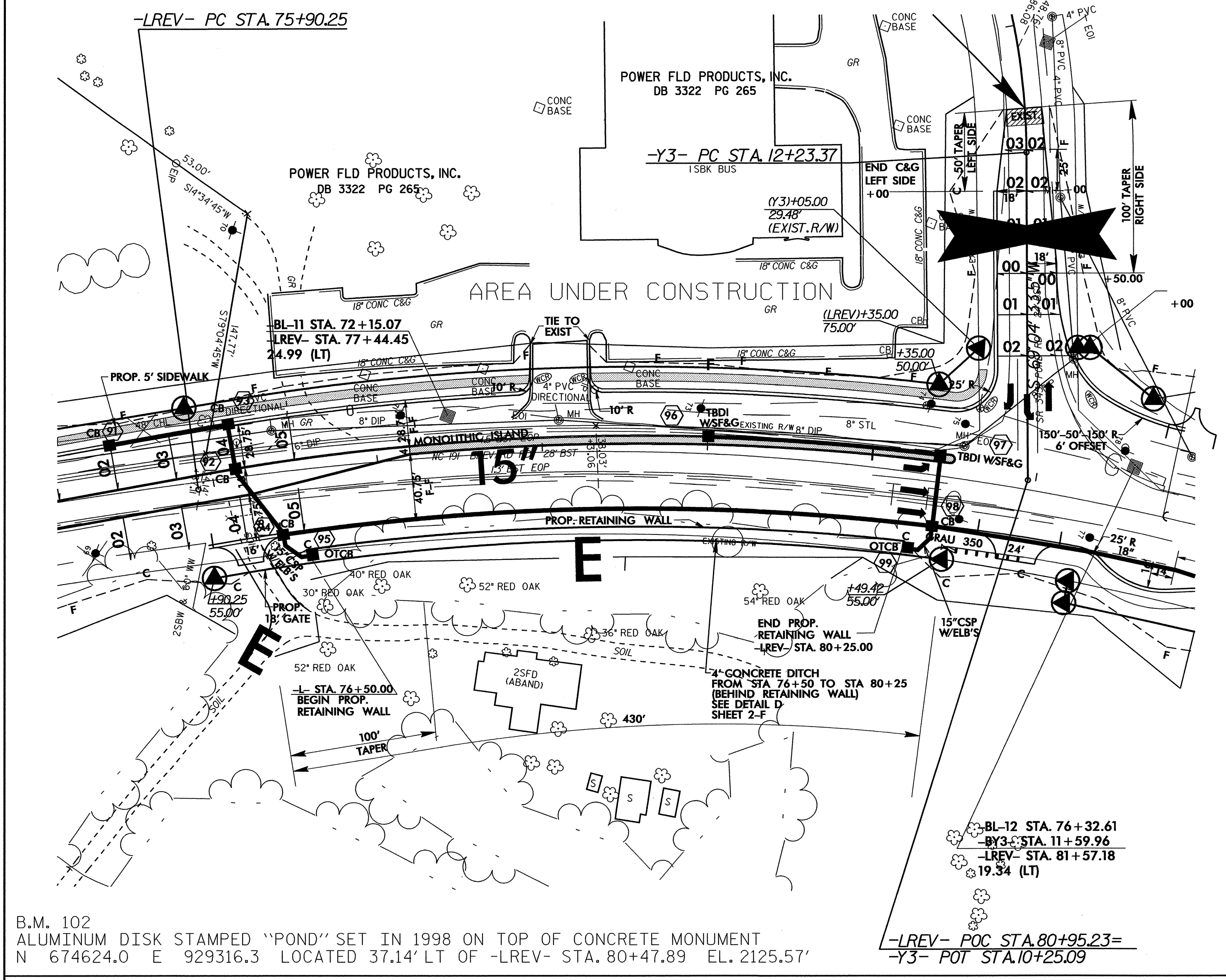


GEOTECHNICAL ENGINEER
ENGINEER

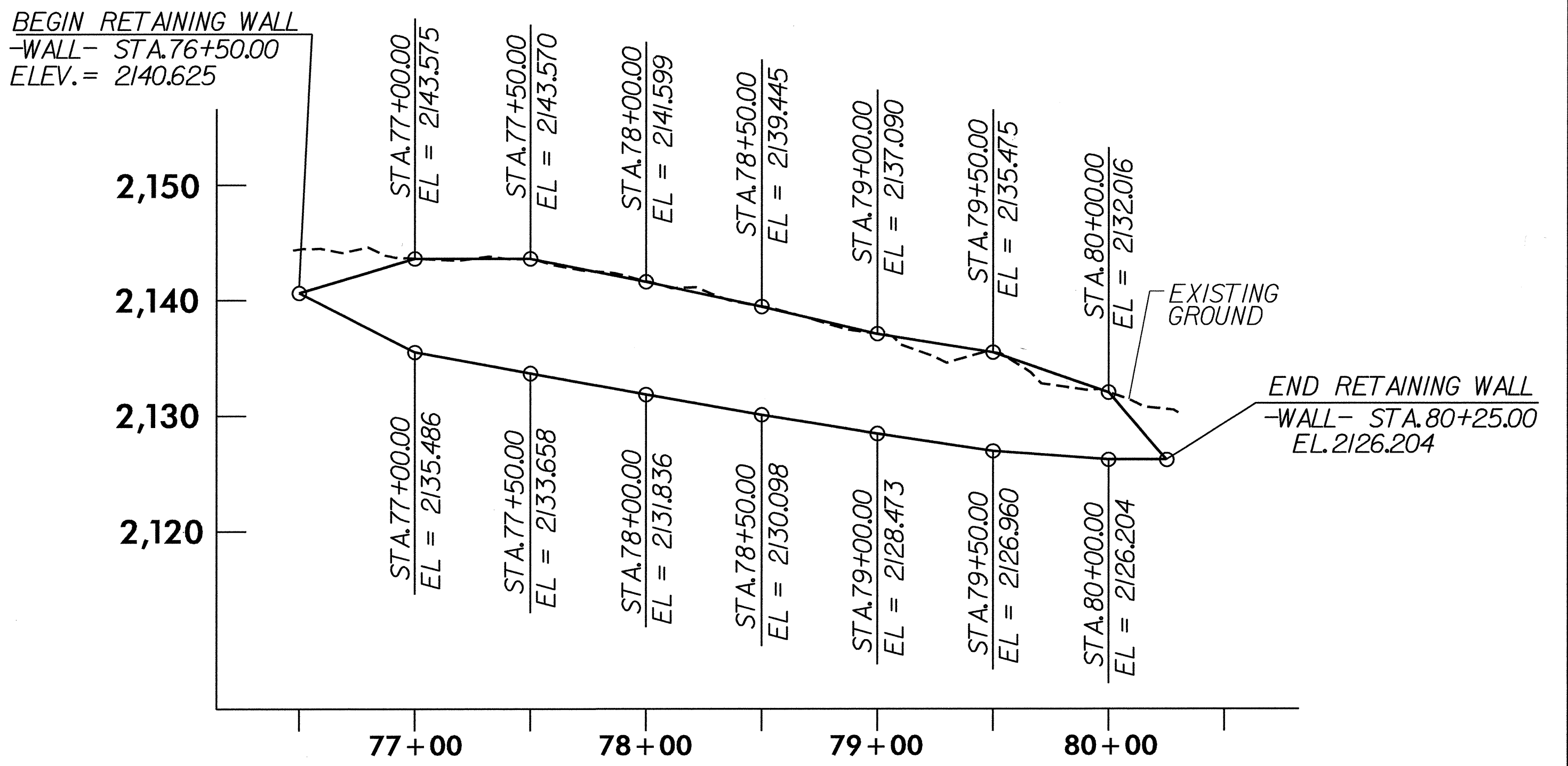
SEAL 29869
STATE OF NORTH CAROLINA
ENGINEER
JAMES C. CLARK

Signature: J. Clark 4/16/08
DATE: 4/16/08

PROJECT REFERENCE NO. U-3601
SHEET NO. W-1



EL. = 2916.41' N 934279 E 1248179 LOCATION SKETCH



B.M. 102
ALUMINUM DISK STAMPED "POND" SET IN 1998 ON TOP OF CONCRETE MONUMENT
N 674624.0 E 929316.3 LOCATED 37.14' LT OF -LREV- STA. 80+47.89 EL. 2125.57'

PROJECT NO.: U-3601
BUNCOMBE COUNTY
STATION: 76+50.00 TO 80+25.00 -LREV-
SHEET 1 OF 5

GEOTECHNICAL ENGINEERING UNIT

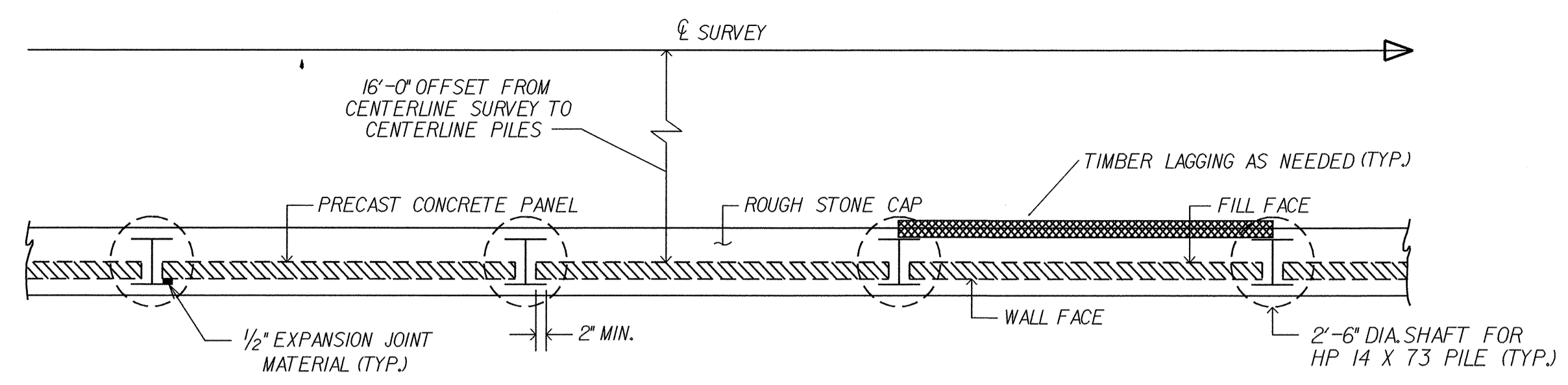
EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

