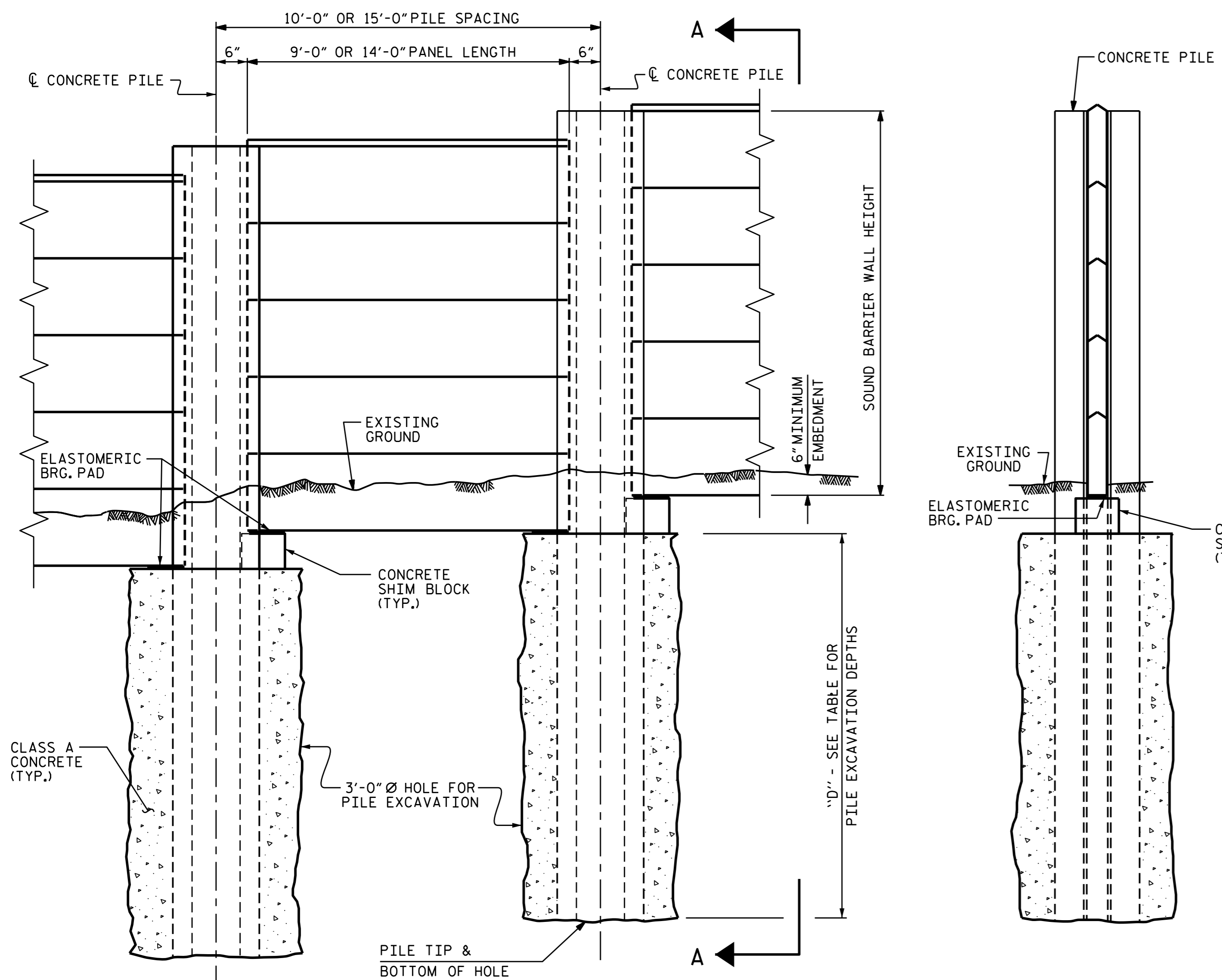


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ELEVATION

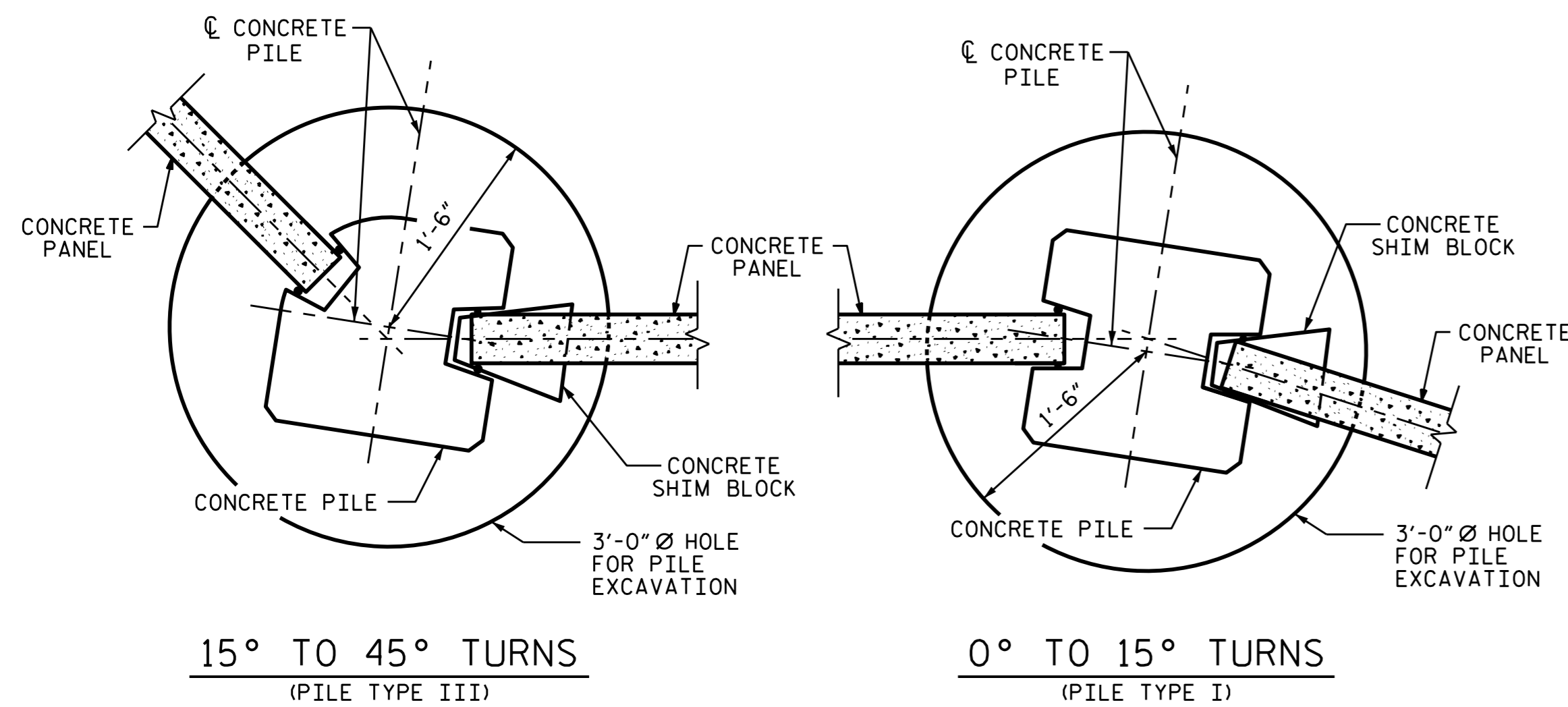
SECTION A-A

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
SOUND BARRIER WALL #1		
FROM : STA. 422+43.04 -L- (122.59 LT.)		
TO : STA. 428+34.81 -L- (133.53 LT.)		
WALL STATION -NW1-	PILE SPACING	DEPTH "D"
STA. 10+00 NW1- TO STA. 13+00 -NW1-	10'-0"	10'-0"
	15'-0"	11'-0"
STA. 13+00 NW1- TO STA. 14+50 -NW1-	10'-0"	8'-0"
	15'-0"	9'-0"
STA. 14+50 NW1- TO STA. 14+95 -NW1-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 14+95 NW1- TO STA. 16+30 -NW1-	10'-0"	8'-0"
	15'-0"	9'-0"

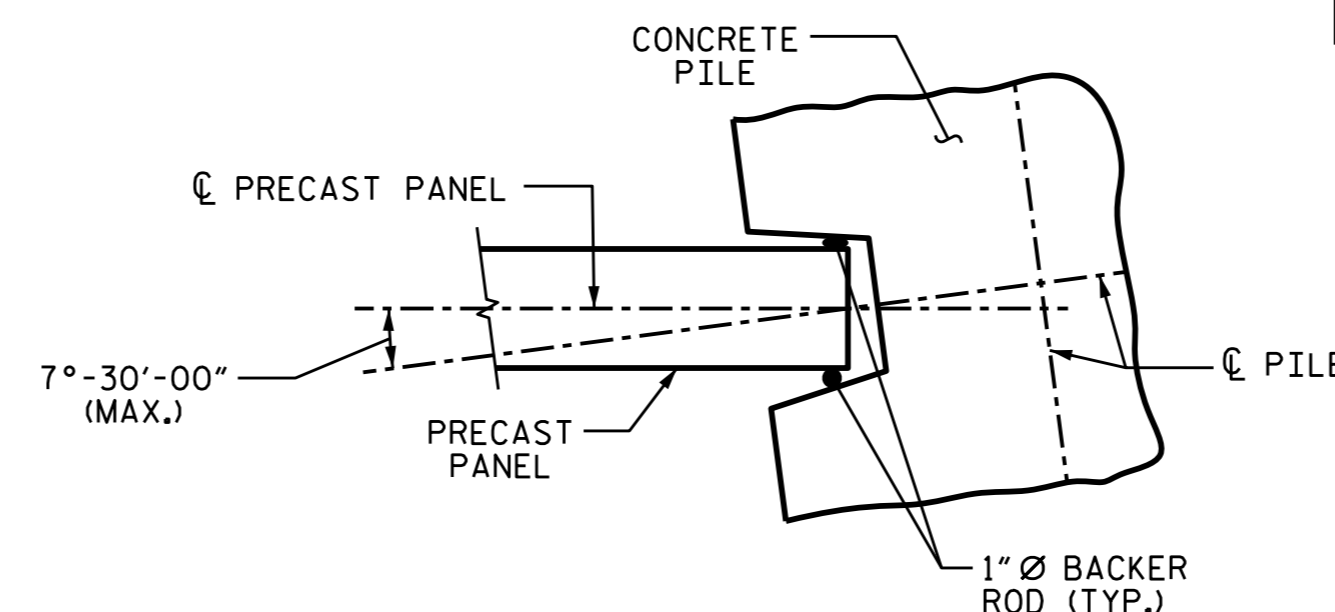
NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PILE VERTICAL REINFORCING STEEL							
DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H > 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	PILE TYPE II				PILE TYPE III ALT.		
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H > 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 25'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

BILL OF MATERIAL	
SOUND BARRIER WALL #1	7,455 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
 GUILFORD COUNTY  
 STATION: 422+43.04 -L-

SHEET 1 OF 9

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD

SOUND BARRIER WALL #1



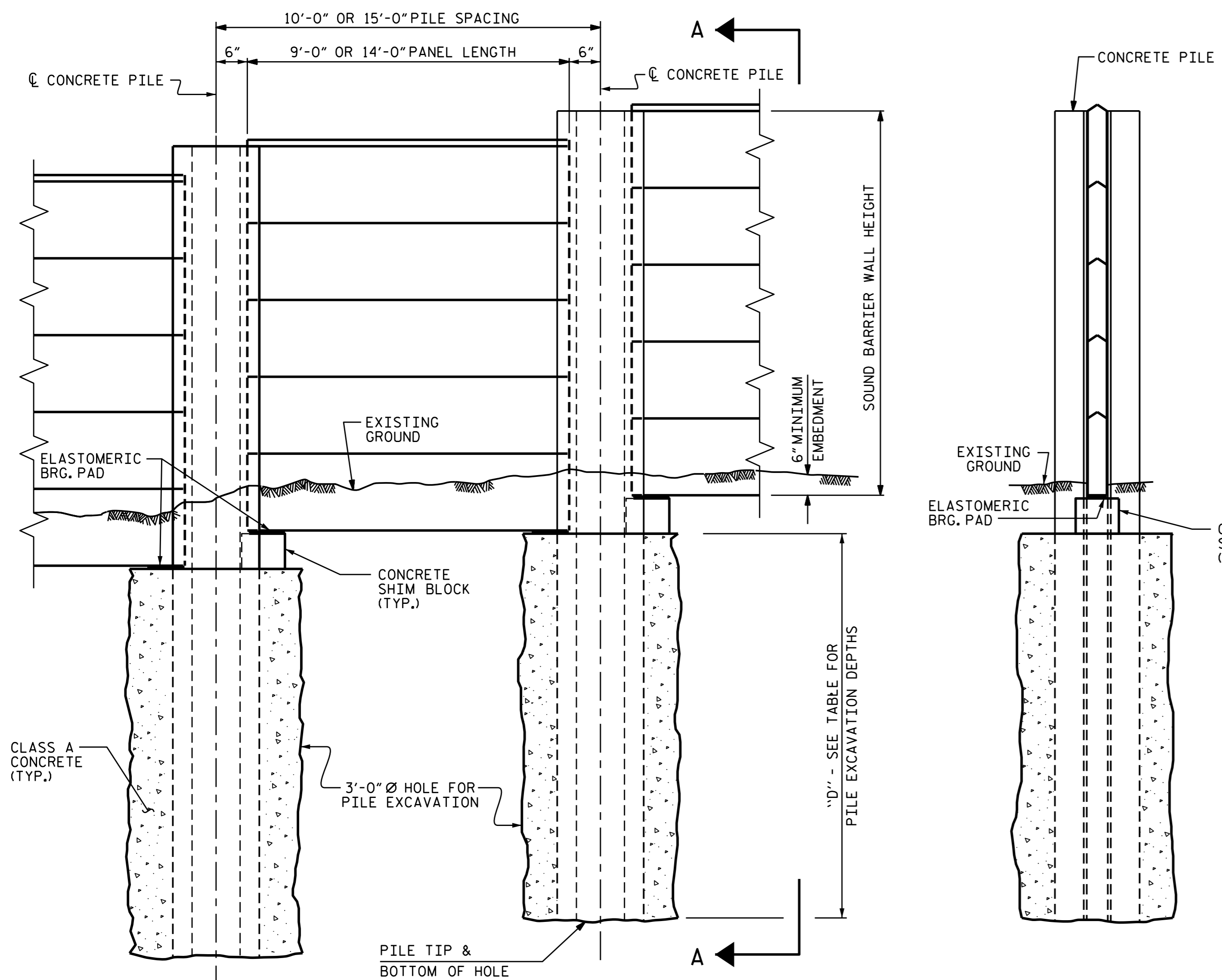
DocuSigned by:  
 J. M. Bailey  
 0026554D952B471... 7/2/2016

DocuSigned by:  
 Ting Fang  
 E7208840977435... 7/1/2016

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/15
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

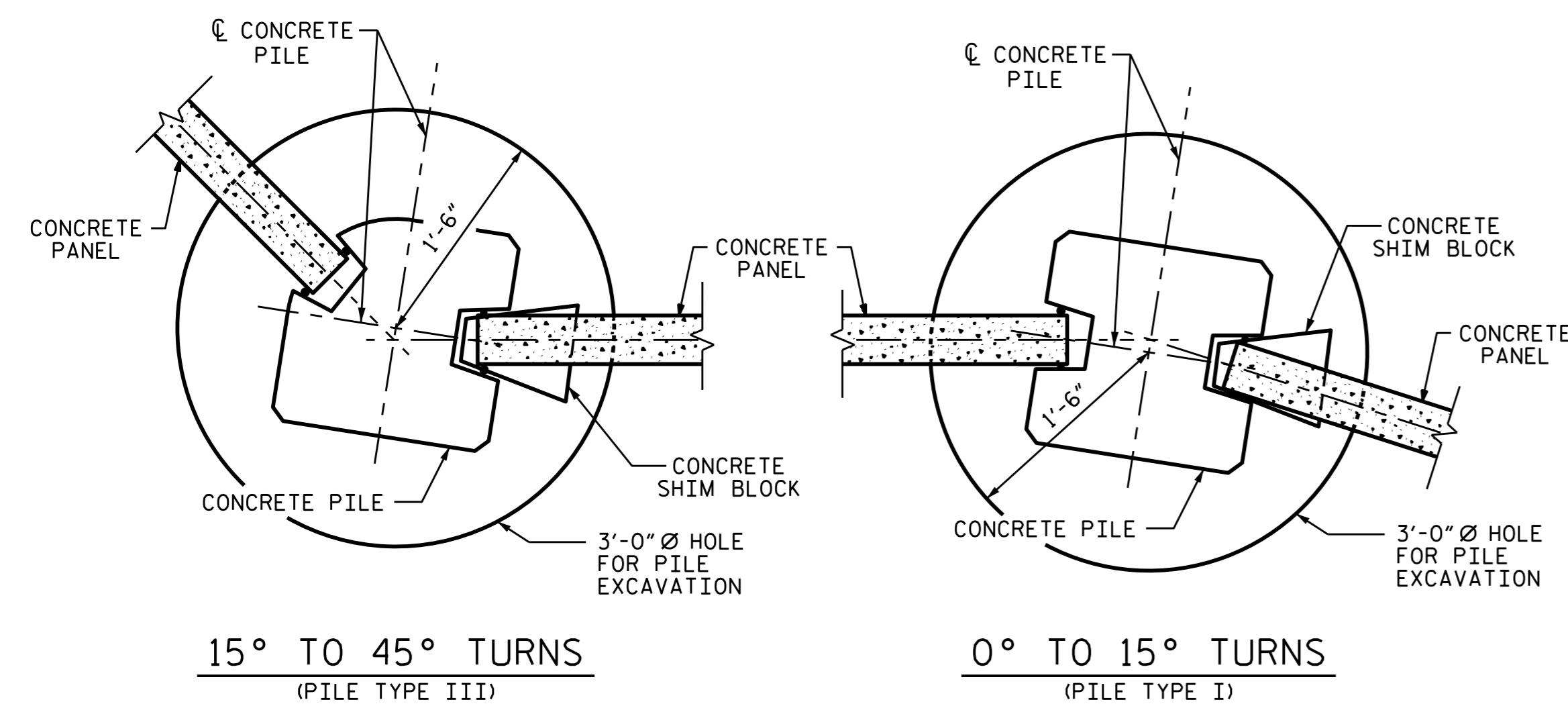
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO. SW-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
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2			4			

