


GENERAL LOCATION OF CONTRACT


PREPARED BY  
CONSULTANT FIRM OF AECOM



11/15/23


THIS SEAL APPLIES TO ALL SHEETS  
BEARING THE "AEC" SECTION DESIGNATION.

DATE



SEAL


PREPARED BY  
CONSULTANT FIRM OF HARDESTY & HANOVER



2023.11.07  
13:06:26-05'00'

THIS SEAL APPLIES TO ALL SHEETS  
BEARING THE "H&H" SECTION DESIGNATION.

DATE



SEAL

THE STATE OF DELAWARE  
DEPARTMENT OF TRANSPORTATION

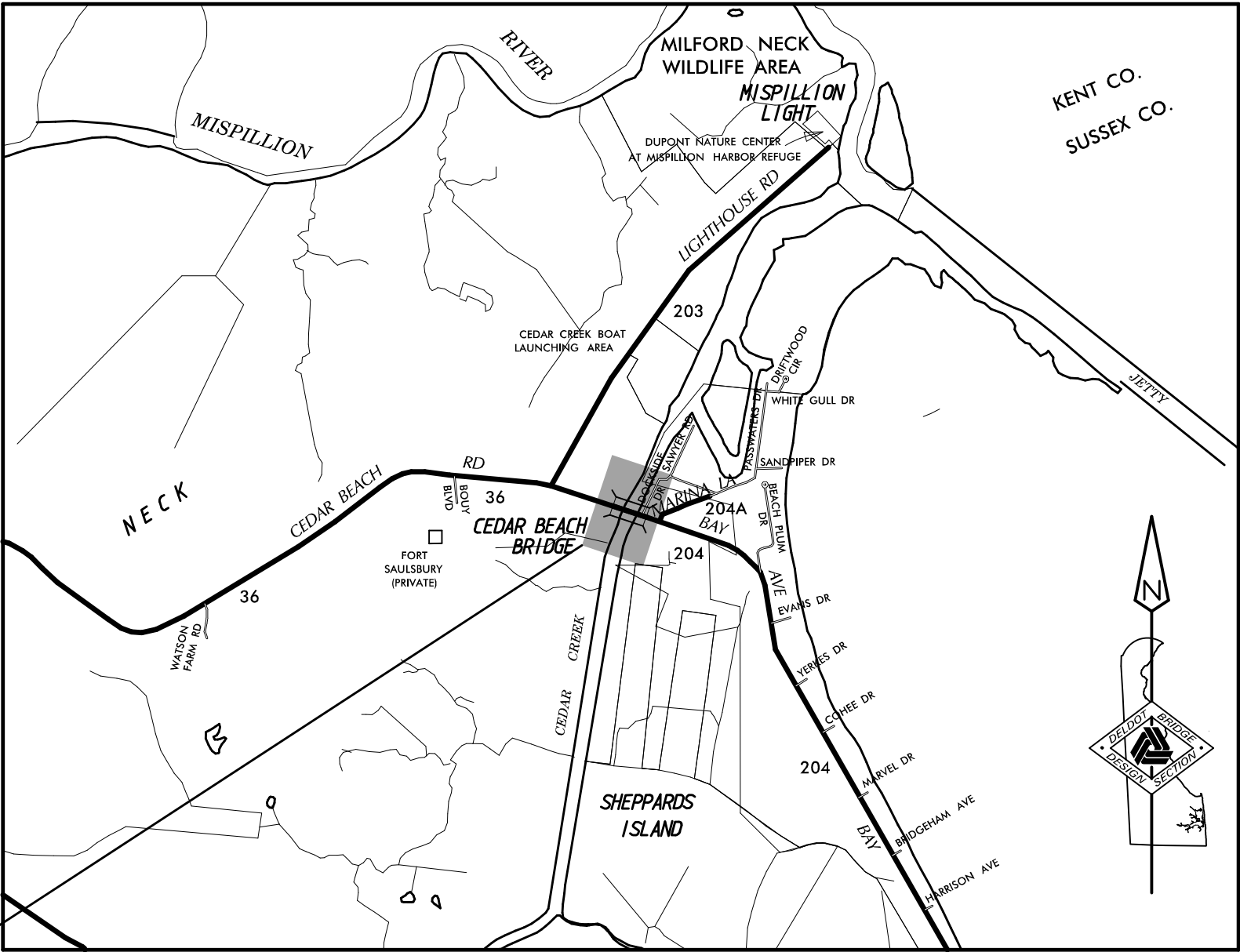


CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR:

REPLACEMENT OF BRIDGE 3-164  
ON SR36 CEDAR BEACH ROAD

CONTRACT NUMBER: T202007301  
FEDERAL AID PROJECT NUMBER: EBHOS-S036 (03)

COUNTY: SUSSEX M.R. #: 36



LOCATION MAP  
N.T.S

REPLACEMENT OF BRIDGE 3-164  
ON SR36 CEDAR BEACH ROAD

U.S. CUSTOMARY  
UNITS

DESIGN DESIGNATION			
MRD #: 36		ROAD NAME: CEDAR BEACH RD	
FUNCTIONAL CLASS: LOCAL		D.H.V. PROJECTED: 421	YEAR: 2046
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT		DESIGN SPEED: 45 M.P.H.	
A.A.D.T. CURRENT: 881	YEAR: 2021	TRUCKS: 9.4 %	
A.A.D.T. PROJECTED: 2349	YEAR: 2046	DIRECTION OF DISTRIBUTION: 62 %	
APPROVED DESIGN EXCEPTIONS			
DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
ADDENDA/ REVISIONS			

APPROVED






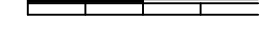
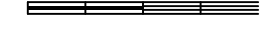
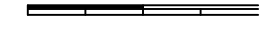










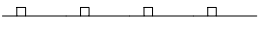




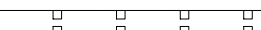
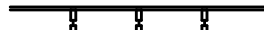
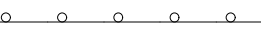



















































CHIEF ENGINEER




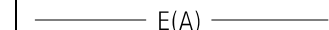




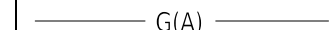
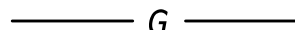





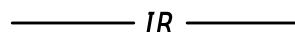


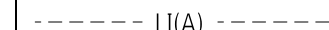




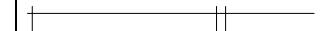
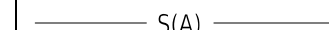




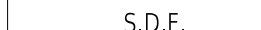




















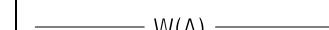







12/21/2023




DATE

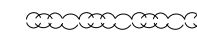










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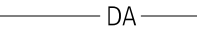
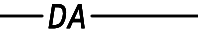

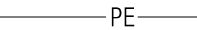
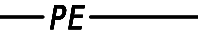




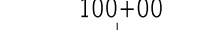

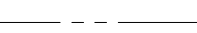
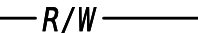




MANMADE ROADSIDE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD - STEEL POLE			
BOLLARD - WOOD POST			
CURB, TYPE 1 AND TYPE 3	CURB, TYPE "X"		
CURB, TYPE 2			
CURB & GUTTER, TYPE 1			
CURB & GUTTER, TYPE 2	C&G, TYPE "X"		
CURB & GUTTER, TYPE 3			
CURB OPENING - SUMP / ON GRADE			
CURB OPENING WITH SIDEWALK			
FENCE - CHAINLINK OR STRANDED			
FENCE - STOCKADE OR SPLIT RAIL			
FLAG POLE	F.P. 		
GUARDRAIL - STEEL BEAM, TYPE 1			
GUARDRAIL - STEEL BEAM, TYPE 2			
GUARDRAIL - STEEL BEAM, TYPE 3			
GUARDRAIL - WIRE ROPE			
GUARDRAIL - END ANCHORAGE			
GUARDRAIL - END TREATMENT, TYPE 1			
GUARDRAIL - END TREATMENT, TYPE 2			
GUARDRAIL - END TREATMENT, TYPE 3			
GUARDRAIL - IMPACT ATTENUATOR			
LAMP AND POST - RESIDENTIAL	LAMP 		
MAILBOX	MB 		
PARKING METER AND POST	P.M. 		
PAVEMENT - FLEXIBLE			
PAVEMENT - RIGID			
PILE - BRIDGE			
PILLAR OR MISCELLANEOUS POST			
TRAFFIC SIGN AND POST			
WALL - BRICK OR BLOCK			
WALL - STONE			







DRAINAGE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BIOFILTRATION SWALE			
DITCH OR STREAM CENTERLINE			
DIRECTIONAL STREAM FLOW ARROW			
DRAINAGE INLET	C.B. 	D.I. 	
DRAINAGE JUNCTION BOX	J.B. 		
DRAINAGE MANHOLE			
DRAINAGE PIPE AND FLOW ARROW	SIZE/TYPE LABEL 		
DRAINAGE PIPE HEADWALL			
FLARED END SECTION			
RIPRAP - AREA FEATURE			
RIPRAP - LINEAR FEATURE			
SAFETY END SECTION			
UNDERDRAIN			
UNDERDRAIN OUTLET			
STONE INFILTRATION BMP			
TIDAL FLOW ARROW			



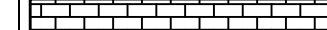




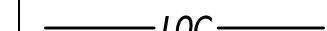
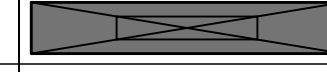



UTILITY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
CABLE TV DISTRIBUTION BOX		
COMMUNICATIONS - UNDERGROUND	COMM(A) 	COMM 
ELECTRIC - UNDERGROUND	E(A) 	E 
ELECTRIC MANHOLE		
ELECTRIC METER	EM 	
ELECTRIC TRANSFORMER	E 	
GAS - UNDERGROUND	G(A) 	G 
GAS MANHOLE		
GAS METER	G.M. 	
GAS VALVE	G.V. 	
GAS PUMP - SERVICE STATION	G.P. 	
IRRIGATION - UNDERGROUND	IR(A) 	IR 
ITMS - UNDERGROUND	ITMS(A) 	ITMS 
LIGHTING - UNDERGROUND	LI(A) 	LI 
LUMINAIRE - POLE MOUNTED		
MANHOLE - UNDETERMINED OWNER		
RAILROAD TRACKS		
SANITARY - UNDERGROUND	S(A) 	S 
SANITARY SEWER MANHOLE		
SANITARY SEWER VALVE	S.V. 	
SANITARY SEWER CLEANOUT OR VENT	S.C.O. 	
SEPTIC DRAIN FIELD	S.D.F. 	
SIGNALIZATION - UNDERGROUND	SIG(A) 	SIG 
SOIL BORING LOCATION		
TELEPHONE BOOTH	B 	
TELEPHONE MANHOLE		
TELEPHONE TEST POINT	T 	
TRAFFIC - CONDUIT JUNCTION WELL	J.W. 	
TRAFFIC - LIGHT POLE AND BASE		
TRAFFIC - PEDESTRIAN POLE & BASE		
TRAFFIC - SIGNAL CABINET & BASE		
TRAFFIC - SIGNAL POLE AND BASE		
UTILITY BOX	U 	
UTILITY POLE GUY WIRE ANCHOR		
UTILITY POLE		
UTILITY TEST HOLE LOCATION		
WATER - UNDERGROUND	W(A) 	W 
WATER - FIRE HYDRANT	F.H. 	F.H. 
WATER METER	W.M. 	
WATER VALVE	W.V. 	W.V. 
WELL HEAD	WELL 	
























PAVEMENT SECTION(S)	
302005 - DELAWARE NO. 57 STONE GRAVEL	
RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS	
DRIVEWAY AND ENTRANCE PAVEMENT - SEE NOTES FOR MATERIALS AND DEPTHS	









NATURAL ROADSIDE FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET		
MARSH BOUNDARY LINE		
TREE - CONIFEROUS		
TREE - DECIDUOUS		
TREE STUMP		
SHRUBBERY		
WETLAND BOUNDARY - DELINEATED	WL 	
WOODS LINE BOUNDARY		

RIGHT-OF-WAY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
DENIAL OF ACCESS	DA 	DA 
EASEMENT - OTHERS	EASEMENT TYPE 	
PERMANENT EASEMENT	PE 	PE 
PROPERTY LINE		
PROPERTY MARKER - CONCRETE	C.M. 	
PROPERTY MARKER - IRON PIPE	I.P. 	
RIGHT-OF-WAY BASELINE	100+00 	100+00 
RIGHT-OF-WAY LINE		R/W 
RIGHT-OF-WAY & DENIAL OF ACCESS	R/W-DA 	R/W-DA 
RIGHT-TO-ENTER		RTE 
TEMPORARY CONSTRUCTION EASEMENT		TCE 

SURVEY CONTROL & MONUMENTATION	
FEATURE DESCRIPTION	EXISTING
POINT OF CURVATURE OR TANGENCY	
POINT OF INTERSECTING TANGENTS	
SURVEY BENCHMARK LOCATION	B.M. 
SURVEY NGS POINT LOCATION	
SURVEY TIE POINT LOCATION	T.P. 
SURVEY TRAVERSE POINT	

MISCELLANEOUS FEATURES	
FEATURE DESCRIPTION	PROPOSED
BARRIER, DOUBLE-FACED, PERMANENT	
BARRIER, SINGLE-FACED, PERMANENT, TEST LEVEL 4 / TEST LEVEL 5	
BRICK PATTERNED SURFACE	
BUTT JOINT	
CLEAR ZONE	CZ 
CONSTRUCTION BASELINE	100+00 
LATERAL OFFSET	LO 
LIMIT OF CONSTRUCTION	LOC 
PAVEMENT PATCH	
PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH	
P.C.C. SIDEWALK - 4"	
P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)	

IDENTIFIERS	
FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	
ABANDON BY OTHERS	
ADJUST BY CONTRACTOR	
ADJUST BY OTHERS	
BEST MANAGEMENT PRACTICE	
BUS STOP PAD / TYPE	
BUS STOP WITH SHELTER PAD / TYPE	
CONCRETE SAFETY BARRIER	
CONVERT TO JUNCTION BOX	
CONVERT TO DRAINAGE MANHOLE	
DO NOT DISTURB	
ENERGY DISSIPATOR	
FILL WITH FLOWABLE FILL	
LANDSCAPE PLANTINGS	
PEDESTRIAN CONNECTION / TYPE	
PEDESTRIAN CONNECTION / TYPE WITHOUT DETECTABLE WARNING SYSTEM	
RELOCATE BY CONTRACTOR	
RELOCATE BY OTHERS	
RELOCATE BY PROPERTY OWNER	
REMOVE BY CONTRACTOR	
REMOVE BY OTHERS	
REMOVE BY TRAFFIC CONTRACTOR	
RIGHT-OF-WAY MONUMENT	

ITMS	
FEATURE DESCRIPTION	PROPOSED
ITMS CONDUIT	ITMS-CON 
CONDUIT JUNCTION WELL	
RWIS PUCK SENSOR	
MICROWAVE DETECTOR	
CCTV CAMERA	
POLE/POLE BASE	
ITMS CABINET	
RWIS	

ADDENDA / REVISIONS	

NOT TO SCALE

REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY: G. CORREALE	
COUNTY	CHECKED BY: G. PERDICK	
SUSSEX		

LEGEND

SECTION
AEC
SHEET NO.
3



GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED JUNE 2022 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2022, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
2. ELECTRONIC DESIGN DATA FILES THAT WILL BE MADE AVAILABLE TO THE BIDDERS INCLUDE:

( )	NONE
( X )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
( )	DESIGN FILE, IN .DGN FILE FORMAT, THAT CONTAINS 3D TRIANGLES REPRESENTING THE EXISTING SURFACE.
( )	DESIGN FILE, IN .DGN FILE FORMAT, THAT CONTAINS 3D FEATURE LINES FOR THE PROPOSED DESIGN. 3D FEATURE LINES ARE FOR THE PROPOSED TOP SURFACE ELEVATION ONLY.

NOTE: THE DOCUMENT ENTITLED "ELECTRONIC FILE SHARING RELEASE" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

NOTE: THERE MAY BE SOME AREAS OF THE PROJECT NOT INCLUDED IN THE ELECTRONIC DESIGN DATA FILE(S). IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE DESIGN DATA FILE AND DETERMINE THE LIMITS OF THE PROJECT INCLUDED.

3. PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

( X )	CROSS SECTIONS
( X )	RIGHT-OF-WAY PLANS

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR WILL CONTACT THE DELAWARE TMC AT 302-659-4600 PRIOR TO ANY UNMANNED AIRCRAFT VEHICLE (UAV) FLIGHTS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE THE FOLLOWING INFORMATION: THE REGISTRATION NUMBER OF THE UAV, THE FLIGHT TIME, LOCATION OF THE FLIGHT, THE PILOT'S NAME AND THE PILOT'S CONTACT NUMBER DURING THE FLIGHT.
3. NIGHT WORK IS NOT PERMITTED ON THIS PROJECT UNLESS THE CONTRACTOR OBTAINS: APPROVAL FROM THE ENGINEER, ACCEPTABLE RESPONSES ON NIGHT WORK SURVEYS, AND ACCEPTANCE FROM THE MUNICIPALITY. METHOD AND FORMAT OF NIGHT WORK SURVEYS WILL BE PROVIDED BY THE ENGINEER UPON REQUEST. NIGHT WORK, SURVEYS, AND COORDINATION WITH MUNICIPALITIES IS NOT COMPENSABLE AND THE TIME TO COMPLETE THE SURVEYS IS NOT EXCUSABLE.