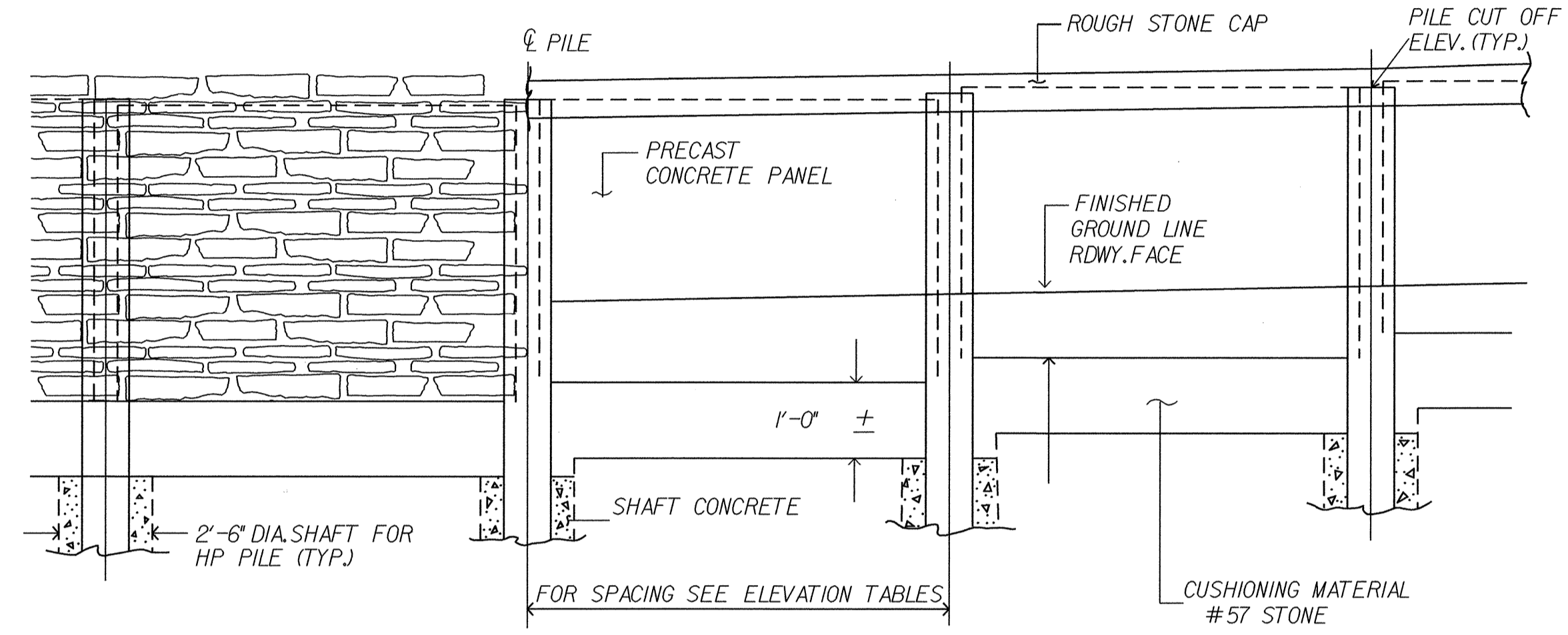
PILE PANEL WALL

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

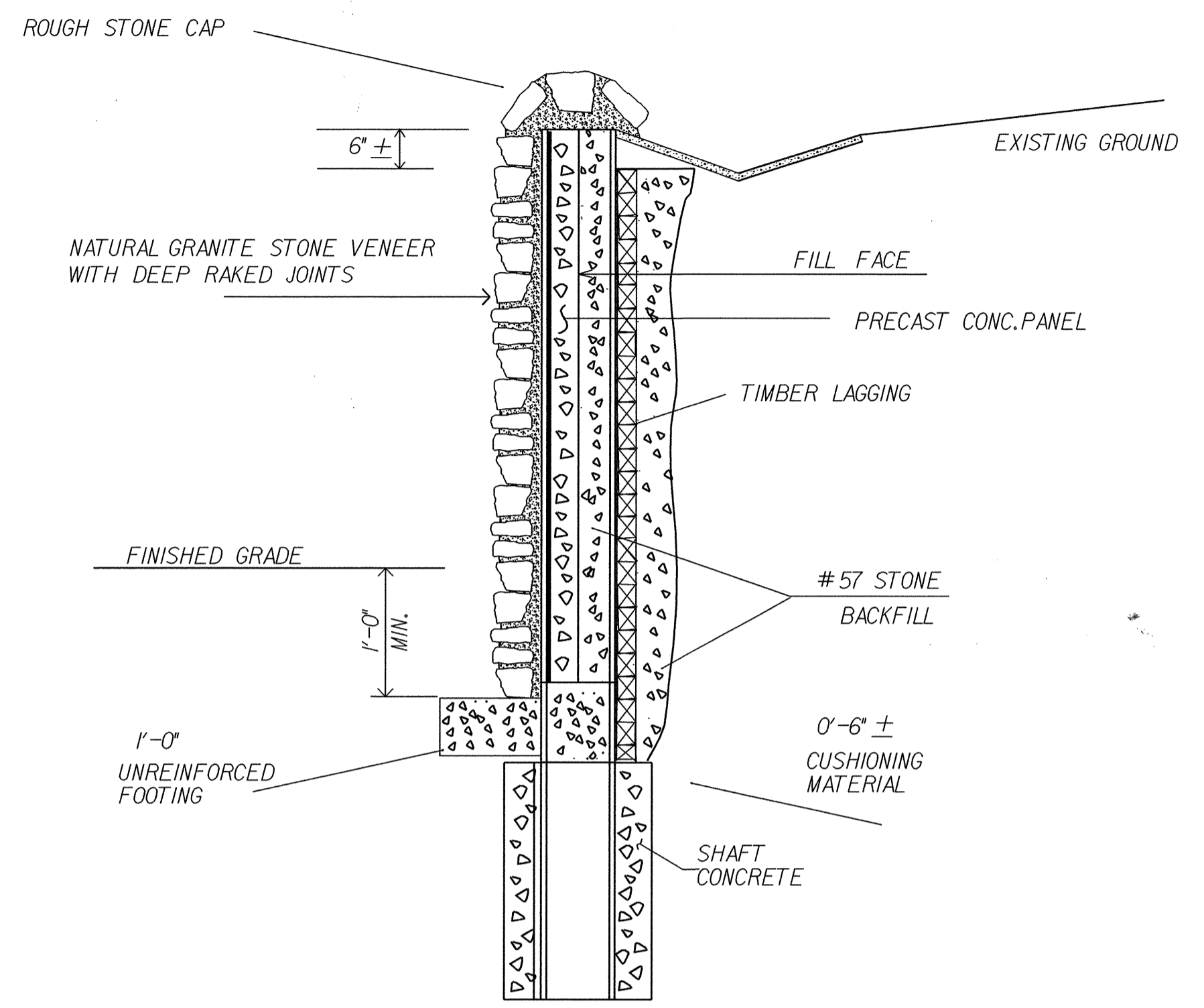
PREPARED BY: E.J. SALVO DATE: 02/08
REVIEWED BY: S.C. CLARK DATE: 02/08



PLAN VIEW
N.T.S.



ELEVATION VIEW
N.T.S.



TYPICAL SECTION
N.T.S.

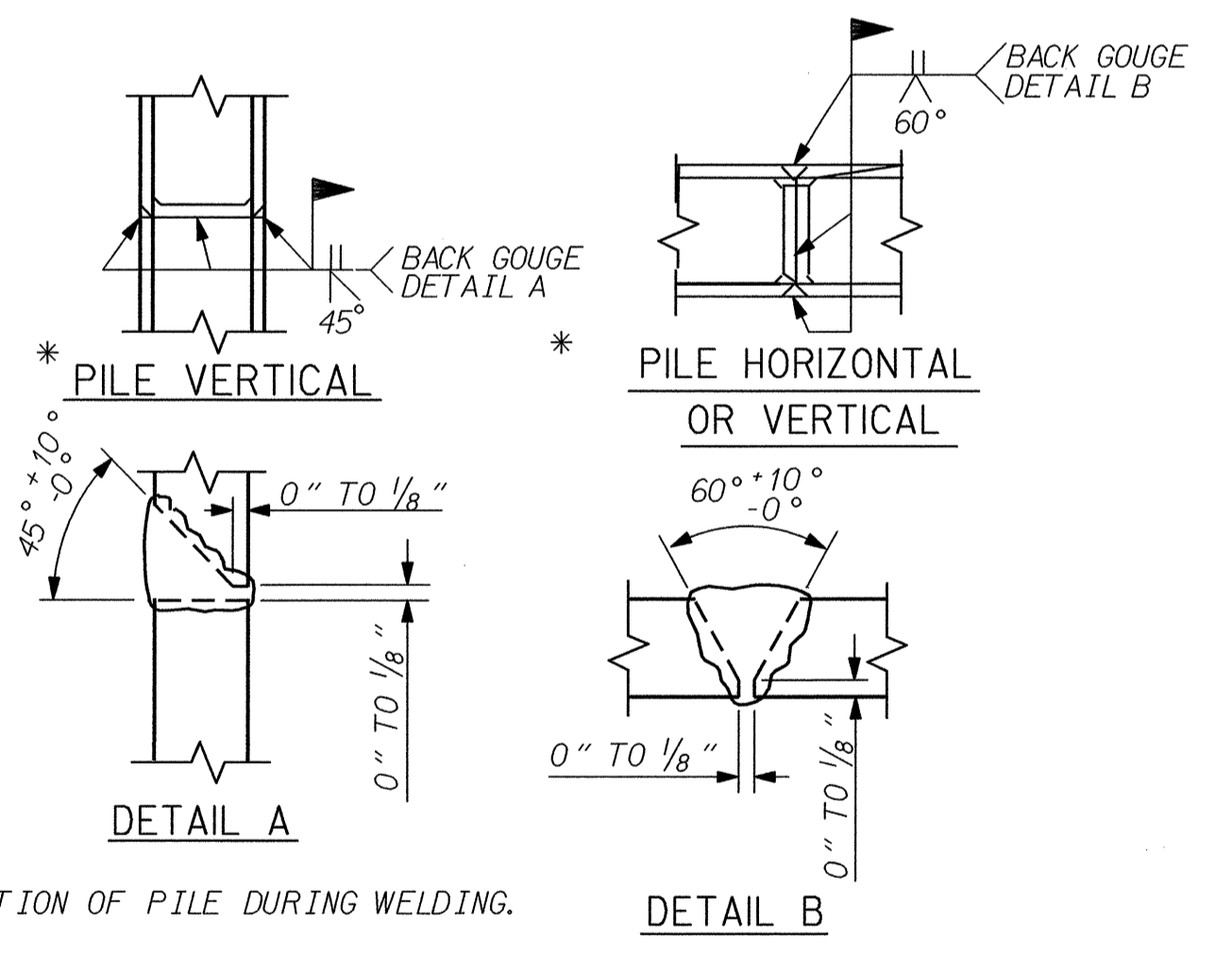
NOTES:

