

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

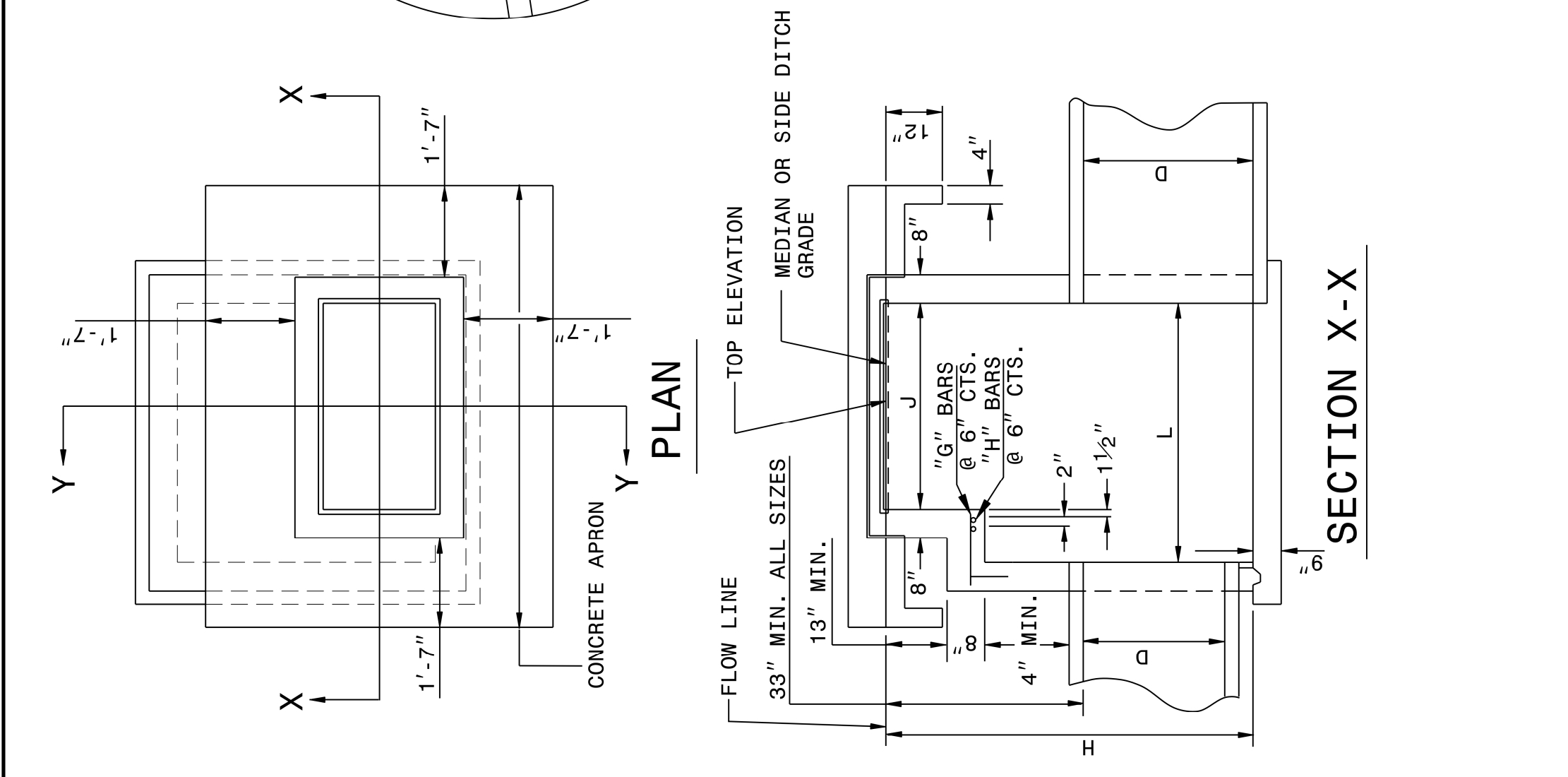
**This file or an individual page
shall not be considered a certified document.**

01-MAR-2018 07:33
 S:\Contracts\Contractors\Special Details\vericard\usr\details\stand\840d17 Extra Depth 2GI.dgn
 J:\overton AT_CSD-292595

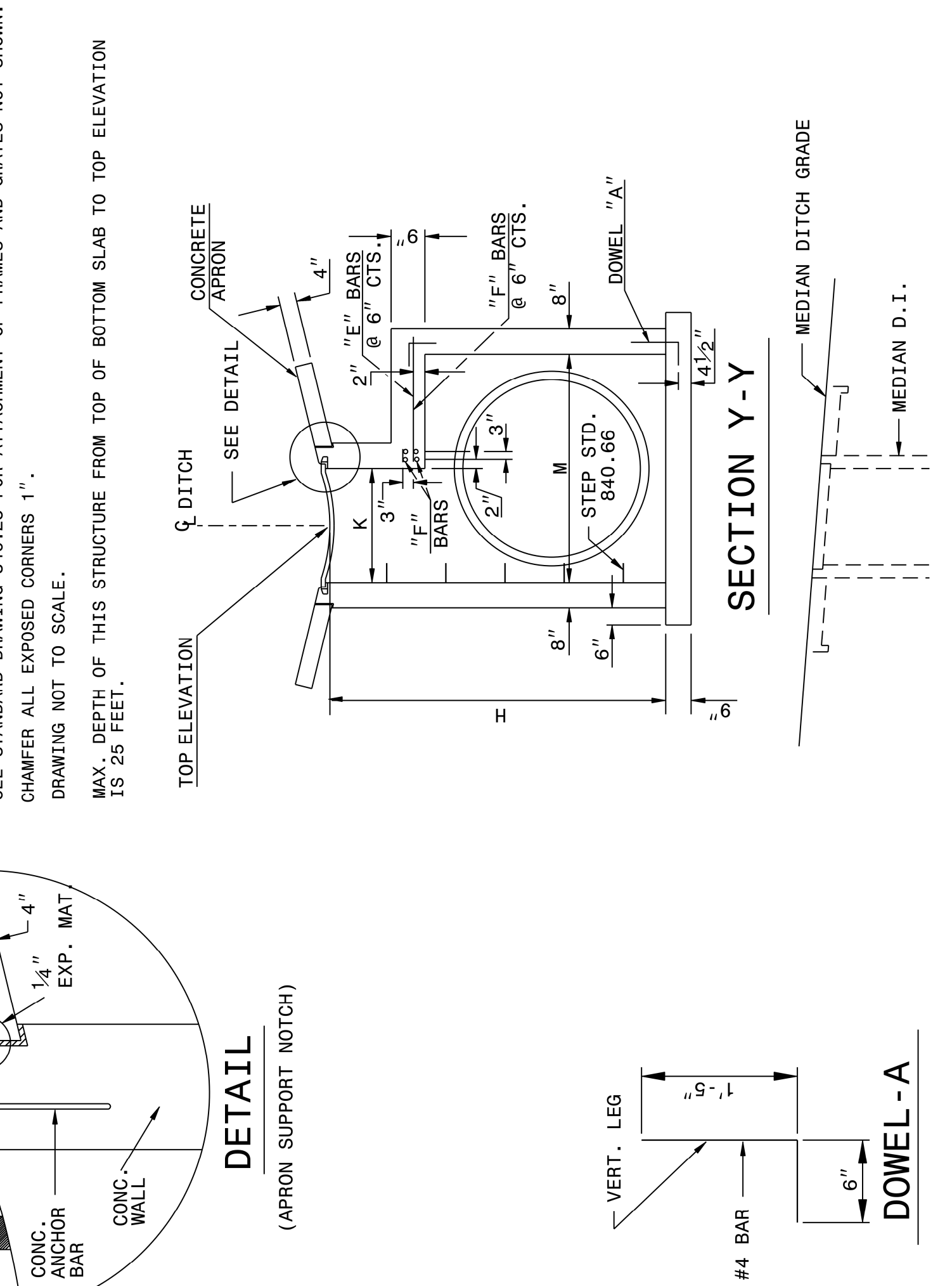
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 1 OF 2
840D17



GENERAL NOTES:
USE CLASS "B" CONCRETE THROUGHOUT.
PROVIDE DROP INLETS 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.
IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
WHEN PAYMENT FOR THE DROP INLET IS MADE ON A PER EACH BASIS, THE CONCRETE APRON WILL BE CONSIDERED PART OF THE DROP INLET.
CONSTRUCT WITH PIPE CROWNS MATCHING.
USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24 (SHOWN), 840.20, 840.29, AND 840.33.
SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
CHAMFER ALL EXPOSED CORNERS 1".
DRAWING NOT TO SCALE.
MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 25 FEET.



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

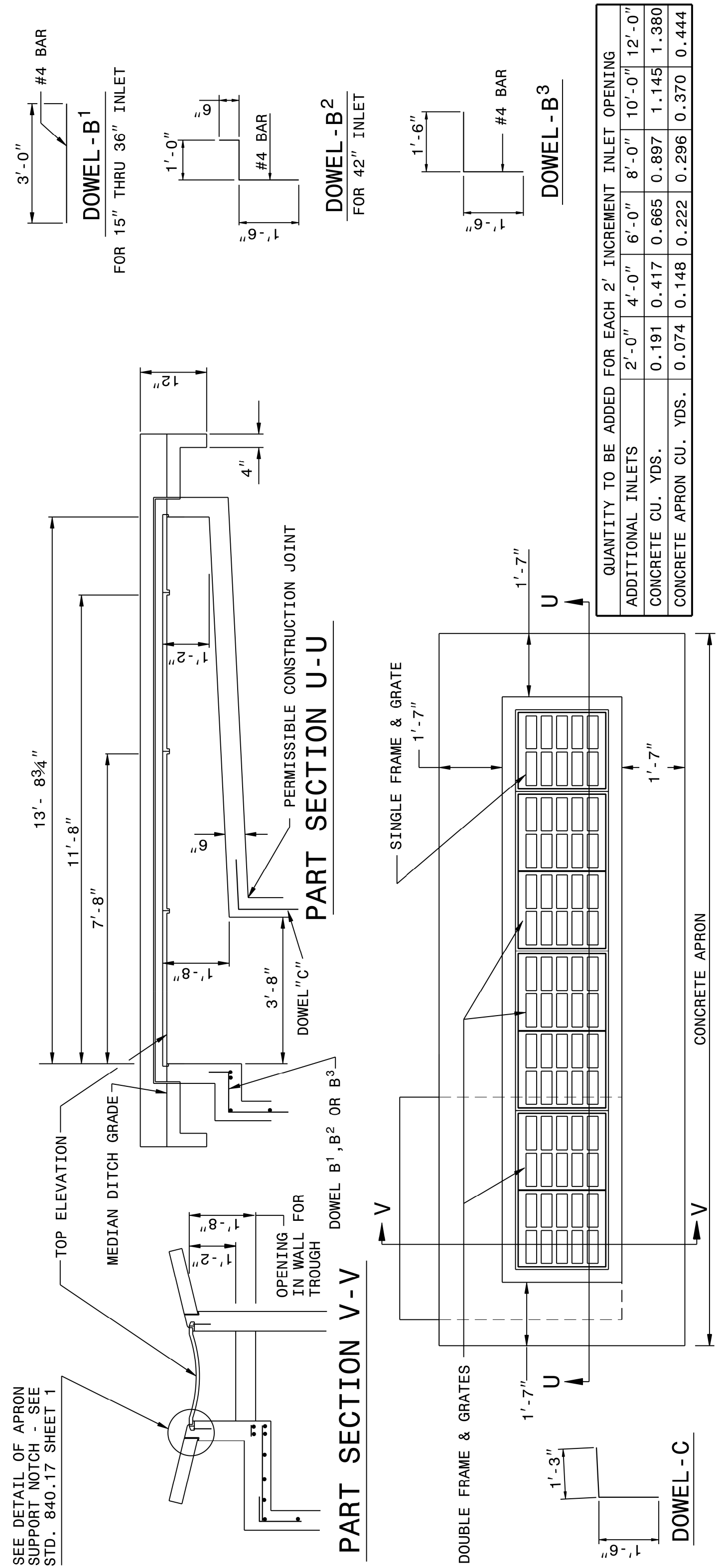
ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 1 OF 2
840D17

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

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 2 OF 2
840D17



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

ENGLISH DETAIL DRAWING FOR
CONCRETE MEDIAN DROP INLET TYPE 'A'
EXTRA DEPTH OVER 12' TO 25'
12" THRU 72" PIPE

SHEET 2 OF 2
840D17

PIPE	DIMENSIONS OF BOX AND PIPE			REINFORCING STEEL - NO. 4 BARS								MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET (BASED ON MIN. HEIGHT, H)		DEDUCTIONS FOR ONE PIPE				
	SPAN	WIDTH	DEPTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	H	PER FT	APRON	TOTAL	C. S.	R. C.	
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.362	1.050	0.247	0.395	1.807	0.033	0.049
24"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.444	1.362	0.278	0.444	2.201	0.059	0.085
30"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.502	1.644	0.288	0.502	2.541	0.092	0.127
36"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.560	1.931	0.321	0.560	2.920	0.132	0.178
42"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.704	2.500	0.370	0.704	3.677	0.180	0.243
48"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.823	3.013	0.407	0.823	4.315	0.235	0.317
54"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	0.951	3.589	0.444	0.951	5.072	0.297	0.401
60"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	1.311	4.539	0.494	1.311	6.170	0.367	0.495
66"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	1.136	5.061	0.537	1.136	6.901	0.444	0.599
72"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	2'-0"	3'-8"	1.500	5.860	0.580	1.500	7.868	0.528	0.713

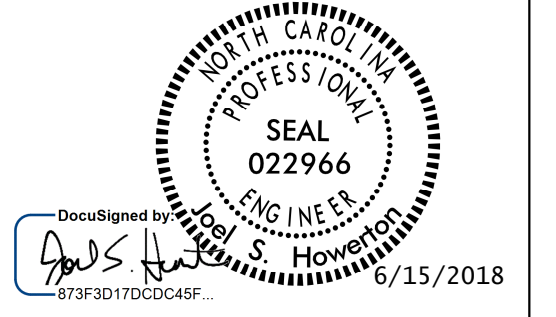
QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING

ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

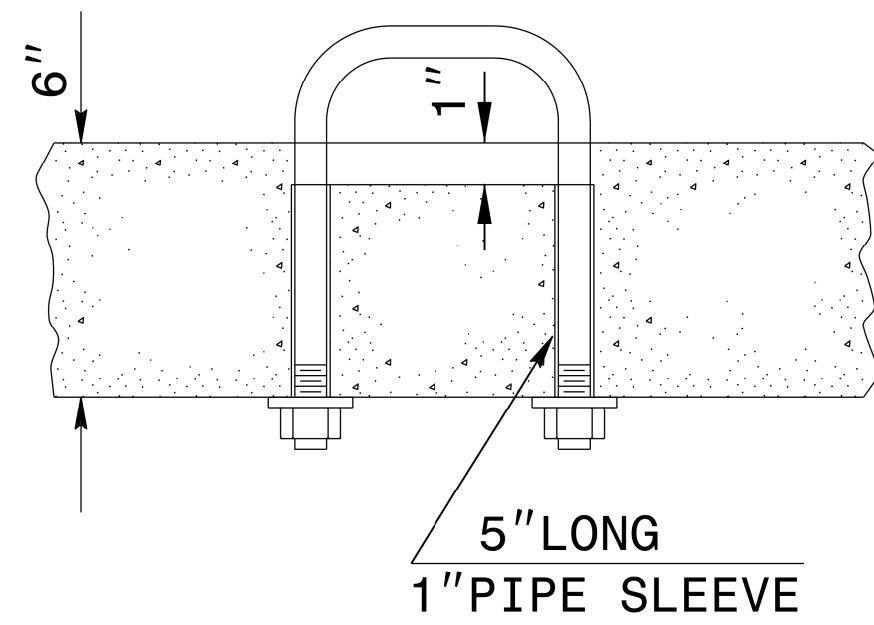
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

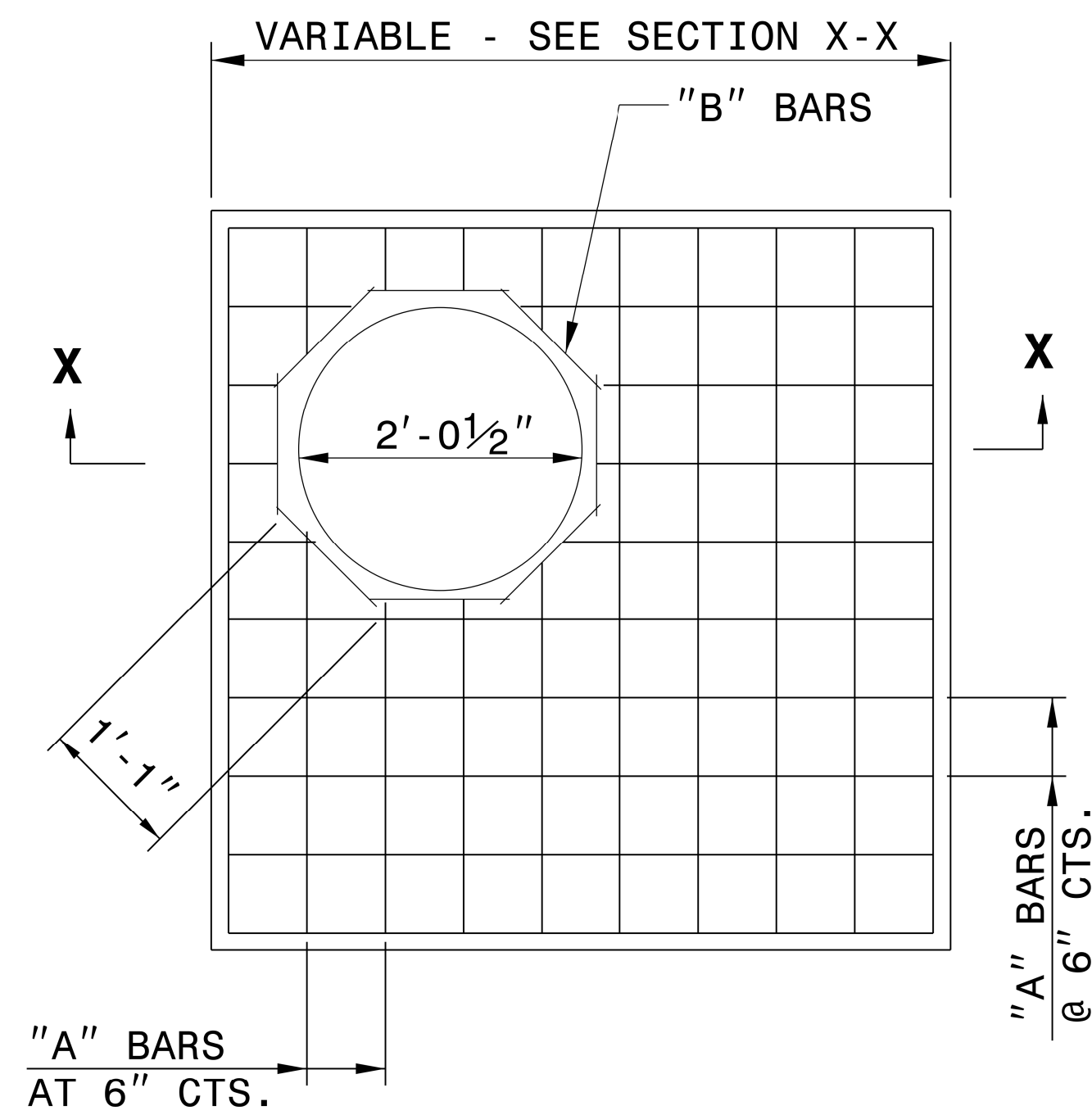
ORIGINAL BY: 2002 STD.840.17 DATE:
MODIFIED BY: K.A. KEMPF DATE: 07-06-09
CHECKED BY: DATE:
FILE SPEC.: /stand/840d17 Extra Depth 2GI.dgn



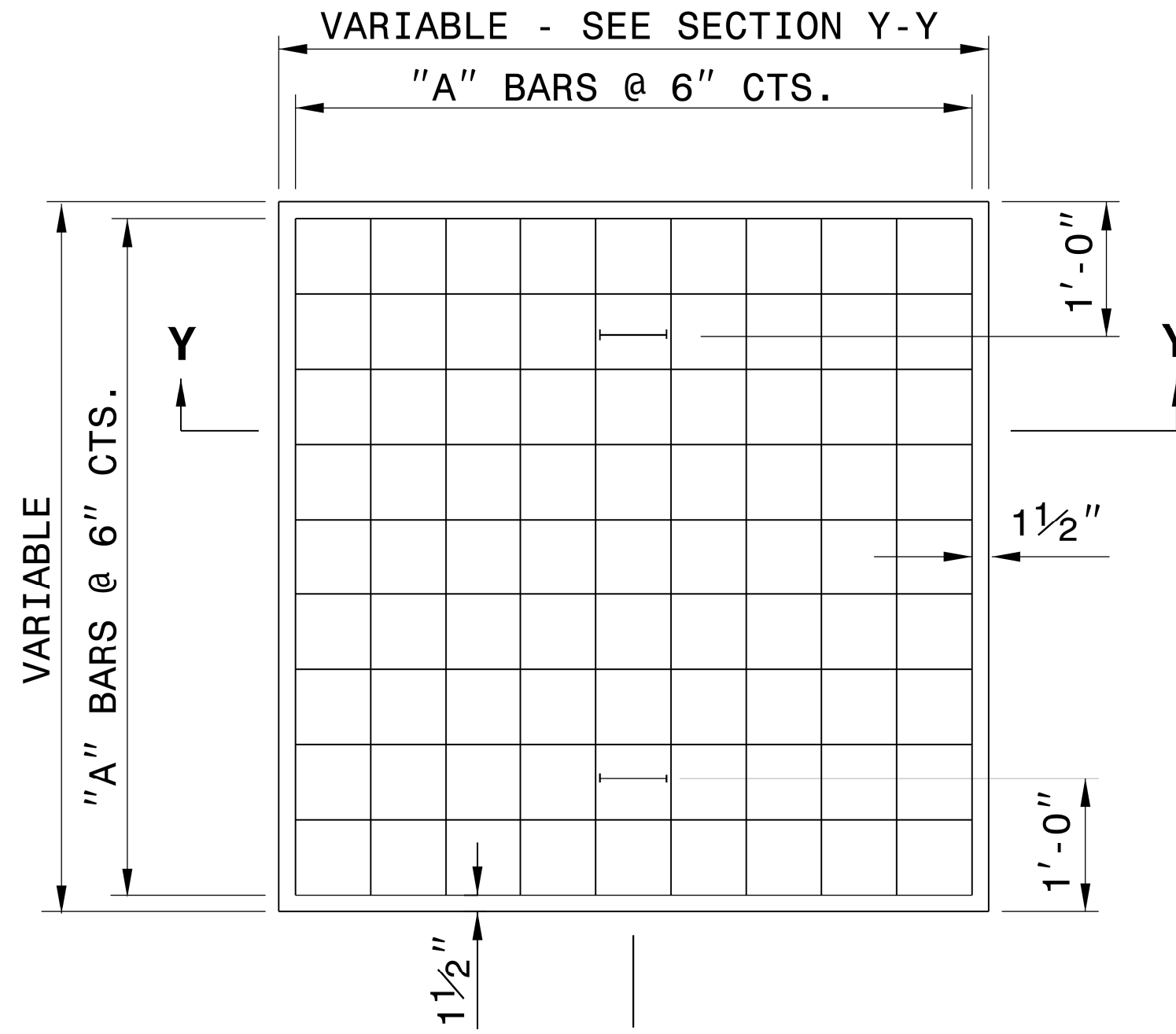
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PARTIAL SECTION



