TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

November 24, 1982

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of the Application of) Docket Nos. 50-390
Tennessee Valley Authority) 50-391

In my letter to you dated June 4, 1982, TVA committed to provide modifications to protect the diesel generator from degraded operation due to a tornado-generated missile impacting the diesel generator exhaust. The NRC in the Watts Bar Nuclear Plant Safety Evaluation Report indicated this was acceptable pending review of the details of the modification. Enclosed is a brief report describing the design associated with this modification and related sketches. This information should resolve confirmatory item 7.

If you have any questions concerning this matter, please get in touch with D. P. Ormsby at FTS 858-2682.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 24th day of Nov. 1982

Bryant M. Lowery
Notary Public
My Commission Expires 4/8/86

Enclosure
cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

B001

ENCLOSURE

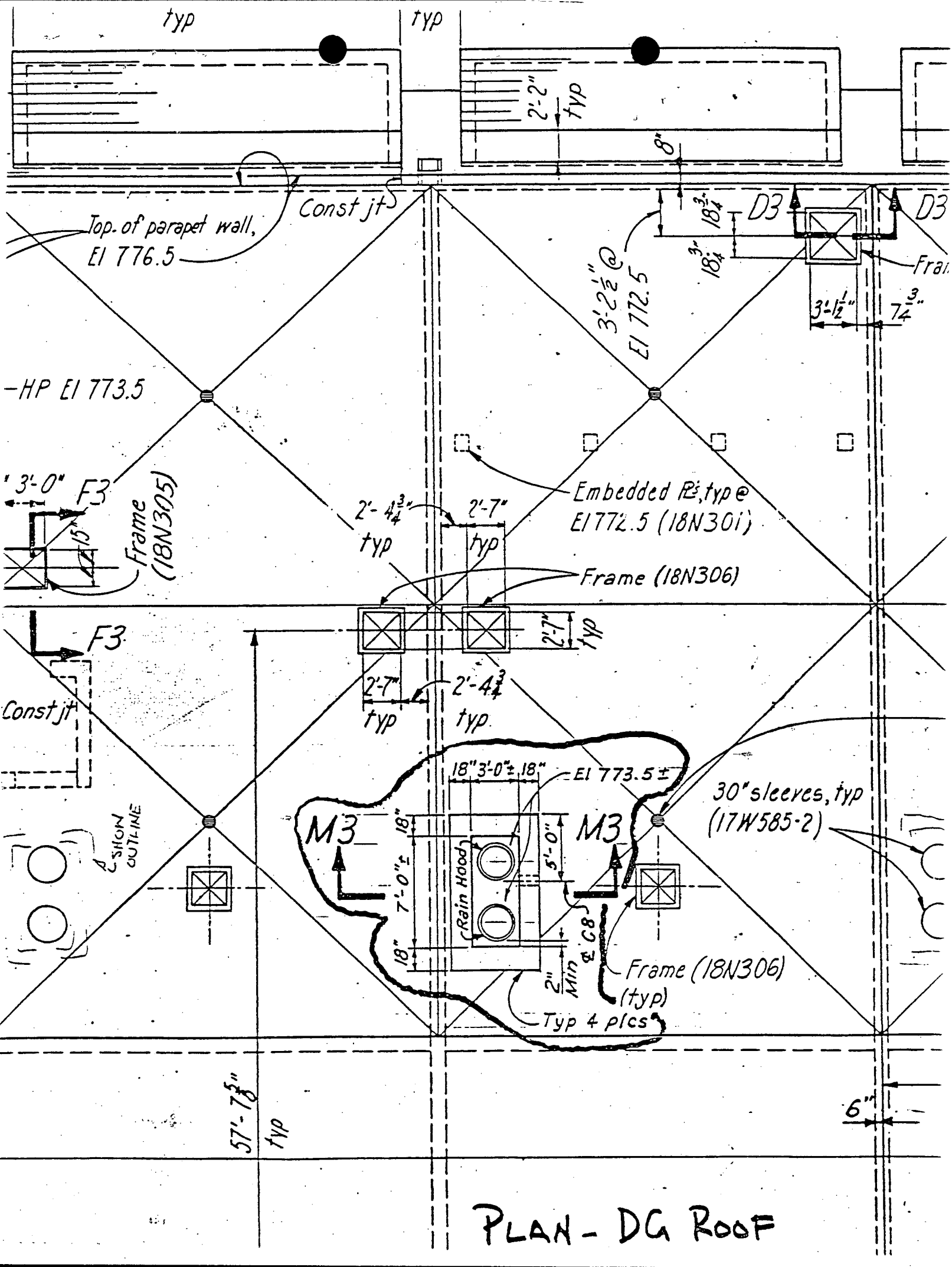
WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
TORNADO MISSILE PROTECTION FOR DIESEL GENERATOR EXHAUSTS

