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BILL OF MATERIAL

WING 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	6	#4	STR	15'-1"	60
H2	2	#4	STR	11'-5"	15
H3	2	#4	STR	7'-6"	10
H4	2	#4	STR	3'-7"	5
H5	14	#4	1	3'-3"	30
H6	2	#4	STR	16'-2"	22
N1	2	#6	2	11'-5"	34
N2	2	#6	2	10'-10"	33
N3	2	#5	2	10'-1"	21
N4	3	#5	2	8'-11"	28
N5	3	#5	2	7'-10"	25
N6	3	#4	2	6'-8"	13
N7	3	#4	2	5'-6"	11
S1	3	#6	STR	6'-0"	27
T1	3	#5	STR	17'-0"	53
V1	2	#4	STR	9'-5"	13
V2	2	#4	STR	8'-11"	12
V3	2	#4	STR	8'-1"	11
V4	3	#4	STR	7'-0"	14
V5	3	#4	STR	5'-10"	12
V6	3	#4	STR	4'-8"	9
V7	3	#4	STR	3'-6"	7
Z1	3	#5	3	6'-6"	20
Z2	3	#5	3	5'-10"	18
Z3	3	#4	3	5'-3"	11
Z4	3	#4	3	4'-7"	9
Z5	3	#4	3	4'-0"	8
Z6	3	#4	3	3'-4"	7

REINFORCING STEEL 538 LBS

CLASS A CONCRETE 7.71 CY

WING 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H7	6	#4	STR	25'-1"	101
H8	2	#4	STR	19'-2"	26
H9	2	#4	STR	12'-11"	17
H10	2	#4	STR	6'-7"	9
H11	14	#4	1	3'-3"	30
H12	2	#4	STR	25'-9"	34
N8	2	#6	2	11'-7"	35
N9	2	#6	2	11'-2"	34
N10	4	#6	2	10'-3"	62
N11	4	#5	2	9'-4"	39
N12	4	#5	2	8'-4"	35
N13	4	#5	2	7'-5"	31
N14	4	#4	2	6'-6"	17
N15	4	#4	2	5'-6"	15
S1	3	#6	STR	6'-0"	27
T2	3	#5	STR	27'-0"	84
V8	2	#4	STR	9'-7"	13
V9	2	#4	STR	9'-3"	12
V10	4	#4	STR	8'-3"	22
V11	4	#4	STR	7'-4"	20
V12	4	#4	STR	6'-4"	17
V13	4	#4	STR	5'-5"	14
V14	4	#4	STR	4'-6"	12
V15	4	#4	STR	3'-6"	9
Z7	3	#5	3	6'-8"	21
Z8	5	#5	3	6'-0"	31
Z9	5	#4	3	5'-4"	18
Z10	5	#4	3	4'-8"	16
Z11	5	#4	3	4'-0"	13
Z12	5	#4	3	3'-4"	11

REINFORCING STEEL 825 LBS

CLASS A CONCRETE 12.13 CY

WING 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H19	6	#4	STR	26'-1"	105
H20	2	#4	STR	23'-11"	32
H21	2	#4	STR	16'-2"	22
H22	2	#4	STR	8'-5"	11
H23	14	#4	1	3'-3"	30
H24	2	#4	STR	26'-7"	36
N22	2	#6	2	11'-7"	35
N23	2	#6	2	11'-4"	34
N24	5	#6	2	10'-4"	78
N25	5	#5	2	9'-5"	49
N26	5	#5	2	8'-5"	44
N27	5	#4	2	7'-6"	25
N28	5	#4	2	6'-6"	22
S1	3	#6	STR	6'-0"	27
T4	3	#5	STR	28'-0"	88
V22	2	#4	STR	9'-7"	13
V23	2	#4	STR	9'-4"	12
V24	5	#4	STR	8'-4"	28
V25	5	#4	STR	7'-5"	25
V26	5	#4	STR	6'-5"	21
V27	5	#4	STR	5'-6"	18
V28	5	#4	STR	4'-6"	15
Z18	4	#5	3	6'-7"	27
Z19	5	#5	3	6'-0"	31
Z20	5	#4	3	5'-5"	18
Z21	5	#4	3	4'-10"	16
Z22	5	#4	3	4'-3"	14
Z23	5	#4	3	3'-8"	12