PLAN



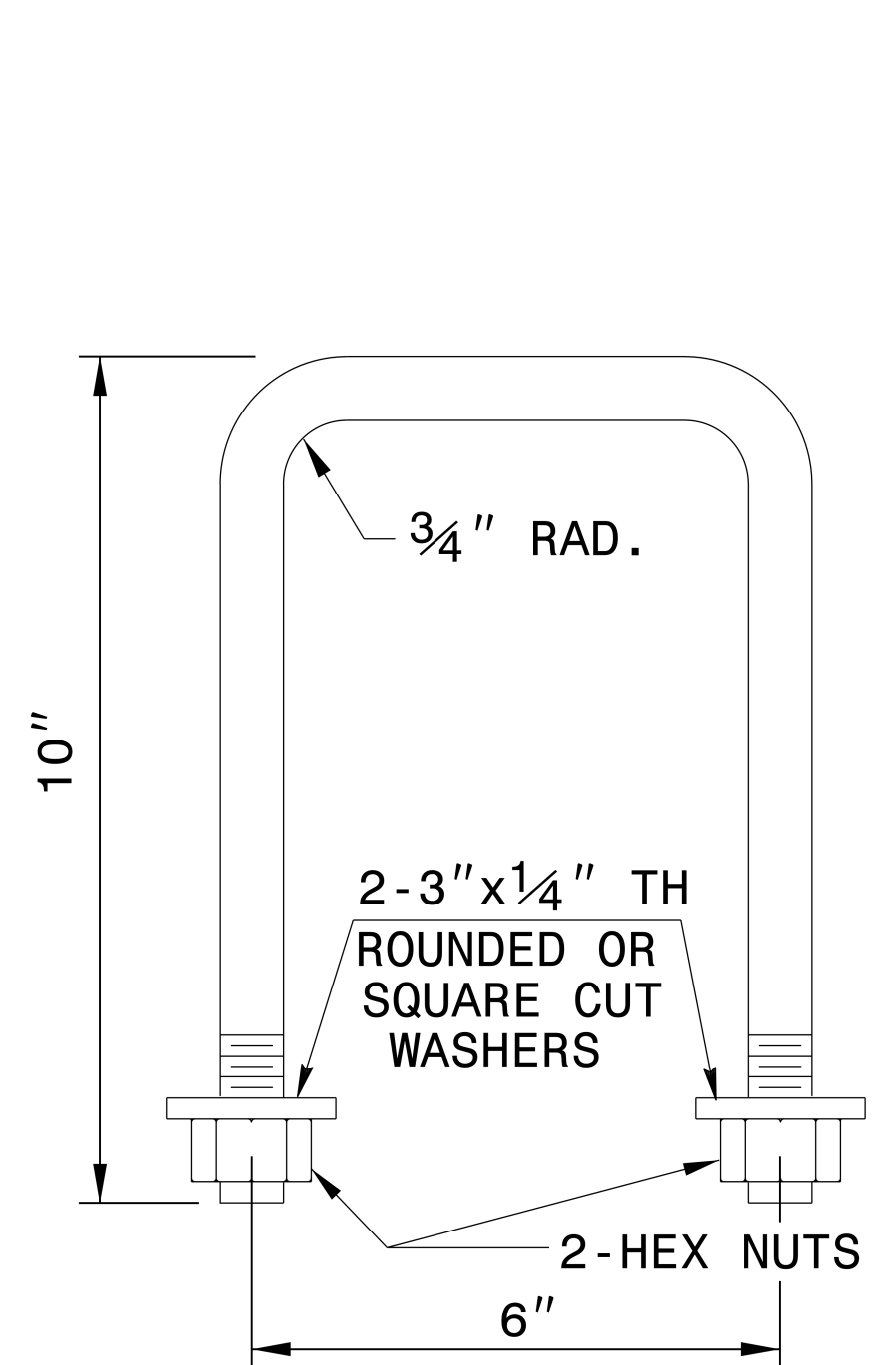
PLAN

GENERAL NOTES:

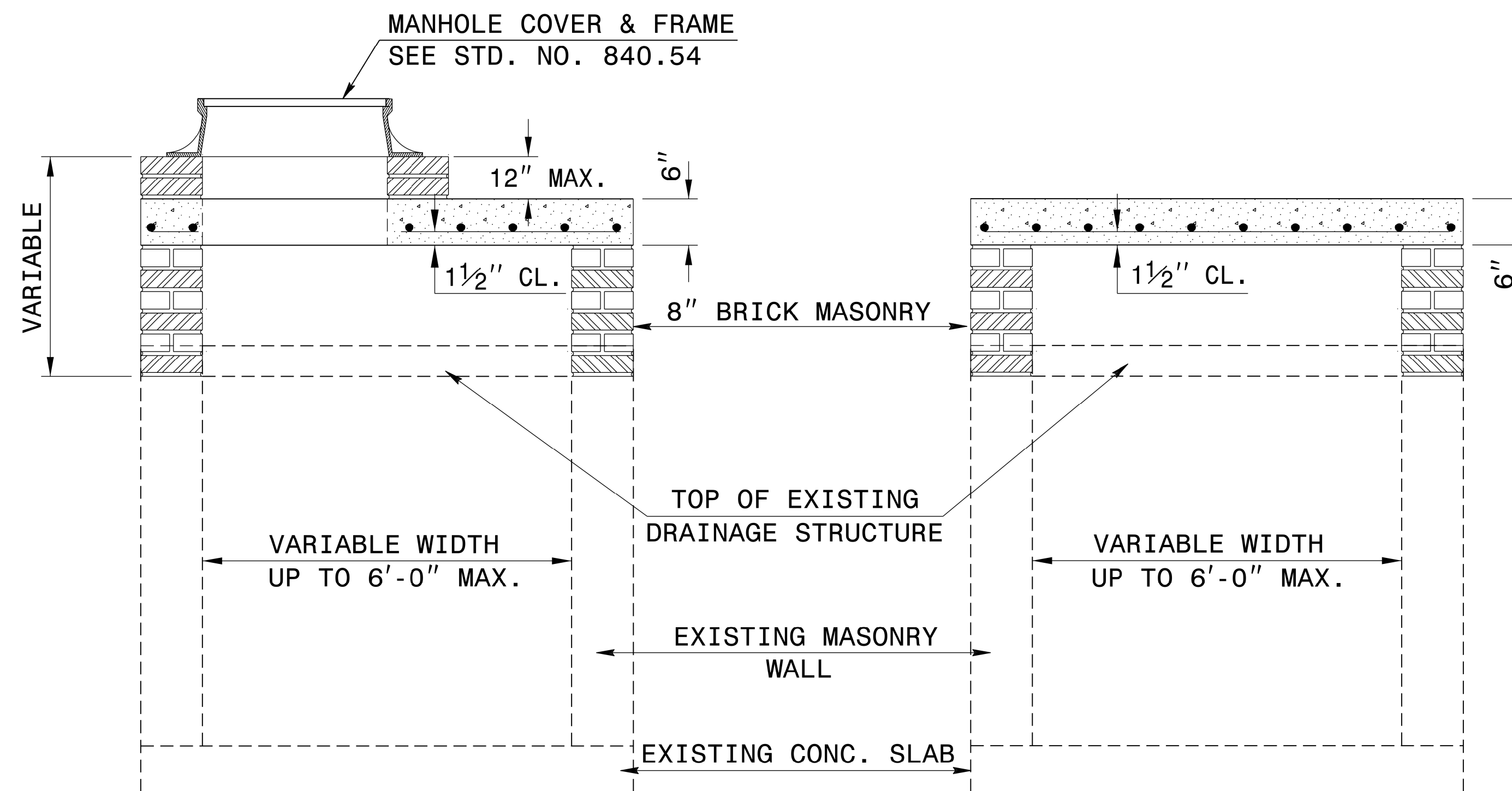
CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.



DETAIL OF HANDLE



SECTION X-X

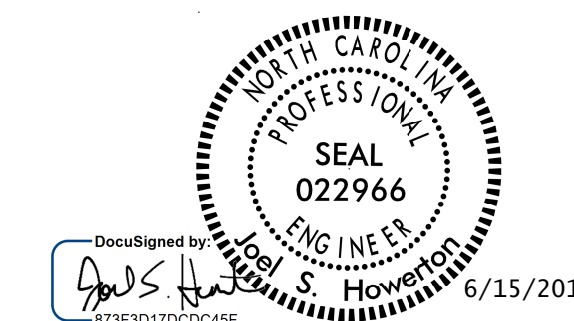
SECTION Y-Y

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.

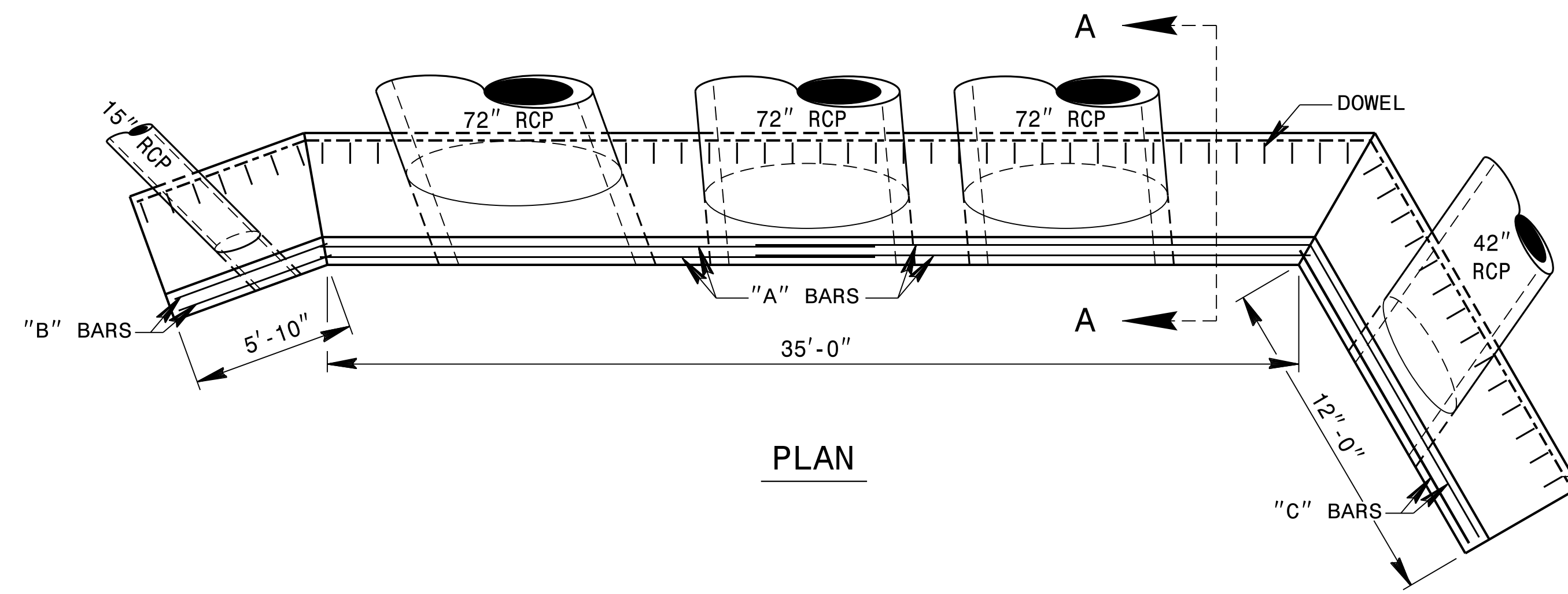
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



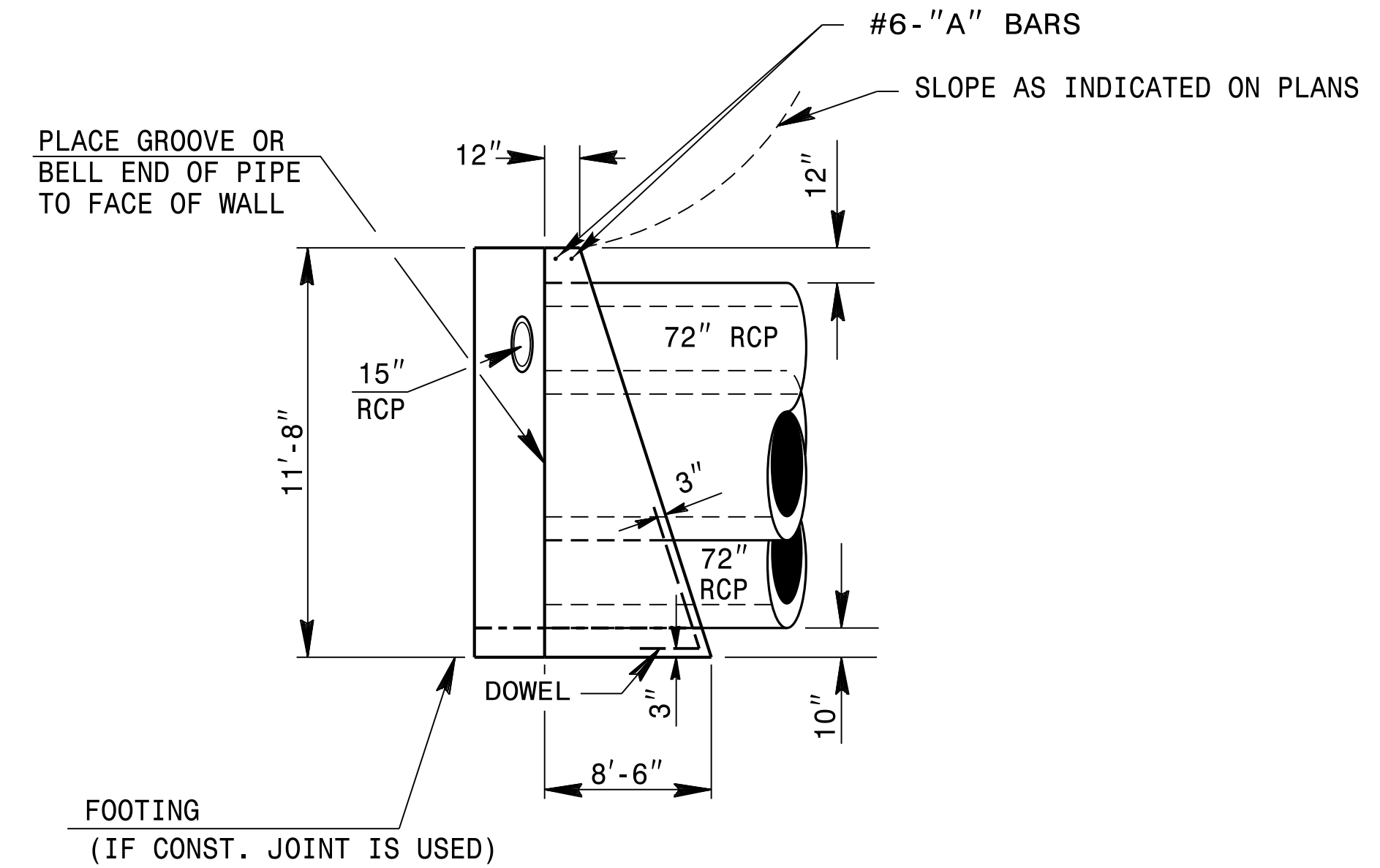
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119
DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)

ORIGINAL BY: T.S.S. DATE: NOV. 1997
MODIFIED BY: T.S.S. DATE: FEB. 2000
CHECKED BY: DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojb.dgn

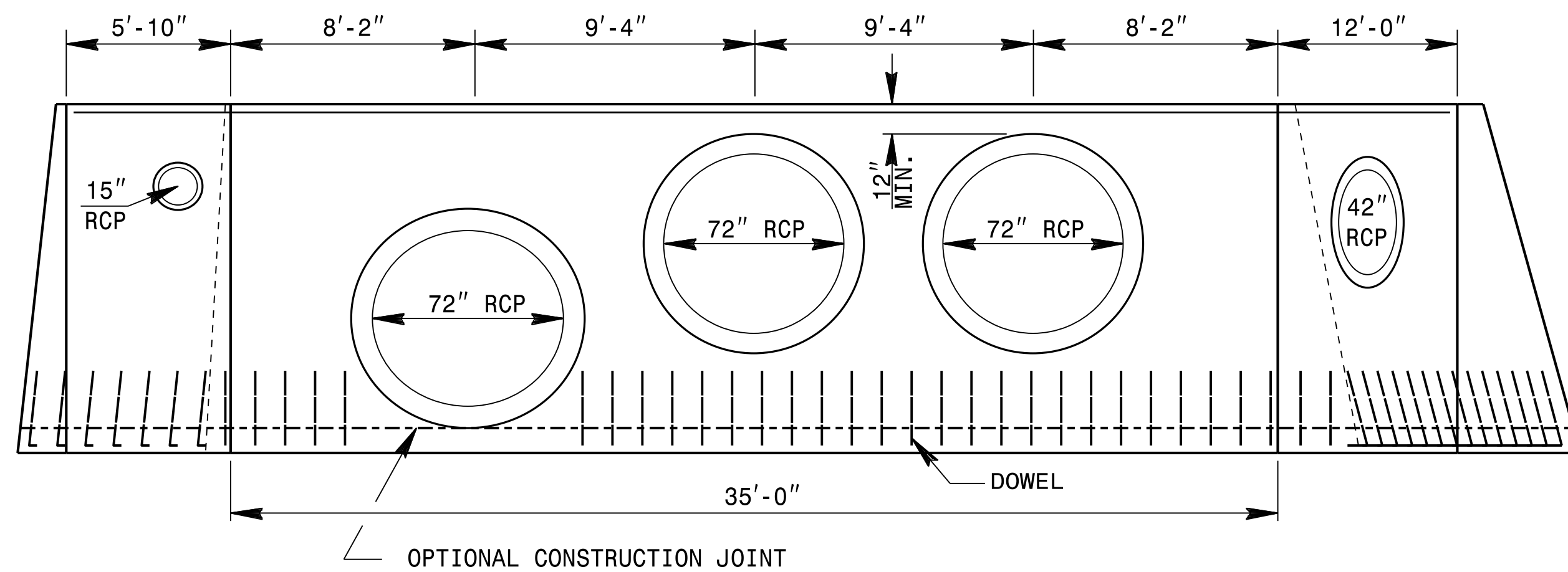
* NOT TO SCALE



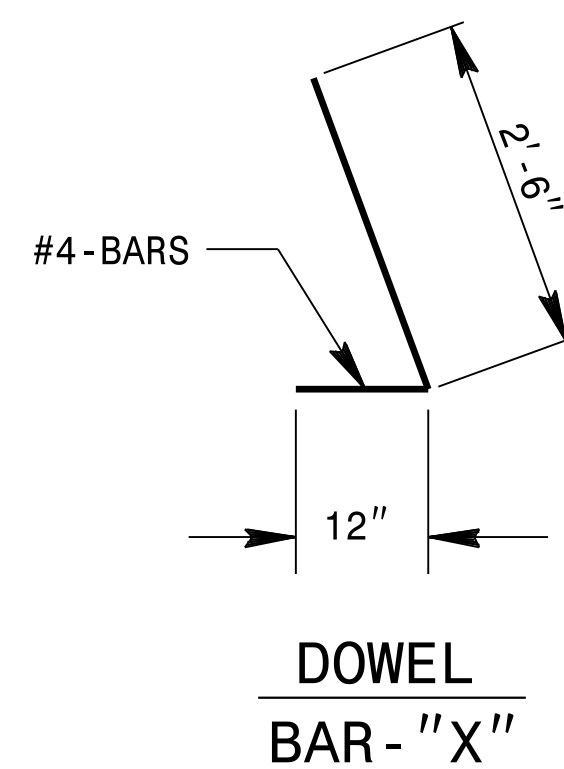
PLAN



'A' SECTION



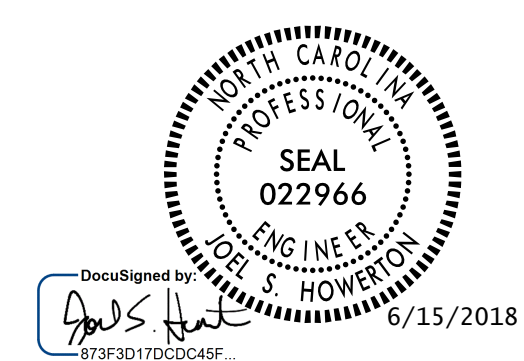
ELEVATION



DOWEL BAR - "X"

- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR 'X' DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	4	#6	20'-0"	120
B	2	#6	5'-10"	18
C	2	#6	12'-2"	37
X	51	#4	3'-6"	119
TOTAL REINF. STEEL (lbs.)				294
TOTAL CONC. CU. YDS.				116.4
PIPE DEDUCTIONS CU. YDS.				15.6



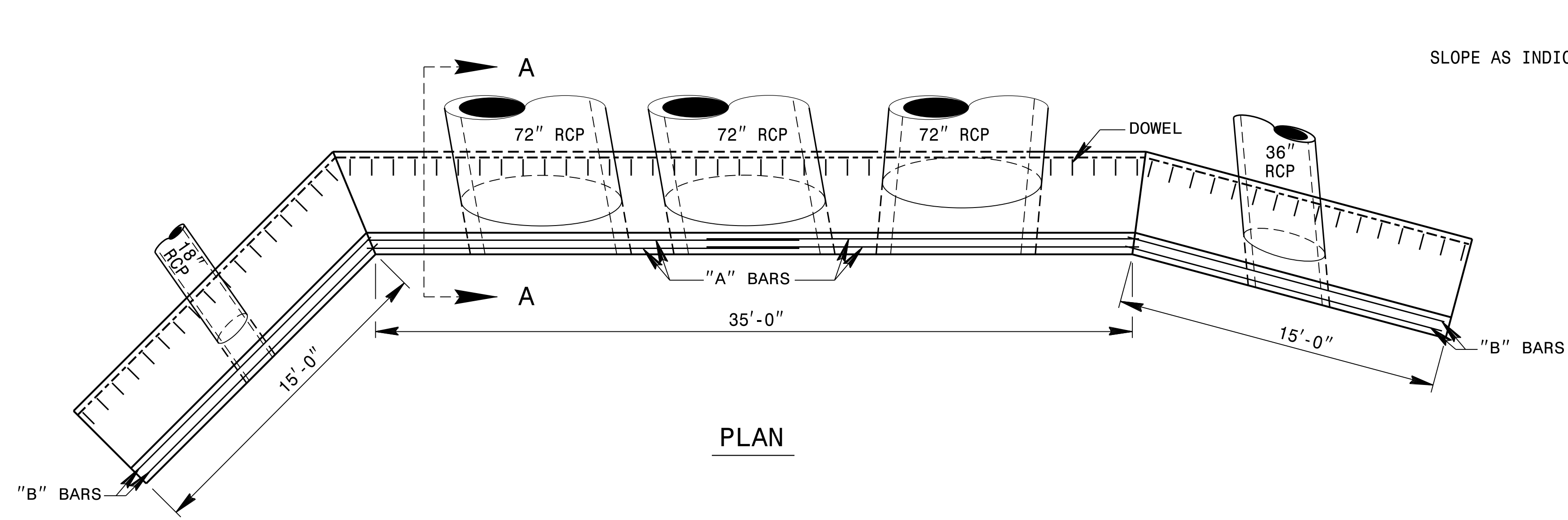
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CONCRETE ENDWALL FOR 3 - 72" RCP, W/ PIPES IN WINGWALLS

