

FEATURE BOULDER	LOCATION	GENERAL PURPOSES)	COMMENTS	KEY DETAIL - DRAWING NUMBER	FIXED BOULDERS (GROUTED WITH ADJACENT 2 FT. MIN. GROUTED BOULDERS OR AS SHOWN)					SPECIAL	TOTAL	FIXED BOULDER PLACEMENT ELEVATIONS - COMMENTS				MOVABLE BOULDERS WITH RIPRAP AND RIPRAP SPECIAL						MOVABLE BOULDER PLACEMENT ELEVATIONS - COMMENTS				RIPRAP FOR MOVABLE BOULDER VOID FILLING, SUPPORT, AND ADJUSTMENT						
					2.5 FT. X 3.5 FT.	2.5 FT. X 4.0 FT.	3. FT. BY 4.5 FT.	3.5 FT. BY 5.5 FT.	4.5 FT. BY 6 FT.			LOW	INT. 1	INT. 2	HIGH	2.5 FT. X 3.5 FT.	2.5 FT. X 4.0 FT.	3. FT. BY 4.5 FT.	3.5 FT. BY 5.5 FT.	4.5 FT. BY 6 FT.	SPECIAL	TOTAL	LOW	INT. 1	INT. 2	HIGH	CUBIC YARDS	COMMENT				
FBC- 1	LOWER MODERATE WATERWAY, DS. END, SOUTH BANK	SPUR TO DEFLECT CURRENT, WHITEWATER EDDY AND WAVE, APPEARANCE	LOWER GROUTED BOULDER EXTENDS INTO WATERWAY 2.5 FT AT ELEV. 567.5.	E1	2		4		1		7	1 EA. 567.5	1 EA. 568.3	3 EA. 569.5	2 EA. 570.5			6		2	1					9	5 EA. 569.5	1 EA. 570.5	3 EA. 571.5	1.5	FINES TO LOCK IN LOW BLDG., FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS ON BOTTOM.	
FBC- 2	LOWER MODERATE WATERWAY, NEAR DS. END, NORTH BANK	SPUR-EDDY BOULDER FOR DEPTH, WHITEWATER EDDY AND WAVE, APPEARANCE	LOWER GROUTED BOULDER EXTENDS INTO WATERWAY 2.5 FT AT ELEV. 567.5.	E1	2	6		1			9	1 EA. 567.5	568.3	4 EA. 569.5	2 EA. 570.5			4		1						5	2 EA. 570.5		1 EA. 571.0	2.5	FINES TO LOCK IN LOW BLDG., FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER.	
FBC- 3	WEST STORM OUTFALL NEAR STAIRS	GROUTED BOULDER TO PROVIDE RISE FOR HEADWALL	PLACE CAREFULLY AND SUPPORT PIPE, SEE DETAIL	E1	6						6	2 EA. 573.5			4 EA. 574.5											0						
FBC- 4	LOWER MODERATE WATERWAY, MIDWAY CONSTRUCTION, S. BANK	CONSTRUCTION AND SILL TO MAINTAIN DEPTH AND WHITEWATER WAVE	LOWER GROUTED BOULDER EXTENDS TO TOE OF WATERWAY BANK AT ELEV. 568.5.	E1	2	2		1			5	1 EA. 568.5	2 EA. 569.5	1 EA. 570.0	1EA. 572.2			8			1					9	3EA. 571.5	4 EA. 571.8	1 EA. 571.8	1 EA. 573.0	5	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS RIPRAP ON BENCH BOTTOM.
FBC- 5	ADJUSTABLE BOTTOM SILL ASSOCIATED WITH FBC4 AND 5	WHITEWATER WAVE AND TO MAINTAIN DEPTH	A FLAT, RECTANGULAR SHAPE BOULDER IS NECESSARY WHICH CAN FORM SILL +- 0.5 FT. OF UPSTREAM INVERT OF WATERWAY.	E1							0												2	2.5 BY 5.5 BY 2 FT. T.		2			2 EA. 567.5	1	FINES TO LOCK IN AND LEVEL BOULDERS. FILL ALL VOIDS.	
