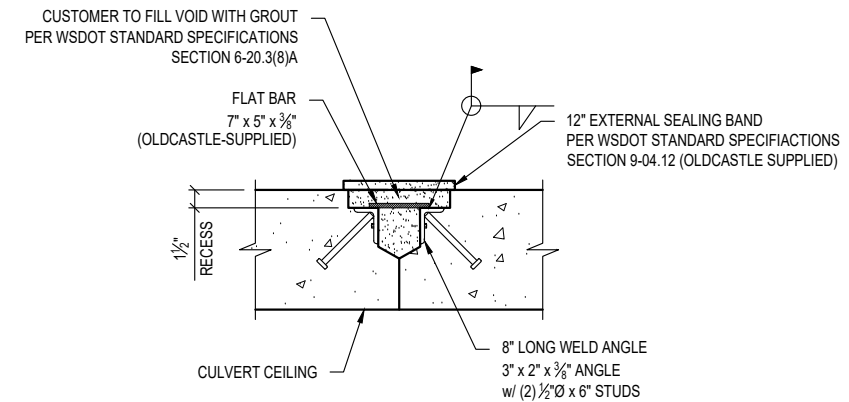
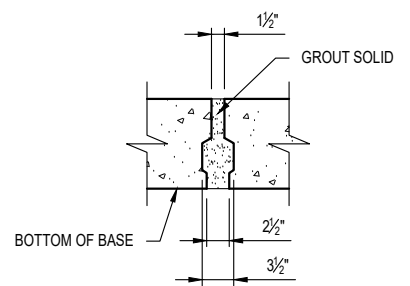


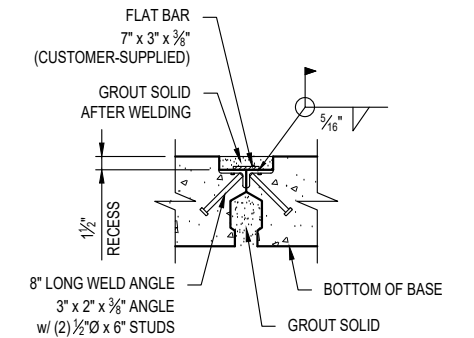
TOP GROUT & SEAL DETAIL



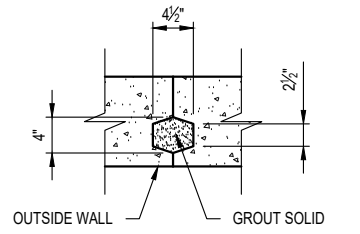
TOP WELD CONNECTION DETAIL



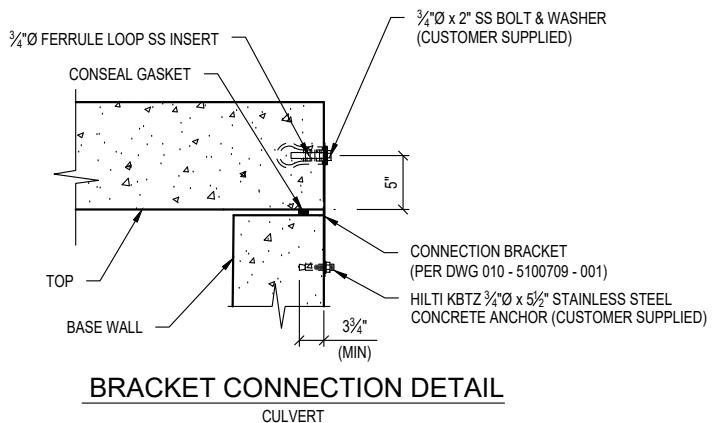
BASE GROUT DETAIL



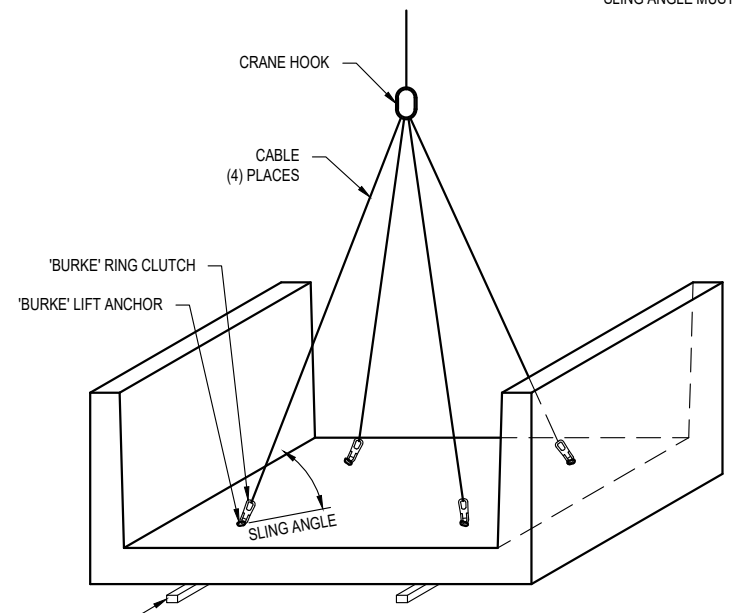
BASE WELD CONNECTION DETAIL



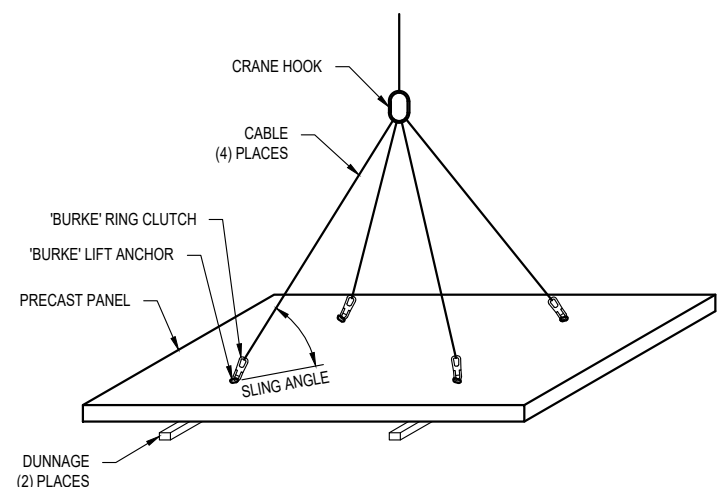
WALL GROUT DETAIL
APPROX. GROUT VOLUME = 180 cu-in PER LINEAR FOOT



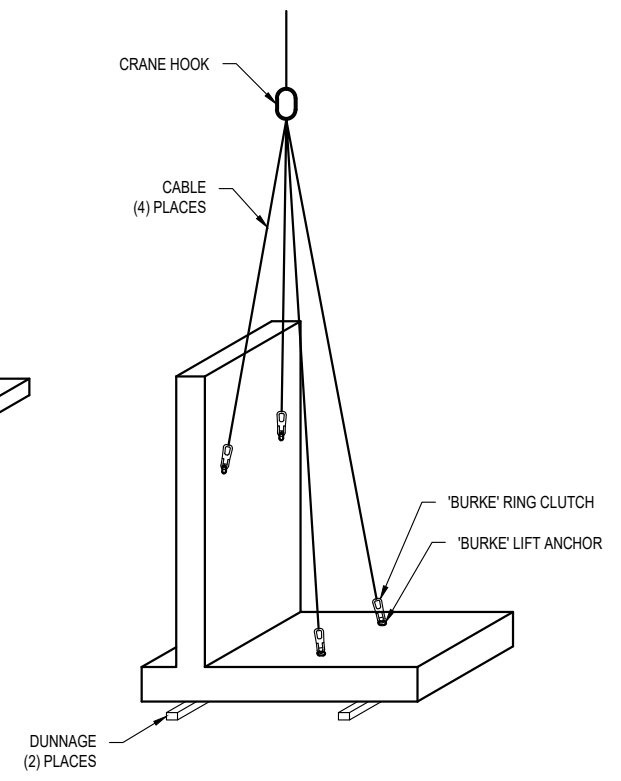
BRACKET CONNECTION DETAIL



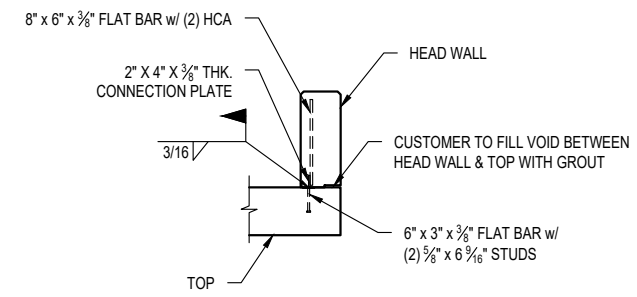
BASE LIFTING DETAIL
SLING ANGLE MUST BE AT LEAST 60°



TOP LIFTING DETAIL
SLING ANGLE MUST BE AT LEAST 60°



WING WALL LIFTING DETAIL



HEAD WALL WELD CONNECTION DETAIL

BILL OF MATERIALS			
#	QUANTITY	DESCRIPTION	ITEM #
1	4 ea	CLUTCHES - BURKE 8-TON EACH	8030020
	8 ea	CONNECTION PLATE	5100709
	3 ea	CONSEAL 3/4" x 14.5' (CS-102)	5130008
	4 ea	WELD PLATE-7" x 5" x 3/8"	
	4 ea	WELD PLATE-7" x 3" x 3/8"	
	10 ea	2" X 4" X 3/8" CONNECTION PL. HEAD WALL	
	7 rl	JOINT WRAP	

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A CRH COMPANY
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18"W x 10'T x 20'L SPLIT CULVERT D (ID 933063)
INSTALLATION
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA
CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---		S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	2 OF 17

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24



REVISION	DESCRIPTION	BY

PRODUCTION QUANTITY

(2) TOP 'T1'

PRODUCT WEIGHT

29,323 LBS

SHOP NOTES

- FORM DIAGONAL DISTANCE: 22'-0 3/4"
- CONCRETE FINISH: FLAT FLOAT FINISH WITH MACHINED EDGES

BILL OF MATERIALS

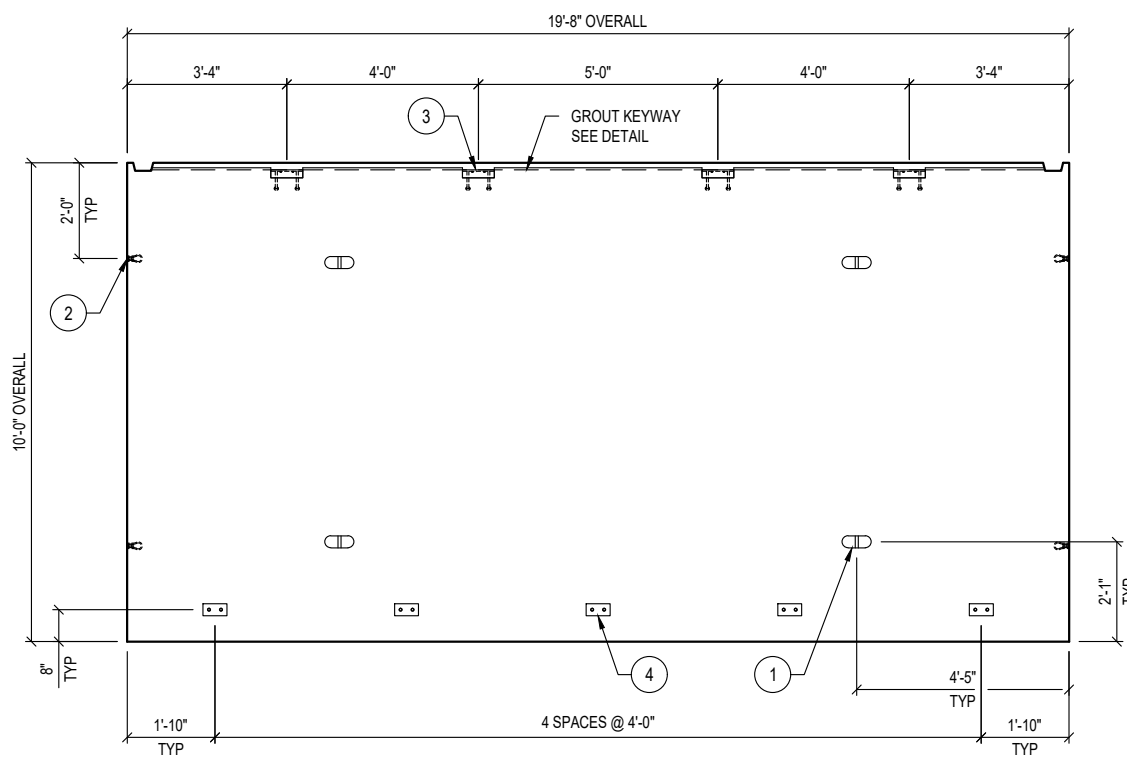
#	QUANTITY	DESCRIPTION	ITEM #
1	4 ea	ANCHOR 8-TON PLATE (Galv)	5100525
2	4 ea	INSERT LOOP FERR 3/4" - STAINLESS	5100480
3	4 ea	WELD ANGLE 2" x 3" x 8" w/ ANGLED STUD	2290620
4	5 ea	3" X 6" WELD PLATE w/ STUD (SIS)	5700045
	7.24 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	1.67 cwt	#4 REBAR A615/A706/GR60	725A0074
	2.02 cwt	#5 REBAR A615/A706/GR60	725A0075
	1 ea	SIS REBAR/MESH - (see cut list)	5700030
	65.16 sqf	MESH CHAIR	5500000

REINFORCEMENT CUT LIST

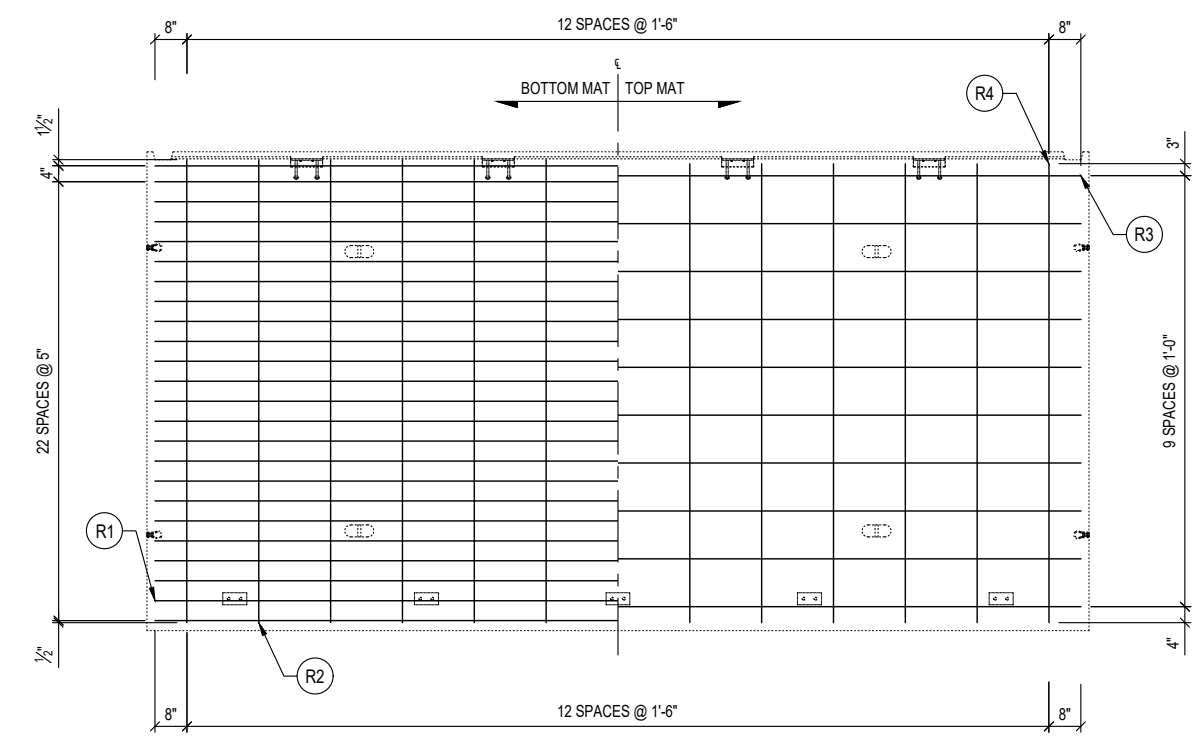
#	QTY	MATERIAL	LENGTH	SHAPE
R2	13	#4 REBAR A615/A706/GR60	9'- 7"	STR
R3	10	#5 REBAR A615/A706/GR60	19'- 4"	STR
R4	13	#4 REBAR A615/A706/GR60	9'- 8"	STR