1. PILES SHALL BE INSTALLED TO THE CUT OFF ELEVATIONS AND LENGTHS SHOWN ON THE PLANS BY PRE-AUGERING OR DRILLING. THE EXCAVATED HOLE SHALL BE 2'-6" MINIMUM DIAMETER AND BACKFILLED WITH CONCRETE TO THE BOTTOM OF THE CUSHIONING MATERIAL.
2. PILES SHALL BE ASTM GRADE 50 STEEL WITH THE ADDITION OF 0.2% MINIMUM COPPER.
3. SPLICING OF PILES IS ONLY ALLOWED IN THE PORTION OF THE PILE PERMANENTLY BELOW GROUND.
4. THE TOP OF THE INSTALLED PILES SHALL BE WITHIN 2" OF THEIR PLAN LOCATION IN ANY DIRECTION.
5. CONCRETE PANELS SHALL HAVE A MINIMUM BEARING DISTANCE OF 2" ON THE PILE FLANGE. 2" THICK EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE CONCRETE PANELS AND PILE FLANGES FOR THE WIDTH OF THE BEARING SURFACE.
6. THE CONCRETE PANELS SHALL HAVE A PLAIN CONCRETE FACE. SEE SPECIAL PROVISIONS FOR COLOR, TEXTURE AND AGGREGATE REQUIREMENTS.
7. CAST DOVETAIL ANCHOR SLOTS VERTICALLY (PARALLEL TO THE LONG DIMENSION) INTO FRONT FACE OF PANEL ON 12 FT SPACINGS ACROSS THE PANEL SEE MASONRY ACCESSORIES SPECIAL PROVISION
8. EXCAVATION TO INSTALL PANELS AND TIMBER LAGGING SHALL BE LIMITED TO 6' BEHIND THE PILES. ANY OVEREXCAVATION SHALL BE BACKFILLED WITH NO. 57 STONE.
9. CONCRETE PANELS SHALL BE HELD SECURELY AGAINST PILES UNTIL BACKFILL IS PLACED.
10. BOTH CUSHIONING MATERIAL AND BACKFILL MATERIAL BEHIND THE PANELS SHALL BE NO. 57 STONE AND COMPACTED AS REQUIRED BY THE ENGINEER. THE STONE SHALL BE RODDED AND SPREAD IN ORDER TO FILL ALL VOIDS AND INSURE MAXIMUM DENSITY. FLUSHING THE STONE WITH WATER TO AID COMPACTION WILL NOT BE ALLOWED.
11. BACKFILLING SHALL BE COMPLETED PRIOR TO SETTING THE ROUGH STONE CAP.
12. THE TOP OF ROUGH STONE CAP IS TO BE ADJUSTED BY THE ENGINEER TO GIVE A UNIFORM APPEARANCE.
13. THE CONTRACTOR SHALL VERIFY THE LOCATION OF DRAINAGE STRUCTURES AND UTILITIES PRIOR TO INSTALLING PILES.

18. EXCAVATION SEQUENCE:

- DRILL MINIMUM 2'-6" DIA. SHAFTS FOR 14" PILES FROM NATURAL GROUND, INSTALL PILES AND BACKFILL WITH CONCRETE TO THE TOP OF SHAFT ELEVATIONS BEFORE EXCAVATING TO INSTALL PANELS OR TIMBER LAGGING.
- EXCAVATION TO INSTALL THE PANELS OR LAGGING SHALL BE VERTICAL, HAVE A MAXIMUM LIFT HEIGHT OF 4'-0" AND BE LIMITED IN EXTENT TO ONLY WHAT IS NECESSARY.
- TIMBER LAGGING IS NEEDED ONLY TO MEET OSHA REQUIREMENTS FOR SAFE EXCAVATION HEIGHTS. IF CUT IS LESS THAN 4'-0" HIGH, LAGGING IS NOT REQUIRED.
- THE LAGGING SHALL HAVE A MINIMUM BEARING DISTANCE OF 3" ON THE PILE FLANGE.
- UNTREATED STRUCTURAL TIMBERS SHALL BE A MINIMUM OF 3" THICK AND SHALL CONFORM TO THE APPLICABLE PARTS OF SECTIONS 445 AND 1082 OF THE STANDARD SPECIFICATIONS.
- PLACE BACKFILL BEHIND THE LAGGING IMMEDIATELY AFTER INSTALLATION.
- WHERE PRACTICAL, THE TOP FEW PIECES OF LAGGING SHALL BE REMOVED PRIOR TO BACKFILLING BEHIND PANELS. ALL OTHER LAGGING SHALL BE LEFT IN PLACE.
- THE CONTRACTOR MAY ELECT TO USE AN ALTERNATE METHOD OF PROVIDING A SAFE EXCAVATION, HOWEVER, THE ALTERNATE METHOD MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

15. IF NECESSARY, SPECIAL MEASURES SHALL BE TAKEN TO INSURE THE STABILITY OF THE SHAFT SUCH AS INSTALLING TEMPORARY CASINGS PRIOR TO DRILLING, INSTALLING THE PILE AND PLACING CONCRETE IMMEDIATELY AFTER A SHAFT IS EXCAVATED BEFORE CAVING OCCURS, INSTALLING WELL POINTS, OR OTHER MEASURES. IF CAVING OCCURS, THE SHAFT EXCAVATION OPERATION SHALL BE HALTED UNTIL SPECIAL MEASURES ARE IMPLEMENTED.
16. ANCHOR NATURAL GRANITE STONE VENEER TO THE PRECAST PANELS USING GALVANIZED DOVETAIL ANCHORS WITH TRIANGULAR TIES. SEE NATURAL GRANITE STONE VENEER SPECIAL PROVISION.
17. SHAFT EXCAVATION MAY REQUIRE SPECIALTY DRILLING EQUIPMENT TO PENETRATE INTO WEATHERED ROCK AND FRESH ROCK. SEE WALL SUBSURFACE INVESTIGATION FOR FURTHER INFORMATION.



PILE SPlice DETAILS
N.T.S.

PROJECT NO.: U-3601
 BUNCOMBE COUNTY
 STATION: 76+50.00 TO 80+25.60 -LREV-
 SHEET 2 OF 5

GEOTECHNICAL ENGINEERING UNIT
 EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

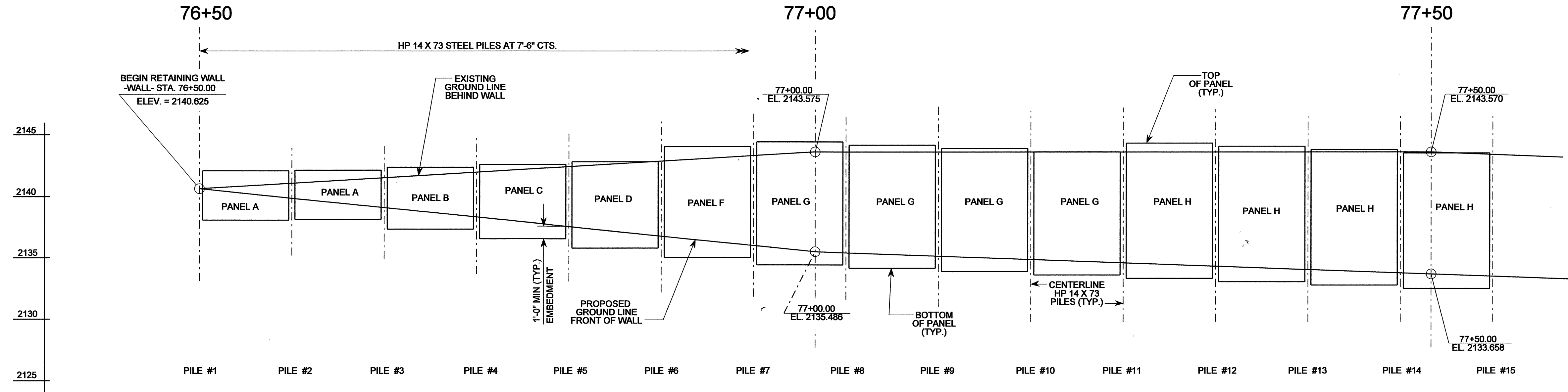
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

GEOTECHNICAL ENGINEER ENGINEER

SEAL 29869
 NORTH CAROLINA PROFESSIONAL SEAL
 ENGINEER STANLEY C. CLARK

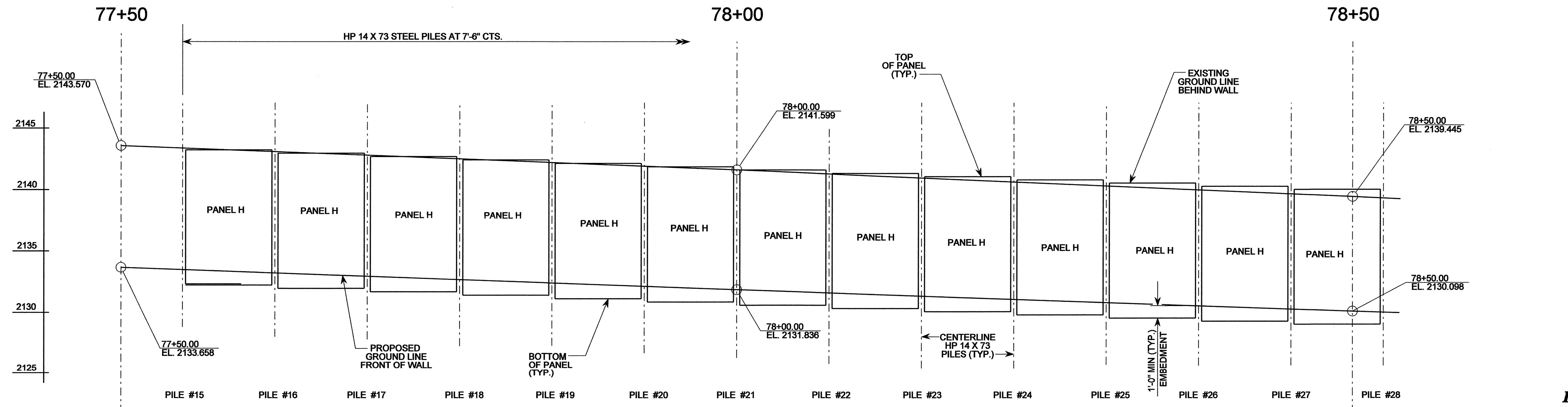
Signature: *S.C. Clark* 4/16/06
 DATE: 4/16/06

