

**NOTES**

FOR GRAVITY RETAINING WALLS, SEE SECTION 453 OF THE STANDARD SPECIFICATIONS.

THE GRAVITY RETAINING WALL IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
 TOTAL UNIT WEIGHT = 120 PCF  
 COHESION = 0 PSF  
 FRICTION ANGLE = 35 DEGREES  
 (GROUNDWATER WITHIN 5'-0" OF BOTTOM OF FOOTING)  
 FRICTION ANGLE = 30 DEGREES  
 (GROUNDWATER MORE THAN 5'-0" BELOW BOTTOM OF FOOTING)

DO NOT USE A GRAVITY RETAINING WALL IF THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF FOOTING.

DO NOT USE A GRAVITY RETAINING WALL WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE WALL.

DO NOT PLACE CONCRETE UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND CHECKING FOUNDATION MATERIAL FOR IN-SITU ASSUMED SOIL PARAMETERS.

USE CLASS "A" CONCRETE AND PROVIDE CLASS I SURFACE FINISH FOR ALL EXPOSED SURFACES.

PROVIDE 3" DIAMETER WEEP HOLES ON 10'-0" CENTERS ALONG WALL. SLOPE WEEP HOLES ON A 1" PER FOOT SLOPE THROUGH THE WALL SO THAT WATER DRAINS OUT OF THE FRONT OF THE WALL.

CONSTRUCT A HORIZONTAL DRAIN IN SUBDRAIN FINE AGGREGATE AT LEAST 1'-0" TALL AND 1'-0" WIDE TO CONNECT ALL STONE DRAINS.

PROVIDE GROOVED CONTRACTION JOINTS EVERY 10'-0" AND EXPANSION JOINTS EVERY 30'-0" ALONG THE WALL.

DO NOT BACKFILL BEHIND WALL UNTIL CONCRETE DEVELOPS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. COMPACT BACKFILL IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. PLACE BACKFILL WITHIN 3'-0" OF THE BACK OF THE WALL WITH HAND OPERATED EQUIPMENT. DO NOT OPERATE HEAVY EARTH MOVING EQUIPMENT WITHIN 10'-0" OF THE BACK OF WALL.

WHEN A CONSTRUCTION JOINT IS LOCATED AT THE BASE OF THE WALL, IN SECTION, PROVIDE A MINIMUM OF 3-#4 DOWELS AT AN EQUAL SPACING. SPACE ALL DOWELS AT 1'-6" CENTERS ALONG THE LENGTH OF THE WALL.

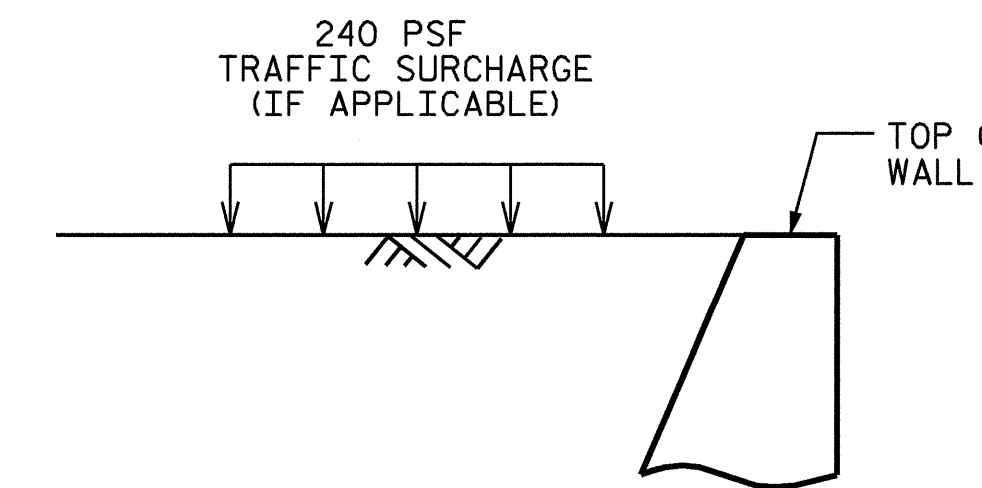
FOR PLAN VIEW OF GRAVITY RETAINING WALL, SEE ROADWAY PLAN SHEETS.

