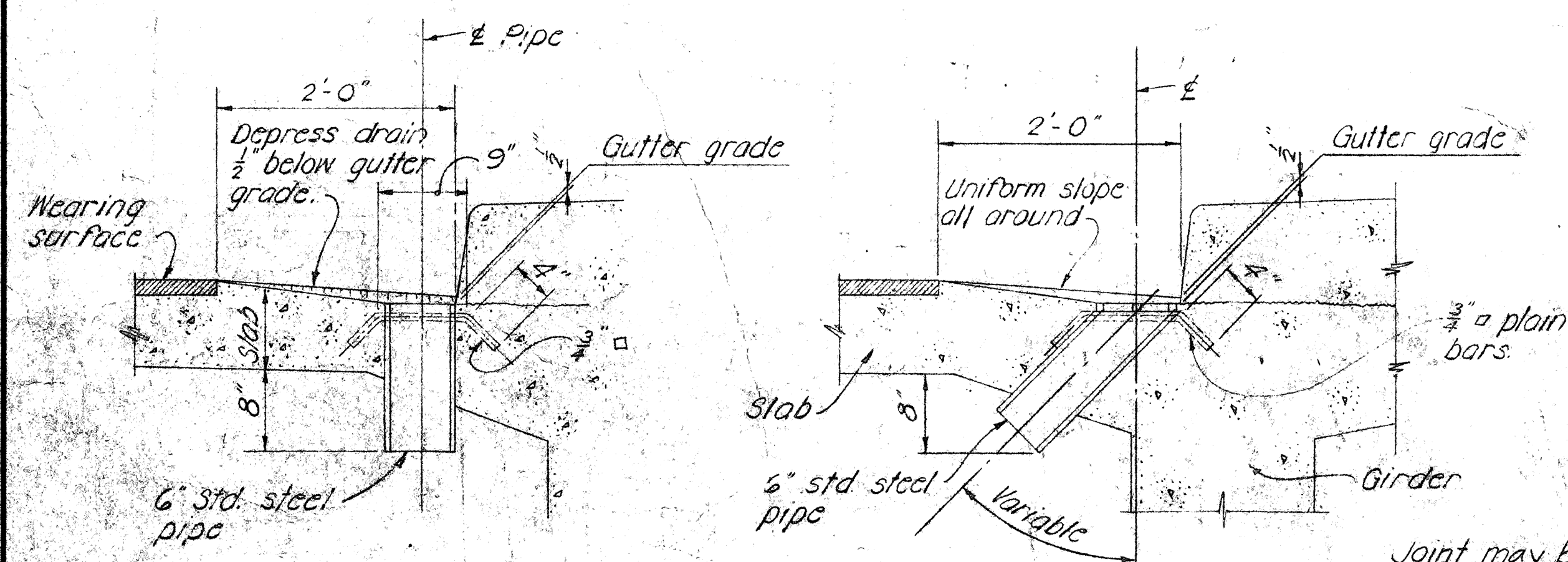
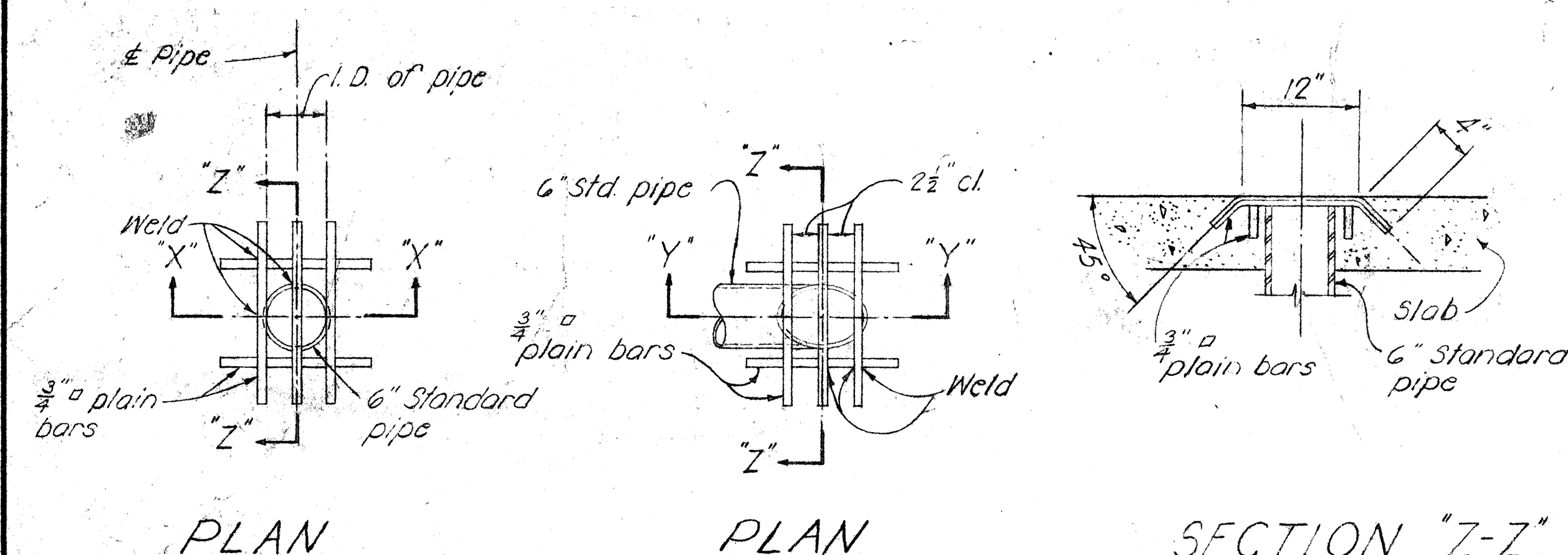


GENERAL NOTES

- All concrete shall be Class A unless otherwise noted.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1/2" For stirrups of beams & pier caps.
 - 2" For ties of columns.
 - 2" For formed walls.
 - 3" For footings.
- Minimum spacing between parallel bars shall be 2 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
- Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
- Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4".
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top of concrete seats shall be finished with a steel trowel to a smooth level surface at the elevation shown on the plans.
- Elastomeric Pads: Bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.
- Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.
- The contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation or driving of piles.
- Standard Detail Drawings refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.

