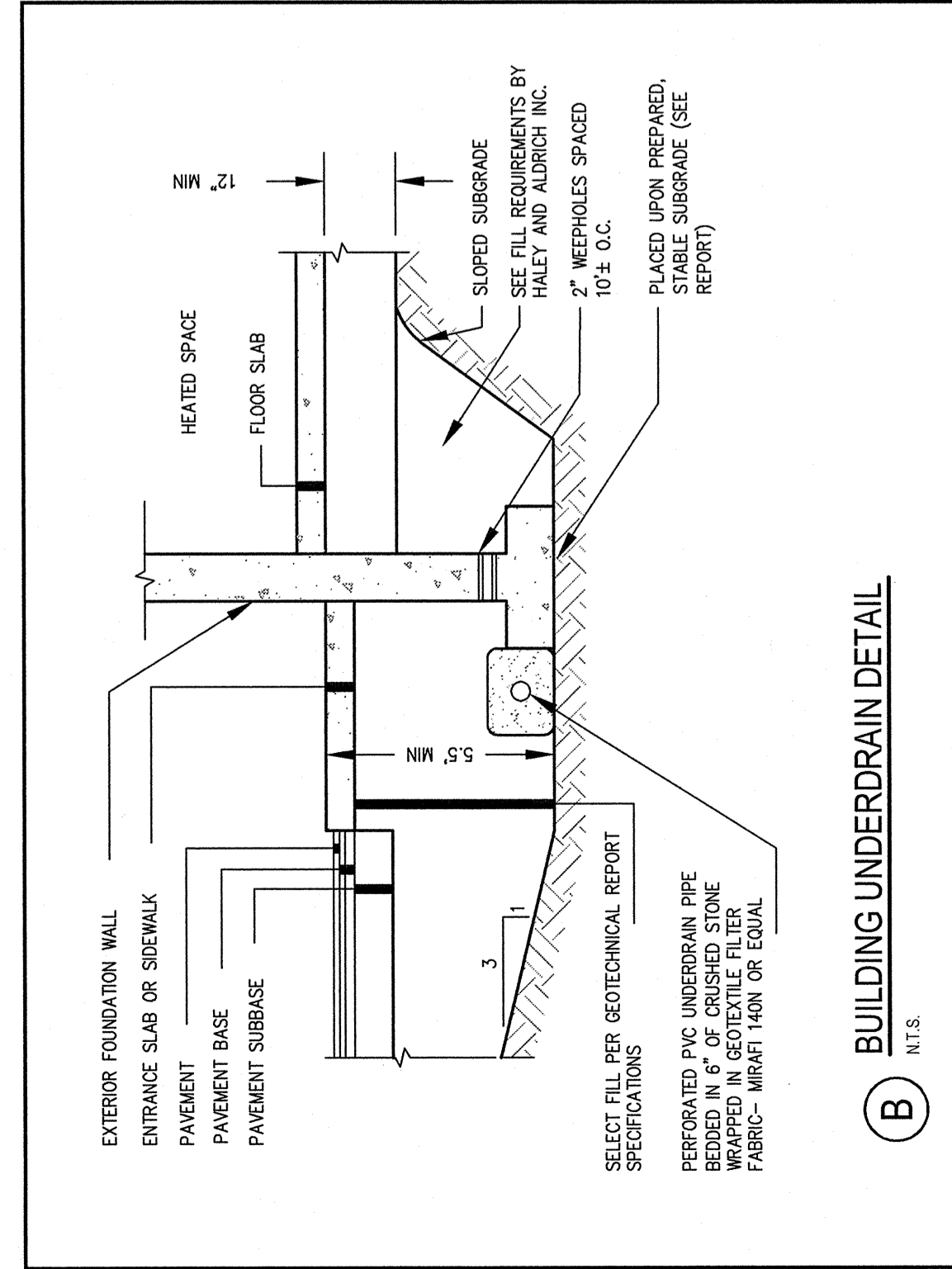
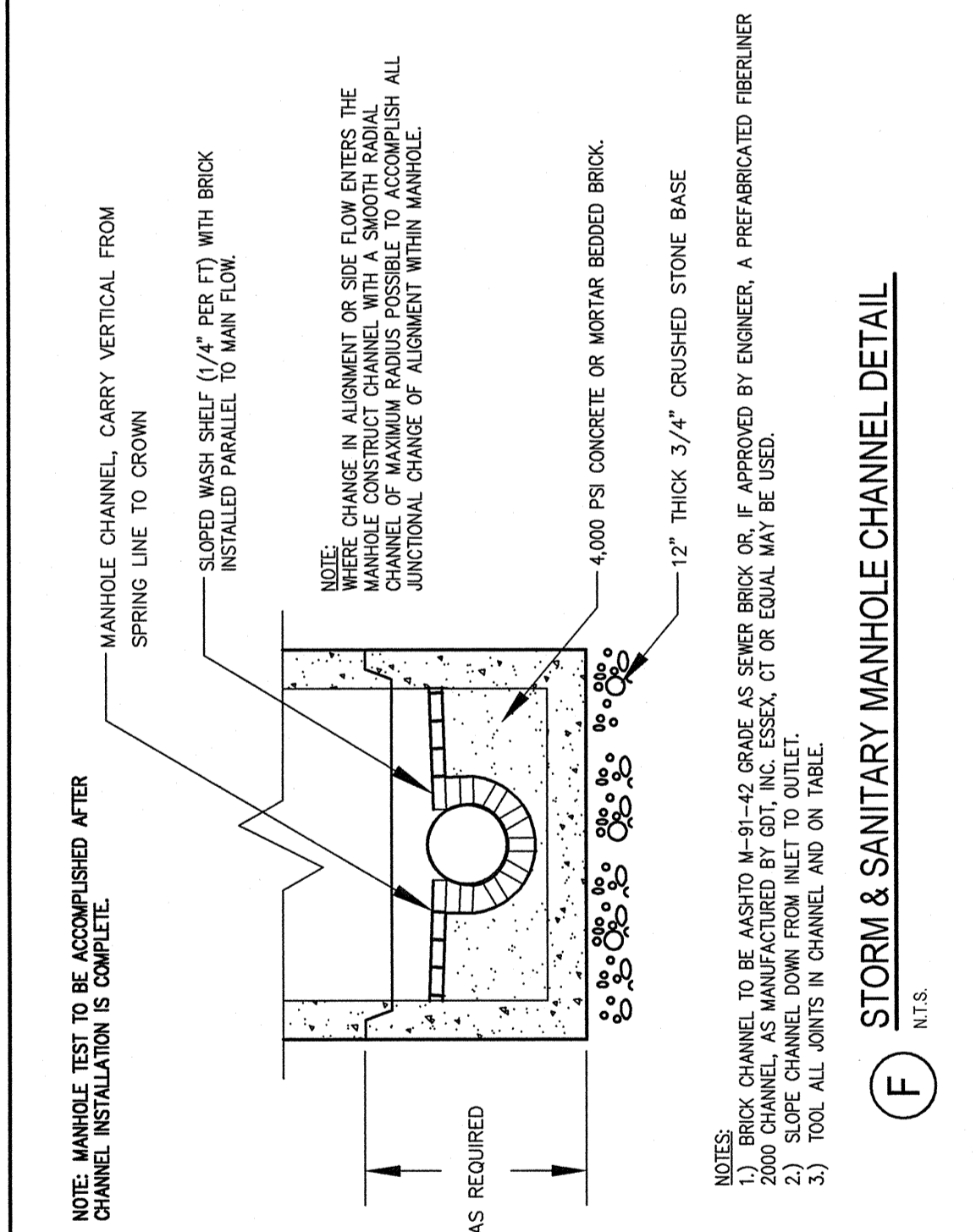


