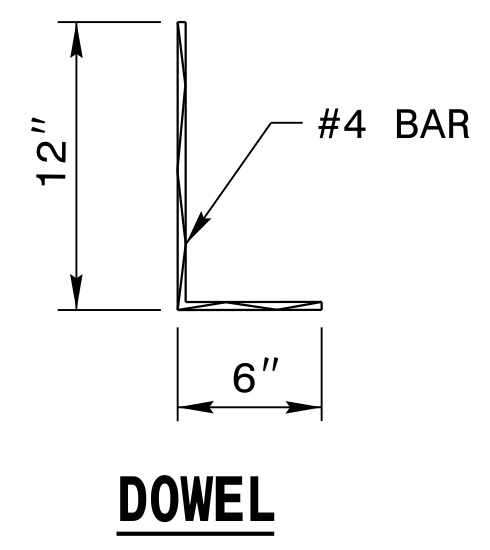
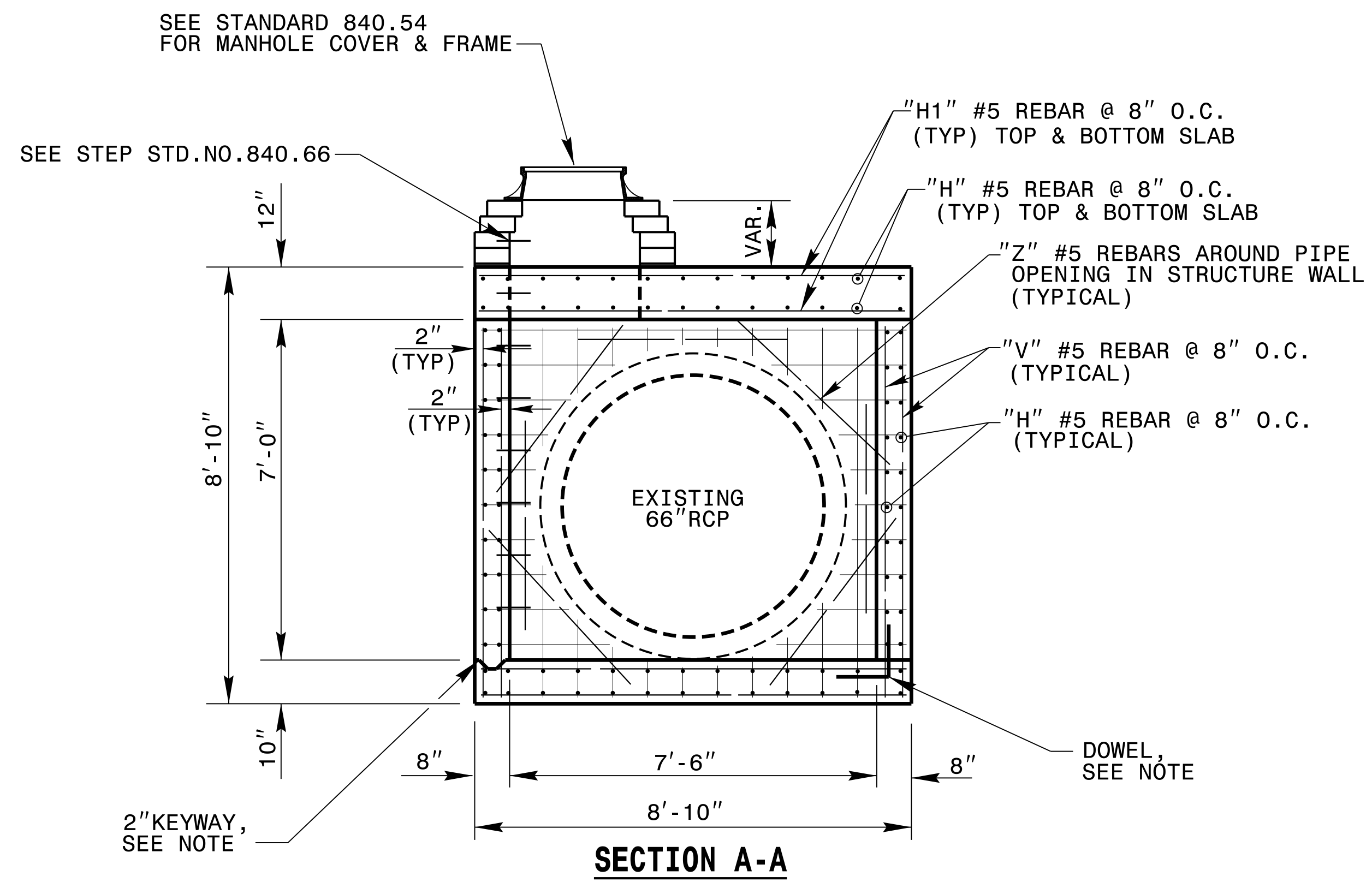


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GENERAL NOTES:

USE CLASS "AA" CONCRETE THROUGHOUT.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

INSTALL MANHOLE IN POSITION AS DIRECTED BY THE ENGINEER. CUT AND BEND ALL REBAR CROSSING THIS OPENING TO ALLOW 2" MINIMUM CONCRETE COVERAGE.

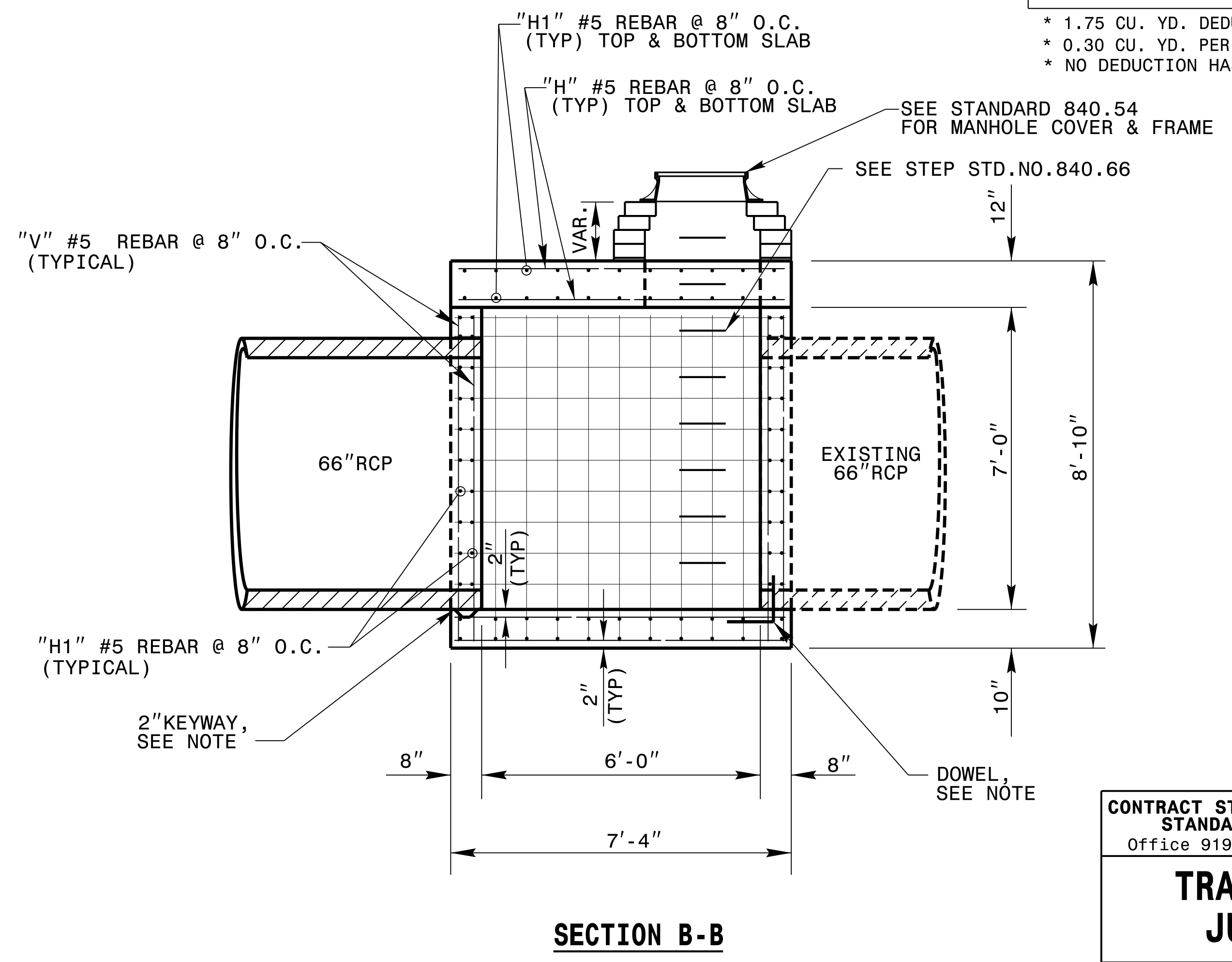
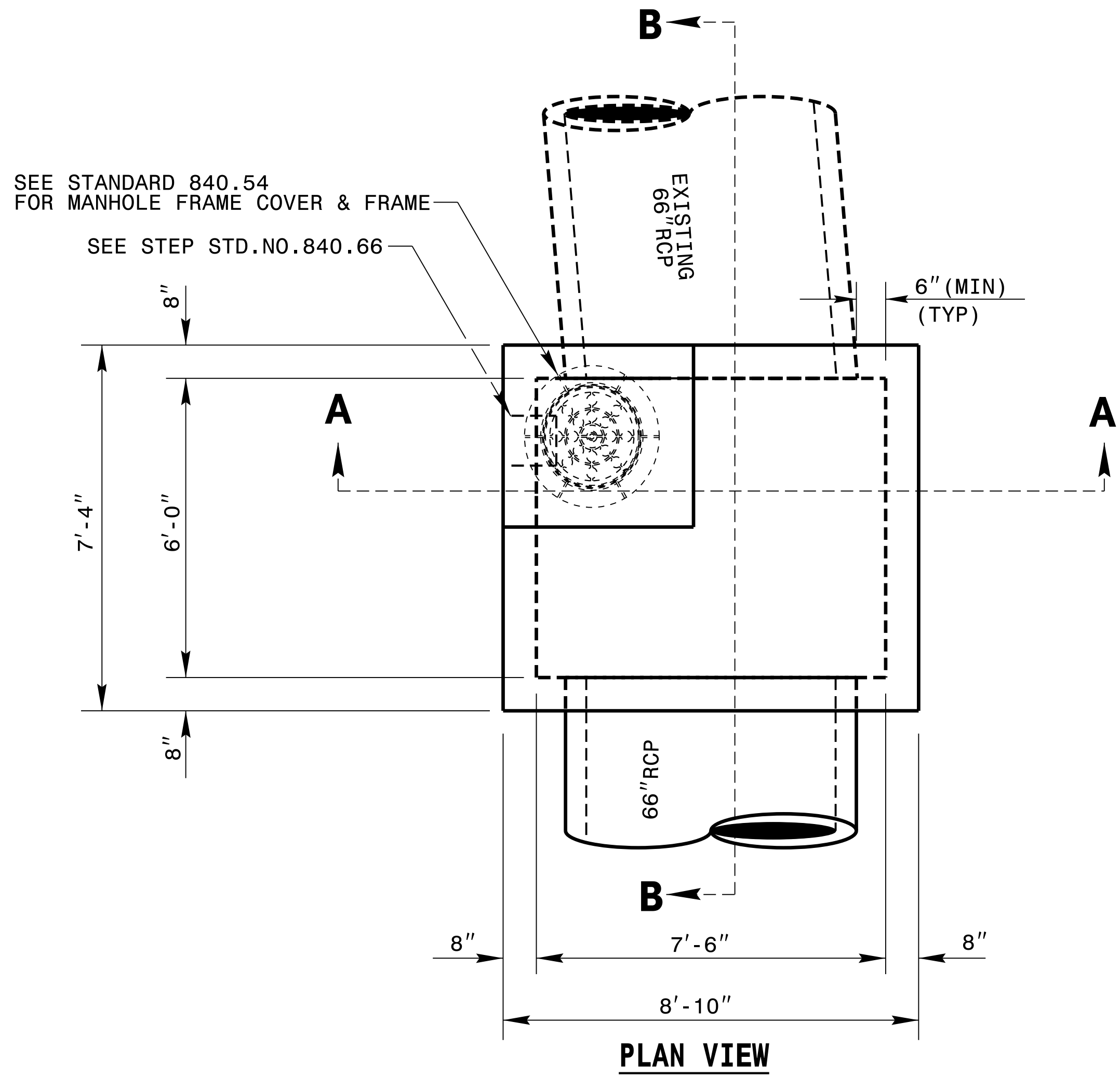
CHAMFER ALL EXPOSED CORNERS 1".

2" MINIMUM CONCRETE COVERAGE ON ALL REBAR.

HEIGHT DIMENSIONS MAY BE ADJUSTED DOWN FOR SMALLER PIPES AS DIRECTED BY THE ENGINEER.

| BILL OF MATERIALS | | | | |
|------------------------------|-----|------|--------|--------|
| BAR | NO. | SIZE | LENGTH | WEIGHT |
| H | 92 | #5 | 7'-0" | 672 |
| H1 | 84 | #5 | 8'-6" | 745 |
| V | 92 | #5 | 7'-6" | 720 |
| Z | 14 | #5 | 4'-0" | 59 |
| TOTAL REINF. STEEL (LBS.) | | | | 2196 |
| TOTAL CL."AA" CONC.(CU.YDS.) | | | | 9.6 |

* 1.75 CU. YD. DEDUCTION FOR 2-66" RC PIPE
 * 0.30 CU. YD. PER FOOT OF RISER HEIGHT
 * NO DEDUCTION HAS BEEN MADE FOR PIPES



Designed by
 D.S. Howarth
 5/16/2019

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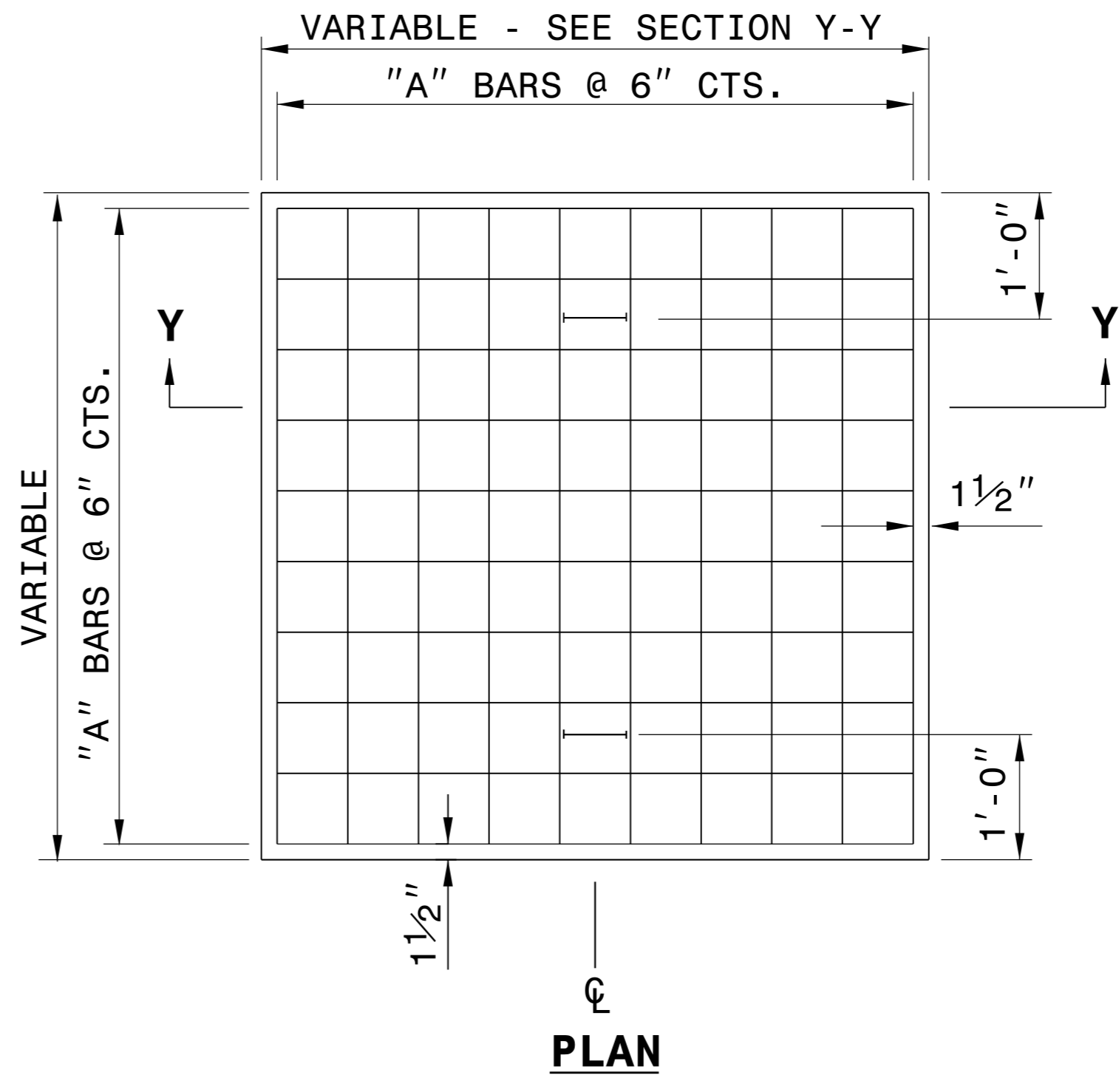
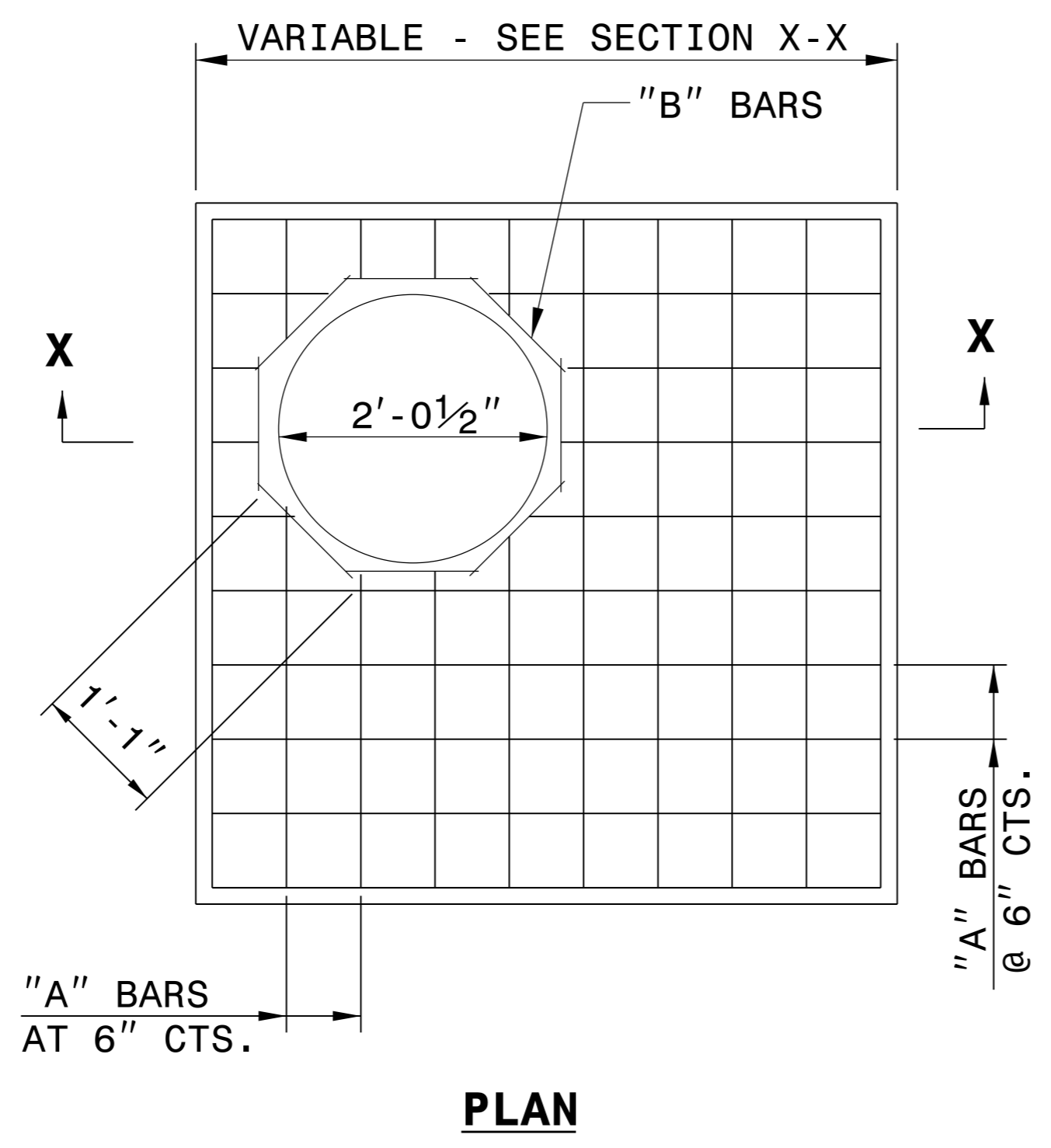
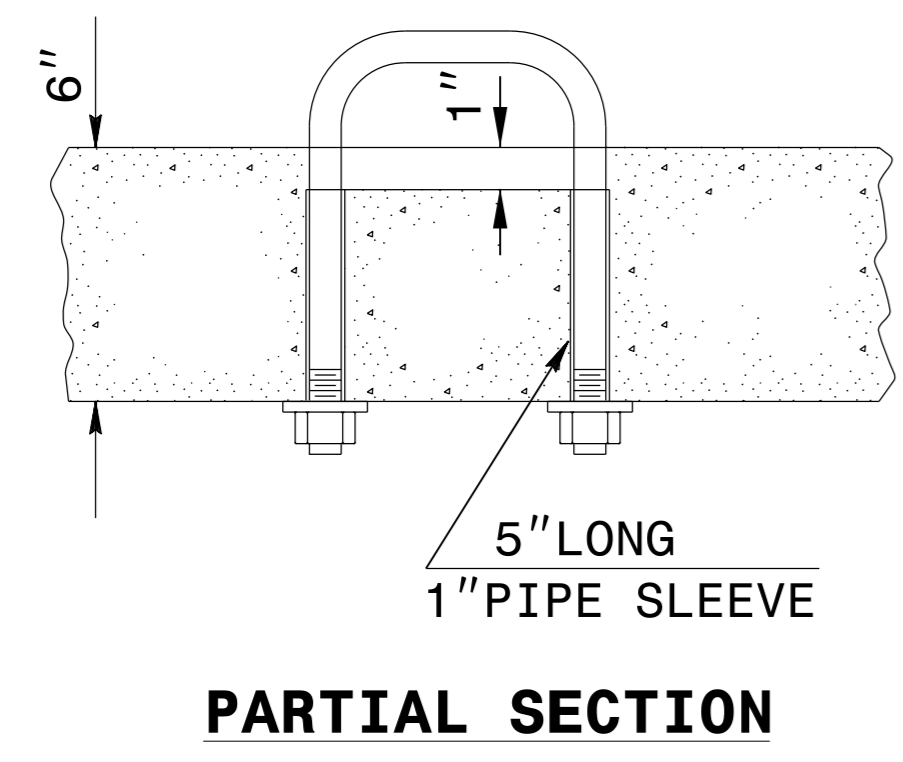
TRAFFIC BEARING JUNCTION BOX

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 MODIFIED BY: nbritt DATE: 04/22/08
 CHECKED BY: _____ DATE: _____
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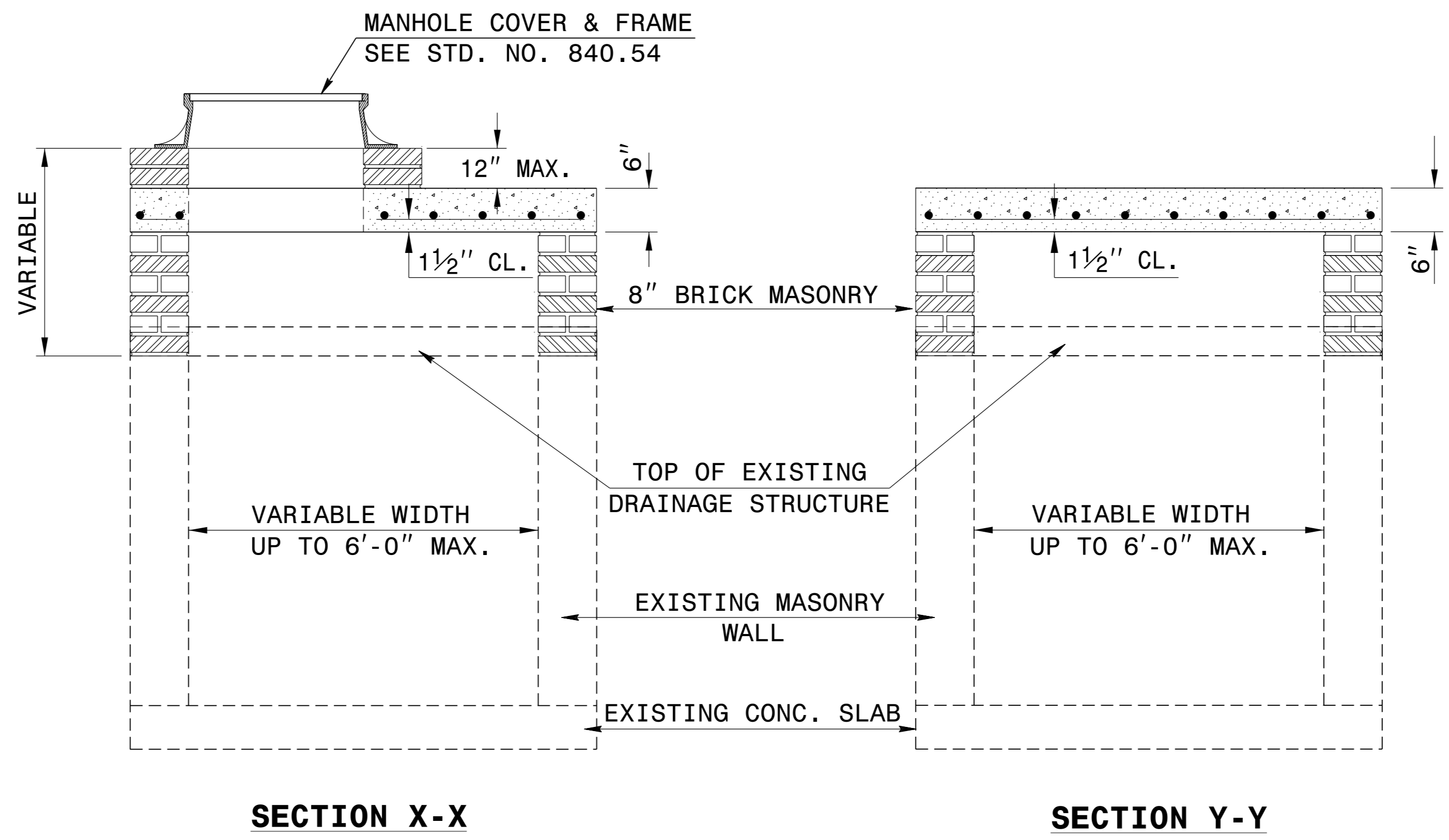
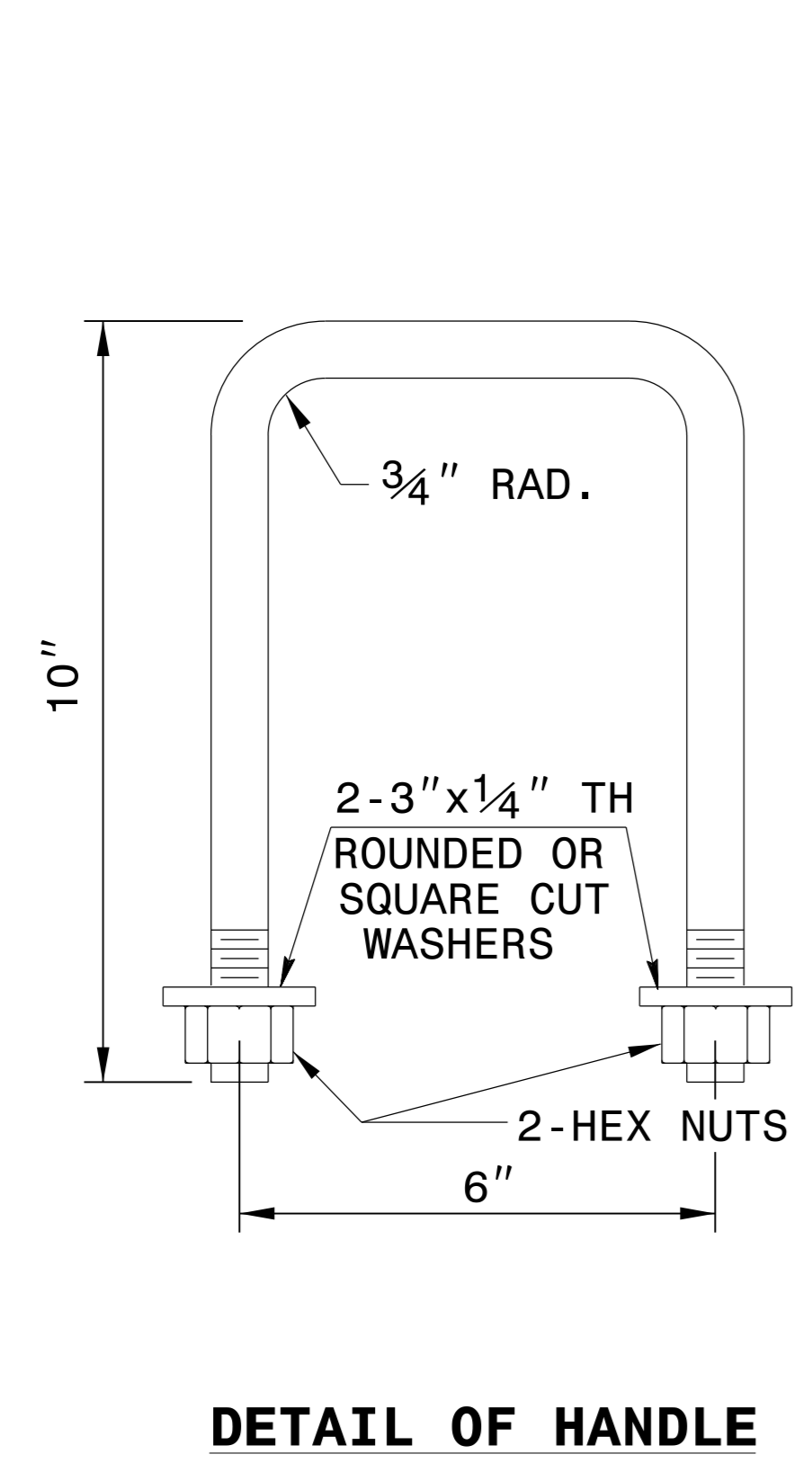


GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

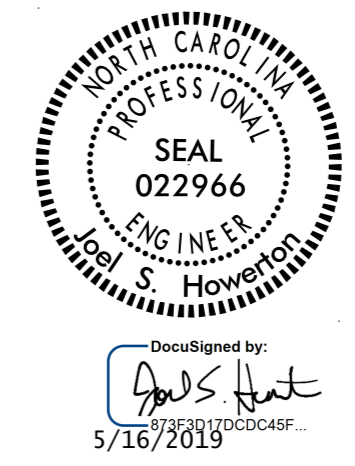
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



| BILL OF MATERIALS | | | | |
|-------------------------------|------|------|--------|-------------------|
| REINFORCING STEEL | | | | |
| CODE | SIZE | QTY. | LENGTH | REINF. STEEL LBS. |
| A | #4 | 20 | 4'-6" | 60.12 |
| B | #4 | 8 | 1'-1" | 5.79 |
| TOTAL | | | | 65.91 * |
| MASONRY | | | | CU YDS |
| TOP SLAB CONCRETE CLASS "B" | | | | .4326 * |
| BRICK MASONRY PER FT HT (MIN) | | | | .4111 |

*** NOTE:**
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

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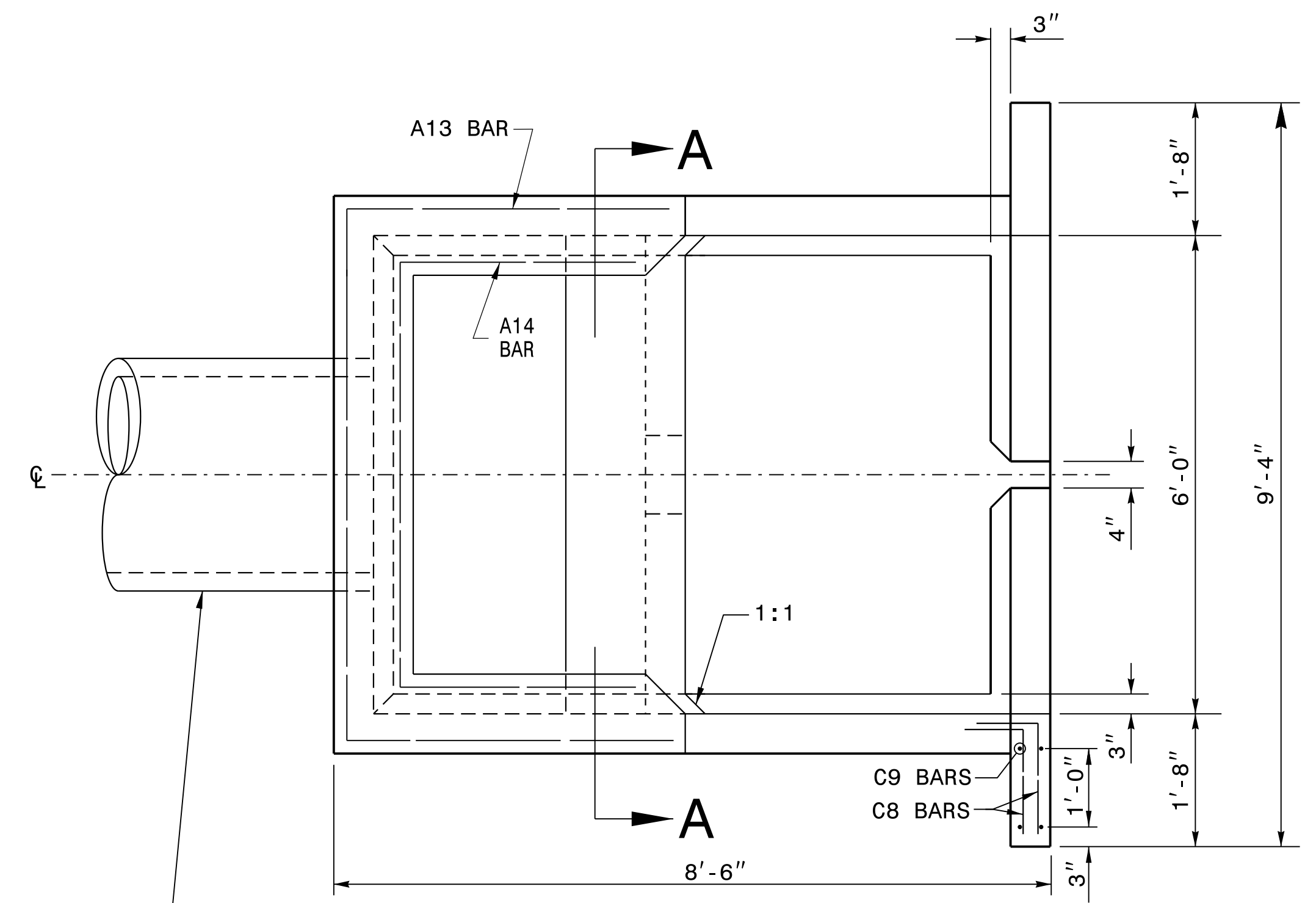
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**DETAIL TO CONVERT EXISTING
DI, CB, OTCB or GI
TO JUNCTION BOX
(MANHOLE OPTIONAL)**

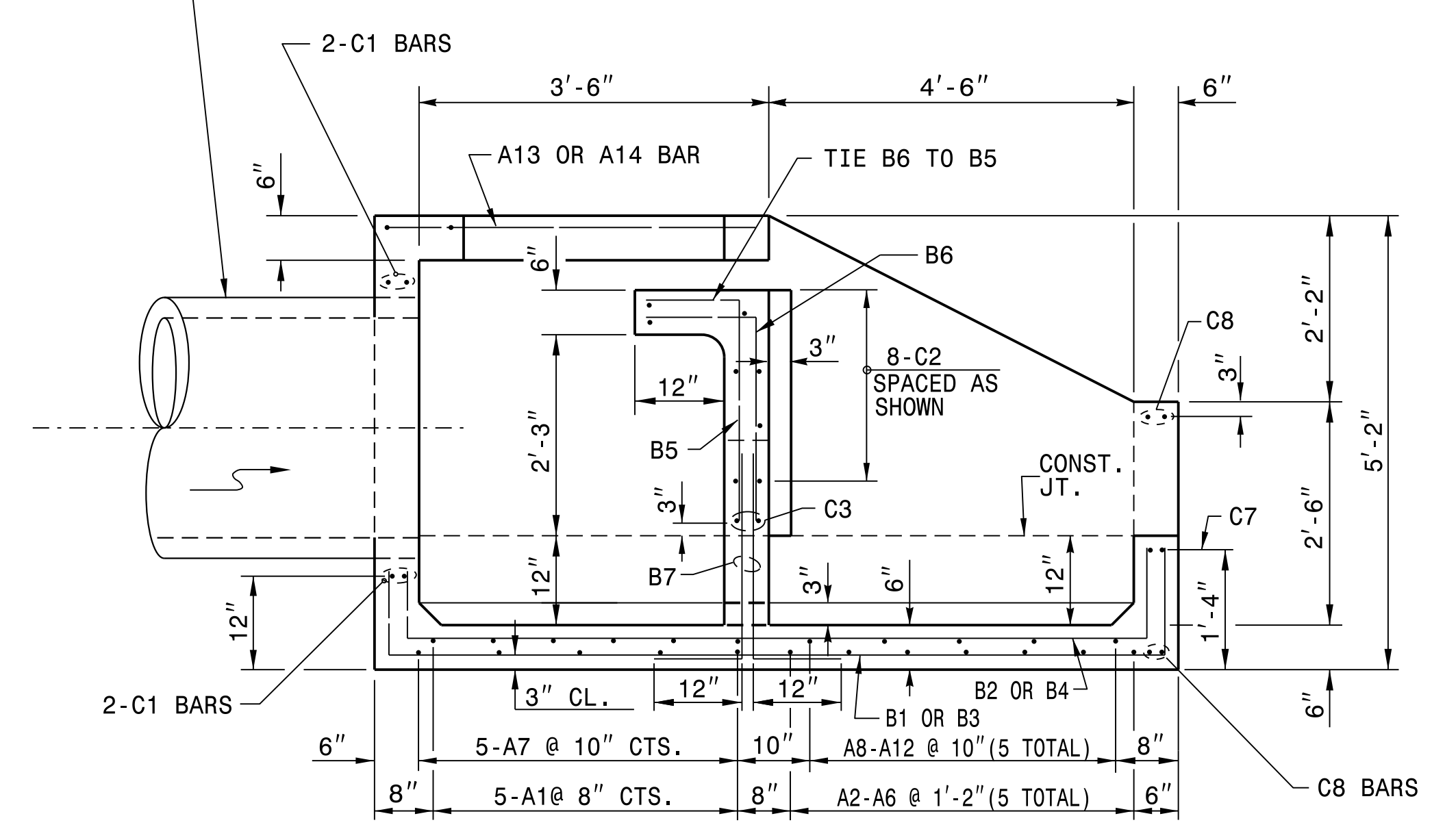
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| MODIFIED BY: T.S.S. | DATE: FEB. 2000 |
| CHECKED BY: | DATE: |
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USE THIS STRUCTURE FOR PIPE SIZES 15" THROUGH 36". THE PIPE MAY BE CSP OR RCP.

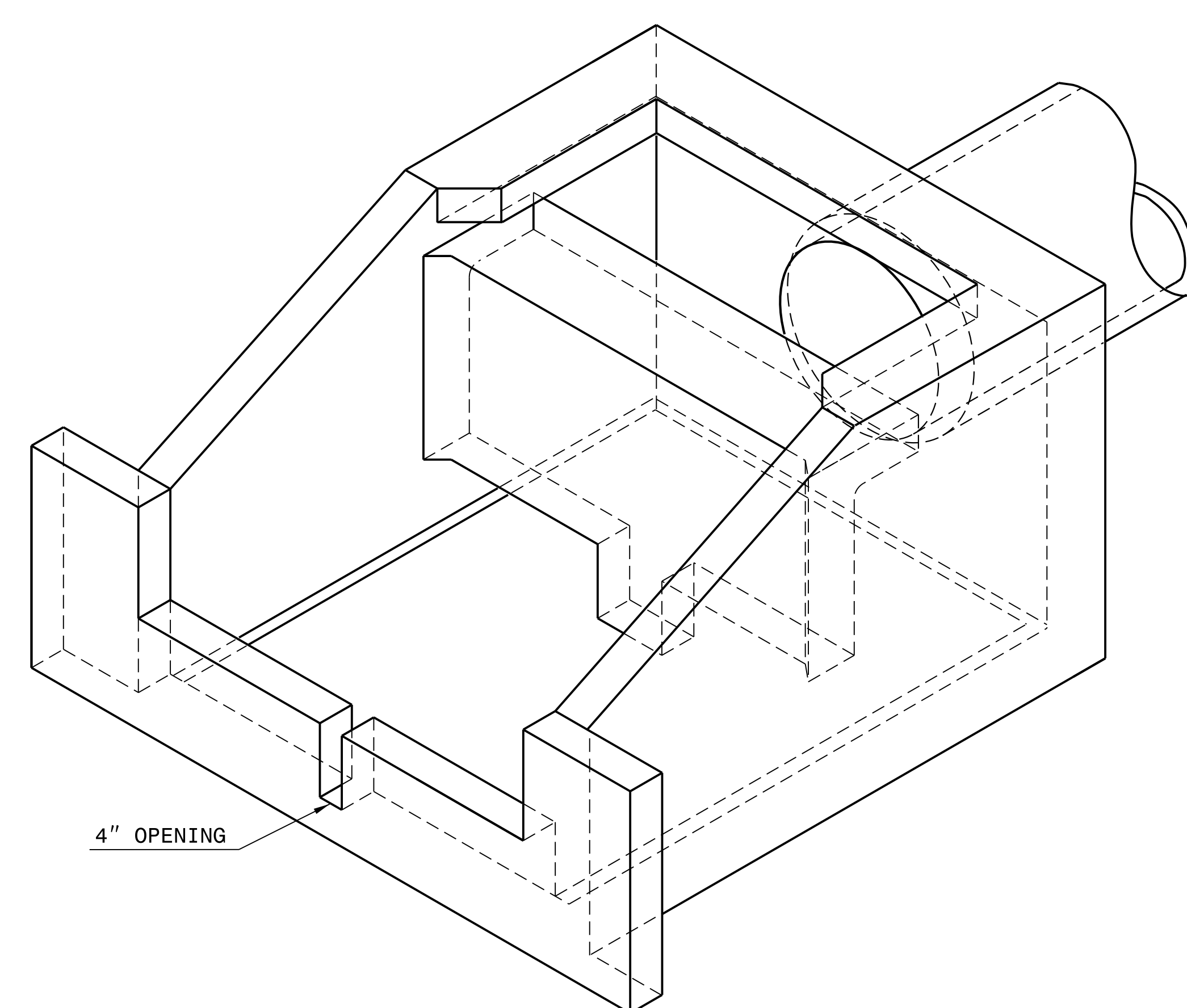


PLAN

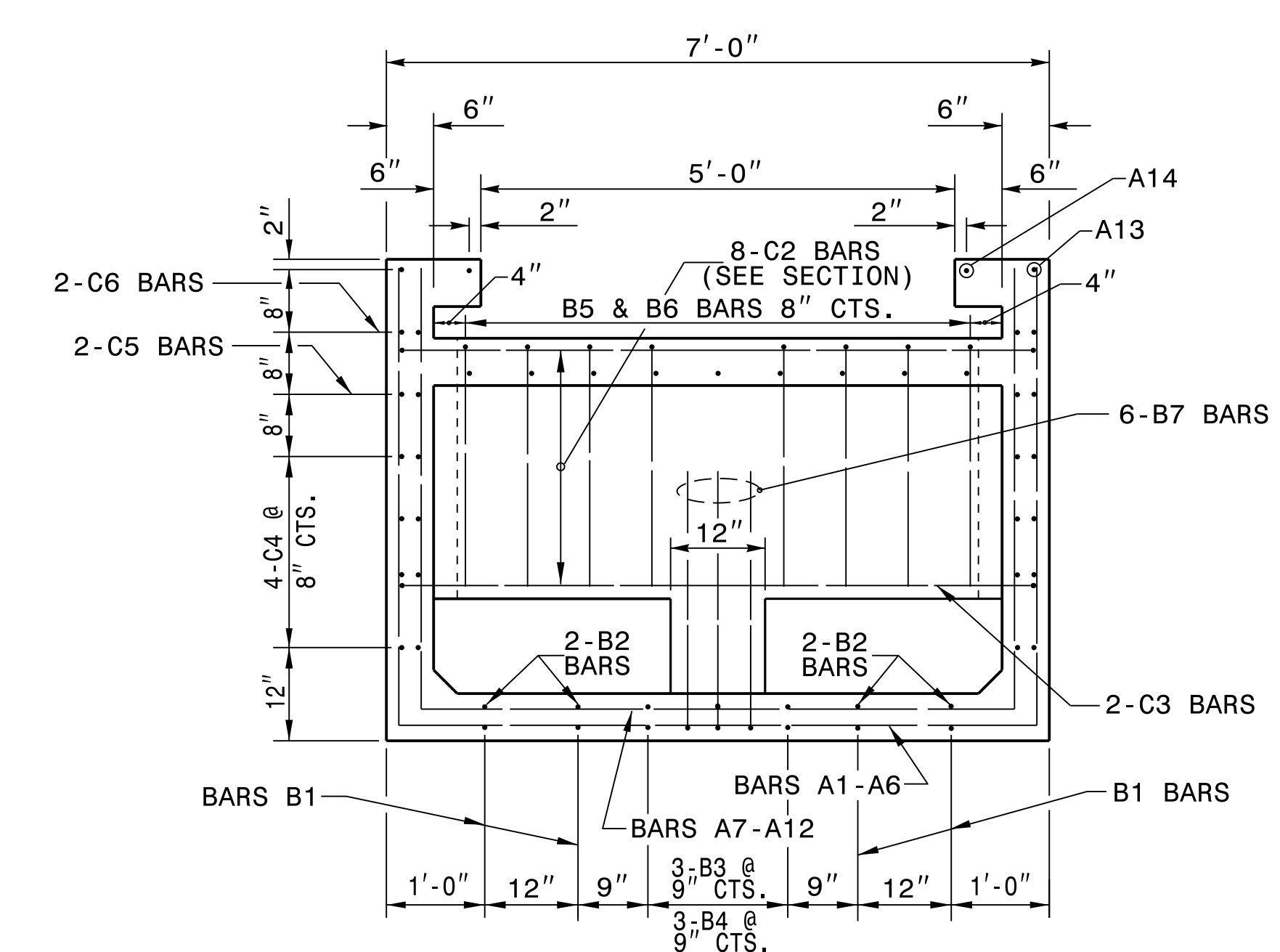
SEE PLANS FOR PIPE SIZE



SECTION ON CL



4" OPENING

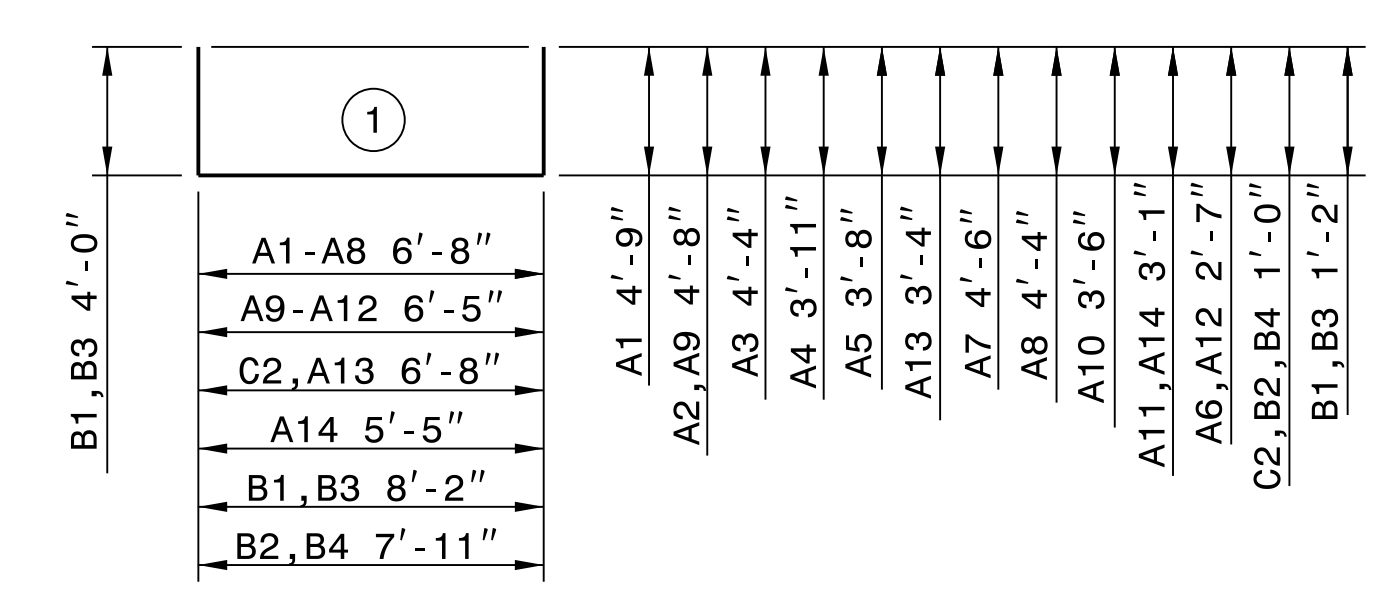
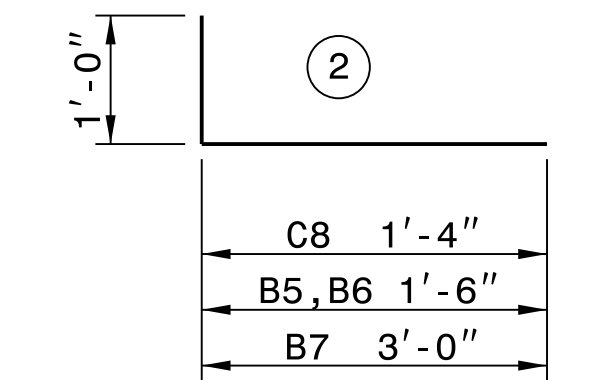


* SHIFT B3 & B4 BARS AS NECESSARY TO CLEAR 4" OPENING

SECTION A-A

| BILL OF MATERIAL | | | | | |
|---------------------------|-----|------|------|---------|--------|
| BAR | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| A1 | 5 | 5 | 1 | 16'-2" | 84.3 |
| A2 | 1 | 5 | 1 | 16'-0" | 16.7 |
| A3 | 1 | 5 | 1 | 15'-4" | 16.0 |
| A4 | 1 | 5 | 1 | 14'-6" | 15.1 |
| A5 | 1 | 5 | 1 | 14'-0" | 14.6 |
| A6 | 1 | 5 | 1 | 11'-10" | 12.3 |
| A7 | 5 | 5 | 1 | 15'-8" | 81.7 |
| A8 | 1 | 5 | 1 | 15'-4" | 16.0 |
| A9 | 1 | 4 | 1 | 15'-9" | 10.5 |
| A10 | 1 | 4 | 1 | 13'-4" | 8.9 |
| A11 | 1 | 4 | 1 | 12'-7" | 8.4 |
| A12 | 1 | 4 | 1 | 11'-7" | 7.7 |
| A13 | 1 | 4 | 1 | 13'-5" | 8.9 |
| A14 | 1 | 4 | 1 | 11'-7" | 7.7 |
| B1 | 4 | 4 | 1 | 13'-4" | 35.6 |
| B2 | 4 | 4 | 1 | 9'-11" | 26.5 |
| B3 | 3 | 4 | 1 | 13'-4" | 26.7 |
| B4 | 3 | 4 | 1 | 9'-11" | 19.9 |
| B5 | 9 | 4 | 2 | 2'-6" | 15.0 |
| B6 | 9 | 4 | 2 | 2'-6" | 15.0 |
| B7 | 6 | 4 | 2 | 4'-0" | 16.0 |
| C1 | 4 | 4 | STR | 6'-8" | 17.8 |
| C2 | 8 | 8 | 1 | 8'-9" | 186.9 |
| C3 | 2 | 8 | STR | 6'-8" | 35.6 |
| C4 | 16 | 4 | STR | 8'-2" | 87.3 |
| C5 | 4 | 4 | STR | 4'-11" | 13.1 |
| C6 | 4 | 4 | STR | 6'-7" | 17.6 |
| C7 | 4 | 4 | STR | 2'-8" | 7.1 |
| C8 | 8 | 4 | 2 | 2'-4" | 12.5 |
| C9 | 8 | 4 | STR | 2'-8" | 14.3 |
| TOTAL REINF. STEEL (LBS.) | | | | | |
| CONCRETE (CU.YDS.) | | | | | 3.44 |

* ALL SPLICES SHALL BE 1'-6" MIN.
* ALL REINFORCING STEEL SHALL BE 2" CL. OF ANY FACE UNLESS SHOWN OTHERWISE.



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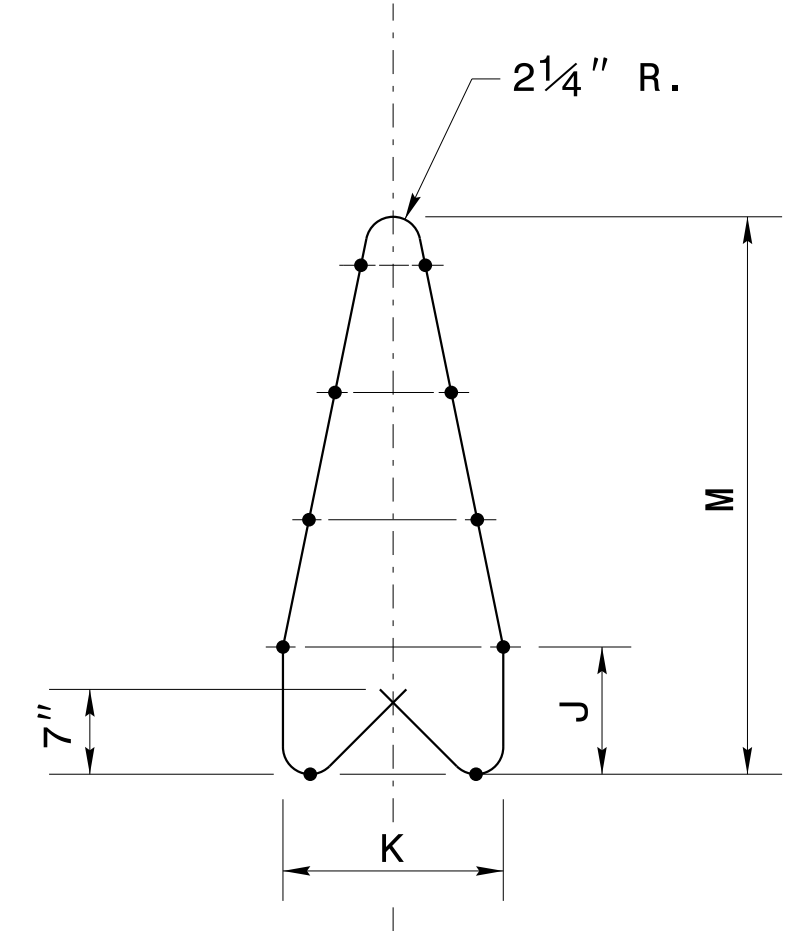
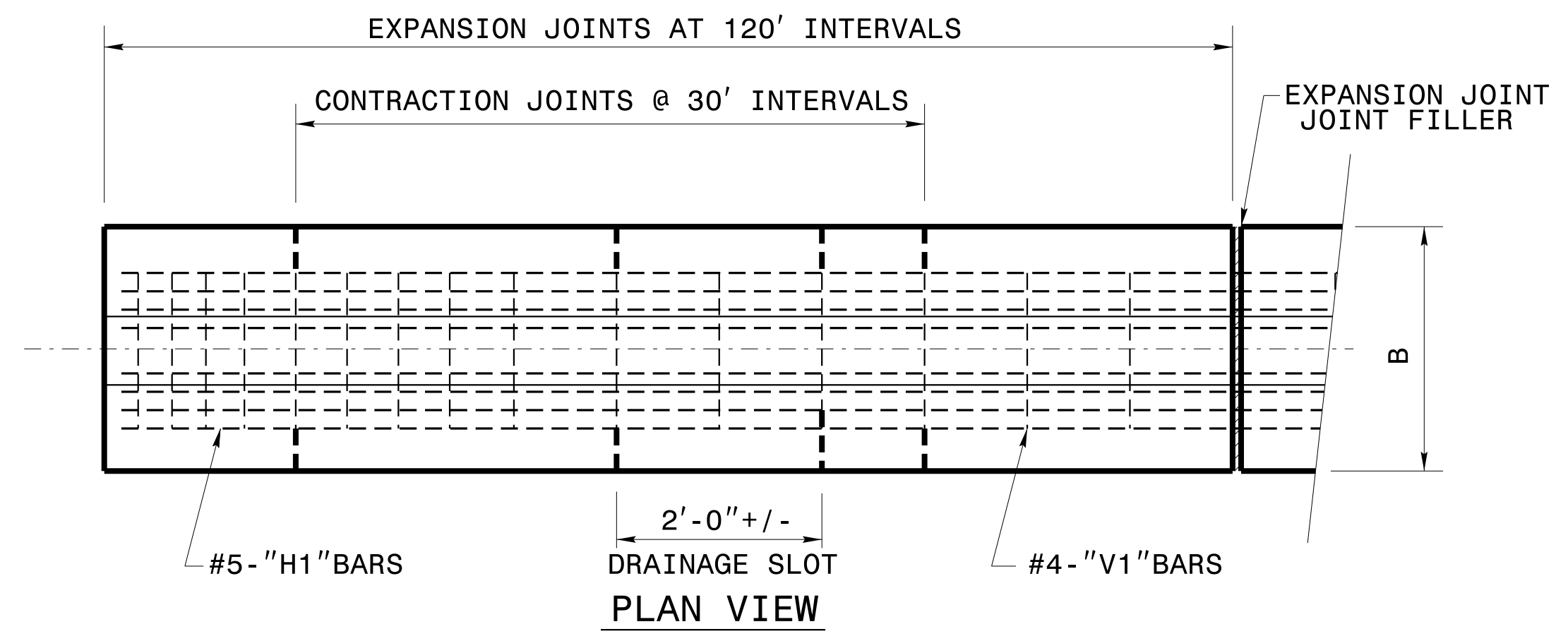
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ENERGY DISSIPATOR

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MODIFIED BY: T.S.S. DATE: JULY 20, 2011
CHECKED BY: DATE:
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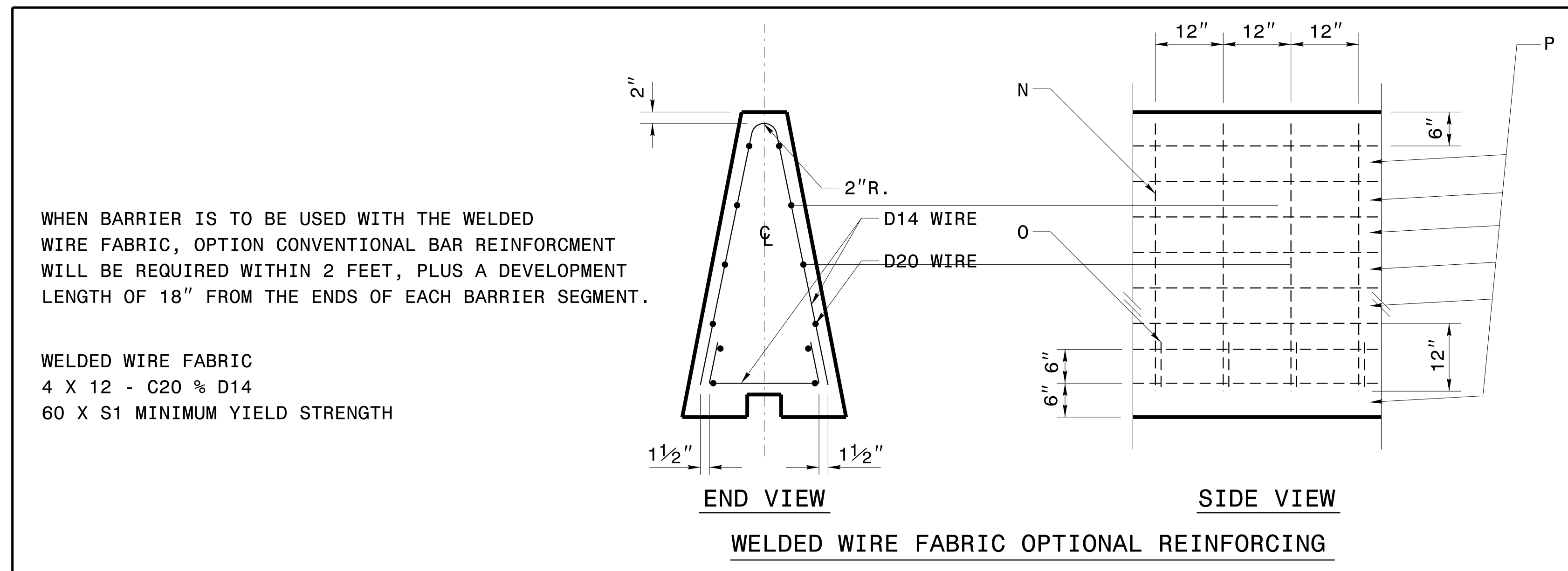
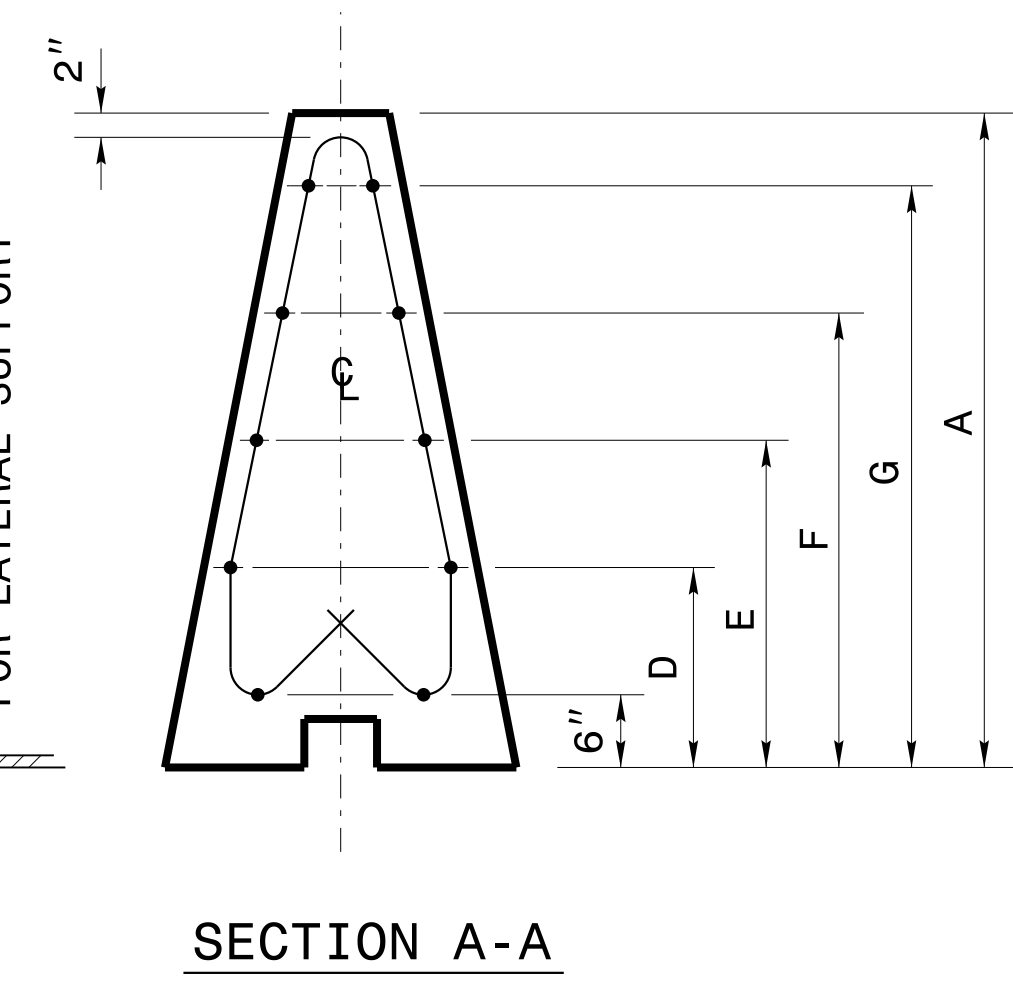
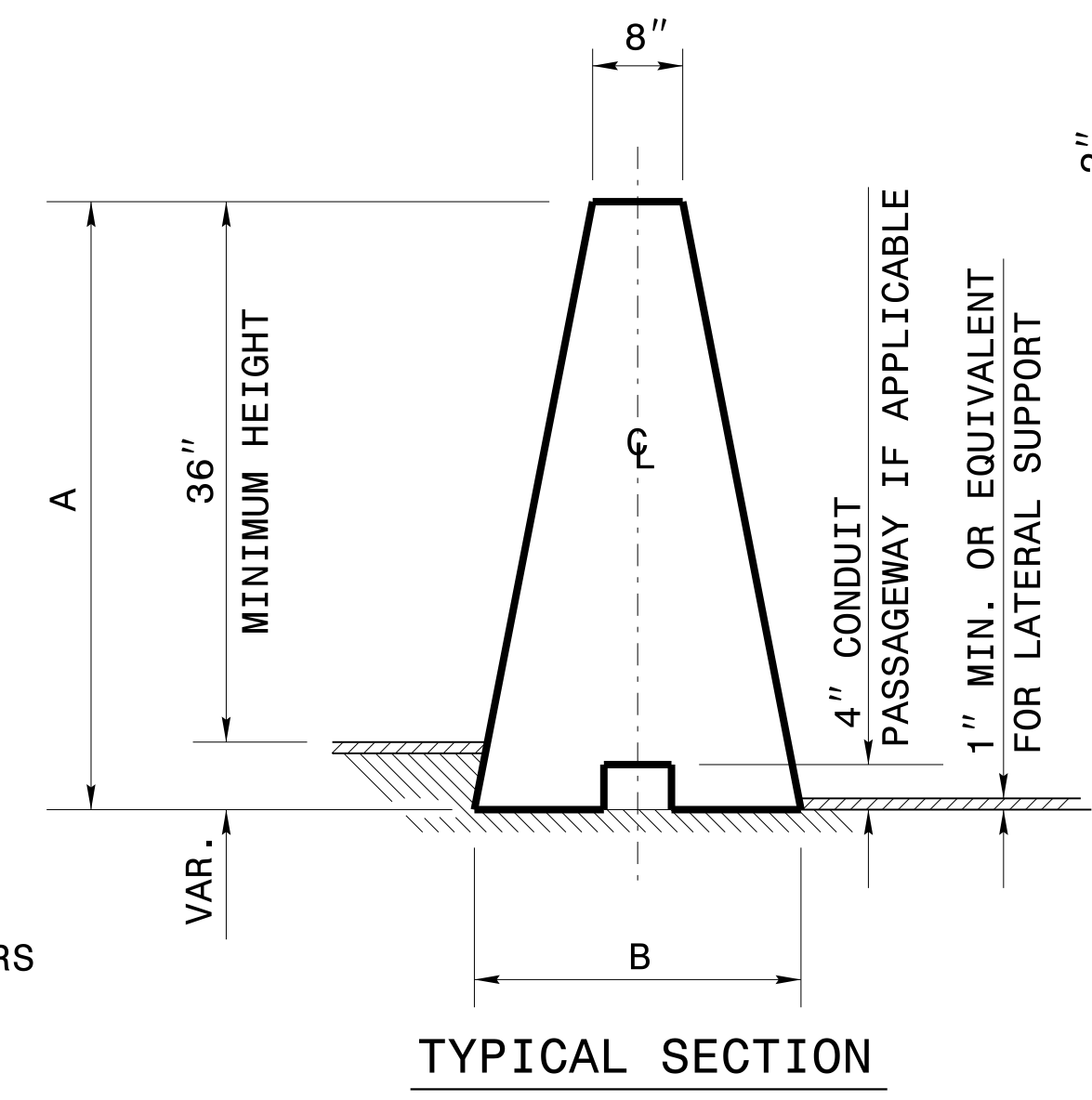
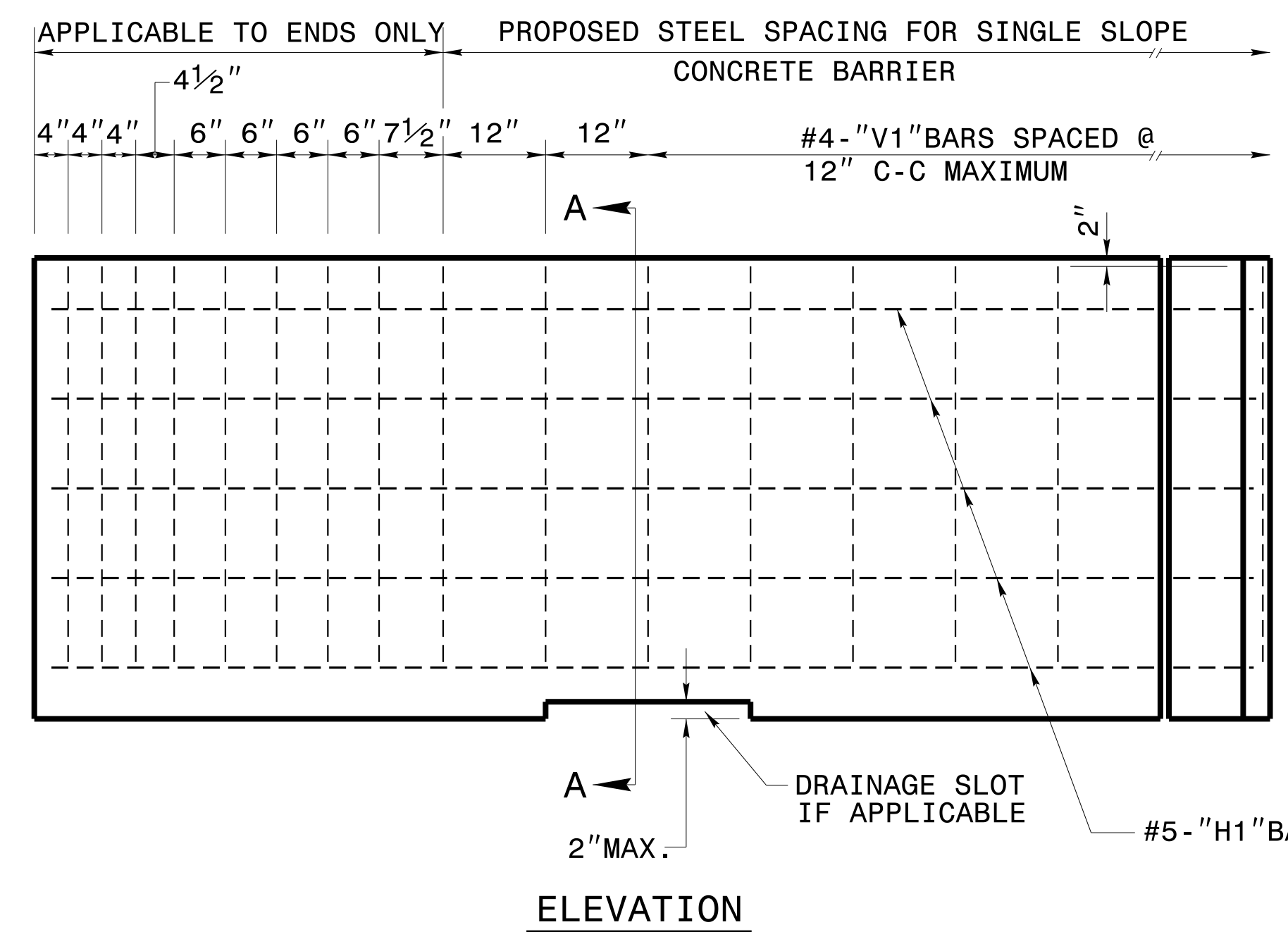
5/14/99



GENERAL NOTES:

1. USE CLASS "AA" CONCRETE.
2. MAINTAIN 2" OF COVER OVER ALL REBAR. CHAMFER TOP AND ENDS OF BARRIER 1/2 INCH.
3. USE BAR SPLICE LENGTHS A MINIMUM OF 20 TIMES THE NORMAL DIAMETER OF THE BAR. ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL ROADWAY STEEL WILL BE POSITIONED +/- 1/2 INCH AS DIMENSIONED WILL BE SATISFACTORY.

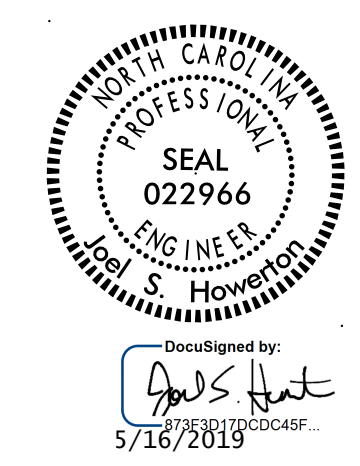
WELDED WIRE FABRIC MAY BE USED AS AN OPTION TO CONVENTIONAL REINFORCEMENT FOR CAST-IN-PLACE BARRIER. WELDED WIRE FABRIC SHALL BE MADE IN ACCORDANCE WITH ASTM A497. CONDUIT TO BE PROVIDED ONLY WHEN CALLED FOR ELSEWHERE IN THE PLANS. POSITION OF THE CONDUIT OR CONDUIT PASSAGEWAY MAY BE ADJUSTED TO FACILITATE CONSTRUCTION, SUBJECT TO APPROVAL BY THE ENGINEER.
4. REFER TO ROADWAY STANDARD DRAWING NO.854.01 FOR EXPANSION AND CONTRACTION JOINT, FILLER AND OTHER SPECIFICATIONS.



WHEN BARRIER IS TO BE USED WITH THE WELDED WIRE FABRIC, OPTION CONVENTIONAL BAR REINFORCEMENT WILL BE REQUIRED WITHIN 2 FEET, PLUS A DEVELOPMENT LENGTH OF 18" FROM THE ENDS OF EACH BARRIER SEGMENT.