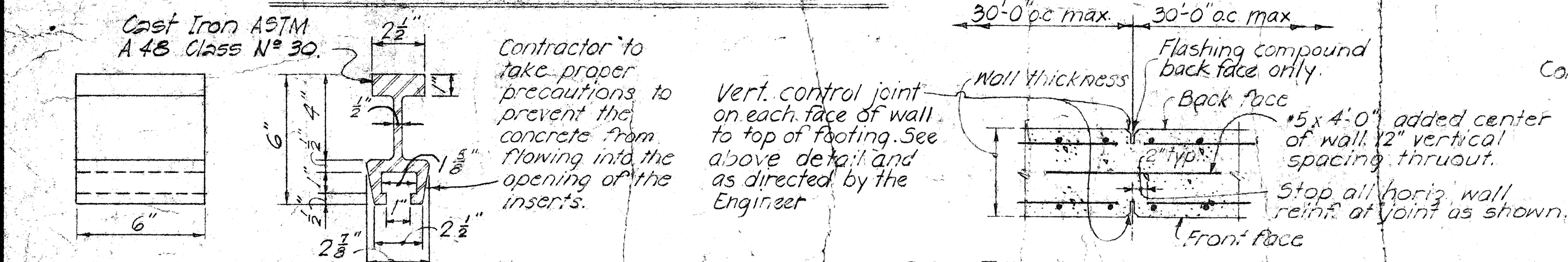
TYPICAL CONCRETE GROOVE DETAIL

DRIP DETAIL



NOTE: Metal drains shall be considered incidental to Class A Concrete in both concrete and steel bridges and will not be paid for separately. Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