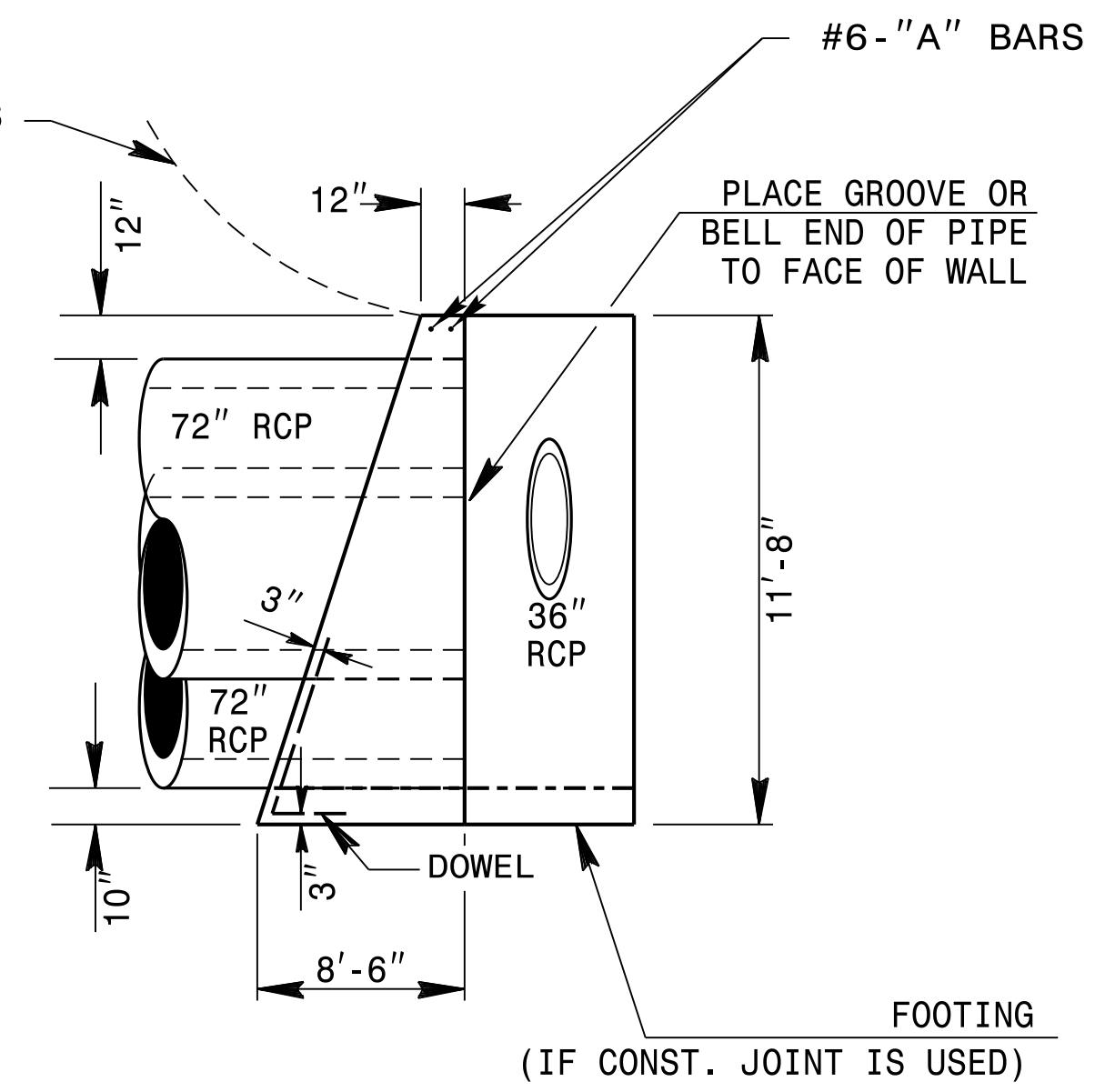
ORIGINAL BY: K KEMPF	DATE: 04-25-18
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: k Kempf\english\U4405_endwalls.dgn	

* NOT TO SCALE

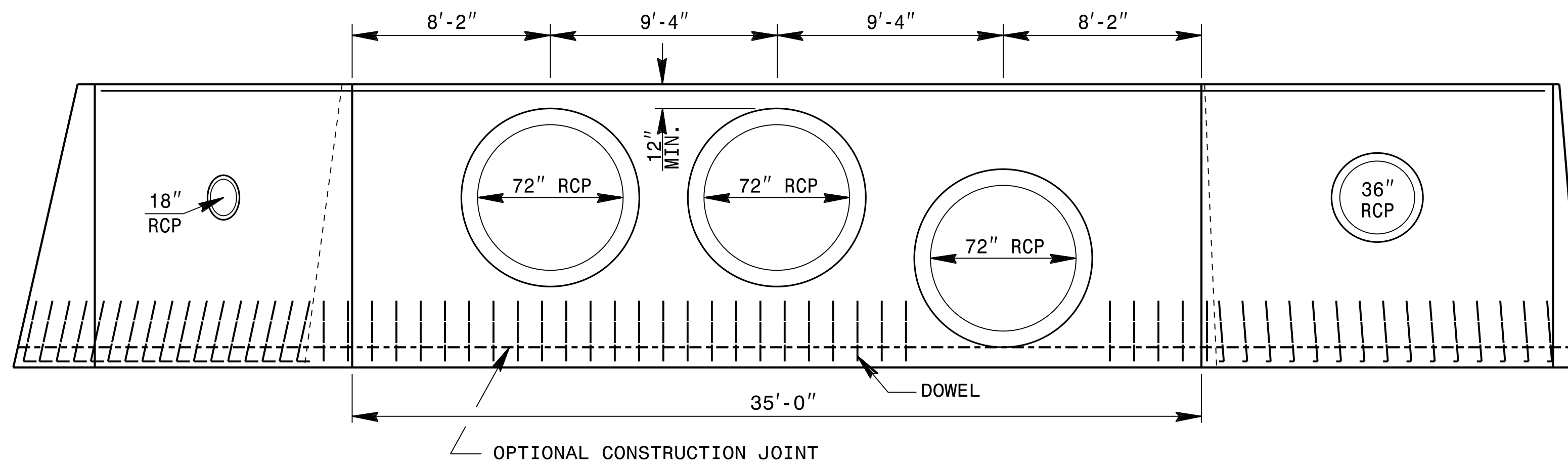


PLAN

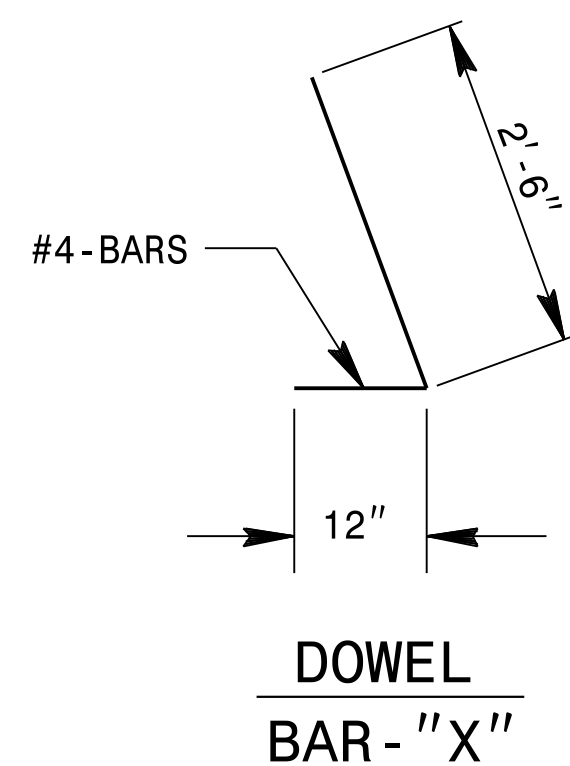
SLOPE AS INDICATED ON PLANS



'A' SECTION



ELEVATION



- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR 'X' DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

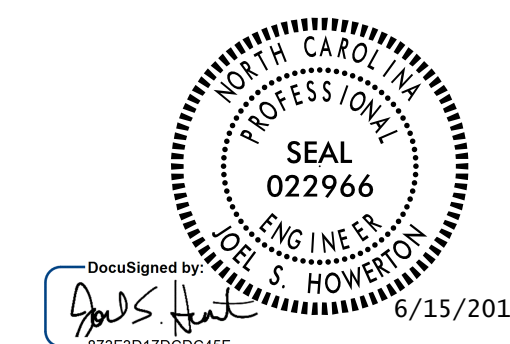
BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	4	#6	20'-0"	120
B	4	#6	15'-0"	90
X	63	#4	3'-6"	147
TOTAL REINF. STEEL (lbs.)				357
TOTAL CONC. CU. YDS.				142.8
PIPE DEDUCTIONS CU. YDS.				15.7

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

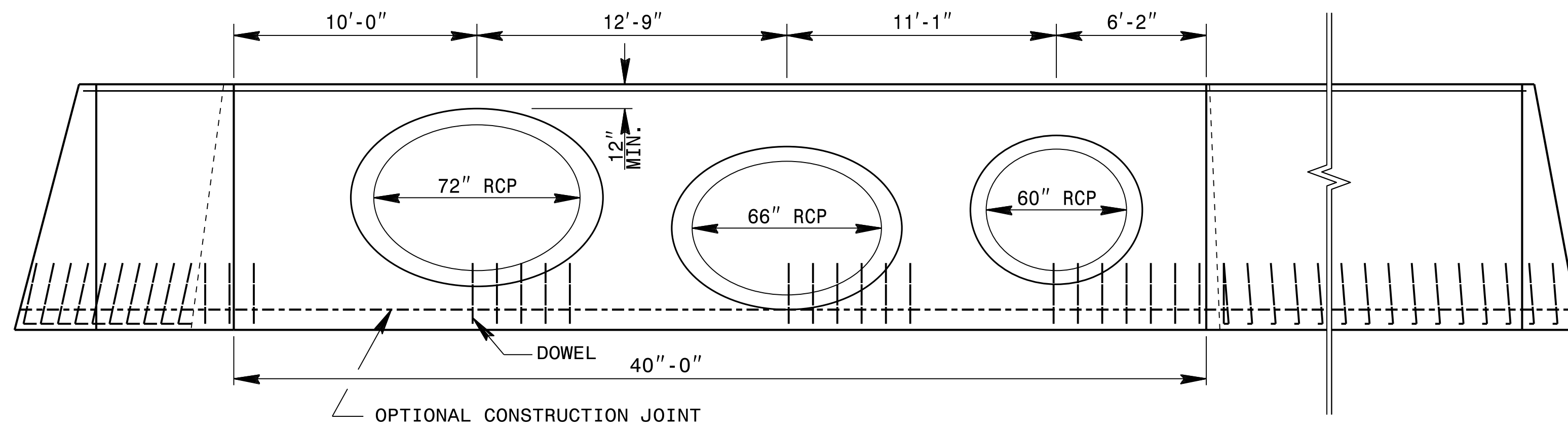
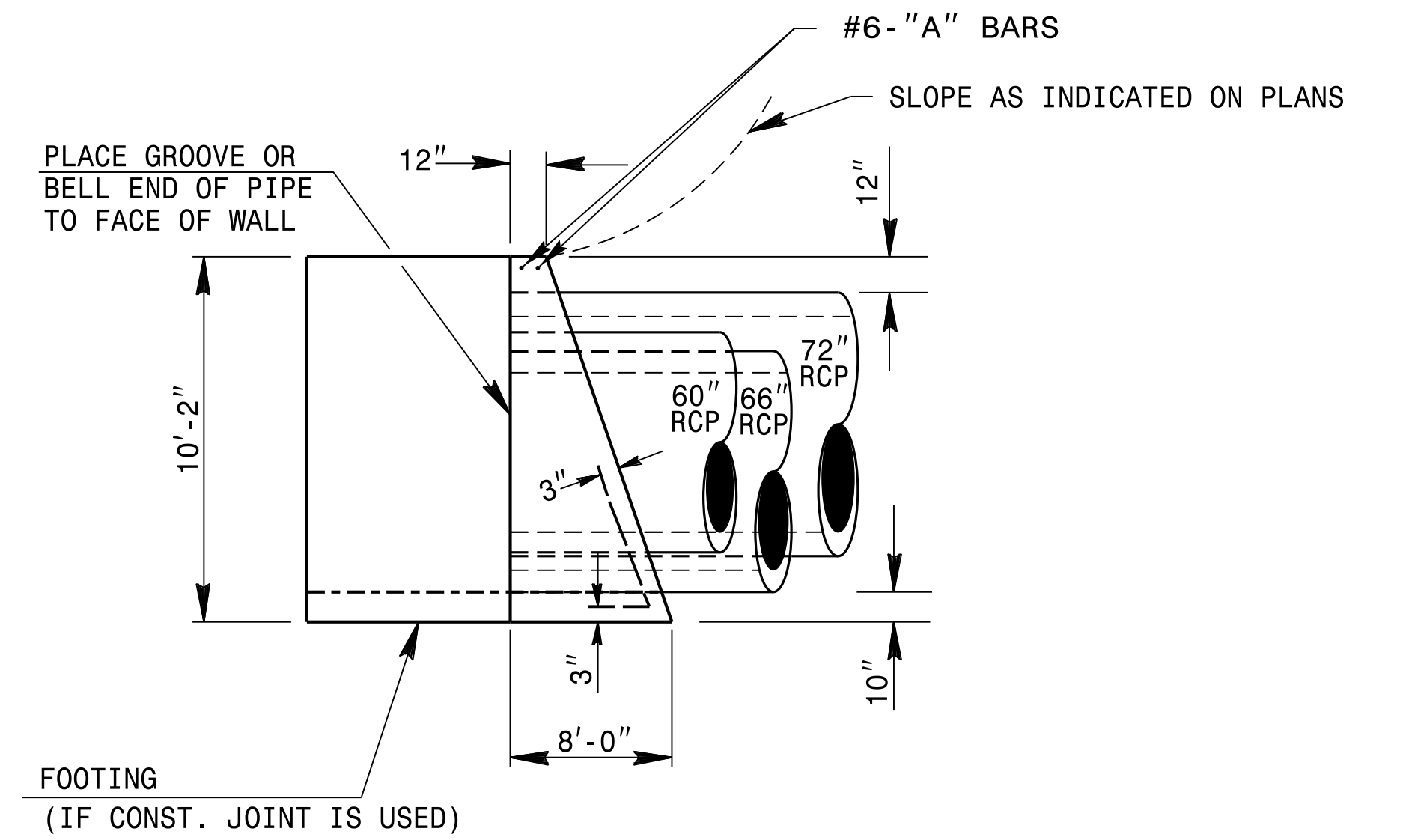
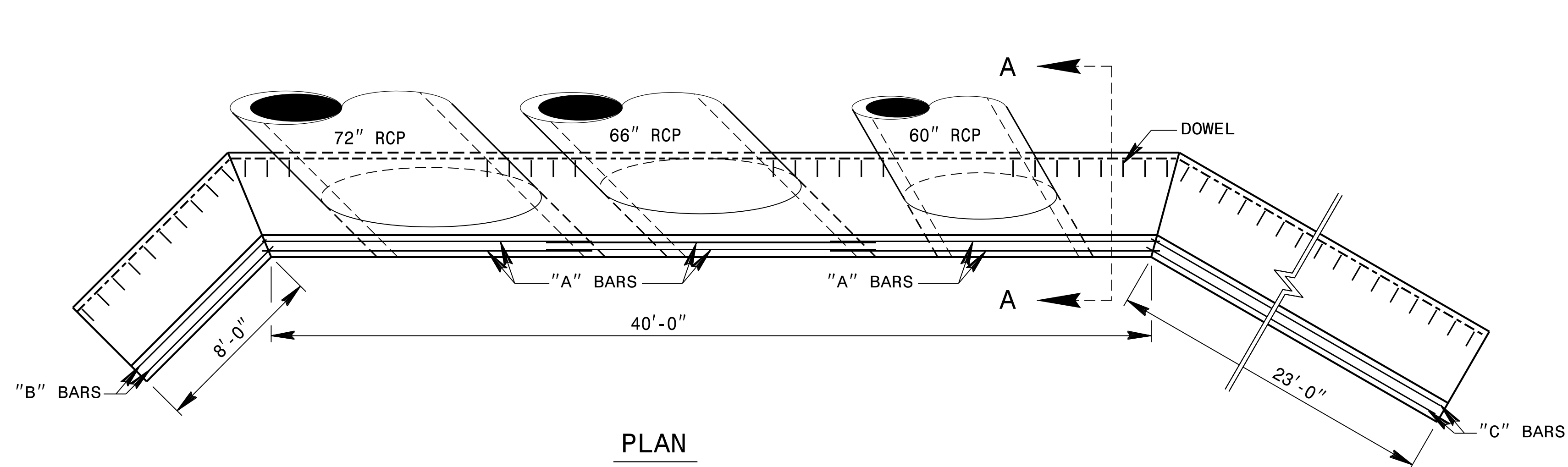
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CONCRETE ENDWALL FOR
3 - 72" RCP,
W/ PIPES IN WINGWALLS

ORIGINAL BY: K KEMPF DATE: 05-01-18
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempfe\english\U4405_endwalls.dgn

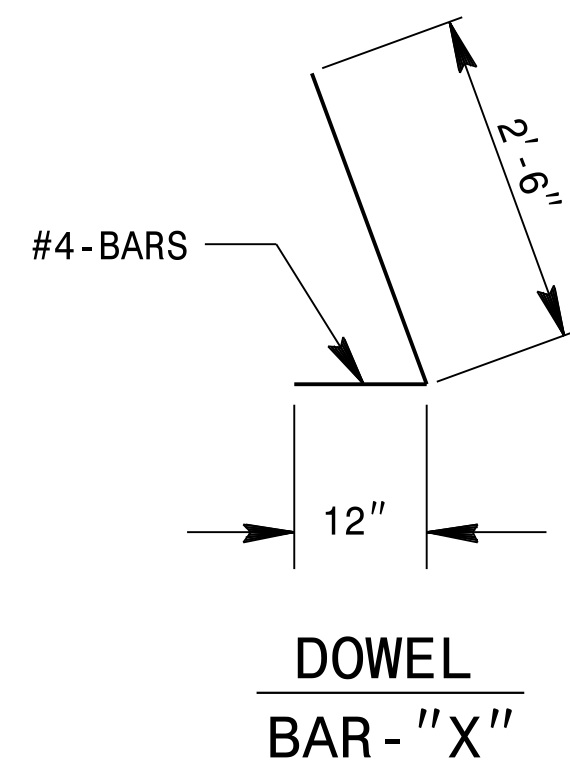


* NOT TO SCALE



- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR 'X' DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

ELEVATION



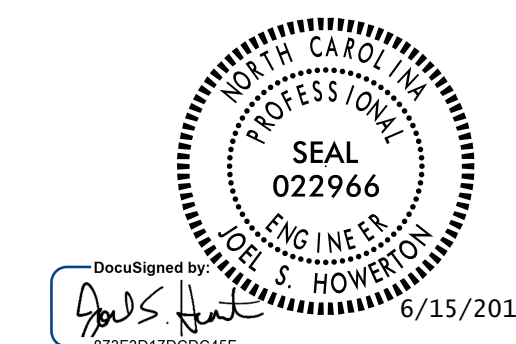
BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	6	#6	15'-0"	120
B	2	#6	8'-0"	90
C	2	#6	23'-0"	90
X	63	#4	3'-6"	147
TOTAL REINF. STEEL (lbs.)				447
TOTAL CONC. CU. YDS.				120.3
PIPE DEDUCTIONS CU. YDS.				23.0

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

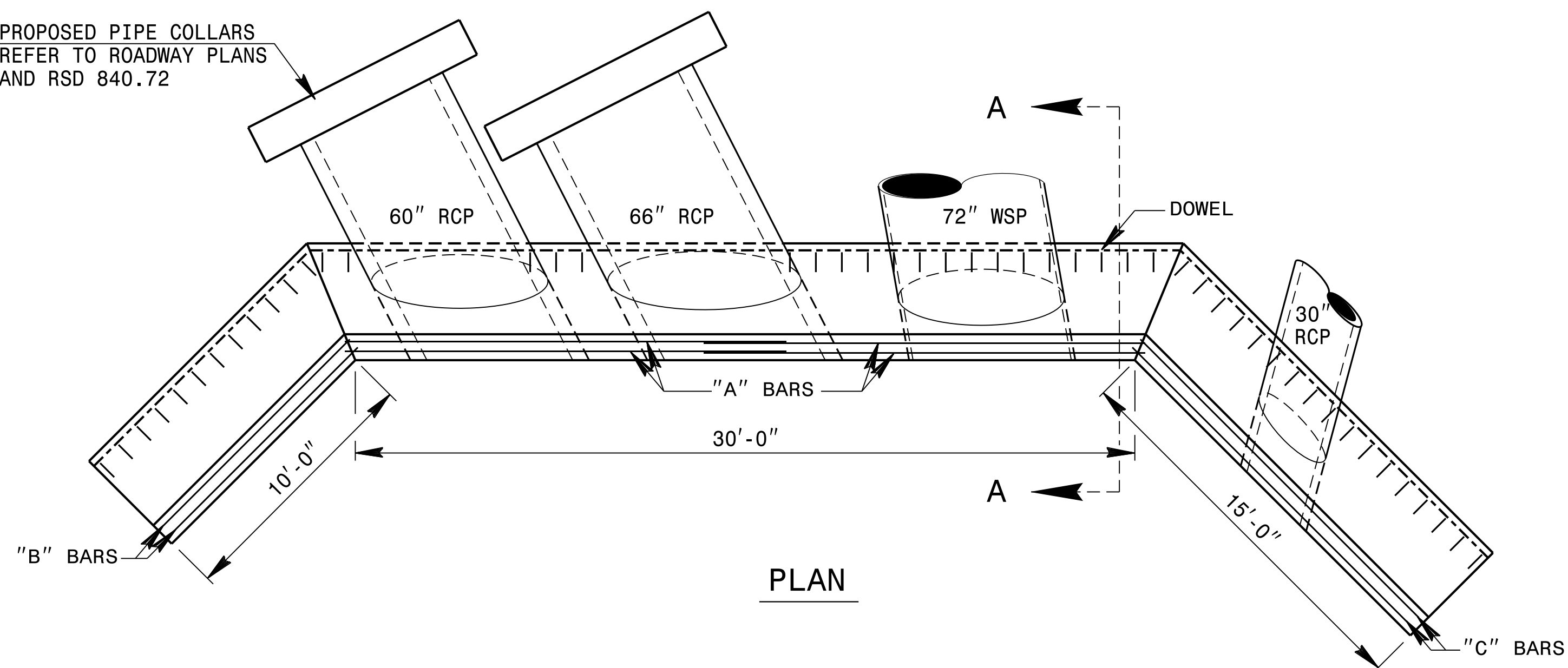
CONCRETE ENDWALL FOR 60" RCP, 66" RCP, 72" WSP, W/ WINGWALL

ORIGINAL BY: K KEMPF DATE: 05-07-18
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempf\english\U4405_endwalls.dgn