PROJECT REFERENCE NO.	SHEET NO.
U-3601	W-3



ELEVATION OF WALL LAYOUT

FOR COPING DETAILS, SEE SHEET 1 OF 5



ELEVATION OF WALL LAYOUT

FOR COPING DETAILS, SEE SHEET 1 OF 5

PROJECT NO.: U-3601
BUNCOMBE COUNTY
STATION: 76+50.00 TO 80+25.00 -LREV-
 SHEET 3 OF 5

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PILE PANEL WALL

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

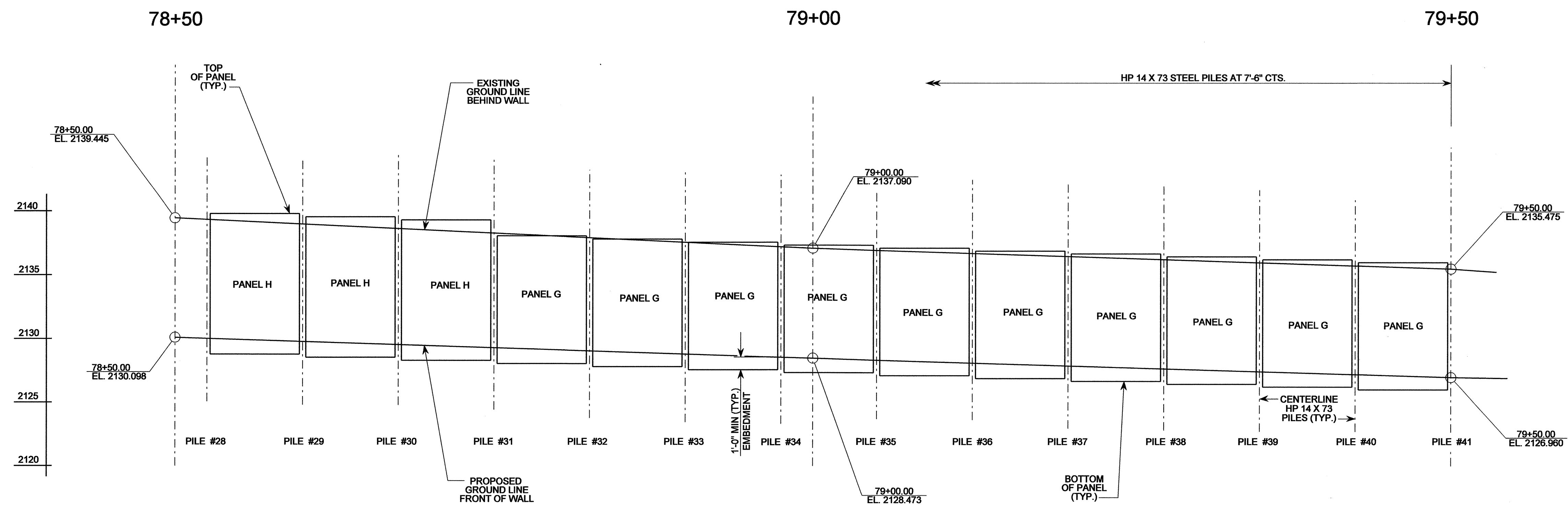
PREPARED BY:	E.J. SALVO	DATE:	02/08
REVIEWED BY:	S.C. CLARK	DATE:	02/08

GEOTECHNICAL ENGINEER
ENGINEER

SEAL
29869
ENGINEER
STATE OF NORTH CAROLINA

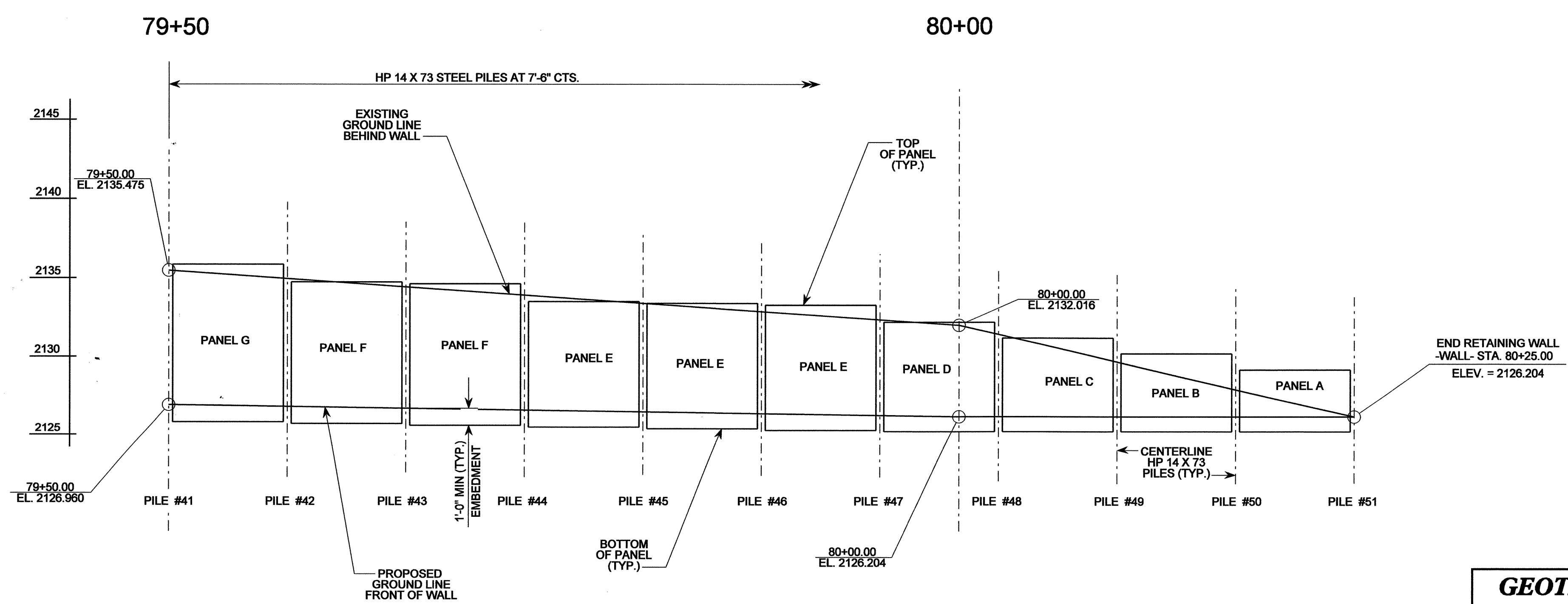
S. Clark 4/16/08
SIGNATURE DATE

PROJECT REFERENCE NO. U-3601
SHEET NO. W-4



ELEVATION OF WALL LAYOUT

FOR COPING DETAILS, SEE SHEET 1 OF 5



ELEVATION OF WALL LAYOUT

FOR COPING DETAILS, SEE SHEET 1 OF 5

PROJECT NO.: U-3601
BUNCOMBE COUNTY
 STATION: 76+50.00 TO 80+25.00 -LREV-
 SHEET 4 OF 5

PREPARED BY: E.J. SALVO	DATE: 02/08
REVIEWED BY: S.C. CLARK	DATE: 02/08

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE

**STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH**

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

BILL OF MATERIALS FOR RETAINING WALL

PRECAST CONCRETE PANELS					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT (LBS.)
H1	938	#4	STR.	6'-8"	4177
V1	42	#4	STR.	3'-8"	103
V2	28	#4	STR.	4'-8"	87
V3	28	#4	STR.	5'-8"	106
V4	28	#4	STR.	6'-8"	125
V5	42	#4	STR.	7'-8"	215
V6	42	#4	STR.	8'-8"	243
V7	210	#4	STR.	9'-8"	1356
V8	280	#4	STR.	10'-8"	1995

REINFORCING STEEL (PANELS)	LBS.	8407
CLASS 'A' CONCRETE (PANELS)	CU.YDS.	61.0

BILL OF MATERIALS FOR RETAINING WALL

ESTIMATED QUANTITIES			
PRECAST CONCRETE PANEL A	----- NO.	3	
PRECAST CONCRETE PANEL B	----- NO.	2	
PRECAST CONCRETE PANEL C	----- NO.	2	
PRECAST CONCRETE PANEL D	----- NO.	2	
PRECAST CONCRETE PANEL E	----- NO.	3	
PRECAST CONCRETE PANEL F	----- NO.	3	
PRECAST CONCRETE PANEL G	----- NO.	15	
PRECAST CONCRETE PANEL H	----- NO.	20	

HP 14X73 STEEL PILES	NO. = 51	LF =	
----------------------	----------	------	--

C.I.P. COPING	LIN.FT.	375.0
NO.57 STONE	CU YARDS	130.0
SHAFT EXCAVATION	LIN.FT.	765.0
SHAFT CONCRETE, CLASS 'A'	CU YARDS	121.0
CLASS II RIP RAP	TONS	139.0

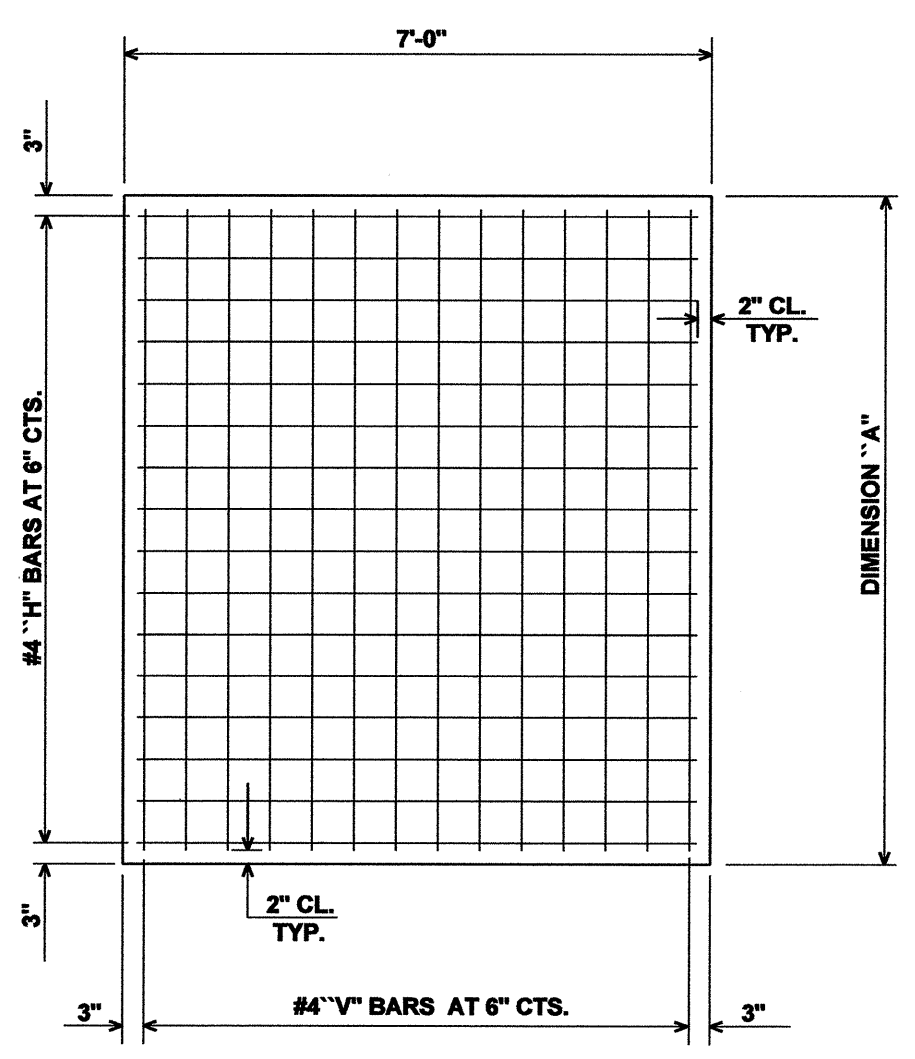
NOTE : ALL HP 14X73 STEEL PILES ARE ASTM GRADE 50 STEEL