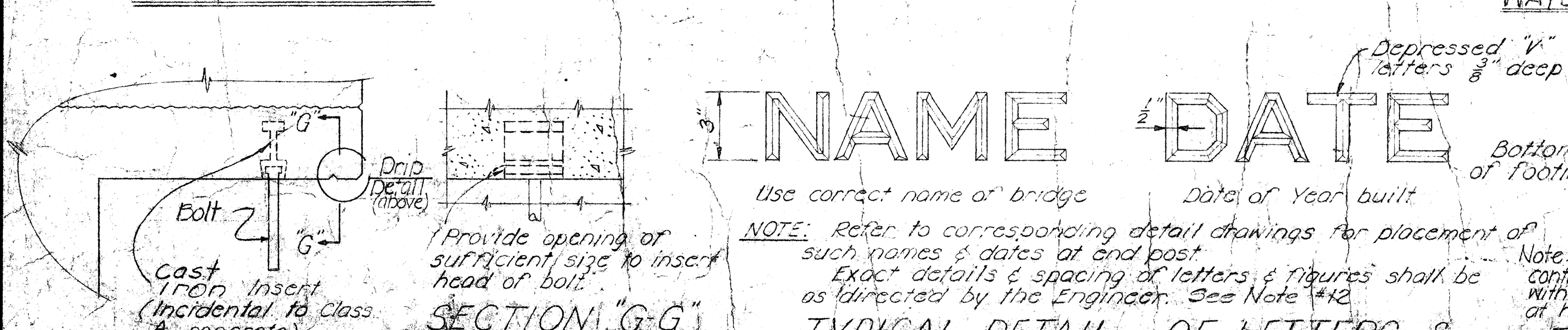
TYPICAL DRAINAGE DETAILS



CONTROL JOINT DETAILS

TYP. FLASHING COMPOUND WATERPROOFING DETAIL

INSERT DETAIL



DETAIL OF PIPE HANGERS & INSERTS

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER
DATE 1-23-78

APPROVED
Paul T. Yamashita
ASSISTANT CHIEF, ENGINEERING
DATE 1-28-78

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

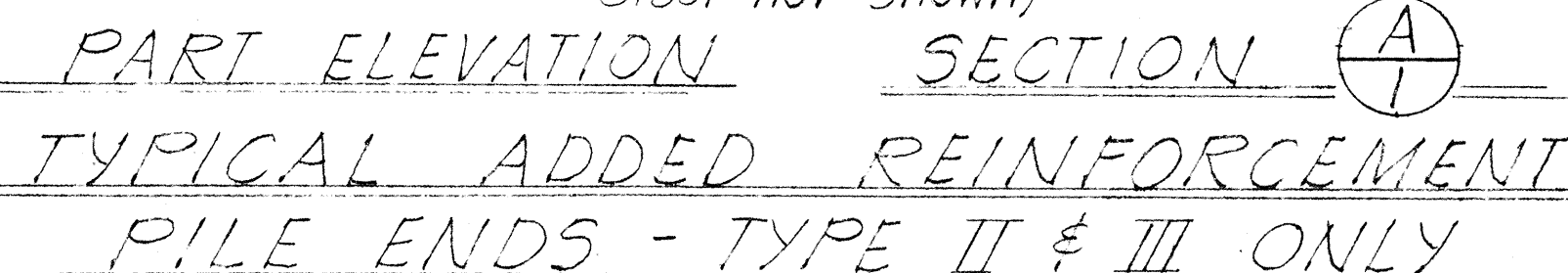
STANDARD DETAILS

NOTES AND MISCELLANEOUS
DETAILS

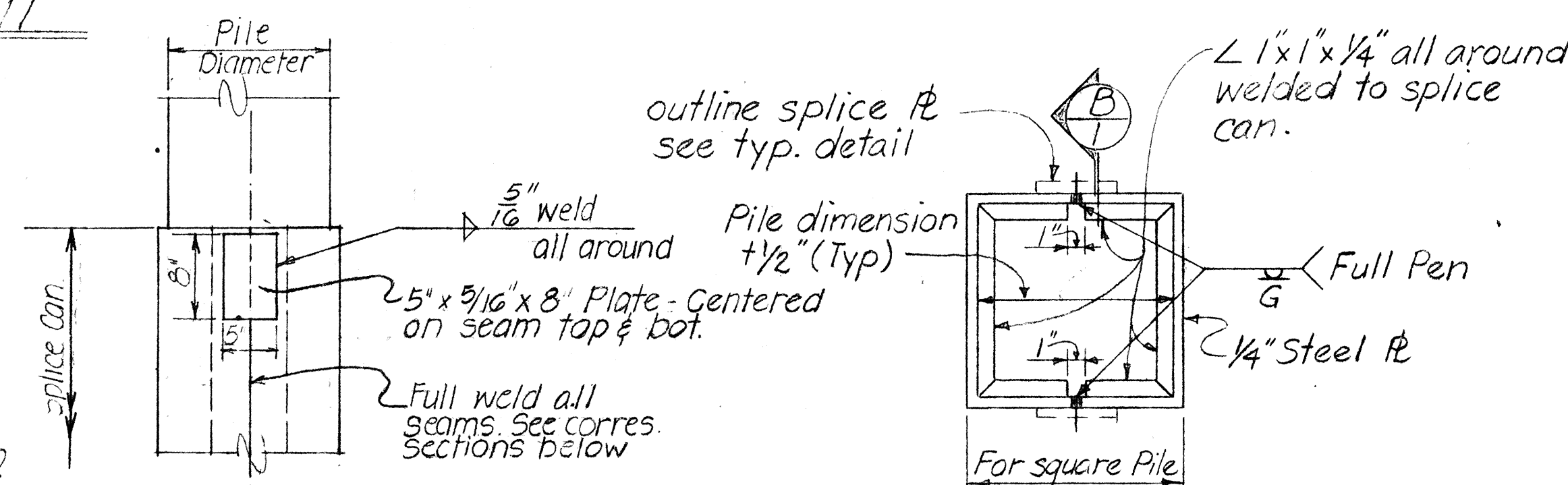
F.A.R. No. BRF-019-2(14)

Date: October 1983

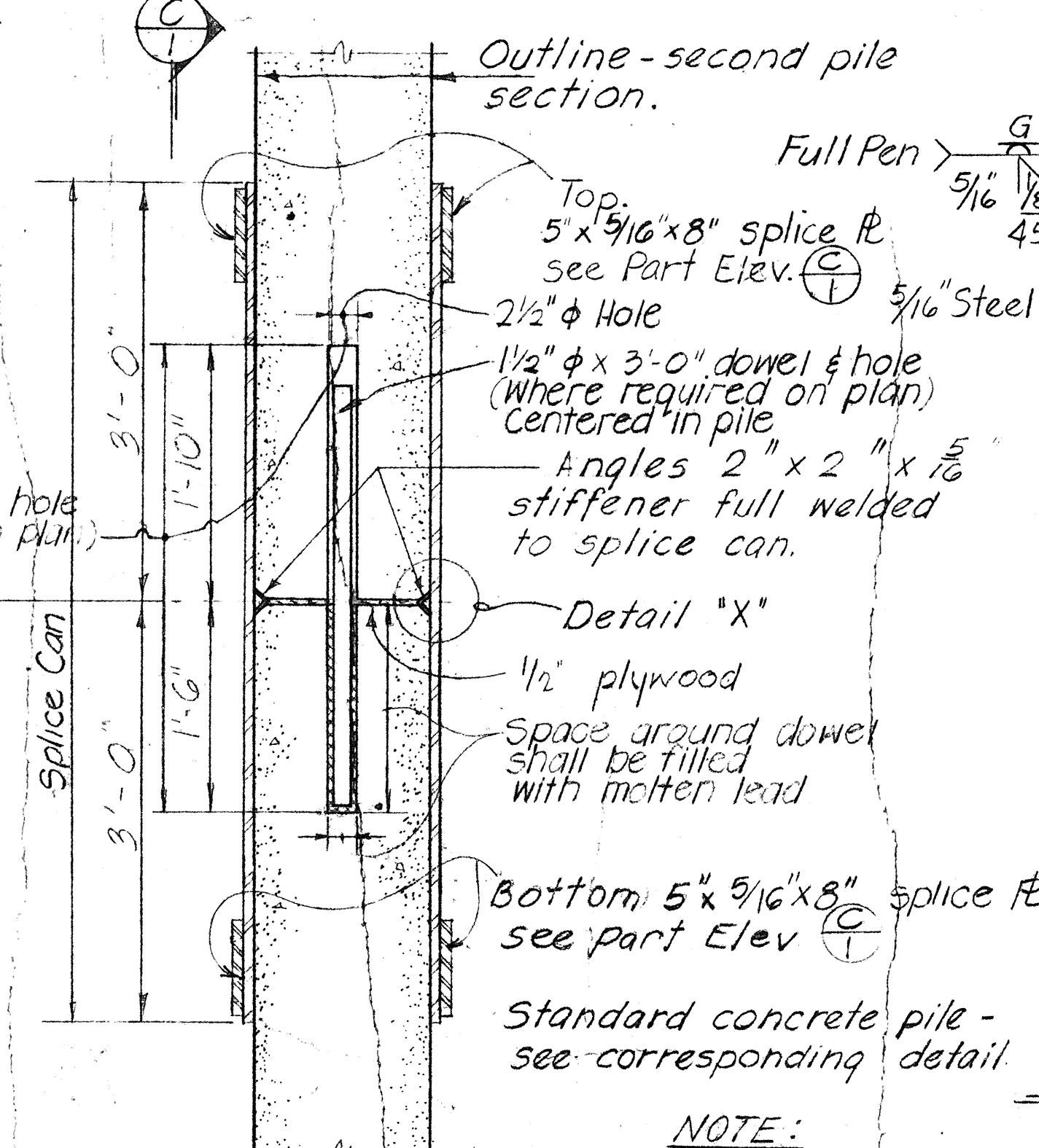
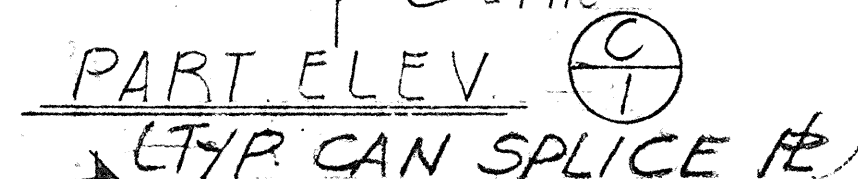
SHEET No. 1 OF 7 SHEETS DB-100