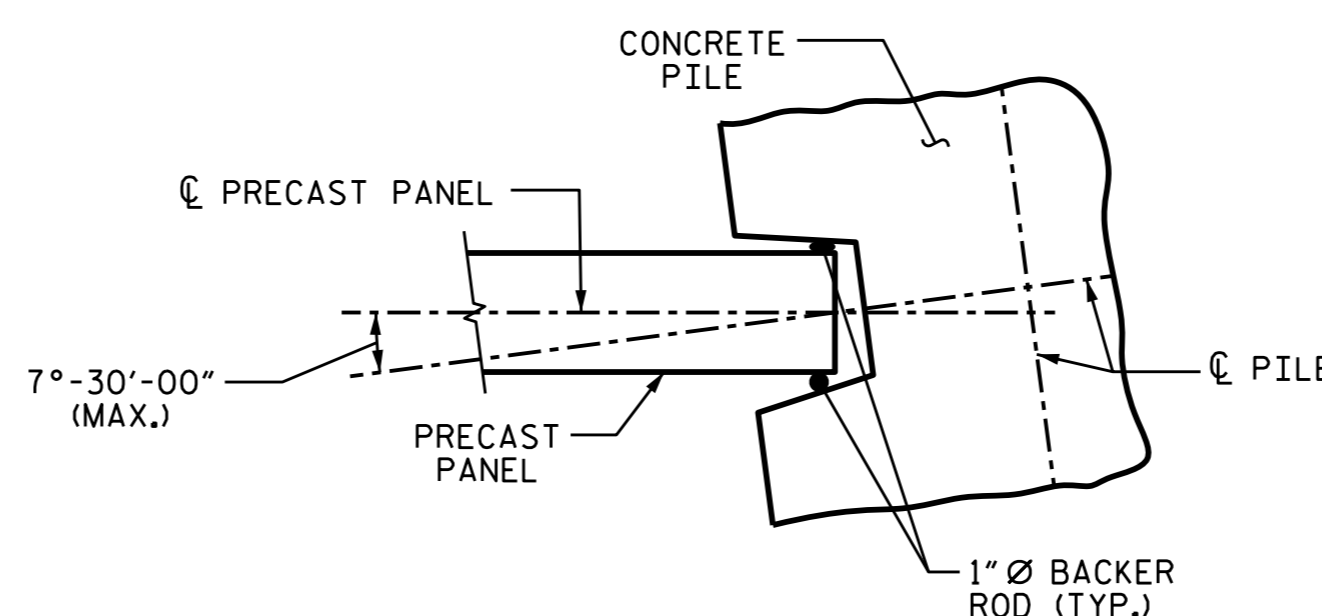


ELEVATION

SECTION A-A



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
SOUND BARRIER WALL #2 FROM : STA. 8+84.33 -RPDY4- (140.61 LT.) TO : STA. 434+06.08 -L- (145.00 RT.)		
WALL STATION -NW2-	PILE SPACING	DEPTH "D"
STA. 10+00 -NW2- TO STA. 12+00 -NW2-	10'-0"	14'-0"
	15'-0"	16'-0"
STA. 12+00 -NW2- TO STA. 14+70 -NW2-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 14+70 -NW2- TO STA. 17+25 -NW2-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 17+25 -NW2- TO STA. 19+05 -NW2-	10'-0"	11'-0"
	15'-0"	12'-0"
STA. 19+05 -NW2- TO STA. 22+00 -NW2-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 22+00 -NW2- TO STA. 23+85 -NW2-	10'-0"	9'-0"
	15'-0"	10'-0"
STA. 23+85 -NW2- TO STA. 25+95 -NW2-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 25+95 -NW2- TO STA. 26+55 -NW2-	10'-0"	8'-0"
	15'-0"	9'-0"

PILE VERTICAL REINFORCING STEEL DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 26'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 26'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 27'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	PILE TYPE II				PILE TYPE III ALT.		
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 26'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 26'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE

BILL OF MATERIAL	
SOUND BARRIER WALL #2	32,285 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

**NOTES**

FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.

CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.

PROVIDE PANELS WITH A FLAT BOTTOM.

VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.

ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.

USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.

FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.

PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.

FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PROJECT NO. U-2524D  
 GUILFORD COUNTY  
 STATION: 8+84.33 -RPDY4-

SHEET 2 OF 9

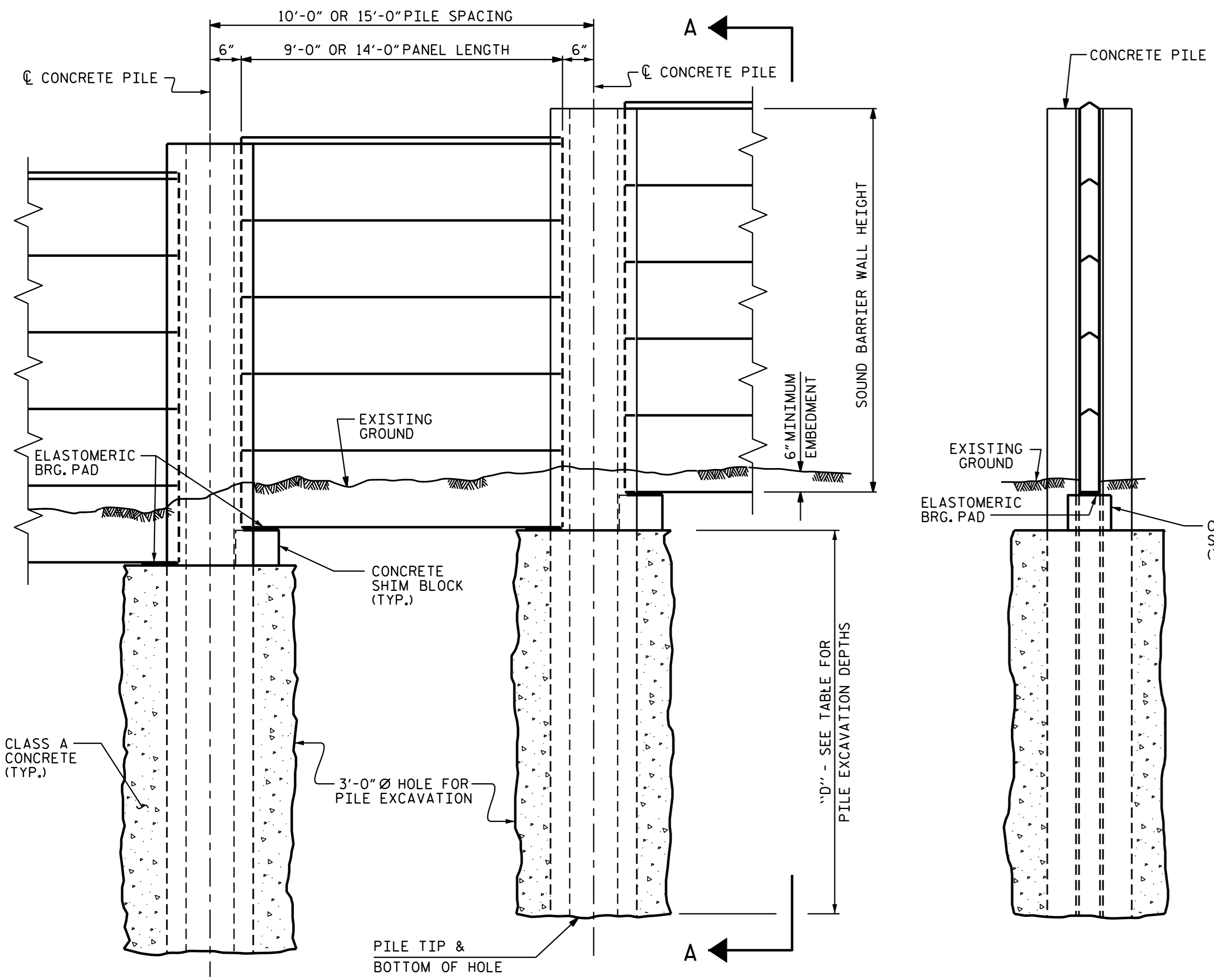


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SOUND BARRIER WALL #2

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SW-2
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2			4			



ELEVATION

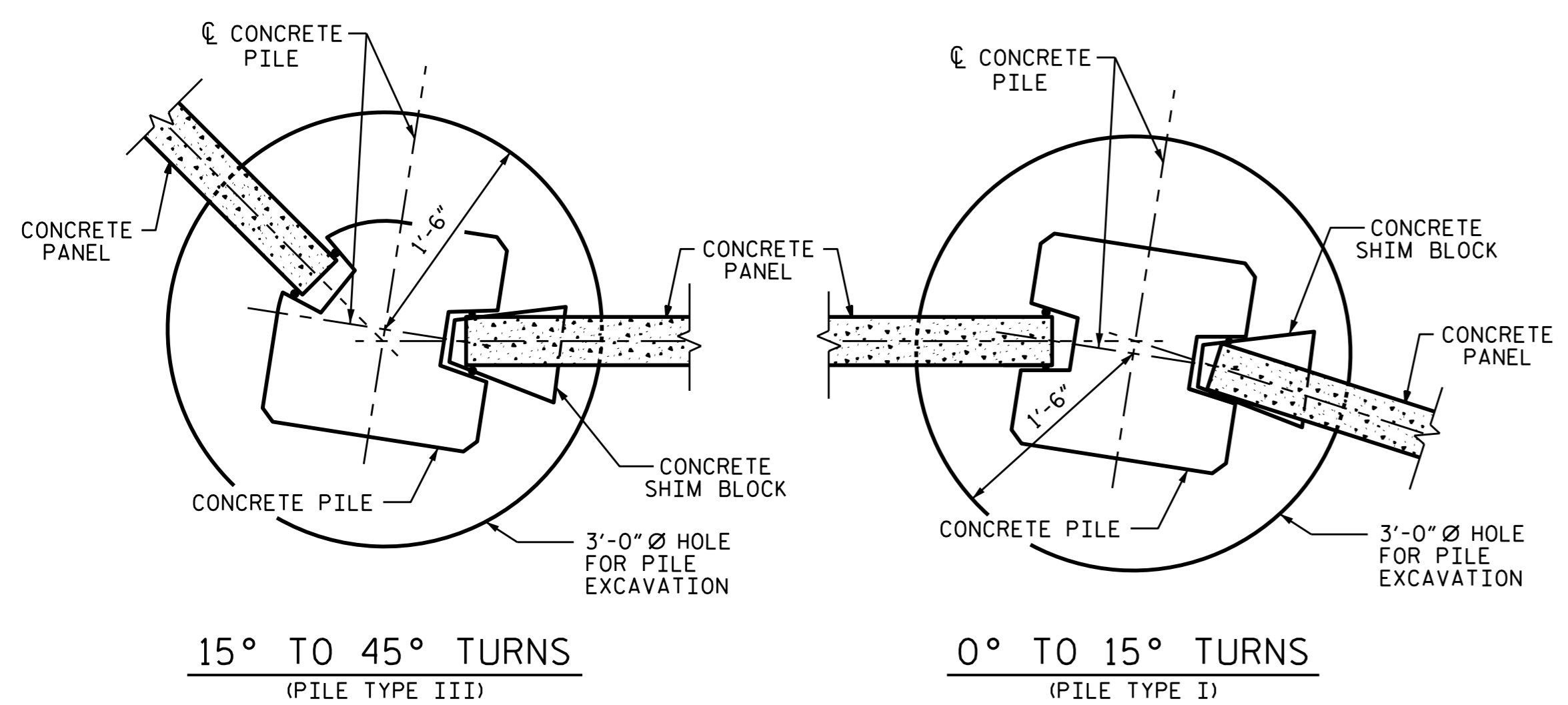
SECTION A-A

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
SOUND BARRIER WALL #3	FROM : STA. 434+58.03 -L- (75.00 LT.) TO : STA. 445+70.17 -L- (223.21 LT.)	
WALL STATION -NW3-	PILE SPACING	DEPTH "D"
STA. 10+00 -NW3- TO STA. 12+40 -NW3-	10'-0"	9'-0"
	15'-0"	10'-0"
STA. 12+40 -NW3- TO STA. 14+05 -NW3-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 14+05 -NW3- TO STA. 18+25 -NW3-	10'-0"	13'-0"
	15'-0"	16'-0"
STA. 18+25 -NW3- TO STA. 18+70 -NW3-	10'-0"	12'-0"
	15'-0"	14'-0"
STA. 18+70 -NW3- TO STA. 19+50 -NW3-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 19+50 -NW3- TO STA. 21+55 -NW3-	10'-0"	8'-0"
	15'-0"	9'-0"

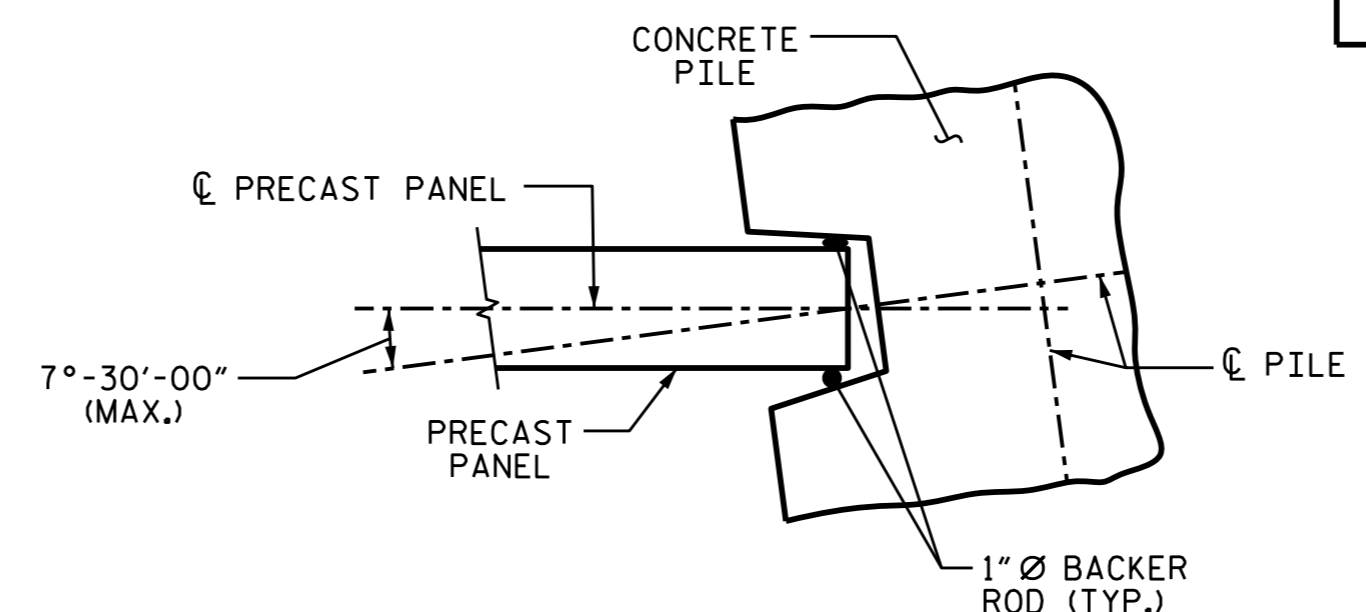
NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PILE VERTICAL REINFORCING STEEL DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	PILE TYPE II				PILE TYPE III ALT.		
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 25'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

BILL OF MATERIAL	
SOUND BARRIER WALL #3	22,845 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
GUILFORD COUNTY  
STATION: 434+58.03 -L-

SHEET 3 OF 9

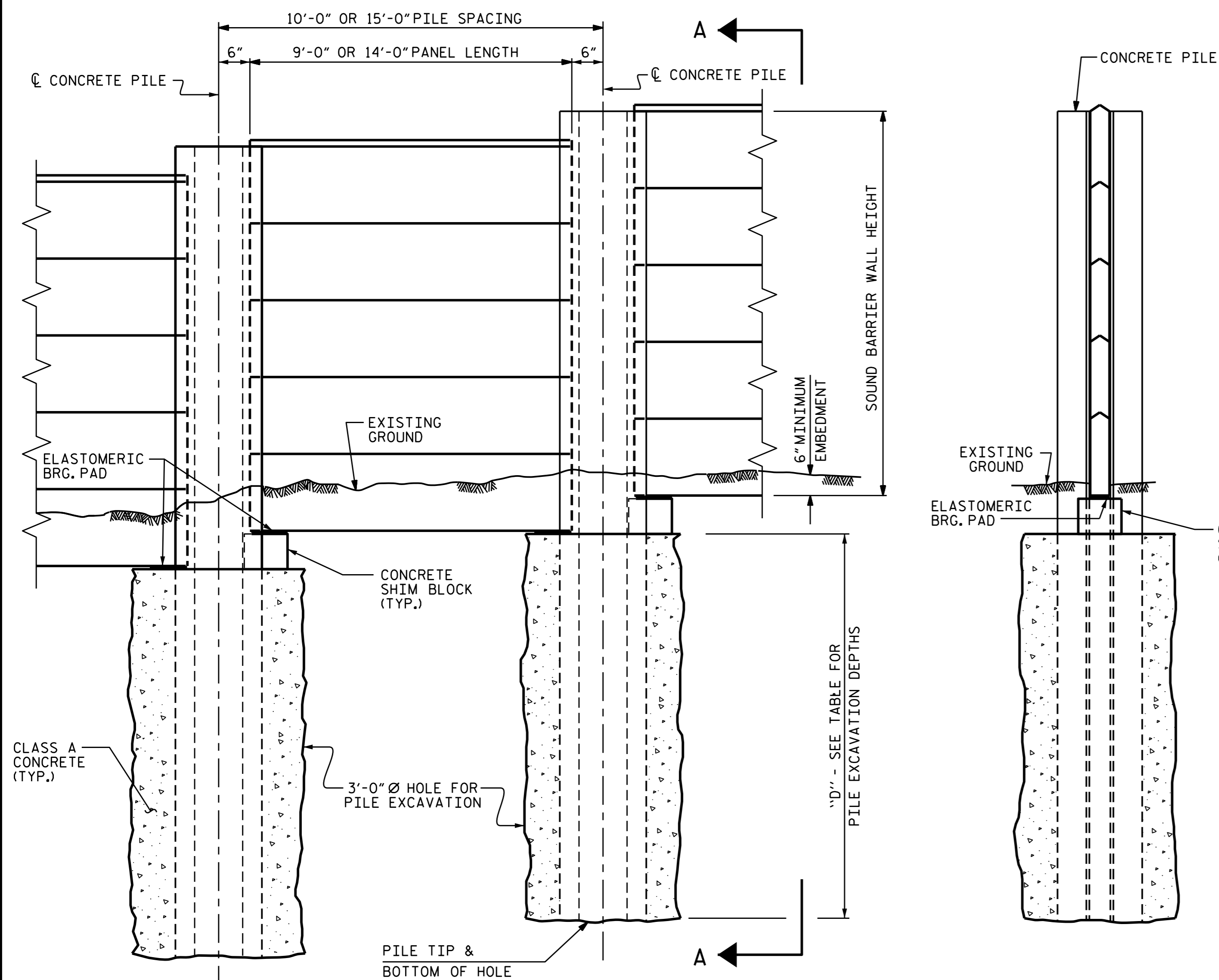


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
SOUND BARRIER WALL #3

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO. SW-3 TOTAL SHEETS 9
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2			4			



