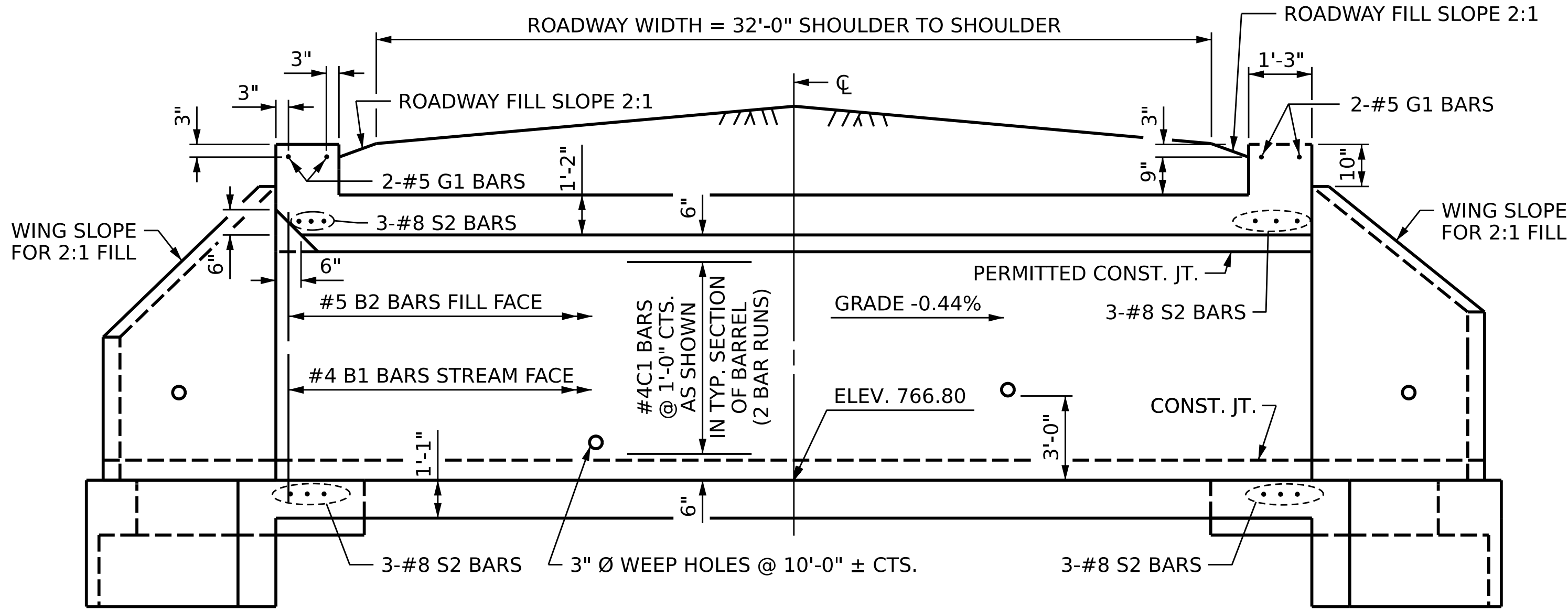


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for the convenience of the user
and is Not a Certified Document –**

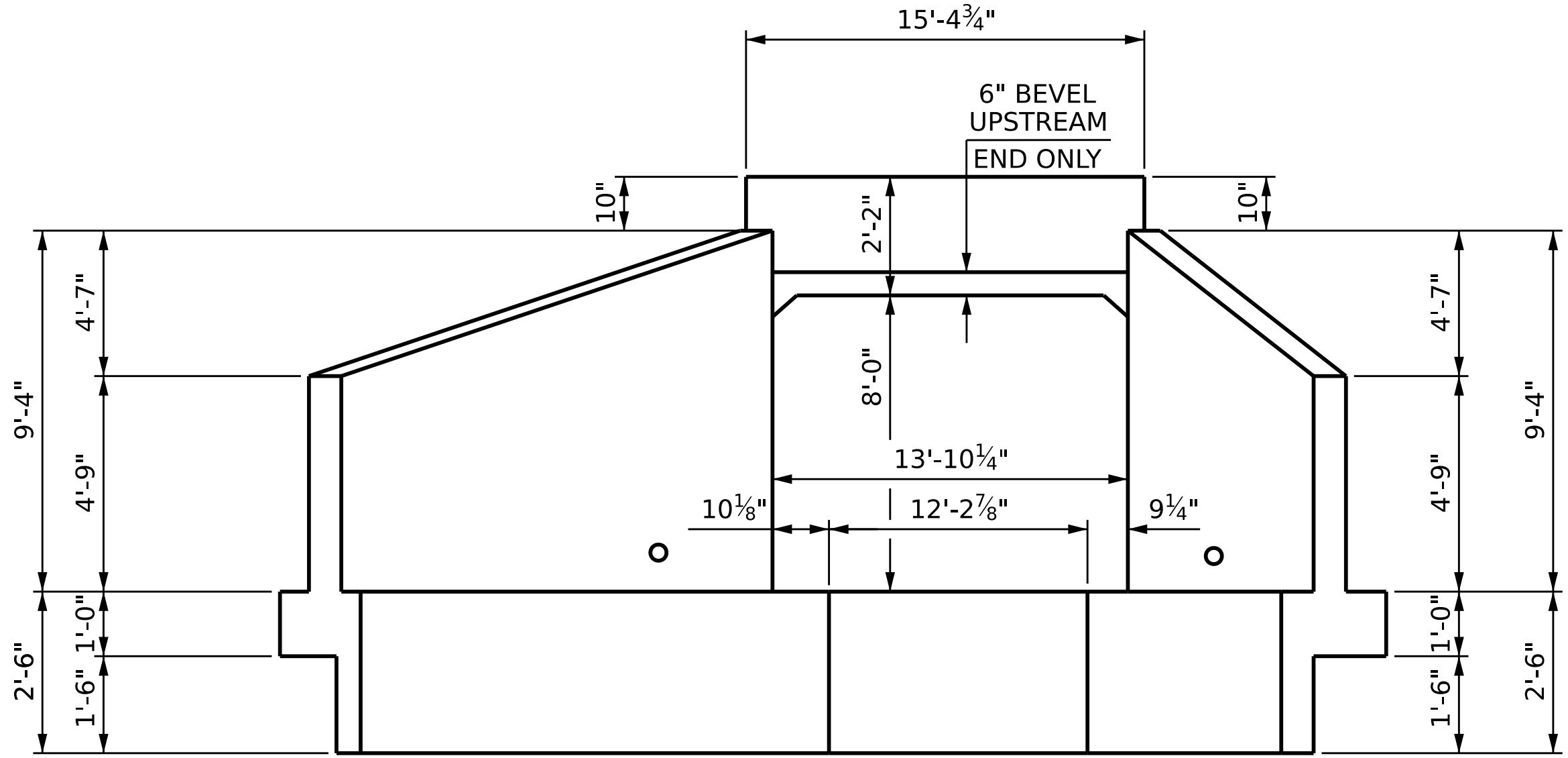
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**This file or an individual page
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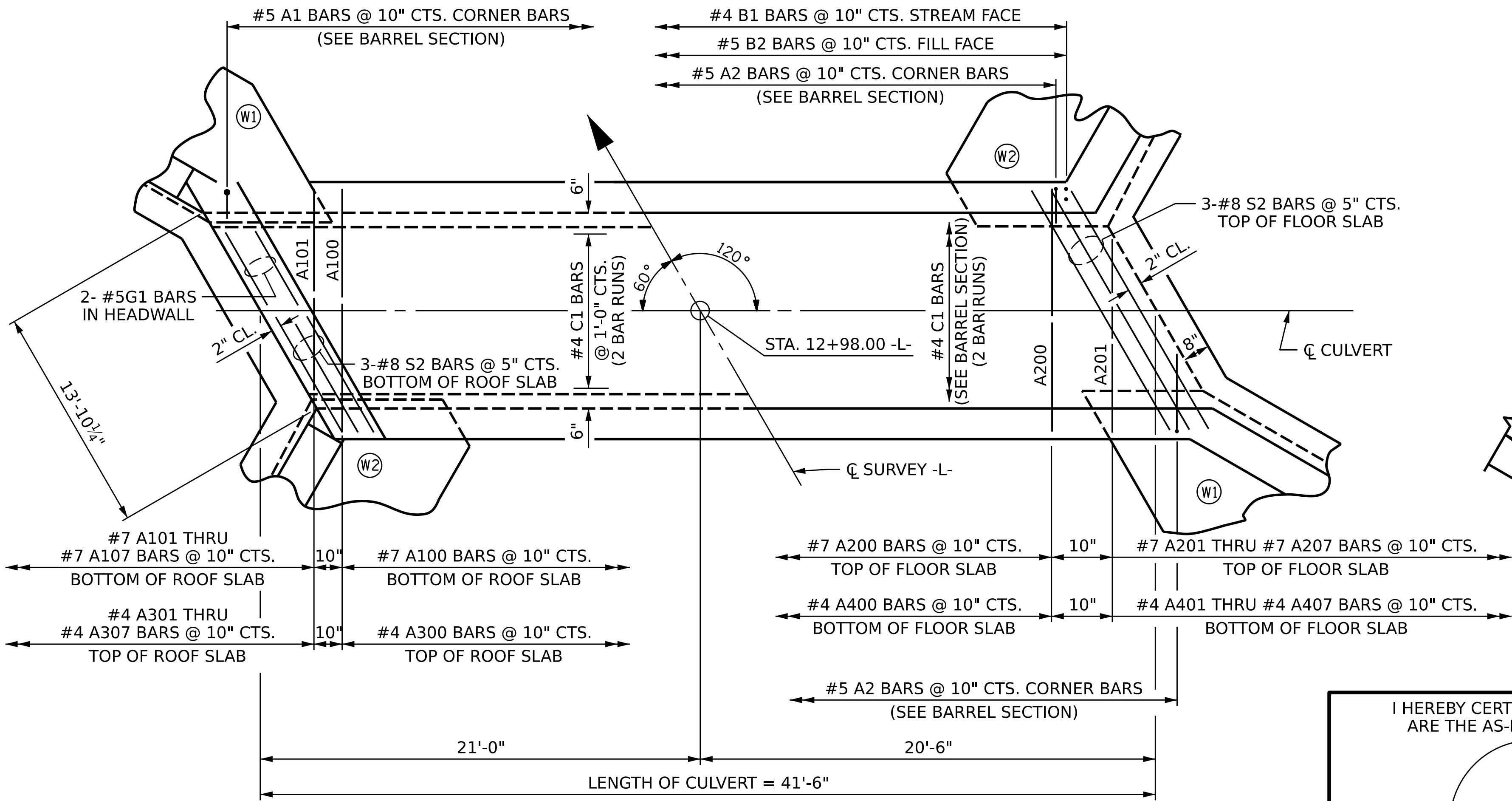
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CULVERT SECTION NORMAL TO ROADWAY

