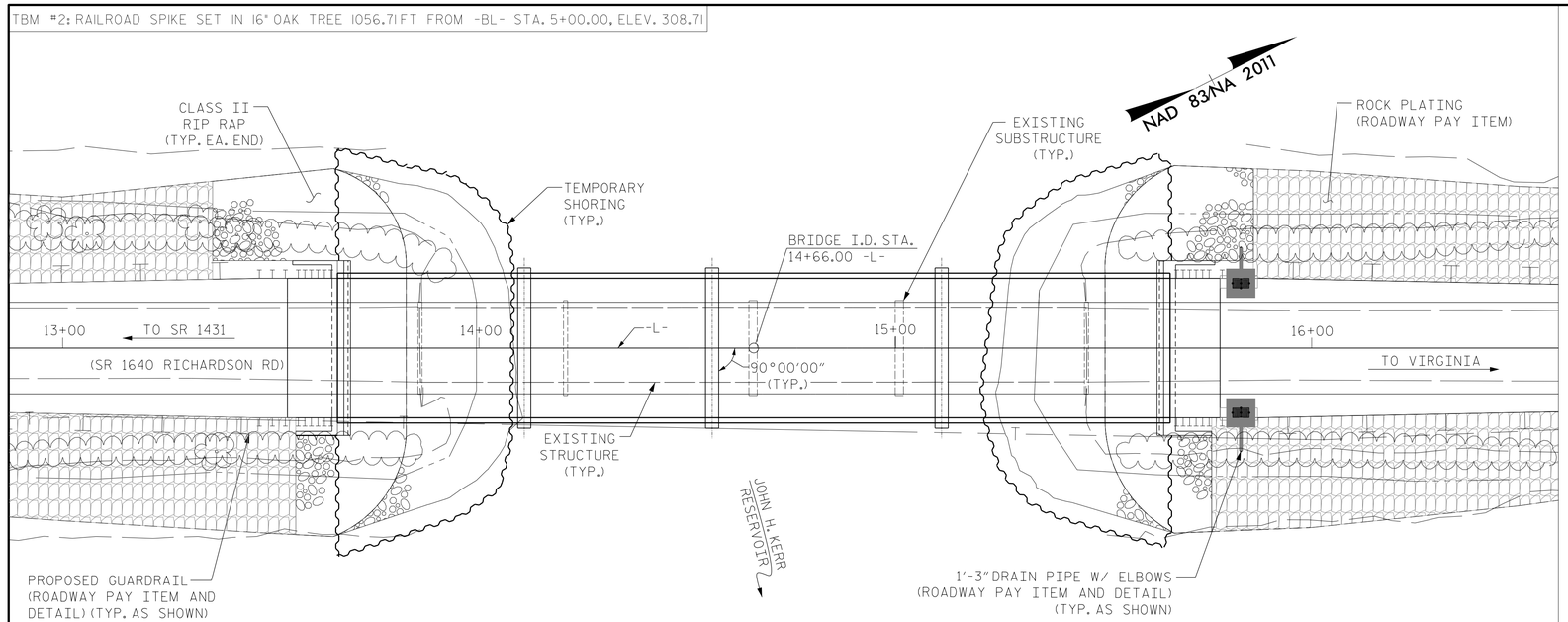

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

GENERAL NOTES:

1. ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING
2. THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
3. THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1
4. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."
5. THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
6. REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
7. FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
8. FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
9. FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
10. FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
11. FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
12. FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
13. ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
14. THE EXISTING STRUCTURE #380143 CONSISTING OF FOUR (4) TIMBER SPANS @ 35'-4", 45'-0", 35'-0", AND 45'-6" (160'-10" TOTAL LENGTH), 19'-0" CLEAR ROADWAY WIDTH AND TIMBER DECK WITH AN ASPHALT WEARING SURFACE ON TIMBER END BENTS AND BENT 1 WITH TIMBER PILES AND BENT 2 & BENT 3 WITH CONCRETE PIERS NEAR THE WATER LINE AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED IN THEIR ENTIRETY. EXISTING INTERIOR BENTS SHALL BE REMOVED TO ONE FOOT BELOW THE MUD LINE. THE EXISTING BRIDGE IS PRESENTLY CLOSED TO TRAFFIC AND TRAFFIC IS NOT PERMITTED TO CROSS THE BRIDGE.
15. FOR REMOVAL OF EXISTING BRIDGE, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	3'-0" DIA. DRILLED PIERS NOT IN SOIL	3'-0" DIA. DRILLED PIERS IN SOIL	PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	SID TESTING	CSL TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES		2-BAR METAL RAIL	1'-2" x 2'-9½" CONCRETE PARAPET	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CORED SLABS		TEMPORARY SHORING
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LUMP SUM	CY	LUMP SUM	LBS	LBS	EACH	No.	LF	LF	LF	TON	SY	LUMP SUM	No.	LF	SF
SUPERSTRUCTURE										LUMP SUM						385.75	400.75			LUMP SUM	48	2400.00	
END BENT No. 1								LUMP SUM	22.8		2,806		7	7	175			440	485				4000
BENT No. 1			45.0	39.0	69.0	1	1		17.7		9,113	1,568											
BENT No. 2			45.0	51.0	78.0	1	1		17.6		9,737	1,761											
BENT No. 3			15.0	63.0	69.0	1	1		17.5		8,754	1,453											
END BENT No. 2								LUMP SUM	22.8		2,806		7	7	175			400	440				4000
TOTAL	LUMP SUM	LUMP SUM	105.0	153.0	216.0	3	3	LUMP SUM	98.4	LUMP SUM	33,216	4,782	14	14	350	385.75	400.75	840	925	LUMP SUM	48	2400.00	8000

⚠1 ⚠1 ⚠1

GENERAL NOTES (CONTINUED):

16. FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
17. BEST MANAGEMENT PRACTICES FOR BRIDGE DEMOLITION AND REMOVAL WILL BE IMPLEMENTED DURING THE REMOVAL OF THE EXISTING BRIDGE.
18. INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 14+66.00 -L-.
19. THE CONTRACTOR SHALL PROVIDE MARKED UP "AS-BUILT" PLANS TO THE RESIDENT ENGINEER UPON COMPLETION OF THE PROJECT. THE RESIDENT ENGINEER SHALL FORWARD AS-BUILTS TO THE DIVISION 5 ENVIRONMENTAL OFFICER AND THE NCDOT HYDRAULICS UNIT (NCDOT_HYDRAULICS_AS-BUILT_PLANS@NCDOT.GOV). THE PURPOSE OF THE SUBMITTAL IS TO MEET THE REQUIREMENT OF SUBMITTING AS-BUILT PLANS TO THE USACE AND ALSO FOR THE NCDOT HYDRAULICS UNIT TO DETERMINE QUANTITY OF MITIGATION CREDITS TO APPLY TO THE MITIGATION BANK.

