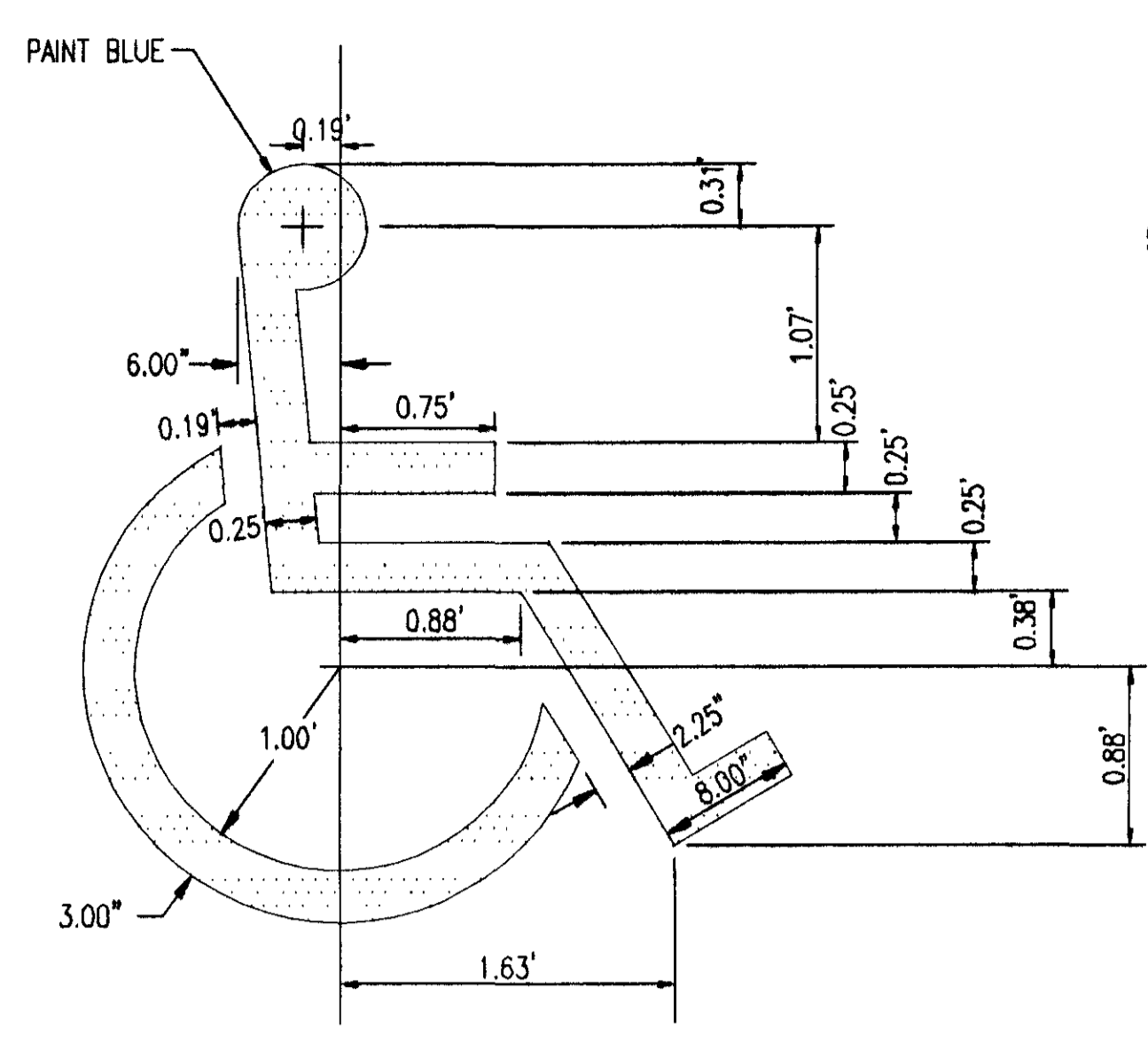
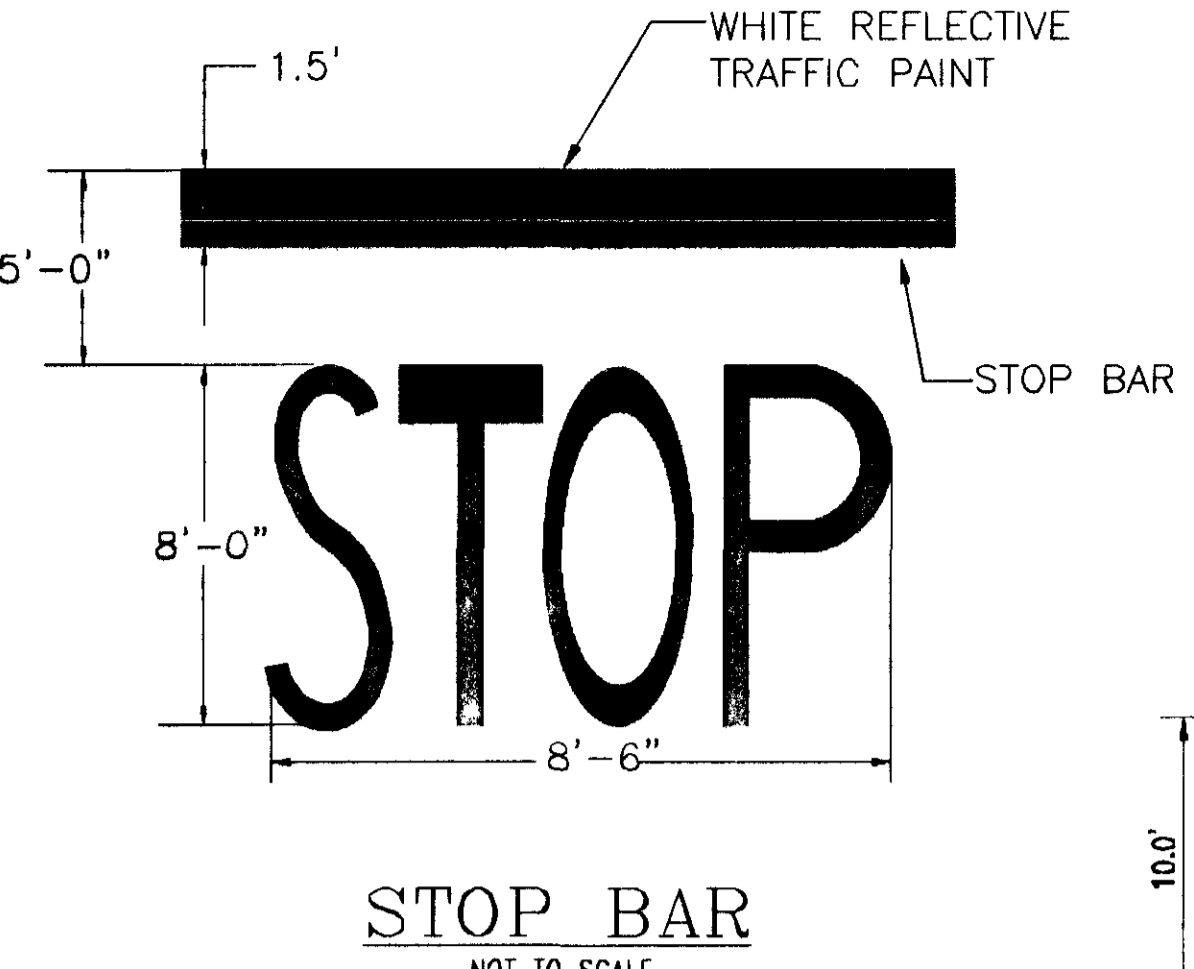