FOR WALL WITH FENCE, USE SLEEVES IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS FOR FENCE POSTS, OR SUBMIT FENCE POST ANCHOR PLATE DETAILS.

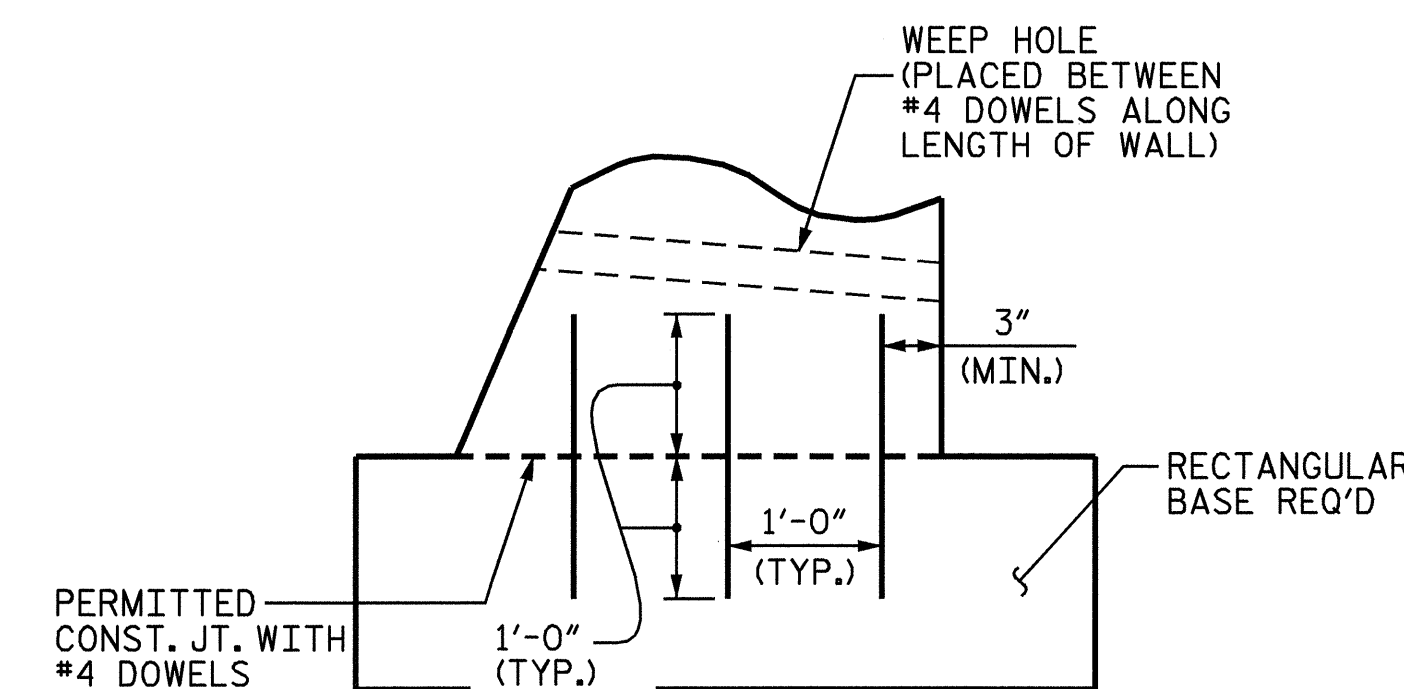
H (ft)	> 9 - 12
NO SLOPE CONDITION WITH TRAFFIC SURCHARGE	.70 *