Concrete in pile build-ups without driving shall be Class A Concrete. Concrete in pile build-ups with driving shall have a minimum compressive cylinder strength f'_c of 5000 p.s.i. at 28 days. Build-ups may be driven if the specimen of concrete from which the piles were poured develops a strength of at least 3500 p.s.i. but not earlier than 7 days.



TYPE II & III

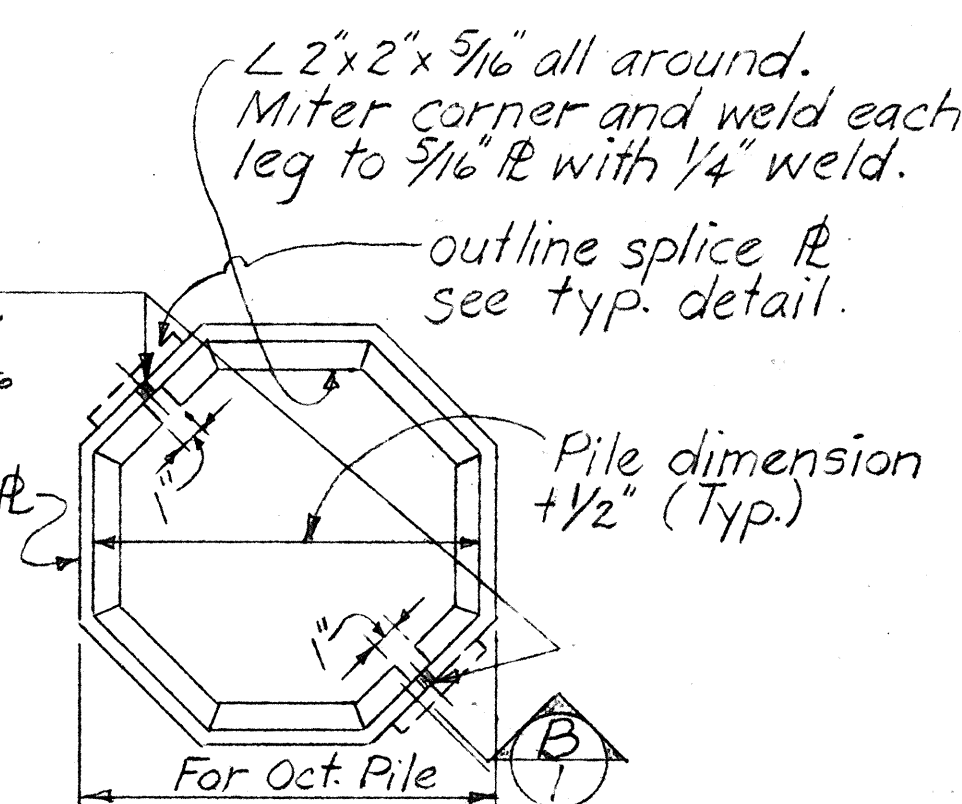


SECTION B
1

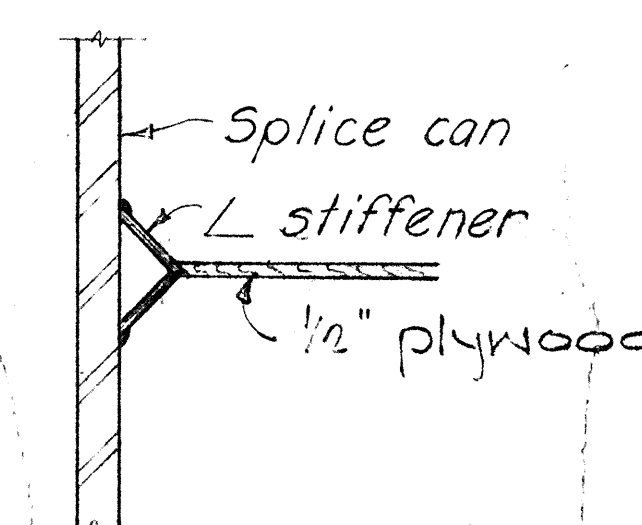
1. Splice detail shown above shall not be used except for pile length in excess of 100'-0" long.
2. Structural steel for splice can shall be ASTM A36.