SECTION 200

4. THE CONTRACTOR SHALL REMOVE AND RESET ALL MAILBOXES TO MAINTAIN MAIL SERVICE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RELOCATE MAILBOXES AS REQUIRED BY THE PROPOSED GEOMETRICS AND AS DIRECTED BY THE ENGINEER. WHEN RELOCATING MAILBOXES IN CURBED SECTIONS, THE FACE OF THE MAILBOX SHALL BE FLUSH WITH THE BACK EDGE OF CURB. WHEN RELOCATING MAILBOXES IN OPEN SECTIONS, THE FACE OF THE MAILBOX SHALL SET BACK 8 INCHES FROM THE EDGE OF THE PAVED SHOULDER. THE BOTTOM OF THE MAILBOX SHALL BE POSITIONED IN ACCORDANCE WITH LATEST VERSION OF THE UNITED STATES POSTAL SERVICE GUIDELINES. MAILBOXES LOCATED AT DRIVEWAY ENTRANCES SHALL BE PLACED ON THE FAR SIDE OF THE DRIVEWAY IN THE DIRECTION OF TRAVEL. POSTS BEING RESET IN CONCRETE SIDEWALK SHALL BE PLACED IN AN APPROPRIATE SIZE PVC SLEEVE. ACCEPTABLE POST SHALL BE 4 INCH X 4 INCH WOOD POST OR 4 INCH DIAMETER WOOD POST. FOR RELOCATING MULTIPLE MAILBOXES TOGETHER ALL POST SHALL BE SEPARATED BY A DISTANCE OF NO LESS THAN 3/4 OF THEIR FULL HEIGHT ABOVE THE GROUND. MULTIPLE MAILBOXES ATTACHED TO A SINGLE HORIZONTAL BOARD SHALL NOT BE LOCATED INSIDE THE CLEAR ZONE. EACH MAIL BOX SHALL BE PLACED ON AN INDIVIDUAL POST MEETING THE CRITERIA ABOVE. ALL MAILBOXES SHALL BE SET NOT TO IMPEDE THE MINIMUM PAR (PEDESTRIAN ACCESS ROUTE) WIDTH AS DETERMINED BY THE CURRENT EDITION OF THE PEDESTRIAN ACCESSIBILITY STANDARDS FOR FACILITIES IN THE PUBLIC RIGHT OF WAY. IF MAILBOXES ARE NOT SET IN ACCORDANCE WITH THE ABOVE DIRECTIONS, RESETTING OF THE MAILBOXES WILL BE AT THE COST OF THE CONTRACTOR. COST FOR ALL WORK AND MATERIALS SHALL BE PAID UNDER ITEM 201000 - CLEARING AND GRUBBING.
5. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

a. POLES AND BASES.  
b. GUARDRAIL.  
c. SHED.  
d. DRAINAGE PIPES OUTSIDE LIMITS OF EXCAVATION NOT COVERED BY 20200.  
e. TIDE GATE.  
f. HDPE.  
g. FENCES.  
h. SIGNALS.
6. SEE BRIDGE PLANS FOR ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

7. UNLESS OTHERWISE NOTED AS DO NOT DISTURB OR ADJUST BY CONTRACTOR/OTHERS, ALL EXISTING FEATURES INCLUDING TREES, WITHIN THE PROPOSED LOC SHALL BE REMOVED BY THE CONTRACTOR AND PAID FOR UNDER THE RESPECTIVE BID ITEM. REMOVAL OF EXISTING STORM DRAIN PIPE SHALL BE PAID UNDER ITEM 202000 UNLESS NOTED WITH A FLOWABLE FILL IDENTIFIER, REMOVAL OF TREES AND SHRUBS SHALL BE PAID FOR UNDER ITEM 201000, AND REMOVAL OF ADDITIONAL EXISTING FEATURES SHALL BE PAID FOR UNDER ITEM 211000 AS NOTED IN SECTION 200 OF THE PROJECT NOTES.

SECTION 400

8. THE PAVEMENT SECTION FOR FLEXIBLE PAVEMENT RESIDENTIAL DRIVEWAYS SHALL BE 2" BITUMINOUS CONCRETE, TYPE 'C' OVER 8" GRADED AGGREGATE BASE COURSE, TYPE 'B', UNLESS OTHERWISE NOTED ON THE PLANS OR AS DETERMINED BY ENGINEER IN THE FIELD AS NEEDED TO MATCH EXISTING.

SECTION 600

9. STATION AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED TO THE CENTER OF THE GRATE FOR INLETS AND TO THE CENTER OF THE STRUCTURE FOR JUNCTION BOXES AND MANHOLES.

SECTION 700

10. ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT.

SECTION 900

11. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

12. THE CONTRACTOR SHALL NOTIFY DART FIRST STATE AT DOT\_DETOURS@DELAWARE.GOV AT LEAST 14 DAY'S PRIOR TO THE START OF ANY DETOURS OR CONSTRUCTION, AND DOT\_DTC\_PROJECTDEVELOPMENT@DELAWARE.GOV AT SUCH TIME THE FACILITY IS COMPLETED AND OPERABLE FOR TRANSIT OPERATIONS. FOR EMERGENCY DETOUR INFORMATION ONLY, PLEASE CONTACT DTC'S CHIEF SCHEDULER AT 302-576-6019.
13. ALL DART SIGNS HAVE BEEN UPDATED TO A NEW DESIGN. THE DELDOT SIGN SHOP DOES NOT FABRICATE THE UPDATED SIGN OR ANY SUPPLEMENTAL PLAQUES TO ALLOW FOR ADDITIONAL ROUTE NUMBERS. ALL REQUESTS FOR FABRICATION OF THESE SIGNS MUST BE MADE THROUGH DART TRANSIT AT 302-576-6132.
14. ANY STAGING AND/OR STOCKPILE AREA(S) OUTSIDE THE PROJECT'S LIMIT OF CONSTRUCTION (LOC) THAT INDIVIDUALLY OR CUMULATIVELY ARE LARGER THAN 10,000 SQUARE FEET, MUST BE APPROVED BY DELDOT'S ARCHAEOLOGIST. CONTACT THE CONSTRUCTION AREA ENGINEER WHO WILL COORDINATE WITH DELDOT'S ARCHAEOLOGIST.

WITHIN 30 DAYS, DELDOT WILL;

1) APPROVE THE USE OF PROPOSED STAGING AND STOCKPILE AREA(S);  
2) REJECT THE REQUEST; OR  
3) PERFORM AN ARCHAEOLOGICAL SURVEY TO DETERMINE WHETHER TO APPROVE OR REJECT THE REQUEST, WHICH MAY TAKE UP TO 3 MONTHS. IF AN ARCHAEOLOGICAL SURVEY IS NECESSARY, DELDOT OR A CONSULTANT ON ITS BEHALF WILL UNDERTAKE THE SURVEY.
15. CREOSOTE TIMBERS/FENDER SYSTEM WILL NEED TO BE DISPOSED OF BY DELDOT'S ENVIRONMENTAL CONSULTANT. PLEASE REFER TO PROVISIONS OF SPECIFICATION 202560 FOR CONTRACTOR RESPONSIBILITY. TIMBERS CANNOT EXCEED 14 FEET IN LENGTH. ANY TIMBERS EXCEEDING 14 FEET IN LENGTH WILL NEED TO BE CUT IN HALF.
16. DUE TO THE PROXIMITY TO HISTORICAL FORT SAULSBURY, THE CONTRACTOR SHOULD BE TRAINED IN THE PROPER MEANS OF RECOGNIZING POTENTIAL UNEXPLODED ORDINANCES, STOPPING OF WORK IF ENCOUNTERED AND REPORTING TO THE PROPER AUTHORITIES. IN THE EVENT THAT UNEXPLODED ORDINANCES ARE ENCOUNTERED, THE STATE WILL COORDINATE FOR REMEDIATION OF THE IDENTIFIED ITEMS.

EARTHWORK SUMMARY	
EXCAVATION	
EXCAVATION FROM CROSS SECTIONS	1065 C.Y.
ROCK EXCAVATION FOR ROADWAY AND TRENCHES	0 C.Y.
TOPSOIL STRIPPING	0 C.Y.
TOTAL EXCAVATION	1065 C.Y.
EXCAVATION AVAILABLE FOR EMBANKMENT	
EXCAVATION MEETING BORROW TYPE 'A'	0 C.Y.
EXCAVATION MEETING BORROW TYPE 'F'	0 C.Y.
EXCAVATION MEETING TOPSOIL	0 C.Y.
EMBANKMENT REQUIREMENTS	
BORROW TYPE 'A' REQUIRED (INCLUDING UNDERCUT)	0 C.Y.
BORROW TYPE 'F' REQUIRED	+175 C.Y.
TOPSOIL REQUIRED	+345 C.Y.
MATERIAL BALANCE ("+"= EXCESS, "-"= NEED)	
BORROW TYPE 'A'	0 C.Y.
BORROW TYPE 'F'	-175 C.Y.
TOPSOIL	-345 C.Y.
UNSUITABLE MATERIAL	+1065 C.Y.
NOTES: <div>1) THE VALUES LISTED IN THE EARTHWORK SUMMARY ARE APPROXIMATE AND ARE NOT TO BE USED AS A BASIS OF PAYMENT. THE EARTHWORK SUMMARY IS CONSIDERED FOR INFORMATIONAL PURPOSES ONLY.</div> <div>2) OTHER SOURCES OF EXCAVATION MAY INCLUDE PIPE TRENCH EXCAVATION, STRUCTURE EXCAVATION, UNDERCUT EXCAVATION, STORMWATER MANAGEMENT POND EXCAVATION, ENVIRONMENTAL SITE EXCAVATION, MAINTENANCE OF TRAFFIC EXCAVATION, ETC.</div> <div>3) UNSUITABLE MATERIALS INCLUDE UNDERCUT SOILS, BITUMINOUS PAVEMENT, ETC.</div>	

ADDENDA / REVISIONS		NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	NOTES
				T202007301	DESIGNED BY: G. CORREALE		
				COUNTY	CHECKED BY: G. PERDICK		
				SUSSEX			

GENERAL NOTES

1.

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED JUNE 2022, AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2022, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.
2.

ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE BIDDERS INCLUDE:

( )	NONE
( X )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
( )	DESIGN FILE, IN .DGN FILE FORMAT, THAT CONTAINS 3D TRIANGLES REPRESENTING THE EXISTING SURFACE.
( )	DESIGN FILE, IN .DGN FILE FORMAT, THAT CONTAINS 3D FEATURE LINES FOR THE PROPOSED DESIGN. 3D FEATURE LINES ARE FOR THE PROPOSED TOP SURFACE ELEVATION ONLY.
- NOTE: THE DOCUMENT ENTITLED "ELECTRONIC FILE SHARING RELEASE" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.
- NOTE: THERE MAY BE SOME AREAS OF THE PROJECT NOT INCLUDED IN THE ELECTRONIC DESIGN DATA FILE(S). IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE DESIGN DATA FILE AND DETERMINE THE LIMITS OF THE PROJECT INCLUDED.
3.

PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

( X )	CROSS SECTIONS
( X )	RIGHT-OF-WAY PLANS

PROJECT NOTES

SECTION 200

1.

REMOVAL OF STRUCTURES AND OBSTRUCTIONS:  
REMOVE AND PROPERLY DISPOSE OFF SITE THE FOLLOWING ITEMS UNDER ITEM #211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS ASSOCIATED WITH BRIDGE NUMBER 3164 036:  
A. CONTROL HOUSE  
B. SWING SPAN SUPERSTRUCTURE INCLUDING BRIDGE RAILING  
C. SWING SPAN OPERATING MACHINERY  
D. SWING SPAN ELECTRICAL SYSTEM  
E. APPROACH SPAN SUPERSTRUCTURE INCLUDING BRIDGE RAILING  
F. PIVOT PIER INCLUDING SUPPORTING PILES  
G. REST PIER INCLUDING SUPPORTING PILES  
H. FENDER SYSTEM INCLUDING SUPPORTING PILES  
I. WEST AND EAST ABUTMENTS INCLUDING SUPPORTING PILES AND EXISTING ANCHOR RODS  
J. PORTIONS OF WEST AND EAST BULKHEADS  
K. FOR MORE INFORMATION SEE DWG. S-07
2.

HAZARDOUS MATERIAL (timber):  
BE ADVISED THAT THE EXISTING STRUCTURE OVER THE CEDAR CREEK CANAL MAY CONTAIN CREOSOTED TIMBER. HANDLE ALL HAZARDOUS MATERIALS (i.e. creosote timber) IN ACCORDANCE WITH SPECIAL PROVISION 202560. PAYMENT INCIDENTAL TO ITEM #211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
3.

HAZARDOUS MATERIAL (steel only):  
BE ADVISED THAT THE EXISTING STRUCTURE OVER THE CEDAR CREEK CANAL DOES CONTAIN LEAD BASED PAINT. AS A RESULT, DETAIL METHODS OF CUTTING THE BEAMS AND/OR DIAPHRAGMS, IF REQUIRED, IN THE CONTRACTOR'S PROPOSED DEMOLITION PLAN AND HOW THOSE PERSONS PERFORMING SUCH WORK WILL BE PROTECTED IN ACCORDANCE WITH APPLICABLE OSHA REGULATIONS. ADDITIONALLY, DETAIL WHEN AND HOW THE LEAD BASED PAINT WILL BE REMOVED FROM THE STRUCTURAL STEEL AND ALL RELATED BRIDGE COMPONENTS. IF THE WORK IS PERFORMED ON SITE, THEN INCLUDE PROPER PROTECTION, CONTAINMENT, AND FINAL LEAD PAINT DISPOSAL IN THE PROPOSED PLAN. IF THE BEAMS WILL BE TRANSPORTED WITH THE PAINT STILL INTACT, THEN DETAIL HOW THE STRUCTURAL COMPONENTS WILL BE PROTECTED DURING TRANSPORT, WHERE AND HOW THE PAINT WILL BE REMOVED, AND THE LOCATION OF FINAL PAINT DISPOSAL, AGAIN IN ACCORDANCE WITH OSHA REGULATIONS. PROVIDE WRITTEN DOCUMENTATION TO THE ENGINEER, PRIOR TO FINAL CONTRACT ACCEPTANCE, NOTING WHEN AND WHERE THE LEAD BASED PAINT WAS REMOVED, AND THE LOCATION OF FINAL PAINT DISPOSAL. ALL COSTS INVOLVED WITH THE ABOVE LISTED WORK IS INCIDENTAL TO ITEM #211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
4.

SIGNING:  
TO AVOID DAMAGE, SIGNS WITHIN PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED, BUT MUST BE REPLACED TO MATCH EXISTING CONDITIONS BEFORE REOPENING THE ROADWAY. INCLUDE PAYMENT FOR ALL WORK RELATED TO MOVING AND REINSTALLING THE SIGN IN ITEM #211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, REPLACE THE SIGN AT THE CONTRACTOR'S EXPENSE.
5.

TEMPORARILY REMOVE EXISTING RUBBLE RIP RAP AND/OR CONCRETE DEBRIS ON THE CHANNEL BOTTOM THAT INTERFERES WITH INSTALLATION OF NEW BRIDGE FOUNDATIONS AND/OR SHEET PILE BULKHEADS. ANY REMOVAL, STORAGE AND/OR RELOCATION OF EXISTING RIP RAP IS TO BE DONE IN COMPLIANCE WITH ALL ENVIRONMENTAL AND PERMITTING REQUIREMENTS. REMOVED RUBBLE RIP RAP MAY BE REINSTALLED TOGETHER WITH NEW RUBBLE RIP RAP. WORK TO BE PAID FOR UNDER ITEM 707013.

SECTION 600

6.

SEE DEMOLITION PLAN FOR ADDITIONAL INFORMATION.
7.

PORTLAND CEMENT CONCRETE:  
USE PORTLAND CEMENT CONCRETE FOR CAST-IN-PLACE ELEMENTS AS FOLLOWS:  
(f'c = 28-DAY COMPRESSIVE STRENGTH)  
CLASS A - ABUTMENT CAPS, BASCULE PIER CAP, REST PIER CAP, MAINTENANCE PLATFORM SLABS, FENDER PILE CAPS, PARAPET/BARRIER CONCRETE (f'c = 4.5 ksi)  
CLASS B - STEEL PIPE PILE CONCRETE FILL (f'c = 3.0 ksi)  
CLASS D - BRIDGE DECK, CURBS, COUNTERWEIGHT CONCRETE, APPROACH SLAB (f'c = 4.5 ksi)  
UHPC - PRESTRESSED SOLID SLAB SHEAR KEYWAYS AND CAVITIES (f'c = 22.0 ksi)  
  
CHAMFER ALL EXPOSED EDGES 3/4" x 3/4" UNLESS NOTED OTHERWISE.  
  
SUPPLY THE CONCRETE FOR THE BRIDGE DECK, BARRIER, APPROACH SLAB, AND CONCRETE CURBS THAT INCLUDES A SHRINKAGE-REDUCING/COMPENSATING ADMIXTURE. THE ADMIXTURE MAY BE SUPPLIED BY ONE PRODUCT THAT PROVIDES BOTH EXPANSION AND PORE WATER SURFACE TENSION OR TWO SEPARATE PRODUCTS EACH ADDED AT DOSAGE RECOMMENDED BY MANUFACTURER'S TECHNICAL DATA SHEETS AND HAVING THE FOLLOWING CHARACTERISTICS:  
  
(A) DESIGNED TO PROVIDE BOTH OF THE FOLLOWING CHARACTERISTICS:  
(i.) EXPANDS AT A RATE THAT CLOSELY COMPENSATES FOR THE SHRINKAGE OF THE CONCRETE MIX.  
(ii.) REDUCES THE CAPILLARY SURFACE TENSION OF THE CONCRETE PORE WATER.  
(B) PROVIDES AT LEAST 80% SHRINKAGE REDUCTION AS MEASURED AND DOCUMENTED BY FIELD PERFORMANCE.  
(C) FORMULATED FOR USE IN FREEZING AND THAWING WEATHER.

USE ADMIXTURES THAT ARE COMPATIBLE WITH ALL OTHER CONCRETE-MIX DESIGN CONSTITUENTS. CALCIUM CHLORIDE IS NOT PERMITTED; NO CHEMICAL ADMIXTURES WHICH CONTAIN MORE THAN 0.1% CHLORIDE BY WEIGHT, WILL BE PERMITTED FOR USE. DOSAGE RATE AND MIXING SEQUENCE WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

USE PORTLAND CEMENT CONCRETE FOR PRECAST ELEMENTS AS FOLLOWS:  
(f'c = 28-DAY COMPRESSIVE STRENGTH)  
(f'ci = COMPRESSIVE STRENGTH AT INITIAL PRESTRESS)  
FOR ALL PRESTRESSED CONCRETE SOLID SLAB BEAMS AND CONCRETE PIER CAPS:  
f'c = 8.0 ksi; f'ci = 6.4 ksi  
THE PRESTRESSED CONCRETE SOLID SLAB BEAMS WERE DESIGNED FOR SEVERE CORROSIVE CONDITIONS AS PER A5.9.2.3.2b.

- CONCRETE SEALER:  
REFER TO TYPICAL DECK SECTIONS ON SHEETS S-41 AND S-42 FOR LIMITS OF CONCRETE SEALER. PAYMENT FOR SEALER SHALL BE UNDER ITEM 613003.
8.

CONCRETE DECK SLAB:  
THE 5" DECK SLAB THICKNESS INCLUDES 1/2" INTEGRAL WEARING SURFACE.
9.