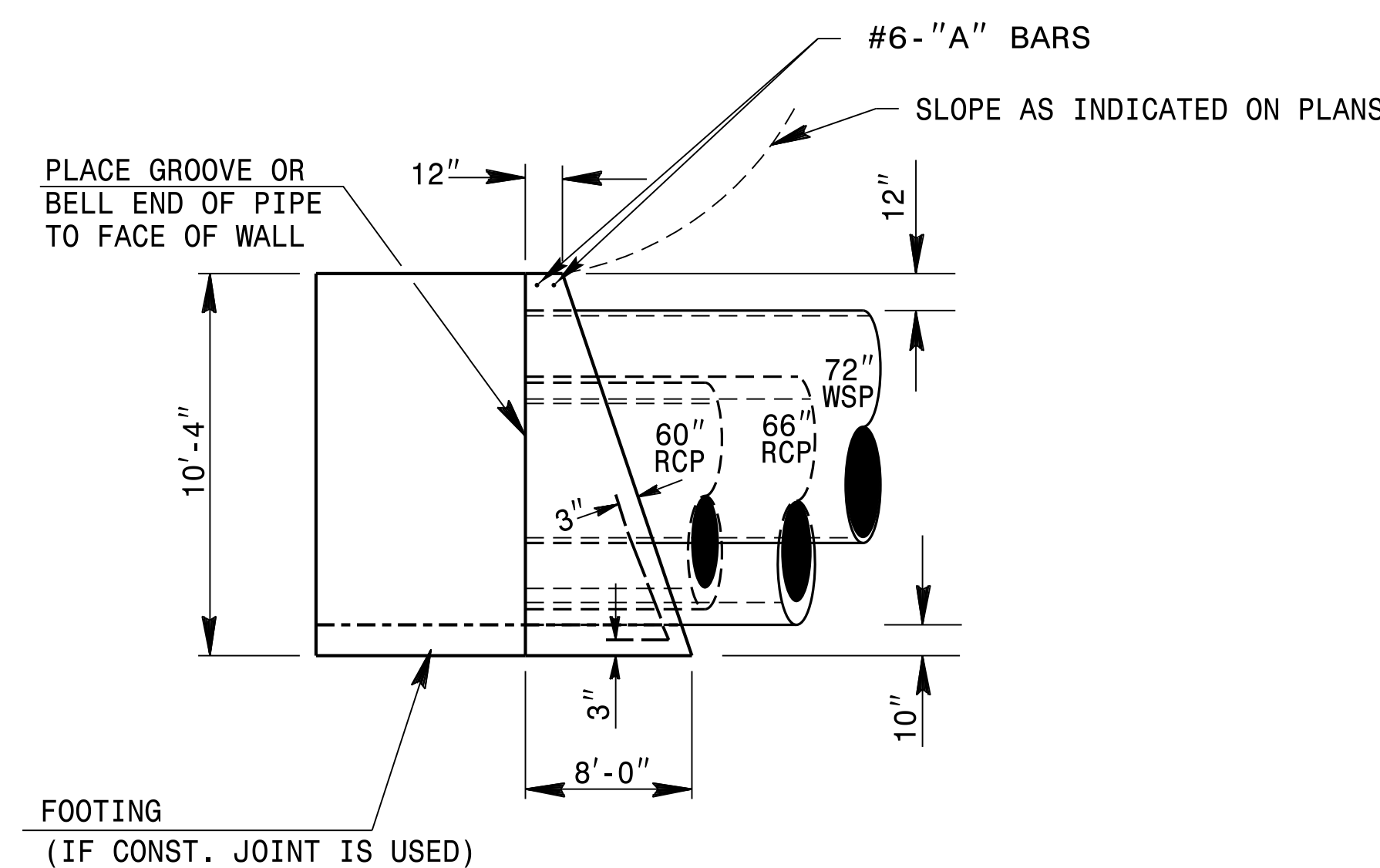


* NOT TO SCALE

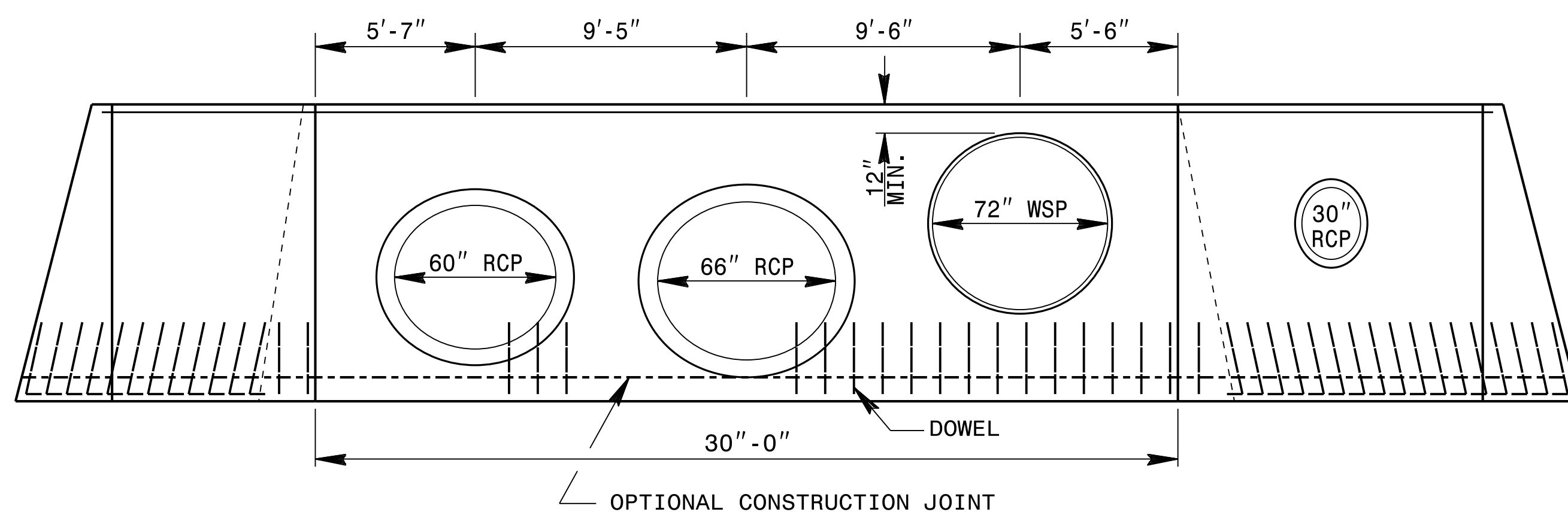
PROPOSED PIPE COLLARS
REFER TO ROADWAY PLANS
AND RSD 840.72



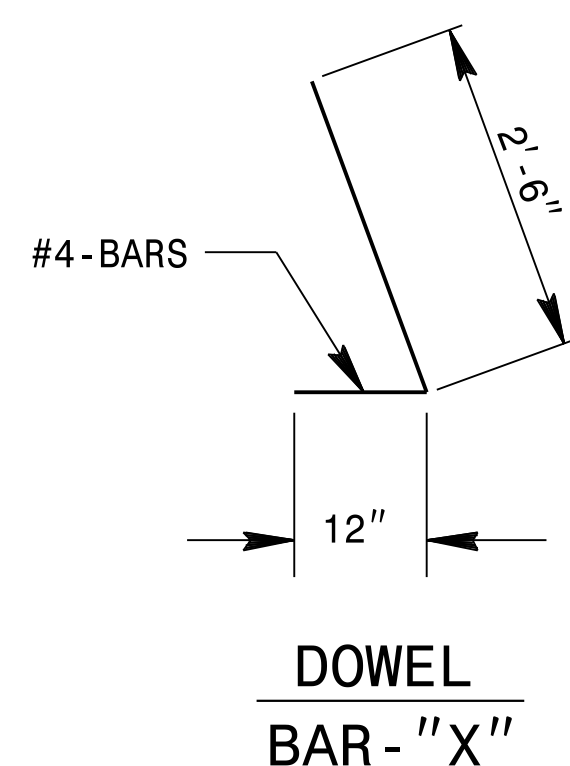
PLAN



'A' SECTION



ELEVATION



DOWEL
BAR - "X"

- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR 'X' DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

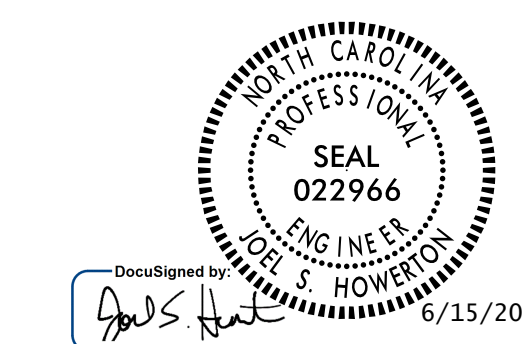
BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	4	#6	17'-0"	102
B	2	#6	10'-2"	31
C	2	#6	15'-2"	46
X	49	#4	3'-6"	115
TOTAL REINF. STEEL (lbs.)				294
TOTAL CONC. CU. YDS.				94.7
PIPE DEDUCTIONS CU. YDS.				13.4

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

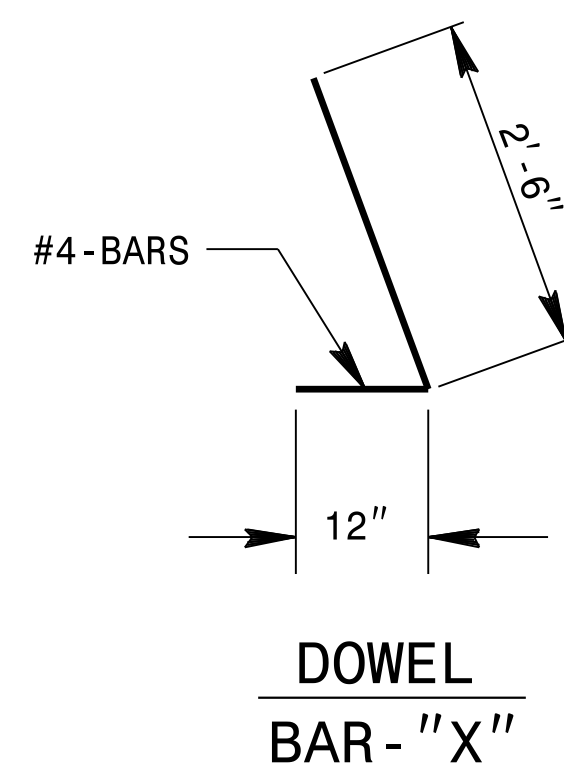
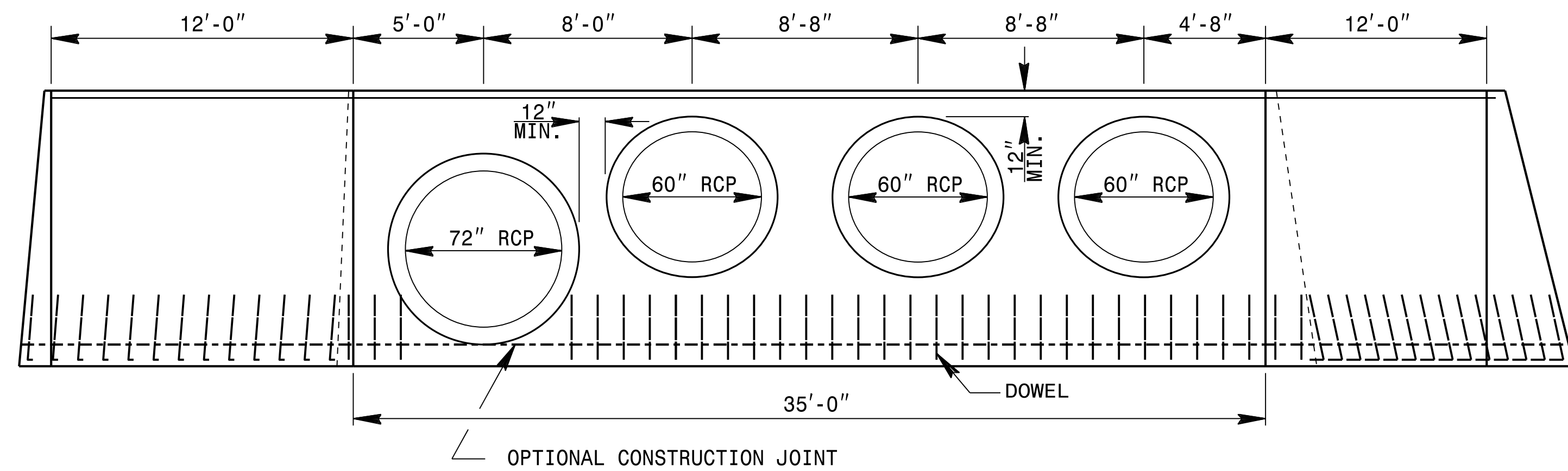
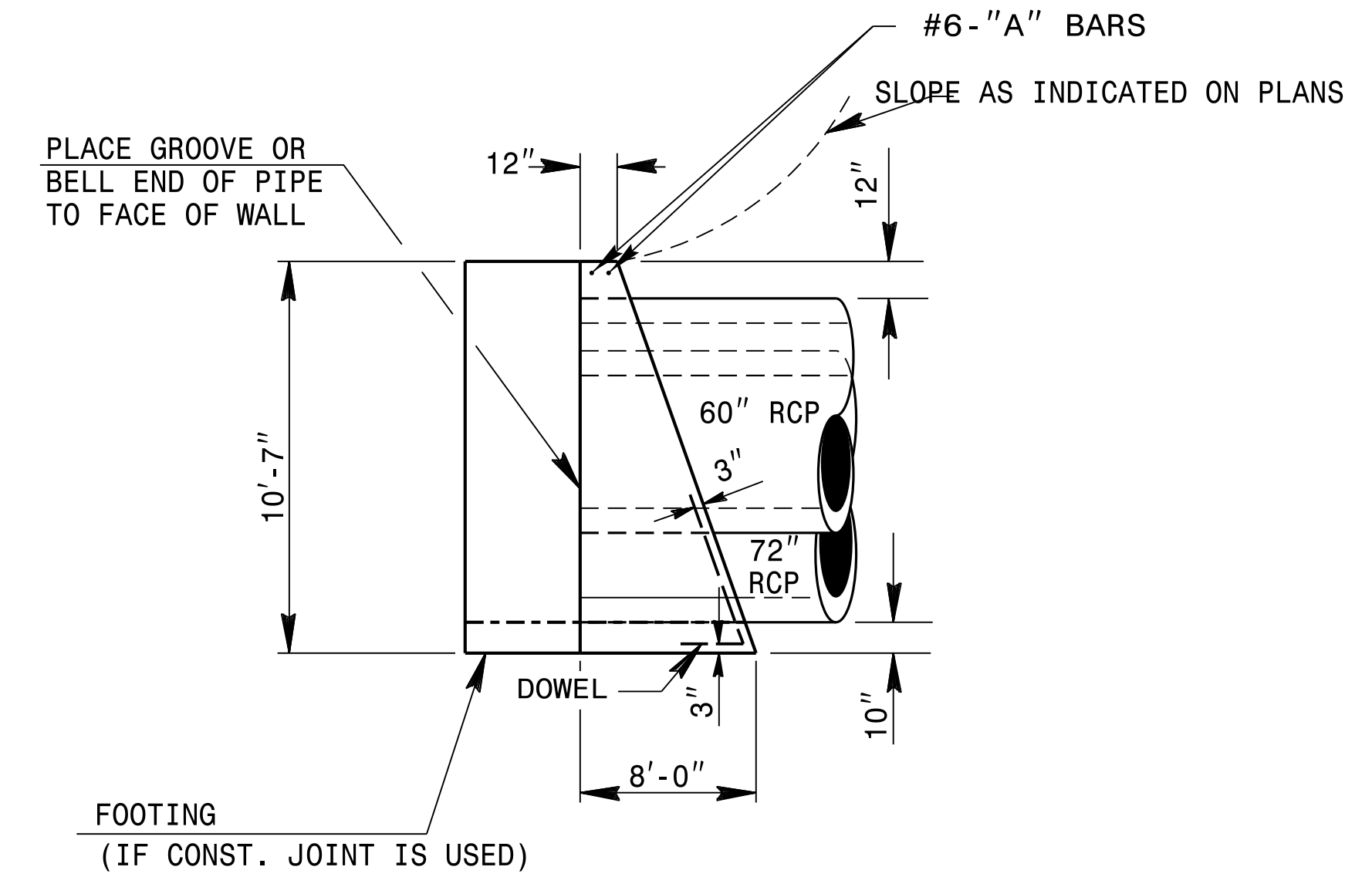
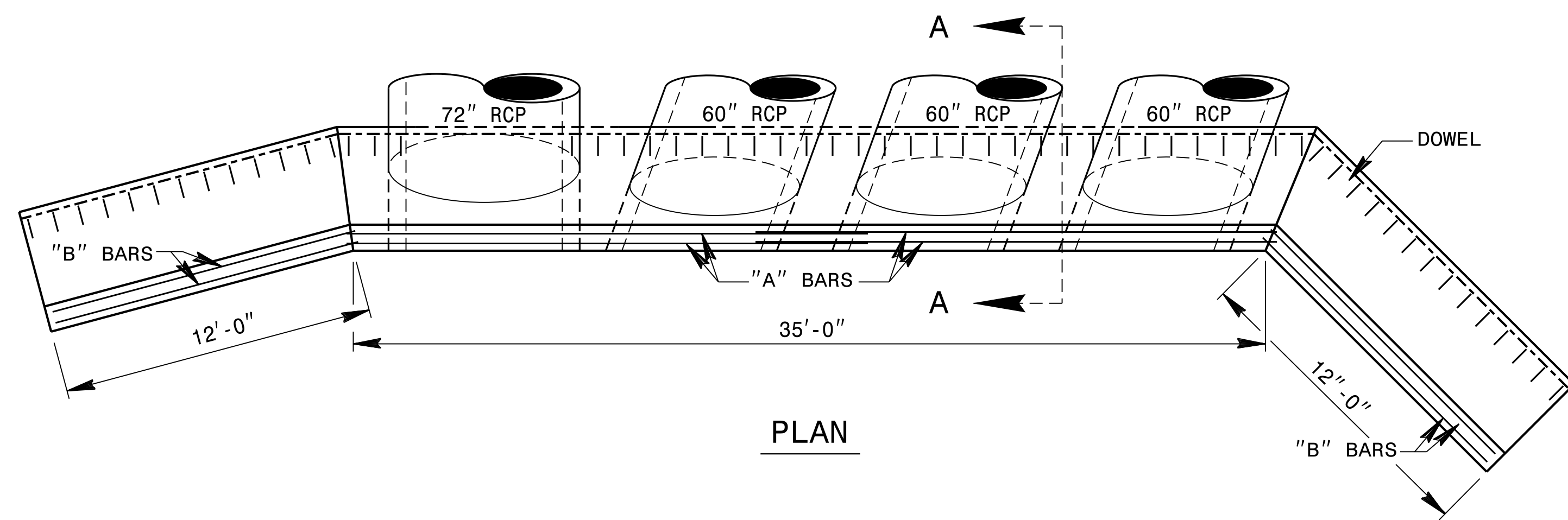
CONTRACTS STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CONCRETE ENDWALL FOR
60" RCP, 66" RCP, 72" WSP,
W/ PIPE IN WINGWALL

ORIGINAL BY: K KEMPF DATE: 05-08-18
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempfe\english\U4405_endwalls.dgn

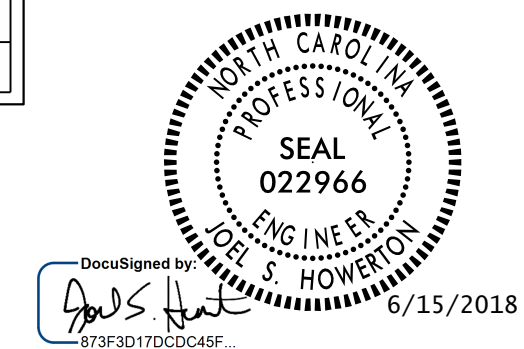


* NOT TO SCALE



- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	4	#6	20'-0"	120
B	4	#6	12'-2"	73
X	59	#4	3'-6"	138
TOTAL REINF. STEEL (lbs.)				331
TOTAL CONC. CU. YDS.				103.3
PIPE DEDUCTIONS CU. YDS.				14.7



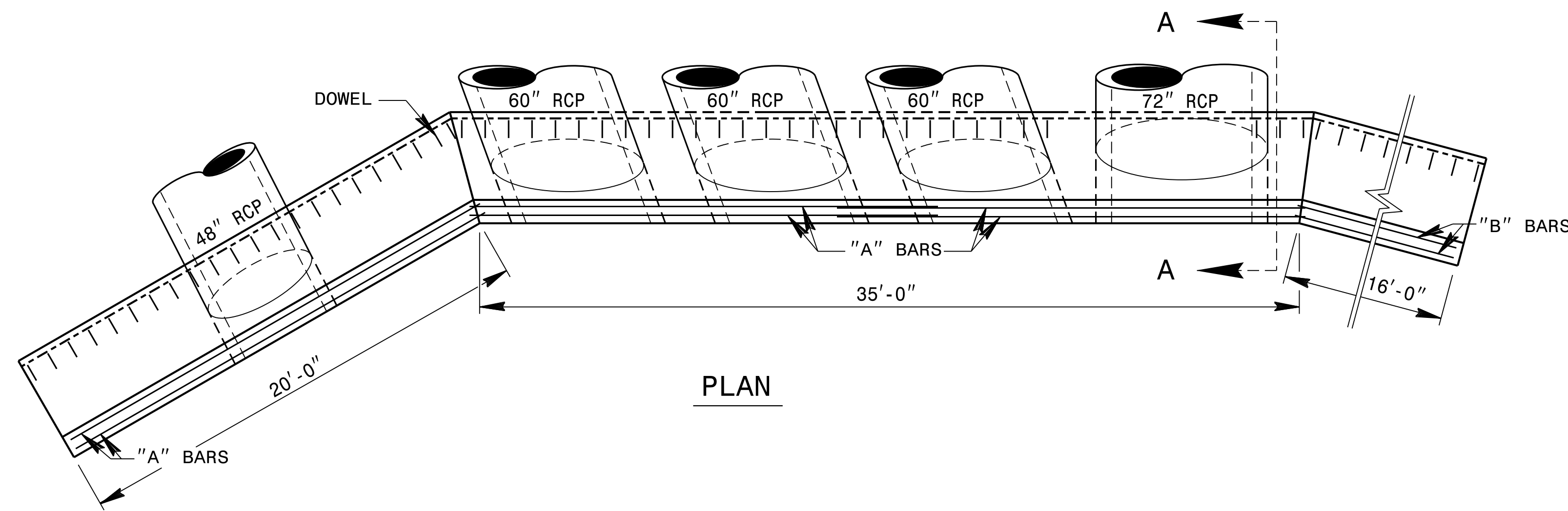
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