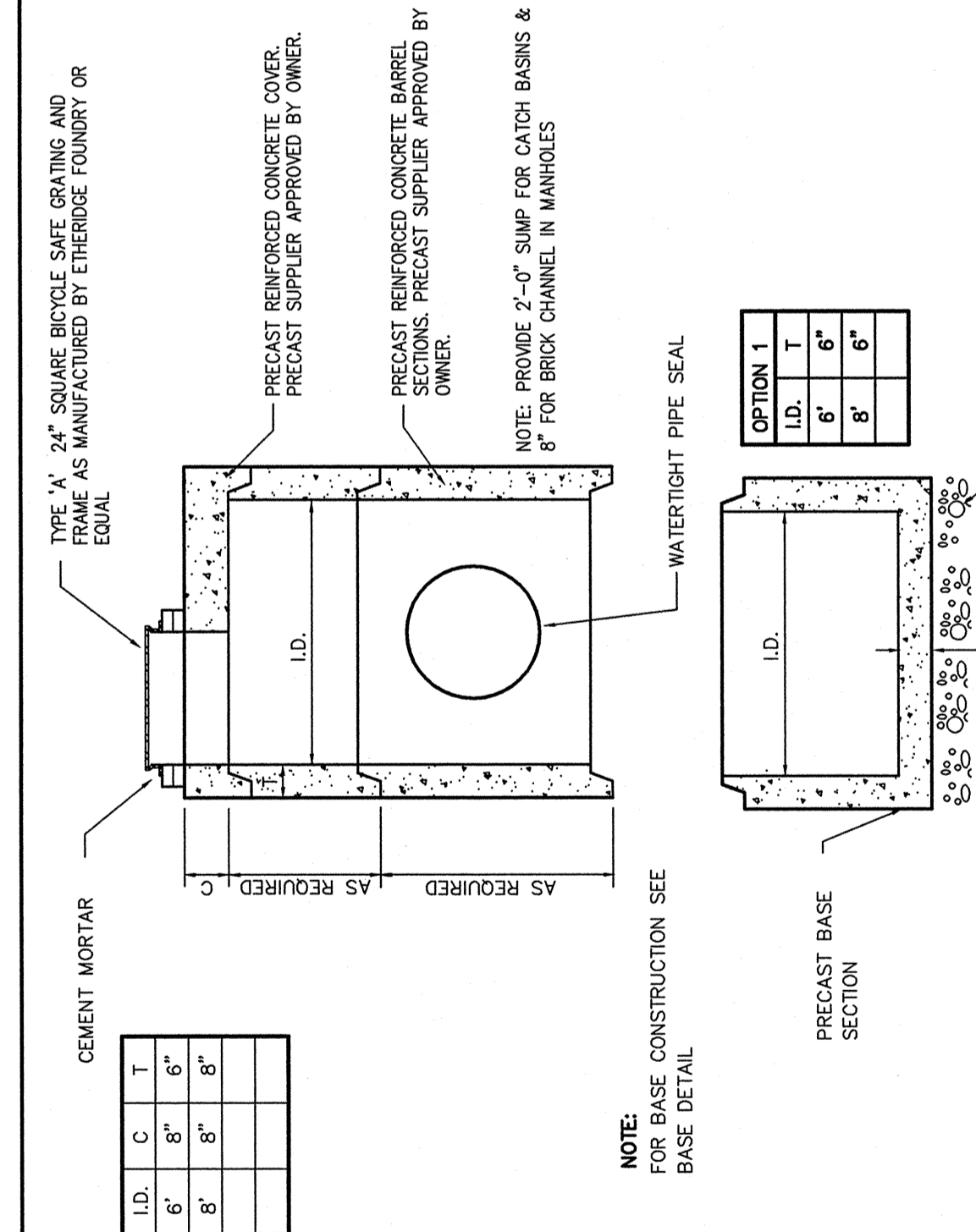
A 4'-0" OR 5'-0" PRECAST CATCH BASIN



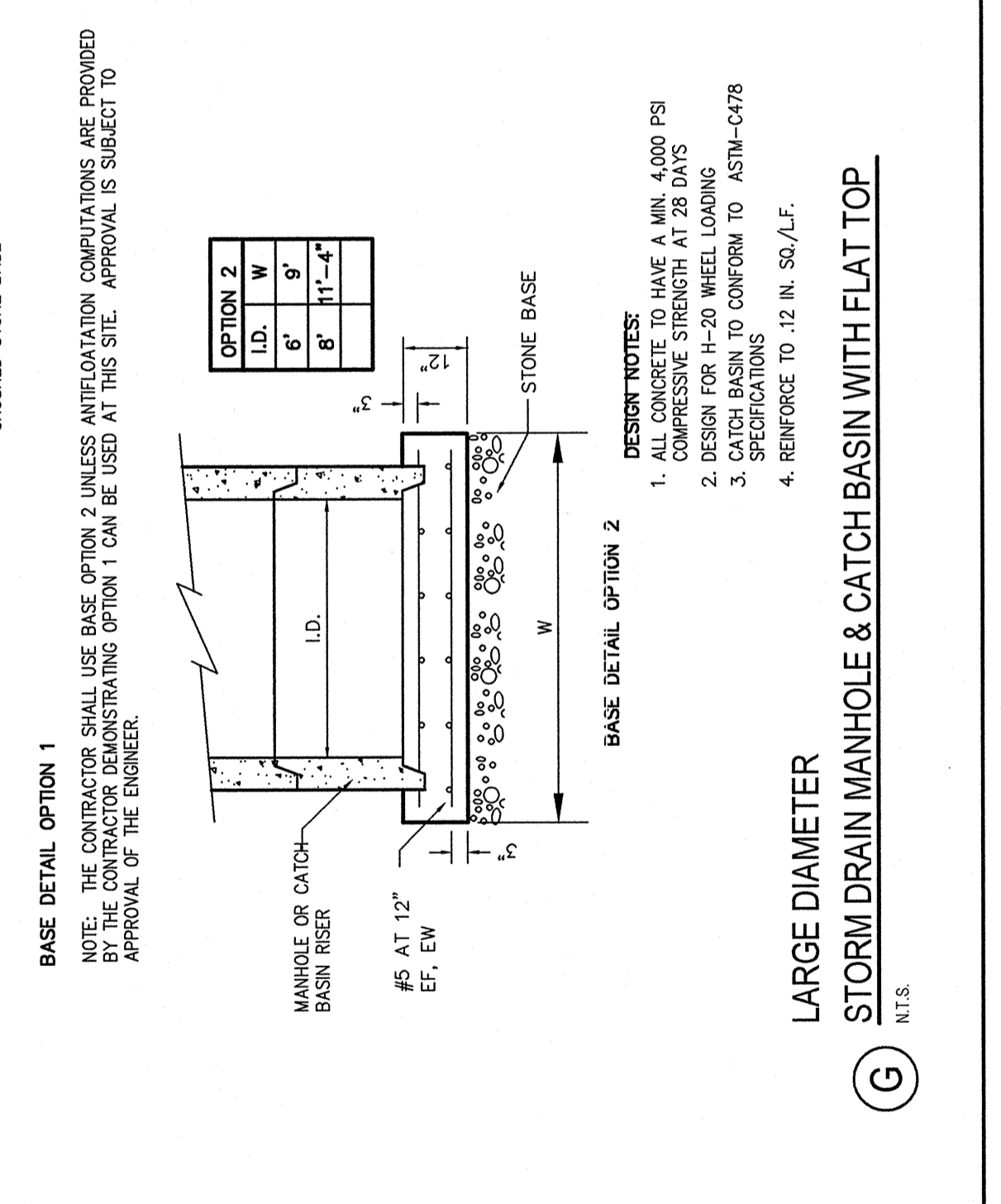