**SIS REBAR / MESH CUT LIST
(SPECIAL PURCHASED ITEMS)**

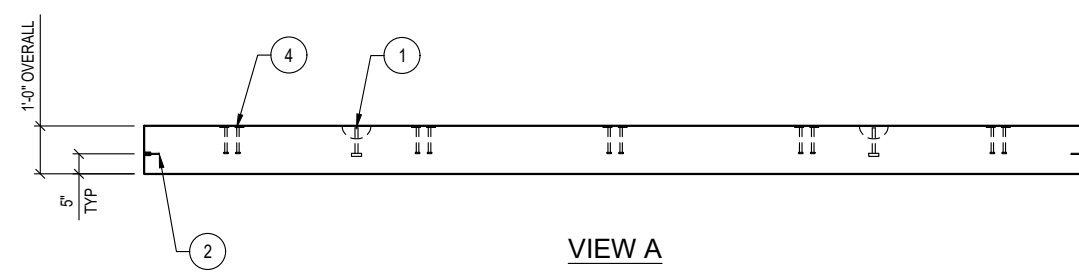
#	QTY	MATERIAL	LENGTH	SHAPE
R1	24	#9 REBAR A615/A706/GR60	19'- 4"	STR



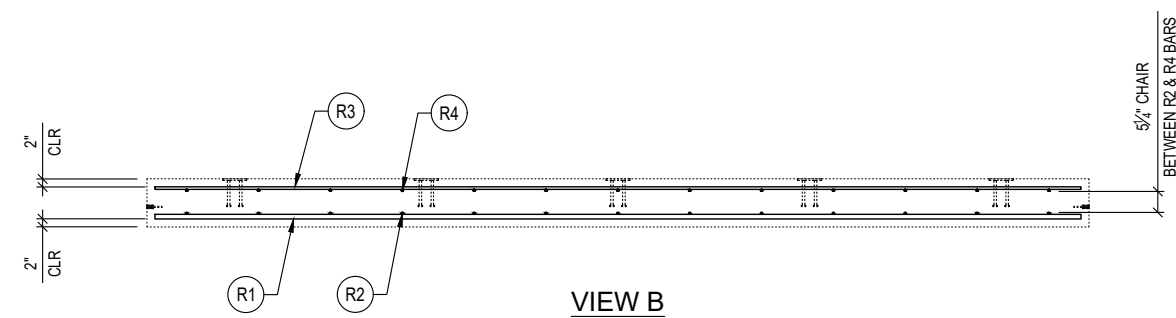
A PLAN VIEW
LAYOUT (SHOWN AS POURED)



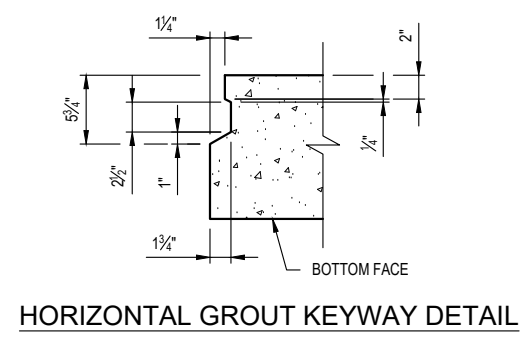
B PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)



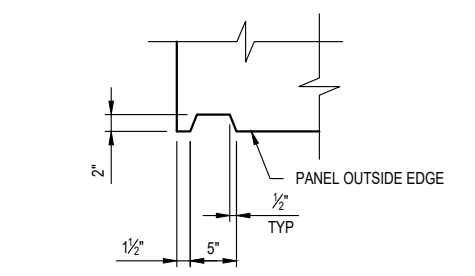
VIEW A



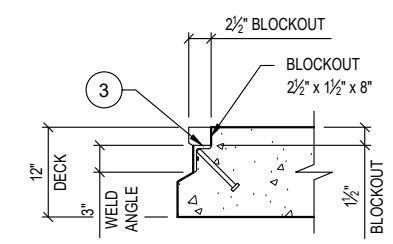
VIEW B



HORIZONTAL GROUT KEYWAY DETAIL



VERTICAL GROUT KEYWAY DETAIL



TOP WELD ANGLE DETAIL



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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)

TOP 'T1': LAYOUT & REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

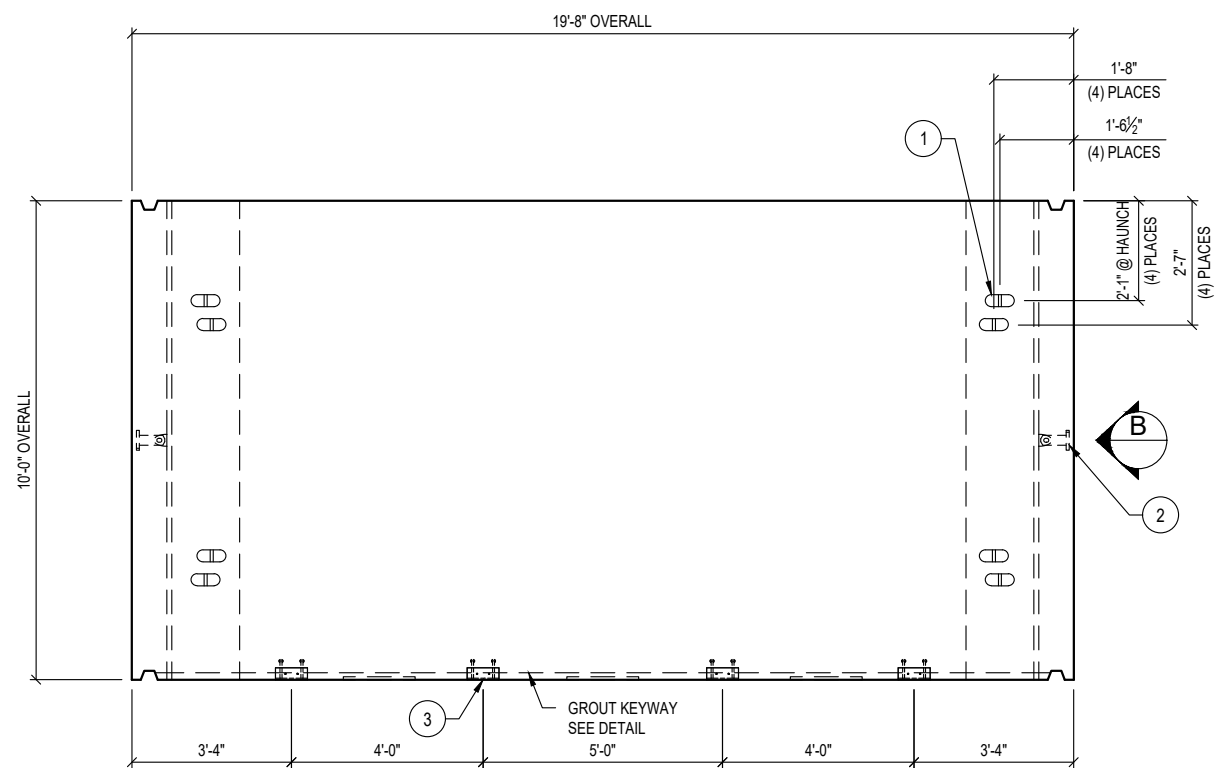
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

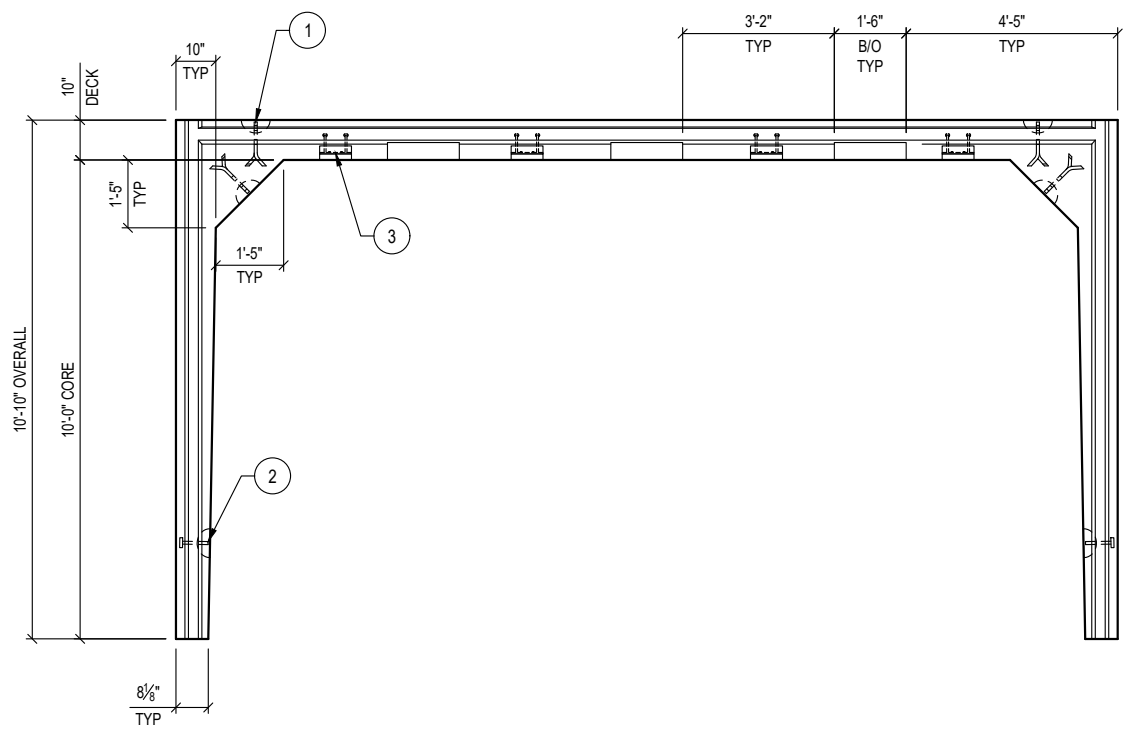


REVISION	DESCRIPTION	BY

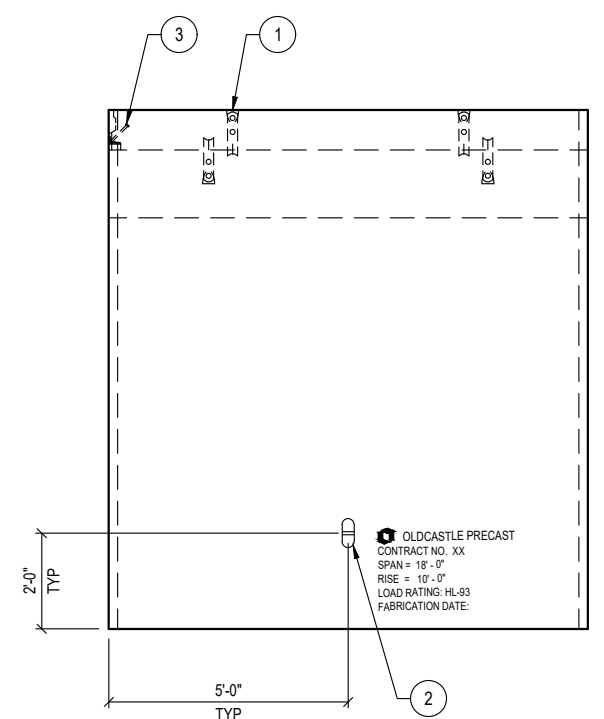
DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	3 OF 17



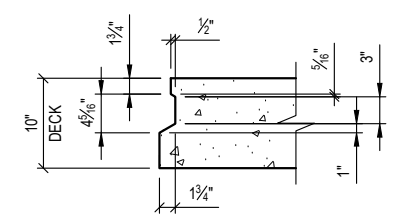
PLAN VIEW
LAYOUT (SHOWN AS POURED)



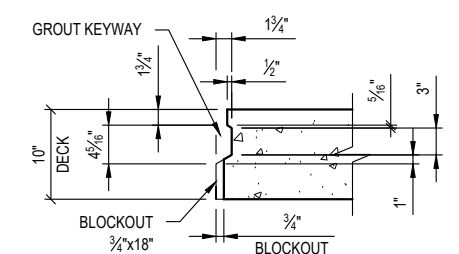
VIEW A



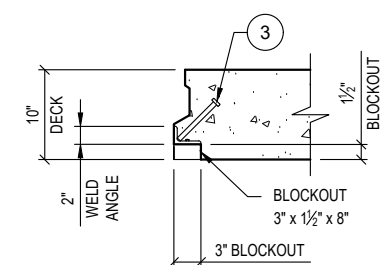
VIEW B



DECK GROUT KEYWAY DETAIL



DECK GROUT KEYWAY & BLOCKOUT DETAIL



DECK WELD ANGLE DETAIL

PRODUCTION QUANTITY

(2) BASE 'B1'

PRODUCT WEIGHT

50,241 LBS

SHOP NOTES

- FORM DIAGONAL DISTANCE: 22'-0 3/4"
- CONCRETE FINISH: FLAT FLOAT FINISH WITH MACHINED EDGES
- FLIP METHOD: ANCHOR IN WALLS
- MARK (WITH WATER PROOF PAINT) ON THE INSIDE VERTICAL FACE OF WALL 6" FROM THE TOP AFTER FLIPPING AS FOLLOWS:

OLDCASTLE PRECAST
CONTRACT NO. XX
SPAN = 18' - 0"
RISE = 10' - 0"
LOAD RATING: HL-93
FABRICATION DATE:

BILL OF MATERIALS

#	QUANTITY	DESCRIPTION	ITEM #
1	8 ea	ANCHOR 8-TON SPREAD (Galv)	5100530
2	2 ea	ANCHOR 8-TON PLATE (Galv)	5100525
3	4 ea	WELD ANGLE 2" x 3" x 8" w/ANGLED STUD	2290620
	12.40 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	3.71 cwt	#4 REBAR A615/A706/GR60	725A0074
	2.16 cwt	#5 REBAR A615/A706/GR60	725A0075
	3.48 cwt	#6 REBAR A615/A706/GR60	725A0076
	1 ea	SIS REBAR/MESH - (see cut list)	5700030
	111.6 sqf	MESH CHAIR	5500000