**NOTE:**  
"V" GROOVES SHALL BE TROWELED OR SAWCUT IN CONCRETE.

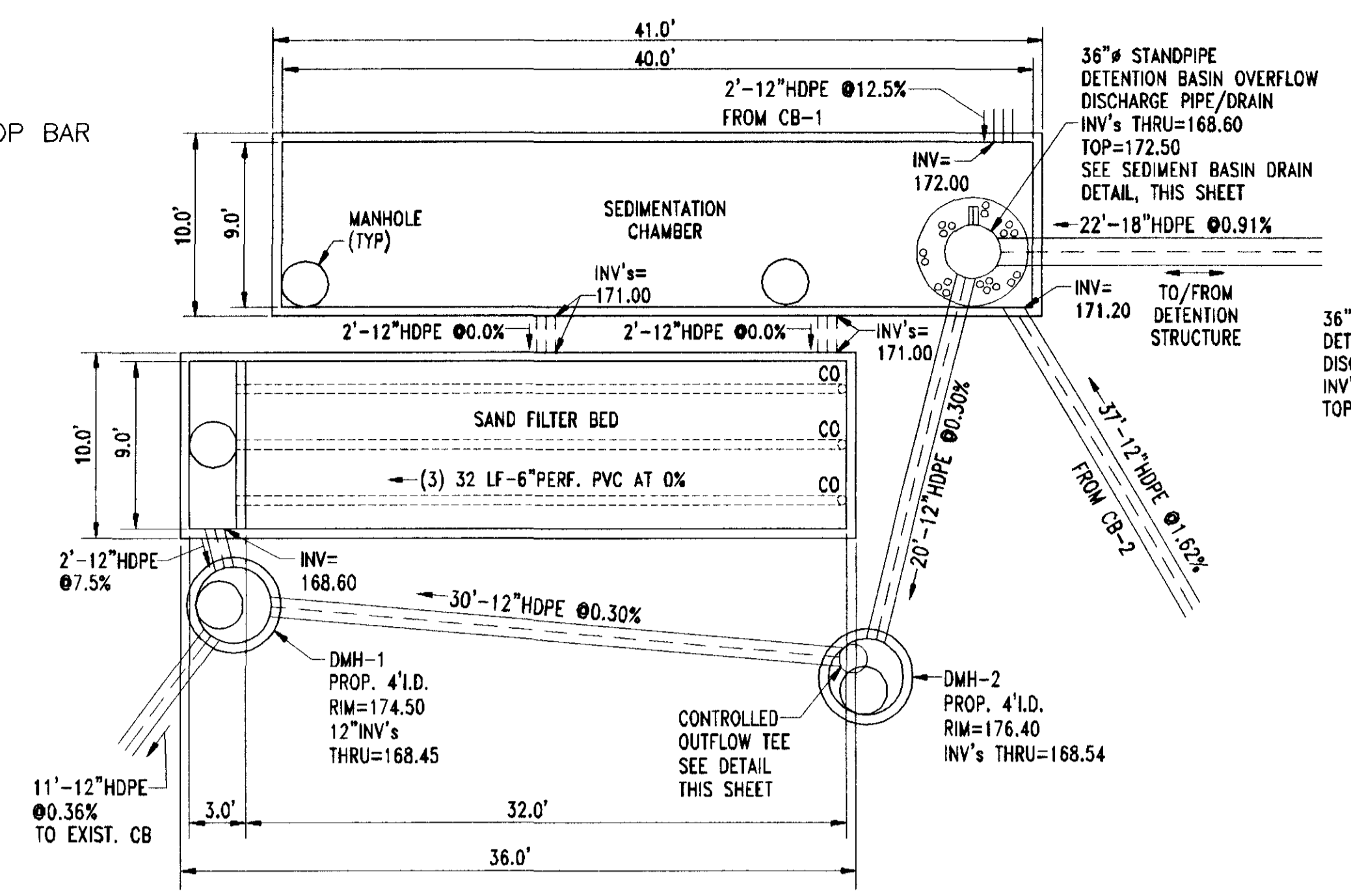
**DETAIL**  
**POSITIVE LIMITING BARRIER**  
**SAW CUTS & PATTERNS**  
NOT TO SCALE



