

**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.**

4/8/2022 P:\w\geocom-na-pw-bentley.com\AECOM\_DS2\NA\_2020\Documents\60592827-NC00T\_SMU\_B-5717\900-CAD\_GIS\910\_CAD\_70\_NCDOT\_TIP\Roadway\Proj\B5717\_Rdy\_tsh.dgn

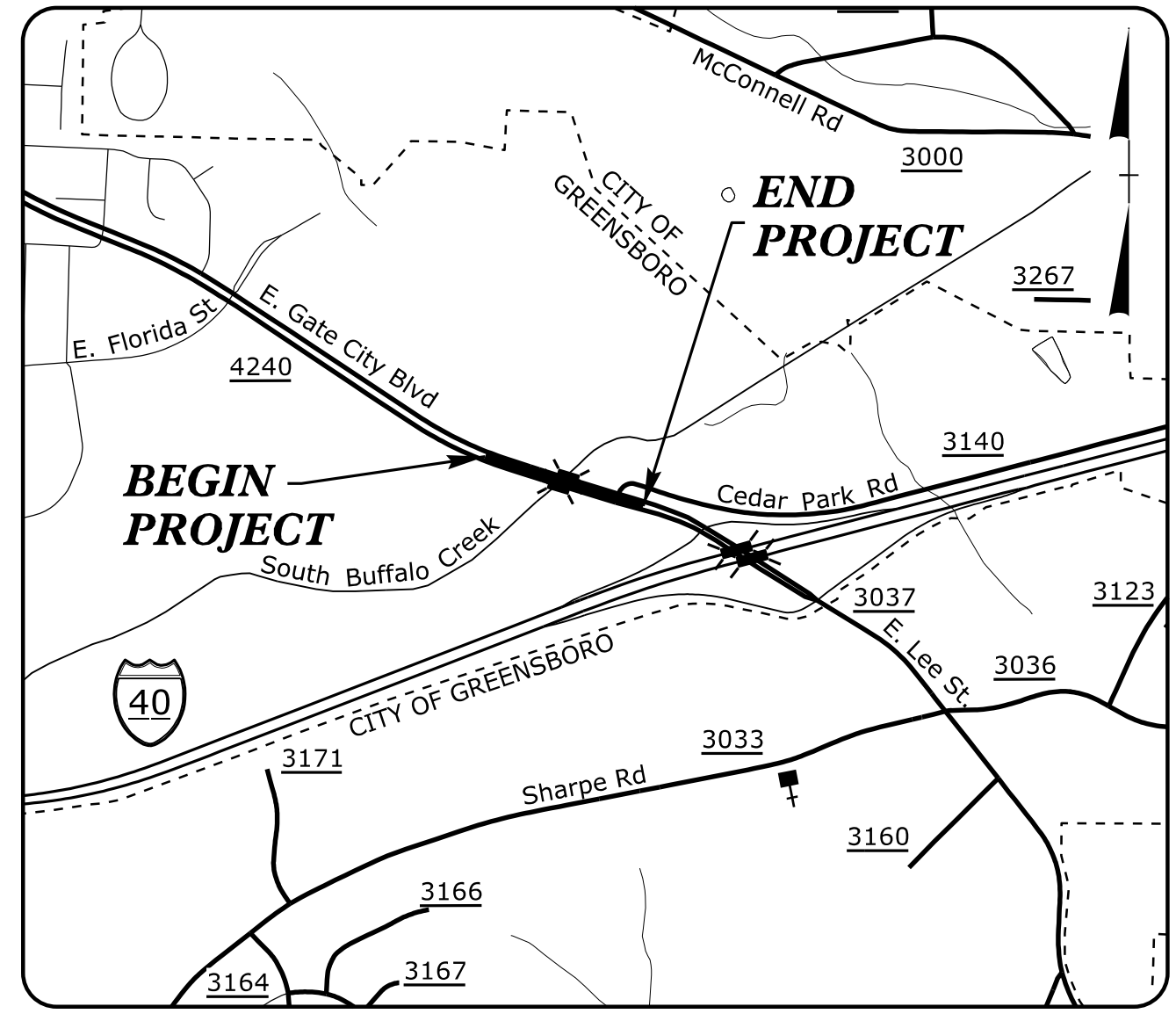
**CONTRACT: C204712** **TIP PROJECT: B-5717**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**GUILFORD COUNTY**

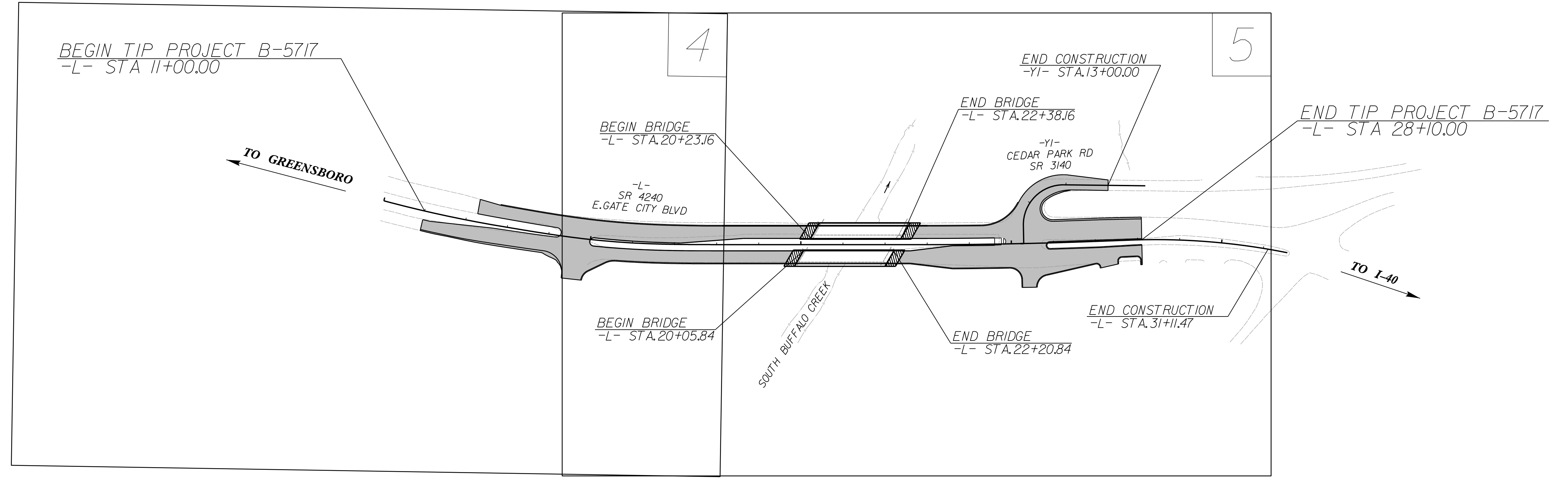
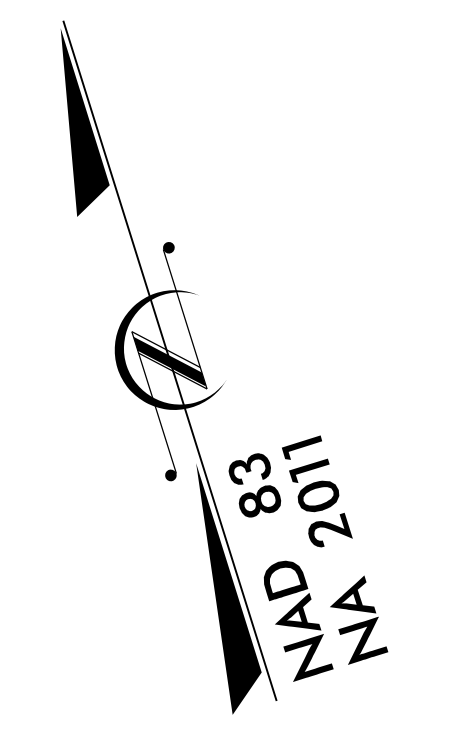
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-5717</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45673.1.2		PE	
45673.2.1		R/W	
45673.2.2		UTIL	
45673.3.1	4240002	CONST	

**LOCATION: BRIDGES 109 AND 121 ON SR 4240 (E. GATE CITY BLVD)  
OVER SOUTH BUFFALO CREEK**

**TYPE OF WORK: DRAINAGE, GRADING, PAVING, AND STRUCTURES**

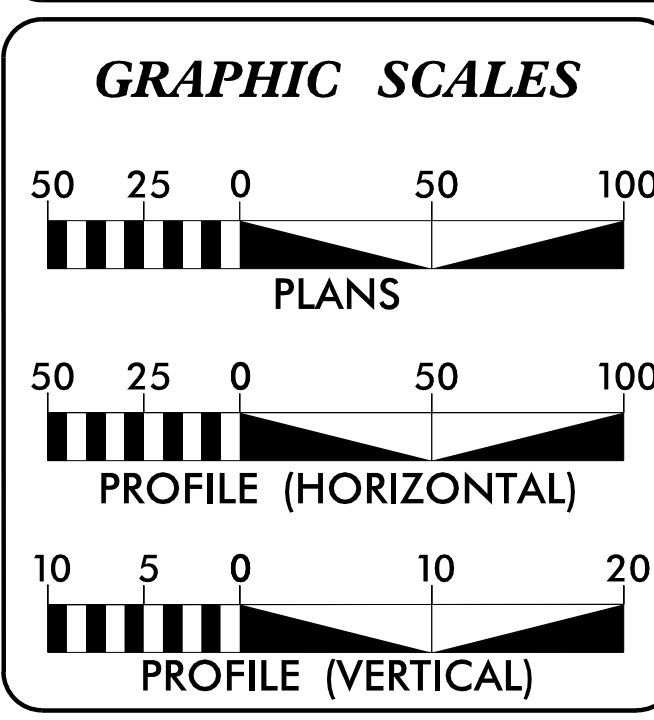


**VICINITY MAP**  
See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
**NOT TO SCALE**



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT U-TURN BULB HAS FULL CONTROL OF ACCESS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2022 =	18,375
ADT 2042 =	20,292
K =	11 %
D =	65 %
T =	5% % *
V =	50 MPH
* TTST = 1% DUAL 4%	
FUNC CLASS =	
PRINCIPAL ARTERIAL	
REGIONAL TIER	

**PROJECT LENGTH**

<b>LENGTH ROADWAY TIP PROJECT B-5717 =</b>	<b>0.283 MI</b>
<b>LENGTH STRUCTURE TIP PROJECT B-5717 =</b>	<b>0.041 MI</b>
<b>TOTAL LENGTH TIP PROJECT B-5717 =</b>	<b>0.324 MI</b>

Prepared in the Office of:

**AECOM**  
NC FIRM LICENSE No: F-0342  
5438 Wade Park Boulevard, Suite 200  
Raleigh, NC 27607  
(919) 461-1100

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
JUNE 8, 2021

**LETTING DATE:**  
JUNE 21, 2022

**GREGORY COLS, P.E.**  
PROJECT ENGINEER

**TIMOTHY KLOTZ, P.E.**  
PROJECT DESIGN ENGINEER

**DAVID STUTTS, P.E.**  
NCDOT PROJECT ENGINEER

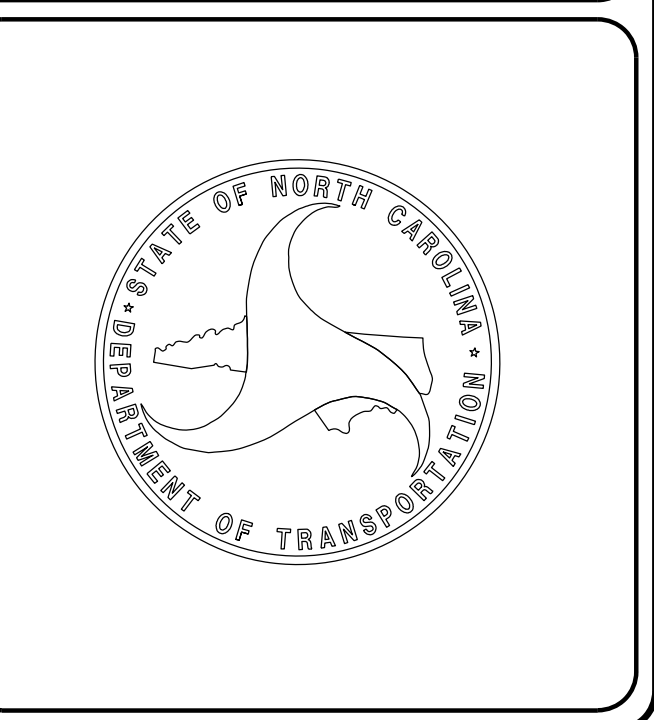
**HYDRAULICS ENGINEER**

DocuSigned by: *Wade Buscemi* 4/25/2022

**ROADWAY DESIGN ENGINEER**

DocuSigned by: *Timothy A. Klotz* 4/25/2022

Professional Engineer Seals for Wade D. Buscemi and Timothy A. Klotz.



STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

INDEX OF SHEETS, GENERAL NOTES AND 2018 ROADWAY ENGLISH STANDARD DRAWINGS

PROJECT REFERENCE NO. B-5717 SHEET NO. 1A ROADWAY DESIGN ENGINEER SEAL 046210 NORTH CAROLINA PROFESSIONAL SEAL AECOM NC FIRM LICENSE No: F-0342 5438 Wood Park Boulevard, Suite 200 Raleigh, NC 27607 (919) 461-0000 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

Table with 2 columns: SHEET NUMBER and SHEET. Lists sheet numbers (1, 1A, 1B, 1C-1, 2A-1 THRU 2A-4, etc.) and their corresponding sheet titles (TITLE SHEET, INDEX OF SHEETS, GENERAL NOTES, etc.).

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

Table with 2 columns: STD. NO. and TITLE. Lists standard numbers (200.02, 225.02, 225.04, etc.) and their titles (Method of Clearing, Guide for Grading Subgrade, etc.).

EFF. 01-16-2018 REV.