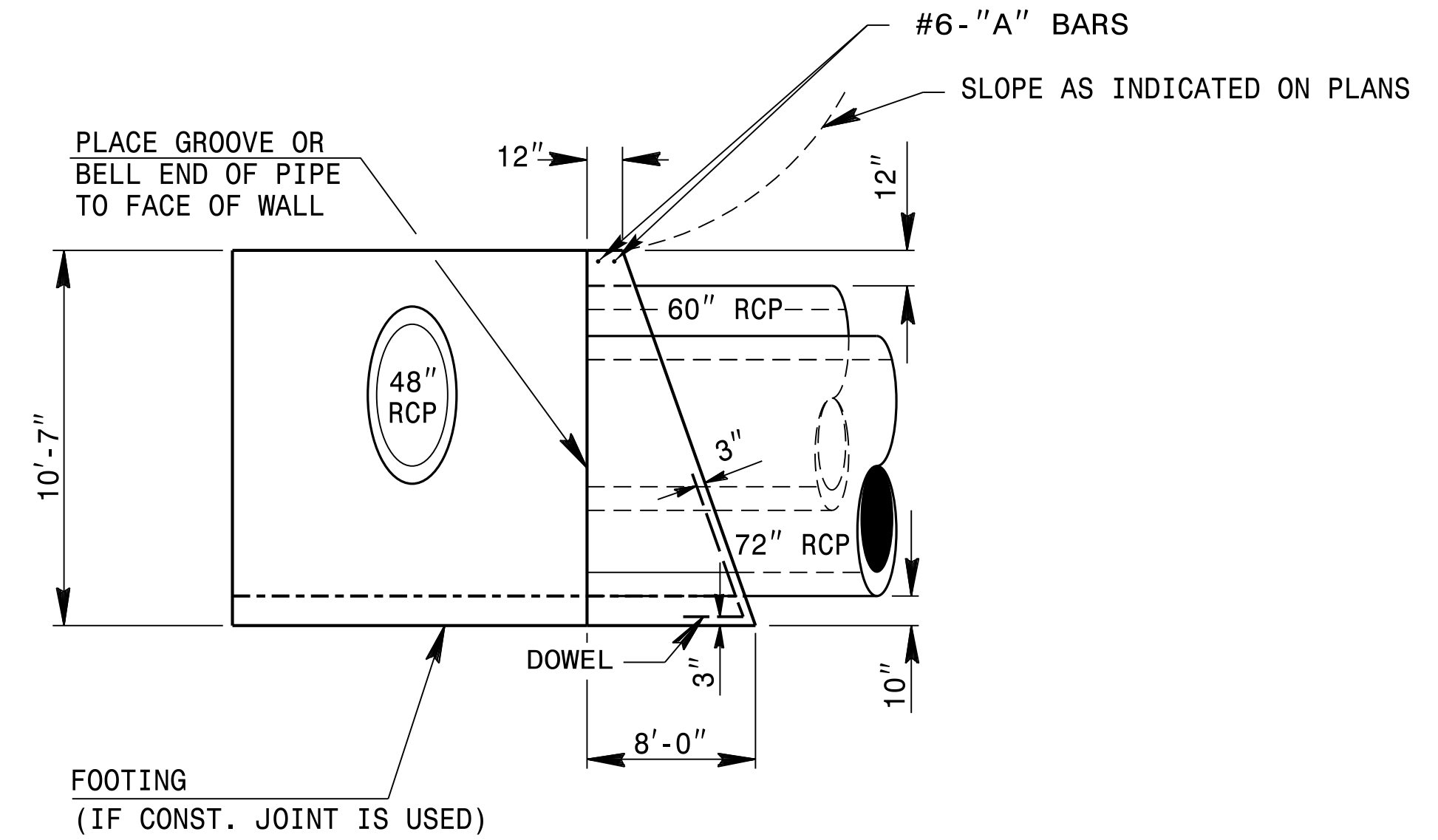
CONCRETE ENDWALL FOR
3 - 60" RCP, 72" RCP
W/ WINGWALLS

ORIGINAL BY: K KEMPF DATE: 05-10-18
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: kkempf\english\U4405_endwalls.dgn

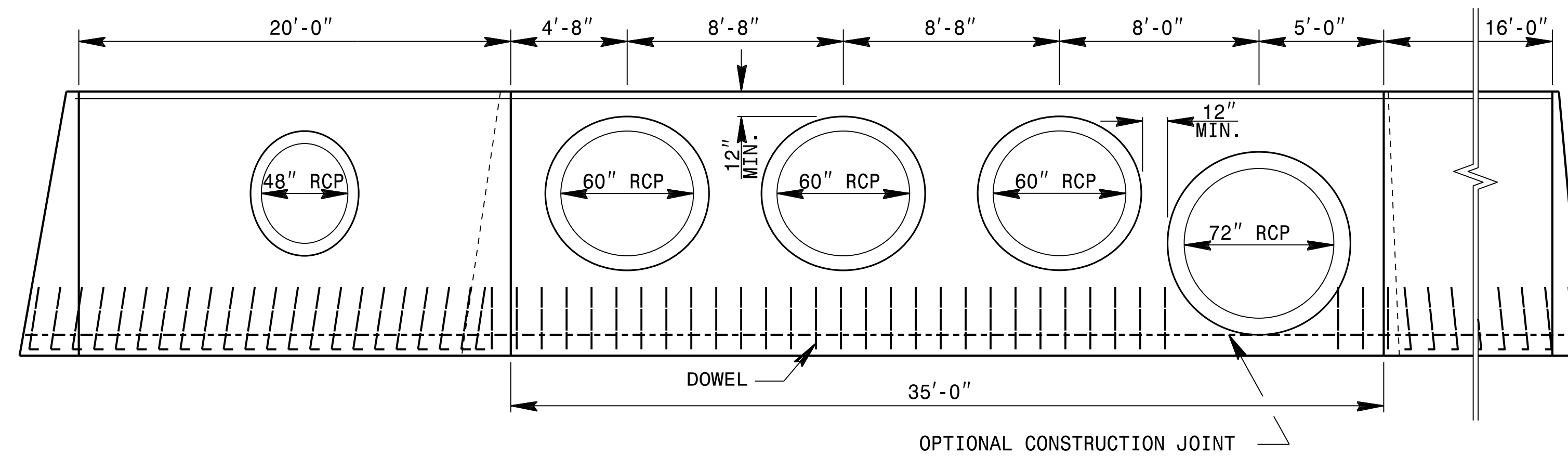
* NOT TO SCALE



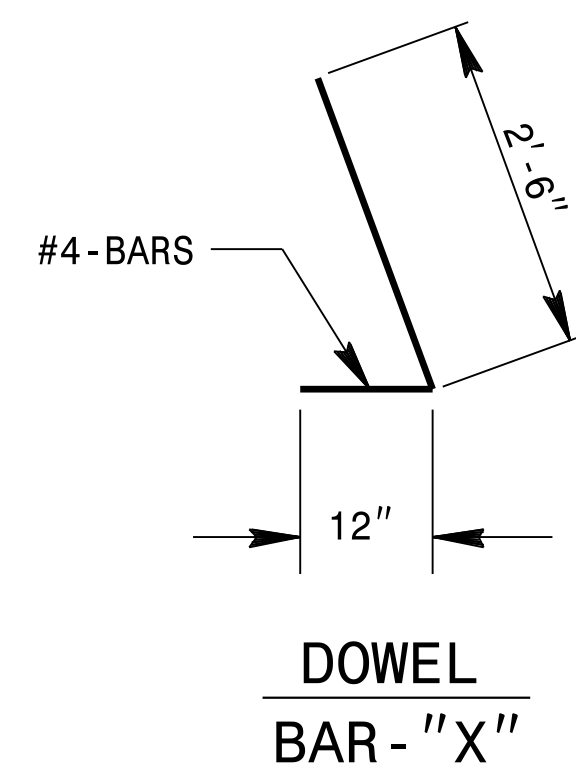
PLAN



'A' SECTION



ELEVATION



DOWEL
BAR - "X"

- GENERAL NOTES:
- CHAMFER ALL CORNERS 1".
 - USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
 - WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS 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.
 - REINFORCING STEEL TO BE CUT, BENT OR RELOCATED AS DIRECTED BY THE ENGINEER.
 - FINAL LOCATION OF PIPES TO BE DETERMINED BY THE ENGINEER.
 - SEE SPECIAL DETAIL FOR FENCE INSTALLATION IF REQUIRED BY THE ENGINEER.
 - USE CLASS "B" CONCRETE.

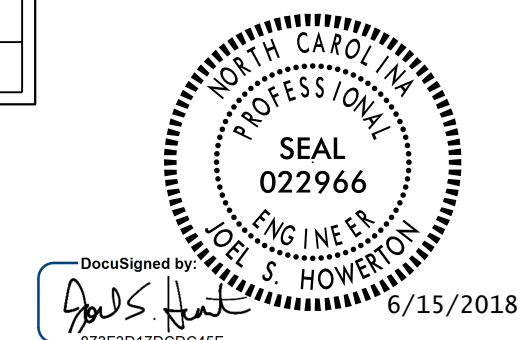
BILL OF MATERIALS				
BAR	QTY	SIZE	LENGTH	WEIGHT
A	6	#6	20'-0"	180
B	2	#6	16'-2"	49
X	69	#4	3'-6"	161
TOTAL REINF. STEEL (lbs.)				390
TOTAL CONC. CU. YDS.				124.3
PIPE DEDUCTIONS CU. YDS.				16.3

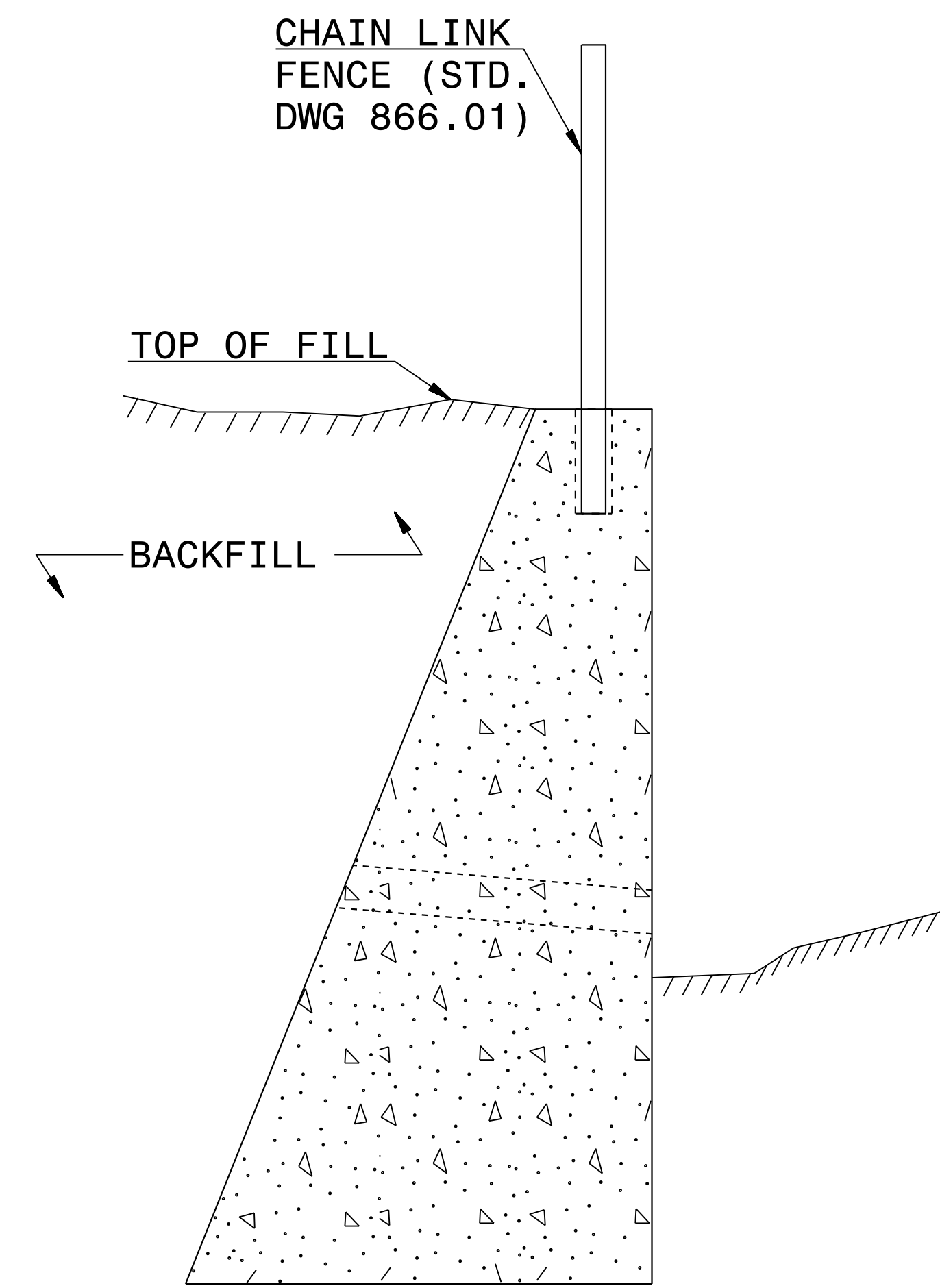
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

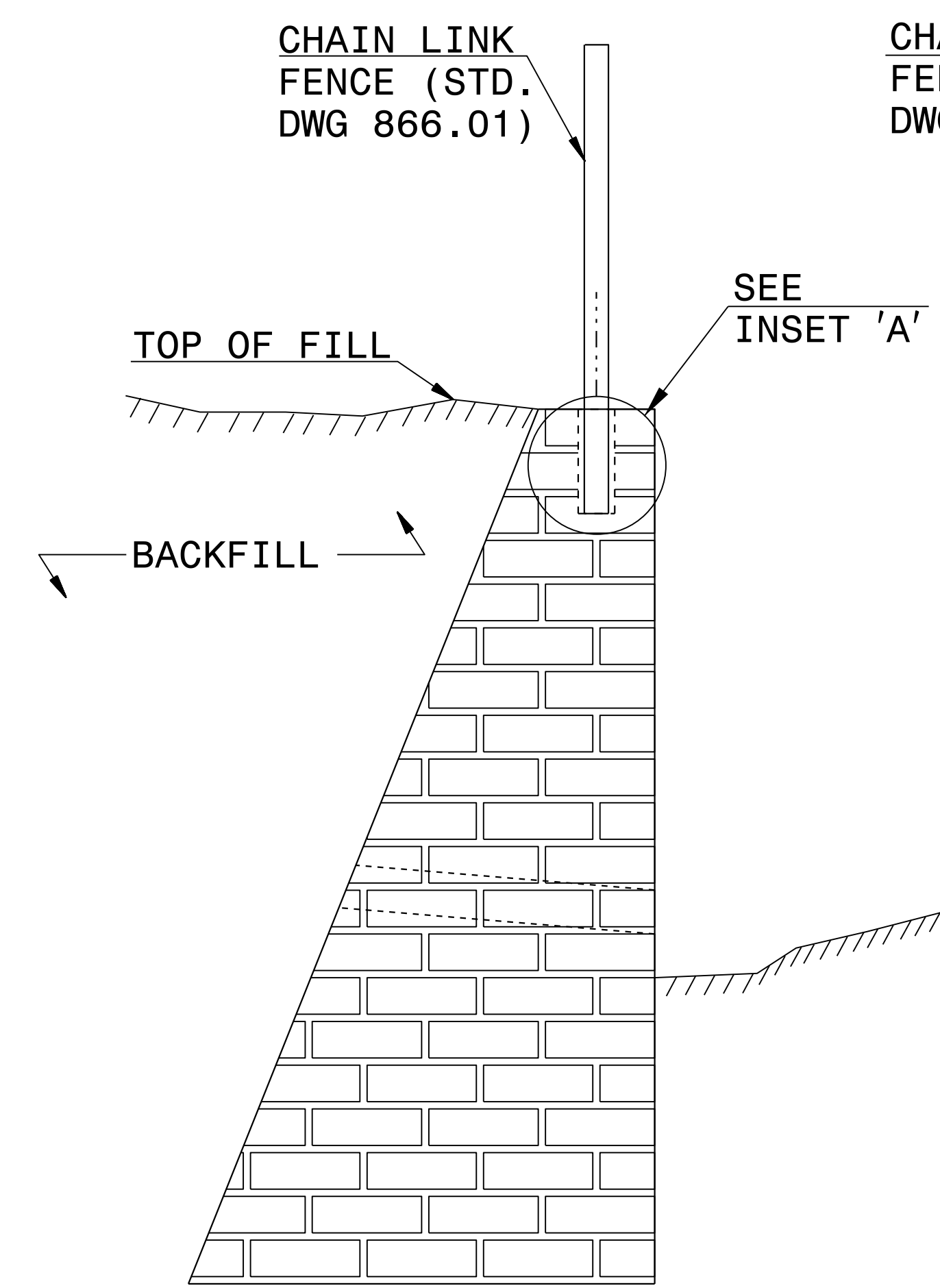
CONCRETE ENDWALL FOR
3 - 60" RCP, 72" RCP
W/ 48" RCP IN WINGWALL

ORIGINAL BY: K KEMPF DATE: 05-11-18
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.: kkempf\english\U4405_endwall1s.dgn

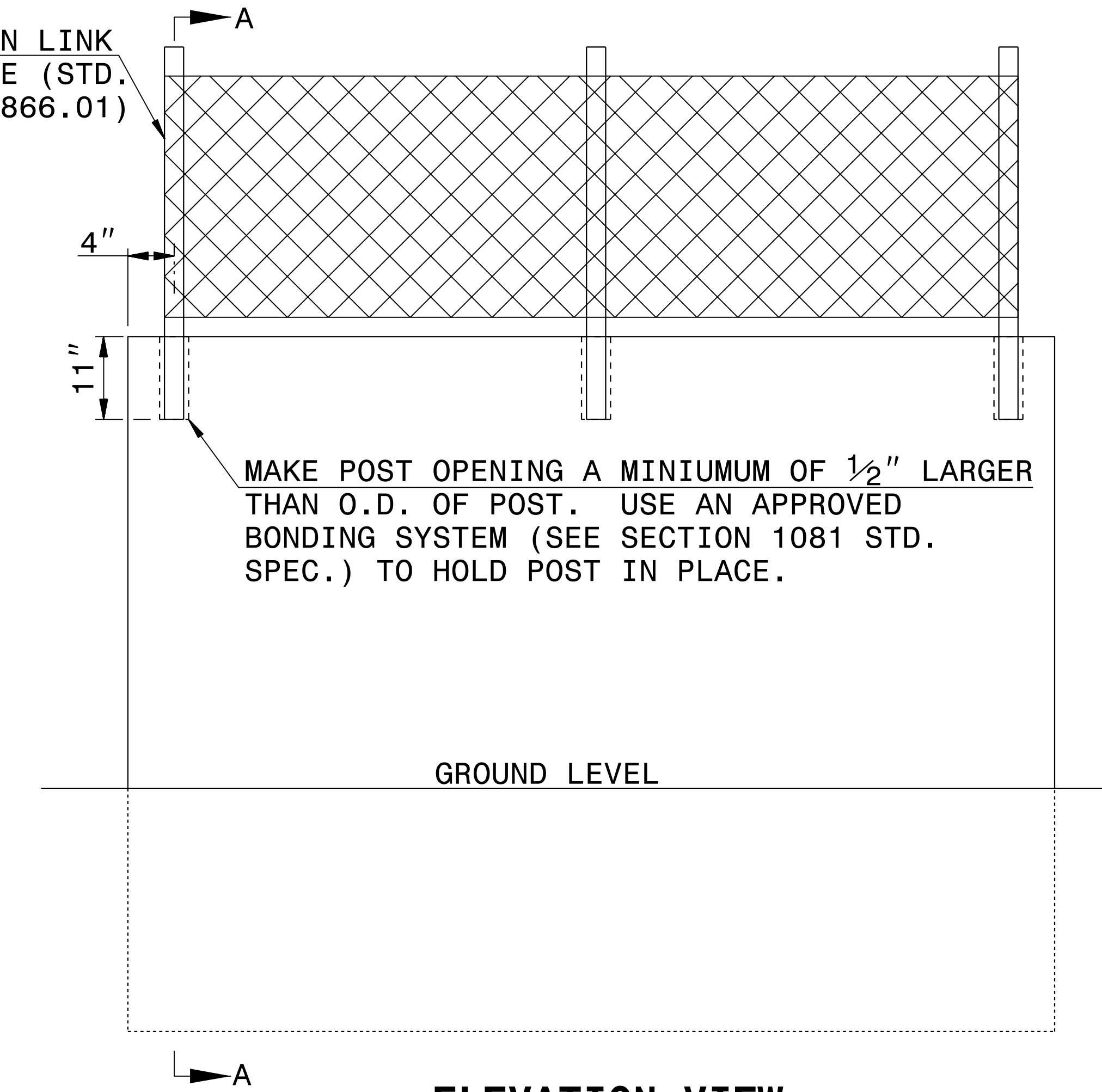




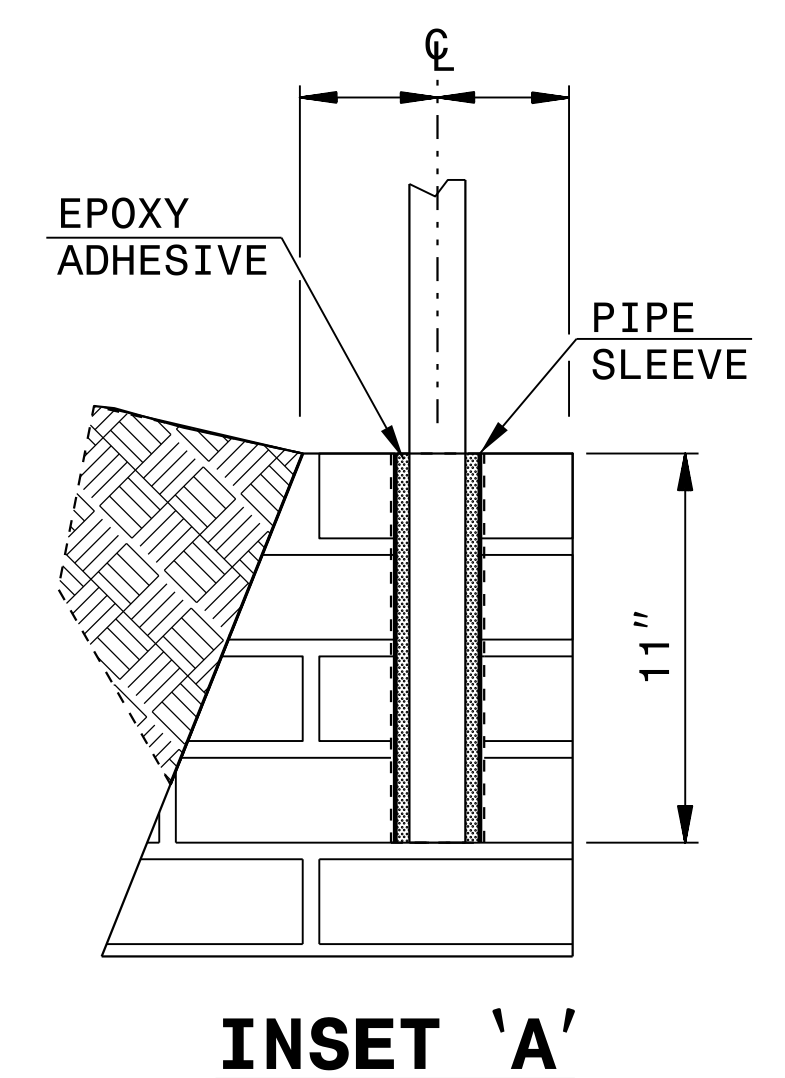
**SECTION A-A
CONCRETE RETAINING WALL**



**SECTION A-A
BRICK MASONRY RETAINING WALL**



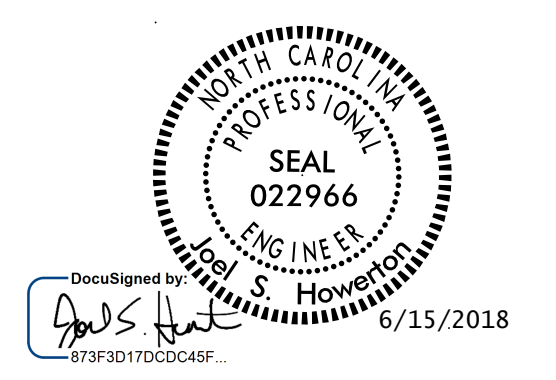
**ELEVATION VIEW
OF RETAINING WALL**



INSET 'A'