TYPICAL PILE SPLICE DETAILS
(FOR PRESTRESSED CONCRETE PILES
WHEN CAST IN TWO OR MORE SECTIONS)

NOTE: All welding shall conform to the Specifications for "Welded Highway and Railway Bridges" of the American Welding Society.



TYPE I



DETAIL 'X'

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER

APPROVED Paul T. Jamieson
ASSISTANT CHIEF, ENGINEERING

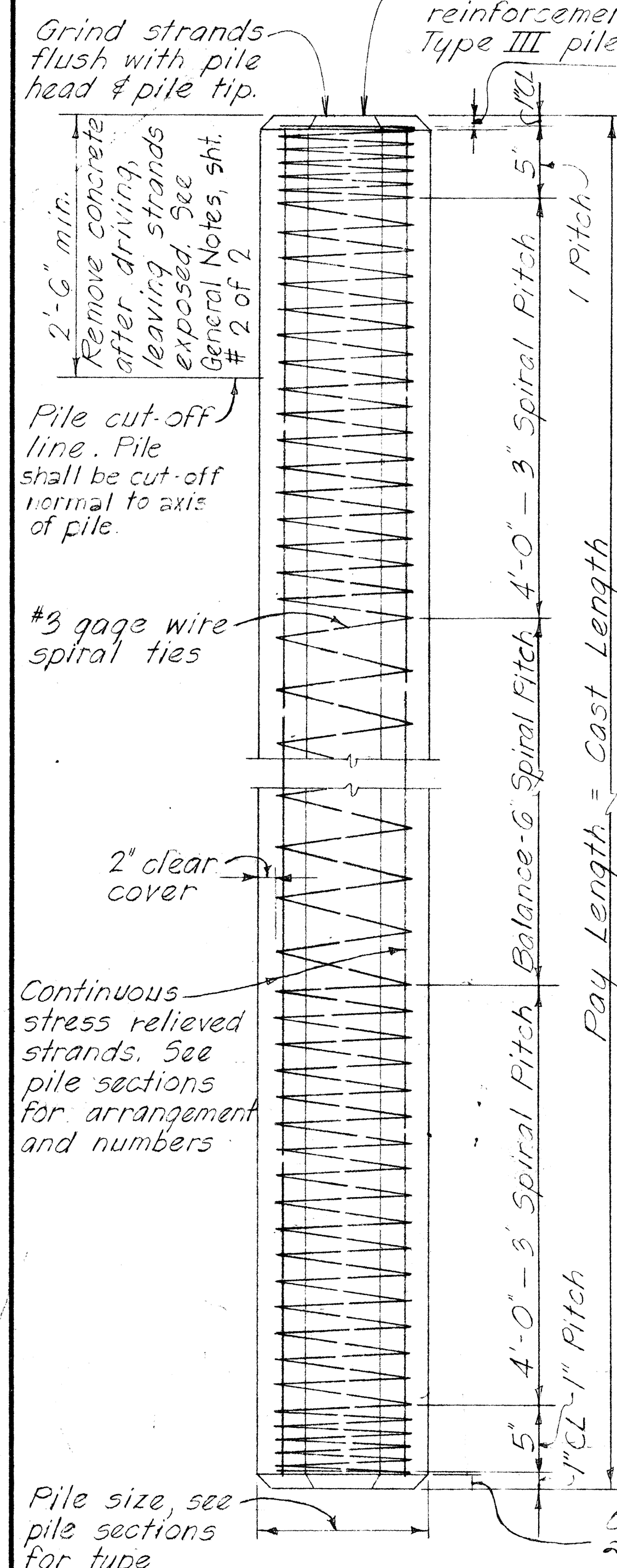
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