ELEVATION

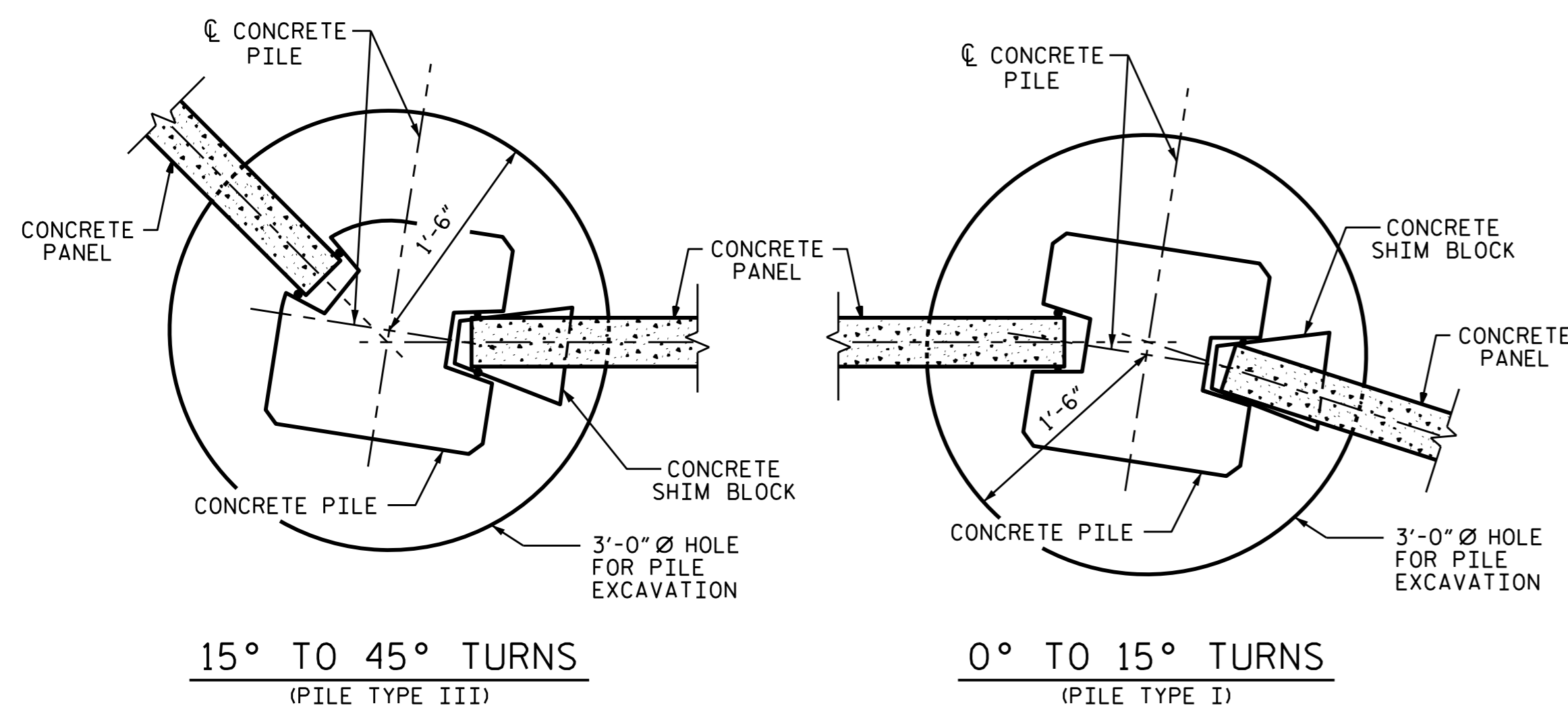
SECTION A-A

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
SOUND BARRIER WALL #6		
FROM : STA. 452+79.17 -L- (75.00 LT.)		
TO : STA. 0+48.51 -SPBY8- (60.03 LT.)		
WALL STATION -NW6-	PILE SPACING	DEPTH "D"
STA. 10+00 -NW6- TO STA. 13+00 -NW6-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 13+00 -NW6- TO STA. 17+00 -NW6-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 17+00 -NW6- TO STA. 25+00 -NW6-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 25+00 -NW6- TO STA. 36+00 -NW6-	10'-0"	12'-0"
	15'-0"	14'-0"
STA. 36+00 -NW6- TO STA. 38+00 -NW6-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 38+00 -NW6- TO STA. 43+00 -NW6-	10'-0"	10'-0"
	15'-0"	11'-0"
STA. 43+00 -NW6- TO STA. 45+00 -NW6-	10'-0"	11'-0"
	15'-0"	13'-0"
STA. 45+00 -NW6- TO STA. 49+75 -NW6-	10'-0"	10'-0"
	15'-0"	12'-0"

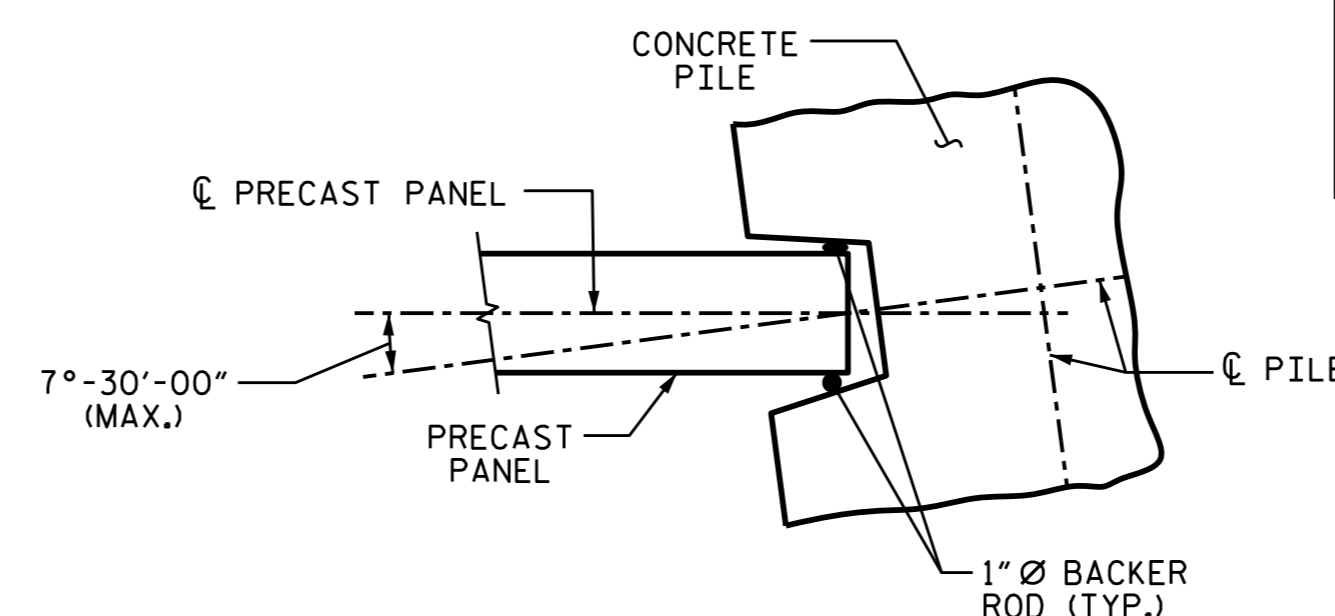
NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PILE VERTICAL REINFORCING STEEL							
DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 26'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 26'	3 - #11 SHORT FACE 4 - #11 LONG FACE
	PILE TYPE II				PILE TYPE III ALT.		
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.		15'-0"	H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE
15'-0"	20' < H ≤ 26'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.	15'-0"		20' < H ≤ 26'	3 - #11 SHORT FACE 4 - #11 LONG FACE



TYPICAL WALL TURN DETAILS



PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30°-00" TO ACCOMMODATE WALL TURN.)

BILL OF MATERIAL	
SOUND BARRIER WALL #6	81,315 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
 GUILFORD COUNTY  
 STATION: 452+79.17 -L-

SHEET 4 OF 9

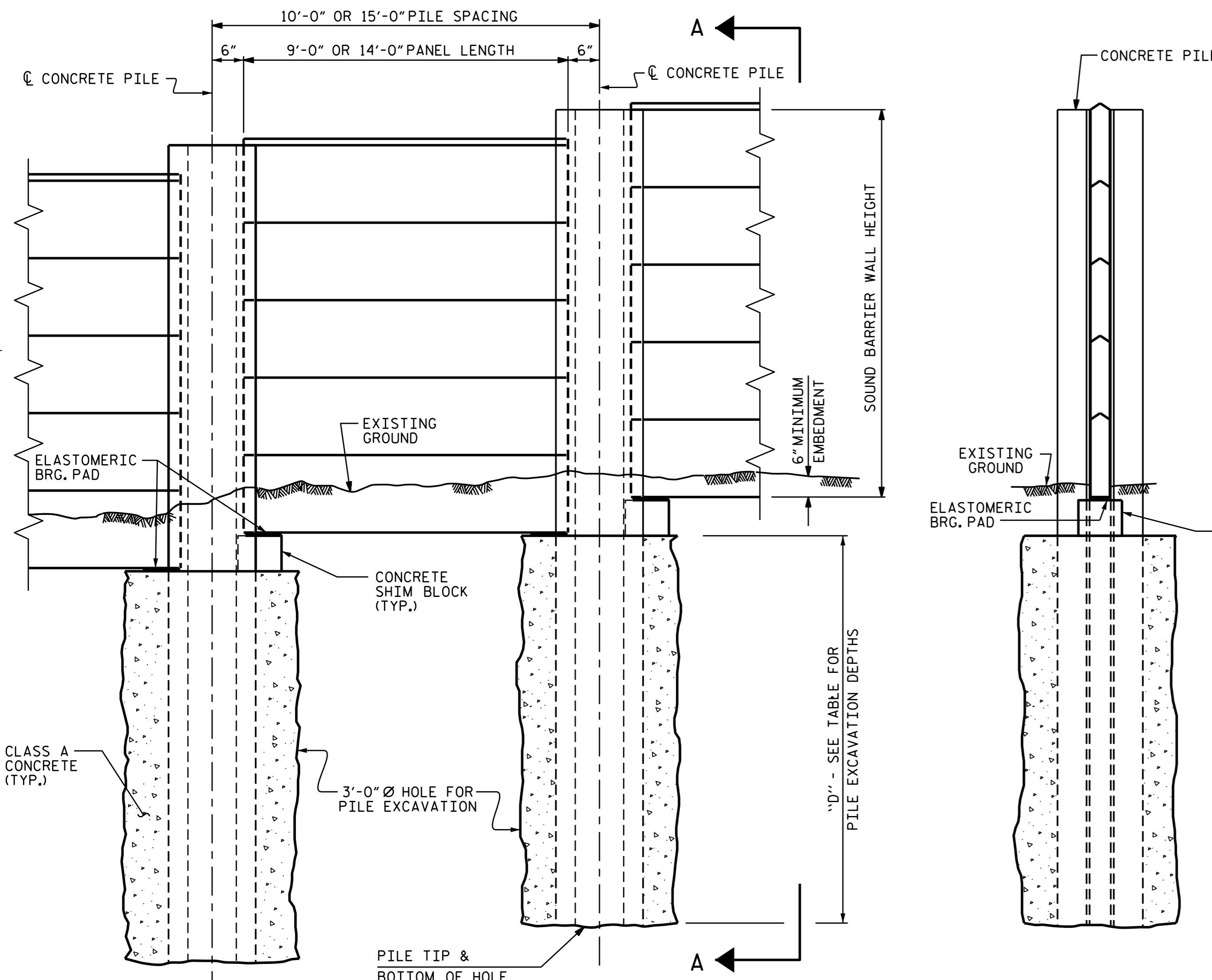


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SOUND BARRIER WALL #6

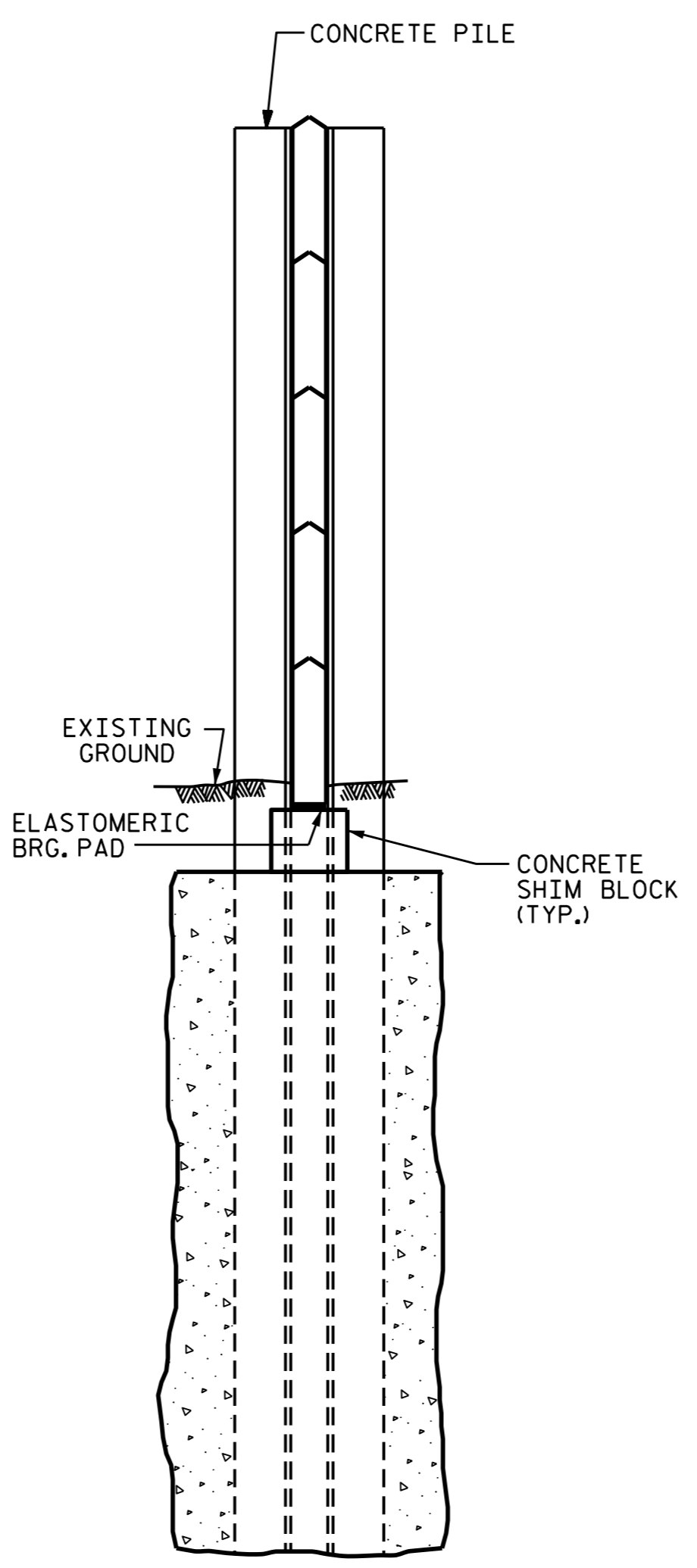
ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/11/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

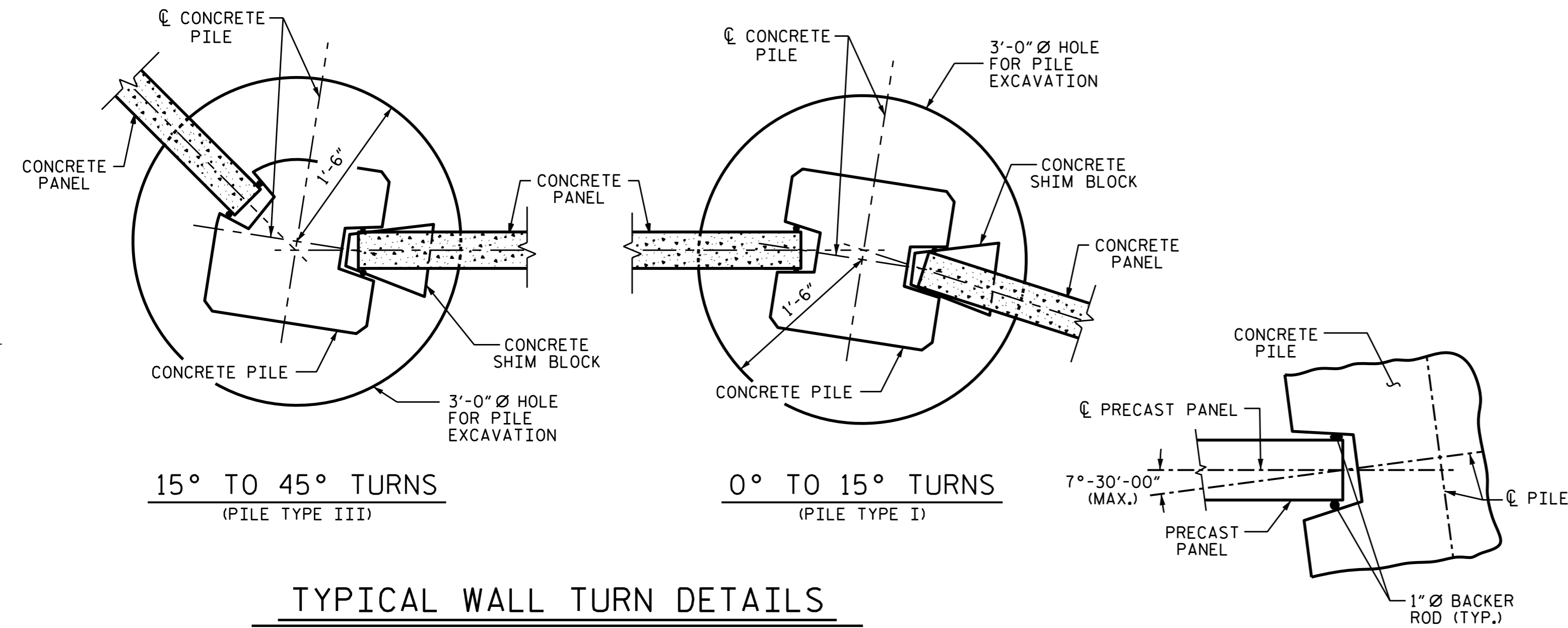
REVISIONS						SHEET NO. SW-4
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 9
2			4			



ELEVATION



SECTION A-A



TYPICAL WALL TURN DETAILS

PILE ROTATION LIMIT FOR WALL TURN  
(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PILE VERTICAL REINFORCING STEEL  
DESIGN WIND PRESSURE = 40 PSF