⚠1 BENT CAP WIDTH AND QUANTITY UPDATE

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R RUGGLES

DocuSigned by: David R. Ruggles 4/20/2023
C462768DF412422

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PROJECT NO. B-5323
GRANVILLE COUNTY
STATION: 14+66.00 -L-
SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER JOHN H. RESERVOIR
ON SR 1442 (DAVE WINSTON RD)
BETWEEN SR 1431 AND VIRGINIA

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE: 10-18
CHECKED BY: E. PHELPS DATE: 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE: 12-18

B-5323
4/20/2023
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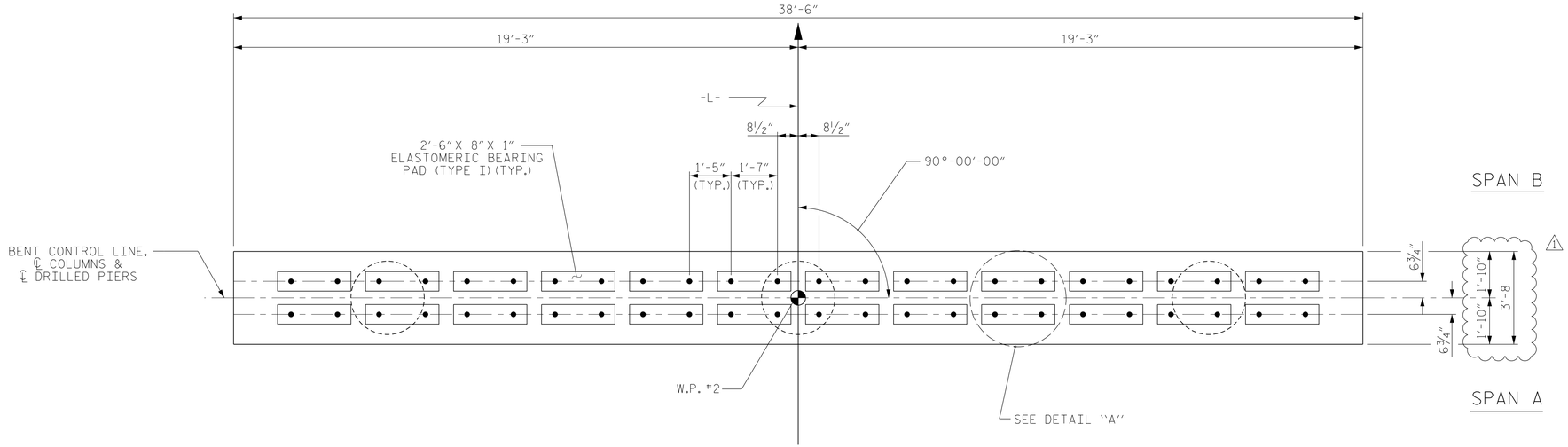
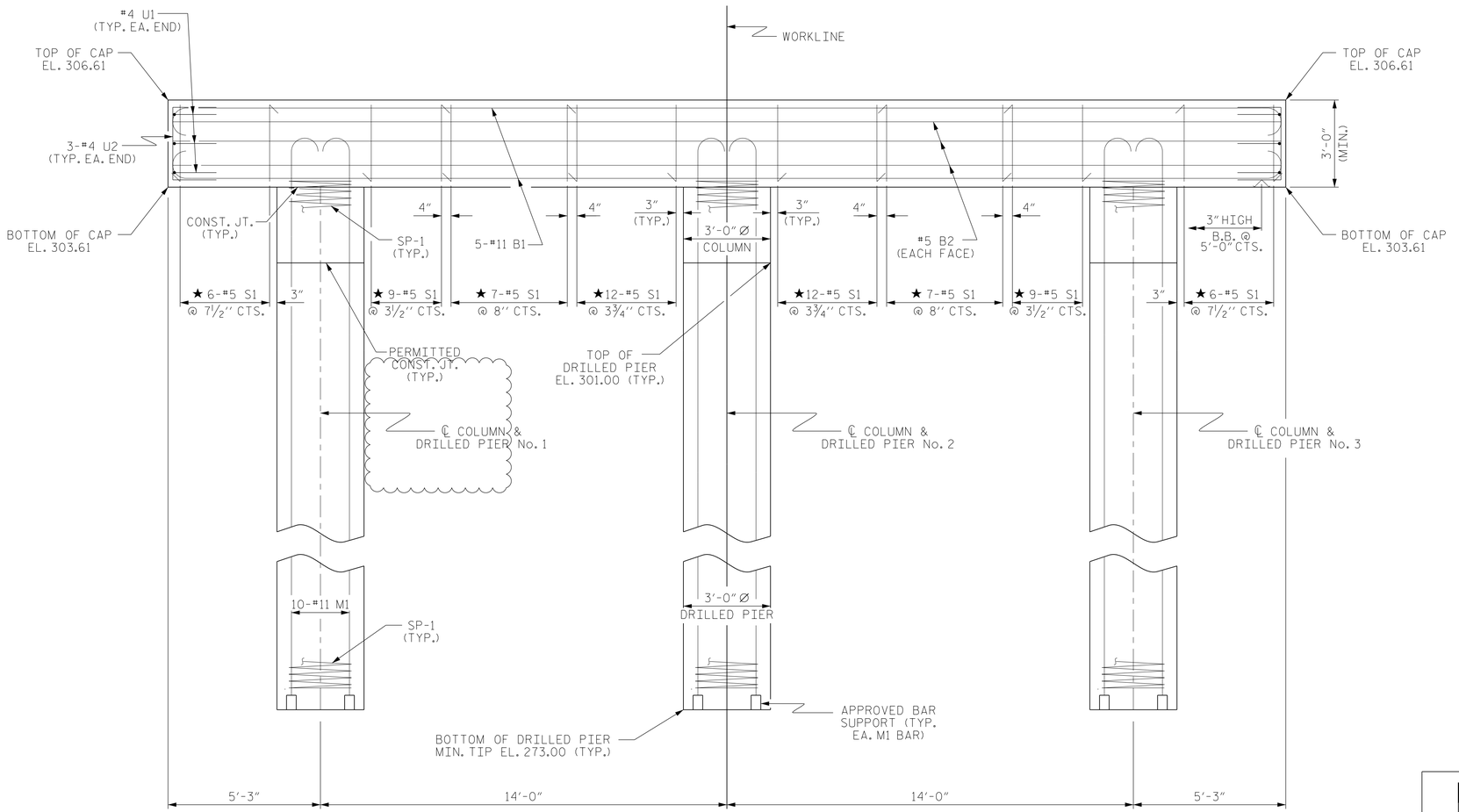
USER:jwilson



PLAN



ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

★ INVERT ALTERNATE STIRRUPS.