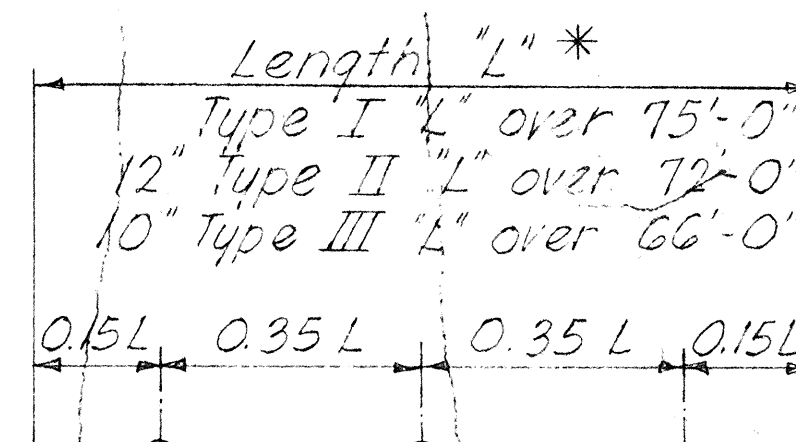
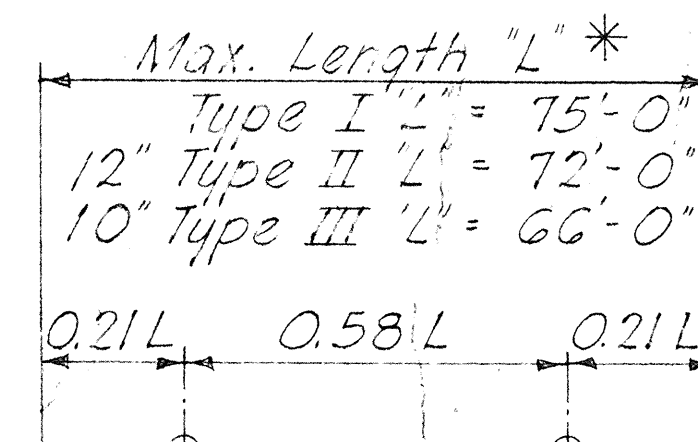
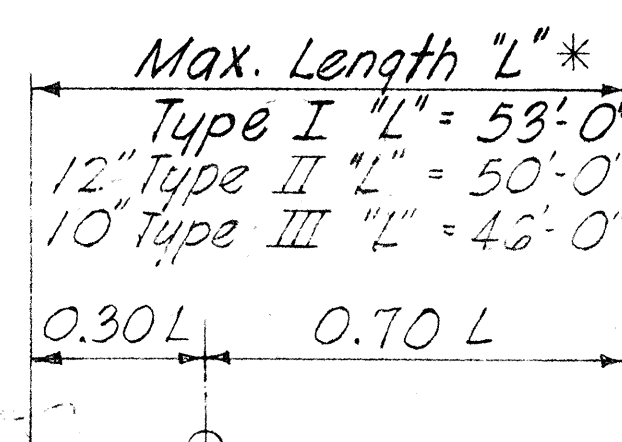
PRESTRESSED CONCRETE PILES

F.A.P. No. BRF-019-2(14)

SHEET No. 1 OF 2 SHEETS DB-300-



TYPICAL PILE DETAIL



* The length "L" is the distance end to end of pile.

1 POINT PICK-UP

2 POINT PICK-UP

B POINT PICK-UP

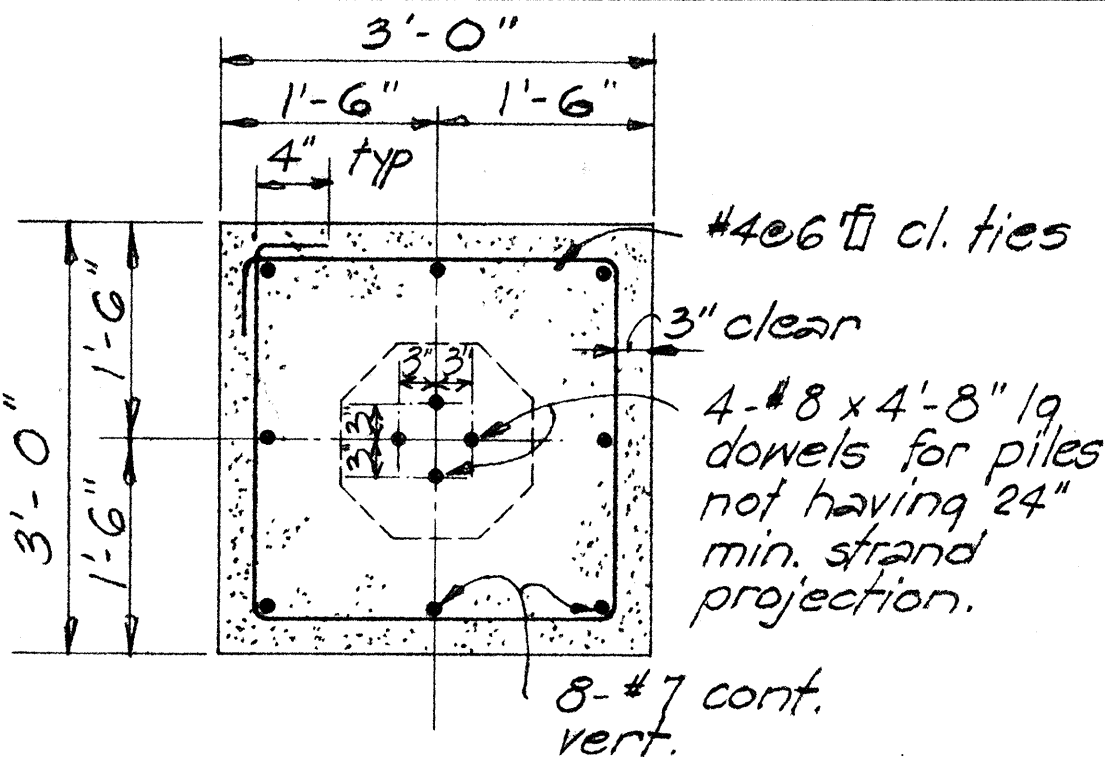
NOTE: Unless special lifting devices are attached for pick-up points, pick-up points shall be plainly marked on all piles after removal of the forms and all lifting shall be done at these points.