BAR REINFORCEMENT:  
-PROVIDE REINFORCING STEEL CONFORMING TO AASHTO M31 (ASTM A615), GRADE 60.  
-PROVIDE A 3" CLEAR COVER FOR ALL REINFORCING STEEL PLACED IN CONCRETE CAST AGAINST EARTH OR A 2" CLEAR COVER ELSEWHERE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
-WHERE A SUFFIX IS INCLUDED IN BAR MARKS, PROTECT ALL REINFORCING STEEL WITH THE MATERIAL DENOTED.  
SUFFIX 'E' DENOTES EPOXY COATED BAR REINFORCEMENT  
SUFFIX 'G' DENOTES GALVANIZED BAR REINFORCEMENT  
SUFFIX 'S' DENOTES STAINLESS STEEL BAR REINFORCEMENT  
-WITH APPROVAL OF THE BRIDGE DESIGN ENGINEER, GALVANIZED REINFORCING STEEL MAY BE SUBSTITUTED FOR EPOXY-COATED REINFORCING STEEL AT NO ADDITIONAL COST TO THE DEPARTMENT.
10.

STRUCTURAL STEEL:  
PROVIDE STRUCTURAL STEEL CONFORMING TO AASHTO M270, GRADE 50 (ASTM A709, GRADE 50) DESIGNATION, EXCEPT WHEN NOTED OTHERWISE. THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270 ARE MANDATORY FOR PRIMARY LOAD CARRYING MEMBERS. USE TESTING PARAMETERS FOR TEMPERATURE ZONE 2. PRIMARY LOAD CARRYING MEMBERS THAT SHALL BE SUBJECTED TO THE REQUIREMENTS FOR CHARPY V-NOTCH TESTING INCLUDE: ORTHOTROPIC STEEL DECK, FLOORBEAMS, KNEE BRACES, BASCULE GIRDERS, BALANCE FRAME GIRDERS, TRUNNION STRUT, CRANK ARM, TRUNNION TOWERS, CONNECTION PLATES, AND SPLICE PLATES.

STRUCTURAL MEMBERS LABELED WITH 'FCM' DENOTES FRACTURE CRITICAL MEMBERS. ALL CONNECTION MATERIAL FOR THESE MEMBERS, INCLUDING SPLICE PLATES, CONNECTION PLATES AND ANGLES, AND STIFFENERS USED AS CONNECTION PLATES SHALL ALSO BE CONSIDERED FRACTURE CRITICAL MEMBERS. ALL MEMBERS DESIGNATED AS FCM SHALL MEET THE REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270. USE TESTING PARAMETERS FOR TEMPERATURE ZONE 2.

ALL FASTENERS ARE 7/8" DIAMETER ASTM F3125 HIGH STRENGTH BOLTS, TYPE 1 GRADE A325 UNLESS OTHERWISE NOTED. HEAVY HEX NUTS SHALL BE ASTM F563 GRADE DH AND HARDENED WASHERS SHALL BE ASTM F436. ALL HIGH STRENGTH BOLTS, AND ACCOMPANYING HARDWARE, SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695 CLASS 50, TYPE 1, AND PAINTED AFTER INSTALLATION.

HSS SHAPES (LINK ARMS, FORWARD STRUT, AND INTERMEDIATE STRUT) SHALL BE ASTM A1085 GRADE 50 (OR APPROVED EQUIVALENT). THE TRUNNION STRUT SHALL BE API 5L GRADE X46 PSL2 (OR APPROVED EQUIVALENT).

REAM SUBDRILLED or SUBPUNCHED HOLES FOR END CONNECTIONS AND FIELD SPLICES IN THE FABRICATION SHOP.

THE FAYING SURFACE CLASSIFICATION IS CLASS B.

WELDING:  
-MAKE TACK WELDS WITH THE SAME TYPE OF ELECTRODE AND INCORPORATE IN THE FINAL WELD. NO OTHER TACK WELDING WILL BE PERMITTED.  
-OVERHEAD WELDING IS NOT PERMITTED IN THE FIELD UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
-DO NOT MAKE WELDS BY MANUAL SHIELDED METAL ARC PROCESS FOR PRIMARY GIRDER WELDS SUCH AS FLANGE TO WEB WELDS OR FOR SHOP SPLICES OF WEB AND FLANGES.

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FLANGES.										S-01	
ADDENDA / REVISIONS					NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	BRIDGE PROJECT NOTES - 1	SECTION
							T202007301	DESIGNED BY: D. NEELY			H&H
							COUNTY	CHECKED BY: G. PATTON			SHEET NO.
							SUSSEX				10



SECTION 600 (CONTINUED)

10. STRUCTURAL STEEL (CONTINUED):  
SHOP ASSEMBLE AND ALIGN EACH ENTIRE STEEL BASCULE LEAF, BALANCE FRAME, AND A-FRAME SUBASSEMBLIES USING ERECTION PROCEDURES AND SUPPORT CONDITIONS THAT WILL ACHIEVE PROPER FIT-UP AND ALIGNMENT OF PRIOR TO DRILLING FROM SOLID OR REAMING SUBPUNCHED OR SUBDRILLED BOLT HOLES FOR SPLICES AND CONNECTION PLATES. SHOP ASSEMBLY OF THE ENTIRE BASCULE SPAN IS NOT REQUIRED (I.E., IT IS NOT REQUIRED TO SHOP ASSEMBLE THE BALANCE FRAME ON TOP OF THE A-FRAME TOWERS, SHOP CONNECT THE BASCULE LEAF TO THE A-FRAME TOWERS, OR CONNECT THE BASCULE LEAF TO THE BALANCE FRAME WITH THE LINK ARMS.)

SET ANCHOR BOLTS TO TEMPLATE OR IN PRE-FORMED HOLES. DO NOT DRILL UNLESS SPECIFICALLY INDICATED ON PLANS. FILL THE PRE-FORMED HOLES WITH NON-SHRINK GROUT. IN MASONRY PLATES, FILL THE CLEARANCE BETWEEN ANCHOR BOLTS AND HOLES WITH APPROVED NON-HARDENING CAULKING COMPOUND UNLESS OTHERWISE NOTED.

ALL ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 105 UNLESS OTHERWISE NOTED. HEAVY HEX NUTS SHALL BE ASTM A563 GRADE DH AND HARDENED WASHERS SHALL BE ASTM F436. UNLESS OTHERWISE NOTES, HIGH STRENGTH ANCHOR BOLTS, AND ACCOMPANYING HARDWARE, SHALL BE MECHANICALLY GALVANIZED IN ACCORDANCE WITH ASTM B695 CLASS 50, TYPE 1, AND PAINTED AFTER INSTALLATION.

STAINLESS STEEL ANCHOR BOLTS SHALL BE ASTM F593H TYPE 316. NUTS SHALL BE ASTM F594H TYPE 316 AND WASHERS SHALL BE TYPE 316. STAINLESS STEEL ANCHOR BOLTS, AND ASSOCIATED HARDWARE, SHALL BE PAINTED AFTER INSTALLATION.

- THE FOLLOWING PROTECTIVE COATING SYSTEMS SHALL BE UTILIZED FOR EACH OF THE VARIOUS STRUCTURAL STEEL MEMBERS:
- ORTHOTROPIC STEEL DECK = METALLIZED, SEAL COAT, AND TOP COAT
  - BASCULE GIRDERS = METALLIZED, SEAL COAT, AND TOP COAT
  - BALANCE ARMS & TRUNNION STRUT = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
  - COUNTERWEIGHT BOX = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
  - CRANK ARMS = METALLIZED, SEAL COAT, AND TOP COAT
  - A-FRAME TOWERS = METALLIZED, SEAL COAT, AND TOP COAT (TOP COAT EXTERIOR ONLY)
  - LINK ARMS = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
  - INTERMEDIATE STRUT = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
  - FORWARD STRUT = HOT-DIP GALVANIZED, INTERMEDIATE COAT, AND TOP COAT (INTERMEDIATE AND TOP COAT EXTERIOR ONLY)
  - BRIDGE RAILING = HOT-DIP GALVANIZED
  - STEEL CURB = HOT-DIP GALVANIZED

THE COLOR OF THE FINISHED PAINT COAT SHALL CONFORM TO FEDERAL STANDARD NO. 595 COLOR NO. 25183 (BLUE) UNLESS NOTED OTHERWISE. THE COLOR OF THE FINISHED PAINT COAT SHALL CONFORM TO FEDERAL STANDARD NO. 595B COLOR NO. 17925 (WHITE) FOR THE LINK ARMS, TRUNNION STRUT, CRANK ARMS, AND HYDRAULIC CYLINDERS. THE BRIDGE RAILING AND STEEL CURB SHALL NOT RECIEVE THE FINISHED PAINT COAT.

SECTION 800

11. MAINTENANCE OF TRAFFIC:  
MAINTAIN TRAFFIC AS PER DETOUR PLAN. ALL MOT ITEMS WILL BE INCLUDED IN THE FOLLOWING PAY ITEMS: ITEM #803001 PORTABLE CHANGEABLE MESSAGE SIGNS, ITEM #810001 TEMPORARY WARNING SIGNS AND PLAQUES, AND ITEM #813001 TEMPORARY BARRICADES, TYPE III.

MISCELLANEOUS

12. DESIGN SPECIFICATIONS:  
(A) DELDOT BRIDGE DESIGN MANUAL, 2021 EDITION  
(B) AASHTO LRFD BRIDGE SPECIFICATIONS, 2020, 9TH EDITION, CUSTOMARY U.S. UNITS.  
(C) AASHTO LRFD MOVABLE HIGHWAY BRIDGE DESIGN SPECIFICATIONS, 2007, 2ND EDITION, CUSTOMARY U.S. UNITS INCLUDING 2008, 2010, 2011, 2012, 2014, AND 2015 INTERIM REVISIONS.
13. LOADING:  
-DEAD LOADS CONSERVATIVELY INCLUDE 25 PSF FOR FUTURE WEARING SURFACE ON DECK SLAB. THIS ADDITIONAL DEAD LOAD WAS NOT USED IN DETERMINING THE SPAN BALANCE.  
-DESIGN LIVE LOADS INCLUDE HL-93 LOADING.  
-FATIGUE DESIGN IS BASED ON THE FOLLOWING ONE DIRECTIONAL TRAFFIC VOLUMES: ADTT = 237 (2020).  
-LIVE LOAD DISTRIBUTION FACTOR FOR BASCULE GIRDER IS 1.26.  
-THERMAL LOADS AND MOVEMENTS ARE BASED ON THE MODERATE TEMPERATURE RANGE AS STIPULATED IN THE AASHTO LRFD DESIGN SPECIFICATIONS AS 0 TO 120 DEGREES FAHRENHEIT. THE NORMAL TEMPERATURE WILL BE CONSIDERED TO BE 68° F.  
-LIVE LOAD DEFLECTION LIMIT IS L/800.  
-FOR SEISMIC LOADS, CONSIDER SEISMIC PERFORMANCE ZONE 1, WITH A SITE CLASS = D AND OPERATIONAL CATEGORY = CRITICAL.  
-TRAFFIC BARRIERS HAVE BEEN DESIGNED FOR MASH TEST LEVEL 4 (TL-4) UNLESS NOTED OTHERWISE. THE THREE STRAND TUBE RAIL BARRIER END POST AND MOMENT SLAB HAVE BEEN DESIGNED FOR MASH TEST LEVEL 3 (TL-3).
14. EXISTING CONDITIONS:  
-ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ARE BASED ON THE BEST AVAILABLE INFORMATION AND ARE APPROXIMATE ONLY. FIELD VERIFY ALL EXISTING DIMENSIONS, GEOMETRY, AND ELEVATIONS AS NECESSARY PRIOR TO ORDERING ANY MATERIALS AND COMMENCING CONSTRUCTION TO ENSURE PROPER FIT OF THE PROPOSED CONSTRUCTION. PAYMENT UNDER ITEM #763501 - CONSTRUCTION ENGINEERING.  
-DO NOT CONSIDER ANY OF THE DATA ON THE EXISTING STRUCTURE SUPPLIED IN THE ORIGINAL DESIGN DRAWINGS OR MADE AVAILABLE BY THE DEPARTMENT OR ITS AUTHORIZED AGENTS AS ACCURATE REPRESENTATIONS OF ANY OF THE CONDITIONS THAT WILL BE ENCOUNTERED IN THE FIELD.

MISCELLANEOUS (CONTINUED)

15. HYDRAULIC DATA:  
DESIGN FREQ.: 100 YEARS  
100-YEAR DISCHARGE: 6100 cfs  
PROPOSED (DESIGN STORM) WSE: 11.4 ft  
PROPOSED (DESIGN STORM) VELOCITY: 5.7 fps  
PROPOSED 100-YEAR WSE: 11.4 ft  
PROPOSED 100-YEAR VELOCITY: 5.7 fps  
PROPOSED WATERWAY OPENING: 2050 sq. ft
- MEAN HIGH WATER ELEVATION: 2.06 ft  
MEAN LOW WATER ELEVATION: -2.57 ft  
VERTICAL UNDER CLEARANCE: 4.04 ft (FROM MHW TO BASCULE LEAF)

16. SCOUR ANALYSIS:  
SCOUR DESIGN FREQUENCY: \*  
SCOUR DESIGN FLOOD DISCHARGE: 6100 cfs  
SCOUR DESIGN FLOOD VELOCITY: 5.7 fps (AT BRIDGE OUTLET)  
WATER SURFACE ELEVATION: 4.5 ft (IMMEDIATELY UPSTREAM OF BRIDGE)  
CALCULATED SCOUR DEPTH AT EACH SUBSTRUCTURE UNIT: \*  
\*FOR ADDITIONAL INFORMATION REFER TO THE COASTAL HYDRAULIC AND SCOUR STUDY PERFORMED BY AECOM.

SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE SCOUR DESIGN FLOOD IN ACCORDANCE WITH HEC 23 - BRIDGE SCOUR AND STREAM INSTABILITY COUNTERMEASURES and/or HEC 14 - HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS.

17. ROADWAY CLEARANCES:  
MAINTAIN A MINIMUM OF 16'-6" ABOVE ALL ROADWAYS.

LOAD RATING SUMMARY					
VEHICLE TYPE	RATING FACTOR	RATING WEIGHT (TONS)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.40	50.49	EXTERIOR (SPAN 1)	106	SERVICE III
HL-93 TANDEM (INVENTORY)	1.16	28.96	EXTERIOR (SPAN 1)	105	SERVICE III
HS20 (INVENTORY)	1.66	59.73	EXTERIOR (SPAN 1)	106	SERVICE III
HL-93 TRUCK (OPERATING)	2.22	79.89	EXTERIOR (SPAN 1)	103	STRENGTH I
HL-93 TANDEM (OPERATING)	1.98	49.53	EXTERIOR (SPAN 1)	105	STRENGTH I
HS20 (OPERATING)	2.57	92.47	EXTERIOR (SPAN 1)	103	STRENGTH I
DE S220	2.42	48.34	EXTERIOR (SPAN 1)	106	SERVICE III
DE S335	1.25	43.60	EXTERIOR (SPAN 1)	105	SERVICE III
DE S437	1.19	43.58	EXTERIOR (SPAN 1)	105	SERVICE III
DE T330	2.24	67.21	EXTERIOR (SPAN 1)	105	SERVICE III
DE T435	1.68	58.85	EXTERIOR (SPAN 1)	105	SERVICE III
DE T540	1.60	63.96	EXTERIOR (SPAN 1)	105	SERVICE III
EV2	1.73	49.75	EXTERIOR (SPAN 1)	106	SERVICE III
EV3	1.08	46.65	EXTERIOR (SPAN 1)	105	SERVICE III
SU4	1.64	44.37	EXTERIOR (SPAN 1)	105	SERVICE III
SU5	1.51	46.71	EXTERIOR (SPAN 1)	105	SERVICE III
SU6	1.38	47.85	EXTERIOR (SPAN 1)	105	SERVICE III
SU7	1.33	51.57	EXTERIOR (SPAN 1)	105	SERVICE III
NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE, SEE NOTE 13 THIS DRAWING.					

ANCHOR BOLT PROPERTIES				
LOCATION	DIA.	GRADE	FINISH	REQUIRED TENSION (KIPS)
BARRIER GATE RECEIVER PLATE	¾"	ASTM F1554 GR. 105	GALVANIZED	10
3 STRAND TUBE RAIL	7⁄8"	ASTM F1554 GR. 105	GALVANIZED	15
CENTERING DEVICE	1"	ASTM F1554 GR. 105	GALVANIZED	20
BASCULE GIRDER BEARING	1¼"	ASTM F1554 GR. 105	GALVANIZED	35
FORWARD TOWER BASEPLATE	1½"	ASTM F1554 GR. 105	GALVANIZED	50
REAR TOWER BASEPLATE	1½"	ASTM F1554 GR. 105	GALVANIZED	50
AERIAL CABLE POLE	2¼"	ASTM F1554 GR. 105	GALVANIZED	105
PRECAST SLAB SPAN FIXED BEARING	1"	ASTM F593H TYPE 316	STAINLESS STEEL	10
PRECAST SLAB SPAN EXPANSION BEARING	1"	ASTM F593H TYPE 316	STAINLESS STEEL	10