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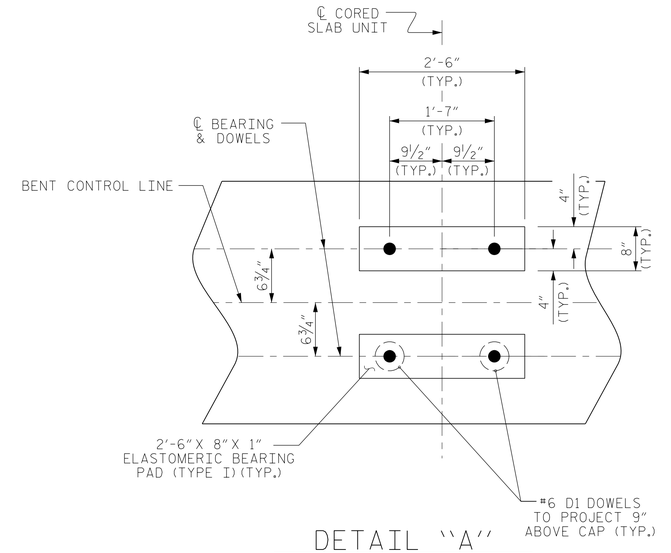
DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE NORMAL WATER SURFACE ELEVATION FOR SHAFTS LOCATED IN WATER.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

⚠ BENT CAP WIDTH AND QUANTITY UPDATE

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David R. Ruggles C4527680F412422... 4/20/2023

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GRANVILLE COUNTY

STATION: 14+66.00 -L-

SHEET 5 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE : 10-18
CHECKED BY: E. PHELPS DATE : 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 12-18

B-5323

4/20/2023
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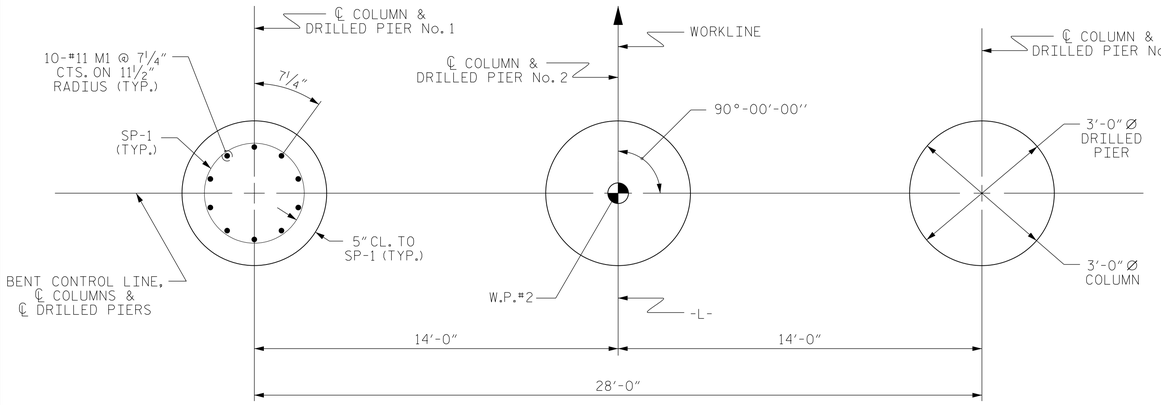
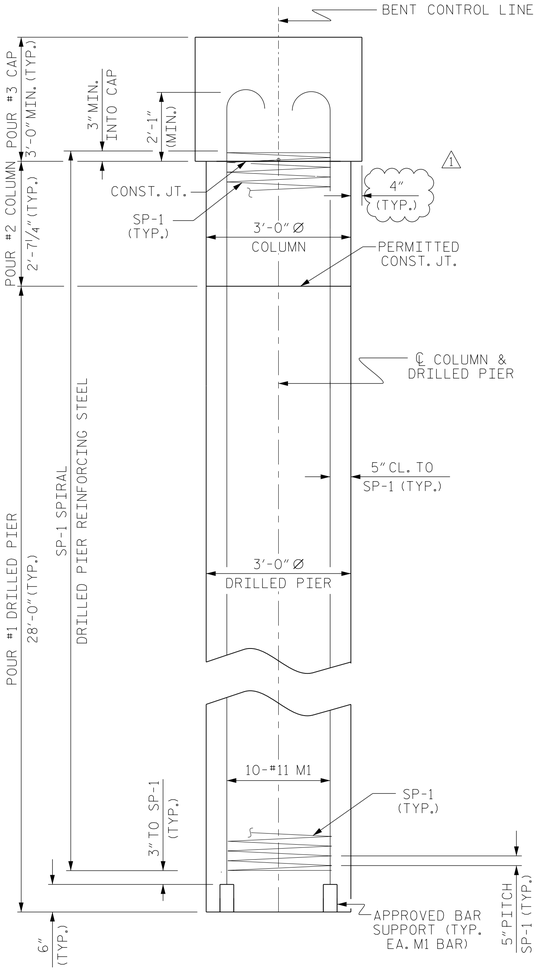
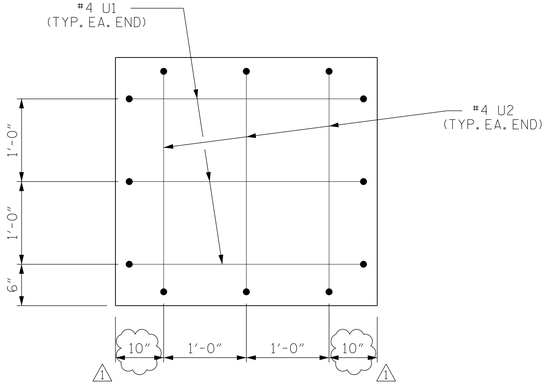
USER:jwilson