PILE TYPE I			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.
PILE TYPE II			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.
PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.
PILE TYPE III ALT.			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
SOUND BARRIER WALL #7	FROM : STA. 456+19.17 -L- (75.00 RT.) TO : STA. 1+17.80 -SPCY8- (68.33 RT.)	
WALL STATION -NW7-	PILE SPACING	DEPTH "D"
STA. 10+00 -NW7- TO STA. 15+85 -NW7-	10'-0"	11'-0"
	15'-0"	13'-0"
STA. 15+85 -NW7- TO STA. 22+60 -NW7-	10'-0"	13'-0"
	15'-0"	15'-0"
STA. 22+60 -NW7- TO STA. 24+10 -NW7-	10'-0"	11'-0"
	15'-0"	12'-0"
STA. 24+10 -NW7- TO STA. 24+55 -NW7-	10'-0"	13'-0"
	15'-0"	16'-0"
STA. 24+55 -NW7- TO STA. 24+85 -NW7-	10'-0"	12'-0"
	15'-0"	14'-0"
STA. 24+85 -NW7- TO STA. 29+20 -NW7-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 29+20 -NW7- TO STA. 30+25 -NW7-	10'-0"	8'-0"
	15'-0"	9'-0"
STA. 30+25 -NW7- TO STA. 33+55 -NW7-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 33+55 -NW7- TO STA. 36+55 -NW7-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 36+55 -NW7- TO STA. 37+30 -NW7-	10'-0"	12'-0"
	15'-0"	14'-0"
STA. 37+30 -NW7- TO STA. 40+00 -NW7-	10'-0"	10'-0"
	15'-0"	12'-0"
STA. 40+00 -NW7- TO STA. 42+40 -NW7-	10'-0"	9'-0"
	15'-0"	11'-0"
STA. 42+40 -NW7- TO STA. 45+85 -NW7-	10'-0"	10'-0"
	15'-0"	12'-0"

BILL OF MATERIAL	
SOUND BARRIER WALL #7	65,100 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
GUILFORD COUNTY  
STATION: 456+19.17 -L-

SHEET 5 OF 9

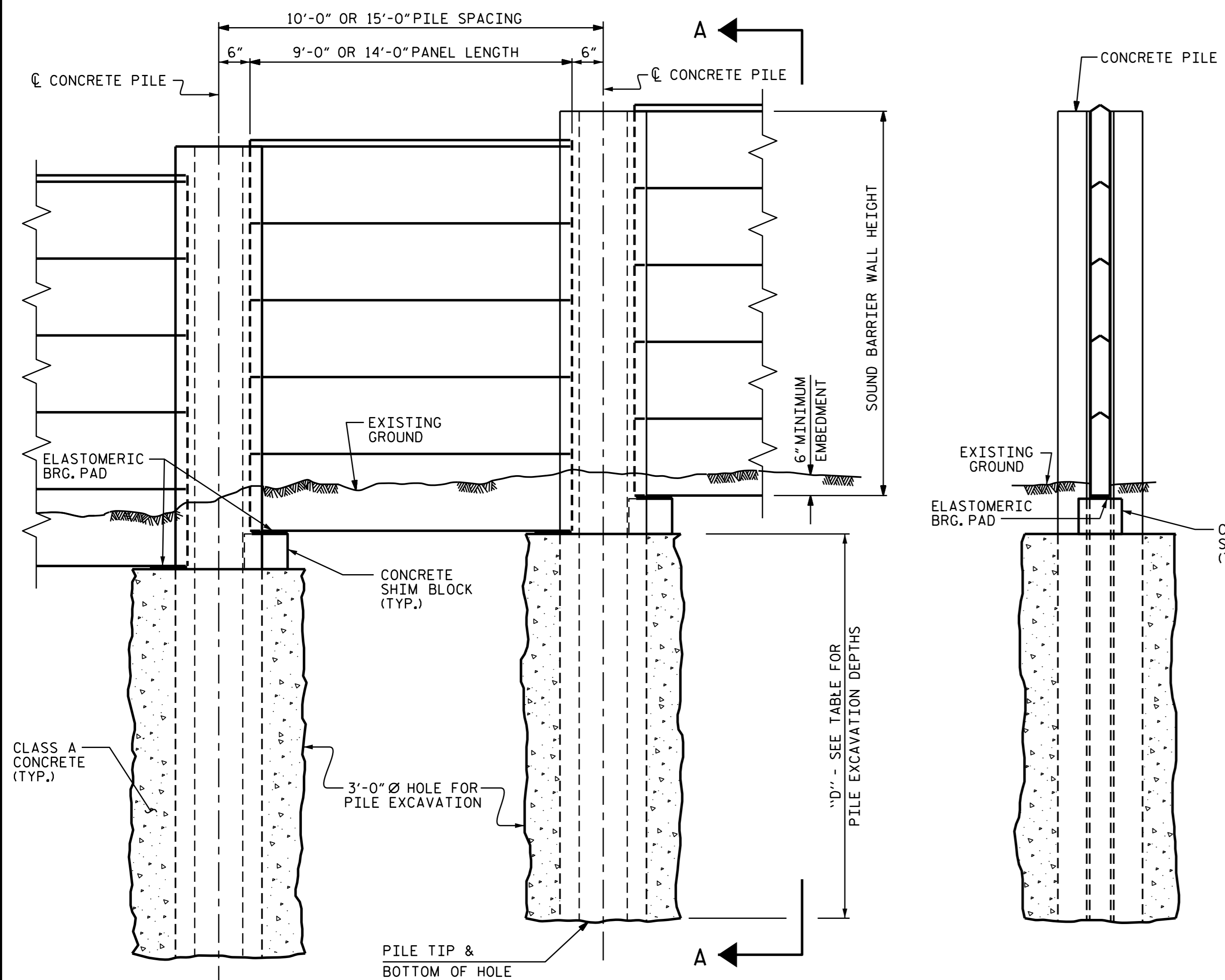


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
SOUND BARRIER WALL #7

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

NO. 1	BY: [Signature]	DATE: [Date]	NO. 2	BY: [Signature]	DATE: [Date]
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SW-5
1			3			TOTAL SHEETS 9
2			4			



ELEVATION

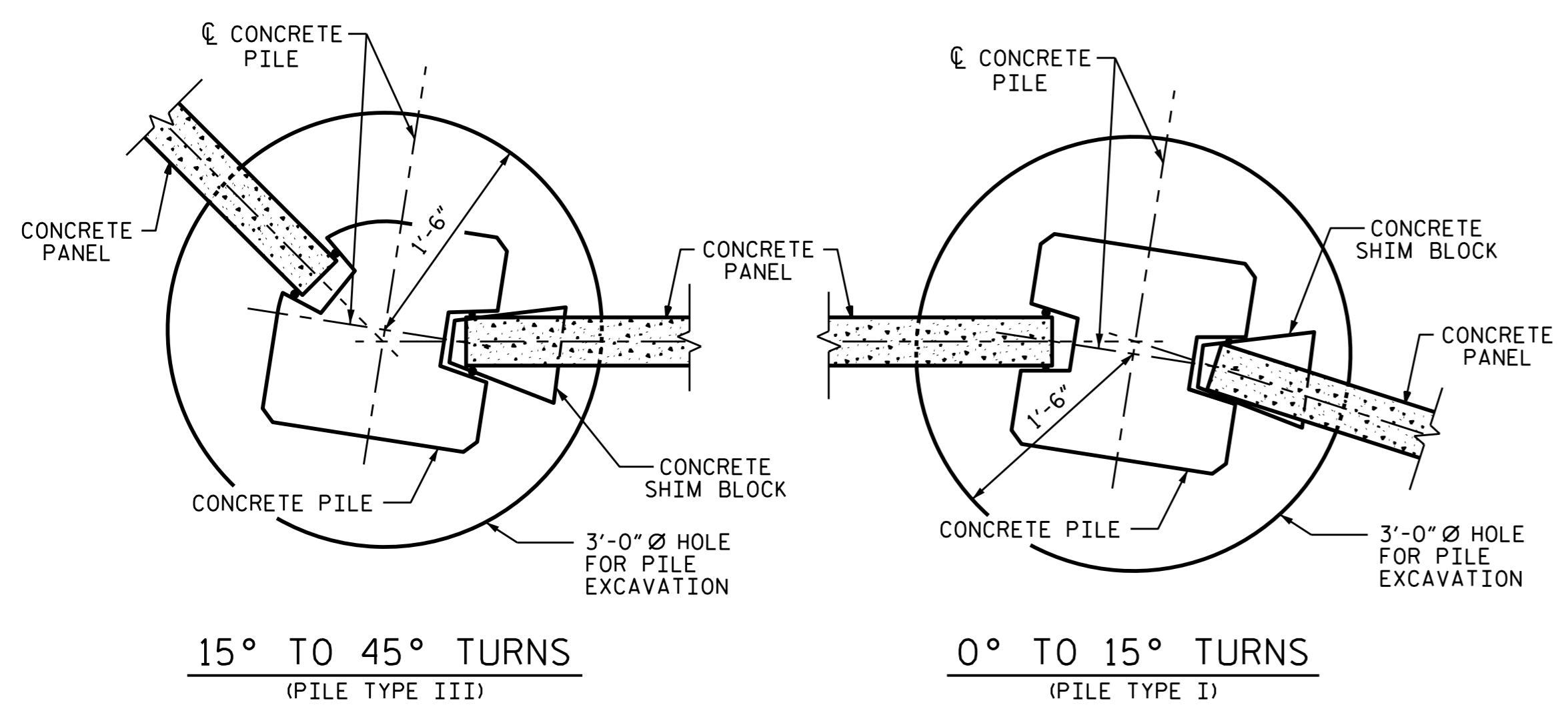
SECTION A-A

PILE EXCAVATION DEPTH "D"		
3'-0" Ø HOLE		
<b>SOUND BARRIER WALL #8</b>	FROM : STA. 9+83.78 -RPAY8- (40.16 RT.) TO : STA. 514+14.10 -L- (81.81 LT.)	
WALL STATION -NW8-	PILE SPACING	DEPTH "D"
STA. 10+00 -NW8- TO STA. 20+50 -NW8-	10'-0"	13'-0"
STA. 20+50 -NW8- TO STA. 21+50 -NW8-	15'-0"	16'-0"
STA. 21+50 -NW8- TO STA. 24+70 -NW8-	10'-0"	11'-0"
	15'-0"	12'-0"
	10'-0"	9'-0"
	15'-0"	11'-0"

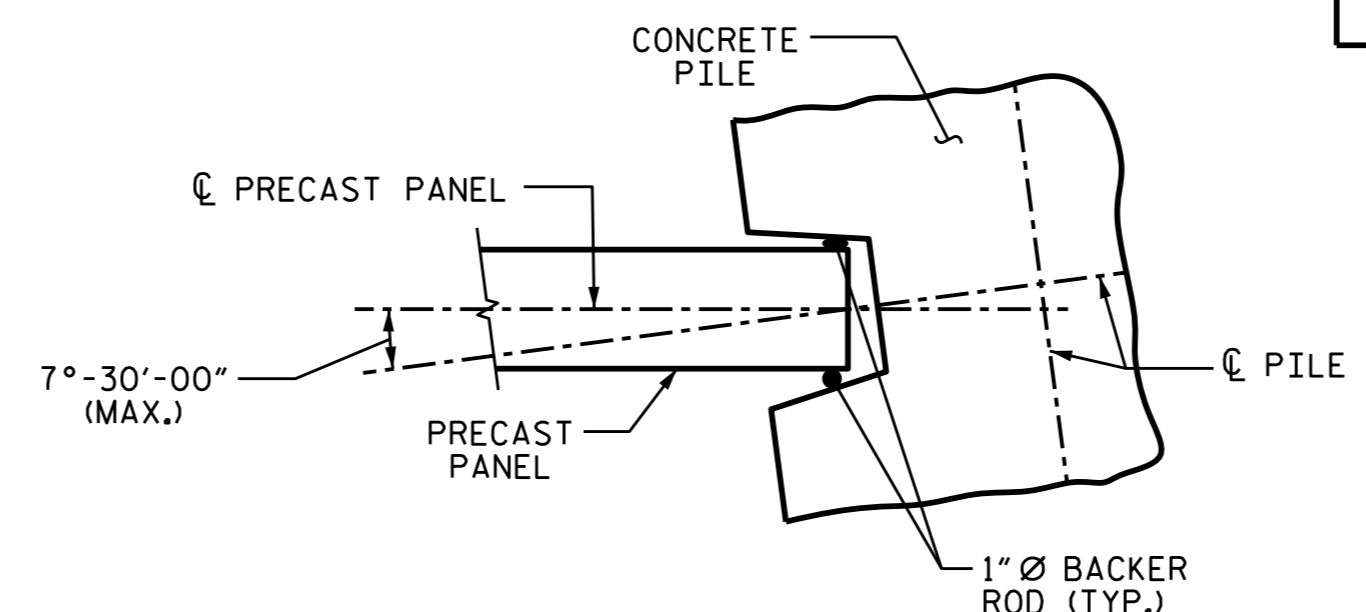
PILE VERTICAL REINFORCING STEEL DESIGN WIND PRESSURE = 40 PSF							
PILE TYPE I				PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4"CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4"CTS.
	H > 25'	4 - #10 EA. FACE	#3 @ 1'-4"CTS.		H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4"CTS.
15'-0"	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4"CTS.	15'-0"	20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4"CTS.
	20' < H ≤ 25'	4 - #10 EA. FACE	#3 @ 1'-4"CTS.		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4"CTS.
PILE TYPE II				PILE TYPE III ALT.			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES	PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4"CTS.	10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4"CTS.
	H > 25'	4 - #6 EA. FACE	#3 @ 1'-4"CTS.		H ≤ 20'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4"CTS.
15'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4"CTS.	15'-0"	20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4"CTS.
	20' < H ≤ 25'	4 - #7 EA. FACE	#3 @ 1'-4"CTS.		20' < H ≤ 25'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4"CTS.

NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
- CONSTRUCT SOUND BARRIER WALL TO LINES AND GRADES SHOWN ON THE ROADWAY PLANS.
- PROVIDE PANELS WITH A FLAT BOTTOM.
- VERIFY THE LOCATION OF UNDERGROUND UTILITIES BEFORE DRILLING HOLES TO ENSURE SUFFICIENT CLEARANCE IS AVAILABLE.
- ADJUST PILE EXCAVATION ELEVATIONS TO MAINTAIN 6" MINIMUM EMBEDMENT OF THE BOTTOM PANEL.
- USE CLASS AA FOR PANELS AND CLASS A CONCRETE PILE EXCAVATION BACKFILL, IN ACCORDANCE WITH ARTICLE 1000-4 OF THE STANDARD SPECIFICATIONS.
- AT THE CONTRACTOR'S OPTION, USE 10'-0" OR 15'-0" PILE SPACINGS. STANDARD PRECAST CONCRETE PANELS MAY BE USED WITH THE 10'-0" AND 15'-0" PILE SPACING.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS, AND WALL ENVELOPE, SEE ROADWAY PLANS.
- PLACE 1" Ø BACKER RODS FULL HEIGHT ON EACH SIDE OF THE PRECAST PANELS. SET AND SEAL THE BACKER ROD IN PLACE WITH SEALANT THAT CONFORMS WITH ARTICLE 1028-3 OF THE STANDARD SPECIFICATIONS.
- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.



TYPICAL WALL TURN DETAILS



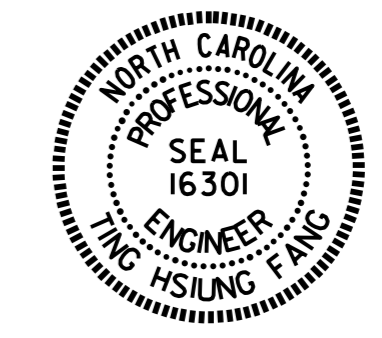
PILE ROTATION LIMIT FOR WALL TURN

(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

BILL OF MATERIAL	
SOUND BARRIER WALL #8	31,365 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
GUILFORD COUNTY  
STATION: 9+83.78 -RPAY8-