GENERAL NOTES:

EMBED CHAIN LINK FENCE 11" INTO PROPOSED WALL IN A SLEEVE OR BLOCKOUT WITH EPOXY OR CONCRETE GROUT ANCHORING SYSTEM. PRE-MEASURE AND CENTER THE PROPOSED FENCE ON TOP OF WALL FOR POST SPACINGS. IF DRILLING THE HOLES FOR POSTS, USE A ROTARY DRILL TO DRILL HOLES IN THE CONCRETE. NO IMPACT DRILLS WILL BE ALLOWED, TO ELIMINATE ANY POSSIBILITY OF STRUCTURAL DAMAGES TO THE PROPOSED WALL.
INSTALL PIPE SLEEVES IN THE BRICK RETAINING WALL (SEE INSET 'A') AND REFER TO STD. SPECIFICATION 1081 FOR PROPER ANCHOR SYSTEM.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

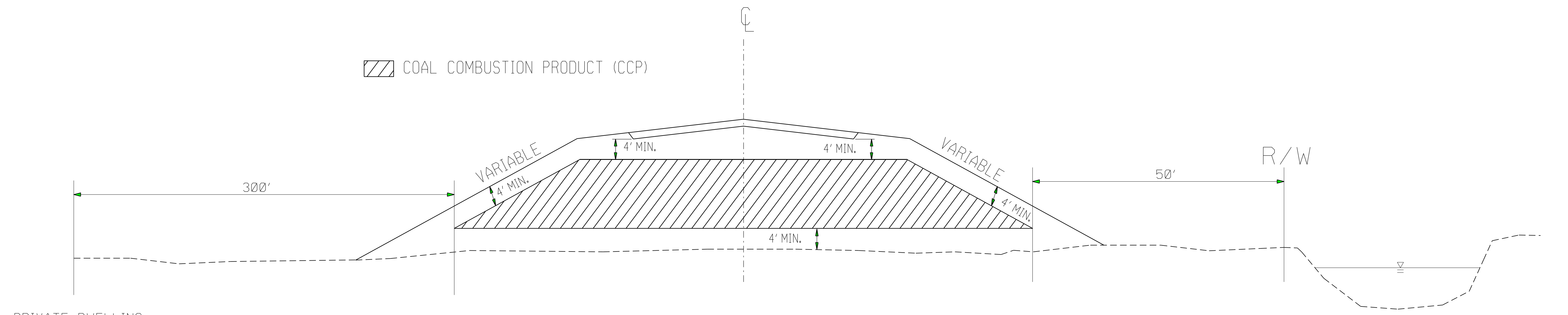
**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

**CHAIN LINK FENCE
ON RETAINING WALL**

ORIGINAL BY: L. Robinson	DATE: Nov. 1996
MODIFIED BY: K. Kempf	DATE: May. 2018
CHECKED BY:	DATE:
FILE SPEC.: details/jhowerton/chain link on retaining wall.dgn	

I:\MAY-2018 4416
S:\Contracts\Special Details\jhowerton\chain link on retaining wall.dgn
Kempf AT USD-292596

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

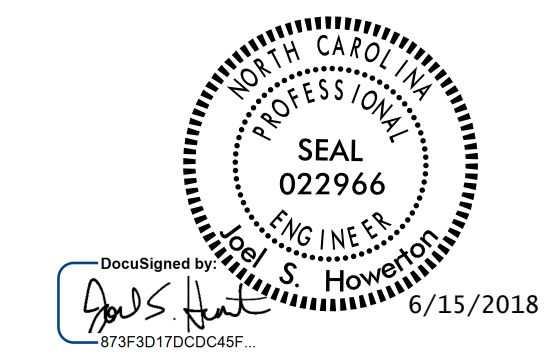
PLACE CCP A MINIMUM OF 5' ABOVE SEASONAL HIGH GROUND WATER

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

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	

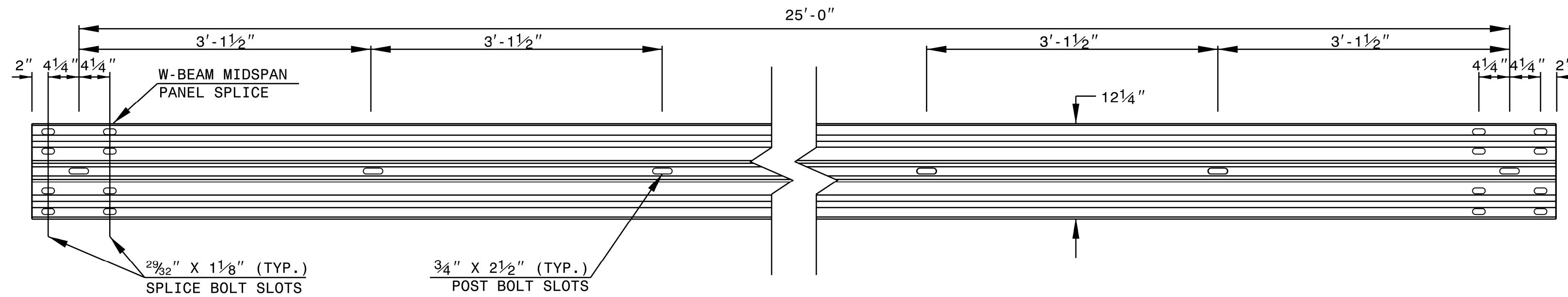


11-MAY-2018 14:34 S:\Contracting\Centers\Joel\Special Details\Howerton\Coal Combustion Product Detail.dgn Ktemp AT CS0292596

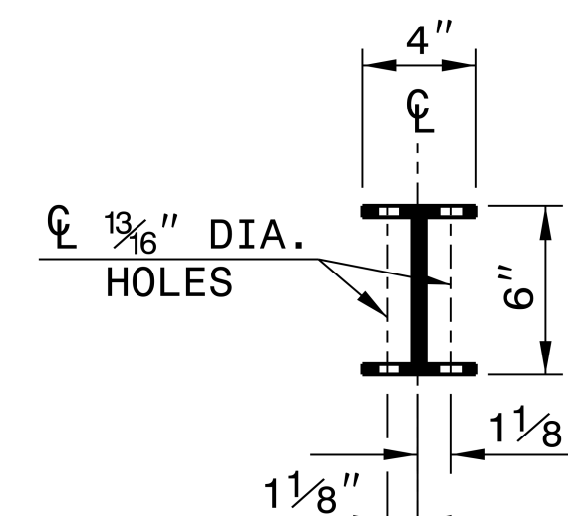
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

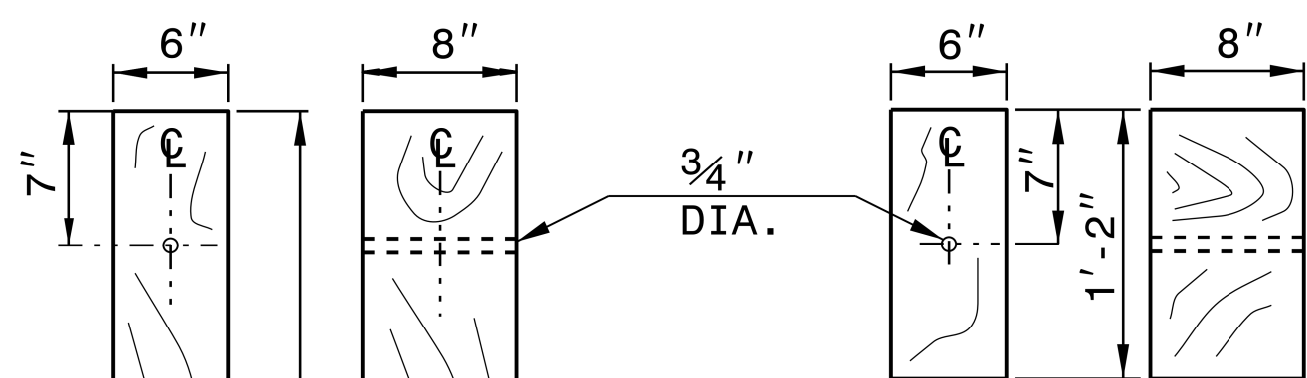
SHEET 6 OF 8
862D02



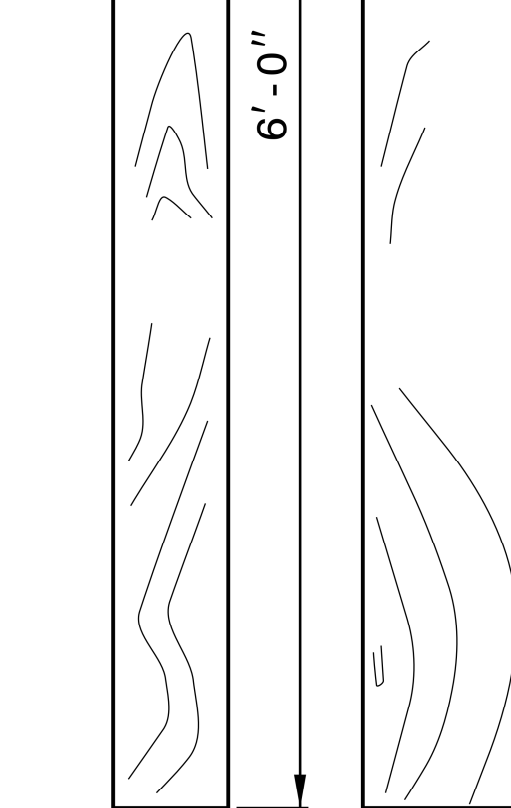
STANDARD W-BEAM GUARDRAIL



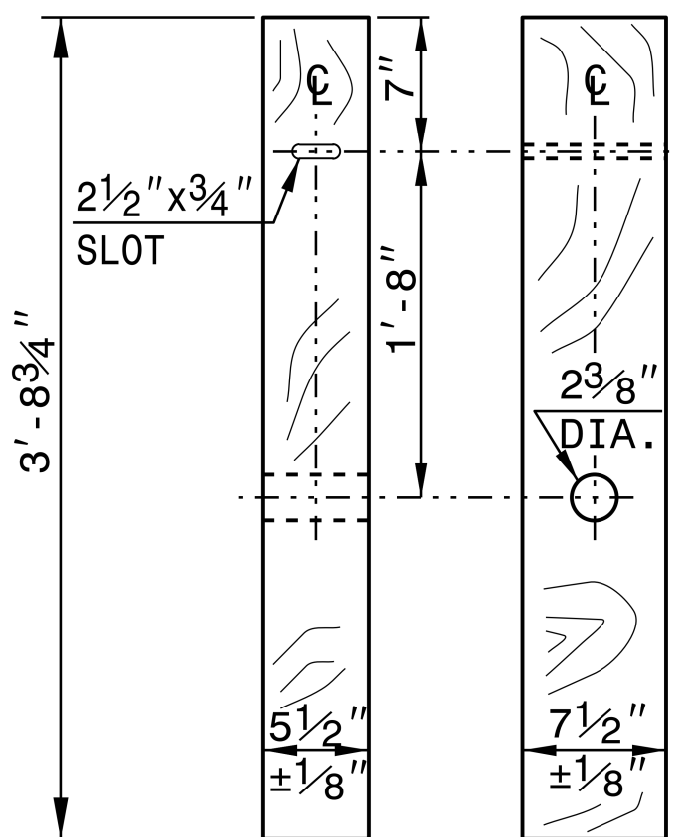
PLAN



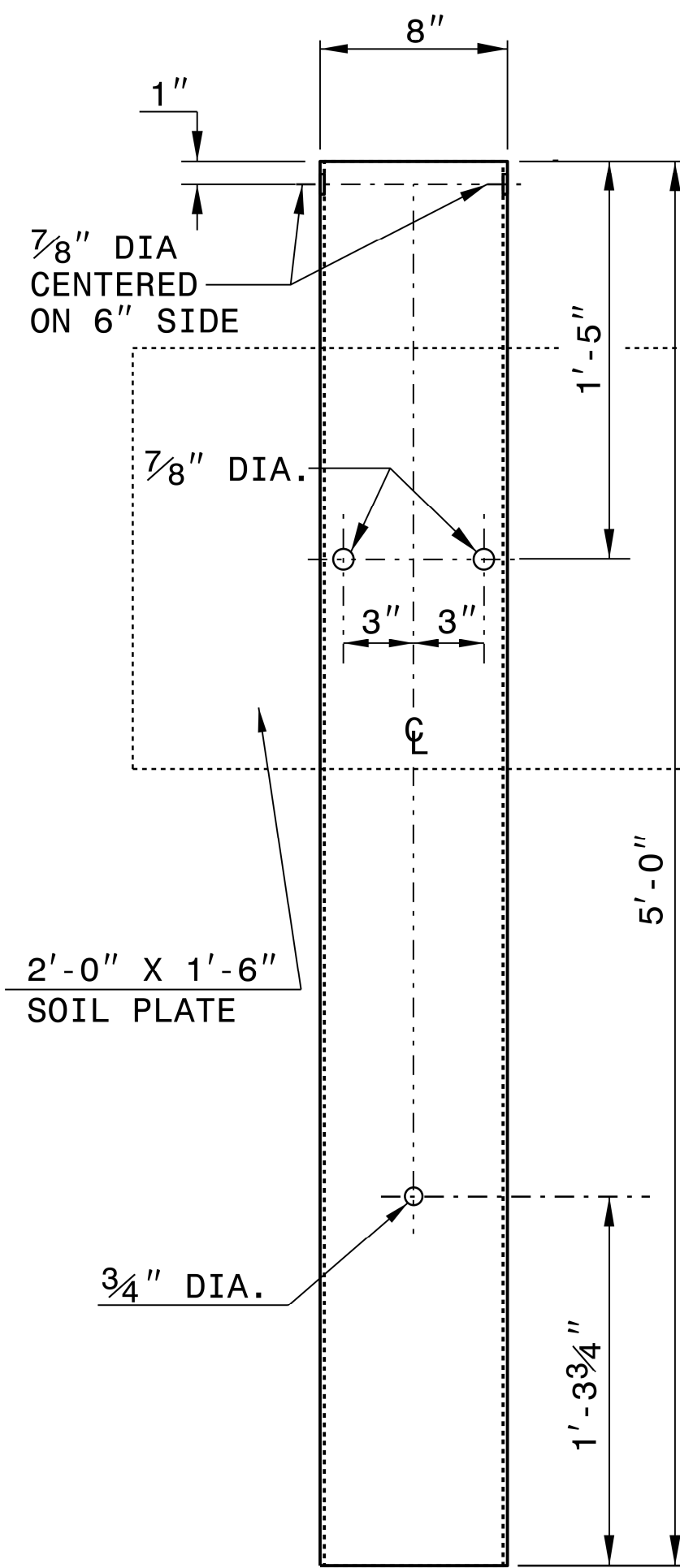
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**



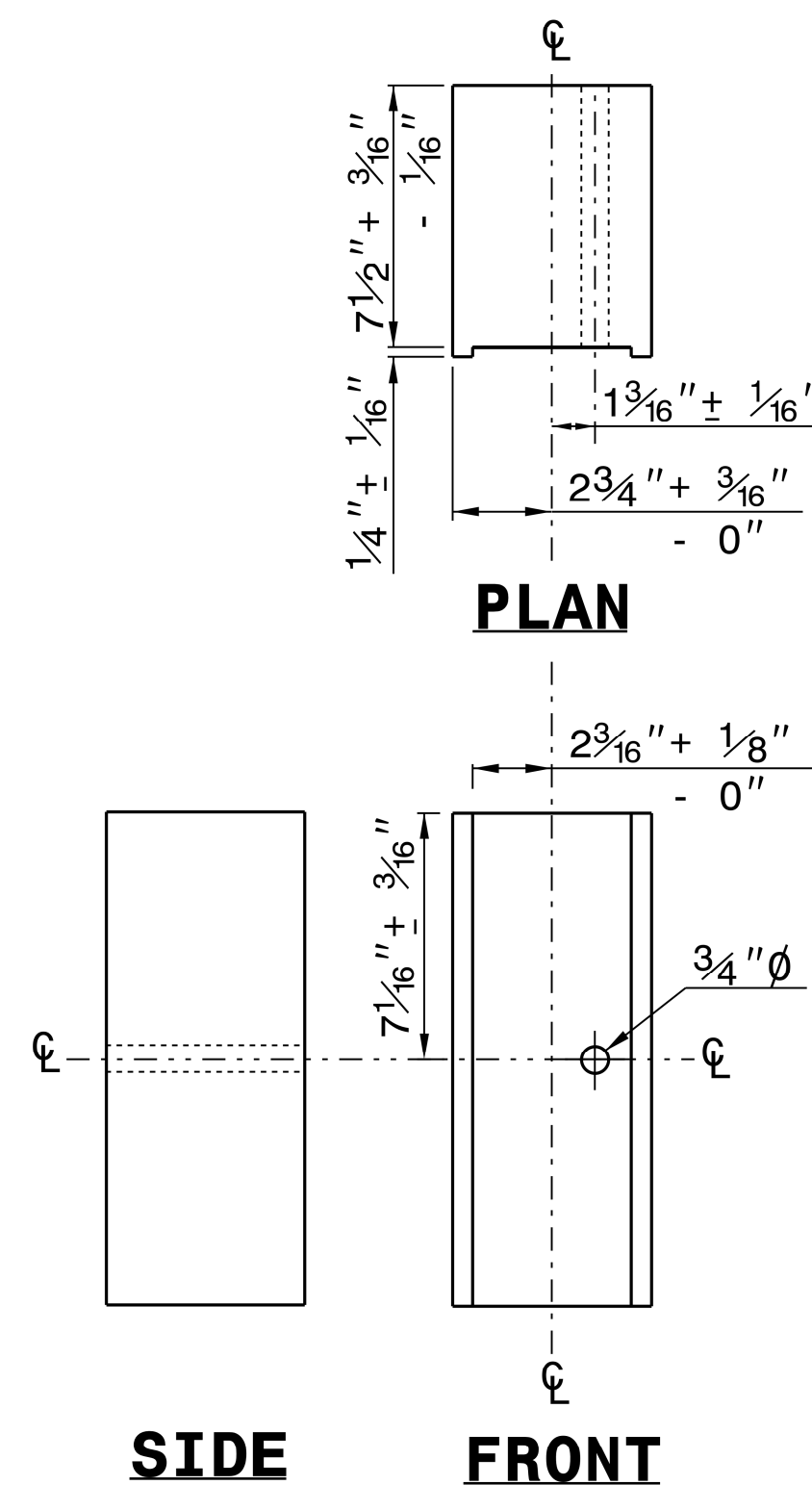
**STANDARD
LINE POST**



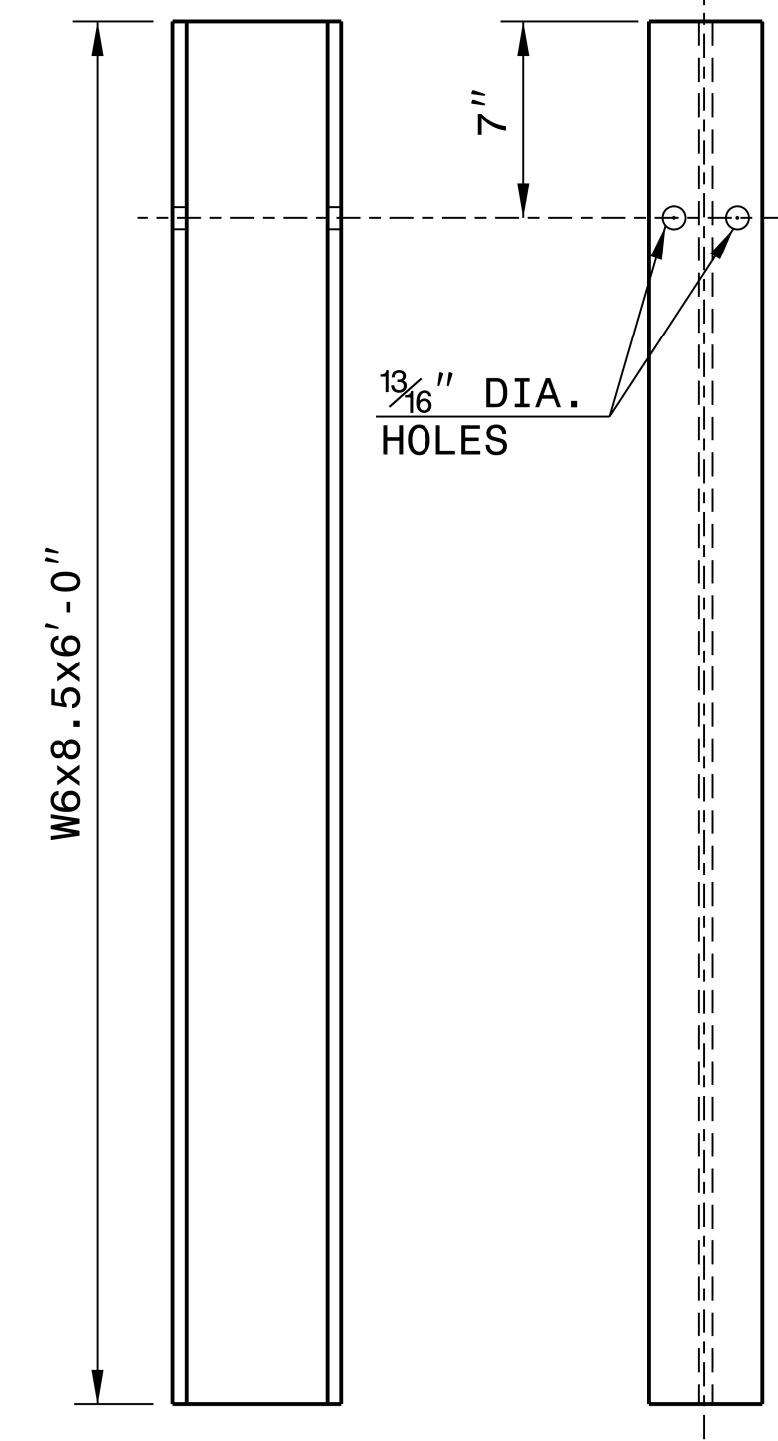
**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**



**ROUTED
OFFSET BLOCK**



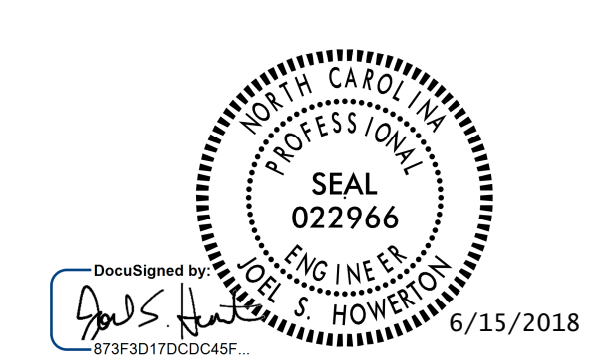
"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