**B/H RATIO**

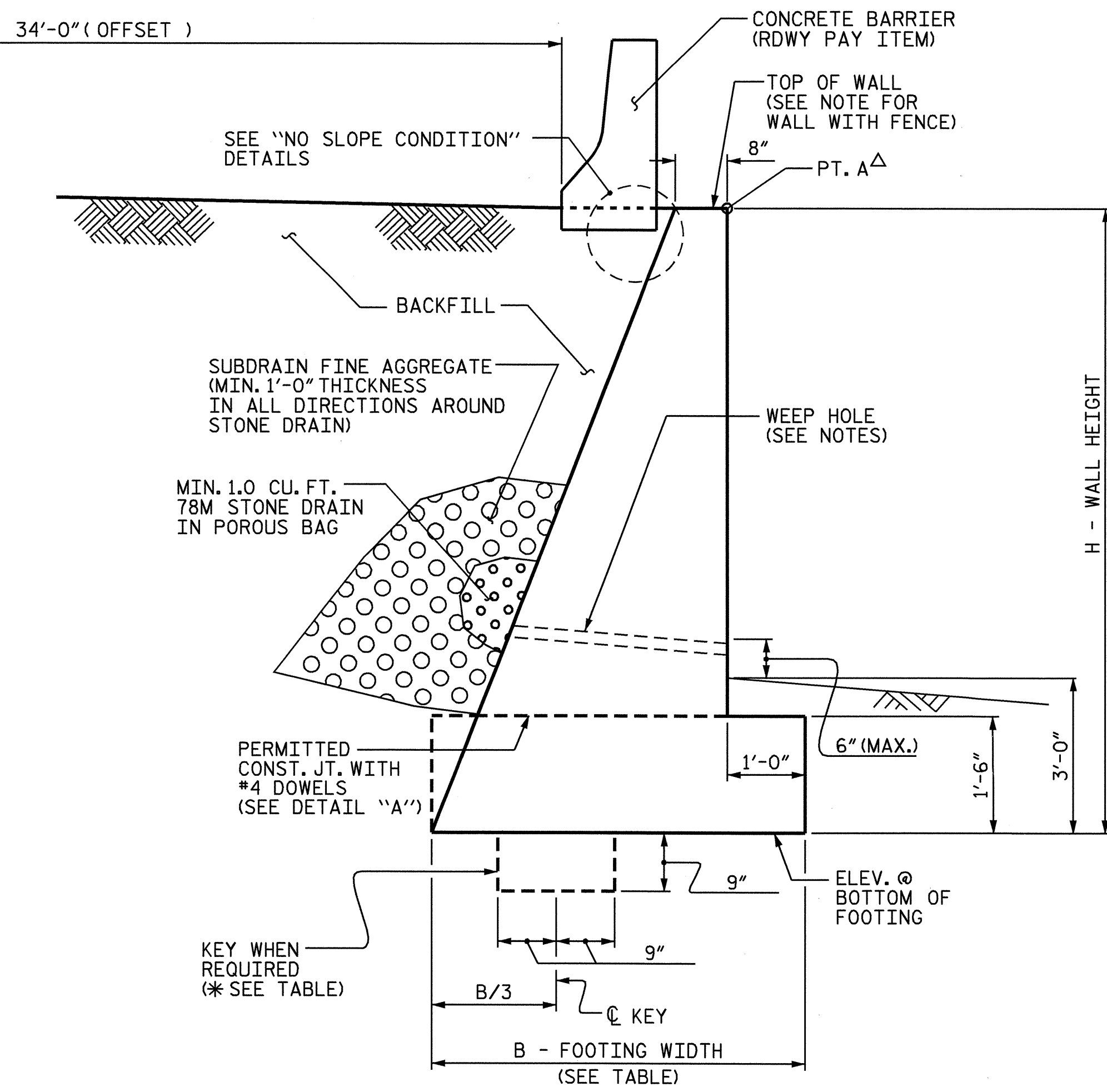
\* KEY IS REQUIRED FOR NO SLOPE CONDITION WITH TRAFFIC SURCHARGE.