FBC- 6	LOWER MODERATE WATERWAY, MIDWAY CONSTRUCTION, N. BANK	CONSTRUCTION AND SILL TO MAINTAIN DEPTH AND WHITEWATER WAVE	LOWER GROUTED BOULDER EXTENDS TO TOE OF WATERWAY BANK AT ELEV. 568.5.	E1	3	2		1			6	1 EA. 568.5	3 EA. 569.5		1EA. 570.5											0						
FBC- 7	LOWER MODERATE WATERWAY, MIDWAY CONSTRUCTION, S. BANK	WHITEWATER WAVE, EDDY, AND TO MAINTAIN DEPTH	LOWER GROUTED BOULDER EXTENDS TO TOE OF WATERWAY BANK AT ELEV. 569.5.	E1	2	2	1				5	2 EA. 569.5	1 EA. 570.5		2 EA. 571.5			3	1	1						5	2 EA. 570.5		1 EA. 573.2	2 EA. 573.5	2.5	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS RIPRAP ON BENCH BOTTOM.
FBC- 8	LOWER MODERATE WATERWAY, MIDWAY CONSTRUCTION, N. BANK	WHITEWATER WAVE, EDDY, AND TO MAINTAIN DEPTH	LOWER GROUTED BOULDER EXTENDS TO TOE OF WATERWAY BANK AT ELEV. 569.5.	E1	2		2	1			5	2 EA. 570.5	1 EA. 570.5		2 EA. 572.5											0						
FBC- 9	LOWER MODERATE WATERWAY, MIDWAY SPUR, S. BANK	WHITEWATER WAVE, EDDY, AND TO MAINTAIN DEPTH	LOWER GROUTED BOULDER EXTENDS 2.0 FT INTO WATERWAY BANK AT ELEV. 569.5.	E1		3					3	1 EA. 569.5	1 EA. 570.3		1EA. 570.5			3	1	1						5	4 EA. 571.5		1 EA. 572.5	2.5	FINES TO LOCK IN LOW BLDG., FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS DOWNSTREAM.	
FBC- 10	N. BANK OF ENTRY SECTION TO LOWER MODERATE WATERWAY	ENHANCE VISIBILITY OF ENTRY TO LOWER MODERATE WATERWAY	SELECT BOULDER WITH EMPHASIS ON AESTHETICS AND ROUNDED EDGES	E1	1			2			3	1 EA. 573.5			2 EA. 574.5											0						
FBC- 11	S. BANK, ENTRY SECTION TO LOWER MODERATE WATERWAY	ADJUSTMENT OF WATER LEVELS, FLOW PATTERN, AND ELEV., FRAME ENTRY VIEW	LOWER TWO BOULDERS EXTENDS TO TOE OF SLOPE OF ENTRY, LARGER 571.5, SML. 570.5	E1							0							13	2	2	2					19	7 EA. 570.5	5 EA. 571.5	5 EA. 572.5	2 EA. 573.5	10	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS RIPRAP ON BENCH BOTTOM.
FBC- 12	N. BANK, ENTRY SECTION TO LOWER MODERATE WATERWAY	ADJUSTMENT OF WATER LEVELS, FLOW PATTERN, AND ELEV., FRAME ENTRY VIEW; SCREEN VISIBILITY OF LOWER CHALL. ENTRY	LOWER TWO BOULDERS EXTENDS TO TOE OF SLOPE OF ENTRY, LARGER 571.5, SML. 570.5	E1							0							13	2	3	2	3				23	5 EA. 569.5	1 EA. 570.5	3 EA. 571.5	11	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS RIPRAP ON BENCH BOTTOM.	