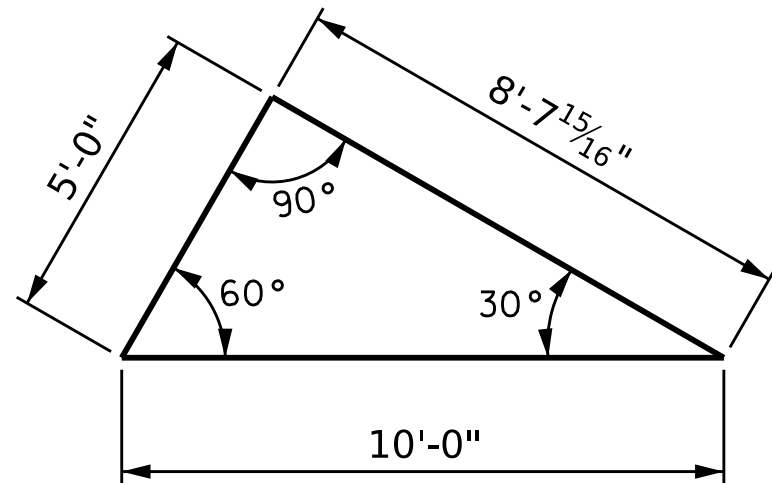


END ELEVATION NORMAL TO SKEW

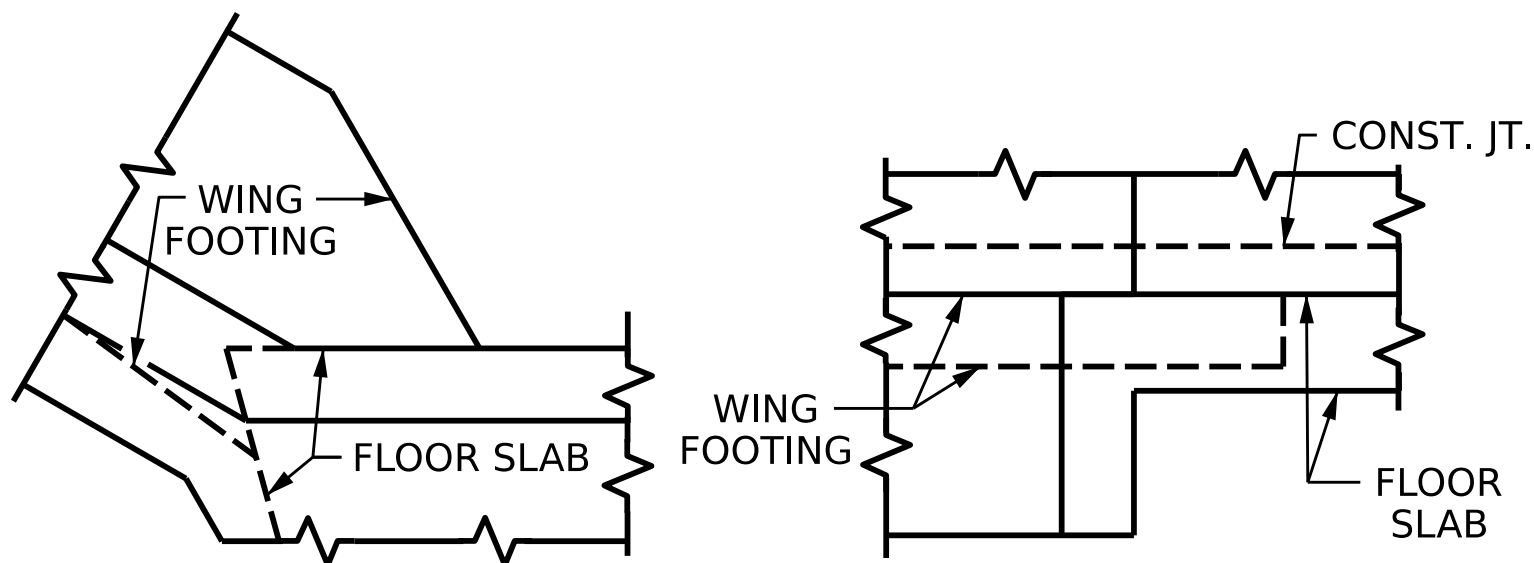


PART PLAN - ROOF SLAB

PART PLAN - FLOOR SLAB



SKEW TRIANGLE



CONNECTION OF WING FOOTING AND FLOOR SLAB WHEN SLAB IS THICKER THAN FOOTING

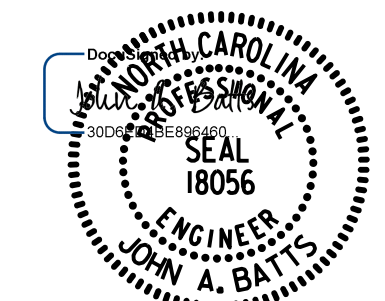
PROJECT NO. BP7.R005
GUILFORD COUNTY
STATION: 12+98.00 -L-

SHEET 2 OF 6

| | | | | | |
|--|-----|-------|-----|-----|-------|
| STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH | | | | | |
| SINGLE 12 FT. X 8 FT. CONCRETE BOX CULVERT | | | | | |
| 120° SKEW | | | | | |
| REVISIONS | | | | | |
| NO. | BY: | DATE: | NO. | BY: | DATE: |
| 1 | | | 3 | | |
| 2 | | | 4 | | |
| SHEET NO. S-2 | | | | | |
| TOTAL SHEETS 6 | | | | | |

| | |
|---|-------------|
| DRAWN BY : S.D. COOPER | DATE : 8-22 |
| CHECKED BY : B.S. COX | DATE : 8-22 |
| DESIGN ENGINEER OF RECORD: D.B. SIMPSON | DATE : 8-22 |

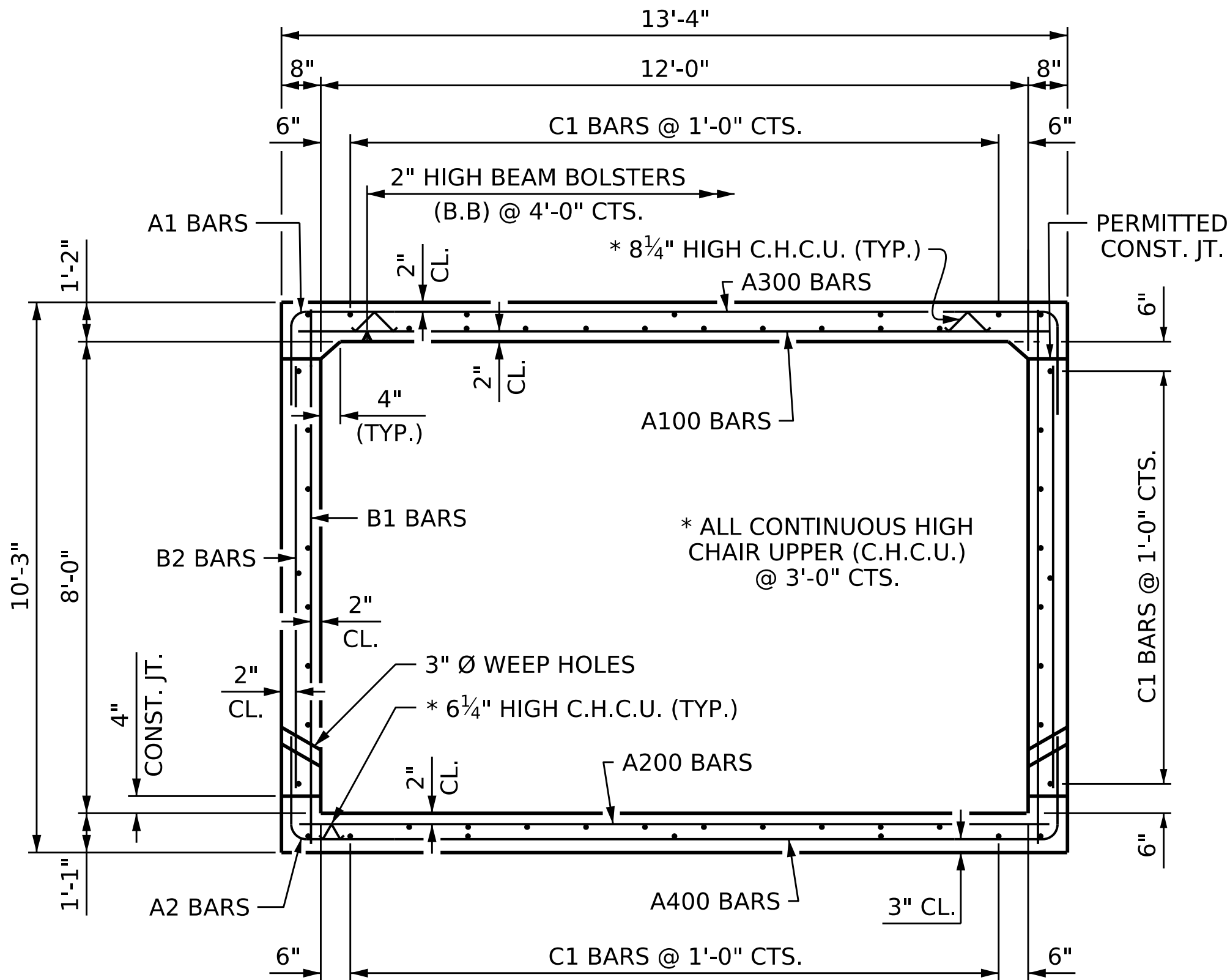
I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



LICENSURE NO. C-4434

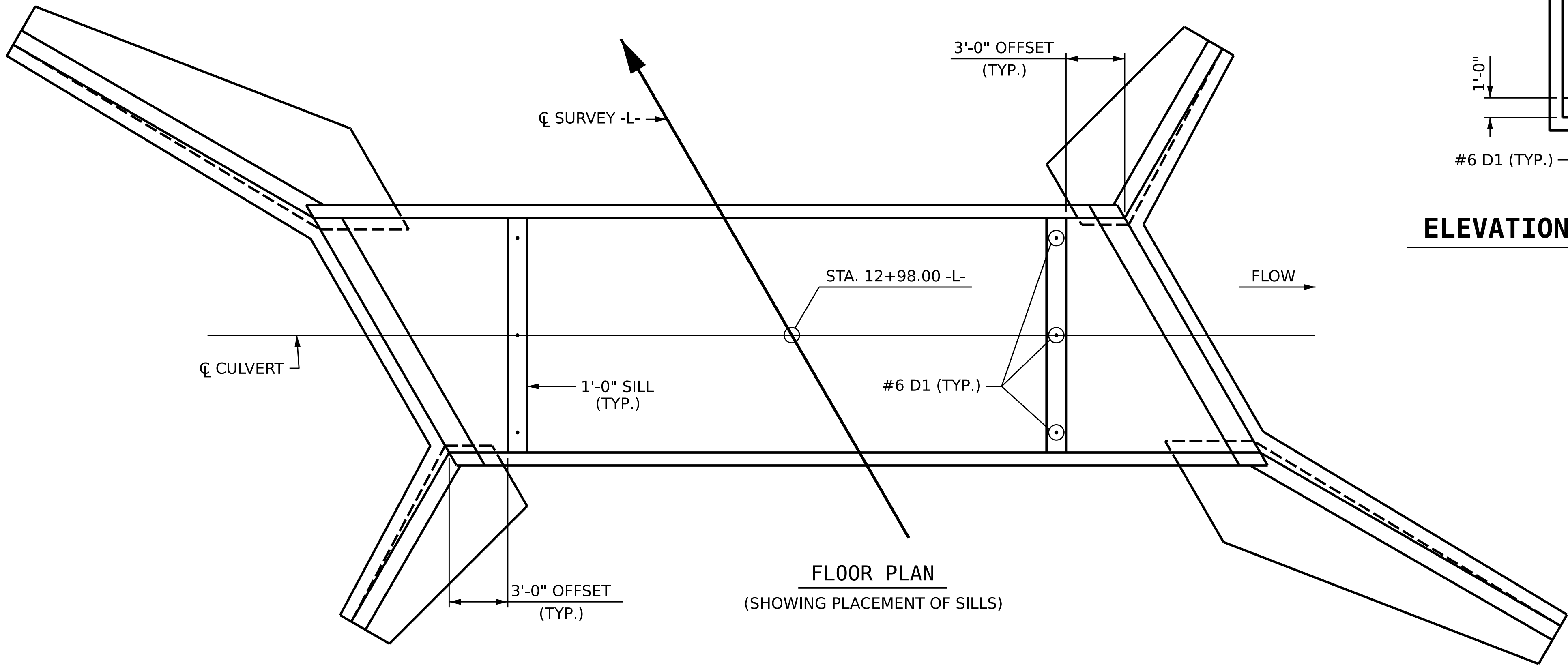
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