**NO SLOPE CONDITION**



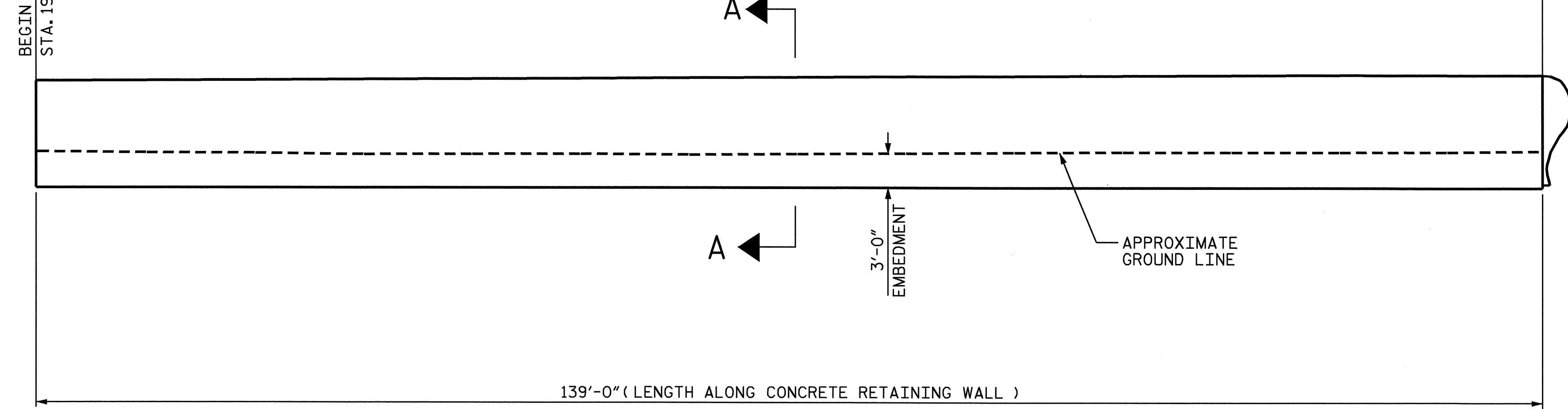
**DETAIL "A"**



**TYPICAL SECTION**

BEGIN CONCRETE GRAVITY WALL NO. 1 STA. 19+49.77 -L-

END CONC. GRAVITY WALL NO. 1 STA. 20+88.77 -L-  
 BEGIN CONC. GRAVITY WALL NO. 2 STA. 12+58.67 SPUR



**ELEVATION ALONG CONCRETE GRAVITY WALL NO. 1 (NOT REINFORCED)**

-L- STA.	Δ OFFSET FROM CL -L- TO POINT A	ELEV. @ TOP OF WALL	ELEV. @ BOTTOM OF FOOTING	WALL HEIGHT
19+49.77	37.000	874.750	865.253	9.497
19+50.00	37.000	874.751	865.247	9.504
20+00.00	37.000	874.986	865.021	9.965
20+50.00	37.000	875.221	865.182	10.039
20+88.77	37.000	875.275	865.306	9.969

CONCRETE GRAVITY WALL NO. 1	966.0 S.F.
-----------------------------	------------

APPROXIMATE CLASS A CONCRETE QUANTITY FOR CONCRETE GRAVITY WALL NO. 1 201.4 C.Y.