The use of special embedded or attached lifting devices, the employment of other pick-up points or any other method of pick-up shall be subject to approval by the Engineer.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BRF-019-2(14)	1970	54	78

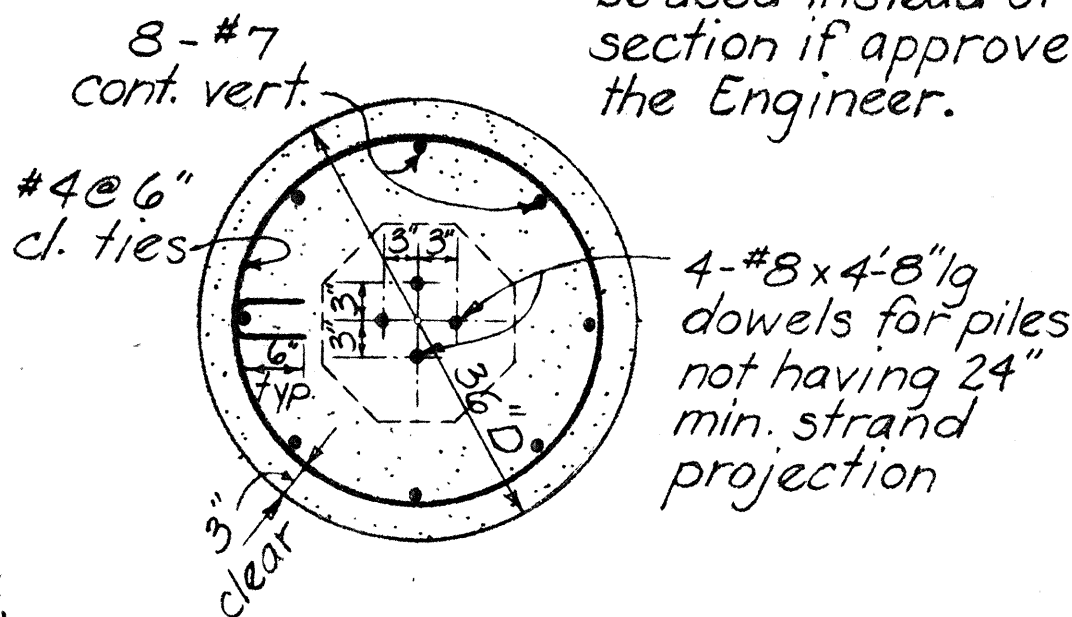
2'-6" min. unless otherwise directed by the Engineer.
Remove concrete after driving, leaving reinf. exposed

Chamfer - See Typical Pile Detail.

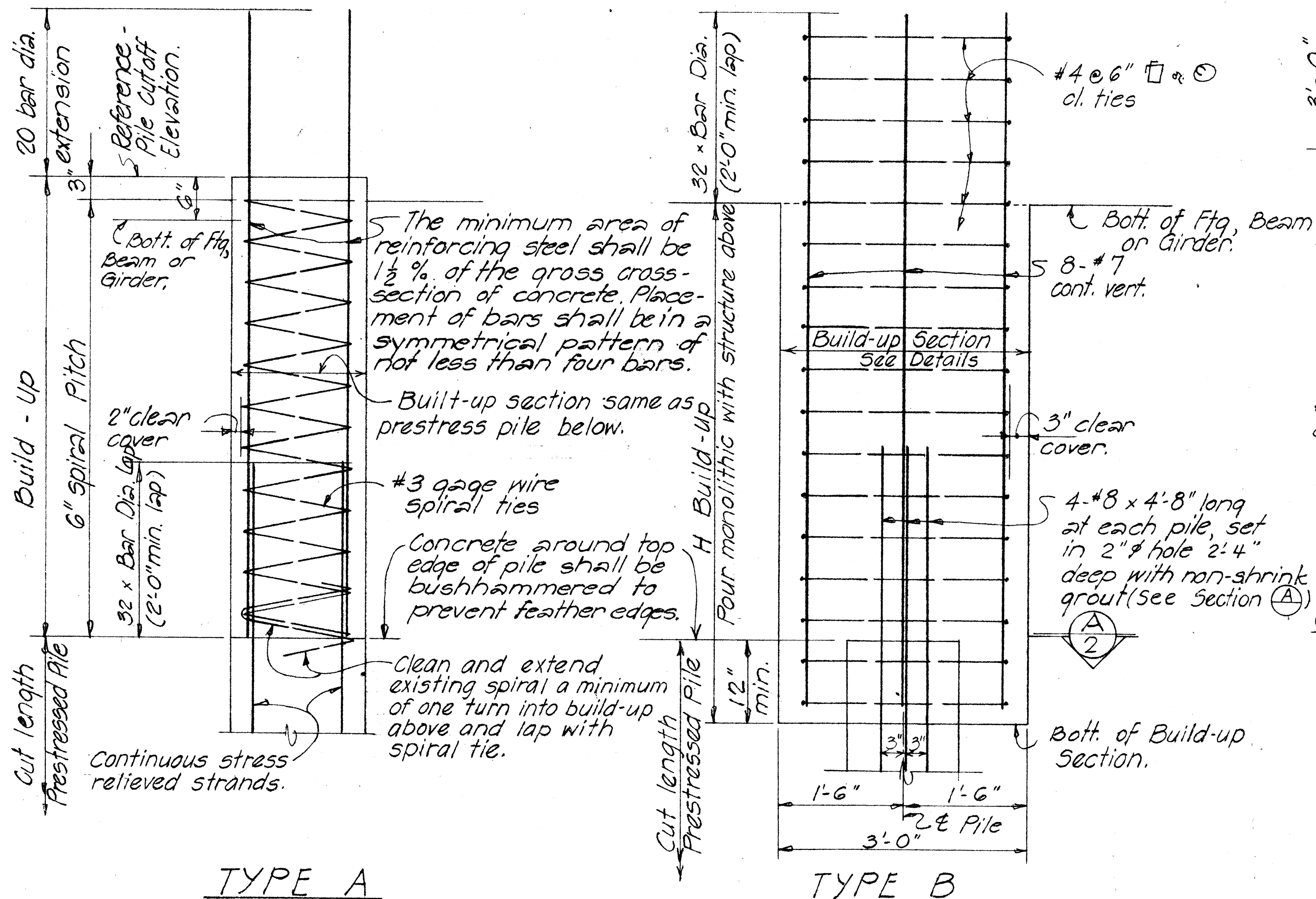


SQUARE BUILD-UP

Note:
Circular section may be used instead of square section if approved by the Engineer.