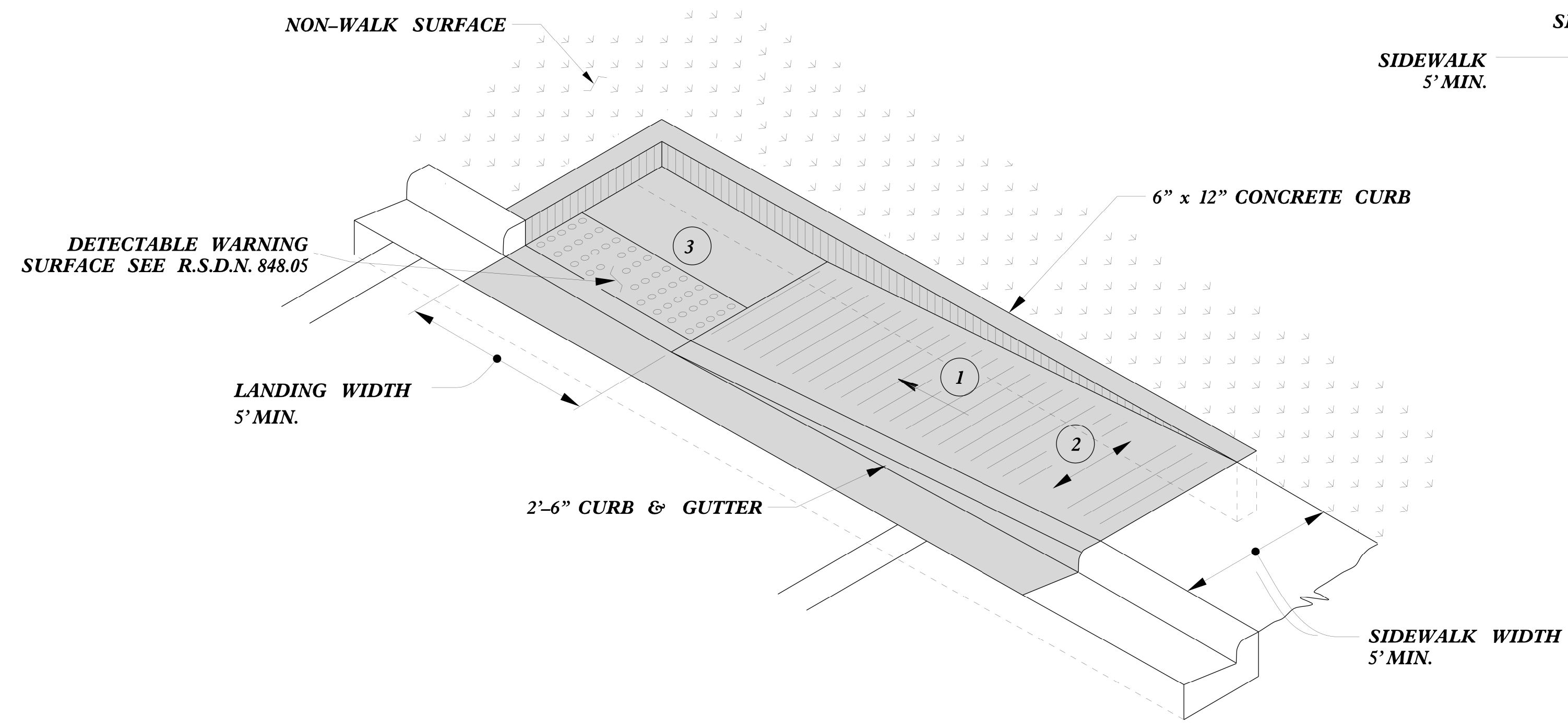
SHEET 6 OF 8
862D02



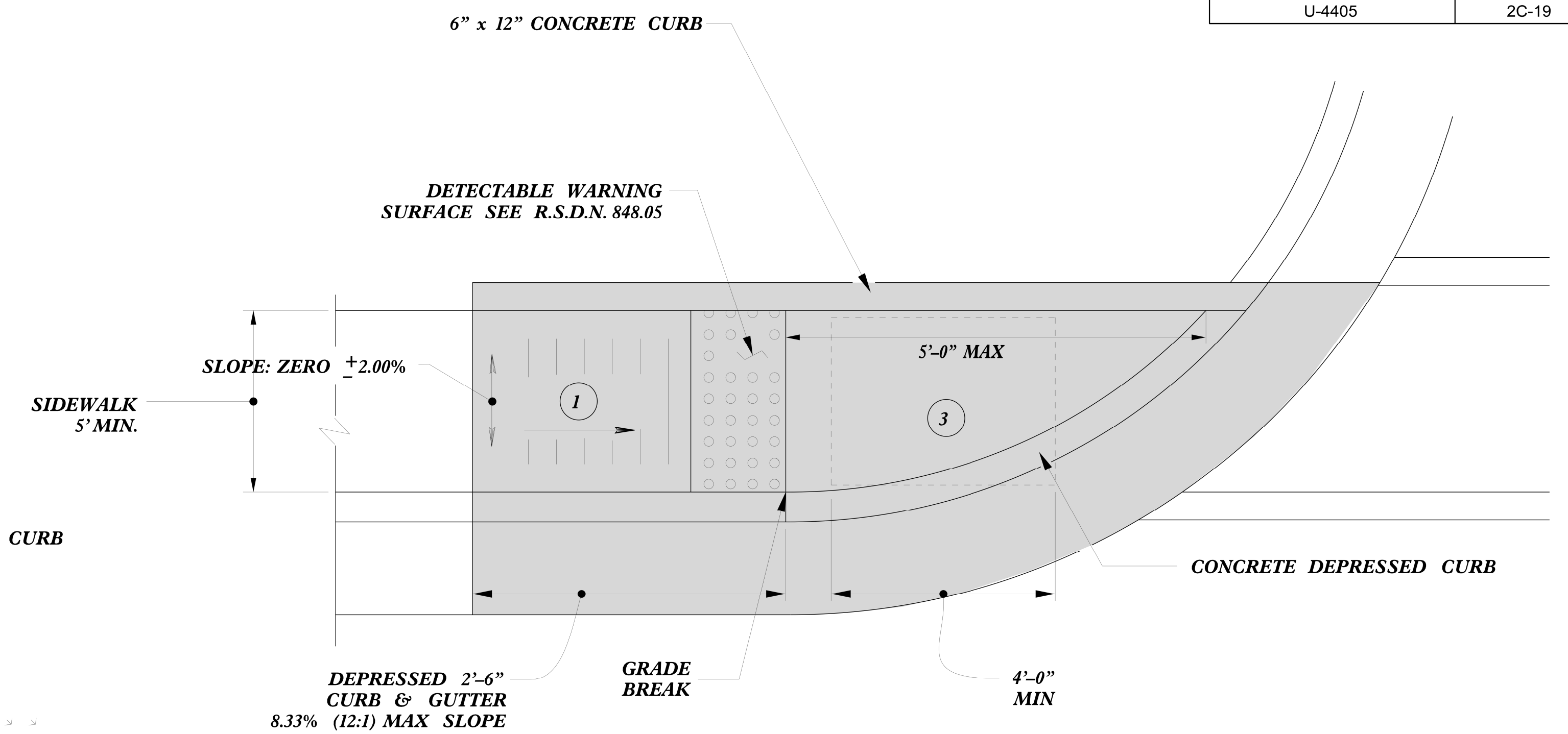
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

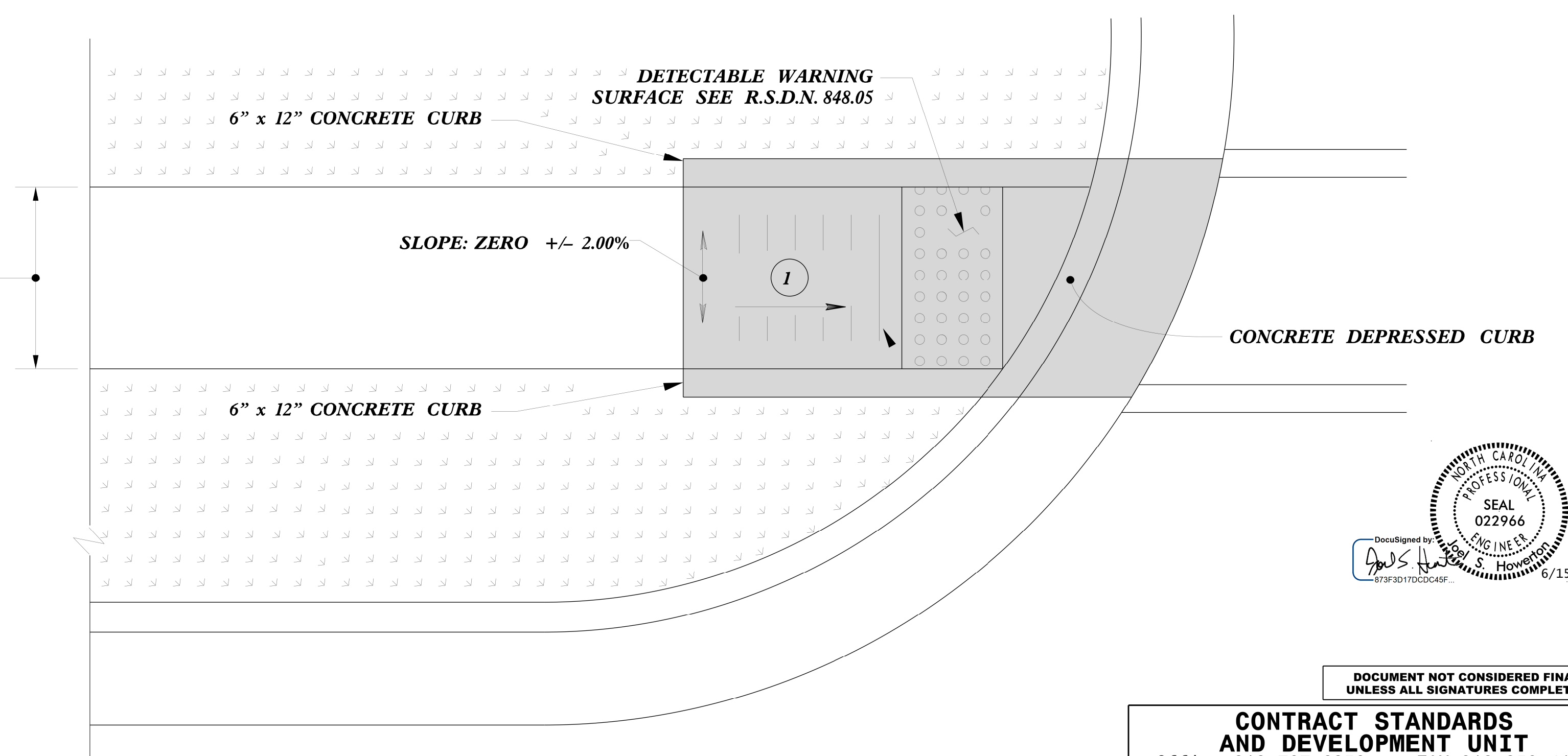
ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	



TYPE 1A



TYPE 1

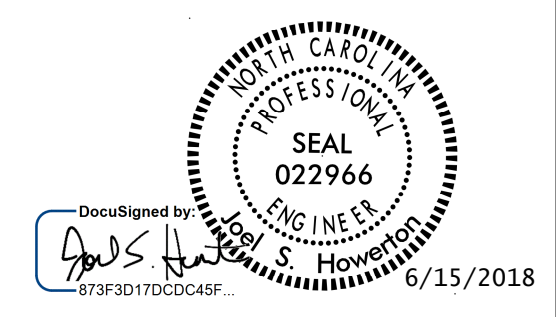


TYPE 1 Modified

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

PAY LIMITS FOR 1 CURB RAMP


REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

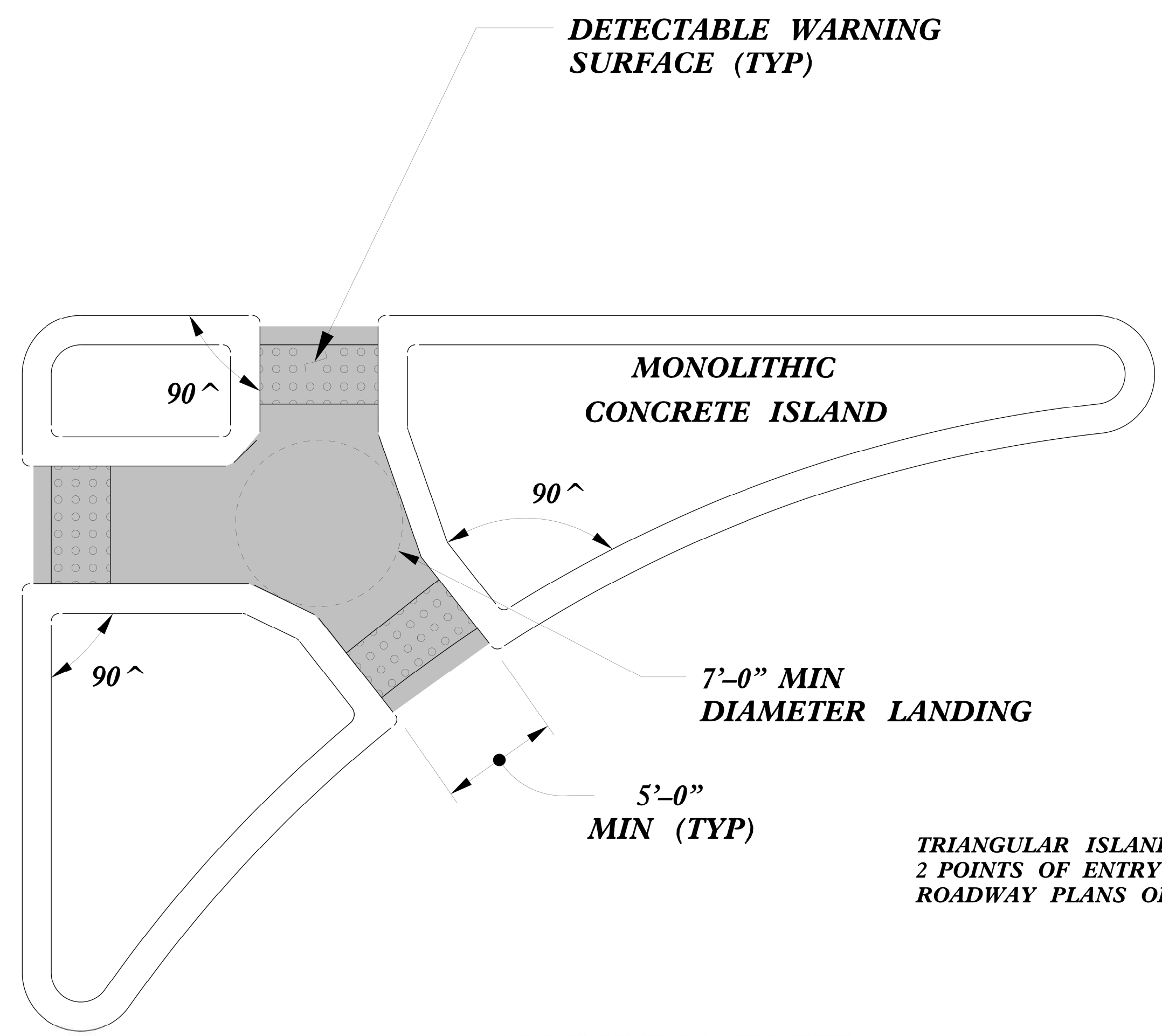


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: .stds/2012CurbRamp/CurbRampDetails.dgn	

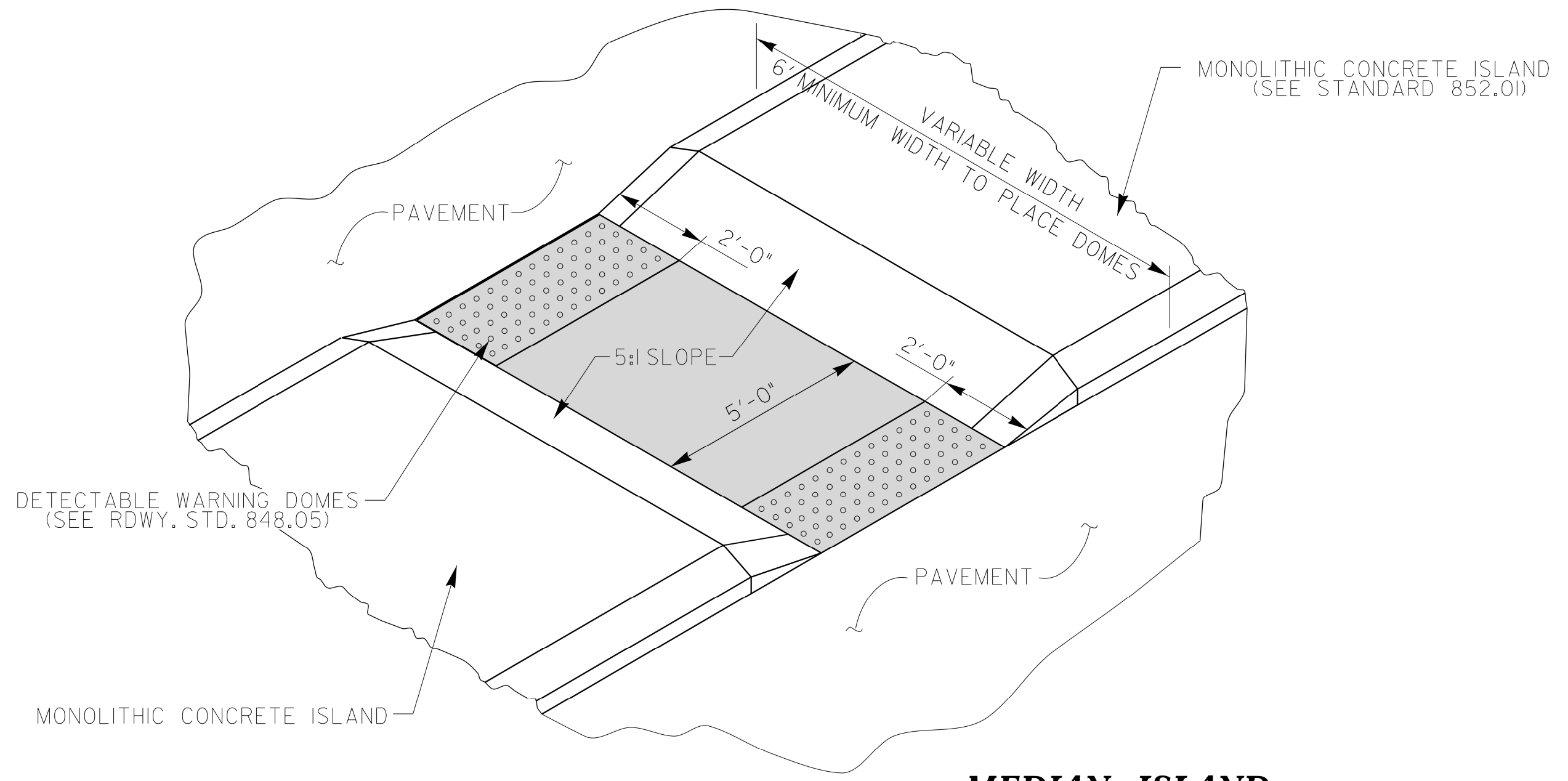
5/14/18 11:58 AM C:\Users\jsho\OneDrive\Documents\2012CurbRamp\CurbRampDetails.dgn

 PAY LIMITS FOR 2 OR 3 CURB RAMPS
(CALCULATE BASED ON NUMBER OF
SETS OF TRUNCATED DOMES)

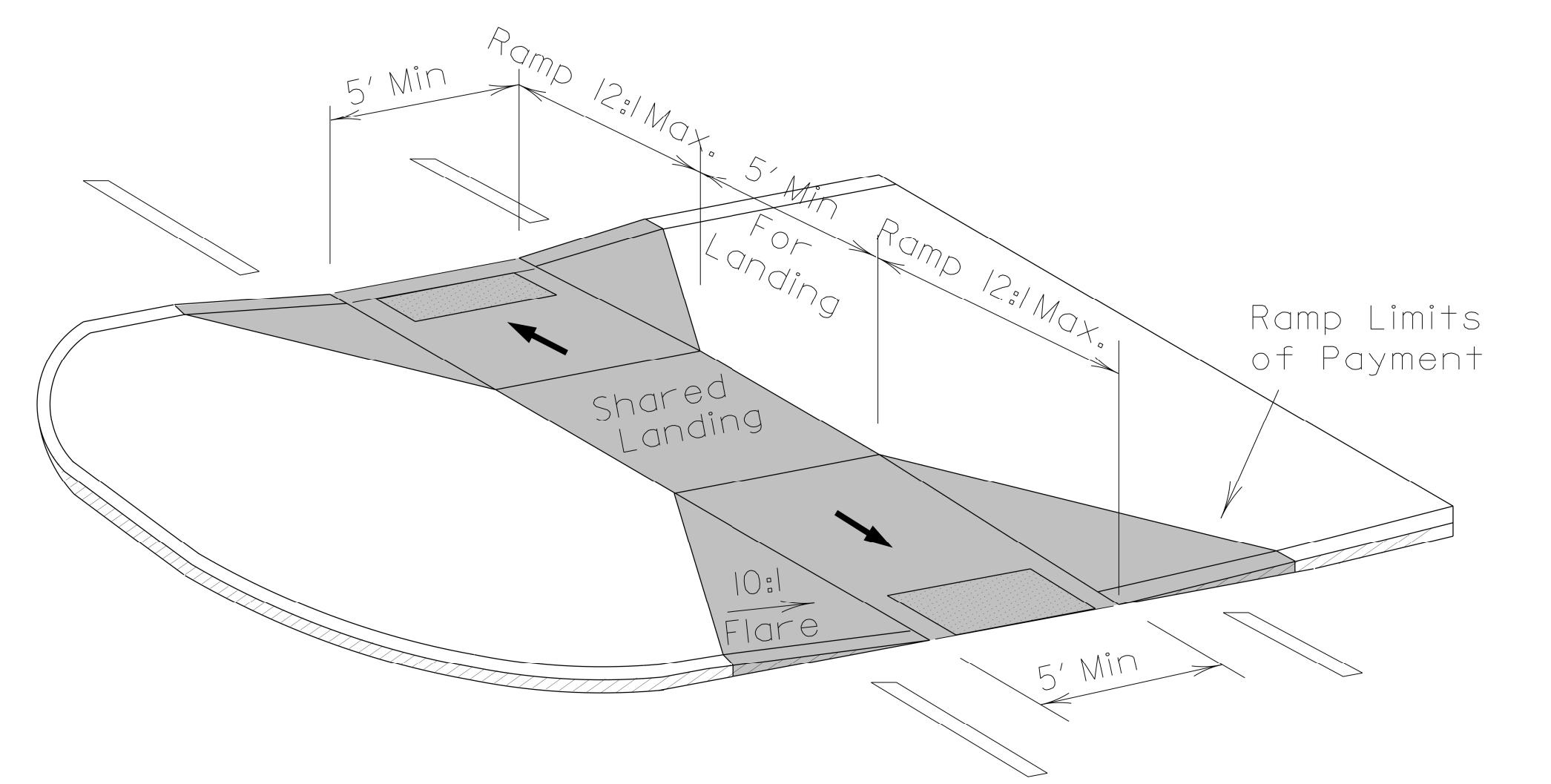


TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY
2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE
ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.