11/21/2022 2:26:09 PM P:\Raleigh\Projects\2018\Division 7 (SEA)\BP7R005 Guilford 402 Reddicks Ck\Structures\Drawings\Final\BP7R005_SMU_CU_400402.dgn



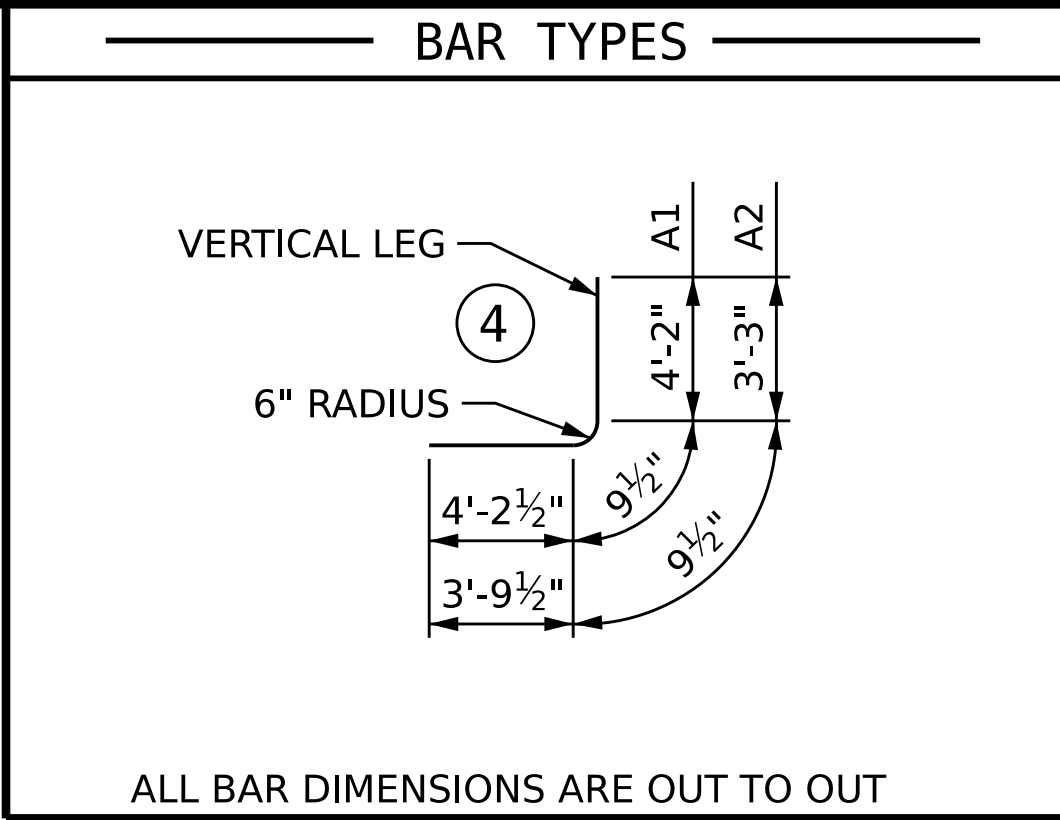
RIGHT ANGLE SECTION OF BARREL

(THERE ARE 52 "C" BARS IN SECTION OF BARREL)



CULVERT SILL DETAILS

BACKFILL BARREL WITH 1'-0" OF NATIVE MATERIALS TO SILL HEIGHT.
(SEE CULVERT SURVEY AND HYDRAULIC DESIGN REPORT FOR DESCRIPTION
OF AND PLACEMENT OF NATIVE MATERIALS.)

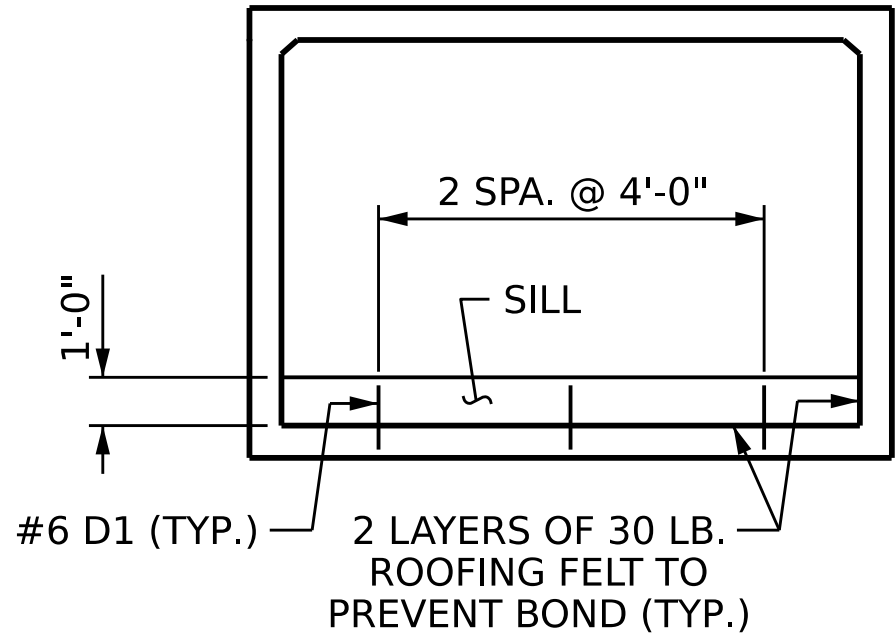


SPLICE CHART

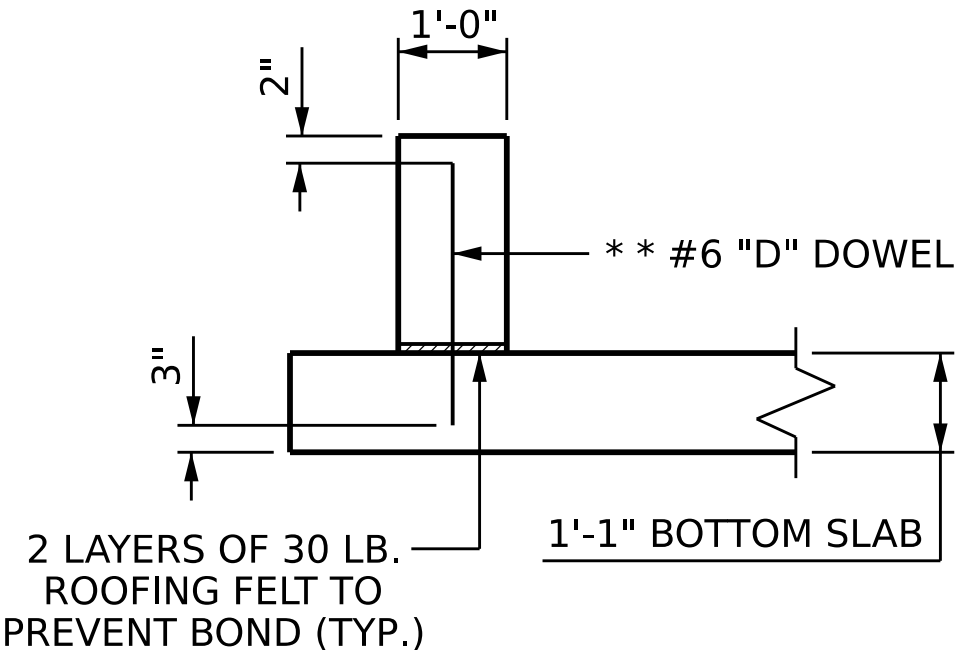
#4 C1 SPLICE LENGTH = 1'-11"

#4 B1 SPLICE LENGTH = 1'-10"

| BILL OF MATERIAL | | | | | | BILL OF MATERIAL | | | | | |
|------------------|-----|------|------|---------|--------|----------------------------|-----|------|------|---------|---------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT | BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| A1 | 100 | #5 | 4 | 9'-2" | 956 | A400 | 41 | #4 | STR | 12'-11" | 354 |
| A2 | 100 | #5 | 4 | 7'-10" | 817 | A401 | 2 | #4 | STR | 11'-5" | 15 |
| | | | | | | A402 | 2 | #4 | STR | 9'-11" | 13 |
| A100 | 41 | #7 | STR | 12'-11" | 1082 | A403 | 2 | #4 | STR | 8'-6" | 11 |
| A101 | 2 | #7 | STR | 11'-5" | 47 | A404 | 2 | #4 | STR | 7'-1" | 9 |
| A102 | 2 | #7 | STR | 9'-11" | 41 | A405 | 2 | #4 | STR | 5'-7" | 7 |
| A103 | 2 | #7 | STR | 8'-6" | 35 | A406 | 2 | #4 | STR | 4'-2" | 6 |
| A104 | 2 | #7 | STR | 7'-1" | 29 | A407 | 2 | #4 | STR | 2'-9" | 4 |
| A105 | 2 | #7 | STR | 5'-7" | 23 | | | | | | |
| A106 | 2 | #7 | STR | 4'-2" | 17 | B1 | 100 | #4 | STR | 9'-9" | 651 |
| A107 | 2 | #7 | STR | 2'-9" | 11 | B2 | 100 | #5 | STR | 7'-4" | 765 |
| | | | | | | | | | | | |
| A200 | 41 | #7 | STR | 12'-11" | 1082 | C1 | 104 | #4 | STR | 21'-7" | 1499 |
| A201 | 2 | #7 | STR | 11'-5" | 47 | | | | | | |
| A202 | 2 | #7 | STR | 9'-11" | 41 | D1 | 6 | #6 | STR | 1'-8" | 15 |
| A203 | 2 | #7 | STR | 8'-6" | 35 | | | | | | |
| A204 | 2 | #7 | STR | 7'-1" | 29 | G1 | 4 | #5 | STR | 15'-0" | 63 |
| A205 | 2 | #7 | STR | 5'-7" | 23 | | | | | | |
| A206 | 2 | #7 | STR | 4'-2" | 17 | S2 | 12 | #8 | STR | 15'-0" | 481 |
| A207 | 2 | #7 | STR | 2'-9" | 11 | | | | | | |
| | | | | | | TOTAL REINFORCING STEEL | | | | | 8655 LB |
| A300 | 41 | #4 | STR | 12'-11" | 354 | CLASS A CONCRETE BREAKDOWN | | | | | |
| A301 | 2 | #4 | STR | 11'-5" | 15 | BARREL | | | | | 62.7 CY |
| A302 | 2 | #4 | STR | 9'-11" | 13 | SILLS | | | | | 0.9 CY |
| A303 | 2 | #4 | STR | 8'-6" | 11 | | | | | | |
| A304 | 2 | #4 | STR | 7'-1" | 9 | | | | | | |
| A305 | 2 | #4 | STR | 5'-7" | 7 | | | | | | |
| A306 | 2 | #4 | STR | 4'-2" | 6 | | | | | | |
| A307 | 2 | #4 | STR | 2'-9" | 4 | | | | | | |