WELDED WIRE FABRIC
4 X 12 - C20 % D14
60 X S1 MINIMUM YIELD STRENGTH

| BARRIER HEIGHT (IN.) | DIMENSIONS | | | | | | | | | | | |
|----------------------|------------|----|--------|----|--------|----|----|-------|----|----|----|---|
| | A | B | D | E | F | G | K | L | M | N | O | P |
| 42" | 42 | 24 | 13 1/2 | 21 | 28 1/2 | 36 | 15 | 9 1/4 | 36 | 72 | 28 | 4 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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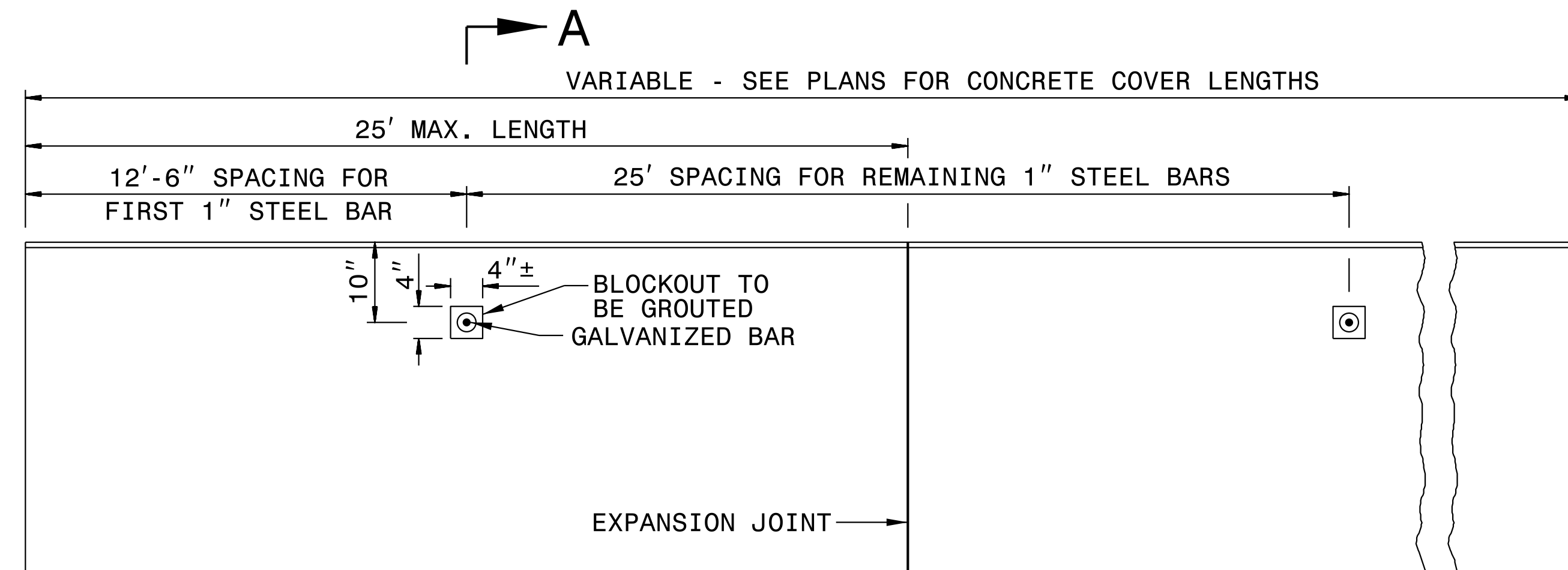
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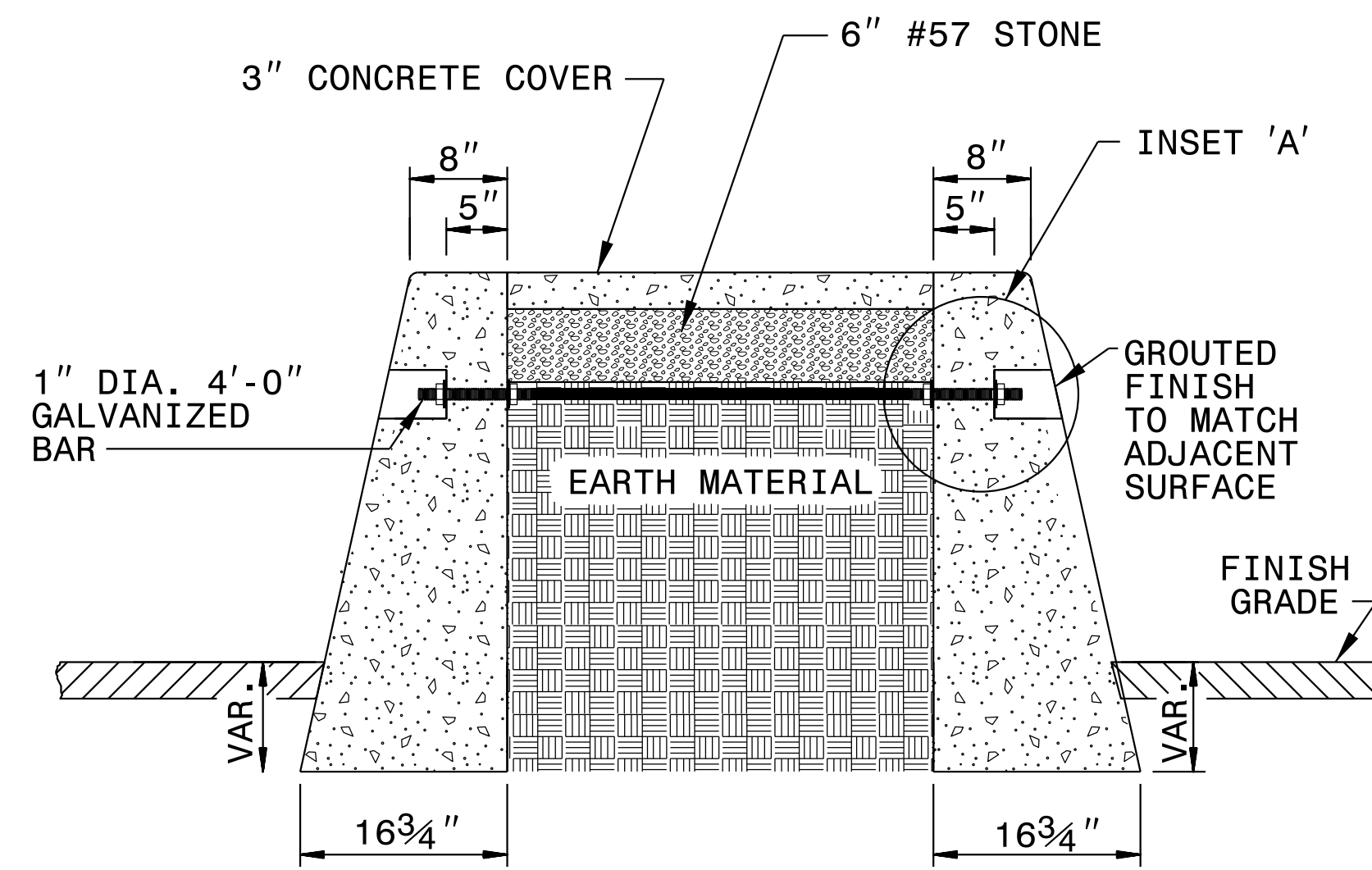
TYPE I SINGLE SLOPE CONCRETE BARRIER

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 MODIFIED BY: kkempf DATE: 05-01-19
 CHECKED BY: _____ DATE: _____
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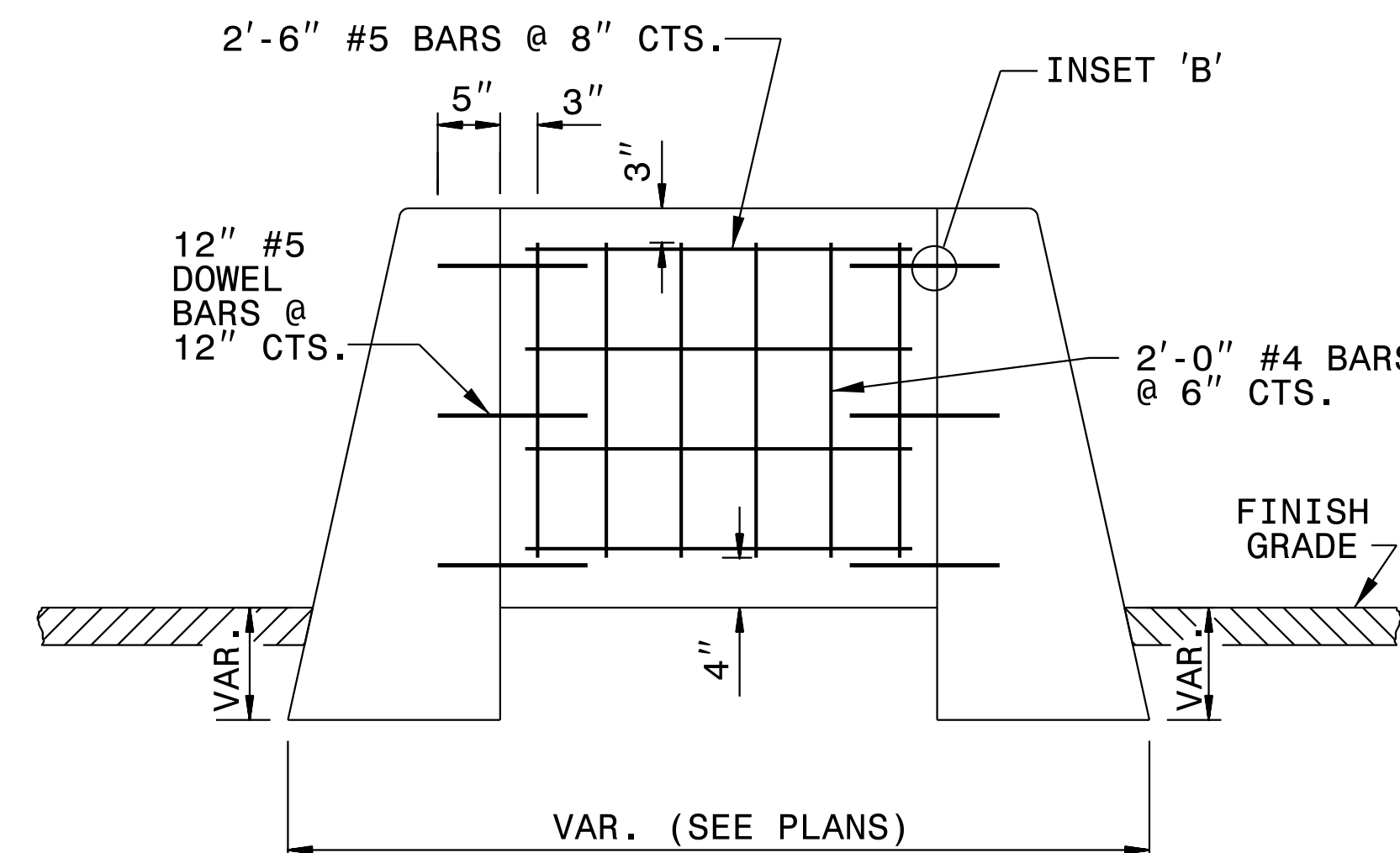
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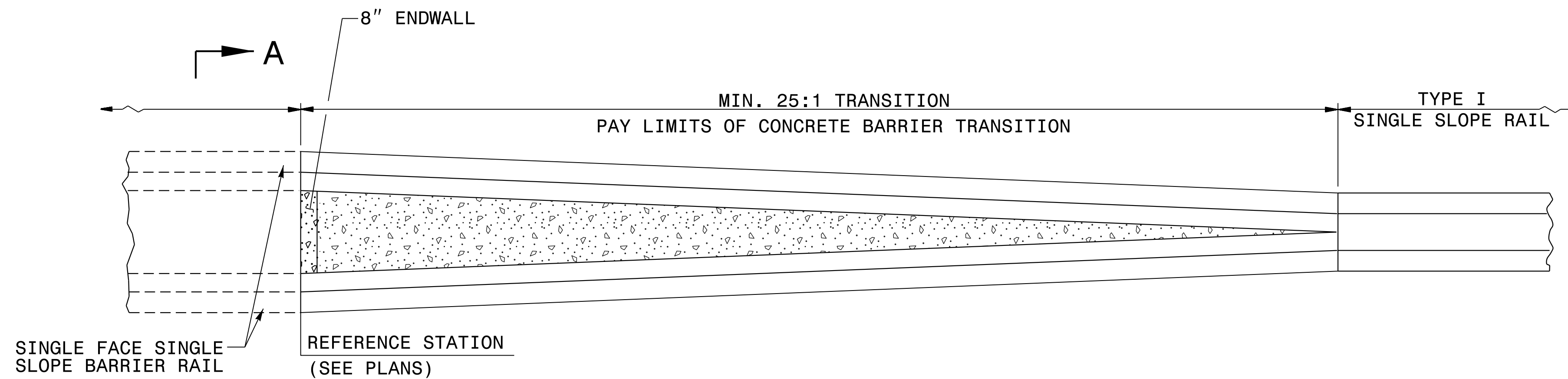
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ELEVATION



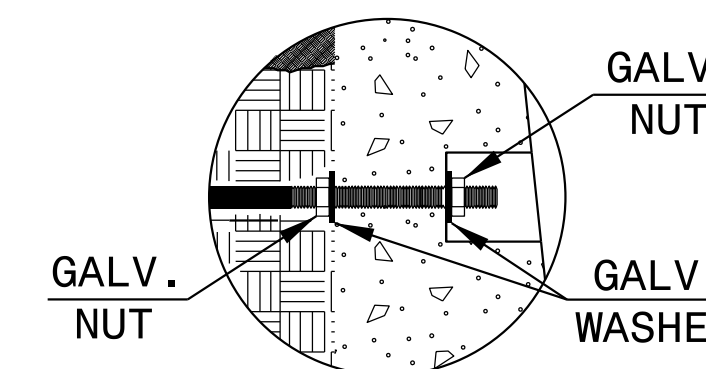
SECTION 'A-A'



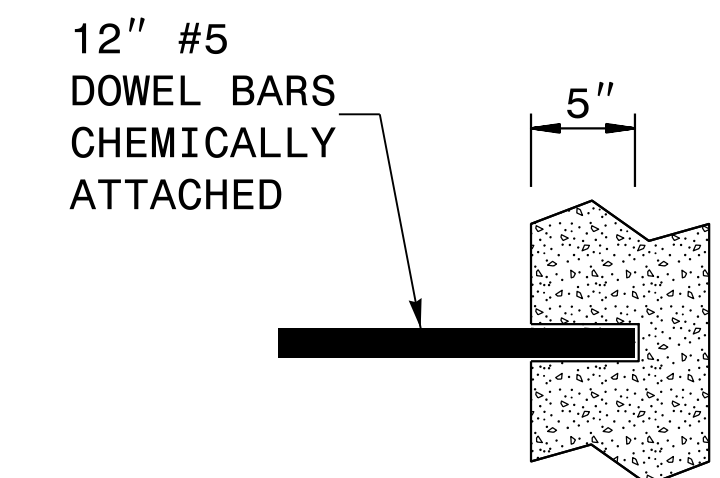
ENDWALL



TRANSITION FROM SINGLE FACE SINGLE SLOPE BARRIER RAIL TO TYPE I SINGLE SLOPE RAIL



INSET 'A'



INSET 'B'

GENERAL NOTES:

USE CLASS 'AA' CONCRETE TO CONSTRUCT CONCRETE BARRIER TRANSITION.

USE CLASS 'B' CONCRETE TO CONSTRUCT CONCRETE COVER.

SEAL ALL EXPANSION JOINTS WITH JOINT FILLER (SEE SECTION 1028 OF THE SPECIFICATIONS).

SEE SPECIAL DETAILS PERTAINING TO SINGLE SLOPE BARRIERS FOR CONSTRUCTION METHODS AND STEEL PLACEMENT.

SUBMIT ALTERNATIVE METHODS FOR STEEL FABRICATION FOR REVIEW.

REFER TO PLANS AND TYPICAL SECTION FOR CONCRETE COVER LOCATIONS.

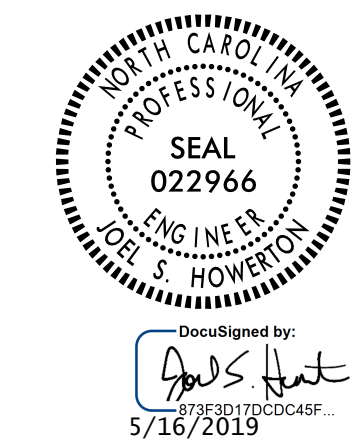
USE AN APPROVED BONDING SYSTEM IN ACCORDANCE WITH SECTION 1081-1, TYPE 3A OF THE STANDARD SPECIFICATIONS.

DRILL ANCHOR HOLES WITH A PNEUMATIC DRILL UNLESS OTHERWISE APPROVED BY THE ENGINEER.

DRILL ANCHOR HOLES IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

REMOVE ALL DEBRIS, CHIPS, DUST, GREASE, OIL AND OTHER FOREIGN MATTER FROM THE ANCHOR HOLES PRIOR TO THE APPLICATION OF THE ADHEIVE BONDING SYSTEM.

BARRIER TRANSITION LOCATED AS FIELD CONDITIONS DICTATE AND AS DIRECTED BY THE ENGINEER.



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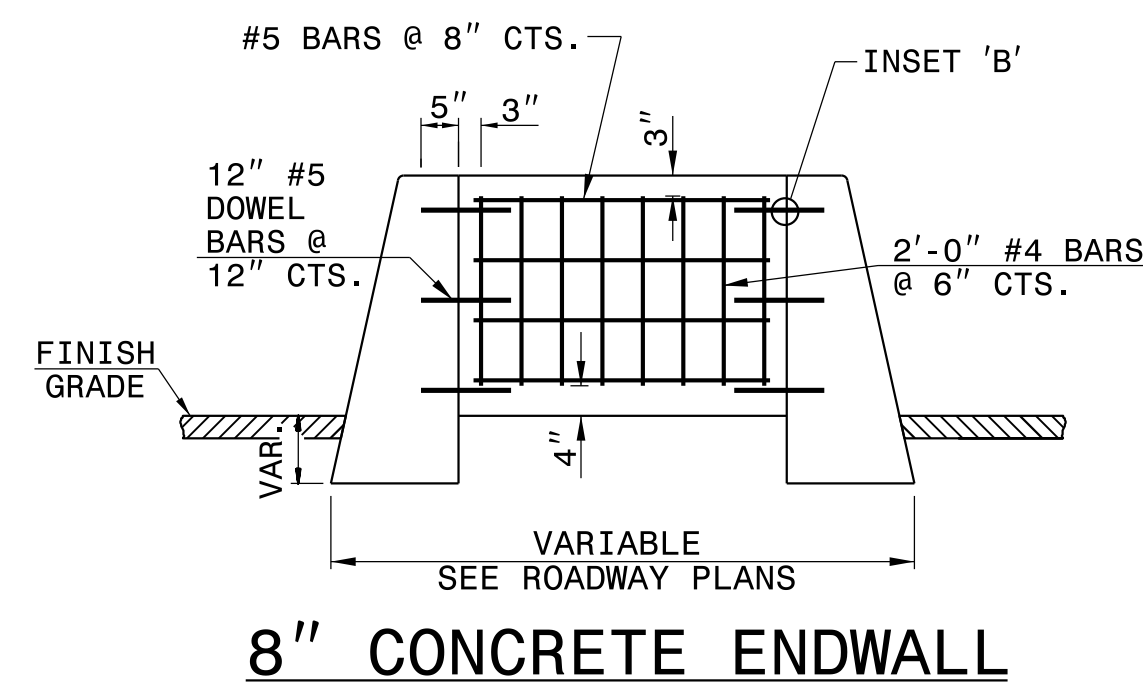
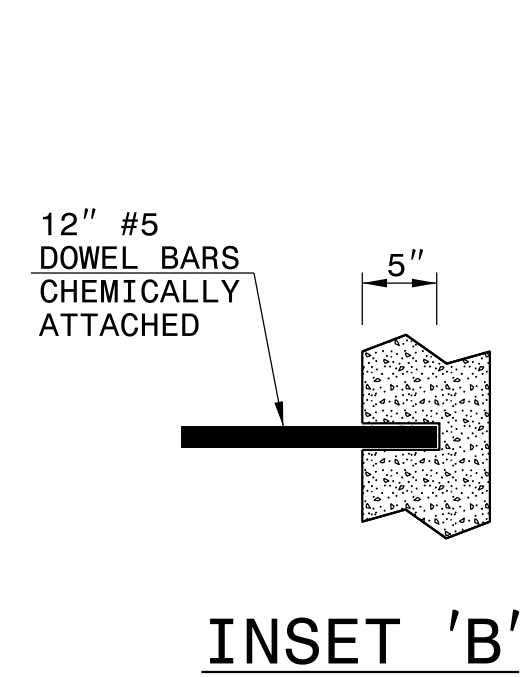
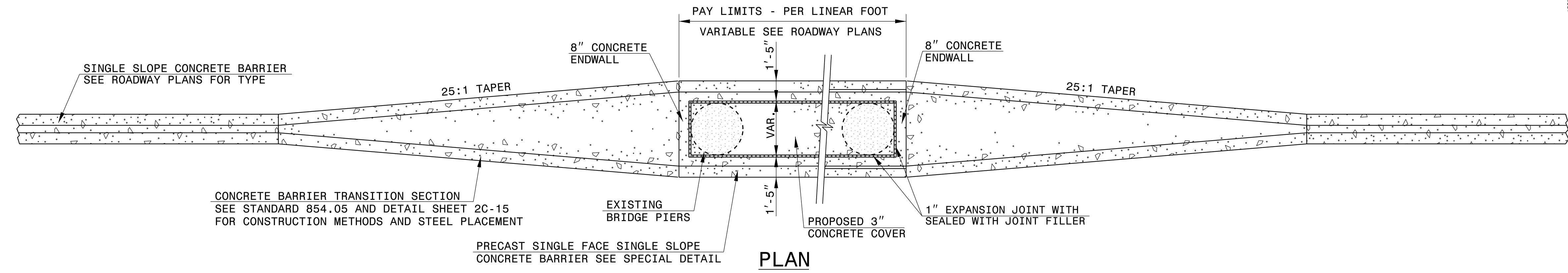
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| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 FAX 919-250-4119 | |
| CONCRETE BARRIER TRANSITION | |
| ORIGINAL BY: T.S. Spell | DATE: 2-14-00 |
| MODIFIED BY: K.A. Kempf | DATE: 5-08-19 |
| CHECKED BY: | DATE: |
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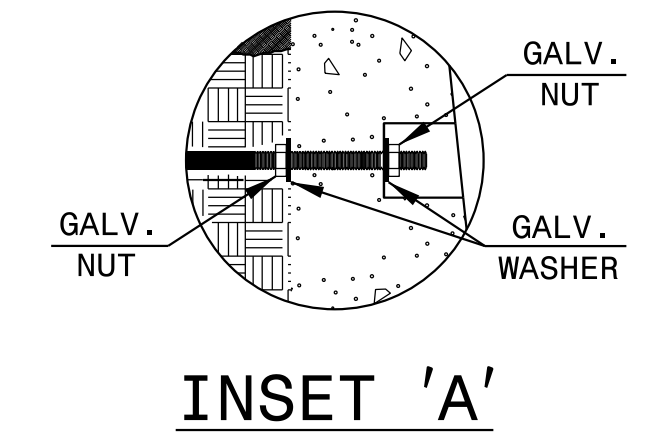
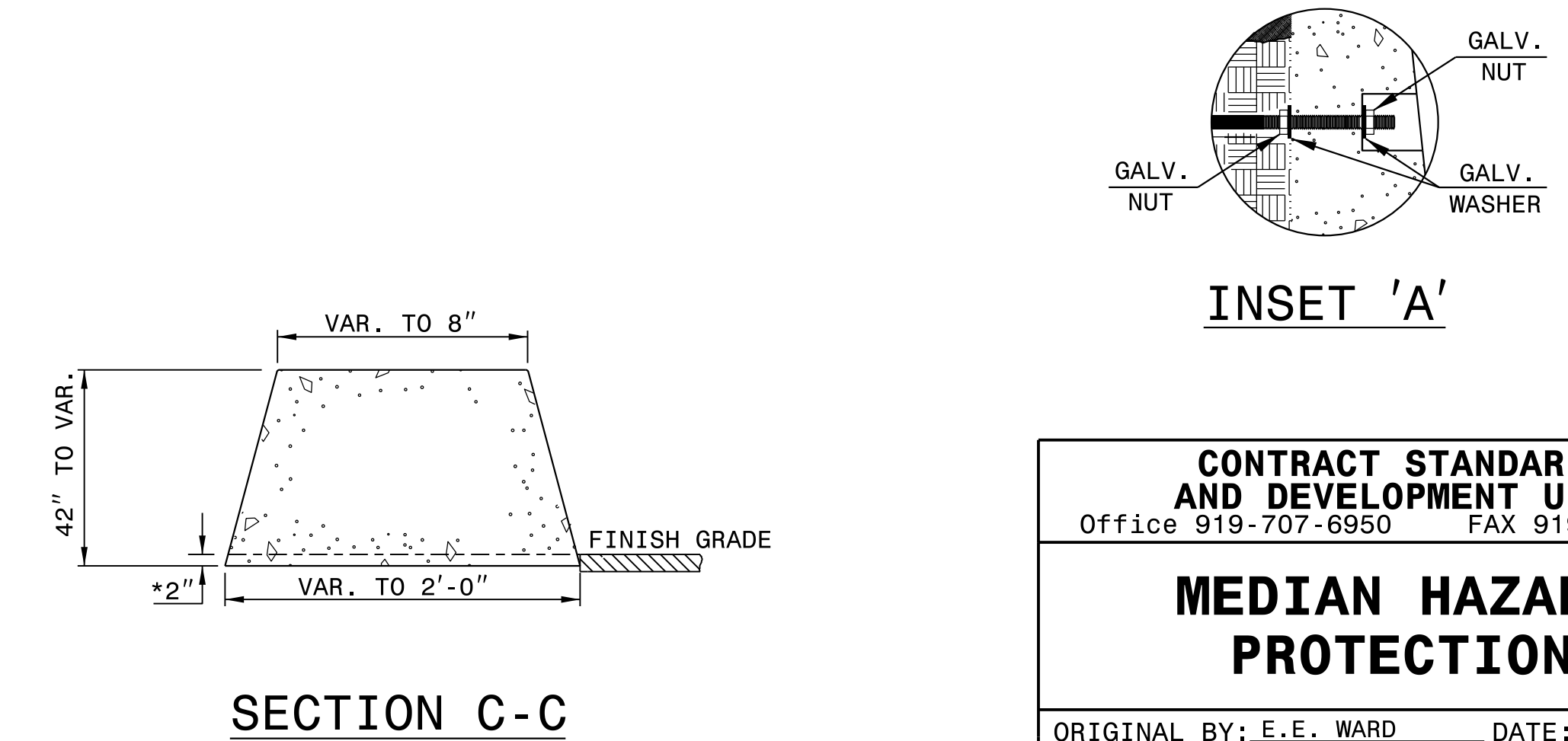
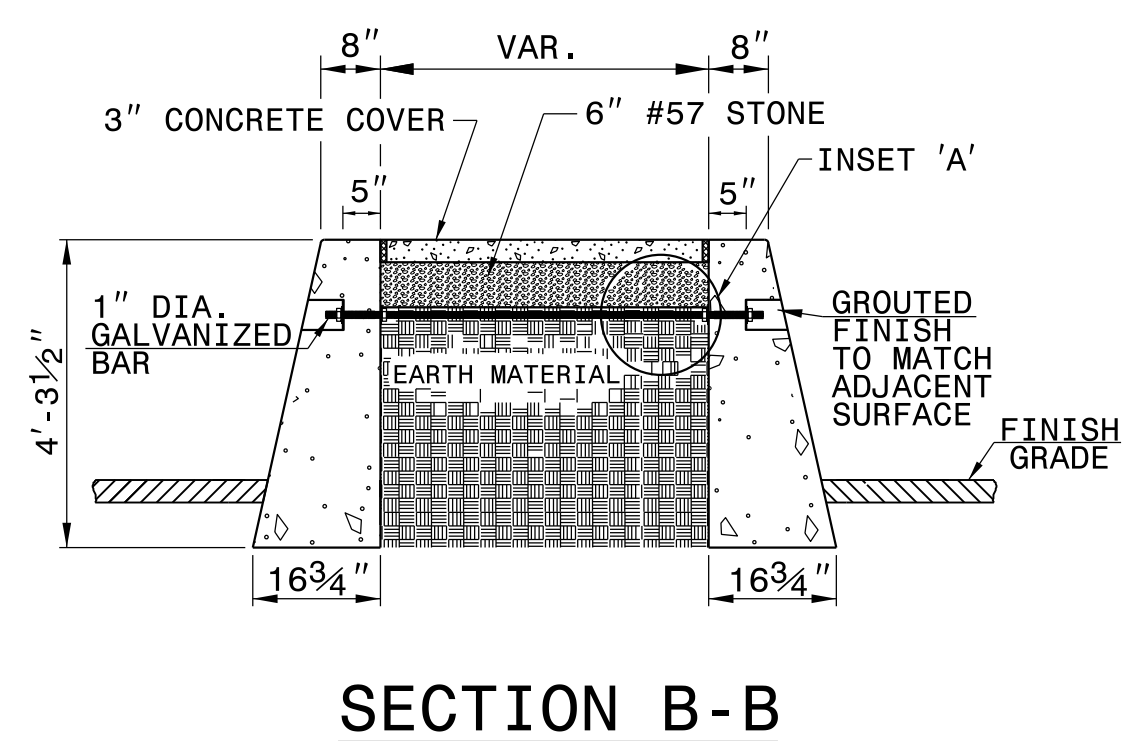
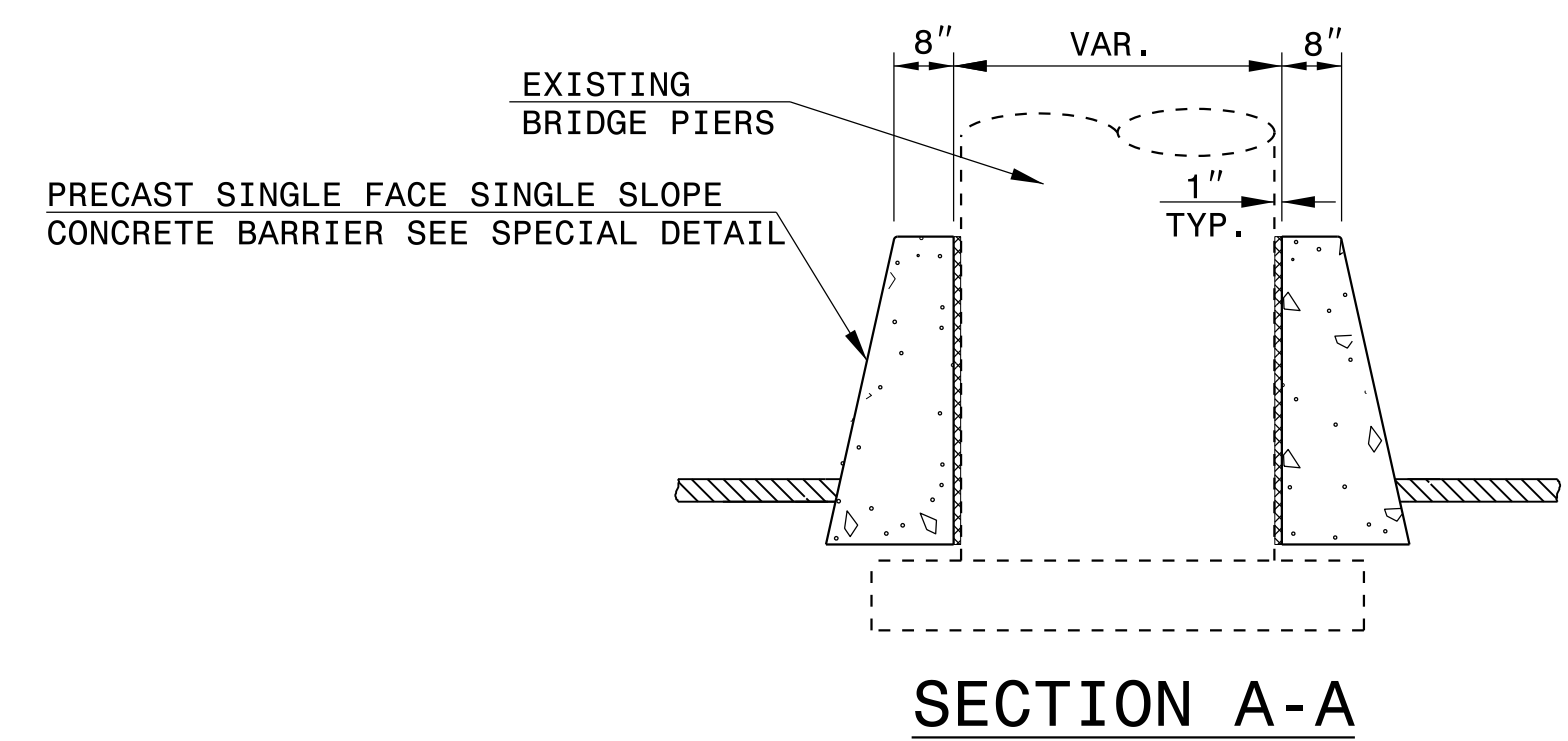
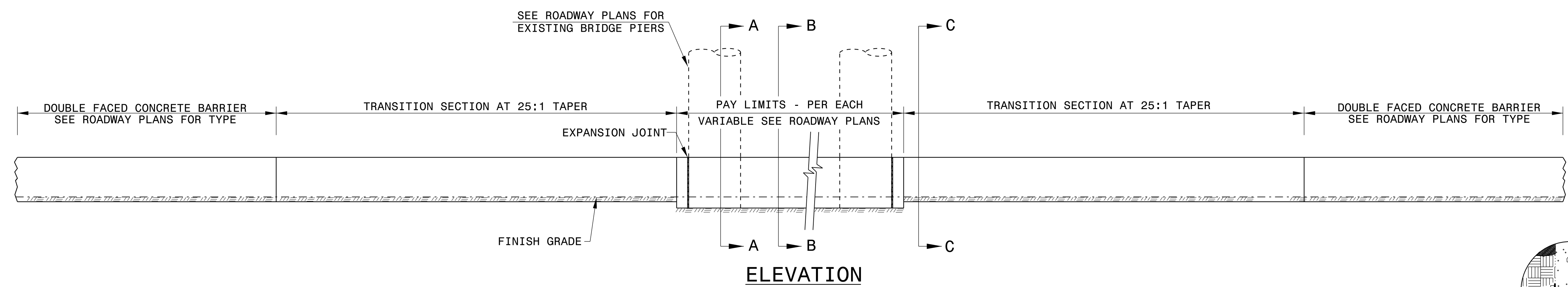
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DocuSigned by:
Daniel S. Howerton
5/16/2019



GENERAL NOTES:
 CONSTRUCT CONCRETE BARRIER WITH CLASS 'AA' CONCRETE. (SEE SPECIFICATIONS SECTION 854).
 CONSTRUCT EXPANSION AND CONTRACTION JOINTS AS SHOWN IN STANDARD DRAWING 854.01.
 SEAL EXPANSION JOINTS WITH JOINT FILLER. (SEE SECTION 1028 OF THE SPECIFICATIONS).
 SEE SPECIAL DETAILS PERTAINING TO SINGLE SLOPE BARRIERS FOR CONSTRUCTION METHODS AND STEEL PLACEMENT.
 SUBMIT ALTERNATIVE METHODS FOR STEEL FABRICATION PLACEMENT FOR REVIEW AND APPROVAL.
 SEE STANDARD DRAWING 854.05 FOR STEEL LAYOUT OF TRANSITION BARRIER.
 *THE 2" DIMENSION FROM FINISH GRADE TO THE BASE IS A MINIMUM DIMENSION.
 INSET FIRST 1" DIA. GALVANIZED BAR 12'-6" AND SPACE THE REMAINING 1' BARS AT 25'-0".
 USE AN APPROVED BONDING SYSTEM IN ACCORDANCE WITH SECTION 1081 OF THE STANDARD SPECIFICATIONS.

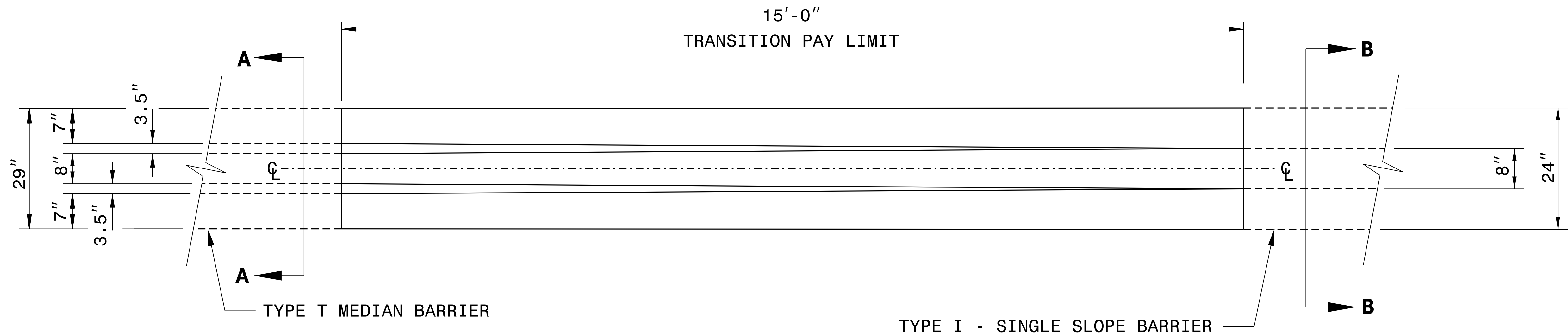


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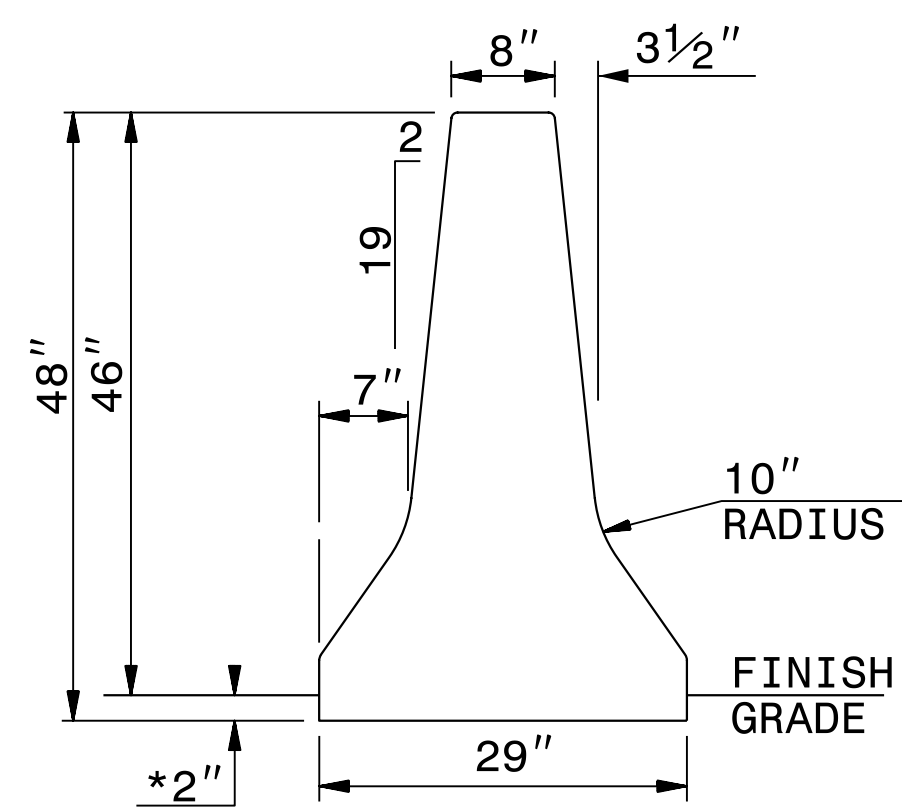
**MEDIAN HAZARD
PROTECTION**

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| MODIFIED BY: K.A. KEMPF | DATE: 5-08-19 |
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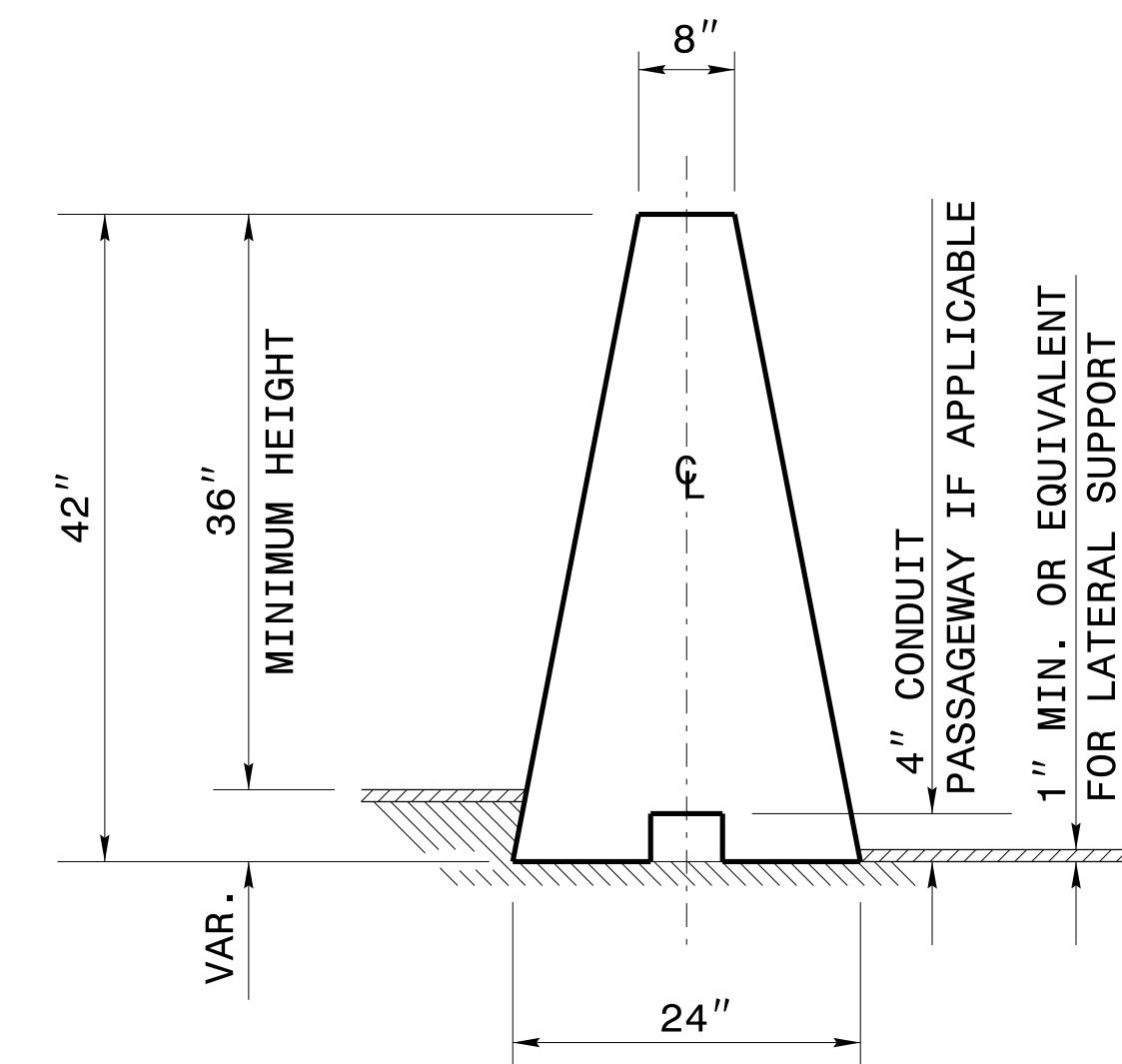
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 JHowerton AT CSD-292595



**TRANSITION FROM TYPE T MEDIAN BARRIER
TO TYPE I SINGLE SLOPE BARRIER**



SECTION A-A
TYPE T MEDIAN BARRIER



SECTION B-B
TYPE I - SINGLE SLOPE CONCRETE BARRIER

NOTES:
 SEE SPECIAL DETAILS PERTAINING TO SINGLE SLOPE BARRIERS FOR CONSTRUCTION METHODS AND STEEL PLACEMENT.
 SEE RDWY. STD DWG. 854.02 FOR TYPE T MEDIAN BARRIER CONSTRUCTION METHODS AND STEEL PLACEMENT.
 DIMENSIONS OF CONCRETE MEDIAN BARRIER ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.



DocuSigned by:
 S. Howers
 5/16/2019

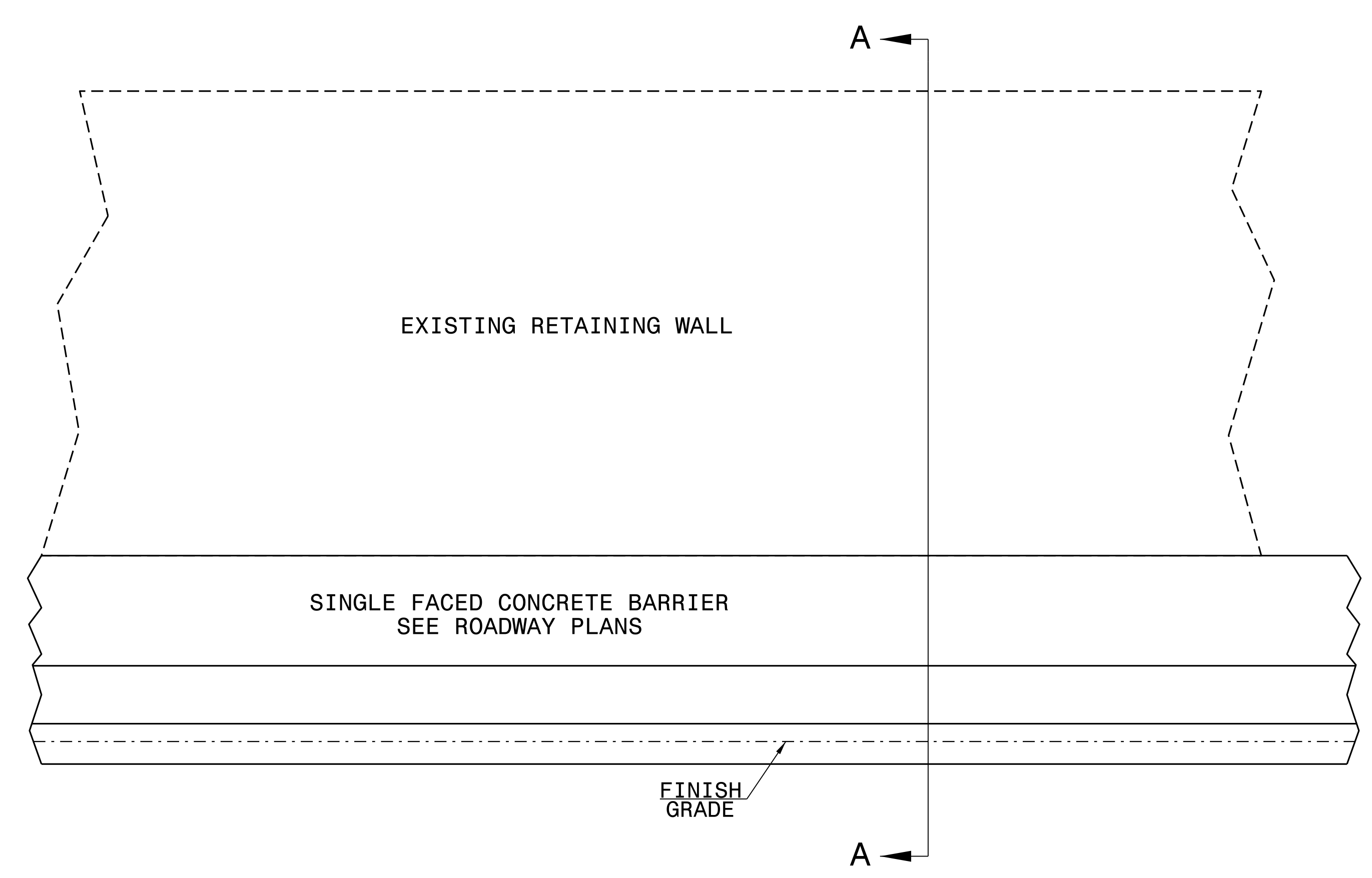
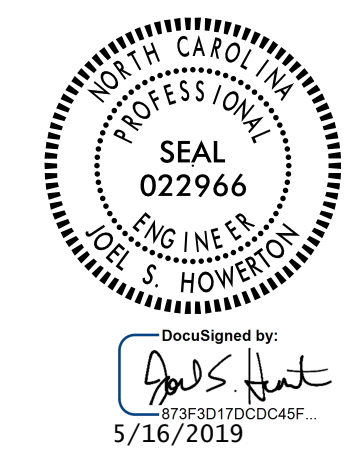
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UNLESS ALL SIGNATURES COMPLETED

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|---|------------------|
| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 | FAX 919-250-4119 |
| CONCRETE BARRIER TRANSITION | |
| ORIGINAL BY: T. STEPHENSON | DATE: 1-97 |
| MODIFIED BY: K.A.K. | DATE: 5-19 |
| CHECKED BY: | DATE: |
| FILE SPEC.: brittenglishguardrail/single slope concrete barrier.dgn | |

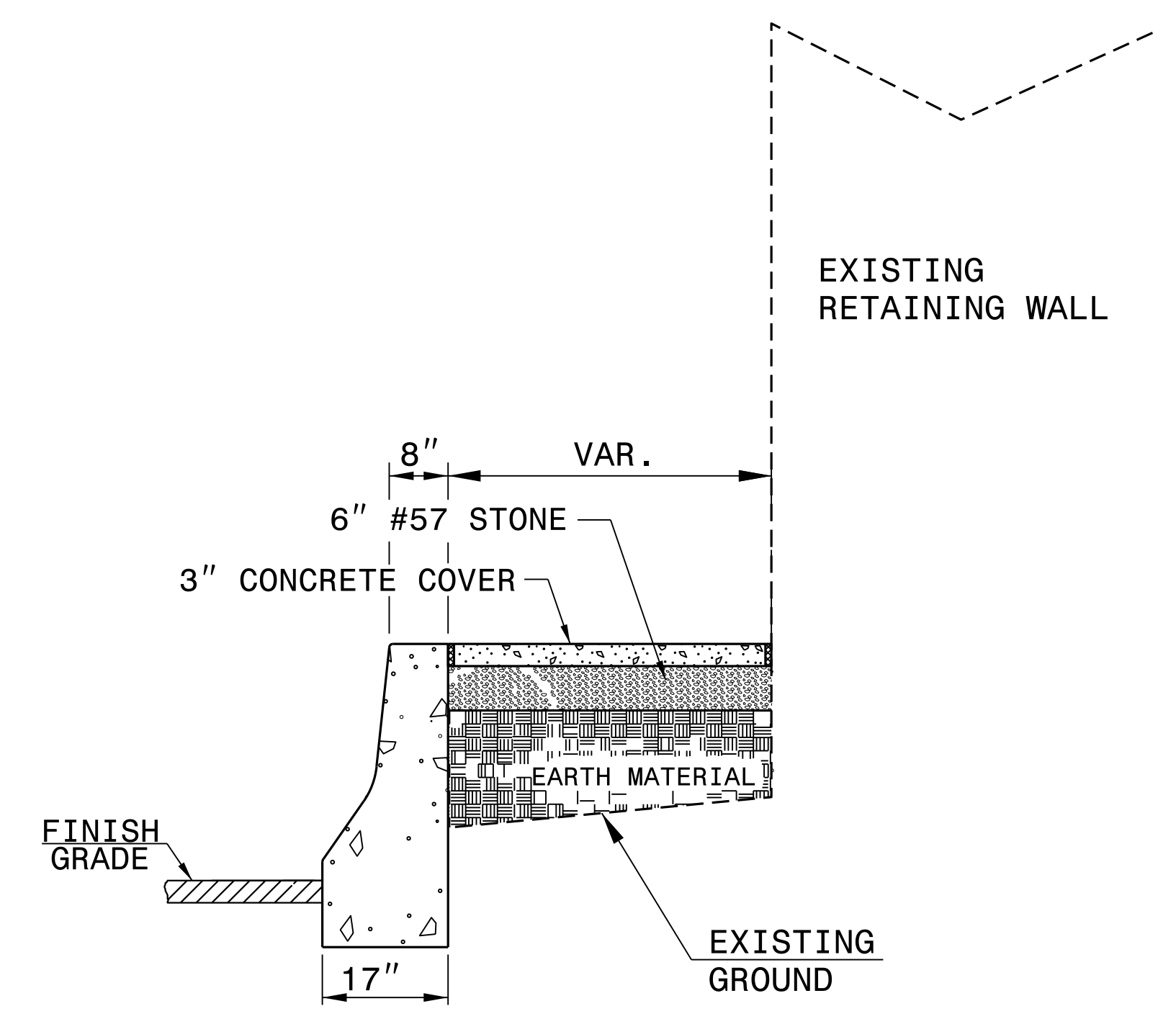
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GENERAL NOTES:

CONSTRUCT EXPANSION AND CONTRACTION JOINTS AS SHOWN IN STANDARD DRAWING 854.01.
 SEAL EXPANSION JOINTS WITH JOINT FILLER. (SEE SECTION 1028 OF THE SPECIFICATIONS).
 SUBMIT ALTERNATIVE METHODS FOR STEEL FABRICATION PLACEMENT FOR REVIEW AND APPROVAL.
 USE AN APPROVED BONDING SYSTEM IN ACCORDANCE WITH SECTION 1081 OF THE STANDARD SPECIFICATIONS.
 SEE STD. 857.01 FOR SINGLE FACED BARRIER.



ELEVATION



SECTION A-A

18-FEB-2019 15:22
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kempf AT CSD-2925%6

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|---|---------------|
| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 FAX 919-250-4119 | |
| CONCRETE CAP FOR SINGLE FACED BARRIER FILL | |
| ORIGINAL BY: K. KEMPF | DATE: 2-18-19 |
| MODIFIED BY: | DATE: |
| CHECKED BY: | DATE: |
| FILE SPEC.: kempf\english\barrier concrete cap.dgn | |

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

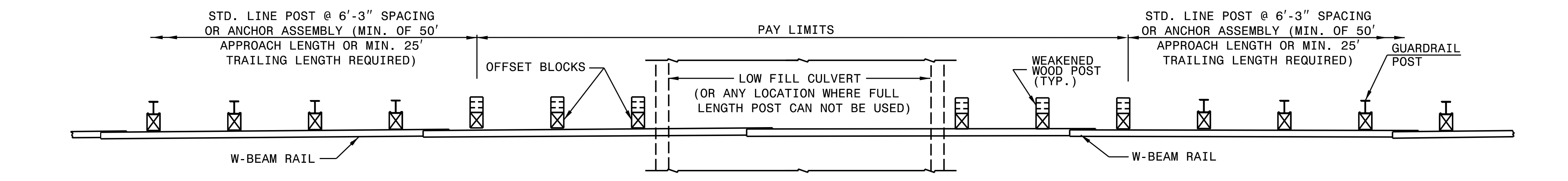
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

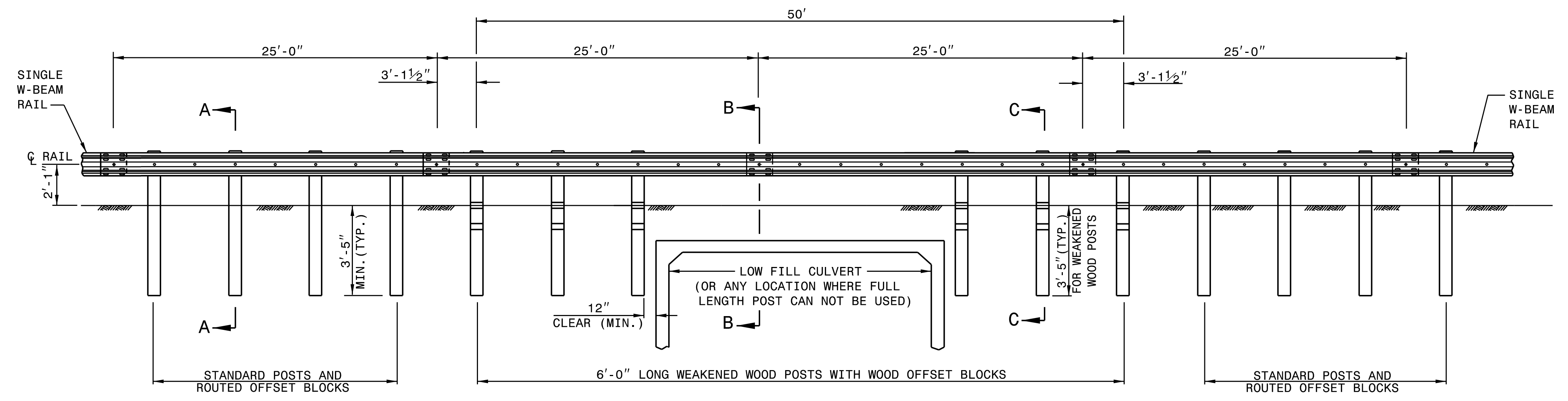
SPECIAL DETAIL FOR
GUARDRAIL PLACEMENT
25'-0" CLEAR SPAN

SHEET - OF -
862D01

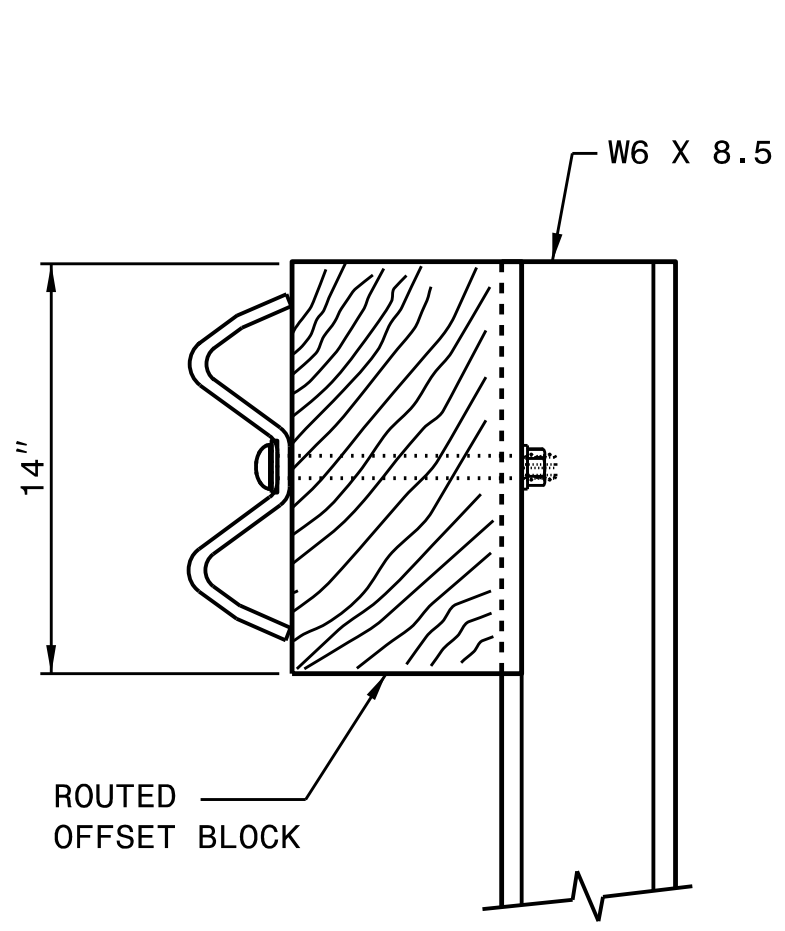
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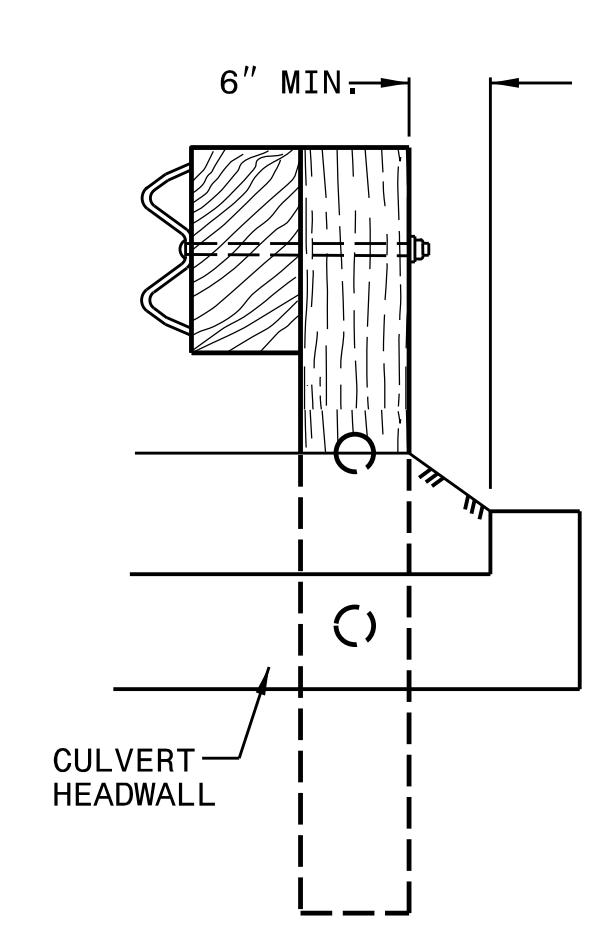
PLAN



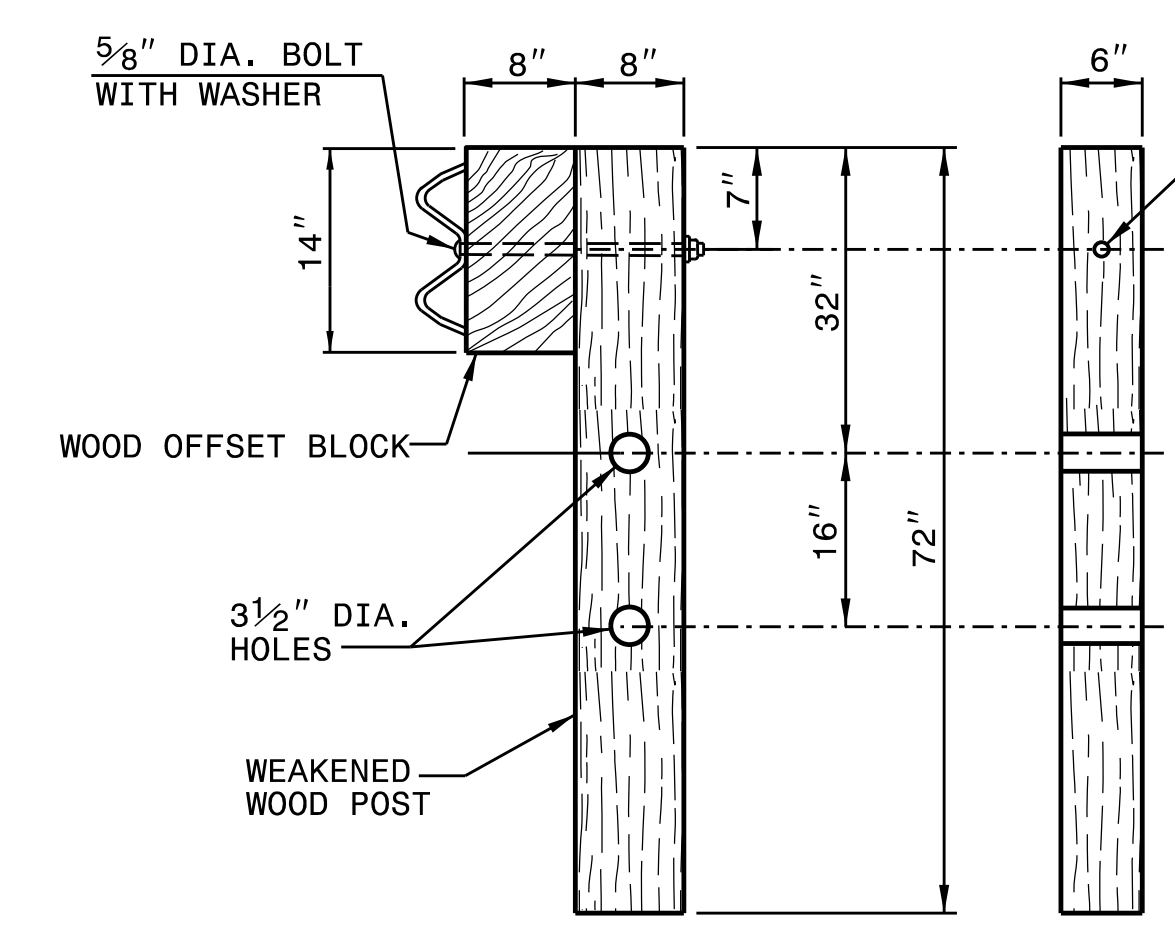
**ELEVATION
25'-0" GUARDRAIL SPAN**



SECTION A-A

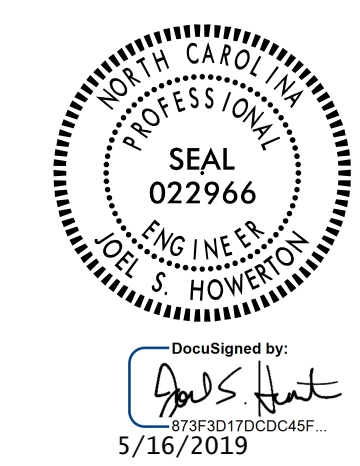


SECTION B-B



**SECTION C-C FRONT
WEAKENED WOOD POST**

- GENERAL NOTES:
1. LAP RAIL IN THE DIRECTION OF TRAFFIC FLOW.
2. SEE ROADWAY PLANS FOR LOCATIONS AND CONTINUATION OF RAIL OR END SECTIONS.
3. MINIMUM DISTANCE OF 5 FEET BEHIND THE GUARDRAIL SHOULD BE CLEAR OF ANY FIXED-OBJECT HAZARDS THAT COULD SNAG AN IMPACTING VEHICLE.