SHEET 6 OF 9

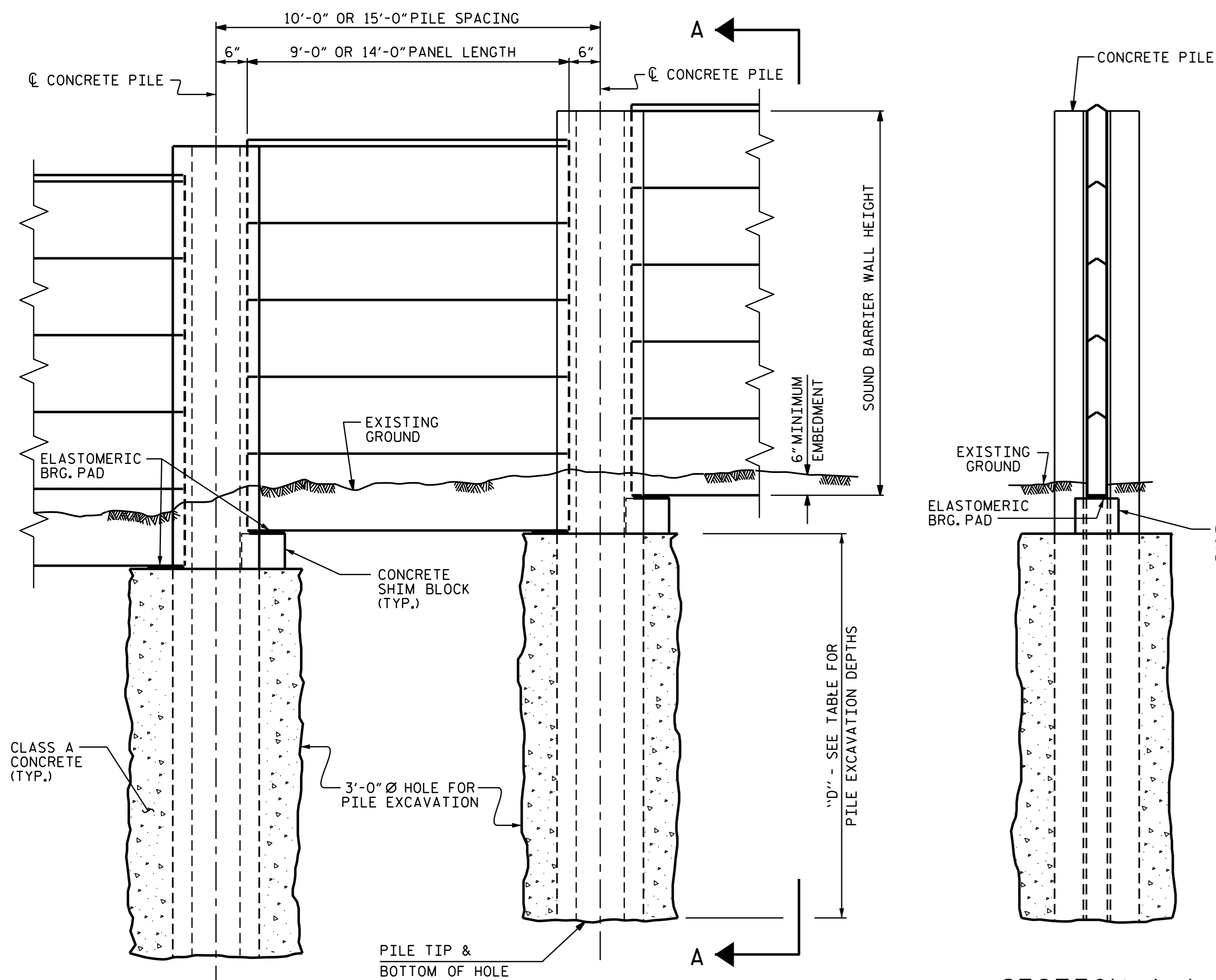


STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
SOUND BARRIER WALL #8

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

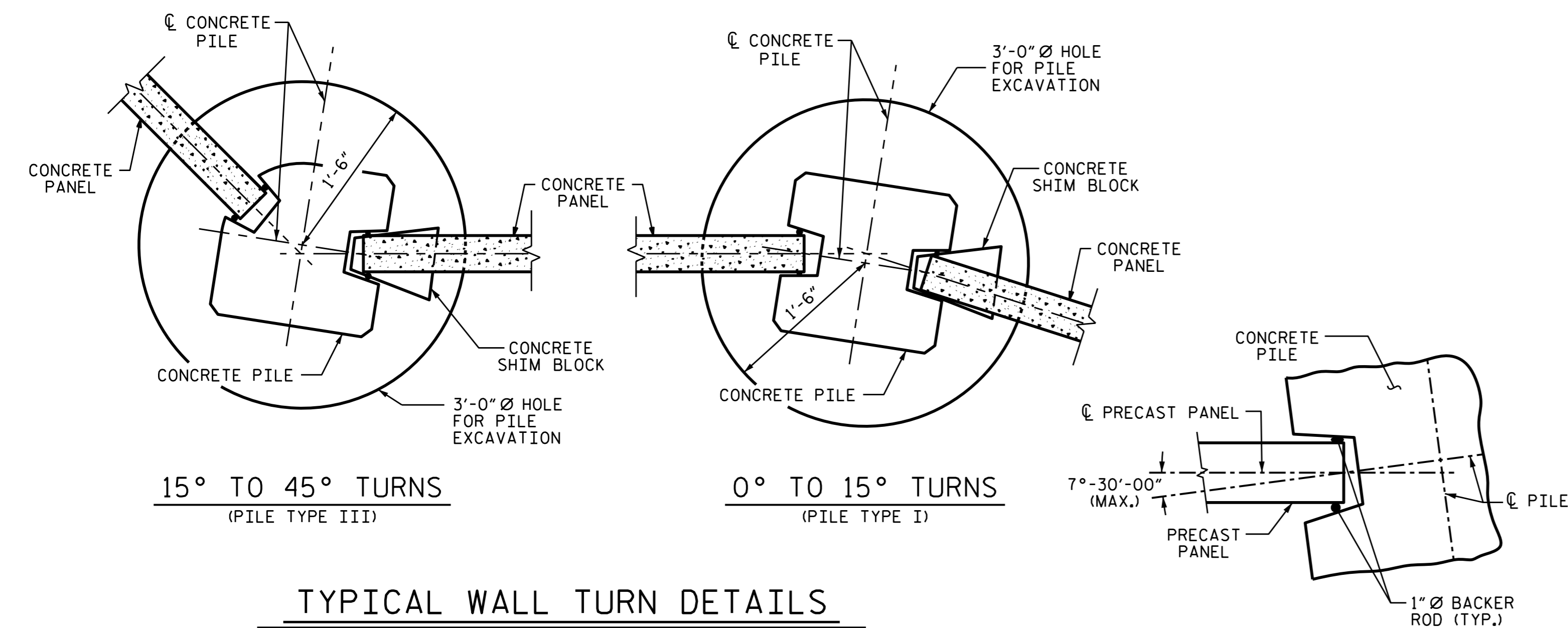
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO. 1	BY: [Signature]	DATE: [Date]	NO. 2	BY: [Signature]	DATE: [Date]
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REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SW-6	
1			3			TOTAL SHEETS 9	
2			4				



ELEVATION

SECTION A-A



TYPICAL WALL TURN DETAILS

PILE ROTATION LIMIT FOR WALL TURN  
(ROTATE THE CONCRETE PILE ±7°-30'-00" TO ACCOMMODATE WALL TURN.)

NOTES

- FOR SOUND BARRIER WALL, SEE SPECIAL PROVISIONS.
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- FOR CONCRETE PILE & PANEL DETAILS, SEE SHEETS SW-8 & SW-9.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SOUND BARRIER WALL STATIONS, OFFSETS AND WALL ENVELOPES, SEE ROADWAY PLANS.

PILE VERTICAL REINFORCING STEEL  
DESIGN WIND PRESSURE = 40 PSF

PILE TYPE I			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	4 - #8 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #10 EA. FACE	#3 @ 1'-4" CTS.
PILE TYPE II			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	4 - #6 EA. FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	4 - #7 EA. FACE	#3 @ 1'-4" CTS.
PILE TYPE III			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.
PILE TYPE III ALT.			
PILE SPACING	MAXIMUM WALL HEIGHT (H)	VERTICAL REINFORCING STEEL	TIES
10'-0"	H ≤ 25'	3 - #9 SHORT FACE 4 - #9 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
15'-0"	H ≤ 20'	3 - #8 SHORT FACE 4 - #8 LONG FACE	#3 @ 1'-4" CTS.
	20' < H ≤ 27'	3 - #11 SHORT FACE 4 - #11 LONG FACE	#3 @ 1'-4" CTS.

PILE EXCAVATION DEPTH "D"

3'-0" Ø HOLE		
SOUND BARRIER WALL #9		
FROM : STA. 3+90.14 -SPDY8- (28.10 LT.) TO : STA. 525+21.66 -L- (75.00 RT.)		
WALL STATION -NW9-	PILE SPACING	DEPTH "D"
STA. 10+00 NW9- TO STA. 11+05 -NW9-	10'-0"	10'-0"
STA. 11+05 -NW9- TO STA. 14+50 -NW9-	15'-0"	11'-0"
STA. 14+50 -NW9- TO STA. 20+95 -NW9-	10'-0"	11'-0"
STA. 20+95 -NW9- TO STA. 22+45 -NW9-	15'-0"	13'-0"
STA. 22+45 -NW9- TO STA. 22+60 -NW9-	10'-0"	14'-0"
STA. 22+60 -NW9- TO STA. 24+55 -NW9-	15'-0"	16'-0"
STA. 24+55 -NW9- TO STA. 28+30 -NW9-	10'-0"	11'-0"
STA. 28+30 -NW9- TO STA. 29+65 -NW9-	15'-0"	10'-0"
STA. 29+65 -NW9- TO STA. 30+25 -NW9-	10'-0"	9'-0"
STA. 30+25 -NW9- TO STA. 31+00 -NW9-	15'-0"	10'-0"
STA. 31+00 -NW9- TO STA. 31+60 -NW9-	10'-0"	10'-0"
STA. 31+60 -NW9- TO STA. 32+65 -NW9-	15'-0"	12'-0"
STA. 32+65 -NW9- TO STA. 33+40 -NW9-	10'-0"	9'-0"
STA. 33+40 -NW9- TO STA. 34+45 -NW9-	15'-0"	10'-0"
STA. 34+45 -NW9- TO STA. 35+20 -NW9-	10'-0"	11'-0"
STA. 35+20 -NW9- TO STA. 35+65 -NW9-	15'-0"	15'-0"
STA. 35+65 -NW9- TO STA. 35+80 -NW9-	10'-0"	14'-0"
STA. 35+80 -NW9- TO STA. 38+20 -NW9-	15'-0"	16'-0"
STA. 38+20 -NW9- TO STA. 39+10 -NW9-	10'-0"	12'-0"
STA. 39+10 -NW9- TO STA. 40+60 -NW9-	15'-0"	14'-0"
STA. 40+60 -NW9- TO STA. 41+00 -NW9-	10'-0"	9'-0"
STA. 41+00 -NW9- TO STA. 41+60 -NW9-	15'-0"	11'-0"
STA. 41+60 -NW9- TO STA. 42+00 -NW9-	10'-0"	8'-0"
STA. 42+00 -NW9- TO STA. 42+60 -NW9-	15'-0"	9'-0"
STA. 42+60 -NW9- TO STA. 43+00 -NW9-	10'-0"	10'-0"
STA. 43+00 -NW9- TO STA. 43+60 -NW9-	15'-0"	12'-0"
STA. 43+60 -NW9- TO STA. 44+00 -NW9-	10'-0"	9'-0"
STA. 44+00 -NW9- TO STA. 44+60 -NW9-	15'-0"	11'-0"
STA. 44+60 -NW9- TO STA. 45+00 -NW9-	10'-0"	8'-0"
STA. 45+00 -NW9- TO STA. 45+60 -NW9-	15'-0"	9'-0"
STA. 45+60 -NW9- TO STA. 46+00 -NW9-	10'-0"	10'-0"
STA. 46+00 -NW9- TO STA. 46+60 -NW9-	15'-0"	12'-0"
STA. 46+60 -NW9- TO STA. 47+00 -NW9-	10'-0"	9'-0"
STA. 47+00 -NW9- TO STA. 47+60 -NW9-	15'-0"	11'-0"
STA. 47+60 -NW9- TO STA. 48+00 -NW9-	10'-0"	8'-0"
STA. 48+00 -NW9- TO STA. 48+60 -NW9-	15'-0"	9'-0"
STA. 48+60 -NW9- TO STA. 49+00 -NW9-	10'-0"	10'-0"
STA. 49+00 -NW9- TO STA. 49+60 -NW9-	15'-0"	12'-0"
STA. 49+60 -NW9- TO STA. 50+00 -NW9-	10'-0"	9'-0"
STA. 50+00 -NW9- TO STA. 50+60 -NW9-	15'-0"	11'-0"
STA. 50+60 -NW9- TO STA. 51+00 -NW9-	10'-0"	8'-0"
STA. 51+00 -NW9- TO STA. 51+60 -NW9-	15'-0"	9'-0"
STA. 51+60 -NW9- TO STA. 52+00 -NW9-	10'-0"	10'-0"
STA. 52+00 -NW9- TO STA. 52+60 -NW9-	15'-0"	12'-0"
STA. 52+60 -NW9- TO STA. 53+00 -NW9-	10'-0"	9'-0"
STA. 53+00 -NW9- TO STA. 53+60 -NW9-	15'-0"	11'-0"
STA. 53+60 -NW9- TO STA. 54+00 -NW9-	10'-0"	8'-0"
STA. 54+00 -NW9- TO STA. 54+60 -NW9-	15'-0"	9'-0"
STA. 54+60 -NW9- TO STA. 55+00 -NW9-	10'-0"	10'-0"
STA. 55+00 -NW9- TO STA. 55+60 -NW9-	15'-0"	12'-0"
STA. 55+60 -NW9- TO STA. 56+00 -NW9-	10'-0"	9'-0"
STA. 56+00 -NW9- TO STA. 56+60 -NW9-	15'-0"	11'-0"
STA. 56+60 -NW9- TO STA. 57+00 -NW9-	10'-0"	8'-0"
STA. 57+00 -NW9- TO STA. 57+60 -NW9-	15'-0"	9'-0"
STA. 57+60 -NW9- TO STA. 58+00 -NW9-	10'-0"	10'-0"
STA. 58+00 -NW9- TO STA. 58+60 -NW9-	15'-0"	12'-0"
STA. 58+60 -NW9- TO STA. 59+00 -NW9-	10'-0"	9'-0"
STA. 59+00 -NW9- TO STA. 59+60 -NW9-	15'-0"	11'-0"
STA. 59+60 -NW9- TO STA. 60+00 -NW9-	10'-0"	8'-0"
STA. 60+00 -NW9- TO STA. 60+60 -NW9-	15'-0"	9'-0"
STA. 60+60 -NW9- TO STA. 61+00 -NW9-	10'-0"	10'-0"
STA. 61+00 -NW9- TO STA. 61+60 -NW9-	15'-0"	12'-0"
STA. 61+60 -NW9- TO STA. 62+00 -NW9-	10'-0"	9'-0"
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STA. 63+00 -NW9- TO STA. 63+60 -NW9-	15'-0"	9'-0"
STA. 63+60 -NW9- TO STA. 64+00 -NW9-	10'-0"	10'-0"
STA. 64+00 -NW9- TO STA. 64+60 -NW9-	15'-0"	12'-0"
STA. 64+60 -NW9- TO STA. 65+00 -NW9-	10'-0"	9'-0"
STA. 65+00 -NW9- TO STA. 65+60 -NW9-	15'-0"	11'-0"
STA. 65+60 -NW9- TO STA. 66+00 -NW9-	10'-0"	8'-0"
STA. 66+00 -NW9- TO STA. 66+60 -NW9-	15'-0"	9'-0"
STA. 66+60 -NW9- TO STA. 67+00 -NW9-	10'-0"	10'-0"
STA. 67+00 -NW9- TO STA. 67+60 -NW9-	15'-0"	12'-0"
STA. 67+60 -NW9- TO STA. 68+00 -NW9-	10'-0"	9'-0"
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STA. 74+00 -NW9- TO STA. 74+60 -NW9-	15'-0"	11'-0"
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STA. 83+00 -NW9- TO STA. 83+60 -NW9-	15'-0"	11'-0"
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STA. 88+00 -NW9- TO STA. 88+60 -NW9-	15'-0"	12'-0"
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STA. 94+60 -NW9- TO STA. 95+00 -NW9-	10'-0"	9'-0"
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STA. 99+00 -NW9- TO STA. 99+60 -NW9-	15'-0"	9'-0"
STA. 99+60 -NW9- TO STA. 100+00 -NW9-	10'-0"	10'-0"

BILL OF MATERIAL

SOUND BARRIER WALL #9	61,965 S.F.
QUANTITIES PROVIDED ARE APPROXIMATE AND ARE FOR BID PURPOSES ONLY.	

PROJECT NO. U-2524D  
GUILFORD COUNTY  
STATION: 3+90.14 -SPDY8-

SHEET 7 OF 9



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD

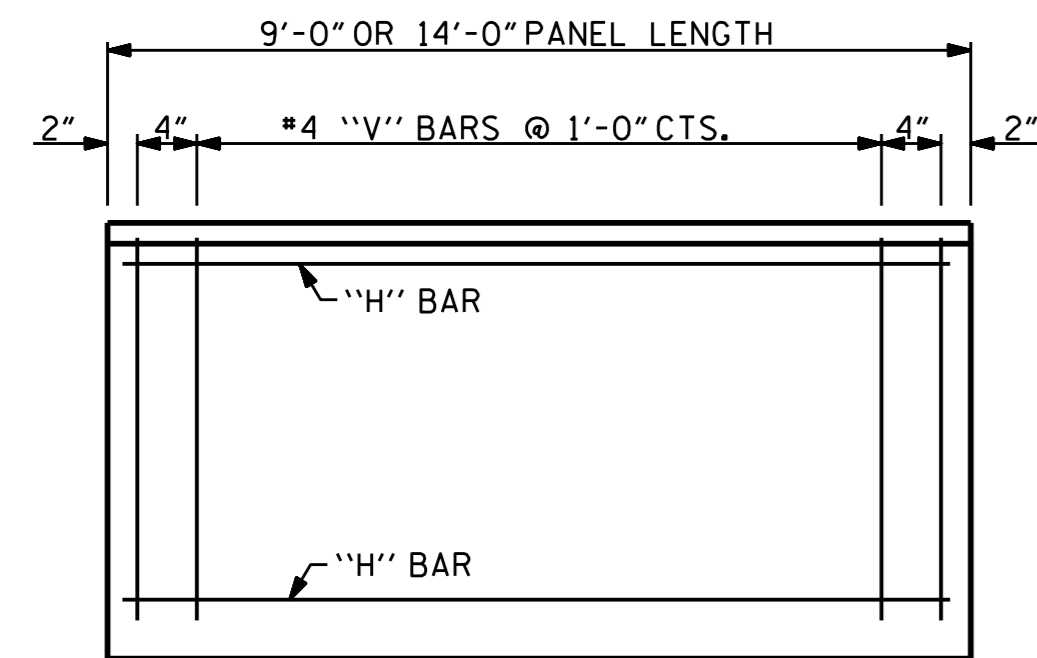
SOUND BARRIER WALL #9

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/11	ADDED 10/1/11
CHECKED BY : GM 6/11	REV. 1/15/14 RWW/TMG
	REV. 9/26/14 MAA/TMG

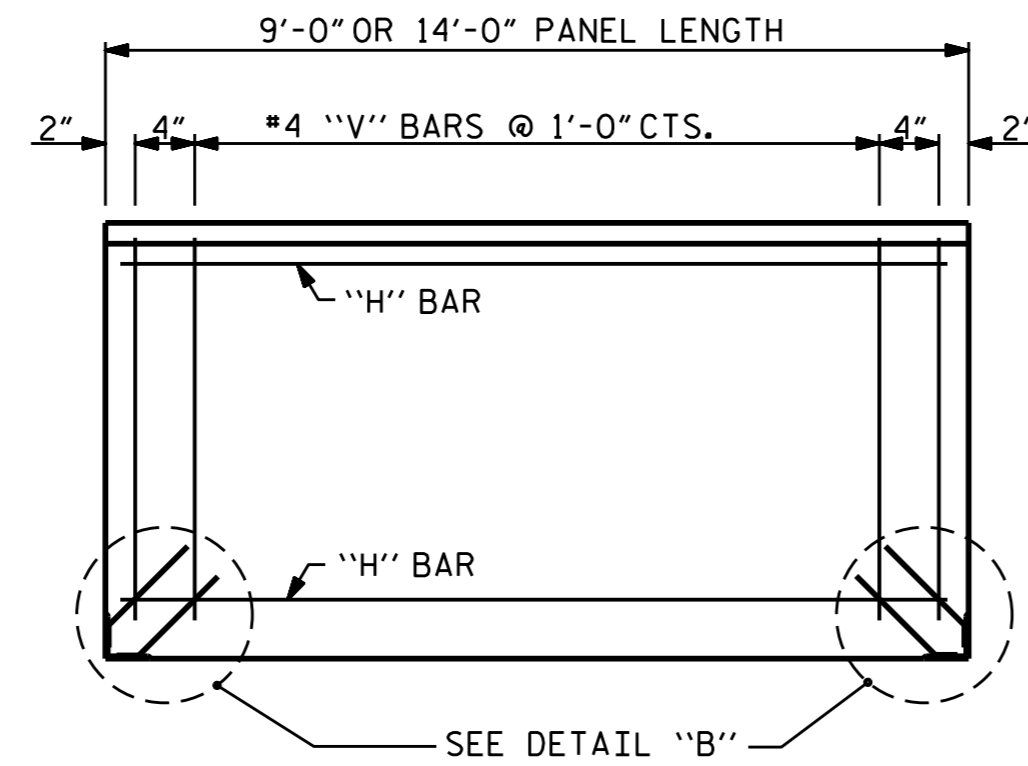
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO. SW-7
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 9
2			4			