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

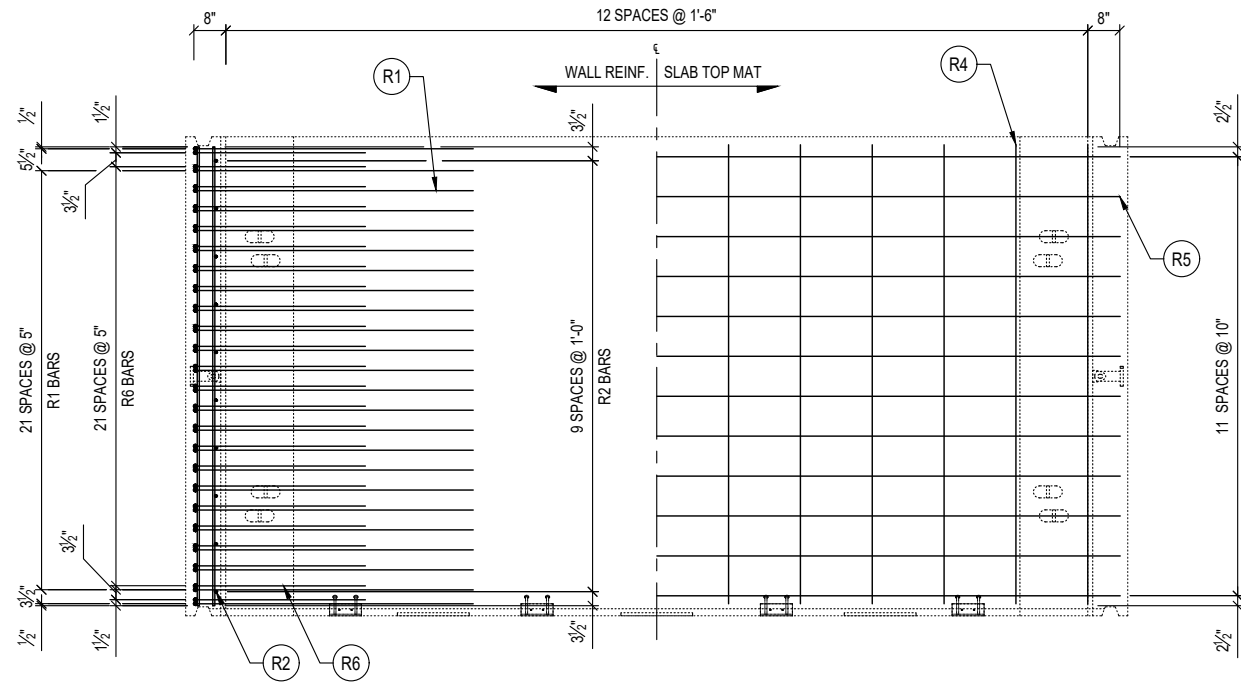


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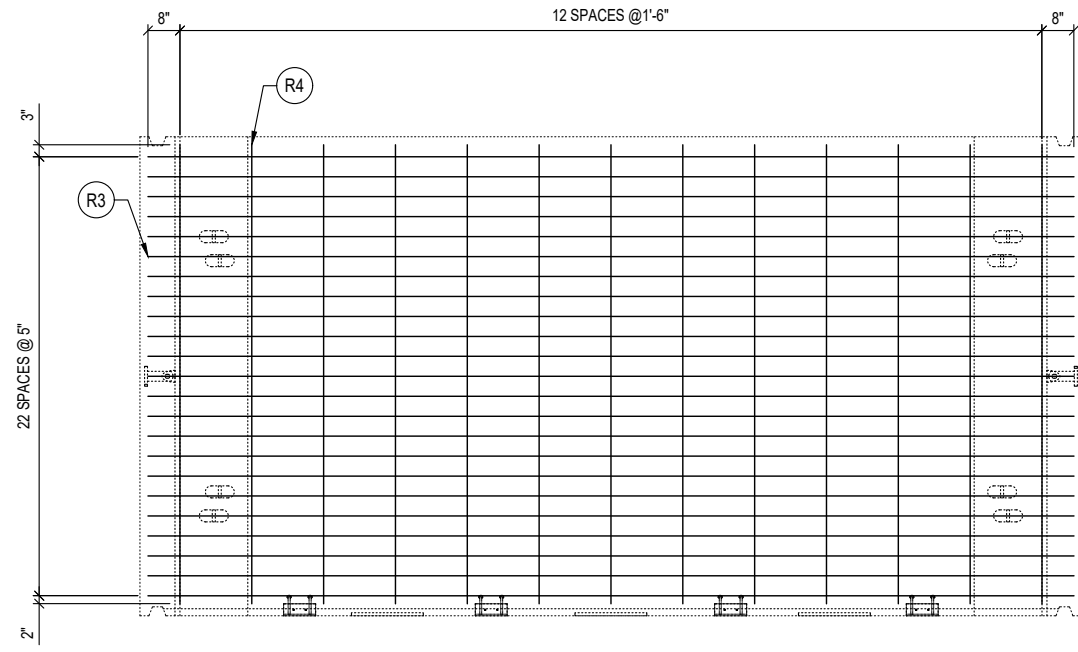
18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
BASE 'B1': LAYOUT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA
CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---		S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	4 OF 17

REVISION	DESCRIPTION	BY



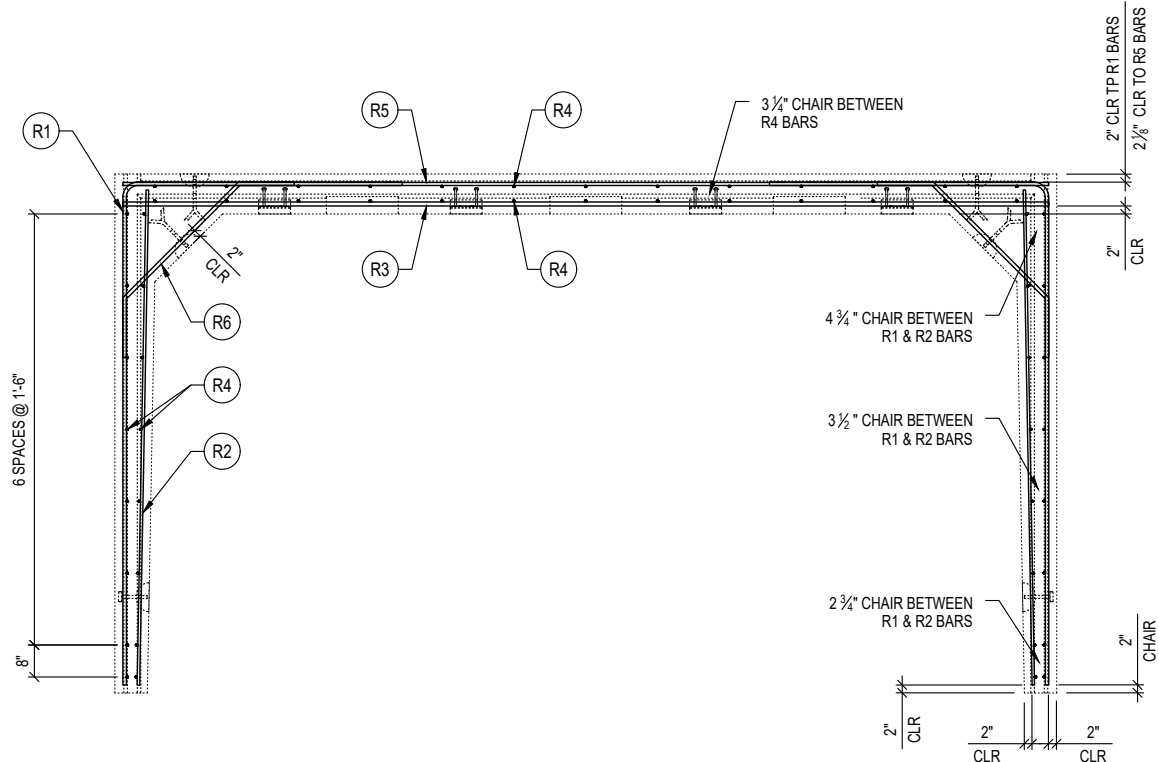
PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)



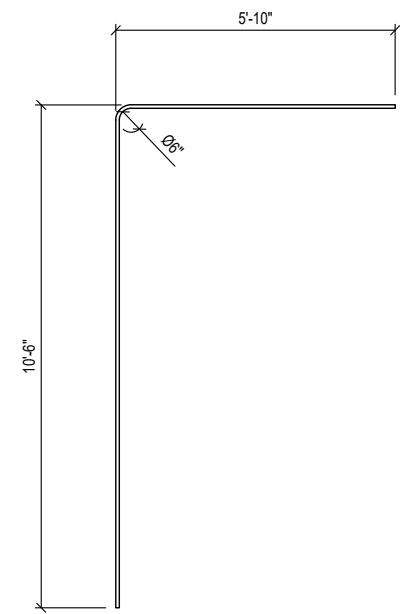
PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)
SLAB BOTTOM MAT

REINFORCEMENT CUT LIST				
#	QTY	MATERIAL	LENGTH	SHAPE
R2	20	#5 REBAR A615/A706/GR60	10'- 4"	STR
R4	58	#4 REBAR A615/A706/GR60	9'- 7"	STR
R5	12	#6 REBAR A615/A706/GR60	19'- 4"	STR

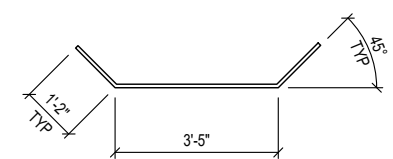
SIS REBAR / MESH CUT LIST (SPECIAL PURCHASED ITEMS)				
#	QTY	MATERIAL	LENGTH	SHAPE
R1	48	#7 REBAR A615/A706/GR60	16'- 2"	BENT
R3	23	#8 REBAR A615/A706/GR60	19'- 4"	STR
R6	48	#7 REBAR A615/A706/GR60	5'- 9"	BENT



VIEW A



R1 DETAIL



R6 DETAIL

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A CRH COMPANY
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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
BASE 'B1': REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

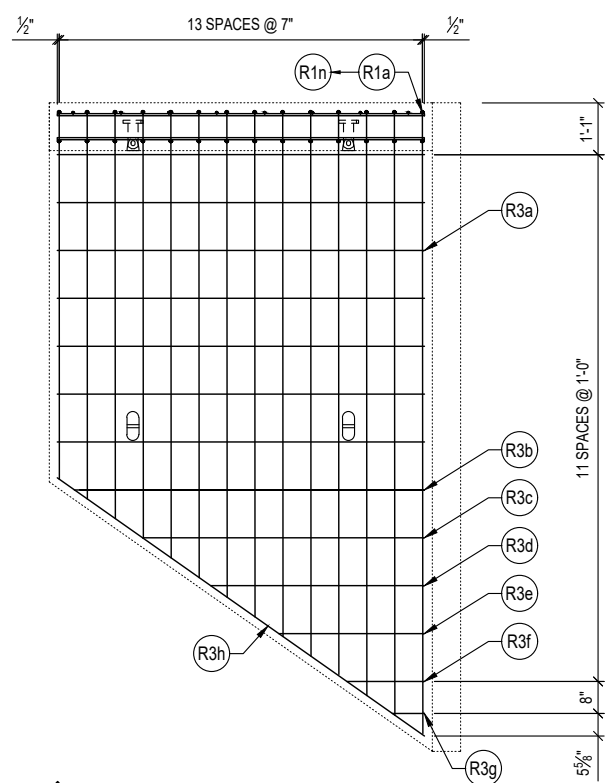
1/29/24



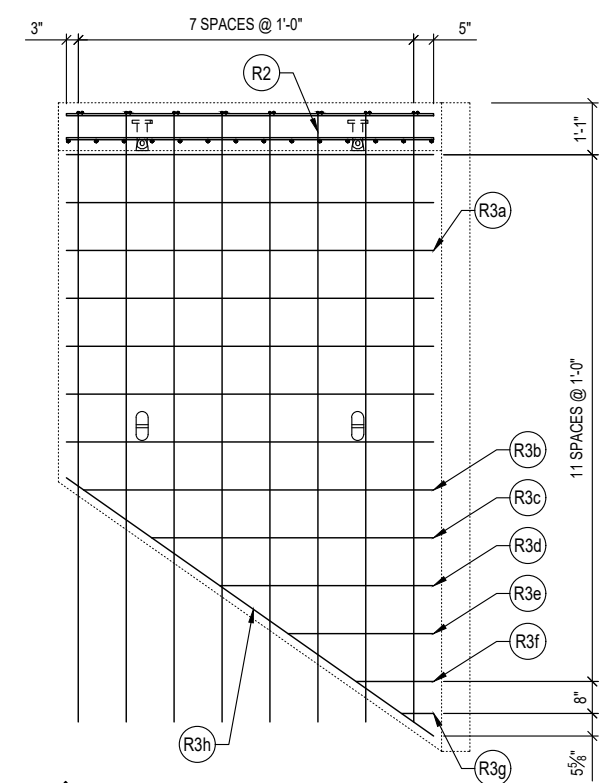
REVISION	DESCRIPTION	BY

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	5 OF 17

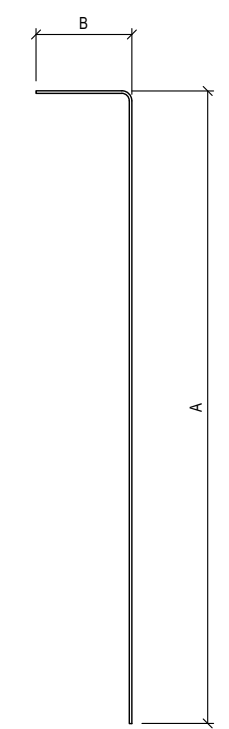
SHOP NOTES
 1. TRIM R2 BARS 2" AWAY FROM THE SLOPE EDGE OF THE WALL



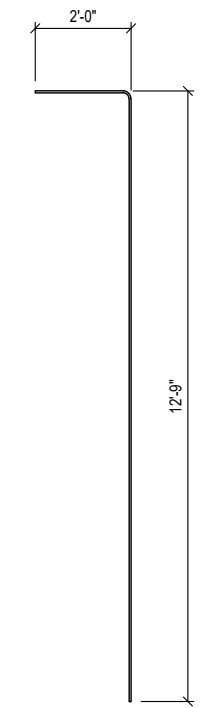
PLAN VIEW
 REINFORCEMENT (SHOWN AS POURED)
 WALL TOP MAT



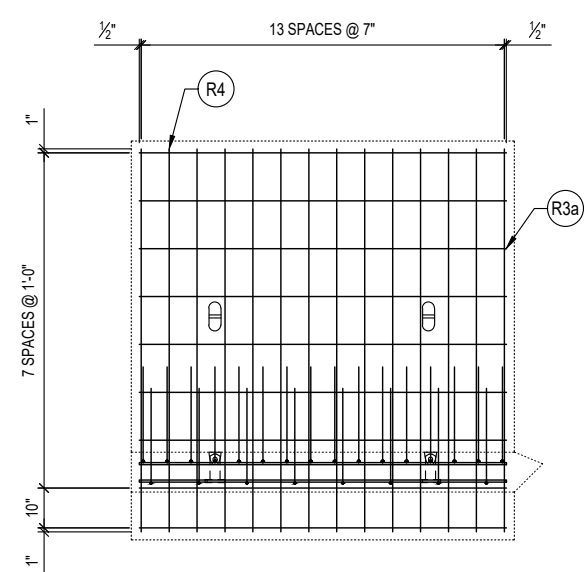
PLAN VIEW
 REINFORCEMENT (SHOWN AS POURED)
 WALL BOTTOM MAT



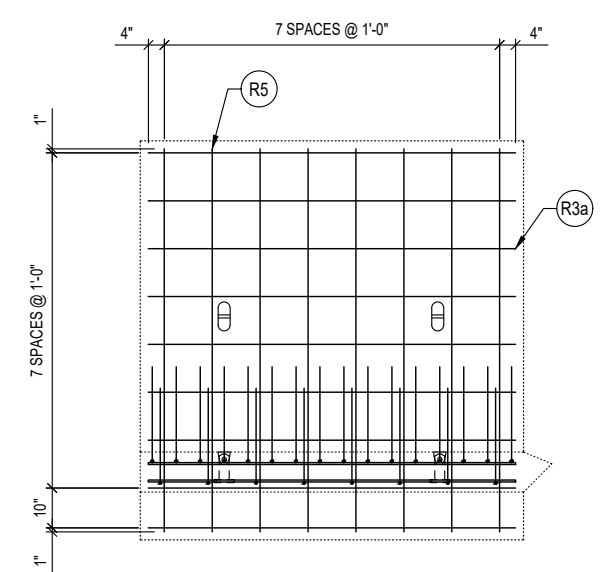
R1 DETAIL



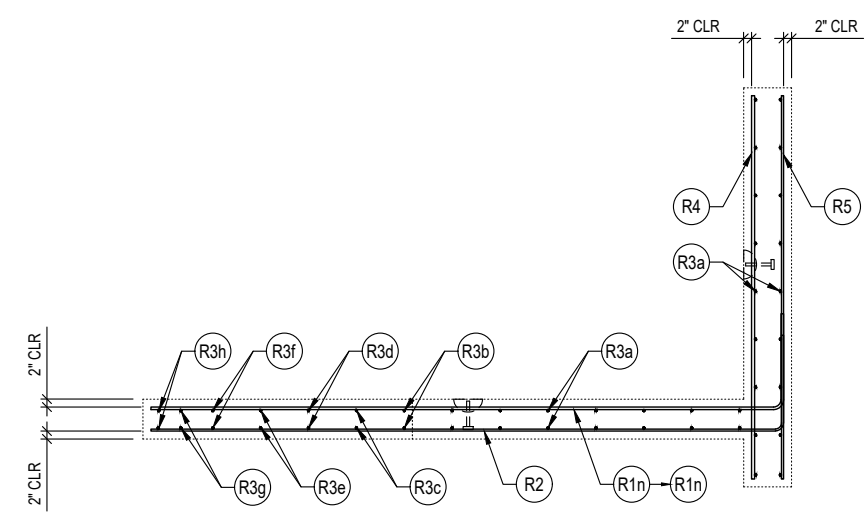
R2 DETAIL



VIEW A
 FOOTING REINF. (NEAR REINF.)