GENERAL NOTES:

2018 SPECIFICATIONS EFFECTIVE: 01-16-2018 REVISED:

GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, AT&T, CITY OF GREENSBORO, DAVIS MARTIN POWELL. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

# STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin (EIP)	○
Computed Property Corner	×
Existing Concrete Monument (ECM)	□
Parcel/Sequence Number	(123)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	WLB
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	-S-S-
Potential Contamination Area: Soil	-S-S-
Known Contamination Area: Water	-W-W-
Potential Contamination Area: Water	-W-W-
Contaminated Site: Known or Potential	☠ ☡

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	×
Foundation	□
Area Outline	□
Cemetery	+
Building	□
School	□
Church	□
Dam	—

## HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	↓
Proposed Lateral, Tail, Head Ditch	→
False Sump	▽

## RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

## RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Secondary Horiz and Vert Control Point	◆
Vertical Benchmark	⊕
Existing Right of Way Monument	△
Proposed Right of Way Monument (Rebar and Cap)	▲
Proposed Right of Way Monument (Concrete)	▲
Existing Permanent Easement Monument	◇
Proposed Permanent Easement Monument (Rebar and Cap)	◆
Existing C/A Monument	△
Proposed C/A Monument (Rebar and Cap)	▲
Proposed C/A Monument (Concrete)	▲
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Existing Control of Access Line	-----
Proposed Control of Access Line	-----
Proposed ROW and CA Line	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage/Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE

## ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	T
Proposed Guardrail	T
Existing Cable Guiderail	T
Proposed Cable Guiderail	T
Equality Symbol	⊕
Pavement Removal	⊗
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----

Woods Line	-----
Orchard	○
Vineyard	□

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	S

## UTILITIES:

\* SUE - Subsurface Utility Engineering  
LOS - Level of Service - A, B, C or D (Accuracy)

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	PH
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	●
U/G Power Line (SUE - LOS B)*	P
U/G Power Line (SUE - LOS C)*	P
U/G Power Line (SUE - LOS D)*	P

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	PH
U/G Telephone Test Hole (SUE - LOS A)*	●
U/G Telephone Cable (SUE - LOS B)*	T
U/G Telephone Cable (SUE - LOS C)*	T
U/G Telephone Cable (SUE - LOS D)*	T
U/G Telephone Conduit (SUE - LOS B)*	TC
U/G Telephone Conduit (SUE - LOS C)*	TC
U/G Telephone Conduit (SUE - LOS D)*	TC
U/G Fiber Optics Cable (SUE - LOS B)*	T FO
U/G Fiber Optics Cable (SUE - LOS C)*	T FO
U/G Fiber Optics Cable (SUE - LOS D)*	T FO

## WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line Test Hole (SUE - LOS A)*	●
U/G Water Line (SUE - LOS B)*	P
U/G Water Line (SUE - LOS C)*	P
U/G Water Line (SUE - LOS D)*	P
Above Ground Water Line	A/G Water
TV:	
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	PH
U/G TV Test Hole (SUE - LOS A)*	●
U/G TV Cable (SUE - LOS B)*	TV
U/G TV Cable (SUE - LOS C)*	TV
U/G TV Cable (SUE - LOS D)*	TV
U/G Fiber Optic Cable (SUE - LOS B)*	TV FO
U/G Fiber Optic Cable (SUE - LOS C)*	TV FO
U/G Fiber Optic Cable (SUE - LOS D)*	TV FO

## GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line Test Hole (SUE - LOS A)*	●
U/G Gas Line (SUE - LOS B)*	G
U/G Gas Line (SUE - LOS C)*	G
U/G Gas Line (SUE - LOS D)*	G
Above Ground Gas Line	A/G Gas
SANITARY SEWER:	
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
SS Force Main Line Test Hole (SUE - LOS A)*	●
SS Force Main Line (SUE - LOS B)*	FSS
SS Force Main Line (SUE - LOS C)*	FSS
SS Force Main Line (SUE - LOS D)*	FSS

## MISCELLANEOUS:

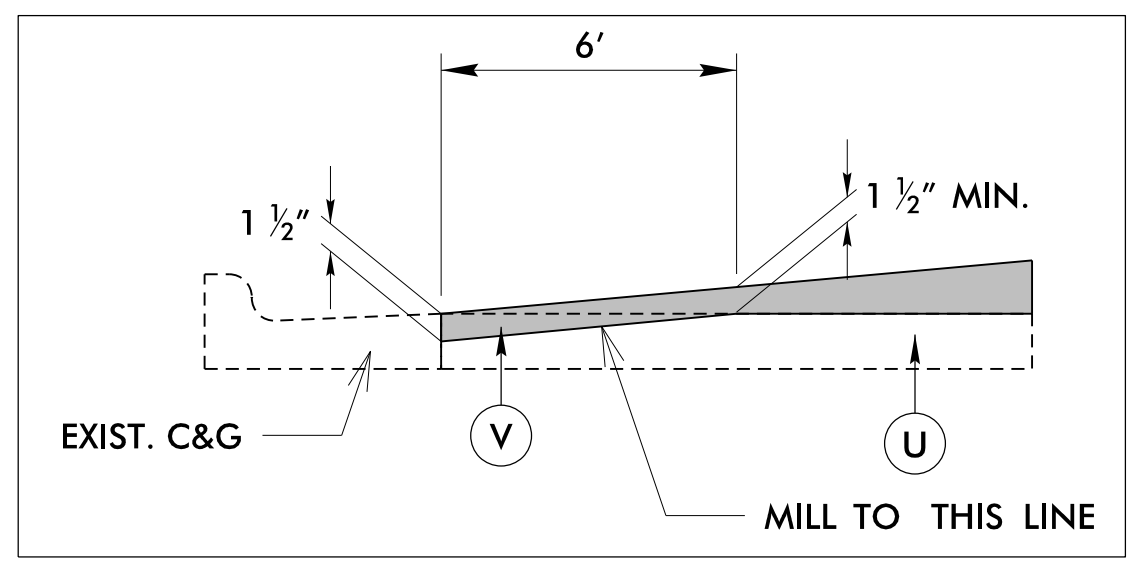
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line (SUE - LOS B)*	UTL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



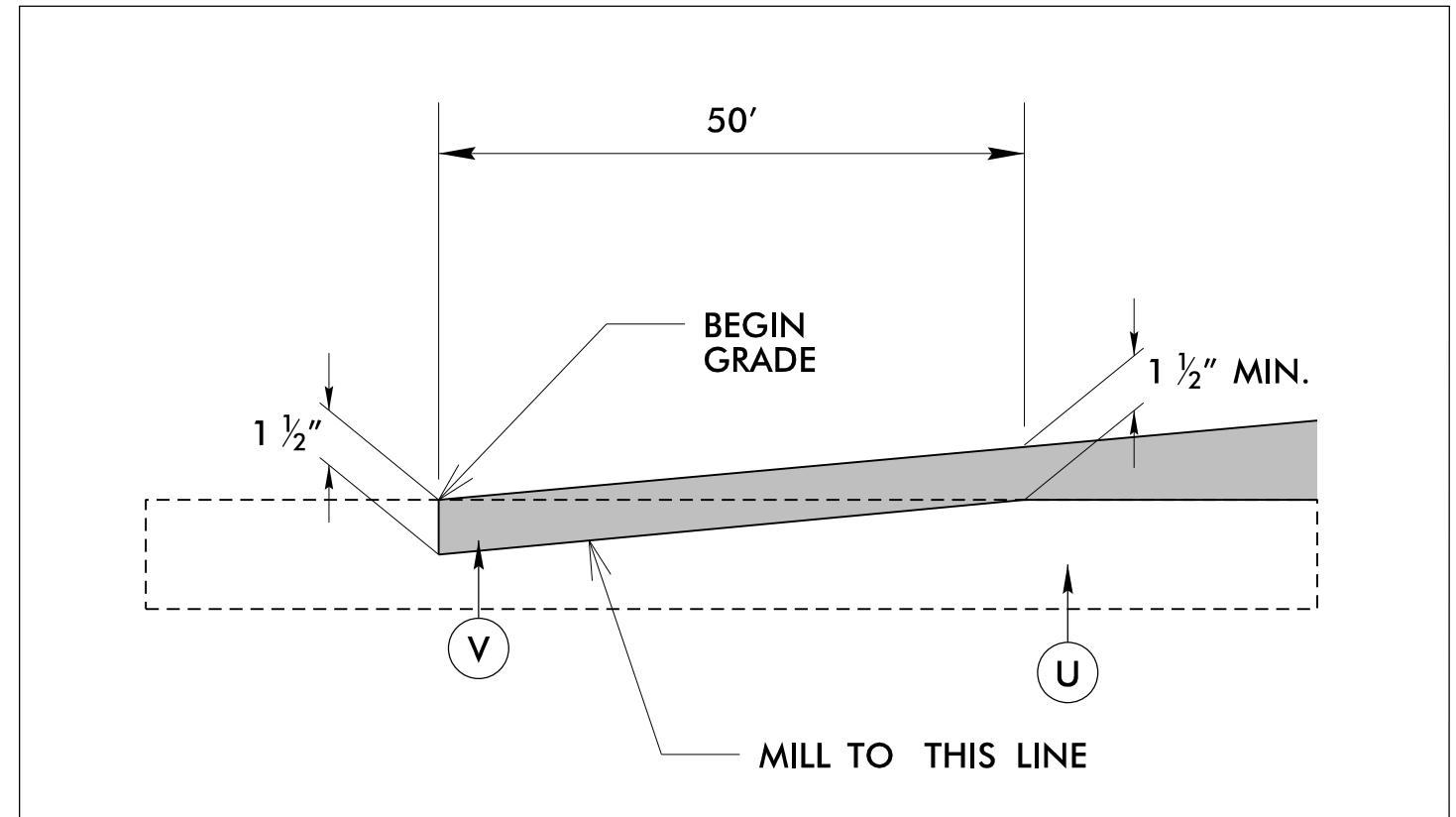
6/22/99  
 p:\aecom-na-pw-bentley.com\AECOM\_DS21.NA.2020\Documents\60592827\NCDOT\_SMU\_B-5717\900-CAD\_01S\910.CAD\70.NCDOT\_TIP\Roadway\Pro\B5717\_rdy\_tup.dgn

PAVEMENT SCHEDULE FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH.
J	8" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YARD.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	1'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING (VARIABLE DEPTH 0" TO 1.5" DEPTH)
W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING NO. 1).

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

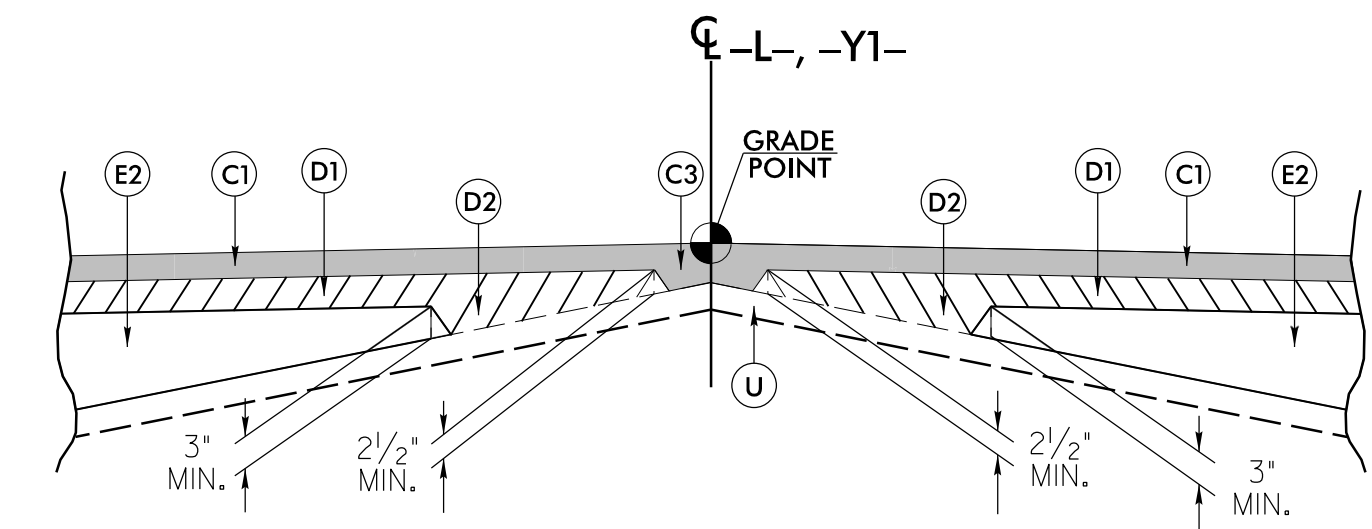


-L- STA. 12+25.00 TO 12+75.80 (LT)  
**INCIDENTAL MILLING**



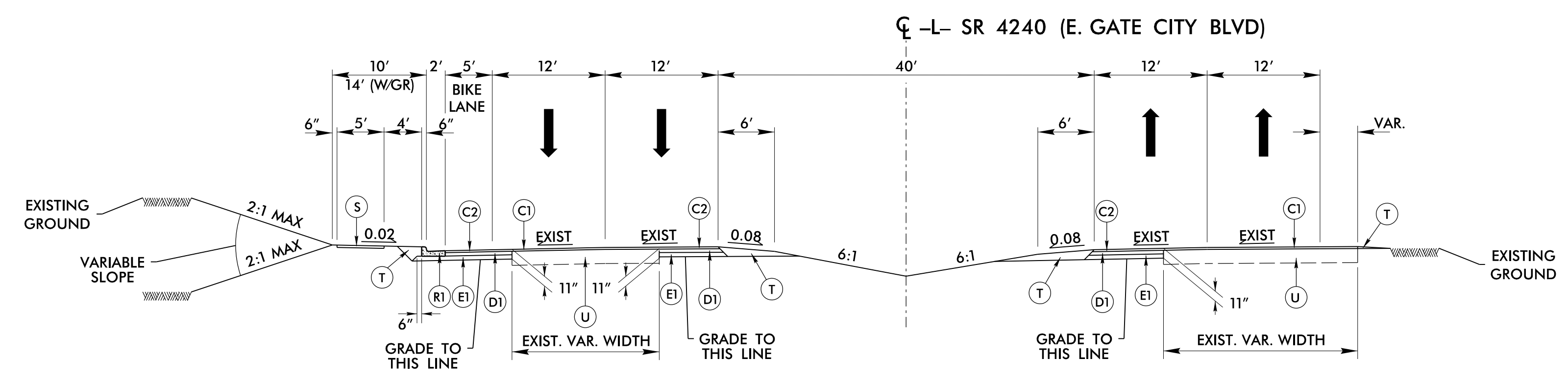
**DETAIL SHOWING INCIDENTAL MILLING**

- L- STA. 11+00.00 TO 11+50.00 (RT)
- L- STA. 12+25.00 TO 12+75.00 (LT)
- L- STA. 27+60.00 TO 28+10.00
- Y1- STA. 12+50.00 TO 13+00.00



**W1: Detail Showing Method of Wedging**

USE THIS DETAIL IN CONJUNCTION WITH TYPICAL SECTION NO. 5 & 9



**TYPICAL SECTION NO. 1**

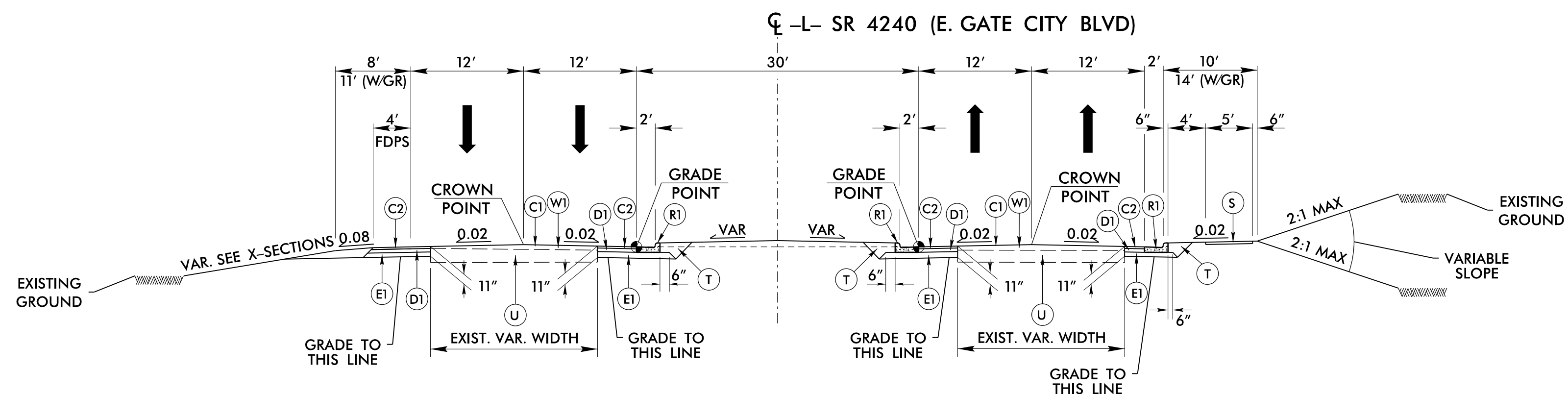
USE TYPICAL SECTION NO. 1  
 -L- STA. 11+00.00 TO 14+98.38