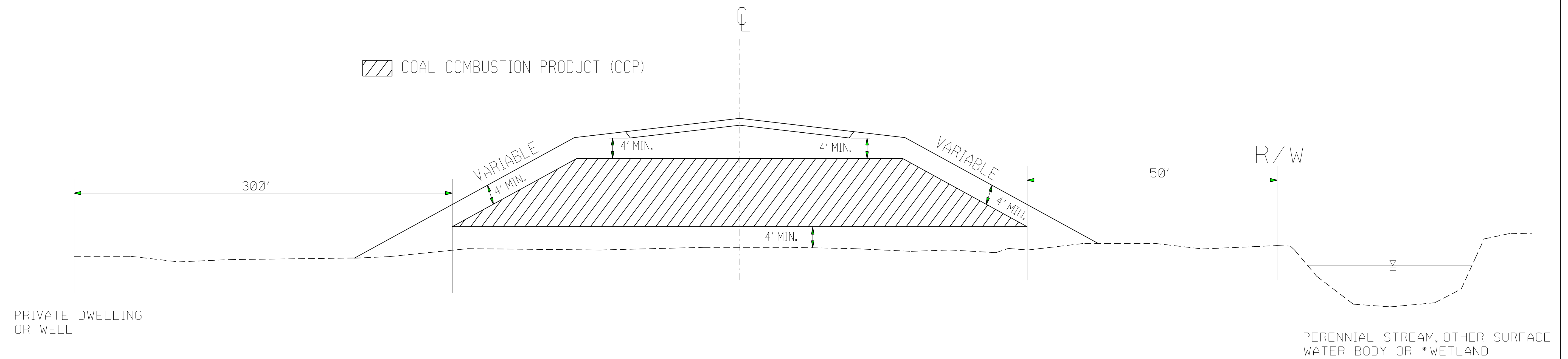
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

25'-0" CLEAR SPAN GUARDRAIL PLACEMENT

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

COAL COMBUSTION PRODUCT PLACEMENT



PRIVATE DWELLING OR WELL

PERENNIAL STREAM, OTHER SURFACE WATER BODY OR *WETLAND

*(OBTAIN PERMISSION FROM ARMY CORPS OF ENGINEERS)

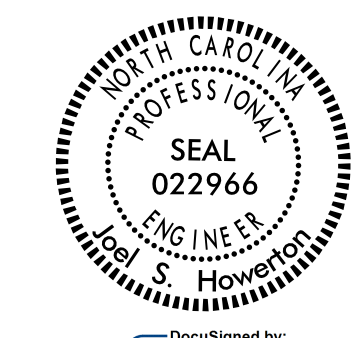
PLACE CCP IN HATCHED AREA IN ACCORDANCE WITH THE PROJECT SPECIAL PROVISIONS

PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

PLACE AT LOCATIONS AS APPROVED BY THE ENGINEER

PLACE SOIL BORROW MATERIAL ON THE OUTSIDE OF CCP AS EACH LIFT OF CCP IS PLACED

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DocuSigned by:
Joel S. Howerton
 5/16/2018 10:00:00 AM

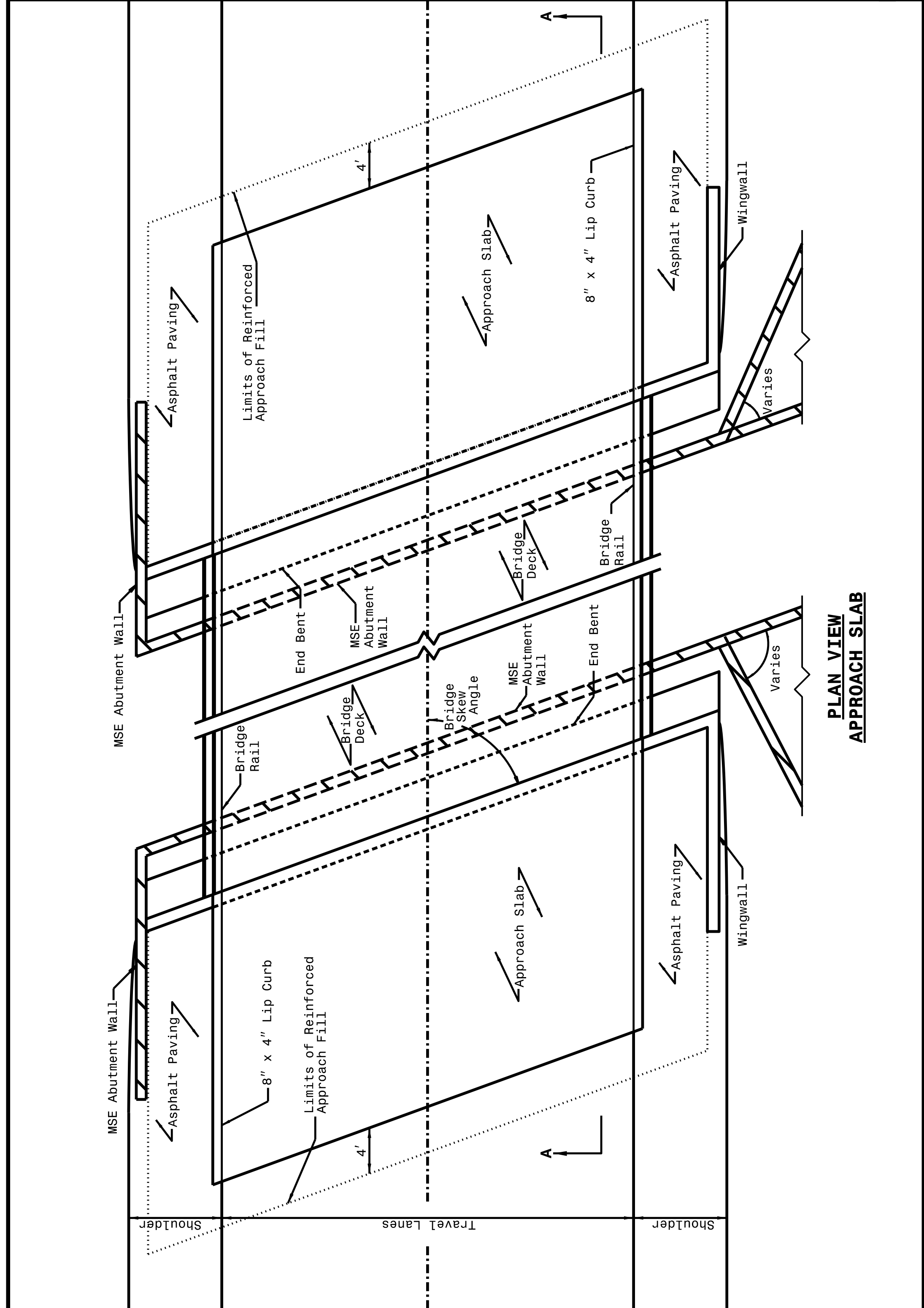
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|--|---------------|
| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 FAX 919-250-4119 | |
| COAL COMBUSTION PRODUCT PLACEMENT DETAIL | |
| ORIGINAL BY: J.S.H. | DATE: 3/16/15 |
| MODIFIED BY: | DATE: |
| CHECKED BY: | DATE: |
| FILE SPEC.: joel/coal combustion material detail.dgn | |

07-SEP-2017 08:21 S:\Contracts\Special Details\Howerton\Coal Combustion Product Detail.dgn

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE III - REINFORCED APPROACH FILL FOR
MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL

SHEET 1 OF 2
422D10



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

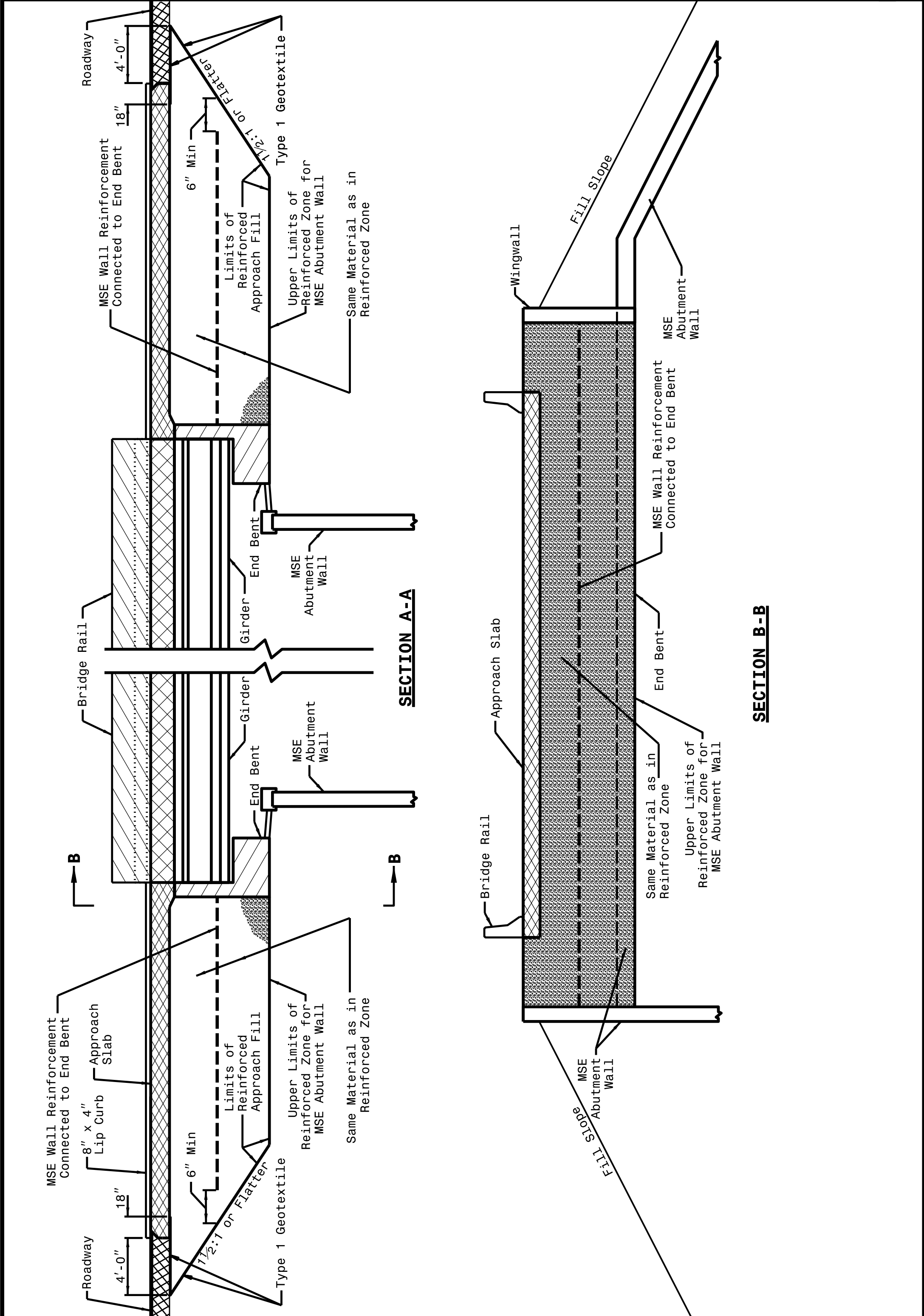
ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE III - REINFORCED APPROACH FILL FOR
MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL

SHEET 1 OF 2
422D10

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE III - REINFORCED APPROACH FILL FOR
MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL

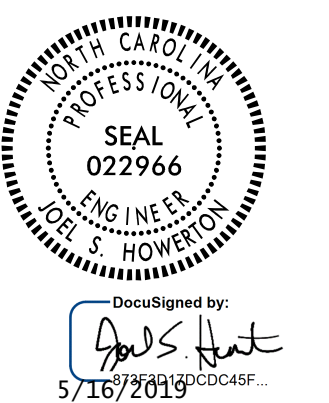
SHEET 2 OF 2
422D10



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE III - REINFORCED APPROACH FILL FOR
MECHANICALLY STABILIZED EARTH (MSE) ABUTMENT WALL

SHEET 2 OF 2
422D10

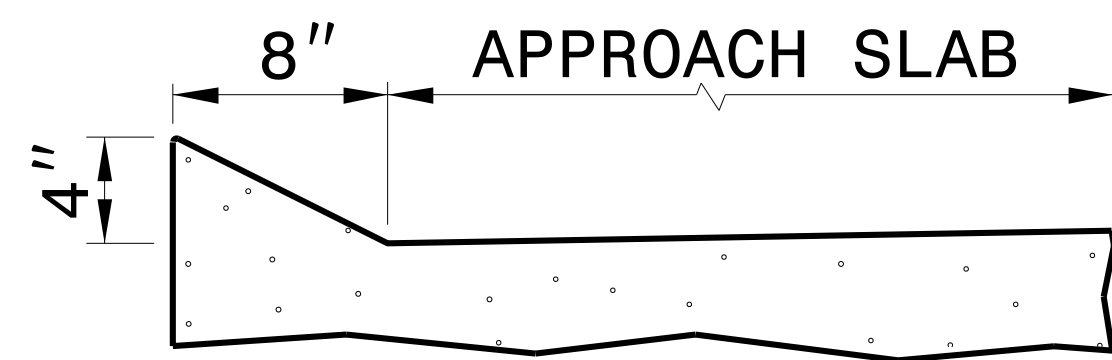
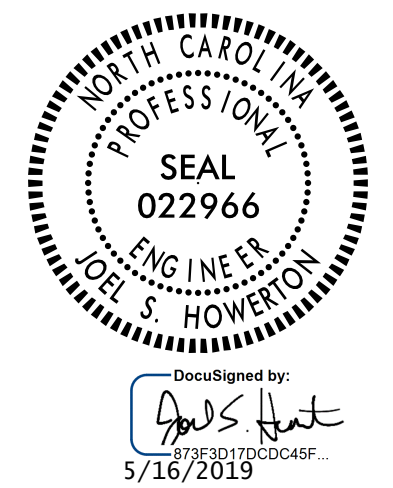


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

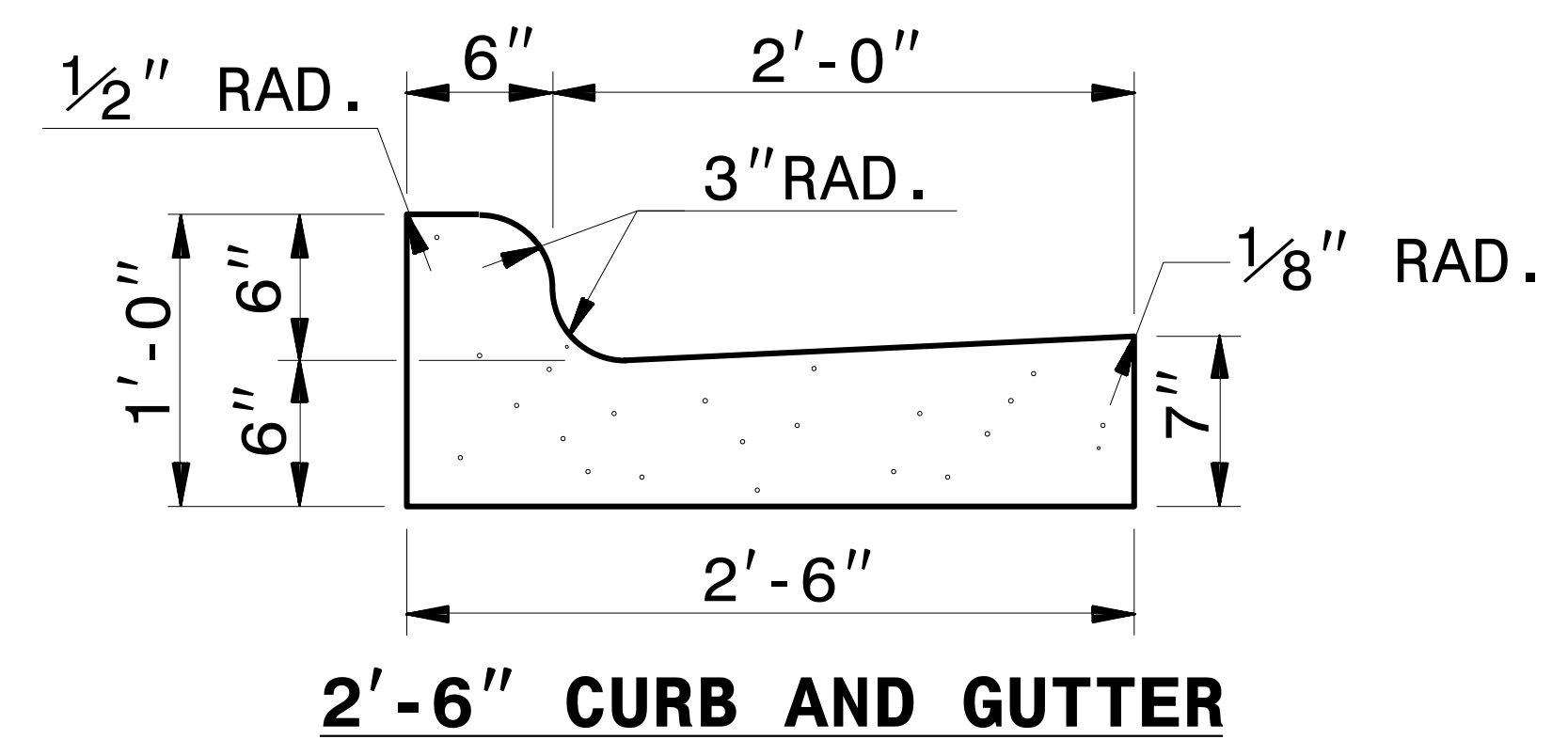
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**TYPE III
REINFORCED
APPROACH FILLS**

ORIGINAL BY: K. A. KEMPF DATE: JULY 2017
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: 2018 standard drawings\division 422d10.dgn



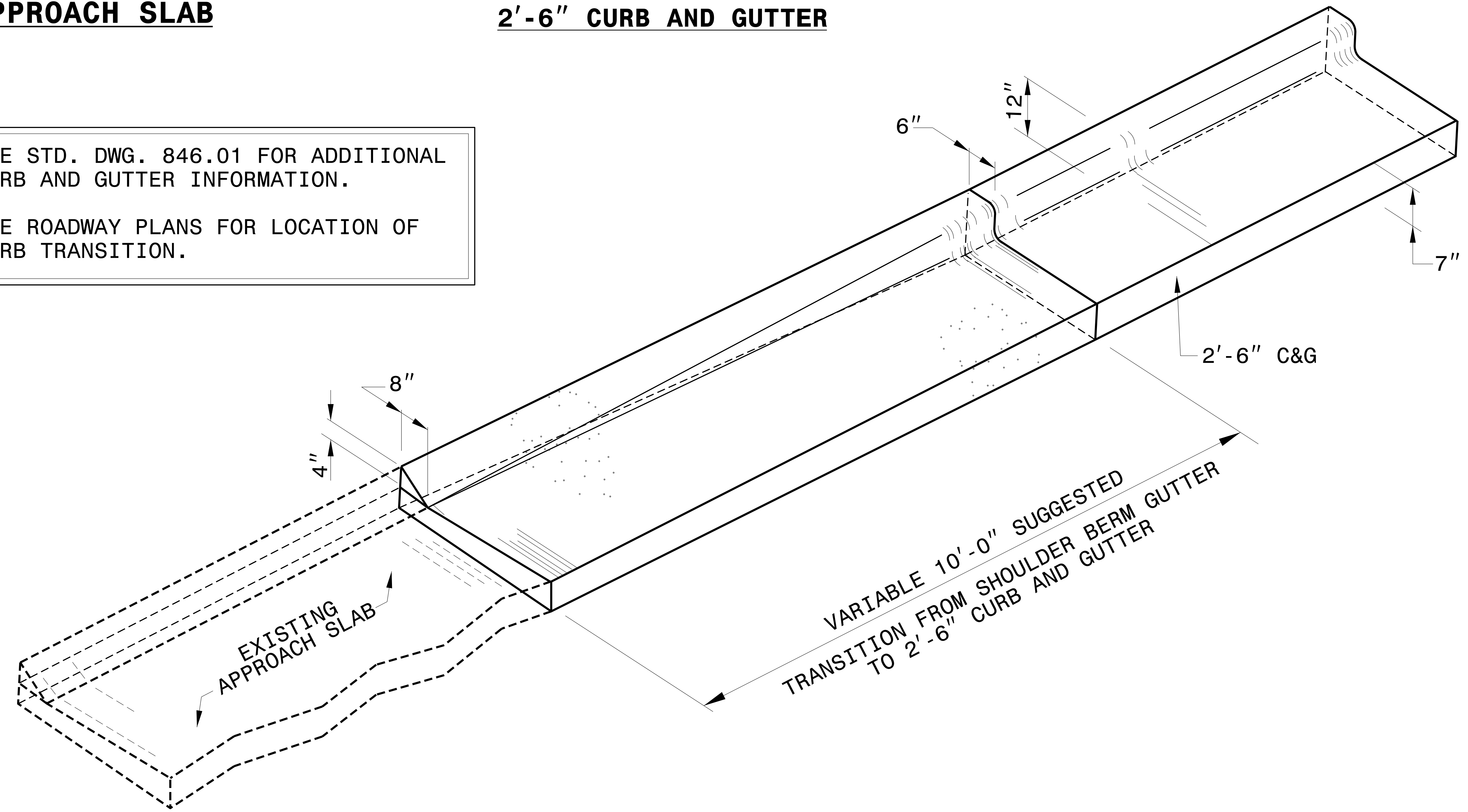
**8" X 4" LIP CURB
ON APPROACH SLAB**



2'-6" CURB AND GUTTER

NOTE: SEE STD. DWG. 846.01 FOR ADDITIONAL CURB AND GUTTER INFORMATION.

SEE ROADWAY PLANS FOR LOCATION OF CURB TRANSITION.

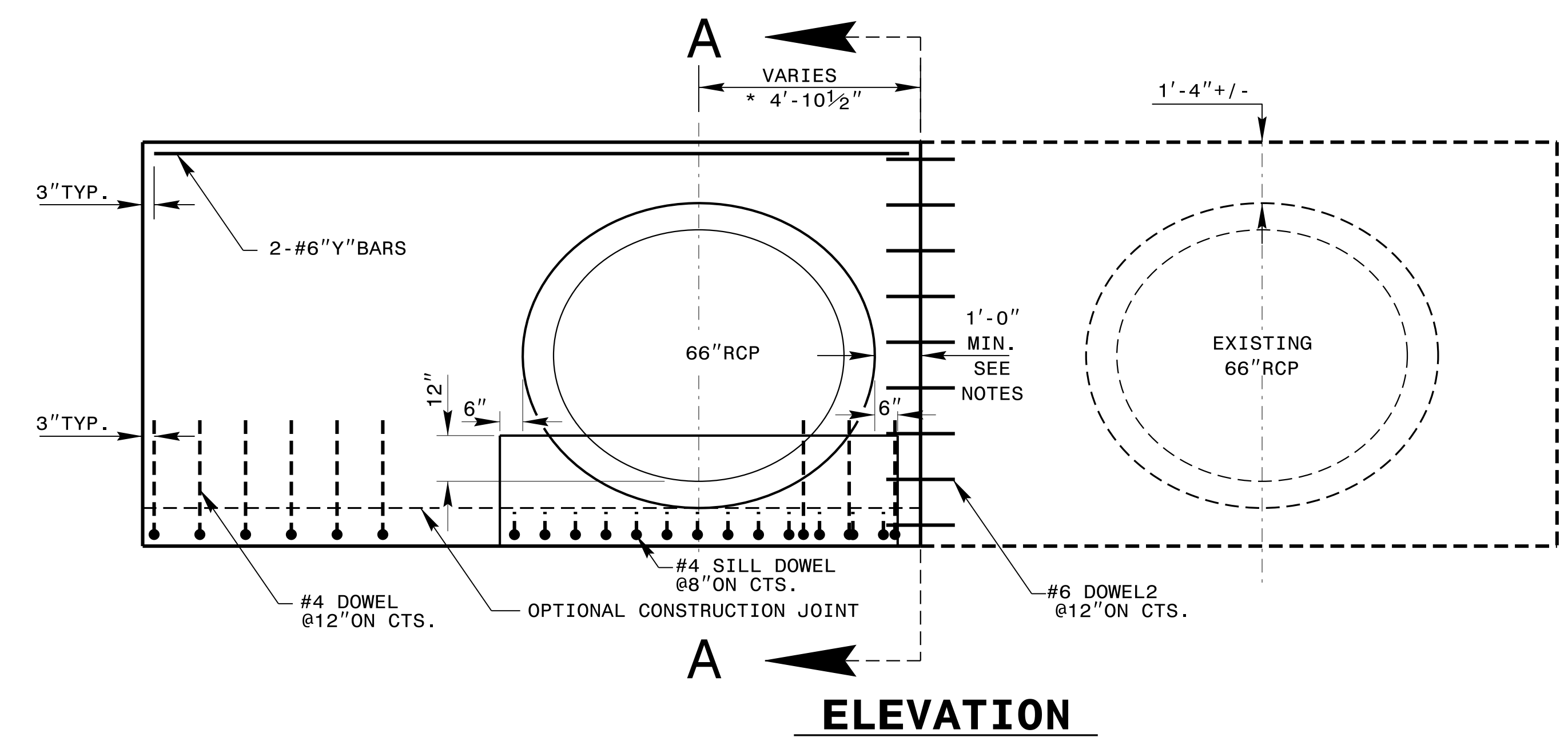


ISOMETRIC VIEW OF TRANSITION

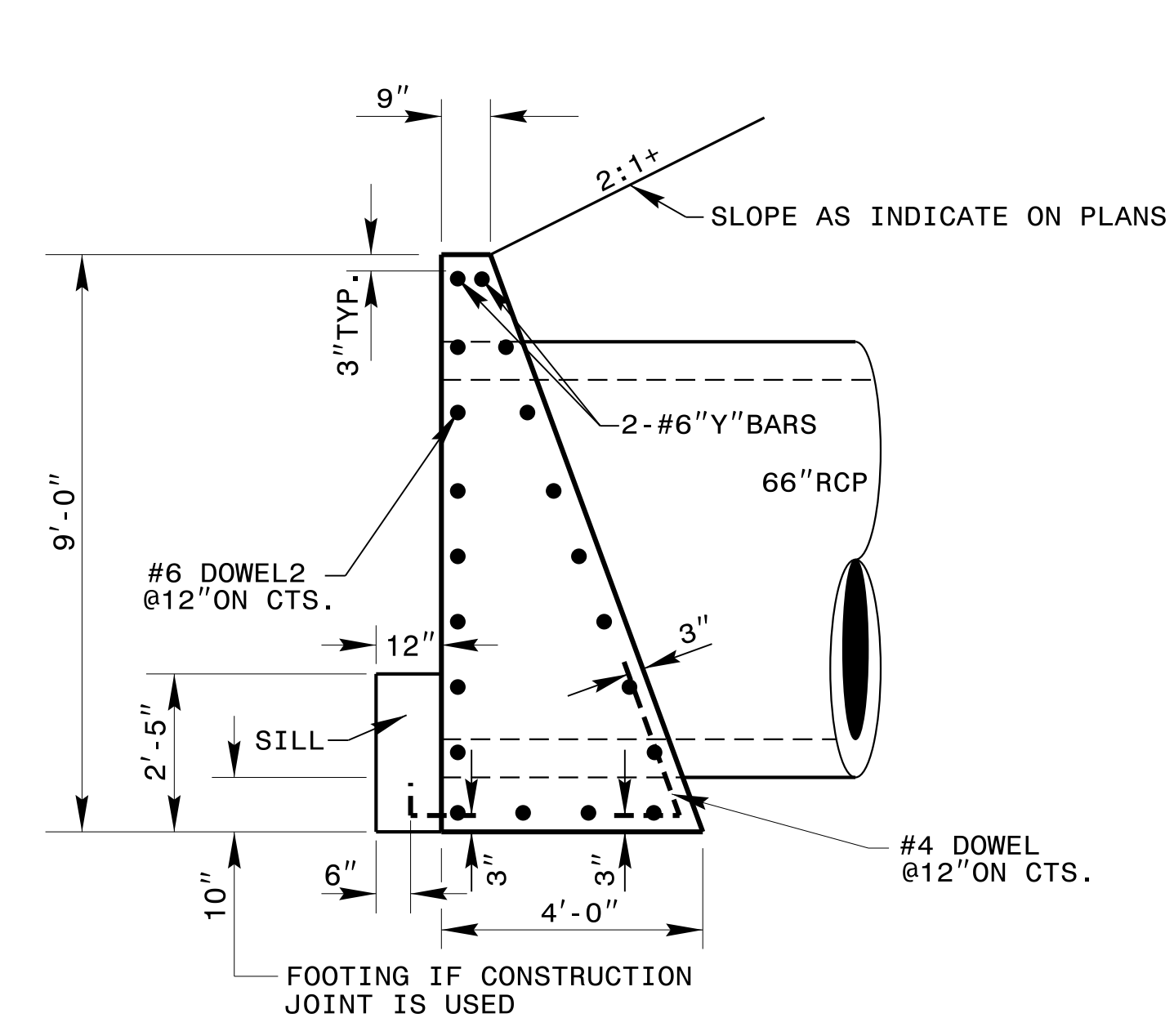
| | |
|---|----------------|
| CONTRACTS STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 FAX 919-250-4119 | |
| DETAIL OF EXISTING APPROACH SLAB WITH 8" X 4" LIP CURB TO 2'-6" CURB AND GUTTER TRANSITION SECTION | |
| ORIGINAL BY: _____ | DATE: _____ |
| MODIFIED BY: KAKEMPF | DATE: 10-23-18 |
| CHECKED BY: _____ | DATE: _____ |
| FILE SPEC.: details/kkempf/english/curb_gutter_transition.dgn | |

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 .kkempf AT CSD-292596

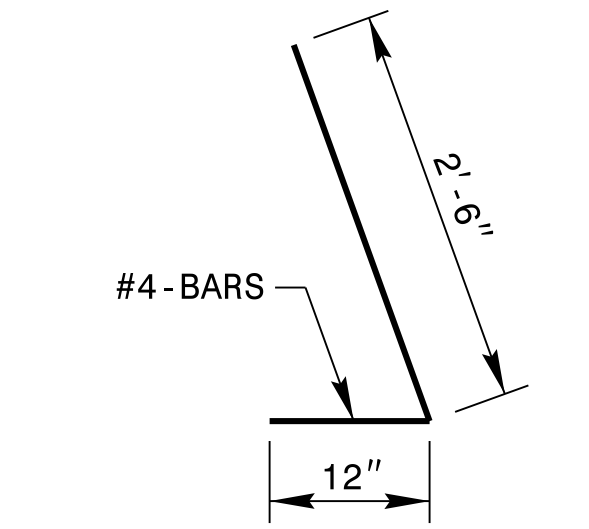
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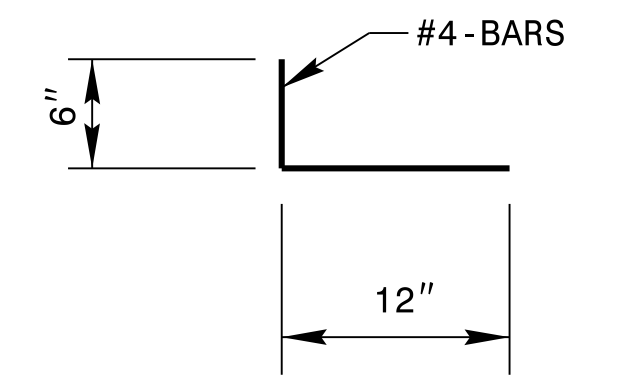
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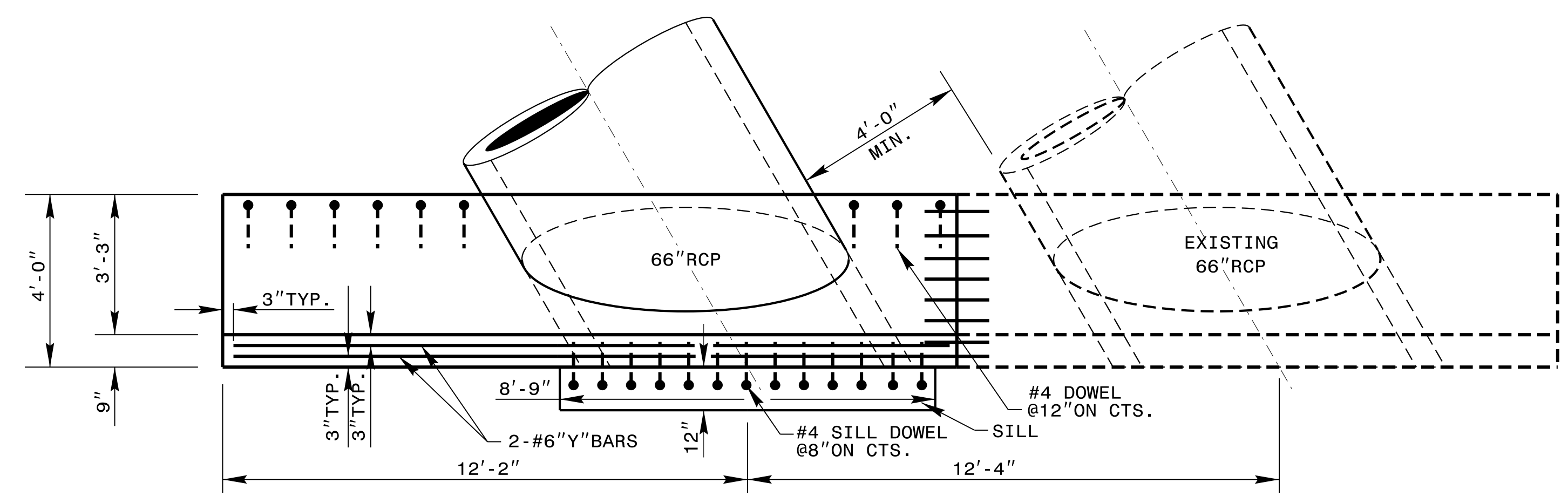
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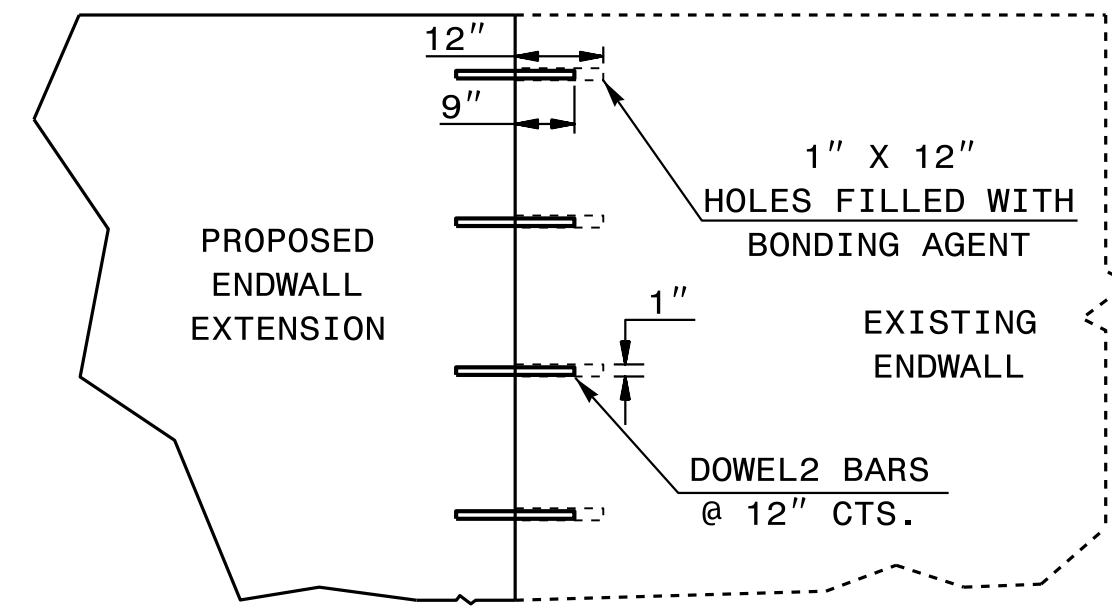
DOWEL BAR "X"



SILL DOWEL



PLAN



DOWEL2 BAR DETAIL

BILL OF MATERIALS

| BAR | QTY | SIZE | LENGTH | WEIGHT |
|--------------------------------|-----|------|--------|--------|
| X | 9 | #4 | 3'-6" | 21 |
| Y | 2 | #6 | 16'-6" | 50 |
| DOWEL2 | 20 | #6 | 1'-6" | 45 |
| SILL DOWEL | 13 | #4 | 1'-6" | 13 |
| TOTAL REINF. STEEL (lbs.) | | | | 129 |
| TOTAL CONCRETE (CU. YDS.) | | | | 14.0 |
| DEDUCTION FOR PIPES (CU. YDS.) | | | | |
| 66" RCP | | | | -2.9 |
| CONCRETE (CU. YDS.) | | | | 10.3 |

* DIMENSION ONLY USED FOR ESTIMATING BILL OF MATERIALS

- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
 - WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPERATELY, THE TOP BASE SHALL BE LEFT ROUGH.
 - USE CLASS "B" CONCRETE.
 - PROVIDE MINIMUM 1'-0" CLEARANCE BETWEEN PROPOSED PIPE AND EXISTING ENDWALL. PARTIAL REMOVAL OF EXISTING ENDWALL MAY BE REQUIRED UNLESS DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

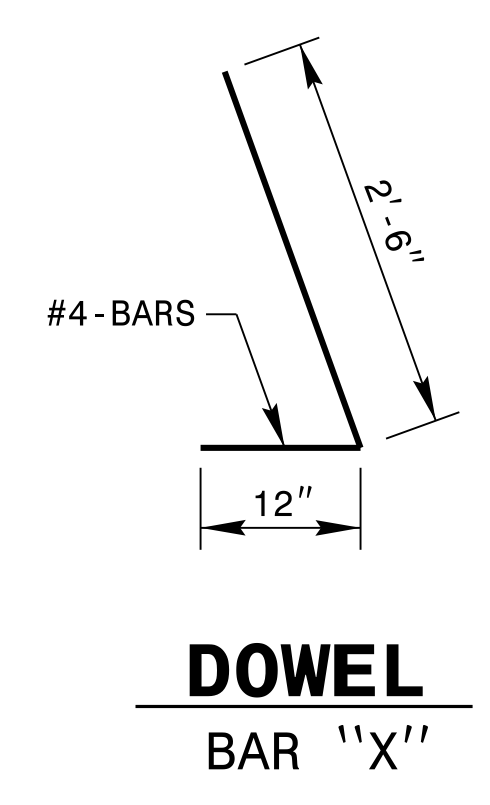
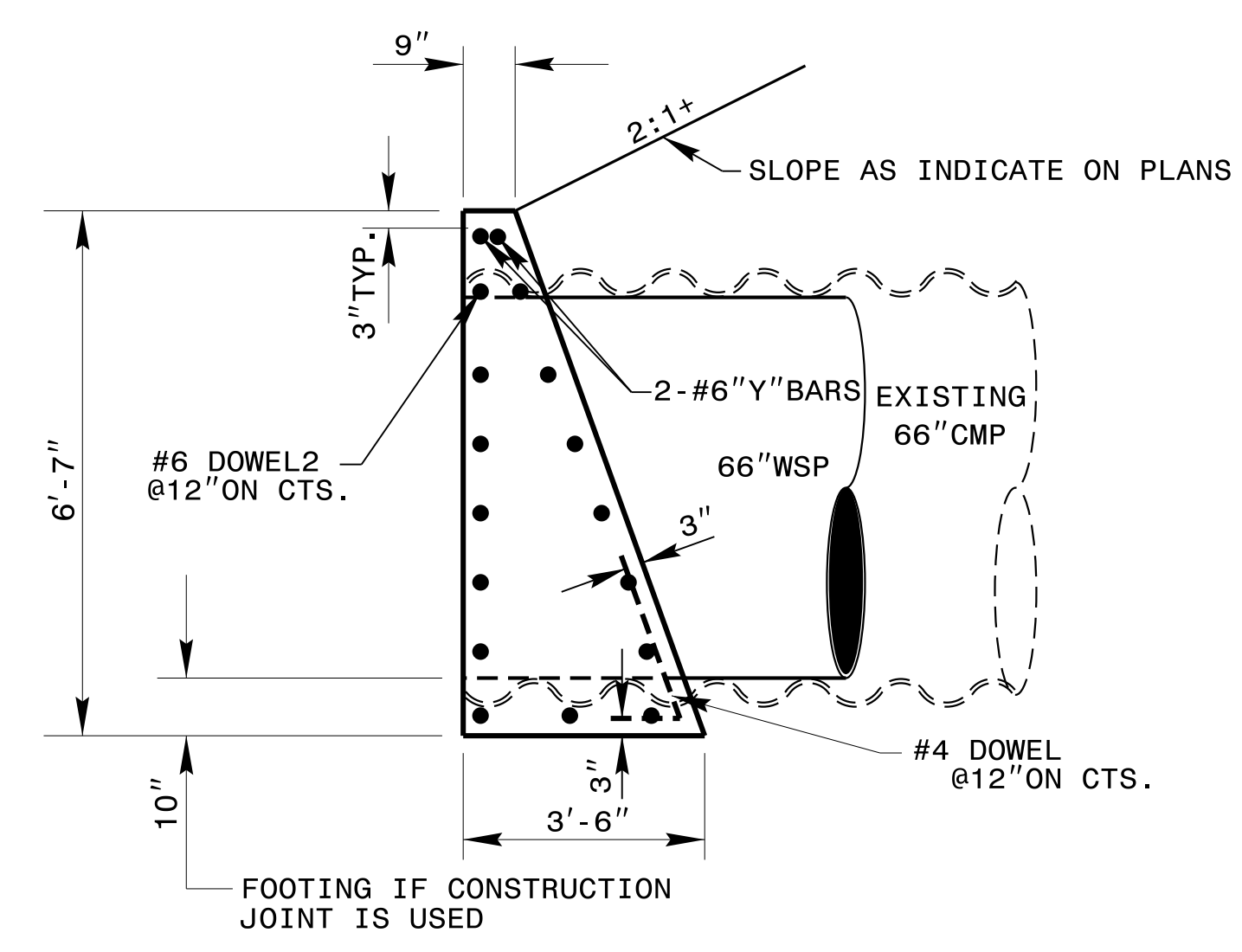
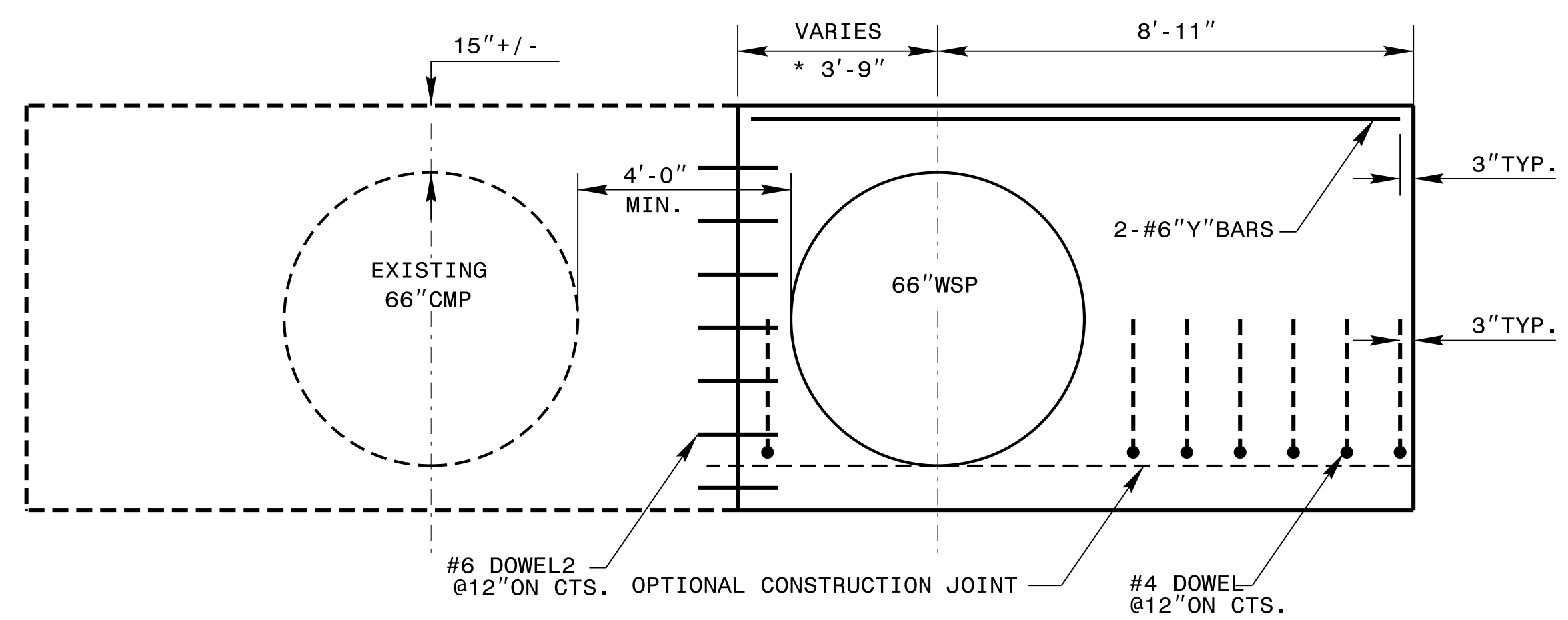
EXTEND CONCRETE ENDWALL FOR DOUBLE PIPE CULVERT

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: K A KEMPF DATE: 2-08-19
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/kkempf/english/I4700 extend endwall

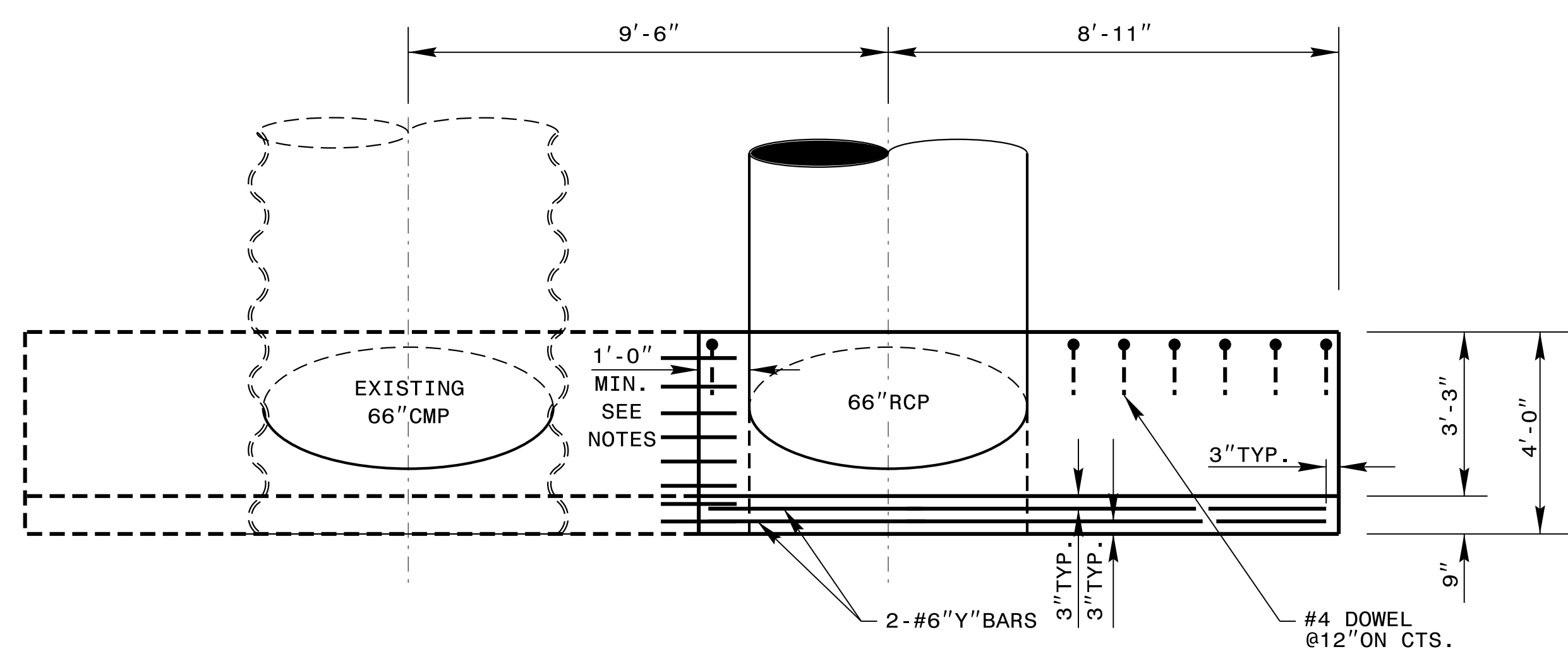


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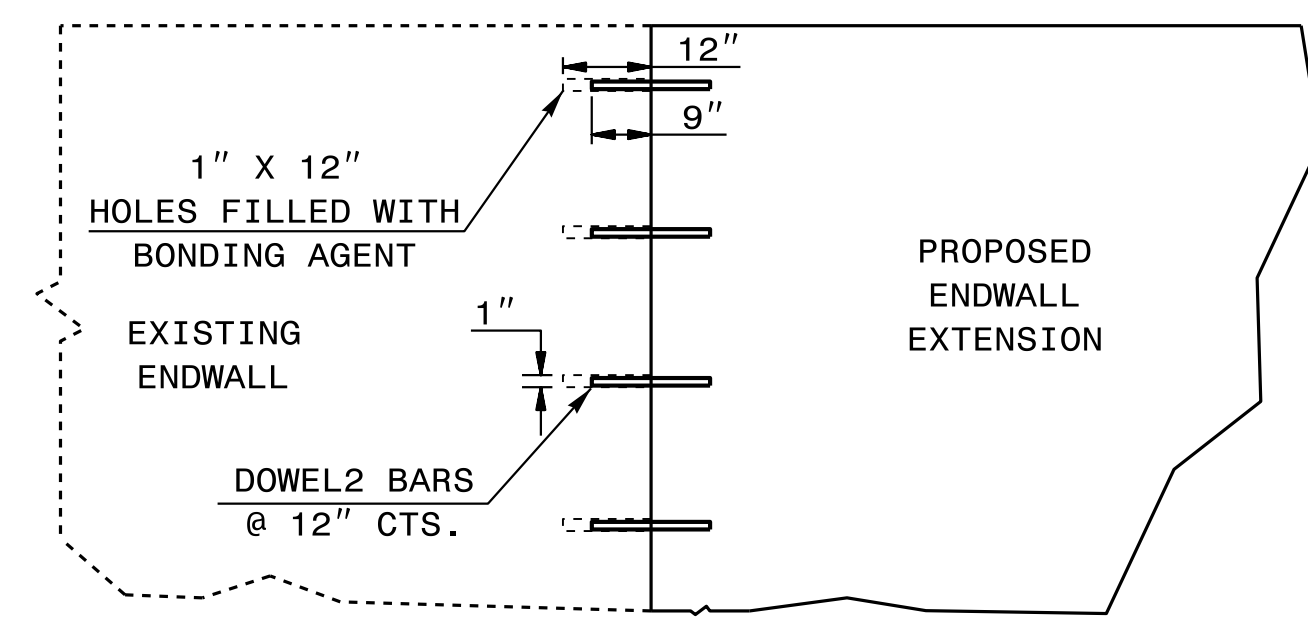
5/14/99



END ELEVATION



PLAN



DOWEL2 BAR DETAIL

BILL OF MATERIALS

| BAR | QTY | SIZE | LENGTH | WEIGHT |
|--------------------------------|-----|------|--------|--------|
| X | 7 | #4 | 3'-6" | 43 |
| Y | 2 | #6 | 12'-2" | 82 |
| DOWEL2 | 15 | #6 | 1'-6" | 45 |
| TOTAL REINF. STEEL (lbs.) | | | | 125 |
| TOTAL CONCRETE (CU. YDS.) | | | | 7.5 |
| DEDUCTION FOR PIPES (CU. YDS.) | | | | |
| 66" WSP | | | | -2.0 |
| CONCRETE (CU. YDS.) | | | | 5.5 |

* DIMENSION ONLY USED FOR ESTIMATING BILL OF MATERIALS

- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
 - WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPERATELY, THE TOP BASE SHALL BE LEFT ROUGH.
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 - PROVIDE MINIMUM 1'-0" CLEARANCE BETWEEN PROPOSED PIPE AND EXISTING ENDWALL. PARTIAL REMOVAL OF EXISTING ENDWALL MAY BE REQUIRED UNLESS DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

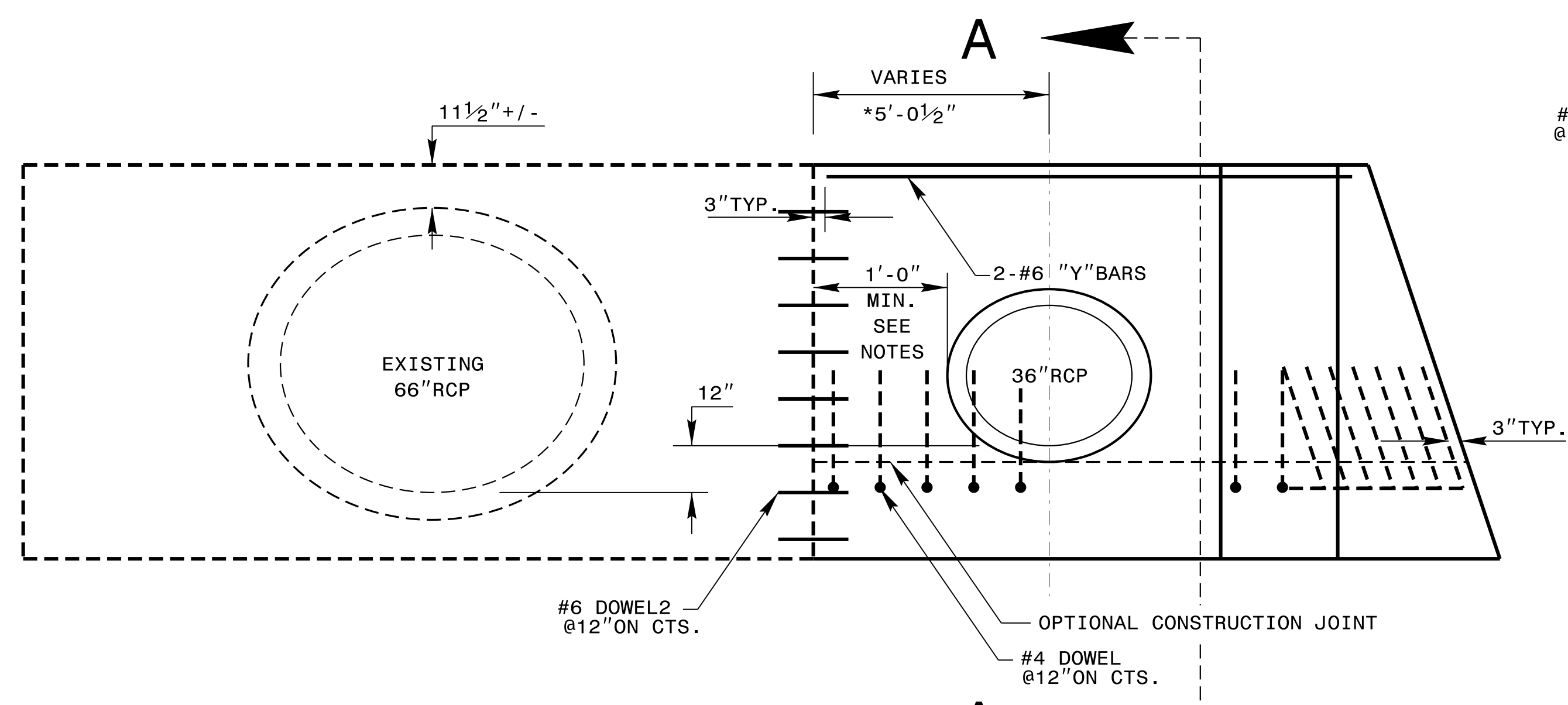
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

EXTEND CONCRETE ENDWALL FOR DOUBLE PIPE CULVERT

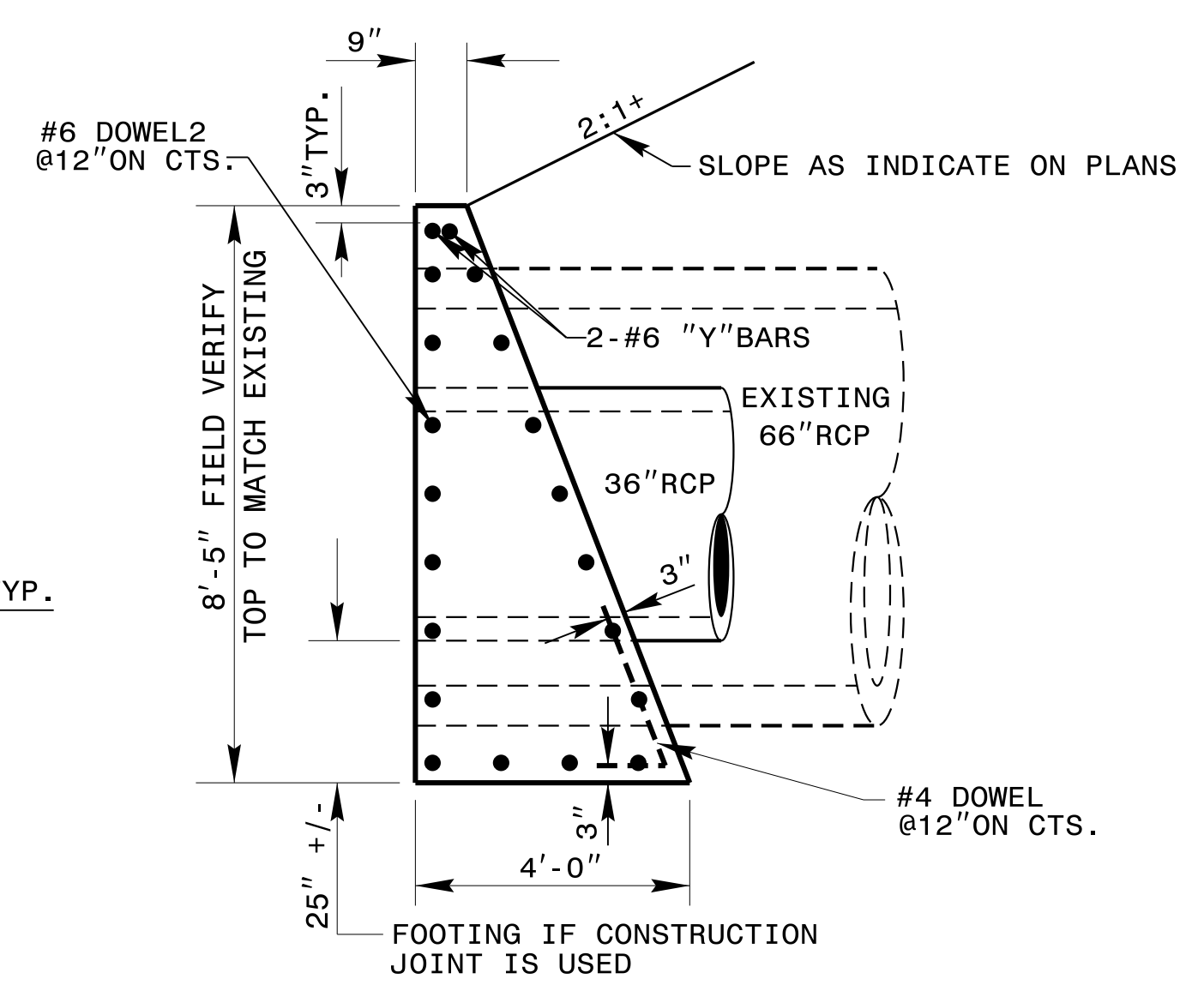
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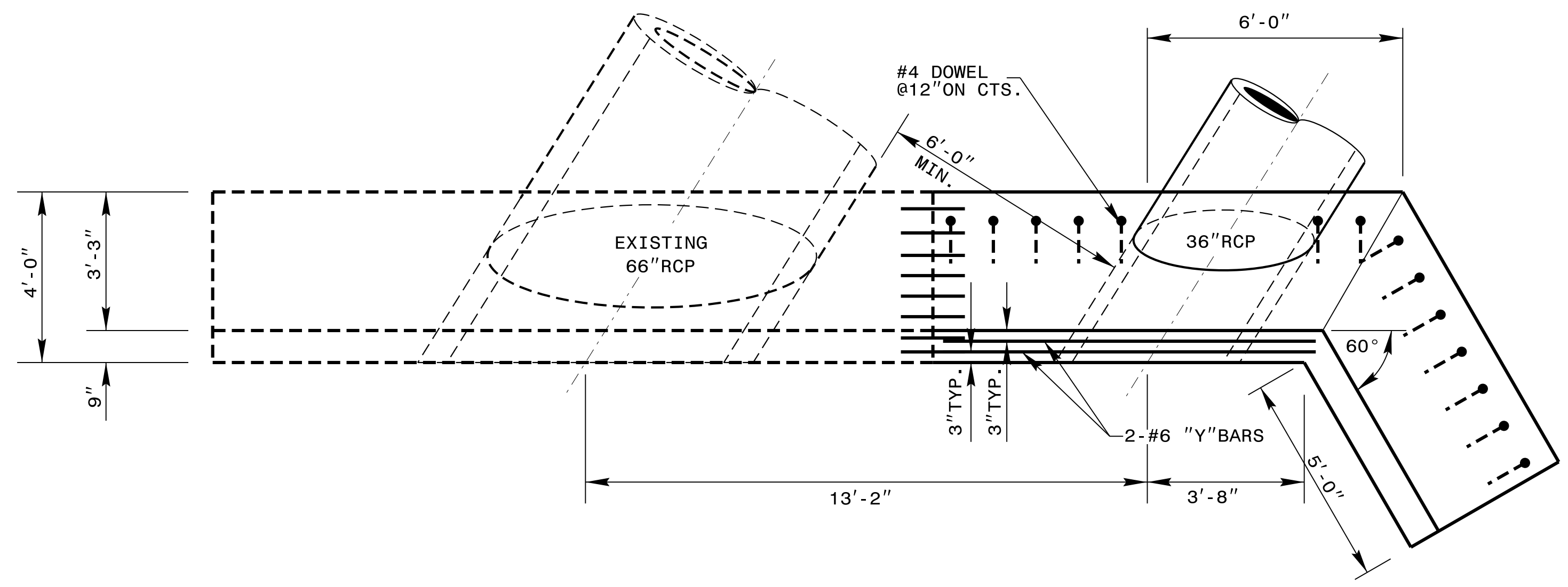
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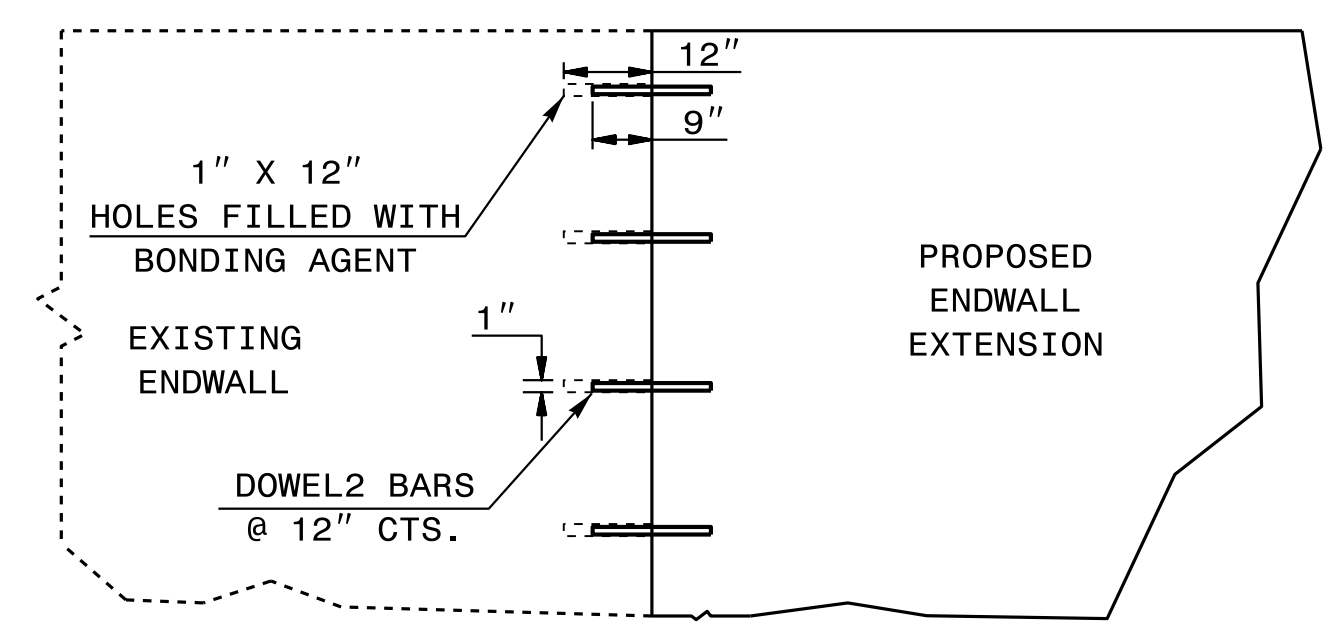
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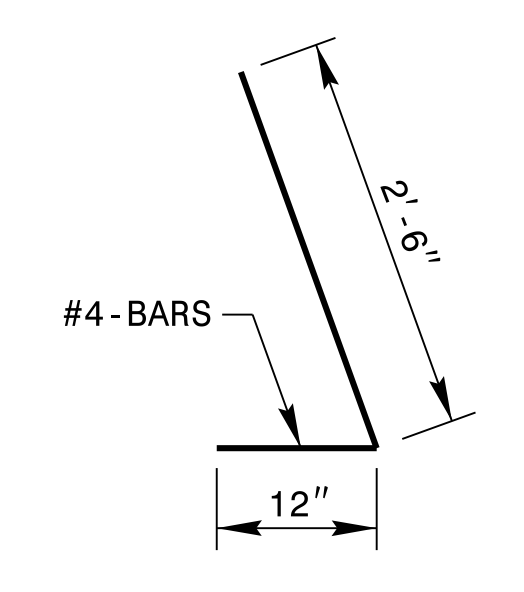
'A' SECTION



PLAN



DOWEL2 BAR DETAIL



DOWEL BAR "X"

| BILL OF MATERIALS | | | | |
|--------------------------------|-----|------|--------|--------|
| BAR | QTY | SIZE | LENGTH | WEIGHT |
| X | 14 | #4 | 3'-6" | 33 |
| Y | 2 | #6 | 8'-9" | 26 |
| DOWEL2 | 20 | #6 | 1'-6" | 45 |
| TOTAL REINF. STEEL (lbs.) | | | | 104 |
| TOTAL CONCRETE (CU. YDS.) | | | | 11.9 |
| DEDUCTION FOR PIPES (CU. YDS.) | | | | |
| 36" RCP | | | | -1.2 |
| CONCRETE (CU. YDS.) | | | | 11.3 |

* DIMENSION ONLY USED FOR ESTIMATING BILL OF MATERIALS

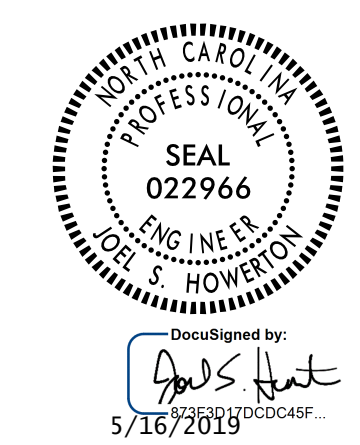
- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

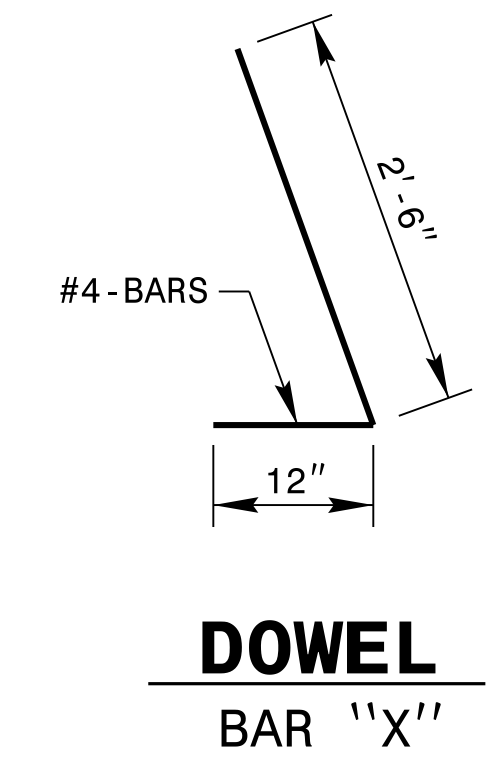
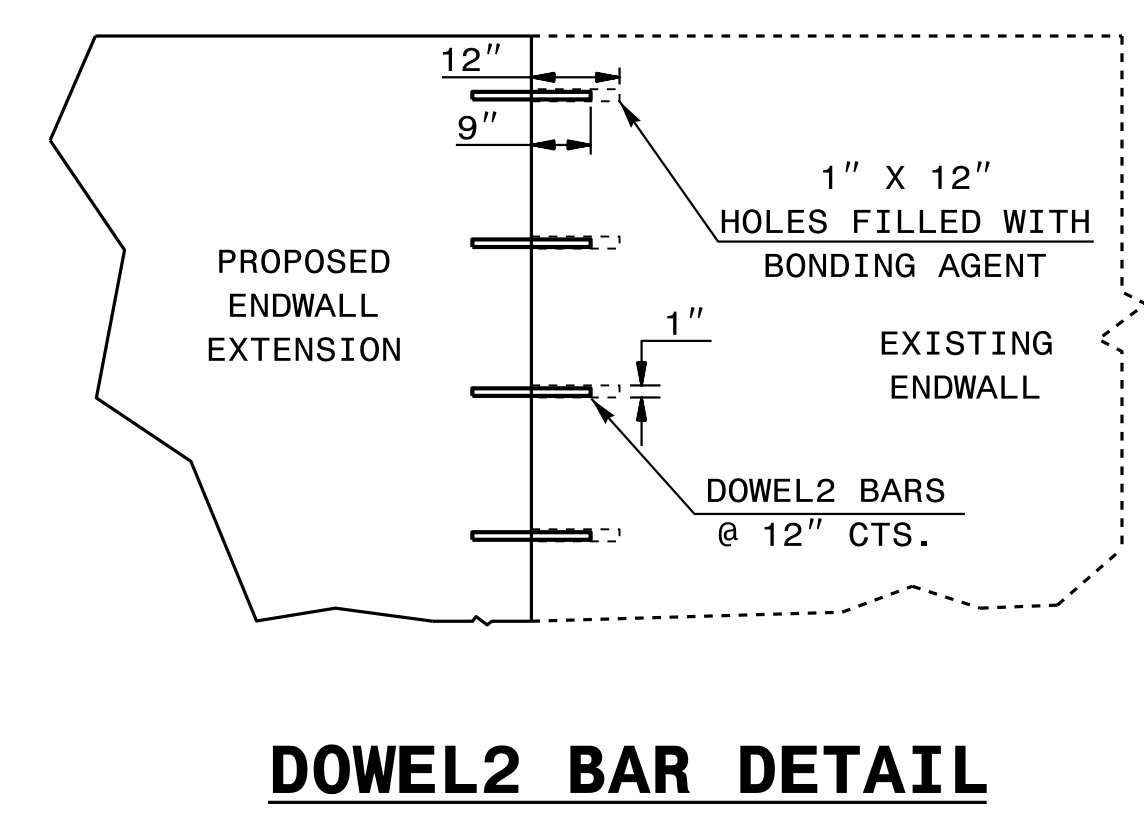
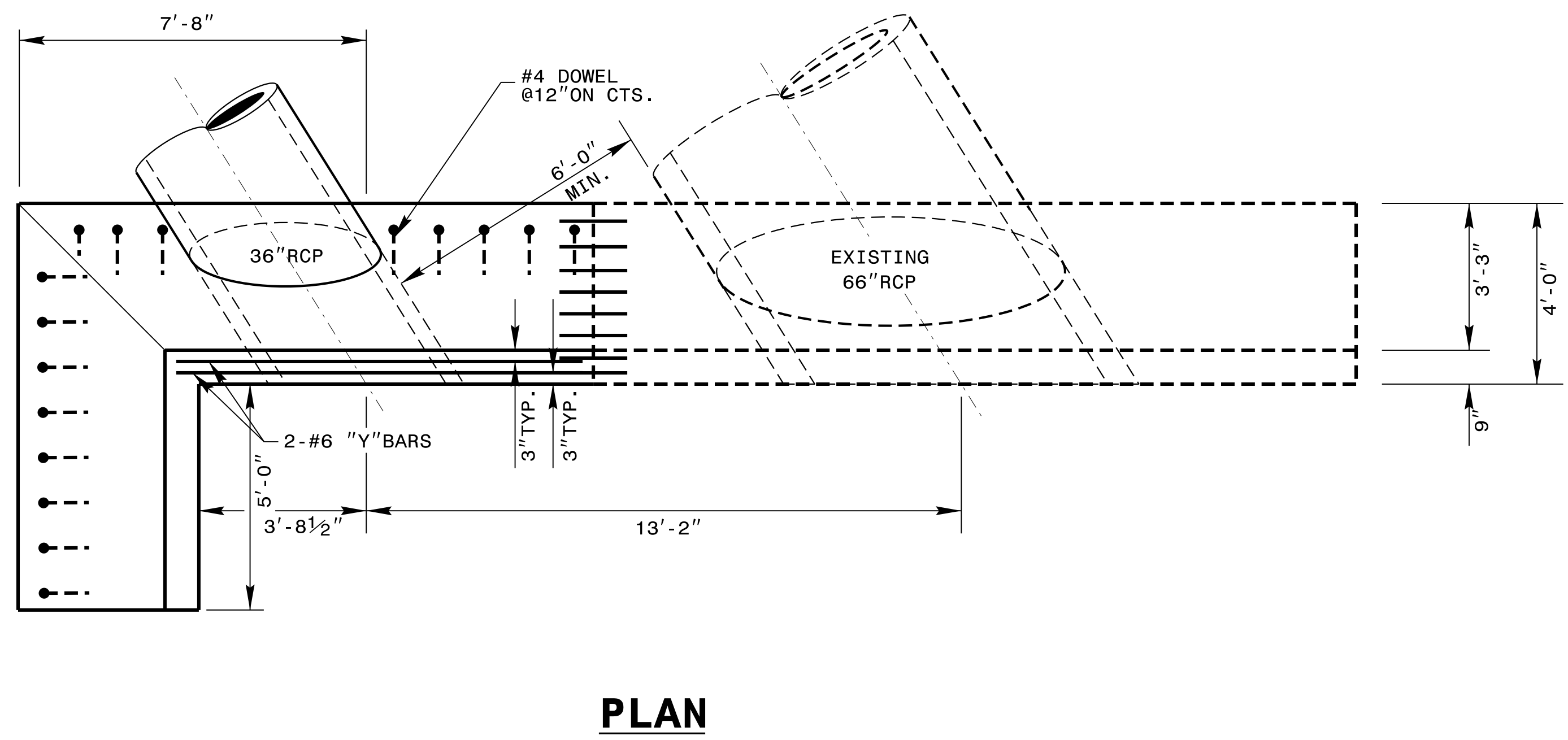
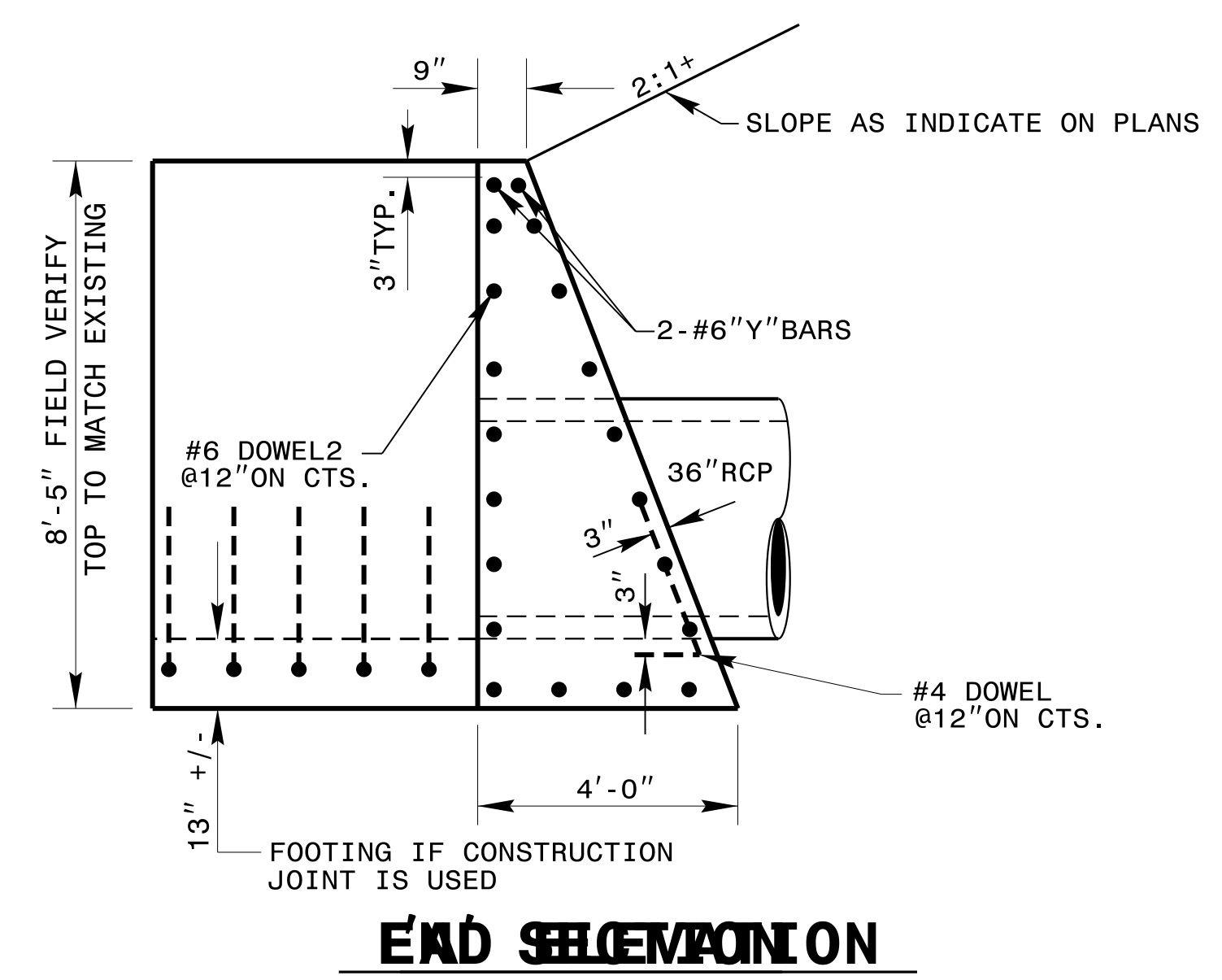
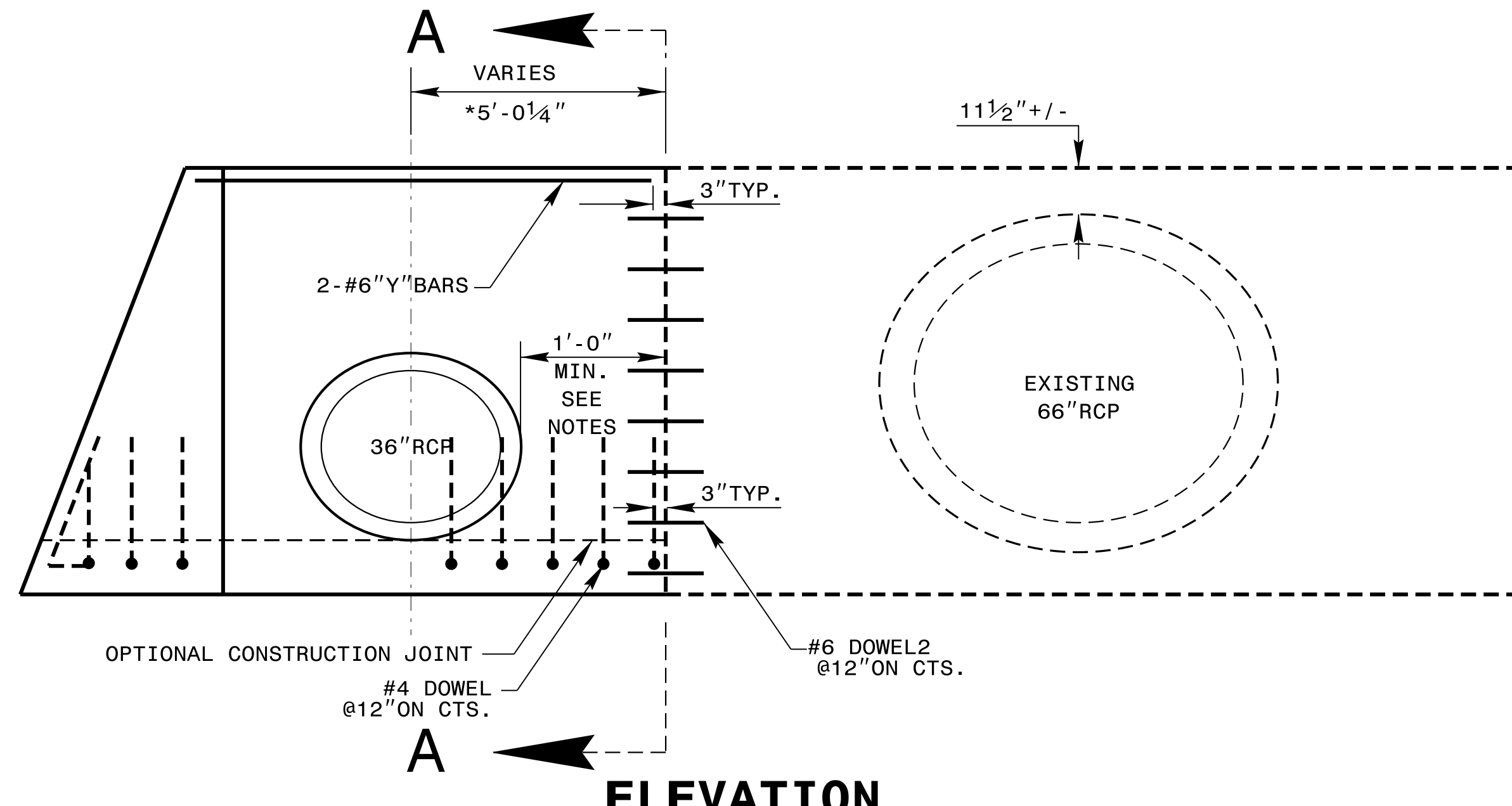
EXTEND CONCRETE ENDWALL FOR DOUBLE PIPE CULVERT

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: K A KEMPF DATE: 5-01-19
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/kkempf/english/I4700 extend endwall



01-MAY-2019 11:34
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 kkempf AT USD-292596

5/14/99



| BILL OF MATERIALS | | | | |
|--------------------------------|-----|------|--------|--------|
| BAR | QTY | SIZE | LENGTH | WEIGHT |
| X | 17 | #4 | 3'-6" | 40 |
| Y | 2 | #6 | 9'-0" | 32 |
| DOWEL2 | 20 | #6 | 1'-6" | 45 |
| TOTAL REINF. STEEL (lbs.) | | | | 117 |
| TOTAL CONCRETE (CU. YDS.) | | | | 11.6 |
| DEDUCTION FOR PIPES (CU. YDS.) | | | | |
| 36" RCP | | | | -1.3 |
| CONCRETE (CU. YDS.) | | | | 11.0 |