VIEW A
 FOOTING REINF. (FAR REINF.)



VIEW B

REINFORCEMENT CUT LIST				
#	QTY	MATERIAL	LENGTH	SHAPE
R1a	1	#5 REBAR A615/A706/GR60	15'- 0"	BENT
R1b	1	#5 REBAR A615/A706/GR60	14'- 7"	BENT
R1c	1	#5 REBAR A615/A706/GR60	14'- 2"	BENT
R1d	1	#5 REBAR A615/A706/GR60	13'- 9"	BENT
R1e	1	#5 REBAR A615/A706/GR60	13'- 4"	BENT
R1f	1	#5 REBAR A615/A706/GR60	12'- 11"	BENT
R1g	1	#5 REBAR A615/A706/GR60	12'- 7"	BENT
R1h	1	#5 REBAR A615/A706/GR60	12'- 2"	BENT
R1i	1	#5 REBAR A615/A706/GR60	11'- 9"	BENT
R1j	1	#5 REBAR A615/A706/GR60	11'- 4"	BENT
R1k	1	#5 REBAR A615/A706/GR60	10'- 11"	BENT
R1l	1	#5 REBAR A615/A706/GR60	10'- 6"	BENT
R1m	1	#5 REBAR A615/A706/GR60	10'- 1"	BENT
R1n	1	#5 REBAR A615/A706/GR60	9'- 8"	BENT
R2	8	#4 REBAR A615/A706/GR60	14'- 9"	BENT
R3a	32	#4 REBAR A615/A706/GR60	7'- 8"	STR
R3b	2	#4 REBAR A615/A706/GR60	7'- 4"	STR
R3c	2	#4 REBAR A615/A706/GR60	5'- 11"	STR
R3d	2	#4 REBAR A615/A706/GR60	4'- 6"	STR
R3e	2	#4 REBAR A615/A706/GR60	3'- 1"	STR
R3f	2	#4 REBAR A615/A706/GR60	1'- 8"	STR
R3g	2	#4 REBAR A615/A706/GR60	0'- 8"	STR
R3h	2	#4 REBAR A615/A706/GR60	9'- 5"	STR
R4	14	#6 REBAR A615/A706/GR60	8'- 0"	STR
R5	8	#4 REBAR A615/A706/GR60	8'- 0"	STR

R1 BARS			
BARS	A	B	LENGTH
R1a	13' - 0"	2'-0"	15' - 0"
R1b	12' - 7"	2'-0"	14' - 7"
R1c	12' - 2"	2'-0"	14' - 2"
R1d	11' - 9"	2'-0"	13' - 9"
R1e	11' - 4"	2'-0"	13' - 4"
R1f	10' - 11"	2'-0"	12' - 11"
R1g	10' - 7"	2'-0"	12' - 7"
R1h	10' - 2"	2'-0"	12' - 2"
R1i	9' - 9"	2'-0"	11' - 9"
R1j	9' - 4"	2'-0"	11' - 4"
R1k	8' - 11"	2'-0"	10' - 11"
R1l	8' - 6"	2'-0"	10' - 6"
R1m	8' - 1"	2'-0"	10' - 1"
R1n	7' - 8"	2'-0"	9' - 8"
TOTAL			172' - 9"

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 A CRH COMPANY
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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
 WING WALL 'W1': REINFORCEMENT DETAILS
 SNOQUALMIE VALLEY WATERSHED IMP. DIST
 WA

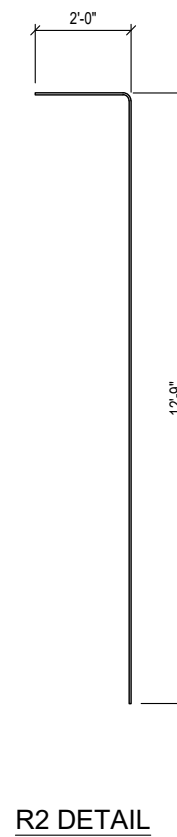
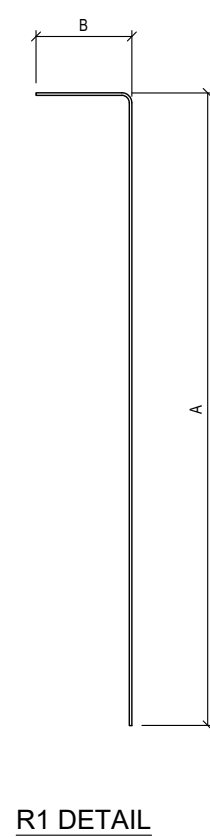
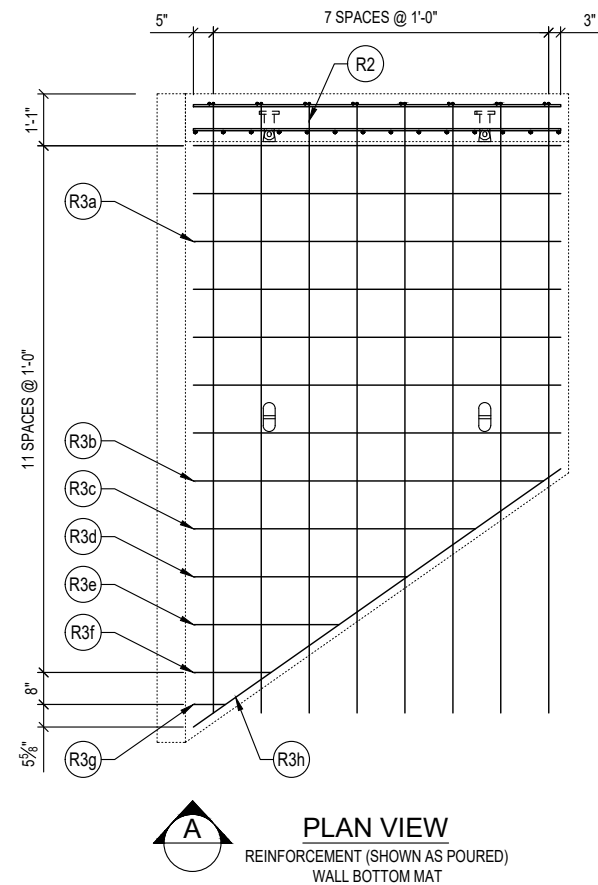
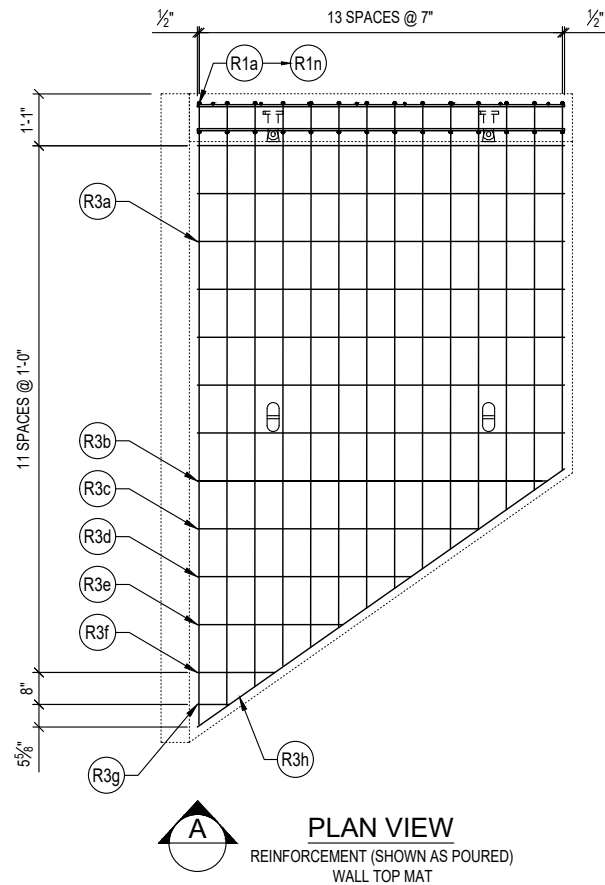
CUSTOMER SNOQUALMIE VALLEY WATERSHED IMP. DIST					
DATE 1/22/24	SALES DM	DRAWN FMT	ENGINEER ---	CHECKED	SALES ORDER S202473
DRAWING NUMBER 010-S202473-002				REVISION REV DATE	SHEET 7 OF 17

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC
 101 PINEVIEW ESTATES MOUNTAIN TOP, PA 18707
 PHONE: 570-868-2081 FAX: 570-868-2082

1/29/24



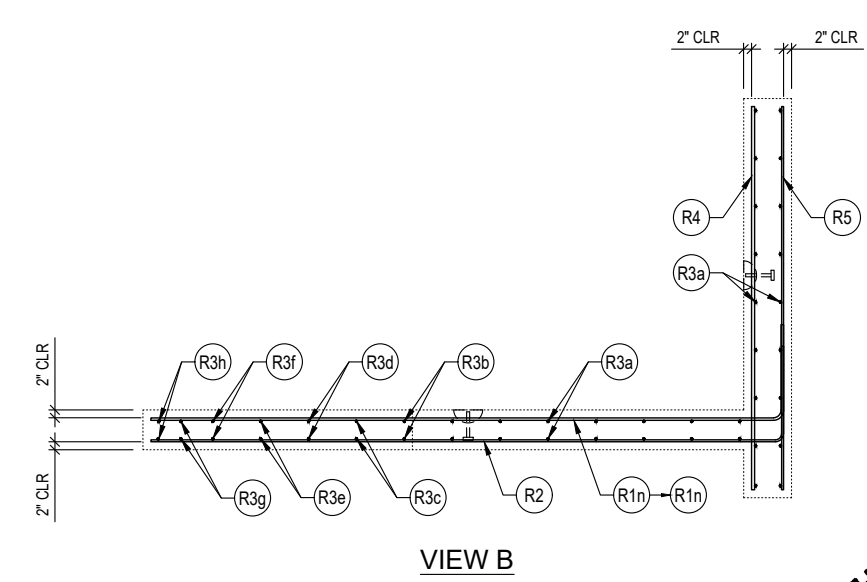
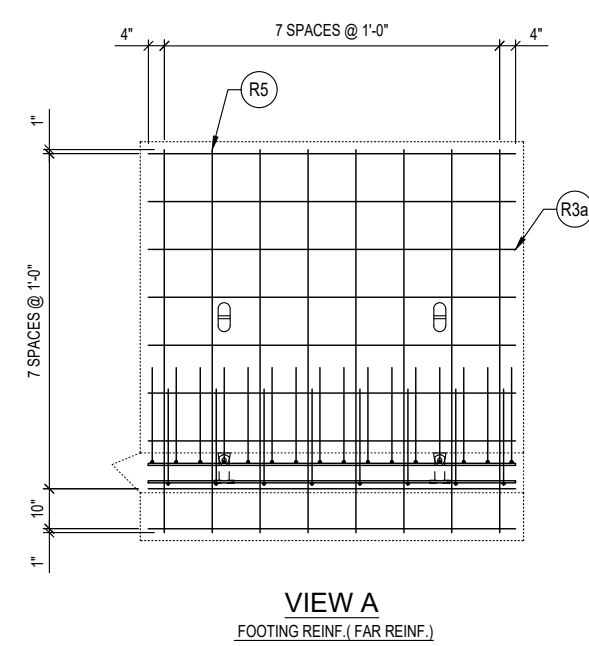
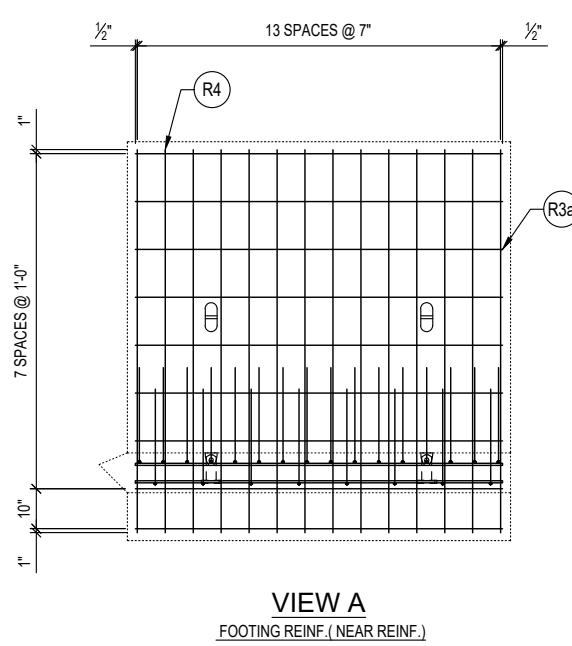
REVISION	DESCRIPTION	BY