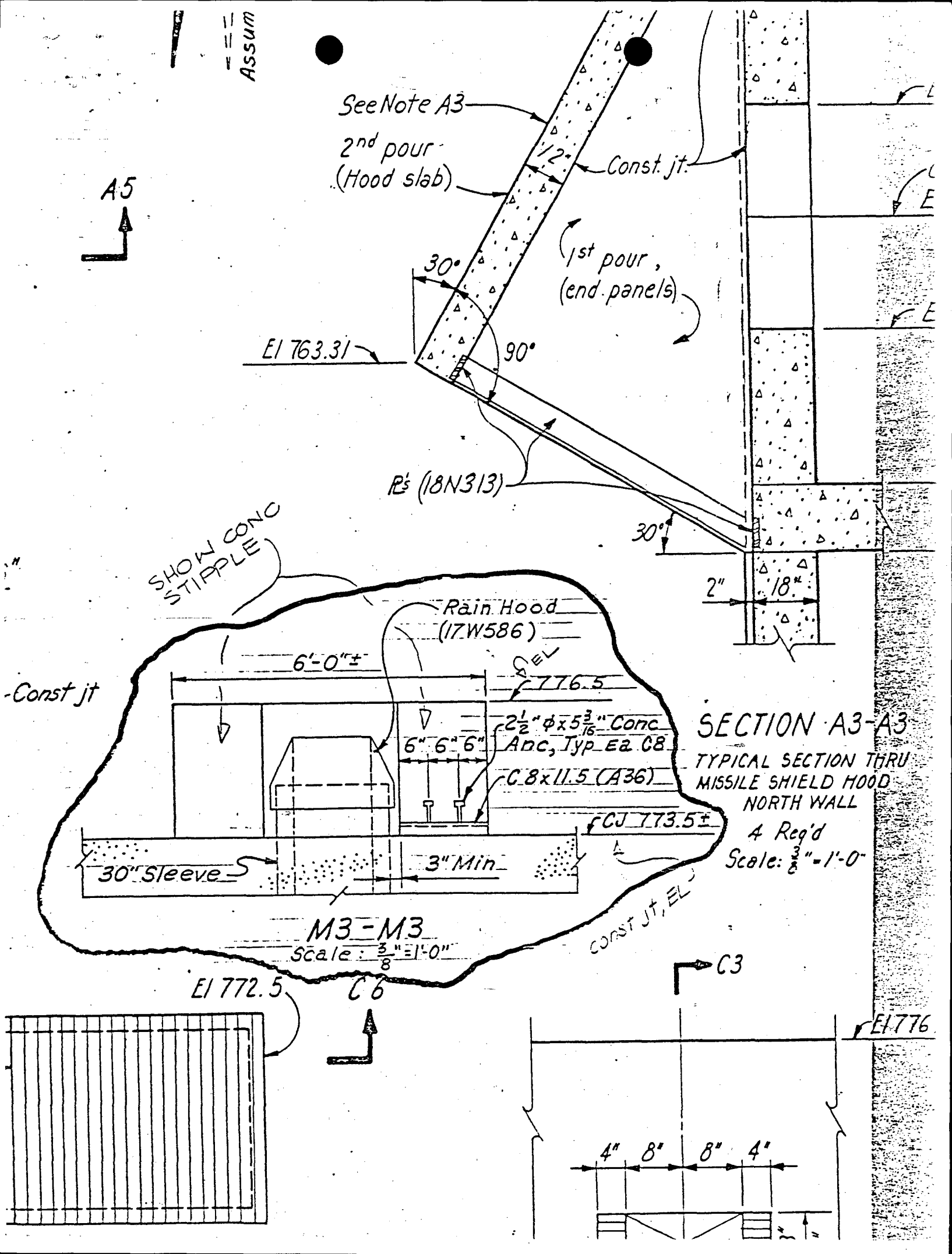
The attached sketches show the reinforced concrete curb around the diesel exhaust stacks to provide protection from tornado-generated missiles.

The curb is 18 inches thick and extends 12 inches above the top of the exhaust stacks. The curb is to protect the exhausts from a one inch diameter rebar impacting at 210 fps (see missile A5 of spectrum A in WBN FSAR, section 3.5.1.4). The use of missile spectrum A is appropriate since that spectrum was used for the original design of the diesel generator building (DGB). The testing program of reference 1* indicated that an 18 inch thick barrier would stop the one inch diameter rod at impact velocities in excess of 300 fps with no backface scabbing. Therefore, the exhaust stacks will be adequately protected from tornado missiles by the curb.

The 30 inch diameter sleeve and the sheet metal rain hood originally provided to prevent the entry of rainwater into the DGB will be left in place. A drain is provided in the curb to prevent the accumulation of rainwater.

*Reference 1: Stephenson, A.E., "Full-Scale Tornado Missile Impact Tests," performed by Sandia Laboratories for the Electric Power Research Institute, EPRI NP-440, Project 399, Final Report, July 1977.


typ
typ
2'-2" typ
8"
Const jt
Top. of parapet wall, El 776.5
D3
D3
3'-2½" @ El 772.5
3'-1½"
7¾"
HP El 773.5
3'-0"
F3
15"
Frame (18N305)
2'-4¾" typ
2'-7" typ
Embedded R's, typ @ El 772.5 (18N301)
Frame (18N306)
F3
2'-7" typ
2'-7" typ
2'-4¾" typ
Const jt
18" 3'-0" ± 18"
El 773.5 ±
30" sleeves, typ (17W585-2)
M3
M3
18"
7'-0" ±
Rain Hood
5'-0"
18"
2" Min ℄ C8
Frame (18N306) (typ)
Typ 4 plcs
SHOW OUTLINE
57'-7⅝" typ
6"
PLAN - DG ROOF


Assum
See Note A3
2nd pour
(Hood slab)
12"
Const. jt.
A5
1st pour,
(end panels)
30°
90°
El 763.31
Rs (18N313)
30°
2"
18"
SHOW CONC STIPPLE
Rain Hood
(17W586)
6'-0"±
℄ EL
776.5
Const jt
2½"ϕx5 3/16" Conc Anc, Typ Ea C8
6" 6" 6"
C 8x11.5 (A36)
CJ 773.5±
30" Sleeve
3" Min
SECTION A3-A3
TYPICAL SECTION THRU MISSILE SHIELD HOOD NORTH WALL
4 Req'd
Scale: 3/8"=1'-0"
M3-M3
Scale: 3/8"=1'-0"
CONST JT, EL
El 772.5
C6
C3
El 776
4" 8" 8" 4"