

8 7 6 5 4 3 2 1

D

C

B

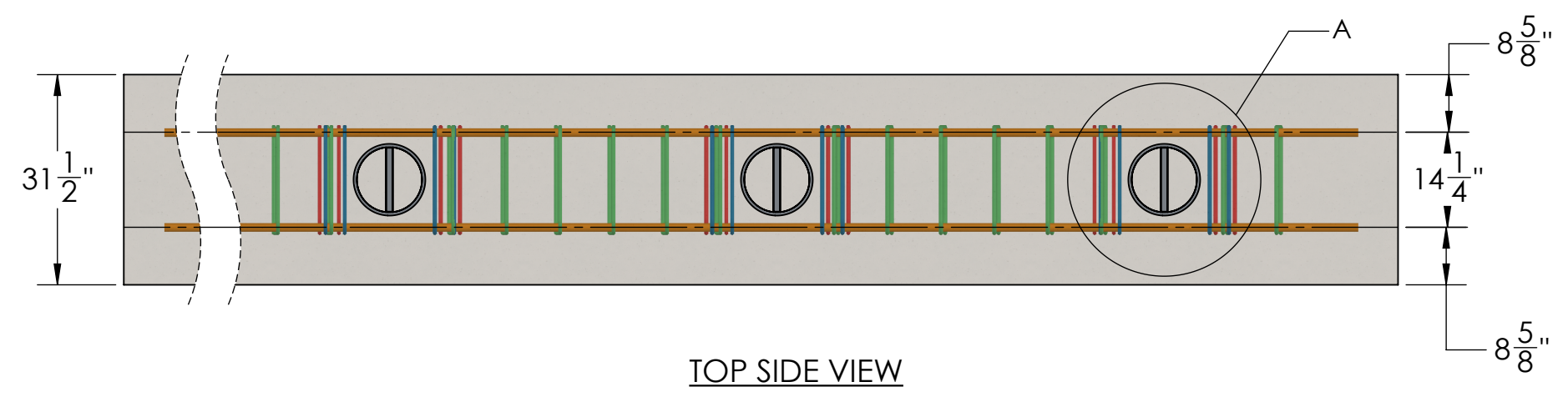