SHOP NOTES
1. TRIM R2 BARS 2" AWAY FROM THE SLOPE EDGE OF THE WALL

REINFORCEMENT CUT LIST				
#	QTY	MATERIAL	LENGTH	SHAPE
R1a	1	#5 REBAR A615/A706/GR60	15'- 0"	BENT
R1b	1	#5 REBAR A615/A706/GR60	14'- 7"	BENT
R1c	1	#5 REBAR A615/A706/GR60	14'- 2"	BENT
R1d	1	#5 REBAR A615/A706/GR60	13'- 9"	BENT
R1e	1	#5 REBAR A615/A706/GR60	13'- 4"	BENT
R1f	1	#5 REBAR A615/A706/GR60	12'- 11"	BENT
R1g	1	#5 REBAR A615/A706/GR60	12'- 7"	BENT
R1h	1	#5 REBAR A615/A706/GR60	12'- 2"	BENT
R1i	1	#5 REBAR A615/A706/GR60	11'- 9"	BENT
R1j	1	#5 REBAR A615/A706/GR60	11'- 4"	BENT
R1k	1	#5 REBAR A615/A706/GR60	10'- 11"	BENT
R1l	1	#5 REBAR A615/A706/GR60	10'- 6"	BENT
R1m	1	#5 REBAR A615/A706/GR60	10'- 1"	BENT
R1n	1	#5 REBAR A615/A706/GR60	9'- 8"	BENT
R2	8	#4 REBAR A615/A706/GR60	14'- 9"	BENT
R3a	32	#4 REBAR A615/A706/GR60	7'- 8"	STR
R3b	2	#4 REBAR A615/A706/GR60	7'- 4"	STR
R3c	2	#4 REBAR A615/A706/GR60	5'- 11"	STR
R3d	2	#4 REBAR A615/A706/GR60	4'- 6"	STR
R3e	2	#4 REBAR A615/A706/GR60	3'- 1"	STR
R3f	2	#4 REBAR A615/A706/GR60	1'- 8"	STR
R3g	2	#4 REBAR A615/A706/GR60	0'- 8"	STR
R3h	2	#4 REBAR A615/A706/GR60	9'- 5"	STR
R4	14	#6 REBAR A615/A706/GR60	8'- 0"	STR
R5	8	#4 REBAR A615/A706/GR60	8'- 0"	STR

R1 BARS			
BARS	A	B	LENGTH
R1a	13'- 0"	2'-0"	15'- 0"
R1b	12'- 7"	2'-0"	14'- 7"
R1c	12'- 2"	2'-0"	14'- 2"
R1d	11'- 9"	2'-0"	13'- 9"
R1e	11'- 4"	2'-0"	13'- 4"
R1f	10'- 11"	2'-0"	12'- 11"
R1g	10'- 7"	2'-0"	12'- 7"
R1h	10'- 2"	2'-0"	12'- 2"
R1i	9'- 9"	2'-0"	11'- 9"
R1j	9'- 4"	2'-0"	11'- 4"
R1k	8'- 11"	2'-0"	10'- 11"
R1l	8'- 6"	2'-0"	10'- 6"
R1m	8'- 1"	2'-0"	10'- 1"
R1n	7'- 8"	2'-0"	9'- 8"
TOTAL			172'- 9"



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A CRH COMPANY
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PHONE: 800-892-1538 FAX: 253-735-4201

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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
WING WALL 'W2': REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

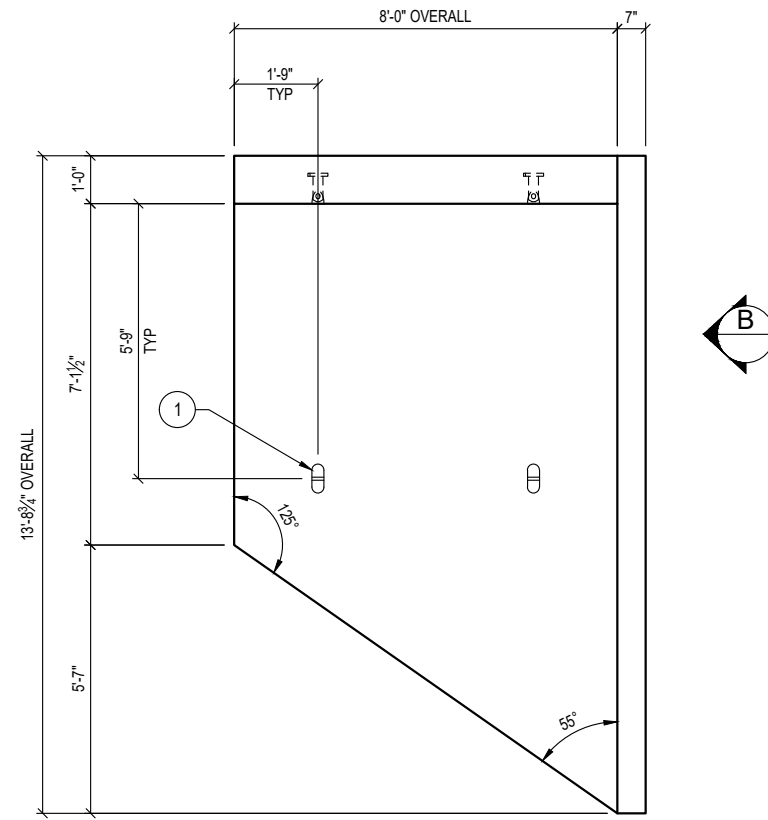
CUSTOMER SNOQUALMIE VALLEY WATERSHED IMP. DIST					
DATE 1/22/24	SALES DM	DRAWN FMT	ENGINEER ---	CHECKED	SALES ORDER S202473
DRAWING NUMBER 010-S202473-002				REVISION REV DATE	SHEET 9 OF 17

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

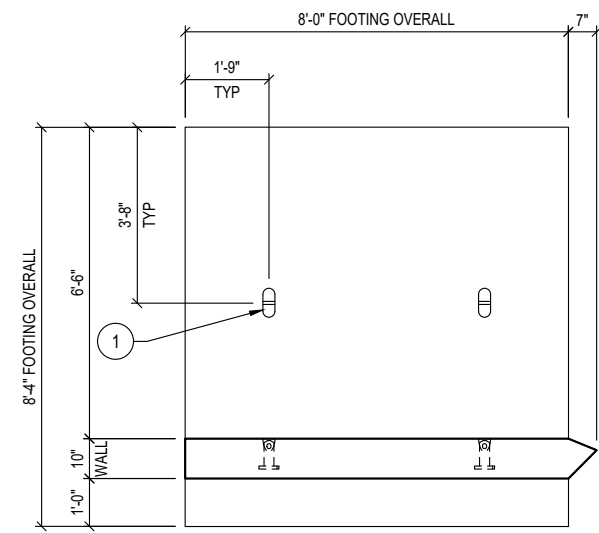
1/29/24



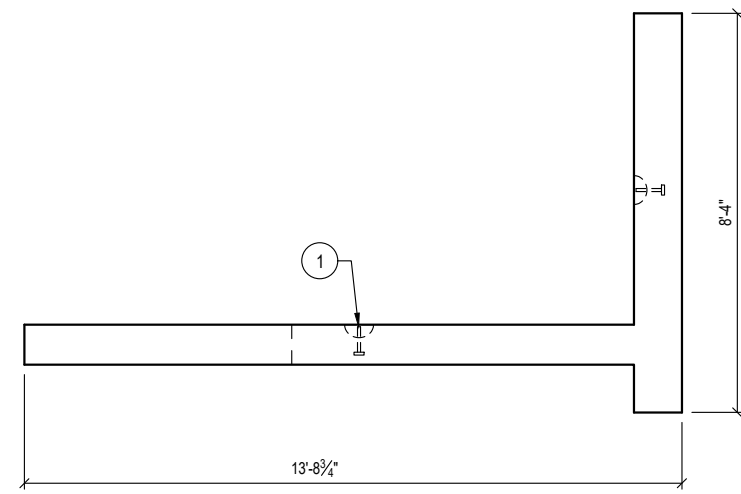
REVISION	DESCRIPTION	BY



PLAN VIEW
LAYOUT (SHOWN AS POURED)



VIEW A



VIEW B

PRODUCTION QUANTITY

(1) WING WALL 'W3'

PRODUCT WEIGHT

20,643 LBS

SHOP NOTES

1. CONCRETE FINISH: FLAT FLOAT FINISH
2. DO NOT ROTATE WING WALL TO UPRIGHT POSITION (IT WILL BE ROTATED AT THE JOBSITE)
3. EXTEND FOOTING FORM BY 4" FOR A 8'-4" OVERALL

BILL OF MATERIALS

#	QUANTITY	DESCRIPTION	ITEM #
1	4 ea	ANCHOR 8-TON SPREAD (Galv)	5100530
	5.09 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	3.21 cwt	#4 REBAR A615/A706/GR60	725A0074
	1.83 cwt	#5 REBAR A615/A706/GR60	725A0075
	1.68 cwt	#6 REBAR A615/A706/GR60	725A0076
	44.28 sqf	MESH CHAIR	5500000

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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
WING WALL 'W3': LAYOUT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

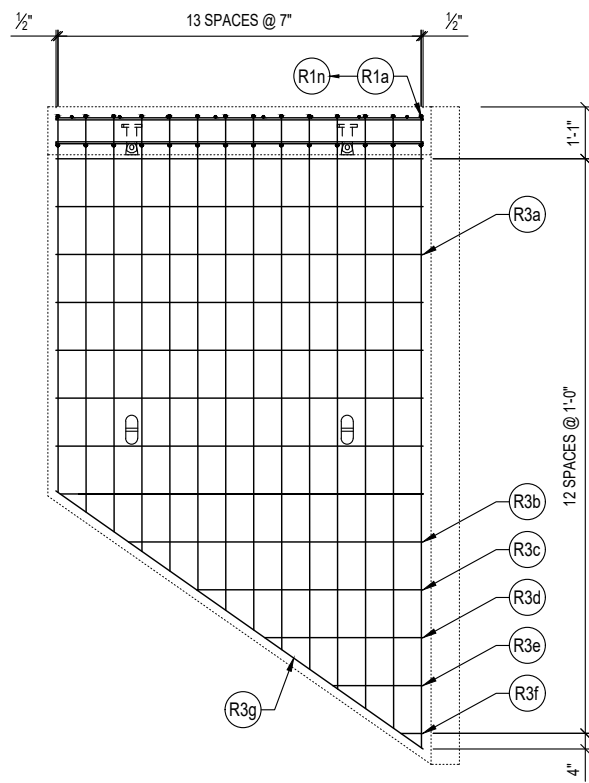
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

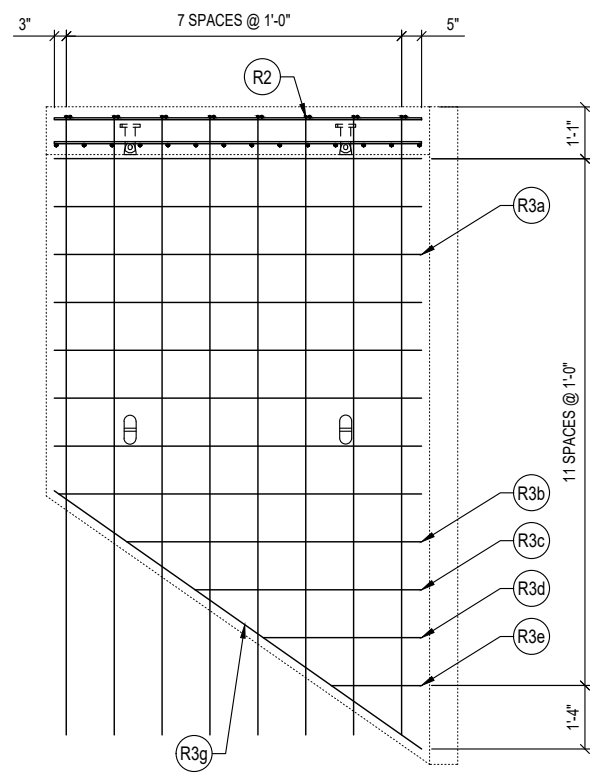


REVISION	DESCRIPTION	BY

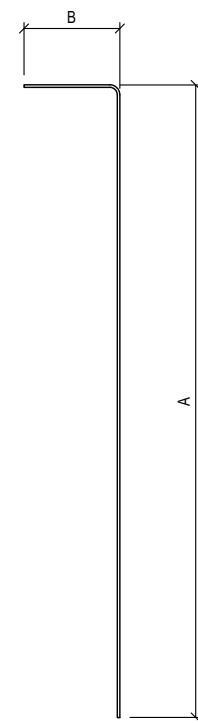
DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	10 OF 17



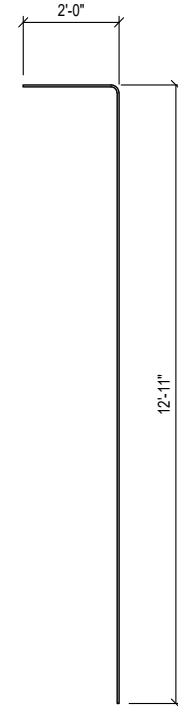
PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)
WALL TOP MAT



PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)
WALL BOTTOM MAT



R1 DETAIL



R2 DETAIL

SHOP NOTES

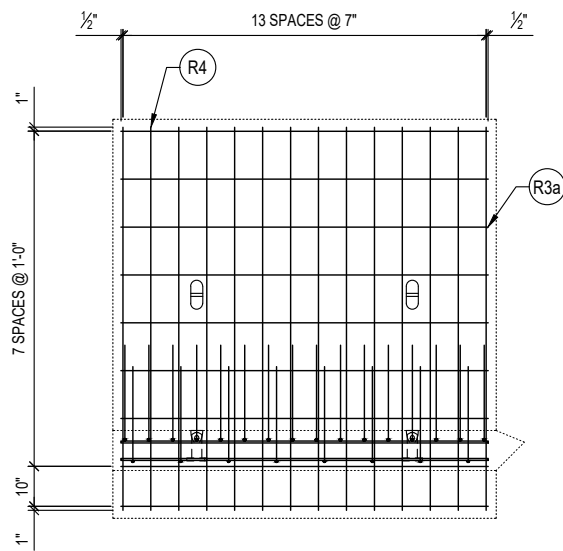
- TRIM R2 BARS 2" AWAY FROM THE SLOPE EDGE OF THE WALL

REINFORCEMENT CUT LIST

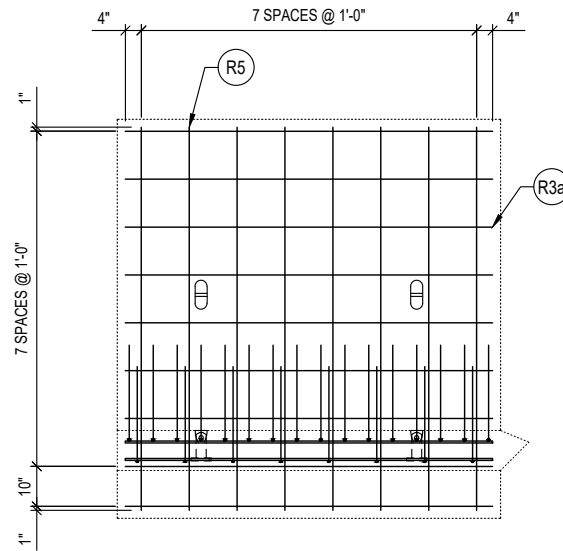
#	QTY	MATERIAL	LENGTH	SHAPE
R1a	1	#5 REBAR A615/A706/GR60	15'- 2"	BENT
R1b	1	#5 REBAR A615/A706/GR60	14'- 9"	BENT
R1c	1	#5 REBAR A615/A706/GR60	14'- 4"	BENT
R1d	1	#5 REBAR A615/A706/GR60	14'- 0"	BENT
R1e	1	#5 REBAR A615/A706/GR60	13'- 7"	BENT
R1f	1	#5 REBAR A615/A706/GR60	13'- 2"	BENT
R1g	1	#5 REBAR A615/A706/GR60	12'- 9"	BENT
R1h	1	#5 REBAR A615/A706/GR60	12'- 4"	BENT
R1i	1	#5 REBAR A615/A706/GR60	11'- 11"	BENT
R1j	1	#5 REBAR A615/A706/GR60	11'- 6"	BENT
R1k	1	#5 REBAR A615/A706/GR60	11'- 1"	BENT
R1l	1	#5 REBAR A615/A706/GR60	10'- 8"	BENT
R1m	1	#5 REBAR A615/A706/GR60	10'- 3"	BENT
R1n	1	#5 REBAR A615/A706/GR60	9'- 10"	BENT
R2	8	#4 REBAR A615/A706/GR60	14'- 11"	BENT
R3a	32	#4 REBAR A615/A706/GR60	7'- 8"	STR
R3b	2	#4 REBAR A615/A706/GR60	6'- 2"	STR
R3c	2	#4 REBAR A615/A706/GR60	4'- 9"	STR
R3d	2	#4 REBAR A615/A706/GR60	3'- 4"	STR
R3e	2	#4 REBAR A615/A706/GR60	1'- 11"	STR
R3f	1	#4 REBAR A615/A706/GR60	0'- 6"	STR
R3g	2	#4 REBAR A615/A706/GR60	9'- 5"	STR
R4	14	#6 REBAR A615/A706/GR60	8'- 0"	STR
R5	8	#4 REBAR A615/A706/GR60	8'- 0"	STR

