

**MICROPILE GENERAL NOTES**

1. DESIGN BASIS
  - A. 2015 INTERNATIONAL BUILDING CODE
2. REFERENCE CODES:
  - A. AISC-ASD STEEL MANUAL, 9TH EDITION
  - B. ACI 318-11 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
  - C. PUBLICATION NO. FHWA-SA-97-070 "MICROPILE DESIGN AND CONSTRUCTION GUIDELINES."
  - D. PUBLICATION NO. FHWA NHI-05-039 "MICROPILE DESIGN AND CONSTRUCTION" DECEMBER 2005
3. FOUNDATION:
  - A. SOIL INFORMATION WAS DERIVED FROM THE GEOTECHNICAL ENGINEERING REPORT TITLED PREPARED BY NORTHWEST COLORADO CONSULTANTS, INC. (NWCC JOB NUMBER: 20-12000) DATED 12/30/2020.
4. MATERIALS:
  - A. BARS:
    - BARS TO BE GRADE 75 OR GRADE 150 OF SIZE INDICATED ON MICROPILE PLANS. REINFORCEMENT BARS SHALL MEET ASTM A 615/AASHTO M31 (GR. 75) OR ASTM A 722/AASHTO M275 (GR. 150) SPECIFICATIONS. MINIMUM THICKNESS OF EPOXY COATING SHALL BE 0.010 INCH. EPOXY COATING SHALL BE IN ACCORDANCE WITH ASTM A775 OR ASTM A934. CENTRALIZERS SHALL BE PROVIDED FOR ALL MICROPILES AS INDICATED PER PLAN. CENTRALIZERS SHALL BE FABRICATED FROM SCHEDULE 40 PVC PIPE.
  - B. GROUT:
    - GROUT SHALL BE PORTLAND CEMENT TYPE I OR TYPE II, MEETING ASTM C150 SPECIFICATIONS AND POTABLE WATER. THE MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF THE GROUT SHALL BE 4,000 PSI. GROUT MAY CONTAIN SIKKA CO. INTERPLAST-N SHRINKAGE COMPENSATING CEMENT IN THE MAXIMUM AMOUNT OF 1% BY WEIGHT OF CEMENT.
  - C. CASING:
    - CASING SHALL BE OF DIAMETER AND WALL THICKNESS INDICATED ON MICROPILE SCHEDULE. PIPE SHALL CONFORM TO ASTM A53 GRADE B DESIGNATION (MINIMUM YIELD STRESS OF 36 KSI) OR API N-80 SPECIFICATIONS (MINIMUM YIELD STRESS OF 80 KSI). API PIPE SHALL BE FREE FROM DEFECTS AND DOCUMENTATION OF MINIMUM STRENGTH SHALL BE PROVIDED TO COGGINS ENGINEER.
  - D. PLATES AND SHAPES:
    - STRUCTURAL SHAPES SHALL CONFORM TO ASTM A36/AASHTO M183 OR ASTM A572/AASHTO M223, GRADE 36.
5. ALL DIMENSIONS ON DRAWINGS SHALL BE VERIFIED BY GENERAL CONTRACTOR PRIOR TO BEGINNING OF WORK.
6. PROCEDURE:
  - A. ALL UTILITIES WITH EQUIPMENT OR FACILITIES SERVING AN AREA WITHIN 300 FEET OF THE PLANNED CONSTRUCTION SHALL BE NOTIFIED PRIOR TO MICROPILE INSTALLATION THAT SUCH WORK IS TO TAKE PLACE. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF MICROPILES WITH UTILITIES.
  - B. ADVANCE DRILL BIT FULL MICROPILE LENGTH UTILIZING ROTARY PERCUSSION DRILLING TECHNIQUES. AFTER COMPLETION OF DRILLING INSERT BAR WITH CENTRALIZERS AND TREMIE PIPE ATTACHED. GROUT FULL LENGTH OF MICROPILE. UPON COMPLETION OF GROUTING INSERT PIPE INTO DRILL HOLE. ADJUST TOP OF PIPE AND BAR TO PROPER ELEVATION.
  - C. **INSTALL BEARING PLATE AND HARDWARE**
  - D. MICROPILE INSTALLATION SHALL BE MONITORED AND RECORDED. MONITORED AND RECORDED DATA SHALL INCLUDE TOTAL DEPTH, GROUT PRESSURE (PRIMARY AND POST GROUT), GROUT QUANTITIES (PRIMARY AND POST GROUT), SOIL/ROCK ENCOUNTERED DURING INSTALLATION, AND ANY OBSTRUCTION OR IRREGULARITIES.
7. ENGINEER'S APPROVAL MUST BE SECURED FOR ALL SUBSTITUTIONS.
8. THE REQUIREMENTS OF THE LATEST EDITION OF THE "OSHA CONSTRUCTION STANDARDS", SHALL BE COMPLIED WITH BY ALL CONTRACTORS, FABRICATORS AND SUPPLIERS.