PILE ELEVATIONS, STATIONS, AND PILE LENGTHS FOR RETAINING WALL

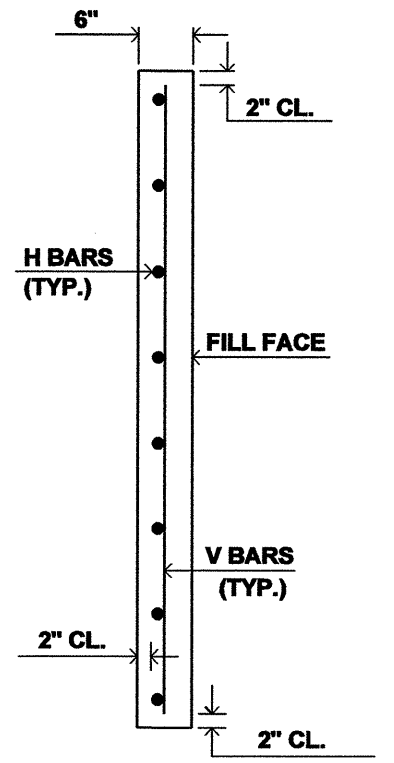
PILE STATION -LREV-	PILE No.	OFFSET FROM -L- (FT)	PILE SIZE	PILE LENGTH (FT)	△ CUTOFF ELEV.
76+50	1	46.75'	HP 14 X 73	16	2142.053
76+57.50	2	46.75'	HP 14 X 73	17	2142.096
76+65	3	46.75'	HP 14 X 73	18	2142.339
76+72.50	4	46.75'	HP 14 X 73	19	2142.563
76+80	5	46.75'	HP 14 X 73	20	2142.793
76+87.50	6	46.75'	HP 14 X 73	23	2144.022
76+95	7	46.75'	HP 14 X 73	24	2144.405
77+02.50	8	46.75'	HP 14 X 73	24	2144.405
77+10	9	46.75'	HP 14 X 73	24	2144.131
77+17.50	10	46.75'	HP 14 X 73	24	2143.857
77+25	11	46.75'	HP 14 X 73	25	2144.308
77+32.50	12	46.75'	HP 14 X 73	25	2144.308
77+40	13	46.75'	HP 14 X 73	25	2144.034
77+47.50	14	46.75'	HP 14 X 73	25	2143.760
77+55	15	46.75'	HP 14 X 73	25	2143.486
77+62.50	16	46.75'	HP 14 X 73	25	2143.211
77+70	17	46.75'	HP 14 X 73	25	2142.938
77+77.50	18	46.75'	HP 14 X 73	25	2142.664
77+85	19	46.75'	HP 14 X 73	25	2142.391
77+92.50	20	46.75'	HP 14 X 73	25	2142.118
78+00	21	46.75'	HP 14 X 73	25	2141.844
78+07.50	22	46.75'	HP 14 X 73	25	2141.583
78+15	23	46.75'	HP 14 X 73	25	2141.323
78+22.50	24	46.75'	HP 14 X 73	25	2141.062
78+30	25	46.75'	HP 14 X 73	25	2140.801
78+37.50	26	46.75'	HP 14 X 73	25	2140.541
78+45	27	46.75'	HP 14 X 73	25	2140.280
78+52.50	28	46.75'	HP 14 X 73	25	2140.027
78+60	29	46.75'	HP 14 X 73	25	2139.781
78+67.50	30	46.75'	HP 14 X 73	25	2139.537
78+75	31	46.75'	HP 14 X 73	25	2139.293
78+82.50	32	46.75'	HP 14 X 73	24	2138.049
78+90	33	46.75'	HP 14 X 73	24	2137.806
78+97.50	34	46.75'	HP 14 X 73	24	2137.562
79+05	35	46.75'	HP 14 X 73	24	2137.329
79+12.50	36	46.75'	HP 14 X 73	24	2137.102
79+20	37	46.75'	HP 14 X 73	24	2136.875
79+27.50	38	46.75'	HP 14 X 73	24	2136.648
79+35	39	46.75'	HP 14 X 73	24	2136.421
79+42.50	40	46.75'	HP 14 X 73	24	2136.194
79+50	41	46.75'	HP 14 X 73	24	2135.967
79+57.50	42	46.75'	HP 14 X 73	24	2135.850
79+65	43	46.75'	HP 14 X 73	23	2134.737
79+72.50	44	46.75'	HP 14 X 73	23	2134.624
79+80	45	46.75'	HP 14 X 73	22	2133.510
79+87.50	46	46.75'	HP 14 X 73	22	2133.397
79+95	47	46.75'	HP 14 X 73	22	2133.283
80+02.50	48	46.75'	HP 14 X 73	21	2132.204
80+10	49	46.75'	HP 14 X 73	20	2131.204
80+17.50	50	46.75'	HP 14 X 73	19	2130.204
80+25	51	46.75'	HP 14 X 73	18	2129.204

HP 14X73 STEEL PILES ARE ASTM GRADE 50 STEEL
△ THE CUTOFF ELEVATION IS THE TOP OF PILE ELEVATION

PANEL	NO. OF PANELS	DIMENSION "A"	"V" BARS		"H" BARS	
			NUMBER	LENGTH	NUMBER	LENGTH
A	3	4'-0"	14	3'-8"	8	6'-8"
B	2	5'-0"	14	4'-8"	10	6'-8"
C	2	6'-0"	14	5'-8"	12	6'-8"
D	2	7'-0"	14	6'-8"	14	6'-8"
E	3	8'-0"	14	7'-8"	16	6'-8"
F	3	9'-0"	14	8'-8"	18	6'-8"
G	15	10'-0"	14	9'-8"	20	6'-8"
H	20	11'-0"	14	10'-8"	22	6'-8"



PRECAST PANEL DETAILS



SECTION THRU PANELS

BM - 102 NCGS MON. "POND" STA. 80+48.00 -LREV- 37.00' LT.
 EL. = 2125.57' N 674624 E 929316

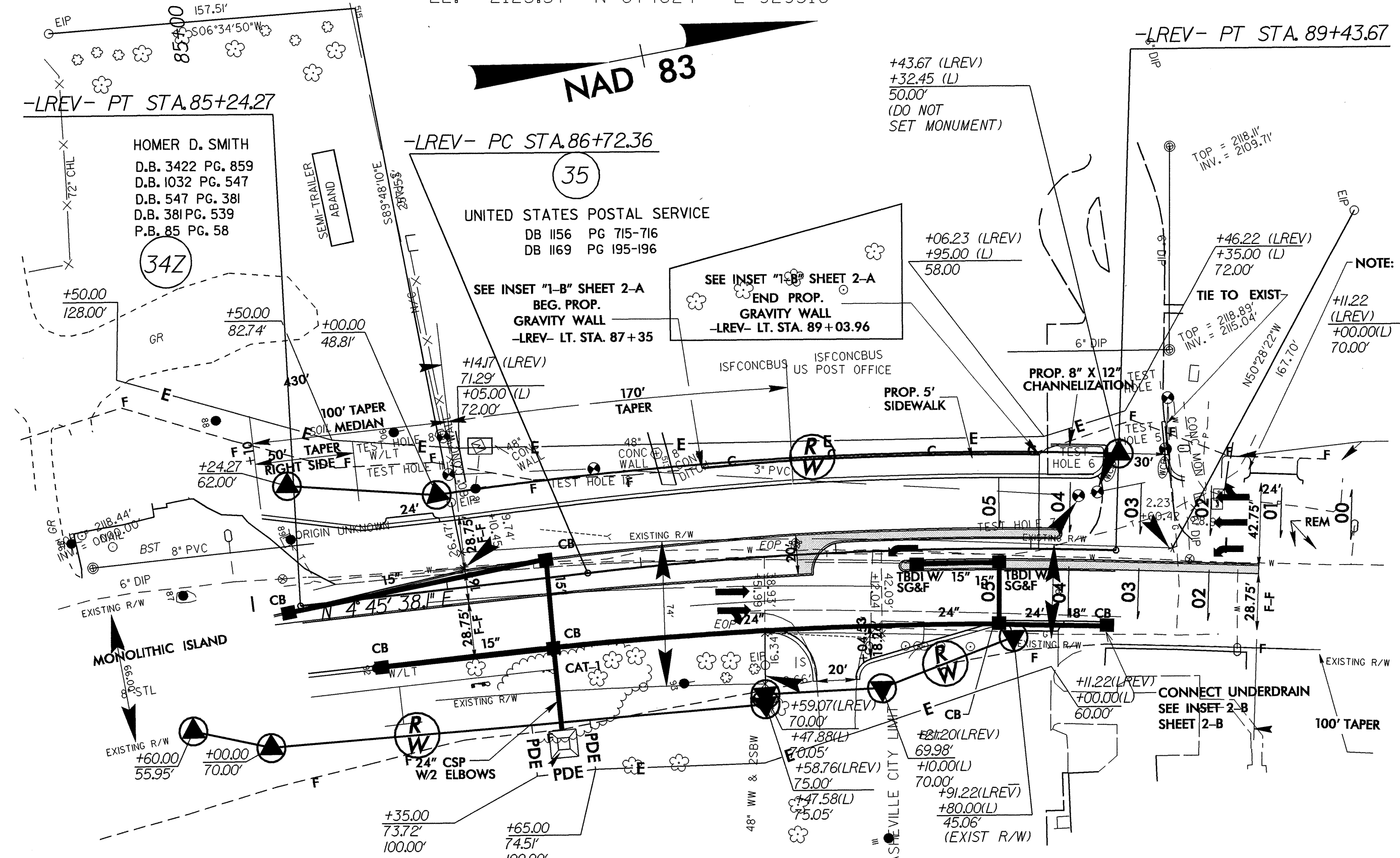
PROJECT REFERENCE NO. U-3601
 SHEET NO. W-6