B BUILDING UNDERDRAIN DETAIL



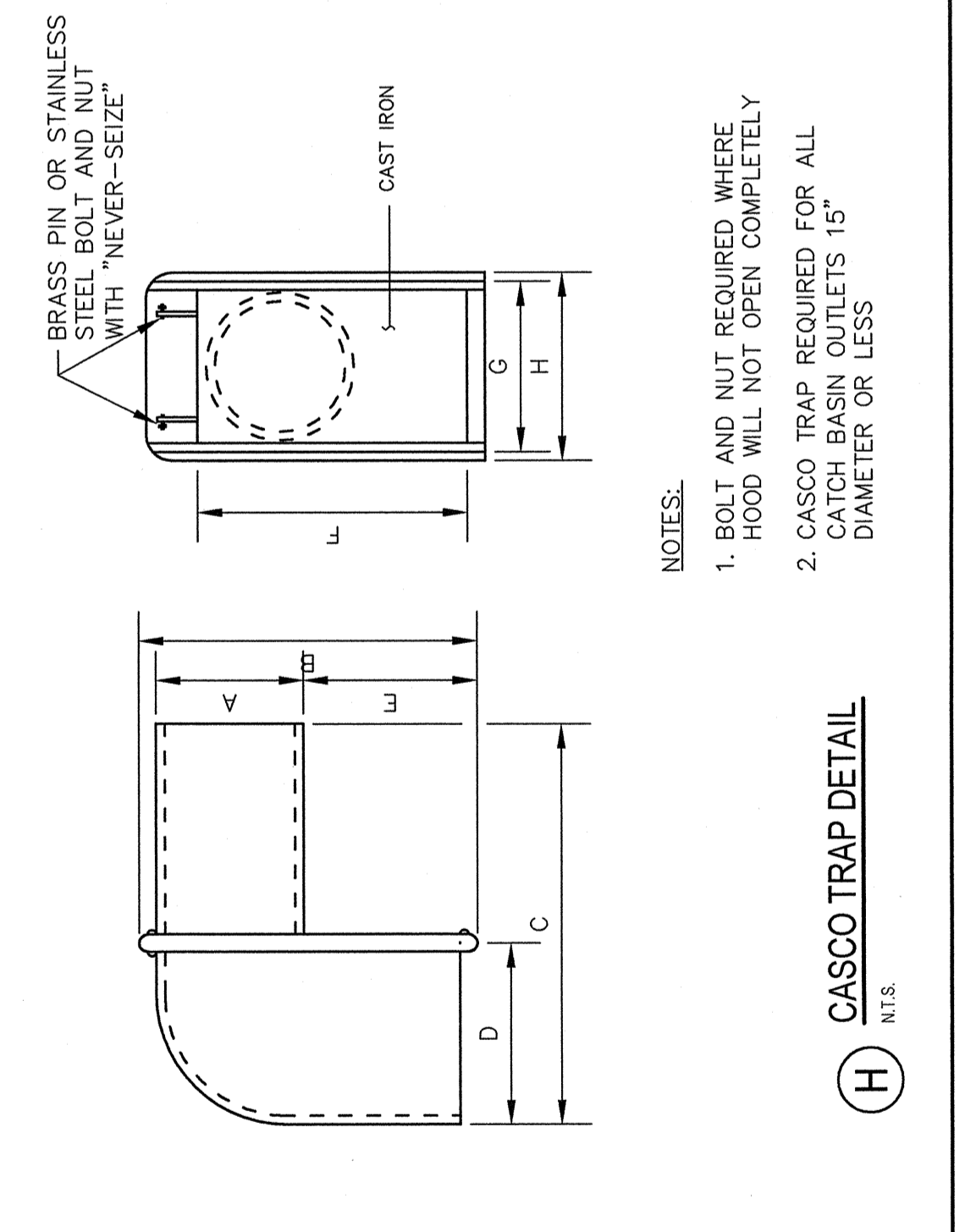
F STORM & SANITARY MANHOLE CHANNEL DETAIL