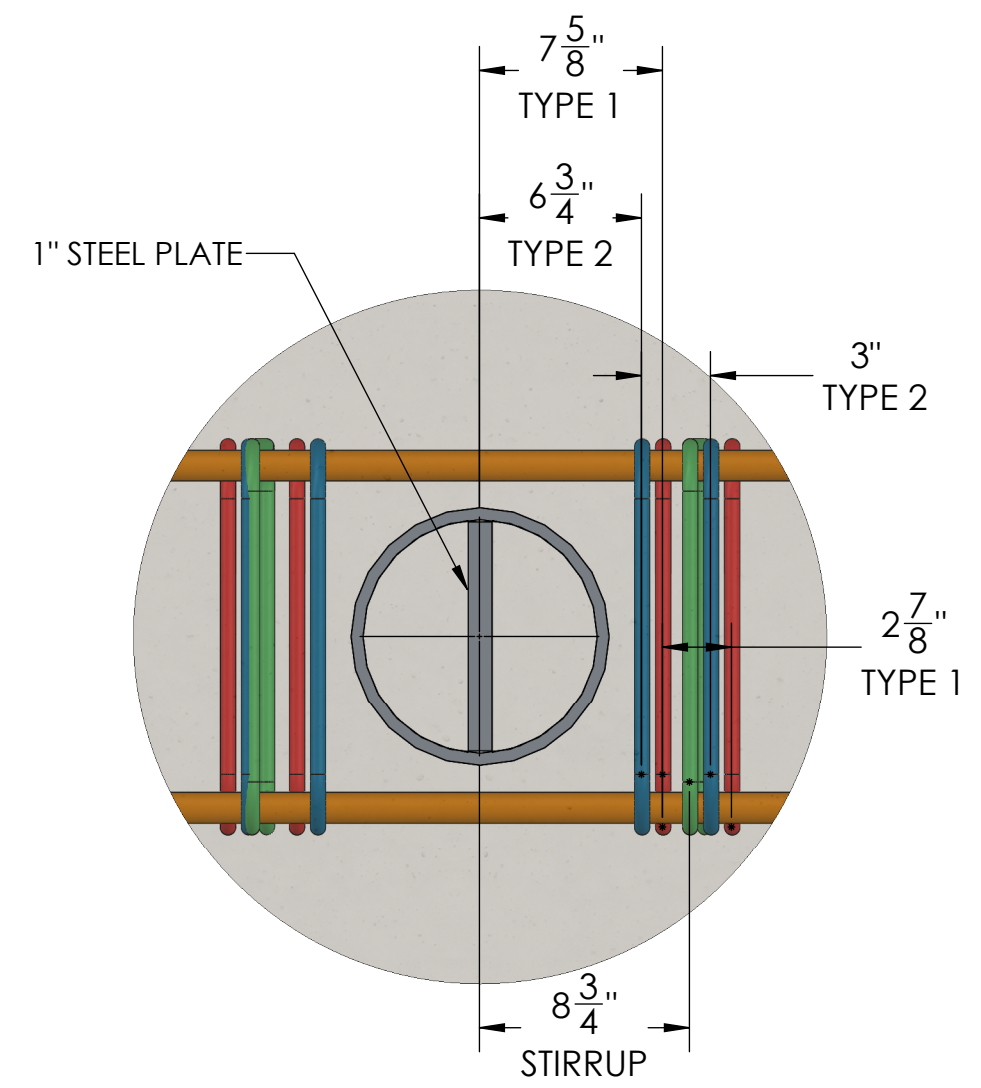
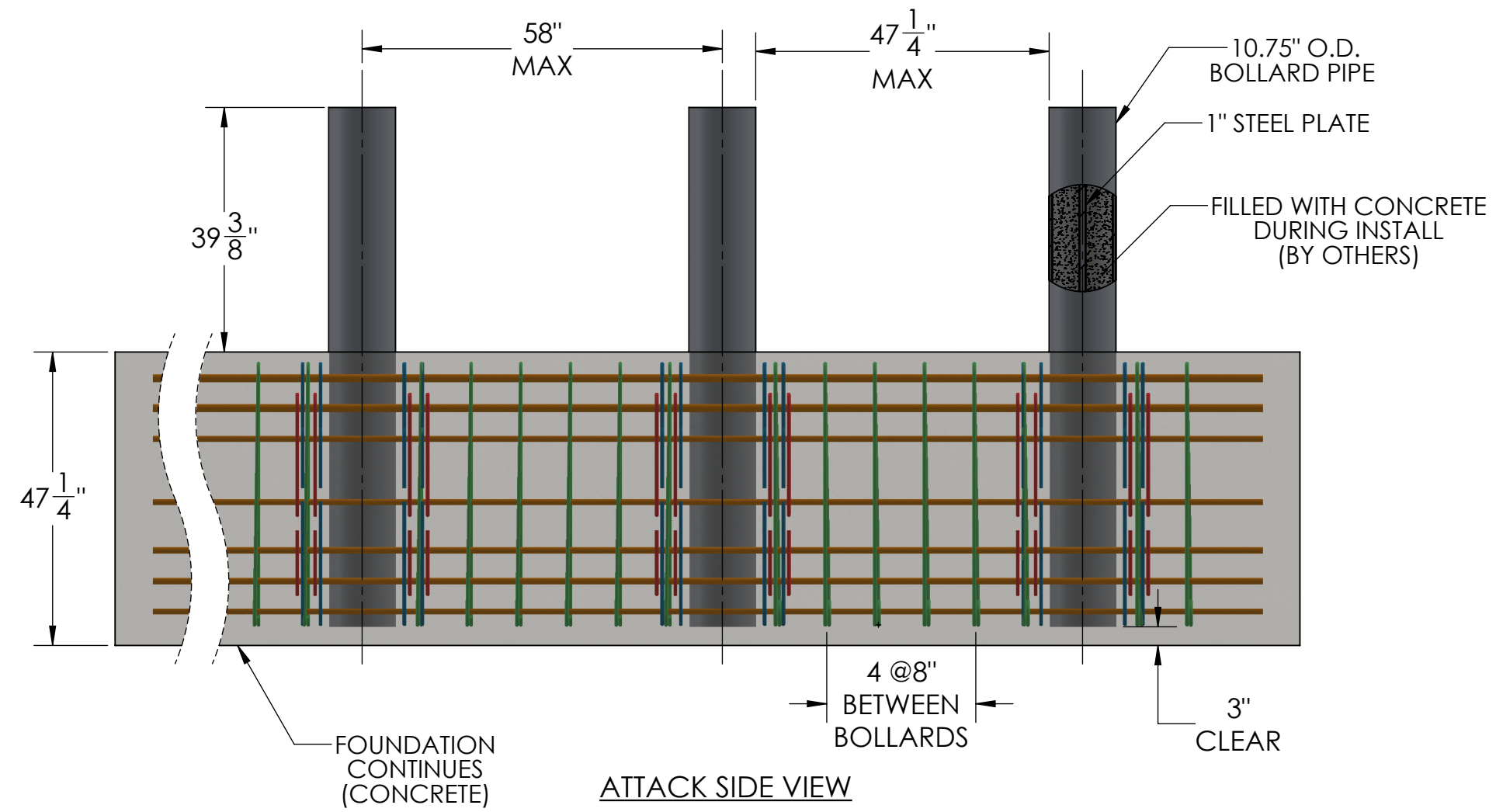
A