PLAN OF DRILLED PIERS & COLUMNS

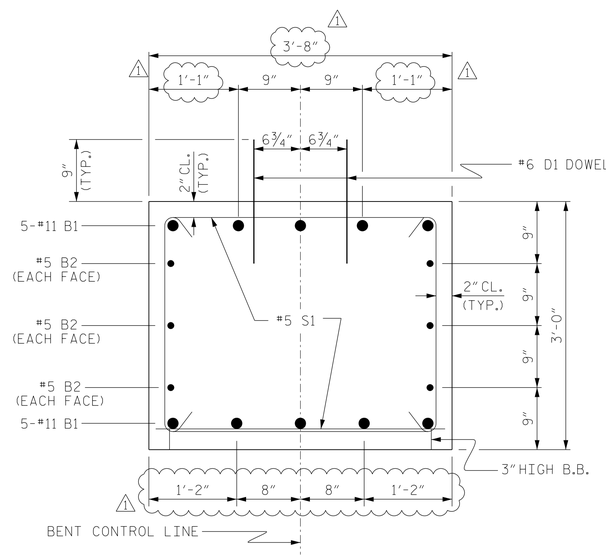


END ELEVATION



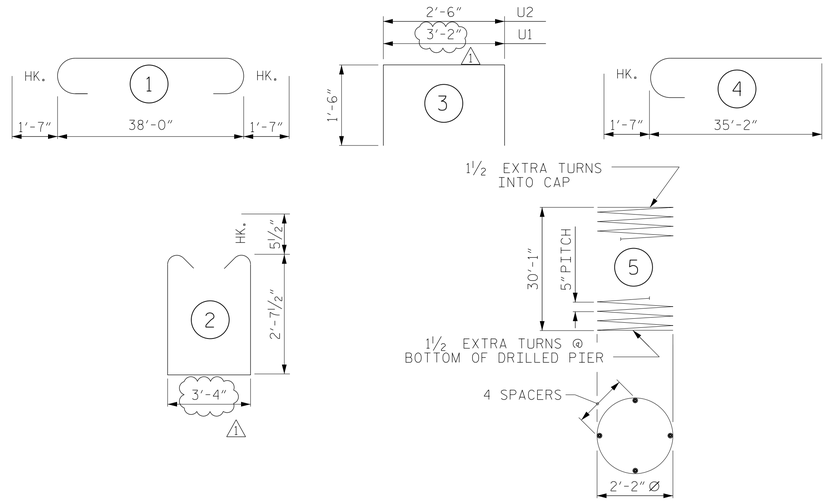
END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION THRU CAP

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	41'-2"	2187
B2	6	#5	STR	38'-2"	239
D1	48	#6	STR	1'-6"	108
M1	30	#11	4	36'-9"	5858
				⚠1 9'-6"	674
S1	68	#5	2		
U1	6	#4	3	6'-2"	25
U2	6	#4	3	5'-6"	22

REINFORCING STEEL (FOR ONE BENT) ⚠1 9,113 LBS.

SP-1	3	*	5	501'-0"	1568

SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,568 LBS.

* THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

POUR #2 (COLUMNS)	2.0 C.Y.
POUR #3 (CAP)	⚠1 15.7 C.Y.
TOTAL CLASS A CONCRETE	17.7 C.Y.

DRILLED PIERS: (FOR ONE BENT)

DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)	⚠1 22.0 C.Y.
3'-0" Ø DRILLED PIER NOT IN SOIL	45.0 LIN. FT.
3'-0" Ø DRILLED PIER IN SOIL	⚠1 39.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	⚠1 69.0 LIN. FT.
CSL TUBES	385.3 LIN. FT.
SID INSPECTIONS	1 EA.
CSL TESTING	1 EA.

PROJECT NO. B-5323

GRANVILLE COUNTY

STATION: 14+66.00 -L-

SHEET 6 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 1

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David R. Ruggles C462768DF412422 4/20/2023

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⚠1 BENT CAP WIDTH AND QUANTITY UPDATE

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE : 10-18
CHECKED BY: E. PHELPS DATE : 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 12-18

B-5323

4/20/2023
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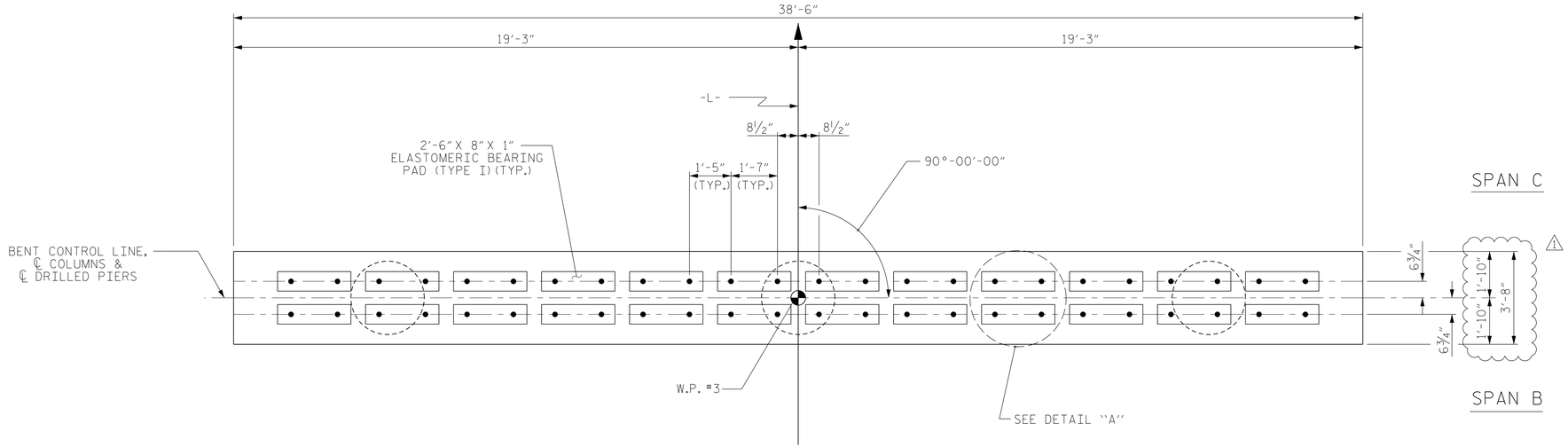
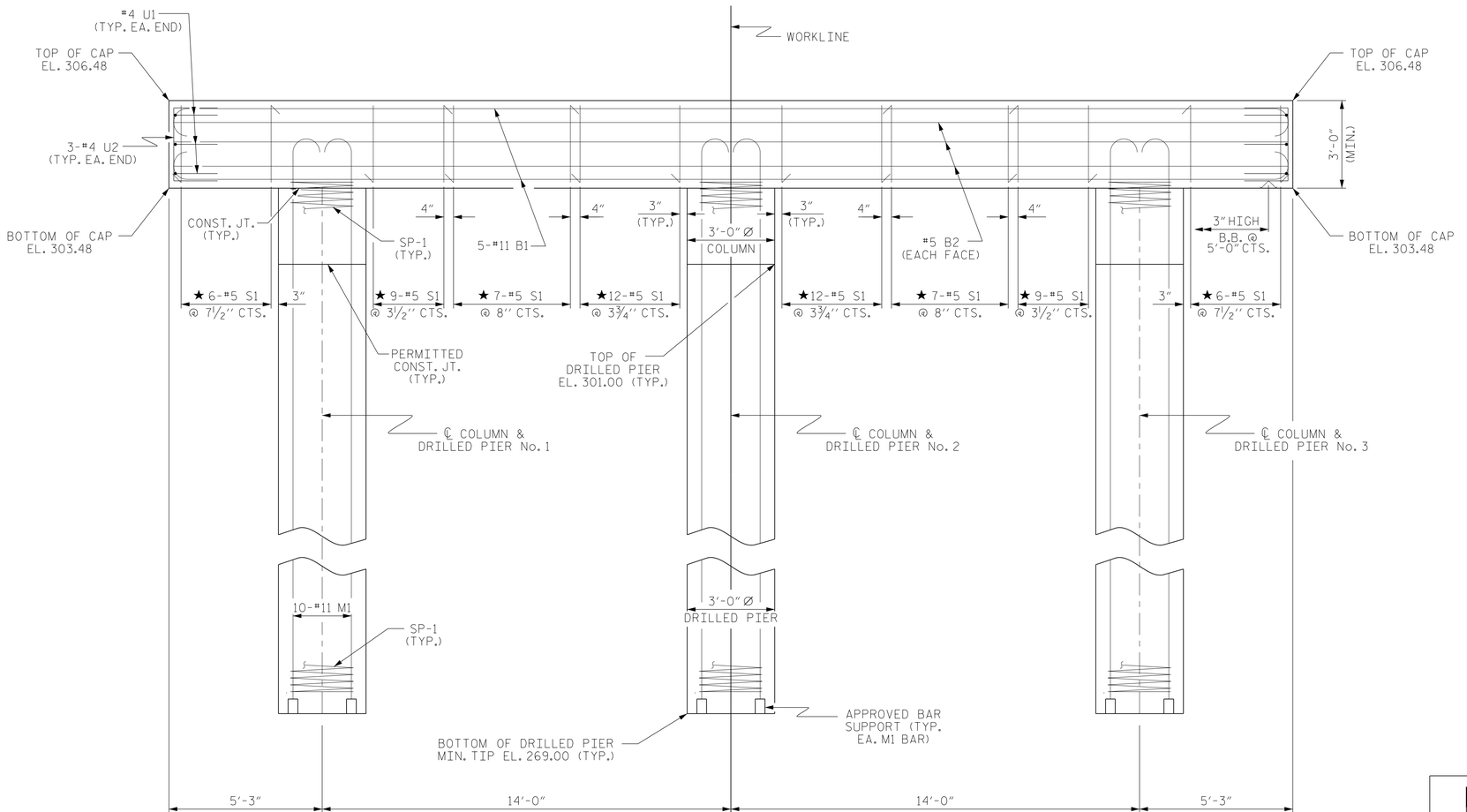
USER:jwilson