* DIMENSION ONLY USED FOR ESTIMATING BILL OF MATERIALS

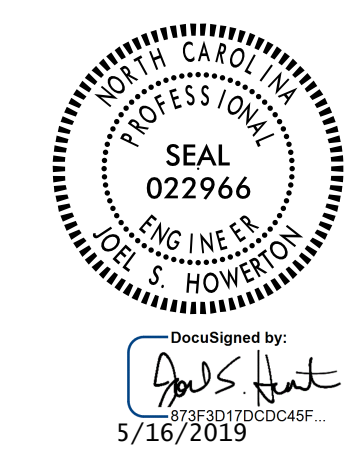
- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
 - WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPERATELY, THE TOP BASE SHALL BE LEFT ROUGH.
 - USE CLASS "B" CONCRETE.
 - PROVIDE MINIMUM 1'-0" CLEARANCE BETWEEN PROPOSED PIPE AND EXISTING ENDWALL. PARTIAL REMOVAL OF EXISTING ENDWALL MAY BE REQUIRED UNLESS DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

EXTEND CONCRETE ENDWALL FOR DOUBLE PIPE CULVERT

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: K A KEMPF DATE: 5-01-19
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/kkempf/english/I4700 extend endwall



01-MAY-2019 11:38
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 kkempf AT USD-292596

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

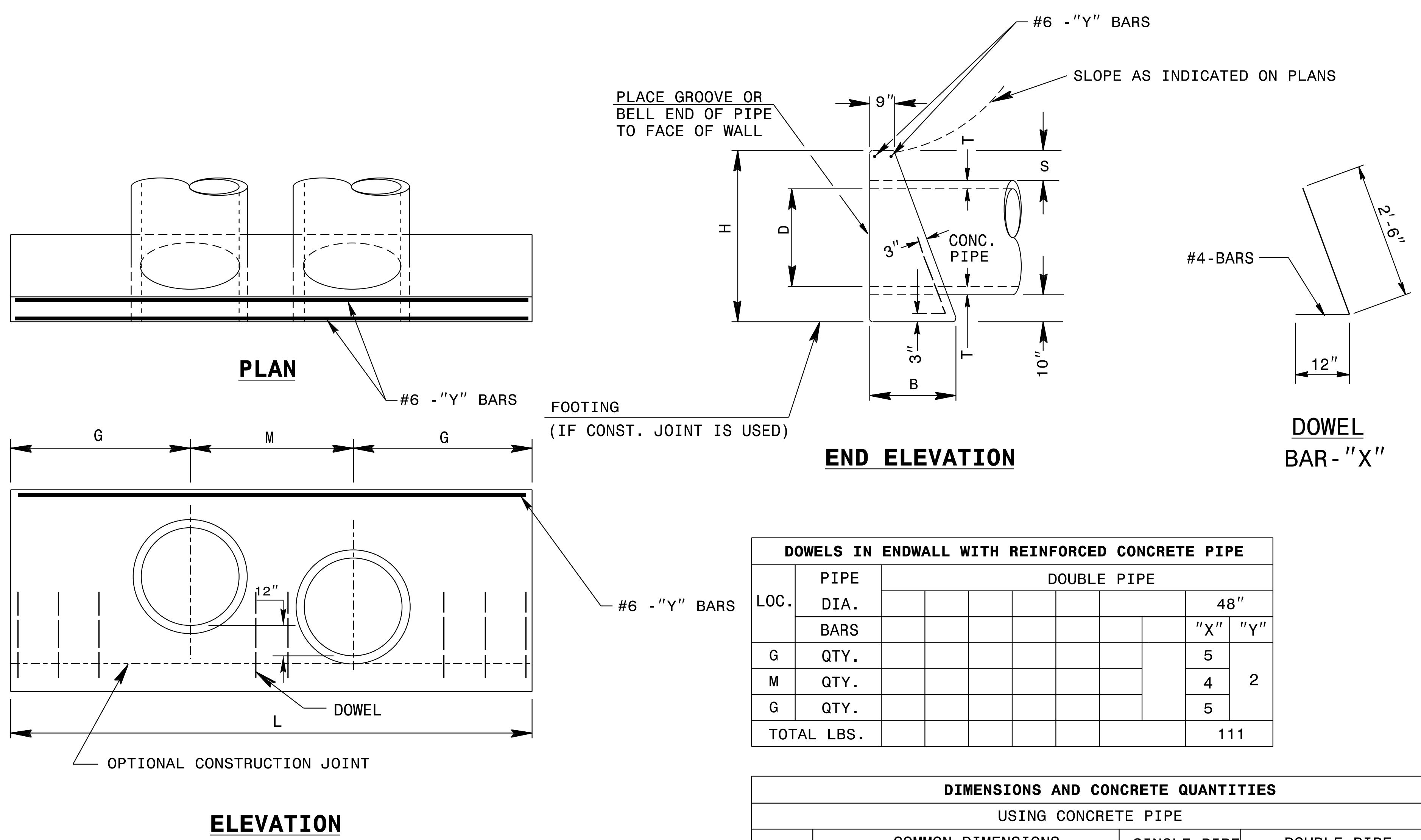
ROADWAY SPECIAL DETAIL FOR
**CONCRETE ENDWALL FOR
DOUBLE PIPE CULVERTS**
48" PIPE - 90° SKEW

SHEET OF
838d01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY SPECIAL DETAIL FOR
**CONCRETE ENDWALL FOR
DOUBLE PIPE CULVERTS**
48" PIPE - 90° SKEW

SHEET OF
838d01



| DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE | | | | | |
|---|-----------|-------------|-----|-----|-----|
| LOC. | PIPE DIA. | DOUBLE PIPE | | | |
| | | 48" | | 48" | |
| | BARS | "X" | "Y" | | |
| G | QTY. | | 5 | | |
| M | QTY. | | 4 | 2 | |
| G | QTY. | | 5 | | |
| TOTAL LBS. | | | | | 111 |

| DIMENSIONS AND CONCRETE QUANTITIES | | | | | | | | | | | | |
|------------------------------------|-------------------|--------|-------|--------|---------|---|-------------|-----------------|--------|------|-------------|--|
| USING CONCRETE PIPE | | | | | | | | | | | | |
| D | COMMON DIMENSIONS | | | | | S | SINGLE PIPE | | | | DOUBLE PIPE | |
| | H | B | G | T | M | | L | YD ³ | | | | |
| 48" | 7'-9" | 3'-10" | 7'-2" | 5 3/4" | 11 1/2" | | | 9'-0" | 23'-2" | 11.9 | | |

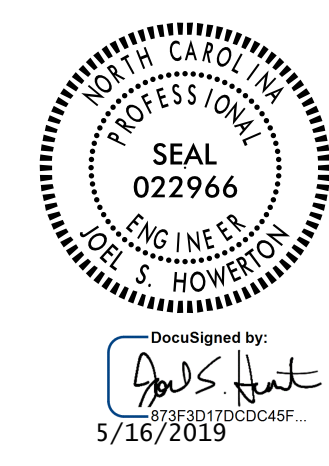
- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
 - WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPERATELY, THE TOP BASE SHALL BE LEFT ROUGH.
 - USE CLASS "B" CONCRETE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: KKEMPF DATE: FEB 2019
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/kkempf/english/14700 extend endwall



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kkempf AT CSD-292596

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

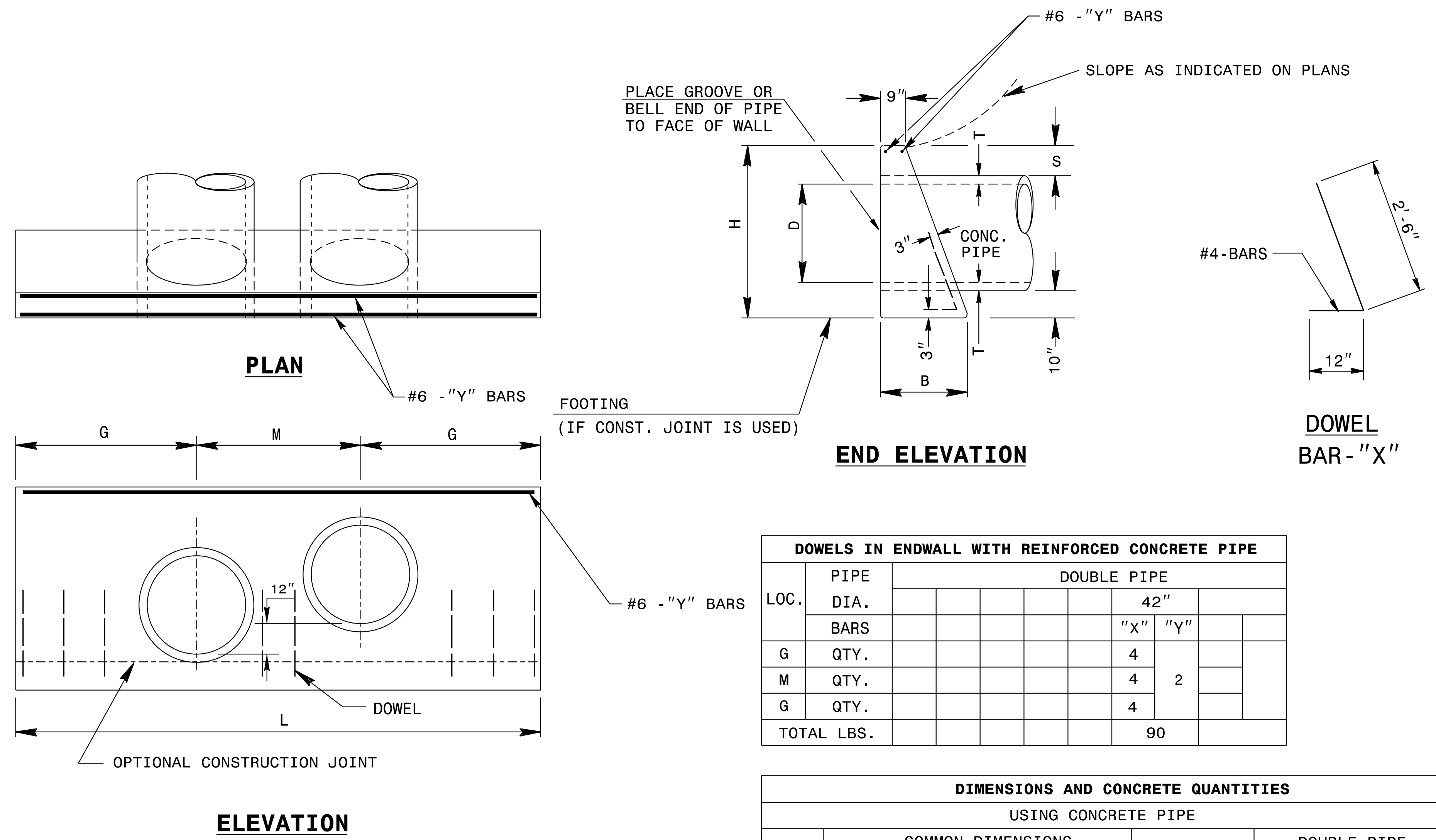
ROADWAY SPECIAL DETAIL FOR
**CONCRETE ENDWALL FOR
 DOUBLE PIPE CULVERTS**
 42" PIPE - 90° SKEW

SHEET OF
838d01

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY SPECIAL DETAIL FOR
**CONCRETE ENDWALL FOR
 DOUBLE PIPE CULVERTS**
 42" PIPE - 90° SKEW

SHEET OF
838d01

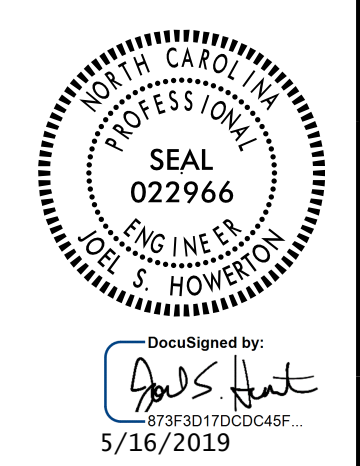


| DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE | | | | | | |
|---|-----------|-------------|-----|---|----|--|
| LOC. | PIPE DIA. | DOUBLE PIPE | | | | |
| | | 42" | | | | |
| | BARS | "X" | "Y" | | | |
| G | QTY. | | | 4 | | |
| M | QTY. | | | 4 | 2 | |
| G | QTY. | | | 4 | | |
| TOTAL LBS. | | | | | 90 | |

| DIMENSIONS AND CONCRETE QUANTITIES | | | | | | | | | |
|------------------------------------|-------|-------------------|-------|--------|---------|-------------|--------|-----------------|--|
| USING CONCRETE PIPE | | | | | | | | | |
| D | H | COMMON DIMENSIONS | | | | DOUBLE PIPE | | | |
| | | B | G | T | S | M | L | YD ³ | |
| 42" | 7'-2" | 3'-7" | 6'-4" | 5 1/4" | 11 1/2" | 8'-5" | 21'-1" | 9.7 | |

- GENERAL NOTES:**
- CHAMFER ALL CORNERS 1".
 - THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 - #6 BARS "Y" IN THE TOP OF ALL ENDWALLS FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL.
 - USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 - WALL THICKNESS SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT ARE USED ONLY IN COMPUTING ENDWALL QUANTITIES.
 - IF CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE, BAR X (PLACE DOWELS IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS TO BE APPROXIMATELY 12" CENTER UNLESS ENGINEER DIRECTS OTHERWISE.
 - WHEN CONTRACTOR ELECTS TO USE CONSTRUCTION JOINT AT BOTTOM OF PIPE AND POURS BASE SEPERATELY, THE TOP BASE SHALL BE LEFT ROUGH.
 - USE CLASS "B" CONCRETE.

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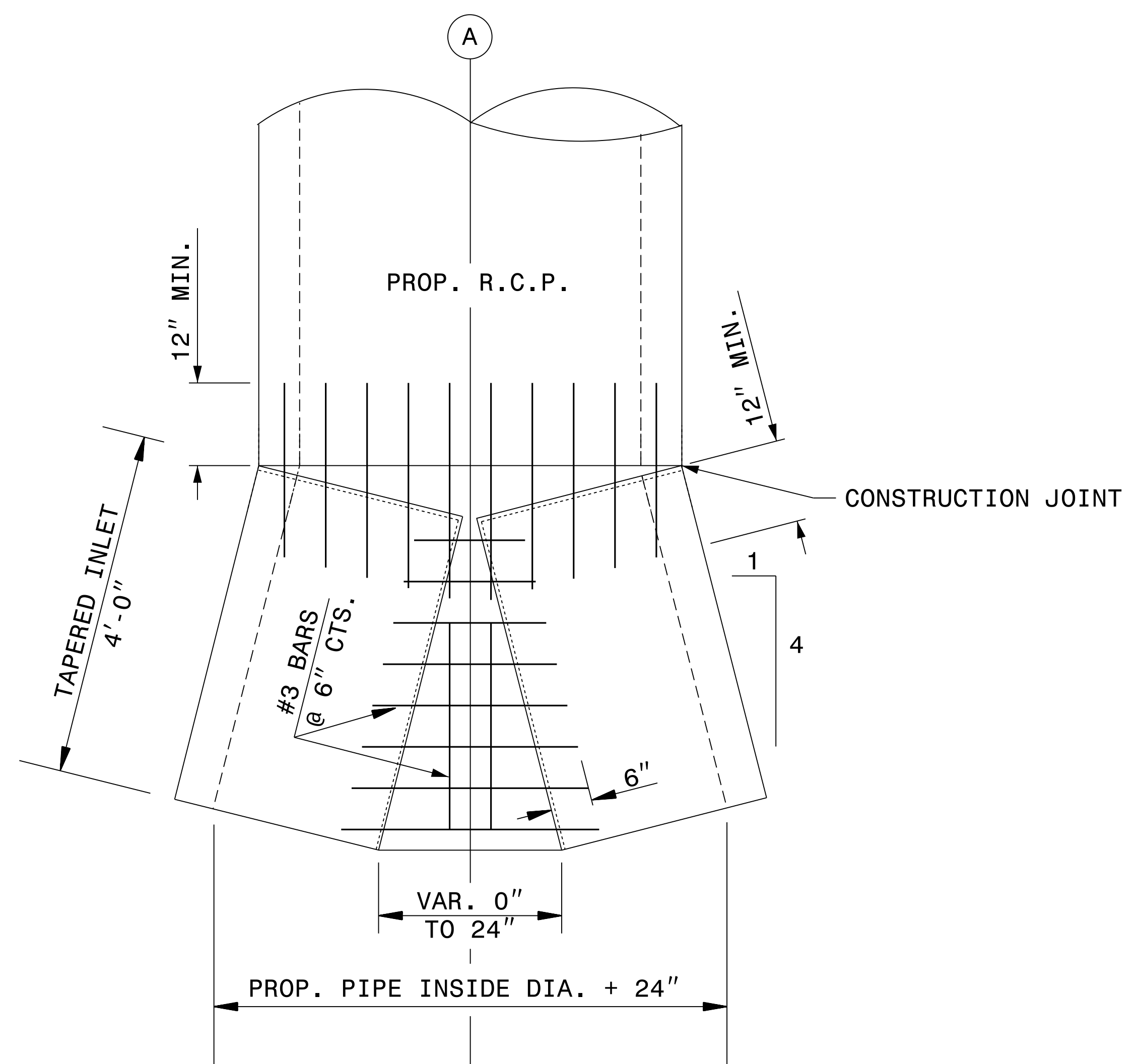


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**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

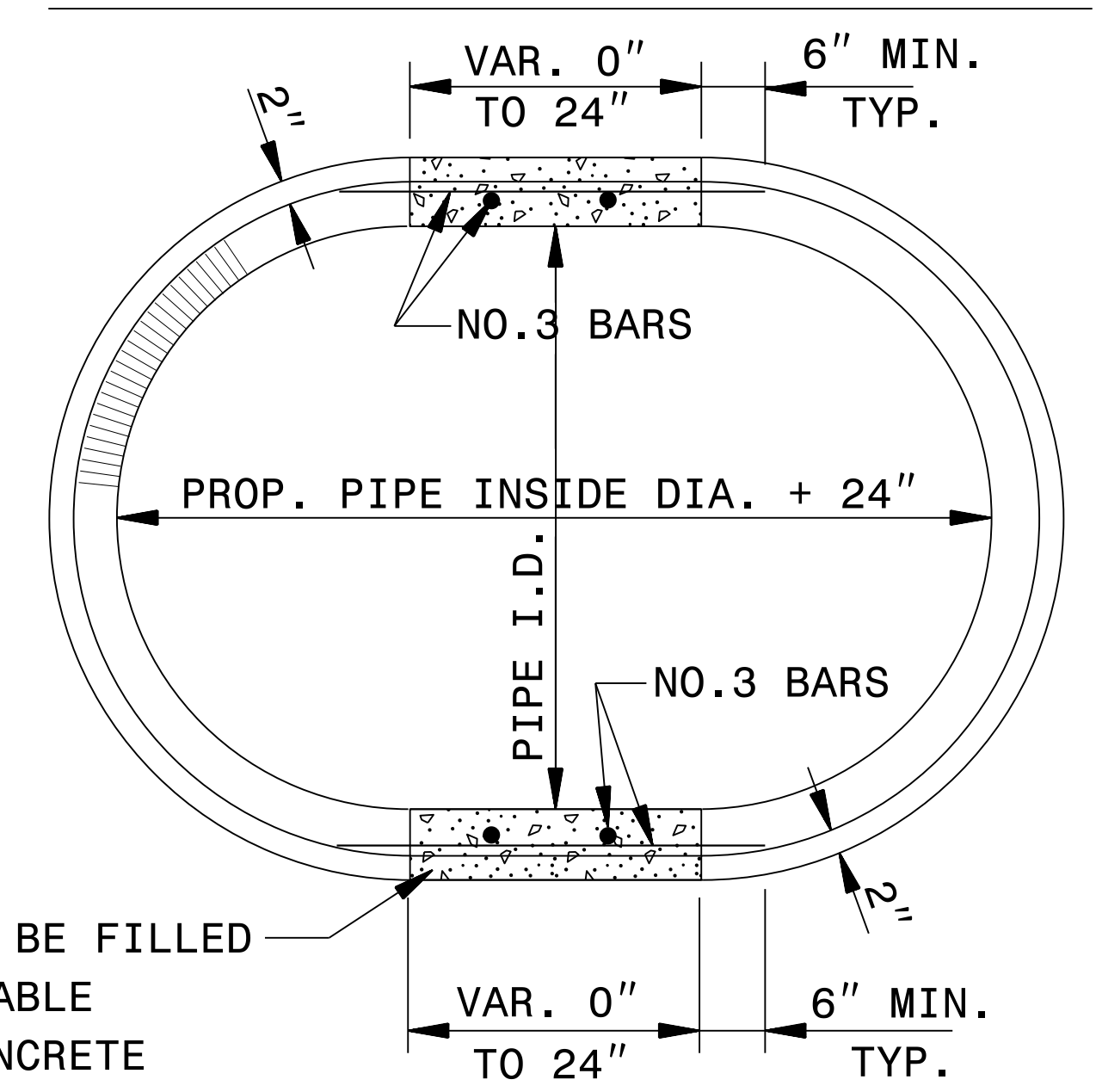
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| MODIFIED BY: KKEMPF | DATE: FEB 2019 |
| CHECKED BY: _____ | DATE: _____ |
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PLAN

SHOWING PLACEMENT OF REINFORCING STEEL

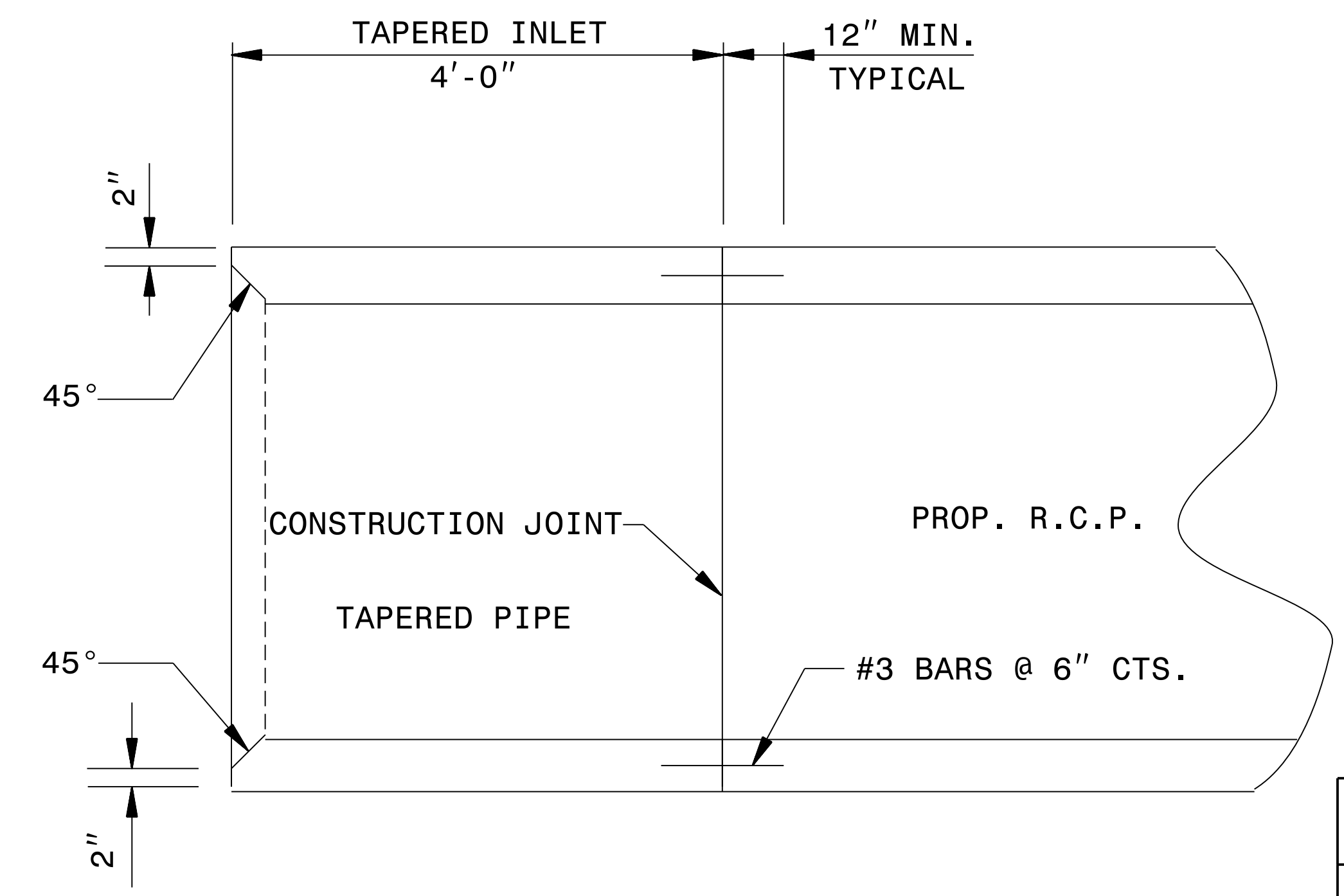


VOIDS SHALL BE FILLED WITH COMPARABLE STRENGTH CONCRETE

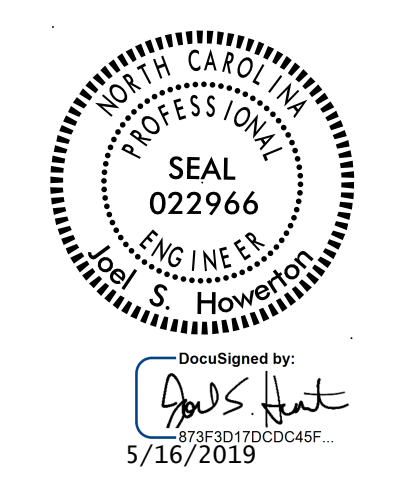
END VIEW

GENERAL NOTES:

- * CONSTRUCT SPECIAL REINFORCED CONCRETE TAPERED INLET IN ACCORDANCE WITH DETAIL AND SECTION 310 OF THE STANDARD ROADWAY SPECIFICATIONS.
- * CONSTRUCT THE TAPERED INLET REINFORCED CONCRETE PIPE.
- * EMBED ALL REINFORCING STEEL UNLESS SHOWN OTHERWISE.
- * CONSTRUCT THE TAPERED INLET AS DIRECTED BY THE ENGINEER.



SECTION A-A



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

DETAIL OF REINFORCED TAPERD INLET 24" THRU 72" DIAMETER

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 MODIFIED BY: DATE:
 CHECKED BY: DATE:
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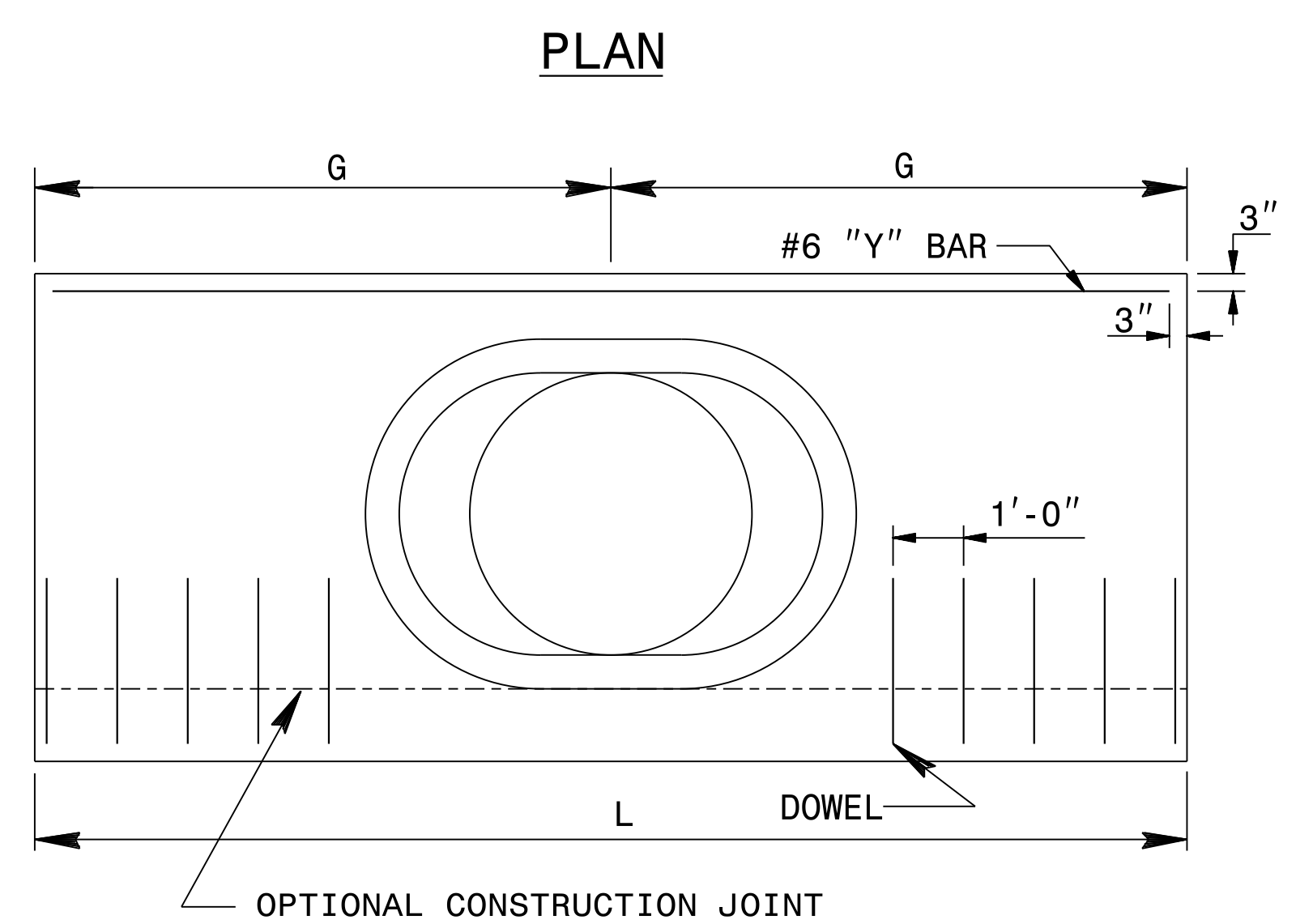
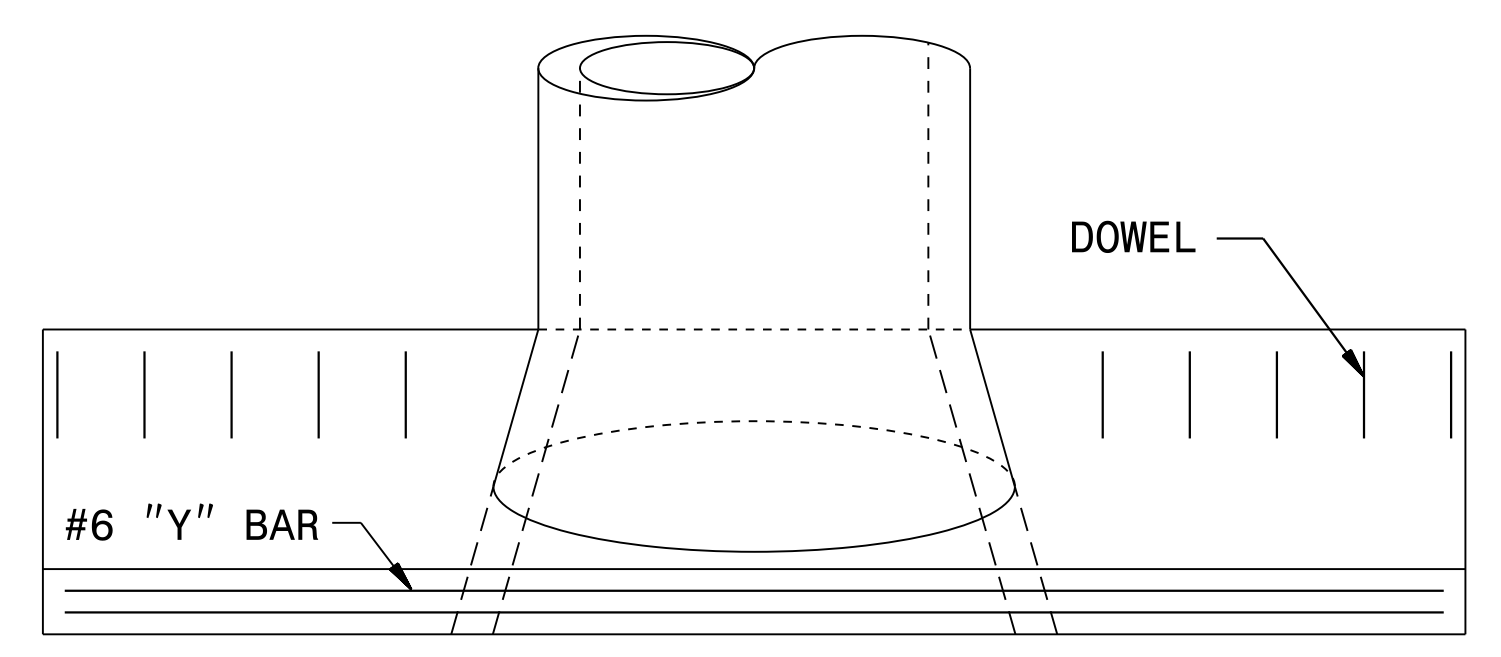
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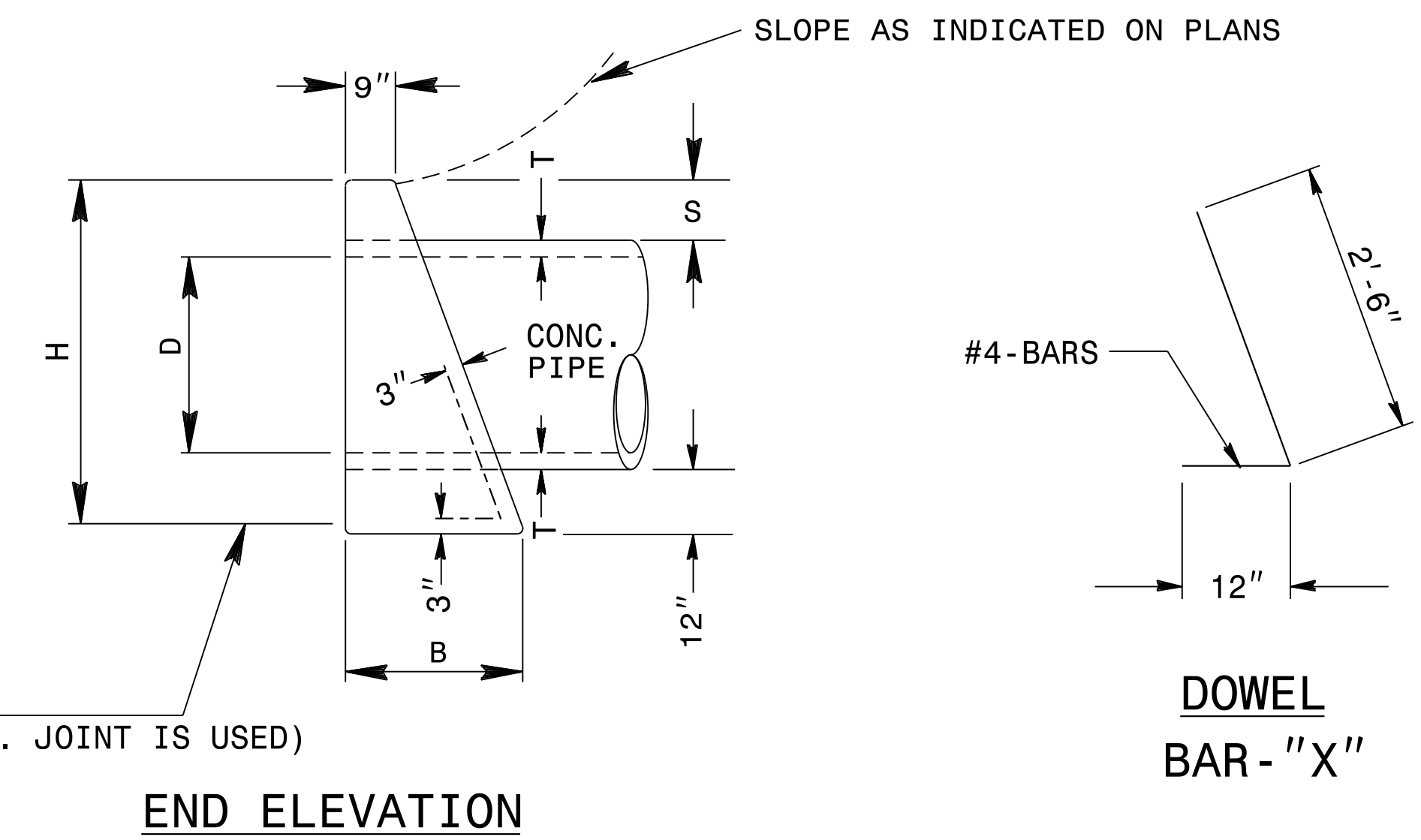
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE ENDWALL FOR TAPERED INLET

SHEET OF
ENDTAP



| DIMENSIONS AND CONCRETE QUANTITIES | | | | | | | |
|------------------------------------|-------------------|--------|--------|--------|--------|---------|----------|
| CONCRETE PIPE | COMMON DIMENSIONS | | | | | | |
| D | H | B | L | G | T | S | CU. YDS. |
| 24"x48" | 4'-6" | 2'-2" | 9'-8" | 4'-10" | 3" | 11 1/2" | 2.3 |
| 30"x54" | 5'-1" | 2'-6" | 11'-4" | 5'-8" | 3 1/2" | 11 1/2" | 3.5 |
| 36"x60" | 5'-8" | 2'-10" | 13'-0" | 6'-6" | 4" | 11 1/2" | 4.9 |
| 42"x66" | 6'-4" | 3'-2" | 14'-8" | 7'-4" | 5 1/4" | 11 1/2" | 6.7 |
| 48"x72" | 6'-11" | 3'-6" | 16'-4" | 8'-2" | 5 3/4" | 11 1/2" | 9.2 |



FOOTING
(IF CONST. JOINT IS USED)

GENERAL NOTES:

ALL EXTERIOR CORNERS SHALL BE CHAMFERED 1" OR HAVE A RADIUS OF 1".

THE CONTRACTOR WILL BE REQUIRED TO PLACE 2 #6 "Y" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

WALL THICKNESS (T) SHOWN IS NOT TO BE INTERPRETED TO MEAN THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, BAR X DOWELS SHALL BE PLACED IN THE BASE AS SHOWN ON PLANS. SPACING OF BARS IS TO BE APPROXIMATELY 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY, THE POUR SHALL BE LEFT ROUGH.

CLASS "B" CONCRETE SHALL BE USED.

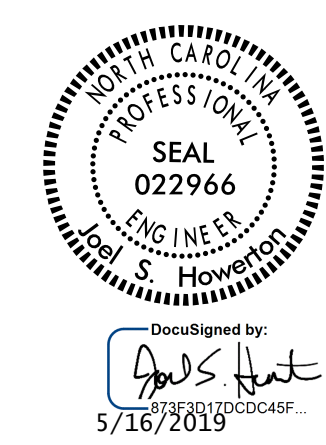
| DOWELS IN ENDWALL WITH REINFORCED CONCRETE PIPE | | | | | | | | | | | |
|---|-----------|-------------|----|---------|----|---------|----|---------|----|---------|----|
| LOC. | PIPE DIA. | SINGLE PIPE | | | | | | | | | |
| | | 24"x48" | | 30"x54" | | 36"x60" | | 42"x66" | | 48"x72" | |
| | BARS | "X" | Y* | "X" | Y* | "X" | Y* | "X" | Y* | "X" | Y* |
| G | QTY. | 3 | | 4 | | 4 | | 5 | 2 | 5 | 2 |
| G | QTY. | 3 | | 4 | | 4 | | 5 | 2 | 5 | 2 |
| TOT. LBS. | | 14 | | 19 | | 19 | | 64 | | 69 | |

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE ENDWALL FOR TAPERED INLET

SHEET OF
ENDTAP

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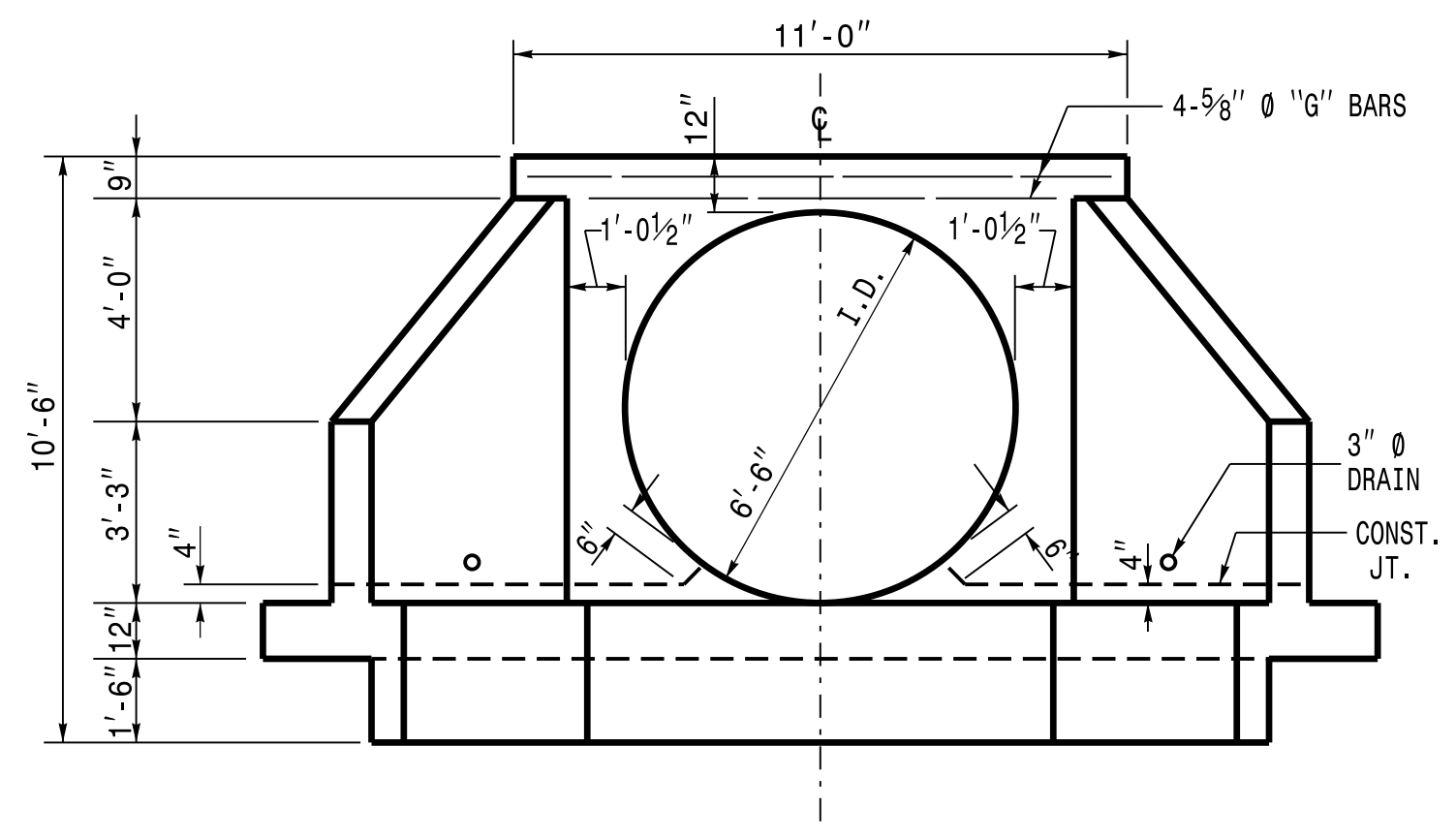


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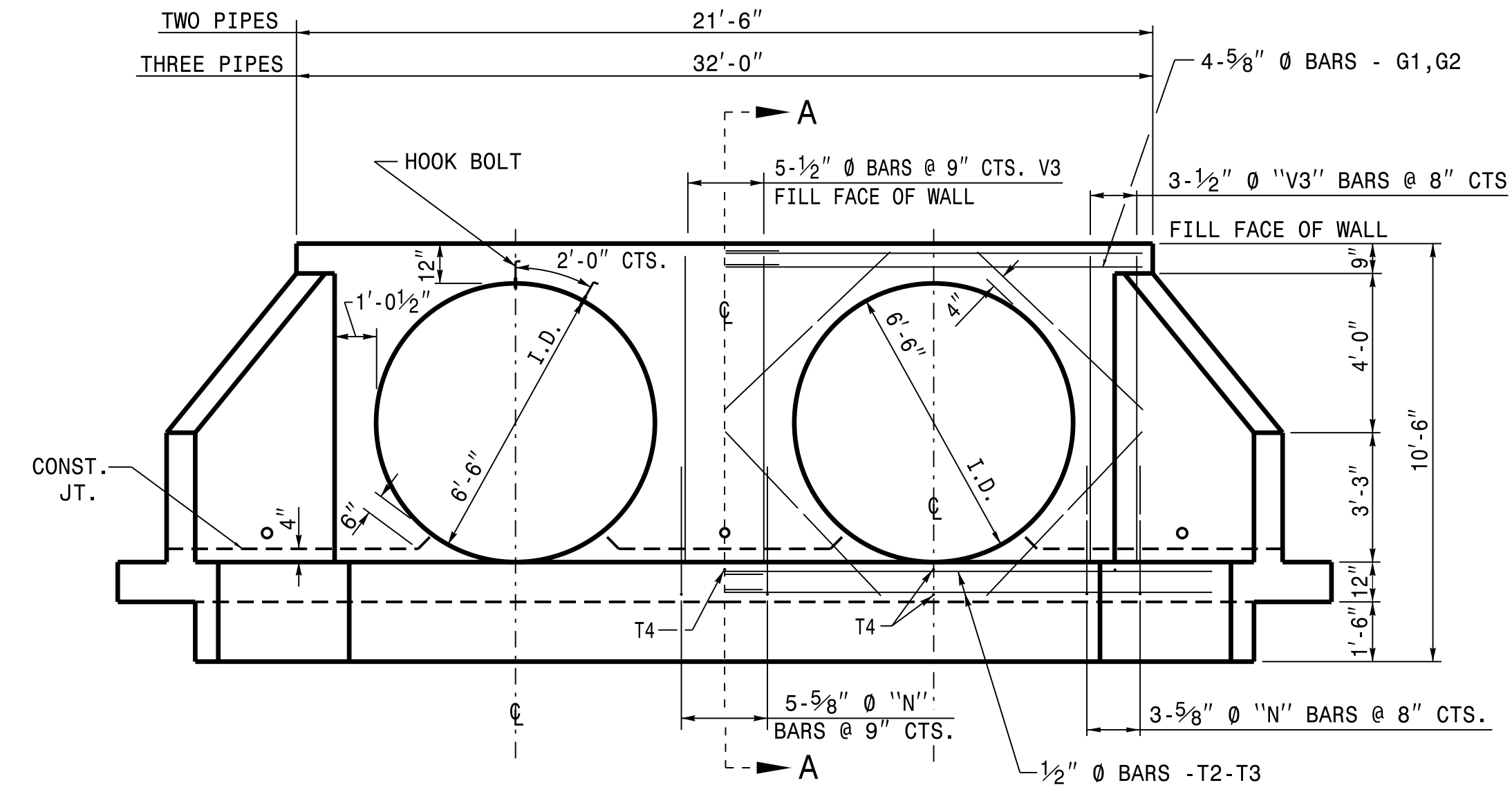
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

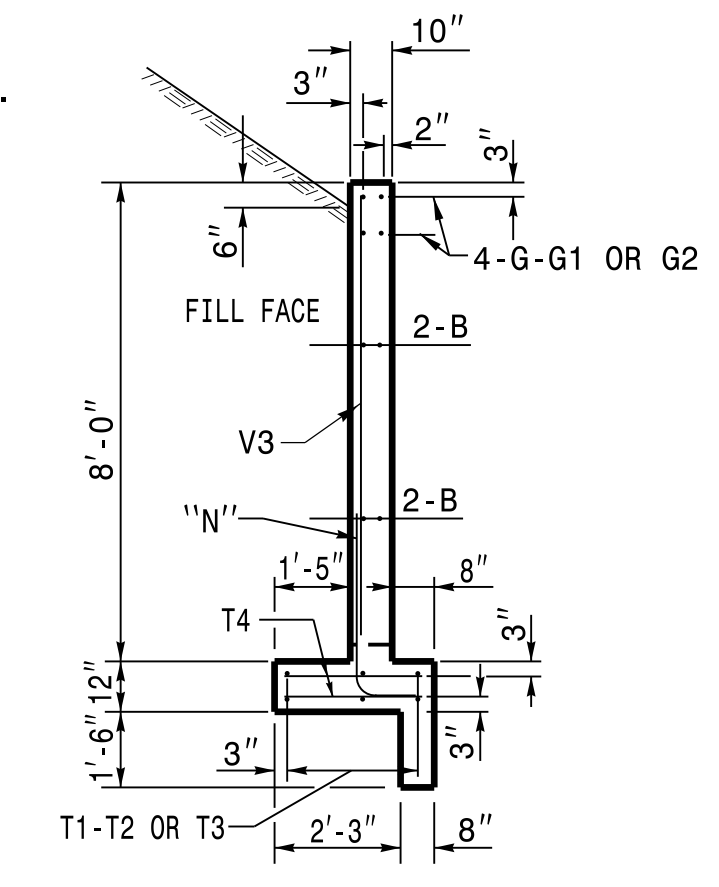
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END ELEVATION



END ELEVATION



**SECTION A-A
FOR ALL ENDWALLS**

NOTES:

USE CLASS 'A' CONCRETE.

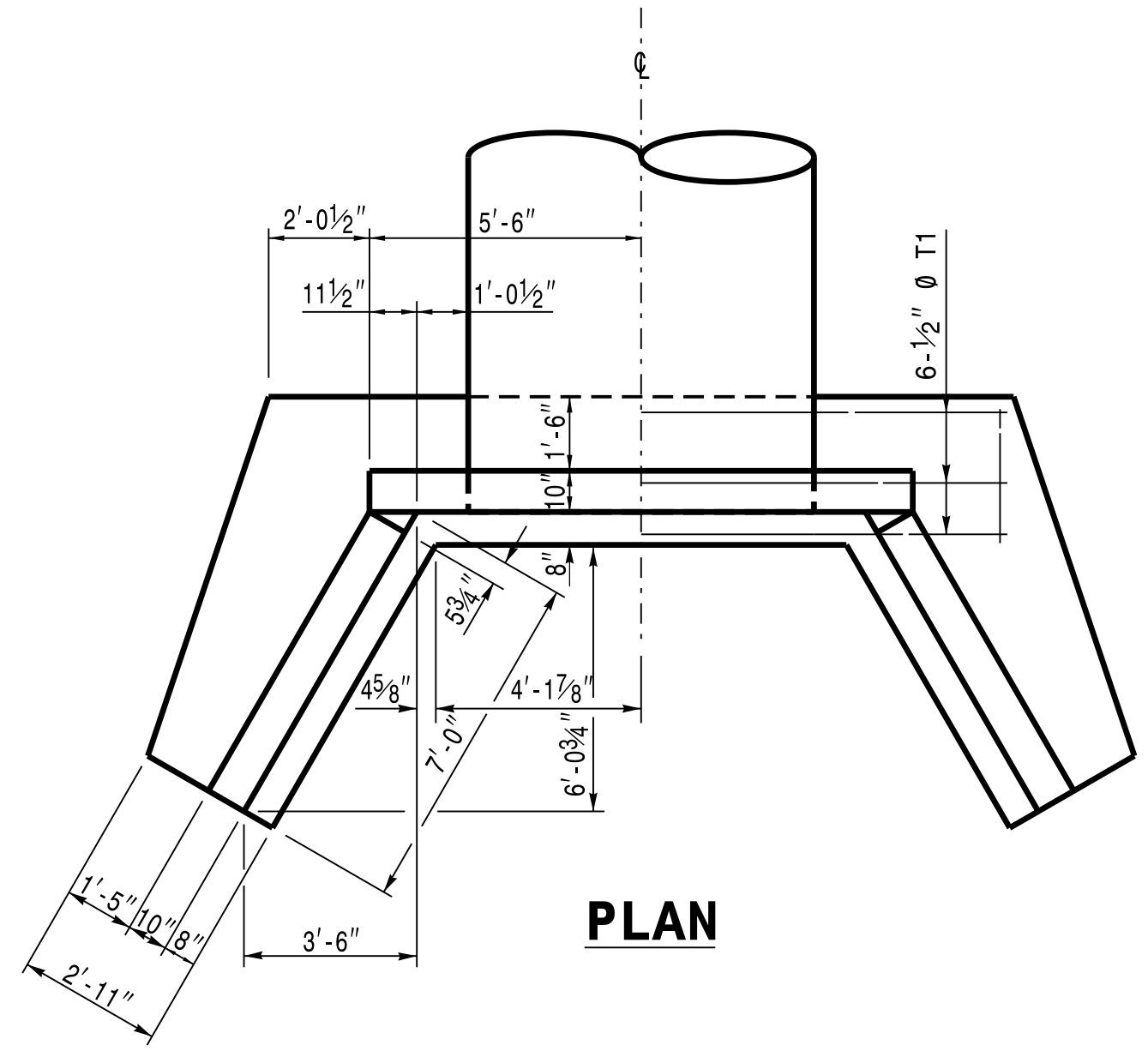
USE ASTM A615-GRADE 60 REINFORCING STEEL.

USE DEFORMED BARS FOR ALL REINFORCING STEEL. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.

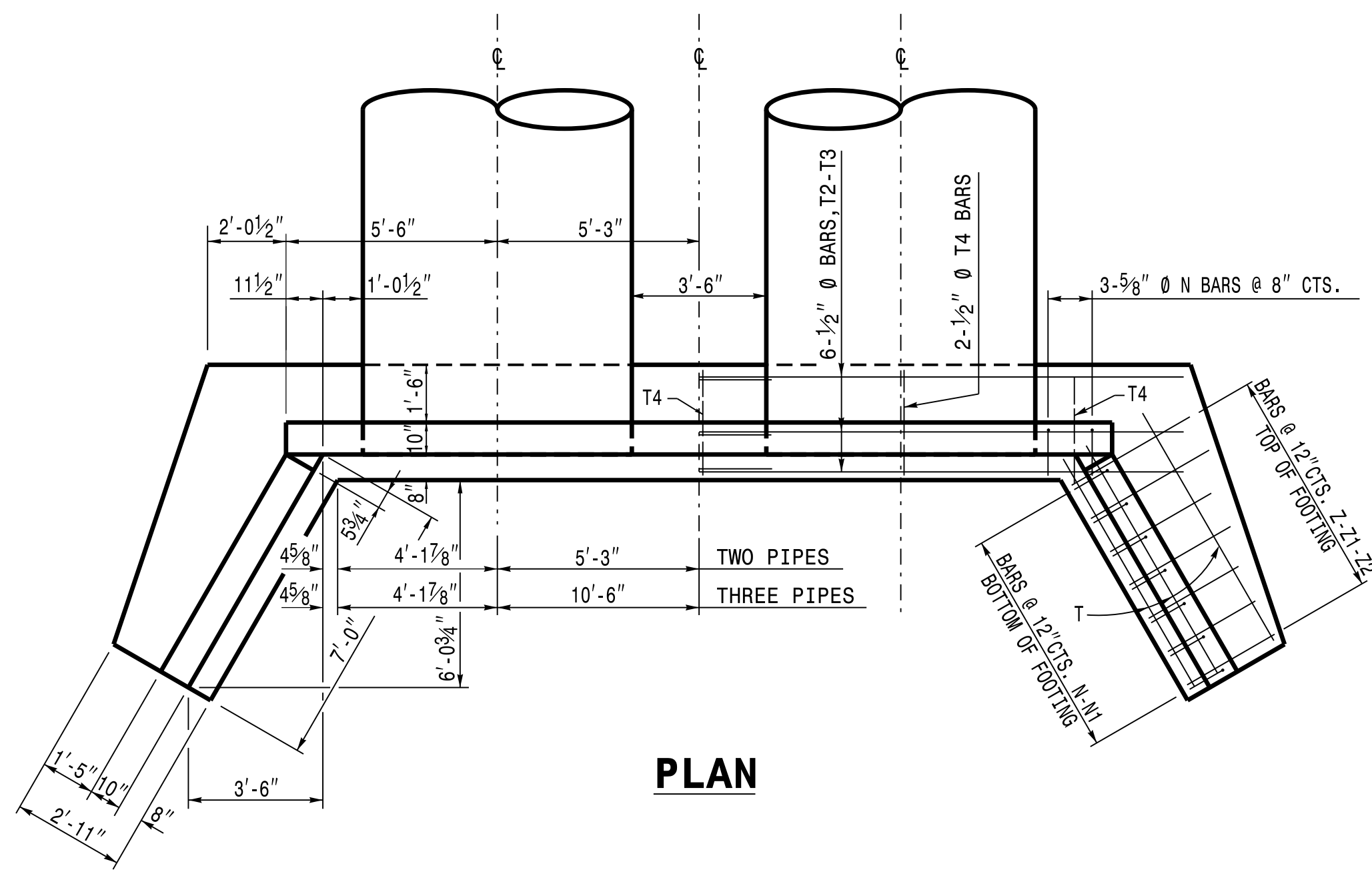
THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. POUR THE REMAINING WALL IN ONE OPERATION.

CHAMFER ALL EXPOSED CORNERS 1".

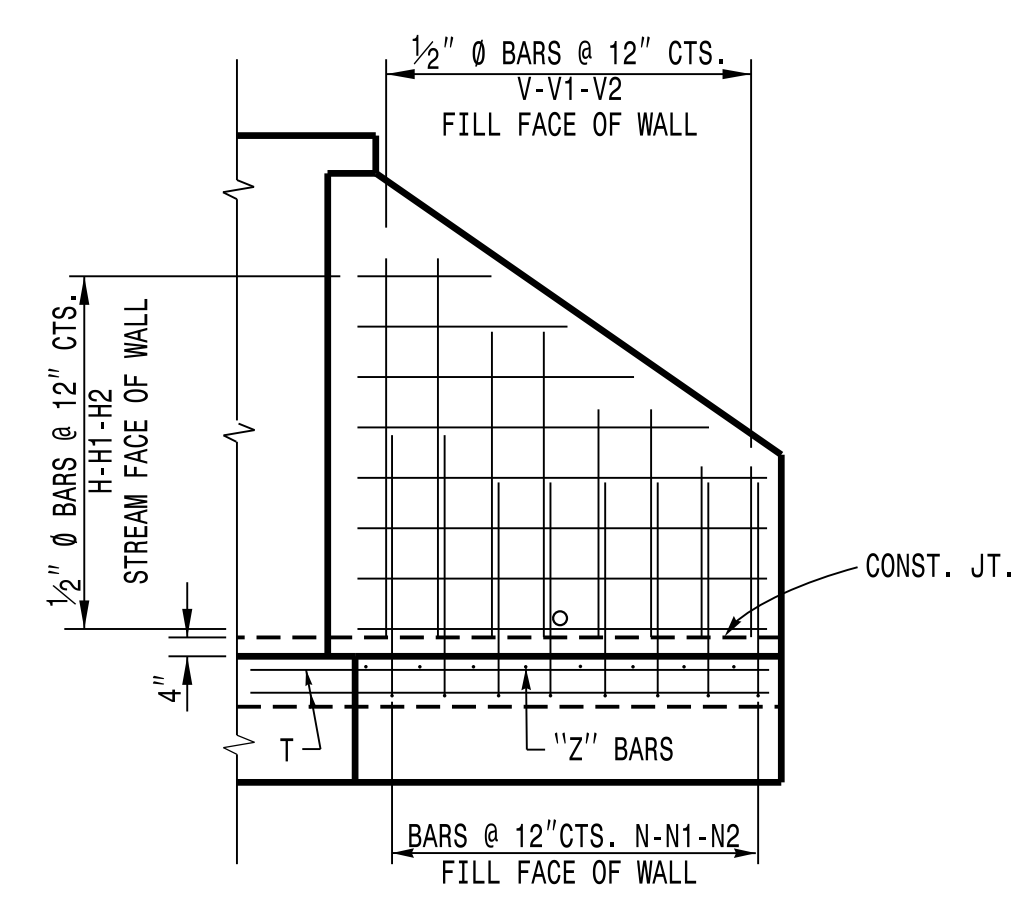
PLACE 3" DIAMETER DRAINS IN WALL AS SHOWN 6" ABOVE NORMAL FLOW LINE.



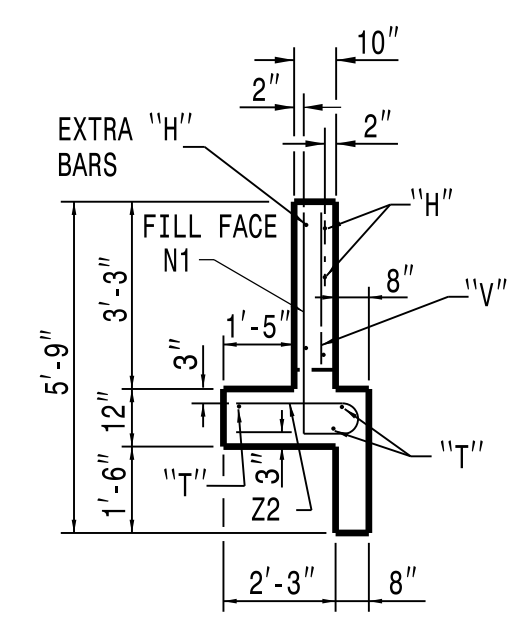
PLAN



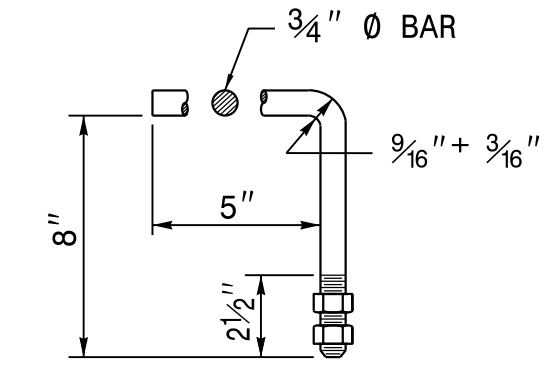
PLAN



**ELEVATION OF WING
SHOWING REINFORCEMENT**

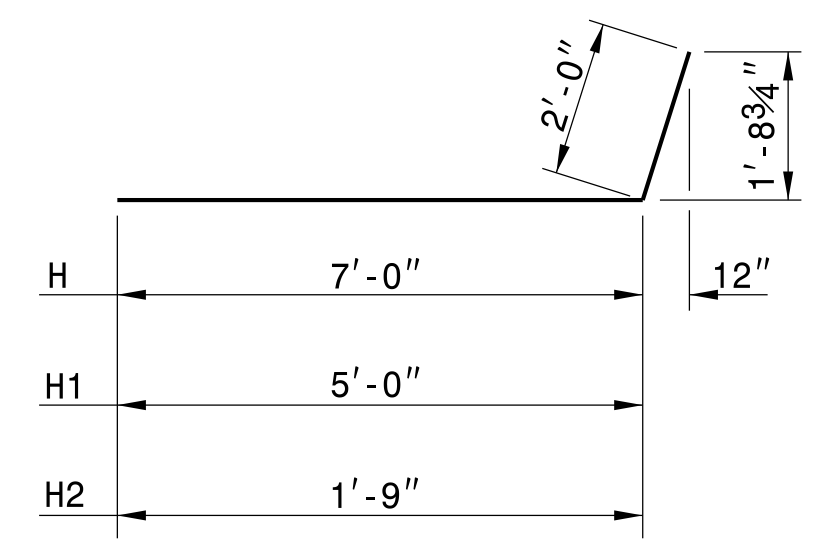


END OF WING

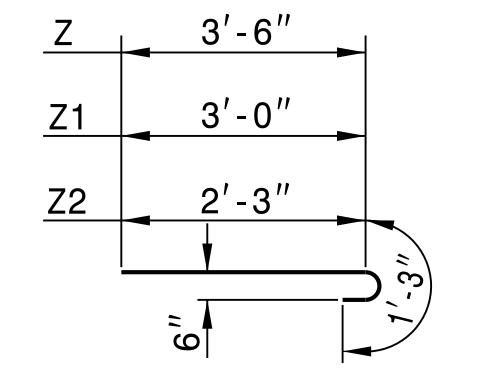


HOOK BOLT

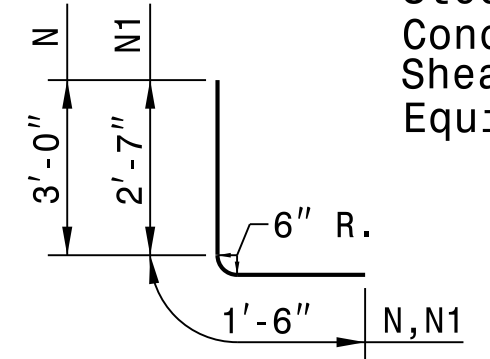
HOOK BOLTS (CONSTRUCT ANCHORS AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 6'-6" CSP. EMBED THE HOOK BOLTS IN THE CONCRETE ENDWALL 8" IN DEPTH. THE GALVANIZED 3/4" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



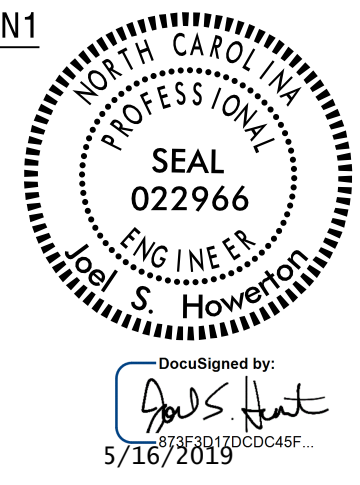
BARS H-H1-H2



BARS Z-Z1-Z2



BARS N-N1



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BILL OF MATERIAL FOR ONE ENDWALL

| REINFORCING STEEL | 1 PIPE | 2 PIPES | 3 PIPES |
|----------------------------|--------|---------|---------|
| BAR #4 | NO. 8 | NO. 16 | NO. 24 |
| BAR #5 | NO. 4 | NO. 8 | NO. 8 |
| H #4 | NO. 10 | NO. 10 | NO. 10 |
| H1 #4 | NO. 6 | NO. 6 | NO. 6 |
| H2 #4 | NO. 4 | NO. 4 | NO. 4 |
| N #5 | NO. 10 | NO. 15 | NO. 20 |
| N1 #4 | NO. 10 | NO. 10 | NO. 10 |
| T #4 | NO. 6 | NO. 6 | NO. 6 |
| T1 #4 | NO. 6 | NO. 12 | NO. 12 |
| T2 #4 | NO. 12 | NO. 110 | NO. 12 |
| T3 #4 | NO. 7 | NO. 13 | NO. 10 |
| T4 #4 | NO. 7 | NO. 13 | NO. 10 |
| V #4 | NO. 6 | NO. 6 | NO. 6 |
| V1 #4 | NO. 6 | NO. 6 | NO. 6 |
| V2 #4 | NO. 8 | NO. 8 | NO. 8 |
| V3 #4 | NO. 6 | NO. 11 | NO. 16 |
| Z #5 | NO. 4 | NO. 4 | NO. 4 |
| Z1 #4 | NO. 4 | NO. 4 | NO. 4 |
| Z2 #4 | NO. 6 | NO. 6 | NO. 6 |
| TOTAL REINF. STEEL (lbs.) | 473 | 662 | 834 |
| CLASS "A" CONC. (cu. yds.) | 7.9 | 10.8 | 13.8 |

DESIGN DATA

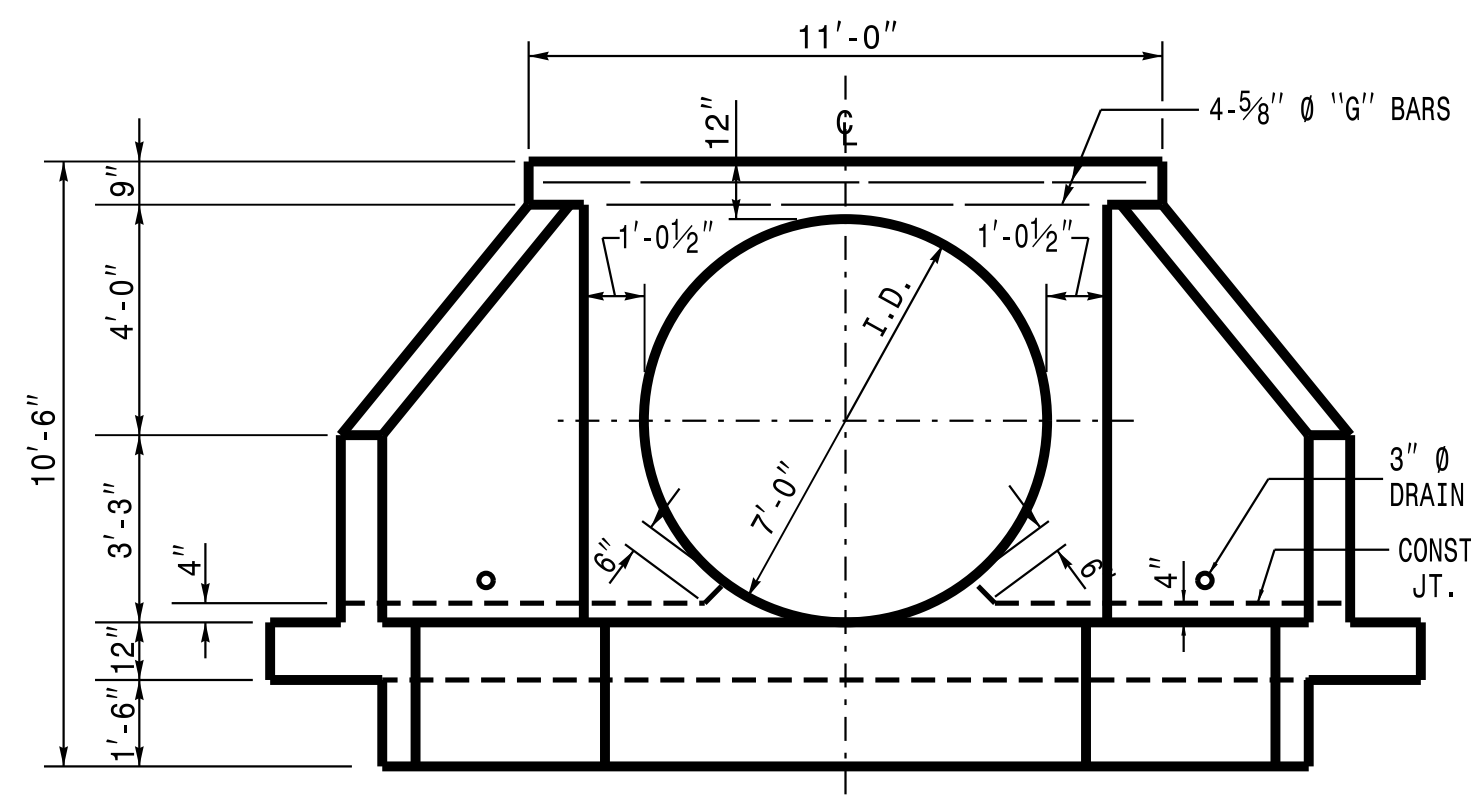
Specifications Steel in tension Concrete in compression Shear Class "A" Concrete Equiv. fluid pressure of earth

A.A.S.H.T.O. (1977) 20,000 LBS. PER SQ. IN. 1,200 LBS. PER SQ. IN. SEE A.A.S.H.T.O. 30 LBS. PER CU. FT.