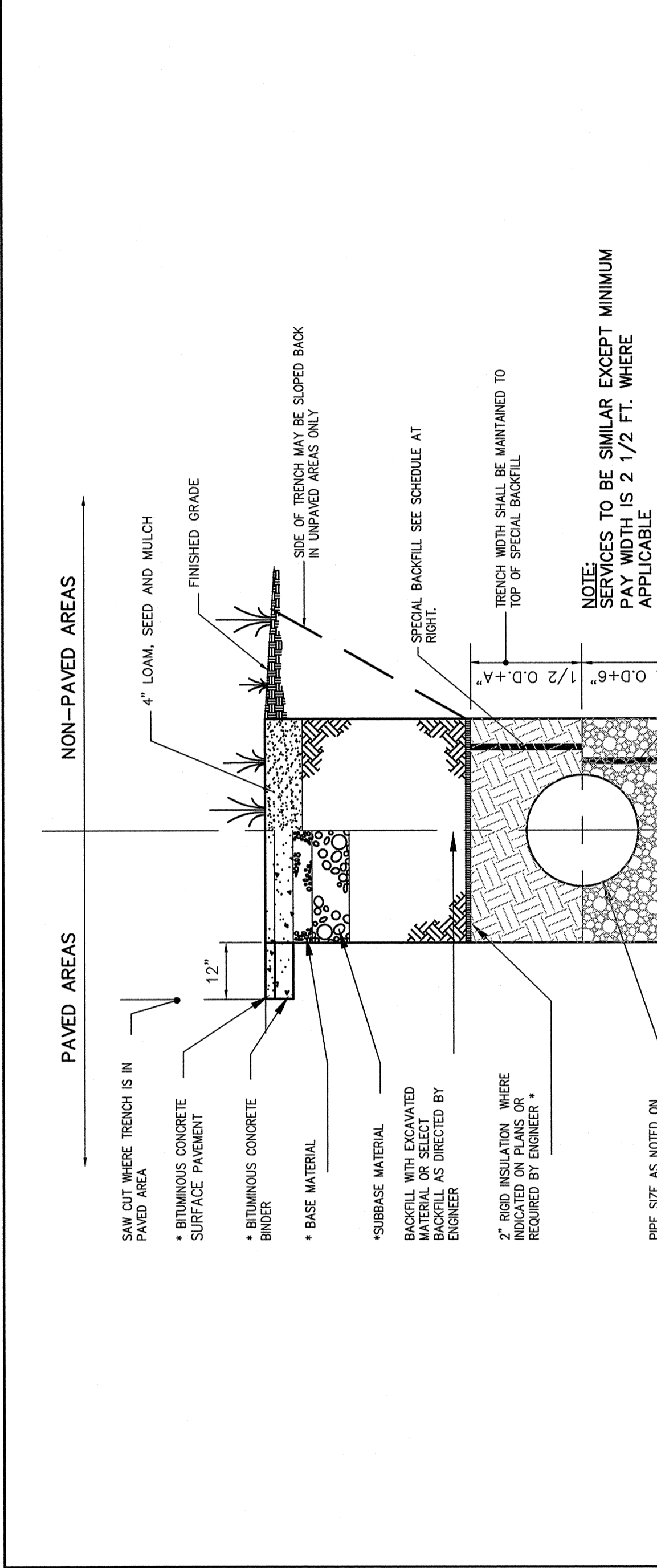
G STORM DRAIN MANHOLE & CATCH BASIN WITH FLAT TOP



H CASCO TRAP DETAIL



I DUCTBANK - 6 WAY



J TYPICAL SEWER, WATER MAIN, & STORM DRAIN TRENCH SECTION

SCHEDULE OF BASE BACKFILL FOR NON-SANITARY INSTALLATIONS

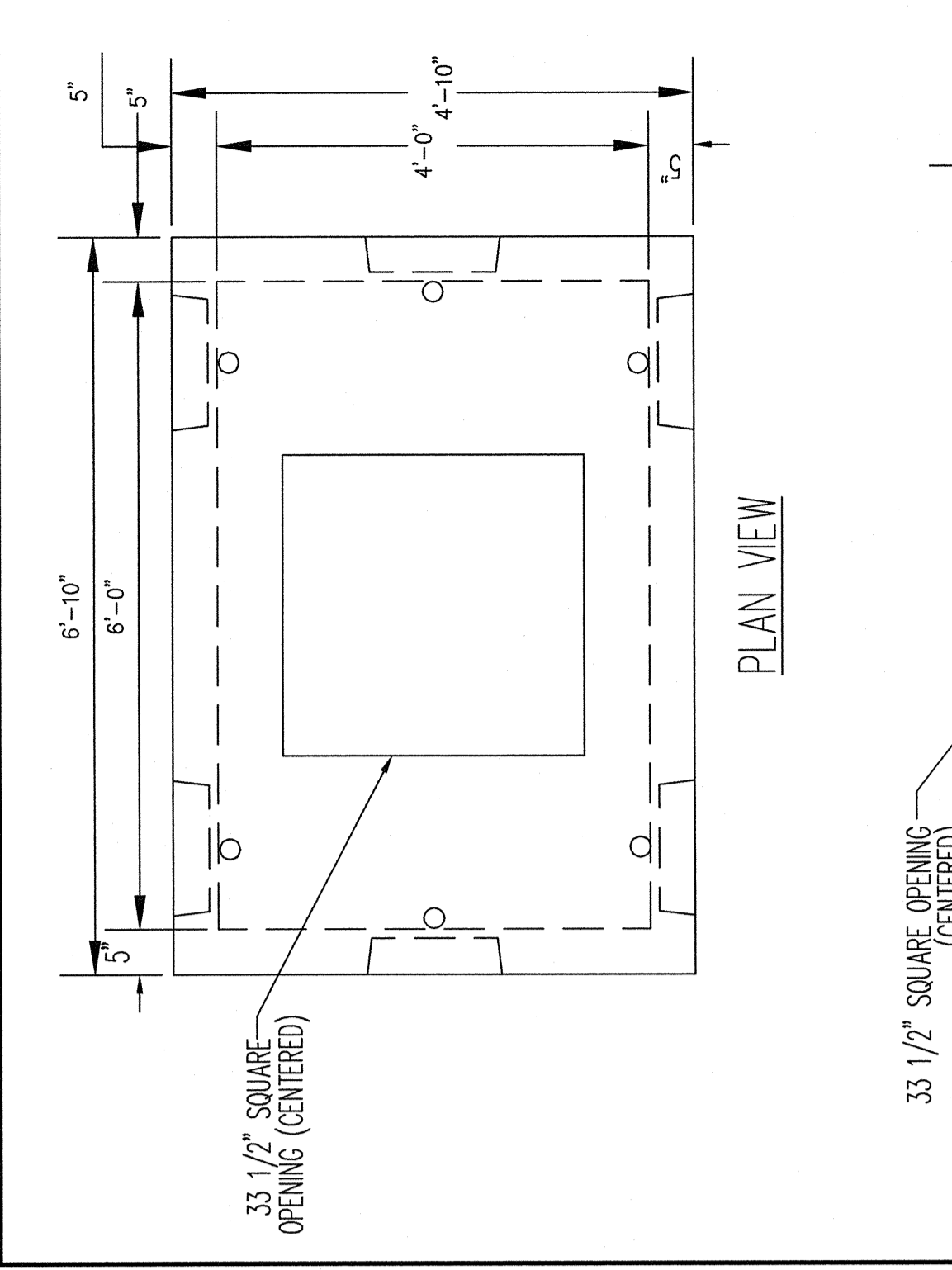
TYPE PIPE	BEDDING MATERIAL	SPECIAL BACKFILL	SELECT BACKFILL
CONCRETE	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER
PVC	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER
OMP	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER
DUCTILE IRON	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER

SCHEDULE OF BASE BACKFILL FOR SANITARY INSTALLATIONS

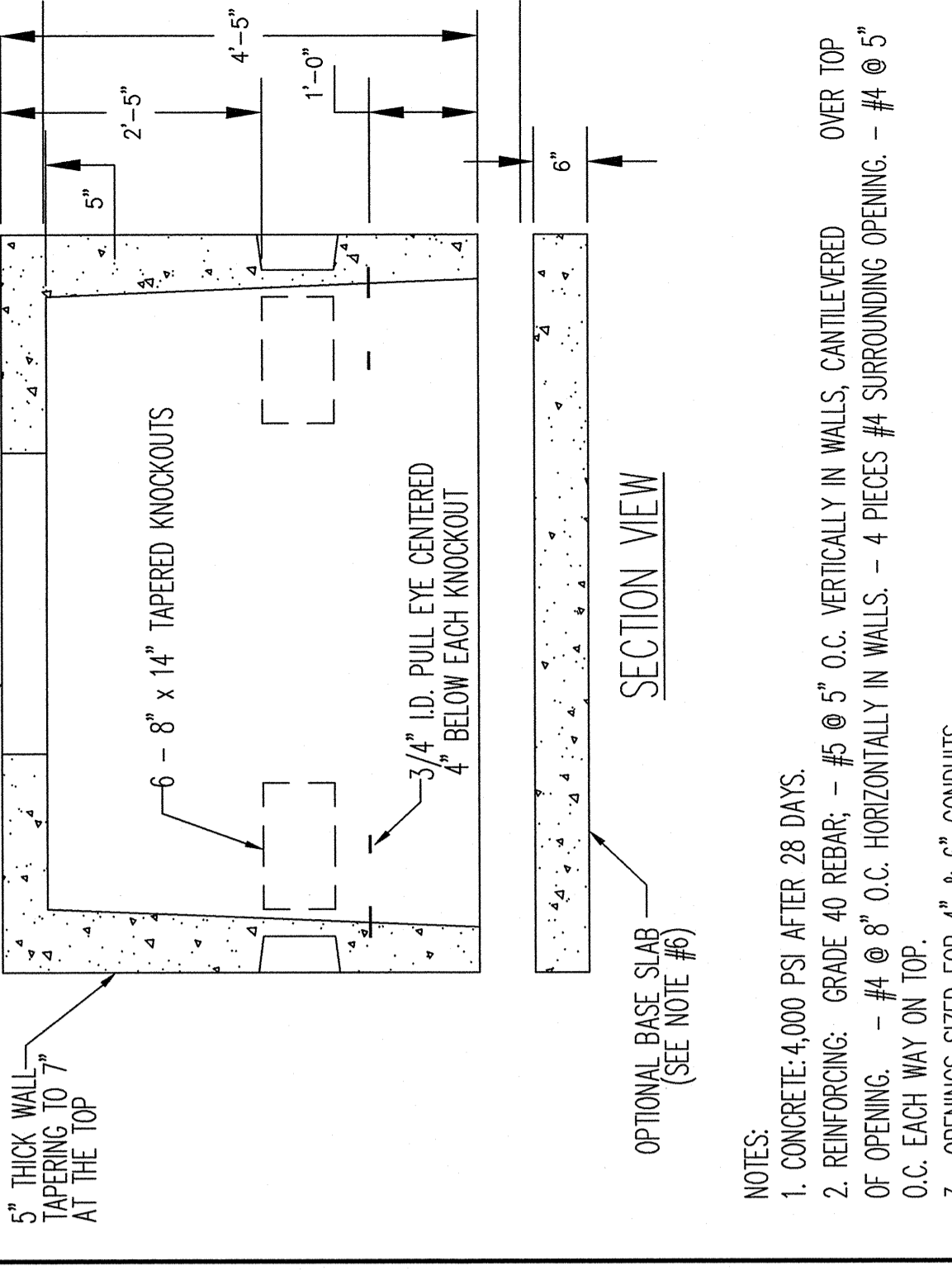
TYPE PIPE	BEDDING MATERIAL	SPECIAL BACKFILL	SELECT BACKFILL
PVC PRESSURE	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER
PVC GRAVITY	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER
DUCTILE IRON	3/4" CRUSHED STONE	GRANULAR M45-49 A-3 OR BETTER	GRANULAR M45-49 A-3 OR BETTER