PLAN



ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

NOTES

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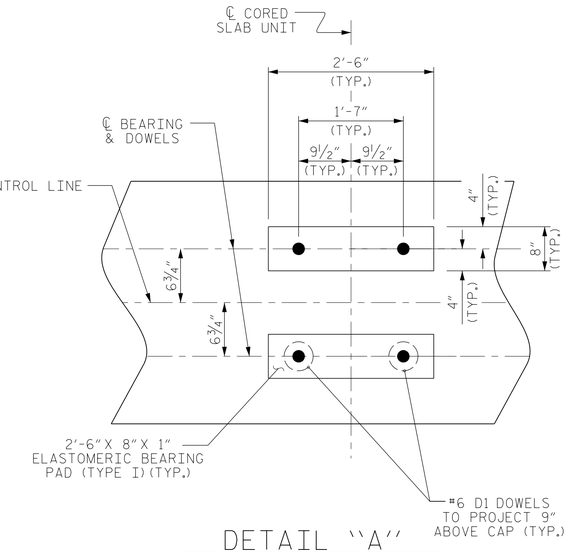

DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

⚠ BENT CAP WIDTH AND QUANTITY UPDATE

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David R. Ruggles C4527680F412422... 4/20/2023

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PROJECT NO. B-5323

GRANVILLE COUNTY

STATION: 14+66.00 -L-

SHEET 7 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE : 10-18
CHECKED BY: E. PHELPS DATE : 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 12-18

B-5323

4/20/2023
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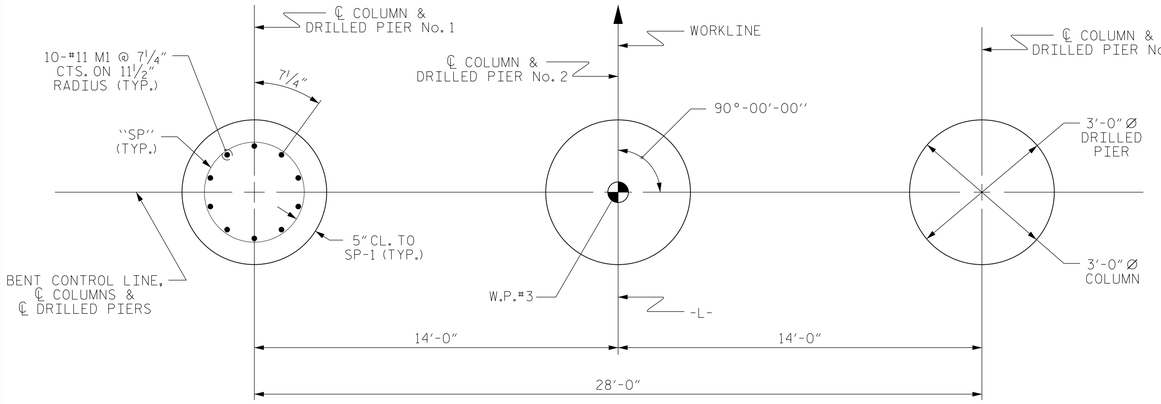
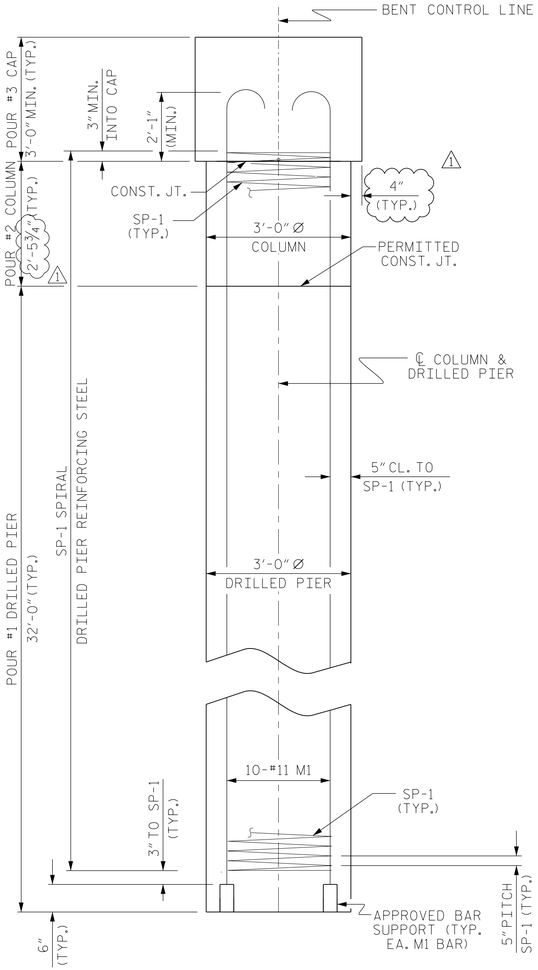
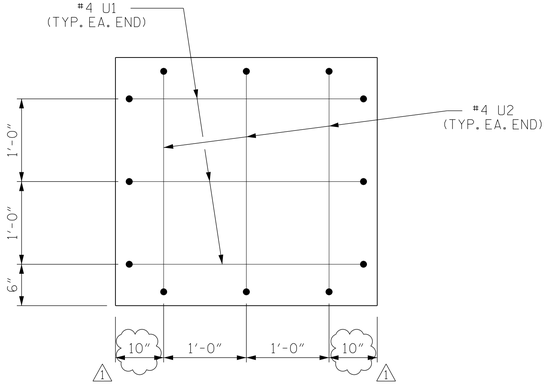
USER:jwilson