RCRBD requires a deferred submittal of the installation report to be provided to us prior to calling for inspections above the micro piles

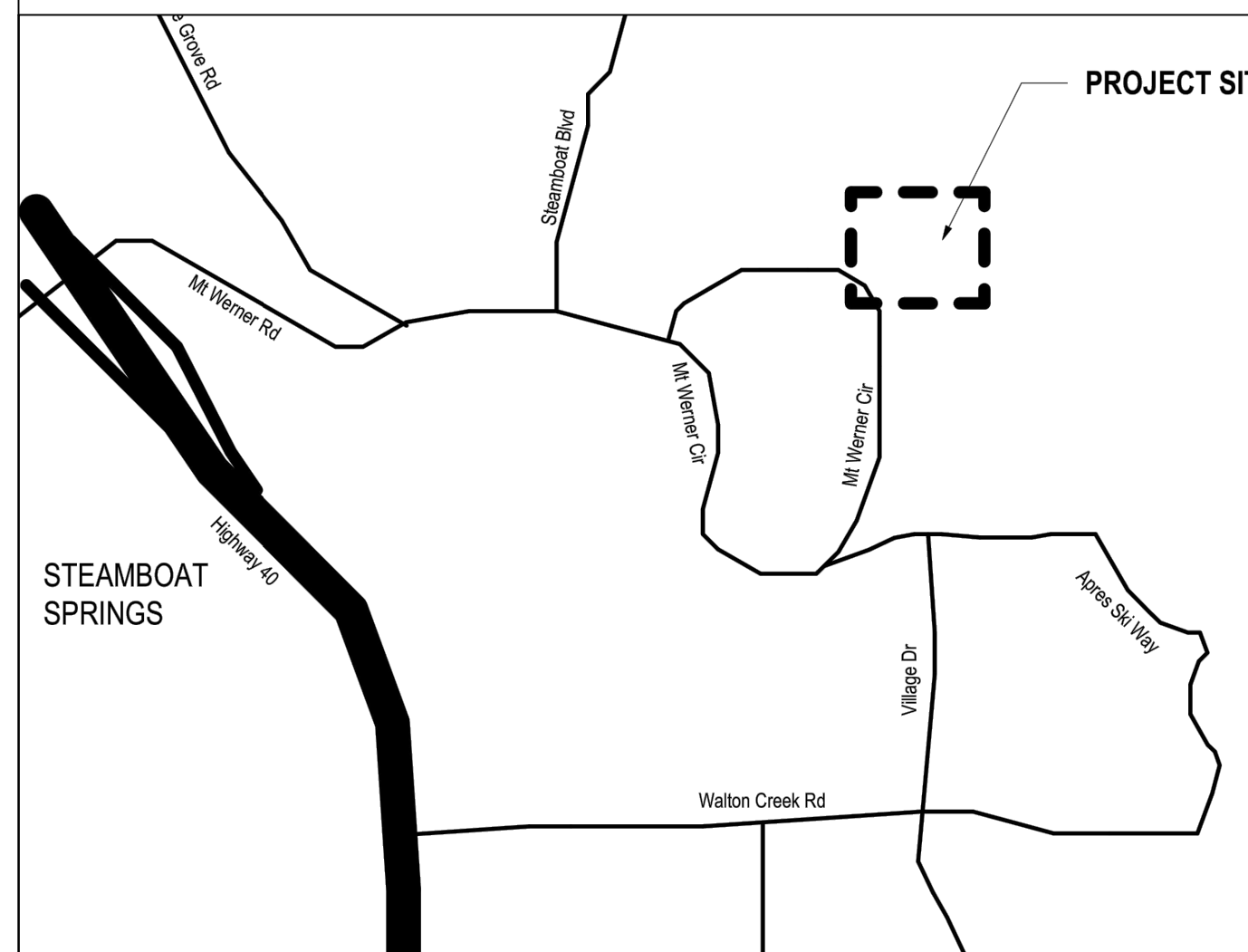


9512 TITAN PARK CIRCLE  
 LITTLETON, COLORADO 80125  
 TEL: 303-791-9911  
 FAX: 303-791-0967

**PROPOSED MICROPILES**  
**SSRC - BASE AREA IMPROVEMENTS - STAGE**  
**2305 MOUNT WERNER CIRCLE**  
**STEAMBOAT SPRINGS, CO 80487**

<u>SHEET NO.</u>	<u>INDEX OF SHEETS</u>
XBS - 1	COVER SHEET
XBS - 2	PLAN VIEW & DETAILS

**VICINITY MAP**



FOR  
**SAUNDERS CONSTRUCTION INC.**  
**86 INVERNESS PLACE NORTH**  
**CENTENNIAL, CO 80112**  
**PH: 303-699-9000**

NOTE:  
 BEFORE CONSTRUCTION COMMENCES, A UTILITY LOCATE MUST BE PERFORMED TO FIELD VERIFY THE LOCATION OF ALL UTILITIES IN THE VICINITY OF THE SITE. THE EARTH RETENTION DESIGN WILL BE REVIEWED AND DRAWINGS REVISED, IF REQUIRED, WHEN FINAL UTILITY LOCATIONS BECOMES AVAILABLE.

DIMENSIONS OBTAINED FROM BP5: IFC DATED FEBRUARY 4, 2022:  
 • MARTIN / MARTIN ENGINEERS (STRUCTURAL)  
 SHEET 2A-S9.00

NO.	DATE	REVISIONS DESCRIPTION

This drawing, as an instrument of professional service, is the property of Coggins & Sons, Inc. It is furnished to the General Contractor for information purposes and for approval for construction by Coggins & Sons, Inc. of the excavation retention for the designated project only. It shall be returned to Coggins & Sons upon demand.