FBC- 13	SMALL ISLAND IN POOL 7	SCREEN VIEW OF ENTRY TO LOWER CHALLENGE, FEATURE	BOULDERS ARE PLACED ON RIPRAP BASE PAID SEPARATELY, PLACE TIGHT AND MINIMIZE VISIBILITY OF RIPRAP	E1							0									2	2					4	1 EA. 573	2 EA. 573.8	1 EA. 573.9	9	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER BUT MINIMIZE VISIBILITY, LEAVE EXCESS BELOW WATER.	
FBC- 14	LANDING BELOW LOWER CHALLENGE AT DIVIDER ISLAND	LANDING FOR EXPERT BOATERS TO TAKEOUT AND WALK UPSTREAM, FEATURE	PORTION OF ROCK CAN BE REUSED TO ADJUST WHITEWATER FEATURES AND REPAIR SPUR	E1							0							31	3	1	1					36	4 EA. 569.5	6 EA. 570.5	25 EA. 571.5	1 EA. 571.9	16	FILL ALL VOIDS AND LEVEL TERRACES, ADD STAB. SOIL ABOVE LOW WATER, USE EXCESS FOR BANK TRANSITION.
FBC- 15	LOWER CHALL., END OF ISLAND BETWEEN MAIN WW AND CHALL. OVERFLOW	FLOW PATTERN, SURFING WAVE, ADJUSTMENT, APPEARANCE, SEPARATE WATERWAYS.	MATCH BLDG FACES TO MINIMIZE JOINTS AND FLOW THRU ROCK.	E1							0							12	7	7	6					32	5 EA. 569.5	1 EA. 570.5	3 EA. 571.5	21	FINES TO LOCK IN BOULDERS FOR SILL AND ON SLOPING BASE. ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS DOWNSTREAM OF DIVIDER.	
FBC- 16	S. BANK OF LOWER CHALLENGE AT DS. CONSTRUCTION	WAVE, EDDY, WS. ELEV. UPSTREAM, AND FLOW SPLIT TO HIGH FLOW WATERWAY	LOWER BOULDER EXTENDS TO TOE OF SLOPE OF SILL, 572.5.	E1	2			1	2		5	2 EA. 571.5			2 EA. 572.5											0						RIPRAP FROM ADJACENT CLUSTERS MAY BE MOVED HERE FOR ADJUSTMENTS
FBC- 17	N. BANK OF LOWER CHALLENGE AT DS. CONSTRUCTION	WAVE, EDDY, WS. ELEV. UPSTREAM, AND FLOW SPLIT TO HIGH FLOW WATERWAY	TWO BOULDERS AT TOE OF SLOPE, LARGER EXTENDS 2.25 FT. INTO SILL, SMALLER 2.5 FT., ELEV. BOTH 568.5	E1	3		3	1			7	2 EA. 568.5	2 EA. 569.5	2 EA. 570.5	1EA. 571.5											0						RIPRAP FROM ADJACENT CLUSTERS MAY BE MOVED HERE FOR ADJUSTMENTS
FBC- 18	NW. BANK OF DOWNSTREAM SIDE EDDY, LOWER CHALLENGE	SOURCE OF BOULDERS FOR ADJUSTMENTS AND APPEARANCE.	FILL ALL VOIDS AND PLACE BOULDERS LEVEL FOR SITTING.	E1							0							2	6							8	3 EA. 570.5	2 EA. 571.0	2 EA. 571.5	1 EA. 572.5	4	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS BELOW WATER.
FBC- 19	N. BANK OF MIDDLE OF EDDY, LOWER CHALLENGE	SOURCE OF BOULDERS FOR ADJUSTMENTS AND APPEARANCE.	FILL ALL VOIDS AND PLACE BOULDERS LEVEL FOR SITTING.	E1							0							6								6	2 EA. 571.0	2 EA. 571.5	1 EA. 572.0	1 EA. 572.5	3	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS BELOW WATER.