R1 BARS

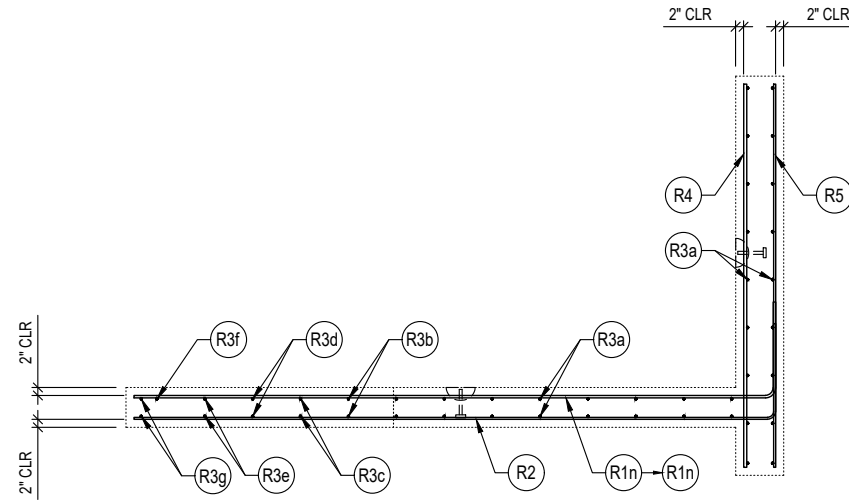
BARS	A	B	LENGTH
R1a	13' - 2"	2'-0"	15' - 2"
R1b	12' - 9"	2'-0"	14' - 9"
R1c	12' - 4"	2'-0"	14' - 4"
R1d	12' - 0"	2'-0"	14' - 0"
R1e	11' - 7"	2'-0"	13' - 7"
R1f	11' - 2"	2'-0"	13' - 2"
R1g	10' - 9"	2'-0"	12' - 9"
R1h	10' - 4"	2'-0"	12' - 4"
R1i	9' - 11"	2'-0"	11' - 11"
R1j	9' - 6"	2'-0"	11' - 6"
R1k	9' - 1"	2'-0"	11' - 1"
R1l	8' - 8"	2'-0"	10' - 8"
R1m	8' - 3"	2'-0"	10' - 3"
R1n	7' - 10"	2'-0"	9' - 10"
TOTAL			174' - 4"



VIEW A
FOOTING REINF. (NEAR REINF.)



VIEW A
FOOTING REINF. (FAR REINF.)



VIEW B

Oldcastle Infrastructure
A CRH COMPANY
P.O. BOX 588 AUBURN, WA 98071-0588
PHONE: 800-892-1538 FAX: 253-735-4201

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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)

WING WALL 'W3': REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	11 OF 17

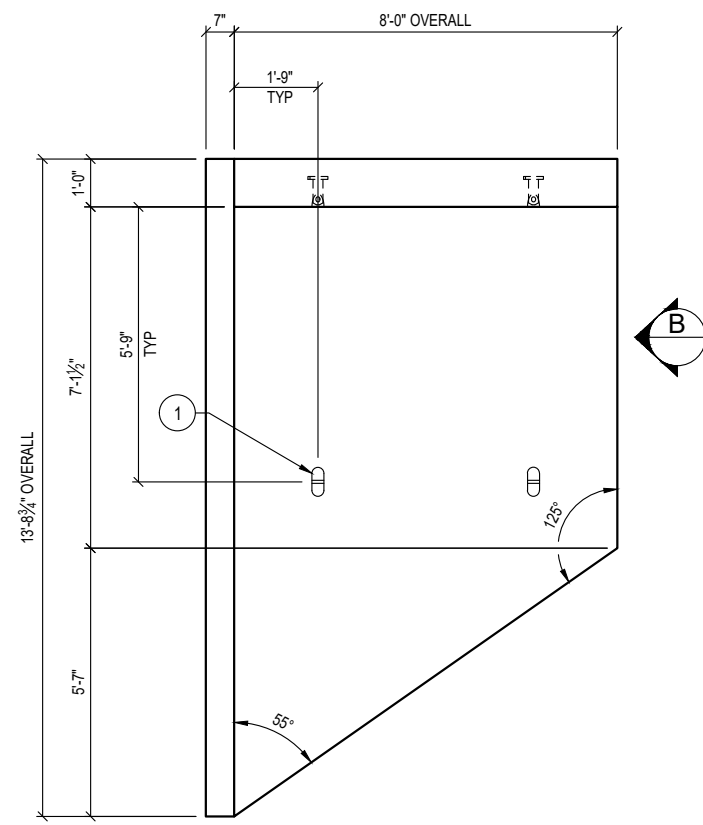
SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

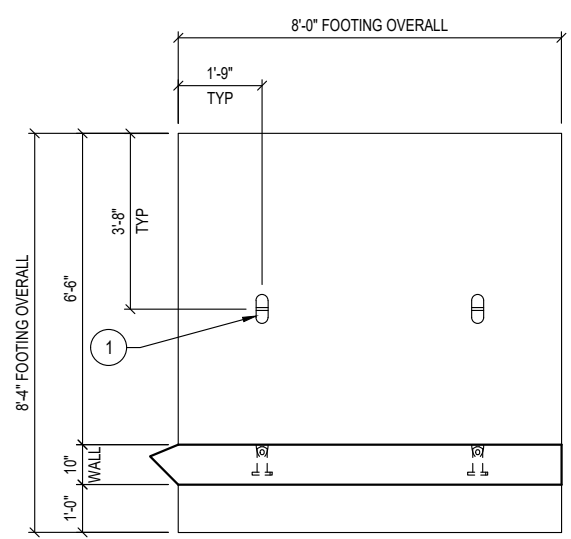
1/29/24



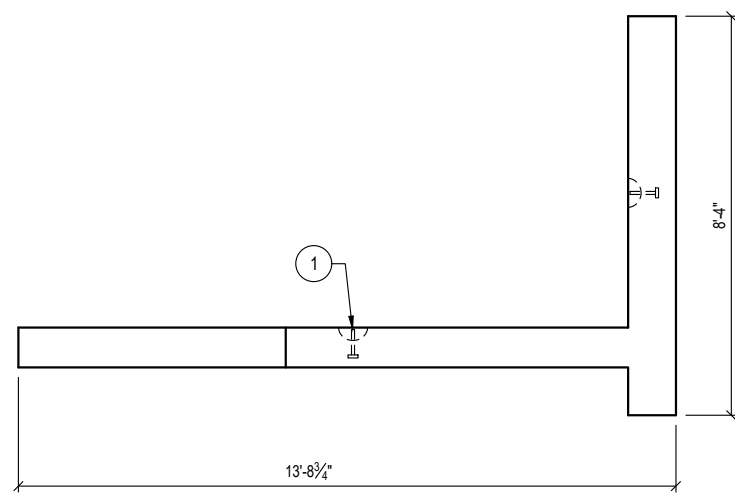
REVISION	DESCRIPTION	BY



PLAN VIEW
LAYOUT (SHOWN AS POURED)



VIEW A



VIEW B

PRODUCTION QUANTITY

(1) WING WALL 'W4'

PRODUCT WEIGHT

20,643 LBS

SHOP NOTES

1. CONCRETE FINISH: FLAT FLOAT FINISH
2. DO NOT ROTATE WING WALL TO UPRIGHT POSITION (IT WILL BE ROTATED AT THE JOBSITE)
3. EXTEND FOOTING FORM BY 4" FOR A 8'-4" OVERALL

BILL OF MATERIALS			
#	QUANTITY	DESCRIPTION	ITEM #
1	4 ea	ANCHOR 8-TON SPREAD (Galv)	5100530
	5.09 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	3.21 cwt	#4 REBAR A615/A706/GR60	725A0074
	1.83 cwt	#5 REBAR A615/A706/GR60	725A0075
	1.68 cwt	#6 REBAR A615/A706/GR60	725A0076
	44.28 sqf	MESH CHAIR	5500000



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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
WING WALL 'W4': LAYOUT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC

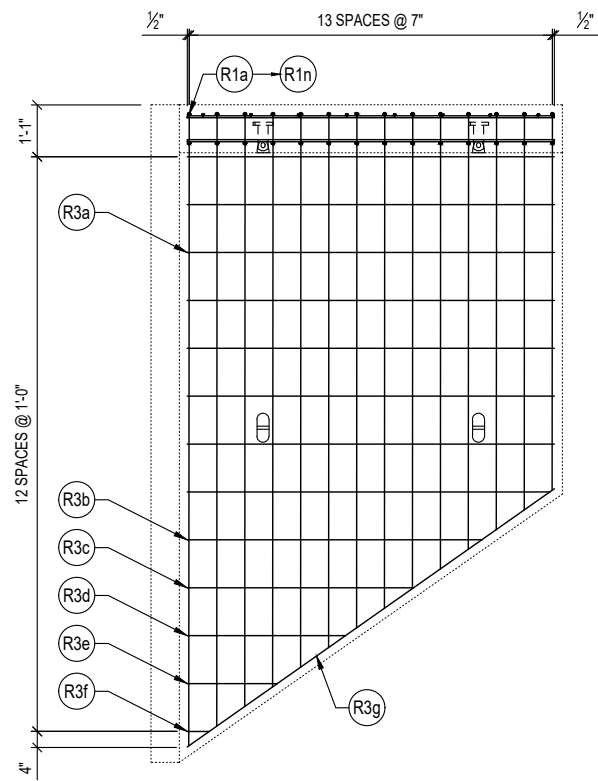
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

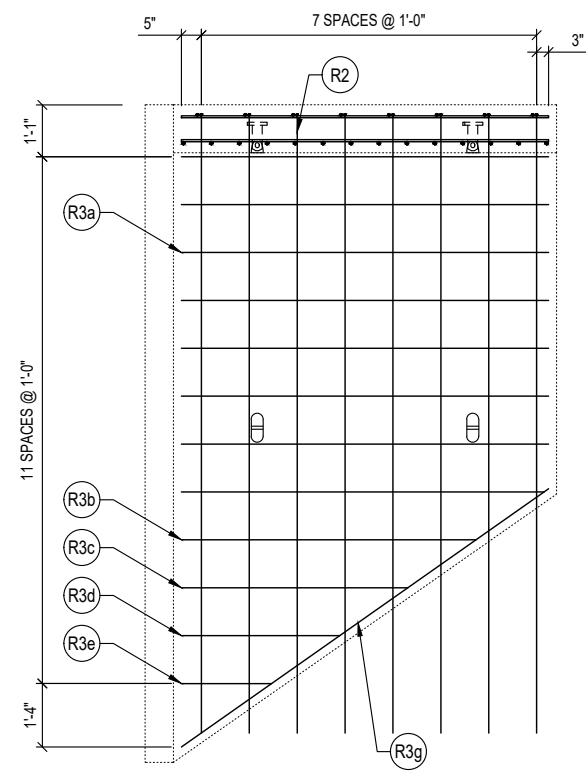


REVISION	DESCRIPTION	BY

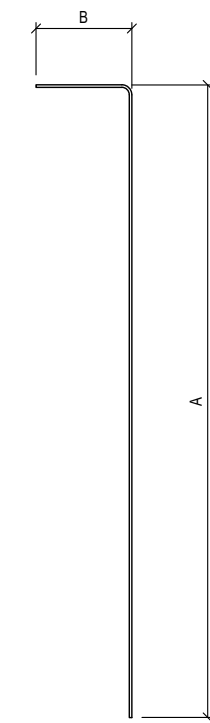
DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	12 OF 17



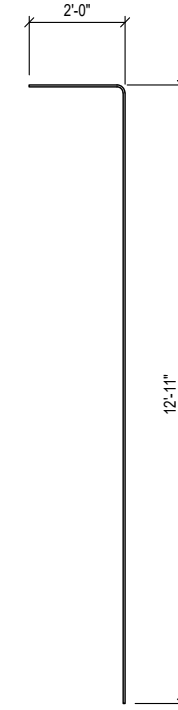
PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)
WALL TOP MAT



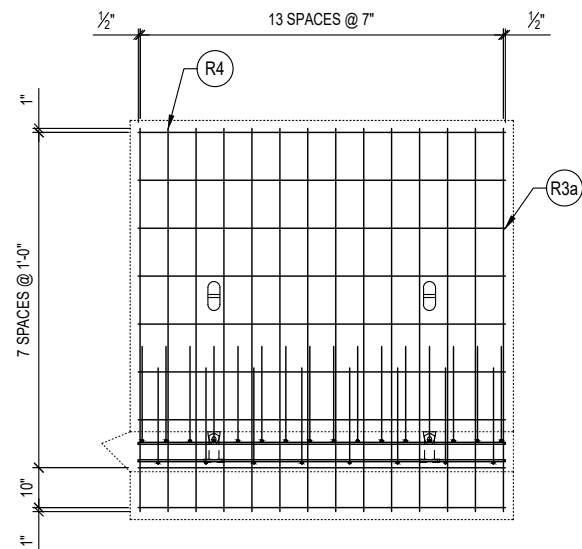
PLAN VIEW
REINFORCEMENT (SHOWN AS POURED)
WALL BOTTOM MAT



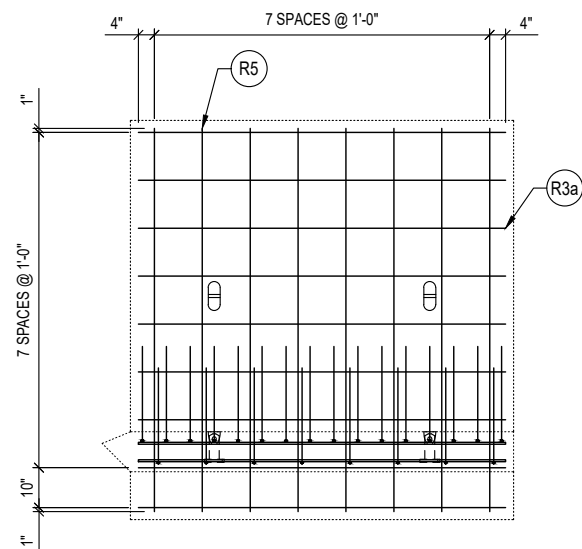
R1 DETAIL



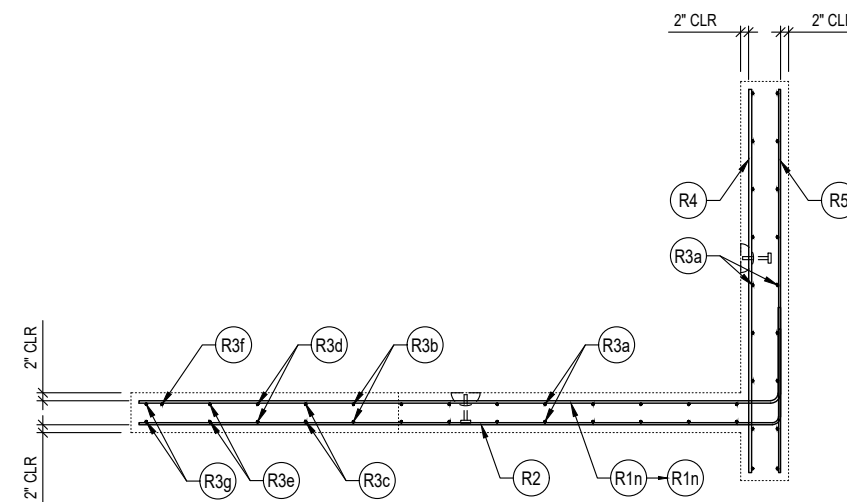
R2 DETAIL



VIEW A
FOOTING REINF. (NEAR REINF.)