FRONT ELEVATION OF UPPER PRECAST PANELS



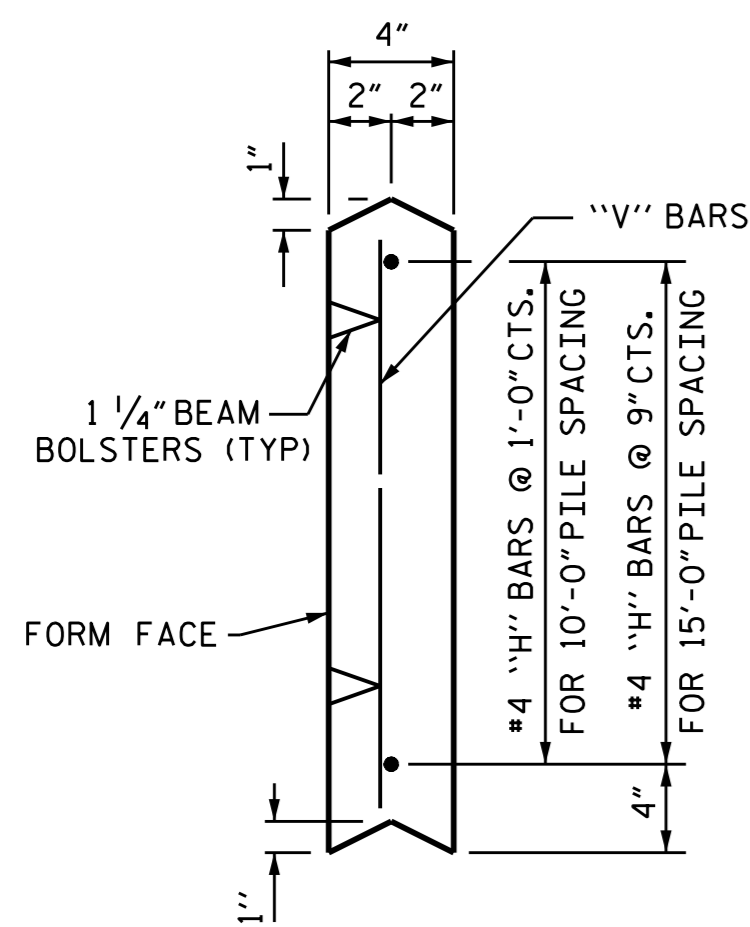
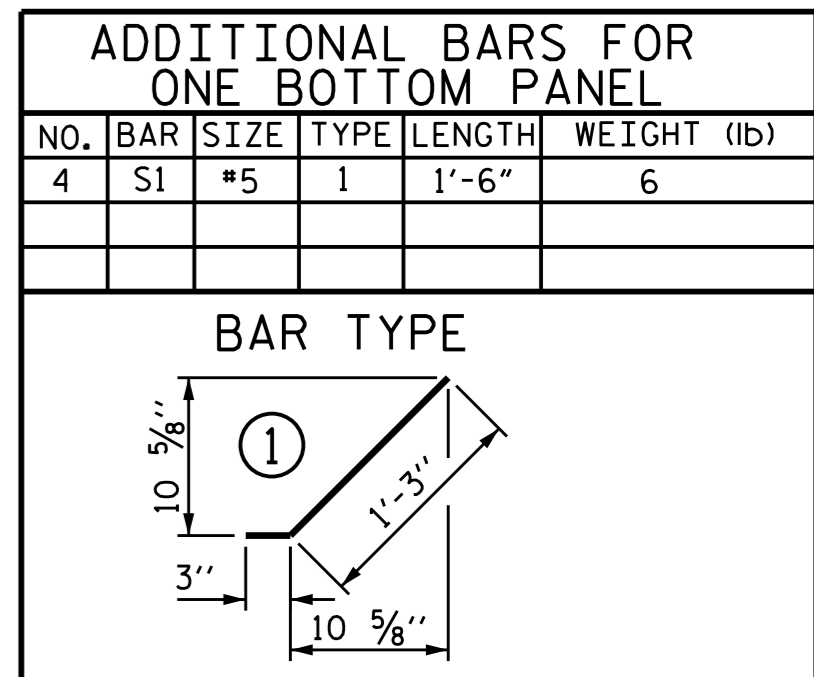
FRONT ELEVATION OF BOTTOM PRECAST PANEL

QUANTITIES FOR ONE PRECAST PANEL (FOR 10'-0" PILE SPACING)

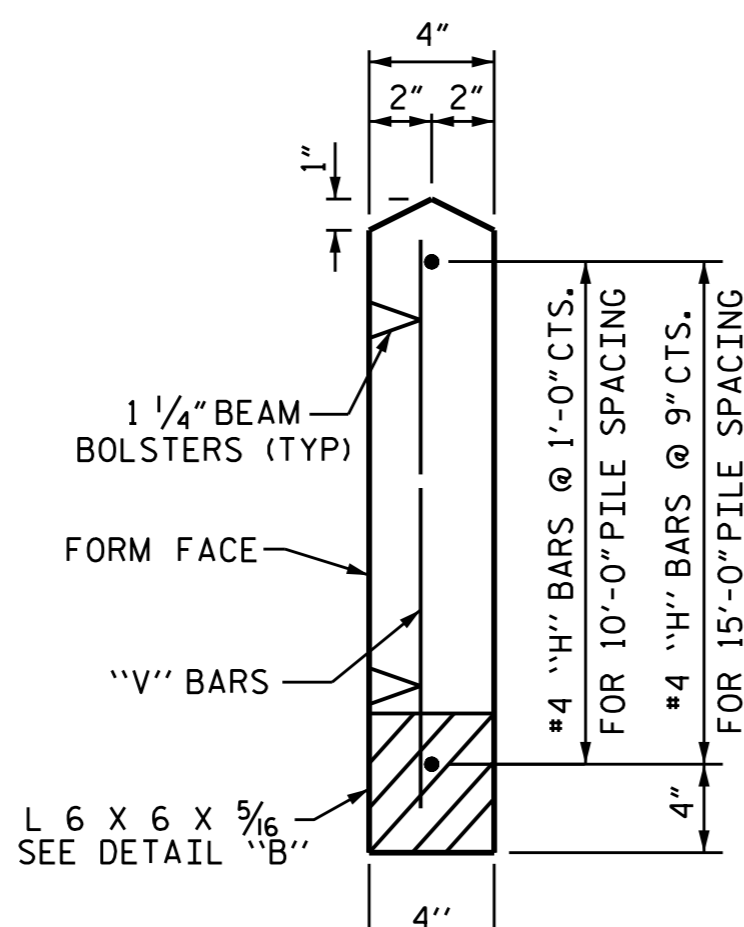
PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES									
		HORIZONTAL					VERTICAL				
		NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)
2'-0"	0.22	3	H1 #4	STR	8'-8"	17	11	V1 #4	STR	1'-8"	12
3'-0"	0.33	4	H2 #4	STR	8'-8"	23	11	V2 #4	STR	2'-8"	20
4'-0"	0.44	5	H3 #4	STR	8'-8"	29	11	V3 #4	STR	3'-8"	27

QUANTITIES FOR ONE PRECAST PANEL (FOR 15'-0" PILE SPACING)

PANEL HEIGHT	CLASS AA CONCRETE C.Y.	BAR TYPES									
		HORIZONTAL					VERTICAL				
		NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)	NO.	BAR SIZE	TYPE	LENGTH	WEIGHT (lb)
3'-0"	0.52	5	H1 #4	STR	13'-8"	46	16	V1 #4	STR	2'-8"	29
4'-0"	0.69	6	H2 #4	STR	13'-8"	55	16	V2 #4	STR	3'-8"	39
5'-0"	0.86	7	H3 #4	STR	13'-8"	64	16	V3 #4	STR	4'-8"	50
6'-0"	1.04	8	H4 #4	STR	13'-8"	73	16	V4 #4	STR	5'-8"	61

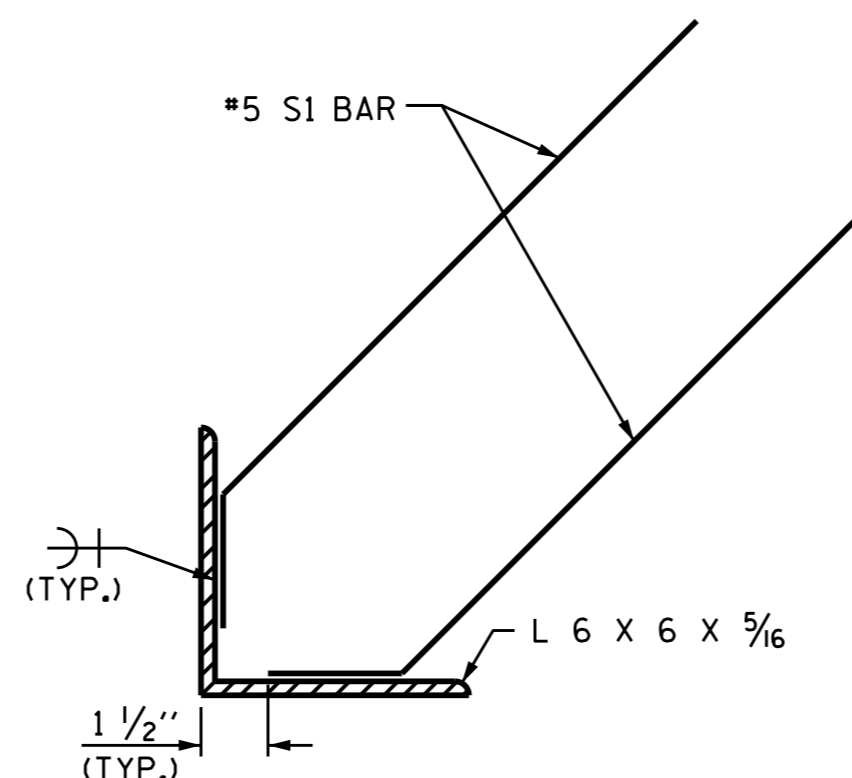


UPPER PANEL

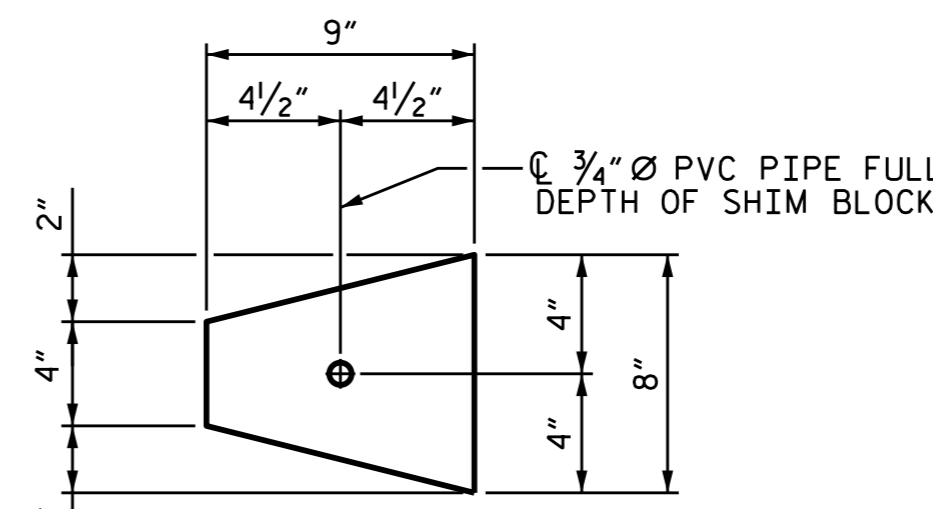


BOTTOM PANEL

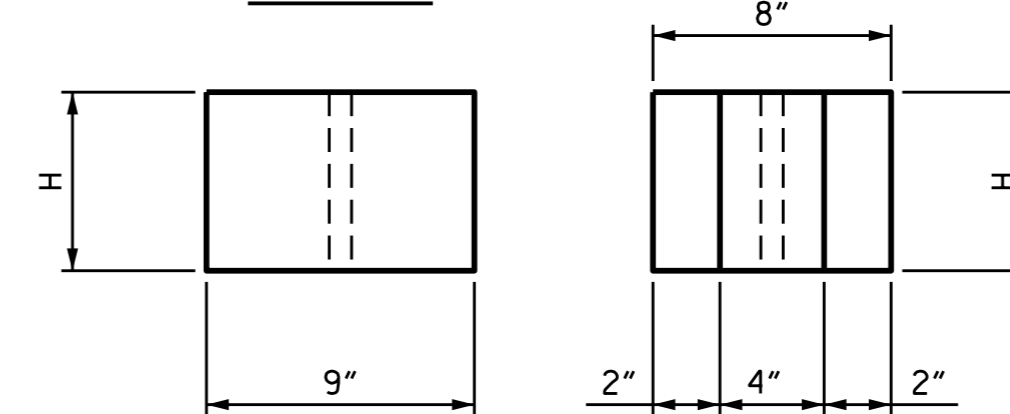
SECTION THROUGH PRECAST PANELS



DETAIL "B"



PLAN

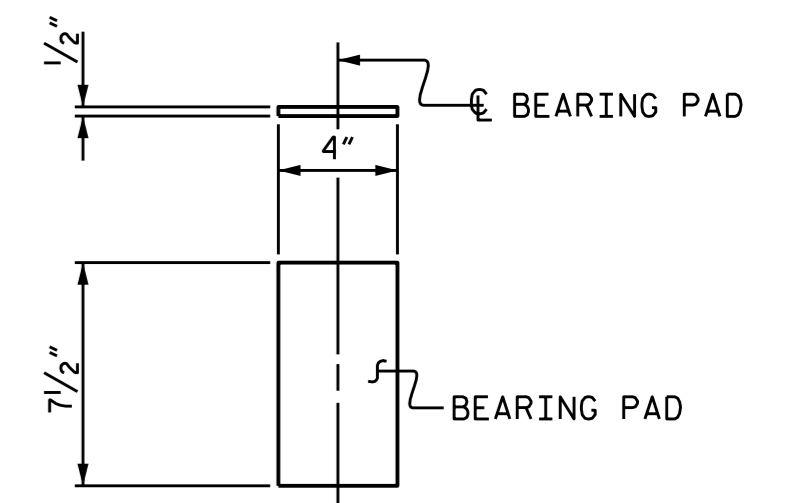


ELEVATION

END

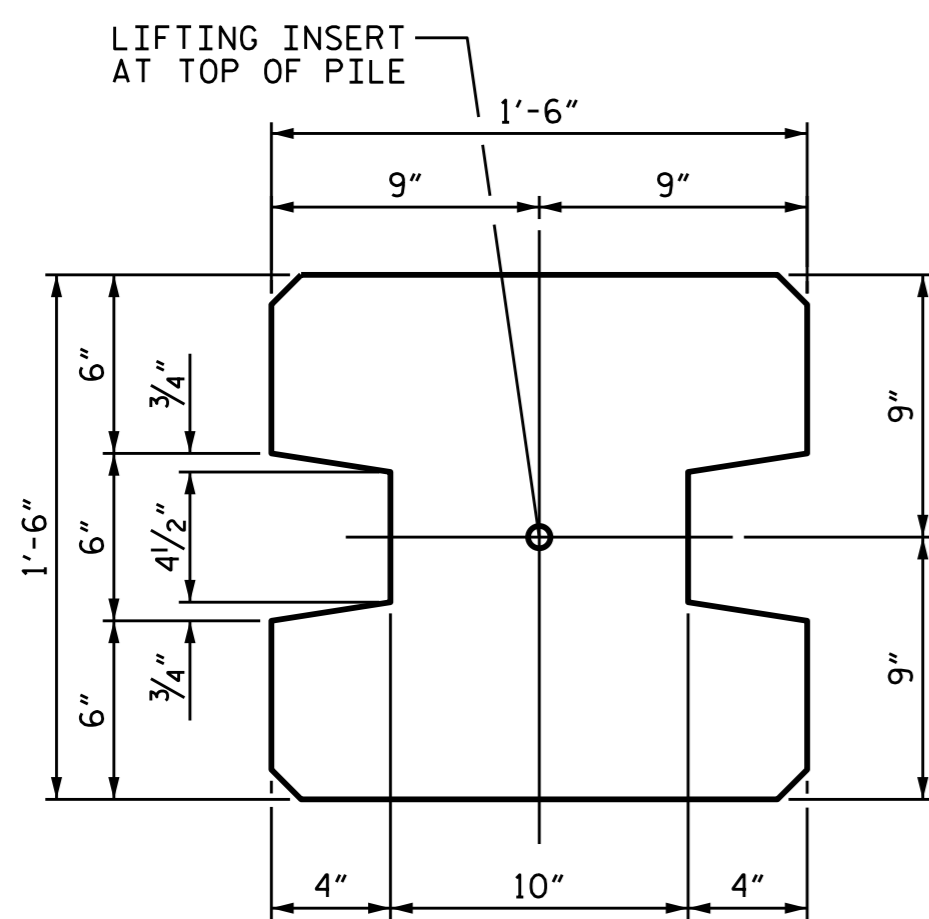
CONCRETE SHIM BLOCK

H = 3", 6" OR 1'-0"