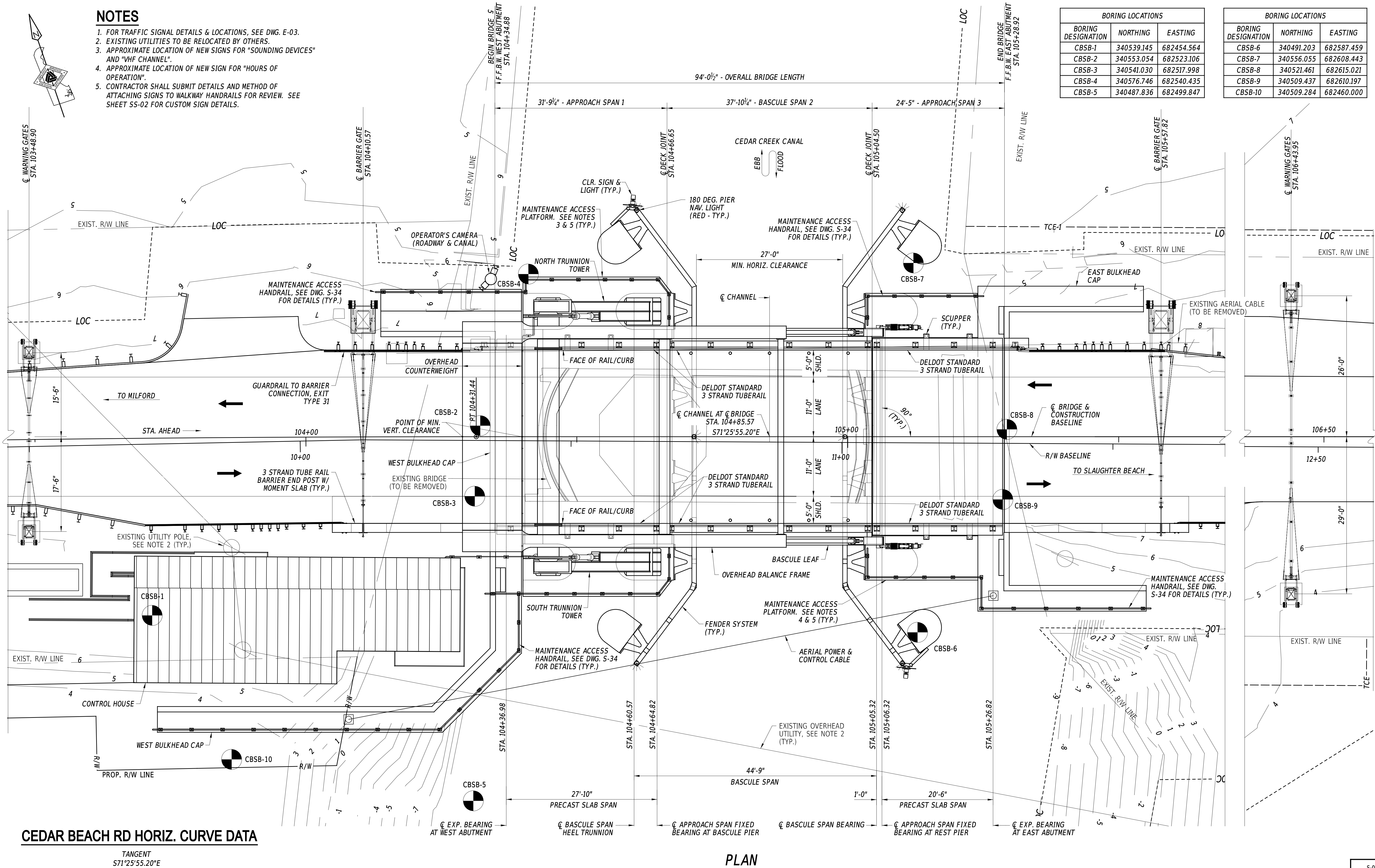
BRIDGE 3-164 QUANTITIES

ITEM NO.	ITEM TITLE	UNIT	QUANTITY
207000	PIPE, CULVERT, AND STRUCTURAL EXCAVATION	CY	1476
207021	STRUCTURAL BACKFILL (BORROW, TYPE C)	CY	2509
208000	FLOWABLE FILL	CY	340
211000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LS	1
301001	GABC	CY	25
302005	DELAWARE NO. 57 STONE	TON	272
604002	COFFERDAMS	LS	1
605032	PROVIDE STEEL PIPE PILE 36"	LF	333
605033	PROVIDE STEEL PIPE PILE 48"	LF	187
605041	PROVIDE PRECAST PRESTRESSED CONCRETE PILES, 14"x14"	LF	700
605083	PROVIDE STEEL PIPE INDICATOR OR TEST PILES, 48"	LF	393
605091	PROVIDE PRECAST PRESTRESSED CONCRETE TEST PILES, 14"x14"	LF	110
605132	INSTALL STEEL PIPE PILE 36"	LF	333
605133	INSTALL STEEL PIPE PILE 48"	LF	187
605141	INSTALL PRECAST PRESTRESSED CONCRETE PILES, 14"x14"	LF	700
605183	INSTALL STEEL PIPE INDICATOR OR TEST PILES, 48"	LF	393
605191	INSTALL PRECAST PRESTRESSED CONCRETE TEST PILES, 14"x14"	LF	110
605200	PILE RESTRIKE	EA	4
605201	DYNAMIC PILE TESTING BY CONTRACTOR FOR TEST PILE INITIAL DRIVE	EA	6
605202	DYNAMIC PILE TESTING BY CONTRACTOR FOR RE-STRIKE OR PRODUCTION PILE	EA	6
605515	VIBRATION MONITORING	LS	1
608030	SHEET PILE WALL TIE-BACK SYSTEM	LS	1
608049	STEEL SHEET PILES, NZ 42	SF	16,201
610005	PCC MASONRY, SUBSTRUCTURE, CLASS A	CY	368
610008	PCC MASONRY, PARAPET, CLASS A	CY	13
610017	PCC MASONRY, SUPERSTRUCTURE, CLASS D	CY	58
610018	PCC MASONRY, APPROACH SLAB, CLASS D	CY	26
610500	ULTRA HIGH PERFORMANCE CONCRETE	CF	105
611001	BAR REINFORCEMENT, EPOXY COATED	LB	117,407
612020	PRESTRESSED REINFORCED CONCRETE MEMBERS, SOLID SLAB	LS	1
612500	PRECAST CONCRETE PIER CAP	CY	165
613003	HIGH MOLECULAR WEIGHT METHACRYLATE CONCRETE SEALER	SF	2,213
615001	STEEL STRUCTURES	LS	1
615503	BRIDGE MECHANICAL SYSTEM	LS	1
615504	BRIDGE ELECTRICAL SYSTEM	LS	1
615512	BRIDGE SCUPPERS	EA	8
624000	PREFABRICATED EXPANSION JOINT SYSTEM, 3"	LF	145
626010	ALUMINUM PEDESTRIAN RAILING	LF	314
626501	THREE STRAND TUBE RAIL PARAPET	LF	184
707013	RIPRAP, R7	CY	900
708001	GEOTEXTILES, STABILIZATION	SY	1473
708003	GEOTEXTILES, RIPRAP	SY	281
763501	CONSTRUCTION ENGINEERING	LS	1
763522	COAST GUARD SPECIFIC CONDITIONS	LS	1
763537	INTEGRAL FENDER SYSTEM	LS	1
909004	TURBIDITY CURTAIN, FLOATING	LF	728

										S-02
ADDENDA / REVISIONS					NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	BRIDGE PROJECT NOTES - 2
							T202007301	DESIGNED BY: D. NEELY		
							COUNTY	CHECKED BY: G. PATTON		
							SUSSEX			

NOTES

1. FOR TRAFFIC SIGNAL DETAILS & LOCATIONS, SEE DWG. E-03.
2. EXISTING UTILITIES TO BE RELOCATED BY OTHERS.
3. APPROXIMATE LOCATION OF NEW SIGNS FOR "SOUNDING DEVICES" AND "VHF CHANNEL".
4. APPROXIMATE LOCATION OF NEW SIGN FOR "HOURS OF OPERATION".
5. CONTRACTOR SHALL SUBMIT DETAILS AND METHOD OF ATTACHING SIGNS TO WALKWAY HANDRAILS FOR REVIEW. SEE SHEET SS-02 FOR CUSTOM SIGN DETAILS.



BORING LOCATIONS		
BORING DESIGNATION	NORTHING	EASTING
CBSB-1	340539.145	682454.564
CBSB-2	340553.054	682523.106
CBSB-3	340541.030	682517.998
CBSB-4	340576.746	682540.435
CBSB-5	340487.836	682499.847

BORING LOCATIONS		
BORING DESIGNATION	NORTHING	EASTING
CBSB-6	340491.203	682587.459
CBSB-7	340556.055	682608.443
CBSB-8	340521.461	682615.021
CBSB-9	340509.437	682610.197
CBSB-10	340509.284	682460.000

CEDAR BEACH RD HORIZ. CURVE DATA

TANGENT  
S71°25'55.20"E

PLAN



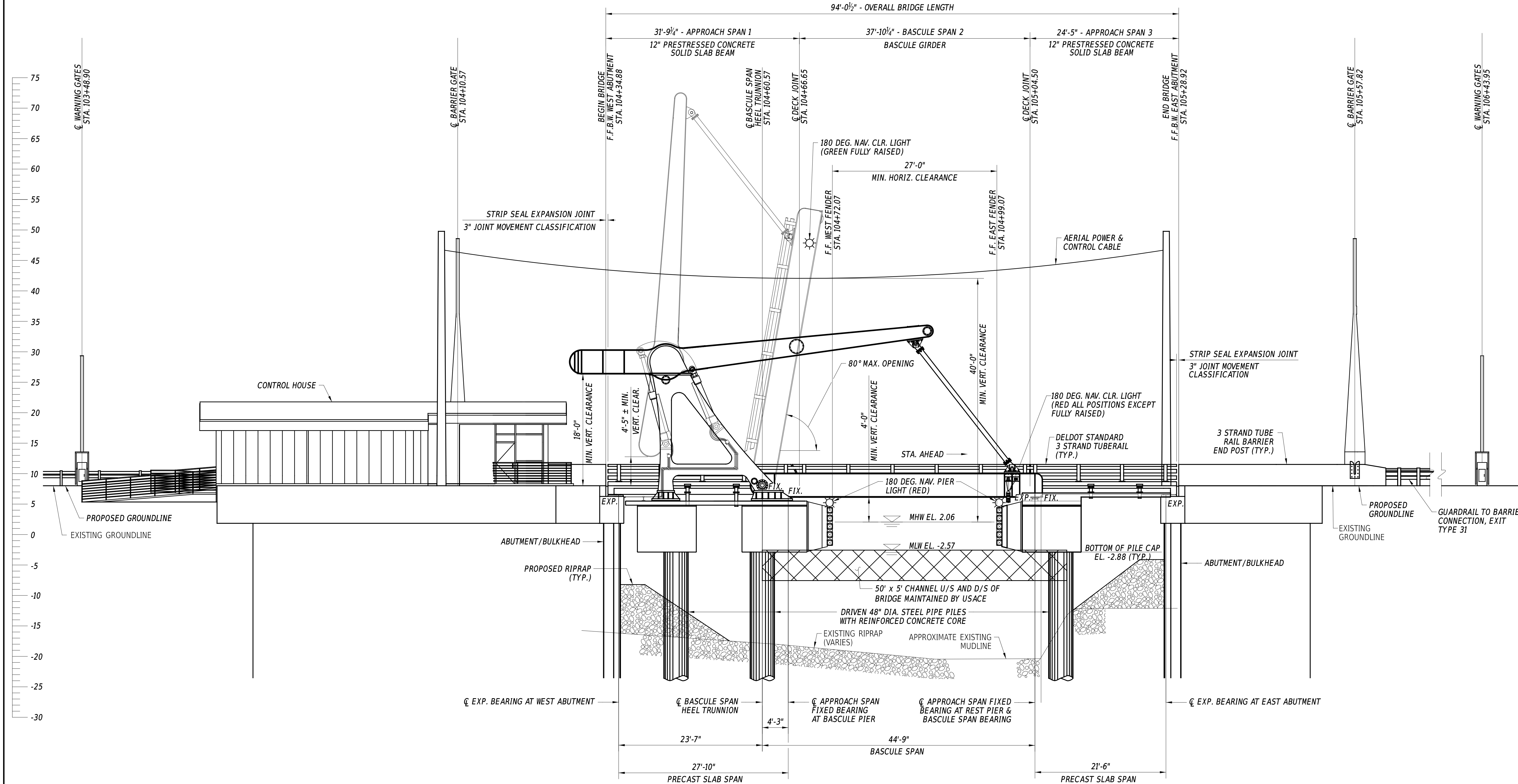
REPLACEMENT OF BR 3-164 ON  
SR 36 CEDAR BEACH ROAD

CONTRACT	BRIDGE NO.	3-164
T202007301	DESIGNED BY:	A. MILLER
COUNTY	CHECKED BY:	D. NEELY
SUSSEX		

BRIDGE GENERAL PLAN

S-03
SECTION
H&H
SHEET NO.
12

7-OCT-2024  
11:14  
pw/laecom-ria-pw.bentley.com:AECOM\_D521\_NA\_2020/Documents/60646484-DeIDOT AGR 1966F-01 BR 3-164 Cedar Beach Rd/900-CAD GIS/910\_CAD/10\_REFERENCE/H & H/Structures/PE02.dgn



### CEDAR BEACH RD VERT. CURVE DATA



### ELEVATION



### REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD

CONTRACT  
T202007301  
COUNTY  
SUSSEX

BRIDGE NO.  
**3-164**  
DESIGNED BY: A. MILLER  
CHECKED BY: D. NEELY

### BRIDGE GENERAL ELEVATION

### NOTES

1. FOR TRAFFIC SIGNAL DETAILS & LOCATIONS, SEE DWG. E-03.
2. FOR PILE TIP ELEVATIONS, SEE DWG. S-14.
3. LOCATION AND EXTENT OF PROPOSED RIPRAP IS APPROXIMATE AND MAY VARY BASED ON EXISTING CONDITIONS. SEE DWG. S-18 AND S-19 FOR INSTALLATION DETAILS.

S-04

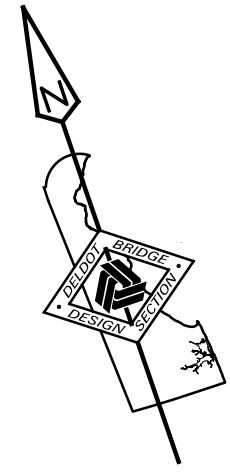
SECTION

H&H

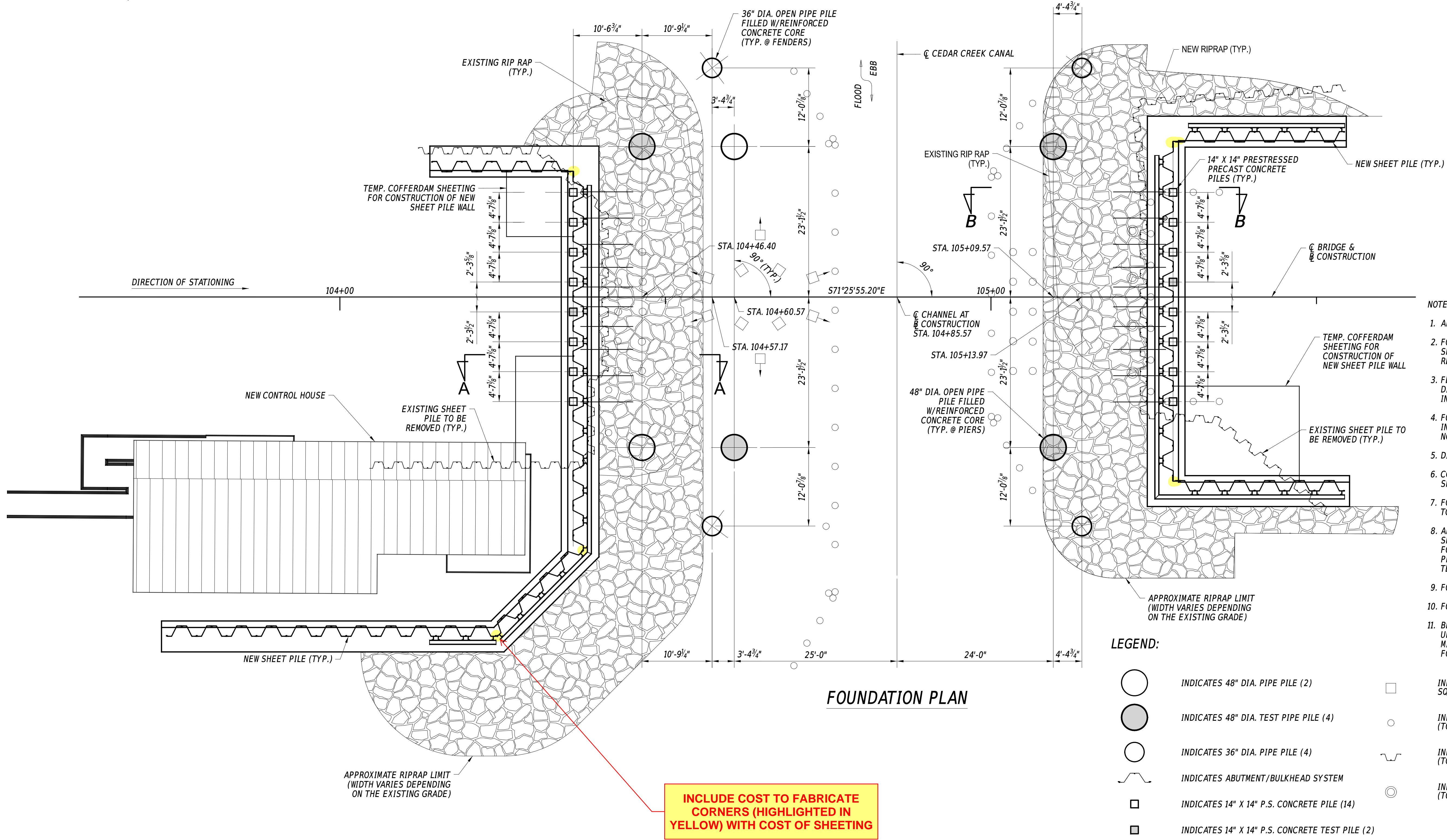
SHEET NO.

13





PILE DATA TABLE						
DESIGN DATA				ACTUAL FIELD DATA		
SUBSTRUCTURE UNIT	NOMINAL PILE DRIVING RESISTANCE (R <sub>ndr</sub> ) (KIPS)	ESTIMATED TIP ELEVATION	MINIMUM TIP ELEVATION	AVERAGE ACTUAL MINIMUM TIP ELEVATION	AVERAGE ACTUAL MAXIMUM TIP ELEVATION	CUTOFF ELEVATION
BASCULE PIER 48" DIA.	966	-90	-75	TBD	TBD	-1.88
REST PIER 48" DIA.	823	-90	-75	TBD	TBD	-1.88
FENDER SUPPORT 36" DIA.	496	-80	-60	TBD	TBD	-1.88
WEST ABUTMENT 14" SQ.	340	-45	-32	TBD	TBD	+4.00
EAST ABUTMENT 14" SQ.	314	-45	-32	TBD	TBD	+4.00



- NOTES:
- ALL PILES ARE TO BE DRIVEN PLUMB.
  - FOUNDATIONS AT BASCULE PIER AND REST PIER SHALL BE 48" X 3/4" DIAMETER PIPE PILE WITH REINFORCED CONCRETE INTERIOR CORE.
  - FENDER PILE SUPPORTS SHALL BE 36" X 3/4" DIAMETER PIPE PILE WITH REINFORCED CONCRETE INTERIOR CORE.
  - FOR PIPE PILE CUTOFF ELEVATIONS AND PILE INSTALLATION NOTES, SEE PILE DATA TABLE, DWG. NO. S-14
  - DIMENSIONS SHOWN ARE ALONG C PIER.
  - COORDINATE THIS SHEET WITH DEMOLITION PLAN SHEET.
  - FOR EXISTING ELEMENTS AND CONDITIONS REFER TO AS BUILT PLANS.
  - ALL COSTS ASSOCIATED WITH THE TEMPORARY SHEETING FOR THE COFFERDAM SHALL BE PAID FOR UNDER ITEM 604002. CONTRACTOR MAY PROPOSE ADDITIONAL COFFERDAM(S) OR TEMPORARY WORKS FOR REVIEW AND ACCEPTANCE.
  - FOR SECTIONS A-A, SEE S-18.
  - FOR SECTIONS B-B, SEE S-19.
  - BE AWARE OF THE POTENTIAL FOR ENCOUNTERING UNEXPLODED ORDNANCES (UXO). REFER TO MISCELLANEOUS NOTE 16 ON THE NOTES SHEET FOR ADDITIONAL DETAILS.