VIEW A
FOOTING REINF. (FAR REINF.)



VIEW B

SHOP NOTES

- TRIM R2 BARS 2" AWAY FROM THE SLOPE EDGE OF THE WALL

REINFORCEMENT CUT LIST

#	QTY	MATERIAL	LENGTH	SHAPE
R1a	1	#5 REBAR A615/A706/GR60	15'- 2"	BENT
R1b	1	#5 REBAR A615/A706/GR60	14'- 9"	BENT
R1c	1	#5 REBAR A615/A706/GR60	14'- 4"	BENT
R1d	1	#5 REBAR A615/A706/GR60	14'- 0"	BENT
R1e	1	#5 REBAR A615/A706/GR60	13'- 7"	BENT
R1f	1	#5 REBAR A615/A706/GR60	13'- 2"	BENT
R1g	1	#5 REBAR A615/A706/GR60	12'- 9"	BENT
R1h	1	#5 REBAR A615/A706/GR60	12'- 4"	BENT
R1i	1	#5 REBAR A615/A706/GR60	11'- 11"	BENT
R1j	1	#5 REBAR A615/A706/GR60	11'- 6"	BENT
R1k	1	#5 REBAR A615/A706/GR60	11'- 1"	BENT
R1l	1	#5 REBAR A615/A706/GR60	10'- 8"	BENT
R1m	1	#5 REBAR A615/A706/GR60	10'- 3"	BENT
R1n	1	#5 REBAR A615/A706/GR60	9'- 10"	BENT
R2	8	#4 REBAR A615/A706/GR60	14'- 11"	BENT
R3a	32	#4 REBAR A615/A706/GR60	7'- 8"	STR
R3b	2	#4 REBAR A615/A706/GR60	6'- 2"	STR
R3c	2	#4 REBAR A615/A706/GR60	4'- 9"	STR
R3d	2	#4 REBAR A615/A706/GR60	3'- 4"	STR
R3e	2	#4 REBAR A615/A706/GR60	1'- 11"	STR
R3f	1	#4 REBAR A615/A706/GR60	0'- 6"	STR
R3g	2	#4 REBAR A615/A706/GR60	9'- 5"	STR
R4	14	#6 REBAR A615/A706/GR60	8'- 0"	STR
R5	8	#4 REBAR A615/A706/GR60	8'- 0"	STR

R1 BARS

BARS	A	B	LENGTH
R1a	13' - 2"	2'-0"	15' - 2"
R1b	12' - 9"	2'-0"	14' - 9"
R1c	12' - 4"	2'-0"	14' - 4"
R1d	12' - 0"	2'-0"	14' - 0"
R1e	11' - 7"	2'-0"	13' - 7"
R1f	11' - 2"	2'-0"	13' - 2"
R1g	10' - 9"	2'-0"	12' - 9"
R1h	10' - 4"	2'-0"	12' - 4"
R1i	9' - 11"	2'-0"	11' - 11"
R1j	9' - 6"	2'-0"	11' - 6"
R1k	9' - 1"	2'-0"	11' - 1"
R1l	8' - 8"	2'-0"	10' - 8"
R1m	8' - 3"	2'-0"	10' - 3"
R1n	7' - 10"	2'-0"	9' - 10"
TOTAL			174' - 4"



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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)

WING WALL 'W4': REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	13 OF 17

SPECIALTY ENGINEERING SERVICES PROVIDED BY:

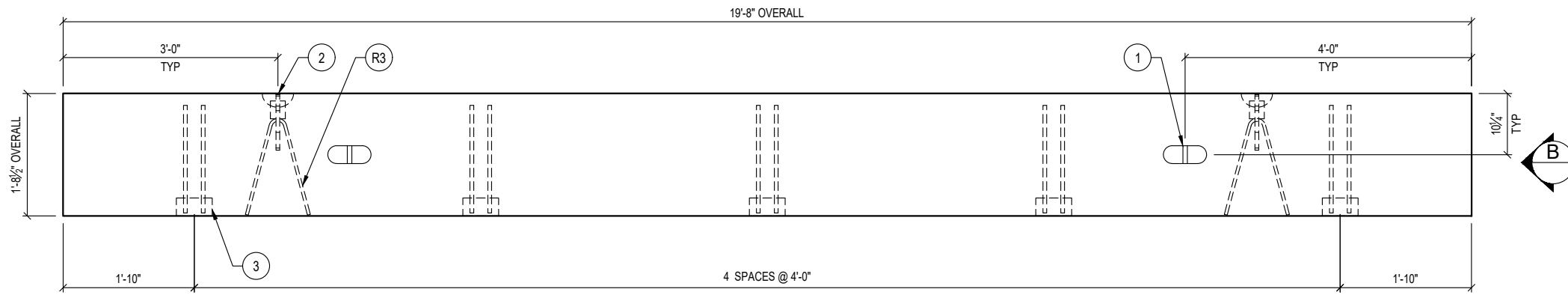
CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

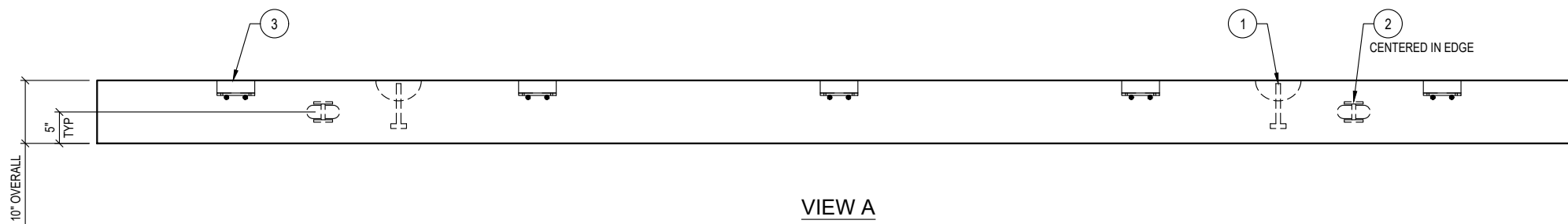
1/29/24



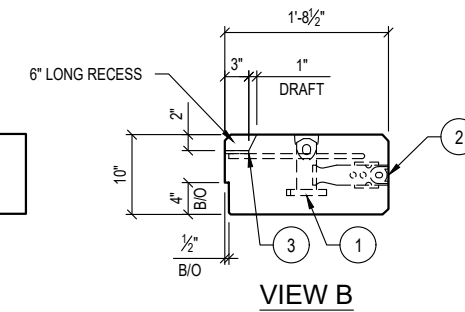
REVISION	DESCRIPTION	BY



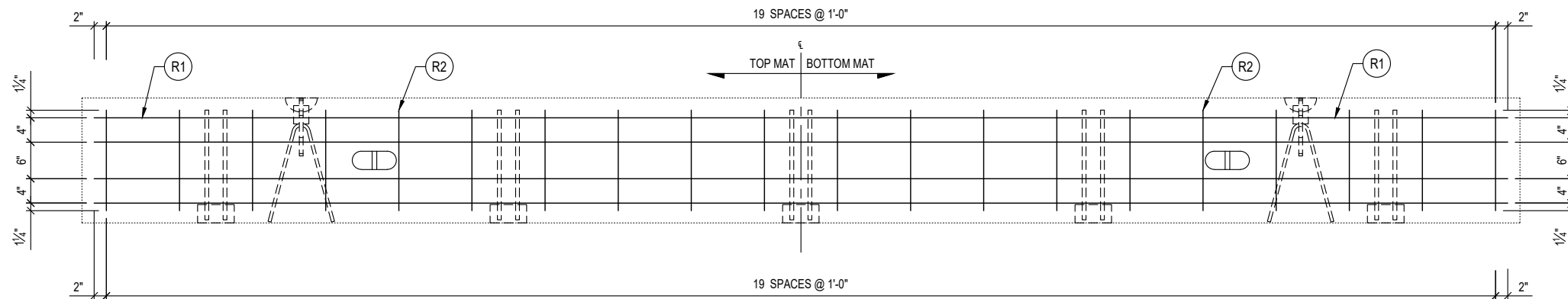
A PLAN VIEW
LAYOUT (SHOWN AS Poured)



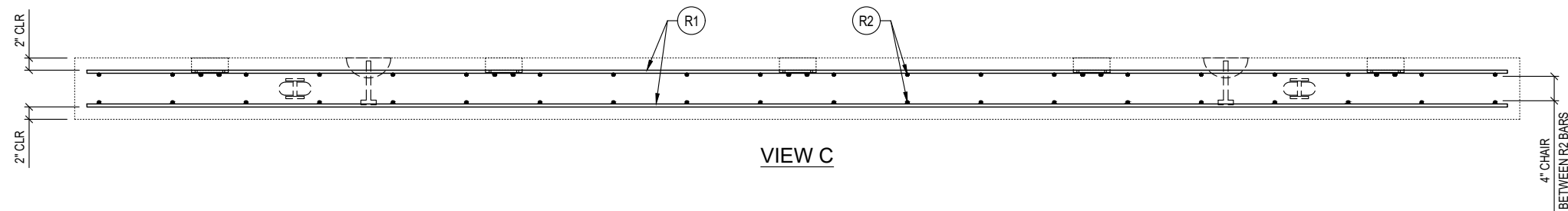
VIEW A



VIEW B



C PLAN VIEW
REINFORCEMENT (SHOWN AS Poured)



VIEW C

PRODUCTION QUANTITY
(1) HEAD WALL 'H1'

PRODUCT WEIGHT
4,199 LBS

SHOP NOTES

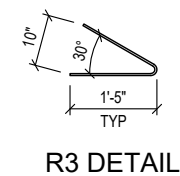
- NO STEEL FORM EXISTS; USE WOOD FORM FOR ALL FEATURES
- FORM DIAGONAL DISTANCE: 19'-8⁷/₈"
- CONCRETE FINISH: FLAT FLOAT FINISH WITH 3/4" CHAMFERED EDGES

BILL OF MATERIALS

#	QUANTITY	DESCRIPTION	ITEM #
1	2 ea	ANCHOR 8-TON PLATE (Galv)	5100525
2	2 ea	ANCHOR 8-TON ERECTION DSP (Galv)	5100535
3	5 ea	HEAD WALL WELD PLATE (SIS)	2300500
	1.03 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	1.45 cwt	#4 REBAR A615/A706/GR60	725A0074
	9.27 sqf	MESH CHAIR	5500000

REINFORCEMENT CUT LIST

#	QTY	MATERIAL	LENGTH	SHAPE
R1	8	#4 REBAR A615/A706/GR60	19'- 4"	STR
R2	40	#4 REBAR A615/A706/GR60	1'- 4.5"	STR
R3	2	#4 REBAR A615/A706/GR60	2'- 10"	BENT



R3 DETAIL



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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)

HEADWALL 'H1': LAYOUT & REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

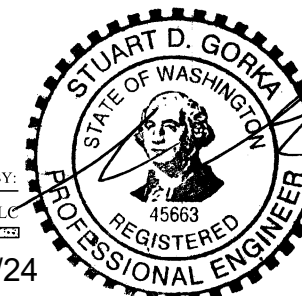
CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

SPECIALTY ENGINEERING SERVICES PROVIDED BY:

CONCRETE ENGINEERING SOLUTIONS, LLC

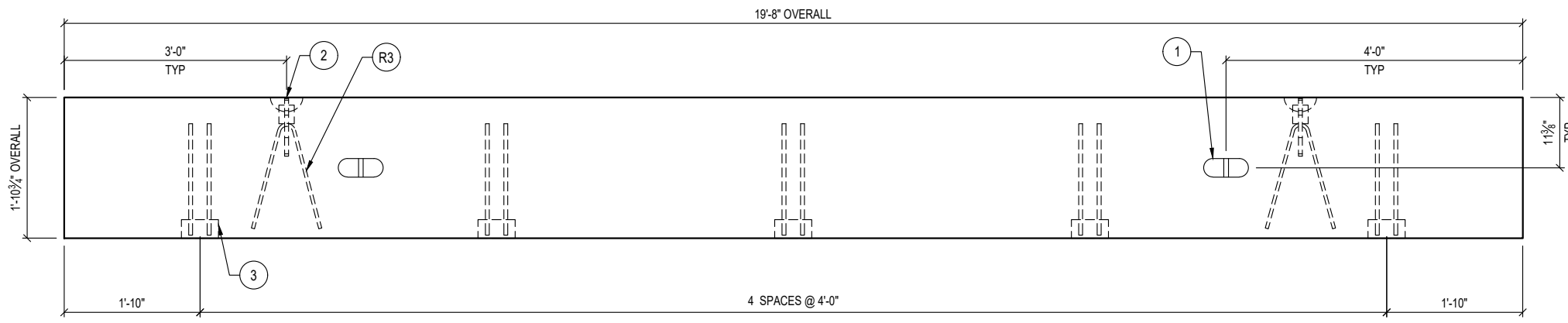
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

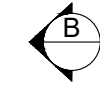


REVISION	DESCRIPTION	BY

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	14 OF 17



A PLAN VIEW
LAYOUT (SHOWN AS Poured)



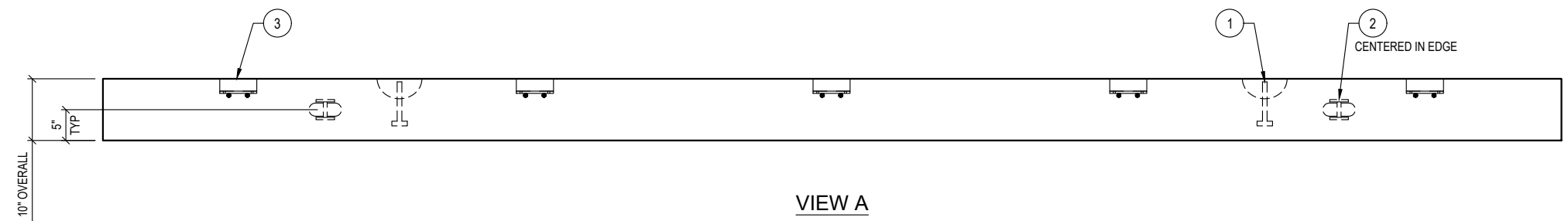
PRODUCTION QUANTITY
(1) HEAD WALL 'H2'