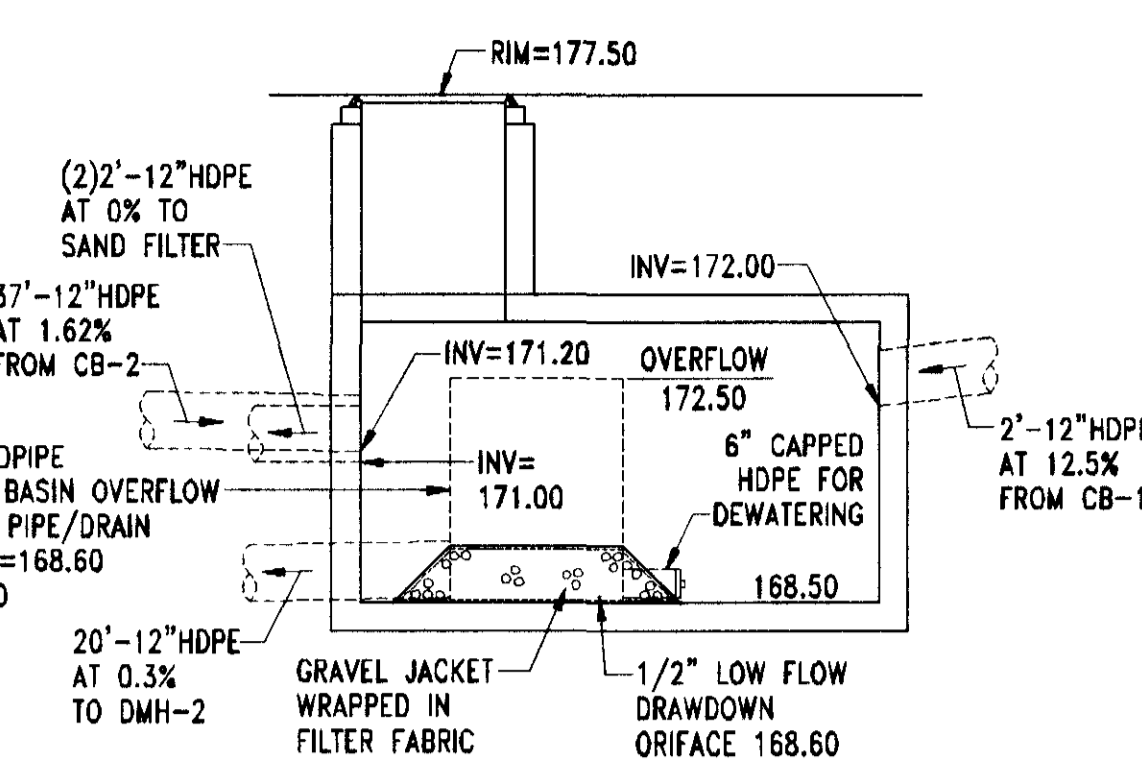
**HANDICAP SYMBOL**  
NOT TO SCALE



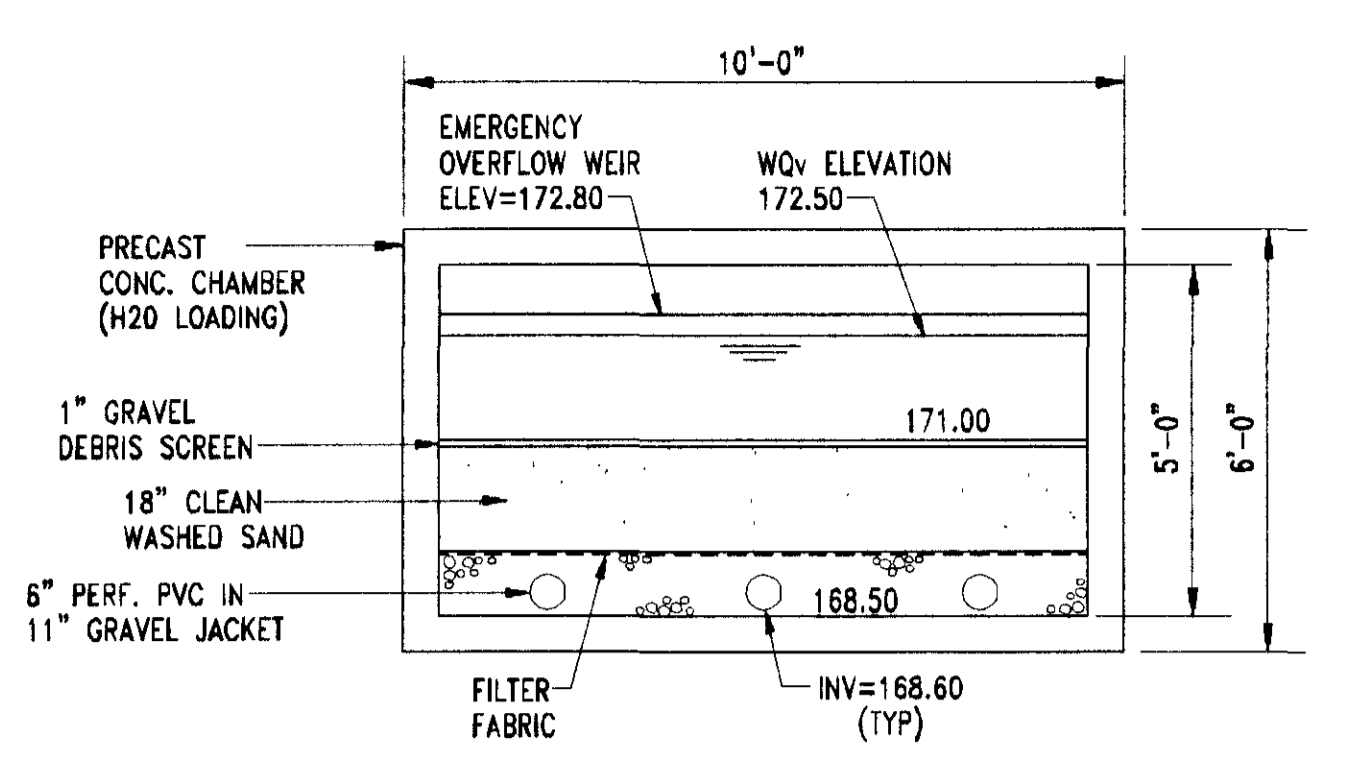
**STOP BAR**  
NOT TO SCALE



**SAND FILTER & SEDIMENT CHAMBER PLAN**  
SCALE: 1"=10'



**SEDIMENT BASIN DRAIN**  
NTS



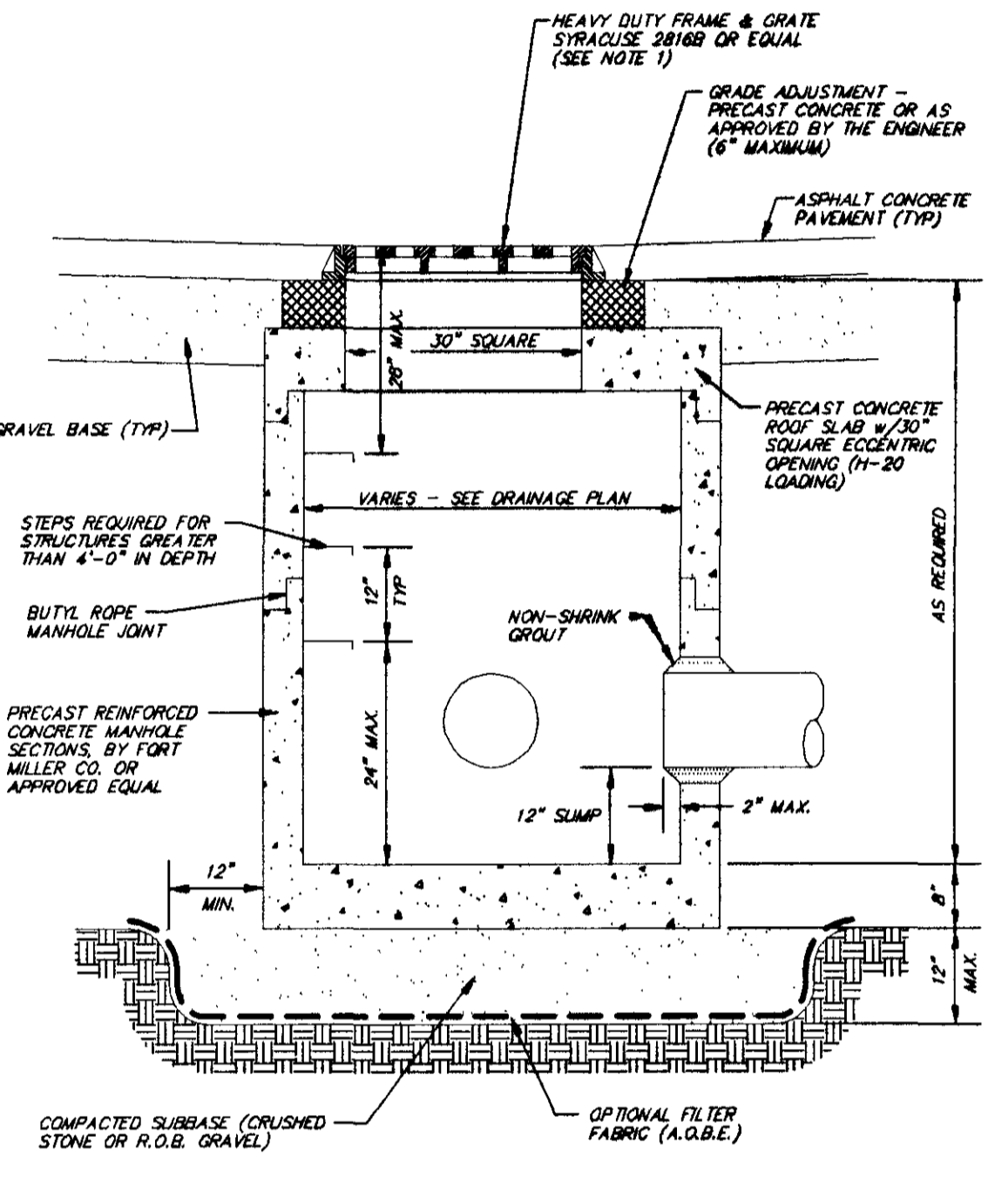
**SAND FILTER BED SECTION**  
SCALE: 1/4"=1'-0"

**WATER QUALITY VOLUME (WQV) CALCULATIONS:**  
90% RULE:  
P=1.0  
I=72%  
R<sub>a</sub>=0.05+0.009(72)=0.698  
A=0.98  
WQV = (P)(R<sub>a</sub>)(I)/12 = ((1.0)(0.698)(0.98))/12 = 0.057 AF  
0.057 AF = 2,483 CF

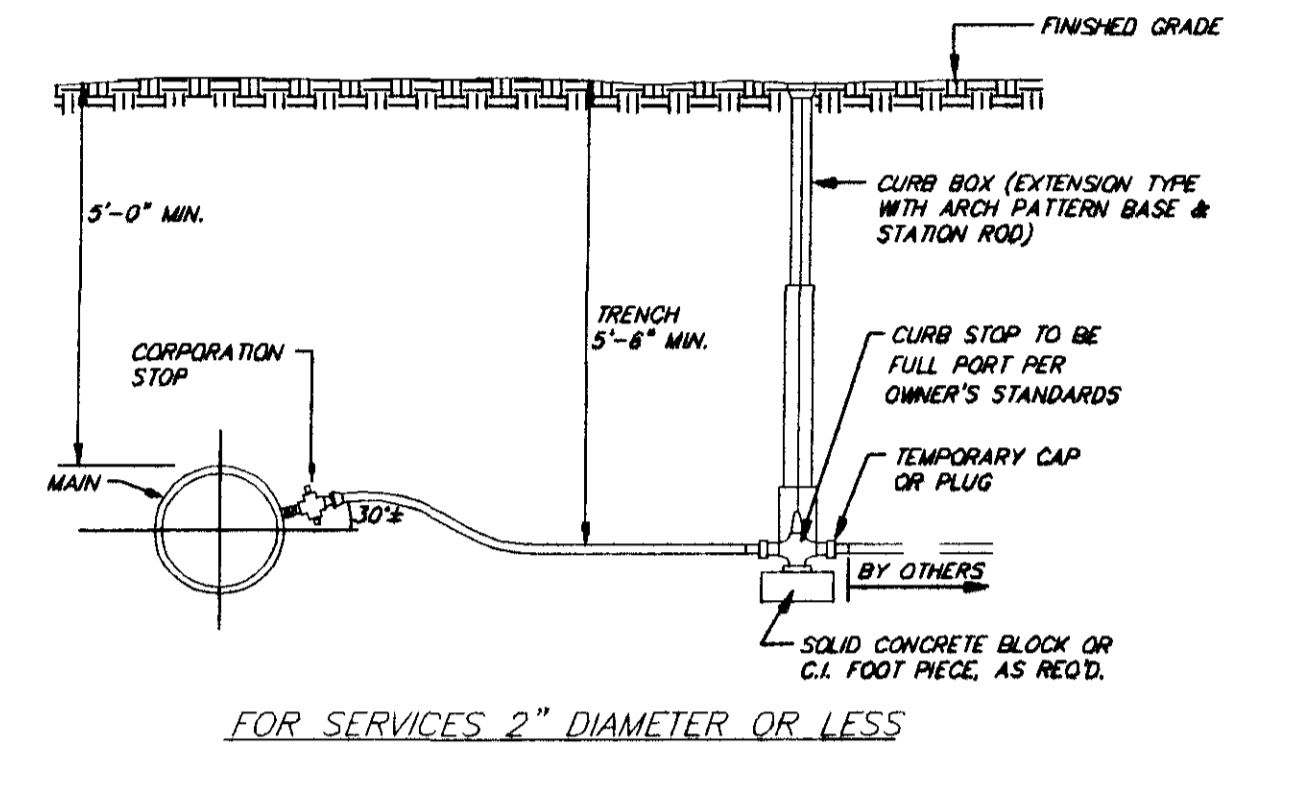
**SAND FILTER REQUIREMENTS:**  
REQUIRED:  
STORAGE OF 75% OF WQV = 1,862 CF  
PROVIDED:  
SEDIMENT BASIN VOLUME AT 2.5' DEPTH = 40'x9'x2.5' = 900 CF  
REMAINING BASIN VOLUME AT 1.5' DEPTH = 72'x9'x1.5' = 972 CF  
TOTAL VOLUME = 1,872 CF  
REQUIRED:  
25% OF WQV STORAGE IN SEDIMENT BASIN = 621 CF  
PROVIDED:  
SEDIMENT BASIN AREA AT 2.5' DEPTH = 40'x9'x2.5' = 900 CF  
REQUIRED:  
FILTER AREA = (WQV)(d<sub>f</sub>)/((k)(H+D<sub>f</sub>)(T))  
WQV = 2,483 CF  
d<sub>f</sub> = FILTER BED DEPTH = 1.5'  
k = COEFFICIENT OF PERMEABILITY OF FILTER MEDIA (ft/day)  
SAND = 3.5 ft/day  
H = AVERAGE HEIGHT OF WATER ABOVE FILTER BED = 0.75'  
T = DESIGN FILTER BED DRAIN TIME (days)  
RECOMMENDED MAXIMUM T FOR SAND FILTERS = 1.67 days  
(2.483)(1.5)/((3.5)(0.75+1.5)(1.67)) = 283 SF  
PROVIDED:  
32'x9' FILTER BED = 288 SF