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A



ATTACK ↑

REFERENCE: SD-STD-02.01 CERTIFIED

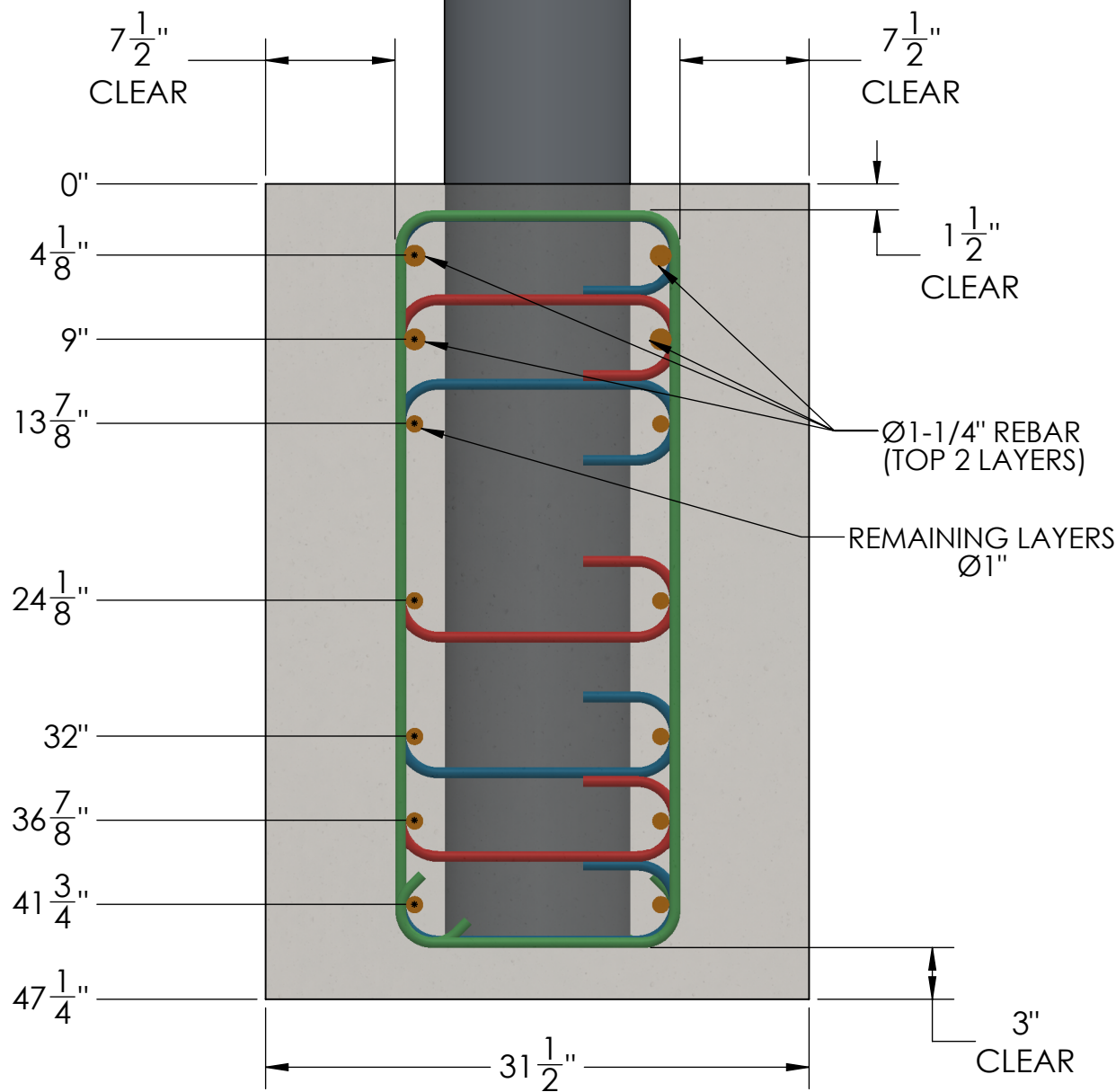
UNLESS OTHERWISE SPECIFIED:		NAME	DATE	 986 ROSEDALE DR. HIRAM, GA 30141 (678) 915-2080	
DIMENSIONS ARE IN INCHES		DRAWN BY	S.J.		4/2/2020
TOLERANCES:		CHECKED BY	J.HU.		4/2/2020
FRACTIONAL: -0" / +1/16"		ENG APPR.			
ANGULAR: MACH ±1.0° BEND ±2.5°		MFG APPR.			
BREAK ALL SHARP EDGES		PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SHAW STAINLESS LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SHAW STAINLESS LLC IS PROHIBITED.			
MATERIAL		DESCRIPTION:			
ASTM GRADE B		DS22 FIXED BOLLARD			
FINISH		REV.	ITEM NO:		
HDG		BDS-DS22-FB-FD			
NO MANUAL REVISIONS/CHANGES ALLOWED		WEIGHT:		SHEET 1 OF 3	