PRODUCT WEIGHT
4,660 LBS

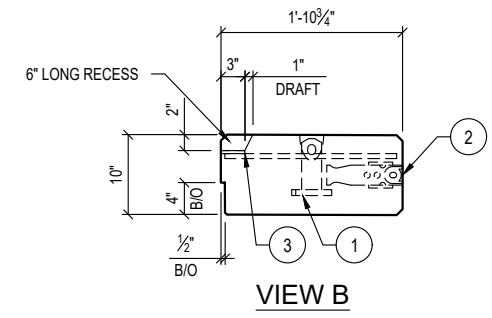
SHOP NOTES

- NO STEEL FORM EXISTS; USE WOOD FORM FOR ALL FEATURES
- FORM DIAGONAL DISTANCE: 19'-9 1/8"
- CONCRETE FINISH: FLAT FLOAT FINISH WITH 3/4" CHAMFERED EDGES

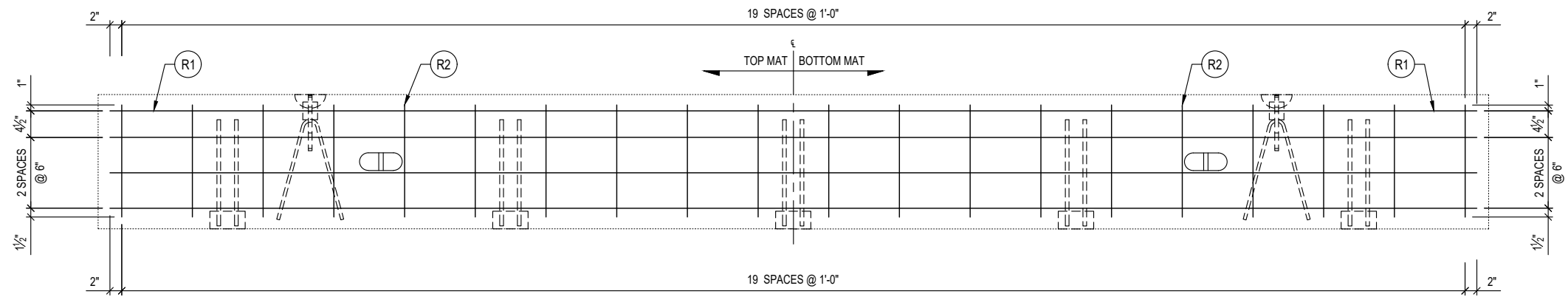
BILL OF MATERIALS			
#	QUANTITY	DESCRIPTION	ITEM #
1	2 ea	ANCHOR 8-TON PLATE (Galv)	5100525
2	2 ea	ANCHOR 8-TON ERECTION DSP (Galv)	5100535
3	5 ea	HEAD WALL WELD PLATE (SIS)	2300500
	1.15 yds	CONCRETE MIX 71 - SCC (WSDOT)	5010075
	1.50 cwt	#4 REBAR A615/A706/GR60	725A0074
	10.35 sqf	MESH CHAIR	5500000



VIEW A

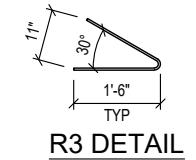


VIEW B

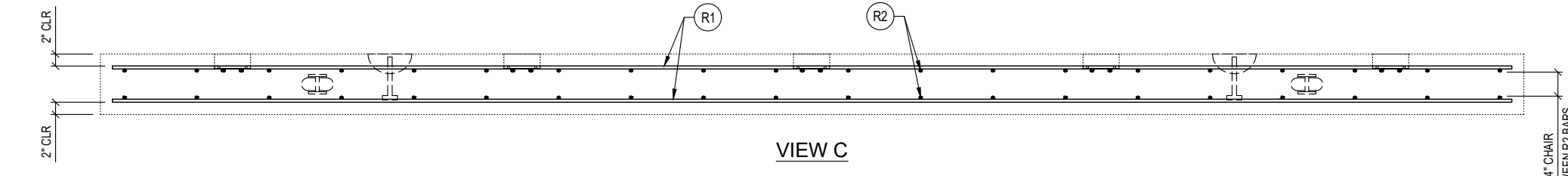


C PLAN VIEW
REINFORCEMENT (SHOWN AS Poured)

#	QTY	MATERIAL	LENGTH	SHAPE
R1	8	#4 REBAR A615/A706/GR60	19'- 4"	STR
R2	40	#4 REBAR A615/A706/GR60	1'- 7"	STR
R3	2	#4 REBAR A615/A706/GR60	3'- 0"	BENT



R3 DETAIL



VIEW C

SPECIALTY ENGINEERING SERVICES PROVIDED BY:
CONCRETE ENGINEERING SOLUTIONS, LLC
101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24

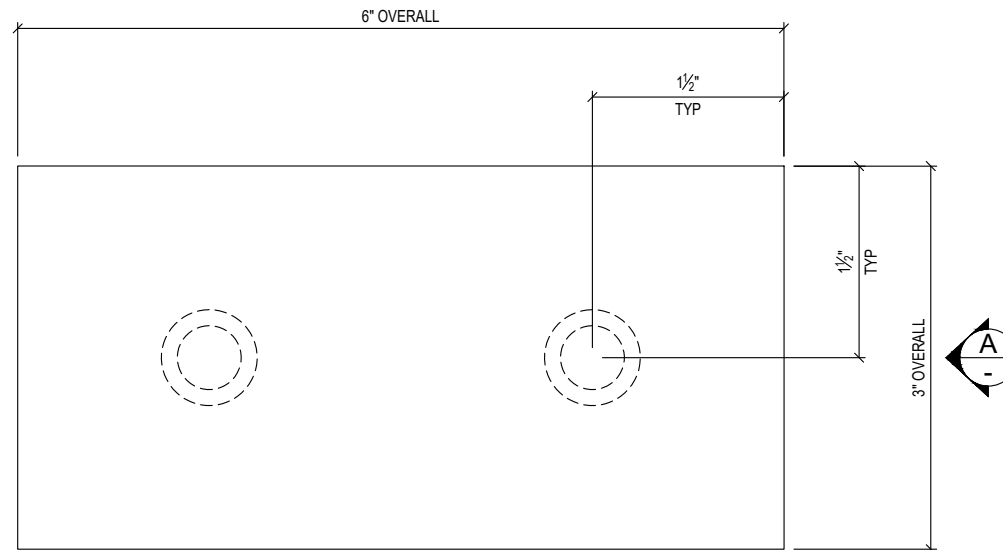


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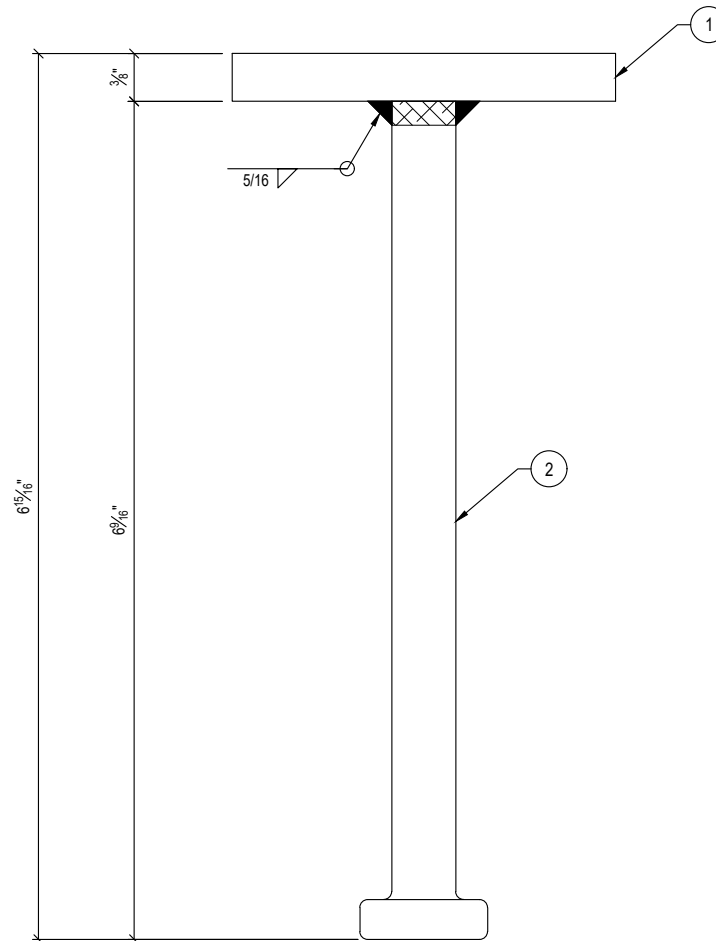
18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
HEADWALL 'H2' : LAYOUT & REINFORCEMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

CUSTOMER SNOQUALMIE VALLEY WATERSHED IMP. DIST					
DATE 1/22/24	SALES DM	DRAWN FMT	ENGINEER ---	CHECKED	SALES ORDER S202473
DRAWING NUMBER 010-S202473-002				REVISION REV DATE	SHEET 15 OF 17

REVISION	DESCRIPTION	BY



PLAN VIEW



VIEW A

- SHOP NOTES
- OVERALL DIMENSIONS HAVE A TOLERANCE OF $\pm 1/16$ "
 - GRIND ALL SHARP EDGES

PRODUCTION QUANTITY
(10) WELD PLATES

BILL OF MATERIALS			
#	QUANTITY	DESCRIPTION	ITEM #
1	1.91 lbs	FLATBAR 3/8" x 6"	
2	2 ea	STUD 5/8" X 6-9/16"	5910475

LAYOUT CUT LIST			
#	QUANTITY	DESCRIPTION	SIZE
2	1 ea	FLATBAR 3/8" X 3"	6"

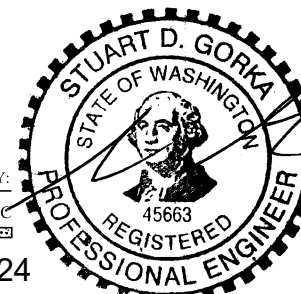
REVISION	DESCRIPTION	BY

SPECIALTY ENGINEERING SERVICES PROVIDED BY:

CONCRETE ENGINEERING SOLUTIONS, LLC

101 PINEVIEW ESTATES
MOUNTAIN TOP, PA 18707
PHONE: 570-868-2081
FAX: 570-868-2082

1/29/24



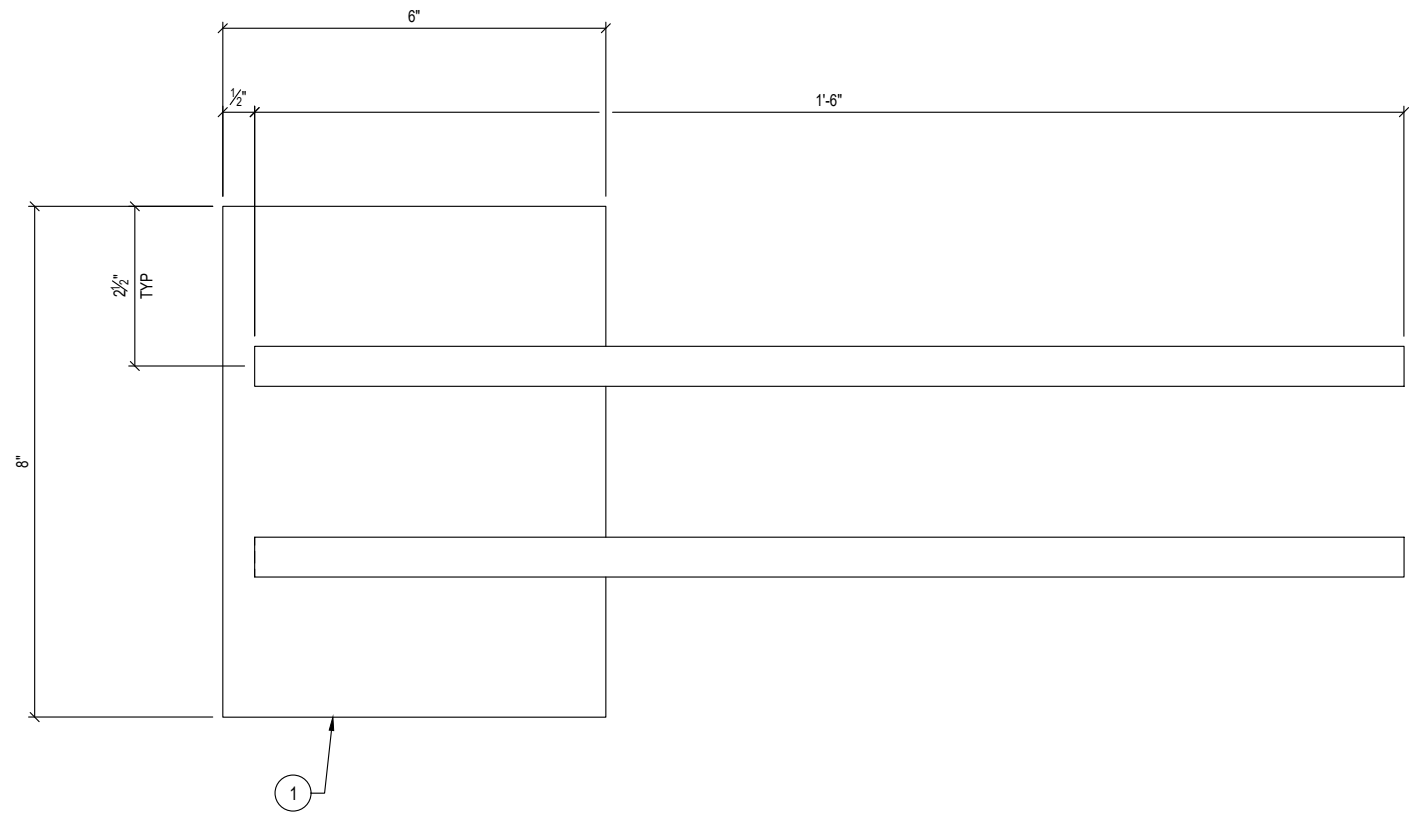
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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)

TOP HEADWALL PLATE LAYOUT & WELDMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST

CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---		S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	16 OF 17



A
PLAN VIEW



VIEW A

SHOP NOTES

1. OVERALL DIMENSIONS HAVE A TOLERANCE OF $\pm \frac{1}{16}$ "
2. ALL WELDS ARE $\frac{3}{16}$ " FILLET UNLESS OTHERWISE NOTED
3. GRIND ALL SHARP EDGES

PRODUCTION QUANTITY

(10) WELD PLATES

BILL OF MATERIALS

#	QUANTITY	DESCRIPTION	ITEM #
	5.08 lbs	FLATBAR $\frac{3}{8}$ " x 6"	

LAYOUT CUT LIST

#	QUANTITY	DESCRIPTION	SIZE
1	1 ea	FLATBAR $\frac{3}{8}$ " X 6" W/ (2) HCA	8"



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18"W x10'Tx20'L SPLIT CULVERT D (ID 933063)
HEADWALL WELD PLATE LAYOUT & WELDMENT DETAILS
SNOQUALMIE VALLEY WATERSHED IMP. DIST
WA

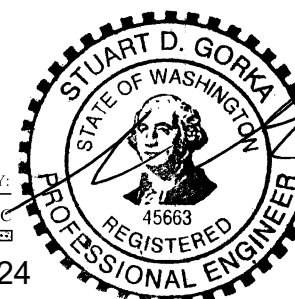
CUSTOMER
SNOQUALMIE VALLEY WATERSHED IMP. DIST

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1/29/24



REVISION	DESCRIPTION	BY

DATE	SALES	DRAWN	ENGINEER	CHECKED	SALES ORDER
1/22/24	DM	FMT	---	---	S202473
DRAWING NUMBER				REVISION	SHEET
010-S202473-002				REV DATE	17 OF 17