**MATERIAL SPECIFICATIONS:**  
SAND: CLEAN AASHTO M-6 OR ASTM C-33 CONCRETE SAND 0.075" #10 ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLMILIC SAND SUBSTITUTIONS ARE ACCEPTABLE. "ROCK DUST" CANNOT BE SUBSTITUTED FOR SAND.  
UNDERDRAIN PIPING: ASTM D-1785 OR AASHTO M-278, 8" RIGID SCHEDULE 40 PVC 3/8" PERF. 6" ON CENTER, 4 HOLES PER ROW; MINIMUM OF 3" OF GRAVEL OVER PIPES; NOT NECESSARY UNDERNEATH PIPES.  
CONCRETE: (CAST-IN-PLACE) SEE LOCAL DOT STANDARDS AND SPECS. f<sub>c</sub> = 3500 PSI, NORMAL WEIGHT, AIR-ENTRAINED; REINFORCING TO MEET ASTM A615-60. ON-SITE TESTING OF POURED-IN-PLACE CONCRETE REQUIRED. 28 DAY STRENGTH AND SLUMP TEST, ALL CONCRETE, DESIGN (CAST-IN-PLACE OR PRE-CAST) NOT USING PREVIOUSLY APPROVED STATE OR LOCAL STANDARDS REQUIRES DESIGN DRAWINGS SEALED AND APPROVED BY A LICENSED PROFESSIONAL STRUCTURAL ENGINEER.  
NON-REBAR STEEL: ASTM A-36. STRUCTURAL STEEL TO BE HOT-DIPPED GALVANIZED ASTM A123

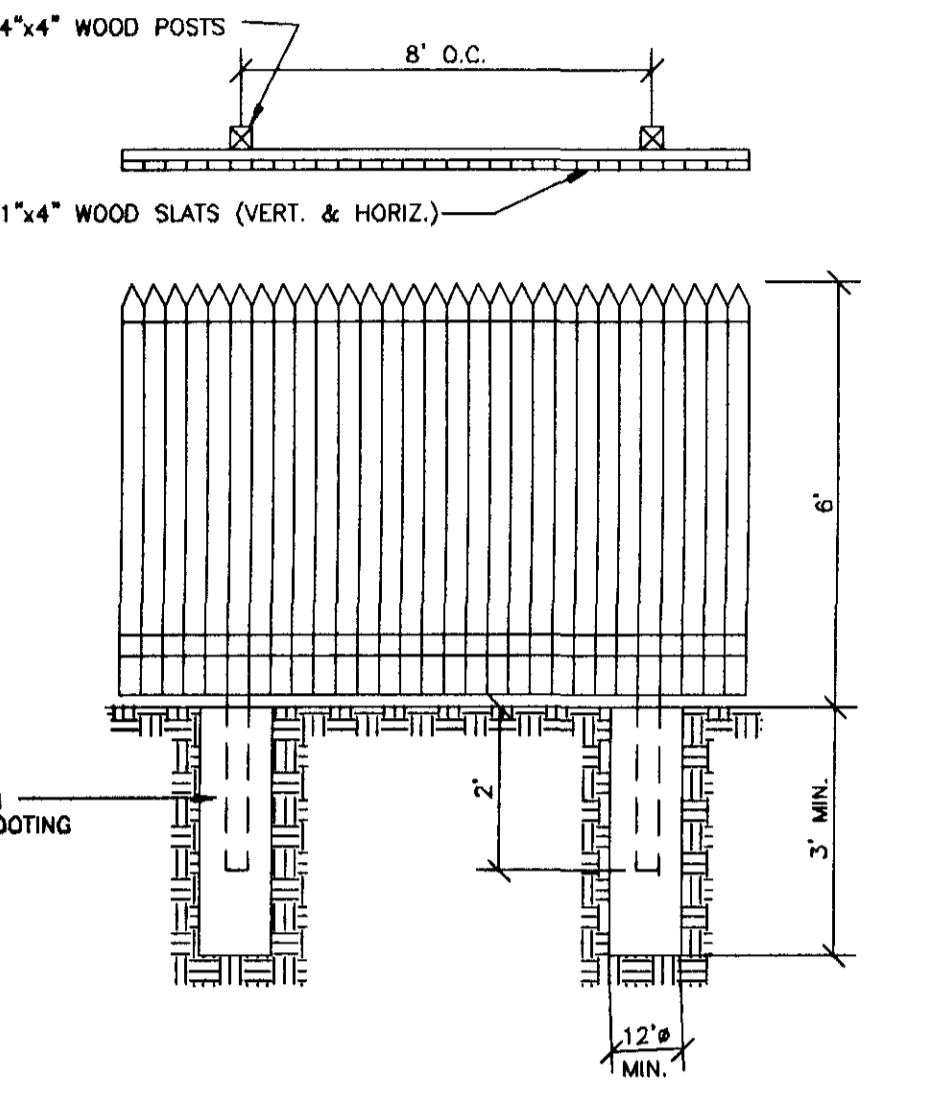
24-HR. WATER TEST:  
TO INSURE THE FILTER BED AND SEDIMENT CHAMBERS ARE WATER TIGHT, THE OPERATOR SHALL CONDUCT A 24-HOUR WATER TEST, PRIOR TO THE PLACEMENT OF FILTER MATERIAL, THE OPERATOR SHALL PLUG THE DISCHARGE PIPE AND FILL THE FILTER BED CHAMBER WITH WATER. THE HIGH WATER MARK SHALL BE MARKED AND THE OPERATOR SHALL MEASURE ANY DROP IN WATER ELEVATION A 24 HOUR PERIOD. THE RESULTS SHALL BE RECORDED AND FORWARDED TO THE PROJECT ENGINEER FOR REVIEW. FILTER BED MATERIAL SHALL NOT BE PLACED UNTIL THE RESULTS ARE REVIEWED AND APPROVED BY THE PROJECT ENGINEER.