ELEVATION - LOOKING DOWNSTREAM

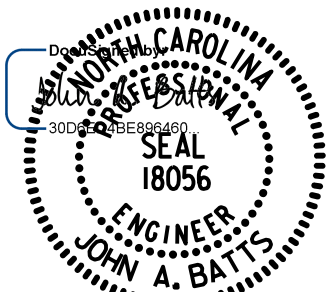


SECTION THROUGH SILL

** DOWELS MAY BE PUSHED INTO GREEN
CONCRETE AFTER SLAB HAS BEEN FLOAT FINISHED.

PROJECT NO. BP7.R005
GUILFORD COUNTY
STATION: 12+98.00 -L-

SHEET 3 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SINGLE 12 FT. X 8 FT.
CONCRETE BOX CULVERT**

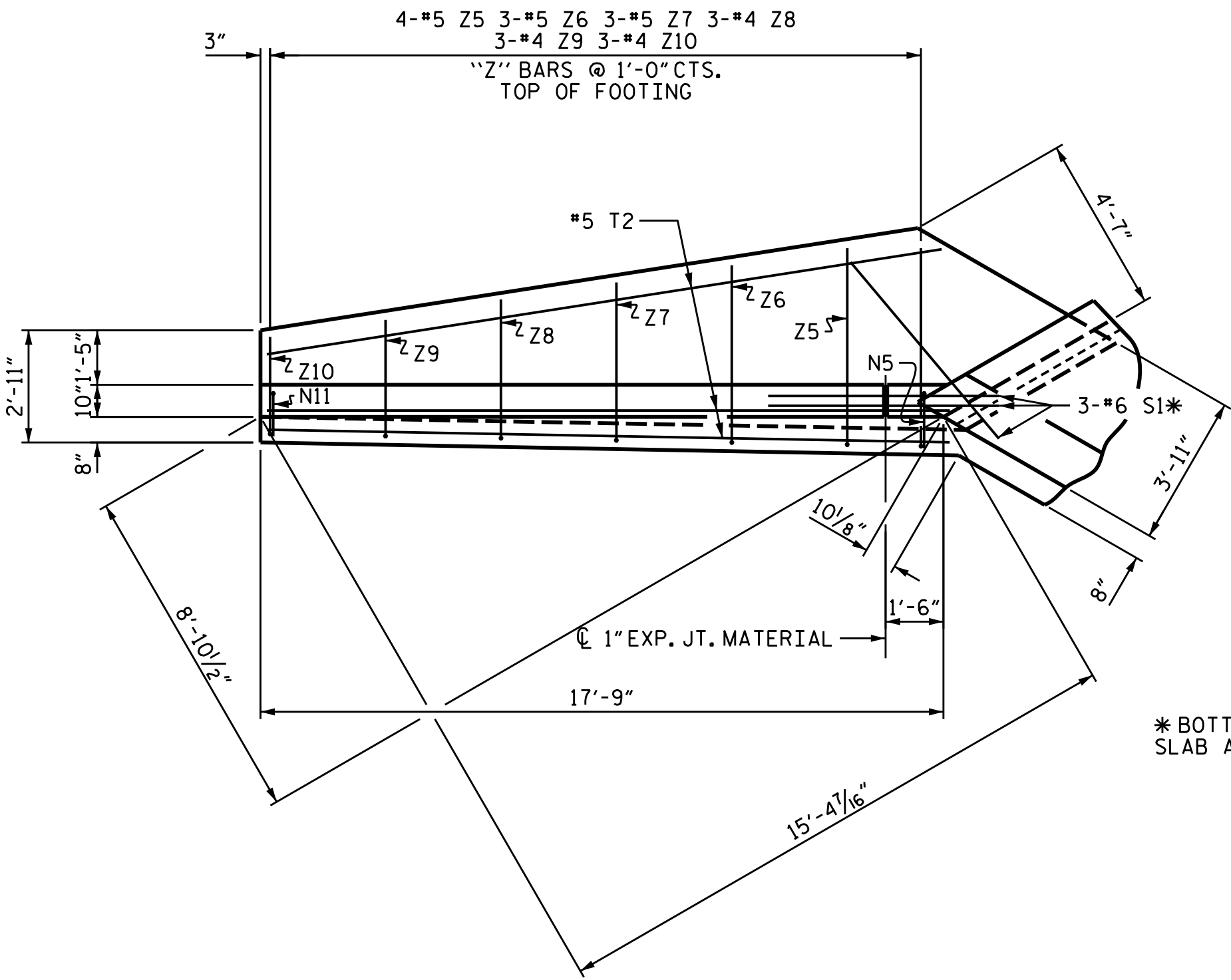
120° SKEW

| REVISIONS | | | | | | SHEET NO. | |
|-----------|-----|-------|-----|-----|-------|--------------|--|
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| 1 | | | 3 | | | TOTAL SHEETS | |
| 2 | | | 4 | | | 6 | |

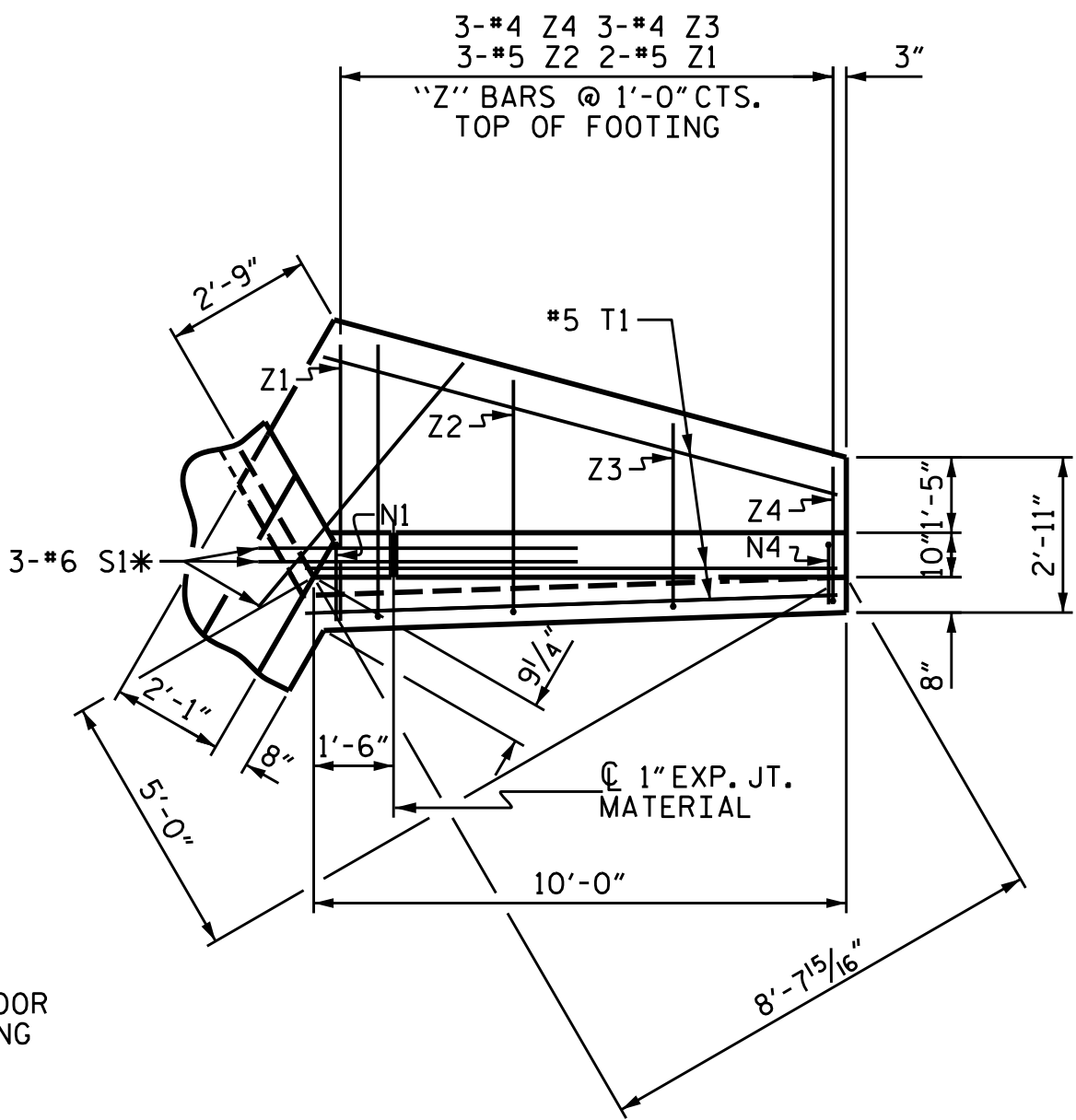
DRAWN BY : S.D. COOPER DATE : 8-22
CHECKED BY : B.S. COX DATE : 8-22
DESIGN ENGINEER OF RECORD: D.B. SIMPSON DATE : 8-22