NOTES:  
 SEE DETAIL SHOWING EDGE MILLING  
 SEE PLANS FOR TURN LANES AND TAPERS  
 MILL AS NEEDED

PROJECT REFERENCE NO. B-5717	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER SEAL 046210 MOTHY A. KOTL	PAVEMENT DESIGN ENGINEER SEAL 022896 S. MORRISON
Prepared in the Office of: <b>AECOM</b>	
NC FIRM LICENSE No: F-0342 5438 Wade Park, Raleigh, N.C. 27607 (919) 461-1000	
<b>DOCUMENT NOT CONSIDERED FINAL                  UNLESS ALL SIGNATURES COMPLETED</b>	



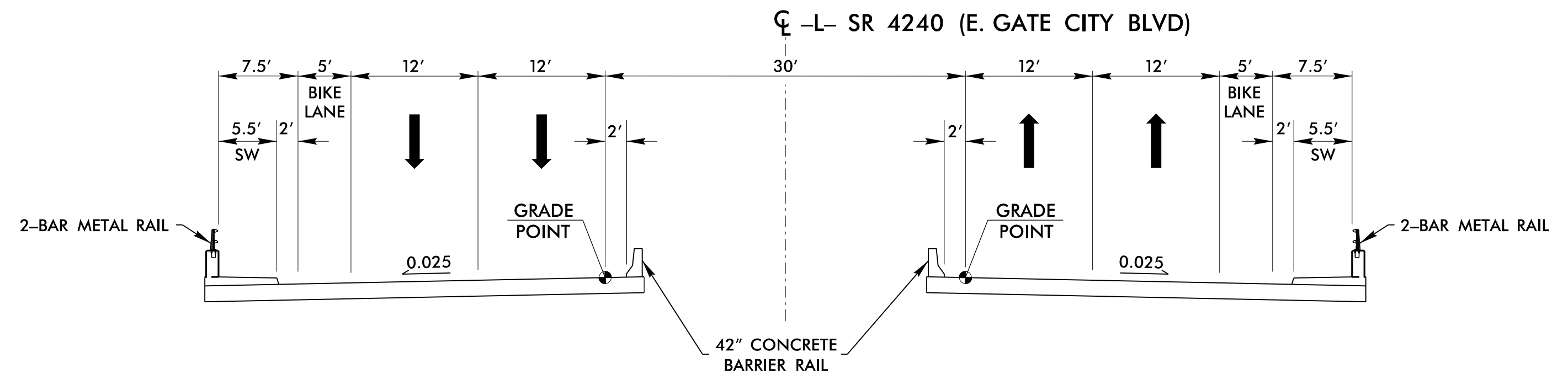
PROJECT REFERENCE NO. B-5717	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER SEAL 046210 WIMBLY A. KOTL	PAVEMENT DESIGN ENGINEER SEAL 022896 COURTNEY S. MORRISON
Prepared in the Office of: <b>AECOM</b>	
<small>NC PERM LICENSE No: F-0342 5438 W. Pkwy. Raleigh, NC 27607 919.461.1000</small>	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



**TYPICAL SECTION NO. 5**

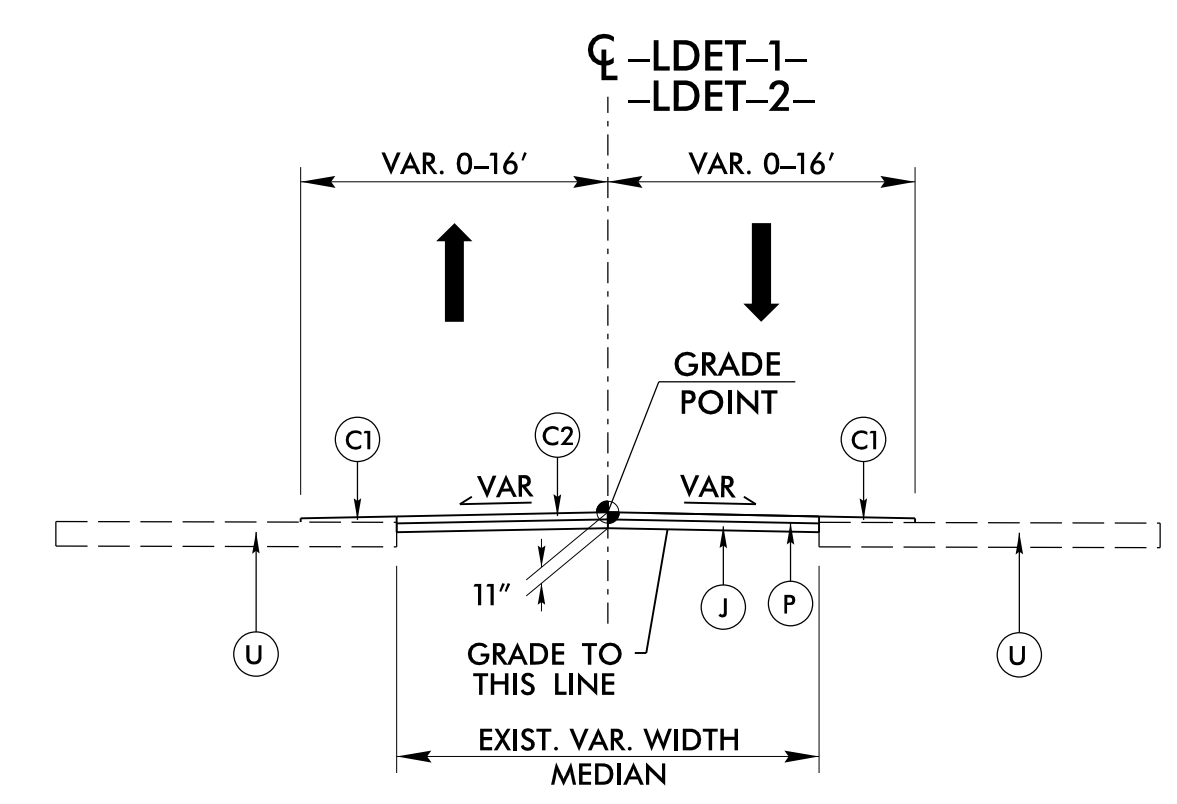
USE TYPICAL SECTION NO. 5  
-L- STA. 25+95.70 TO 28+10.00

NOTES:  
SEE PLANS FOR TURN LANES AND TAPERS  
MILL AS NEEDED



**TYPICAL SECTION NO. 6**

USE TYPICAL SECTION NO. 6  
-L- STA. 20+05.84 RT /20+23.16 LT (BEGIN BRIDGE) TO 22+20.84 RT /22+38.16 LT (END BRIDGE)



**TYPICAL SECTION NO. 7**

USE TYPICAL SECTION NO. 7  
TEMPORARY CROSSOVERS  
SEE WZTC PLANS  
-LDET-1- STA. 12+50.00 TO 17+28.29  
-LDET-1- STA. 24+70.00 TO 29+20.00  
-LDET-2- STA. 12+42.89 TO 15+55.18  
-LDET-2- STA. 25+98.95 TO 28+02.59

C1	1.5" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
E2	VAR. B25.0C
J	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
S	4" CONC. SW
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	VAR. MILLING
W1	WEDGING DET. #1

p:\aecom-na-pw\bentley.com\AECOM\_DS21\_NA\_2020\Documents\60592827\NCDOT\_SMU\_B-5717\900-CAD\_C1S\910\_CAD\70\_NCDOT\_TIP\Roadway\Pro\B5717\_rdy\_tup.dgn



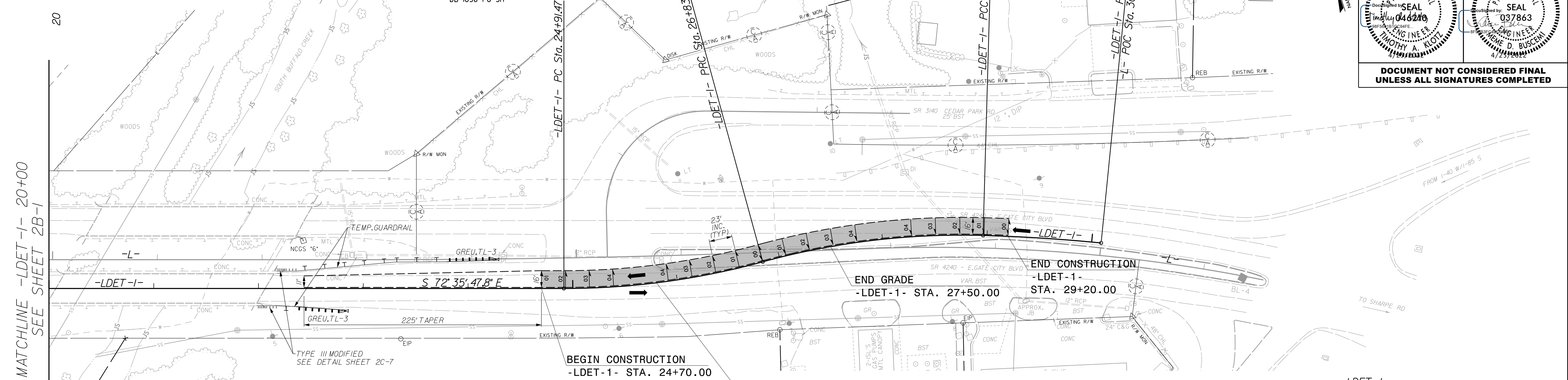




3/17/2022  
 P:\GIS\Projects\2022\202203\Documents\60592827-NCDD1\_SMLI\_B-5717\900-CAD\_GIS\910\_CAD\70\_NCDD1\_IPX\Roadway\Proc\AB5717\_Rdy\_2022-2.dgn  
 3/17/2022  
 P:\GIS\Projects\2022\202203\Documents\60592827-NCDD1\_SMLI\_B-5717\900-CAD\_GIS\910\_CAD\70\_NCDD1\_IPX\Roadway\Proc\AB5717\_Rdy\_2022-2.dgn

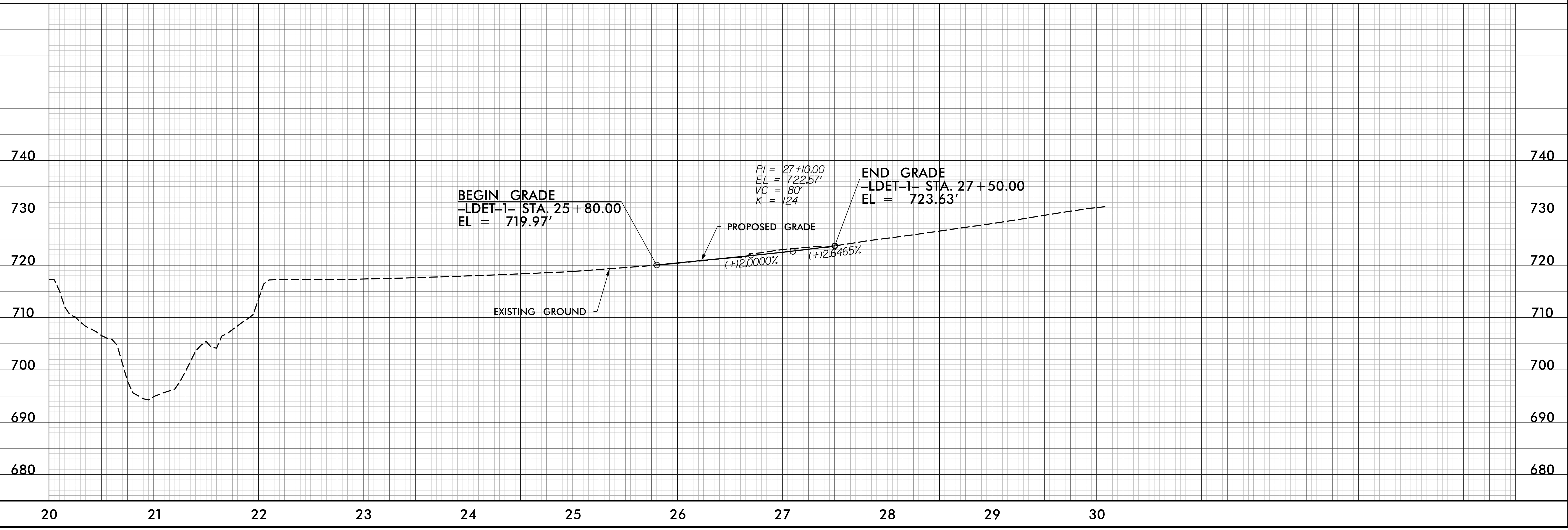
SEE ROADWAY PLANS FOR PROPOSED DESIGN, DRAINAGE, AND RIGHT OF WAY DETAIL

SEE TRAFFIC MANAGEMENT PLANS FOR WZTC DETAILS



PROJECT REFERENCE NO. B-5717	SHEET NO. 2B-2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046240 TIMOTHY A. KLOTZ	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 037863 WENDE D. BUSCHEN
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-LDET-1-		-LDET-1-		-LDET-1-	
PI Sta 25+88.09	$\Delta = 15' 17" 13.9" (LT)$	PI Sta 27+90.63	$\Delta = 16' 54' 55.7" (RT)$	PI Sta 29+52.61	$\Delta = 4' 03' 01" (RT)$
D = 7' 57' 27.9"	L = 192.10'	D = 7' 57' 27.9"	L = 212.57'	D = 3' 35' 15.8"	L = 112.89'
T = 96.63'	R = 720.00'	T = 107.06'	R = 720.00'	T = 56.47'	R = 1,597.00'
V = 45 MPH		V = 45 MPH			