MAXIMUM ALLOWABLE TRENCH WIDTHS FOR SEWERS

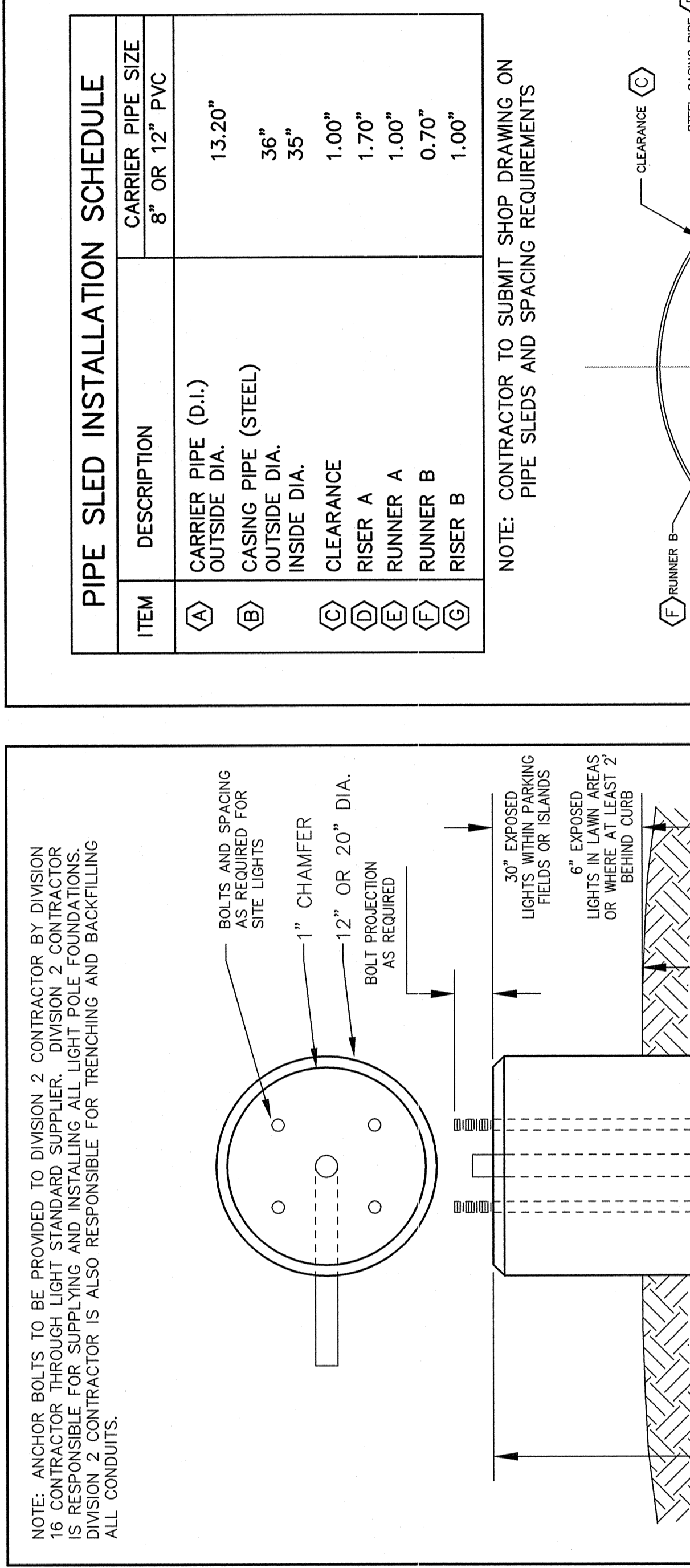
PIPE SIZE	MAXIMUM WIDTH
10" OR LESS	4'-0"
12"	4'-6"
15"	5'-0"
18"	5'-6"
24"	6'-0"
30"	7'-0"
36"	7'-6"
42"	8'-0"
48"	8'-6"