GEOTECHNICAL ENGINEER

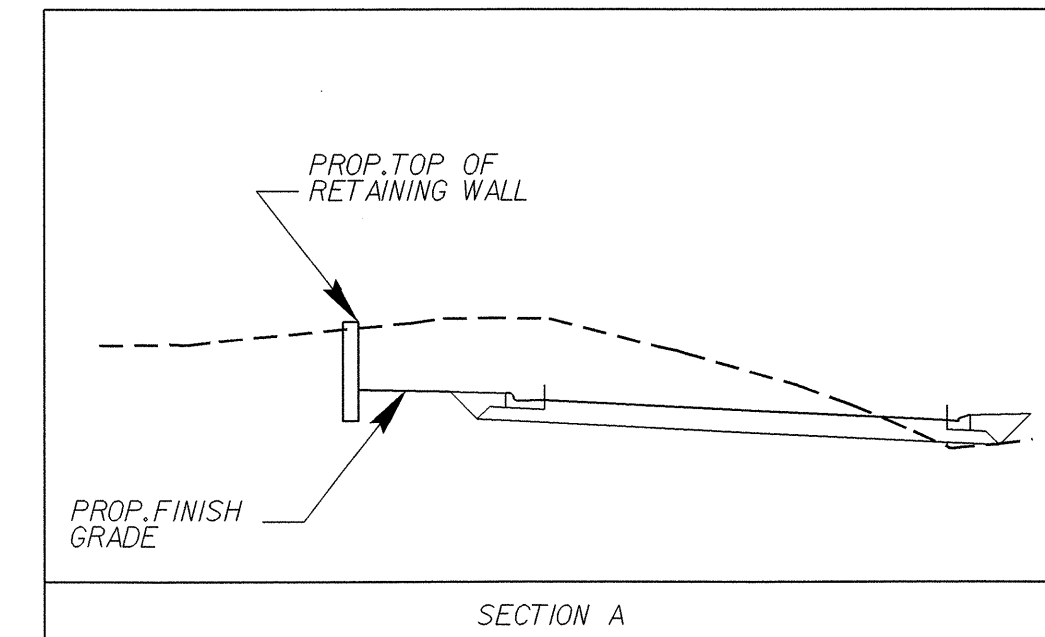
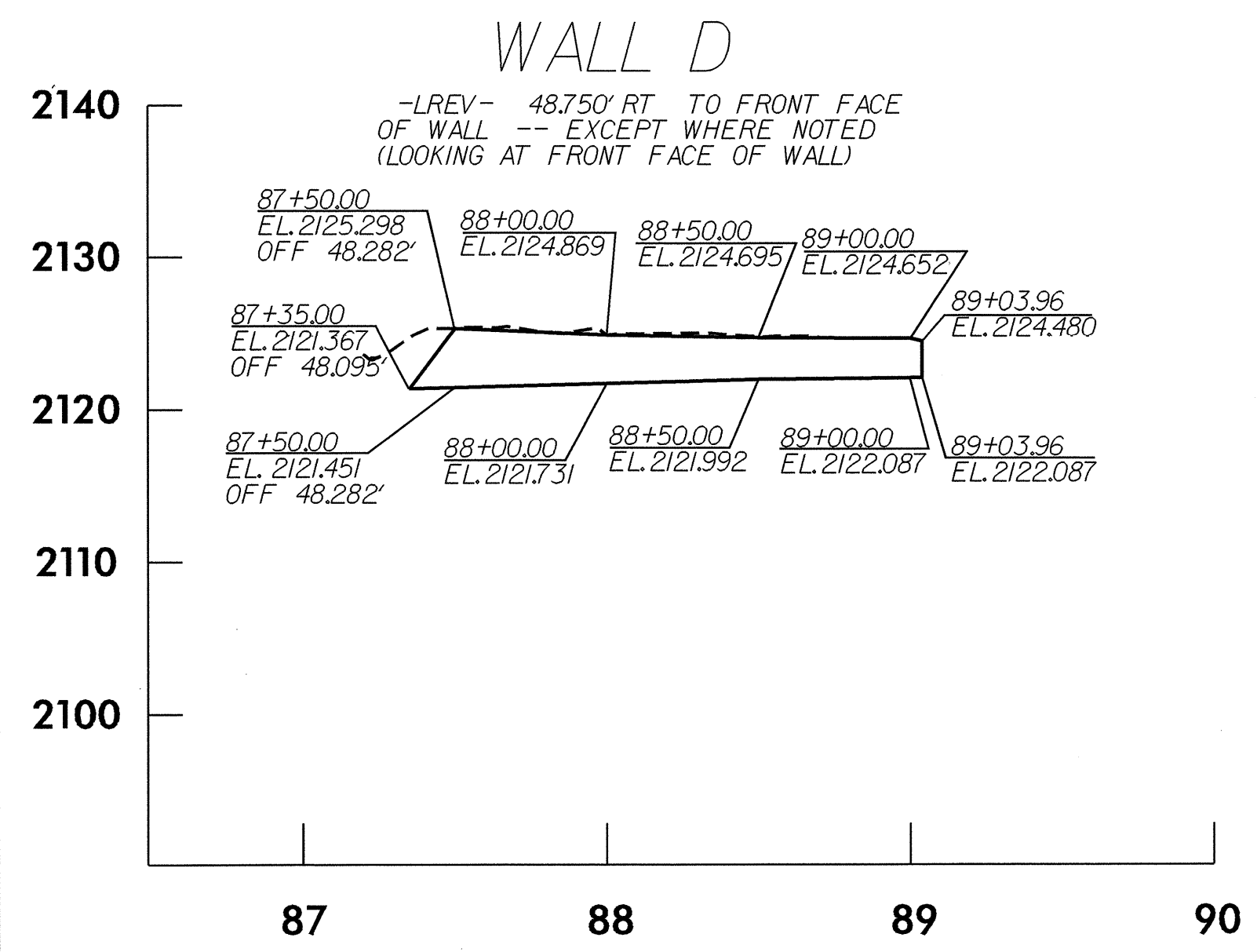
ENGINEER

SEAL 29869
 JAMES CLARK

3/16/08



LOCATION SKETCH



TOTAL STRUCTURE QUANTITIES

GRAVITY RETAINING WALLS	491	SQ. FT.
2" GALVANIZED STEEL PIPE RAIL	166	LIN. FT.

GRAVITY RETAINING WALL ELEVATIONS

-LREV- STA	OFFSET FROM C (LEFT)	ELEV @ TOP OF WALL	* PROPOSED FINISHED GRADE	* EXPOSED WALL HEIGHT	** DESIGN WALL HEIGHT "H"
87+35.00	48.095	2121.367	2121.367	N/A	N/A
87+40.00	48.154	2122.677	2121.395	1.28	.78
87+50.00	48.282	2125.298	2121.451	3.85	3.35
87+60.00	48.424	2125.212	2121.507	3.71	3.21
87+70.00	48.580	2125.126	2121.563	3.56	3.06
87+80.00	48.750	2125.041	2121.619	3.42	2.92
87+90.00	48.750	2124.955	2121.675	3.28	2.78
88+00.00	48.750	2124.869	2121.731	3.14	2.64
88+10.00	48.750	2124.834	2121.783	3.06	2.56
88+20.00	48.750	2124.799	2121.835	2.96	2.46
88+30.00	48.750	2124.765	2121.888	2.88	2.38
88+40.00	48.750	2124.730	2121.940	2.79	2.29
88+50.00	48.750	2124.695	2121.992	2.70	2.20
88+60.00	48.750	2124.686	2122.011	2.68	2.18
88+70.00	48.750	2124.678	2122.030	2.65	2.15
88+80.00	48.750	2124.669	2122.049	2.62	2.12
88+90.00	48.750	2124.661	2122.068	2.59	2.09
89+00.00	48.750	2124.652	2122.087	2.56	2.06
89+03.96	48.750	2124.480	2122.087	2.39	1.89

* ELEVATION @ PROPOSED FINISHED GRADE AND EXPOSED WALL HEIGHT DO NOT INCLUDE EMBEDMENT DEPTH
 ** FOR DESIGN WALL HEIGHT "H", SEE STANDARD DRAWING No. 453.01

NOTES

NO BRICK VENEER WILL BE ALLOWED.

NO FENCE WILL BE REQUIRED

SET APPROVED SLEEVES IN RETAINING WALL IN ACCORDANCE WITH THE DETAILS IN THE PLANS. AFTER THE POSTS HAVE BEEN SET, FILL SLEEVES WITH GROUT.

PREPARED BY: J.T. WILLIAMS DATE: 11/16/07
 REVIEWED BY: S.C. CLARK DATE: 11/16/07

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE

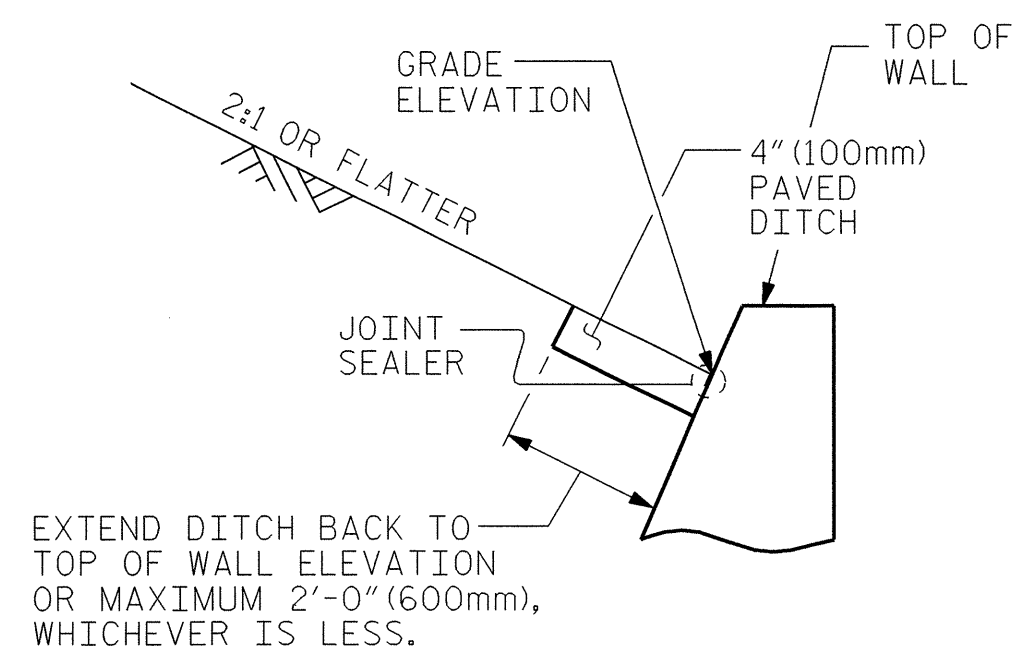
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GRAVITY RETAINING WALL D

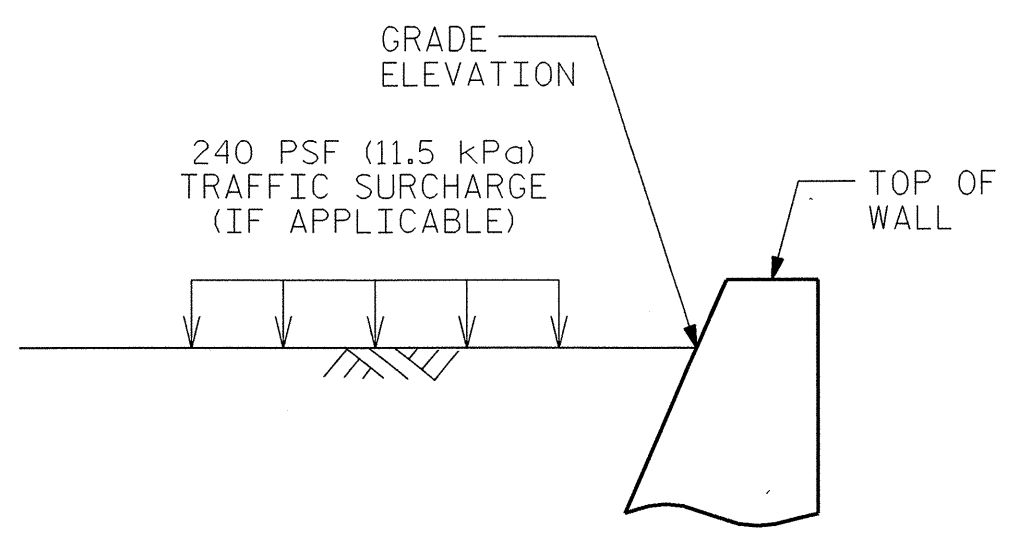
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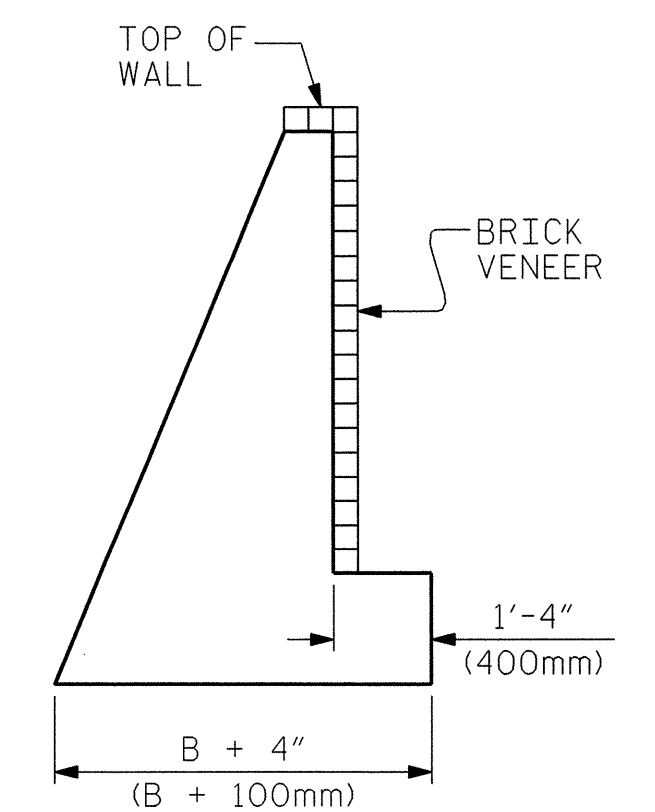
SHEET NO. TOTAL SHEETS