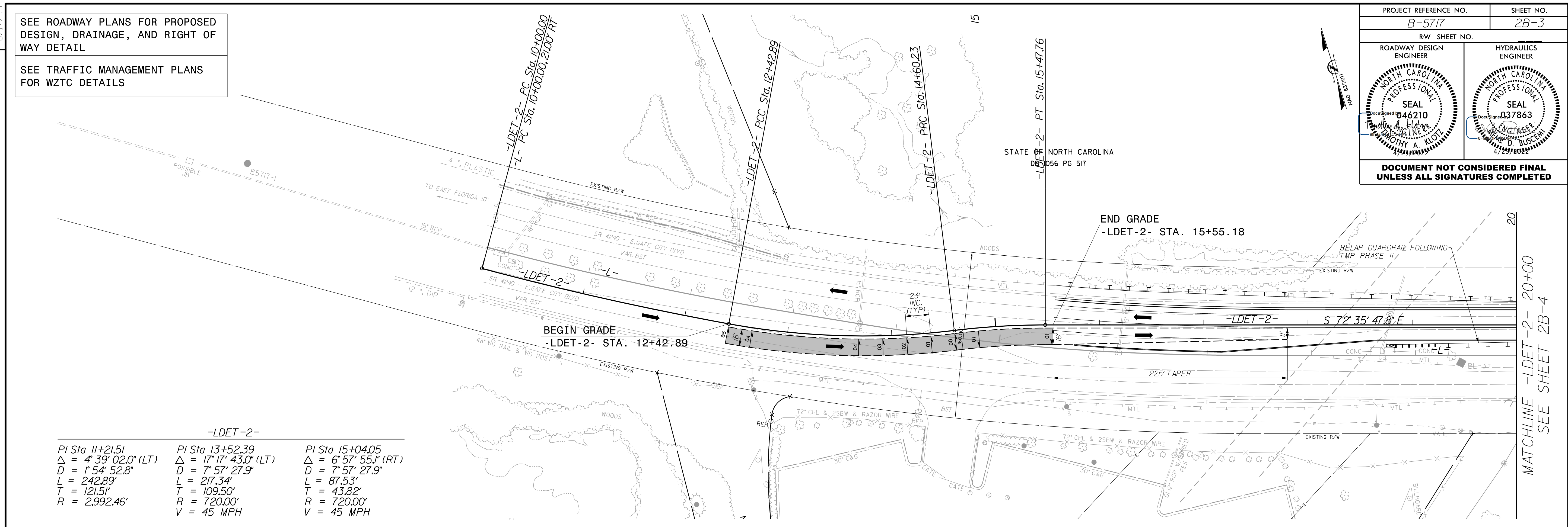


-LDET-1-

8/17/99

SEE ROADWAY PLANS FOR PROPOSED DESIGN, DRAINAGE, AND RIGHT OF WAY DETAIL  
SEE TRAFFIC MANAGEMENT PLANS FOR WZTC DETAILS

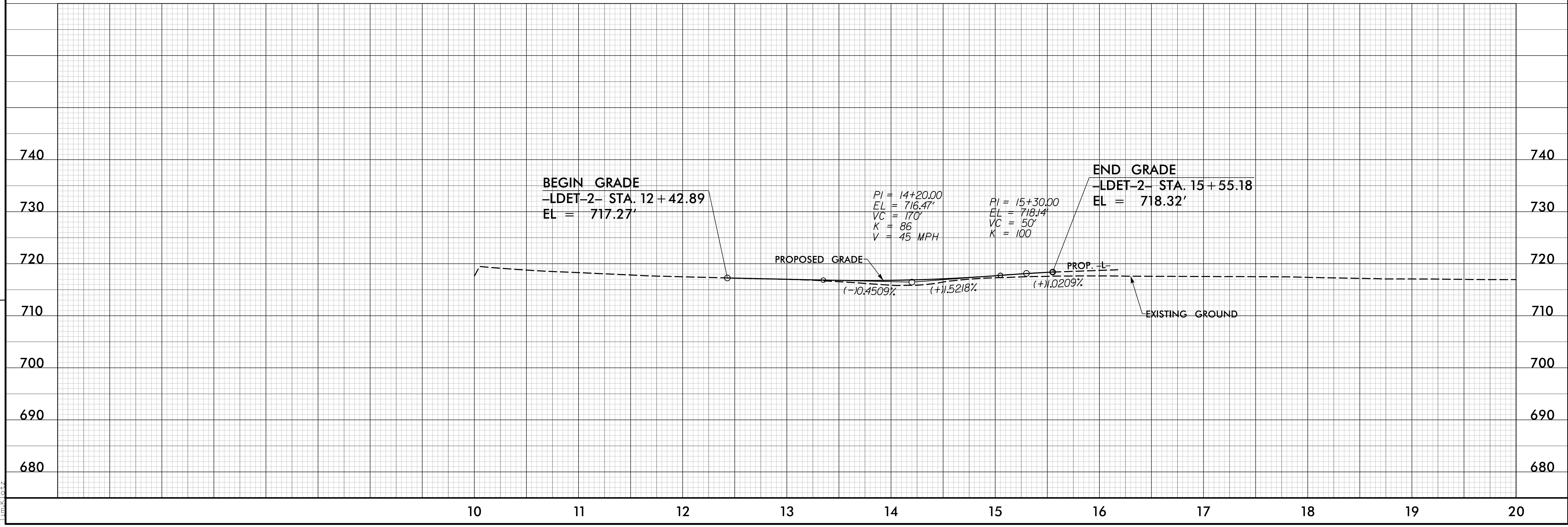
PROJECT REFERENCE NO. B-5717	SHEET NO. 2B-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 046210 MURRAY A. MOSE	HYDRAULICS ENGINEER SEAL 037863 WILLIAM D. BUSCH
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



**-LDET-2-**

PI Sta	PI Sta	PI Sta
11+21.51	13+52.39	15+04.05
$\Delta = 4^{\circ} 39' 02.0''$ (LT)	$\Delta = 17^{\circ} 17' 43.0''$ (LT)	$\Delta = 6^{\circ} 57' 55.1''$ (RT)
$D = 1^{\circ} 54' 52.8''$	$D = 7^{\circ} 57' 27.9''$	$D = 7^{\circ} 57' 27.9''$
$L = 242.89'$	$L = 217.34'$	$L = 87.53'$
$T = 121.51'$	$T = 109.50'$	$T = 43.82'$
$R = 2,992.46'$	$R = 720.00'$	$R = 720.00'$
	$V = 45$ MPH	$V = 45$ MPH

**-LDET-2-**



REVISIONS

3/17/2022  
D:\s\sec\com\ne\paw.bentley.com\AECOM\_DS21\_NA\_2020\Documents\60592827-NCDDI\_SMLI\_B-5717\900-CAD\_GIS\910\_CAD\70\_NCDDI\_IP\Roadway\Proc\B5717\_Rdly\_esh02B-3.dgn

MATCHLINE -LDET-2- 20+00  
SEE SHEET 2B-4

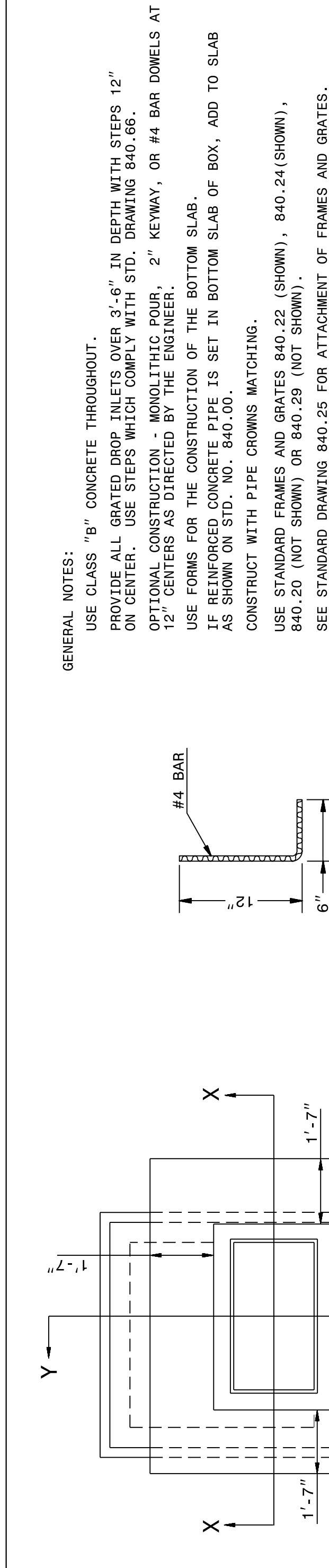




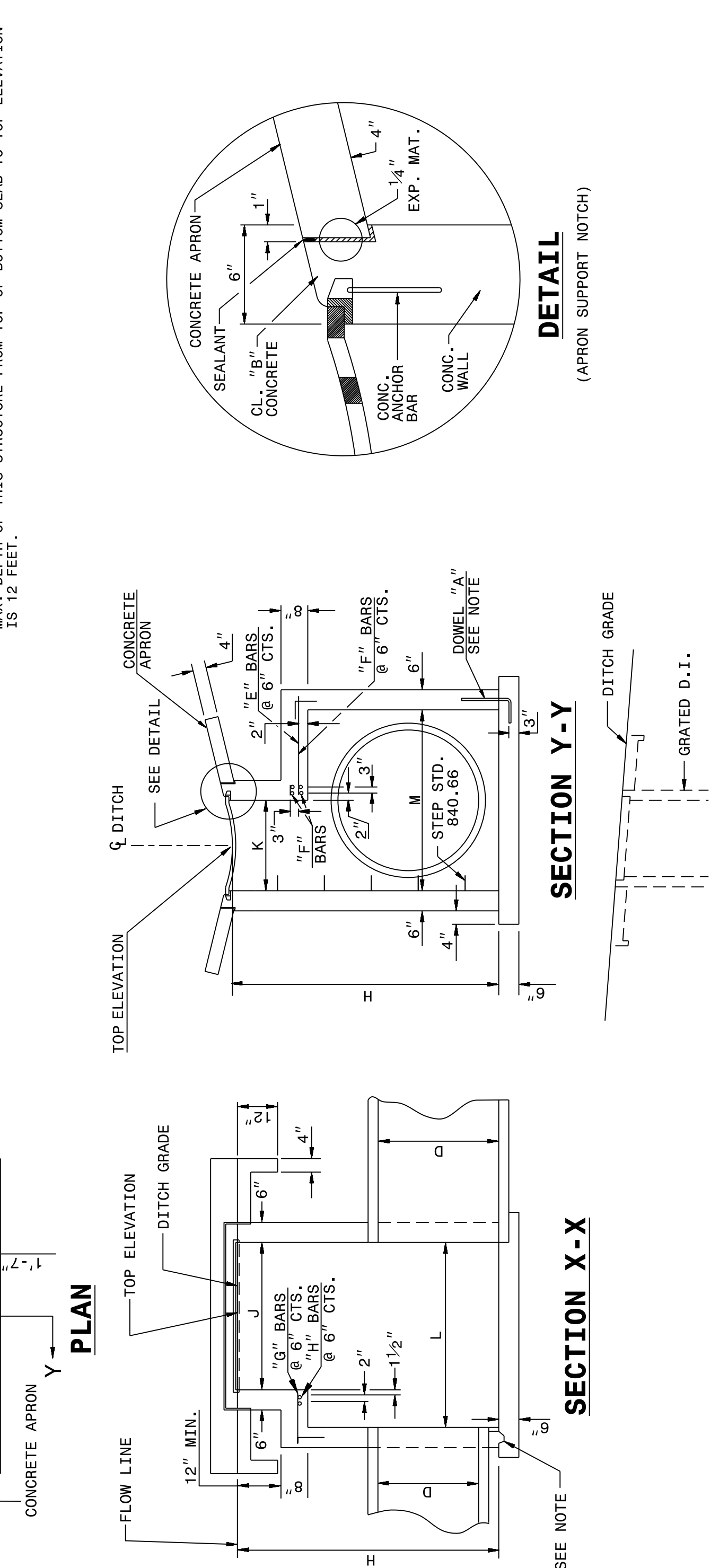
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

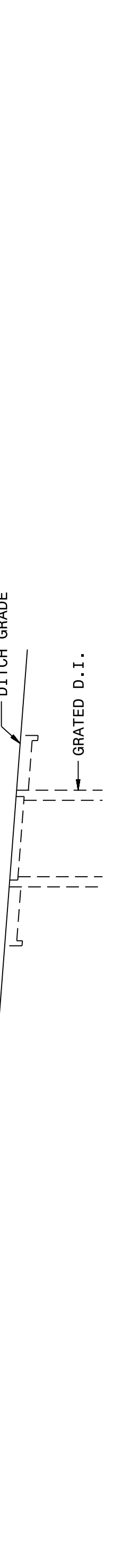
SHEET 1 OF 2 840d17



SECTION X-X



SECTION Y-Y



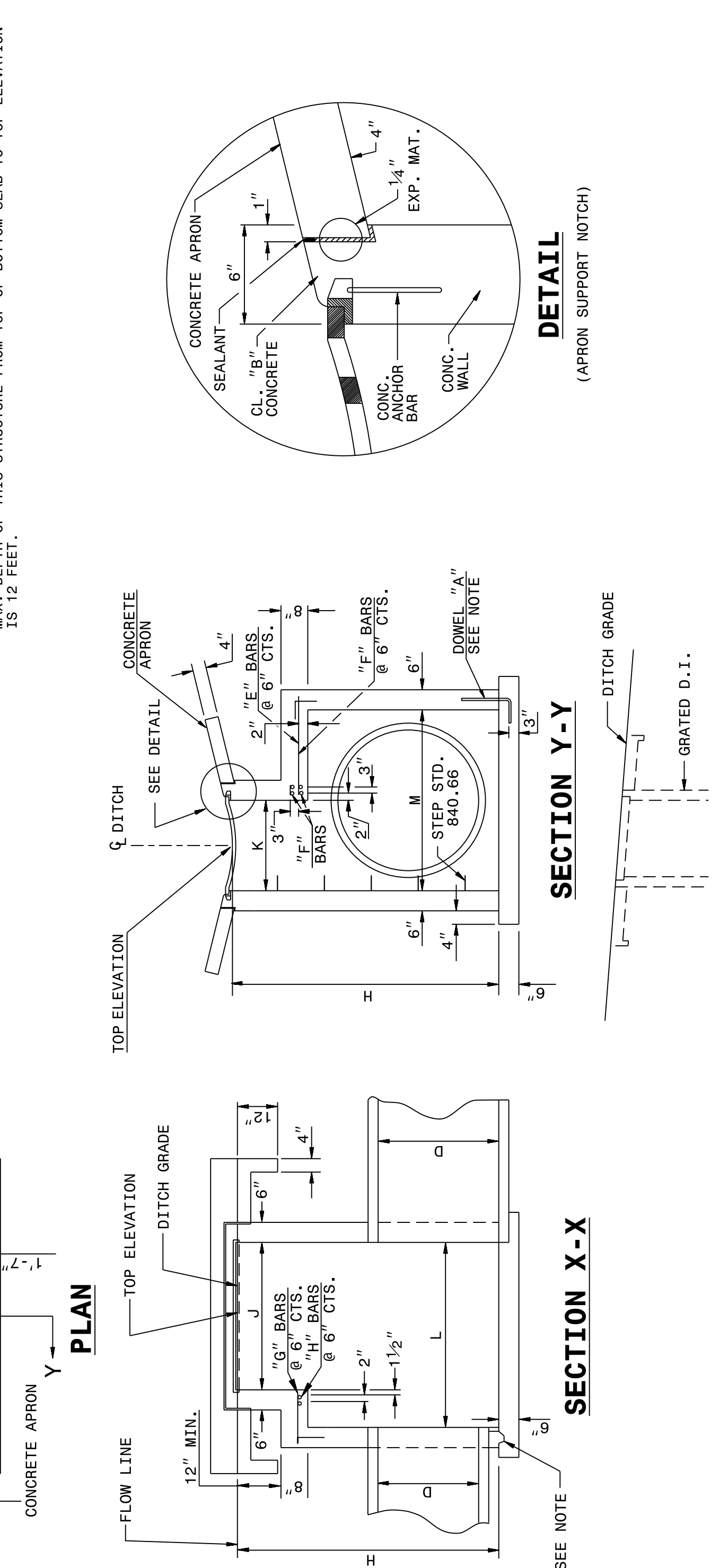
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