PROJECT NO. U-2702  
 RANDOLPH/GUILFORD COUNTY  
 STATION: 19+46.77 -L-

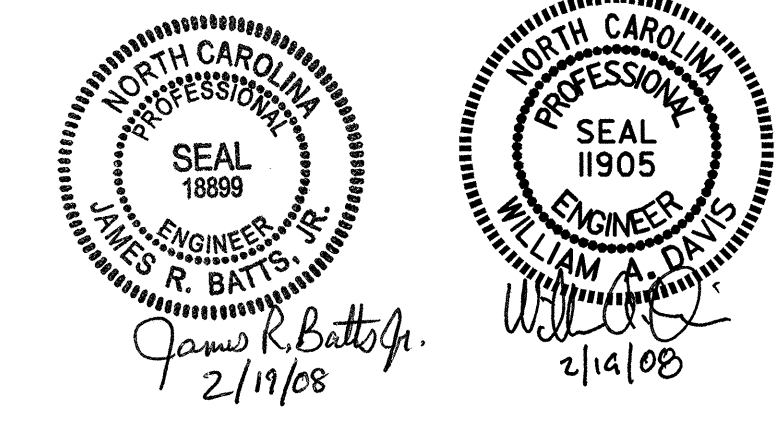
SHEET 1 OF 2

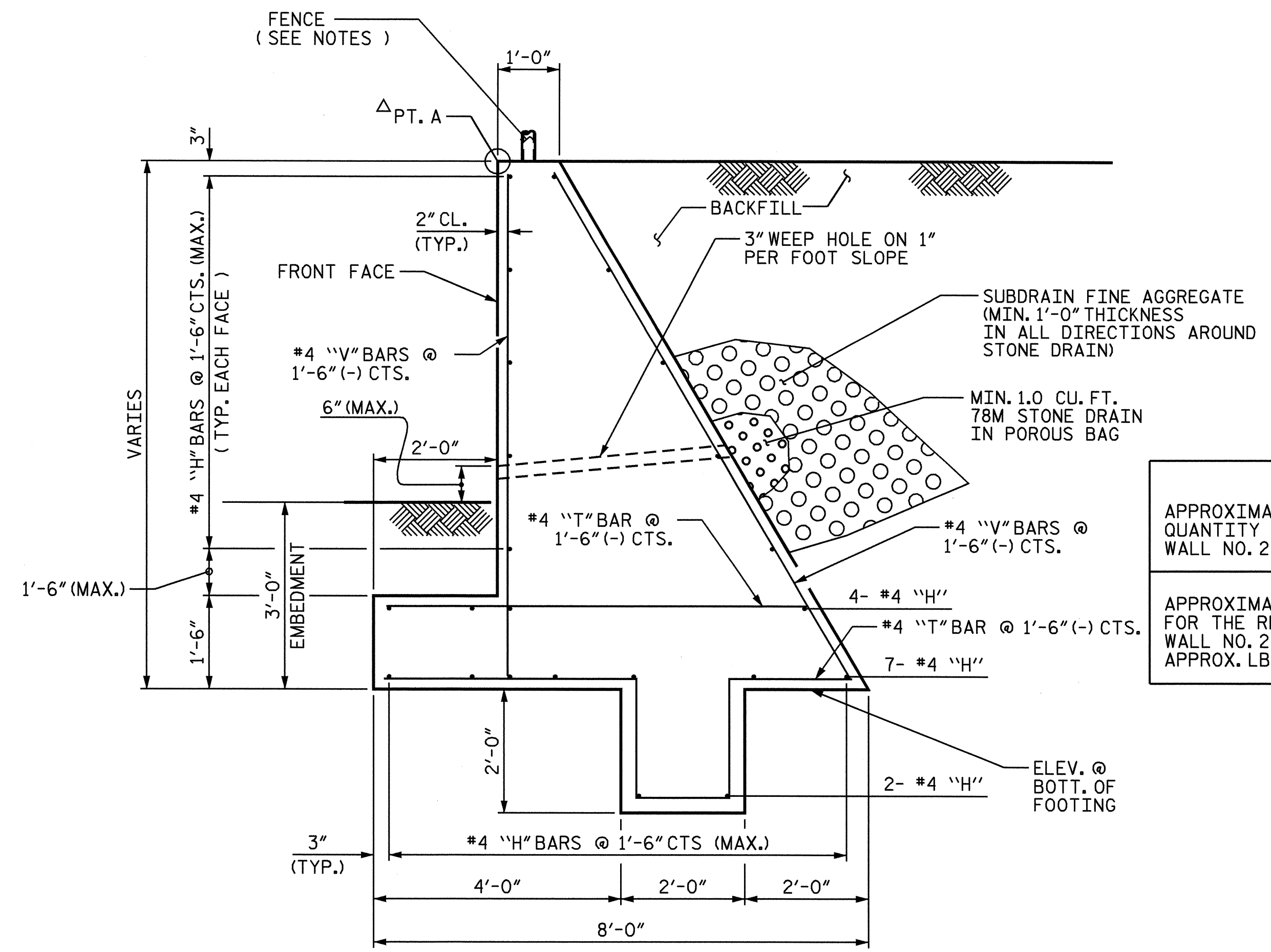
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GRAVITY RETAINING WALL #1**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	W-1
1			3			TOTAL SHEETS
2			4			2