NOT VALID WITHOUT DATE & ORIGINAL SIGNATURE

SSRC - BASE AREA IMPROVEMENTS - STAGE



SAUNDERS CONSTRUCTION INC.  
 86 INVERNESS PLACE NORTH  
 CENTENNIAL, CO 80112  
 PH: 303-699-9000

**COGGINS & SONS, INC.**

9512 TITAN PARK CIRCLE  
 LITTLETON, COLORADO 80125  
 TEL: 303-791-9911 FAX: 303-791-0967

JOB NO. : 5822  
 ISSUED: 2022.04.23  
 DWN BY: JHH  
 DWG. NO.  
**XBS-1**  
 SHT. 1 OF 2



NOT VALID WITHOUT DATE & ORIGINAL SIGNATURE

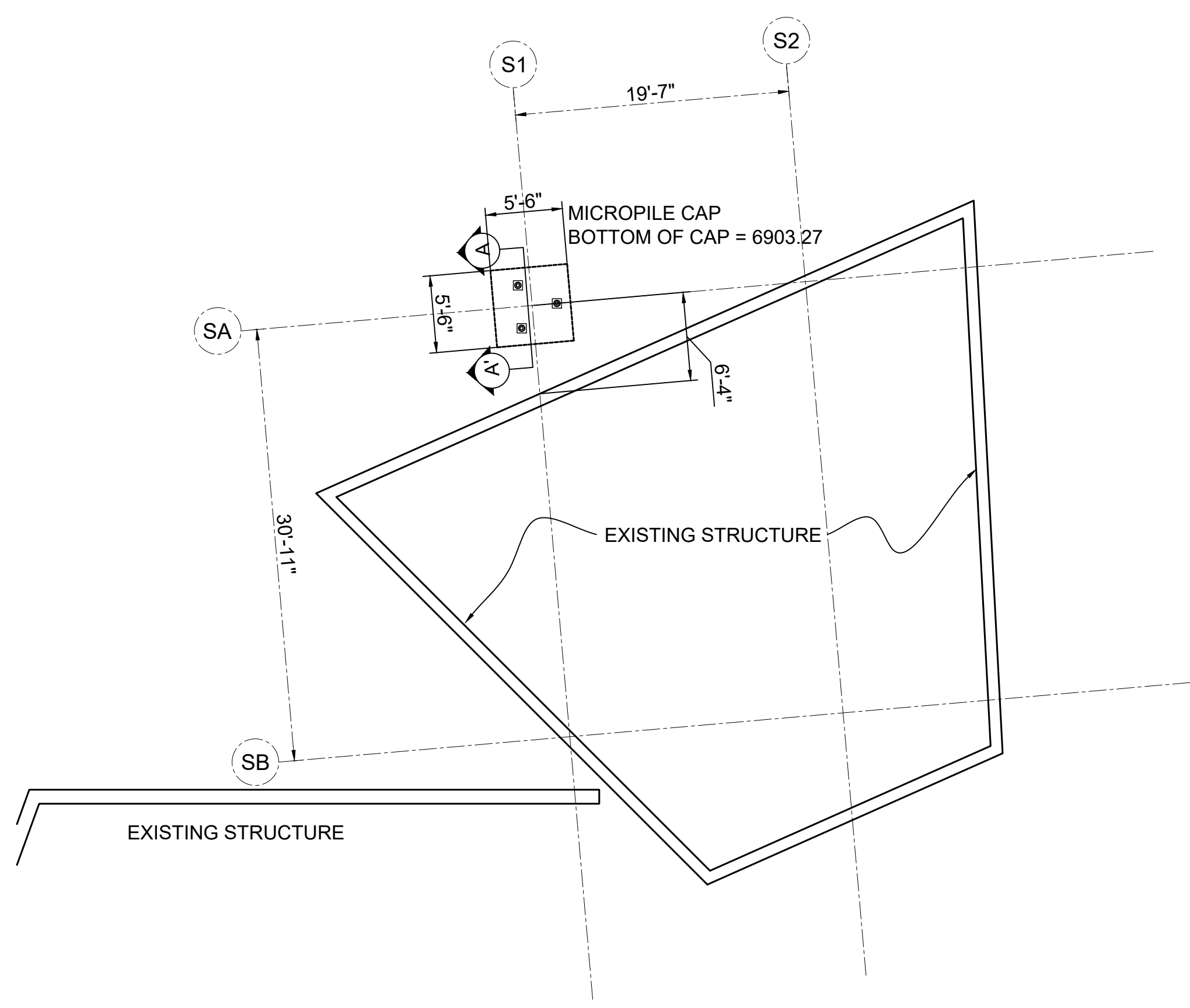
SSRC - BASE AREA IMPROVEMENTS - STAGE  
 SAUNDERS CONSTRUCTION INC.  
 86 INVERNESS PLACE NORTH  
 CENTENNIAL, CO 80112  
 PH: 303-699-9000