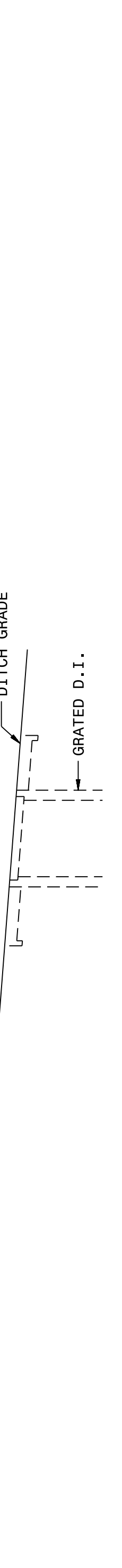
SHEET 1 OF 2 840d17

GENERAL NOTES:  
 USE CLASS "B" CONCRETE THROUGHOUT.  
 PROVIDE ALL GRATED DROP INLETS 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.  
 REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.  
 CONSTRUCT WITH PIPE CROWNS MATCHING.  
 USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24 (SHOWN), 840.20 (NOT SHOWN) OR 840.29 (NOT SHOWN).  
 SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.  
 CHAMFER ALL EXPOSED CORNERS 1".  
 DRAWING NOT TO SCALE.  
 MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

SECTION Y-Y



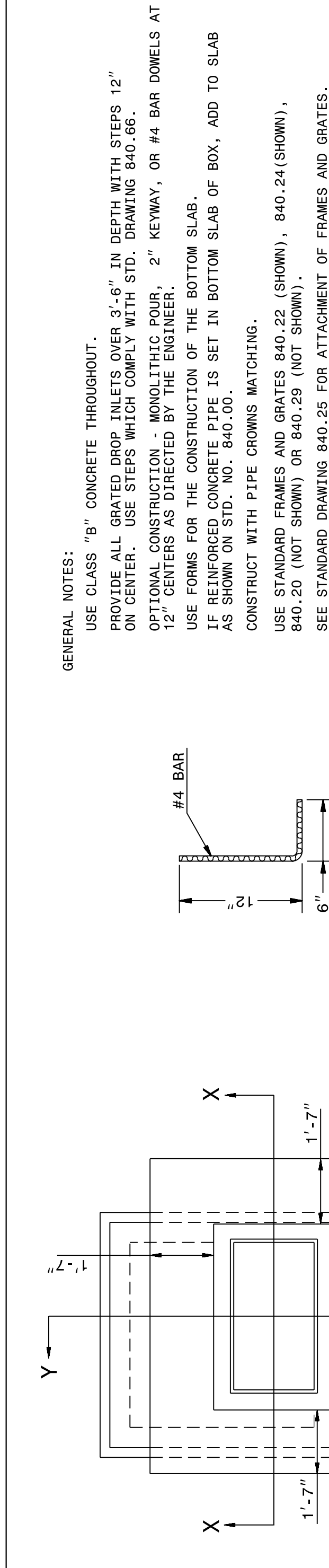
SECTION Y-Y



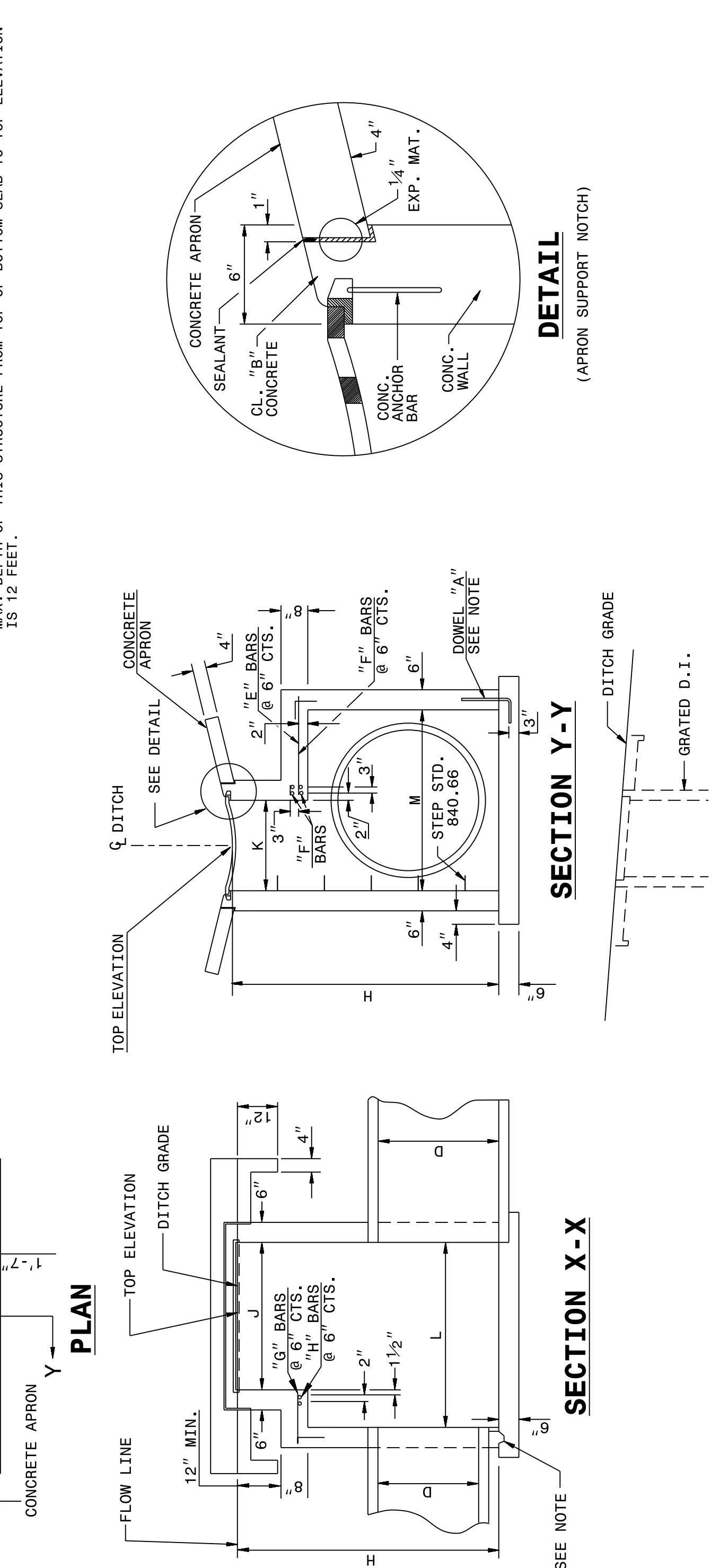
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

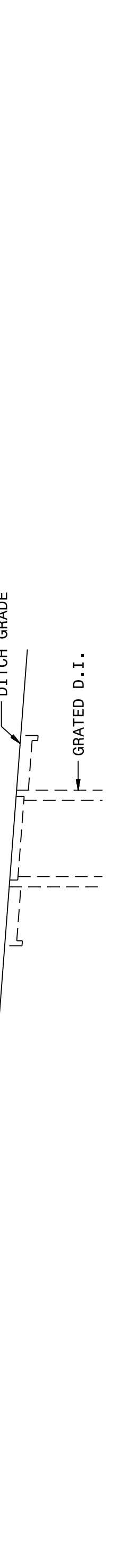
SHEET 2 OF 2 840d17



SECTION Y-Y



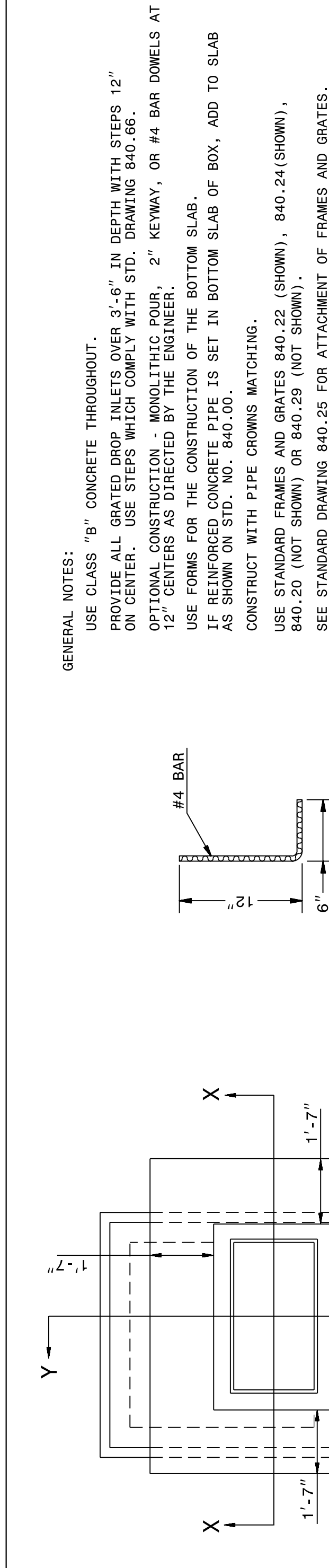
SECTION Y-Y



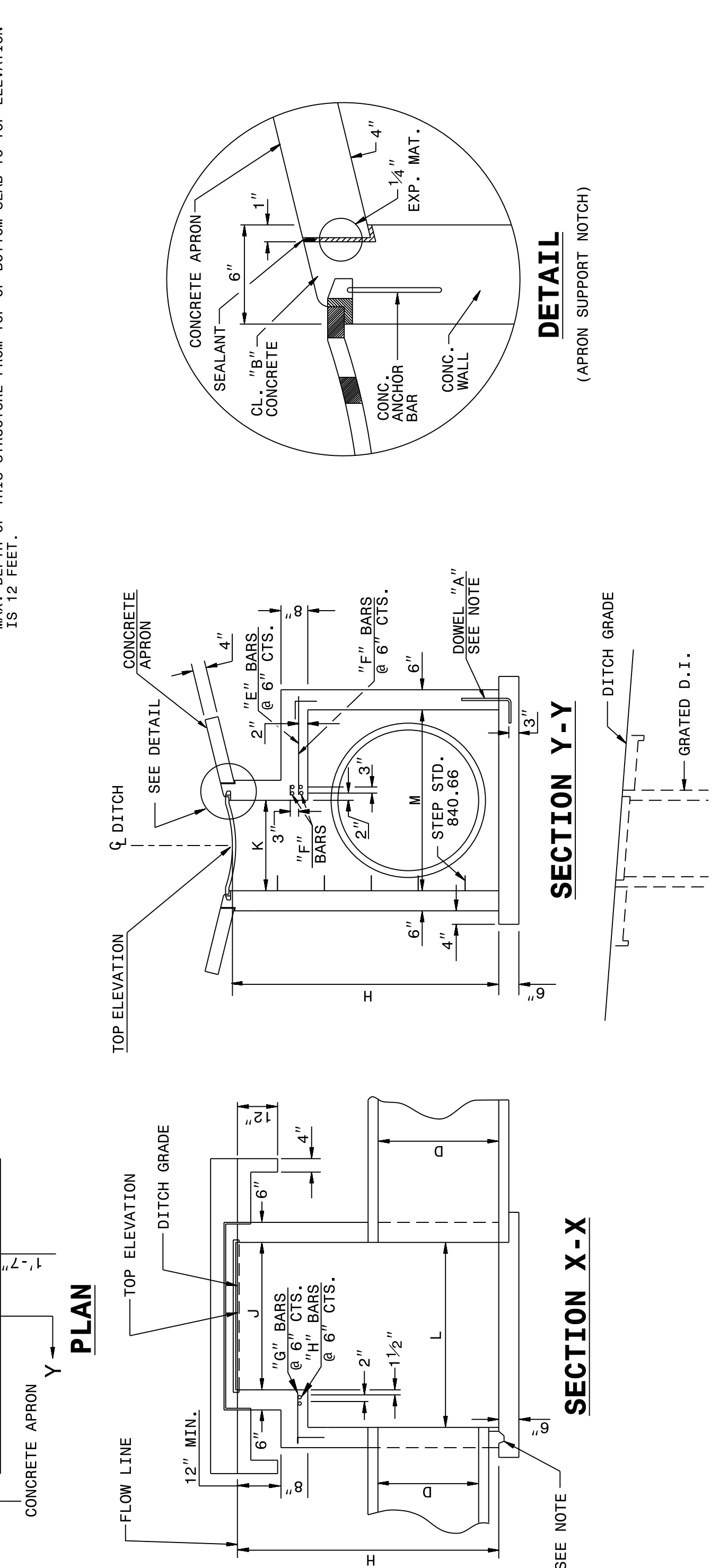
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