ADDENDA / REVISIONS	



**REPLACEMENT OF BR 3-164 ON  
SR 36 CEDAR BEACH ROAD**

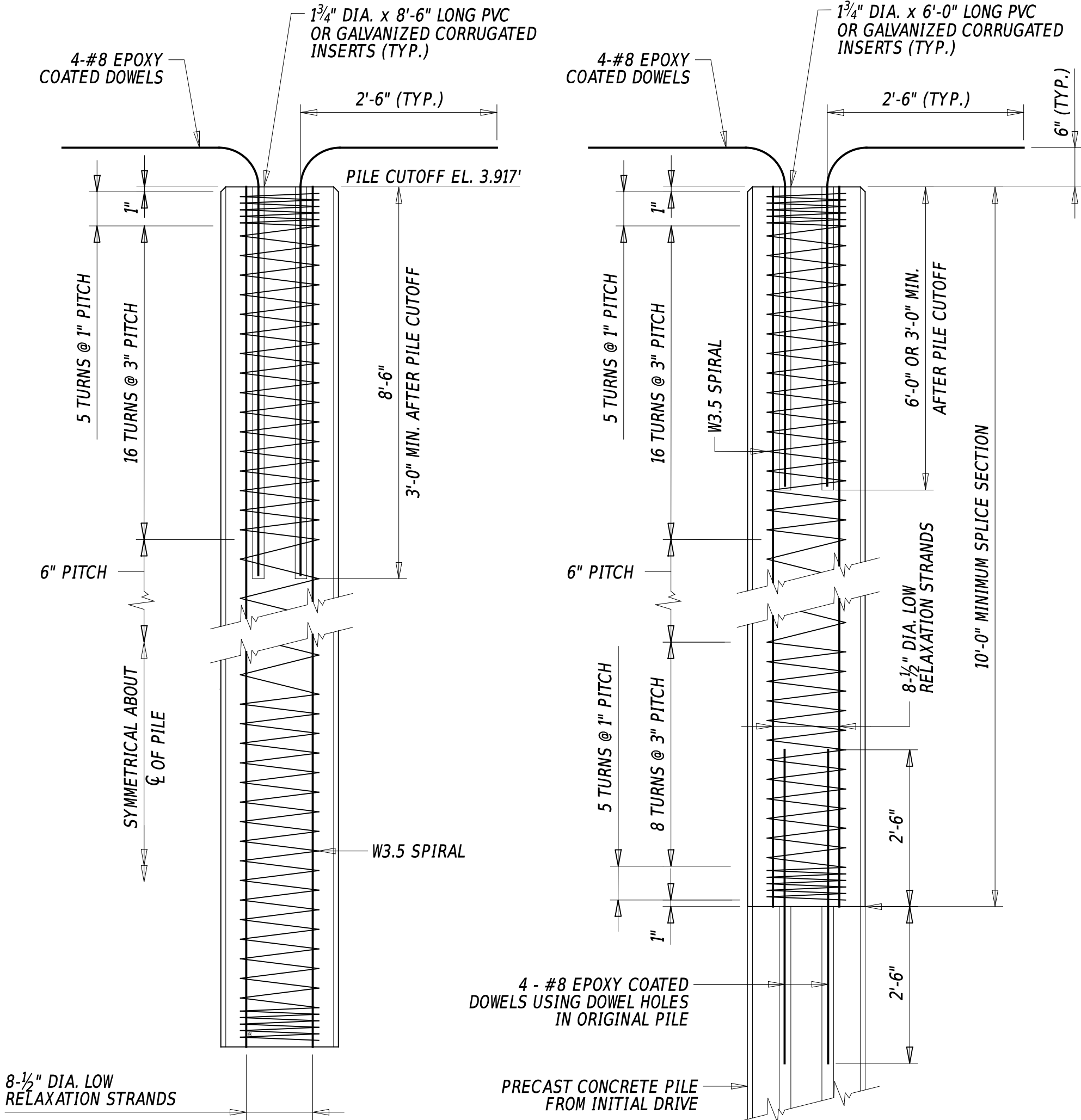
CONTRACT	BRIDGE NO.	<b>3-164</b>
T202007301	DESIGNED BY:	J. SOTO
COUNTY	CHECKED BY:	C. GRANADOS
SUSSEX		

**FOUNDATION PLAN**

S-14
SECTION
H&H
SHEET NO.
23

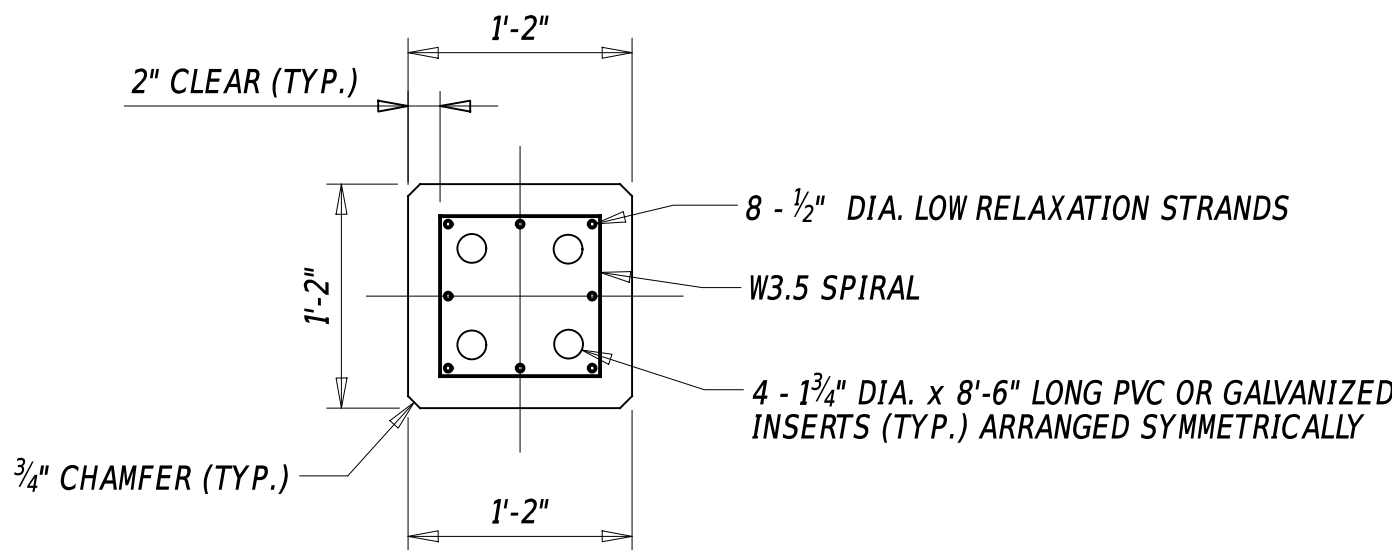


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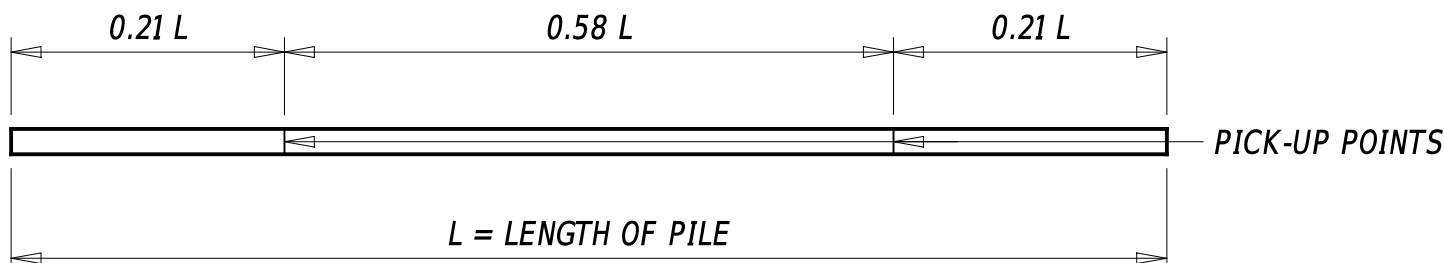
PILE ELEVATION

PILE BUILD-UP FOR DRIVING (PRECAST)

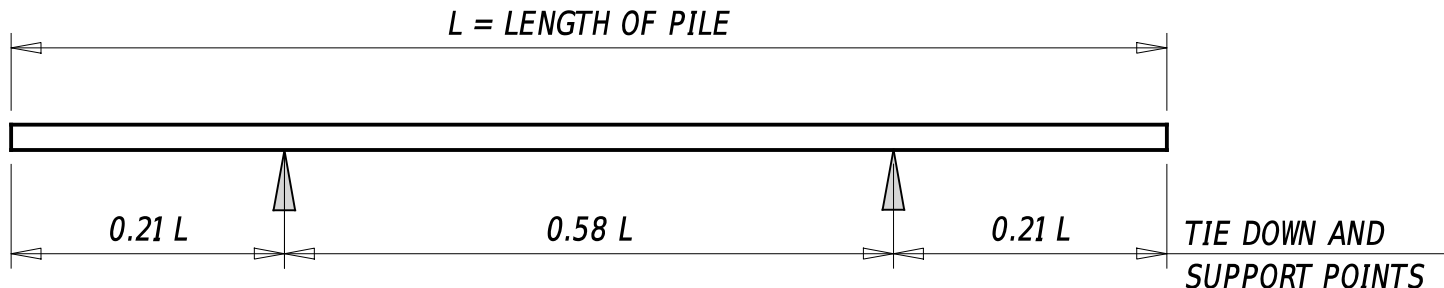


TYPICAL PRECAST PILE SECTION

PILE INSTALLATION DATA (PRECAST PILES)					
SUBSTRUCTURE UNIT	DESIGN DATA		ACTUAL FIELD DATA		
	MINIMUM TIP ELEVATION	ESTIMATED PILE TIP ELEVATION	ACTUAL MINIMUM TIP ELEVATION	ACTUAL AVERAGE TIP ELEVATION	ACTUAL MAXIMUM TIP ELEVATION
WEST ABUTMENT	-32	-45 FT.	TBD	TBD	TBD
EAST ABUTMENT	-32	-45 FT.	TBD	TBD	TBD



2-POINT PICK-UP DIAGRAMS



2-POINT SUPPORT DIAGRAMS FOR STORAGE AND TRANSPORTATION

PROJECT SPECIFIC PILE NOTES

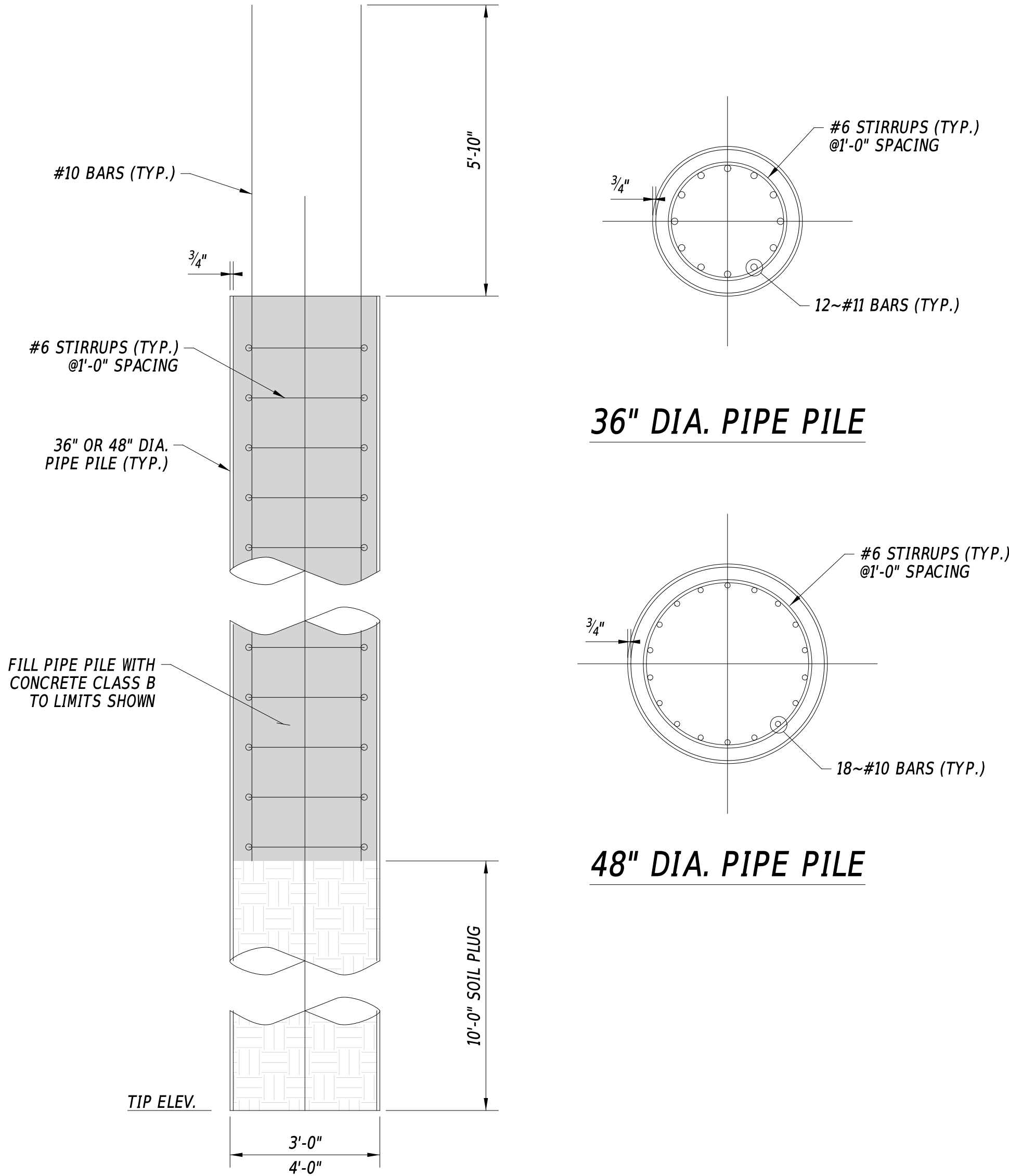
- PILE TYPE: THIS PROJECT SHALL UTILIZE 36" DIA., 48" DIA., AND 14" X 14" PRESTRESSED-PRECAST CONCRETE PILES.
- ESTIMATED PRODUCTION PILE LENGTH IS 50'.
- REQUIRED TEST PILE LENGTH IS 5' LONGER THAN THE ESTIMATED PRODUCTION PILE LENGTH.
- PILES SHALL BE DRIVEN TO A BEARING RESISTANCE OF 340 KIPS USING A RESISTANCE FACTOR OF 0.65.
- DESIGN ASSUMPTIONS: THE PRESTRESSED CONCRETE PILES WERE DESIGNED FOR SEVERE CORROSIVE CONDITIONS.

GENERAL PILE NOTES

- FOR MORE INFORMATION REGARDING PILE DRIVING, INSTALLATION, MATERIALS, AND FABRICATION, REFER TO SECTION 605 - DRIVEN PILES OF THE STANDARD SPECIFICATIONS.
- TEST PILES SHALL BE DRIVEN AT EACH LOCATION SHOWN ON THE PLANS. PRODUCTION PILES SHALL BE ORDERED BASED ON THE RESULTS OF THE TEST PILE DRIVING.

PRESTRESSED-PRECAST CONCRETE PILE NOTES

- PROTECT ALL REINFORCING STEEL WITH FUSION BONDED EPOXY.
- DOWEL HOLES CAST IN THE TOP OF THE PILES SHALL BE CLEANED BY INSERTING A HIGH PRESSURE AIR HOSE TO THE BOTTOM AND BLOWING THE HOLE CLEAN FROM THE BOTTOM UPWARD PRIOR TO SETTING AND GROUTING THE DOWEL BARS. DOWELS SHALL BE SET WITH AN APPROVED NON-SHRINK EPOXY GROUT.
- IF, AFTER A PILE CUTOFF, THE PREFORMED HOLES IN THE TOP OF PRESTRESSED-PRECAST CONCRETE PILES ARE NOT LONG ENOUGH TO PROVIDE SUFFICIENT DOWEL EMBEDMENT, THEY SHALL BE DRILLED TO THE PROPER DEPTH AT NO ADDITIONAL COST TO THE DEPARTMENT. THE MINIMUM LENGTH OF THE DOWEL BAR EMBEDMENT IN THE HOLE SHALL BE 3'-0".
- EPOXY GROUT FOR GROUTING THE DOWEL BARS IN THE TOP OF THE PRESTRESSED-PRECAST CONCRETE PILE SHALL BE AN APPROVED NON-SHRINK EPOXY GROUT SPECIFICALLY DESIGNED AS A FAST SETTING COMPOUND THAT POURS EASILY TO FILL THE VOIDS. THE COST OF GROUTING THE DOWEL BARS SHALL BE INCIDENTAL TO THE UNIT BID ITEM FOR THAT RESPECTIVE PILE.
- THE WORKING DRAWINGS SHALL ALSO INCLUDE DESIGN AND DETAILS OF THE PROPOSED PICK-UP AND SUPPORT POINTS, AND LIFTING LOOPS FOR THE DEPARTMENT'S APPROVAL.
- THE CONTRACTOR MAY CONSIDER USING ALTERNATIVE PILE BUILD-UP DETAILS FOR BOTH DRIVING AND WITHOUT DRIVING. ALL ALTERNATIVE DETAILS FOR PILE BUILD-UPS SHALL BE SUBMITTED TO THE DEPARTMENT FOR APPROVAL.
- THE CONTRACTOR MAY CONSIDER USING ALTERNATIVE SPLICE JOINT DETAIL. ALL ALTERNATIVE DETAILS FOR SPLICE JOINT SHALL BE SUBMITTED TO THE DEPARTMENT FOR APPROVAL.



36" AND 48" DIA. PIPE PILE DETAIL

NOTES:

- SEE SPECIAL PROVISIONS 605033 AND 605133 FOR DETAILED INFORMATION.
- CONCRETE CORE AND REINFORCEMENT MUST BE EXTENDED TO TOP OF SOIL PLUG ELEVATION IN CASE THE SOIL PLUG DOES NOT REACH 10'.
- PROTECT ALL REINFORCING STEEL WITH FUSION BONDED EPOXY.
- APPLY PROTECTIVE COATING TO ALL PILES IN ACCORDANCE WITH SECTION 1032.3.2 OF STANDARD SPECIFICATIONS.