**COGGINS & SONS, INC.**  
 9512 TITAN PARK CIRCLE  
 LITTLETON, COLORADO 80125  
 TEL: 303-791-9911 FAX: 303-791-0967

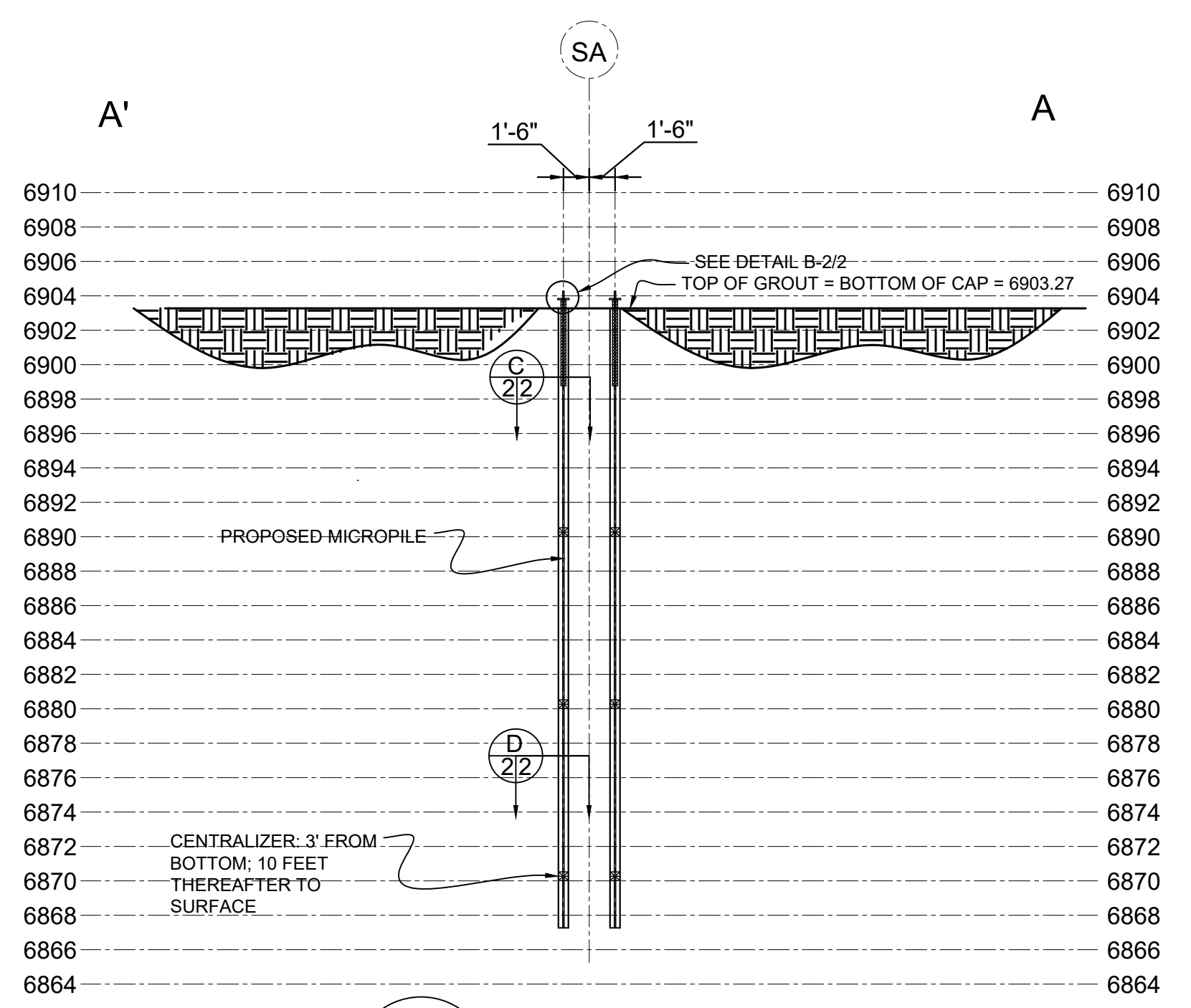
JOB NO. : 5822  
 ISSUED: 2022.04.23  
 DWN BY: JHH  
 DWG. NO.  
**XBS-2**  
 SHT. 2 OF 2