DRAWN BY: Nat M. Ruffin DATE: 2/14/08  
 CHECKED BY: W. A. DAVIS DATE: 2/14/08





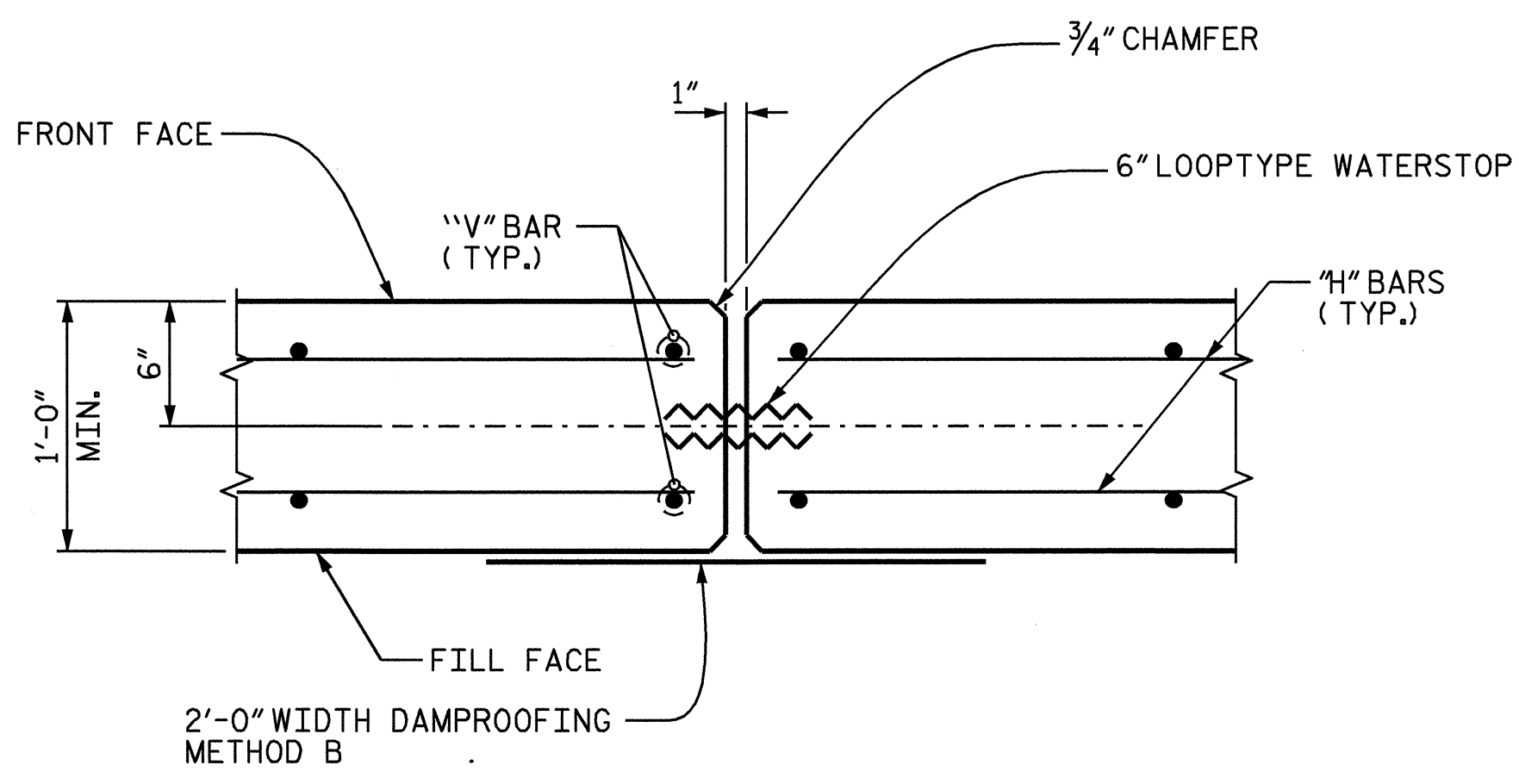
SECTION THRU CONCRETE GRAVITY WALL NO. 2 (B-B)