**TRIANGULAR ISLAND
WITH CUT THROUGH**



**MEDIAN ISLAND
WITH CUT THROUGH**



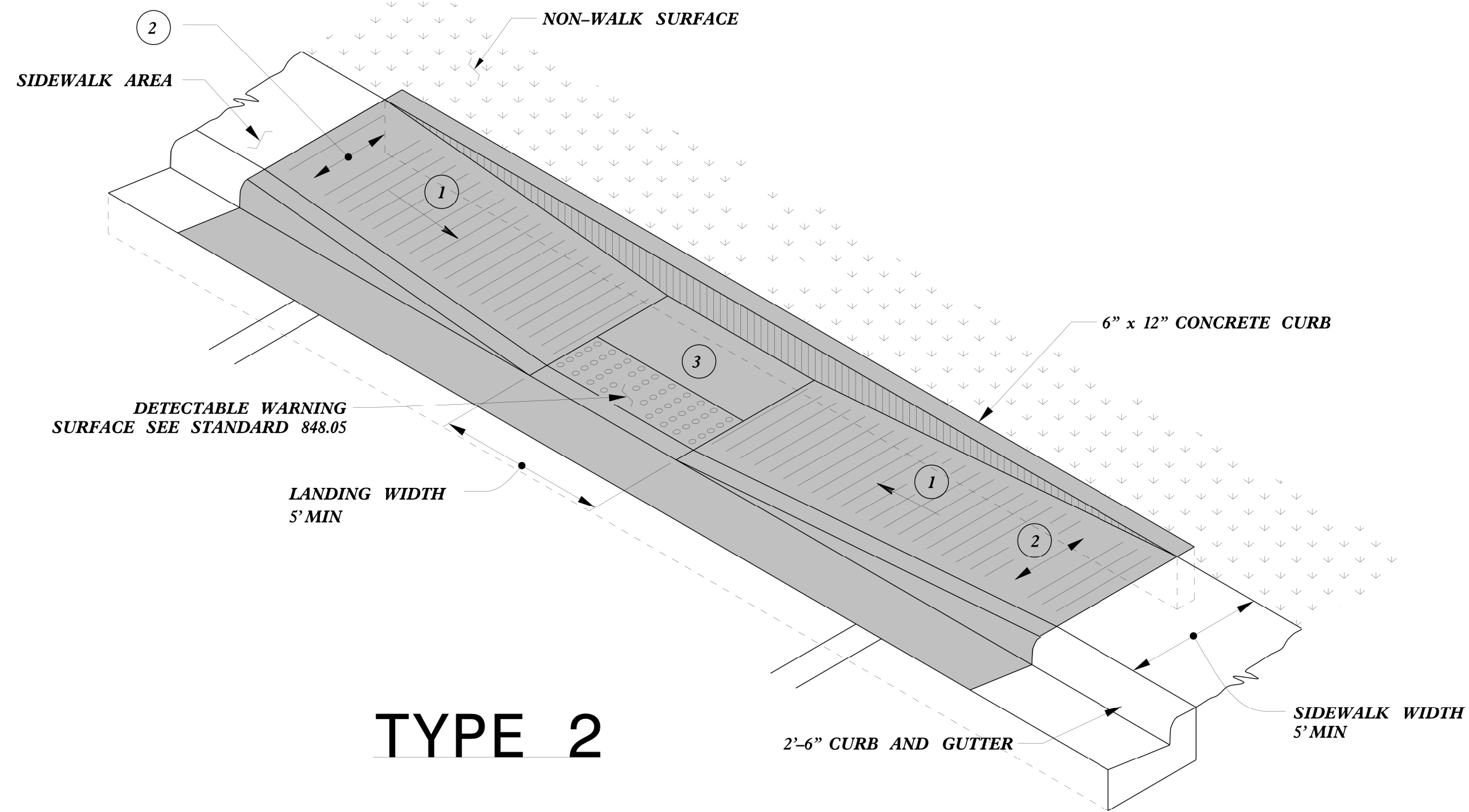
**MEDIAN ISLAND
CURB RAMPS**

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950 FAX 919-250-4119	
CURB RAMPS	
Median or Turn Lane Islands	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: .stds/2012CurbRamp/CurbRampDetails.dgn	



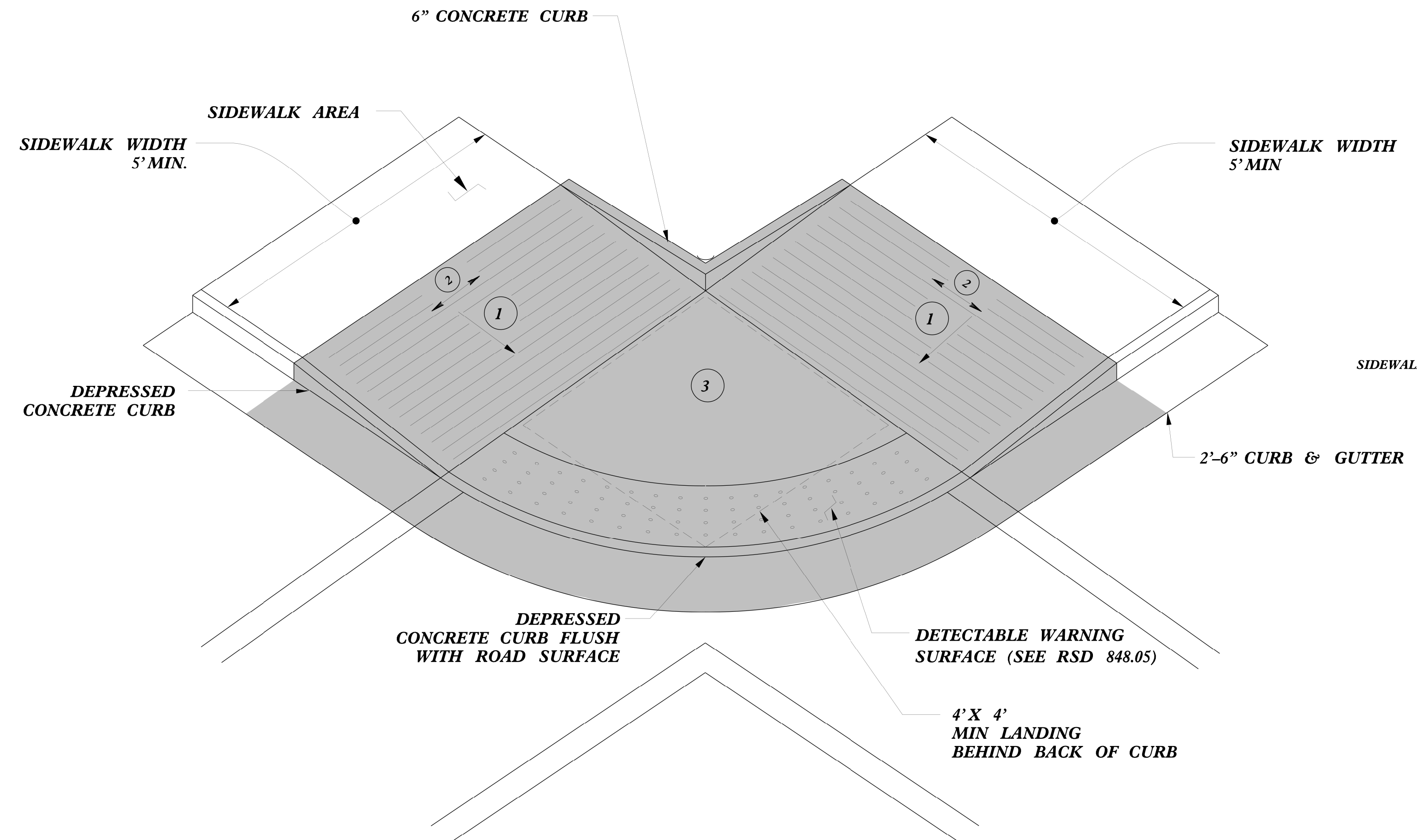
5/14/18
SYSTEMTIME: 5/14/18 10:00:00 AM
USER: J.S. HOWERTON
FILE: .stds/2012CurbRamp/CurbRampDetails.dgn



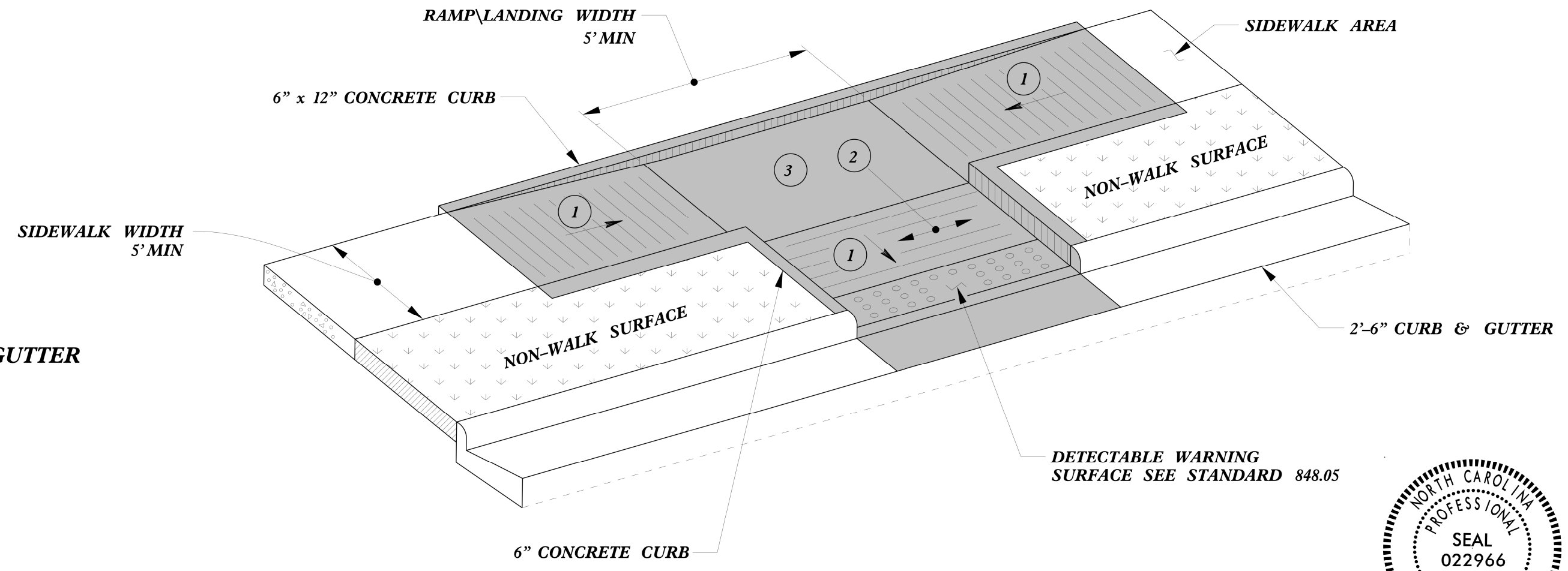
TYPE 2

PAY LIMITS FOR 1 CURB RAMP

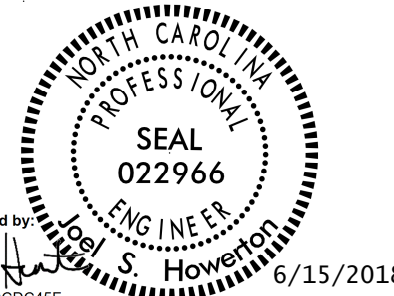
- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



TYPE 2A



TYPE 3



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

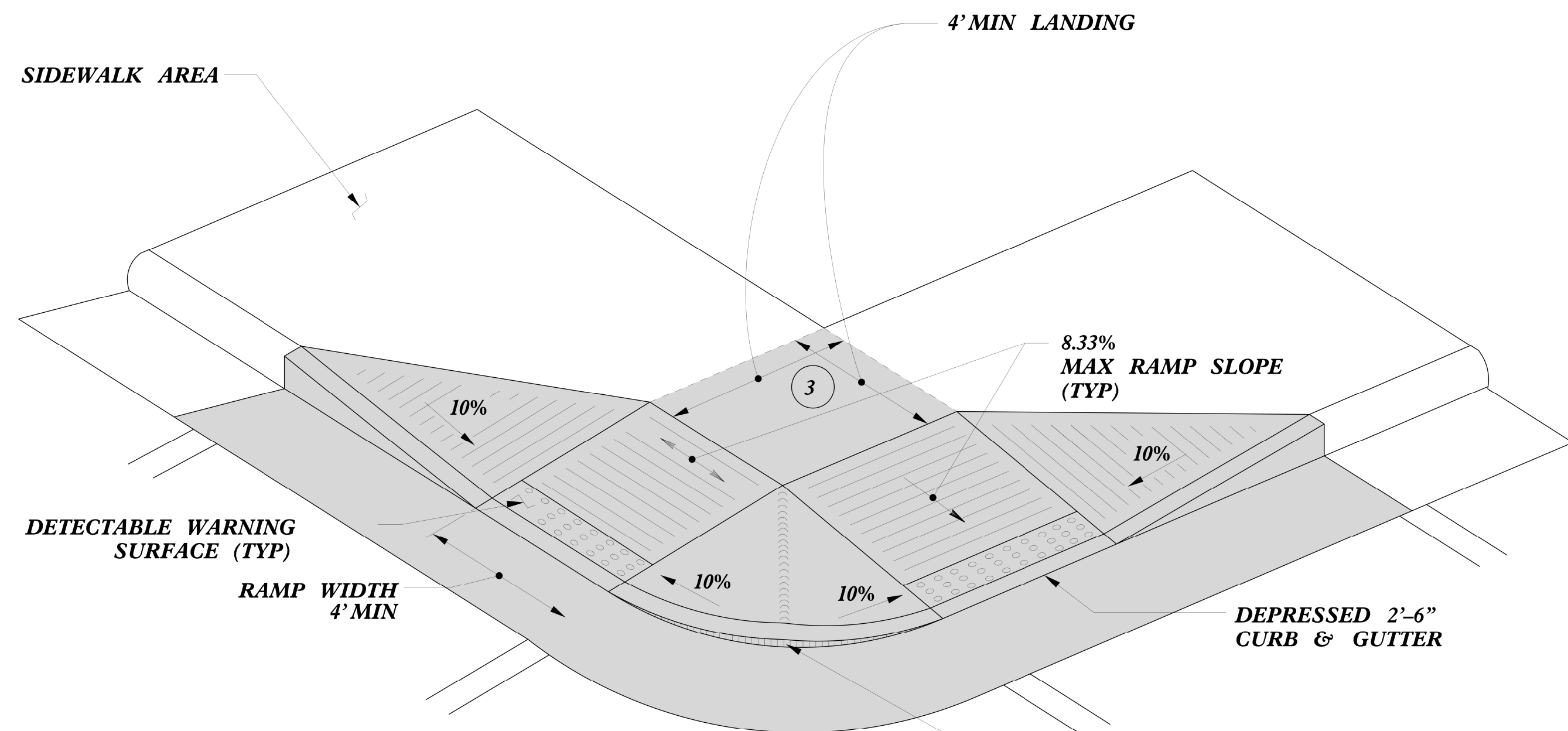
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

CURB RAMPS
Parallel Ramps

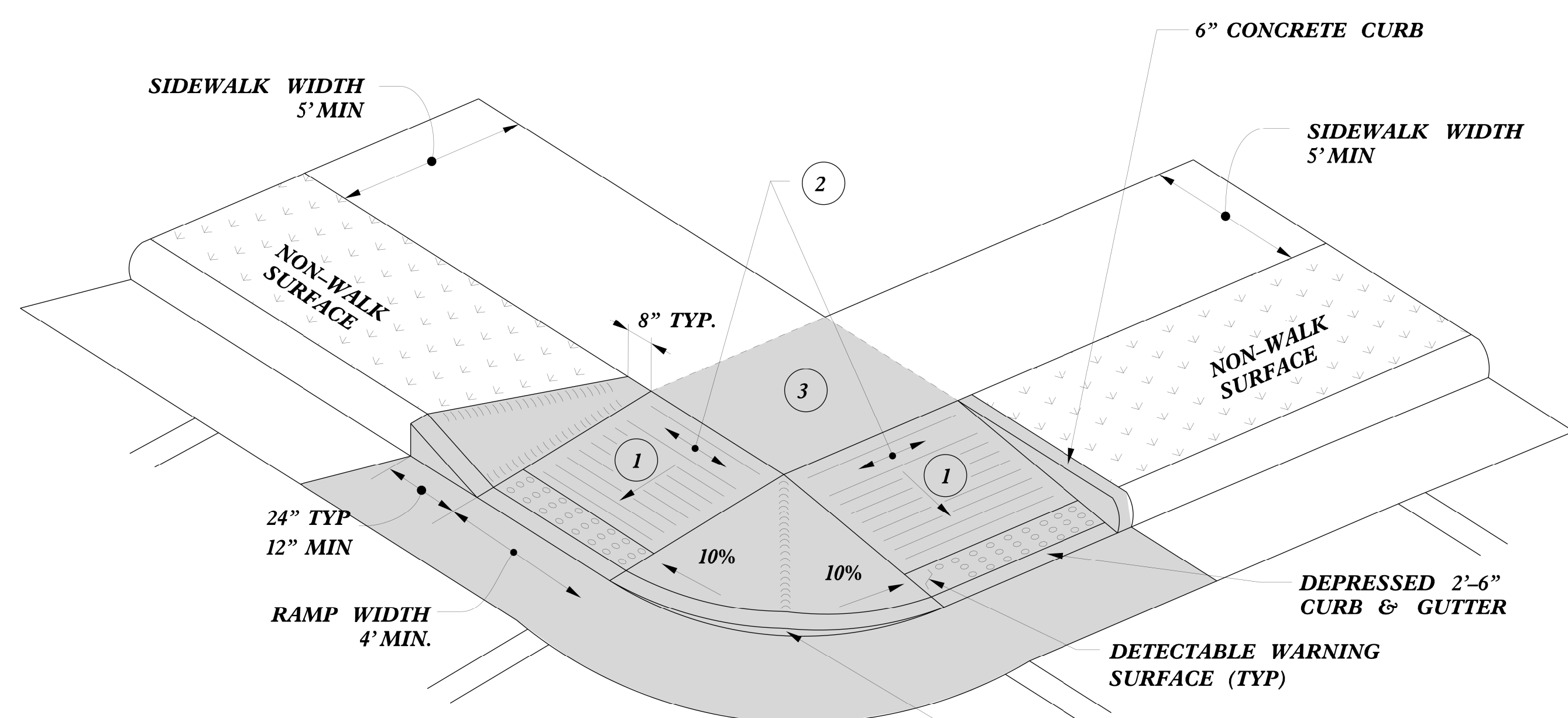
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC: .stds/2012CurbRamp/CurbRampDetails.dgn

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

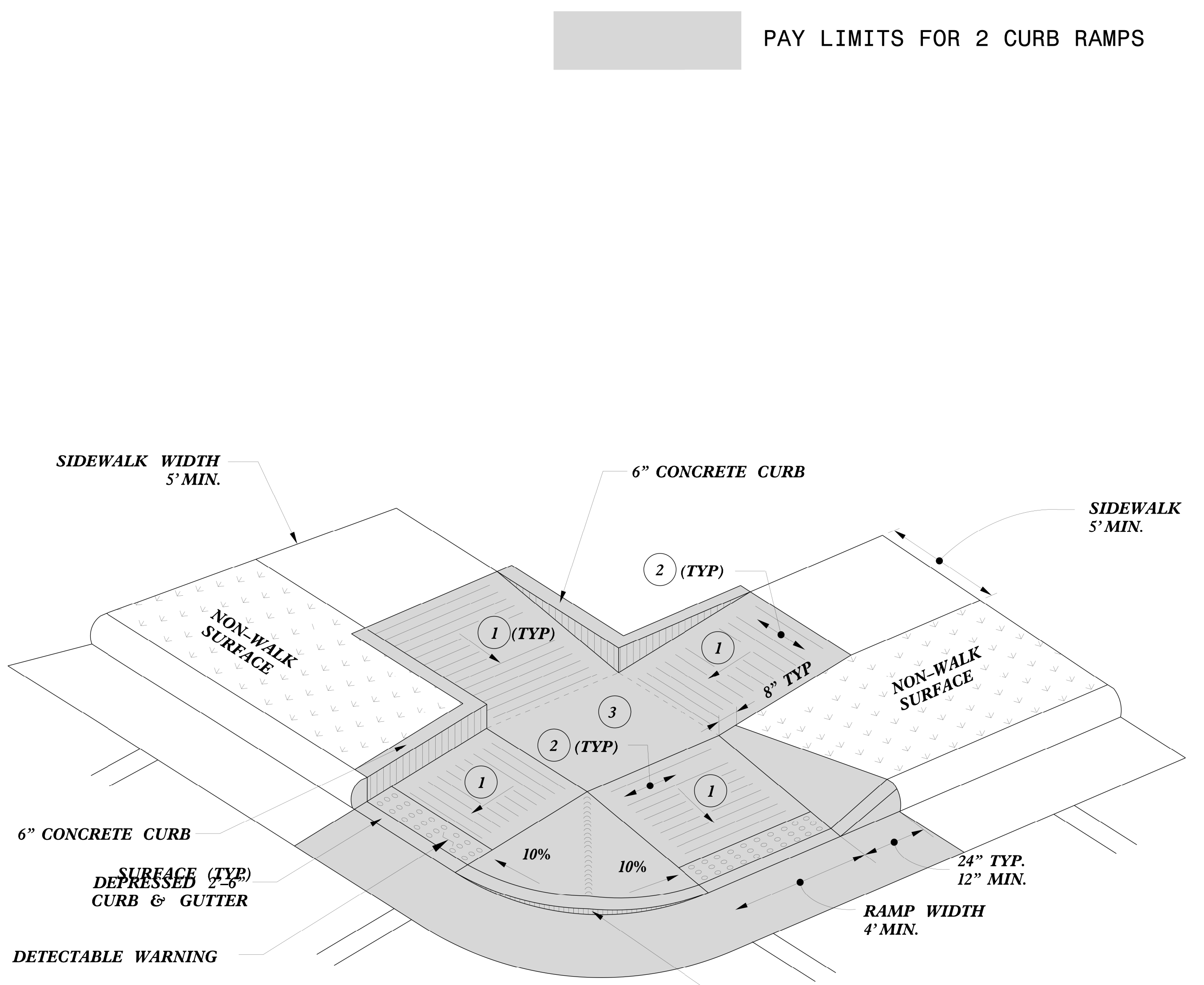
5/14/18
SYTIME
DGN
USERNAME



TYPE 4



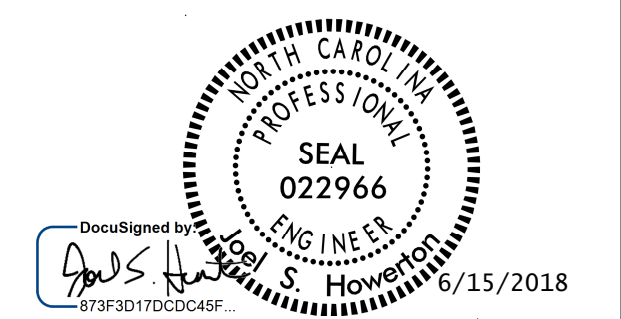
TYPE 4A



TYPE 5

PAY LIMITS FOR 2 CURB RAMPS

- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
CURB RAMPS	
Shared Landing	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC: .stds/2012CurbRamp/CurbRampDetails.dgn	

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

5/14/11 5:41:59 PM SYSTEM TIME 5/14/11 5:41:59 PM USERNAME