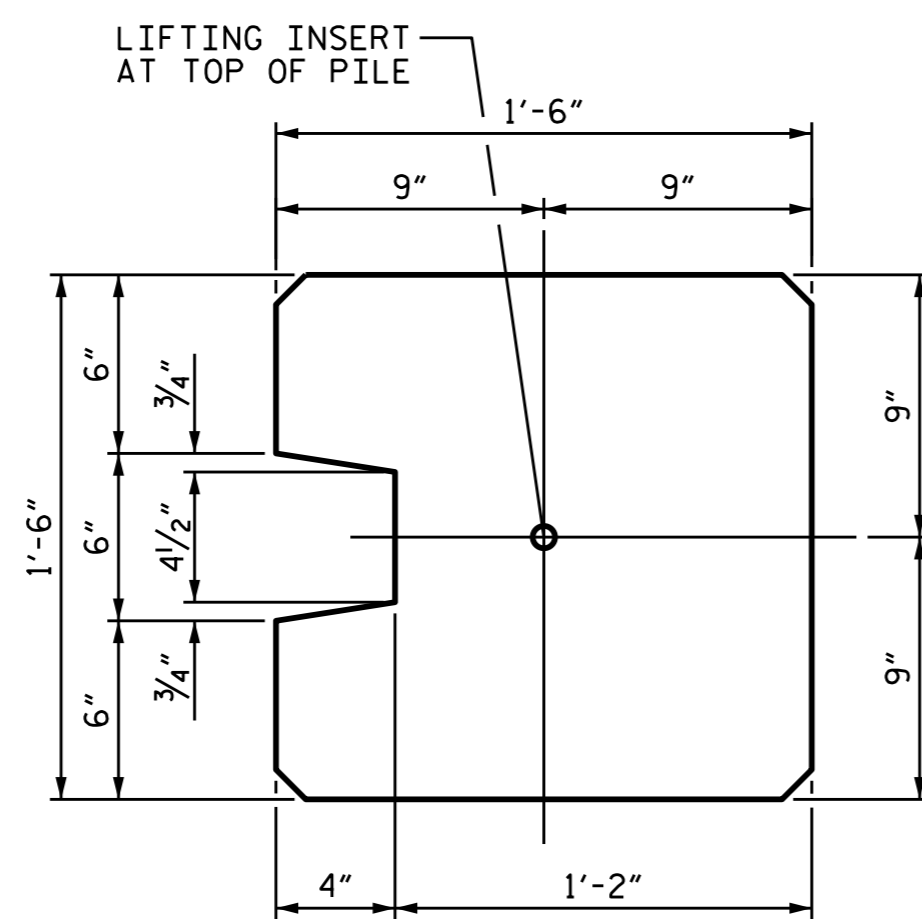


ELASTOMERIC BEARING DETAILS

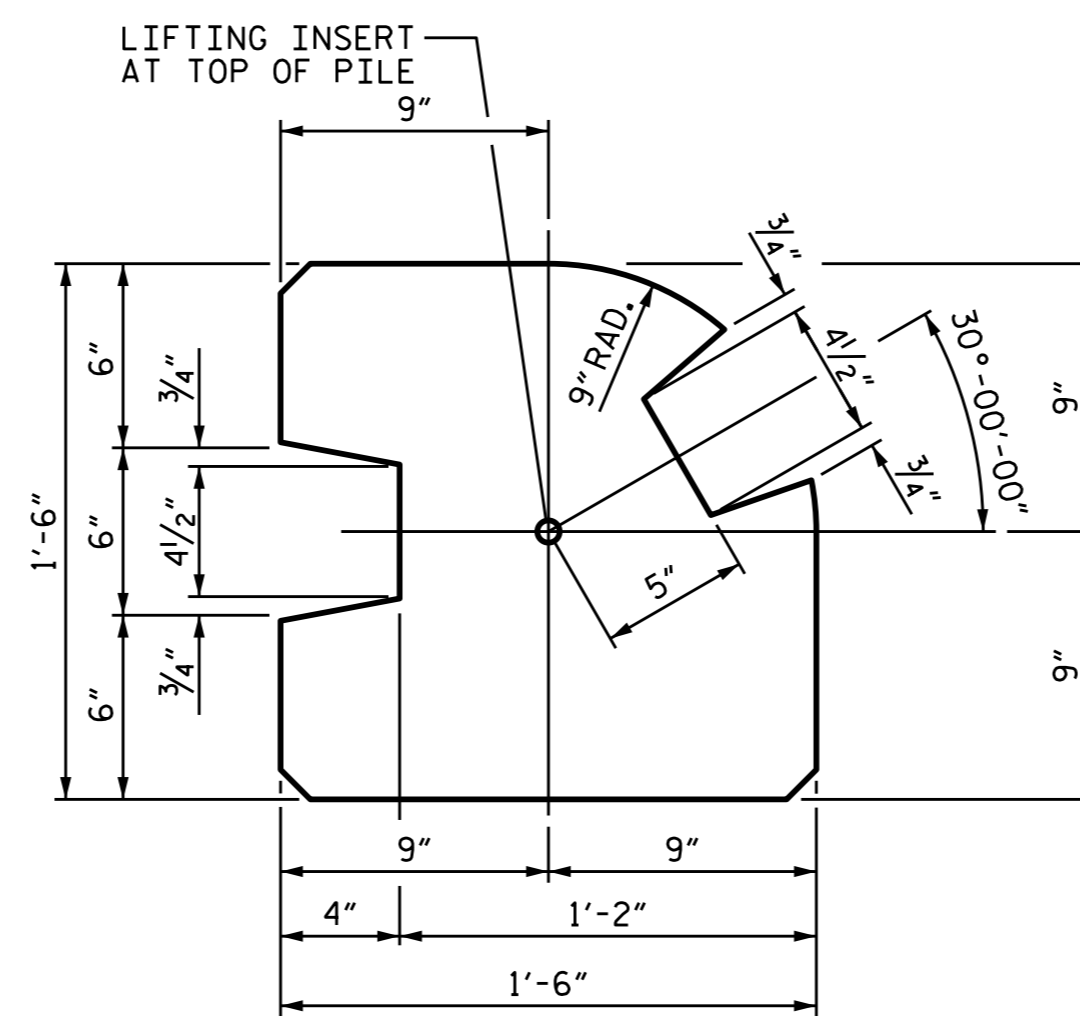
ELASTOMER IN BEARINGS SHALL BE 50 DUROMETER HARDNESS.



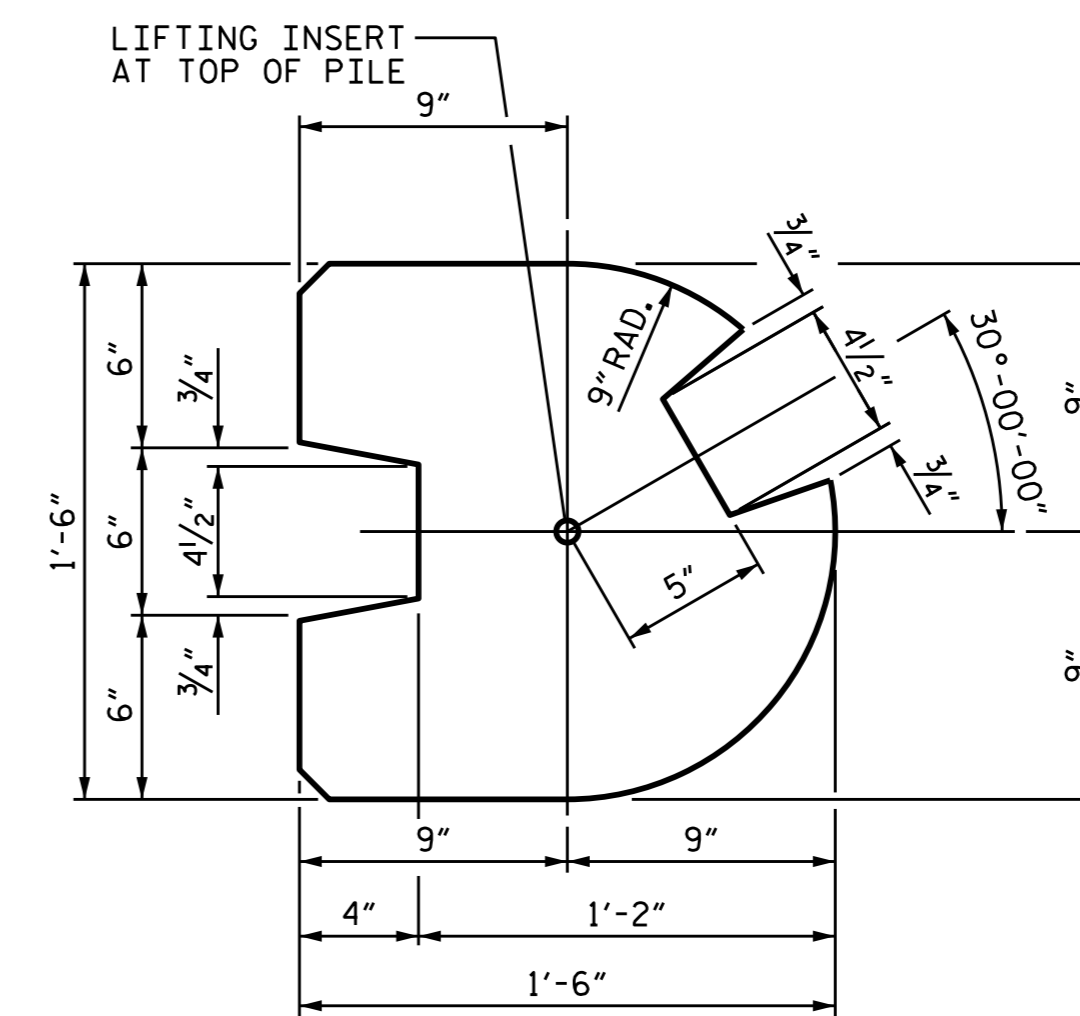
TYPE - I  
(AREA = 1.9444 SQ. FT.)



TYPE - II  
(AREA = 2.0903 SQ. FT.)



TYPE - III  
(AREA = 1.8336 SQ. FT.)



TYPE - III (ALT.)  
(AREA = 1.7163 SQ. FT.)

PILE DIMENSION DETAIL

ALL CORNERS TO BE CHAMFERED 1"

PROJECT NO. U-2524D  
GUILFORD COUNTY  
STATION: 422+43.04 -L-

SHEET 8 OF 9



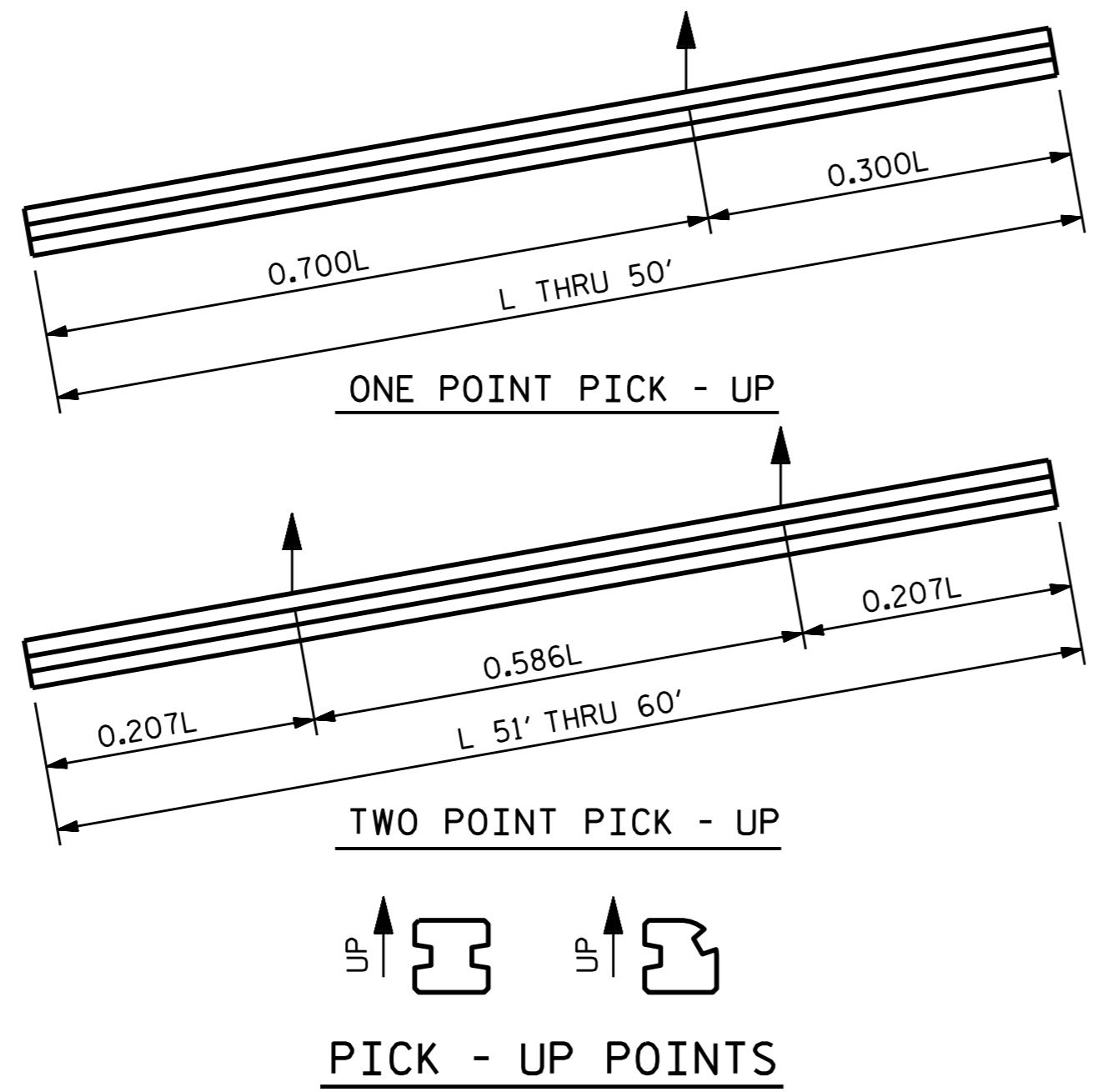
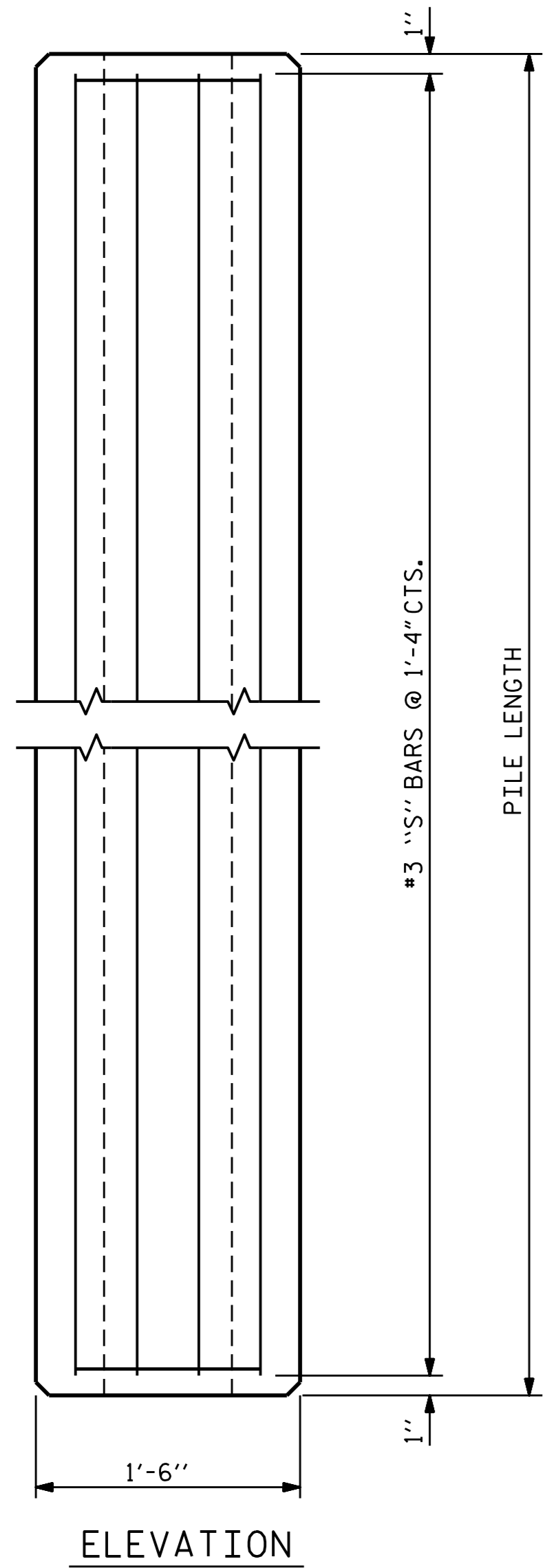
DocuSigned by:  
Ting Fang  
7/1/2016

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
SOUND BARRIER WALL  
PRECAST PANEL  
DETAILS

ASSEMBLED BY : M. SHAHIDI DATE : 4/19/16  
CHECKED BY : T. H. FANG DATE : 4/20/16  
DRAWN BY : MAA 6/11  
CHECKED BY : GM 6/11  
ADDED 8/31/11  
REV. 1/15/14 RWW/TMG

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO. SW-8 TOTAL SHEETS 9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



**QUANTITIES FOR ONE PRECAST CONCRETE PILE**

LENGTH	APPROX. PILE WT. TONS	ONE PICK-UP POINT		TWO PICK-UP POINT	
		0.300L	0.700L	0.207L	0.586L
10'-0"	1.56	3'-0"	7'-0"		
15'-0"	2.35	4'-6"	10'-6"		
20'-0"	3.14	6'-0"	14'-0"		
25'-0"	3.93	7'-6"	17'-6"		
30'-0"	4.70	9'-0"	21'-0"		
35'-0"	5.49	10'-6"	24'-6"		
40'-0"	6.28	12'-0"	28'-0"		
45'-0"	7.05	13'-6"	31'-6"		
50'-0"	7.84	15'-0"	35'-0"		
55'-0"	8.63			11'-4 1/2"	32'-3"
60'-0"	9.42			12'-5"	35'-2"

**NOTES**

CONCRETE DESIGN DATA :  $f'_c = 5,000$  PSI

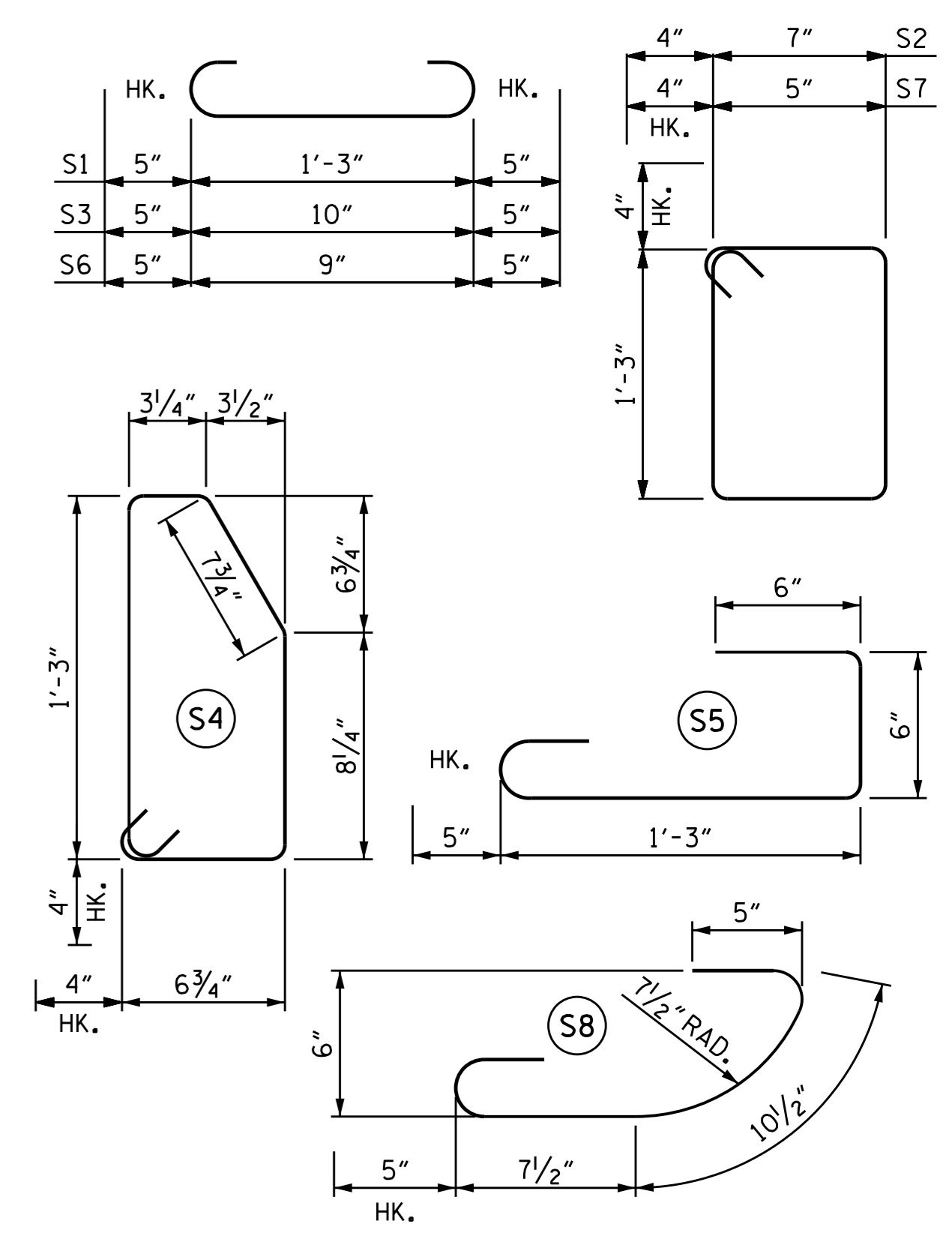
PROPOSED DEVICES FOR LIFTING PILES, RECESS DETAILS, AND PATCHING MATERIAL SHALL BE DETAILED IN SHOP DRAWINGS. AFTER ATTACHMENTS HAVE BEEN REMOVED, OPENINGS SHALL BE REPAIRED SUCH THAT THE APPEARANCE OF THE PILE IS UNIFORM.