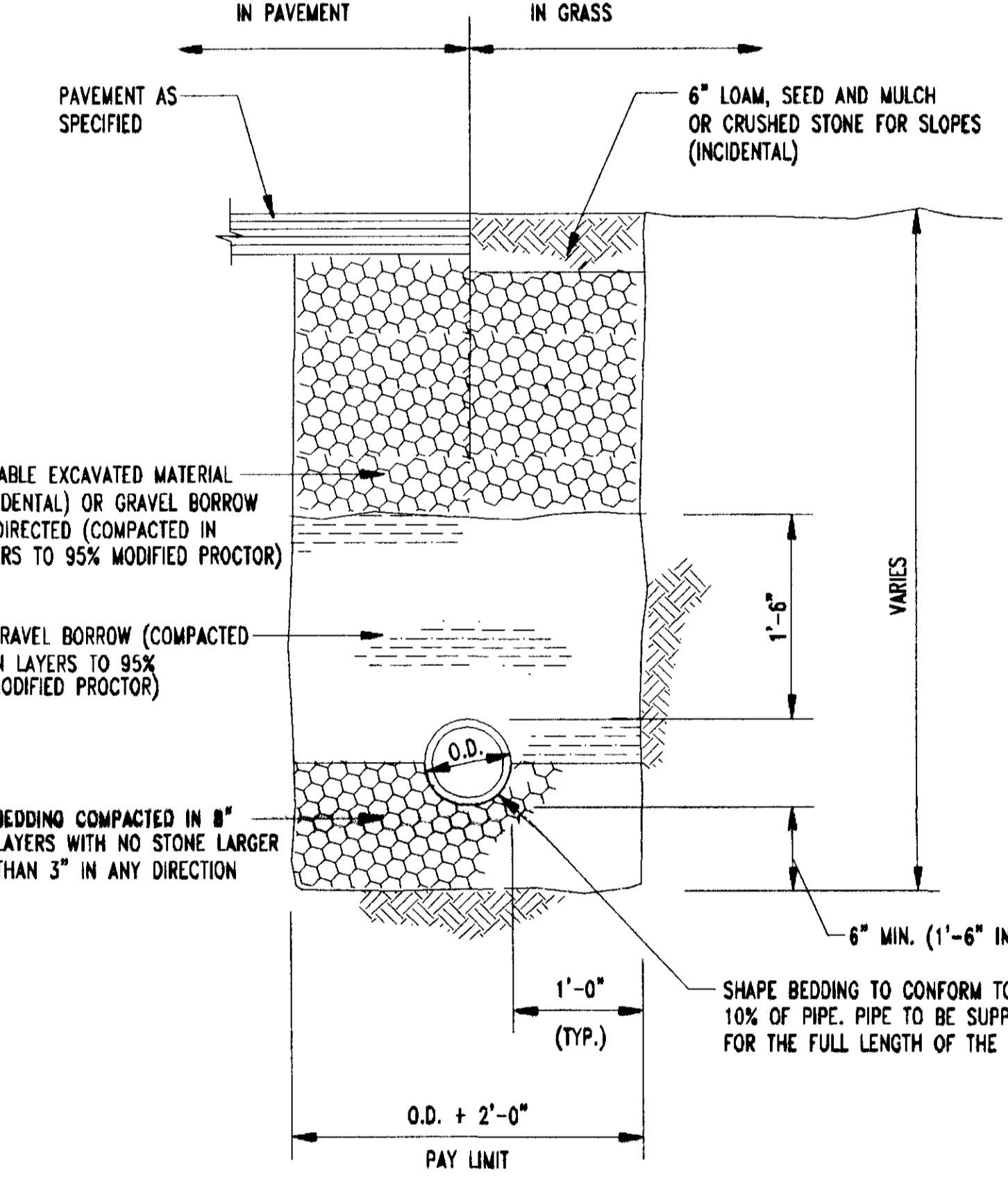
**PRECAST CONCRETE STORM MANHOLE**  
NOT TO SCALE



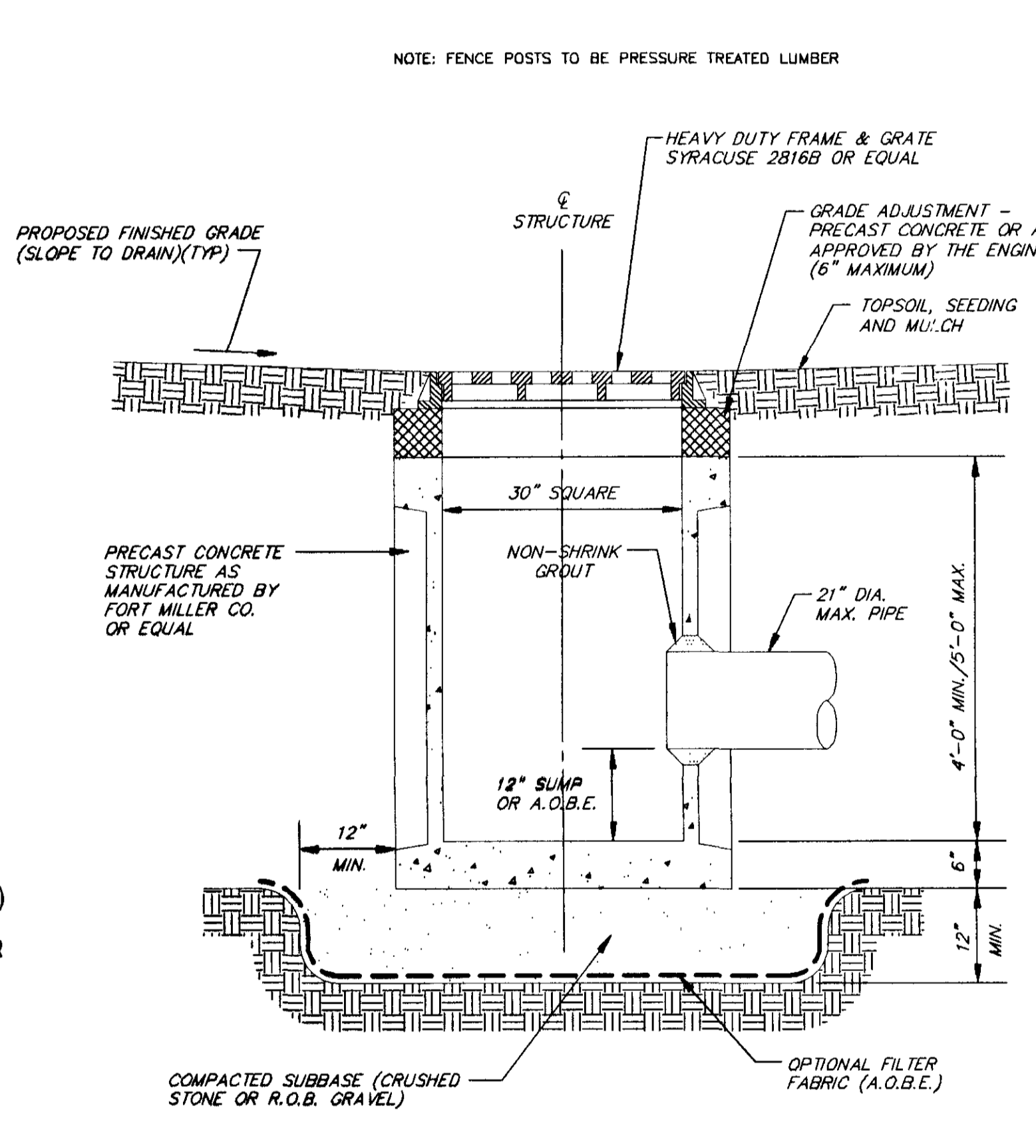
**TYPICAL SERVICE CONNECTION DETAILS**  
SCALE: NONE