LEGEND		
	MP1	MICROPILE IDENTIFICATION
		PROPOSED FOUNDATION WALL
	8	GRID LINE

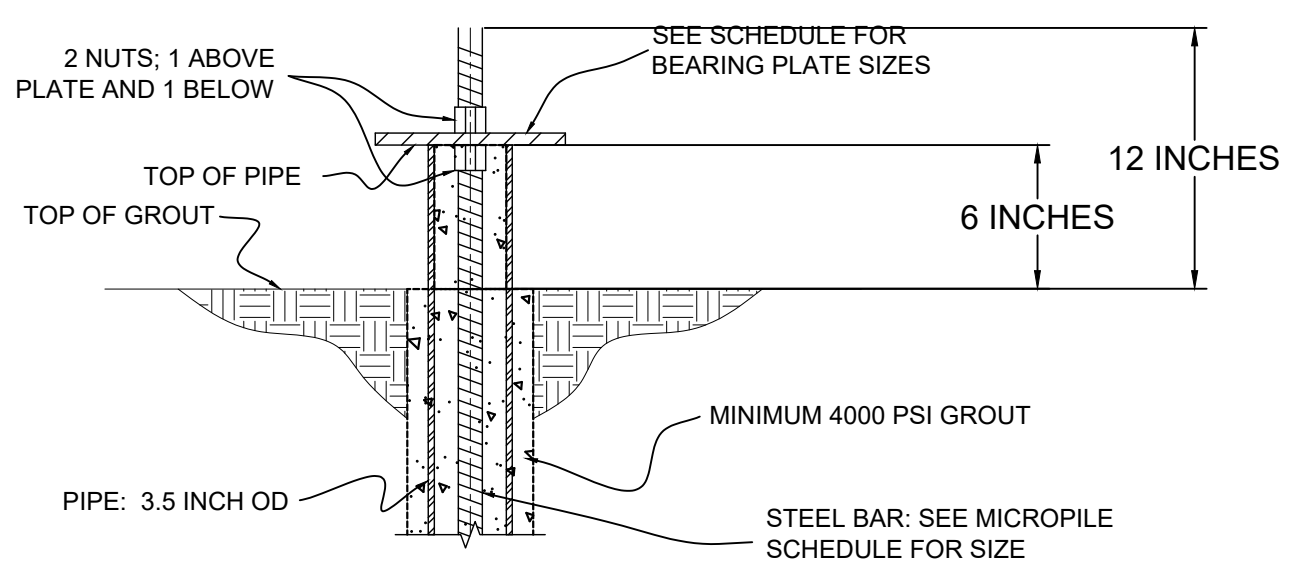
MICROPILE SCHEDULE												
MICROPILE NO.	BAR GRADE (ksi)	DIAMETER OF BAR (IN)	BAR LENGTH (ft.)	DRILL LENGTH (ft.)	PIPE GRADE (ksi)	DIAMETER OF PIPE (in.)	PIPE WALL THICKNESS (in.)	PIPE LENGTH (ft.)	TOP OF PIPE	SERVICE LOAD (kips)		BEARING PLATE SIZE
										COMP.	TENSION	
MP1 - MP3	150	1.00	37	36	36	3.500	0.216	5	6903.77	54	20	8"X8"X1"