PLAN OF DRILLED PIERS & COLUMNS

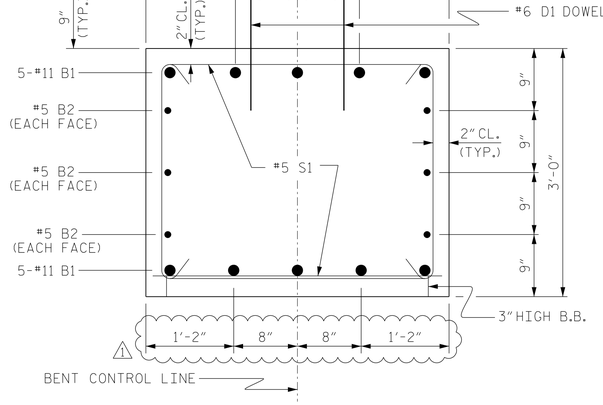


END ELEVATION



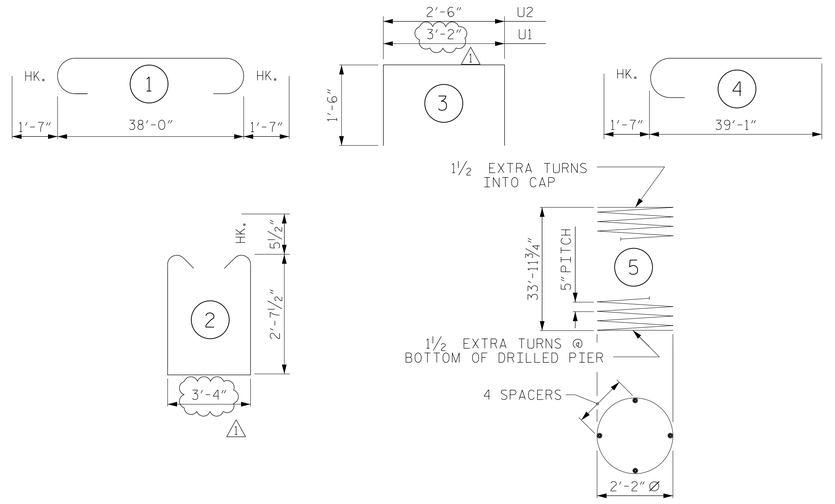
END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION THRU CAP

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	41'-2"	2187
B2	6	#5	STR	38'-2"	239
D1	48	#6	STR	1'-6"	108
M1	30	#11	4	40'-8"	6482
				⚠1	
S1	68	#5	2	9'-6"	674
U1	6	#4	3	6'-2"	25
U2	6	#4	3	5'-6"	22

REINFORCING STEEL (FOR ONE BENT) ⚠1 9,737 LBS.

SP-1	3	✳	5	562'-10"	1761

SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,761 LBS.

✳ THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

POUR #2 (COLUMNS)	1.9 C.Y.
POUR #3 (CAP)	⚠1 15.7 C.Y.
TOTAL CLASS A CONCRETE	17.6 C.Y.

DRILLED PIERS: (FOR ONE BENT)

DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)	⚠1 25.1 C.Y.
3'-0" Ø DRILLED PIER NOT IN SOIL	45.0 LIN. FT.
3'-0" Ø DRILLED PIER IN SOIL	⚠1 51.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	⚠1 78.0 LIN. FT.
CSL TUBES	431.8 LIN. FT.
SID INSPECTIONS	1 EA.
CSL TESTING	1 EA.

PROJECT NO. B-5323

GRANVILLE COUNTY

STATION: 14+66.00 -L-

SHEET 8 OF 10

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 2

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

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⚠1 BENT CAP WIDTH AND QUANTITY UPDATE

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE : 10-18
CHECKED BY: E. PHELPS DATE : 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 12-18