CIRCULAR BUILD-UP SECTION (A/2)



TYPE A

TYPE B

Notes:

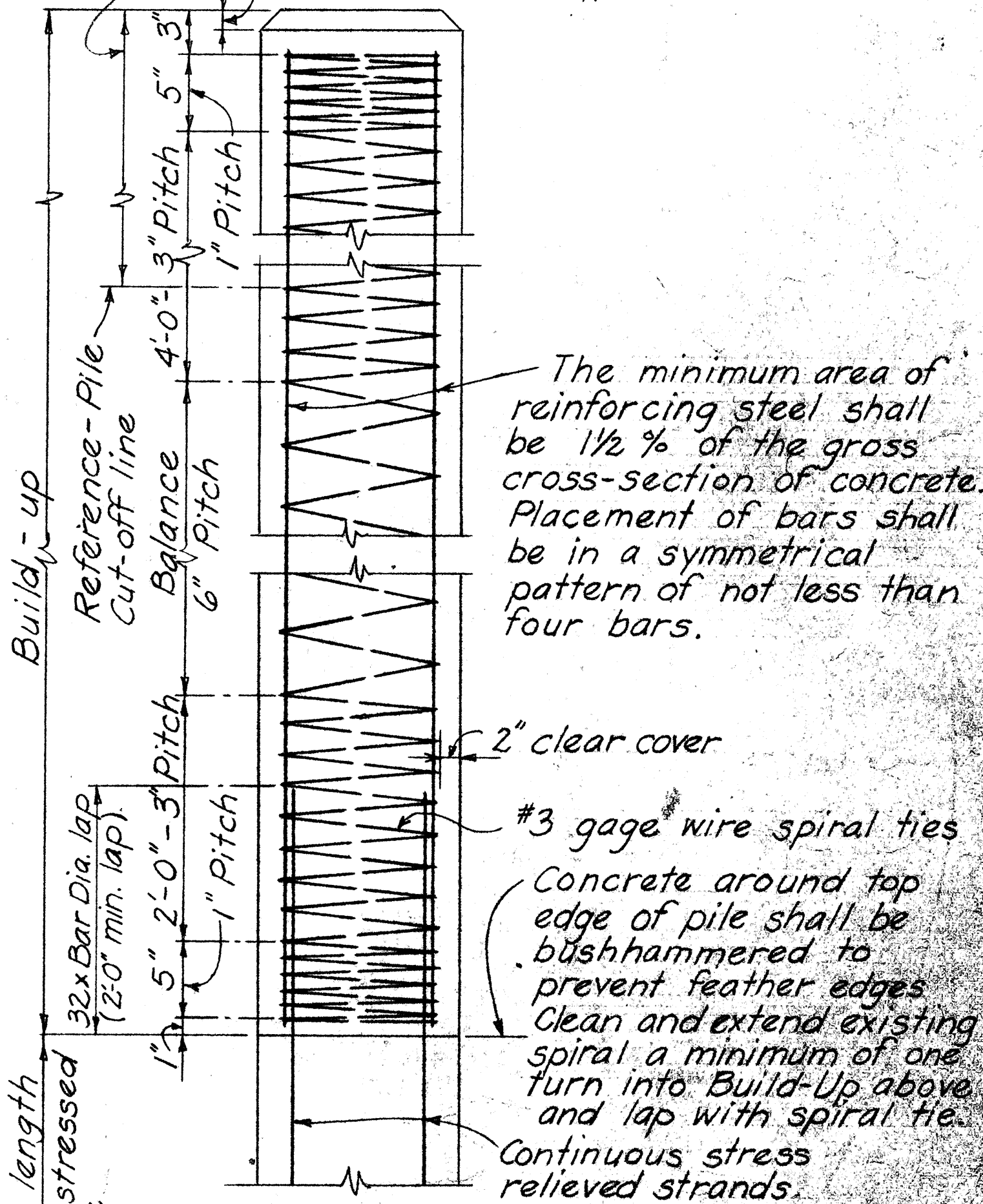
Selection of pile build-up type without driving to be determined by the Engineer.
When height of depressed portion of footing (H) exceeds 4", the depressed section shall be poured separately from the main body of the footing.

Depressed portion of footing may be omitted for pile heads embedded at least 4" into footing provided at least 90% of the piles in each footing have the minimum embedment into footing as shown in contract plans.

WITHOUT DRIVING
TYPICAL PILE BUILD-UP DETAILS

GENERAL NOTES

1. Work of cutting off prestressed conc. piles or concrete build-ups shall be performed in such a manner as to avoid spalling or damaging the pile below cut-off. In case of such damage, the pile shall be replaced or repaired by the Contractor at his expense as directed by the Engineer.
2. Portion of pile embedded into footing shall be of sound concrete. Damaged portions shall be removed and pile cut-off elevation lowered as required by the Engineer.



WITH DRIVING
TYPICAL PILE BUILD-UP DETAIL

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER
1-23-70
DATE

APPROVED
Paul T. Yamashita
For ASSISTANT CHIEF, ENGINEERING
1-28-70
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS
PRESTRESSED CONCRETE PILES
F.A.P. No. BRF-019-2(14)
Date: Oct. 1968
SHEET No. 2 OF 2 SHEETS DB-308-2