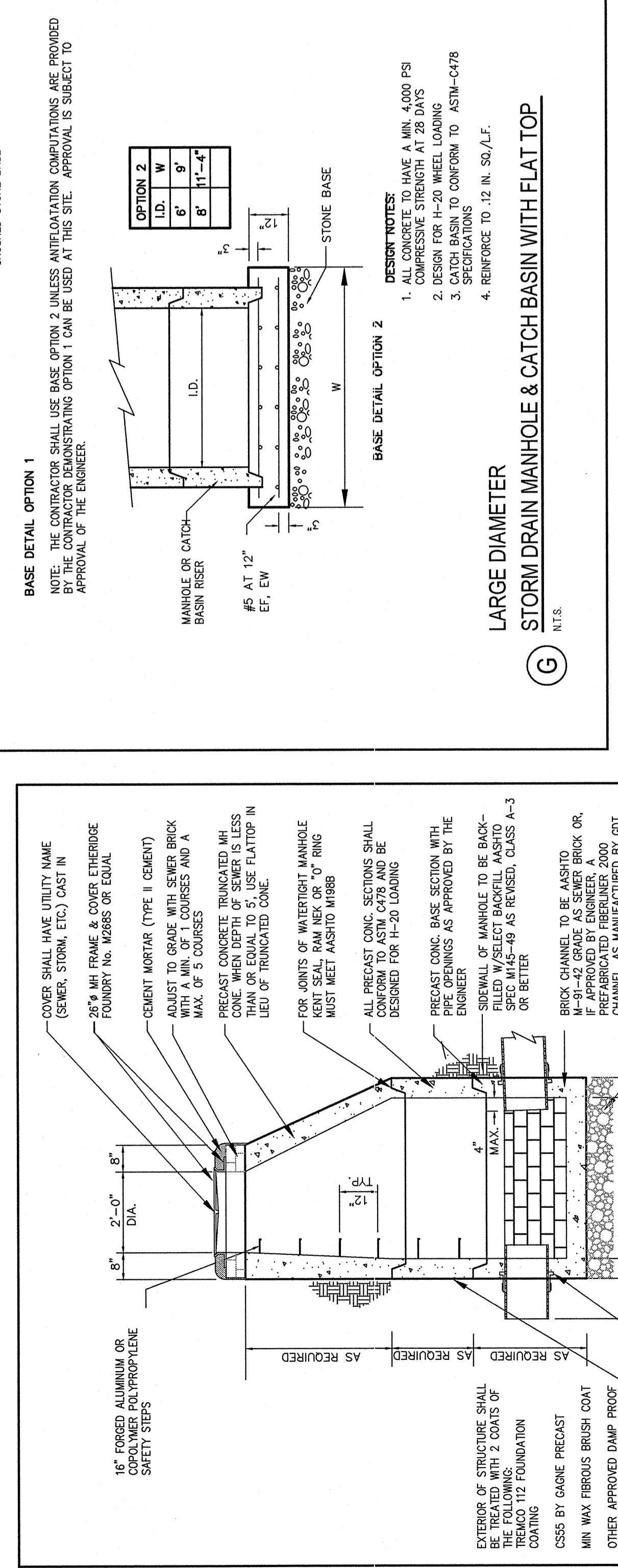
M ELECTRICAL HAND HOLE DETAIL



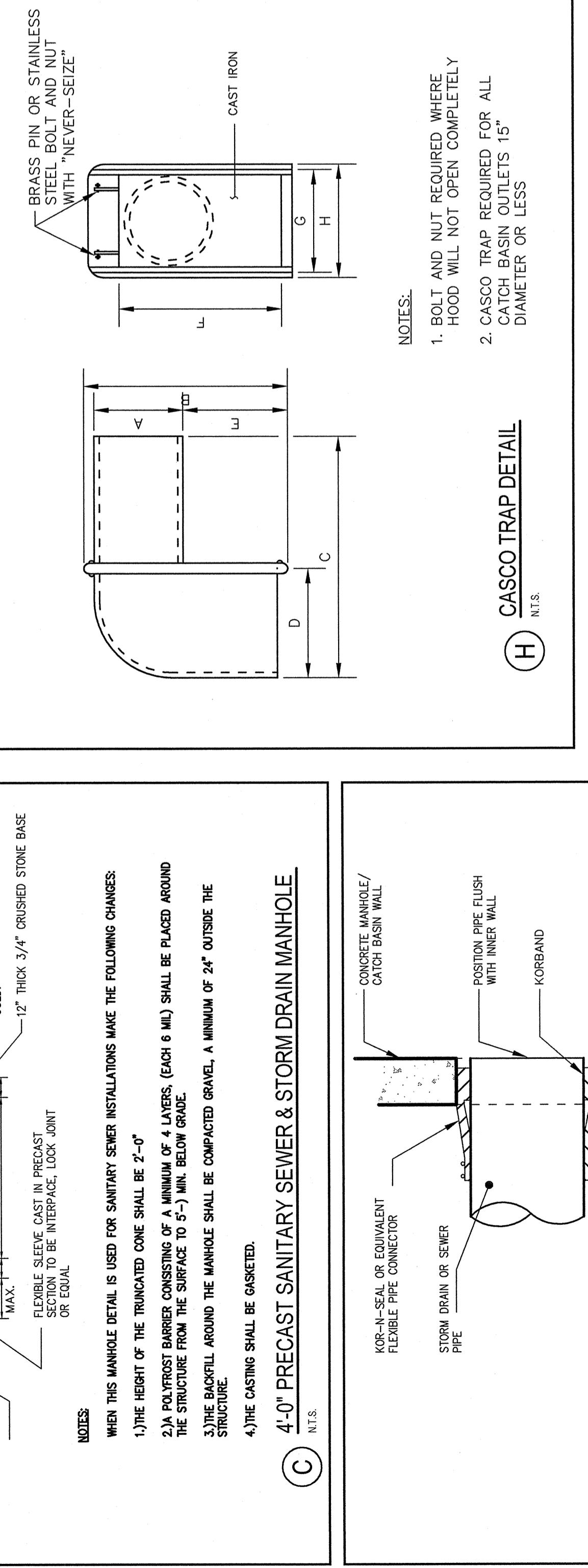
N UTILITY POLE RISER DETAIL



L PIPE SLED DETAIL



C 4'-0" PRECAST SANITARY SEWER & STORM DRAIN MANHOLE

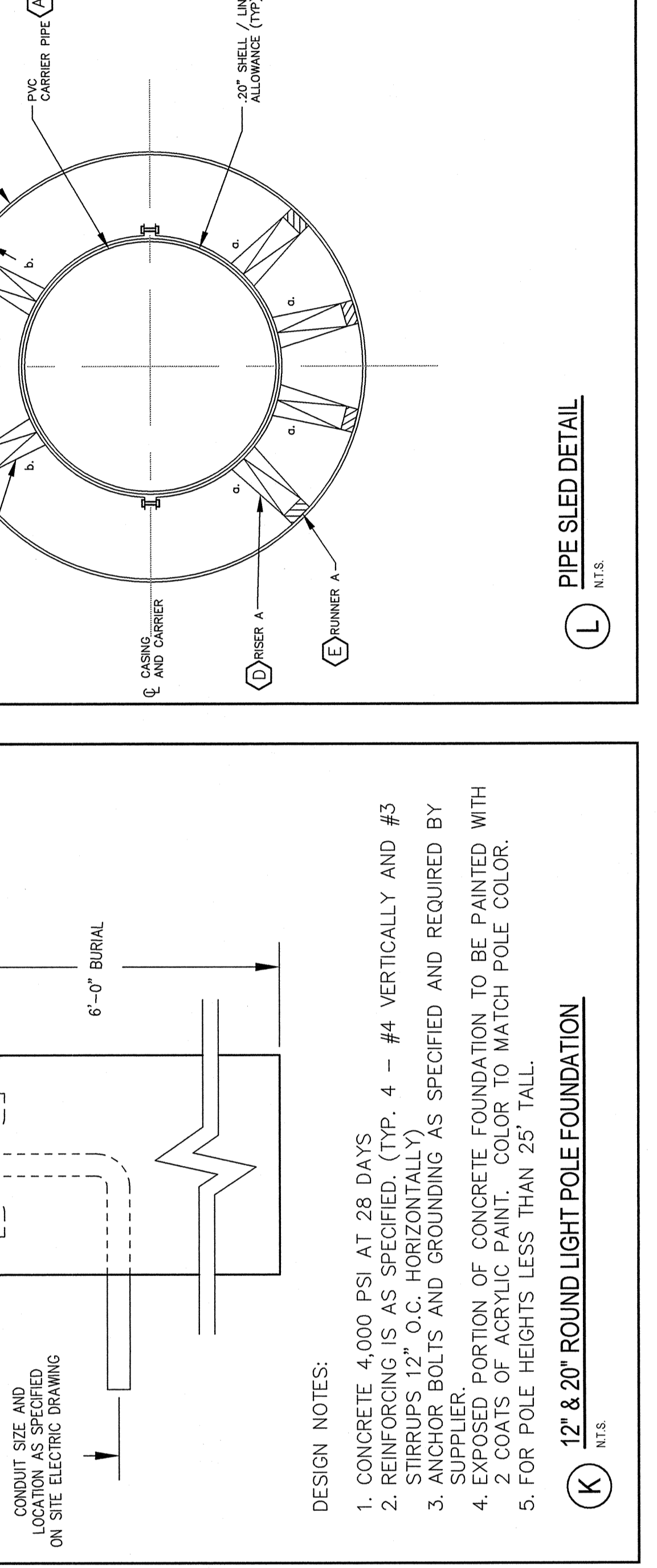


D PIPE CONNECTION TO PRECAST CONCRETE SANITARY SEWER AND STORM DRAINAGE STRUCTURE

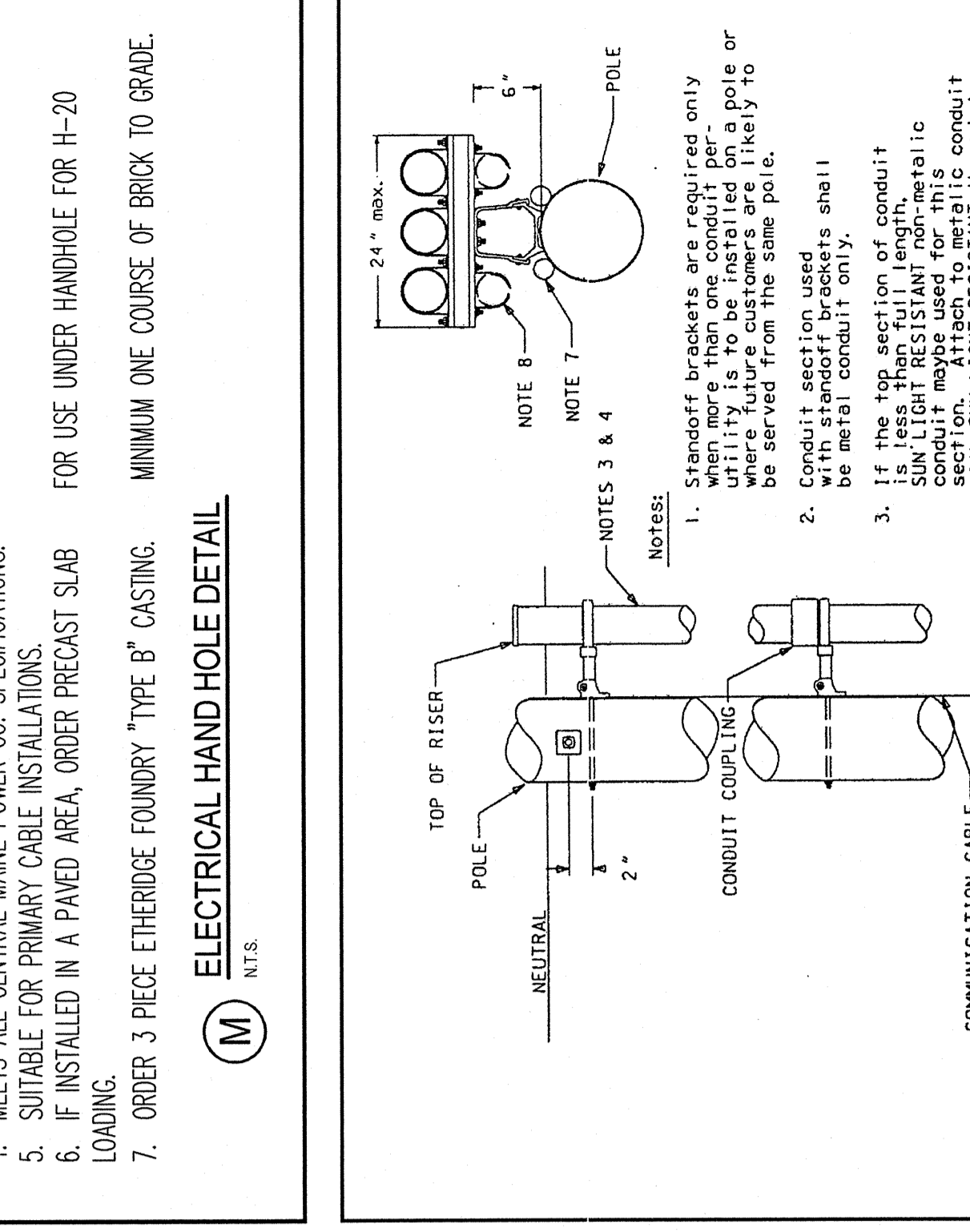
PIPE SLED INSTALLATION SCHEDULE

ITEM	DESCRIPTION	CARRIER PIPE SIZE
A	CARRIER PIPE (D.I.)	13.20"
B	CASING PIPE (STEEL) OUTSIDE DIA.	36"
C	CASING PIPE (STEEL) INSIDE DIA.	35"
D	CLEARANCE	1.00"
E	RISER A	1.70"
F	RUNNER A	1.00"
G	RISER B	0.70"
H	RUNNER B	1.00"

NOTE: CONTRACTOR TO SUBMIT SHOP DRAWING ON PIPE SLEDS AND SPACING REQUIREMENTS



K LENGTH-WISE SECTION



O UTILITY POLE RISER DETAIL

DESIGN NOTES:

- CONCRETE 4,000 PSI AT 28 DAYS