END CONC. GRAVITY WALL NO. 1 STA. 20+88.77 -L-  
BEGIN CONC. GRAVITY WALL NO. 2 STA. 12+58.67

APPROXIMATE CLASS A CONCRETE QUANTITY FOR CONCRETE GRAVITY WALL NO. 2	347.9 C.Y.
APPROXIMATE WEIGHT OF REINFORCEMENT FOR THE REINFORCED CONCRETE GRAVITY WALL NO. 2 APPROX. LBS.	8152

CONCRETE GRAVITY WALL NO. 2				
SPUR STA.	Δ OFFSET FROM C. SPUR TO POINT A	ELEV. @ TOP OF WALL	ELEV. @ BOTTOM OF FOOTING	WALL HEIGHT
12+58.67	35.600	875.275	865.326	9.949
13+00.00	12.088	875.050	866.347	8.703
13+50.00	15.500	873.108	865.803	7.305
14+00.00	15.500	872.633	864.962	7.671
14+50.00	15.500	871.976	864.427	7.549
15+00.00	15.500	871.070	864.529	6.541
15+50.00	15.500	870.071	864.408	5.663
15+51.67	15.500	870.037	864.453	5.584

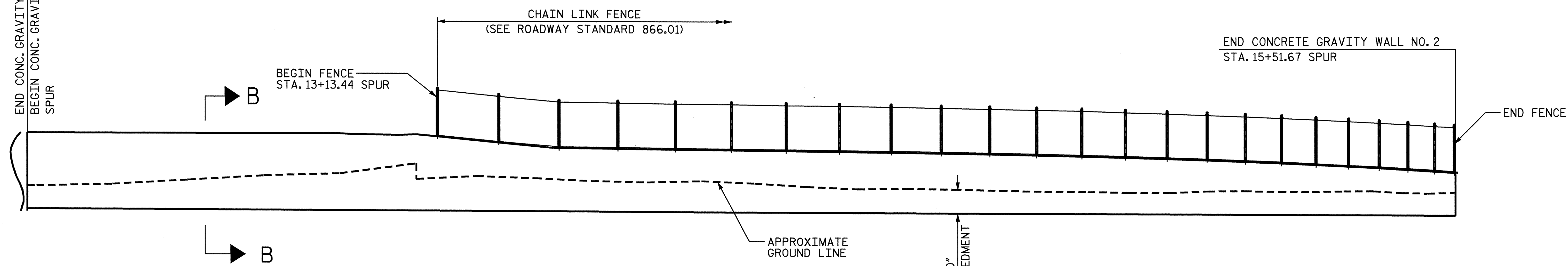
BILL OF MATERIAL FOR WALL NO. 2	
CONCRETE GRAVITY WALL NO. 2	1262.3 S.F.