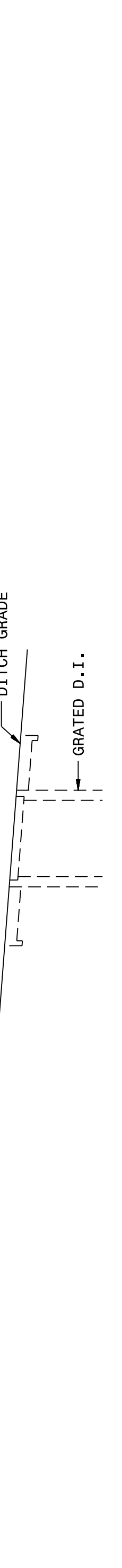
SHEET 2 OF 2 840d17



SECTION Y-Y



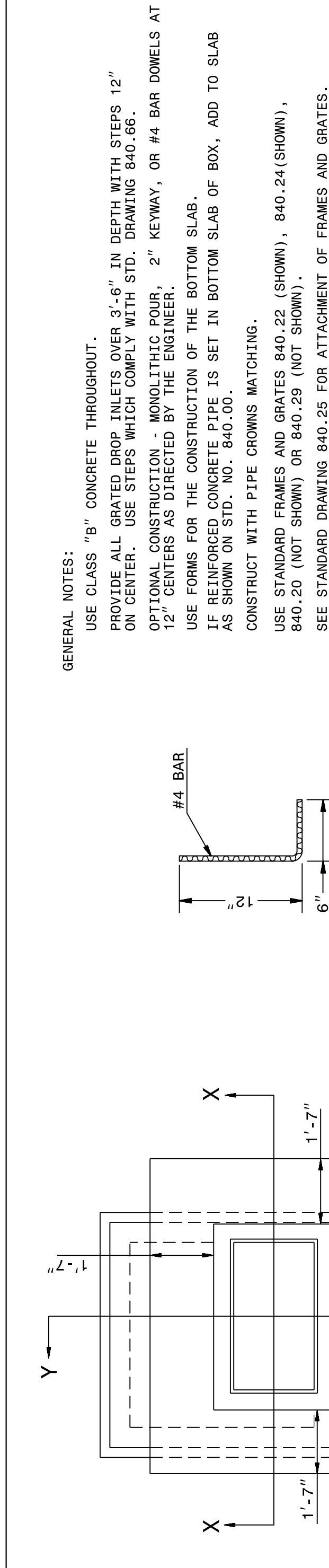
SECTION Y-Y



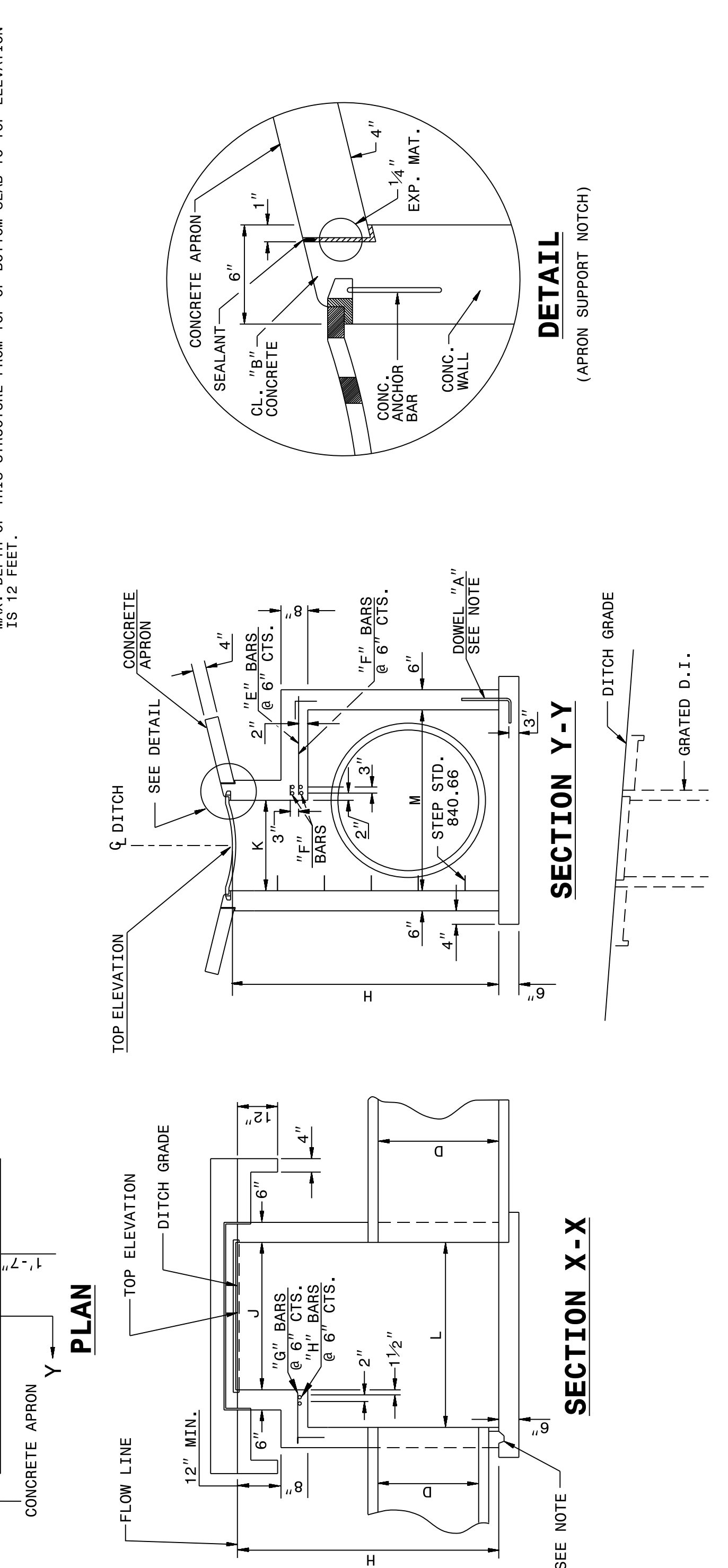
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

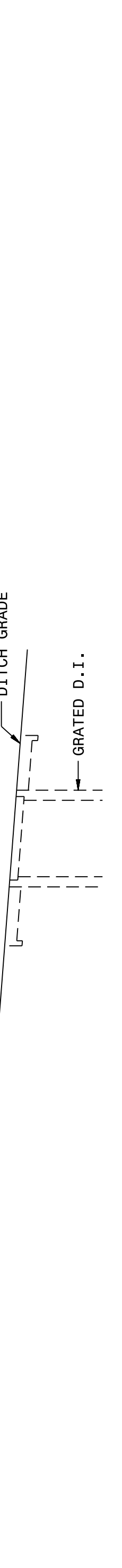
SHEET 2 OF 2 840d17



SECTION Y-Y



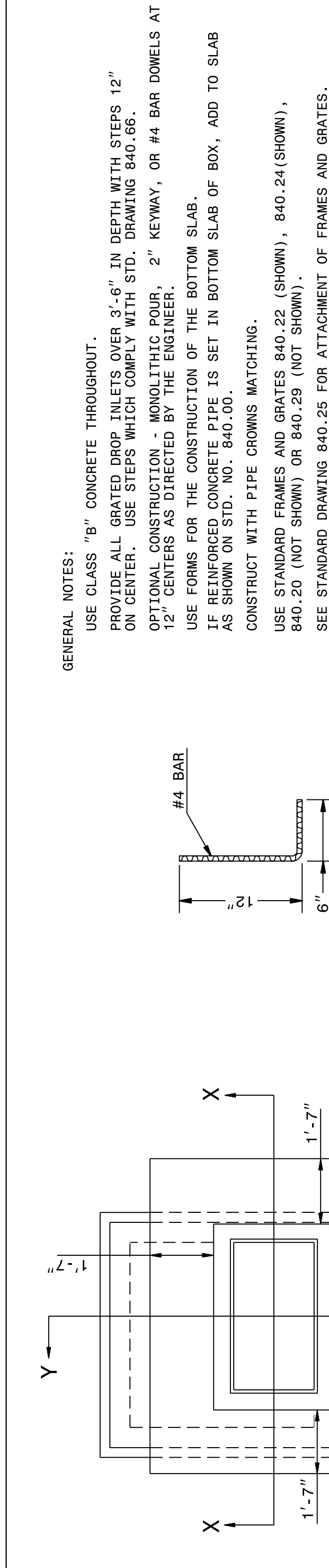
SECTION Y-Y



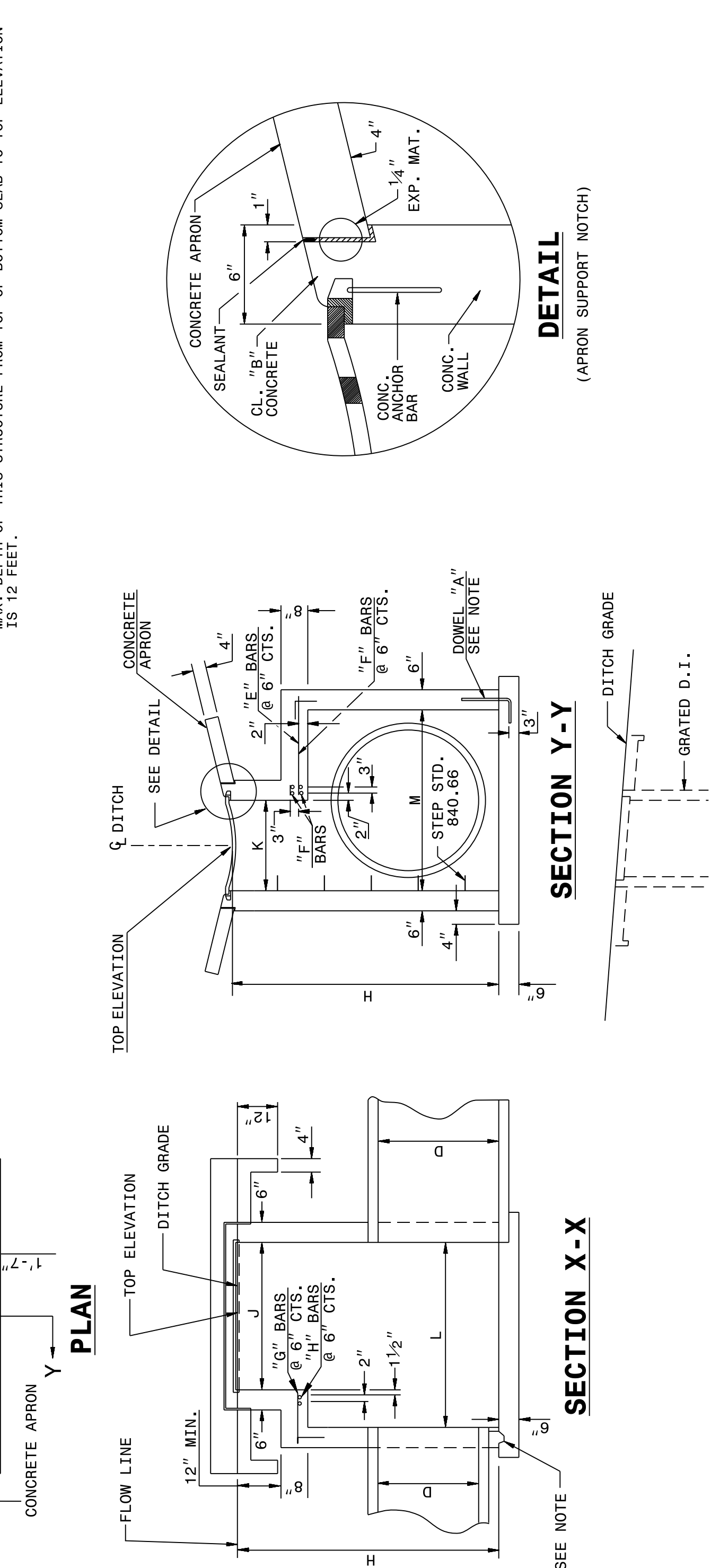
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

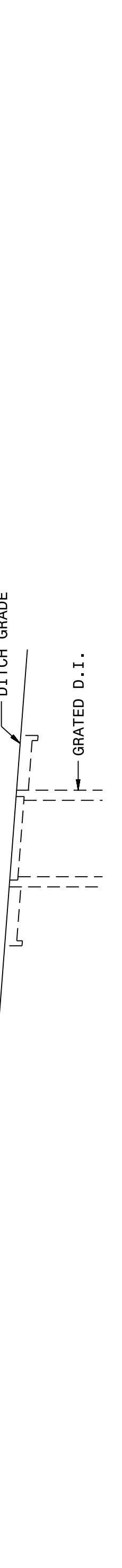
SHEET 2 OF 2 840d17



SECTION Y-Y



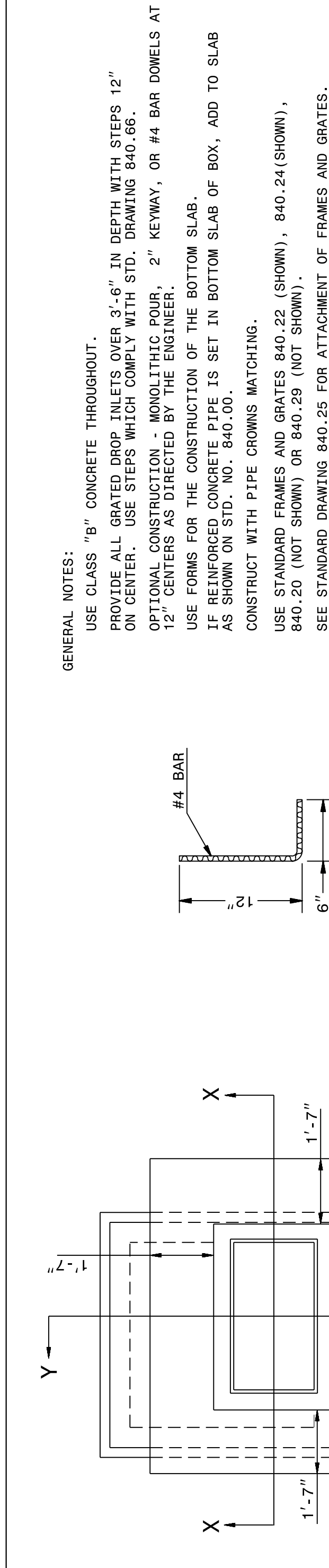
SECTION Y-Y



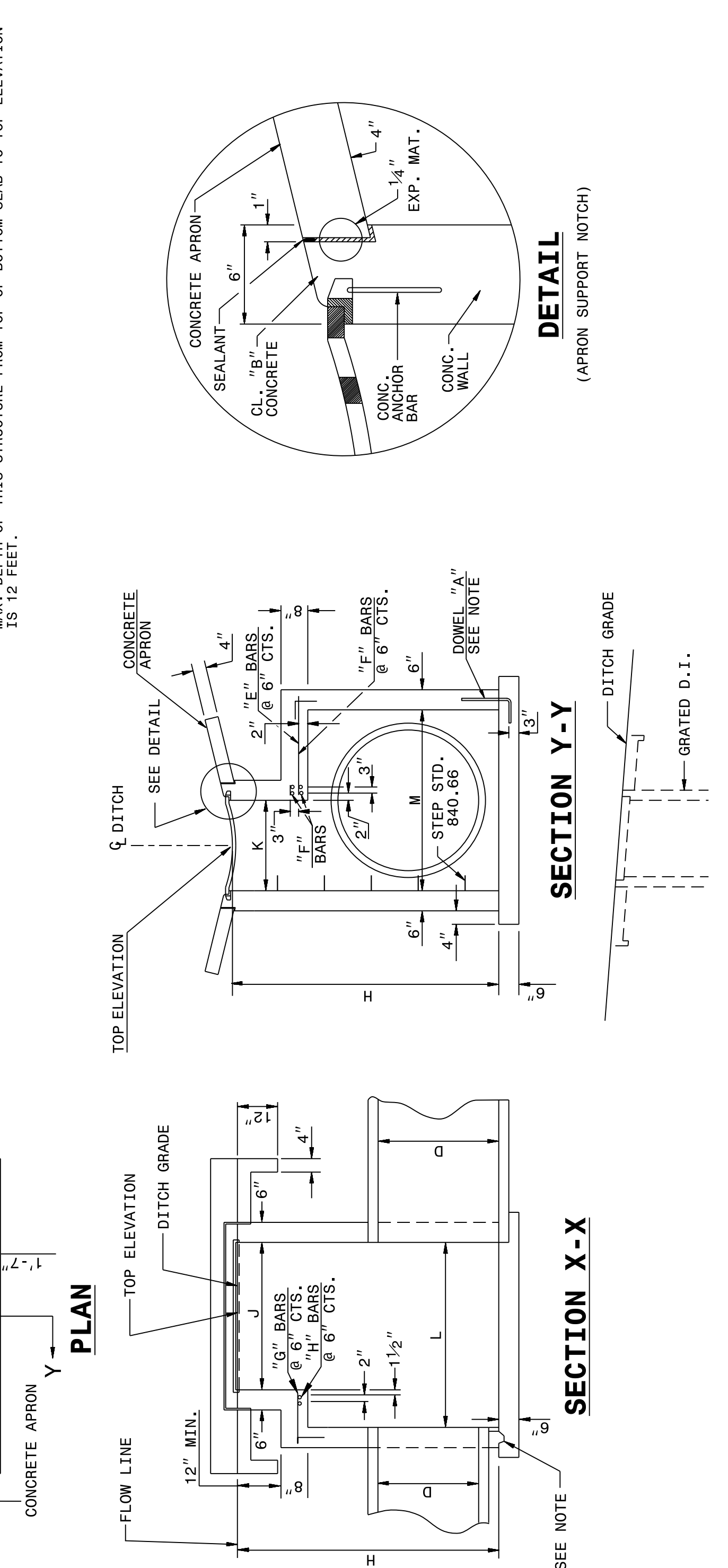
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