- REINFORCING IS AS SPECIFIED. (TYP. 4 - #4 VERTICALLY AND #3 STIRRUPS 12" O.C. HORIZONTALLY)
- ANCHOR BOLTS AND GROUNDING AS SPECIFIED AND REQUIRED BY SUPPLIER.
- EXPOSED PORTION OF CONCRETE FOUNDATION TO BE PAINTED WITH 2 COATS OF ACRYLIC PAINT. COLOR TO MATCH POLE COLOR.
- POLE HEIGHTS LESS THAN 25' TALL.

O UTILITY POLE RISER DETAIL

REVISIONS

REV	DATE	DESCRIPTION
1	11/10/02	SITE LOCATION OF DEVELOPMENT PERMIT SUBMISSION
2	3/10/06	PRELIMINARY SITE PLAN APPROVAL BY CITY OF PORTLAND
3	7/25/06	RELEASED TO CITY OF PORTLAND
4	7/25/06	RESUBMITTED TO CITY OF PORTLAND
5	7/25/06	RELEASED TO CONSTRUCTION MANAGER

CLIENT: MERCY HOSPITAL
PROJECT: MERCY AT THE FORE
SHEET TITLE: UTILITY DETAILS
PROJECT NO.: 21042-DET-UTIL
DATE: JAN. 2002
SCALE: NONE
DESIGNED BY: SRS
CHECKED BY: SRS
DATE: JAN. 2002
PROJECT NO.: 21042-DET-UTIL
SHEET: C-15A