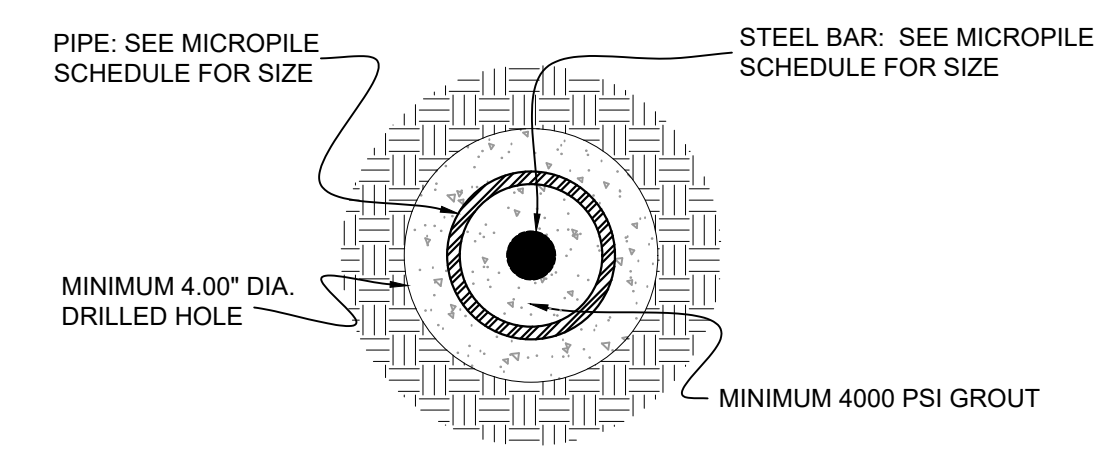
**PLAN VIEW**  
 SCALE: 1/8" = 1'-0"  
 PLAN NORTH



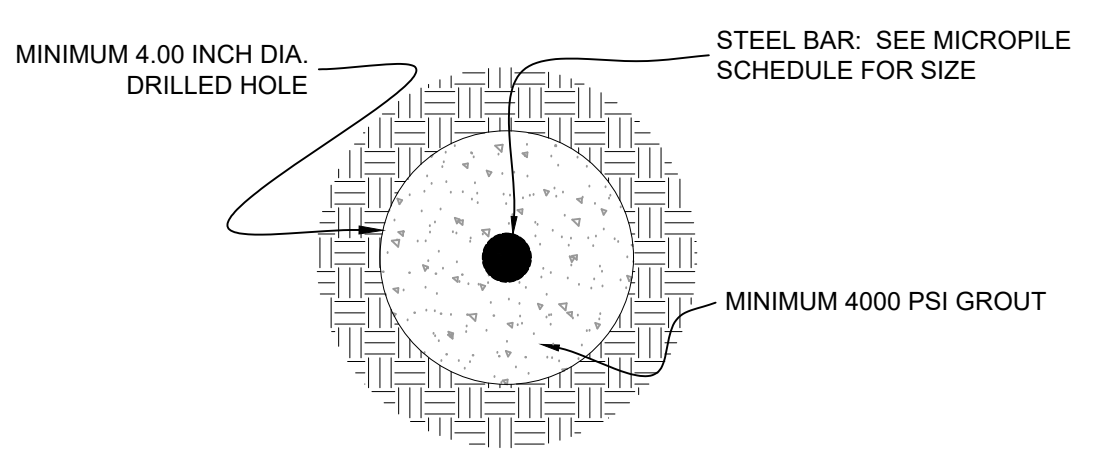
**A-A'**  
 CROSS SECTION A-A'  
 SCALE: NOT TO SCALE