8 7 6 5 4 3 2 1

GROUT WASH FLAT TO ALLOW FOR BOLLARD COVER WHEN USED - OTHERWISE ROUND

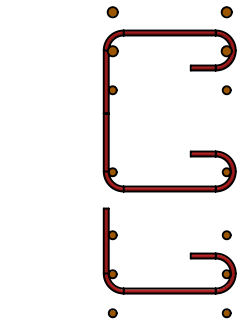
ATTACK SIDE

PROTECTED SIDE

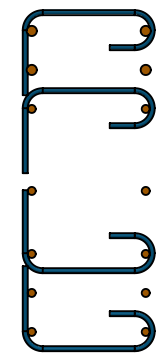


SIDE VIEW

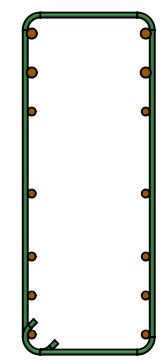
ATTACK SIDE



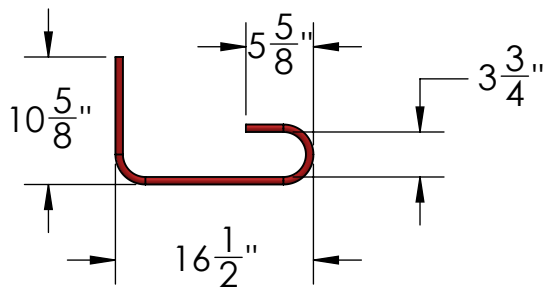
TYPE 1 ORIENTATION



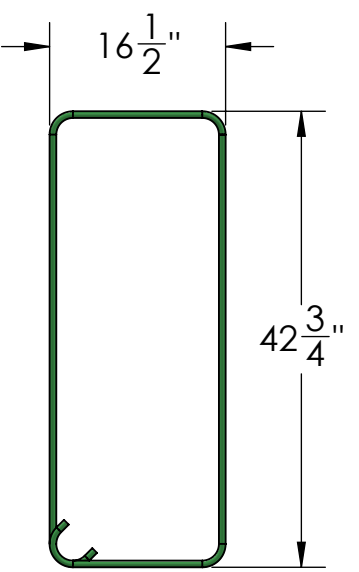
TYPE 2 ORIENTATION



#5 STIRRUP ORIENTATION



#5 TIE DETAIL



#5 STIRRUP DETAIL

REFERENCE: SD-STD-02.01 CERTIFIED

UNLESS OTHERWISE SPECIFIED:		NAME		DATE	
DIMENSIONS ARE IN INCHES		DRAWN BY	S.J.	4/2/2020	
TOLERANCES:		CHECKED BY	J.HU.	4/2/2020	
FRACTIONAL: -0" / +1/16"		ENG APPR.			
ANGULAR: MACH ±1.0° BEND ±2.5°		MFG APPR.			
BREAK ALL SHARP EDGES					
MATERIAL	PROPRIETARY AND CONFIDENTIAL				
ASTM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SHAW STAINLESS LLC.				
FINISH	ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SHAW STAINLESS LLC IS PROHIBITED.				
ZINC RICH PRIMER					
NO MANUAL REVISIONS/CHANGES ALLOWED		REV.	ITEM NO:		
		BDS-DS22-FB-FD			WEIGHT:
					SHEET 2 OF 3



