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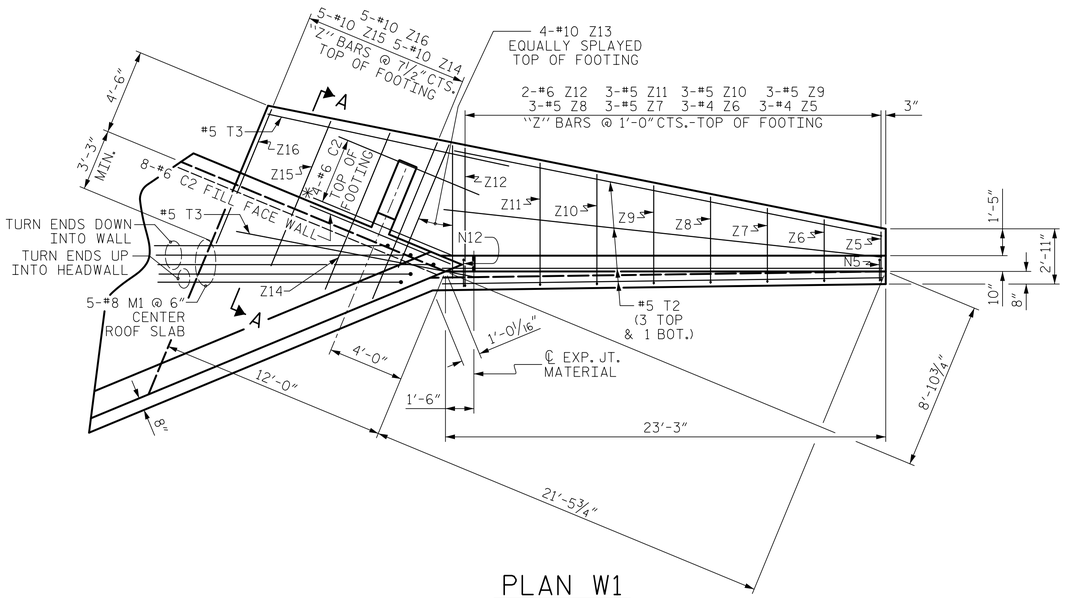
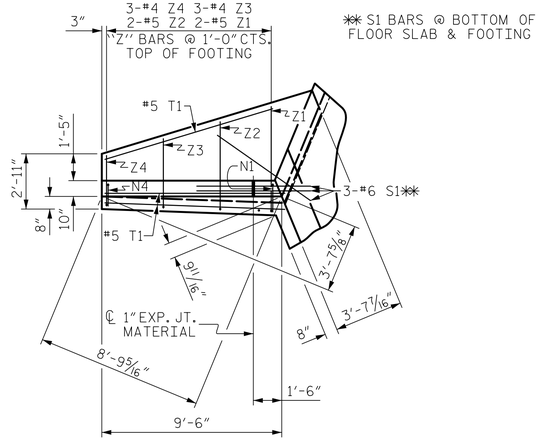


PLAN W1

✳ CENTER ALL #6 C2 BARS ON ℄ COUNTERFORT

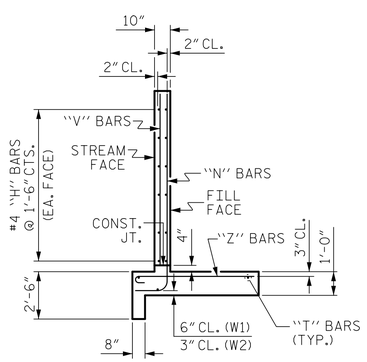


✳✳ S1 BARS @ BOTTOM OF FLOOR SLAB & FOOTING

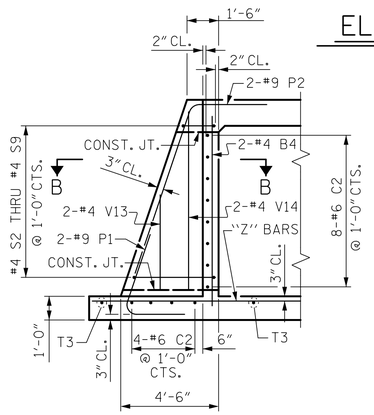
PLAN W2

ELEVATION W1

ELEVATION W2

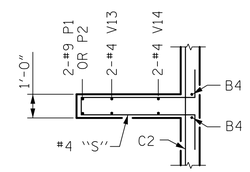


WING SECTION



SECTION A-A

STANDARD REINFORCING STEEL IN BARREL NOT SHOWN



SECTION B-B

NOTE:
A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

G1 BARS IN HEADWALL ARE INCLUDED WITH THE BARREL REINFORCING STEEL.