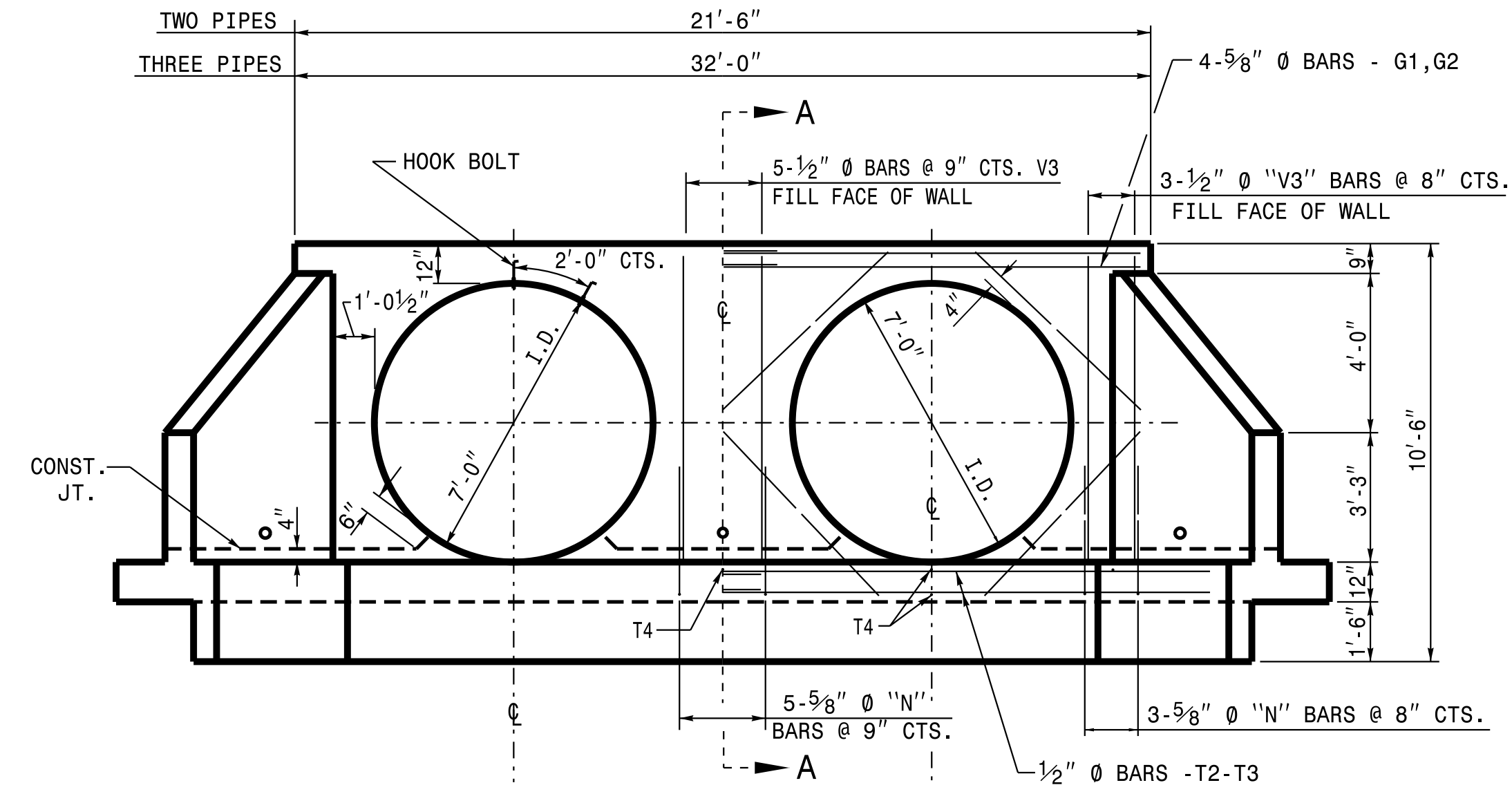
CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

**DETAIL OF REINFORCED
CONCRETE ENDWALL FOR
78" DIAMETER PIPE - 90° SKEW**

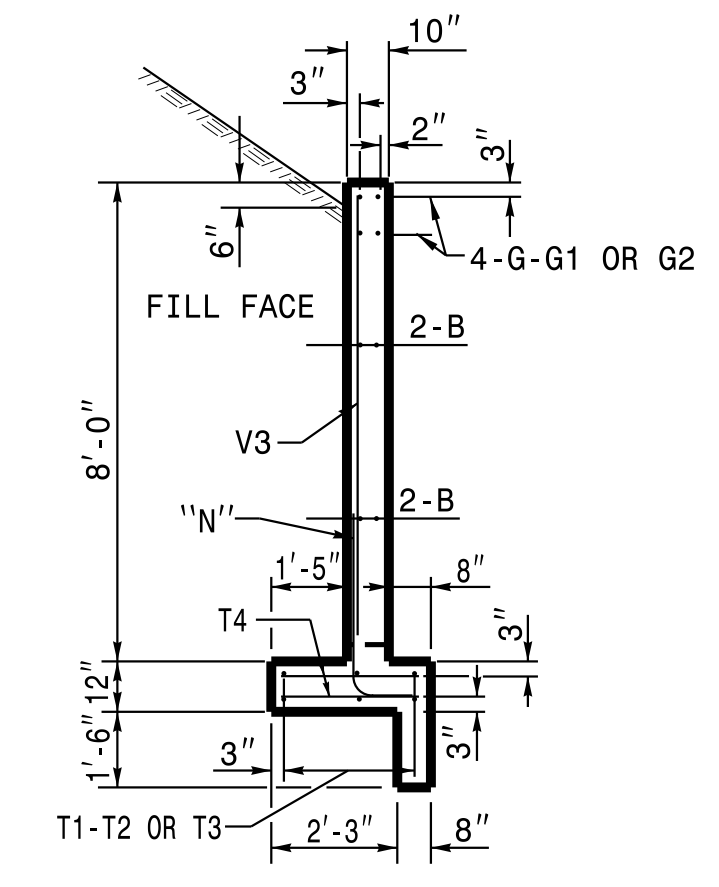
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MODIFIED BY: R.E.D.&T.S.S. DATE: 6-96 & 5-00
CHECKED BY: _____ DATE: _____
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END ELEVATION



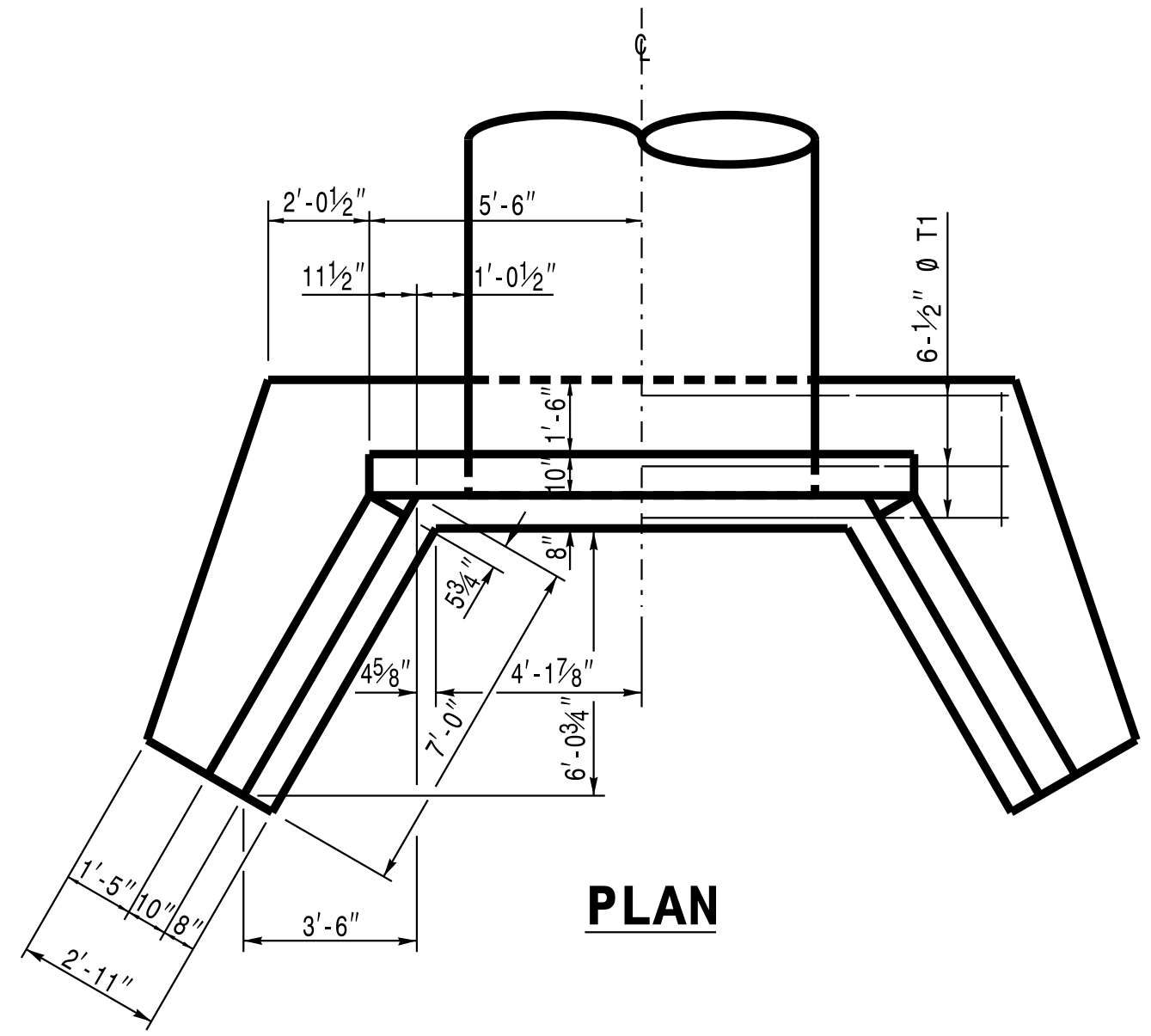
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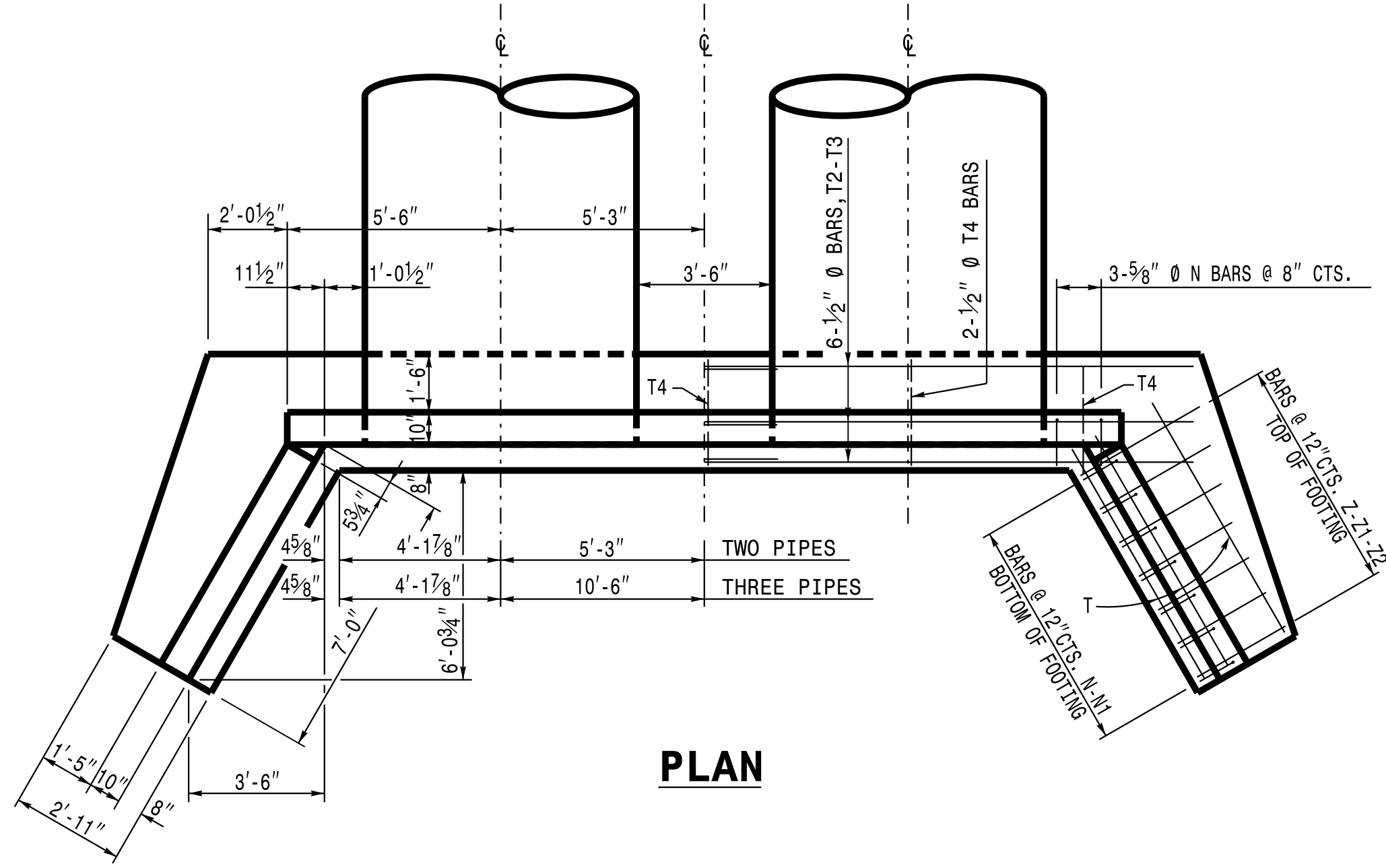
**SECTION A-A
FOR ALL ENDWALLS**

NOTES:

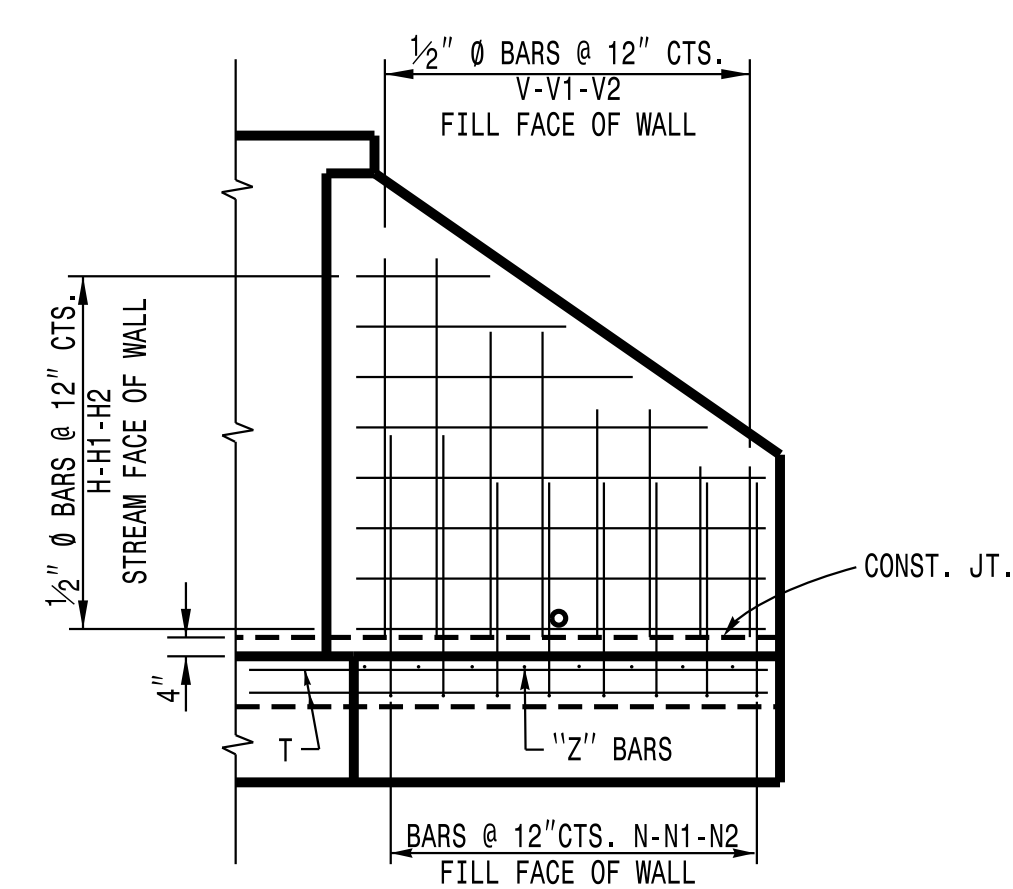
- ALL CONCRETE TO BE CLASS "A".
- ALL REINFORCING STEEL SHALL BE ASTM A615-GRADE 60.
- ALL REINFORCING STEEL SHALL BE DEFORMED BARS. WHERE SPLICING OF REINFORCEMENT IS NECESSARY, BARS ARE TO BE LAPPED 45 DIAMETERS. ALL DIMENSIONS RELATIVE TO REINFORCEMENT ARE TO CENTERS OF BARS.
- THE FOOTING, CURTAIN WALL AND 4" OF WALL ARE TO BE POURED IN ONE OPERATION ALLOWING NO TIME FOR INITIAL SET TO TAKE PLACE BETWEEN THEM. THE REMAINING WALL SHALL THEN BE POURED IN ONE OPERATION.
- ALL EXPOSED CORNERS ARE TO BE CHAMFERED 1".
- 3" DIAMETER DRAINS SHALL BE PLACED IN WALL AS SHOWN AND BE 6" ABOVE NORMAL FLOW LINE.
- ALL MATERIAL AND WORKMANSHIP AS PER N.C. DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.



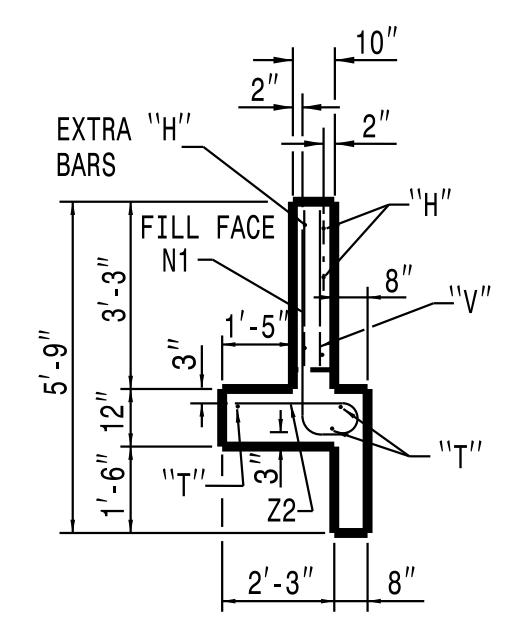
PLAN



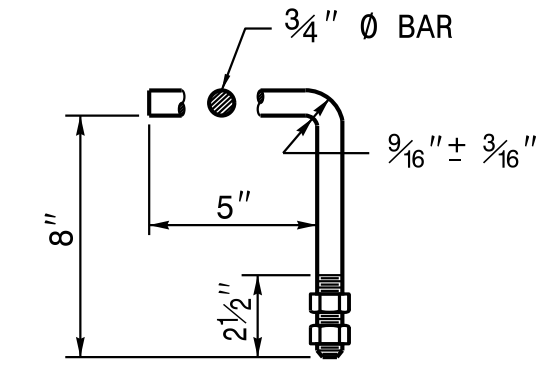
PLAN



**ELEVATION OF WING
SHOWING REINFORCEMENT**

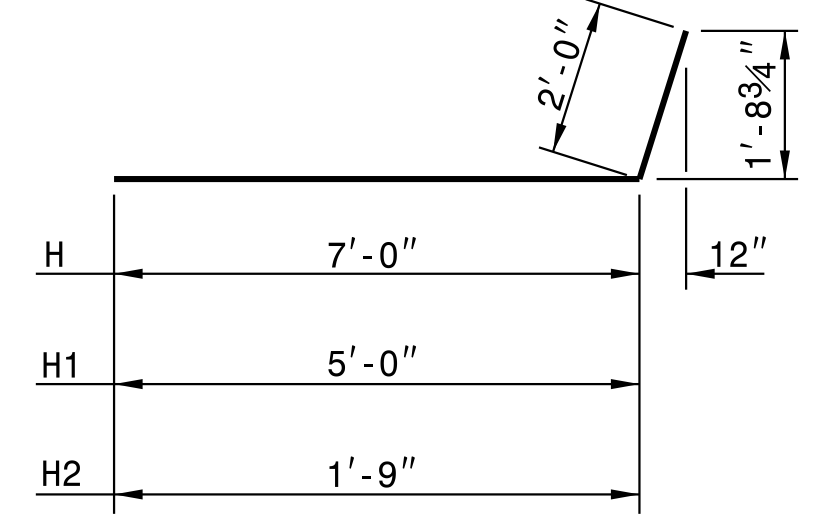


END OF WING

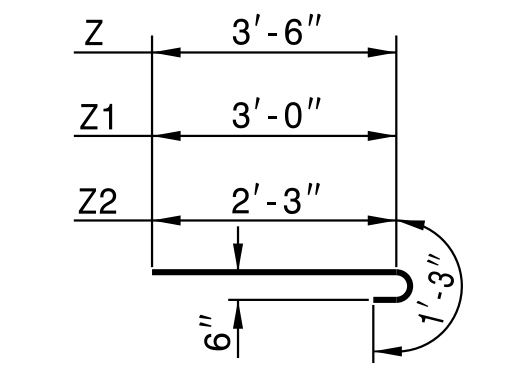


HOOK BOLT

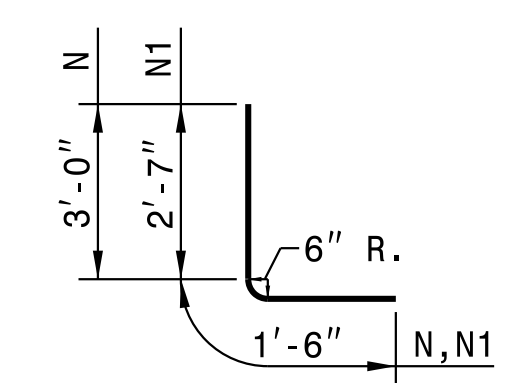
HOOK BOLTS (ANCHORS SHALL BE CONSTRUCTED AT 2'-0" CTS. ALONG THE CIRCUMFERENCE OF THE 7'-0" CSPA. THE HOOK BOLTS SHALL BE EMBEDDED IN THE CONCRETE ENDWALL 8" IN DEPTH. THE GALVANIZED 3/4" DIA. HOOK BOLTS MUST MEET ASTM A-307 OR ASTM A-836. BOTH BOLTS AND NUTS MUST BE IN ACCORDANCE WITH ASTM A-153 FOR GALVANIZING.



BARS H-H1-H2



BARS Z-Z1-Z2



BARS N-N1

BILL OF MATERIAL FOR ONE ENDWALL

| REINFORCING STEEL | | 1 PIPE | 2 PIPES | 3 PIPES | | | | |
|----------------------------|------|--------|---------|---------|-----|--------|-----|--------|
| BAR # | SIZE | LENGTH | NO. | WEIGHT | NO. | WEIGHT | NO. | WEIGHT |
| B | #4 | 6'-0" | 8 | 32 | 16 | 64 | 24 | 96 |
| G | #5 | 10'-9" | 4 | 45 | - | - | - | - |
| G1 | #5 | 11'-9" | - | - | 8 | 98 | - | - |
| G2 | #5 | 17'-0" | - | - | - | - | 8 | 142 |
| H | #4 | 9'-0" | 10 | 60 | 10 | 60 | 10 | 60 |
| H1 | #4 | 7'-0" | 6 | 28 | 6 | 28 | 6 | 28 |
| H2 | #4 | 3'-9" | 4 | 10 | 4 | 10 | 4 | 10 |
| N | #5 | 4'-6" | 10 | 47 | 15 | 70 | 20 | 94 |
| N1 | #4 | 4'-1" | 10 | 27 | 10 | 27 | 10 | 27 |
| T | #4 | 6'-6" | 6 | 26 | 6 | 26 | 6 | 26 |
| T1 | #4 | 15'-0" | 6 | 60 | - | - | - | - |
| T2 | #4 | 13'-9" | - | - | 12 | 110 | - | - |
| T3 | #4 | 19'-0" | - | - | - | - | 12 | 152 |
| T4 | #4 | 2'-9" | 4 | 7 | 7 | 13 | 10 | 18 |
| V | #4 | 5'-9" | 6 | 23 | 6 | 23 | 6 | 23 |
| V1 | #4 | 4'-6" | 6 | 18 | 6 | 18 | 6 | 18 |
| V2 | #4 | 2'-9" | 8 | 15 | 8 | 15 | 8 | 15 |
| V3 | #4 | 7'-6" | 6 | 30 | 11 | 55 | 16 | 80 |
| Z | #5 | 4'-9" | 4 | 20 | 4 | 20 | 4 | 20 |
| Z1 | #4 | 4'-3" | 4 | 11 | 4 | 11 | 4 | 11 |
| Z2 | #4 | 3'-6" | 6 | 14 | 6 | 14 | 6 | 14 |
| TOTAL REINF. STEEL (lbs.) | | | | 473 | | 662 | | 834 |
| CLASS "A" CONC. (cu. yds.) | | | | 7.9 | | 10.8 | | 13.8 |

CONTRACT STANDARDS & DEVELOPMENT UNIT
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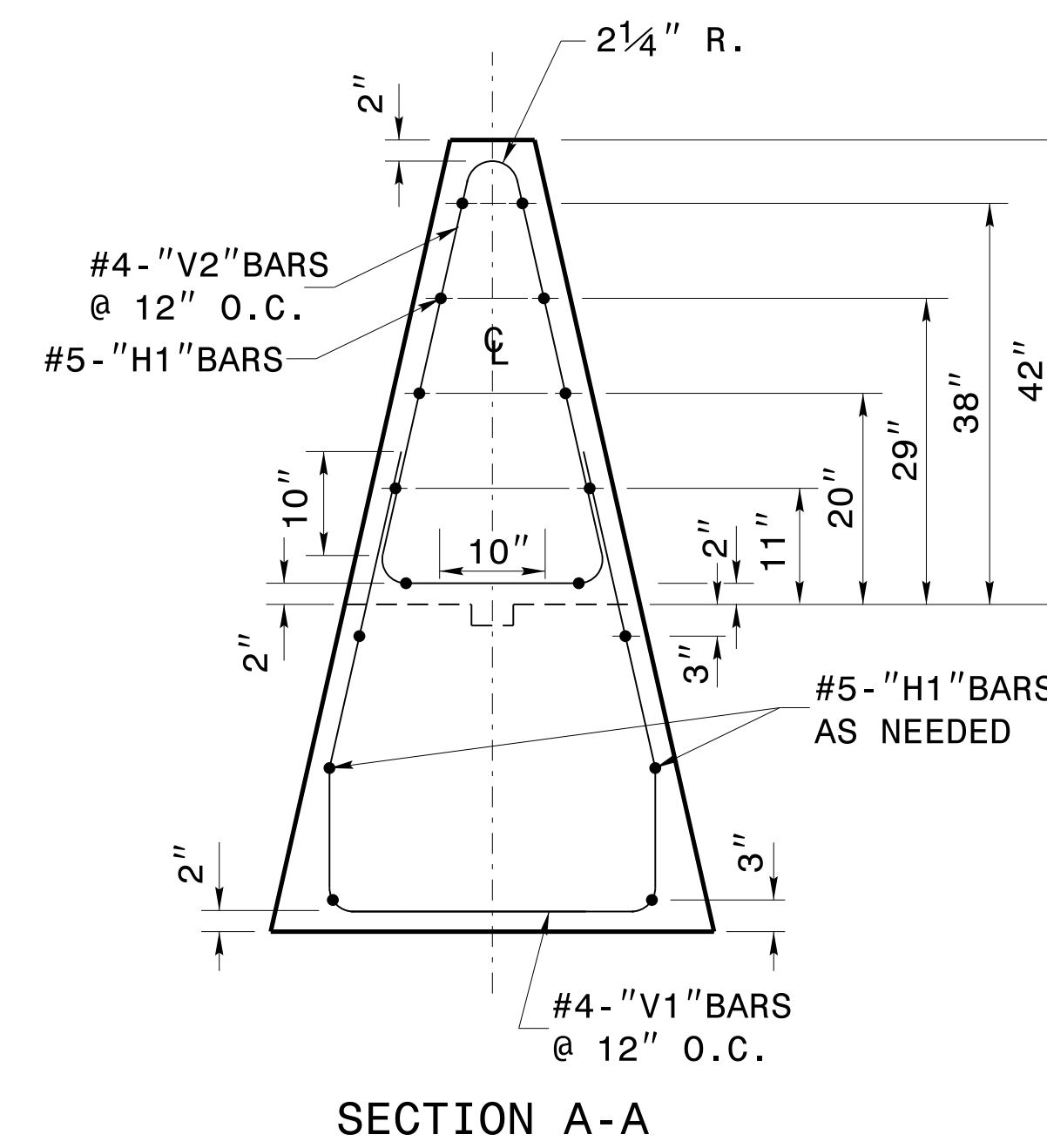
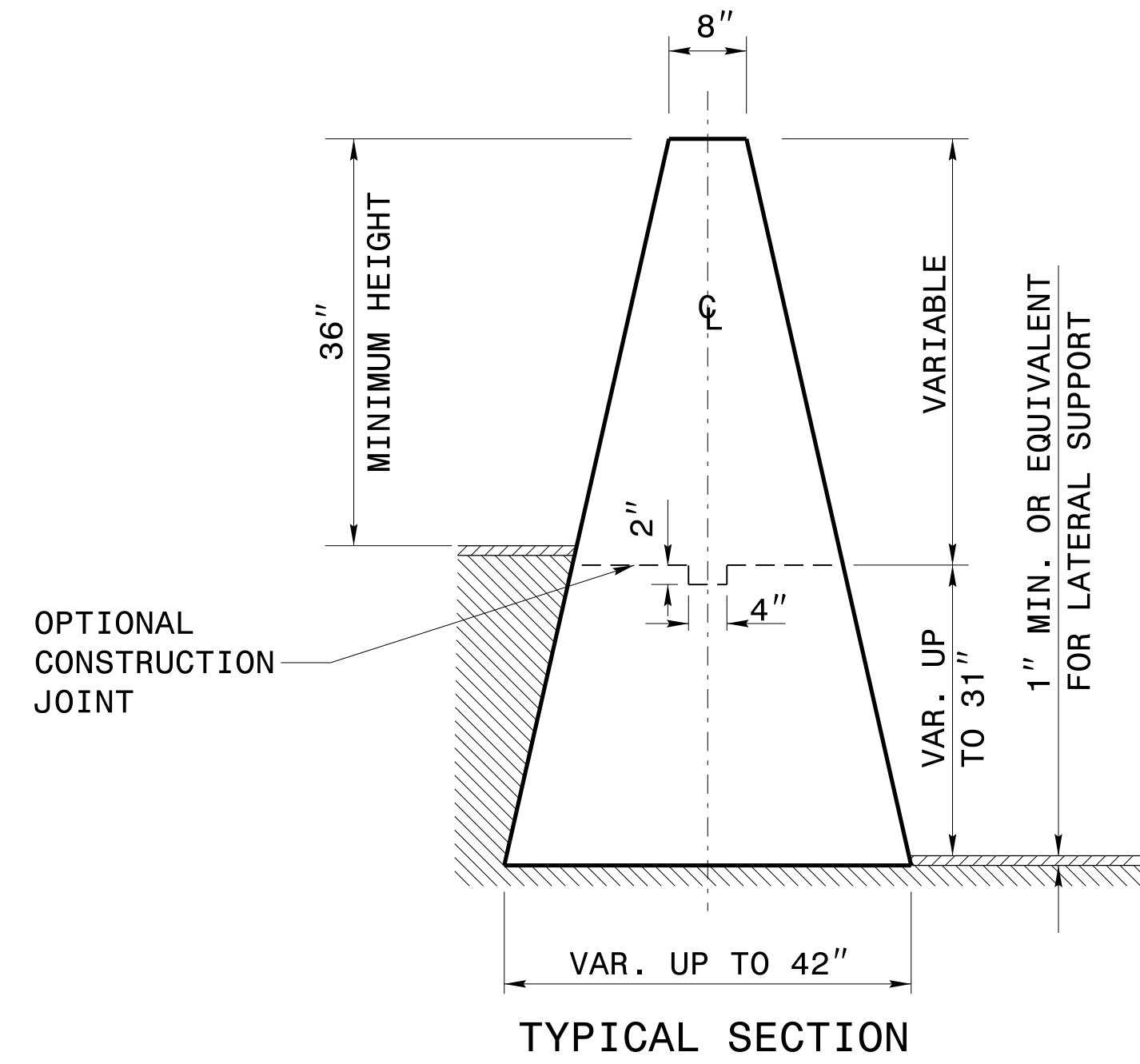
**DETAIL OF REINFORCED
CONCRETE ENDWALL FOR
84" DIAMETER PIPE - 90° SKEW**

ORIGINAL BY: R.S.WICKER DATE: 6-46
MODIFIED BY: R.E.D.&T.S.S. DATE: 6-96 & 5-00
CHECKED BY: DATE:
FILE SPEC.: details/nbritt/english/hydro/84_endwall_90sk.dgn

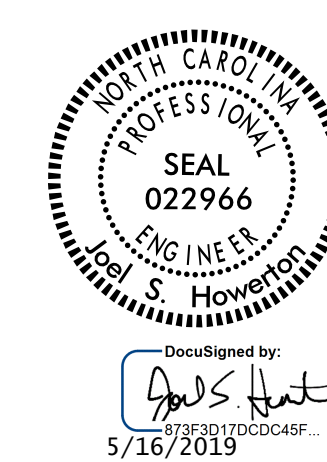
GENERAL NOTES:

1. USE CLASS "AA" CONCRETE.
2. MAINTAIN 2" OF COVER OVER ALL REBAR. CHAMFER TOP AND ENDS OF BARRIER 1/2 INCH.
3. USE BAR SPLICE LENGTHS A MINIMUM OF 20 TIMES THE NORMAL DIAMETER OF THE BAR. ANY METHOD DEvised BY THE CONTRACTOR AND APPROVED BY THE ENGINEER THAT WILL ASSURE THE LONGITUDINAL ROADWAY STEEL WILL BE POSITIONED +/- 1/2 INCH AS DIMENSIONED WILL BE SATISFACTORY.

WELDED WIRE FABRIC MAY BE USED AS AN OPTION TO CONVENTIONAL REINFORCEMENT FOR CAST-IN-PLACE BARRIER. WELDED WIRE FABRIC SHALL BE MADE IN ACCORDANCE WITH ASTM A497. CONDUIT TO BE PROVIDED ONLY WHEN CALLED FOR ELSEWHERE IN THE PLANS. POSITION OF THE CONDUIT OR CONDUIT PASSAGEWAY MAY BE ADJUSTED TO FACILITATE CONSTRUCTION, SUBJECT TO APPROVAL BY THE ENGINEER.
4. REFER TO ROADWAY STANDARD DRAWING NO.854.01 FOR EXPANSION AND CONTRACTION JOINT, FILLER AND OTHER SPECIFICATIONS.
5. REFER TO TYPE I SINGLE SLOPE CONCRETE BARRIER SPECIAL DETAIL FOR FURTHER INFORMATION.



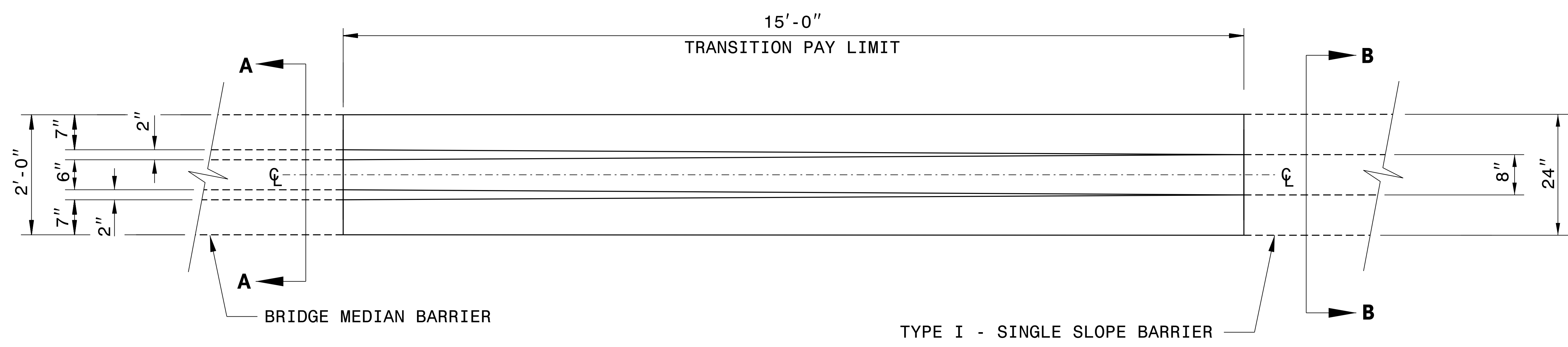
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



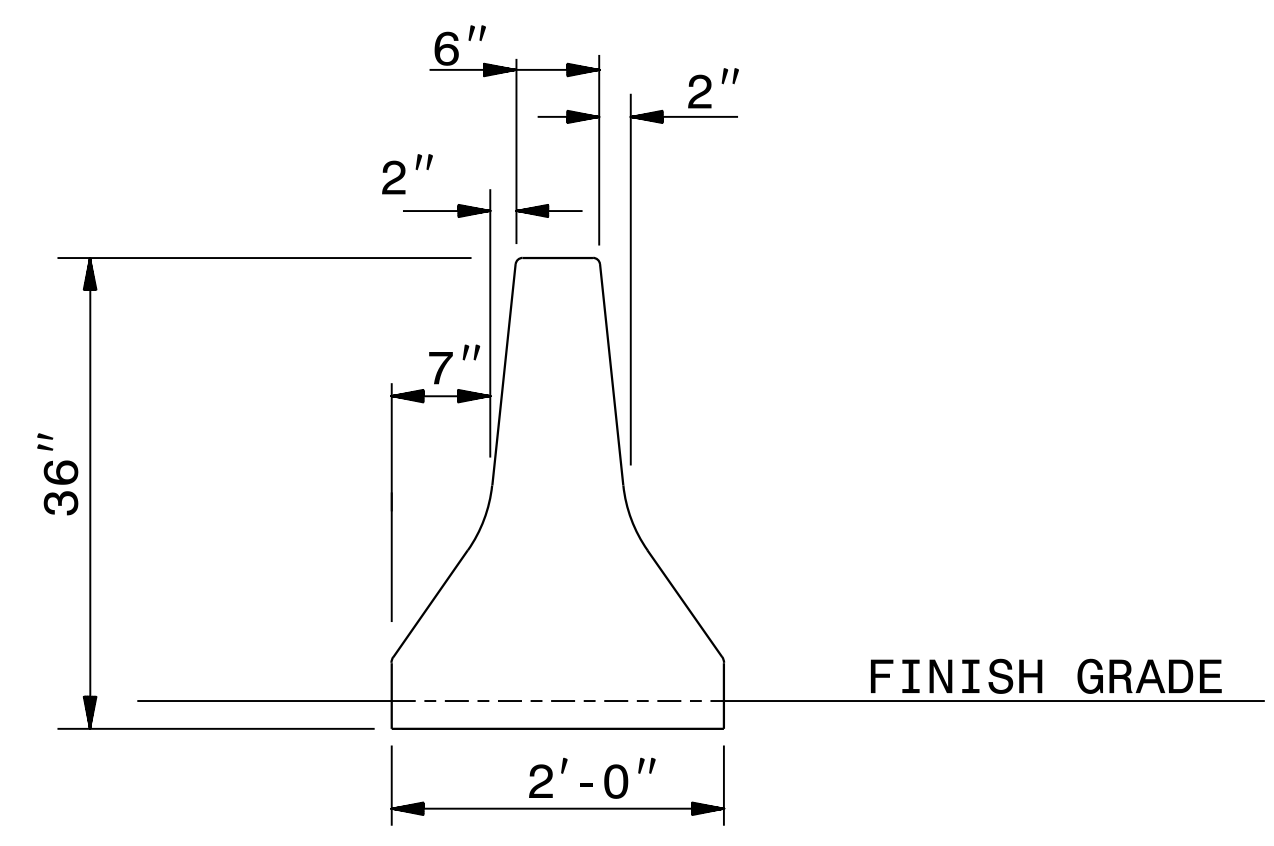
CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

TYPE II SINGLE SLOPE CONCRETE BARRIER

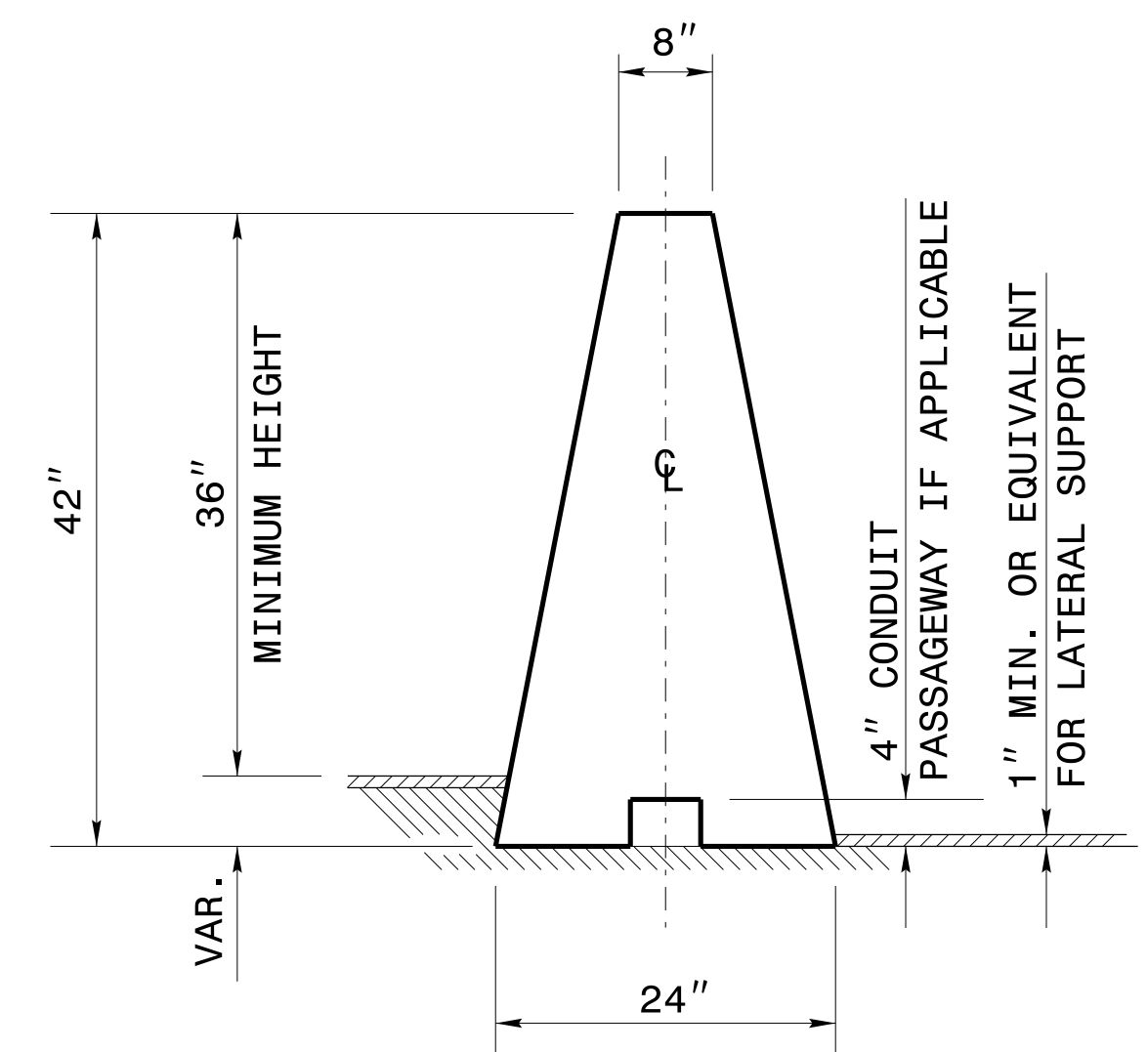
ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: kkempf DATE: 05-01-19
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: details/nbr/itt/english/gurandrail/single slope concrete barrier.dgn



**TRANSITION FROM BRIDGE MEDIAN BARRIER
TO TYPE I SINGLE SLOPE BARRIER**



SECTION A-A
BRIDGE MEDIAN BARRIER



SECTION B-B
TYPE I - SINGLE SLOPE CONCRETE BARRIER

NOTES:
 SEE SPECIAL DETAILS PERTAINING TO SINGLE SLOPE BARRIERS FOR CONSTRUCTION METHODS AND STEEL PLACEMENT.
 SEE STRUCTURE PLANS FOR BRIDGE MEDIAN BARRIER CONSTRUCTION METHODS AND STEEL PLACEMENT.
 DIMENSIONS OF CONCRETE MEDIAN BARRIER ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.

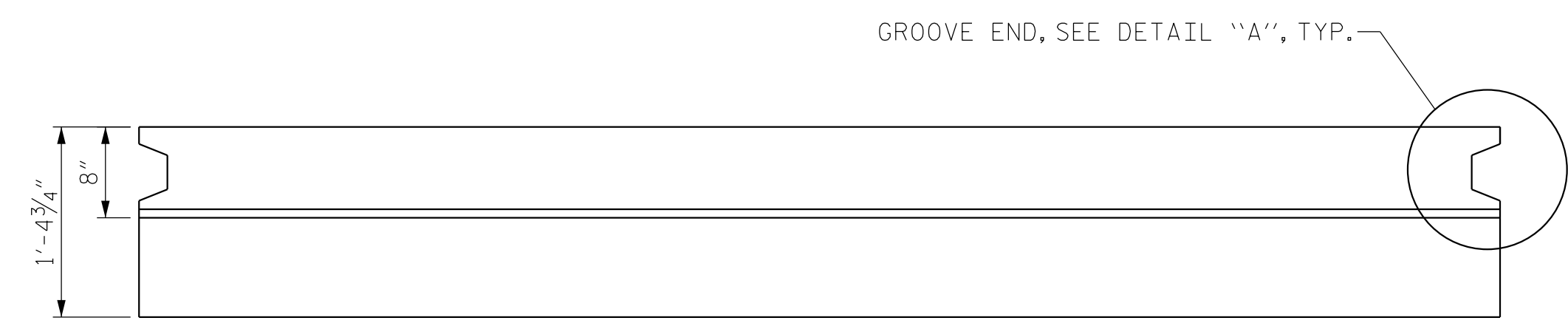


DocuSigned by:
S. Howerton
 5/16/2019

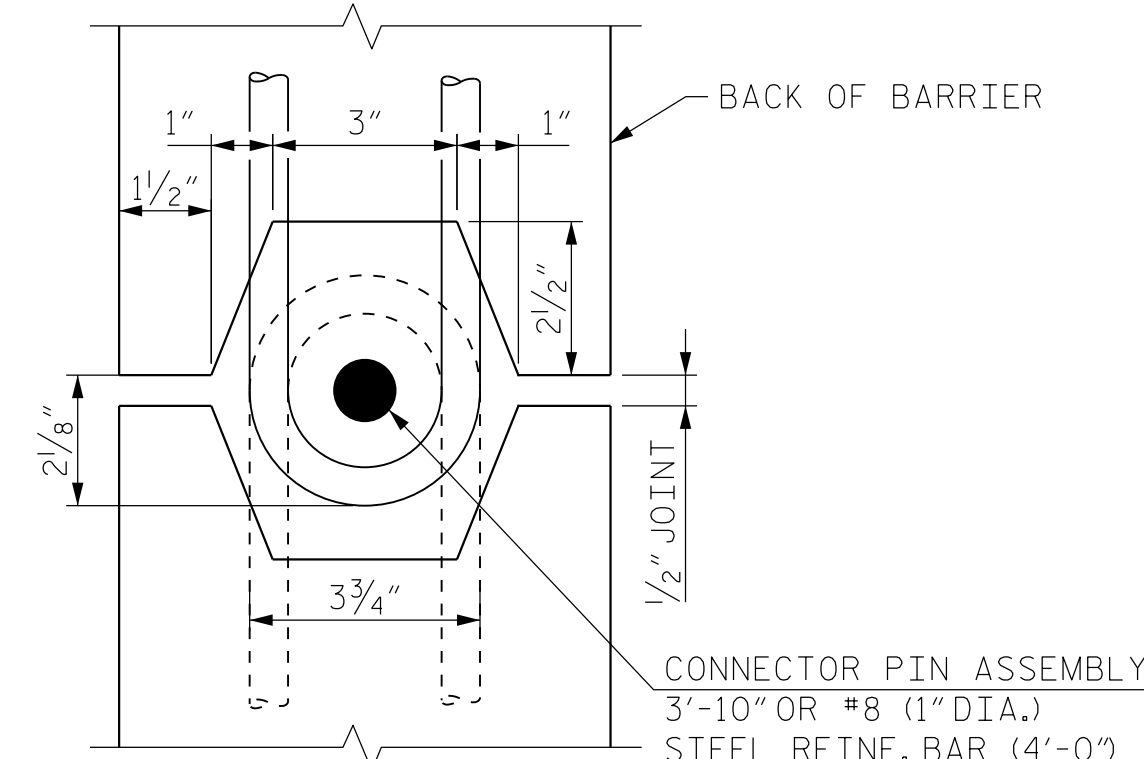
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

| | |
|--|------------------|
| CONTRACT STANDARDS AND DEVELOPMENT UNIT | |
| Office 919-707-6950 | FAX 919-250-4119 |
| CONCRETE BARRIER TRANSITION | |
| ORIGINAL BY: T. STEPHENSON | DATE: 1-97 |
| MODIFIED BY: K.A.K. | DATE: 5-19 |
| CHECKED BY: | DATE: |
| FILE SPEC.: brittenglish\guardrail\single slope concrete barrier.dgn | |

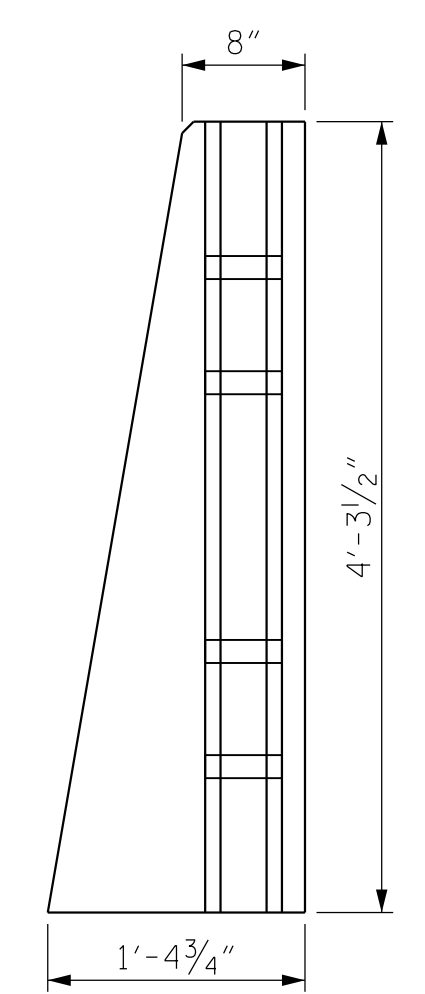
I6-MAY-2019 08:59 S:\Contracts\Projects\Special Details\guardrail\single slope concrete barrier.dgn J:\power\ton AT USD-232595



PLAN



DETAIL "A"

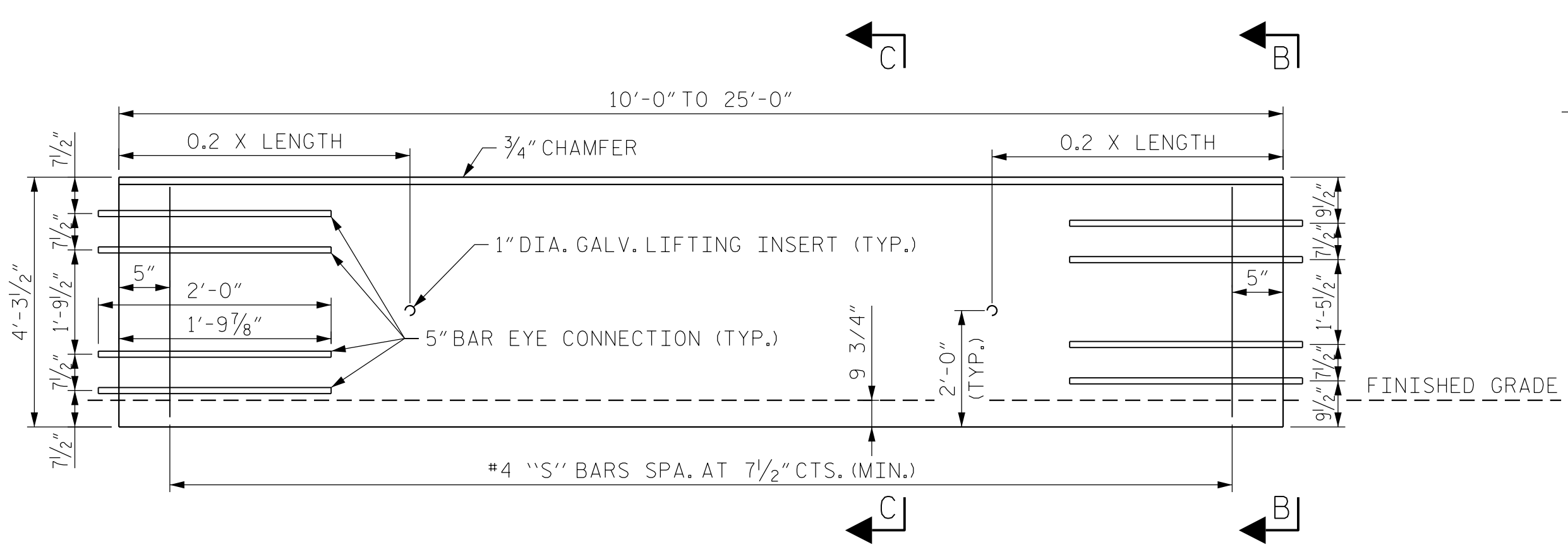


SECTION B-B

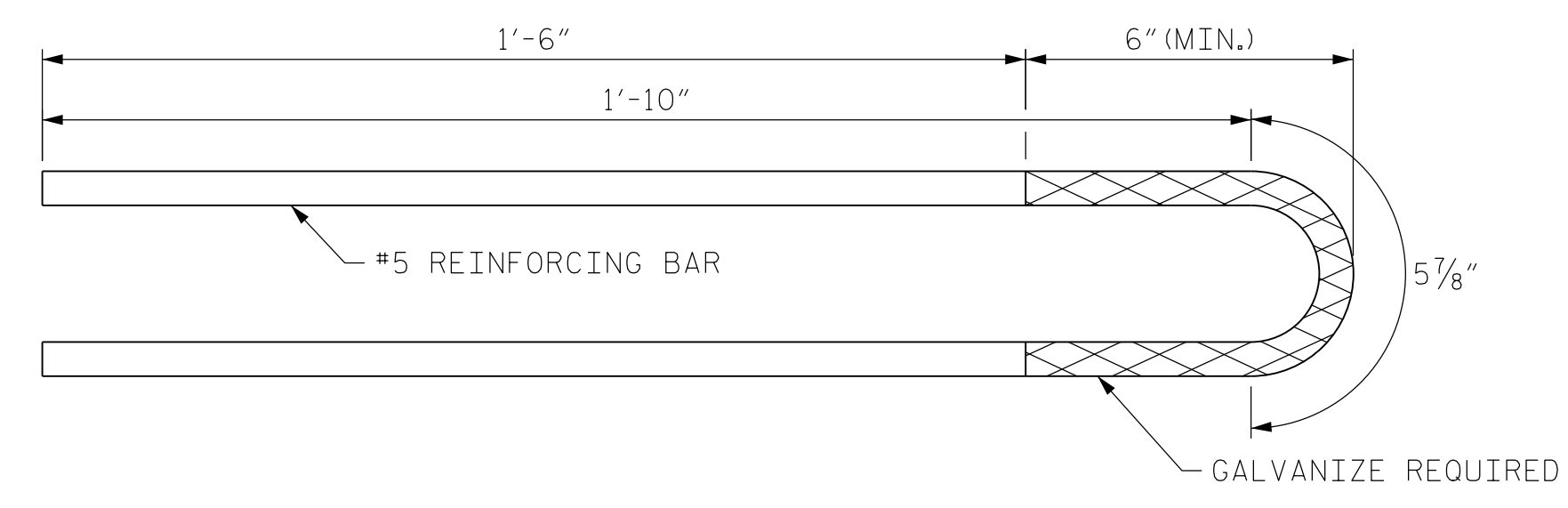
NOTES:

ALL PARTS OF CONNECTOR PIN ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-153 SPECIFICATIONS.

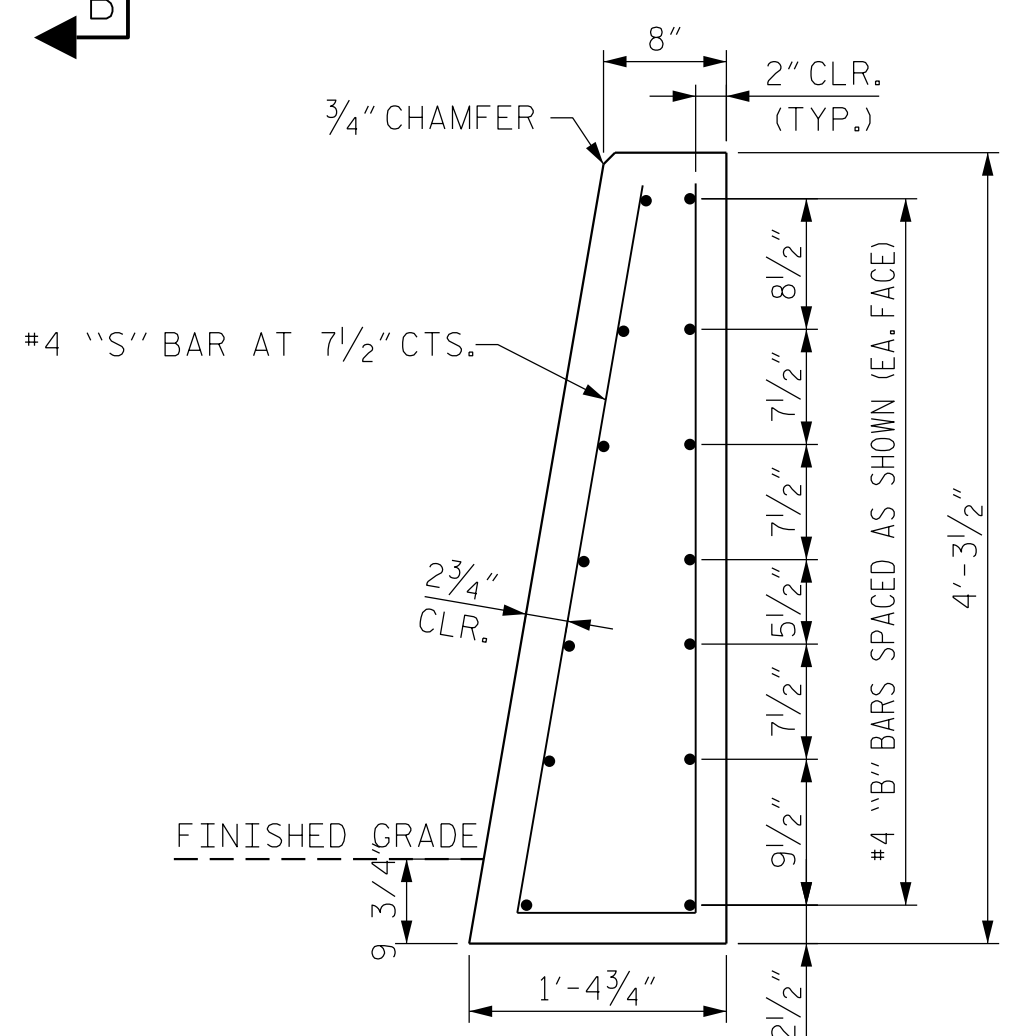
ALL CONCRETE IN PRECAST REINFORCED SINGLE FACE SINGLE SLOPE CONCRETE BARRIER RAIL SHALL BE CLASS AA.



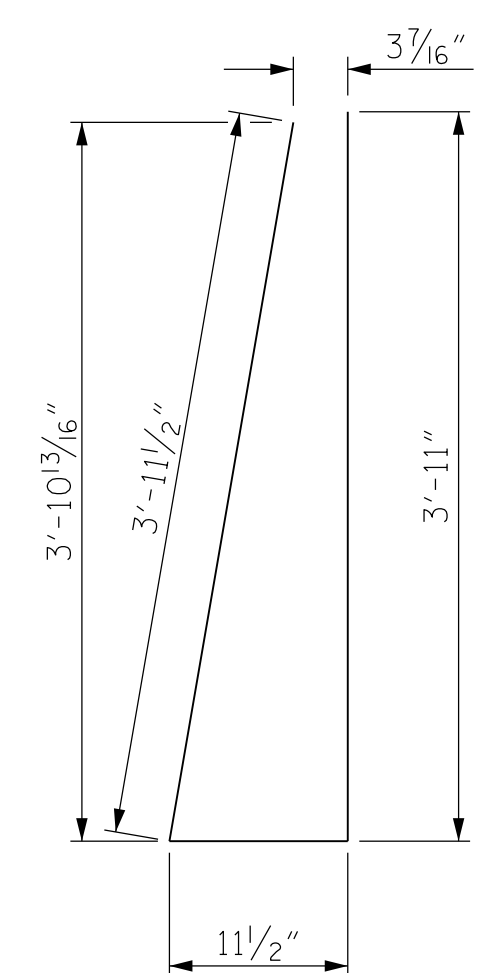
FRONT ELEVATION MIDDLE BARRIER UNIT



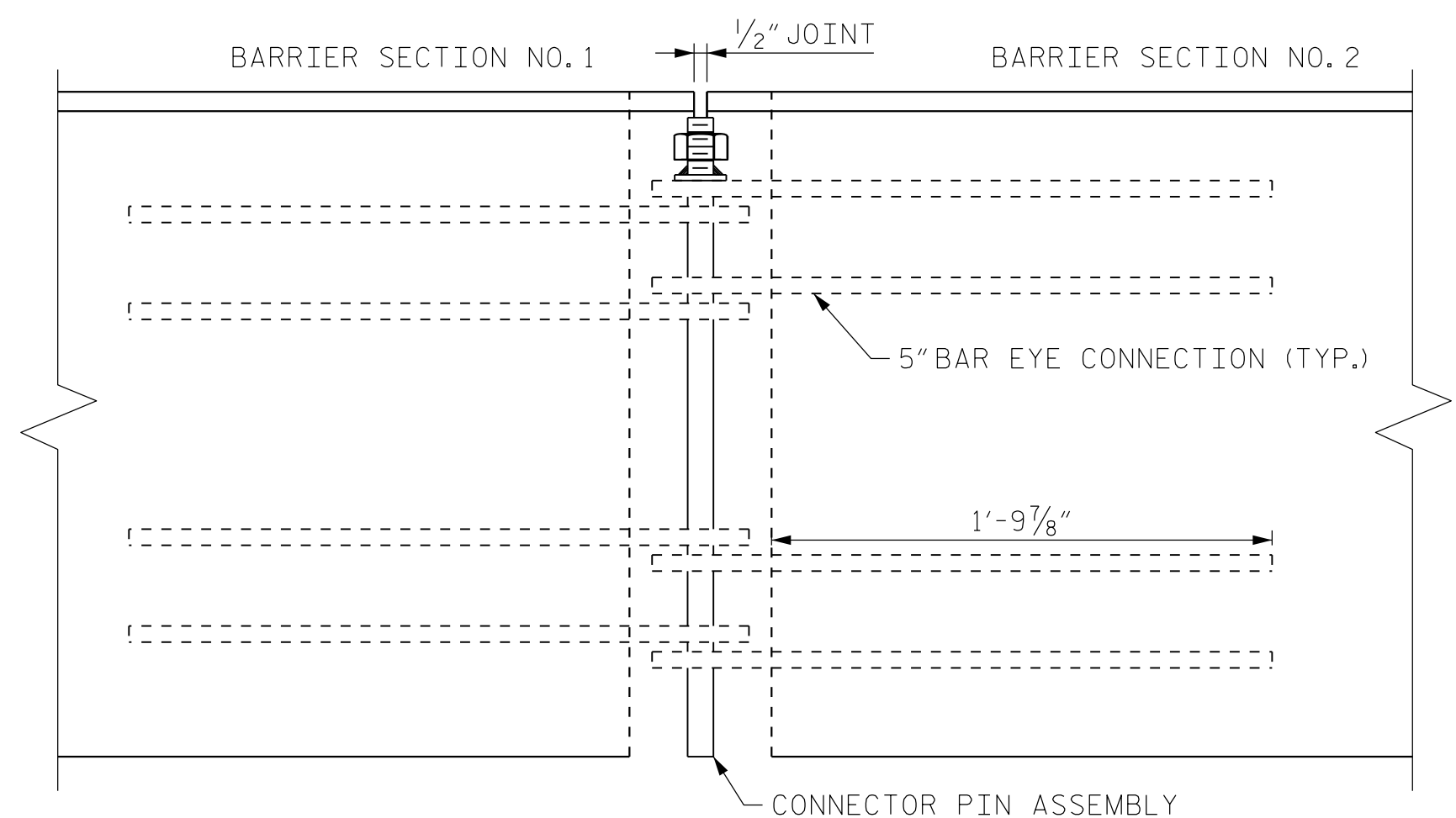
DETAIL OF REINFORCING EYE BAR



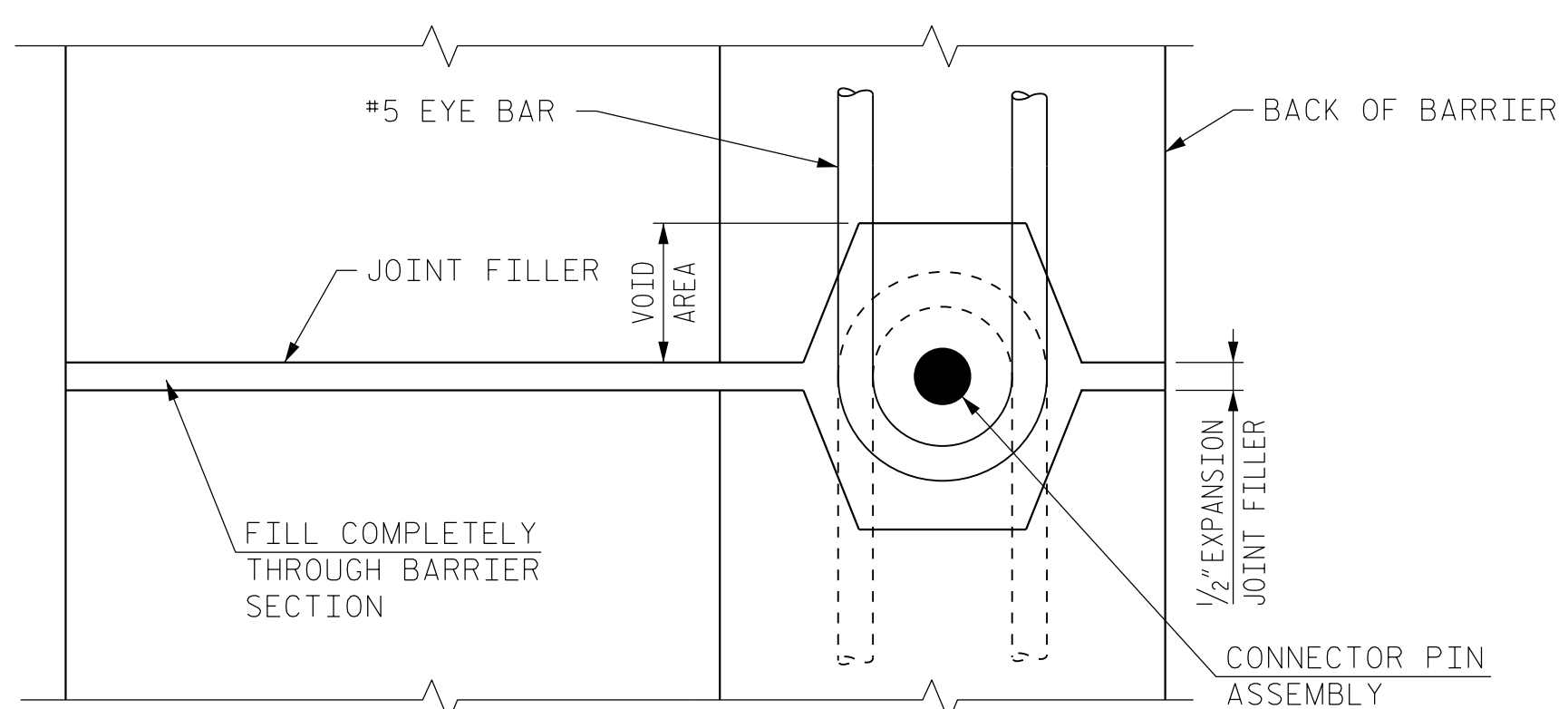
SECTION C-C



"S" BARS

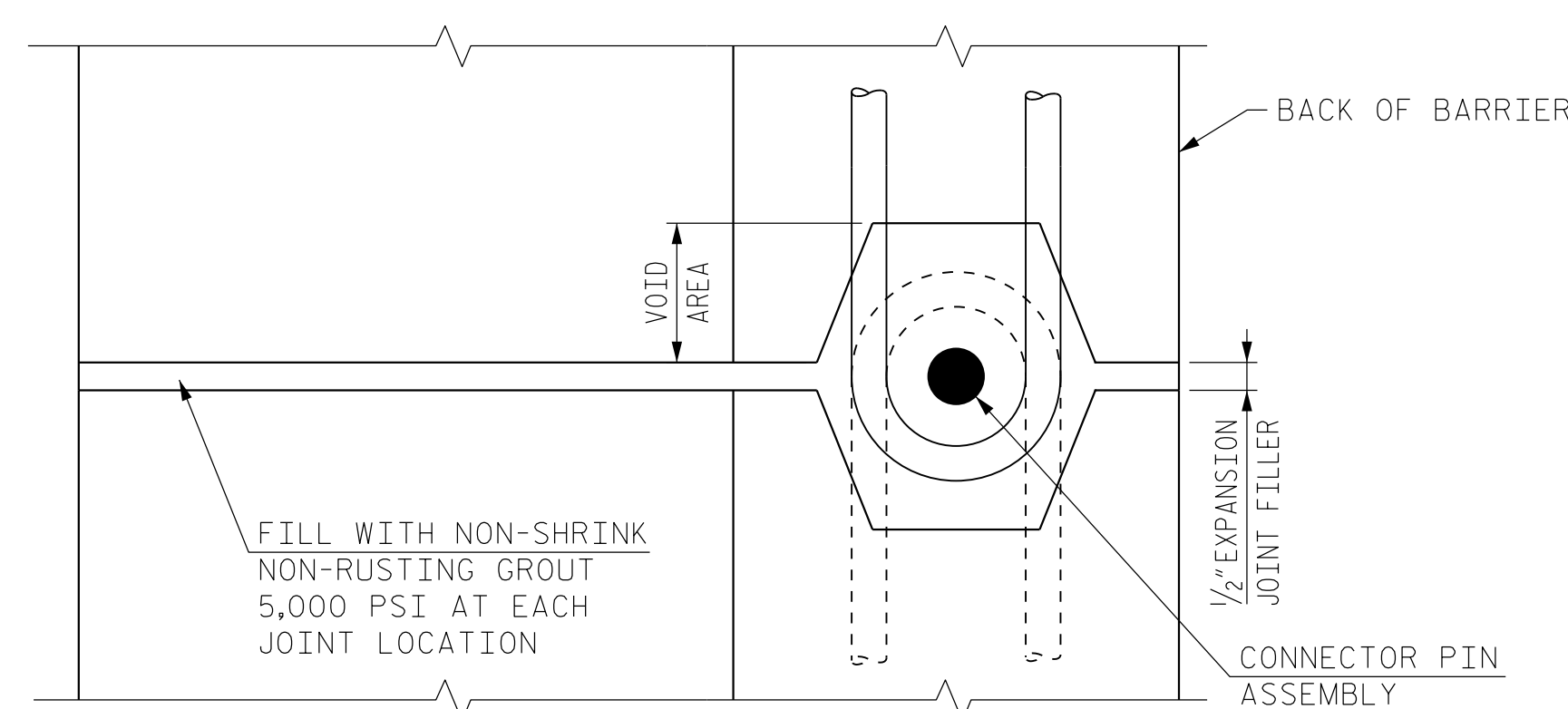


JOINT VIEW ELEVATION

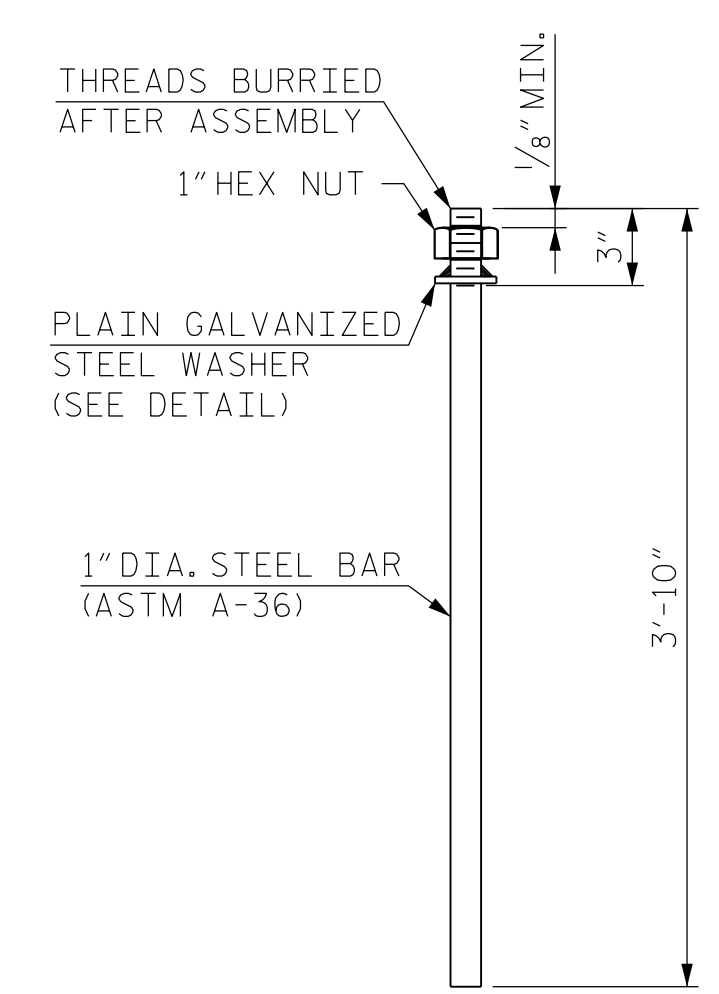


JOINT FILLER DETAIL

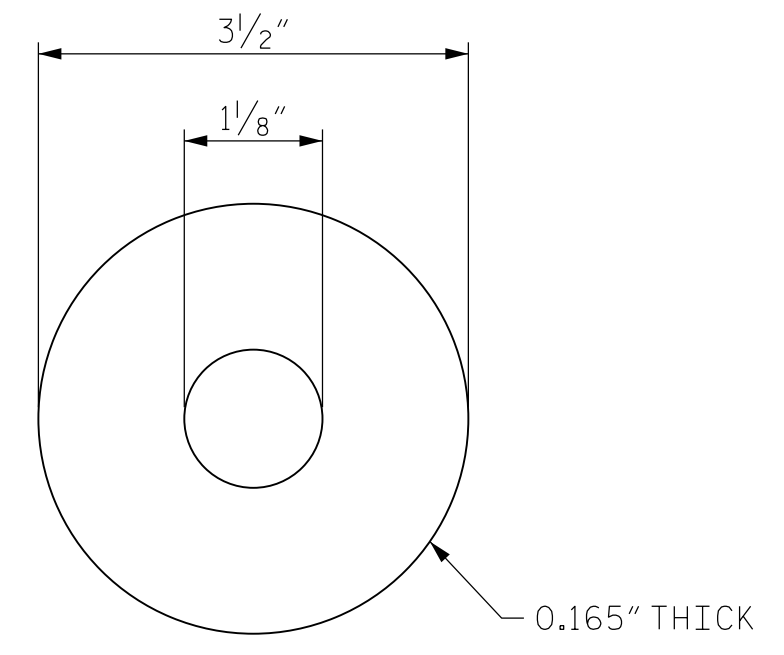
USE JOINT FILLER DETAIL AT 75 FT MAXIMUM SPACINGS



PLAN OF BONDED CONNECTION OF PRECAST UNIT



CONNECTOR PIN ASSEMBLY



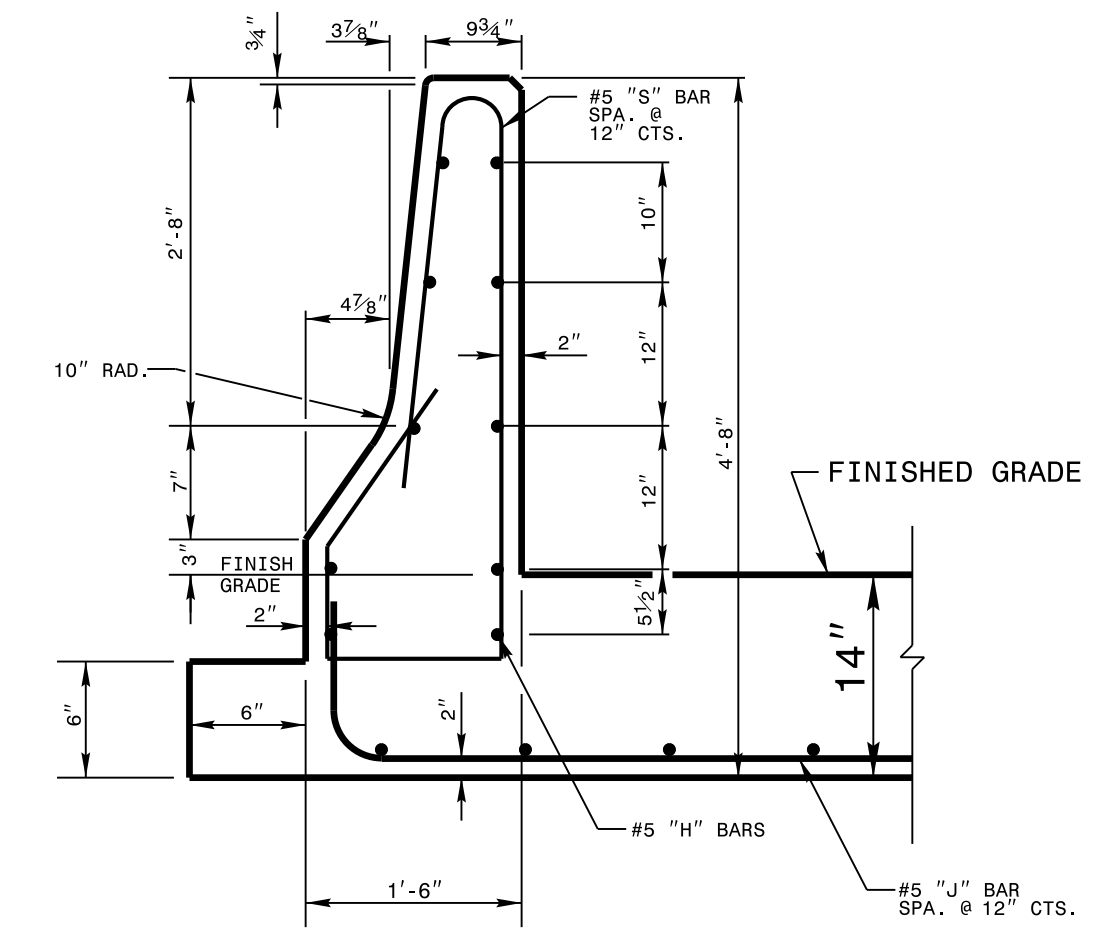
PLAIN GALVANIZED STEEL WASHER FOR 1" PIN

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
 Office 919-707-6950 FAX 919-250-4119

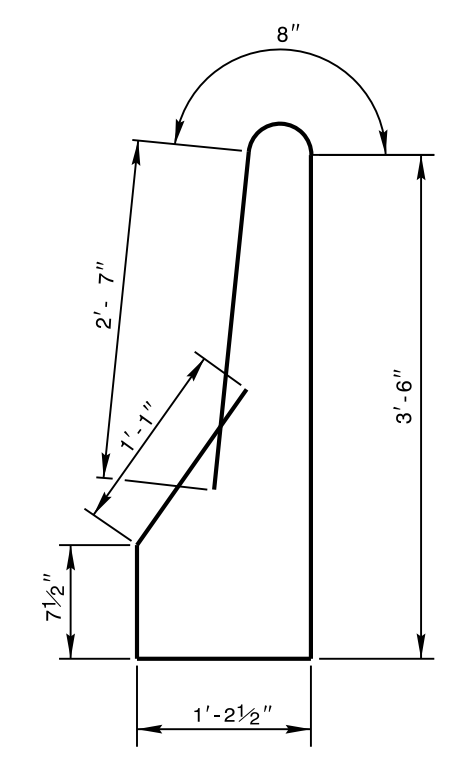
PRECAST REINFORCED SINGLE FACE SINGLE SLOPE CONCRETE BARRIER RAIL

ORIGINAL BY: J. E. KEENE DATE: APR 2019
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: kkempf/english/single face single slope barrier rail.dgn

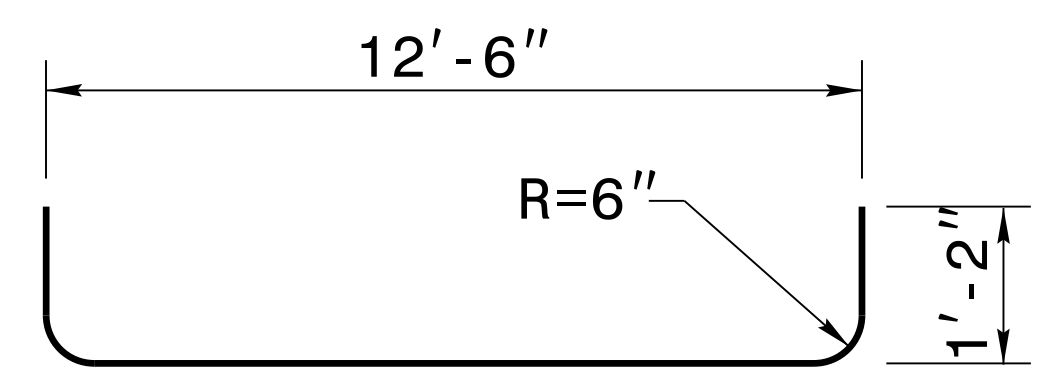
\$\$\$USERNAME\$\$\$
\$\$\$DATE\$\$\$ \$\$\$FILE\$\$\$



DETAIL X-X
CROSS SECTIONAL VIEW



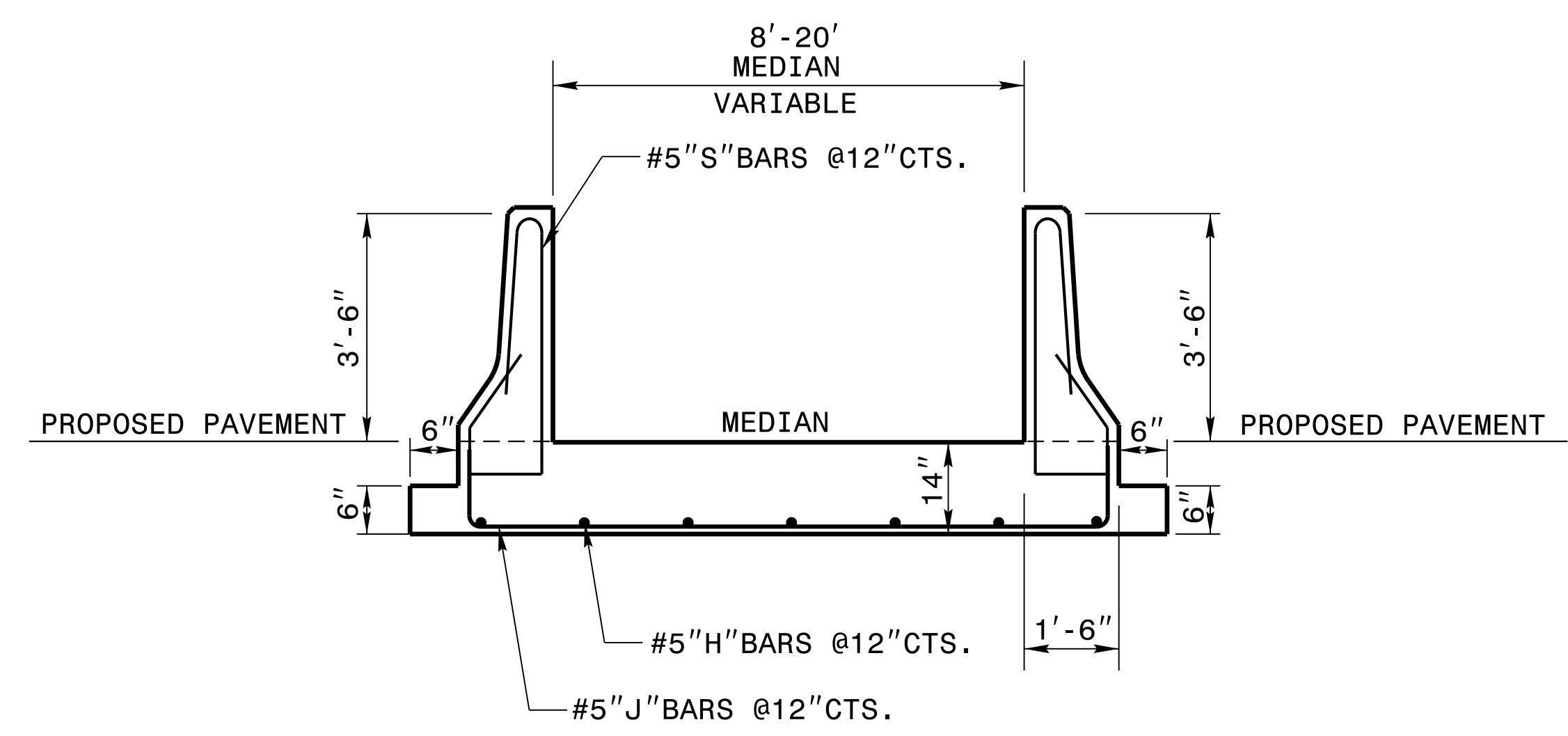
S - BARS
#5 BAR



J - BARS
#5 BAR

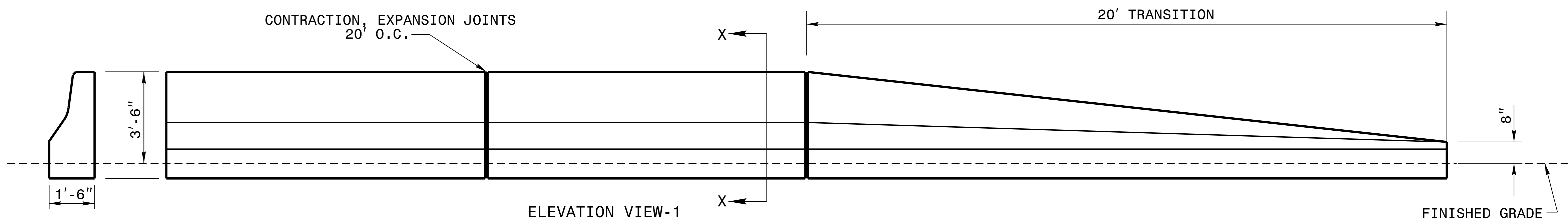
GENERAL NOTES:

- CLASS 'AA' CONCRETE TO BE USED THROUGHOUT.
- REINFORCING STEEL TO BE CUT, BENT OR RELOCATED TO POSITION PIPE AS DIRECTED BY THE ENGINEER.
- ALL EXPOSED CORNERS TO BE CHAMFERED 1".
- MAINTAIN 2" MINIMUM CONCRETE COVERAGE ON ALL STEEL.