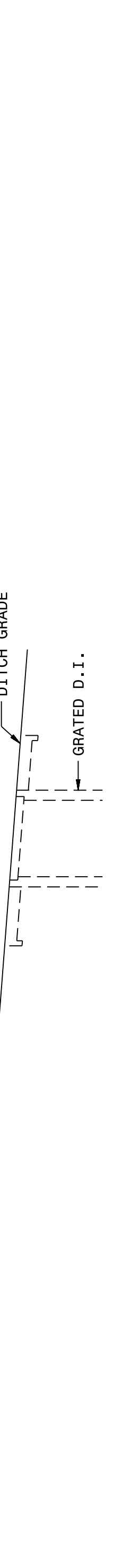
SHEET 2 OF 2 840d17



SECTION Y-Y



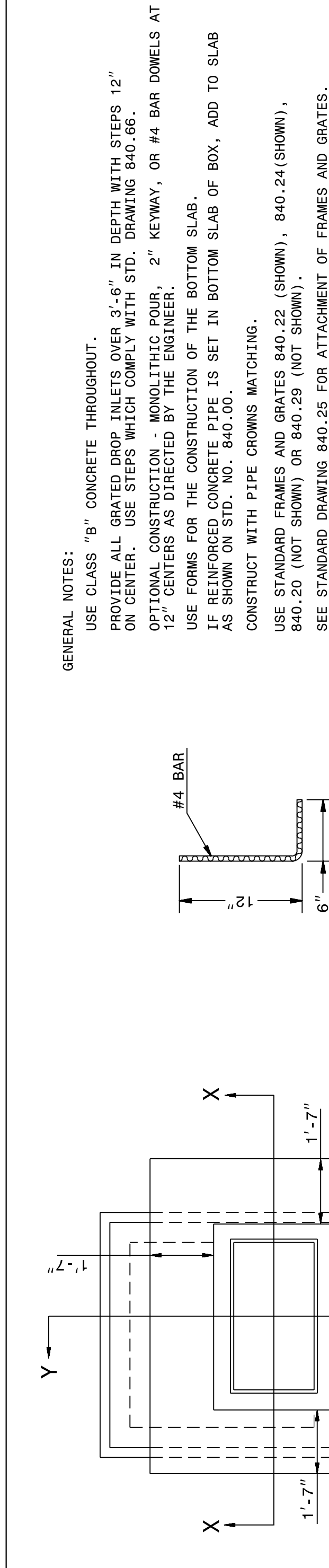
SECTION Y-Y



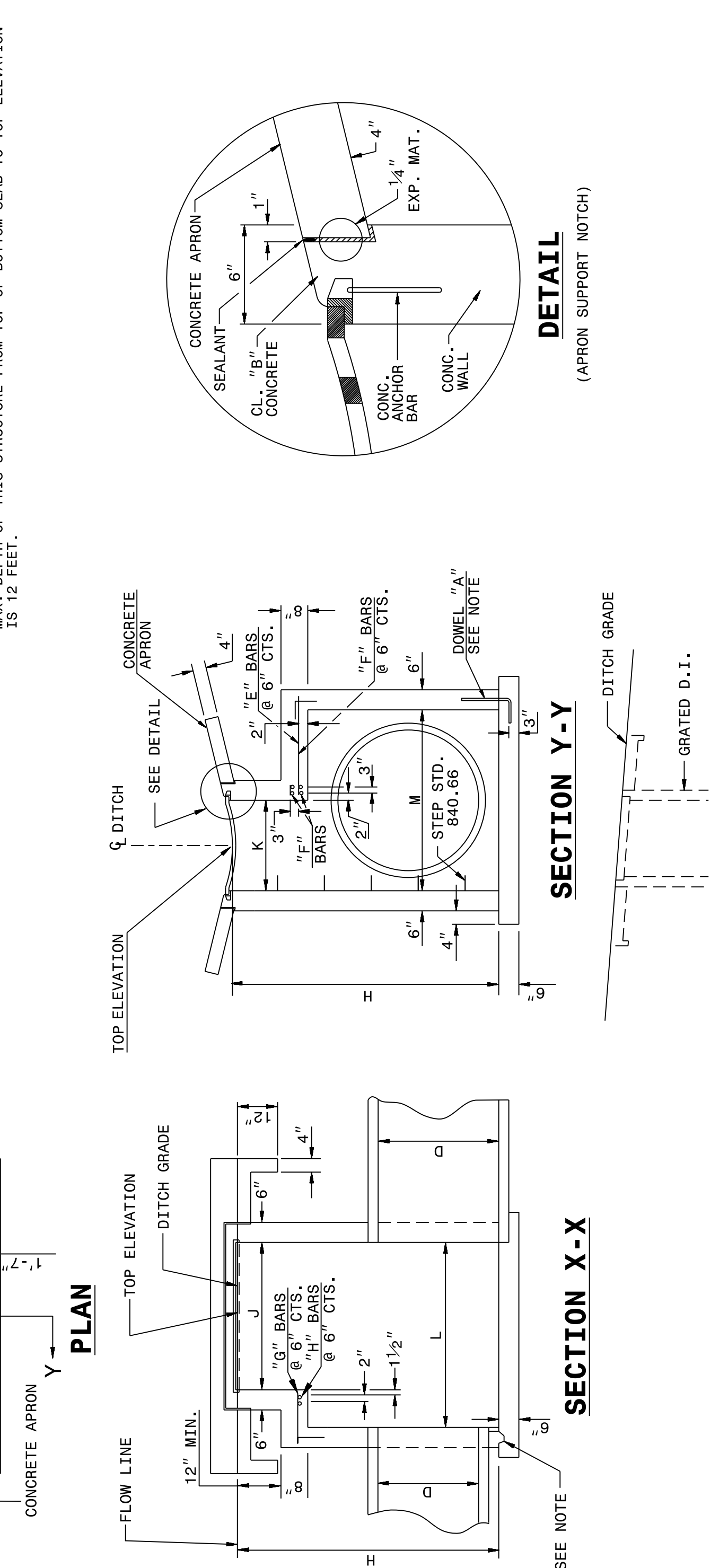
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

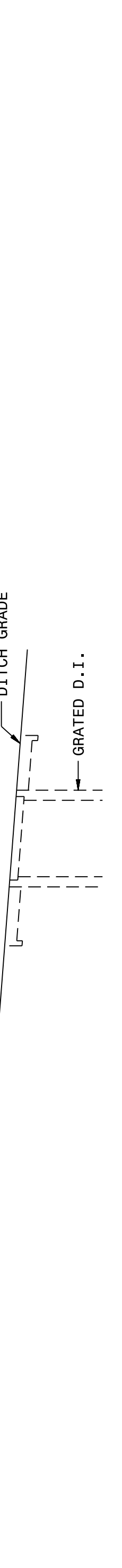
SHEET 2 OF 2 840d17



SECTION Y-Y



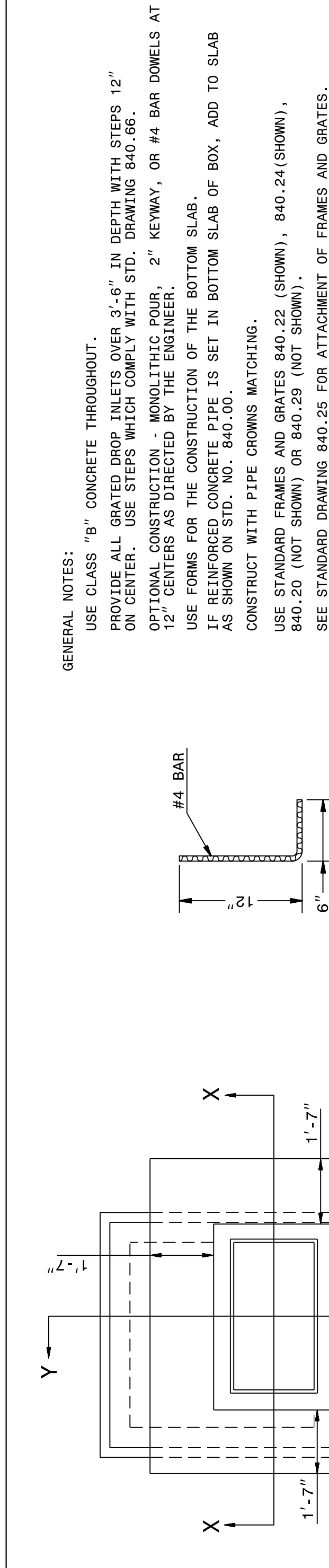
SECTION Y-Y



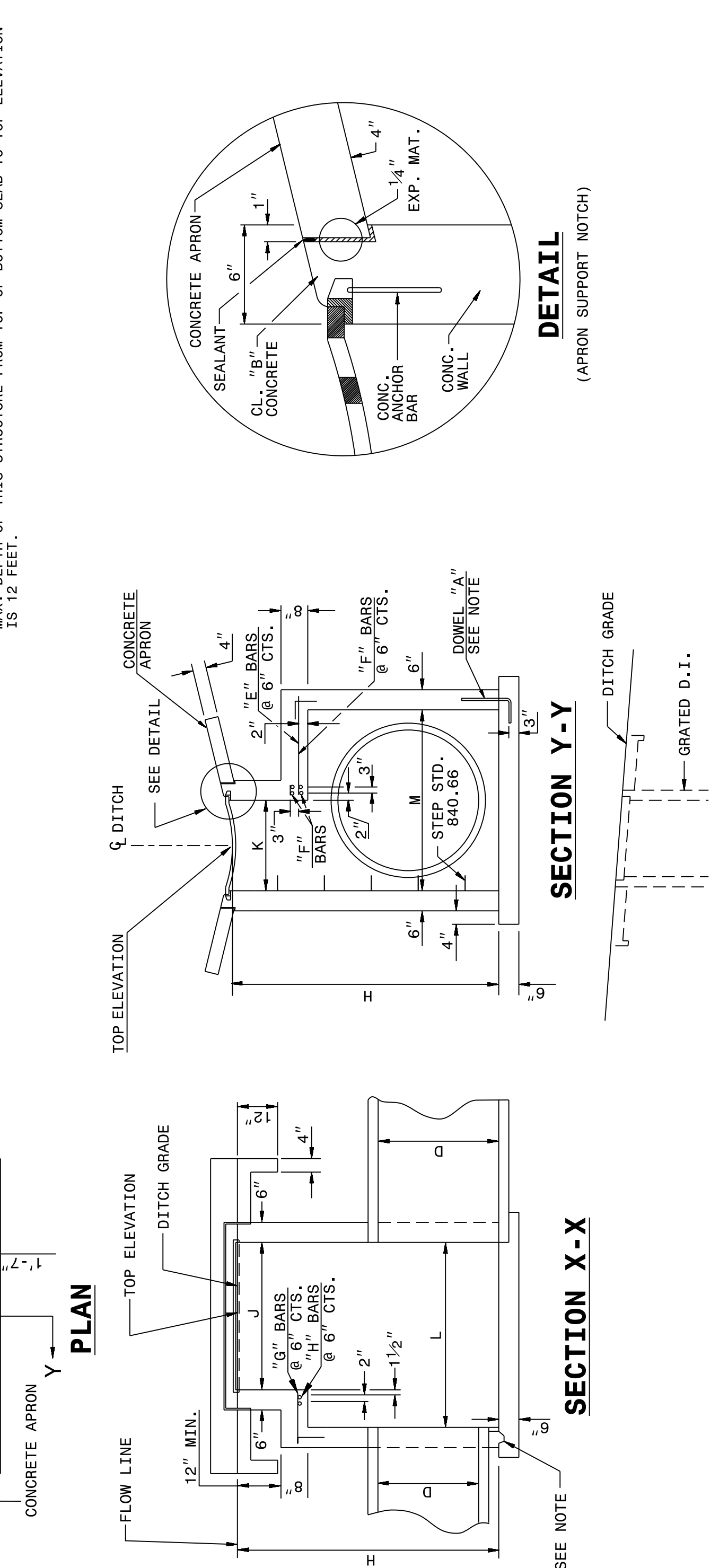
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