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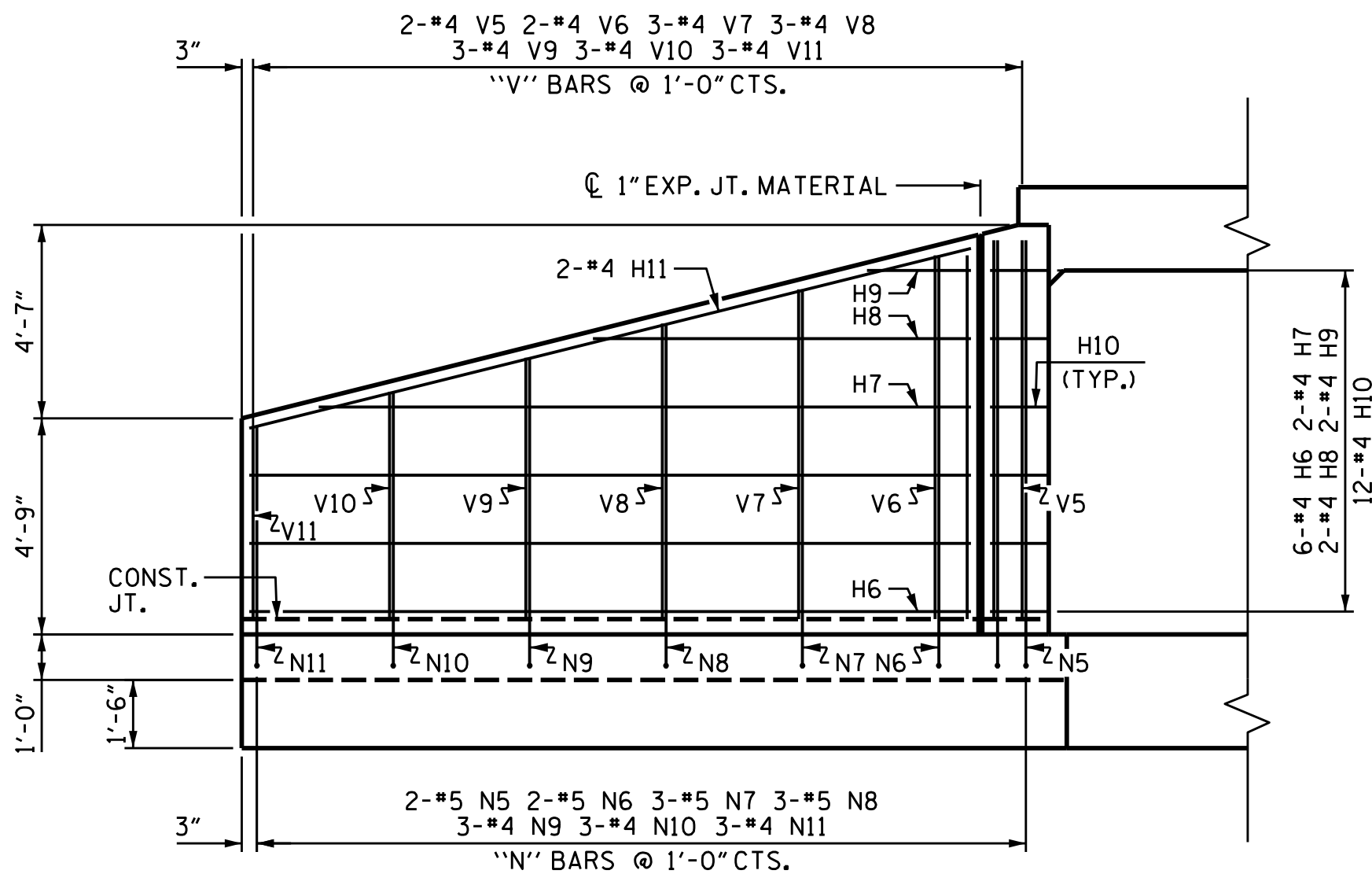
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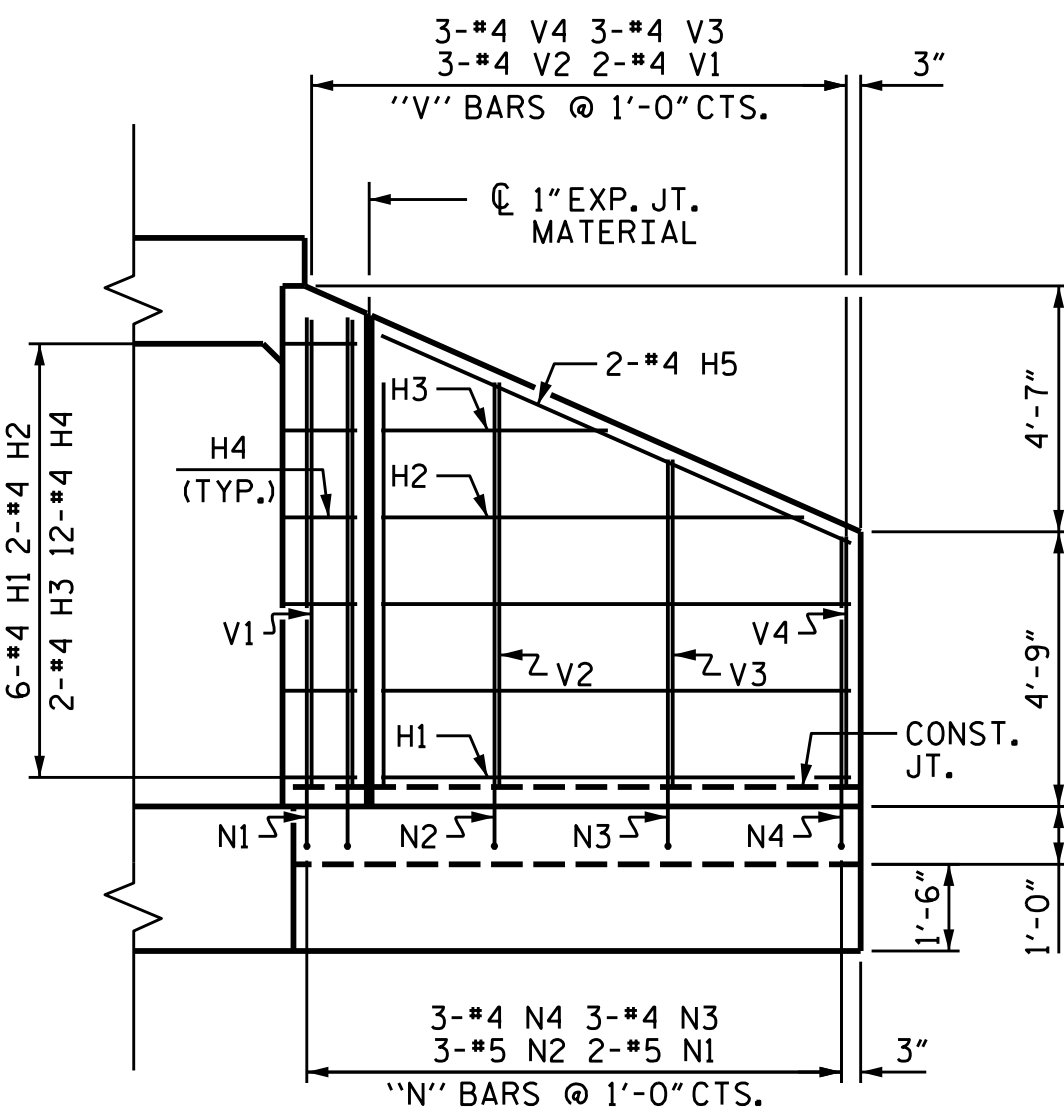
PLAN W1