CROSS SECTIONAL VIEW

| BILL OF MATERIAL | | | | | |
|---------------------------|------|--------|---------|------|-------------|
| CODE | BAR# | LENGTH | LBS/FT. | QTY. | LBS |
| H | 5 | 19'-8" | 1.043 | 968 | 19,856 |
| J | 5 | 14'-6" | 1.043 | 924 | 13,974 |
| S | 5 | 9'-8" | 1.043 | 924 | 9,317 |
| TOTAL WEIGHT STEEL | | | | | 43,147 |
| MASONRY QUANTITIES | | | | | |
| CLASS "AA" CONCRETE | | | | | |
| SINGLE FACE BARRIER | | | | | |
| AND MEDIAN | | | | | 700 CU.YDS. |
| TOTAL CLASS "AA" CONCRETE | | | | | 700 CU.YDS. |



ELEVATION VIEW-1



DocuSigned by:
S. Howerton
5/16/2019 10:00 AM

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DDI BRIDGE BARRIER

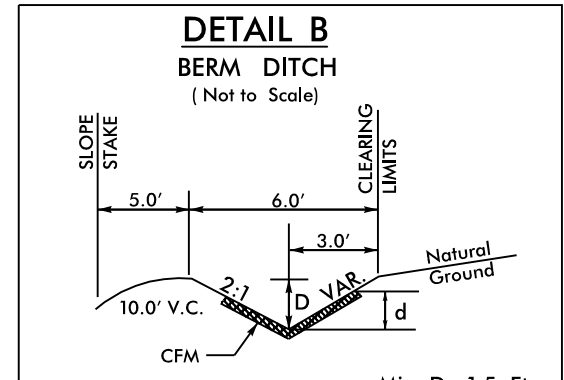
ORIGINAL BY: _____ DATE: _____
 MODIFIED BY: nbritt DATE: 4-26-13
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: nbritt\english\interstate\i5501 ddi bridge barrier.dgn

02-MAY-2019 08:23
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 J:\overton AT_CSD-292595

5/14/99

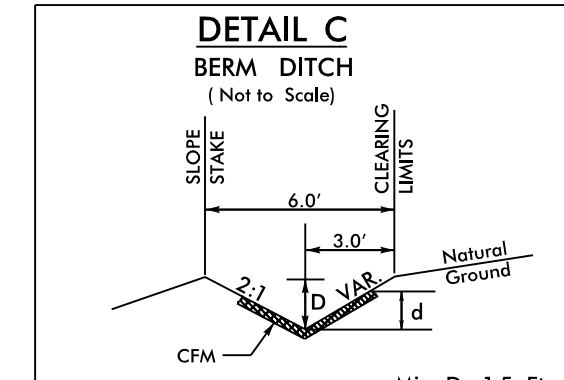
DRAINAGE DITCH DETAILS

| | |
|--|-------------------|
| PROJECT REFERENCE NO. 1-4700 | SHEET NO. 20-1 |
| RW SHEET NO. | |
| HYDRAULICS ENGINEER | |
| | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



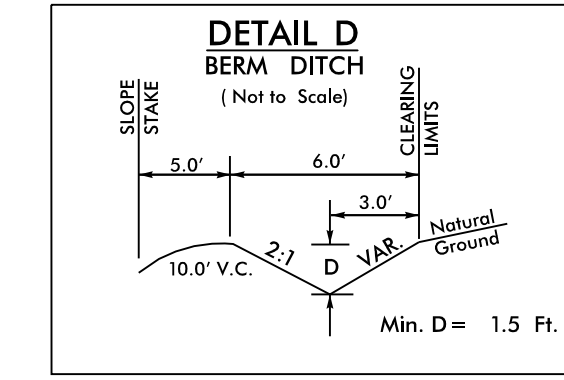
FROM -L- STA. 832+50 TO STA. 835+25 RT
FROM -L- STA. 835+75 TO STA. 838+30 RT
FROM -WBL- STA. 889+14 TO STA. 891+50 RT
FROM -WBL- STA. 896+25 TO STA. 901+50 RT
FROM -WBL- STA. 924+00 TO STA. 931+25 RT
FROM -WBL- STA. 989+00 TO STA. 991+25 RT
FROM -WBL- STA. 994+35 TO STA. 994+95 RT
FROM -WBL- STA. 996+00 TO -Y15RPC- STA. 10+60 RT

Type of Liner = COIR FIBER MAT (CFM)
Min. D = 1.5 Ft.
Max. d = 1.5 Ft.



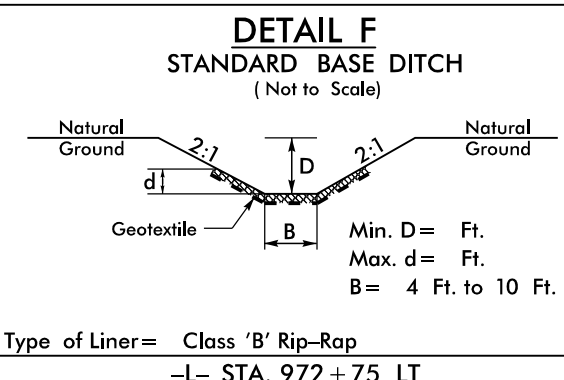
FROM -L- STA. 1063+50 TO STA. 1066+75 RT

Type of Liner = COIR FIBER MAT (CFM)
Min. D = 1.5 Ft.
Max. d = 0.5 Ft.



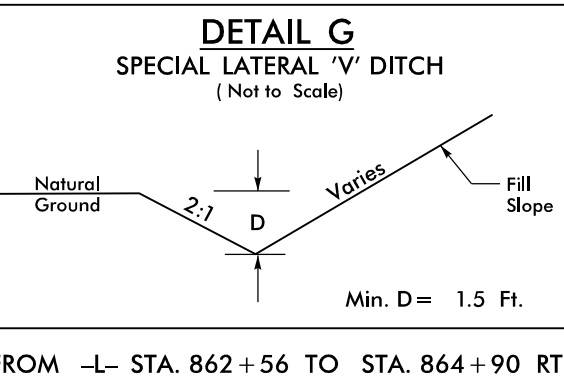
FROM -L- STA. 835+25 TO STA. 835+75 RT
FROM -WBL- STA. 891+50 TO STA. 896+25 RT
FROM -WBL- STA. 905+05 TO STA. 911+00 RT
FROM -WBL- STA. 932+50 TO STA. 936+47 RT
FROM -WBL- STA. 991+25 TO STA. 994+35 RT
FROM -WBL- STA. 994+95 TO STA. 996+00 RT
FROM -WBL- STA. 918+00 TO STA. 921+50 RT
FROM -WBL- STA. 1108+25 TO STA. 1110+50 RT
FROM -EBL- STA. 1114+51 TO STA. 1119+00 LT
FROM -L- STA. 1217+75 TO STA. 1230+57.72 LT

Type of Liner = Class "B" Rip-Rap
-L- STA. 972+75 LT



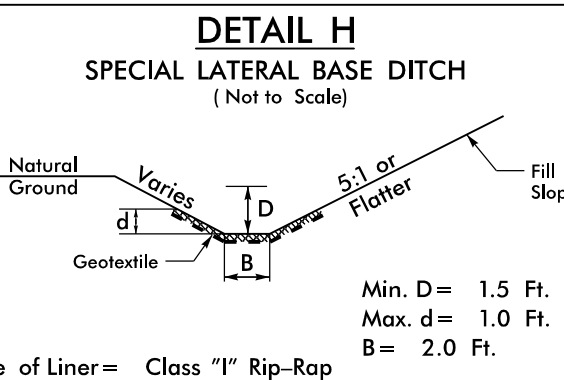
FROM -L- STA. 835+25 TO STA. 835+75 RT
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FROM -WBL- STA. 932+50 TO STA. 936+47 RT
FROM -WBL- STA. 991+25 TO STA. 994+35 RT
FROM -WBL- STA. 994+95 TO STA. 996+00 RT
FROM -WBL- STA. 918+00 TO STA. 921+50 RT
FROM -WBL- STA. 1108+25 TO STA. 1110+50 RT
FROM -EBL- STA. 1114+51 TO STA. 1119+00 LT
FROM -L- STA. 1217+75 TO STA. 1230+57.72 LT

Type of Liner = Class "B" Rip-Rap
-L- STA. 972+75 LT



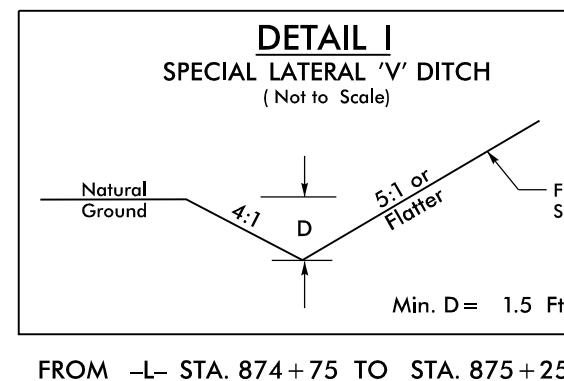
FROM -L- STA. 862+56 TO STA. 864+90 RT

Type of Liner = Class "I" Rip-Rap



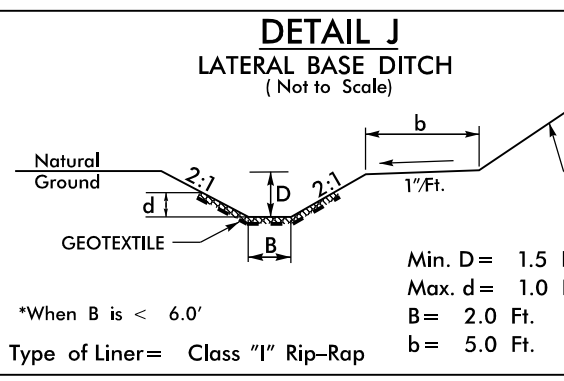
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FROM -Y15RPC- STA. 10+00 TO STA. 11+95 RT

Type of Liner = Class "I" Rip-Rap



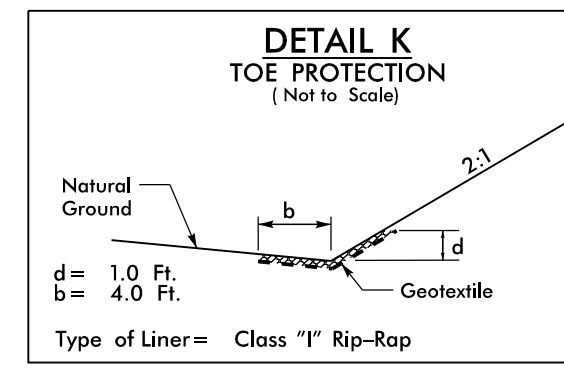
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Type of Liner = Class "I" Rip-Rap



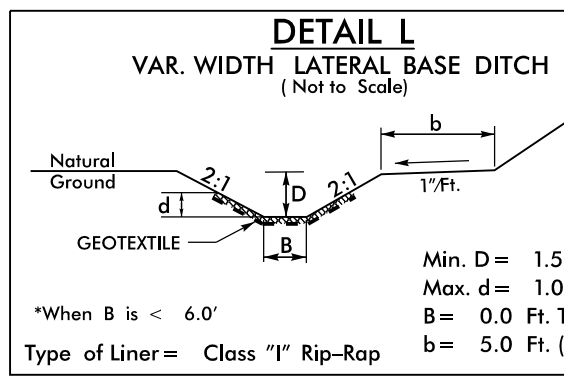
FROM -L- STA. 874+75 TO STA. 876+75 LT

Type of Liner = Class "I" Rip-Rap



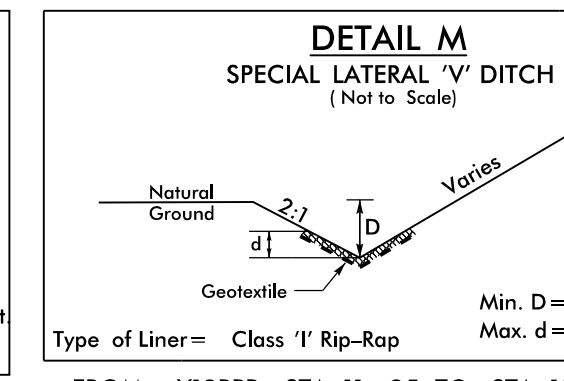
FROM -L- STA. 881+50 TO STA. 883+70 RT
FROM -WBL- STA. 883+70 TO STA. 885+00 RT
FROM -WBL- STA. 885+00 TO STA. 886+00 RT

Type of Liner = Class "I" Rip-Rap



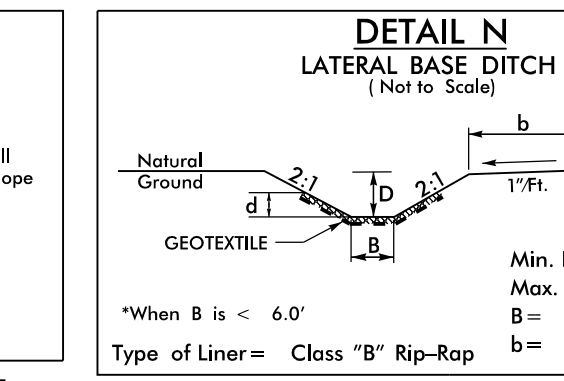
FROM -WBL- STA. 942+75 TO STA. 943+75 RT

Type of Liner = Class "I" Rip-Rap



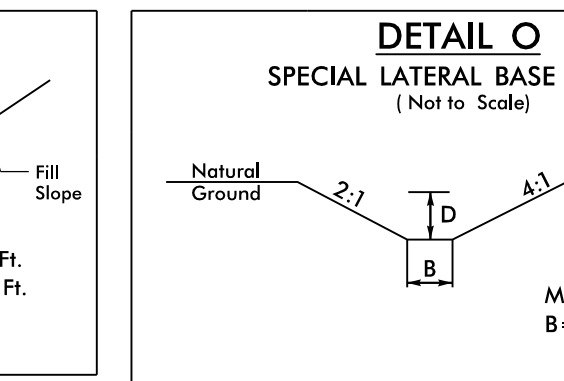
FROM -Y13RPB- STA. 11+25 TO STA. 19+20 LT

Type of Liner = Class "I" Rip-Rap



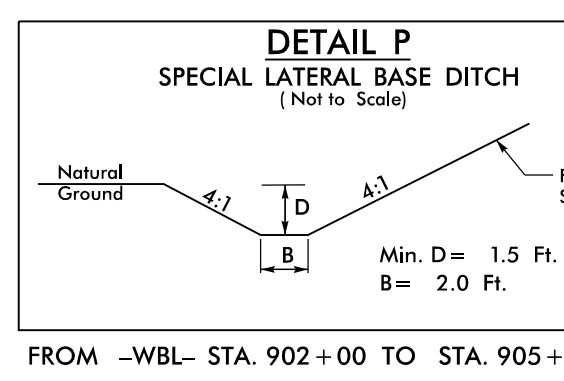
FROM -WBL- STA. 887+50 TO STA. 889+25 RT

Type of Liner = Class "B" Rip-Rap



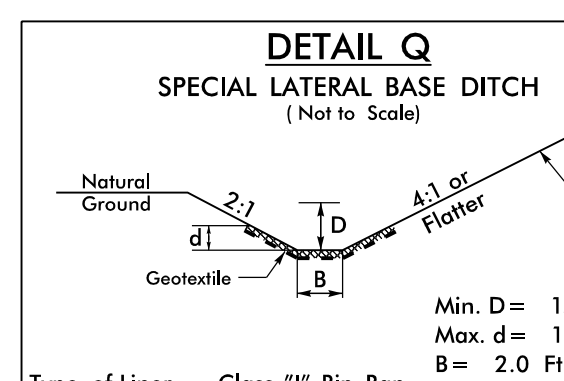
FROM -EBL- STA. 884+00 TO STA. 885+00 LT

Type of Liner = Class "I" Rip-Rap



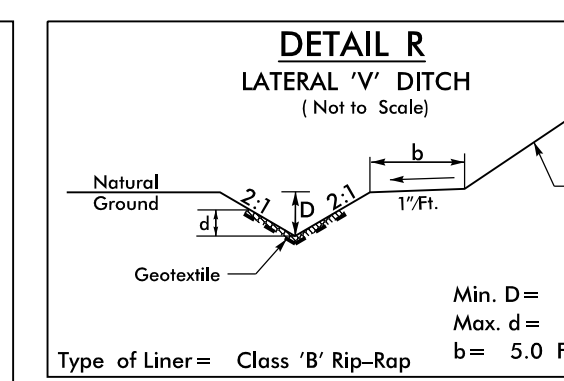
FROM -WBL- STA. 902+00 TO STA. 905+25 RT

Type of Liner = Class "I" Rip-Rap



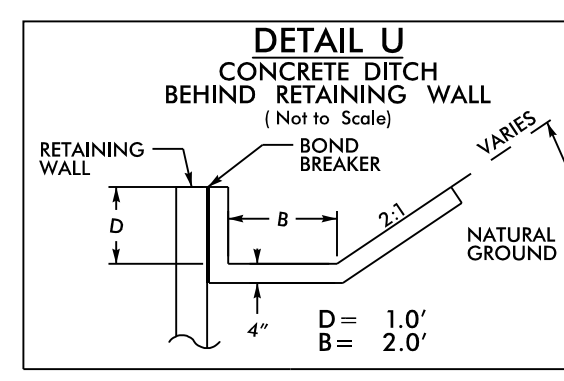
FROM -WBL- STA. 901+25 TO STA. 902+00 RT

Type of Liner = Class "I" Rip-Rap



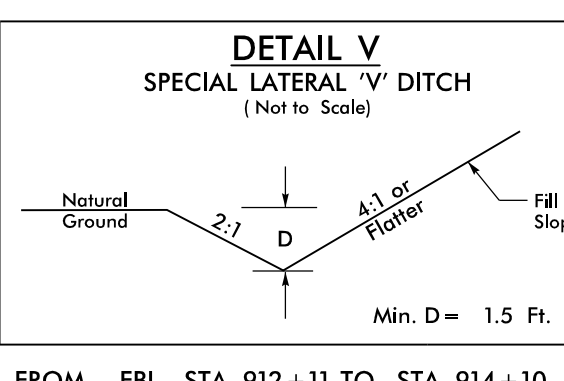
FROM -WBL- STA. 951+50 TO STA. 953+75 RT

Type of Liner = Class "B" Rip-Rap



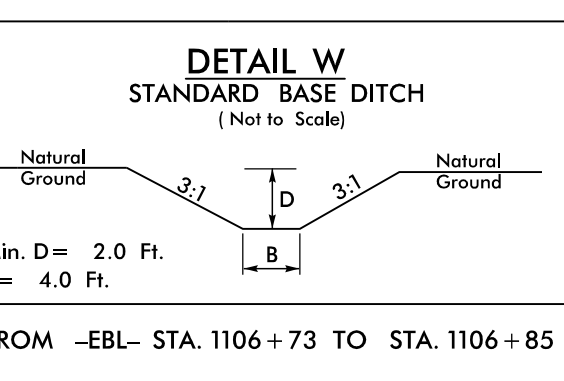
FROM -WBL- STA. 918+25 TO STA. 923+75 RT
FROM -WBL- STA. 948+75 TO STA. 950+00 RT
FROM -WBL- STA. 960+00 TO STA. 980+00 RT
FROM -L- STA. 1070+60 TO STA. 1078+00 LT
FROM -L- STA. 1069+00 TO STA. 1079+00 RT
FROM -EBL- STA. 1081+00 TO STA. 1084+50 LT
FROM -EBL- STA. 1086+00 TO STA. 1093+00 LT
FROM -WBL- STA. 1079+00 TO STA. 1081+00 RT
FROM -WBL- STA. 1093+89 TO STA. 1100+50 RT
FROM -L- STA. 1140+75 TO STA. 1146+58 LT
FROM -L- STA. 1148+06 TO STA. 1161+65 LT
FROM -L- STA. 1184+00 TO STA. 1194+92 LT

Type of Liner = Class "I" Rip-Rap



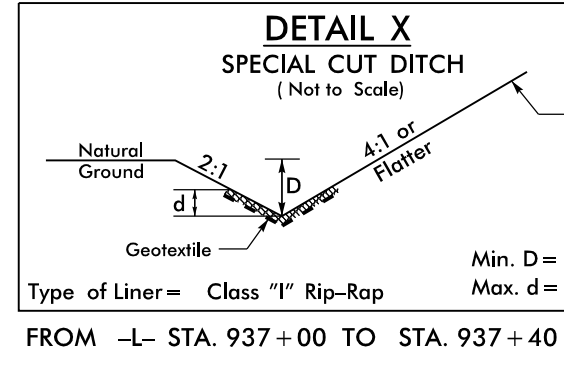
FROM -EBL- STA. 912+11 TO STA. 914+10 LT
FROM -WBL- STA. 923+75 TO STA. 924+00 RT
FROM -WBL- STA. 924+00 TO STA. 924+25 RT

Type of Liner = Class "I" Rip-Rap



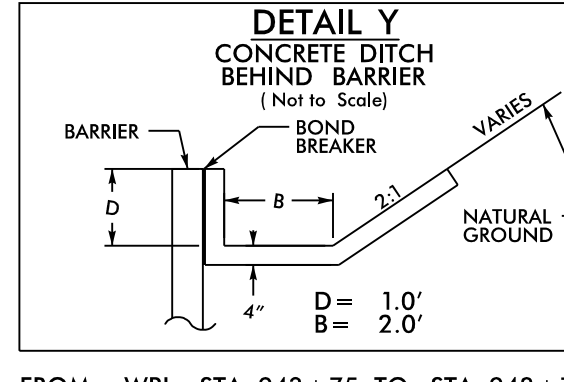
FROM -EBL- STA. 1106+73 TO STA. 1106+85 RT

Type of Liner = Class "I" Rip-Rap



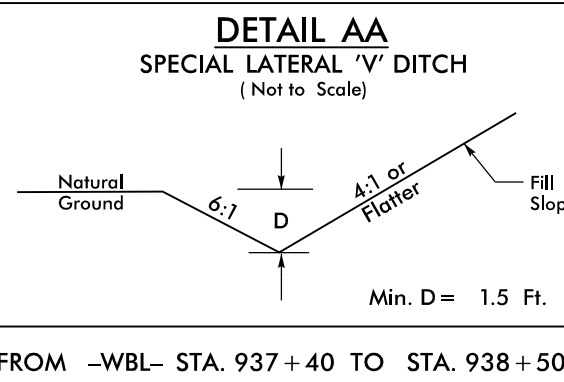
FROM -L- STA. 937+00 TO STA. 937+40 RT

Type of Liner = Class "I" Rip-Rap



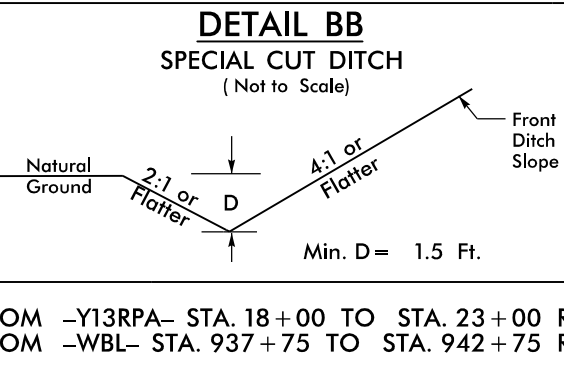
FROM -WBL- STA. 943+75 TO STA. 948+75 RT

Type of Liner = Class "I" Rip-Rap



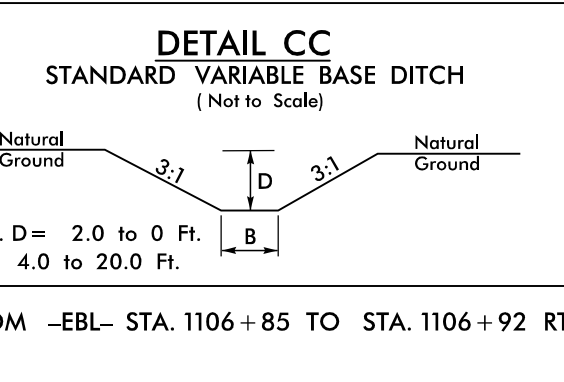
FROM -WBL- STA. 937+40 TO STA. 938+50 RT

Type of Liner = Class "I" Rip-Rap



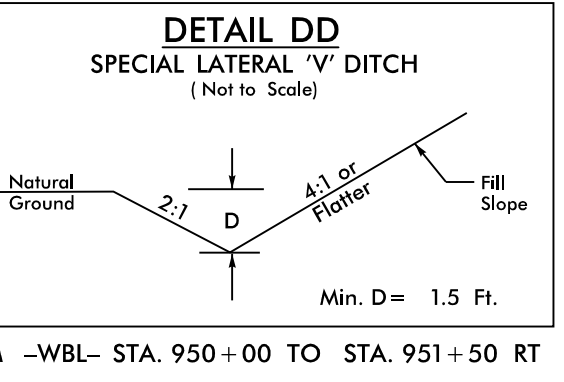
FROM -Y13RPA- STA. 18+00 TO STA. 23+00 RT
FROM -WBL- STA. 937+75 TO STA. 942+75 RT

Type of Liner = Class "I" Rip-Rap



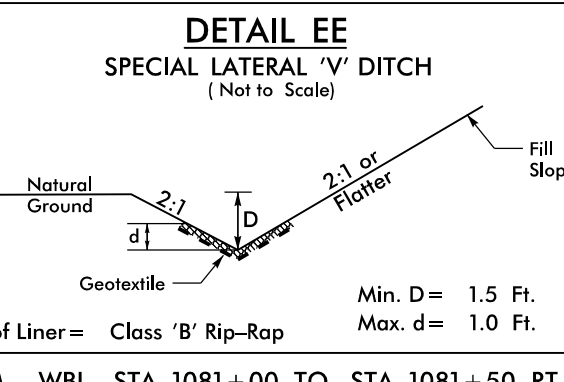
FROM -EBL- STA. 1106+85 TO STA. 1106+92 RT

Type of Liner = Class "I" Rip-Rap



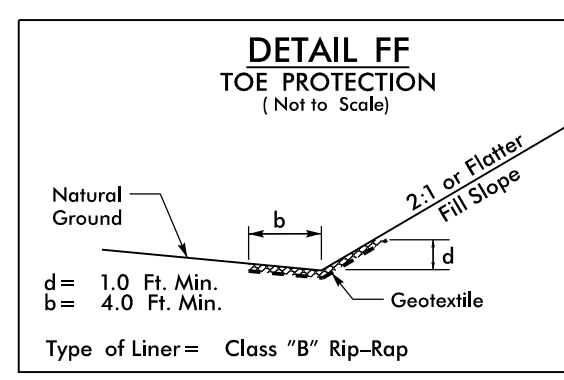
FROM -WBL- STA. 950+00 TO STA. 951+50 RT

Type of Liner = Class "I" Rip-Rap



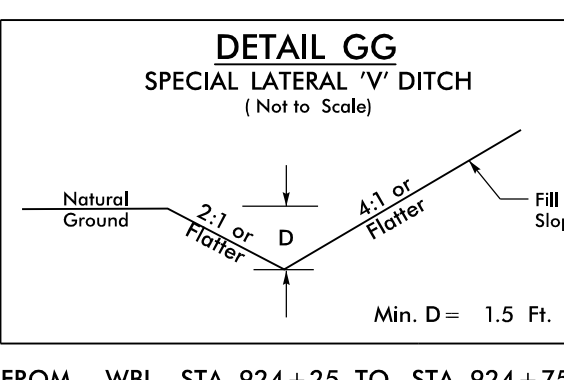
FROM -WBL- STA. 1081+00 TO STA. 1081+50, RT

Type of Liner = Class "B" Rip-Rap



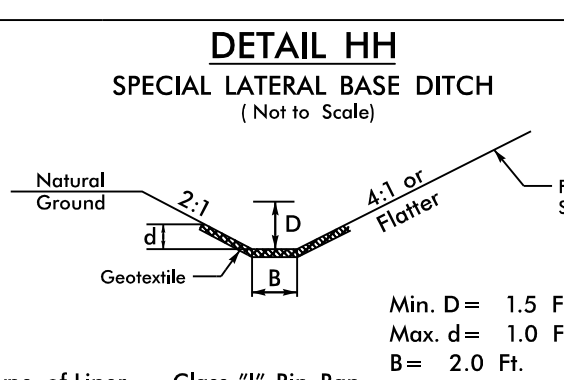
FROM -L- STA. 862+69 TO STA. 866+30 LT
FROM -L- STA. 866+40 TO STA. 866+68 LT
FROM -WBL- STA. 956+00 TO STA. 959+50 RT

Type of Liner = Class "B" Rip-Rap



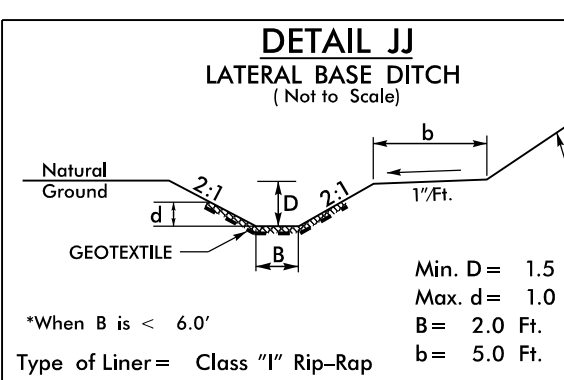
FROM -WBL- STA. 924+25 TO STA. 924+75 RT
FROM -WBL- STA. 988+00 TO STA. 992+00 RT

Type of Liner = Class "I" Rip-Rap



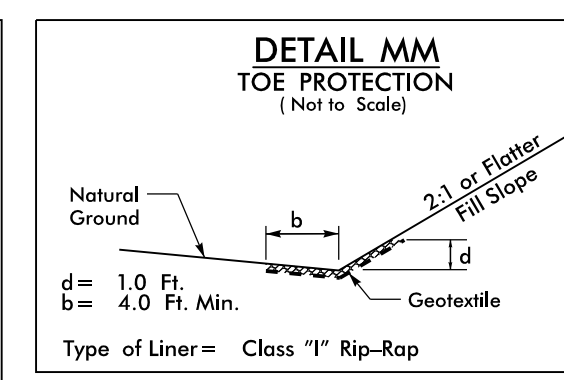
FROM -Y15RPC- STA. 10+00 TO STA. 11+95 RT

Type of Liner = Class "I" Rip-Rap



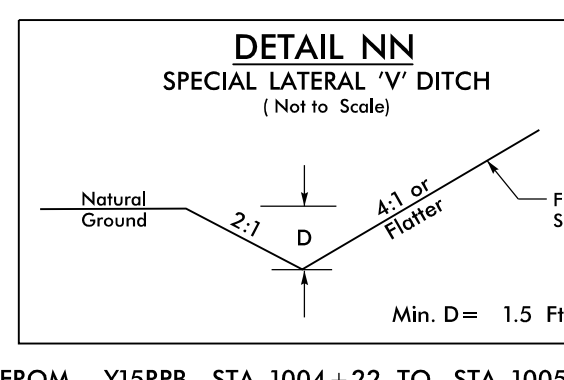
FROM -WBL- STA. 983+75 TO STA. 986+00 RT
FROM -L- STA. 1046+75 TO STA. 1049+00 RT
FROM -L- STA. 1060+26 TO STA. 1063+50 RT

Type of Liner = Class "I" Rip-Rap



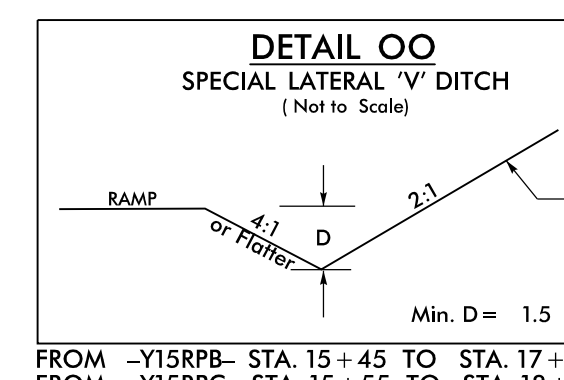
FROM -Y15RPC- STA. 11+95 TO STA. 15+85 RT
FROM -L- STA. 997+00 TO STA. 997+56 LT

Type of Liner = Class "I" Rip-Rap



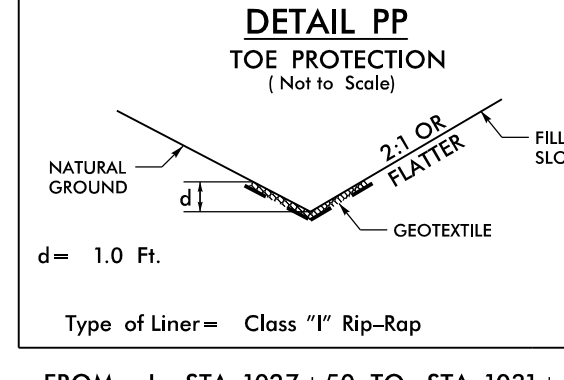
FROM -Y15RPB- STA. 1004+22 TO STA. 1005+65 LT

Type of Liner = Class "I" Rip-Rap



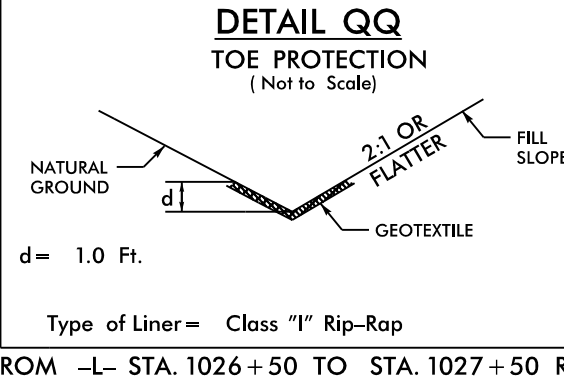
FROM -Y15RPB- STA. 15+45 TO STA. 17+00 RT
FROM -Y15RPC- STA. 15+55 TO STA. 18+00 LT
FROM -Y15RPD- STA. 14+15 TO STA. 17+38 RT
FROM -Y15RPA- STA. 15+40 TO STA. 21+06 LT
FROM -Y15RPD- STA. 17+38 TO STA. 17+47 RT

Type of Liner = Class "I" Rip-Rap



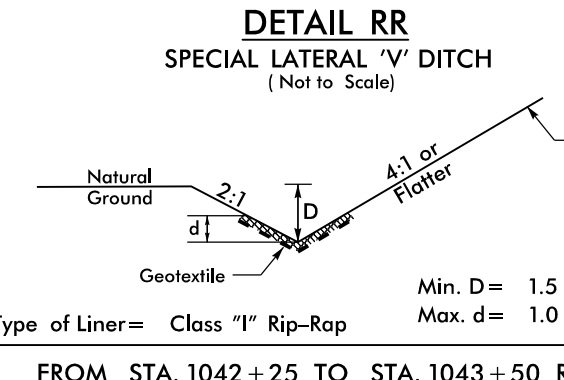
FROM -L- STA. 1027+50 TO STA. 1031+50 RT

Type of Liner = Class "I" Rip-Rap



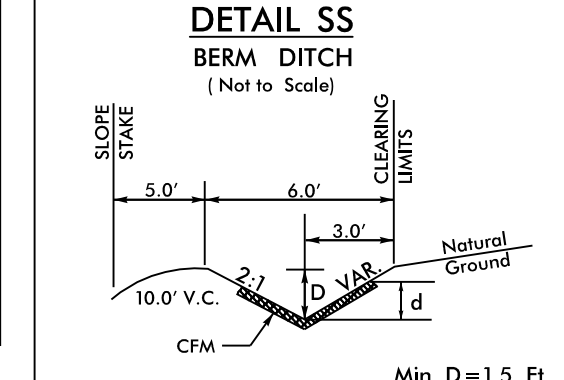
FROM -L- STA. 1026+50 TO STA. 1027+50 RT

Type of Liner = Class "I" Rip-Rap



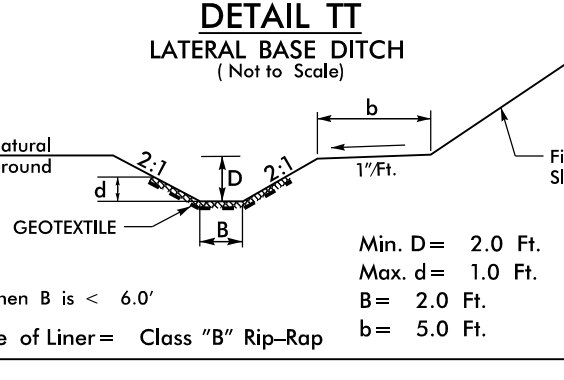
FROM STA. 1042+25 TO STA. 1043+50 RT

Type of Liner = Class "I" Rip-Rap



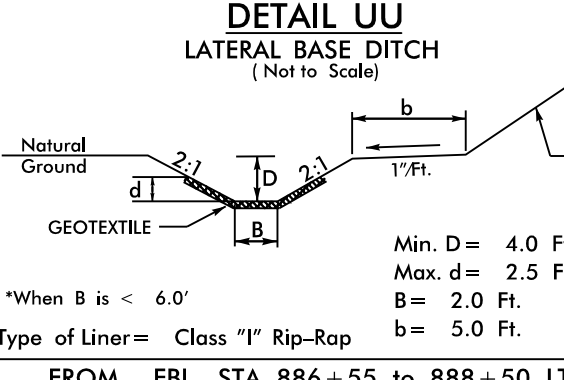
FROM -L- STA. 1038+25 TO STA. 1042+25 RT
FROM -L- STA. 1043+10 TO STA. 1046+75 RT
FROM -L- STA. 1063+50 TO STA. 1066+75 RT
FROM -EBL- STA. 1106+65 TO STA. 1109+13.21 LT
FROM -EBL- STA. 1109+13.21 TO STA. 1114+50 LT
FROM -EBL- STA. 1119+01 TO STA. 1125+75 LT
FROM -WBL- STA. 1110+50 TO STA. 1114+25 RT

Type of Liner = COIR FIBER MAT (CFM)
Min. D = 1.5 Ft.
Max. d = 0.5 Ft.



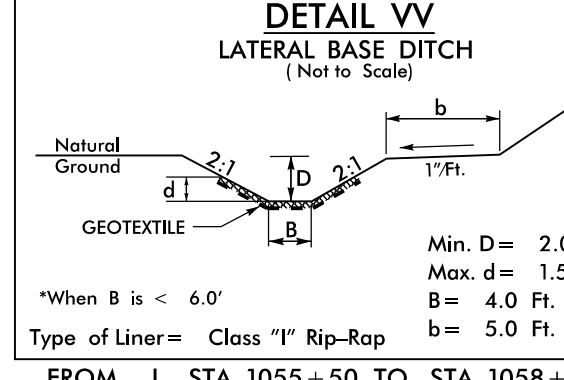
FROM -EBL- STA. 885+00 TO STA. 886+55 LT

Type of Liner = Class "B" Rip-Rap



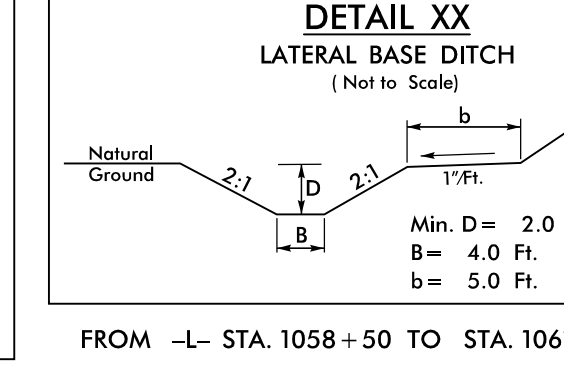
FROM -EBL- STA. 886+55 TO STA. 888+50 LT

Type of Liner = Class "I" Rip-Rap



FROM -L- STA. 1055+50 TO STA. 1058+50 LT

Type of Liner = Class "I" Rip-Rap



FROM -L- STA. 1058+50 TO STA. 1061+50, LT

Type of Liner = Class "I" Rip-Rap

REVISIONS

15-MAY-2019 12:15 (P.01) 14700.RDY.2001-2002.DDD.dgn

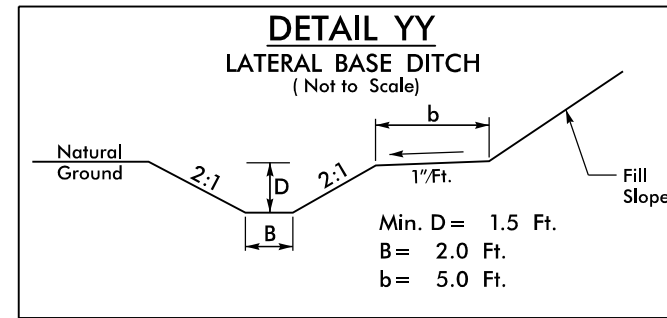
DRAINAGE DITCH DETAILS

RW SHEET NO.

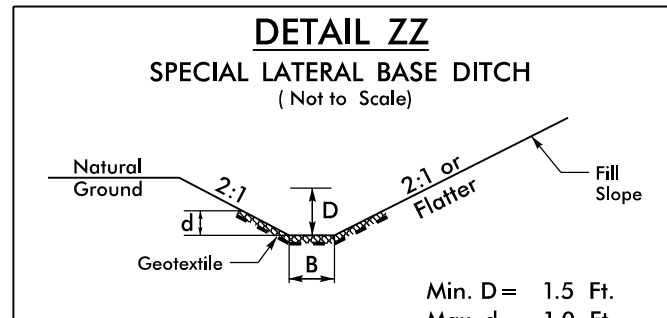
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL
 047948
 JOHN M. BLANCKITT
 5/16/2019

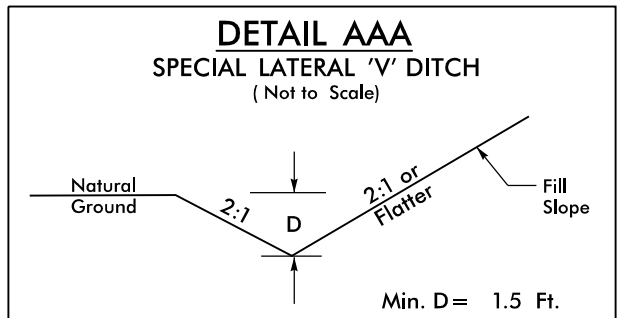
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



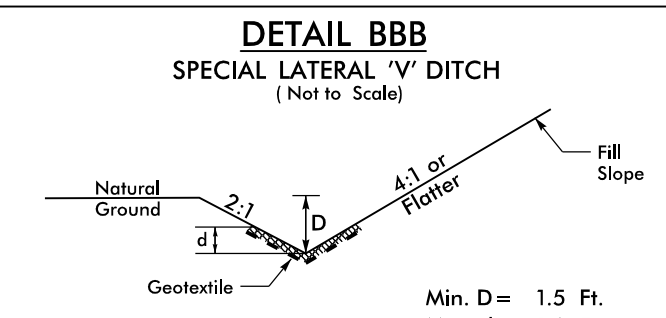
FROM -WBL- STA. 911+00 TO STA. 913+75 RT.
 FROM -WBL- STA. 914+40 TO STA. 918+25 RT.
 FROM -L- STA. 1051+50 TO STA. 1060+25 RT.
 FROM -WBL- STA. 1118+75 TO STA. 1120+00 LT.



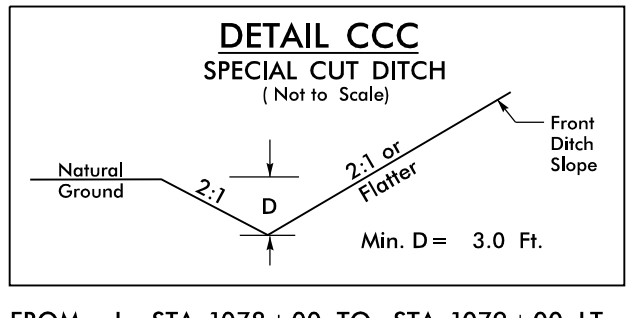
FROM -L- STA. 1066+00 TO STA. 1066+75 RT.
 FROM -WBL- STA. 1081+00 TO STA. 1081+50 RT.
 FROM -L- STA. 1067+75 TO STA. 1069+00 RT.



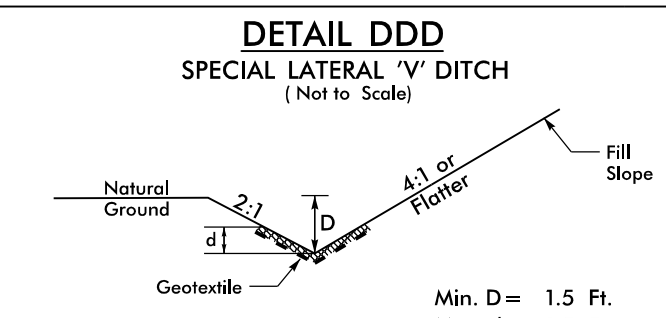
FROM -L- STA. 1066+00 TO STA. 1066+75 RT.
 FROM -WBL- STA. 1081+00 TO STA. 1081+50 RT.
 FROM -L- STA. 1067+75 TO STA. 1069+00 RT.



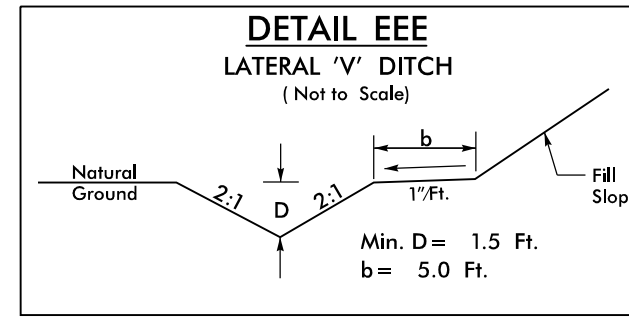
FROM -L- STA. 1078+00 TO STA. 1079+00 LT.
 FROM -EBL- STA. 1079+00 TO STA. 1080+75 LT.



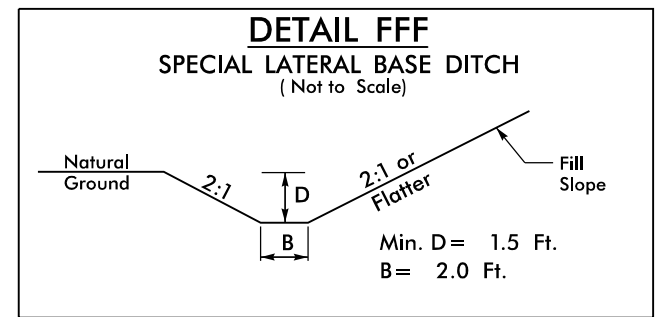
FROM -L- STA. 1183+00 TO STA. 1183+50 RT.



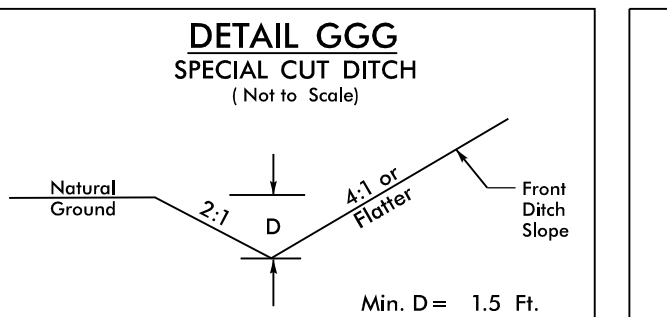
FROM -WBL- STA. 1081+50 TO STA. 1082+50 RT.



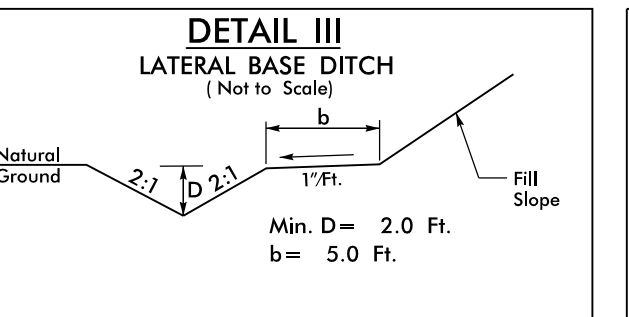
FROM -WBL- STA. 1081+50 TO STA. 1082+50 RT.



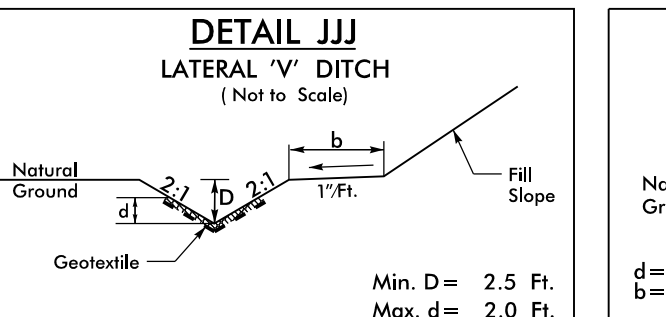
FROM -EBL- STA. 1084+50 TO STA. 1086+00 LT.
 FROM -WBL- STA. 1119+00 TO STA. 1120+50 LT.
 FROM -L- STA. 832+00 TO STA. 834+93 LT.
 FROM -L- STA. 1159+02 TO STA. 1161+00 LT.
 FROM -L- STA. 1176+00 TO STA. 1184+00 LT.



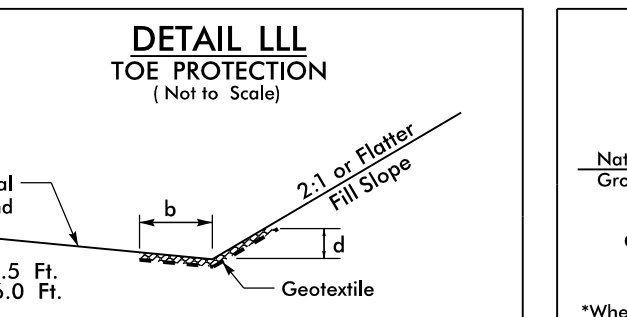
FROM -WBL- STA. 1085+50 TO STA. 1088+50, LT.



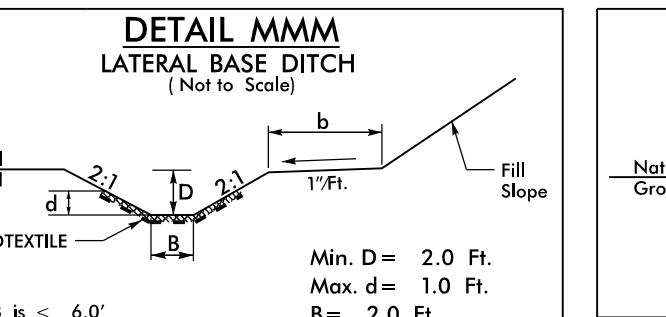
FROM STA. 1082+00 TO STA. 1085+00 RT.



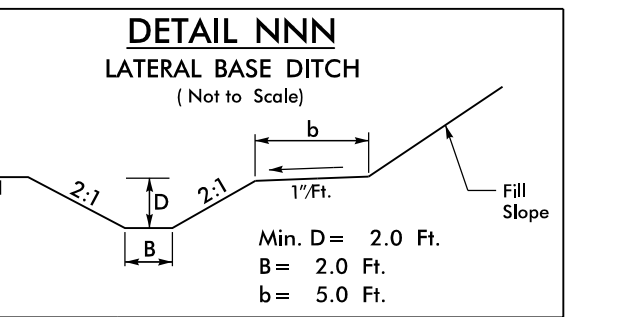
FROM -WBL- STA. 1082+50 TO STA. 1085+30 RT.



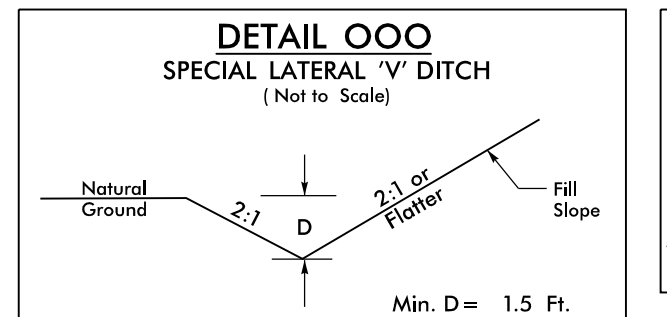
FROM -EBL- STA. 1093+00 TO STA. 1096+25 LT.
 FROM -WBL- STA. 1091+50 TO STA. 1093+89 RT.
 FROM -WBL- STA. 1103+50 TO STA. 1104+30 RT.
 FROM -WBL- STA. 1118+00 TO STA. 1121+00, RT.



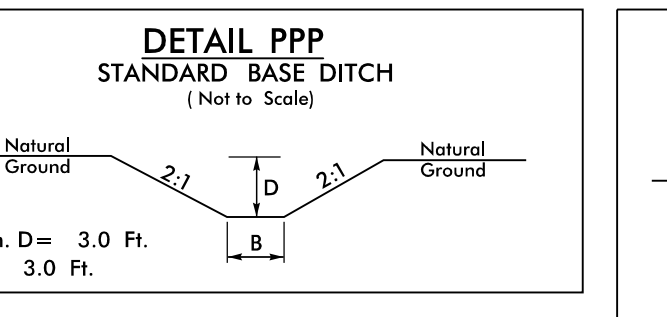
FROM -EBL- STA. 1105+51 TO STA. 1106+65 LT.



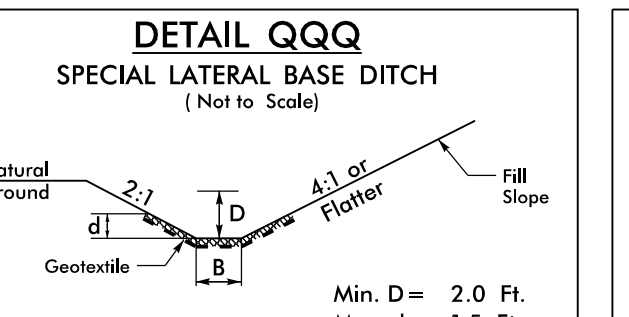
FROM -EBL- STA. 1103+80 TO STA. 1105+50 LT.
 FROM -EBL- STA. 1127+50 TO STA. 1131+00 LT.



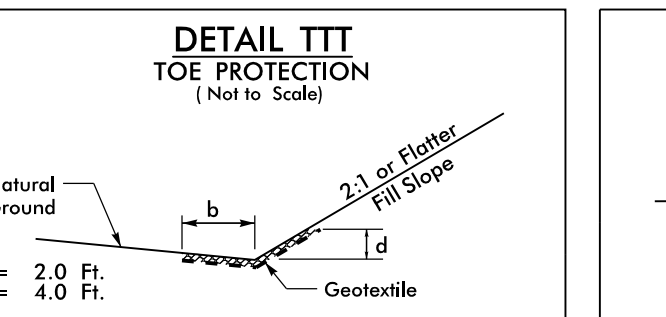
FROM -WBL- STA. 1107+25 TO STA. 1108+25 RT.
 FROM -WBL- STA. 1115+50 TO STA. 1116+00 RT.
 FROM -EBL- STA. 1122+00 TO STA. 1124+50 RT.
 FROM -WBL- STA. 1125+00 TO STA. 1127+50 LT.



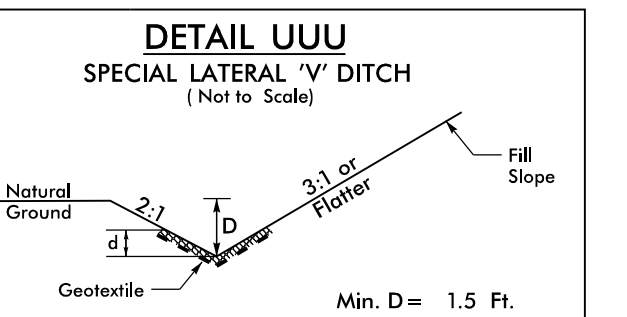
-WBL- STA. 1107+34 RT.



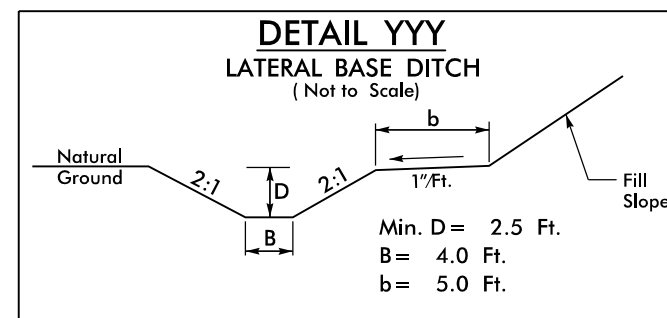
FROM -WBL- STA. 1114+00 TO STA. 1115+50 RT.



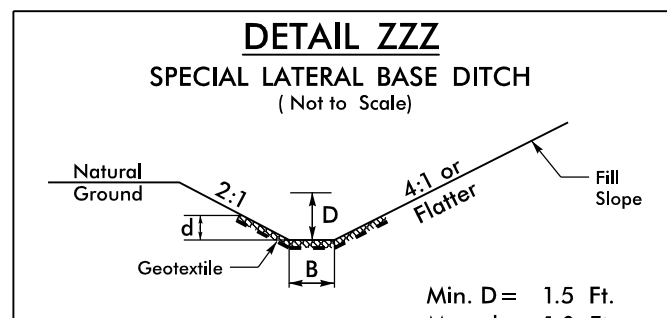
FROM -EBL- STA. 1131+01 TO STA. 1132+40 LT.
 FROM -L- STA. 1133+00 TO STA. 1140+00 LT.
 FROM -L- STA. 1146+58 TO STA. 1148+06 LT.



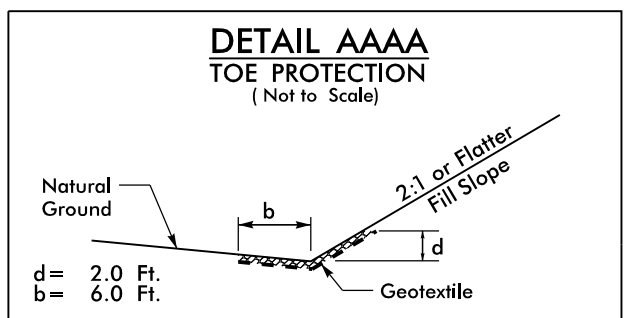
FROM -EBL- STA. 1124+50 TO STA. 1125+00 RT.



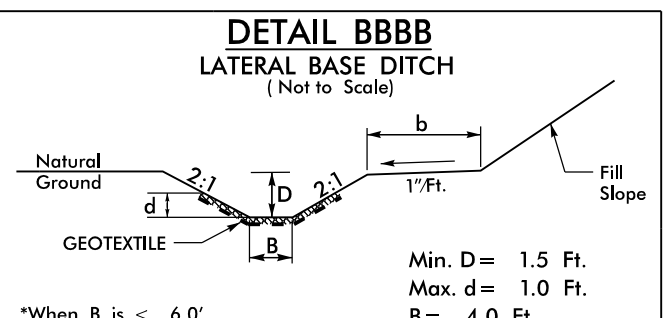
FROM -L- STA. 1149+50 TO STA. 1153+90 RT.



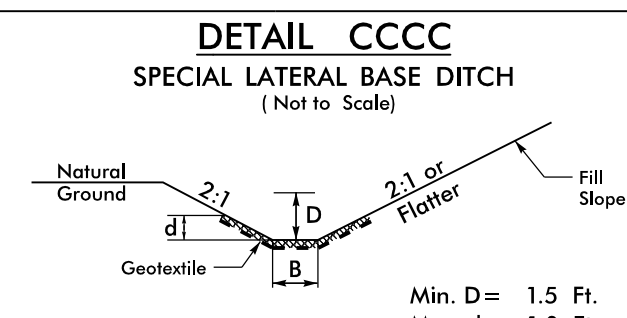
FROM -L- STA. 1175+00 TO STA. 1176+00 LT.



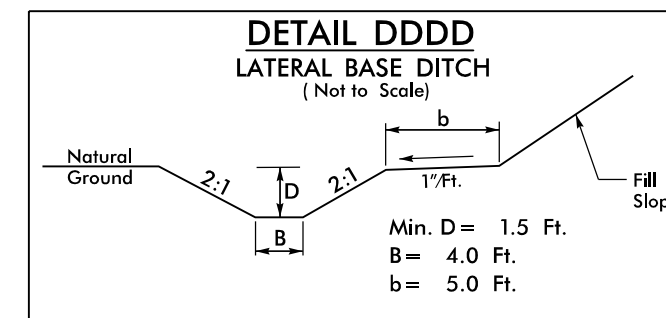
FROM -L- STA. 1198+00 TO STA. 1205+25 LT.
 FROM -L- STA. 1213+50 TO STA. 1216+15 LT.



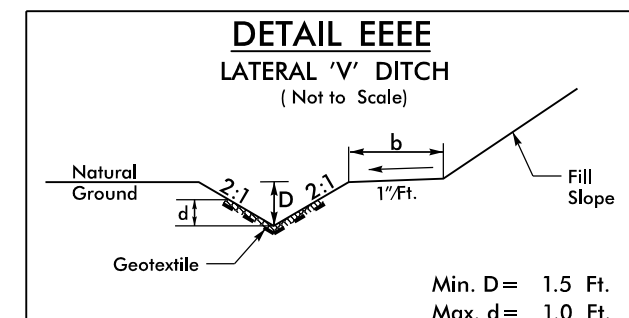
FROM -L- STA. 1205+30 TO STA. 1207+00 LT.



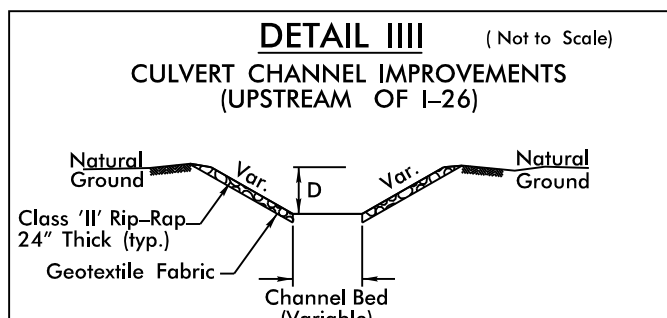
FROM -L- STA. 1207+00 TO STA. 1209+50 LT.



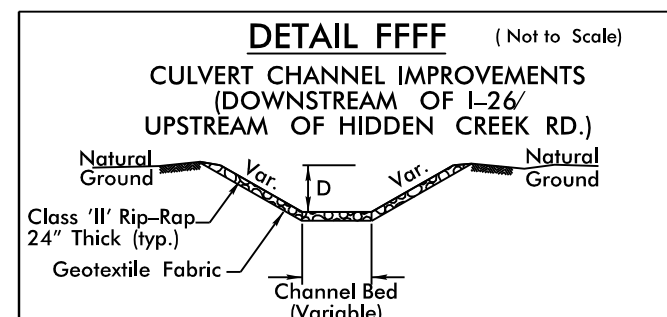
FROM -L- STA. 1216+25 TO STA. 1217+75 LT.



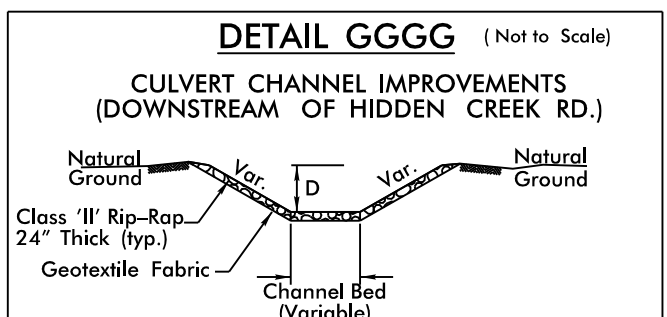
FROM -WBL- STA. 1081+50 TO STA. 1082+50, RT.