BILL OF MATERIAL

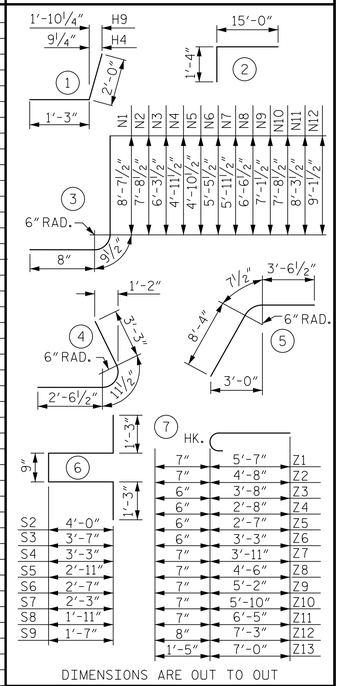
LONG WING W1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B4	2	#4	STR	9'-0"	12
C2	12	#6	STR	8'-0"	144
H6	6	#4	STR	21'-4"	86
H7	2	#4	STR	19'-4"	26
H8	2	#4	STR	11'-5"	15
H9	2	#4	STR	3'-6"	5
H10	12	#4	1	3'-3"	26
H11	2	#4	STR	21'-9"	29
M1	5	#8	2	16'-4"	218
N5	3	#4	3	6'-4"	13
N6	3	#4	3	6'-11"	14
N7	3	#4	3	7'-5"	15
N8	3	#4	3	8'-0"	16
N9	3	#5	3	8'-7"	27
N10	3	#5	3	9'-2"	29
N11	4	#5	3	9'-9"	41
N12	2	#5	3	10'-7"	22
P1	2	#9	4	6'-9"	46
P2	2	#9	5	12'-6"	85
S2	1	#4	6	11'-3"	8
S3	1	#4	6	10'-5"	7
S4	1	#4	6	9'-9"	7
S5	1	#4	6	9'-1"	6
S6	1	#4	6	8'-5"	6
S7	1	#4	6	7'-9"	5
S8	1	#4	6	7'-1"	5
S9	1	#4	6	6'-5"	4
T2	4	#5	STR	23'-3"	97
T3	2	#5	STR	12'-0"	25
V5	3	#4	STR	4'-2"	8
V6	3	#4	STR	4'-10"	10
V7	3	#4	STR	5'-5"	11
V8	3	#4	STR	6'-0"	12
V9	3	#4	STR	6'-6"	13
V10	3	#4	STR	7'-2"	14
V11	4	#4	STR	7'-8"	20
V12	2	#4	STR	8'-7"	11
V13	2	#4	STR	4'-0"	5
V14	2	#4	STR	8'-0"	11
Z5	3	#4	7	3'-1"	6
Z6	3	#4	7	3'-9"	8
Z7	3	#5	7	4'-6"	14
Z8	3	#5	7	5'-1"	16
Z9	3	#5	7	5'-9"	18
Z10	3	#5	7	6'-5"	20
Z11	3	#5	7	7'-0"	22
Z12	2	#6	7	7'-11"	24
Z13	4	#10	7	8'-5"	145
Z14	5	#10	STR	8'-11"	192
Z15	5	#10	STR	8'-3"	177
Z16	5	#10	STR	7'-8"	165
REINFORCING STEEL FOR 1 W1 WING					1,961 LBS.

SHORT WING W2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	7'-7"	30
H2	2	#4	STR	6'-10"	9
H3	2	#4	STR	3'-7"	5
H4	12	#4	1	3'-3"	26
H5	2	#4	STR	8'-5"	11
N1	2	#5	3	10'-1"	21
N2	2	#5	3	9'-2"	19
N3	3	#5	3	7'-9"	24
N4	3	#4	3	6'-5"	13
S1	3	#6	STR	6'-0"	27
T1	3	#5	STR	9'-6"	30
V1	2	#4	STR	8'-1"	11
V2	2	#4	STR	7'-1"	9
V3	3	#4	STR	5'-9"	12
V4	3	#4	STR	4'-4"	9
Z1	2	#5	7	6'-2"	13
Z2	2	#5	7	5'-3"	11
Z3	3	#4	7	4'-2"	8
Z4	3	#4	7	3'-2"	6
REINFORCING STEEL FOR 1 W2 WING					294 LBS.

BAR TYPES



DIMENSIONS ARE OUT TO OUT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	7'-7"	30
H2	2	#4	STR	6'-10"	9
H3	2	#4	STR	3'-7"	5
H4	12	#4	1	3'-3"	26
H5	2	#4	STR	8'-5"	11
N1	2	#5	3	10'-1"	21
N2	2	#5	3	9'-2"	19
N3	3	#5	3	7'-9"	24
N4	3	#4	3	6'-5"	13
S1	3	#6	STR	6'-0"	27
T1	3	#5	STR	9'-6"	30
V1	2	#4	STR	8'-1"	11
V2	2	#4	STR	7'-1"	9
V3	3	#4	STR	5'-9"	12
V4	3	#4	STR	4'-4"	9
Z1	2	#5	7	6'-2"	13
Z2	2	#5	7	5'-3"	11
Z3	3	#4	7	4'-2"	8
Z4	3	#4	7	3'-2"	6
REINFORCING STEEL FOR 1 W2 WING					294 LBS.

TOTAL WING QUANTITIES

REINFORCING STEEL FOR 2 WINGS	2,255 LBS.
CLASS A CONCRETE	
2 WINGS	18.0 C.Y.
1 END CURTAIN WALL	1.9 C.Y.
1 HEADWALL	1.6 C.Y.
TOTAL	21.5 C.Y.

PROJECT NO. A-0009CA

GRAHAM COUNTY

STATION: 195+16.00 -L-

SHEET 6 OF 7

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHEEK, JR.
Marshall G. Cheek, Jr.
6/1/2022

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH STREET
SUITE 200
RALEIGH, NC 27603
PH. (919) 773-8887
CORP. LICENSE NO.: C-0275

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD WINGS FOR MULTIPLE BARREL CONCRETE BOX CULVERT

H = 8'-0" SLOPE = 2:1
45° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C6-6
1			3			TOTAL SHEETS
2			4			7

DRAWN BY : ZCS DATE : 2/21
CHECKED BY : MGC DATE : 6/21
DESIGN ENGINEER OF RECORD: ZCS DATE : 11/21

3/22/2022
X:\NCDOT\A-0009\Structures\A-0009CA\STR. #6 195+16.00 -L-\Final Plans\DGNs\416_011_A-0009CA_SMU_CU06.dgn
User:ZSmith