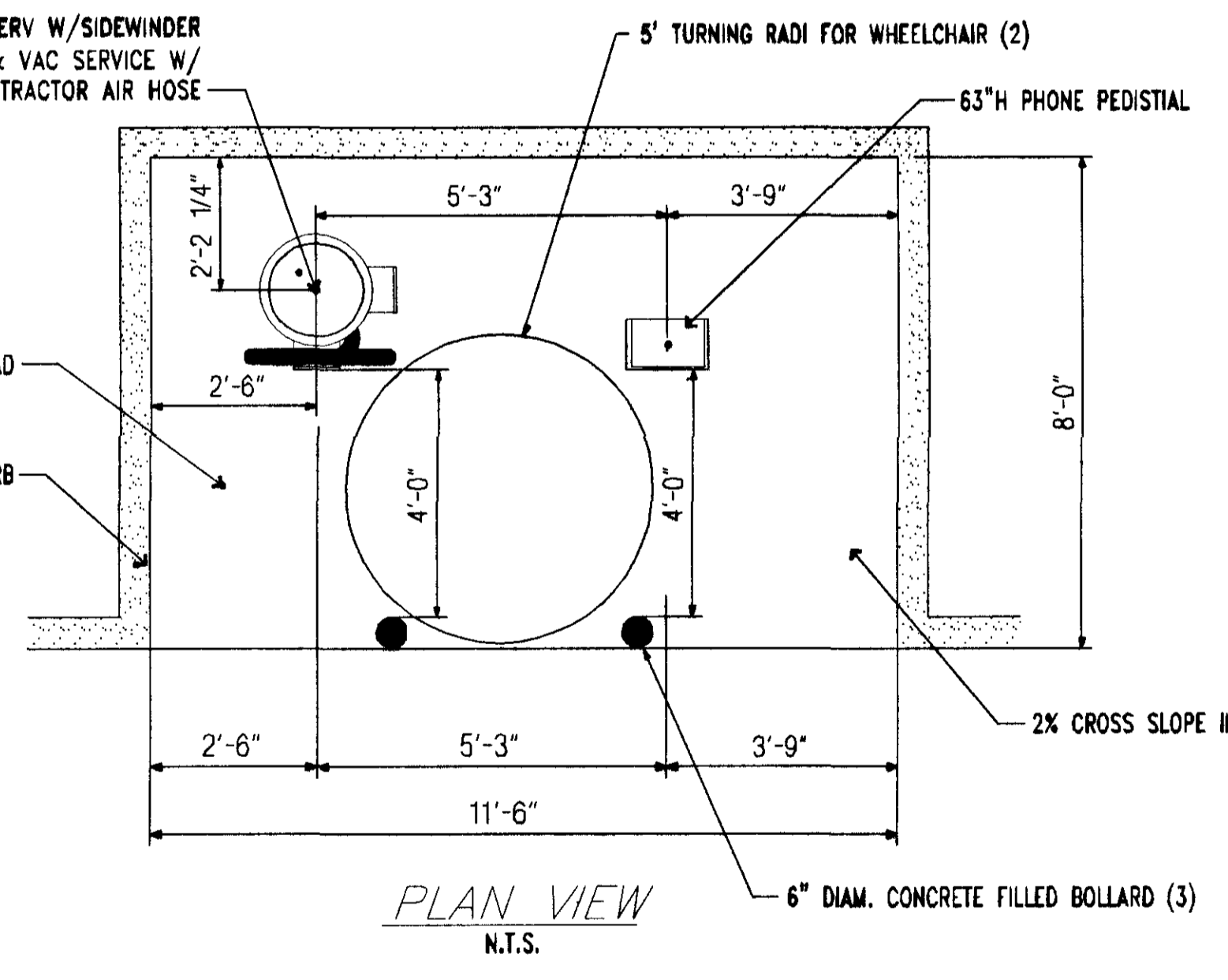
**STOCKADE FENCE DETAIL**  
NOT TO SCALE



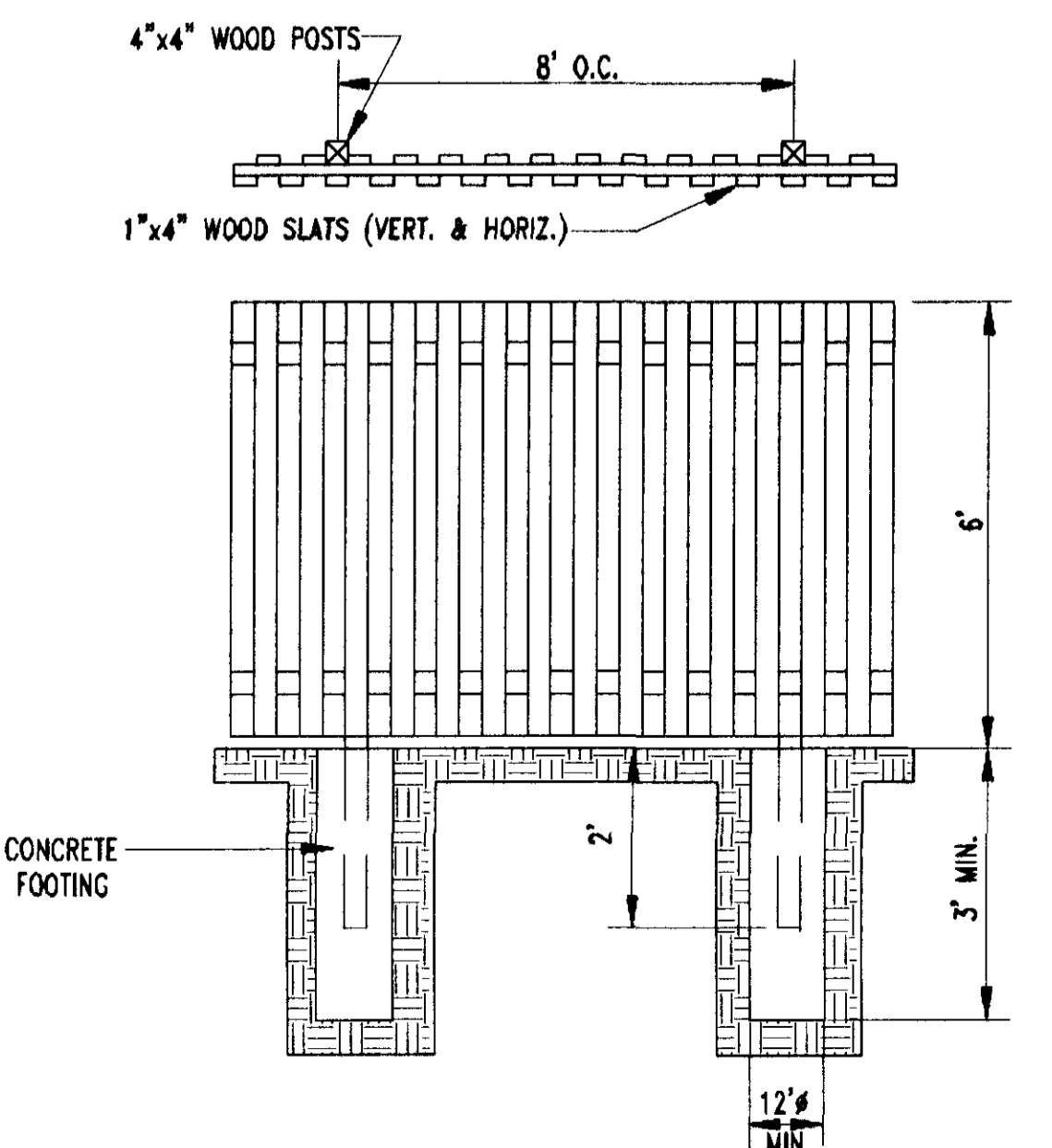
**ONSITE PIPE TRENCH DETAIL**  
NOT TO SCALE



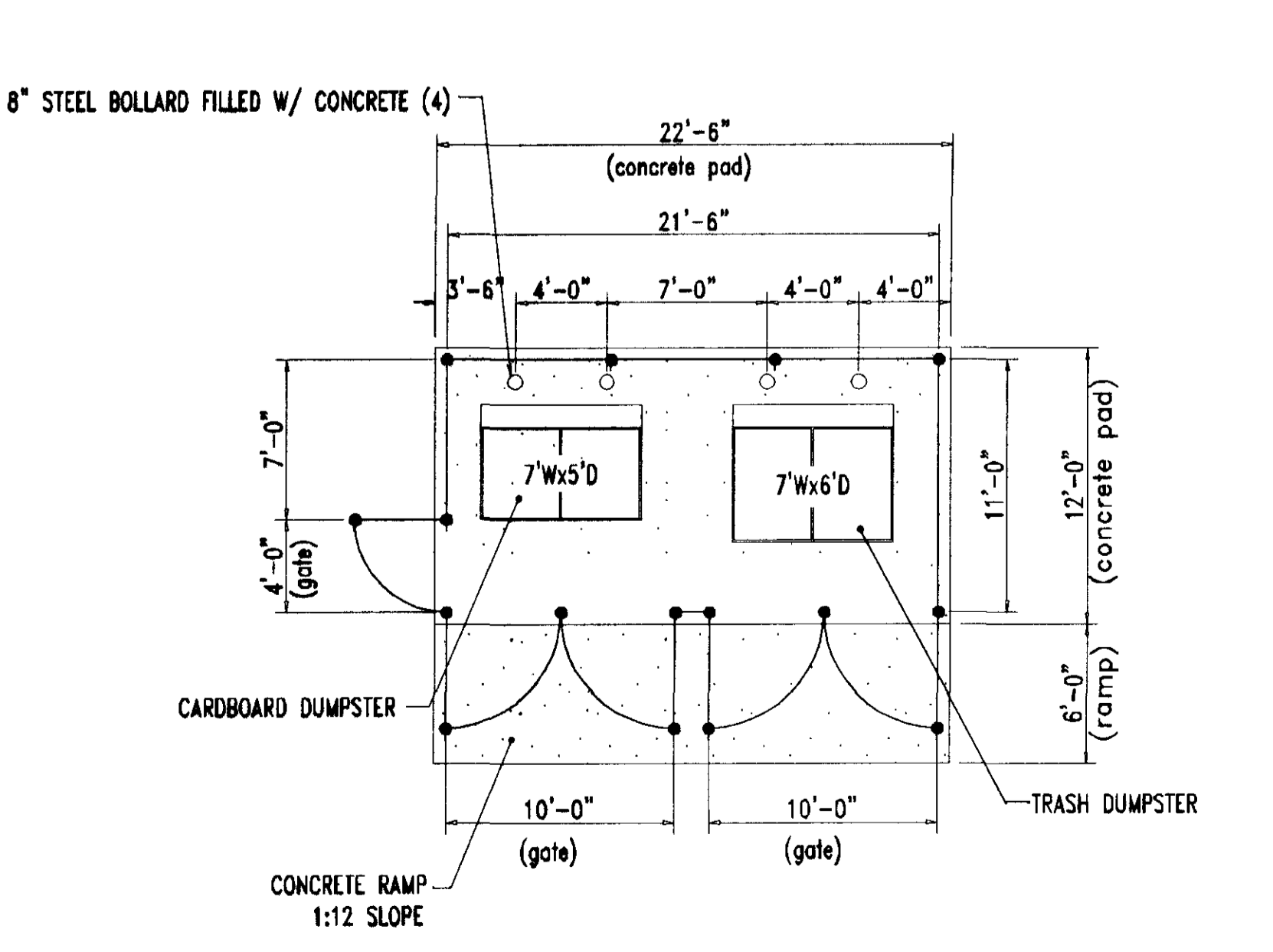
**PRECAST CONCRETE CATCH BASIN**  
NOT TO SCALE