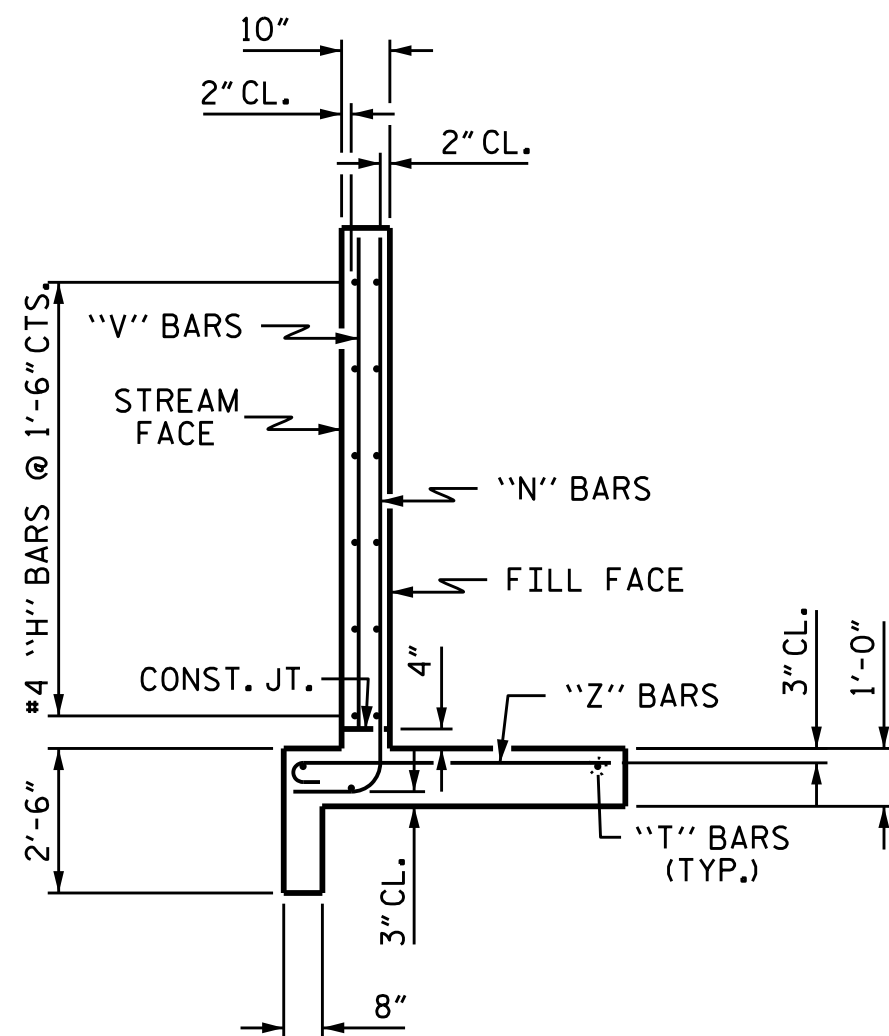
PLAN W2



ELEVATION W1

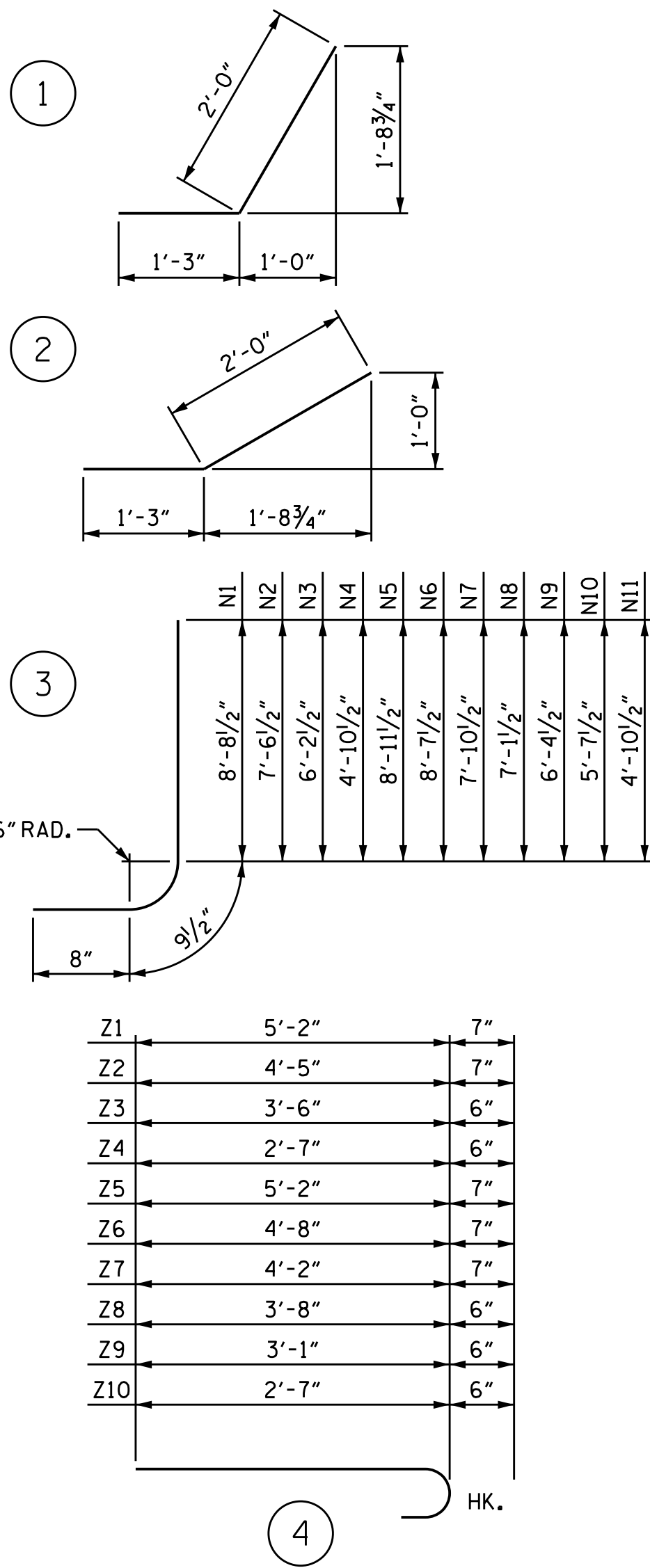


ELEVATION W2



TYPICAL WING SECTION

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
|-------------------------------|-----|------|------|----------|--------|
| H1 | 12 | #4 | STR | 8'-1" | 65 |
| H2 | 4 | #4 | STR | 7'-3" | 19 |
| H3 | 4 | #4 | STR | 3'-11" | 10 |
| H4 | 24 | #4 | 1 | 3'-3" | 52 |
| H5 | 4 | #4 | STR | 8'-10" | 24 |
| H6 | 12 | #4 | STR | 15'-10" | 127 |
| H7 | 4 | #4 | STR | 14'-4" | 38 |
| H8 | 4 | #4 | STR | 8'-3" | 22 |
| H9 | 4 | #4 | STR | 2'-3" | 6 |
| H10 | 24 | #4 | 2 | 3'-3" | 52 |
| H11 | 4 | #4 | STR | 16'-4" | 44 |
| N1 | 4 | #5 | 3 | 10'-2" | 42 |
| N2 | 6 | #5 | 3 | 9'-0" | 56 |
| N3 | 6 | #4 | 3 | 7'-8" | 31 |
| N4 | 6 | #4 | 3 | 6'-4" | 25 |
| N5 | 4 | #5 | 3 | 10'-5" | 43 |
| N6 | 4 | #5 | 3 | 10'-1" | 42 |
| N7 | 6 | #5 | 3 | 9'-4" | 58 |
| N8 | 6 | #5 | 3 | 8'-7" | 54 |
| N9 | 6 | #4 | 3 | 7'-10" | 31 |
| N10 | 6 | #4 | 3 | 7'-1" | 28 |
| N11 | 6 | #4 | 3 | 6'-4" | 25 |
| S1 | 12 | #6 | STR | 6'-0" | 108 |
| T1 | 6 | #5 | STR | 10'-0" | 63 |
| T2 | 6 | #5 | STR | 17'-9" | 111 |
| V1 | 4 | #4 | STR | 8'-1" | 22 |
| V2 | 6 | #4 | STR | 7'-0" | 28 |
| V3 | 6 | #4 | STR | 5'-8" | 23 |
| V4 | 6 | #4 | STR | 4'-4" | 17 |
| V5 | 4 | #4 | STR | 8'-4" | 22 |
| V6 | 4 | #4 | STR | 8'-0" | 21 |
| V7 | 6 | #4 | STR | 7'-3" | 29 |
| V8 | 6 | #4 | STR | 6'-6" | 26 |
| V9 | 6 | #4 | STR | 5'-9" | 23 |
| V10 | 6 | #4 | STR | 5'-0" | 20 |
| V11 | 6 | #4 | STR | 4'-3" | 17 |
| Z1 | 4 | #5 | 4 | 5'-9" | 24 |
| Z2 | 6 | #5 | 4 | 5'-0" | 31 |
| Z3 | 6 | #4 | 4 | 4'-0" | 16 |
| Z4 | 6 | #4 | 4 | 3'-1" | 12 |
| Z5 | 8 | #5 | 4 | 5'-9" | 48 |
| Z6 | 6 | #5 | 4 | 5'-3" | 33 |
| Z7 | 6 | #5 | 4 | 4'-9" | 30 |
| Z8 | 6 | #4 | 4 | 4'-2" | 17 |
| Z9 | 6 | #4 | 4 | 3'-7" | 14 |
| Z10 | 6 | #4 | 4 | 3'-1" | 12 |
| REINFORCING STEEL FOR 4 WINGS | | | | 1661 LBS | |
| CLASS A CONCRETE | | | | | |
| 4 WINGS | | | | 24.3 | CY |
| 2 HEADWALLS | | | | 1.4 | CY |
| 2 END CURTAIN WALLS | | | | 0.9 | CY |
| TOTAL | | | | 26.6 | CY |

PROJECT NO. BP7.R005
GUILFORD COUNTY
STATION: 12+98.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

WINGS FOR
CONCRETE BOX CULVERT
H = 8'-0" SLOPE = 2:1

120° SKEW

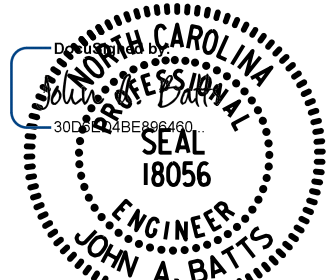
REVISIONS

| NO. | BY: | DATE: | NO. | BY: | DATE: | SHEET NO. |
|-----|-----|-------|-----|-----|-------|----------------|
| 1 | | | 3 | | | S-4 |
| 2 | | | 4 | | | TOTAL SHEETS 6 |