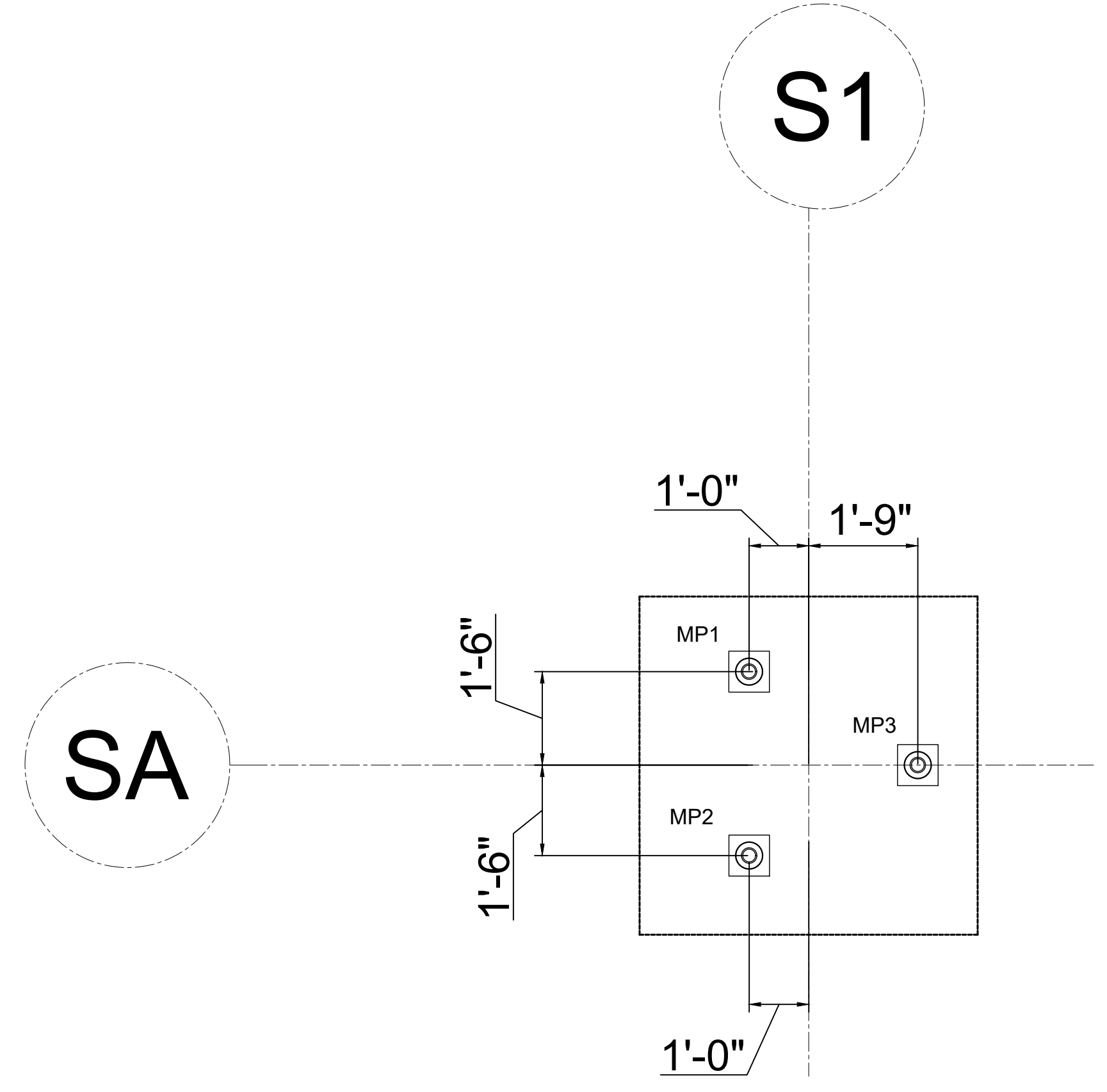
**B**  
 2/2  
 DETAIL HEAD  
 NOT TO SCALE



**C**  
 2/2  
 DETAIL TOP VIEW  
 NOT TO SCALE



**D**  
 2/2  
 DETAIL TOP VIEW  
 NOT TO SCALE



**X-X**  
 2/2  
 MICROPILE CAP DIMENSIONS  
 SCALE: NOT TO SCALE