SLOPE CONDITION



NO SLOPE CONDITION



BRICK VENEER DETAIL

(WHEN APPLICABLE)

NOTES

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

THE STANDARD GRAVITY RETAINING WALL IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 TOTAL UNIT WEIGHT = 120 PCF (18.8 kN/m³)
 COHESION = 0 PSF (0 kPa)
 FRICTION ANGLE = 35 DEGREES
 (GROUNDWATER WITHIN 5'-0" (1.5m) OF BOTTOM OF FOOTING)
 FRICTION ANGLE = 30 DEGREES
 (GROUNDWATER MORE THAN 5'-0" (1.5m) BELOW BOTTOM OF FOOTING)

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

DO NOT USE A STANDARD 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" (75mm) DIAMETER WEEP HOLES ON 10'-0" (3m) CENTERS ALONG WALL. SLOPE WEEP HOLES ON A 1" (25mm) PER FOOT (300mm) 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" (300mm) TALL AND 1'-0" (300mm) WIDE TO CONNECT ALL STONE DRAINS.

PROVIDE GROOVED CONTRACTION JOINTS EVERY 10'-0" (3m) AND EXPANSION JOINTS EVERY 30'-0" (9m) ALONG THE WALL.

FOR WALL WITH BRICK VENEER, SUBMIT BRICK SAMPLES TO THE ENGINEER FOR APPROVAL BEFORE BEGINNING CONSTRUCTION. ANCHOR BRICK VENEER TO CONCRETE RETAINING WALL WITH BRICK TO CONCRETE TYPE ANCHORS ACCORDING TO MANUFACTURER'S SPECIFICATIONS WITH A MINIMUM VERTICAL SPACING OF 1'-4" (400mm) AND A MINIMUM HORIZONTAL SPACING OF 2'-8" (800mm) WITH EACH ROW STAGGERED 1'-4" (400mm) FROM THE ROW OF ANCHORS ABOVE AND BELOW.

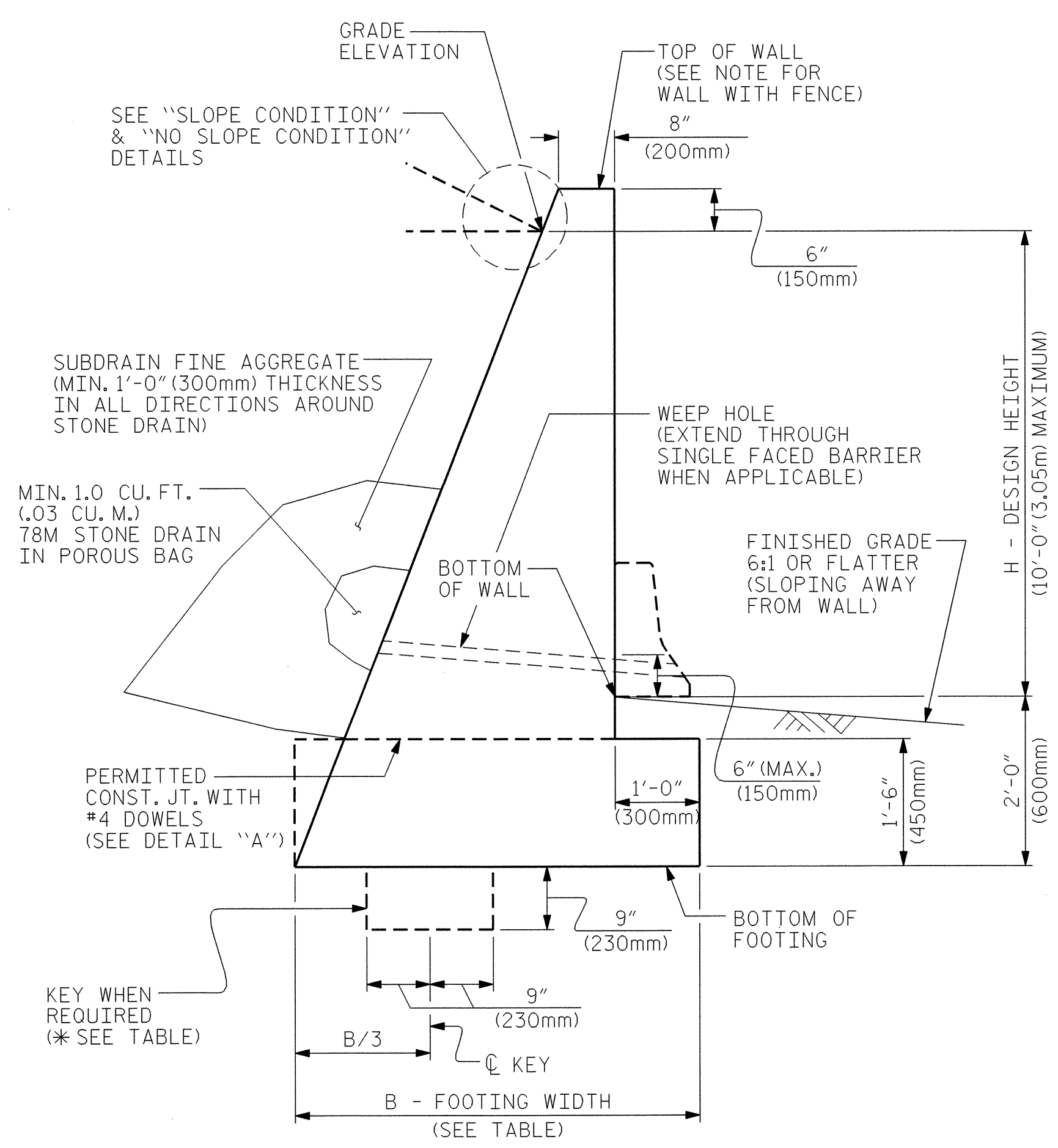
DO NOT BACKFILL BEHIND WALL UNTIL CONCRETE DEVELOPS A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI (20.7 MPa). COMPACT BACKFILL IN ACCORDANCE WITH SUBARTICLE 235-4(C) OF THE STANDARD SPECIFICATIONS. PLACE BACKFILL WITHIN 3'-0" (1m) OF THE BACK OF THE WALL WITH HAND OPERATED EQUIPMENT. DO NOT OPERATE HEAVY EARTH MOVING EQUIPMENT WITHIN 10'-0" (3m) 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" (460mm) CENTERS ALONG THE LENGTH OF THE WALL.

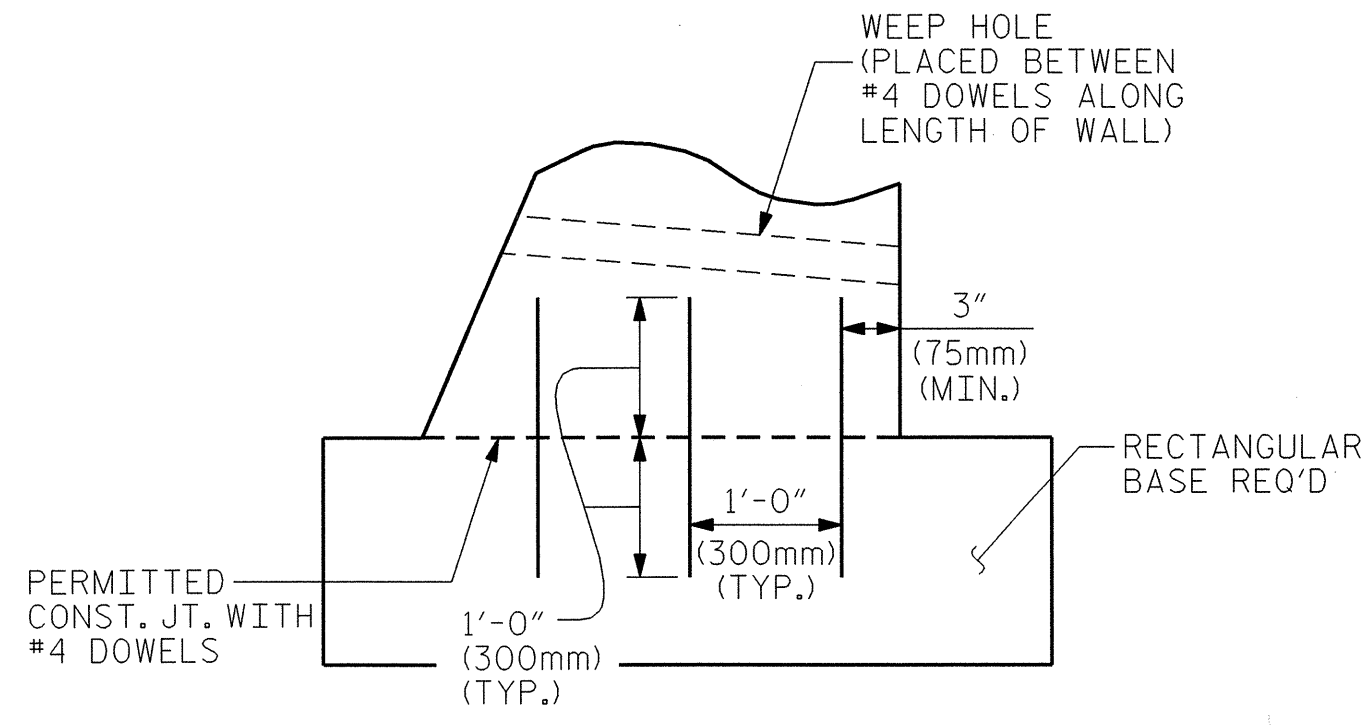
SEE PREVIOUS SHEET(S) FOR PLAN AND PROFILE VIEW (WALL ENVELOPE) AND PROPOSED ELEVATIONS FOR GRAVITY RETAINING WALL(S).

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.

EXTEND DITCH BACK TO TOP OF WALL ELEVATION OR MAXIMUM 2'-0" (600mm), WHICHEVER IS LESS.