5640 Dillard Drive, Suite 200
Cary, NC 27518

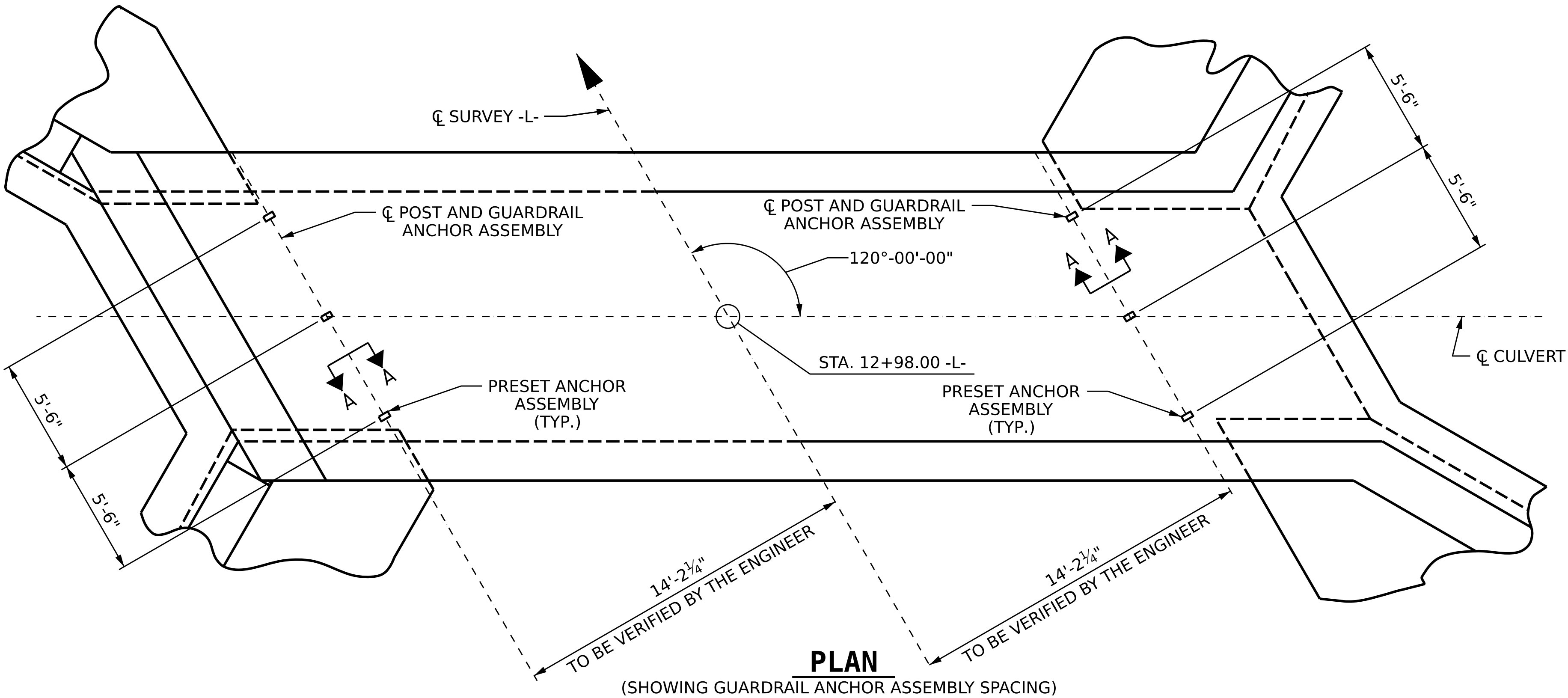
LICENSURE NO. C-4434



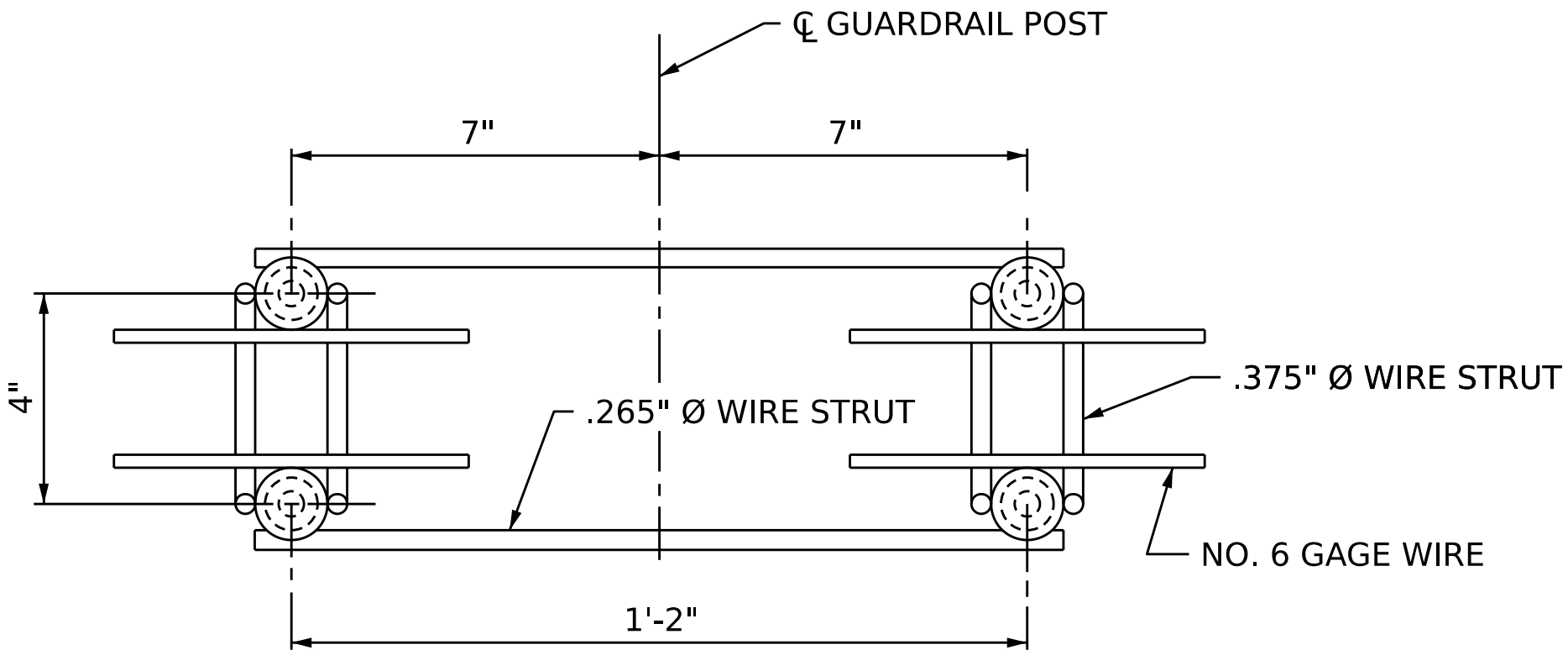
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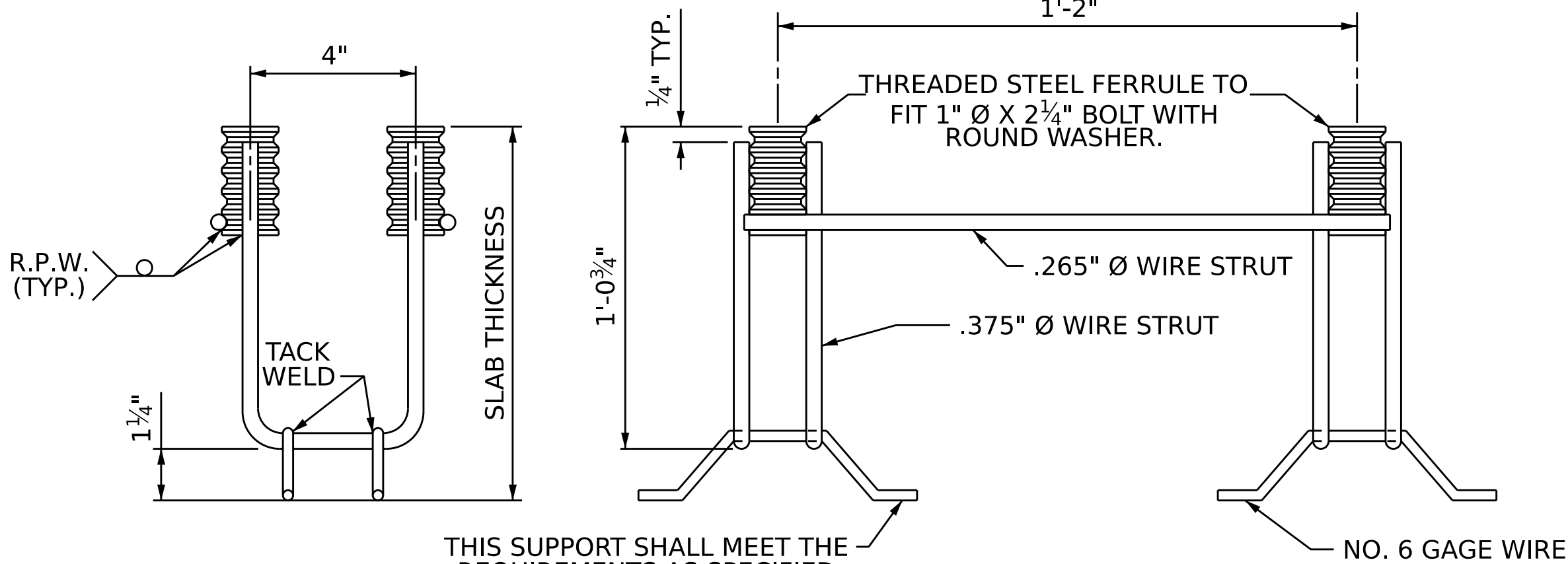
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PLAN
(SHOWING GUARDRAIL ANCHOR ASSEMBLY SPACING)



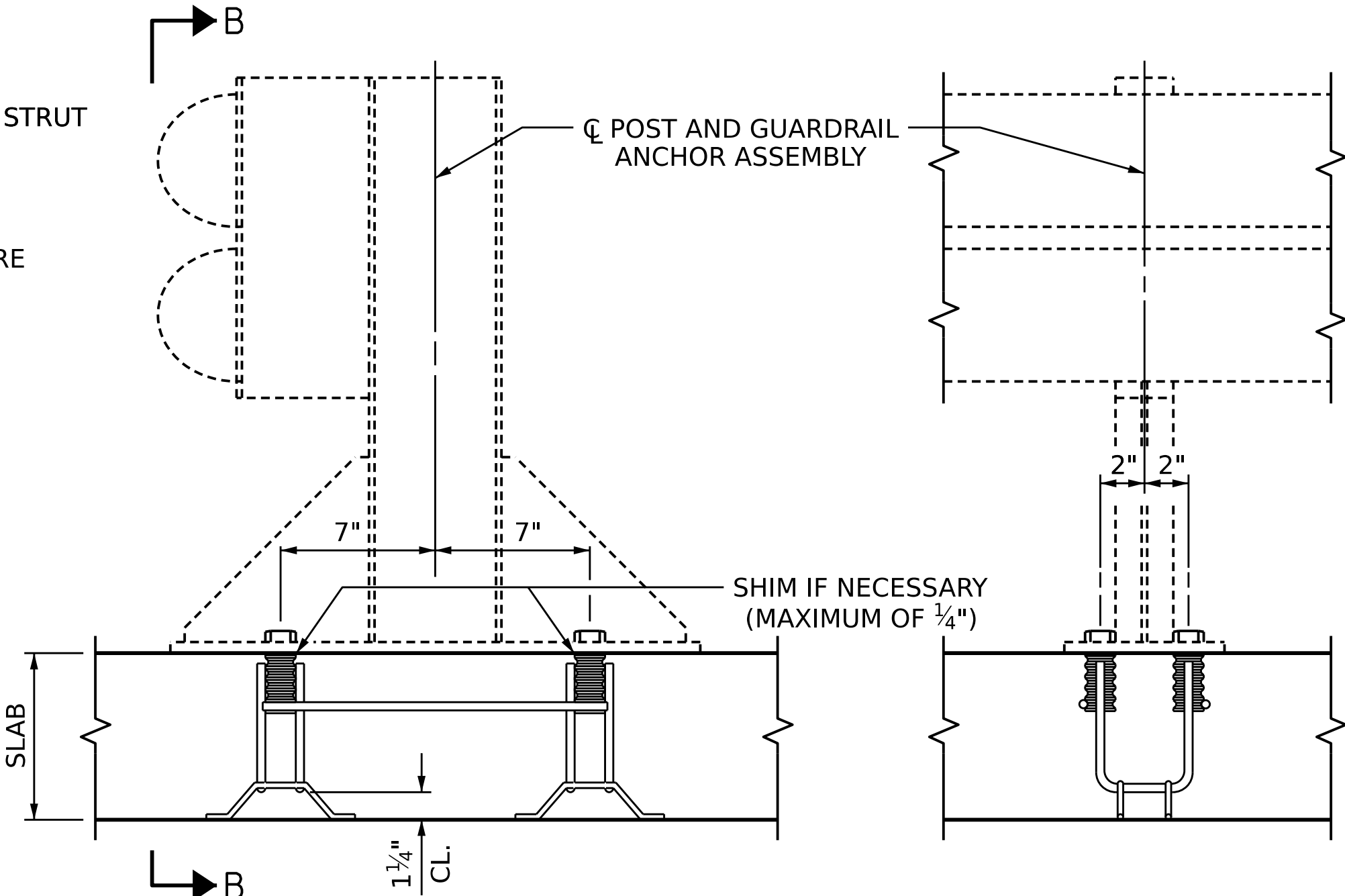
PLAN



ELEVATION

SIDE VIEW

GUARDRAIL ANCHOR ASSEMBLY FOR CULVERTS



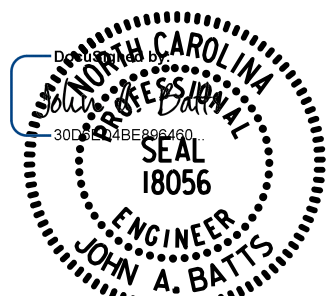
SECTION A-A

SECTION B-B



5640 Dillard Drive, Suite 200
Cary, NC 27518

LICENSURE NO. C-4434



11/21/2022 | 11:52 AM

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GUILFORD COUNTY
STATION: 12+98.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**ANCHORAGE DETAILS
FOR GUARDRAIL
ANCHOR ASSEMBLY
FOR CULVERTS**

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-----------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | |
| 1 | | | 3 | | | S-5 |
| 2 | | | 4 | | | |