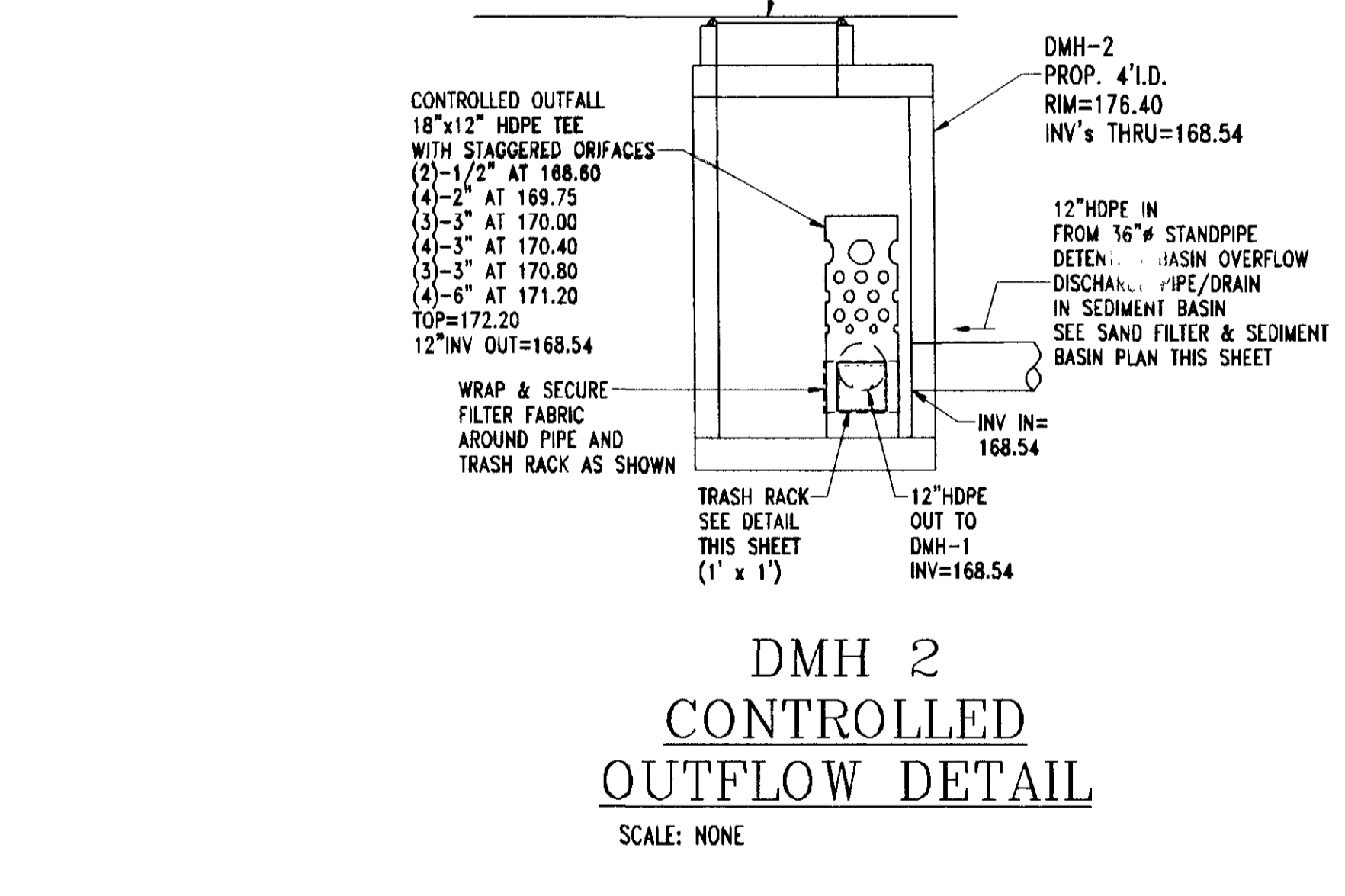
**CUSTOMER SERVICE PAD DETAILS**  
NOT TO SCALE