B-5323

4/20/2023
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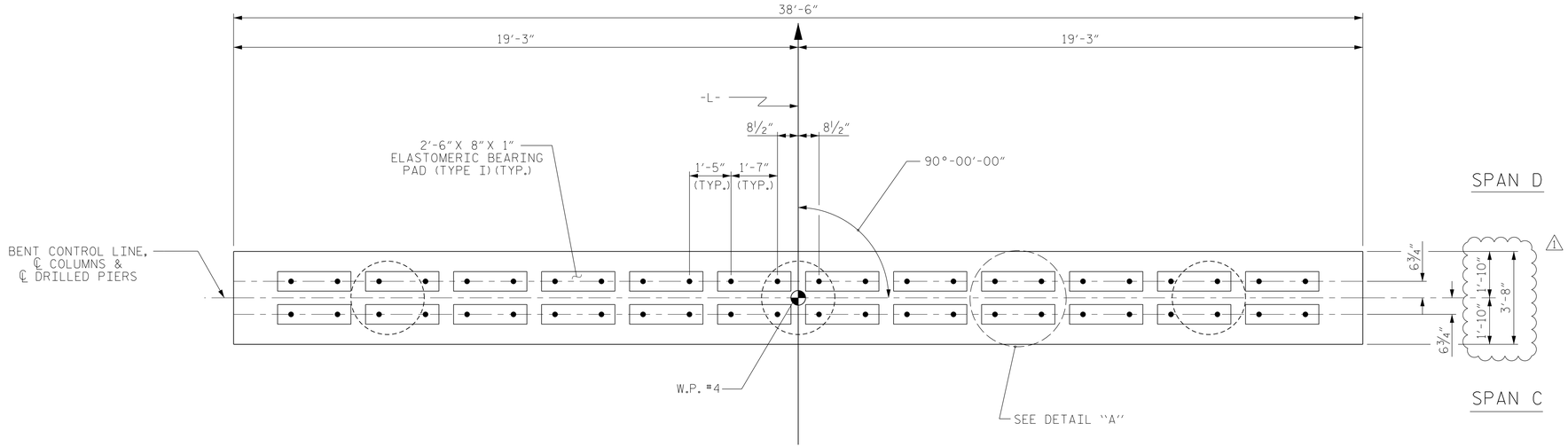
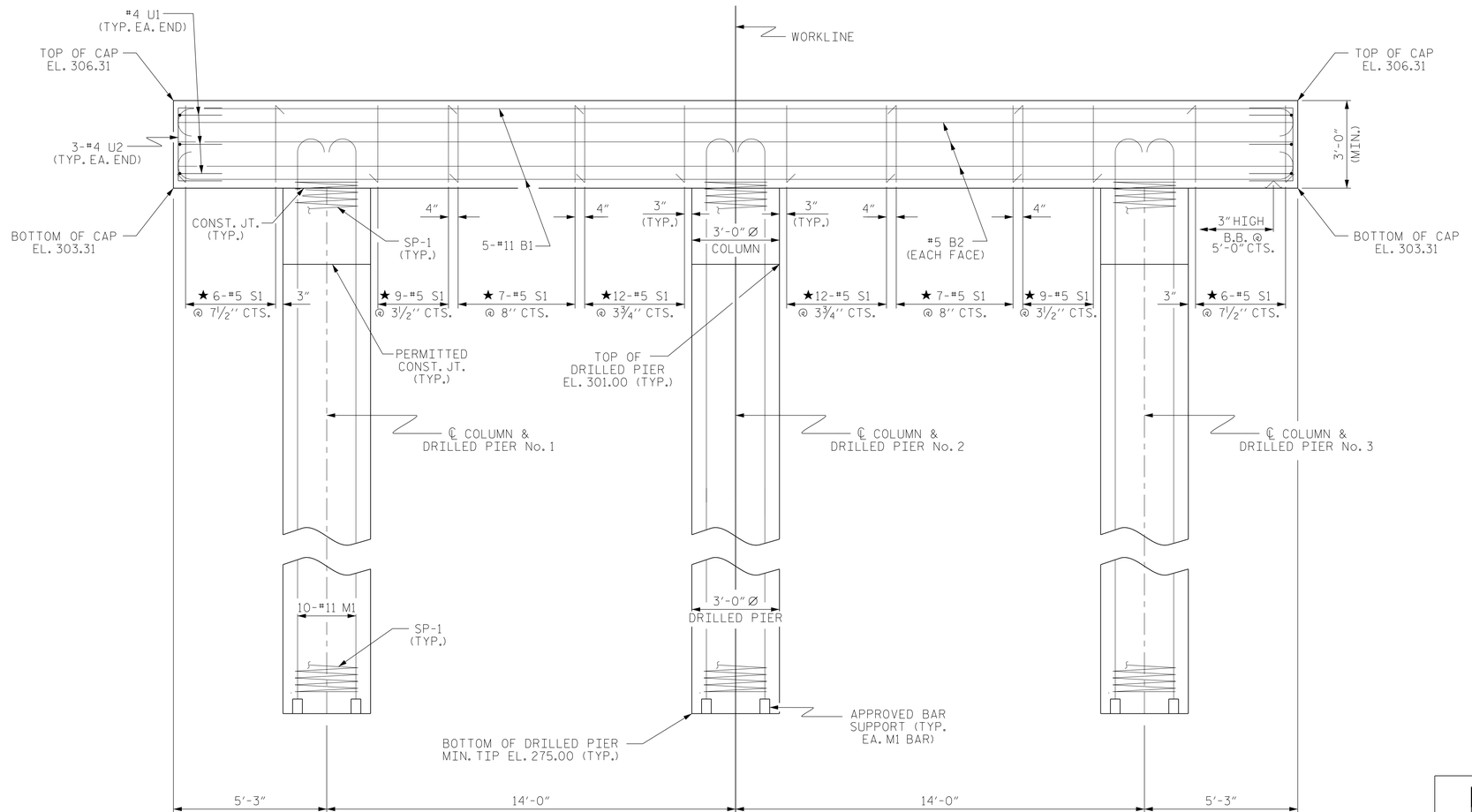
USER:jwilson



PLAN



ELEVATION

DIMENSIONS & REINFORCING STEEL ARE TYPICAL FOR EACH COLUMN & DRILLED PIER UNLESS OTHERWISE NOTED.

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

HOOKS ON "M" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

FOR DRILLED PIERS, SEE SECTION 411 OF THE STANDARD SPECIFICATIONS.

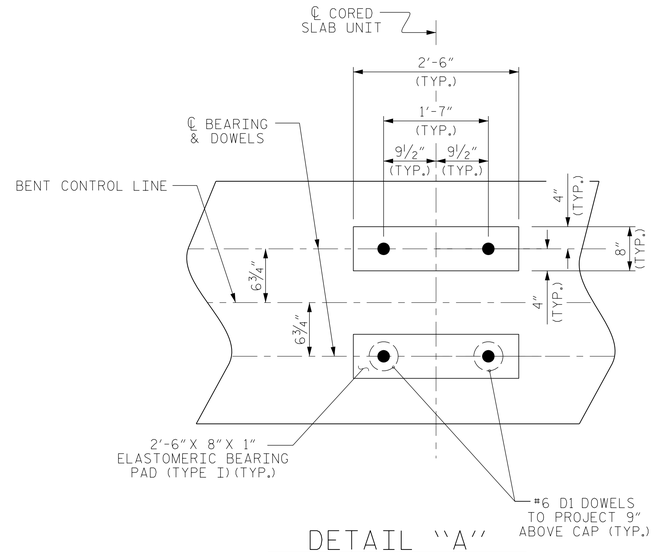
ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."

INVERT ALTERNATE STIRRUPS.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND LINE ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT ONE FOOT BELOW THE GROUND LINE.

DRILLED PIERS SHALL BE TERMINATED ONE FOOT ± ABOVE NORMAL WATER SURFACE ELEVATION FOR SHAFTS LOCATED IN WATER.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

⚠ BENT CAP WIDTH AND QUANTITY UPDATE

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

DocuSigned by: David R. Ruggles C4527680F412422... 4/20/2023

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STEWART

PROJECT NO. B-5323

GRANVILLE COUNTY

STATION: 14+66.00 -L-

SHEET 9 OF 10

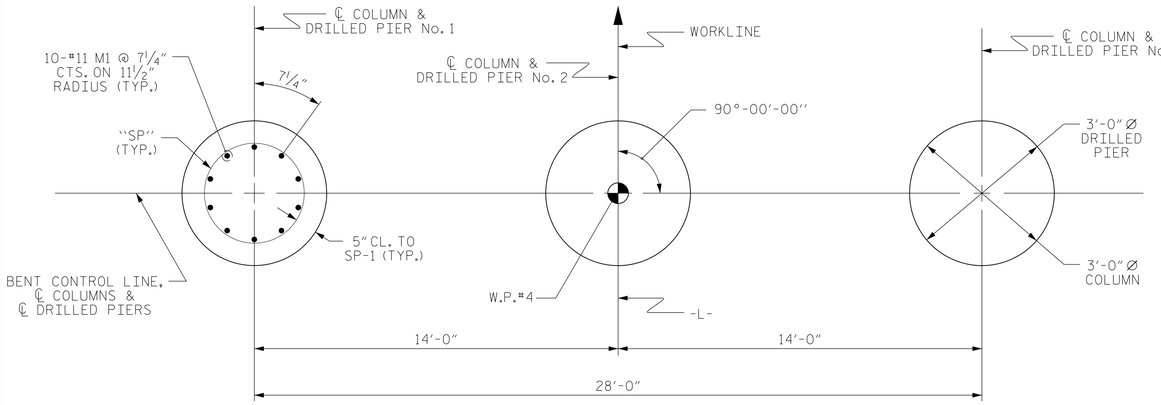
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 3

