

RIP-RAP REQUIRED FOR ALL APRONS: SEE STD. PLATE ST-4

PLACE GRANITE RIP-RAP AROUND SIDES AND OVER THE TOP OF THE F.E.S.

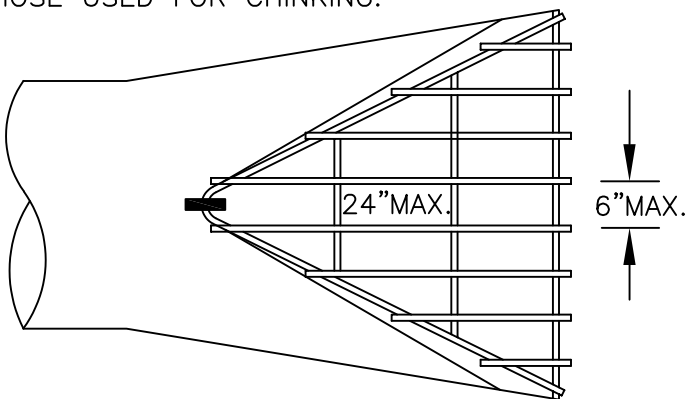
DON'T PLACE RIP-RAP HIGHER THAN THE INVERT OF THE F.E.S.

SEE STD. PL. ST-4 FOR RIPRAP DETAIL

PLACE NONWOVEN GEOTEXTILE FABRIC UNDER RIP-RAP AND EXTENDING 1' UNDER FES

HAND PLACED GRANITE RIPRAP

INDIVIDUAL STONES SHALL NOT WEIGH LESS THAN 50 POUNDS EACH EXCEPT THOSE USED FOR CHINKING.



INSTALL CHANNEL POST AND "FE" MARKER PLATE NEXT TO ALL APRONS.

OFF ROAD MARKER (INCIDENTAL)

TIE THE LAST 6 JOINTS ON INLET AND OUTLET PIPES AND BED IN GRANULAR MATERIAL.

USE 2 TIE BOLT FASTENERS PER JOINT INSTALLED AT 60 DEG FROM TOP OR BOTTOM OF PIPE.

USE 5/8" TIE FOR PIPE SIZES 12" TO 27".

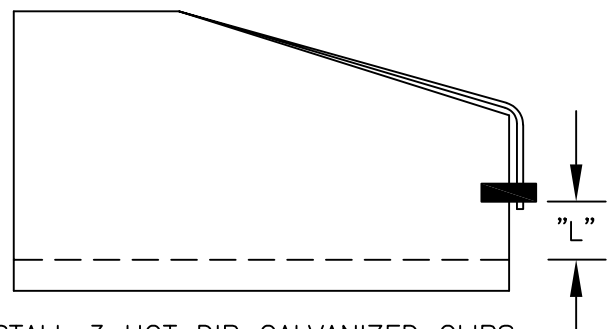
USE 3/4" TIE FOR PIPE SIZES 30" TO 66".

USE 1" TIE FOR PIPE SIZES OVER 72".

NUTS AND WASHERS ARE NOT REQUIRED ON PIPE SIZE LESS THAN 24".

TRASH GUARDS WILL BE REQUIRED ON ALL 24" OR LARGER APRONS UNLESS APPROVED BY THE CITY ENGINEER.

SIZE OF PIPE	BARS	BOLTS	MIN. "L"
21" TO 42"	1"	3/4"	6"
48" TO 72"	1-1/4"	1"	12"



INSTALL 3 HOT DIP GALVANIZED CLIPS TO FASTEN TRASH GUARD TO F.E.S.



STANDARD DETAILS
INLET & OUTLET F.E.S. WITH TRASH GUARD
CITY OF PLYMOUTH

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ST-3
REVISED 1-17