FBC- 20	NE. BANK OF UPSTREAM SIDE OF SIDE EDDY, LOWER CHALLENGE	EDDY, WAVES, SOURCE OF BOULDERS FOR ADJUSTMENTS AND APPEARANCE.	FILL ALL VOIDS AND PLACE BOULDERS LEVEL FOR SITTING. LARGEST BOULDER SET AT 573.5	E1							0							4		1	1					6	1 EA. 570.5	1 EA. 571.5	2 EA. 572.5	1 EA. 573.5	4	FILL ALL VOIDS, ADD STAB. SOIL ABOVE LOW WATER, LEAVE EXCESS BELOW WATER.
FBC- 21	S. OF WATERWAY ON SIDE SILL, MIDDLE LOWER CHALLENGE	EDDY, WAVES, SOURCE OF BOULDERS FOR ADJUSTMENTS AND APPEARANCE.	FILL ALL VOIDS. BOULDER SET ON AND ADJACENT TO SIDE SILL.	E1							0							2	2							4	1 EA. 569.5	2 EA. 571.5	1 EA. 572.0	4	FINES TO LOCK IN BOULDERS AT SILL AND ON SLOPING BASE., FILL ALL VOIDS, LEAVE EXCESS ON S. SIDE OF SILL.	
FBC- 22	S. BANK OF LOWER CHALLENGE MIDDLE CONSTRUCTION	WAVE AND EDDY, ADJUSTMENT OF WATER LEVELS AND FLOW PATTERN.	LOWER BOULDERS EXTENDS 0.5 FT INTO WATERWAY, ELEVATION 569.5.	E1	2		1	1			4	1 EA. 569.5	1EA. 570.5		2 EA. 571.5																	
FBC- 23	N. BANK OF LOWER CHALLENGE MIDDLE CONSTRUCTION	WAVE AND EDDY, ADJUSTMENT OF WATER LEVELS, FLOW PATTERN, AND ELEV.	LOWER BOULDERS EXTENDS 0.5 FT INTO WATERWAY, ELEVATION 569.5.	E1	2		1	1			4	1 EA. 569.5	1EA. 570.5		2 EA. 571.5																	
FBC- 24	SOUTH ABUT. CHUTE 3 ENTRY WEIR ABUTMENT	ABUTMENT TO CONTROL FLOW, WHITEWATER FEATURE, BOULDERS FOR ADJUSTMENTS	GROUTED BLDG. ABUTMENT MUST BE WATERTIGHT, TIGHT JOINTS, RECESS GROUT.	E1	5	2		2	1		10		3 EA. 572.5	1 EA. 573.0	6 EA. 573.5			5		2						7	3 EA. 572.5	1 EA. 572.5	2 EA. 574	1 EA. 574.5	4	FILL ALL VOIDS, ADD STAB. SOIL TO ALL RIPRAP, PLACE EXCESS AS BANK TRANSITION TO WEST.
FBC- 25	NORTH ABUT. CHUTE 3 ENTRY WEIR ABUTMENT	ABUTMENT TO CONTROL FLOW, WHITEWATER FEATURE, BOULDERS FOR ADJUSTMENTS	GROUTED BLDG. ABUTMENT MUST BE WATERTIGHT, TIGHT JOINTS, RECESS GROUT.	E1	5	2		2	1		10		3 EA. 572.5	1 EA. 573.0	6 EA. 573.5			5		2						7	3 EA. 572.5	1 EA. 572.5	2 EA. 574	1 EA. 574.5	4	FILL ALL VOIDS, ADD STAB. SOIL TO ALL RIPRAP, PLACE EXCESS AS BANK TRANSITION TO WEST.
FBC- 26	S. SIDE OF CHUTE 3	WHITEWATER FEATURE WITH SURFING WAVE UPSTREAM AND EDDY BELOW	SMALL BOULDERS TO BE PLACED AS TERRACE FOLLOWED BY LARGE ROUNDED BOULDER.	E1	6				1		7	6 EA. 570.5			1 EA. 572.0											0						

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