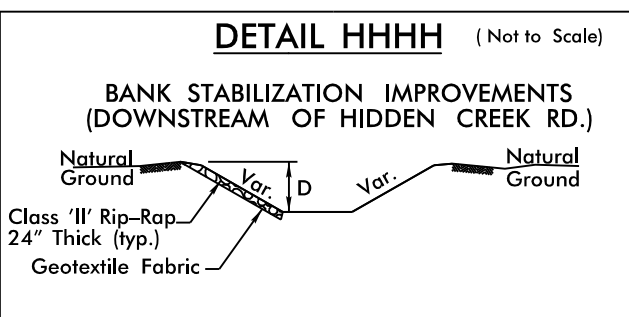
EST. 37 CY EXCAVATION
 EST. 35 TONS CLASS II RIPRAP
 EST. 56 SY GEOTEXTILE FABRIC



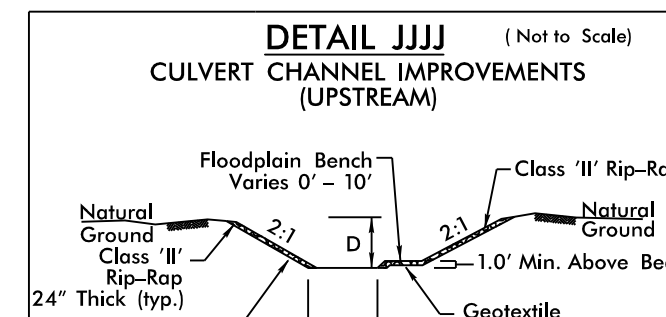
EST. 27 CY EXCAVATION
 EST. 39 TONS CLASS II RIPRAP
 EST. 40 SY GEOTEXTILE FABRIC



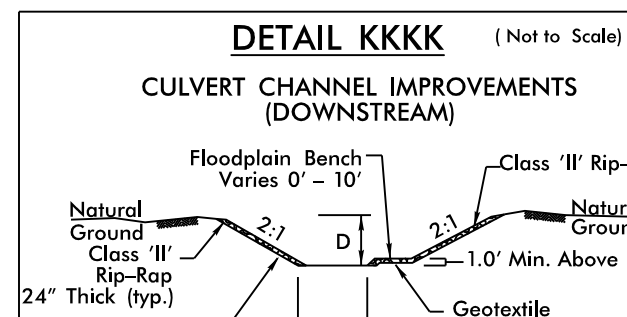
EST. 35 CY EXCAVATION
 EST. 52 TONS CLASS II RIPRAP
 EST. 53 SY GEOTEXTILE FABRIC



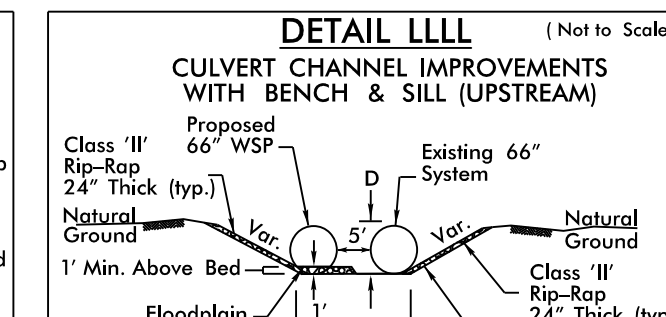
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 EST. 39 TONS CLASS II RIPRAP
 EST. 39 SY GEOTEXTILE FABRIC



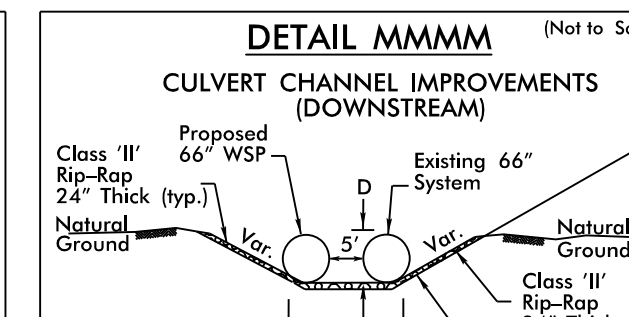
EST. 98 CY EXCAVATION
 EST. 146 TONS CLASS II RIPRAP
 EST. 147 SY GEOTEXTILE FABRIC



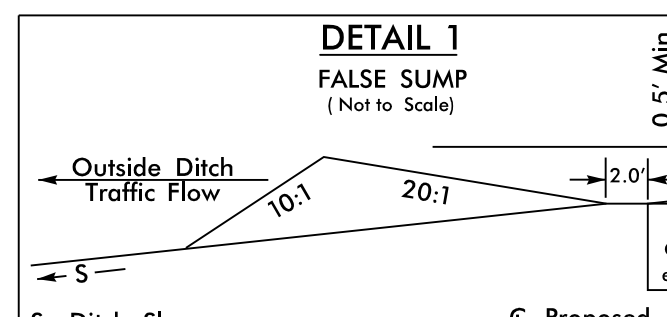
EST. 201 CY EXCAVATION
 EST. 299 TONS CLASS II RIPRAP
 EST. 302 SY GEOTEXTILE FABRIC



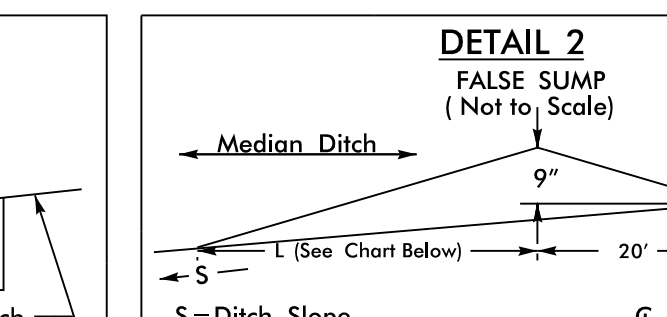
EST. 68 CY EXCAVATION
 EST. 100 TONS CLASS II RIPRAP
 EST. 101 SY GEOTEXTILE FABRIC



EST. 55 CY EXCAVATION
 EST. 82 TONS CLASS II RIPRAP
 EST. 83 SY GEOTEXTILE FABRIC

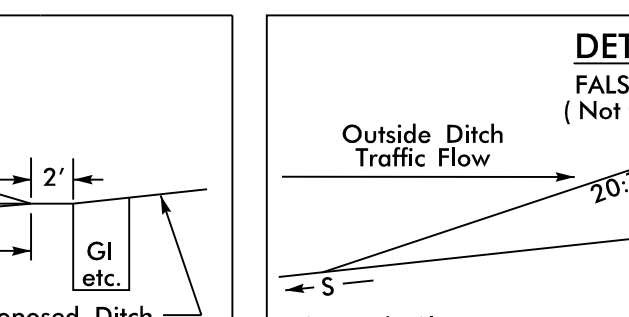


-L- STA. 849+02 LT
 -WBL- STA. 931+10 RT
 -WBL- STA. 994+51 RT
 -WBL- STA. 996+06 RT
 -Y13RPD- STA. 18+61 LT
 -WBL- 1097+15 LT.

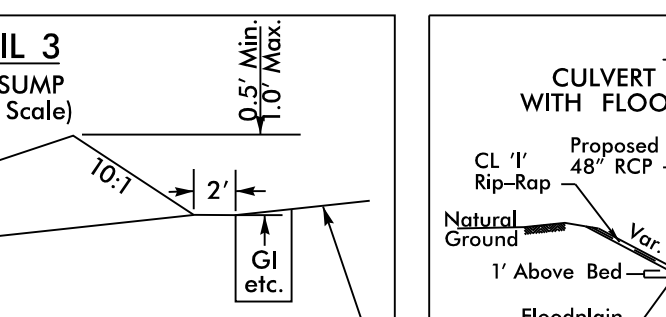


| Ditch Grade | L | Ditch Grade | L |
|-------------------|-----|-------------------|-----|
| 0.0% To 2.0% | 20' | Over 4.0% To 6.0% | 40' |
| Over 2.0% To 4.0% | 30' | Over 6.0% | 50' |

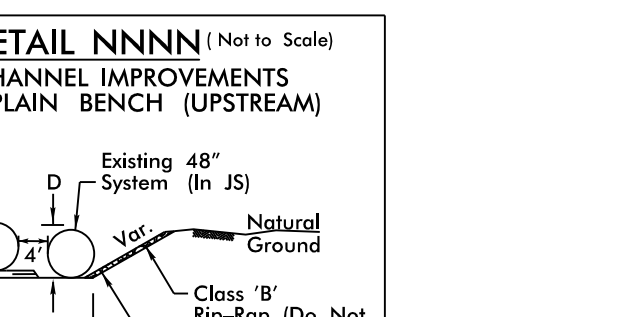
-EBL- STA. 902+53 RT
 -EBL- STA. 905+22 RT
 -EBL- STA. 907+54 RT
 -EBL- STA. 909+71 RT
 -EBL- STA. 911+56 RT
 -EBL- STA. 912+68 RT
 -EBL- STA. 916+83 RT
 -EBL- STA. 923+67 RT
 -EBL- STA. 931+86 RT



-Y13RPC- STA. 10+07 RT
 -L- STA. 850+34 RT
 -L- STA. 854+53 RT
 -WBL- STA. 895+60 RT
 -EBL- STA. 911+57 LT
 -EBL- STA. 914+55 LT
 -EBL- STA. 916+85 LT
 -L- STA. 1037+28 RT



FROM STA. 1082+00 TO STA. 1085+00, RT.
 -EBL- STA. 1109+15 LT.
 -EBL- STA. 1113+15 LT.
 -EBL- STA. 1114+70 LT.
 -EBL- STA. 1119+22 LT.



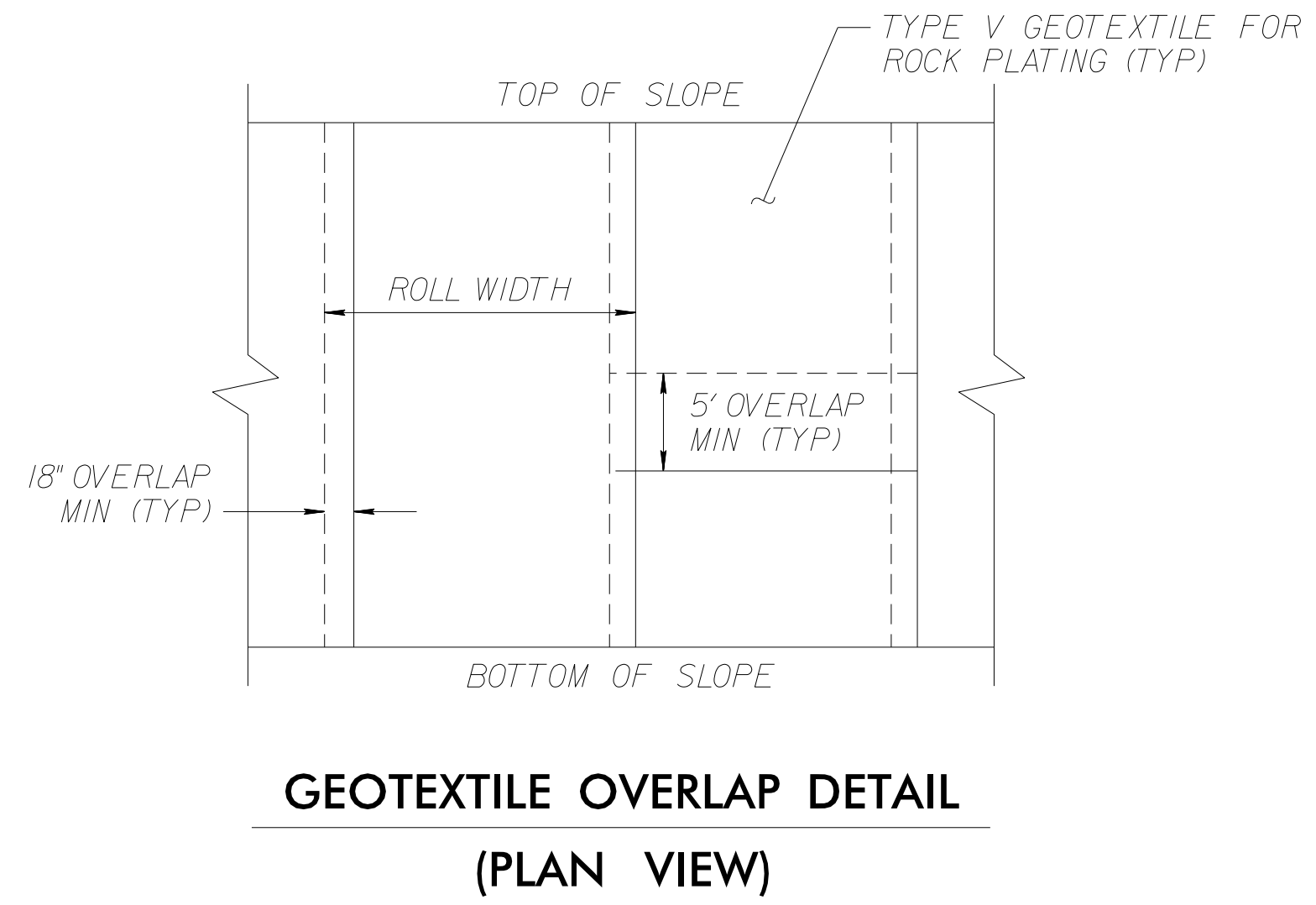
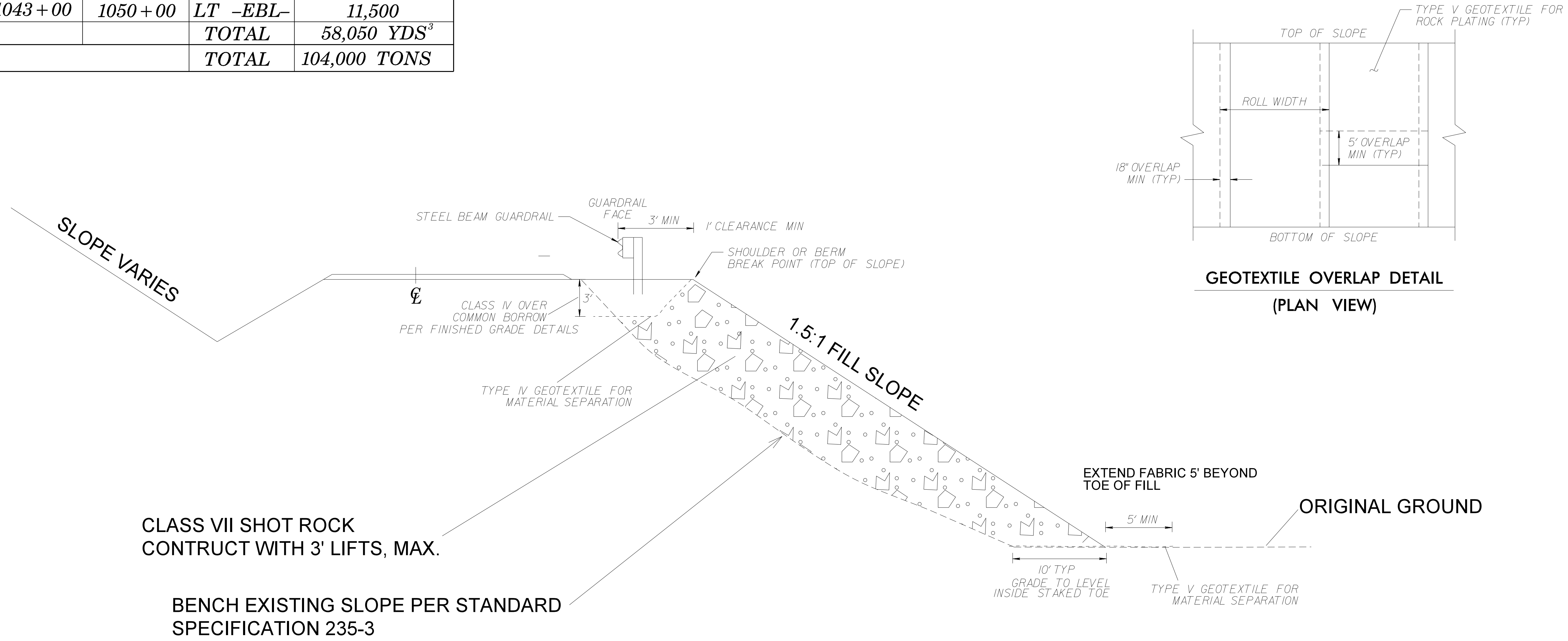
QUANTITIES INCLUDED IN DITCHES

REVISIONS

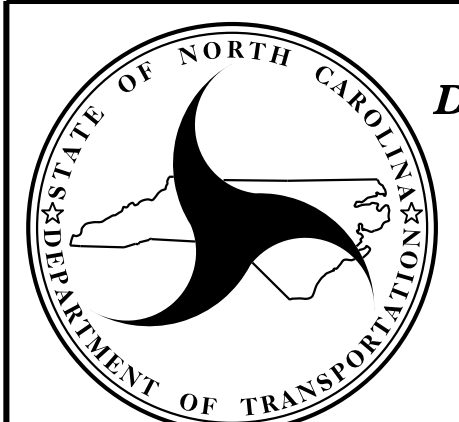
15-MAY-2019 12:15
 (S:\dms\2514700.RD\2001-2002.D00.dgn
 HNTB

QUANTITY SUMMARY

| STATION FROM | STATION TO | LINE | CLASS VII ROCK CUBIC YARDS |
|--------------|------------|--------------|-------------------------------|
| 936+50 | 952+00 | LT -EBL- | 4,800 |
| 957+00 | 962+00 | LT -EBL- | 4,000 |
| 967+50 | 969+50 | LT -EBL- | 250 |
| 971+00 | 988+00 | LT -EBL- | 17,000 |
| 997+00 | 1003+00 | LT -EBL- | 4,500 |
| 1027+50 | 1037+50 | LT -EBL- | 16,000 |
| 1043+00 | 1050+00 | LT -EBL- | 11,500 |
| | | TOTAL | 58,050 YDS³ |
| | | TOTAL | 104,000 TONS |



- NOTES:**
- 1) USE CLASS VII SHOT ROCK TO CONSTRUCT EXPANDED FILLS WHICH ARE 1.5:1 (H:V) AS SHOWN ON PLANS
 - 2) TYPE V GEOTEXTILE AT TOE WITH NO UNDERCUT BENCHING
 - 3) CONSTRUCT WITH 3' LIFTS, MAX




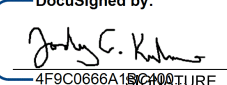
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

ROCK EMBANKMENT DETAILS

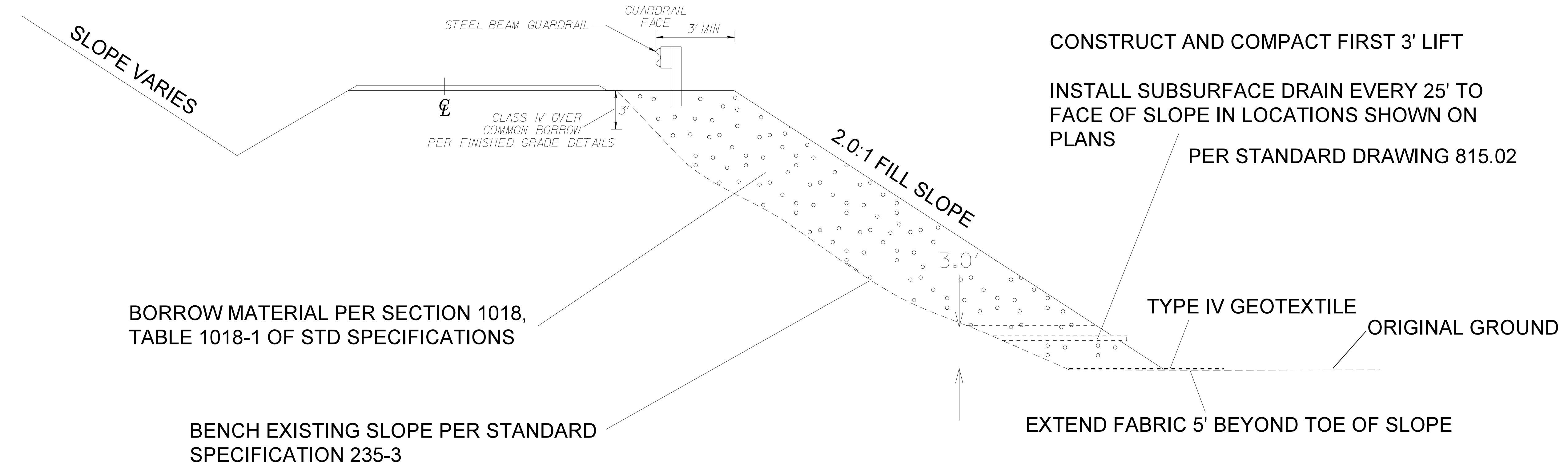
TYPICAL FOR ALL FILL SLOPES
1.5:1 (H:V)
AS SHOWN ON PLANS

DATE: 2-19-19

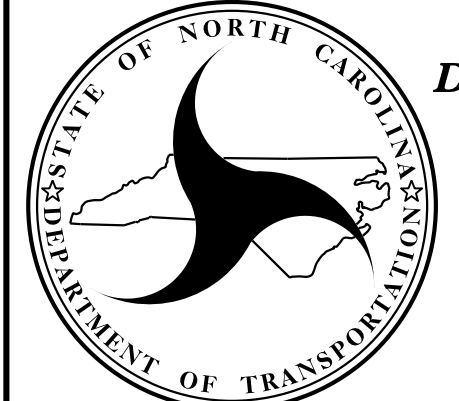
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|--|--|
| PROJECT REFERENCE NO. I-4700 | SHEET NO. 2G-2 |
| GEOTECHNICAL ENGINEER  DocuSigned by:  2/22/2019 <small>DATE</small> | ENGINEER <small>SIGNATURE</small> <small>DATE</small> |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

QUANTITY SUMMARY

| STATION FROM | STATION TO | LINE | TYPE IV GEOTEXTILE SQUARE YARDS | SUBSURFACE DRAIN LINEAR FEET |
|--------------|------------|----------|------------------------------------|---------------------------------|
| 1124+00 | 1133+00 | RT -WBL- | 3,200 | 1,500 |
| 1133+00 | 1138+00 | RT -WBL- | | |



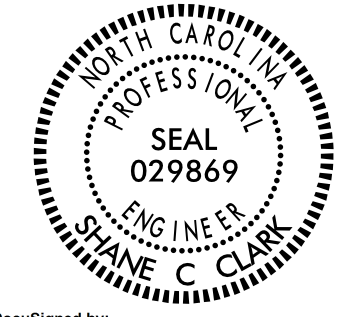
DATE: 2-19-19



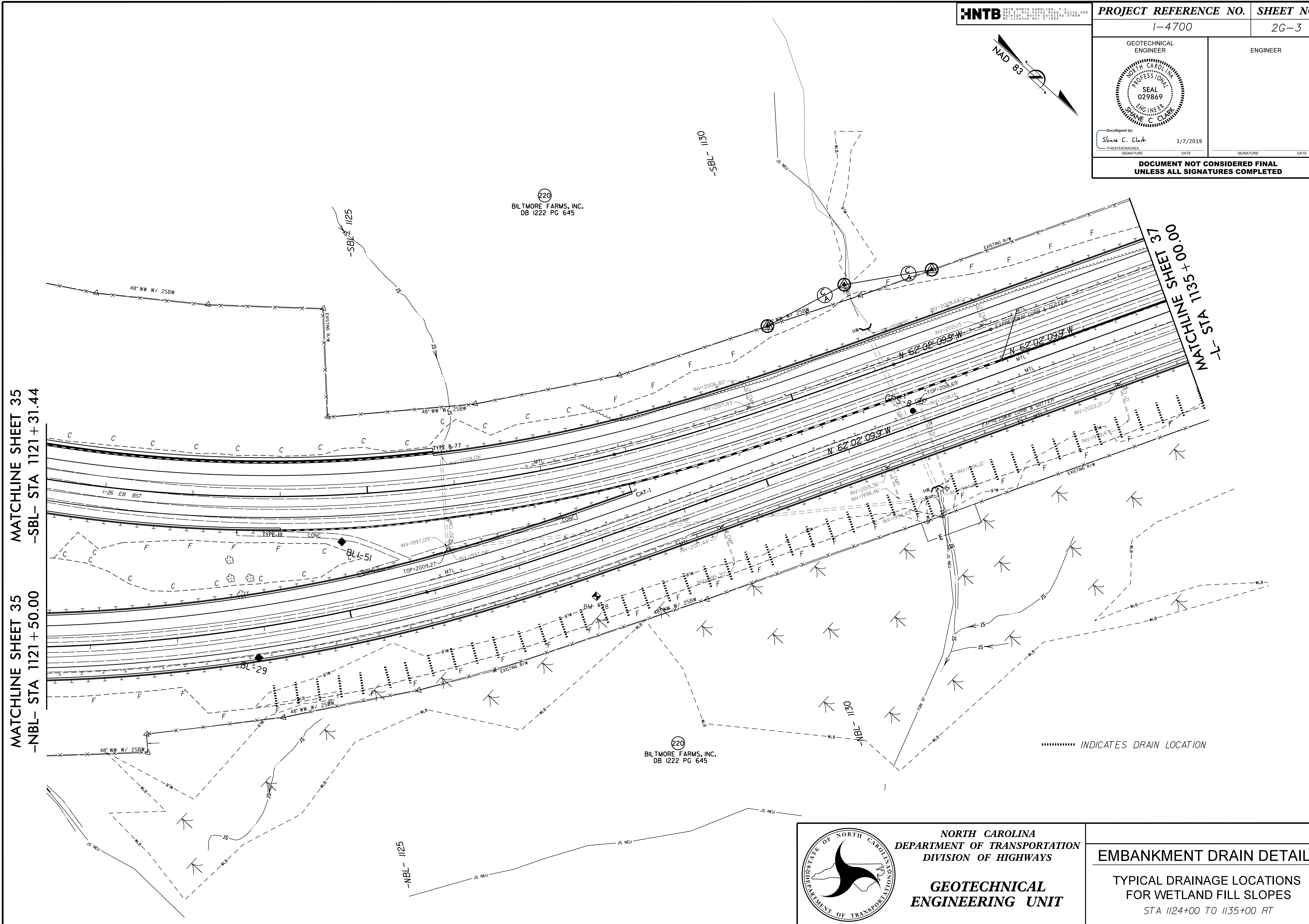
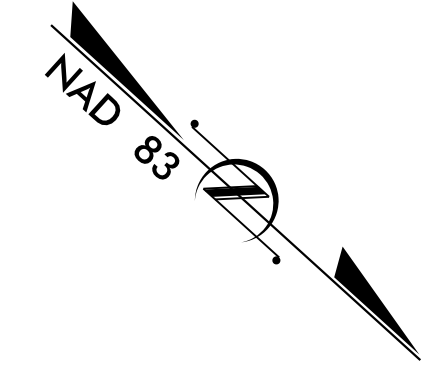
NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

EMBANKMENT DRAIN DETAIL
 TYPICAL FOR WETLAND FILL SLOPES
 2:1 (H:V)
 AS SHOWN ON PLANS

| | |
|---|---|
| GEOTECHNICAL ENGINEER  Documented by: Shane C. Clark <small>1F4E27E0D424E4</small> | ENGINEER DATE: 3/7/2019 SIGNATURE: _____ DATE: _____ SIGNATURE: _____ |
|---|---|

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**



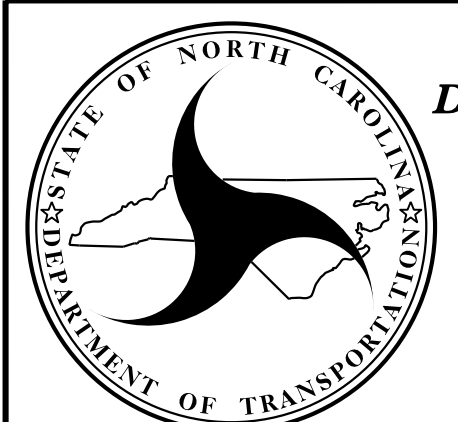
MATCHLINE SHEET 35
 -SBL- STA 1121 +31.44
 MATCHLINE SHEET 35
 -NBL- STA 1121 +50.00

MATCHLINE SHEET 37
 -L- STA 1131 +00.00

220
 BILTMORE FARMS, INC.
 DB 1222 PG 645

220
 BILTMORE FARMS, INC.
 DB 1222 PG 645

..... INDICATES DRAIN LOCATION




**NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS**

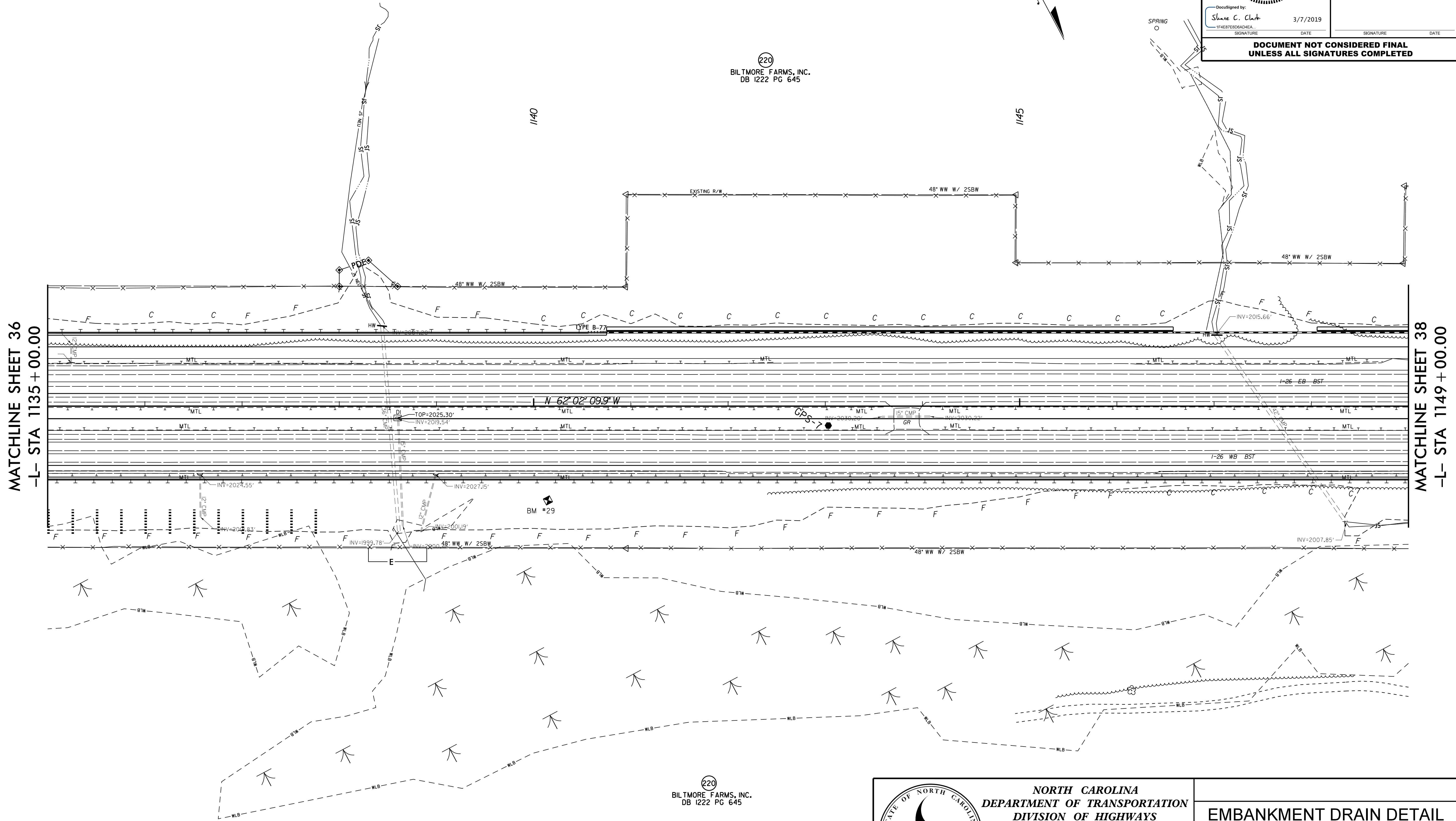
**GEOTECHNICAL
 ENGINEERING UNIT**

EMBANKMENT DRAIN DETAIL

TYPICAL DRAINAGE LOCATIONS
 FOR WETLAND FILL SLOPES
 STA 1124+00 TO 1135+00 RT

| | |
|--|---|
| GEOTECHNICAL ENGINEER  Documented by: Shane C. Clark <small>1F4E87E0D0A0E4</small> SIGNATURE | ENGINEER DATE 3/7/2019 SIGNATURE |
|--|---|


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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 BILTMORE FARMS, INC.
 DB 1222 PG 645


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 BILTMORE FARMS, INC.
 DB 1222 PG 645

..... INDICATES DRAIN LOCATION


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

EMBANKMENT DRAIN DETAIL
 TYPICAL DRAINAGE LOCATIONS
 FOR WETLAND FILL SLOPES
 STA 1135+00 TO 1138+00 RT

| | |
|--|--------------------------|
| PROJECT REFERENCE NO. I-4700 | SHEET NO. 2G-5 |
| GEOTECHNICAL ENGINEER  SHANE C. CLARK ENGINEER | ENGINEER |
| DocuSigned by: Shane Clark 5/20/2019 | SIGNATURE DATE |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

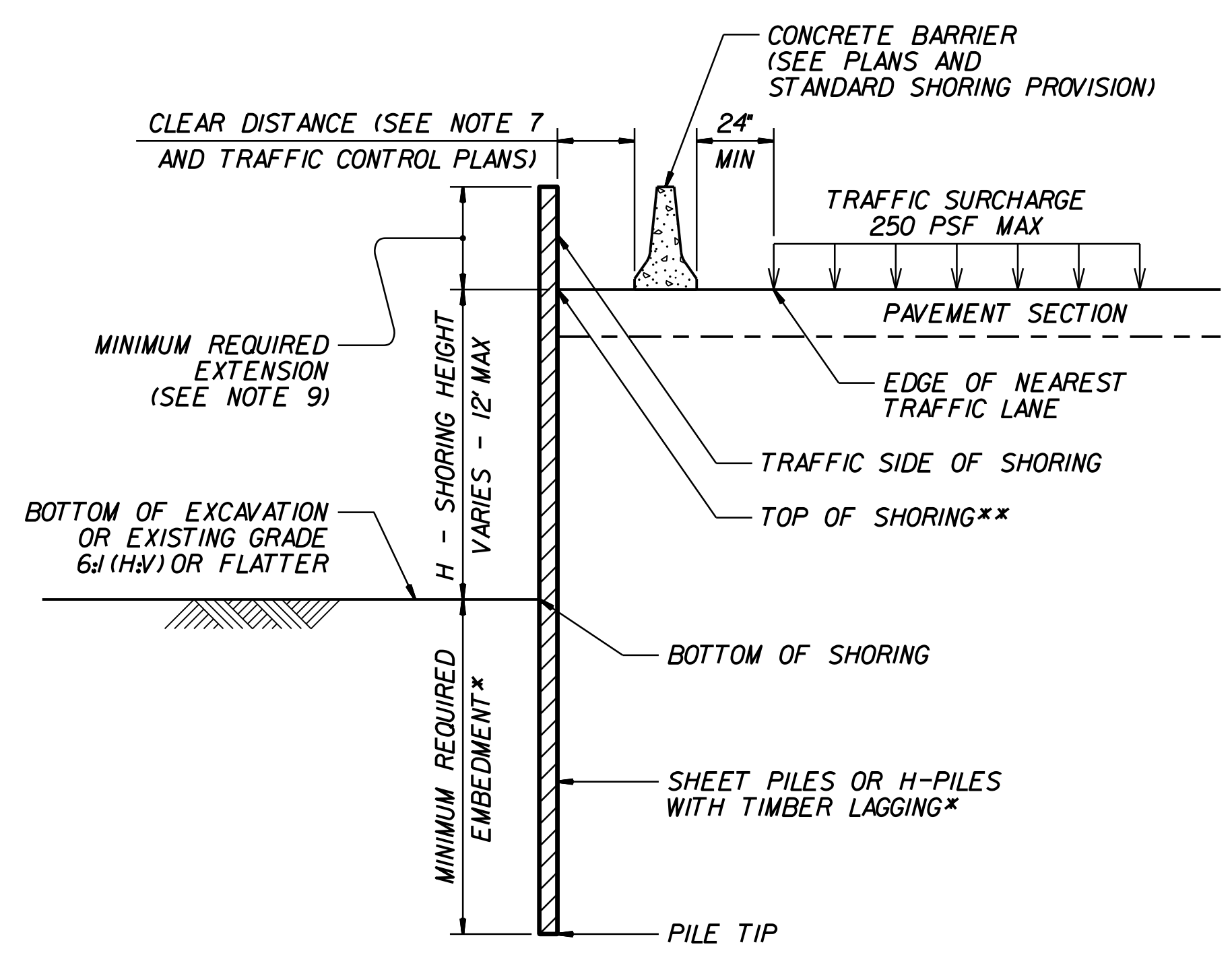
| GROUNDWATER CONDITION (SEE NOTE 6) | H SHORING HEIGHT (FT) | SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT | | | | | | SURCHARGE CASE WITH TRAFFIC IMPACT | | | | | |
|--|-----------------------|--|--|--|----------|----------|---------------------------------|--|--|-----------------------------|----------|--|--|
| | | SHEET PILES | | H-PILES WITH TIMBER LAGGING | | | | SHEET PILES | | H-PILES WITH TIMBER LAGGING | | | |
| | | MINIMUM REQUIRED EMBEDMENT (FT) | MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT) | MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10) | | | MINIMUM REQUIRED EMBEDMENT (FT) | MINIMUM REQUIRED SECTION MODULUS (IN ³ /FT) | MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10) | | | | |
| | | | | HP 10x42 | HP 12x53 | HP 14x73 | | | HP 10x42 | HP 12x53 | HP 14x73 | | |
| GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP | < 6 | 11.5 | 4.5 | 11.5 | 11.5 | 11.5 | 16.0 | 12.0 | 13.0 | 13.0 | 13.0 | | |
| | 7 | 13.0 | 7.0 | 13.0 | 13.0 | 13.0 | 17.0 | 14.5 | 14.5 | 14.5 | 14.5 | | |
| | 8 | 15.0 | 10.0 | -- | 15.0 | 15.0 | 18.0 | 17.0 | -- | 15.5 | 15.5 | | |
| | 9 | 17.0 | 14.0 | -- | 17.0 | 17.0 | 19.0 | 20.0 | -- | 17.0 | 17.0 | | |
| | 10 | 18.5 | 19.5 | -- | -- | 18.5 | 20.0 | 23.5 | -- | -- | 18.5 | | |
| | 11 | 20.5 | 26.0 | -- | -- | -- | 21.0 | 28.0 | -- | -- | 20.0 | | |
| | 12 | 22.5 | 33.0 | -- | -- | -- | 22.0 | 33.0 | -- | -- | 21.5 | | |
| GROUNDWATER ELEVATION BELOW PILE TIP | < 6 | 7.5 | 3.0 | 8.0 | 8.0 | 8.0 | 11.0 | 10.0 | 9.5 | 9.5 | 9.5 | | |
| | 7 | 8.5 | 4.5 | 9.5 | 9.5 | 9.5 | 12.0 | 12.0 | 10.5 | 10.5 | 10.5 | | |
| | 8 | 10.0 | 6.5 | 10.5 | 10.5 | 10.5 | 12.5 | 14.0 | 11.5 | 11.5 | 11.5 | | |
| | 9 | 11.0 | 9.5 | -- | 12.0 | 12.0 | 13.5 | 16.5 | -- | 12.5 | 12.5 | | |
| | 10 | 12.5 | 13.0 | -- | -- | 13.5 | 14.0 | 19.5 | -- | 13.5 | 13.5 | | |
| | 11 | 13.5 | 17.0 | -- | -- | 14.5 | 15.0 | 22.5 | -- | -- | 14.5 | | |
| | 12 | 15.0 | 21.5 | -- | -- | 16.0 | 16.0 | 25.5 | -- | -- | 15.5 | | |

NOTES:

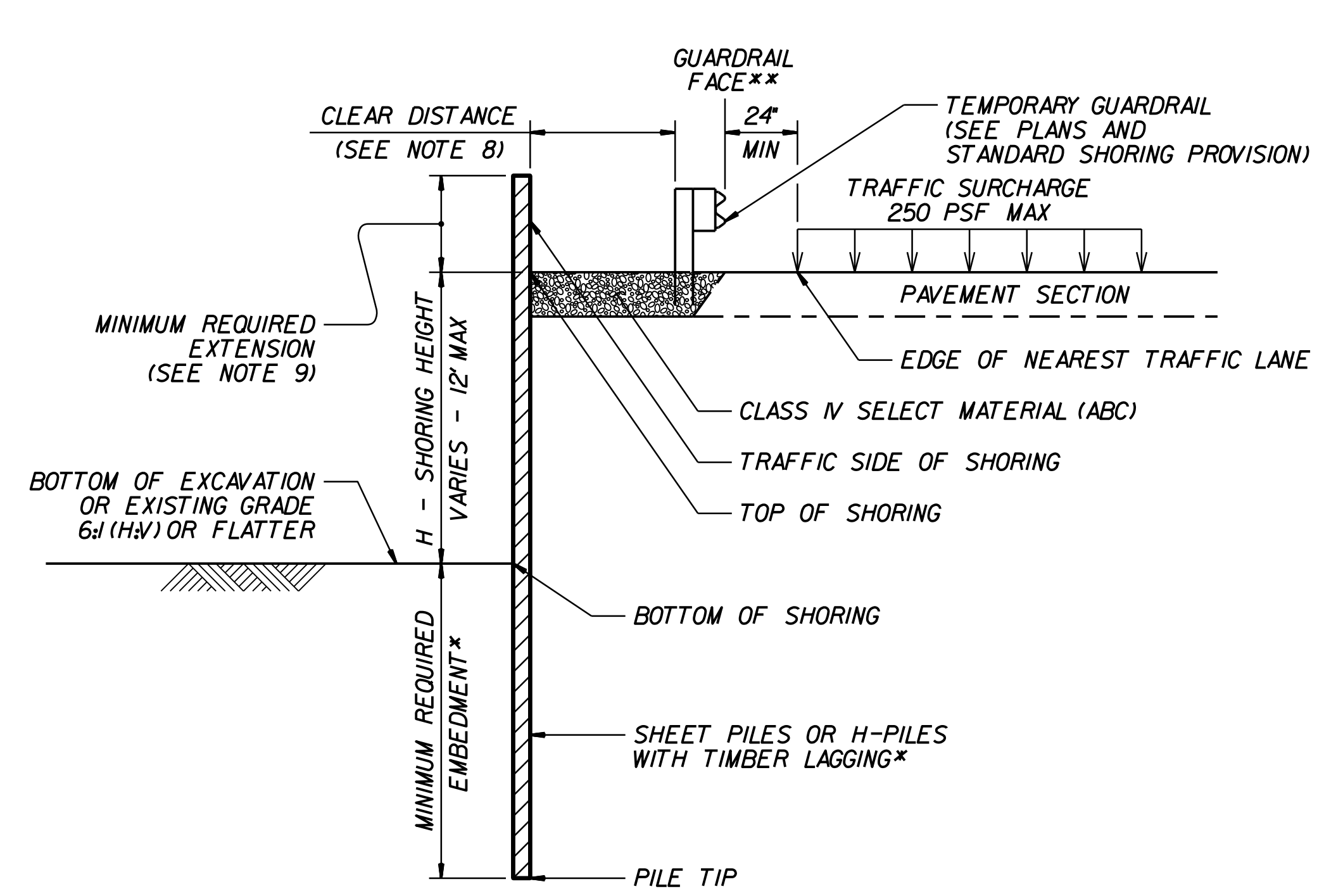
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

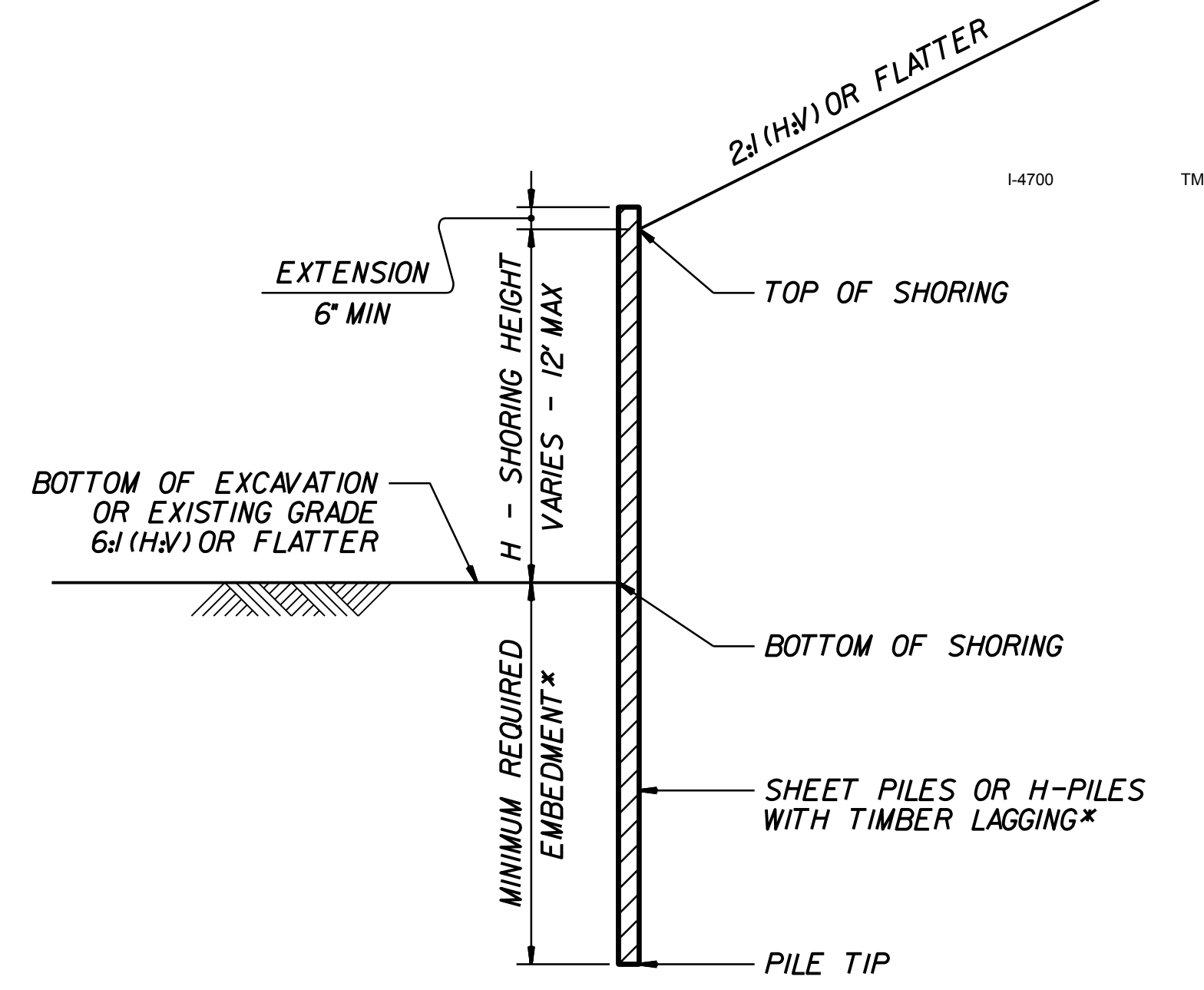
*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".



CONCRETE BARRIER
**TOP OF SHORING = EDGE OF PAVEMENT

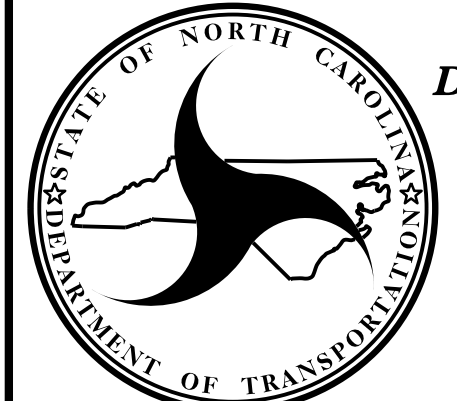


TEMPORARY GUARDRAIL
**GUARDRAIL FACE = EDGE OF PAVEMENT




STANDARD TEMPORARY SHORING (SLOPE CASE)
*SEE TABLE ABOVE.

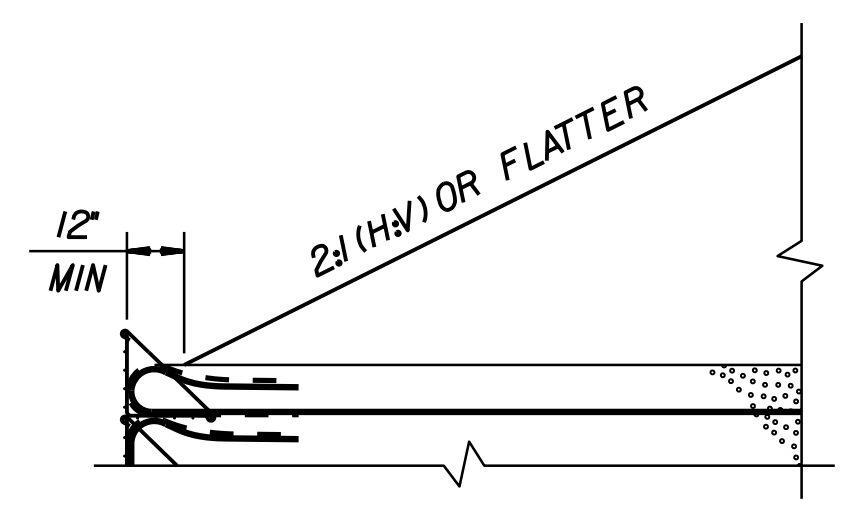
STANDARD TEMPORARY SHORING (SURCHARGE CASE)
*SEE TABLE ABOVE.



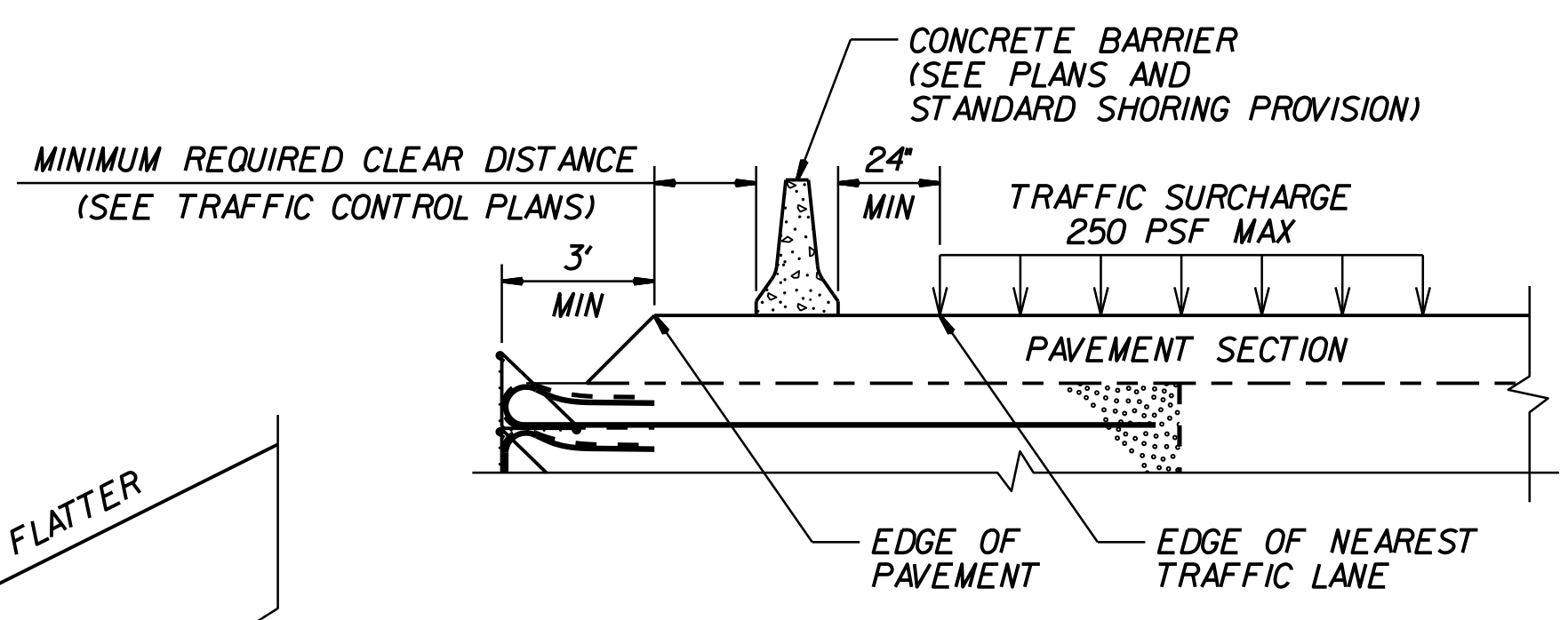
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.01
STANDARD TEMPORARY SHORING
DATE: 11-19-13

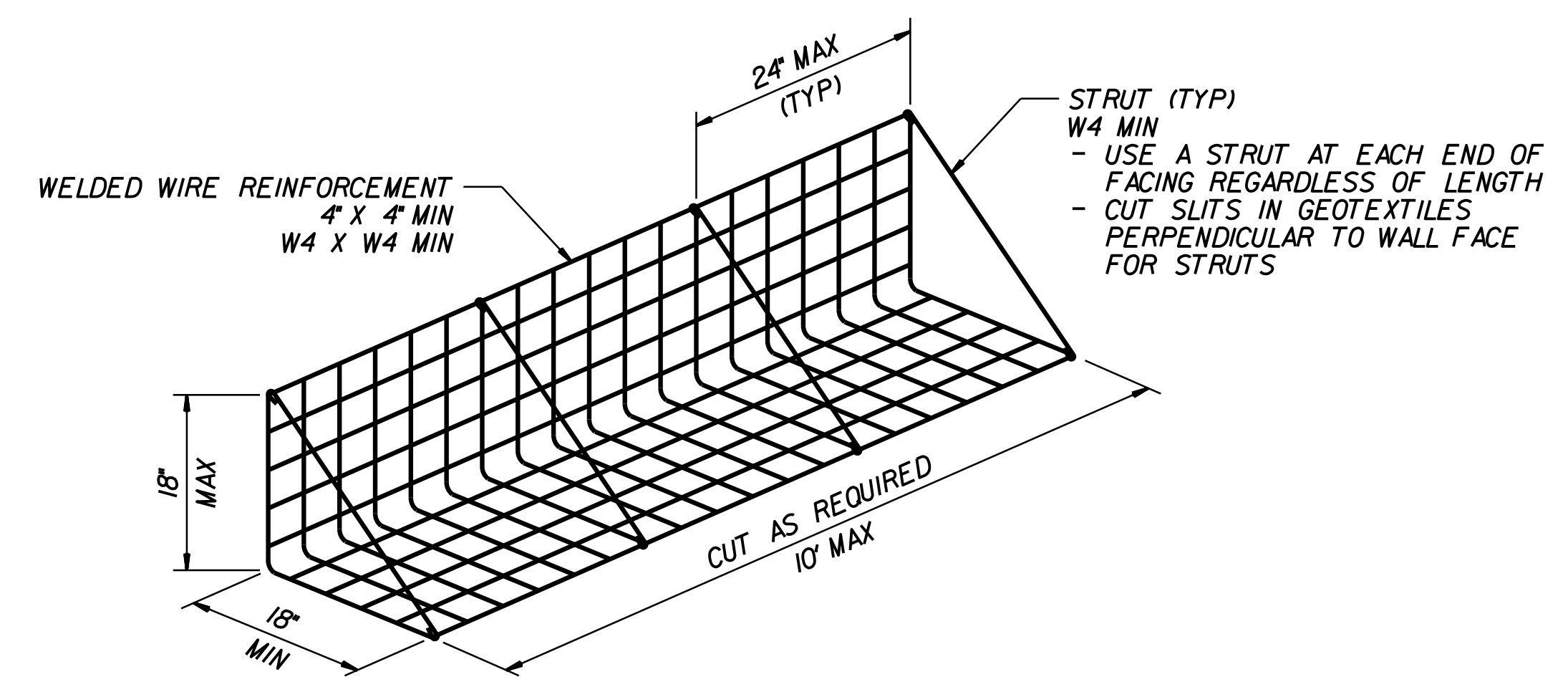
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| PROJECT REFERENCE NO. I-4700 | SHEET NO. 2G-6 |
| GEOTECHNICAL ENGINEER  DocuSigned by: Shane Clark 5/20/2019 | ENGINEER DATE |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



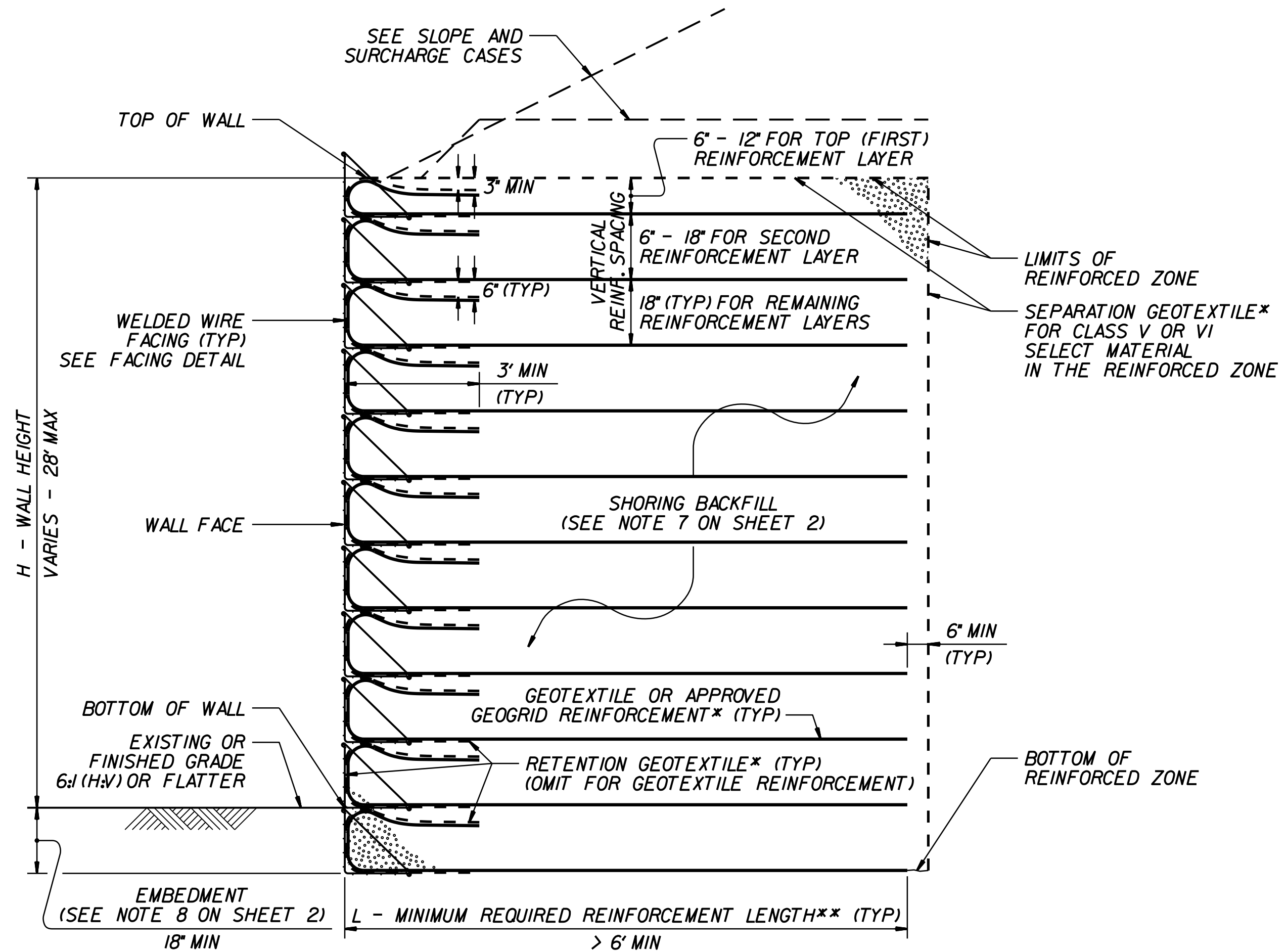
SLOPE CASE



SURCHARGE CASE

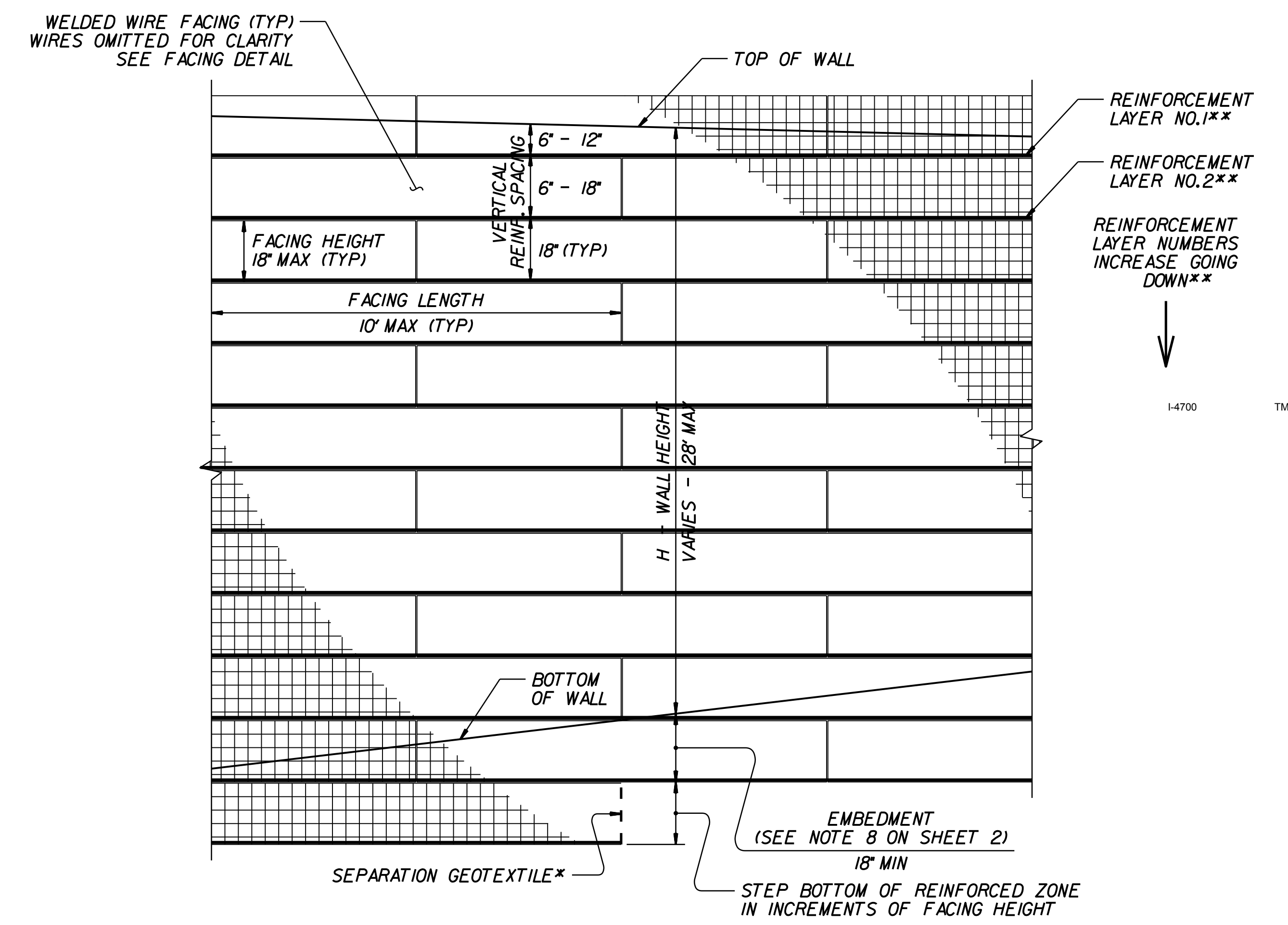


FACING DETAIL



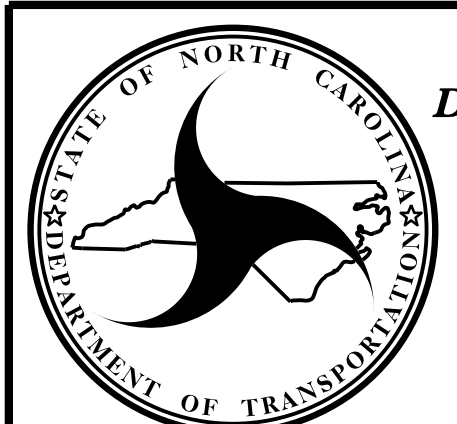
STANDARD TEMPORARY WALL

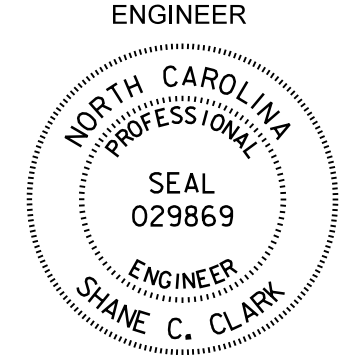
(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
 *SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
 **SEE REINFORCEMENT TABLES ON SHEET 3.

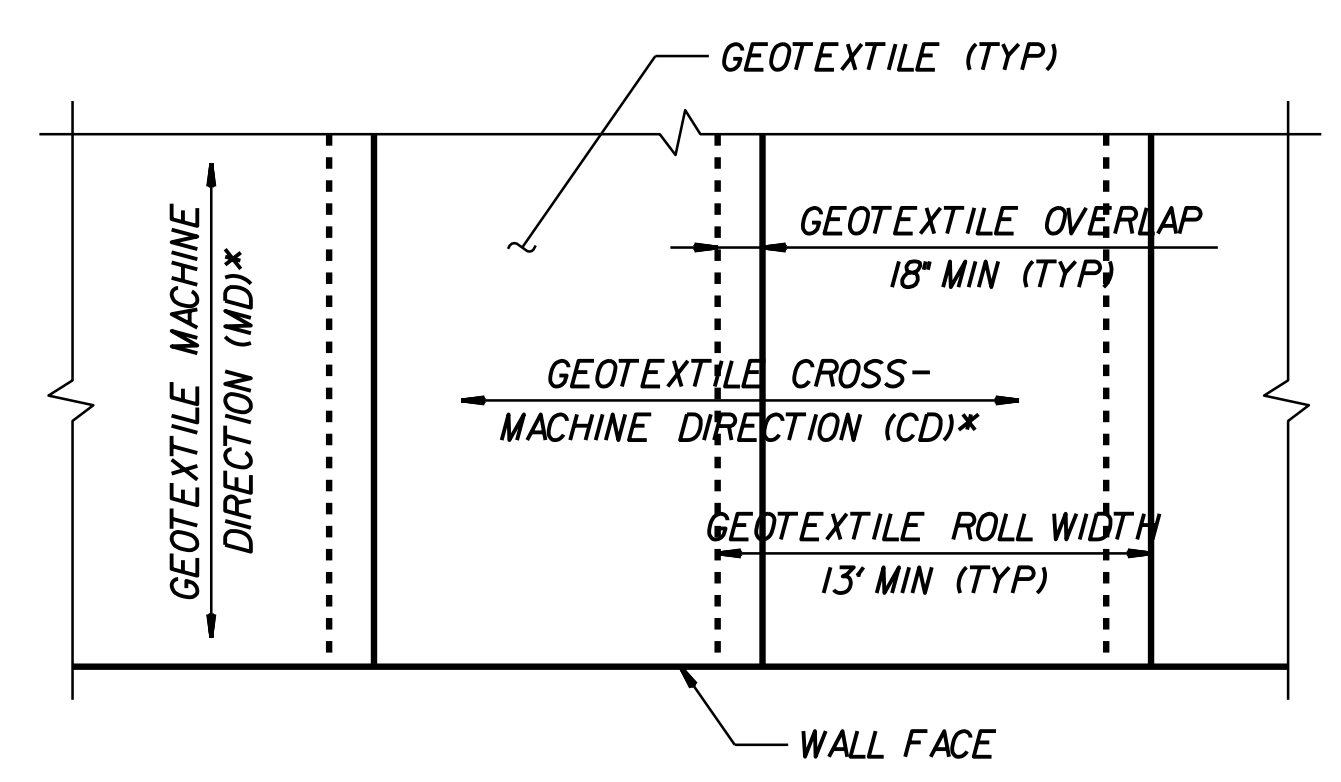


STANDARD TEMPORARY WALL - PARTIAL ELEVATION

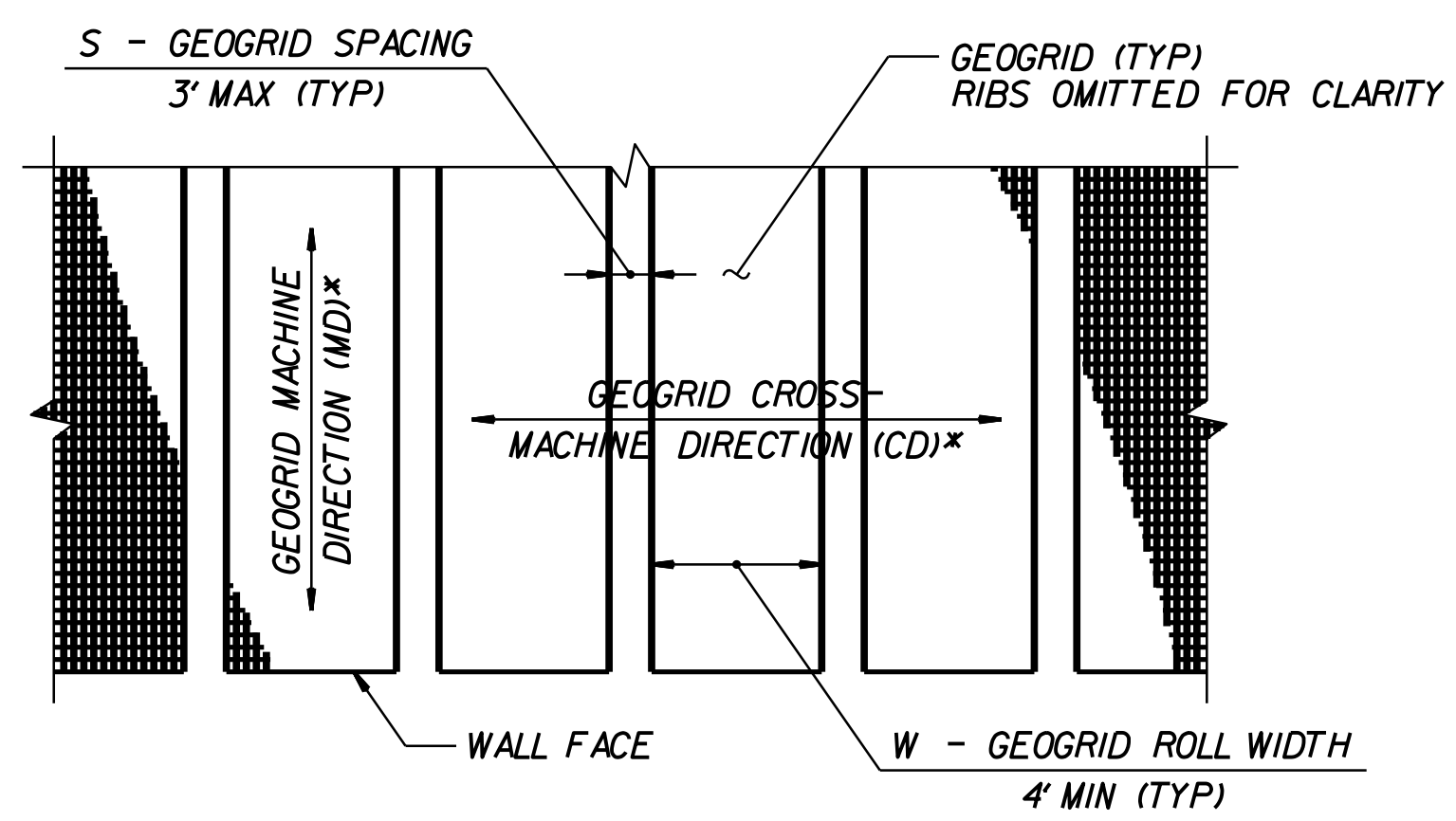
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
 **SEE REINFORCEMENT TABLES ON SHEET 3.

| | |
|--|--|
|  NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT | STANDARD DETAIL NO. 1801.02 |
| | STANDARD TEMPORARY WALL SHEET 1 OF 3 DATE: 11-19-13 |

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. I-4700 | SHEET NO. 2G-7 |
| GEOTECHNICAL ENGINEER  SHANE C. CLARK 5/20/2019 DATE | ENGINEER |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

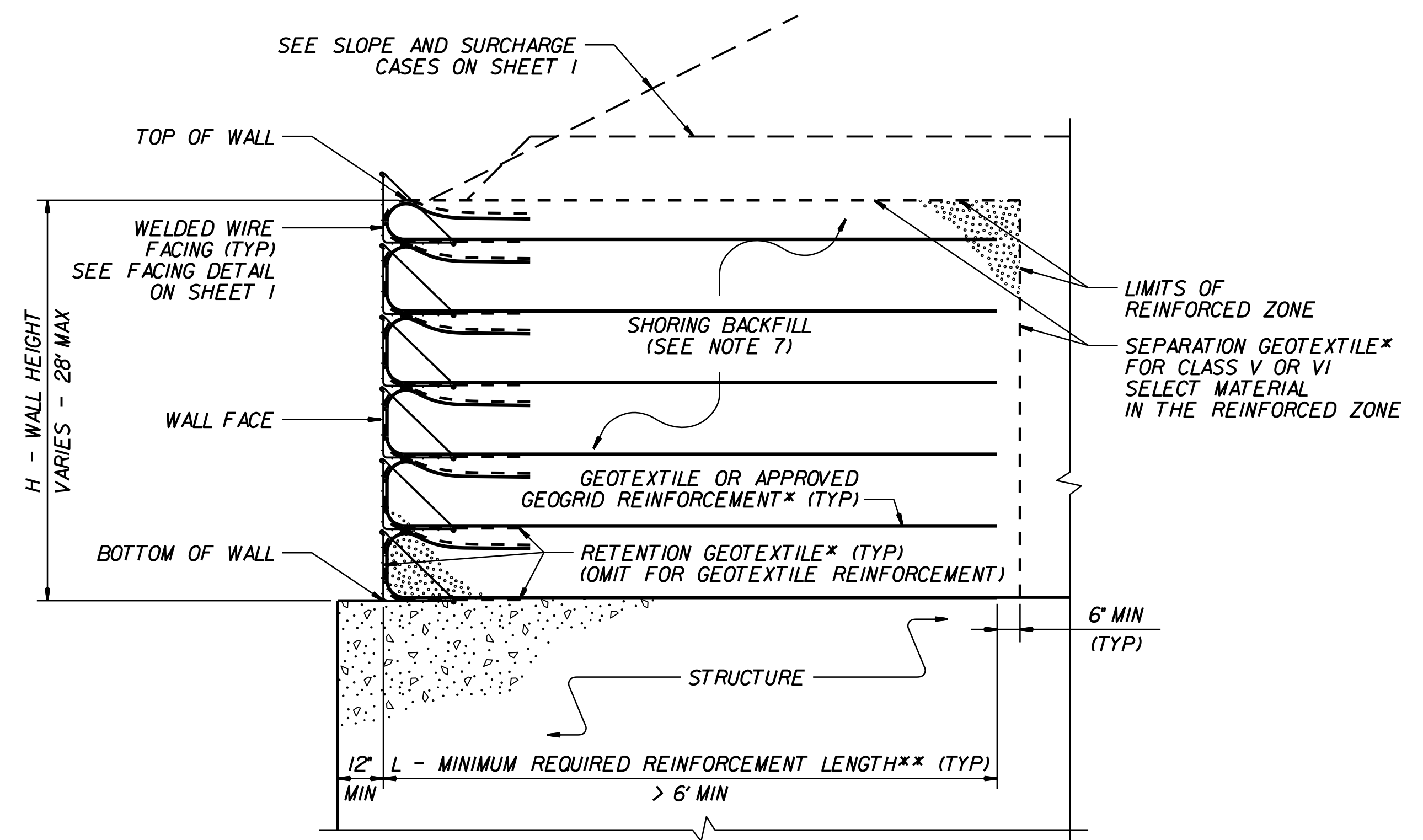


GEOTEXTILE PLACEMENT
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



GEOGRID PLACEMENT
(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT - $\frac{W}{W+S} \times 100 \geq 80\%$, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS
(PLAN VIEW)
*SEE NOTE 12.