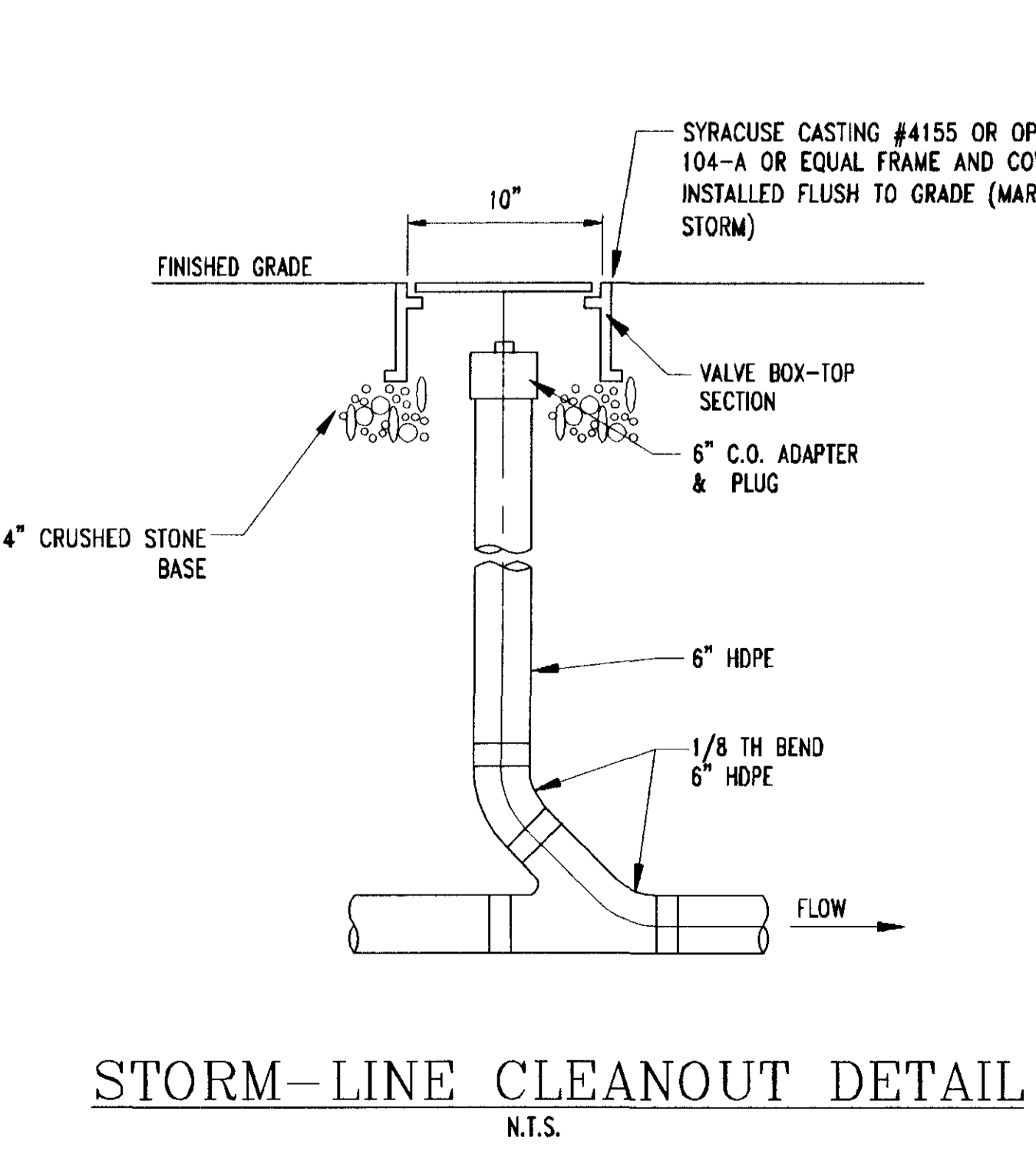
**FENCE DETAIL**  
NOT TO SCALE



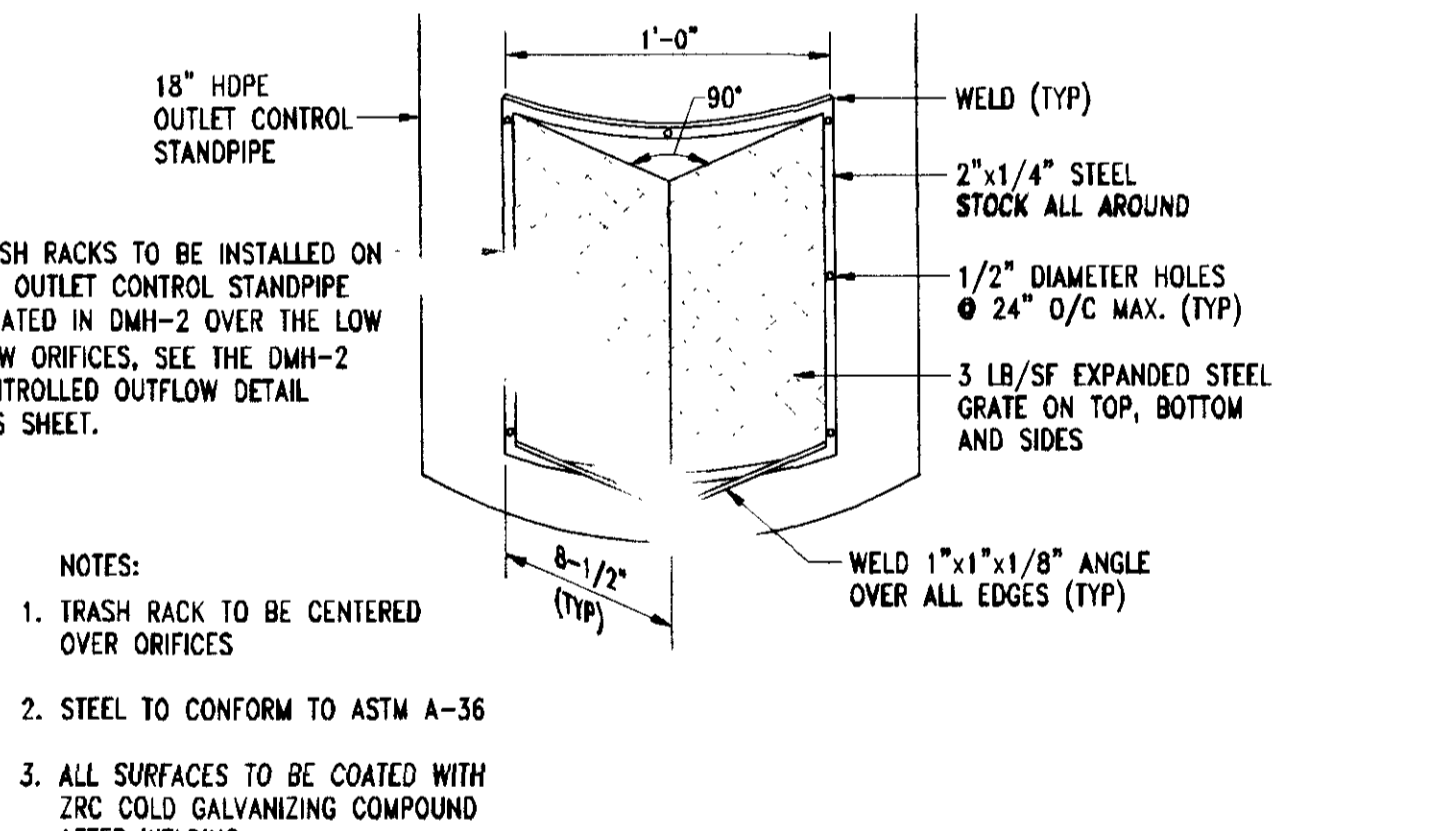
**DUMPSTER ENCLOSURE DETAIL**  
NOT TO SCALE



**DMH 2 CONTROLLED OUTFLOW DETAIL**  
SCALE: NONE

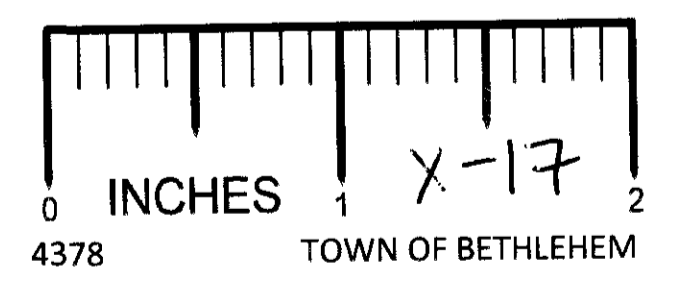


**STORM-LINE CLEANOUT DETAIL**  
NTS



**TRASH RACK PROTECTION DETAIL**  
SCALE: NONE

- TRASH RACK TO BE CENTERED OVER ORIFICES
- STEEL TO CONFORM TO ASTM A-36
- ALL SURFACES TO BE COATED WITH ZINC COLD GALVANIZING COMPOUND AFTER WELDING



TOWN OF BETHLEHEM APPROVAL AREA



**BOHLER ENGINEERING, P.C.**  
CIVIL & CONSULTING ENGINEERS ■ PROJECT MANAGERS ■ ENVIRONMENTAL & SITE PLANNERS ■ MUNICIPAL ENGINEERS

PROJECT: CUMBERLAND FARMS, INC. PROP. CONVENIENCE STORE & GAS STATION  
1238 ROUTE 9W  
TOWN OF BETHLEHEM  
ALBANY COUNTY, NEW YORK

TITLE: **SITE DETAILS**

SCALE: (H) NONE (V) NONE DATE: 5/22/06 SHEET No: 14 OF 19

DRAWN BY: ECR PROJECT No: B050649  
CHECKED BY: RJS CAD L.D. #: B050649s00

PROFESSIONAL ENGINEER  
NEW YORK LICENSE No. 63409  
NEW JERSEY LICENSE No. 27410  
CONNECTICUT LICENSE No. 21854  
MASSACHUSETTS LICENSE No. 17518  
VERMONT LICENSE No. 42644

PROFESSIONAL ENGINEER  
NEW YORK LICENSE No. 071284  
RHODE ISLAND LICENSE No. 7268  
CONNECTICUT LICENSE No. 21854  
MASSACHUSETTS LICENSE No. 42644  
VERMONT LICENSE No. 7735

CONSTRUCTION CHECK DATE

REV.	DATE	COMMENT
1	11/16/07	REVISED PER TOWN COMMENTS
2	10/29/07	REVISED PER TOWN COMMENTS
3	10/29/07	REVISIONAL LANDSCAPE BUFFER INCREASED
4	7/30/07	REVISED PER TOWN COMMENTS
5	7/30/07	BLDG. CANOPY REDUCED / SITE REVISIONED
6	4/27/07	TRUCK DELIVERY / MAKE AVE. ACCESS
7	4/18/07	REVISED PER DOT COMMENTS
8	4/18/07	REVISED PER CLIENT COMMENTS
9	12/12/06	REVISED PER TOWN COMMENTS
10	11/21/06	SITE LAYOUT REVISED - SIGN SUBMITTAL
11	10/24/06	BLDG. FOOTPRINT REVISED