TYPICAL SECTION



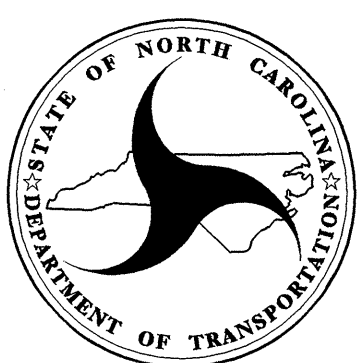
DETAIL "A"

H + 2 (ft)	< 6	6 - 9	> 9 - 12
H + 0.6 (m)	< 1.83	1.83 - 2.74	> 2.74 - 3.65
NO SLOPE CONDITION WITHOUT TRAFFIC SURCHARGE	.60	.60	.60
NO SLOPE CONDITION WITH TRAFFIC SURCHARGE	.80	.75 *	.70 *
SLOPE CONDITION	.66	.70 *	.75 *

B/(H + 2) RATIO

* KEY IS REQUIRED FOR SLOPE CONDITION OR NO SLOPE CONDITION WITH TRAFFIC SURCHARGE WHEN H + 2ft (H + 0.6m) IS 6'-0" (1.83m) OR GREATER.

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BUNCOMBE COUNTY
STATION: 87+35.00 TO 89+03.96 -LREV-
 SHEET 2 OF 3

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 WESTERN REGIONAL OFFICE

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

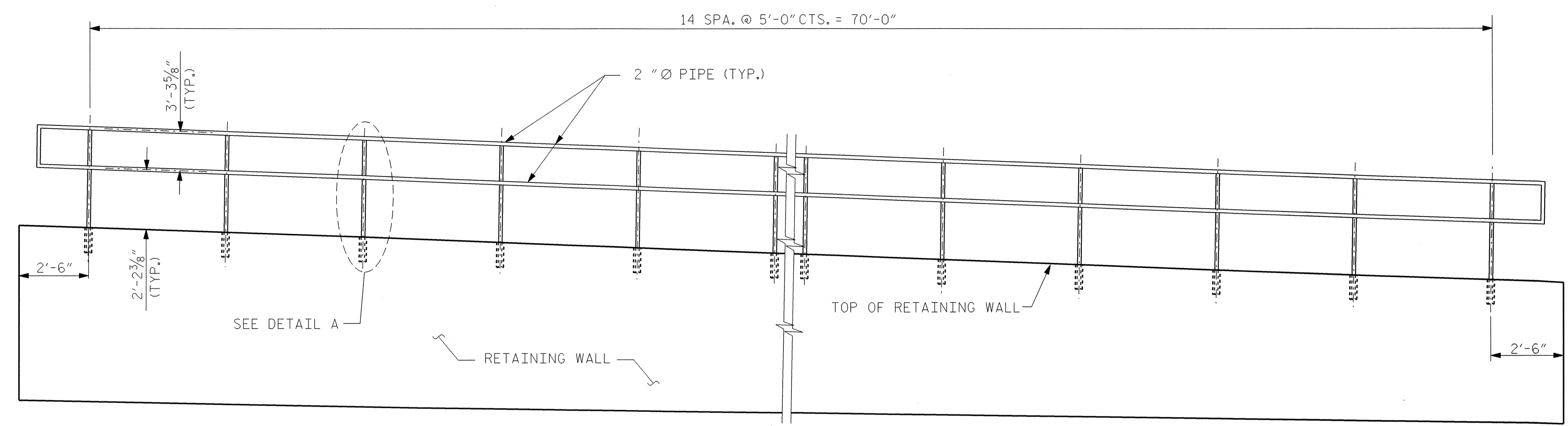
TOTAL SHEETS

GEOTECHNICAL ENGINEER ENGINEER

SEAL 29869

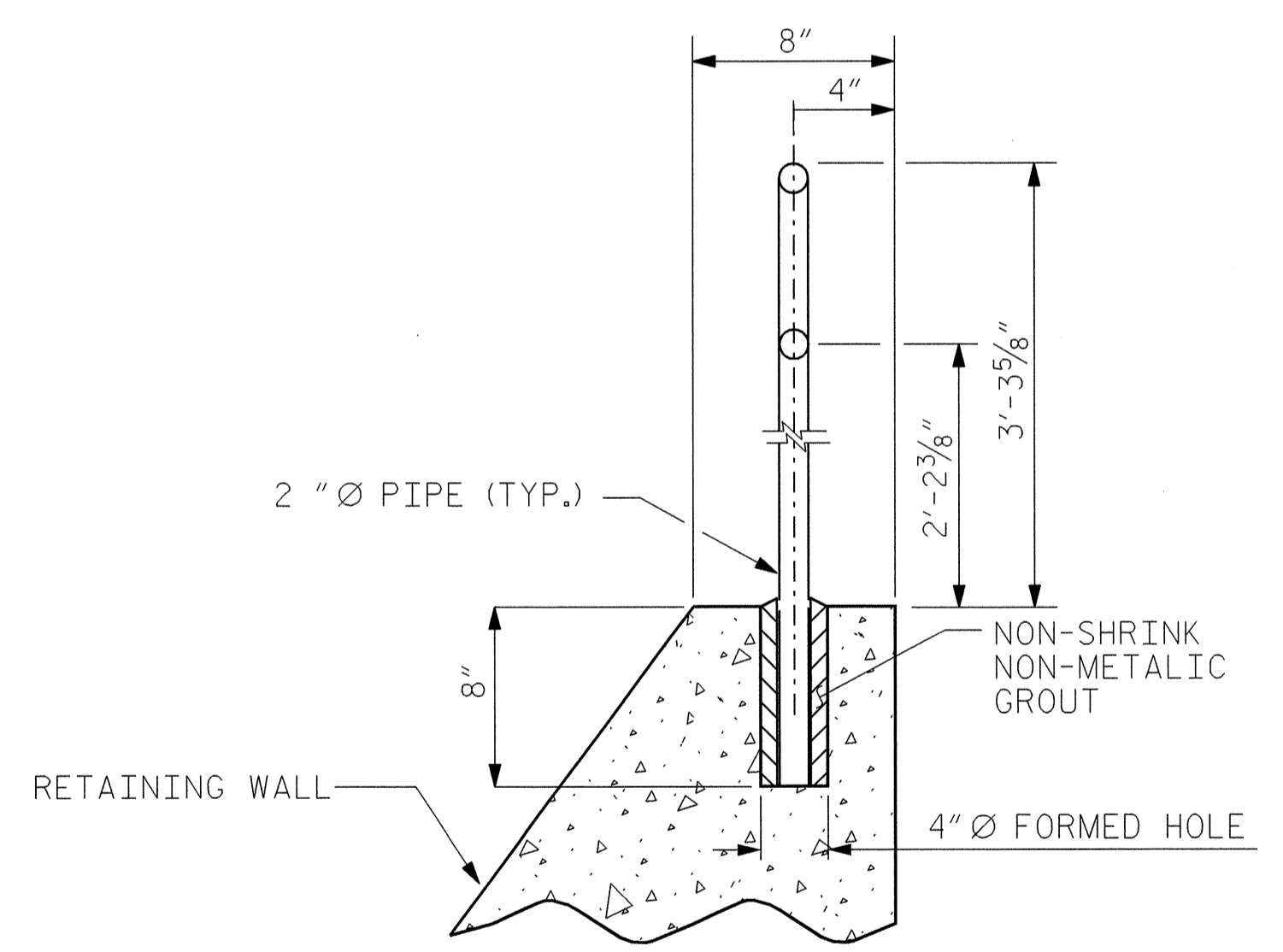
3/16/15

PROJECT REFERENCE NO. SHEET NO.
U-3601 W-8

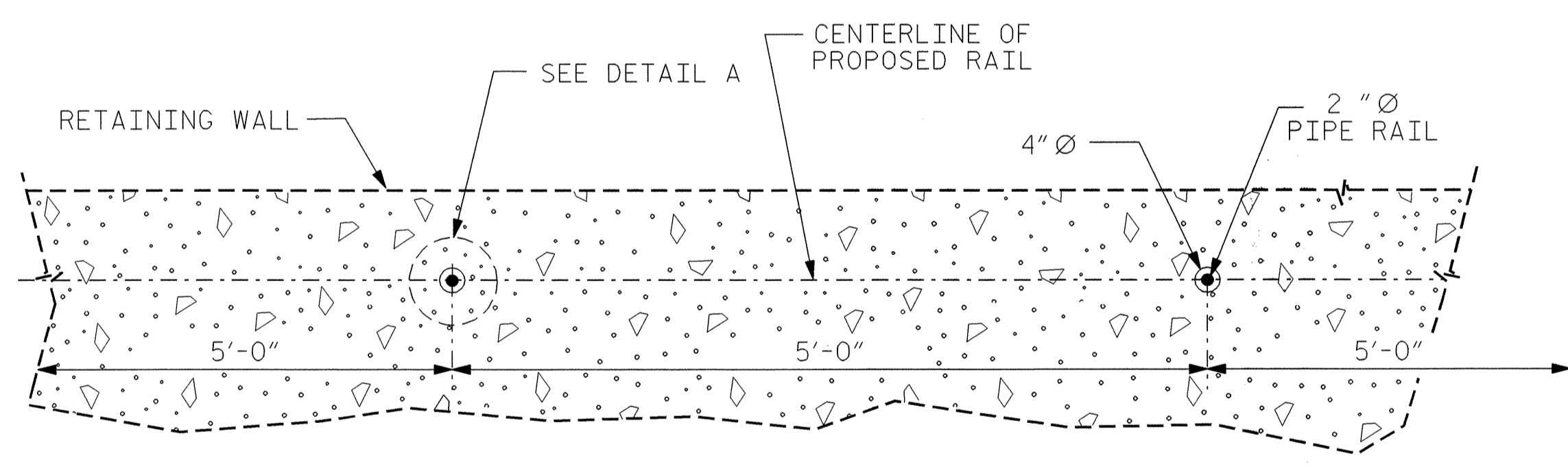


TYPICAL ELEVATION
NTS

- NOTES**
- THE 2" Ø STEEL PIPE SHALL MEET THE REQUIREMENTS OF ASTM A53 FOR STANDARD WEIGHT PIPE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
 - POSTS AND VERTICAL ELEMENTS OF THE RAIL SHALL BE PLUMB.
 - CONSTRUCT PROPOSED STEEL PIPE RAIL OF 2" DIAMETER SCHEDULE 40 PLAIN END GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A53.
 - REPAIR GALVANIZING IN ACCORDANCE WITH SECTION 1076 OF THE NCDOT STANDARD SPECIFICATIONS.
 - PAINT, IF REQUIRED BY THE ENGINEER, IN ACCORDANCE WITH SECTION 1080 OF THE STANDARD SPECIFICATIONS.
 - WELD IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS.
 - THE PIPE RAIL POSTS SHALL BE GROUTED IN PLACE USING NON-SHRINK, NON-METALLIC GROUT AS APPROVED BY THE ENGINEER.



DETAIL A



PLAN VIEW

PROJECT NO.: U-3601
BUNCOMBE COUNTY
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SHEET 3 OF 3

PREPARED BY: E.J. SALVO DATE: 10/07
REVIEWED BY: S.C. CLARK DATE: 10/07

GEOTECHNICAL ENGINEERING UNIT

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DEPARTMENT OF TRANSPORTATION
RALEIGH

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

**GRAVITY
RETAINING WALL D**