										S-15
ADDENDA / REVISIONS				NOT TO SCALE	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164		SECTION
						T202007301	DESIGNED BY:	D. CASTILLO		H&H
						COUNTY	CHECKED BY:	C. GRANADOS		SHEET NO.
						SUSSEX				

GENERAL NOTES

DESIGN SPECIFICATIONS:  
SEE BRIDGE PROJECT NOTES.

DESIGN METHOD:  
STRENGTH CASE USED TO DETERMINE COMPONENT DESIGNS. EMBEDMENT CASE AS PER AASHTO WITH A LOAD FACTOR OF 1.0 AND A PASSIVE RESISTANCE FACTOR OF 0.65.  
SERVICE CASE USED TO DETERMINE WALL DEFLECTION.

LOAD AND RESISTANCE FACTORS USED FOR DESIGN ARE AS FOLLOWS:  
STRENGTH LOAD FACTORS ACTIVE EARTH PRESSURE 1.5.  
ACTIVE LIVE LOAD SURCHARGE 1.75.

RESISTANCE FACTORS STEEL SHEET PILE WALL:  
PASSIVE SOIL PRESSURE (STRENGTH CASES = 0.75).  
PASSIVE SOIL PRESSURE (EMBEDMENT CASE = 0.65).  
FLEXURAL CAPACITY OF VERTICAL WALL ELEMENTS 0.9.

MATERIALS:  
SHEET PILING: AASHTO M202 GRADE 50.  
STEEL AND BENT PLATE: AASHTO M270, GRADE 50.  
SOIL ANCHORS OR TIE RODS: ASTM A722, GRADE 150 KSI THREADED ROD.

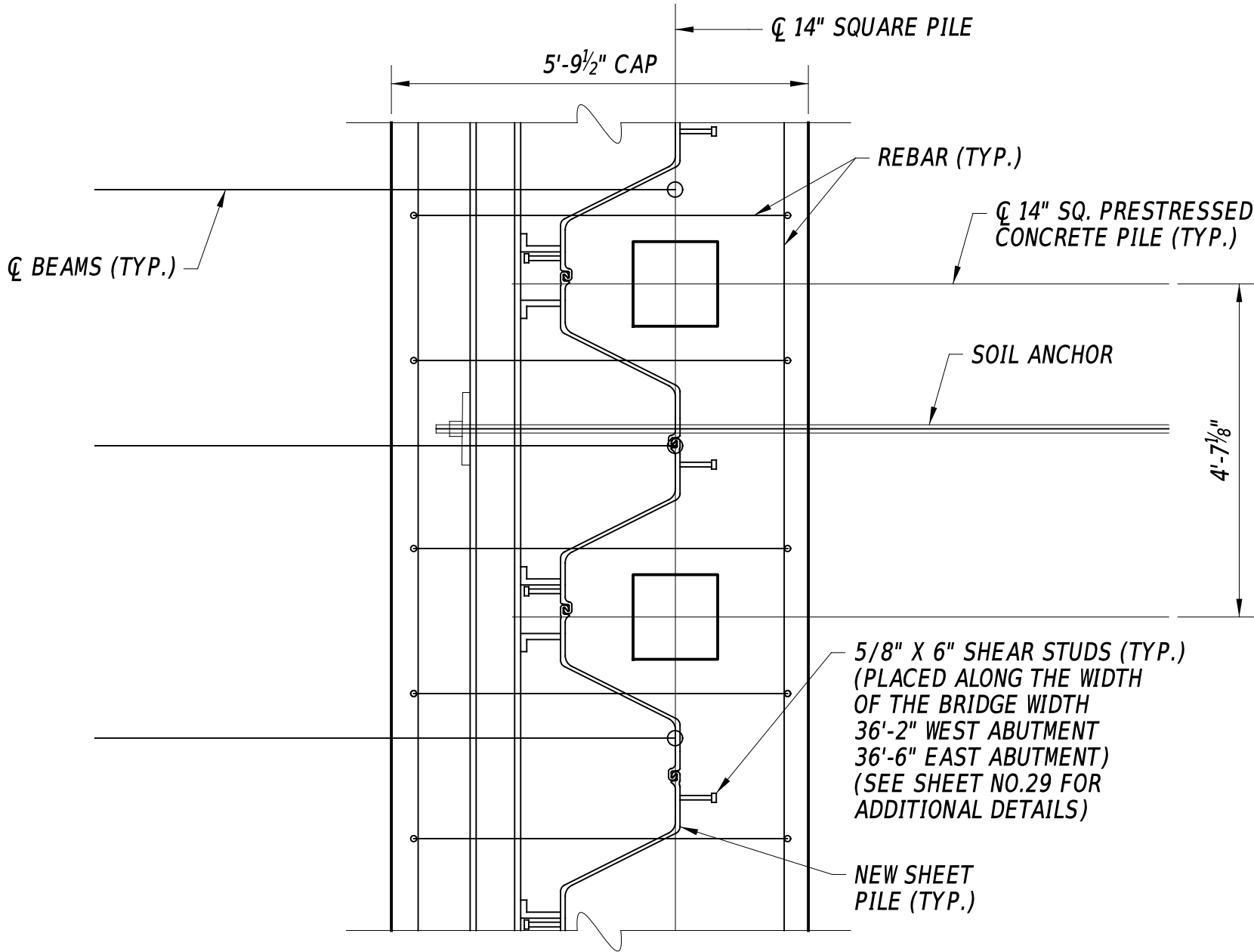
UTILITIES:  
CONTRACTOR IS TO VERIFY LOCATIONS OF EXISTING UTILITIES AND STRUCTURES PRIOR TO BEGINNING OF WALL CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY CONFLICTS.

NOTES:

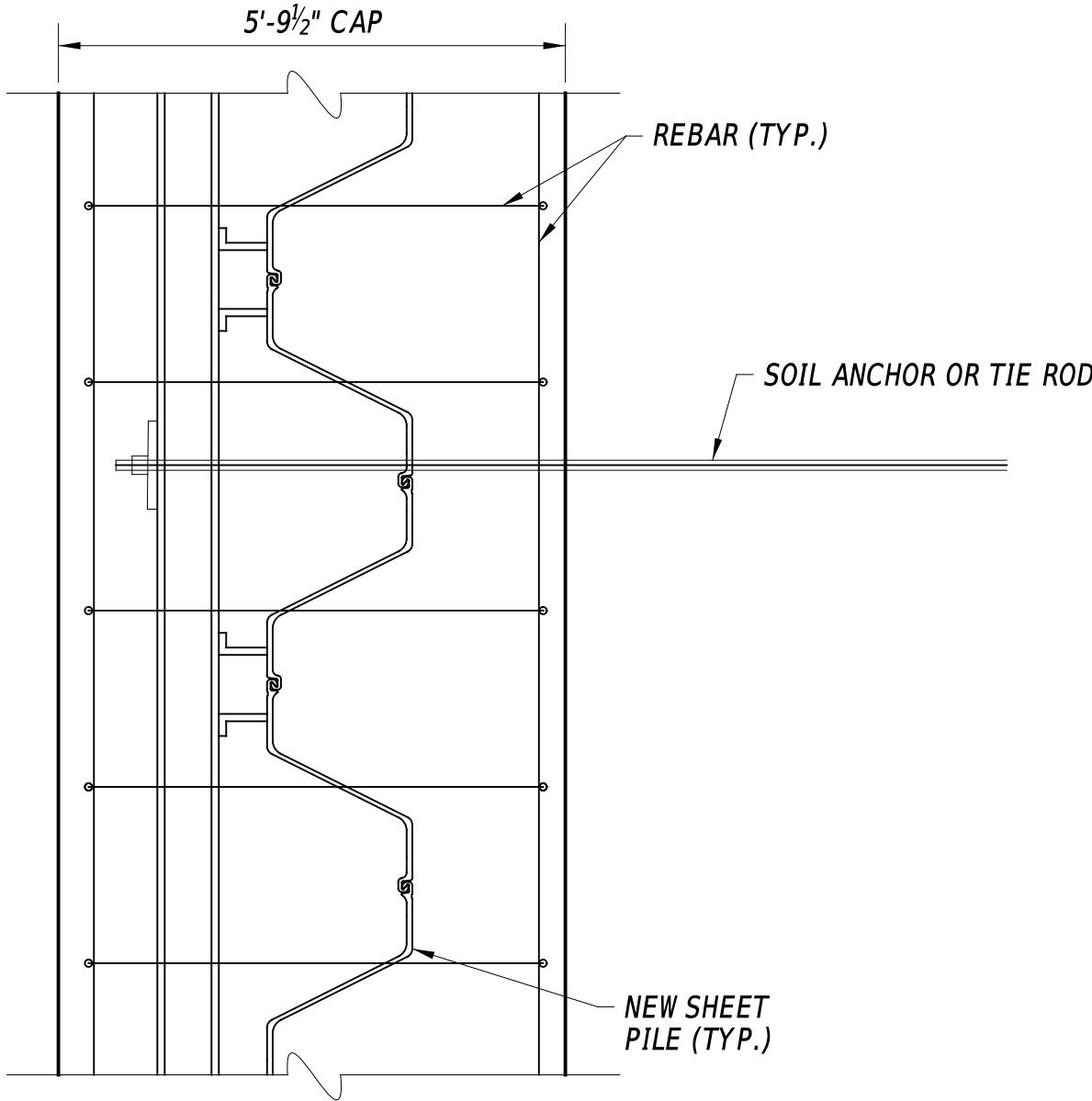
- THE DESIGN PARAMETERS INDICATED IN THE TABLE WERE USED IN THE PILE WALL ANALYSIS. IF THE CONTRACTOR PLANS OPERATIONS, WHICH EXCEED THE DESIGN PARAMETERS SHOWN, THE CONTRACTOR'S SPECIALTY ENGINEER WILL REDESIGN THE WALL TO RESIST CONSTRUCTION LOADS AT A MAXIMUM DEFLECTION OF 1.5 INCHES AT THE TOP OF THE WALL.
- ENVIRONMENTAL CLASSIFICATION IS EXTREMELY AGGRESSIVE.
- DESIGN INCLUDES ALLOWANCE FOR ANTICIPATED LOSS IN STEEL THICKNESS OF 1/16" (BOTH SIDES) DUE TO CORROSION.
- ALTERNATIVE PILING MEETING THE MINIMUM SECTION MODULUS AND MOMENT OF INERTIA REQUIREMENTS OF THE SHEET PILE WALL DATA TABLE MAY BE USED IN LIEU OF SYSTEM SHOWN BELOW.
- COAT SURFACE OF STEEL WALL (BOTH SIDES) TO 5 FEET BELOW ELEVATION -17 WITH COAL TAR-EPOXY.
- FABRICATION AND INSTALLATION OF SHEET PILE SHALL BE AS PER SECTION 608 OF DELDOT STANDARD SPECIFICATIONS.

SHEET PILE WALL DATA TABLE										
CONSTRUCTION INFORMATION					DESIGN PARAMETERS					
WALL LOCATION	MINIMUM REQ'D * PLASTIC SECTION MODULUS (in³ /ft)	MINIMUM REQUIRED MOMENT OF INERTIA (in⁴/ft)	MINIMUM WALL TIP ELEVATION (ft)	WALL TOP ELEV. (ft)	SOIL ELEVATION		WATER ELEVATION		LRFD SERVICE DESIGN LIVE LOAD (psf)	LRFD FACTORED DESIGN LIVE LOAD (psf)
	A-572 (ksi) fy=50 ksi				APPROX. FRONT OF WALL (ft)	BACK OF WALL (ft)	FRONT OF WALL (ft)	BACK OF WALL (ft)		
ALL	90	772.5	**	**	**	8.33	-2.57	2.06	230	403

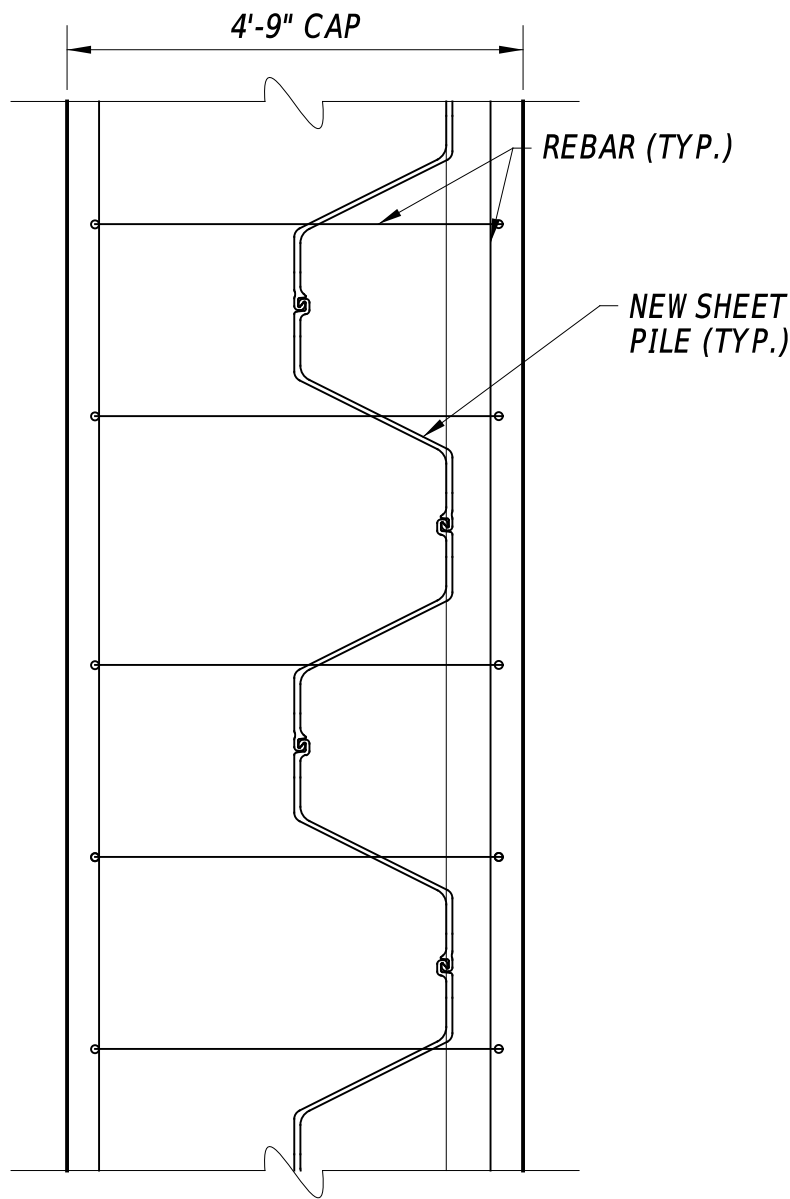
\* MINIMUM SECTION MODULUS IS BASED ON HOT ROLLED SECTIONS.  
\*\* SEE WALL ELEVATIONS. SCOUR DEPTH 2.0'.



TYPE A  
(AT ABUTMENTS)  
(EAST ABUTMENT SHOWN)



TYPE B  
(OUTSIDE ABUTMENT LIMITS - PERPENDICULAR TO ROADWAY,  
WITH SOIL ANCHORS OR TIE RODS)