TOTAL
SHEETS
6

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| LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR REINFORCED CONCRETE BOX CULVERTS | | | | | | | | | | | | | | | | |
|--|--------------------------------------|----------------------|--|-----------------------------------|---------------|---|---------------|---------|-----------------|--|---------------|---------|--------------------|--|-------------------|--|
| LEVEL | VEHICLE | WEIGHT (W) (TONS) | <div>#</div> CONTROLLING LOAD RATING | MINIMUM RATING FACTORS (RF) | TONS = W × RF | STRENGTH I LIMIT STATE | | | | | | | | | | |
| | | | | | | <div>γ_{LL}</div> LIVE-LOAD FACTORS | MOMENT | | | | SHEAR | | | | COMMENT NUMBER | |
| | | | | | | | RATING FACTOR | BOX NO. | ELEMENT TYPE | DISTANCE FROM LEFT END OF ELEMENT (ft) | RATING FACTOR | BOX NO. | ELEMENT TYPE | DISTANCE FROM LEFT END OF ELEMENT (ft) | | |
| DESIGN LOAD RATING | HL-93 (INVENTORY) | N/A | <div>1</div> | 1.03 | -- | 1.75 | 1.03 | 1 | ROOF SLAB - MID | 6.33 | 1.21 | 1 | ROOF SLAB - LT END | 0.33 | | |
| | HL-93 (OPERATING) | N/A | | 1.34 | -- | 1.35 | 1.34 | 1 | ROOF SLAB - MID | 6.33 | 1.57 | 1 | ROOF SLAB - LT END | 0.33 | | |
| | HS-20 (INVENTORY) | 36.000 | <div>2</div> | 1.07 | 38.5 | 1.75 | 1.07 | 1 | ROOF SLAB - MID | 6.33 | 1.26 | 1 | ROOF SLAB - LT END | 0.33 | | |
| | HS-20 (OPERATING) | 36.000 | | 1.39 | 49.9 | 1.35 | 1.39 | 1 | ROOF SLAB - MID | 6.33 | 1.63 | 1 | ROOF SLAB - LT END | 0.33 | | |
| LEGAL LOAD RATING | SINGLE VEHICLE (SV) | SNSH | 13.500 | | 1.81 | 24.4 | 1.40 | 1.81 | 1 | ROOF SLAB - MID | 6.33 | 2.19 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | SNGARBS2 | 20.000 | | 1.69 | 33.8 | 1.40 | 1.69 | 1 | ROOF SLAB - MID | 6.33 | 2.05 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | SNAGRIS2 | 22.000 | | 1.81 | 39.8 | 1.40 | 1.81 | 1 | ROOF SLAB - MID | 6.33 | 2.19 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | SNCOTTS3 | 27.250 | <div>3</div> | 1.03 | 28.1 | 1.40 | 1.03 | 1 | ROOF SLAB - MID | 6.33 | 1.21 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | SNAGGRS4 | 34.925 | | 1.12 | 39.1 | 1.40 | 1.12 | 1 | FLOOR SLAB - MID | 6.33 | 1.17 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | SNS5A | 35.550 | | 1.15 | 40.9 | 1.40 | 1.15 | 1 | ROOF SLAB - MID | 6.33 | 1.20 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | SNS6A | 39.950 | | 1.15 | 45.9 | 1.40 | 1.15 | 1 | FLOOR SLAB - MID | 6.33 | 1.20 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | SNS7B | 42.000 | | 1.15 | 48.3 | 1.40 | 1.15 | 1 | FLOOR SLAB - MID | 6.33 | 1.20 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | TRUCK TRACTOR SEMI-TRAILER (TTST) | TNAGRIT3 | 33.000 | | 1.42 | 46.9 | 1.40 | 1.42 | 1 | FLOOR SLAB - MID | 6.33 | 1.43 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | TNT4A | 33.075 | | 1.23 | 40.7 | 1.40 | 1.23 | 1 | ROOF SLAB - MID | 6.33 | 1.44 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | TNT6A | 41.600 | | 1.16 | 48.3 | 1.40 | 1.16 | 1 | ROOF SLAB - MID | 6.33 | 1.25 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | TNT7A | 42.000 | | 1.20 | 50.4 | 1.40 | 1.20 | 1 | ROOF SLAB - MID | 6.33 | 1.37 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | TNT7B | 42.000 | | 1.16 | 48.7 | 1.40 | 1.16 | 1 | ROOF SLAB - MID | 6.33 | 1.20 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | TNAGRIT4 | 43.000 | | 1.23 | 52.9 | 1.40 | 1.23 | 1 | ROOF SLAB - MID | 6.33 | 1.43 | 1 | FLOOR SLAB - LT END | 0.33 | |
| | | TNAGT5A | 45.000 | | 1.23 | 55.4 | 1.40 | 1.23 | 1 | ROOF SLAB - MID | 6.33 | 1.44 | 1 | ROOF SLAB - LT END | 0.33 | |
| | | TNAGT5B | 45.000 | | 1.53 | 68.9 | 1.40 | 1.53 | 1 | ROOF SLAB - MID | 6.33 | 1.80 | 1 | ROOF SLAB - LT END | 0.33 | |

LOAD FACTORS:

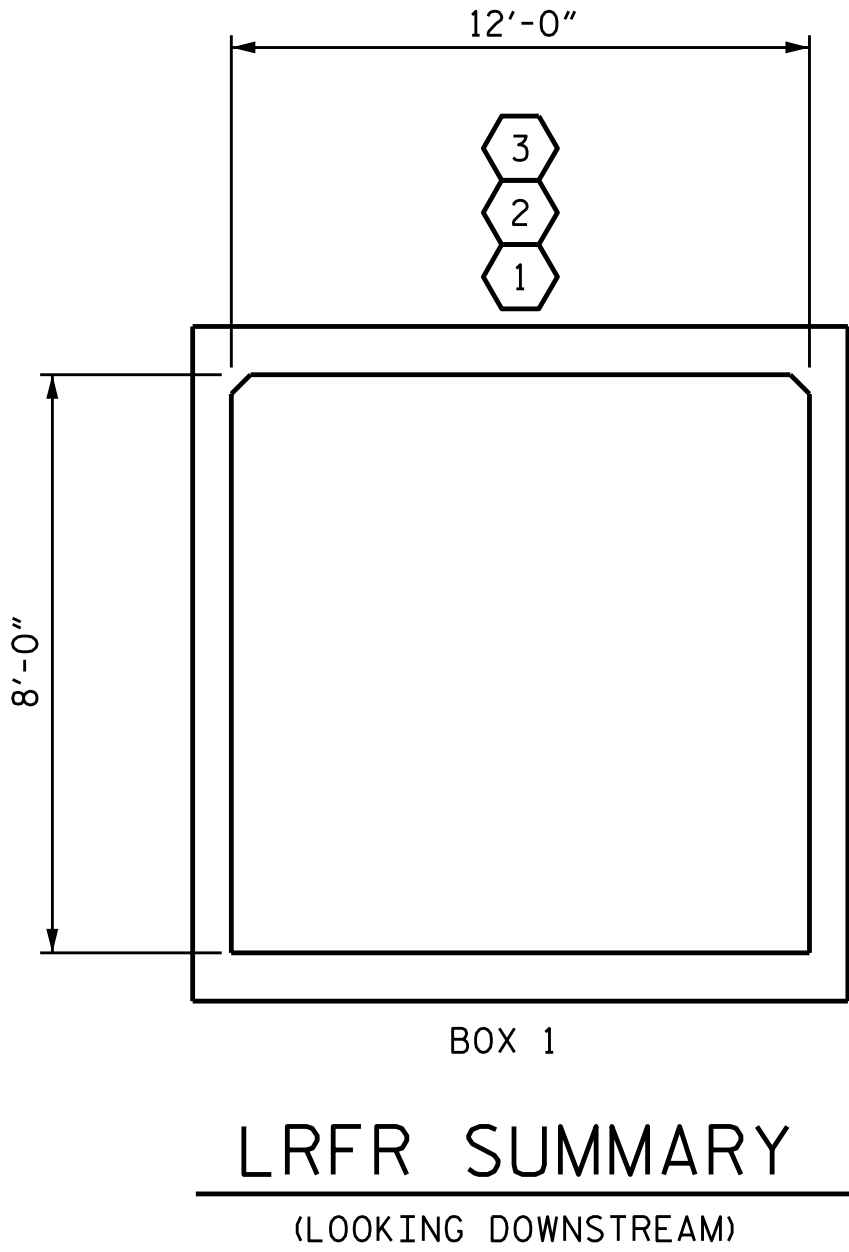
DESIGN LOAD RATING FACTORS

| LOAD TYPE | MAX FACTOR | MIN FACTOR |
|-----------|------------|------------|
| DC | 1.25 | 0.90 |
| DW | 1.50 | 0.65 |
| EV | 1.30 | 0.90 |
| EH | 1.35 | 0.90 |
| ES | 1.35 | 0.90 |
| LS | 1.75 | -- |
| WA | 1.00 | -- |

NOTE:

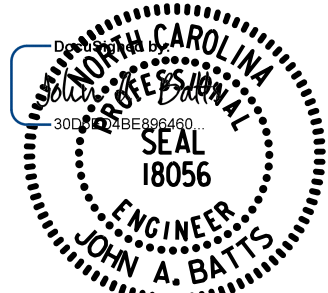
RATING FACTORS ARE BASED ON THE STRENGTH I LIMIT STATE.

| ⬡ CONTROLLING LOAD RATING |
|-------------------------------|
| ⬡1 DESIGN LOAD RATING (HL-93) |
| ⬡2 DESIGN LOAD RATING (HS-20) |
| ⬡3 LEGAL LOAD RATING ** |
| ** SEE CHART FOR VEHICLE TYPE |



PROJECT NO. BP7.R005
GUILFORD COUNTY
STATION: 12+98.00 -L-

SHEET 6 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR
REINFORCED CONCRETE
BOX CULVERTS
(NON-INTERSTATE TRAFFIC)

| REVISIONS | | | | | | SHEET NO. |
|-----------|-----|-------|-----|-----|-------|-------------------|
| NO. | BY: | DATE: | NO. | BY: | DATE: | S-6 |
| 1 | | | 3 | | | TOTAL SHEETS 6 |
| 2 | | | 4 | | | |

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

| | | | |
|----------------------------|--------------|--------|------|
| DRAWN BY : | S.D. COOPER | DATE : | 8-22 |
| CHECKED BY : | B.S. COX | DATE : | 8-22 |
| DESIGN ENGINEER OF RECORD: | D.B. SIMPSON | DATE : | 8-22 |

STANDARD NOTES

DESIGN DATA:

| | | |
|---|-----------|--------------------------------|
| SPECIFICATIONS | - - - - - | A.A.S.H.T.O. (CURRENT) |
| LIVE LOAD | - - - - - | SEE PLANS |
| IMPACT ALLOWANCE | - - - - - | SEE A.A.S.H.T.O. |
| STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36 | - - | 20,000 LBS.PER SQ. IN. |
| - AASHTO M270 GRADE 50W | - - | 27,000 LBS.PER SQ. IN. |
| - AASHTO M270 GRADE 50 | - - | 27,000 LBS.PER SQ. IN. |
| REINFORCING STEEL IN TENSION - GRADE 60 | - - - | 24,000 LBS.PER SQ. IN. |
| CONCRETE IN COMPRESSION | - - - - - | 1,200 LBS.PER SQ. IN. |
| CONCRETE IN SHEAR | - - - - - | SEE A.A.S.H.T.O. |
| STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS | - - - | 1,800 LBS.PER SQ. IN. |
| COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER | - - - - | 375 LBS.PER SQ. IN. |
| EQUIVALENT FLUID PRESSURE OF EARTH | - - - - | 30 LBS.PER CU.FT. (MINIMUM) |

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N.C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 3/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990

STD. NO. SN