EXPANSION JOINT DETAIL FOR WALL NO. 2

NOTES

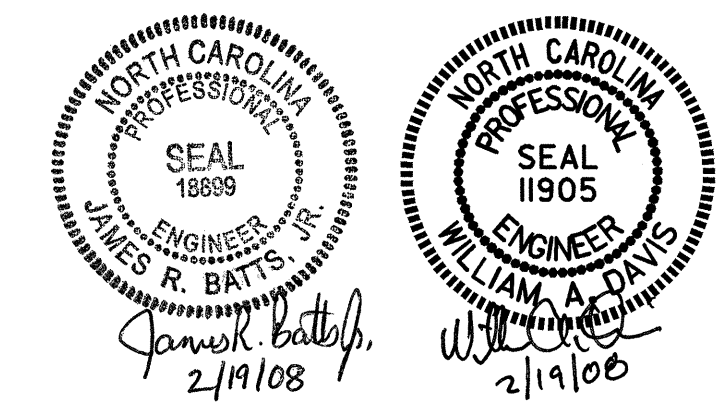
- FOR GRAVITY RETAINING WALLS, SEE SECTION 453 OF THE STANDARD SPECIFICATIONS.
- THE GRAVITY RETAINING WALL IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
TOTAL UNIT WEIGHT = 120 PCF  
COHESION = 0 PSF  
FRICTION ANGLE = 35 DEGREES (GROUNDWATER WITHIN 5'-0" OF BOTTOM OF FOOTING)  
FRICTION ANGLE = 30 DEGREES (GROUNDWATER MORE THAN 5'-0" BELOW BOTTOM OF FOOTING)
- DO NOT USE A GRAVITY RETAINING WALL IF THE ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE THE BOTTOM OF FOOTING.
- DO NOT USE A GRAVITY RETAINING WALL WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS PRESENT BELOW THE WALL.
- DO NOT PLACE CONCRETE UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND CHECKING FOUNDATION MATERIAL FOR IN-SITU ASSUMED SOIL PARAMETERS.
- USE CLASS "A" CONCRETE AND PROVIDE CLASS I SURFACE FINISH FOR ALL EXPOSED SURFACES.
- PROVIDE 3" DIAMETER WEEP HOLES ON 10'-0" CENTERS ALONG WALL. SLOPE WEEP HOLES ON A 1" PER FOOT SLOPE THROUGH THE WALL SO THAT WATER DRAINS OUT OF THE FRONT OF THE WALL.
- CONSTRUCT A HORIZONTAL DRAIN IN SUBDRAIN FINE AGGREGATE AT LEAST 1'-0" TALL AND 1'-0" WIDE TO CONNECT ALL STONE DRAINS.
- PROVIDE GROOVED CONTRACTION JOINTS EVERY 10'-0" AND EXPANSION JOINTS EVERY 30'-0" ALONG THE WALL.
- DO NOT BACKFILL BEHIND WALL UNTIL CONCRETE DEVELOPS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. COMPACT BACKFILL IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. PLACE BACKFILL WITHIN 3'-0" OF THE BACK OF THE WALL WITH HAND OPERATED EQUIPMENT. DO NOT OPERATE HEAVY EARTH MOVING EQUIPMENT WITHIN 10'-0" OF THE BACK OF WALL.
- WHEN A CONSTRUCTION JOINT IS LOCATED AT THE BASE OF THE WALL, IN SECTION, PROVIDE A MINIMUM OF 3-#4 DOWELS AT AN EQUAL SPACING. SPACE ALL DOWELS AT 1'-6" CENTERS ALONG THE LENGTH OF THE WALL.
- FOR PLAN VIEW OF GRAVITY RETAINING WALL, SEE ROADWAY PLAN SHEETS.
- FOR WALL WITH FENCE, USE SLEEVES IN ACCORDANCE WITH SECTION 866 OF THE STANDARD SPECIFICATIONS FOR FENCE POSTS, OR SUBMIT FENCE POST ANCHOR PLATE DETAILS.
- FOR FENCE INSERTS IN THE TOP OF WALL FOR THE FENCE POSTS, SEE "GRAVITY RETAINING WALLS" STANDARD SPECIFICATIONS.
- THE COST OF DAMPROOFING METHOD B IS TO BE INCLUDED IN THE SQUARE FOOT COST OF WALL NO. 2.



ELEVATION ALONG CONCRETE GRAVITY WALL NO. 2 (REINFORCED SECTION)

PROJECT NO. U-2702  
RANDOLPH/GUILFORD COUNTY  
STATION: 12+58.67 SPUR

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
GRAVITY RETAINING WALL #2			
REVISIONS			SHEET NO.
NO.	BY:	DATE:	W-2
1			TOTAL SHEETS
2			2



DRAWN BY: Neil M. Ruffin DATE: 9/6/05  
CHECKED BY: W. A. DAVIS DATE: 11/22/05