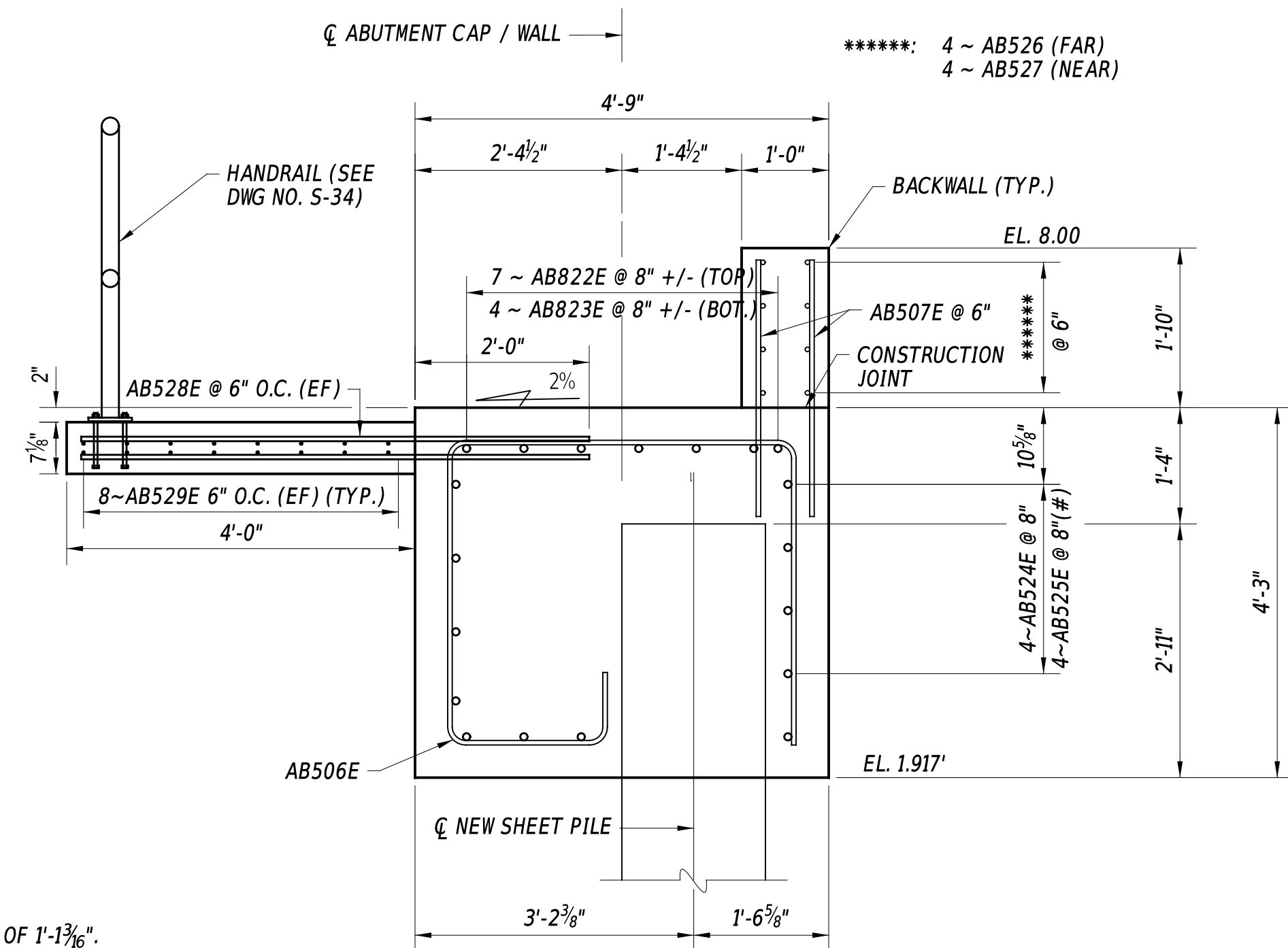
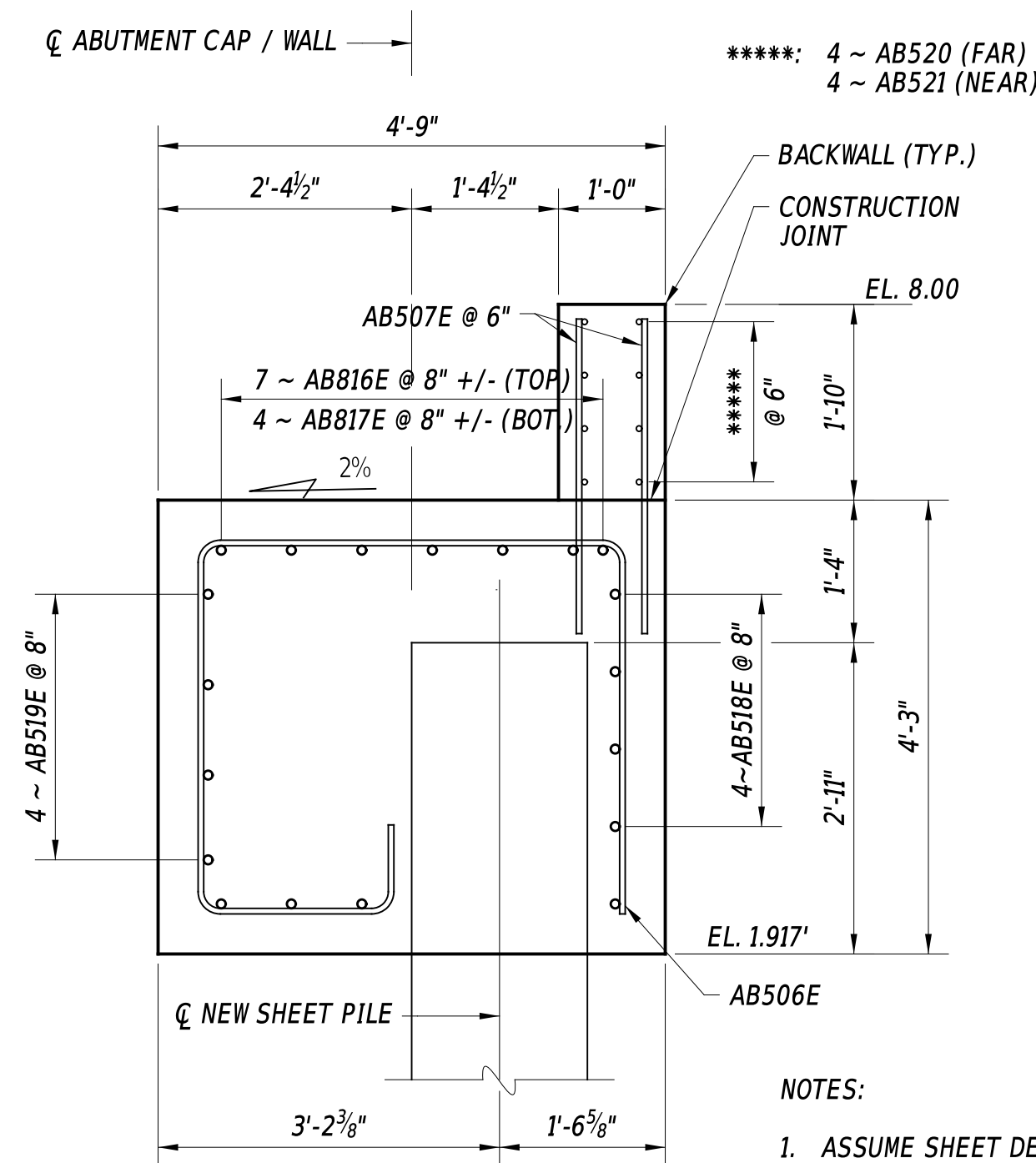
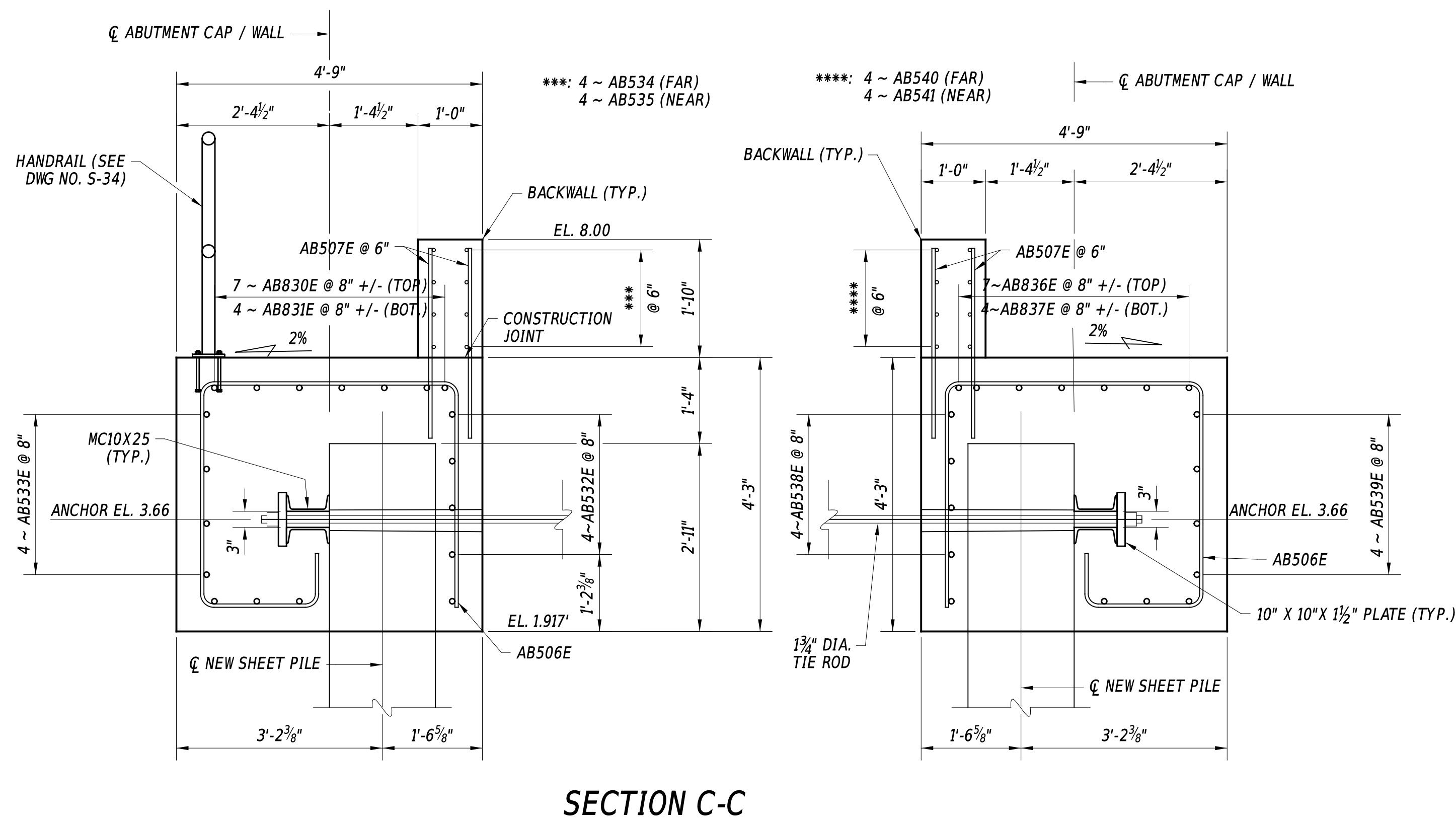
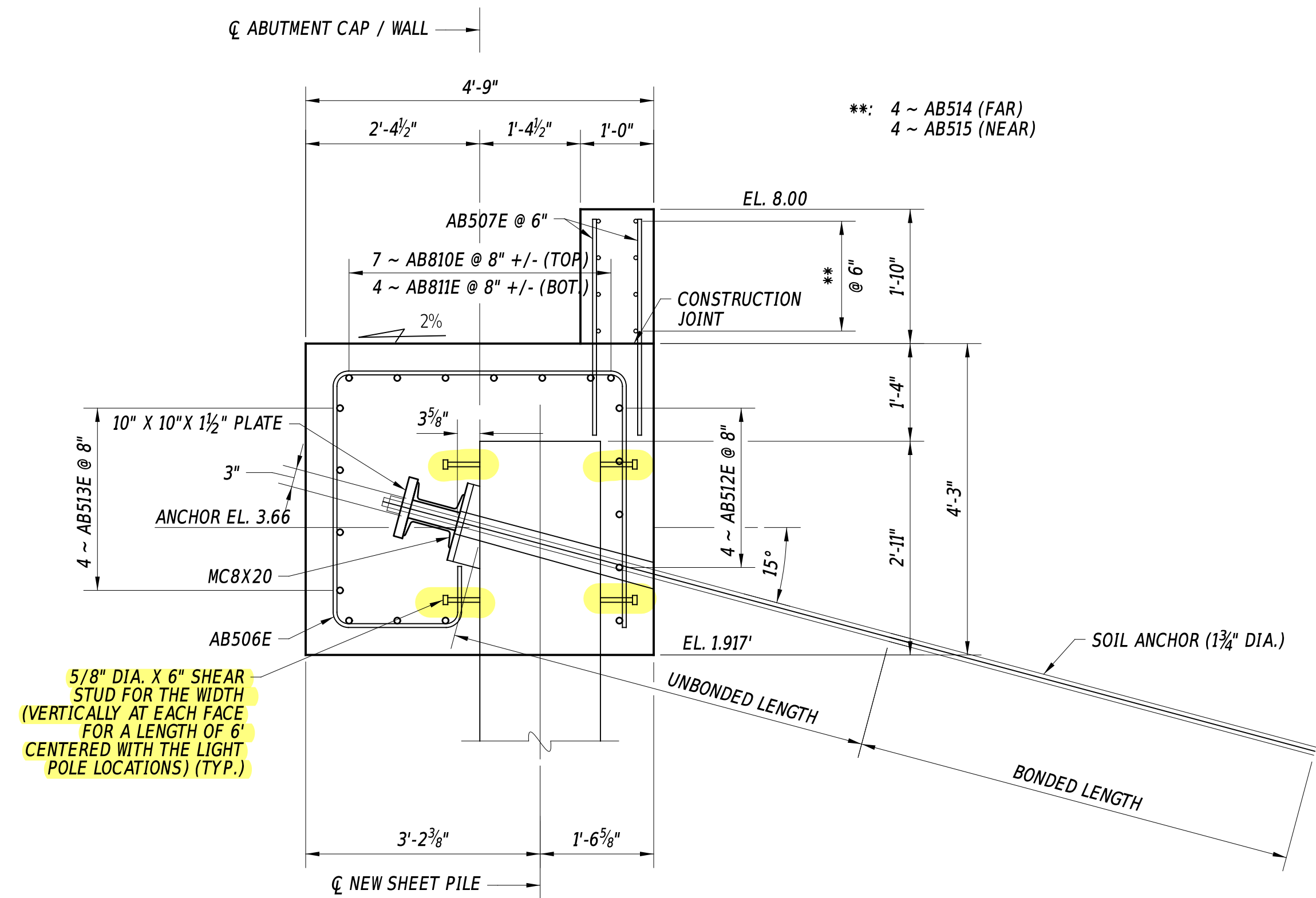
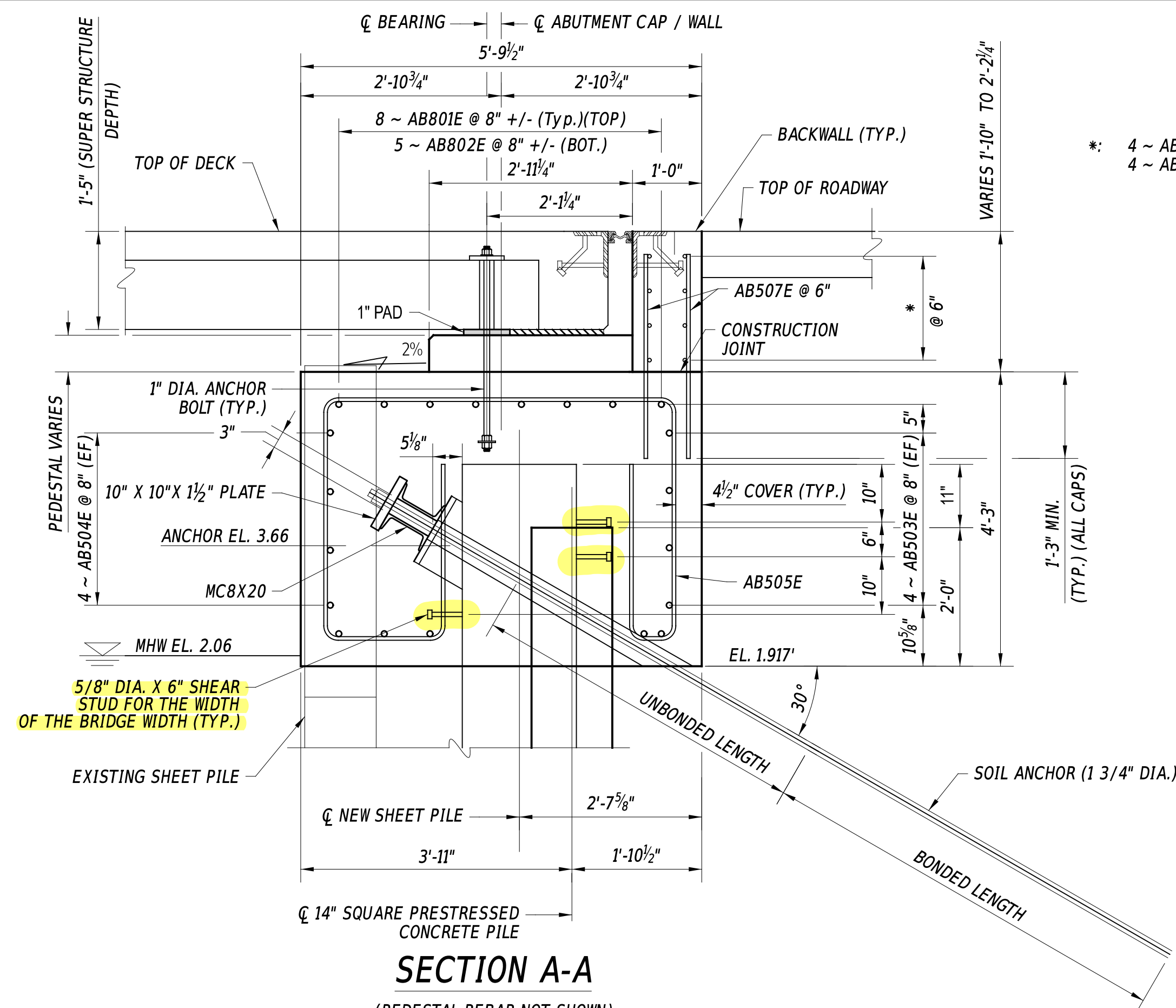
TYPE C  
(OUTSIDE ABUTMENT LIMITS,  
WITH OR WITHOUT SOIL ANCHORS)

- NOTES:
- SEE ABUTMENT CONTROL PLAN FOR SECTIONS.

ADDENDA / REVISIONS				<div>02</div> <div>SCALE</div> <div>0246</div> <div>FEET</div>	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT	BRIDGE NO.	3-164	ABUTMENT AND WALLS GENERAL NOTES AND DATA TABLES	S-16
						T202007301	DESIGNED BY:	J. SOTO		SECTION
						COUNTY	CHECKED BY:	C. GRANADOS		SHEET NO.
						SUSSEX				25