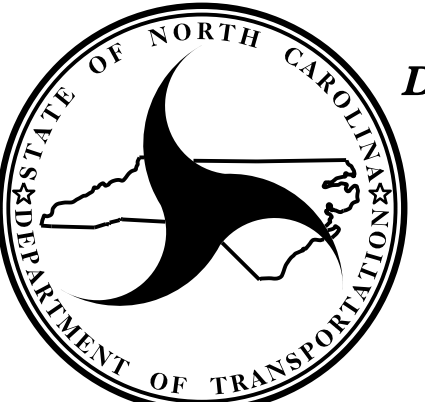
TEMPORARY WALL ON STRUCTURE DETAIL
*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
- DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
- DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
- EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
- DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Manual.aspx
DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

| MATERIAL TYPE | SHORING BACKFILL |
|------------------|---|
| BORROW | A-2-4 SOIL |
| FINE AGGREGATE | CLASS II, TYPE I OR CLASS III SELECT MATERIAL |
| COARSE AGGREGATE | CLASS V OR VI SELECT MATERIAL |

- IF THE WEBSITE DOES NOT LIST A SHORT-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID, USE A SHORT-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 3.5 FOR THE GEOGRID REINFORCEMENT.
- FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
 - AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
- W (REINFORCEMENT ROLL WIDTH) \geq (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 45' AND
- REINFORCEMENT STRENGTH IN CD \geq MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
 - SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
 - DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
 - FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
 - DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
 - CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
 - FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
 - FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

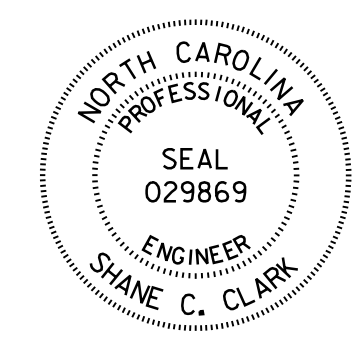

**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.02

**STANDARD
TEMPORARY WALL
SHEET 2 OF 3**

 DATE: 11-19-13

| | |
|--|--|
| PROJECT REFERENCE NO. I-4700 | SHEET NO. 2G-8 |
| GEOTECHNICAL ENGINEER  SHANE C. CLARK ENGINEER | ENGINEER |
| DocuSigned by: Shane Clark 5/20/2019 | DATE: 5/20/2019 SIGNATURE: _____ DATE: _____ |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

| SLOPE OR SURCHARGE CASE | GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT) | SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2) | H - WALL HEIGHT (FT) | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|--|--|----------------------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| | | | < 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | |
| SLOPE CASE | > 0 | CLASS II, TYPE I, CLASS III, CLASS V OR CLASS VI SELECT MATERIAL | 6 | 6 | 7 | 8 | 9 | 11 | 12 | 13 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 24 | 25 | 26 | 27 | 27 | |
| SURCHARGE CASE | > 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20' | ALL SHORING BACKFILL TYPES | 6 | 7 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | 11 | 12 | 12 | 13 | 14 | 14 | 15 | 16 | 17 | 17 | 18 | 19 | 19 | 20 | 21 | 22 | |
| | | A-2-4 SOIL | 6 | 6 | 7 | 8 | 8 | 9 | 9 | 10 | 11 | 11 | 12 | 12 | 13 | 14 | 14 | 15 | 16 | 16 | 17 | 18 | 18 | 19 | 20 | 20 | 21 | |
| | | CLASS II, TYPE I OR CLASS III SELECT MATERIAL | 6 | 6 | 7 | 7 | 8 | 8 | 9 | 10 | 10 | 11 | 11 | 12 | 12 | 13 | 14 | 15 | 15 | 16 | 16 | 17 | 17 | 18 | 18 | 19 | 20 | |
| | > 7 FOR H < 20' > 10 FOR H ≥ 20' | CLASS V OR CLASS VI SELECT MATERIAL | 6 | 6 | 7 | 7 | 7 | 8 | 8 | 9 | 9 | 10 | 10 | 11 | 12 | 13 | 13 | 14 | 14 | 15 | 15 | 16 | 17 | 17 | 18 | 19 | 19 | |

L - MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

| WALL HEIGHT (H) + EMBEDMENT (FT) | NUMBER OF REINFORCEMENT LAYERS* |
|----------------------------------|---------------------------------|
| 2.5 - 4 | 3 |
| 4 - 5.5 | 4 |
| 5.5 - 7 | 5 |
| 7 - 8.5 | 6 |
| 8.5 - 10 | 7 |
| 10 - 11.5 | 8 |
| 11.5 - 13 | 9 |
| 13 - 14.5 | 10 |
| 14.5 - 16 | 11 |
| 16 - 17.5 | 12 |
| 17.5 - 19 | 13 |
| 19 - 20.5 | 14 |
| 20.5 - 22 | 15 |
| 22 - 23.5 | 16 |
| 23.5 - 25 | 17 |
| 25 - 26.5 | 18 |
| 26.5 - 28 | 19 |
| 28 - 29.5 | 20 |

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

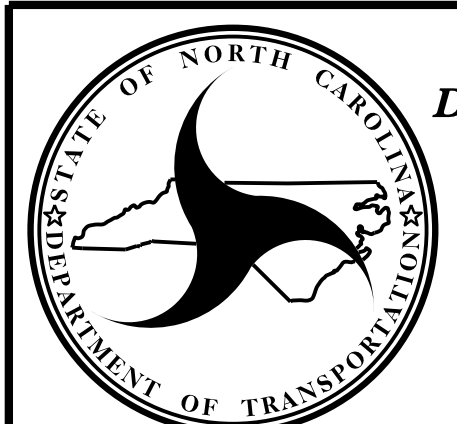
| REINFORCEMENT LAYER NUMBER* | SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2) | | | | |
|-----------------------------|--|-------------------------|----------------|---|-------------------------|
| | SLOPE CASE | | SURCHARGE CASE | | |
| | CLASS II, TYPE I OR CLASS III SELECT MATERIAL | CLASS V SELECT MATERIAL | A-2-4 SOIL | CLASS II, TYPE I OR CLASS III SELECT MATERIAL | CLASS V SELECT MATERIAL |
| 1 | 2400 | 2400 | 2400 | 2400 | 2400 |
| 2 | 2400 | 2400 | 2400 | 2400 | 2400 |
| 3 | 2400 | 2400 | 2400 | 2400 | 2400 |
| 4 | 2400 | 2400 | 2500 | 2400 | 2400 |
| 5 | 2500 | 2400 | 3000 | 2400 | 2400 |
| 6 | 3000 | 2400 | 3500 | 2800 | 2400 |
| 7 | 3500 | 2700 | 4000 | 3200 | 2600 |
| 8 | 4000 | 3100 | 4500 | 3600 | 2900 |
| 9 | 4500 | 3500 | 5000 | 4000 | 3200 |
| 10 | 5000 | 3900 | 5500 | 4400 | 3500 |
| 11 | 5500 | 4300 | 6000 | 4800 | 3800 |
| 12 | 6000 | 4700 | 6500 | 5200 | 4100 |
| 13 | 6500 | 5100 | 7000 | 5600 | 4400 |
| 14 | 7000 | 5400 | 7500 | 6000 | 4700 |
| 15 | 7500 | 5800 | 8000 | 6400 | 5000 |
| 16 | 8000 | 6200 | 8500 | 6800 | 5300 |
| 17 | 8500 | 6600 | 9000 | 7200 | 5600 |
| 18 | 9000 | 7000 | 9500 | 7600 | 5900 |
| 19 | 9500 | 7400 | 10000 | 8000 | 6200 |
| 20 | 10000 | 7800 | 10500 | 8400 | 6500 |

**GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)**

| REINFORCEMENT LAYER NUMBER* | SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2) | | | | |
|-----------------------------|--|-------------------------------------|----------------|---|-------------------------------------|
| | SLOPE CASE | | SURCHARGE CASE | | |
| | CLASS II, TYPE I OR CLASS III SELECT MATERIAL | CLASS V OR CLASS VI SELECT MATERIAL | A-2-4 SOIL | CLASS II, TYPE I OR CLASS III SELECT MATERIAL | CLASS V OR CLASS VI SELECT MATERIAL |
| 1 | 240 | 200 | 340 | 290 | 240 |
| 2 | 380 | 310 | 520 | 430 | 350 |
| 3 | 530 | 420 | 700 | 570 | 460 |
| 4 | 690 | 550 | 870 | 720 | 570 |
| 5 | 860 | 690 | 1050 | 860 | 680 |
| 6 | 1030 | 830 | 1220 | 1000 | 790 |
| 7 | 1200 | 970 | 1400 | 1150 | 900 |
| 8 | 1370 | 1110 | 1580 | 1290 | 1010 |
| 9 | 1550 | 1240 | 1750 | 1430 | 1120 |
| 10 | 1720 | 1380 | 1930 | 1580 | 1230 |
| 11 | 1890 | 1520 | 2100 | 1720 | 1340 |
| 12 | 2060 | 1660 | 2280 | 1860 | 1450 |
| 13 | 2240 | 1800 | 2450 | 2010 | 1560 |
| 14 | 2410 | 1940 | 2630 | 2150 | 1670 |
| 15 | 2580 | 2080 | 2800 | 2290 | 1780 |
| 16 | 2750 | 2220 | 2980 | 2440 | 1890 |
| 17 | 2930 | 2360 | 3160 | 2580 | 2000 |
| 18 | 3100 | 2500 | 3330 | 2720 | 2110 |
| 19 | 3270 | 2640 | 3510 | 2860 | 2220 |
| 20 | 3440 | 2780 | 3690 | 3000 | 2330 |

**GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)**
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1 FOR REINFORCEMENT LAYER NUMBERING.



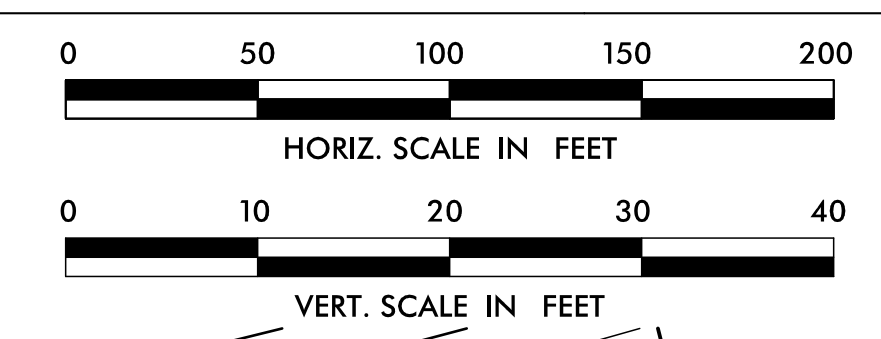
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.02

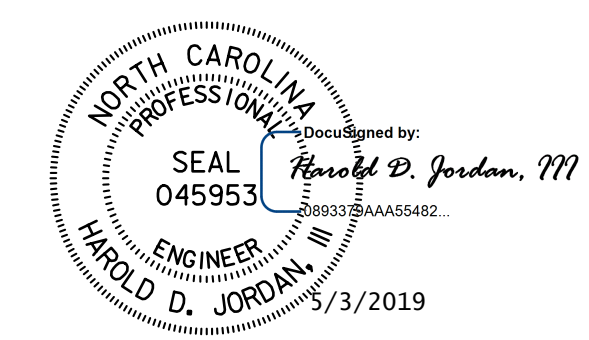
STANDARD
TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13



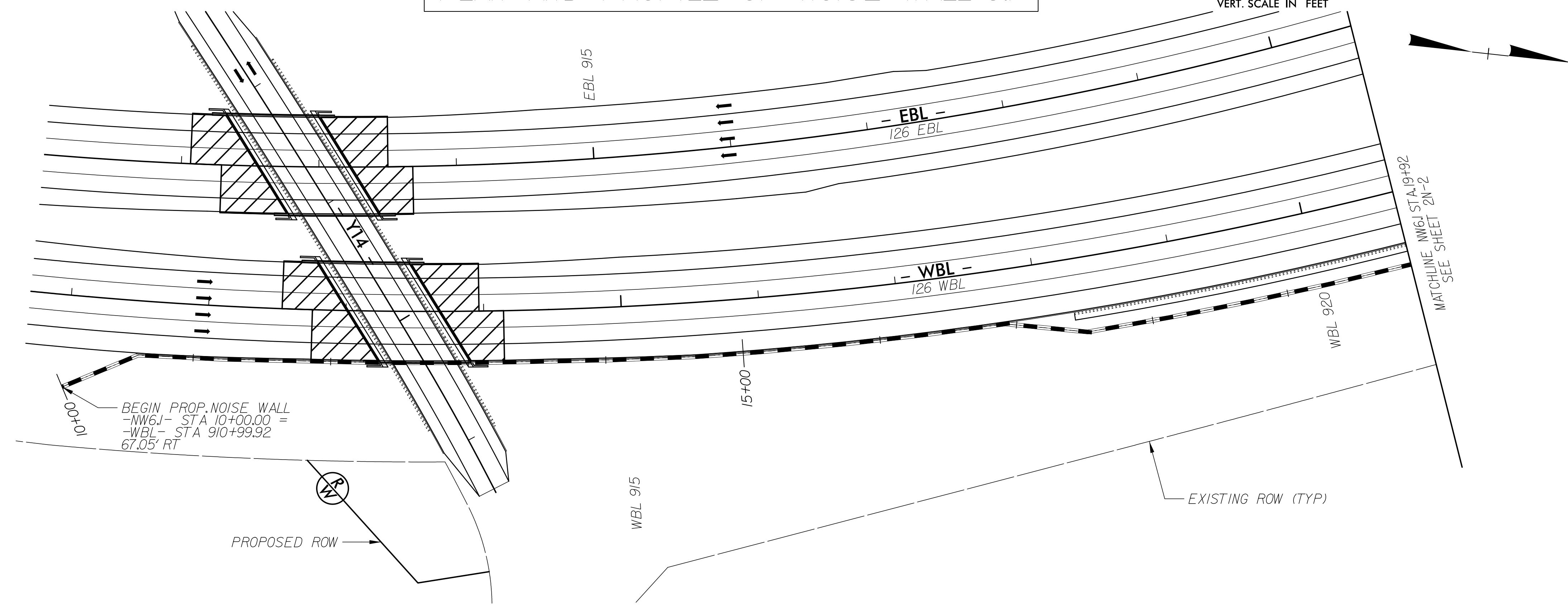
HNTB
HNTB NORTH CAROLINA, P.C.
 240 E. 521 FIFTH ROAD, SUITE 300
 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO. C-1554

PROJECT REFERENCE NO. 1-4700
 SHEET NO. 2N-1



**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

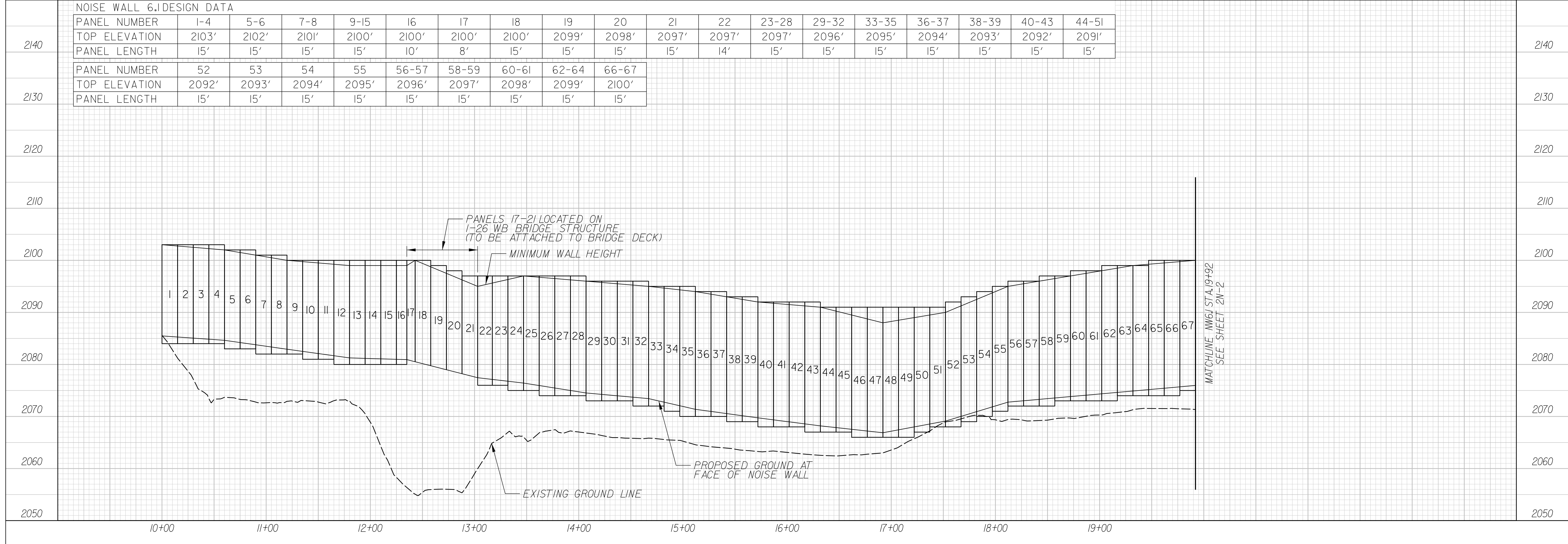
PLAN AND PROFILE OF NOISE WALL 6.I



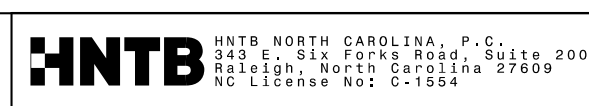
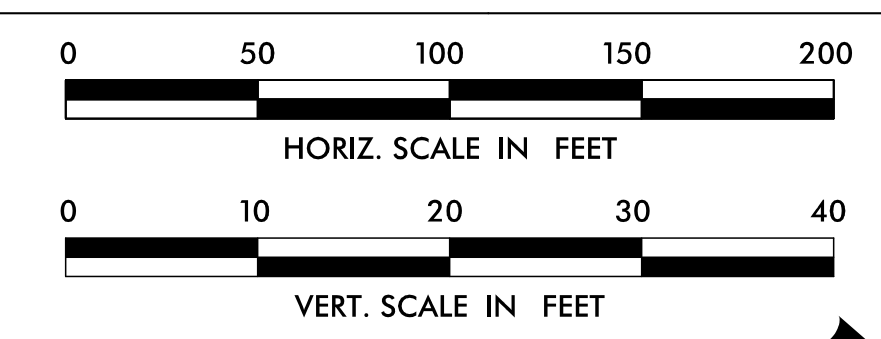
NOISE WALL 6.I DESIGN DATA

| | | | | | | | | | | | | | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PANEL NUMBER | 1-4 | 5-6 | 7-8 | 9-15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23-28 | 29-32 | 33-35 | 36-37 | 38-39 | 40-43 | 44-51 |
| TOP ELEVATION | 2103' | 2102' | 2101' | 2100' | 2100' | 2100' | 2100' | 2099' | 2098' | 2097' | 2097' | 2097' | 2096' | 2095' | 2094' | 2093' | 2092' | 2091' |
| PANEL LENGTH | 15' | 15' | 15' | 15' | 10' | 8' | 15' | 15' | 15' | 15' | 14' | 15' | 15' | 15' | 15' | 15' | 15' | 15' |

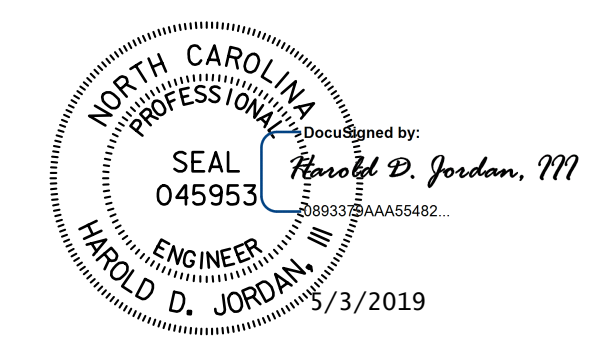
| | | | | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PANEL NUMBER | 52 | 53 | 54 | 55 | 56-57 | 58-59 | 60-61 | 62-64 | 66-67 |
| TOP ELEVATION | 2092' | 2093' | 2094' | 2095' | 2096' | 2097' | 2098' | 2099' | 2100' |
| PANEL LENGTH | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' |



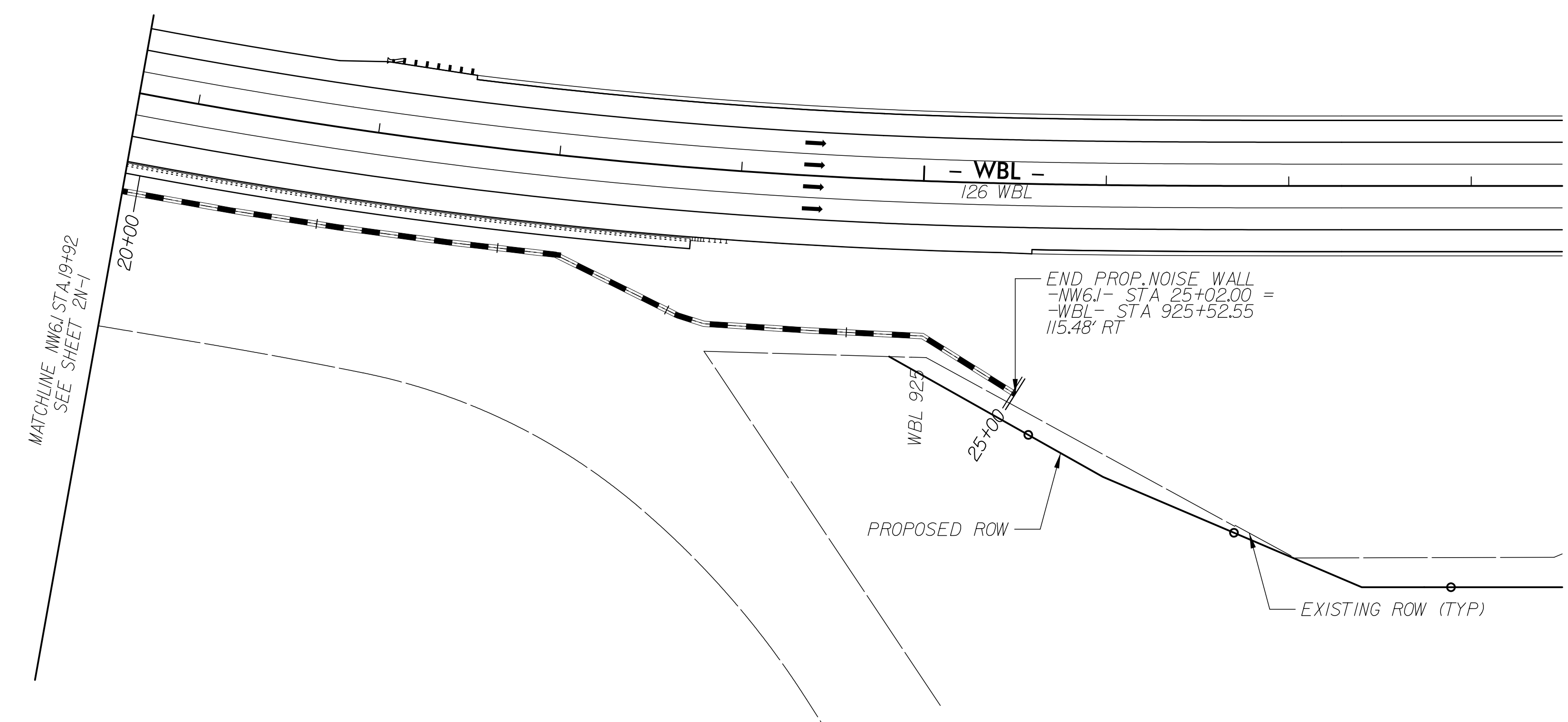
MATCHLINE NW6.I STA. 19+92 SEE SHEET 2N-2



PLAN AND PROFILE OF NOISE WALL 6.J



**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



| NOISE WALL 6.J DESIGN DATA | | | | | | | | | | | | | | |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PANEL NUMBER | 68-76 | 77-78 | 79-80 | 81 | 82-88 | 89-93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 |
| TOP ELEVATION | 2101' | 2100' | 2099' | 2098' | 2097' | 2096' | 2097' | 2099' | 2101' | 2103' | 2105' | 2107' | 2109' | 2111' |
| PANEL LENGTH | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' | 15' |



12/06/07

COMPUTED BY: ELK DATE: 09/2018
 CHECKED BY: DDB DATE: 10/2018

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
 1-4700 3B-3

SUMMARY OF CONCRETE BARRIER
 (IN LINEAR FEET AND EACH)

| SURVEY LINE | STATION | STATION | LOCATION L/RT/MED | PRECAST REINFORCED CONC. BARRIER (LF) | SINGLE SLOPE CONC. BARRIER TYPE I (LF) | SINGLE SLOPE CONC. BARRIER TYPE II (VAR. HEIGHT) (LF) | SINGLE SLOPE CONC. BARRIER TYPE T1 (VAR. HEIGHT) (LF) | CONC. BARRIER TRANSITION SECTION (EA) | IMPACT ATTENUATOR UNIT, TL-2 (EA) | MEDIAN HAZARD PROTECTION (LF) (SEE DETAIL 2C-10) | CONCRETE CAP SINGLE FACED BARRIER FILL (LF) (SEE DETAIL 2C-13) | CONCRETE BARRIER RAIL WMOMENT SLAB (LF) (STRUCT. PAY ITEM) |
|-------------|--------------|--------------|-------------------|---------------------------------------|--|---|---|---------------------------------------|-----------------------------------|--|--|--|
| -L- | 832 + 00.00 | 847 + 25.00 | MED | | 1525.00 | | | | | | | |
| -Y13RPC- | 11 + 25.00 | 16 + 25.00 | RT | 491.13 | | | | | | | | |
| -L- | 846 + 50.00 | 848 + 50.00 | LT | 200.00 | | | | | | | | |
| -L- | 847 + 25.00 | 847 + 88.00 | MED | | | | | 1 | | | | |
| -L- | 847 + 88.00 | 849 + 07.00 | MED | 119.00 | | | | | | 119.00 | | |
| -L- | 849 + 07.00 | 849 + 70.00 | MED | | | | | 1 | | | | |
| -L- | 848 + 50.00 | 850 + 25.00 | RT | 175.00 | | | | | | | | |
| -Y13- | 25 + 56.25 | 26 + 37.78 | LT | 86.80 | | | | | 1 | | | |
| -Y13- | 28 + 72.94 | 30 + 04.10 | RT | 141.99 | | | | | 1 | | | |
| -L- | 849 + 70.00 | 854 + 00.00 | MED | | | | | | | | | |
| -L- | 854 + 00.00 | 866 + 43.75 | MED | | | 1243.75 | | | | | | |
| -L- | 866 + 43.75 | 883 + 69.98 | MED | | 1726.23 | | | | | | | |
| -WBL- | 883 + 70.00 | 898 + 70.00 | MED | | | 1514.68 | | | | | | |
| -EBL- | 886 + 00.00 | 891 + 50.00 | LT | | | | | | | | | 552.58 |
| -WBL- | 911 + 50.00 | 923 + 75.00 | RT | 1174.60 | | | | | | | | |
| -WBL- | 943 + 75.00 | 950 + 00.00 | RT | 624.14 | | | | | | | | |
| -WBL- | 960 + 00.00 | 980 + 00.00 | RT | 1998.76 | | | | | | | | |
| -EBL- | 980 + 00.00 | 996 + 99.52 | RT | | | 1692.85 | | | | | | |
| -L- | 997 + 00.00 | 1012 + 64.70 | MED | | 1549.70 | | | 1 | | | | |
| -L- | 1015 + 67.38 | 1049 + 88.55 | MED | | 3390.51 | | | 2 | | | | |
| -L- | 1051 + 48.80 | 1055 + 00.00 | MED | | 336.20 | | | 1 | | | | |
| -Y15RPD- | 10 + 00.00 | 12 + 39.56 | LT | | | | | | | | 258.27 | |
| -Y15RPD- | 12 + 39.56 | 13 + 55.00 | LT | 94.16 | | | | | | | | |
| -L- | 1024 + 09.96 | 1025 + 35.58 | RT | | | | | | | | 125.61 | |
| -L- | 1025 + 35.58 | 1026 + 50.00 | RT | 114.42 | | | | | | | | |
| -Y14- | 12 + 50.00 | 15 + 80.00 | RT | 328.57 | | | | | 1 | | | |
| -Y14- | 12 + 90.00 | 16 + 00.00 | LT | 311.56 | | | | | 1 | | | |
| -L- | 1055 + 00.00 | 1079 + 00.00 | MED | | | 2399.50 | | | | | | |
| -WBL- | 1079 + 00.00 | 1084 + 36.41 | LT | | | 523.71 | | 1 | | | | |
| -WBL- | 1084 + 36.41 | 1088 + 50.00 | LT | 416.32 | | | | | | | | |
| -L- | 1069 + 00.00 | 1079 + 00.00 | RT | 1014.22 | | | | | | | | |
| -WBL- | 1079 + 00.00 | 1081 + 00.00 | RT | 199.70 | | | | | | | | |
| -EBL- | 1081 + 00.00 | 1093 + 00.00 | LT | 1200.00 | | | | | | | | |
| -WBL- | 1093 + 89.00 | 1100 + 50.00 | RT | 656.90 | | | | | | | | |
| -EBL- | 1094 + 75.00 | 1102 + 25.00 | LT | | | | | | | | | 759.11 |
| -EBL- | 1123 + 99.90 | 1127 + 93.92 | RT | 403.40 | | | | | | | | |
| -EBL- | 1127 + 93.92 | 1132 + 40.49 | RT | | | 435.01 | | 1 | | | | |
| -L- | 1133 + 00.00 | 1160 + 87.52 | MED | | 2772.52 | | | 1 | | | | |
| -L- | 1165 + 35.37 | 1165 + 80.00 | MED | | 29.63 | | | 1 | | | | |
| -L- | 1165 + 80.00 | 1230 + 43.72 | MED | | | 6463.72 | | | | | | |
| -L- | 1230 + 43.72 | 1230 + 57.72 | MED | | | | | 1 | | | | |
| -L- | 1140 + 75.00 | 1161 + 19.96 | LT | 2044.98 | | | | | | | | |
| -L- | 1164 + 95.81 | 1170 + 00.00 | RT | | | | | | | | | 499.84 |
| -L- | 1165 + 79.34 | 1175 + 00.00 | LT | | | | | | | | | 941.65 |
| -L- | 1172 + 00.00 | 1181 + 30.00 | RT | | | | | | | | | 899.10 |
| -L- | 1184 + 00.00 | 1195 + 25.00 | LT | 1113.48 | | | | | | | | |
| -L- | 1195 + 25.00 | 1198 + 25.00 | LT | | | | | | | | | 292.12 |
| -L- | 1193 + 75.00 | 1206 + 75.00 | RT | | | | | | | | | 1314.12 |
| -L- | 1234 + 70.00 | 1237 + 80.00 | MED | | | | 310.00 | | | | | |
| | | | TOTAL: | 12909.14 | 11329.79 | 14273.22 | 310.00 | 11 | 4 | 119.00 | 383.88 | 5258.51 |
| | | | SAY: | 13000 | 12000 | 14300 | 320 | 11 | 4 | 119 | 384 | STRUCT. PAY ITEM |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

24 JUN 2019 09:23
 14700_101_101_3801-3805_Summary.dgn
 HNTB

12/06/07

COMPUTED BY: DDB DATE: 09/2018
 CHECKED BY: ELK DATE: 10/2018

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
 I-4700 3B-4

**SHOULDER BERM GUTTER
 SUMMARY**

| SURVEY LINE | LOCATION LT/RT | STATION | STATION | LENGTH |
|-------------|----------------|------------|------------|----------|
| -L- | LT | 832+00.00 | 833+84.17 | 184.17 |
| -Y13RPB- | LT | 10+00.00 | 17+00.00 | 700.00 |
| -L- | RT | 832+00.00 | 837+83.27 | 583.27 |
| -Y13RPC- | RT | 10+00.00 | 11+25.00 | 125.00 |
| -Y13RPC- | RT | 16+25.00 | 18+61.50 | 236.50 |
| -Y13RPA- | RT | 10+00.00 | 15+00.00 | 500.00 |
| -L- | LT | 863+03.71 | 868+70.00 | 566.29 |
| -L- | RT | 863+50.00 | 871+00.00 | 750.00 |
| -L- | LT | 874+75.00 | 879+10.00 | 435.00 |
| -L- | RT | 878+40.00 | 883+70.00 | 530.00 |
| -WBL- | RT | 883+70.00 | 889+50.00 | 580.00 |
| -WBL- | LT | 922+50.00 | 980+06.61 | 5756.61 |
| -WBL- | RT | 925+60.00 | 932+25.00 | 665.00 |
| -EBL- | LT | 931+00.00 | 990+60.00 | 5960.00 |
| -WBL- | RT | 950+00.00 | 960+00.00 | 1000.00 |
| -WBL- | RT | 980+00.00 | 986+00.00 | 600.00 |
| -WBL- | RT | 988+70.00 | 996+90.85 | 820.85 |
| -L- | RT | 997+00.00 | 999+14.70 | 214.70 |
| -Y15RPC- | RT | 10+00.00 | 17+60.00 | 760.00 |
| -EBL- | LT | 996+75.00 | 996+99.52 | 24.52 |
| -L- | LT | 997+00.00 | 1002+54.49 | 554.49 |
| -Y15RPB- | LT | 10+00.00 | 16+80.00 | 680.00 |
| -Y15RPA- | LT | 10+00.00 | 17+00.00 | 700.00 |
| -L- | LT | 1029+08.18 | 1033+00.00 | 391.82 |
| -L- | RT | 1026+50.00 | 1049+64.39 | 2314.39 |
| -L- | LT | 1044+25.00 | 1049+64.39 | 539.39 |
| -L- | RT | 1051+72.97 | 1069+00.00 | 1727.03 |
| -L- | LT | 1051+72.97 | 1079+00.00 | 2727.03 |
| -EBL- | LT | 1079+00.00 | 1081+00.00 | 200.00 |
| -WBL- | RT | 1081+00.00 | 1093+89.00 | 1289.00 |
| -EBL- | RT | 1084+38.51 | 1089+00.00 | 461.49 |
| -WBL- | LT | 1088+50.00 | 1128+50.00 | 4000.00 |
| -EBL- | LT | 1093+00.00 | 1094+75.00 | 175.00 |
| -EBL- | RT | 1094+00.00 | 1123+99.90 | 2999.90 |
| -WBL- | RT | 1100+50.00 | 1133+00.00 | 3250.00 |
| -L- | RT | 1133+00.00 | 1160+10.49 | 2710.49 |
| -EBL- | LT | 1102+25.00 | 1132+40.49 | 3015.49 |
| -L- | LT | 1133+00.00 | 1140+75.00 | 775.00 |
| -L- | RT | 1170+00.00 | 1172+00.00 | 200.00 |
| -L- | LT | 1175+00.00 | 1184+00.00 | 900.00 |
| -L- | RT | 1181+30.00 | 1193+75.00 | 1245.00 |
| -L- | LT | 1198+25.00 | 1229+75.00 | 3150.00 |
| -L- | RT | 1206+75.00 | 1230+00.00 | 2325.00 |
| | | TOTAL: | | 57322.41 |
| | | SAY: | | 58000 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 ASPHALT PAVEMENT REMOVAL
 (IN SQUARE YARDS)**

| SURVEY LINE | STATION | STATION | LOCATION LT/RT/CL | SY |
|--------------------------|---------|---------|-------------------|--------|
| -L- | 832+00 | 883+70 | LT/RT | 16704 |
| -EBL- | 883+70 | 888+00 | LT/RT | 659 |
| -EBL- | 901+00 | 911+80 | LT | 1637 |
| -EBL- | 912+91 | 997+00 | LT/RT | 12971 |
| -WBL- | 883+70 | 910+80 | LT/RT | 4342 |
| -WBL- | 917+30 | 996+90 | LT/RT | 12933 |
| -Y13RPC- | 13+60 | 18+62 | LT/RT | 1759 |
| -Y13RPB- | 16+05 | 19+30 | LT/RT | 932 |
| -Y13RPA- | 18+50 | 23+00 | LT/RT | 2008 |
| -Y13RPD- | 13+85 | 19+85 | LT/RT | 2114 |
| -Y14- | 11+85 | 16+40 | LT/RT | 1074 |
| -L- | 997+00 | 1012+87 | LT | 8872 |
| -WBL/-L- | 996+87 | 996+91 | RT | 9375 |
| -L- | 1015+36 | 1048+00 | LT/RT | 25942 |
| -Y15RPC- | 14+39 | 18+25 | LT/RT | 1430 |
| -Y15RPC- | 22+07 | 25+14 | LT/RT | 910 |
| -Y15RPB- | 13+47 | 17+00 | LT/RT | 1537 |
| -Y15- | 63+37 | 64+07 | LT | 336 |
| -Y15RPA- | 15+64 | 21+06 | LT/RT | 2555 |
| -Y15RPD- | 13+36 | 16+90 | LT/RT | 1587 |
| -L- | 1053+00 | 1079+00 | LT/RT | 12052 |
| -EBL- | 1079+00 | 1132+40 | LT/RT | 9510 |
| -WBL- | 1079+00 | 1133+00 | LT/RT | 9771 |
| -L- | 1133+00 | 1159+50 | LT/RT | 8780 |
| -L- | 1165+02 | 1230+58 | LT/RT | 19852 |
| TEMPORARY ASPHALT | | | | |
| -L- | 832+00 | 873+00 | LT/RT | 22201 |
| -L- | 873+00 | 930+00 | LT/RT | 14512 |
| -L- | 930+00 | 980+00 | LT/RT | 29015 |
| -L- | 980+00 | 1034+00 | LT/RT | 32608 |
| -L- | 1034+00 | 1055+00 | LT/RT | 8854 |
| -L- | 1055+00 | 1085+00 | LT/RT | 23037 |
| -L- | 1085+00 | 1135+00 | LT/RT | 11269 |
| -L- | 1135+00 | 1184+00 | LT/RT | 21565 |
| -L- | 1184+00 | 1230+58 | LT/RT | 19309 |
| | | TOTAL: | | 352014 |
| | | SAY: | | 360000 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 WOVEN WIRE FENCE, 47" FABRIC
 (IN LINEAR FEET AND EACH)**

| STATION TO STATION | LT. OR RT. | FABRIC LF | 4" POSTS EA | 5" POSTS EA | |
|---|------------|-----------|-------------|-------------|------|
| -L- 832+00.00 to -Y13RPB- 12+88.82 | LT | 1244.95 | 77 | 22 | |
| -L- 832+00.00 to -Y13RPC- 19+59.77 | RT | 1528.23 | 96 | 25 | |
| -Y13RPA- 24+87.52 to -EBL- 912+03.91 | RT/LT | 6489.48 | 422 | 76 | |
| -Y13RPD_SPURLT- 10+98.80 to -WBL- 913+71.48 | LT/RT | 6155.38 | 399 | 76 | |
| -EBL- 912+08.75 to 982+70.05 | LT | 7149.14 | 470 | 76 | |
| -WBL- 914+06.92 to 953+79.54 | RT | 4104.56 | 264 | 55 | |
| -WBL- 954+02.83 to -Y15RC- 25+88.92 | RT | 6020.13 | 381 | 91 | |
| -EBL- 983+12.11 to -L-1014+79.56 | LT | 3162.16 | 185 | 76 | |
| -Y15RPA- 22+23.53 to -L- 1050+14.48 | RT/LT | 3624.11 | 234 | 46 | |
| -Y15- 56+12.83 to -L- 1050+15.67 | LT/RT | 4244.57 | 270 | 61 | |
| -L- 1051+19.36 to 1071+67.46 | LT | 2269.51 | 141 | 40 | |
| -L- 1051+19.48 to 1070+13.75 | RT | 2208.31 | 138 | 37 | |
| -L- 1076+38.96 to 1160+55.07 | RT | 8904.80 | 570 | 121 | |
| -EBL- 1081+85.47 to 1161+19.96 | LT | 8471.94 | 538 | 124 | |
| -L- 1164+94.18 to 1230+57.72 | RT | 6777.24 | 428 | 103 | |
| -L- 1165+75.33 to 1196+99.13 | LT | 3285.95 | 205 | 55 | |
| -L- 1197.62.96 to 1230+57.72 | LT | 3515.70 | 223 | 52 | |
| | | TOTAL: | 79156.16 | 5041 | 1136 |
| | | SAY: | 80000 | 5100 | 1200 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 CONCRETE PAVEMENT REMOVAL
 (IN SQUARE YARDS)**

| SURVEY LINE | STATION | STATION | LOCATION LT/RT/CL | SY |
|-------------|---------|---------|-------------------|--------|
| -L- | 832+00 | 883+70 | LT MED/RT MED | 30199 |
| -EBL- | 883+70 | 888+00 | LT/RT | 1121 |
| -EBL- | 901+00 | 911+78 | LT | 2791 |
| -EBL/-L- | 912+97 | 997+02 | LT/RT | 21884 |
| -WBL- | 883+70 | 910+80 | LT/RT | 7102 |
| -WBL- | 917+30 | 996+87 | LT/RT | 20889 |
| -Y13RPA- | 15+63 | 18+51 | LT/RT | 640 |
| -Y15E- | 10+53 | 10+89 | MED | 17 |
| -L- | 1034+65 | 1048+00 | LT/RT | 7410 |
| -L- | 1053+00 | 1079+00 | LT/RT | 13452 |
| -EBL- | 1079+00 | 1132+40 | LT/RT | 13873 |
| -WBL- | 1079+00 | 1133+00 | LT/RT | 14200 |
| -L- | 1133+00 | 1159+50 | LT/RT | 13822 |
| -L- | 1165+04 | 1230+58 | LT/RT | 34142 |
| -L- | 1165+04 | 1230+58 | LT/RT | 34142 |
| | | TOTAL: | | 181543 |
| | | SAY: | | 190000 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 CONCRETE PAVEMENT BREAKING
 (IN SQUARE YARDS)**

| SURVEY LINE | STATION | STATION | LOCATION LT/RT/CL | SY |
|-------------|---------|---------|-------------------|------|
| -EBL- | 888+00 | 901+00 | LT/RT | 3436 |
| -WBL- | 910+80 | 912+72 | LT/RT | 480 |
| -WBL- | 913+86 | 917+30 | LT/RT | 886 |
| -L- | 1048+00 | 1050+16 | LT/RT | 1125 |
| -L- | 1051+19 | 1053+00 | LT/RT | 944 |
| -L- | 1159+50 | 1161+01 | LT/RT | 688 |
| | | TOTAL: | | 7558 |
| | | SAY: | | 7600 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 ASPHALT PAVEMENT BREAKING
 (IN SQUARE YARDS)**

| SURVEY LINE | STATION | STATION | LOCATION LT/RT/CL | SY |
|-------------|---------|---------|-------------------|------|
| -EBL- | 888+00 | 901+00 | LT/RT | 2010 |
| -WBL- | 910+80 | 912+77 | LT/RT | 343 |
| -WBL- | 913+84 | 917+30 | LT/RT | 643 |
| -L- | 1048+00 | 1050+16 | LT/RT | 1753 |
| -L- | 1051+19 | 1053+00 | LT/RT | 1464 |
| -L- | 1159+50 | 1161+03 | LT/RT | 997 |
| | | TOTAL: | | 7211 |
| | | SAY: | | 7300 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

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COMPUTED BY: CML DATE: 09/2018
 CHECKED BY: KWR DATE: 10/2018

PROJECT REFERENCE NO. 1-4700 SHEET NO. 3B-5

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

**SUMMARY OF
 4" SHOULDER DRAIN**
 (IN LINEAR FEET AND EACH)

| LINE | BEG. STATION | END STATION | SHOULDER DRAIN LF | SHOULDER LF | OUTLET PIPE LF | CONC. PADS EA |
|----------|--------------|-------------|-------------------|-------------|----------------|---------------|
| -L- | 832+00.00 | 837+50.00 | 550.00 | 550.00 | 24.60 | |
| -L- | 841+80.00 | 855+40.00 | 1360.00 | 1360.00 | 136.95 | 2 |
| -L- | 865+00.00 | 872+00.00 | 700.00 | 700.00 | 45.60 | 1 |
| -LEBL- | 872+00.00 | 887+60.00 | 1560.00 | 1560.00 | 133.00 | 5 |
| -EBL- | 901+16.00 | 912+00.00 | 1084.00 | 1084.00 | 108.10 | 4 |
| -EBL- | 913+50.00 | 951+43.00 | 3793.00 | 3793.00 | 320.60 | 8 |
| -EBL- | 964+15.00 | 983+41.00 | 1926.00 | 1926.00 | 149.20 | 4 |
| -EBL- | 994+92.00 | 1005+00.00 | 1008.00 | 1008.00 | 67.80 | |
| -L- | 1009+20.00 | 1012+70.00 | 350.00 | 350.00 | 12.50 | |
| -L- | 1016+00.00 | 1022+00.00 | 600.00 | 600.00 | 32.50 | 1 |
| -Y15RPA- | 10+10.00 | 15+00.00 | 490.00 | 490.00 | 28.70 | 1 |
| -L- | 1048+50.00 | 1049+80.00 | 130.00 | 130.00 | 21.50 | 1 |
| -L- | 1051+80.00 | 1055+00.00 | 320.00 | 320.00 | 27.50 | 1 |
| -L- | 832+00.00 | 870+60.00 | 3860.00 | 3860.00 | 61.80 | |
| -LEBL- | 870+60.00 | 909+50.00 | 3890.00 | 3890.00 | 137.30 | |
| -EBL- | 929+00.00 | 1002+00.00 | 7300.00 | 7300.00 | 354.30 | 3 |
| -L- | 1021+40.00 | 1049+80.00 | 2840.00 | 2840.00 | 70.40 | |
| -L- | 1051+80.00 | 1055+00.00 | 320.00 | 320.00 | 5.30 | |
| -L- | 832+00.00 | 840+00.00 | 800.00 | 800.00 | 45.60 | 1 |
| -L- | 842+60.00 | 872+00.00 | 2940.00 | 2940.00 | 168.25 | 4 |
| -LWBL- | 872+00.00 | 908+30.00 | 3630.00 | 3630.00 | 399.90 | 10 |
| -WBL- | 928+00.00 | 1002+00.00 | 7400.00 | 7400.00 | 455.70 | 10 |
| -L- | 1022+00.00 | 1049+80.00 | 2780.00 | 2780.00 | 103.10 | 2 |
| -L- | 1051+80.00 | 1055+00.00 | 320.00 | 320.00 | 27.00 | 1 |
| -L- | 832+00.00 | 855+30.00 | 2330.00 | 2330.00 | 56.80 | |
| -L- | 865+70.00 | 870+60.00 | 490.00 | 490.00 | 10.60 | |
| -LWBL- | 870+60.00 | 887+60.00 | 1700.00 | 1700.00 | 26.50 | |
| -WBL- | 900+00.00 | 912+30.00 | 1230.00 | 1230.00 | 121.60 | |
| -WBL- | 914+00.00 | 981+10.00 | 6710.00 | 6710.00 | 298.70 | 7 |
| -WBL- | 995+50.00 | 1011+50.00 | 1600.00 | 1600.00 | 41.30 | |
| -WBL- | 1020+10.00 | 1026+50.00 | 640.00 | 640.00 | 15.90 | |
| -L- | 1051+80.00 | 1055+00.00 | 320.00 | 320.00 | 5.80 | |
| -LEBL- | 1055+00.00 | 1094+00.00 | 3900.00 | 3900.00 | 181.80 | 4 |
| -EBL- | 1110+40.00 | 1160+60.00 | 5020.00 | 5020.00 | 222.70 | 3 |
| -L- | 1184+00.00 | 1208+00.00 | 2400.00 | 2400.00 | 104.20 | 2 |
| -L- | 1221+50.00 | 1230+50.00 | 900.00 | 900.00 | 41.90 | 1 |
| -L- | 1055+00.00 | 1060+50.00 | 550.00 | 550.00 | 6.00 | |
| -LEBL- | 1075+00.00 | 1109+00.00 | 3400.00 | 3400.00 | 108.40 | 1 |
| -L- | 1134+00.00 | 1160+50.00 | 2650.00 | 2650.00 | 42.00 | |
| -L- | 1166+12.00 | 1189+00.00 | 2288.00 | 2288.00 | 42.50 | |
| -L- | 1200+90.00 | 1227+90.00 | 2700.00 | 2700.00 | 42.00 | |
| -L- | 1055+00.00 | 1060+46.00 | 546.00 | 546.00 | 29.10 | 1 |
| -LWBL- | 1075+00.00 | 1109+00.00 | 3400.00 | 3400.00 | 166.50 | 3 |
| -WBL- | 1130+00.00 | 1160+30.00 | 3030.00 | 3030.00 | 205.00 | 6 |
| -L- | 1165+50.00 | 1189+16.00 | 2366.00 | 2366.00 | 91.10 | 1 |
| -L- | 1200+90.00 | 1230+50.00 | 2960.00 | 2960.00 | 145.00 | 4 |
| -L- | 1055+00.00 | 1078+00.00 | 2300.00 | 2300.00 | 38.80 | |
| -WBL- | 1106+55.00 | 1160+50.00 | 5395.00 | 5395.00 | 120.90 | |
| -L- | 1166+12.00 | 1168+30.00 | 218.00 | 218.00 | 6.00 | |
| -L- | 1185+90.00 | 1208+26.00 | 2236.00 | 2236.00 | 40.60 | |
| -L- | 1221+50.00 | 1227+90.00 | 640.00 | 640.00 | 11.60 | |
| TOTAL: | | | 111870.00 | 111870.00 | 5160.50 | 92 |
| SAY: | | | 112000 | 112000 | 5200 | 100 |

NOTE:
 THESE QUANTITIES DO NOT INCLUDE
 BLRI OVER I-26 QUANTITIES. SEE
 SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

NOTE: These quantities do not include BLRI over I-26 quantities. See Sheets C01-C11 in BLRI over I-26 plans.

Quantities are approximate only. The Resident Engineer will re-cross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These Earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

| STATION to STATION | UNCLASSIFIED EXCAVATION | UNDERCUT | EMBANK. +% | BORROW | WASTE |
|---|-------------------------|----------|----------------|---------------|---------------|
| AREA 1A (BEGIN PROJECT TO -Y13- (AIRPORT ROAD) BRIDGE, INCLUDING Y13RPB and Y13RPC) | | | | | |
| -L- (EB) 832+00.00 TO 848+50.00 LT | 5,528 | | 520 | | 5,008 |
| -L- (MEDIAN) 832+00.00 TO 848+50.00 | 1,886 | | | | 1,886 |
| -L- (WB) 832+00.00 TO 848+50.00 RT | 14,790 | | | | 14,790 |
| -Y13RPB- 10+00.00 TO 19+30.00 | 1,452 | | 2,119 | 667 | |
| -Y13RPC- 10+00.00 TO 18+61.50 | 4,265 | | 36 | | 4,229 |
| AREA 1A SUBTOTAL | 27,921 | | 2,675 | 667 | 25,913 |
| WASTE TO REPLACE BORROW | | | | -667 | -667 |
| AREA 1A TOTAL | 27,921 | | 2,675 | | 25,246 |
| AREA 1B (-Y13- (AIRPORT ROAD) BRIDGE TO -L- 873+00, INCLUDING Y13RPA and Y13RPD) | | | | | |
| -L- (EB) 848+50.00 TO 873+00.00 LT | 10,496 | | 7,806 | | 2,690 |
| -L- (MEDIAN) 848+50.00 TO 873+00.00 | 1,984 | | 5 | | 1,979 |
| -L- (WB) 848+50.00 TO 873+00.00 RT | 13,220 | | 529 | | 12,691 |
| -Y13RPA- 10+00.00 TO 23+00.00 | 3,155 | | 4,702 | 1,547 | |
| -Y13RPD- 10+00.00 TO 19+85.00 | 9,334 | | 386 | | 8,948 |
| AREA 1B SUBTOTAL | 38,189 | | 13,428 | 1,547 | 26,308 |
| WASTE TO REPLACE BORROW | | | | -1,547 | -1,547 |
| AREA 1B TOTAL | 38,189 | | 13,428 | | 24,761 |
| AREA 1 TOTAL (AREA 1A + AREA 1B) | 66,110 | | 16,103 | 0 | 50,007 |
| AREA 2A (-L- 873+00 TO BRIDGES OVER -Y14- (GLENN BRIDGE)) | | | | | |
| -L- (EB) 873+00.00 TO -EBL- 912+55.00 LT | 5,169 | | 33,328 | 28,159 | |
| -L- (MEDIAN) 873+00.00 TO -WBL/EBL- 913+00.00 | 2,456 | | 33,420 | 30,964 | |
| -L- (WB) 873+00 TO -WBL- 913+00.00 RT | 48,767 | | 14,358 | | 34,409 |
| AREA 2A SUBTOTAL | 56,392 | | 81,106 | 59,123 | 34,409 |
| WASTE TO REPLACE BORROW | | | | -34,409 | -34,409 |
| AREA 2A TOTAL | 56,392 | | 81,106 | | |
| AREA 2B (BRIDGES OVER -Y14- (GLENN BRIDGE) TO -WBL/EBL- 930+00) | | | | | |
| -EBL- 913+24.00 TO 930+00.00 LT | 2,153 | | 4,559 | 2,406 | |
| -WBL/EBL- (MEDIAN) 913+50.00 TO 930+00.00 | 6,465 | | 20,232 | 13,767 | |
| -WBL- 913+69 TO 930+00.00 RT | 13,369 | | 7,971 | | 5,398 |
| -Y14- 11+85.00 TO 16+40.00 | 997 | | 5 | | 992 |
| AREA 2B SUBTOTAL | 22,984 | | 32,767 | 16,173 | 6,390 |
| WASTE TO REPLACE BORROW | | | | -6,390 | -6,390 |
| AREA 2B TOTAL | 22,984 | | 32,767 | 9,783 | |
| AREA 2 TOTAL (AREA 2A + AREA 2B) | 79,376 | | 113,873 | 34,497 | |
| AREA 3 (-WBL/EBL- 930+00 TO 980+00) | | | | | |
| -EBL- 930+00.00 TO 980+00.00 LT | 6,644 | | 8,666 | 2,022 | |
| -WBL/EBL- (MEDIAN) 930+00.00 TO 980+00.00 | 70,782 | | 867 | | 69,915 |
| -WBL- 930+00 TO 980+00.00 RT | 19,729 | | 12,606 | | 7,123 |
| AREA 3 SUBTOTAL | 97,155 | | 22,139 | 2,022 | 77,038 |
| WASTE TO REPLACE BORROW | | | | -2,022 | -2,022 |
| AREA 3 TOTAL | 97,155 | | 22,139 | 0 | 75,016 |
| AREA 4A (-WBL/EBL- 980+00 TO BRIDGE OVER -Y15- (LONG SHOALS), INCLUDING Y15RPB and Y15RPC) | | | | | |
| -EBL- 980+00.00 TO -L- (EB) 1012+65.00 LT | 4,991 | | 3,097 | | 1,894 |
| -WBL/EBL- (MEDIAN) 980+00.00 TO -L- 1012+65.00 | 276 | | 1,927 | | 1,651 |
| -WBL- 980+00.00 TO -L- (WB) 1012+65.00 RT | 30,517 | | 7,660 | | 22,857 |
| -Y15RPB- 10+00.00 TO 17+00.00 | 722 | | 773 | 51 | |
| -Y15RPC- 10+00.00 TO 25+13.78 | 1,280 | | 2,286 | 1,006 | |
| -Y15- 57+16.00 TO 59+44.00 | 38 | | 30 | | 8 |
| -Y15- 62+10.00 TO 65+44.00 | 100 | | 44 | | 56 |
| AREA 4A SUBTOTAL | 39,575 | | 14,166 | 1,057 | 26,466 |
| WASTE TO REPLACE BORROW | | | | -1,057 | -1,057 |
| AREA 4A TOTAL | 39,575 | | 14,166 | | 25,409 |
| AREA 4B (BRIDGE OVER -Y15- (LONG SHOALS) TO -L- 1034+00, INCLUDING Y15RPA and Y15RPD) | | | | | |
| -L- (EB) 1015+65.00 TO 1034+00.00 LT | 2,775 | | 2,860 | 85 | |
| -L- (MEDIAN) 1015+65.00 TO 1034+00.00 | 559 | | 5 | | 554 |
| -L- (WB) 1015+65.00 TO 1034+00.00 RT | 9,076 | | 8,165 | | 911 |
| -Y15RPA- 10+00.00 TO 21+06.22 | 1,905 | | 504 | | 1,401 |
| -Y15RPD- 10+00.00 TO 16+90.00 | 751 | | 168 | | 583 |
| AREA 4B SUBTOTAL | 15,066 | | 11,702 | 85 | 3,449 |
| WASTE TO REPLACE BORROW | | | | -85 | -85 |
| AREA 4B TOTAL | 15,066 | | 11,702 | | 3,364 |
| AREA 4 TOTAL (AREA 4A + AREA 4B) | 54,641 | | 25,868 | | 28,773 |
| AREA 5A (-L- 1034+00 TO -EY3- (BILTMORE) BRIDGE) | | | | | |
| -L- (EB) 1034+00.00 TO 1049+90.00 LT | 17 | | 2,591 | 2,574 | |
| -L- (MEDIAN) 1034+00.00 TO 1049+90.00 | 978 | | 642 | | 336 |
| -L- (WB) 1034+00.00 TO 1049+90.00 RT | 31,186 | | 7,622 | | 23,564 |
| AREA 5A SUBTOTAL | 32,181 | | 10,855 | 2,574 | 23,900 |
| WASTE TO REPLACE BORROW | | | | -2,574 | -2,574 |
| AREA 5A TOTAL | 32,181 | | 10,855 | | 21,326 |
| AREA 5B (-EY3- (BILTMORE) BRIDGE TO -L- 1055+00) | | | | | |
| -L- (EB) 1051+48.00 TO 1055+00.00 LT | | | 12,755 | 12,755 | |
| -L- (MEDIAN) 1051+48.00 TO 1055+00.00 | | | 589 | 589 | |
| -L- (WB) 1051+48.00 TO 1055+00.00 RT | | | 6,667 | 6,667 | |
| AREA 5B SUBTOTAL | | | 20,011 | 20,011 | |
| AREA 5B TOTAL | | | 20,011 | 20,011 | |
| AREA 5 TOTAL (AREA 5A + AREA 5B) | 32,181 | | 30,866 | 20,011 | 21,326 |

| STATION to STATION | UNCLASSIFIED EXCAVATION | UNDERCUT | EMBANK. +% | BORROW | WASTE |
|--|-------------------------|----------|----------------|---------------|----------------|
| AREA 6 (-L- 1055+00 TO -WBL/EBL- 1085+00) | | | | | |
| -L- (EB) 1055+00.00 TO -EBL- 1085+00.00 LT | 18,038 | | 18,750 | 712 | |
| -L- (MEDIAN) 1055+00.00 TO -WBL/EBL- 1085+00.00 | 1,457 | | 806 | | 651 |
| -L- (WB) 1055+00.00 TO -WBL- 1085+00.00 RT | 12,467 | | 16,606 | 4,139 | |
| AREA 6 SUBTOTAL | 31,962 | | 36,162 | 4,851 | 651 |
| WASTE TO REPLACE BORROW | | | | -651 | -651 |
| AREA 6 TOTAL | 31,962 | | 36,162 | 4,200 | 0 |
| AREA 7 (-WBL/EBL- 1085+00 TO -L- 1135+00) | | | | | |
| -EBL- (EB) 1085+00.00 TO -L- 1135+00.00 LT | 56,195 | | 13,872 | | 42,323 |
| -WBL/EBL- (MEDIAN) 1085+00.00 TO -L- 1135+00.00 | 35,009 | | 2,700 | | 32,309 |
| -WBL- (WB) 1085+00.00 TO -L- 1135+00.00 RT | 12,229 | | 16,454 | 4,225 | |
| AREA 7 SUBTOTAL | 103,433 | | 33,026 | 4,225 | 74,632 |
| WASTE TO REPLACE BORROW | | | | -4,225 | -4,225 |
| AREA 7 TOTAL | 103,433 | | 33,026 | 0 | 70,407 |
| AREA 8A (-L- 1135+00 TO BRIDGE AT FRENCH BROAD RIVER) | | | | | |
| -L- (EB) 1135+00.00 TO 1161+00.00 LT | 23,204 | | 6,705 | | 16,499 |
| -L- (MEDIAN) 1135+00.00 TO 1160+50.00 | 3,313 | | 286 | | 3,027 |
| -L- (WB) 1135+00.00 TO 1160+00.00 RT | 7,608 | | 7,288 | | 320 |
| AREA 8A SUBTOTAL | 34,125 | | 14,279 | | 19,846 |
| WASTE TO REPLACE BORROW | | | | 0 | 0 |
| AREA 8A TOTAL | 34,125 | | 14,279 | 0 | 19,846 |
| AREA 8B (BRIDGE AT FRENCH BROAD RIVER TO -L- 1184+00) | | | | | |
| -L- (EB) 1166+00.00 TO 1184+00.00 LT | 5,426 | | 935 | | 4,491 |
| -L- (MEDIAN) 1166+50.00 TO 1184+00.00 | 2,496 | | 98 | | 2,398 |
| -L- (WB) 1166+50.00 TO 1184+00.00 RT | 8,385 | | 5,565 | | 2,820 |
| AREA 8B SUBTOTAL | 16,307 | | 6,598 | | 9,709 |
| AREA 8B TOTAL | 16,307 | | 6,598 | | 9,709 |
| AREA 8 TOTAL (AREA 8A + AREA 8B) | 50,432 | | 20,877 | | 29,555 |
| AREA 9 (-L- 1184+00 TO END OF PROJECT) | | | | | |
| -L- (EB) 1184+00.00 TO 1230+57.72 LT | 33,203 | | 8,029 | | 25,174 |
| -L- (MEDIAN) 1184+00.00 TO 1230+57.72 | 2,150 | | 101 | | 2,049 |
| -L- (WB) 1184+00.00 TO 1230+57.72 RT | 36,381 | | 12,905 | | 23,476 |
| AREA 9 SUBTOTAL | 71,734 | | 21,035 | | 50,699 |
| AREA 9 TOTAL | 71,734 | | 21,035 | 0 | 50,699 |
| PROJECT SUBTOTAL (AREA 1 + AREA 2 + AREA 3 + AREA 4 + AREA 5 + AREA 6 + AREA 7 + AREA 8 + AREA 9) | 587,024 | | 319,949 | 58,708 | 325,783 |
| ESTIMATED LOSS DUE TO CLEARING & GRUBBING | -10,000 | | | | 10,000 |
| ESTIMATED SHOULDER MATERIAL | | | 18,251 | | 18,251 |
| PROJECT TOTAL (AREA 1 + AREA 2 + AREA 3 + AREA 4 + AREA 5 + AREA 6 + AREA 7 + AREA 8 + AREA 9) | 577,024 | | 338,200 | 86,959 | 325,783 |
| ESTIMATED 5% FOR REPLACING TOPSOIL ON BORROW PIT | | | | | 4,348 |
| GRAND TOTAL (CUBIC YARDS) | 577,024 | | 338,200 | 91,307 | 325,783 |
| SAY (CUBIC YARDS) | 577,100 | | | 91,400 | |
| ESTIMATED DRAINAGE DITCH EXCAVATION = 17,340 CY | | | | | |
| ESTIMATED -L- PAVEMENT STRUCTURE VOLUME = 159,000 CY | | | | | |

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-1

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Main data table with columns for Line & Station, Offset, Structure Number, Top Elevation, Invert Elevation, C.S. Pipe (15-66), R.C. Pipe Class IV (12-66), Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, and Remarks. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-2

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Main data table with columns for Line & Station, Offset, Structure Number, Top Elevation, Invert Elevation, C.S. Pipe (15-66), R.C. Pipe Class IV (12-66), Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, and Remarks. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing codes like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding descriptions.

REMARKS

KC01649

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-3

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C.S. PIPE (15-66), R.C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, PIPE REMOVAL, REMARKS.

SHEET TOTALS

34 42 1376 268 216 120 340 242 6.700 23 18.3 9.5 1 7 18 4 11 2 2 242 2 2 1 42 84

KCOL640

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-4

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-5

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes SHEET TOTALS at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-6

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-7

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-8

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for Line & Station, Offset, Structure Number, Top Elevation, Invert Elevation, Minimum Required Slope, C.S. Pipe (15-66), R.C. Pipe Class IV (12-66), 24" Welded Steel Pipe, 36" Welded Steel Pipe, 42" Welded Steel Pipe, 48" Welded Steel Pipe, 66" Welded Steel Pipe, Grouting, Pipe - Special Provision, Thermoplastic Slip Liner, Thermoplastic Slip Liner, Thermoplastic Slip Liner, Thermoplastic Slip Liner, Thermoplastic Slip Liner, Thermoplastic Slip Liner, Sealant, Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, Open Throat C.B. Special Detail, Concrete Bridge Approach, G.D.I. Type, G.D.I. Type, G.D.I. (W.S. Flat) Frame, G.D.I. (W.S. Sag) Frame, T.B.J.B. STD., T.B.D.I. STD., M.H. STD., M.H. Frame and Cover, 24" Pipe Rehabilitation, 30" Pipe Rehabilitation, 36" Pipe Rehabilitation, Pre-Installation Inspection, Convert Existing C.B., Convert Existing C.B., Convert Existing D.I., Adjust J.B., 15" C.S. Elbow, 18" C.S. Elbow, 24" C.S. Elbow, 30" C.S. Elbow, 36" C.S. Elbow, 66" C.S. Elbow, Temporary Steel Plate Covers, Temporary Pipe Bulkhead Plate, Temporary 15" Slotted Drain Special Detail, Berm Ditch Outlet, Side Tapered Inlet Special Detail, Concrete Energy Dissipater Special Detail, Flowable Fill, Pipe Removal. Includes Abbreviations and Remarks columns.

SHEET TOTALS

Summary row for SHEET TOTALS with values for various columns: 52, 46, 92, 32, 1620, 680, 152, 28, 7.900, 9.913, 22, 22.0, 4.9, 15, 8, 14, 2, 7, 275, 4, 2, 4, 2, 1, 22, 58.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-9

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C.S. PIPE (15-66), R.C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-10

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-11

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C.S. PIPE (15-66), R.C. PIPE CLASS IV (12-66), ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing materials like C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, C.S. CORRUGATED STEEL, etc.

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COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 07/10/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-12

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C.S. PIPE (15-66), R.C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing materials like CORRUGATED ALUMINIUM ALLOY, CORRUGATED STEEL, DRAINAGE STRUCTURES, etc.

SHEET TOTALS 208 252 852 144 76 134 23 24.6 6.4 7 20 3 16 8 4 22 3 22 436

KCOL640

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-13

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Main data table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS.

SHEET TOTALS

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-17

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-18

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C.S. PIPE (15-66), R.C. PIPE CLASS IV (12-66), ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

- ABBREVIATIONS
C.A.A. CORRUGATED ALUMINIUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. NARROW SLOT
P.V.C. POLYVINYL CHLORIDE
R.C. REINFORCED CONCRETE
T.B.D.I. TRAFFIC BEARING DROP INLET
T.B.J.B. TRAFFIC BEARING JUNCTION BOX
W.S. WIDE SLOT

KCOL640

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-19

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

KCOL640

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-20

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes SHEET TOTALS at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-21

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-22

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes SHEET TOTALS at the bottom.

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COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-23

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

KCOL640

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-24

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

KCOL640

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-25

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes SHEET TOTALS at the bottom.

KCOL649

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-26

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

KCOL649

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

PROJECT NO. I-4700 SHEET NO. 3D-27

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

KCOL640

COMPUTED BY: JCR, JCD, JJZ DATE: 04/20/2019
CHECKED BY: JJZ DATE: 04/24/2019

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. I-4700 SHEET NO. 3D-29

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR ALL PIPES)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, C. S. PIPE (15-66), R. C. PIPE CLASS IV (12-66), ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRADE, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing codes like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding material descriptions.

REMARKS

12/06/07

COMPUTED BY: ELK DATE: 09/2018
 CHECKED BY: DDB DATE: 10/2018

PROJECT REFERENCE NO. SHEET NO.
 I-4700 36-1

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

**SUMMARY OF AGGREGATE
 SUBGRADE /STABILIZATION**

| LINE | STATION | STATION | AGGREGATE TYPE ASU(1)2)AST | AGGREGATE THICKNESS INCHES | SHALLOW UNDERCUT CY | CLASS IV SUBGRADE STABILIZATION TONS | GEOTEXTILE FOR SOIL STABILIZATION SY | STABILIZER AGGREGATE TONS | CLASS IV AGGREGATE STABILIZATION TONS |
|------------------|------------|------------|----------------------------|----------------------------|---------------------|--------------------------------------|--------------------------------------|---------------------------|---------------------------------------|
| L | 832+00.00 | 883+69.98 | ASU(1) | 12 | 24,107.00 | 62075.46 | 95134.81 | | |
| EBL | 883+69.98 | 912+30.14 | ASU(1) | 12 | 4,538.00 | 16347.35 | 25053.42 | | |
| WBL | 883+69.98 | 912+75.37 | ASU(1) | 12 | 7,078.00 | 16450.80 | 25211.95 | | |
| EBL | 913+48.64 | 996+99.52 | ASU(1) | 12 | 15,299.50 | 47742.47 | 73168.53 | | |
| WBL | 913+93.75 | 996+90.85 | ASU(1) | 12 | 15,971.50 | 47639.63 | 73010.93 | | |
| L | 997+00.00 | 1012+64.70 | ASU(1) | 12 | 15,907.00 | 19385.39 | 29709.40 | | |
| L | 1015+67.39 | 1049+65.80 | ASU(1) | 12 | 15,508.00 | 39906.29 | 61159.07 | | |
| L | 1051+71.30 | 1079+00.00 | ASU(1) | 12 | 10,576.00 | 31766.43 | 48684.18 | | |
| EBL | 1079+00.00 | 1132+40.49 | ASU(1) | 12 | 11,634.50 | 30436.30 | 46645.67 | | |
| WBL | 1079+00.00 | 1133+00.00 | ASU(1) | 12 | 12,687.50 | 30911.66 | 47374.20 | | |
| L | 1133+00.00 | 1160+78.63 | ASU(1) | 12 | 12,411.00 | 32146.46 | 49266.60 | | |
| L | 1165+40.53 | 1230+57.72 | ASU(1) | 12 | 31,109.00 | 71443.84 | 109492.47 | | |
| L | 1234+70.00 | 1234+80.00 | | | | 135 | 207 | | |
| CONTINGENCY | | | | | 2500 | | 17200 | | |
| CONTINGENCY | | | ASU(1) | | | 5100 | | | |
| CONTINGENCY | | | AST | | | | | | |
| TOTAL CY/TONSSY: | | | | | 179400.00 | 460000.00 | 710000.00 | | |

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.
 ASU(1)2) = AGGREGATE SUBGRADE (TYPE 1 or 2)
 AST = AGGREGATE STABILIZATION
 TOTAL SQUARE YARDS OF "GEOTEXTILE FOR SOIL STABILIZATION" IS ONLY THE ESTIMATED QUANTITY FOR ASU(1)2)AST AND MAY ONLY REPRESENT A PORTION OF THE SUBGRADE STABILIZATION AND GEOTEXTILE QUANTITIES SHOWN IN THE ITEM SHEETS OF THE PROPOSAL

**SUMMARY OF GEOTEXTILE
 FOR PAVEMENT STABILIZATION
 (IN SQUARE YARDS)**

| THE FOLLOWING AREAS SHOULD BE INVESTIGATED FOR NEED DURING CONSTRUCTION | | | |
|---|------------|------------|----------|
| LINE | Station | Station | SY |
| L | 859+00.00 | 867+00.00 | 2311.00 |
| L | 876+00.00 | 877+75.00 | 467.00 |
| L/WBL | 882+00.00 | 886+50.00 | 400.00 |
| WBL | 884+00.00 | 888+50.00 | 1200.00 |
| WBL | 911+50.00 | 912+75.00 | 375.00 |
| WBL | 913+75.00 | 915+50.00 | 525.00 |
| WBL | 951+75.00 | 956+75.00 | 1833.00 |
| WBL | 982+25.00 | 985+25.00 | 833.00 |
| EBL | 903+00.00 | 912+25.00 | 8222.00 |
| EBL | 913+75.00 | 917+50.00 | 3333.00 |
| EBL | 936+25.00 | 960+00.00 | 6597.00 |
| EBL | 971+50.00 | 988+75.00 | 4983.00 |
| L | 1006+00.00 | 1007+00.00 | 289.00 |
| L | 1027+00.00 | 1031+00.00 | 1156.00 |
| L | 1048+50.00 | 1050+25.00 | 506.00 |
| L | 1051+25.00 | 1055+00.00 | 1083.00 |
| L | 997+50.00 | 1002+50.00 | 1444.00 |
| L | 1029+50.00 | 1036+00.00 | 1878.00 |
| L | 1043+25.00 | 1050+75.00 | 2167.00 |
| L | 1051+75.00 | 1055+00.00 | 939.00 |
| Y15RPA | 10+08.00 | 11+08.00 | 200.00 |
| L | 1057+25.00 | 1062+75.00 | 1589.00 |
| L | 1055+50.00 | 1060+25.00 | 1372.00 |
| WBL | 1082+25.00 | 1084+00.00 | 506.00 |
| WBL | 1091+75.00 | 1092+75.00 | 289.00 |
| WBL | 1119+25.00 | 1119+75.00 | 289.00 |
| WBL | 1119+75.00 | 1121+25.00 | 433.00 |
| WBL | 1124+00.00 | 1131+00.00 | 2022.00 |
| EBL | 1094+25.00 | 1095+50.00 | 444.00 |
| EBL | 1104+50.00 | 1106+25.00 | 506.00 |
| EBL | 1129+50.00 | 1132+40.49 | 1400.00 |
| L | 1133+00.00 | 134+50.00 | 600.00 |
| L | 1137+75.00 | 1139+00.00 | 500.00 |
| L | 1146+75.00 | 1147+75.00 | 400.00 |
| L | 1198+50.00 | 1201+00.00 | 722.00 |
| L | 1204+75.00 | 1206+25.00 | 433.00 |
| L | 1206+75.00 | 1213+25.00 | 1878.00 |
| L | 1215+25.00 | 1216+75.00 | 433.00 |
| TOTAL SY: | | | 54557.00 |

NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

**SUMMARY OF
 SUBSURFACE DRAINAGE**

| LINE | STATION | STATION | LOCATION LT/RT/CL | DRAIN TYPE* UD/BD/SD | LF |
|-------------|---------------|---------------|-------------------|----------------------|------|
| -WBL/-L- | -WBL- 1124+00 | -WBL- 1133+00 | RT | SD | 1500 |
| | -L- 1133+00 | -L- 1138+00 | | | |
| CONTINGENCY | | | | SD | 3000 |
| | | | | TOTAL LF: | 4500 |
| | | | | SAY: | 4500 |

*UD = UNDERDRAIN
 *BD = BLIND DRAIN
 *SD = SUBSURFACE DRAIN
 NOTE: THESE QUANTITIES DO NOT INCLUDE BLRI OVER I-26 QUANTITIES. SEE SHEETS C01-C11 IN BLRI OVER I-26 PLANS.

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 12/06/07