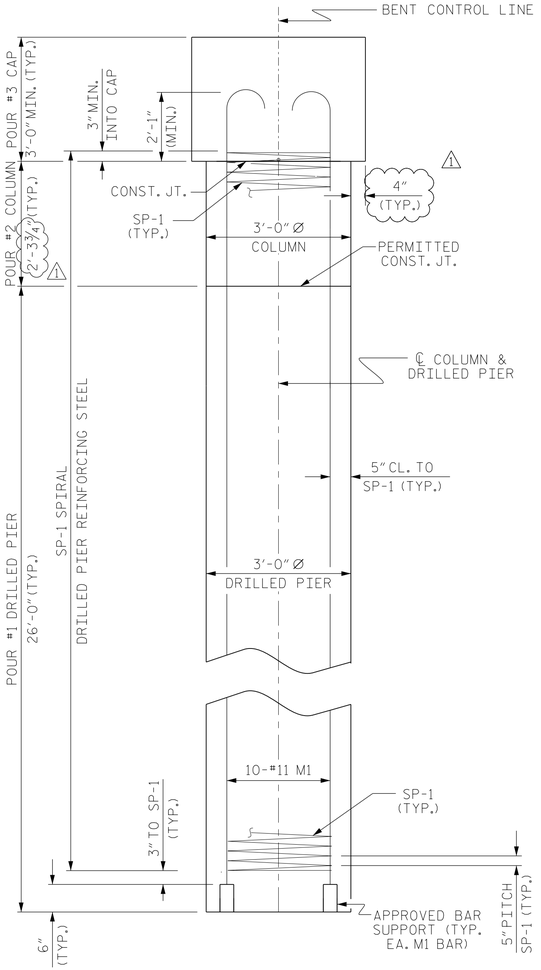
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1	JCW	4/20/23	3			TOTAL SHEETS
2			4			26

DRAWN BY: V. CHUNG DATE : 10-18
CHECKED BY: E. PHELPS DATE : 11-18
DESIGN ENGINEER OF RECORD: D. RUGGLES DATE : 12-18

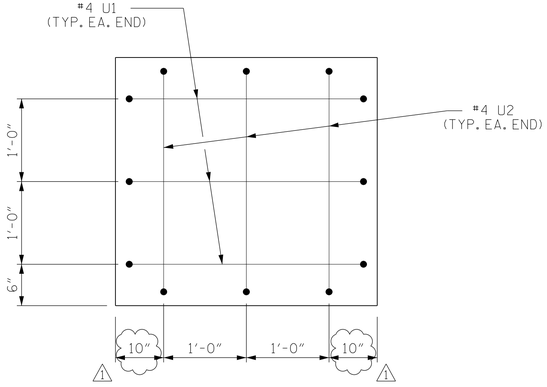
B-5323
4/20/2023
...\400_023_B5323_SMU_SUB09.dgn
USER:jwilson



PLAN OF DRILLED PIERS & COLUMNS

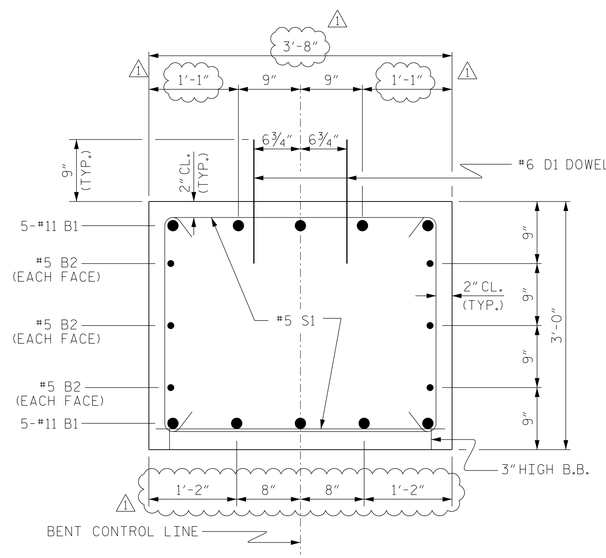


END ELEVATION



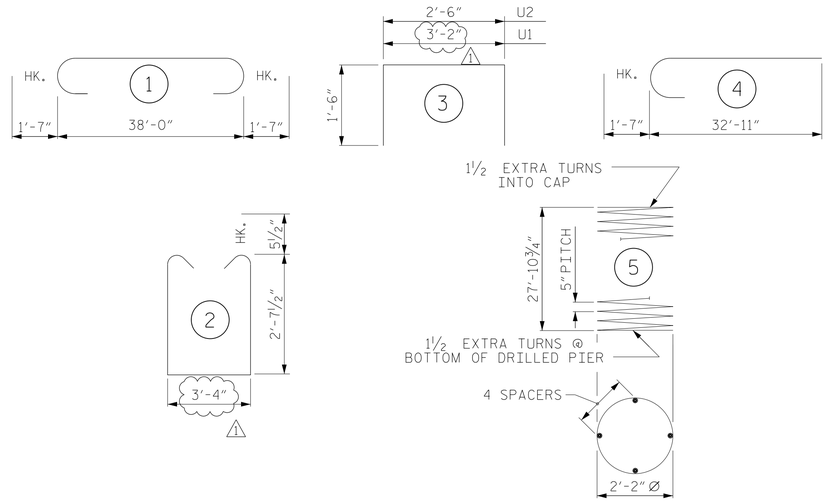
END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION THRU CAP

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL
FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	10	#11	1	41'-2"	2187
B2	6	#5	STR	38'-2"	239
D1	48	#6	STR	1'-6"	108
M1	30	#11	4	34'-6"	5499
S1	68	#5	2	9'-6"	674
U1	6	#4	3	6'-2"	25
U2	6	#4	3	5'-6"	22

REINFORCING STEEL (FOR ONE BENT) ⚠1 8,754 LBS.

SP-1	3	✳	5	464'-3"	1453

SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1453 LBS.

✳ THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

POUR #2 (COLUMNS)	1.8 C.Y.
POUR #3 (CAP)	⚠1 15.7 C.Y.
TOTAL CLASS A CONCRETE	17.5 C.Y.

DRILLED PIERS: (FOR ONE BENT)

DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS)	⚠1 20.4 C.Y.
3'-0" Ø DRILLED PIER NOT IN SOIL	15.0 LIN. FT.
3'-0" Ø DRILLED PIER IN SOIL	⚠1 63.0 LIN. FT.
PERMANENT STEEL CASING FOR 3'-0" Ø DRILLED PIER	⚠1 69.0 LIN. FT.
CSL TUBES	357.7 LIN. FT.
SID INSPECTIONS	1 EA.
CSL TESTING	1 EA.

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SHEET 10 OF 10

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BENT No. 3

NORTH CAROLINA PROFESSIONAL SEAL 11725 ENGINEER DAVID R. RUGGLES

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