DESCRIPTION:
 DS22 FIXED BOLLARD

REV. ITEM NO:
 BDS-DS22-FB-FD

WEIGHT: SHEET 2 OF 3

1. - GENERAL:

- a. ALL NOTES THIS PAGE ARE APPLICABLE TO THE DRAWINGS AND DETAILS PROVIDED FOR FIXED AND REMOVABLE BOLLARDS ONLY.
- b. THE CONTRACTOR SHALL USE MATERIALS AND EMPLOY CONSTRUCTION METHODS IN ORDER TO COMPLY WITH THE DESIGN DRAWINGS. CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY SPECIFIC DEVIATIONS AND OBTAIN ENGINEER'S WRITTEN APPROVAL FROM THE SPECIFIC DEVIATION.
- c. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION
- d. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS.

2. - FOUNDATIONS:


- a. DESIGN "NET" ALLOWABLE SOLID BEARING PRESSURE OF 3000 POUNDS/SQ. FOOT, AT A DEPTH OF 10IN. BELOW ADJACENT GRADE. ALL FOOTING EXCAVATIONS TO BE VERIFIED BY OTHERS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REPORT ADVERSE CONDITIONS.
- b. THE EXCAVATION SHALL BE KEPT DRY AT ALL TIMES. GROUNDWATER SHALL BE REMOVED FROM THE EXCAVATION.
- c. CONTRACTOR SHALL REMOVE ALL LOOSE SOLID OR ROCK FROM THE FOOTING EXCAVATION PRIOR TO CONCRETE PLACEMENT.
- d. SUBGRADE SHALL BE UNIFORMLY COMPACTED TO AT LEAST 95 PERCENT OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. NOTE: ALL BACKFILL SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF SD-STD-02.01, SECTION 7.2.2. IF THE LATERAL CAPACITY OF THE EXISTING SOILS IS NOT IN CONFORMANCE WITH THE REQUIREMENTS OF SD-STD-02.01, SECTION 7.2.2, THEN THE EXISTING SOIL SHALL BE REPLACED.

3. - CONCRETE:

- a. CONCRETE SHALL CONFORM TO ACI BUILDING CODE 318-14. UNLESS NOTED, CONCRETE SHALL BE NORMAL WEIGHT, 4000 PSI (25 MPa) @ 28 DAYS WITH MAX. WATER-CEMENTIOUS MATERIAL RATIO OF 0.45. MAXIMUM SLUMP FOR CONCRETE SHALL BE 5" ± AT POINT OF PLACEMENT.
- b. UNLESS NOTED, CEMENT SHALL CONFORM TO ASTM C150 TYPE II, AGGREGATES SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C33.
- c. CONCRETE SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ACI 318-14, "TOTAL AIR CONTENT FOR THE CONCRETE EXPOSED TO CYCLES OF FREEZING & THAWING."
- d. HOT WEATHER CONCRETE PLACEMENT SHALL COMPLY WITH ACI 305R. COLD WEATHER CONCRETE PLACEMENT SHALL COMPLY WITH ACI 306R-16.
- e. CONCRETE CURING SHALL COMPLY WITH ACI 308R.
- f. CONCRETE SHALL BE CONSOLIDATED AND SHALL COMPLY WITH ACI 309R.
- g. CONTROL JOINTS SHALL BE SCORED OR SAW-CUT JOINTS (1" DEEP FILLED WITH SEALANT) TO MATCH EXISTING CONDITION AND BE PLACED AT A MAXIMUM SPACING OF 12 FEET ON-CENTER. CONCRETE SURFACES THAT ARE EXPOSED SHALL COMPLY WITH THE BUILDING CODE REQUIREMENTS.

4. - REINFORCING STEEL:

- a. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. PROVIDE A MINIMUM BAR LAP OF 60 BAR DIAMETERS. STAGGER LAPS WHERE POSSIBLE.
- b. REINFORCING THAT IS WELDED SHALL BE WELDABLE TYPE ASTM A-706.

	NAME	DATE	 BARRIER DEFENSE SYSTEMS <small>A SHAW STAINLESS COMPANY</small>	986 ROSEDALE DR. HIRAM, GA 30141 (678) 915-2080
DRAWN BY	S.J.	4/2/2020		
CHECKED BY	J.HU.	4/2/2020		
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SHAW STAINLESS LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SHAW STAINLESS LLC IS PROHIBITED.			DESCRIPTION: GENERAL INSTALL NOTES	
NO MANUAL REVISIONS/CHANGES ALLOWED			REV.	ITEM NO: BDS-DS22-FB-FD
			SHEET 3 OF 3	