**#: OPPOSITE FACE**

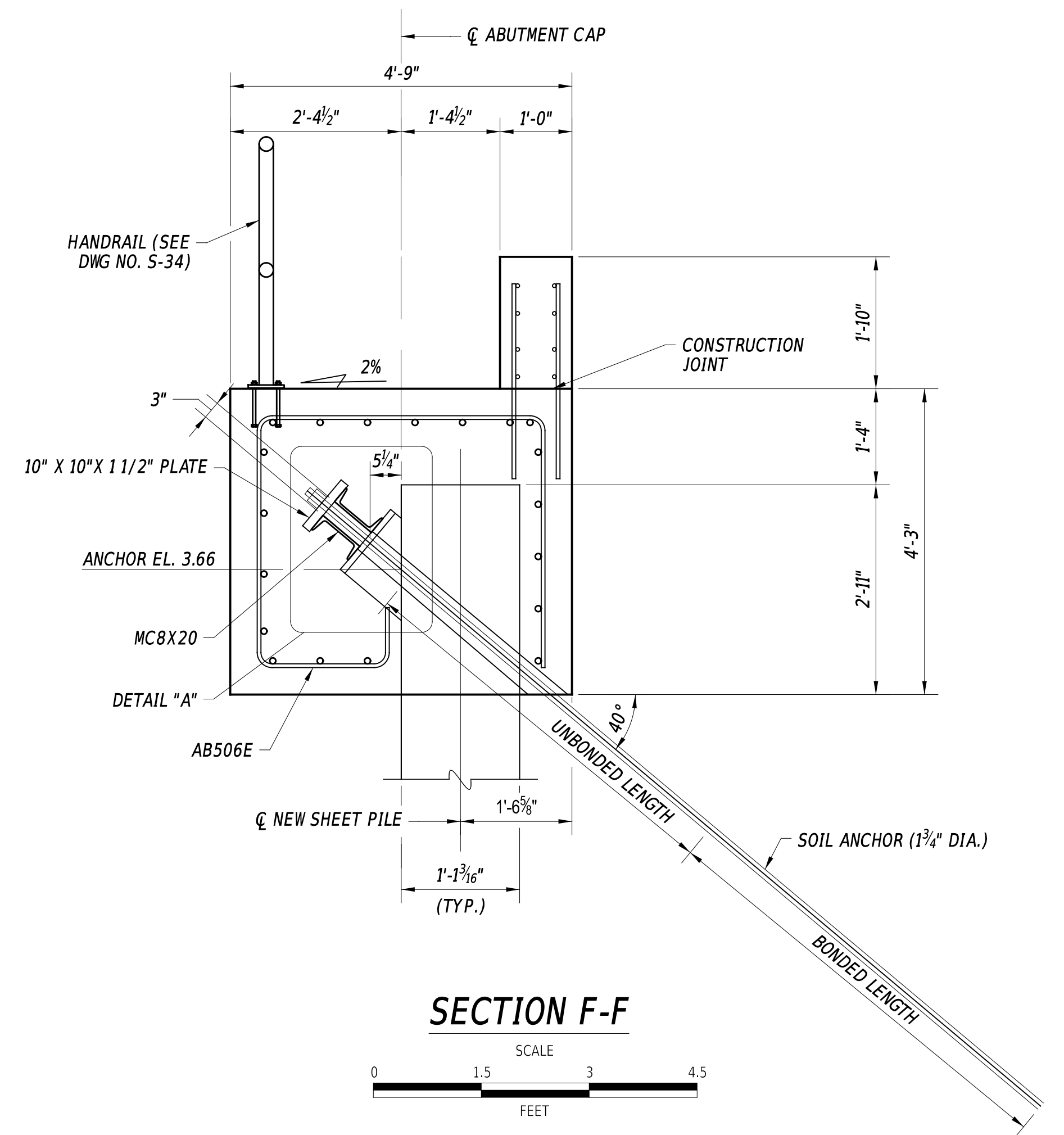
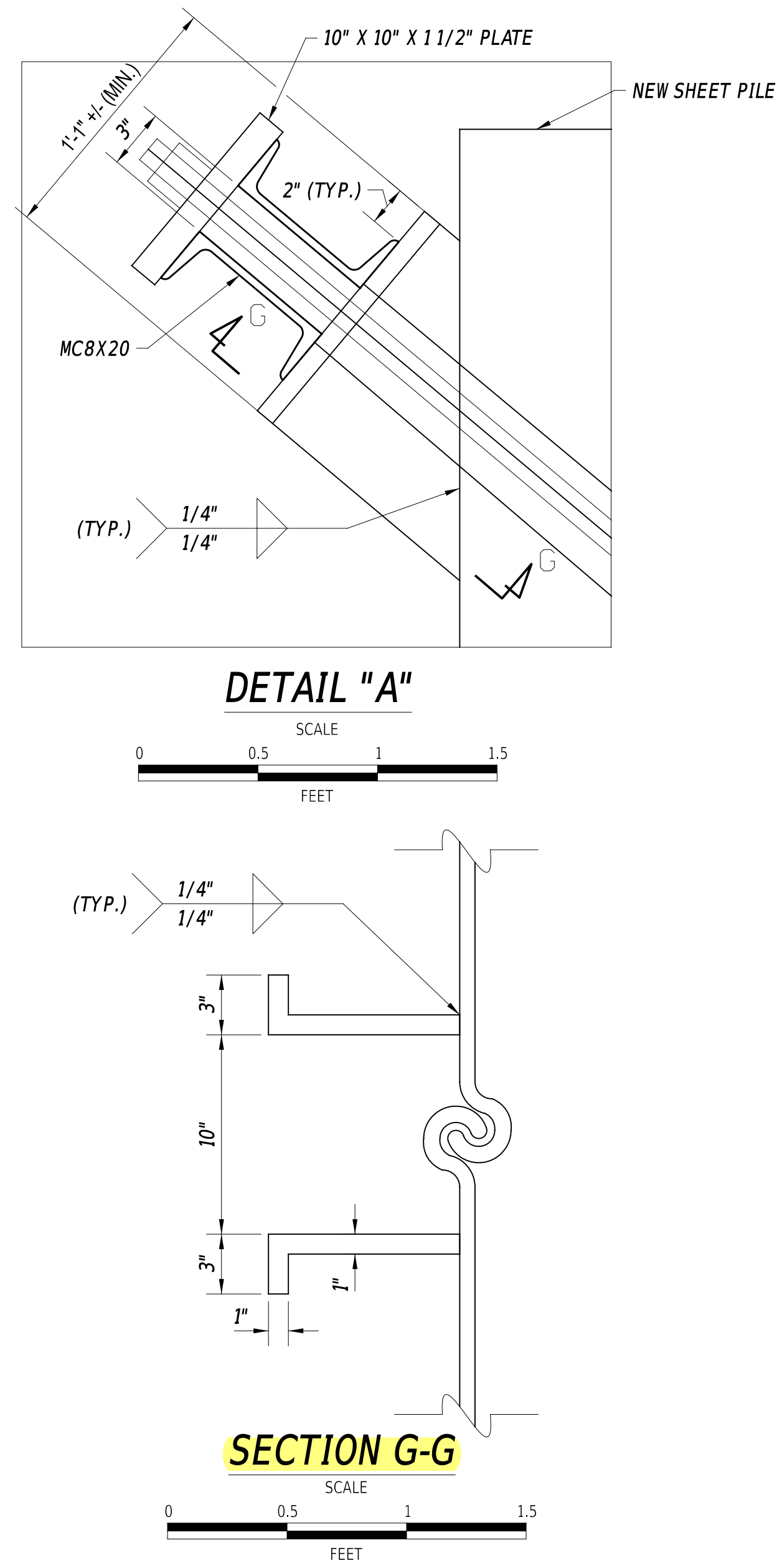
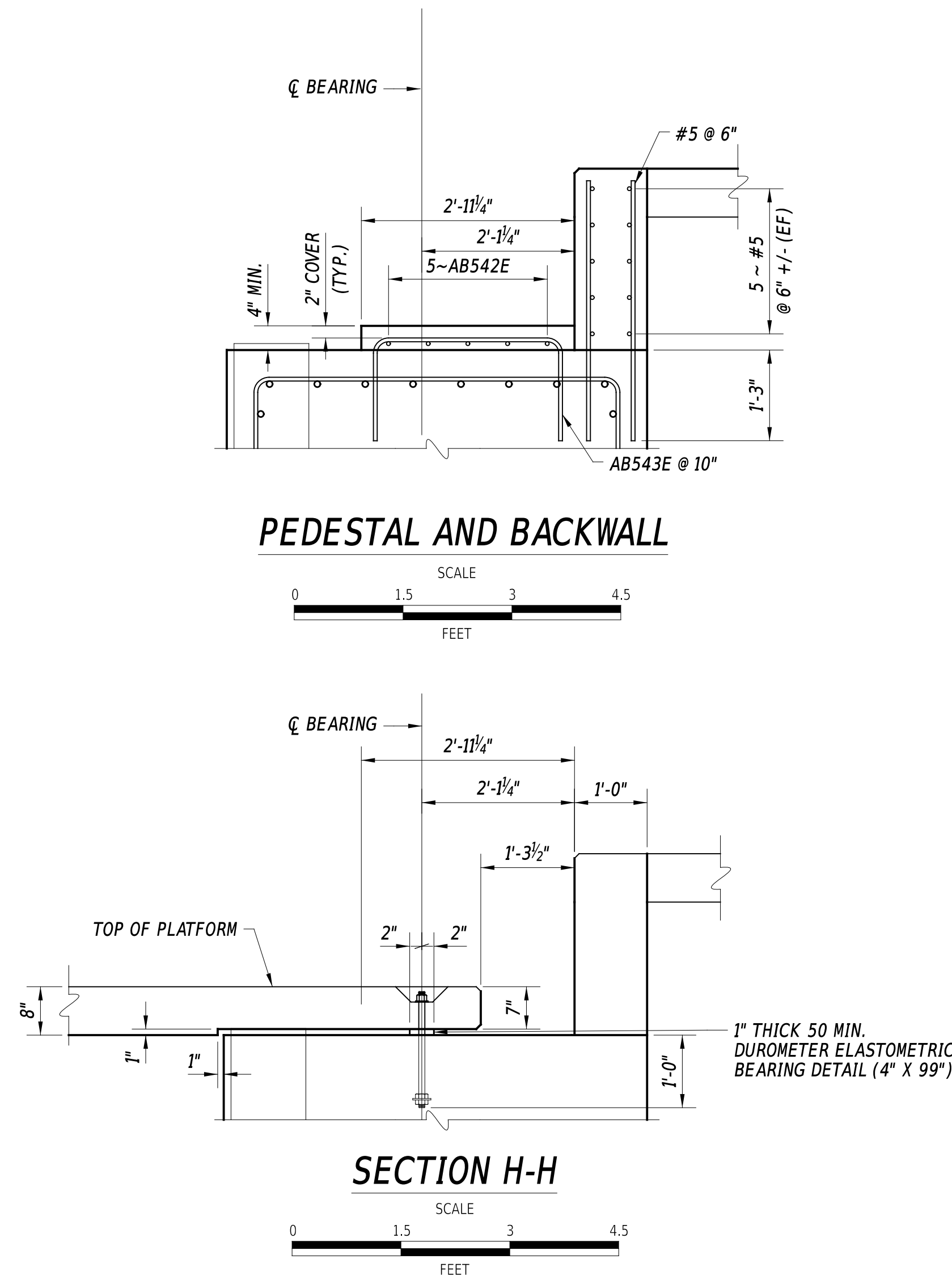
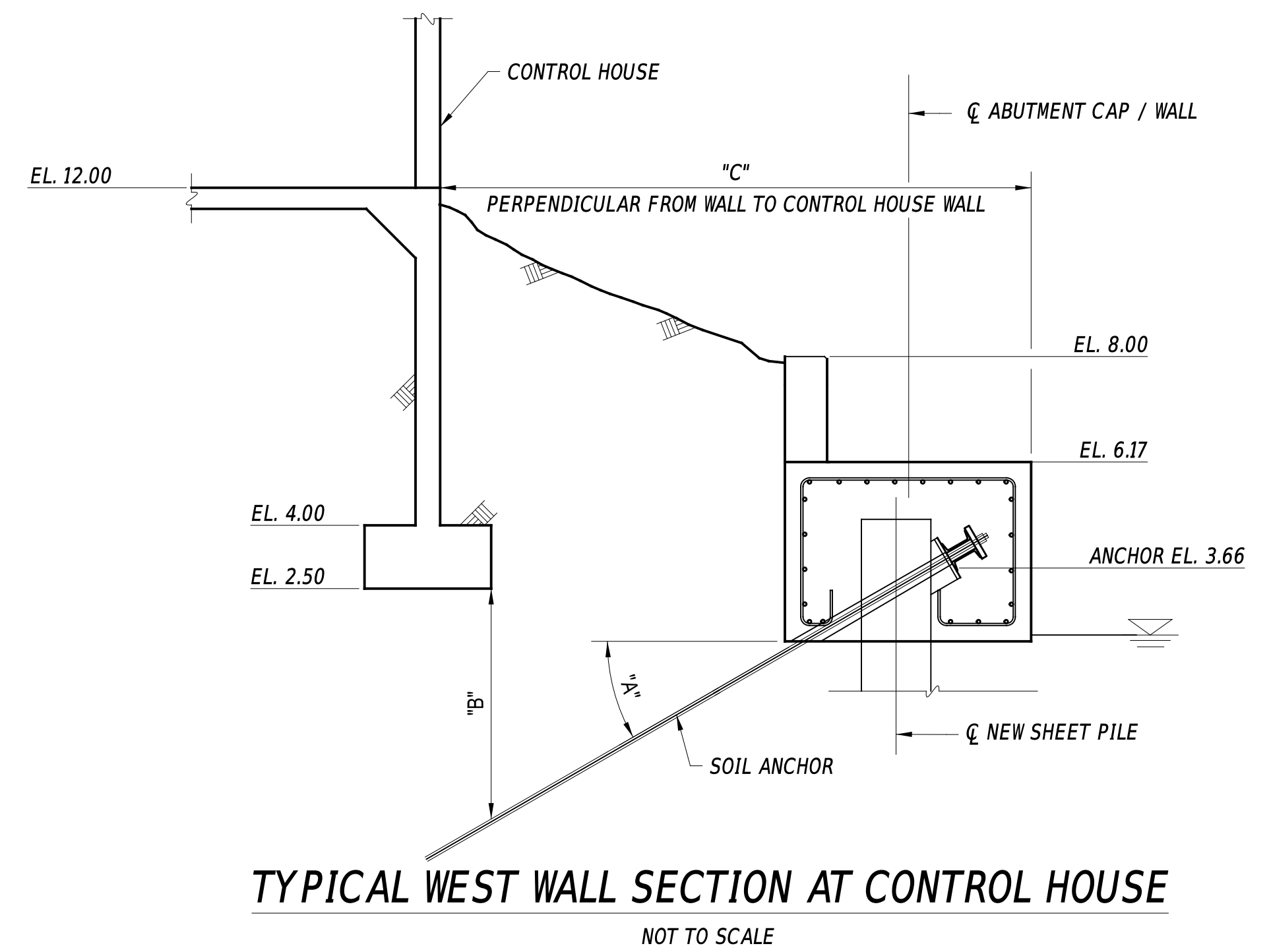
CORRUGATED PVC TUBE OR HIGH DENSITY POLYETHYLENE.										S-20	
ADDENDA / REVISIONS				<div><div>01.534.5</div><div>SCALE</div><div>FEET</div></div>	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD		CONTRACT	BRIDGE NO.	3-164	ABUTMENT DETAILS (1 OF 2)	SECTION
		T202007301	DESIGNED BY:				J. SOTO	H&H			
		COUNTY	CHECKED BY:				C. GRANADOS	SHEET NO.			
		SUSSEX						29			



1. THE CONTRACTOR SHALL DESIGN SOIL ANCHORS (OR GROUND ANCHORS) AS PER THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND SPECIAL PROVISIONS SECTION 608030-SHEET PILE WALL TIE-BACK-SYSTEM AND SUBMIT FOR APPROVAL.
2. ALL SOIL ANCHORS SHALL BE INSTALLED AND PROOF TESTED AS PER THE SPECIAL PROVISION SECTION 608030. A TOTAL OF FOUR SACRIFICIAL SOIL ANCHORS (THREE FOR THE WEST ABUTMENT WALLS AND ONE FOR THE EAST ABUTMENT WALLS FOR EACH INCLINATION ANGLE SPECIFIED IN THE FOLLOWING TABLE) SHOULD BE DESIGNED AND PERFORMANCE TESTED AS PER THE SPECIAL PROVISION SECTION 608030. THE CONTRACTOR SHALL SELECT PERFORMANCE TEST LOCATIONS AND SUBMIT TO THE ENGINEER FOR APPROVAL.
3. ALL SOIL ANCHORS AND TIE RODS SHALL BE OF DOUBLE CORROSION PROTECTION AS PER SPECIAL PROVISION SECTION 608030.
4. PRIOR TO BIDDING, THE CONTRACTOR SHALL INSPECT THE PROJECT SITE TO BECOME FAMILIAR WITH WORKING CONDITIONS FOR SOIL ANCHORS INSTALLATION AND UNDERSTAND THE POTENTIAL CONSTRUCTION ACTIVITY EFFECTS ON THE ADJACENT BUILDINGS, STRUCTURES AND UTILITIES. NO ADDITIONAL COMPENSATION WILL BE MADE FOR INSTALLATION OF SOIL ANCHORS IN DIFFICULT WORKING CONDITIONS.
5. PRIOR TO INSTALLING ANY SOIL ANCHORS, THE CONTRACTOR SHALL VERIFY THE SOIL ANCHOR LOCATIONS IN FIELD AND ENSURE THE SOIL ANCHORS WILL NOT CONFLICT WITH ANY STRUCTURES, SUBSTRUCTURES, AND UTILITIES. IF ANY CONFLICT IS EXPECTED AND/OR OBSERVED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR RELOCATION. THE SOIL ANCHORS WITH POTENTIAL CONFLICTS SHALL NOT BE INSTALLED UNTIL THE RELOCATION IS APPROVED.
6. CONSTRUCTION OF SOIL ANCHORS SHALL BE COORDINATED WITH GENERAL CONSTRUCTION SEQUENCE OF THE PROJECT AND IN COMPLIANCE WITH PROJECT PERMITS AND/OR RESTRICTIONS (INCLUDING ENVIRONMENTAL PERMITS).
7. SOIL ANCHORS THAT ENCOUNTER EXISTING CONCRETE, MASONRY, TIMBER, METAL, BOULDERS OR OTHER OBSTRUCTIONS SHALL BE DRILLED THROUGH THESE OBSTACLES TO ACHIEVE THE REQUIRED DESIGN RESISTANCE AT NO ADDITIONAL COST TO THE CLIENT.
8. GROUT SHALL HAVE A MINIMUM 3 DAY COMPRESSIVE STRENGTH OF 2000 PSI AND A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI.
9. MINIMUM SOIL ANCHOR REQUIREMENTS ARE PROVIDED IN THE FOLLOWING TABLE.
10. EXPOSED PORTION OF ANY SOIL ANCHOR DUE TO THE EXCAVATION DURING THE CONSTRUCTION SHALL BE ENCASED IN A 6" OR MORE O.D. PVC SLEEVE THAT SHOULD BE SUBMITTED FOR APPROVAL. PVC PIPE SLEEVE WILL NOT BE MEASURED AND PAID SEPARATELY, AND ALL INCIDENTAL COST SHALL BE PAID UNDER ITEM NO. 608030.

<b>INCLINATION ANGLE OF SOIL ANCHOR (DEG)</b>	<b>REQUIRED UNFACTORED RESISTANCE (KIPS/ANCHOR)</b>	<b>REQUIRED NOMINAL RESISTANCE (KIPS/ANCHOR)</b>	<b>TESTING 1.33 DESIGN LOAD (1.33 X DL) (KIPS/ANCHOR)</b>	<b>LOCK-OFF LOAD (KIPS/ANCHOR)</b>	<b>MIN. UNBONDED LENGTH (FT.)</b>	<b>ESTIMATED BOND ZONE DIAMETER (IN.)</b>	<b>ESTIMATED BOND LENGTH (FT.)</b>
15	53	94	94	53	55	9	45
30	59	104	104	59	50	6	30
40	67	118	118	67	40	6	35

WEST WALL SECTION DIMENSIONS			
WALL LOCATION	ANGLE "A"	DIMENSION "B"	DISTANCE "C"
SOUTH WEST	15°	1.7'	12'
WEST	30°	5.5'	14'
SOUTH	40°	11.5'	18'



		FEET				FEET				S-21		
ADDENDA / REVISIONS						SCALE AS NOTED	REPLACEMENT OF BR 3-164 ON SR 36 CEDAR BEACH ROAD	CONTRACT		BRIDGE NO.	3-164	ABUTMENT DETAILS (2 OF 2)
								T202007301		DESIGNED BY: J. SOTO		
								COUNTY		CHECKED BY: C. GRANADOS		
								SUSSEX				
										SECTION		
										H&H		
										SHEET NO.		
										30		