WHERE CAST-IN-PLACE LIFTING DEVICES ARE NOT USED, PICK-UP POINTS TO BE INDICATED WITH A BLACK MARK 2" WIDE.

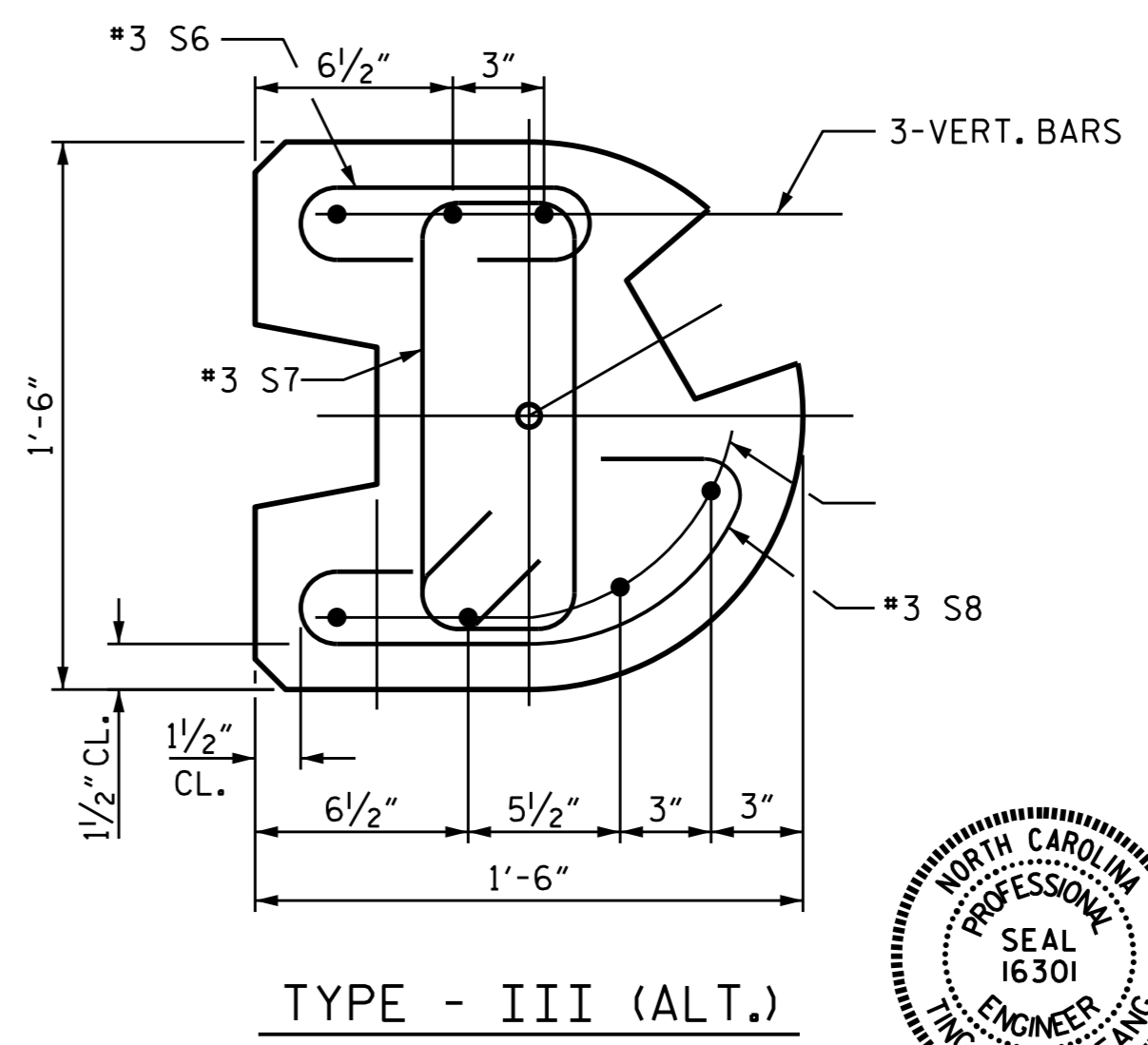
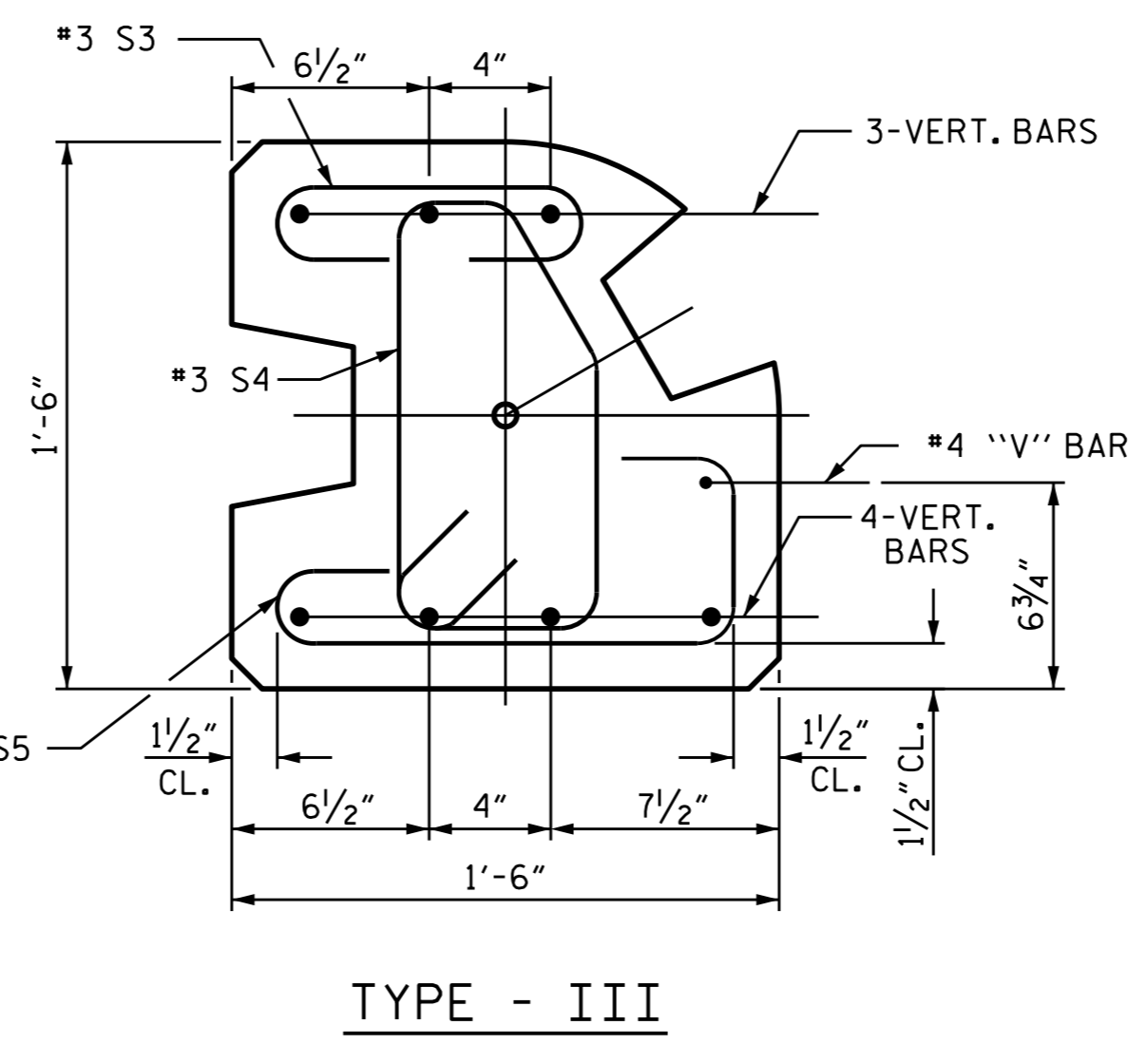
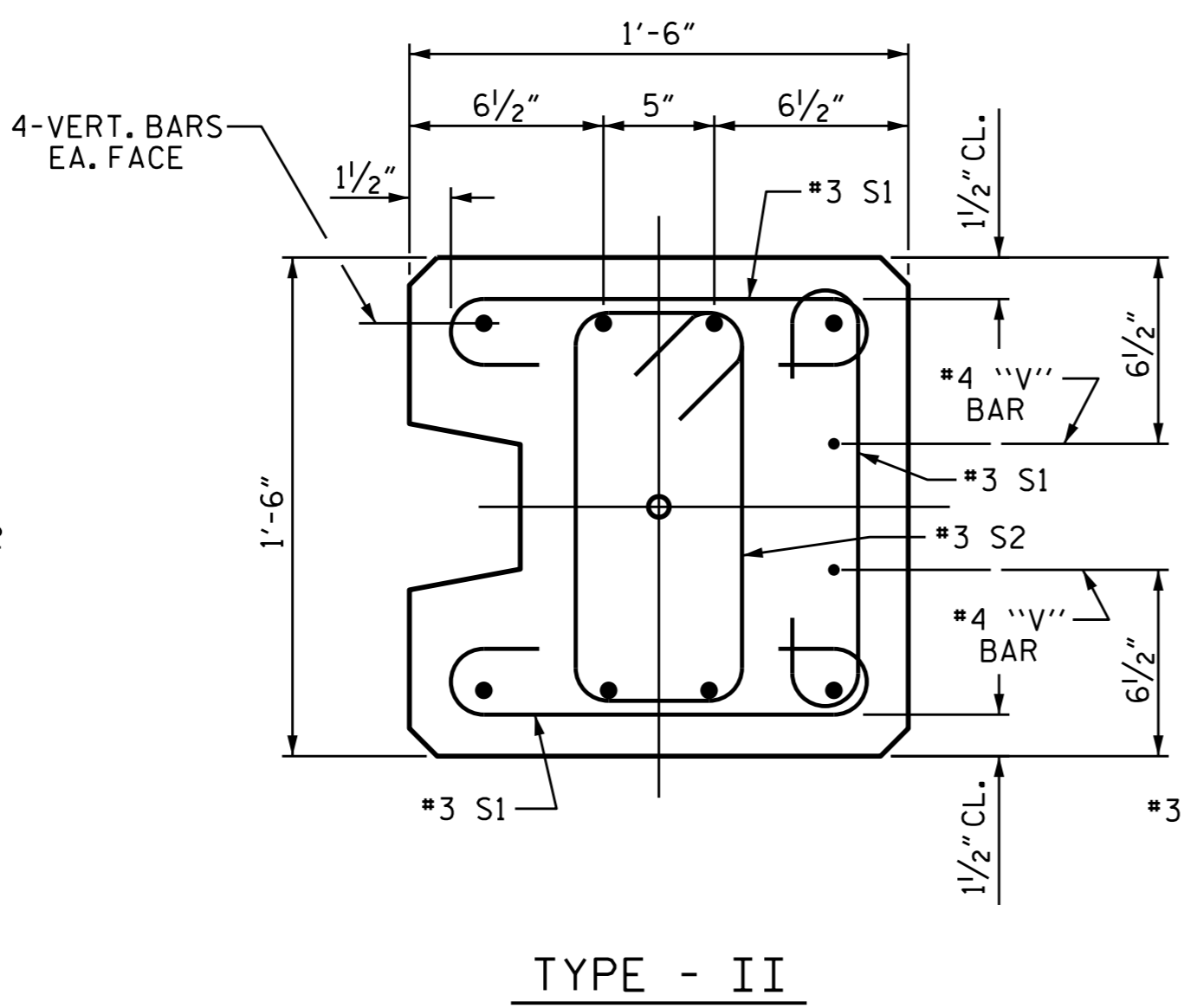
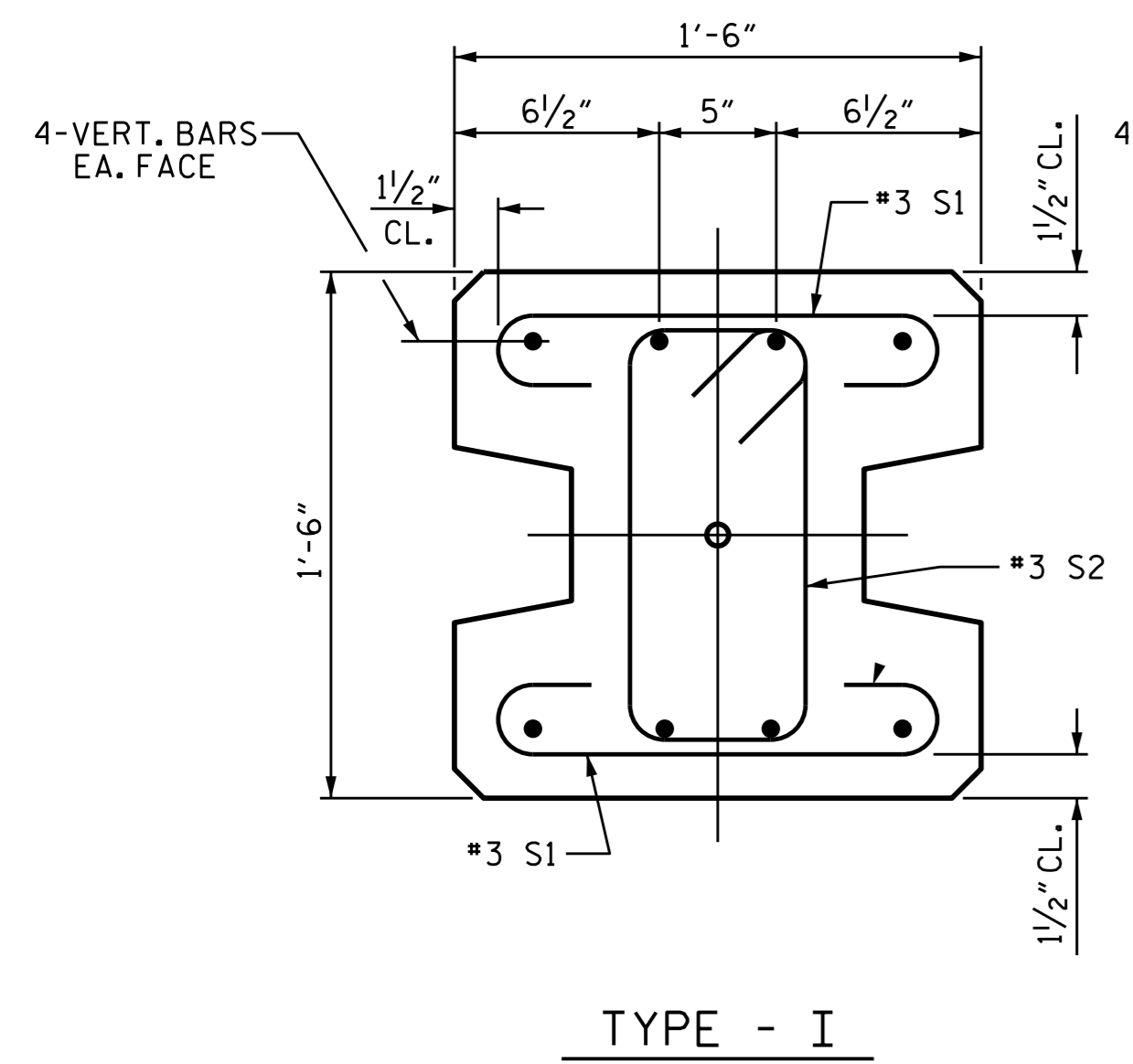
THE SLIP-FORM METHOD OF CASTING PILES WILL NOT BE PERMITTED.

ALL CORNERS TO BE CHAMFERED 1".

**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT.



**PILE DETAIL**

FOR PILE VERTICAL BAR REINFORCING FOR EACH SOUND BARRIER WALL, SEE STD. SHEET NO. SBW1

PROJECT NO. U-2524D  
 GUILFORD COUNTY  
 STATION: 422+43.04 -L-  
 SHEET 9 OF 9



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 SOUND BARRIER WALL  
 PRECAST PILE  
 DETAILS

ASSEMBLED BY : M. SHAHIDI	DATE : 4/19/16
CHECKED BY : T. H. FANG	DATE : 4/20/16
DRAWN BY : MAA 6/II	ADDED 8/31/11
CHECKED BY : GM 6/II	REV. 1/15/14 RWW/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	9
TOTAL SHEETS	9

STD. NO. SBW3