REINFORCING STEEL 888 LBS

CLASS A CONCRETE 13.17 CY

WING 4

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H13	6	#4	STR	11'-1"	44
H14	2	#4	STR	10'-2"	14
H15	2	#4	STR	6'-8"	9
H16	2	#4	STR	3'-1"	4
H17	14	#4	1	3'-3"	30
H18	2	#4	STR	12'-0"	16
N16	2	#6	2	11'-5"	34
N17	1	#6	2	11'-2"	17
N18	2	#6	2	10'-4"	31
N19	3	#5	2	9'-1"	28
N20	3	#4	2	7'-10"	25
N21	3	#4	2	6'-6"	13
S1	3	#6	STR	6'-0"	27
T3	3	#5	STR	13'-0"	41
V16	2	#4	STR	9'-5"	13
V17	1	#4	STR	9'-2"	6
V18	2	#4	STR	8'-4"	11
V19	3	#4	STR	7'-1"	14
V20	3	#4	STR	5'-10"	12
V21	3	#4	STR	4'-6"	9
Z13	2	#5	3	6'-8"	14
Z14	3	#5	3	5'-11"	19
Z15	3	#4	3	5'-2"	10
Z16	3	#4	3	4'-5"	9
Z17	3	#4	3	3'-8"	7

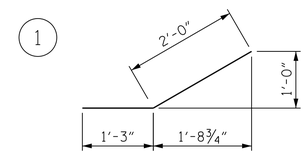
REINFORCING STEEL 457 LBS

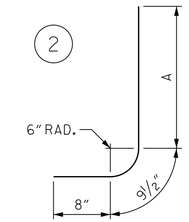
CLASS A CONCRETE 6.22 CY

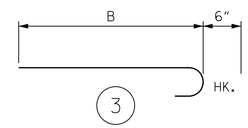
REINFORCING STEEL FOR 4 WINGS 2708 LBS

CLASS A CONCRETE
- 4 WINGS 39.23 CY
- 2 HEADWALLS 1.88 CY
- 2 END CURTAIN WALLS 2.07 CY
- TOTAL 43.18 CY

BAR TYPES







DIMENSION A			
BAR	LENGTH	BAR	LENGTH
N1	9'-11½"	N15	4'-0½"
N2	9'-4½"	N16	9'-11½"
N3	8'-7½"	N17	9'-8½"
N4	7'-5½"	N18	8'-10½"
N5	6'-4½"	N19	7'-7½"
N6	5'-2½"	N20	6'-4½"
N7	4'-0½"	N21	5'-0½"
N8	10'-1½"	N22	10'-1½"
N9	9'-8½"	N23	9'-10½"
N10	8'-9½"	N24	8'-10½"
N11	7'-10½"	N25	7'-11½"
N12	6'-10½"	N26	6'-11½"
N13	5'-11½"	N27	6'-0½"
N14	5'-0½"	N28	5'-0½"

DIMENSION B			
BAR	LENGTH	BAR	LENGTH
Z1	6'-0"	Z13	6'-2"
Z2	5'-4"	Z14	5'-5"
Z3	4'-9"	Z15	4'-8"
Z4	4'-1"	Z16	3'-11"
Z5	3'-6"	Z17	3'-2"
Z6	2'-10"	Z18	6'-1"
Z7	6'-2"	Z19	5'-6"
Z8	5'-6"	Z20	4'-11"
Z9	4'-10"	Z21	4'-4"
Z10	4'-2"	Z22	3'-9"
Z11	3'-6"	Z23	3'-2"
Z12	2'-10"		

ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. W-5107

JOHNSTON COUNTY

STATION: 26+21.25 -Y6-

SHEET 6 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WINGS FOR
CONCRETE BOX CULVERT

H = 9'-0" SLOPE = 3:1
90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 027799 ENGINEER PAUL A. de PAOLI
11/20/2014

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	SHEET NO. C-29
1			3			TOTAL SHEETS 36
2			4			

DRAWN BY : J.S. ISRAELNAIM DATE : 03/14
CHECKED BY : P.A. de PAOLI DATE : 03/14
DESIGN ENGINEER OF RECORD : P.A. de PAOLI DATE : 03/14

11/20/2014
10:24:56 AM
User:blanning
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