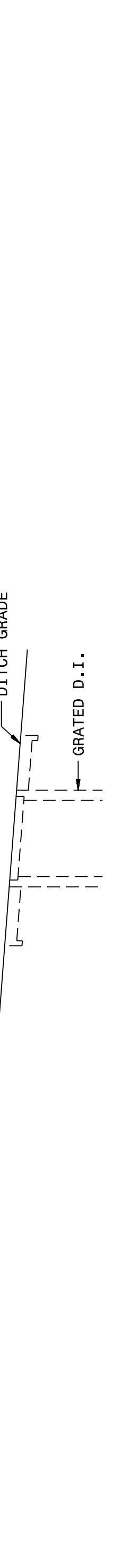
SHEET 2 OF 2 840d17



SECTION Y-Y



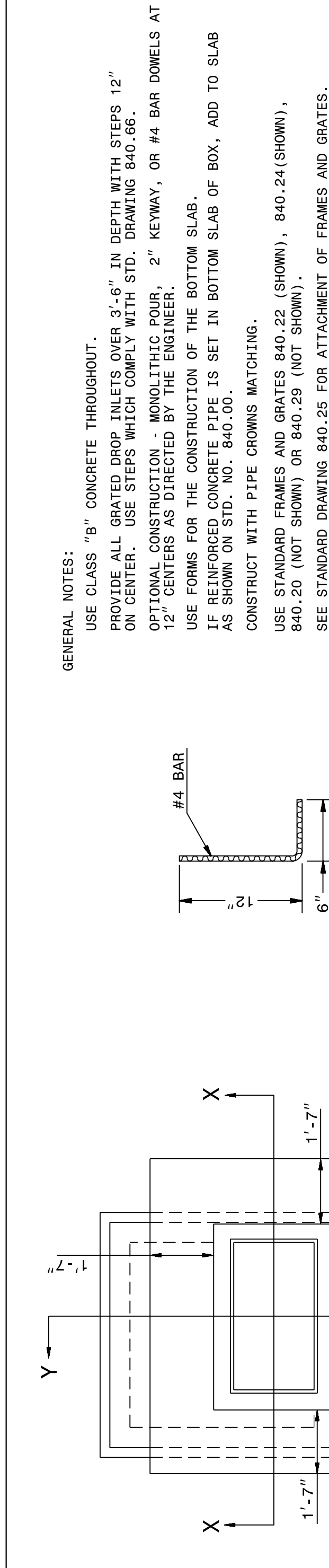
SECTION Y-Y



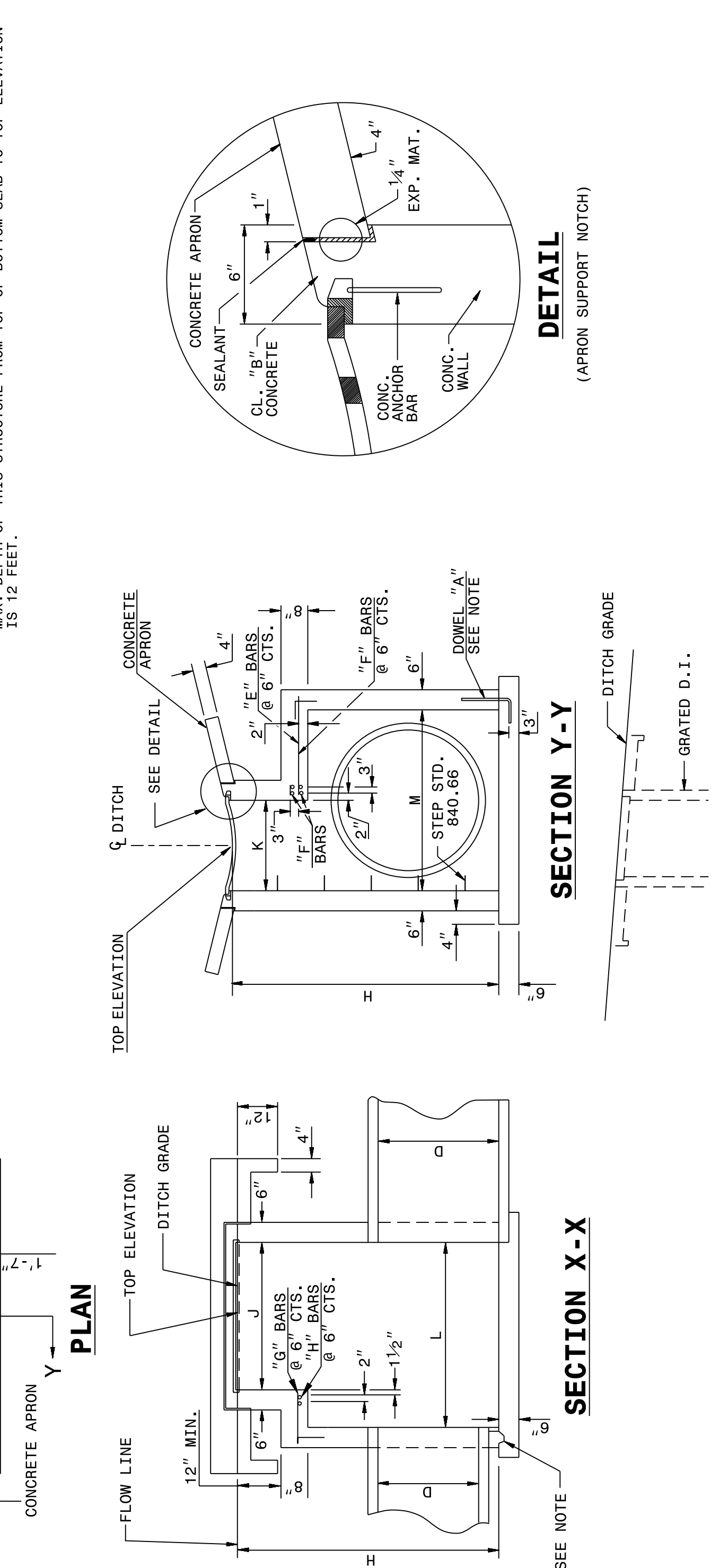
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

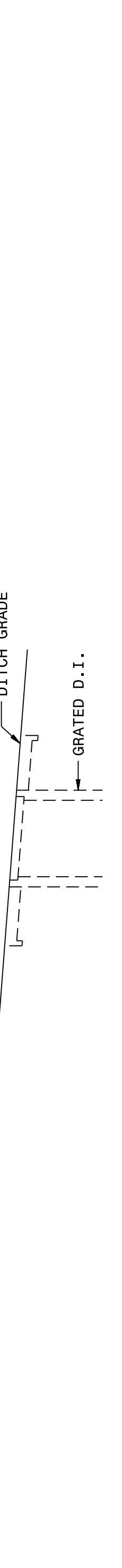
SHEET 2 OF 2 840d17



SECTION Y-Y



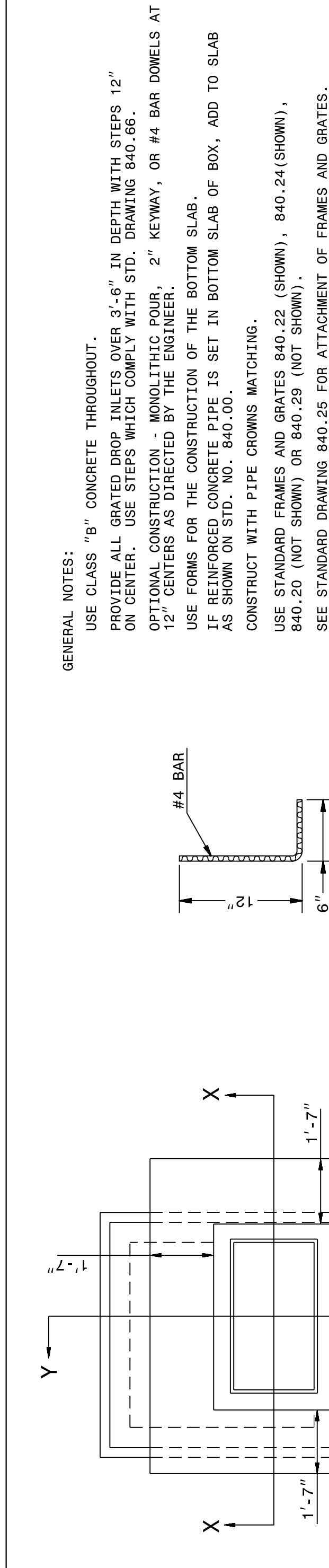
SECTION Y-Y



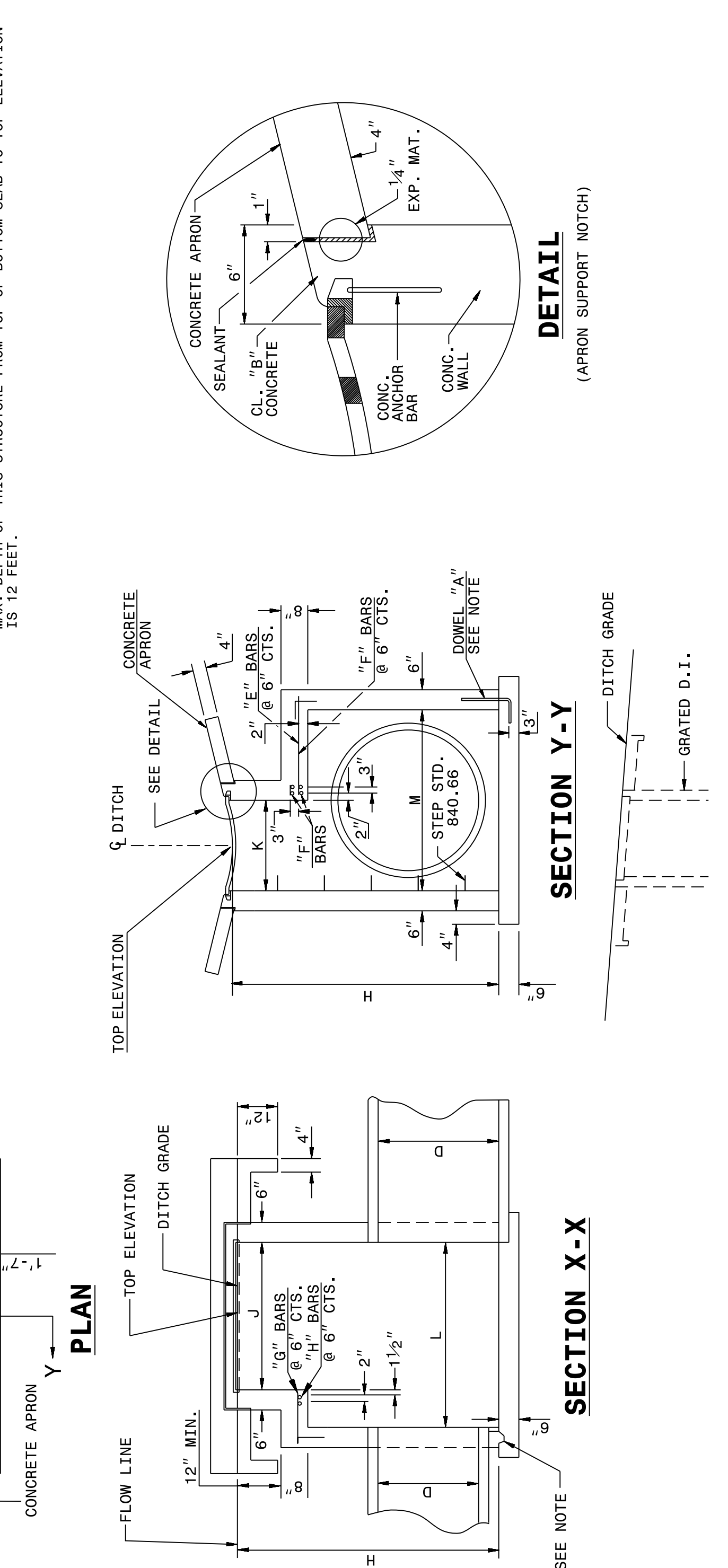
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

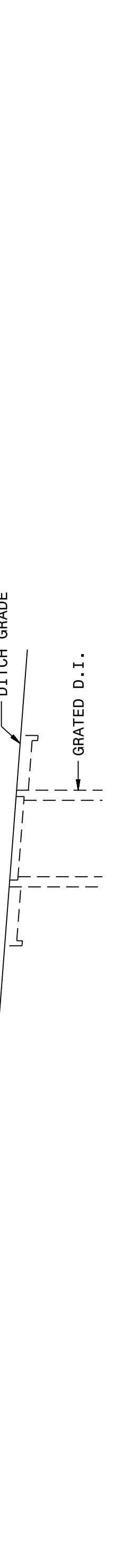
SHEET 2 OF 2 840d17



SECTION Y-Y



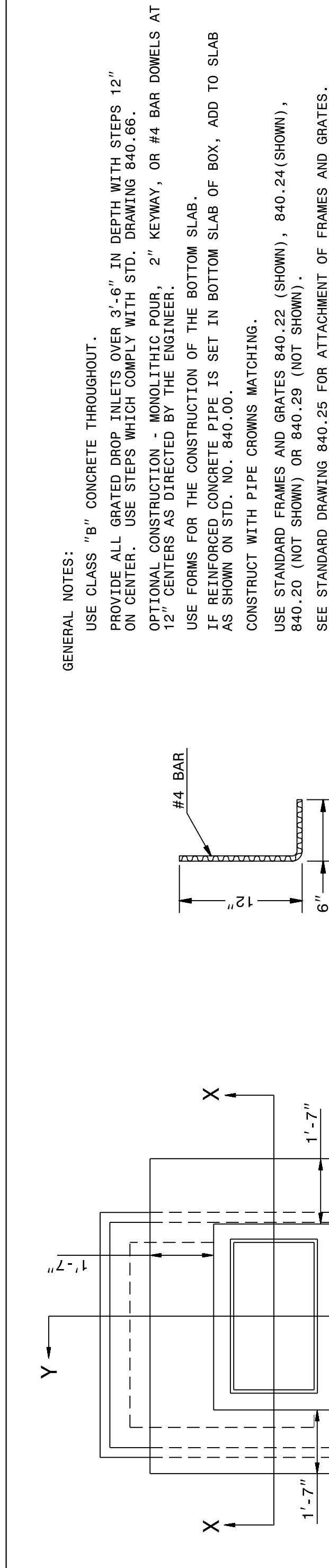
SECTION Y-Y



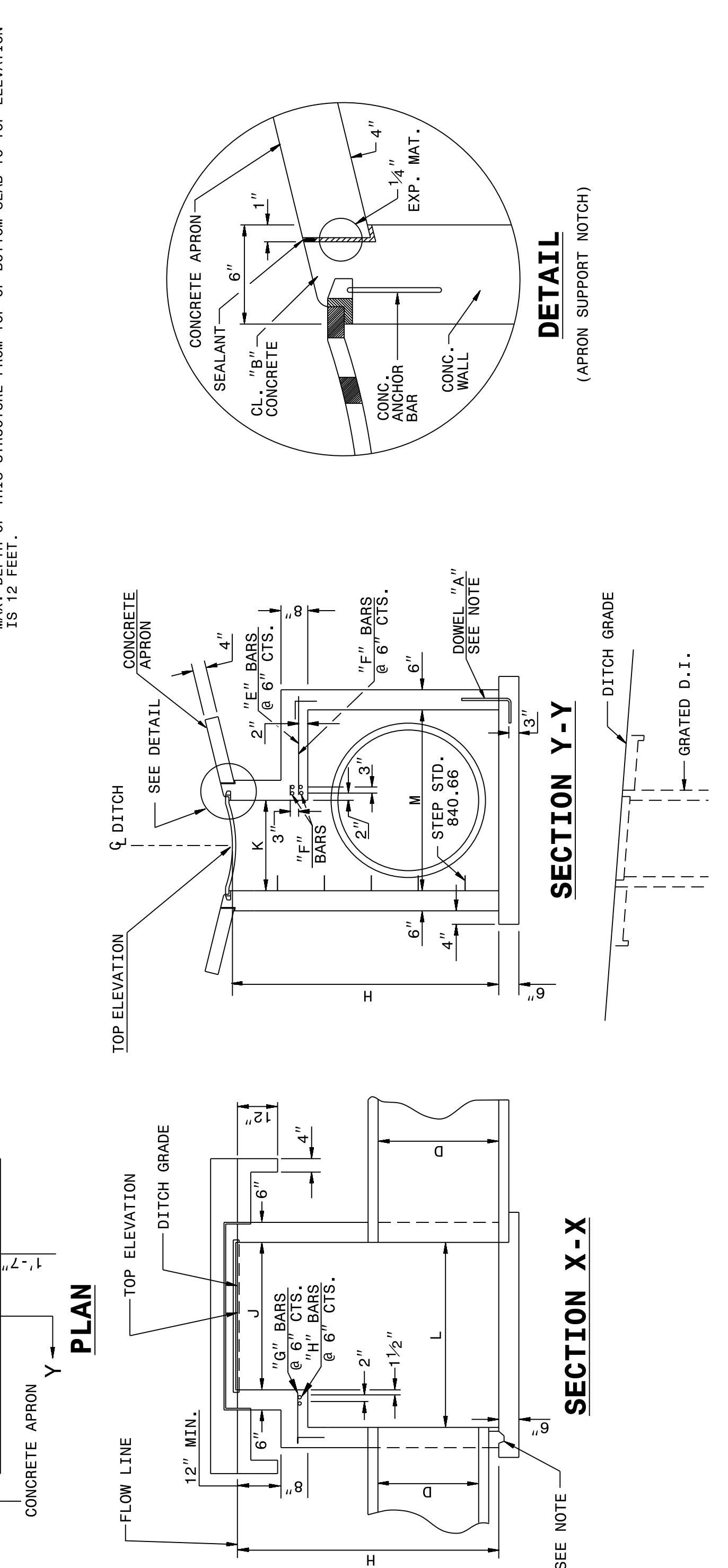
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

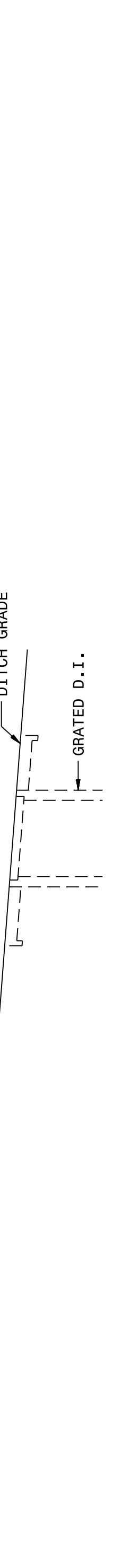
SHEET 2 OF 2 840d17



SECTION Y-Y



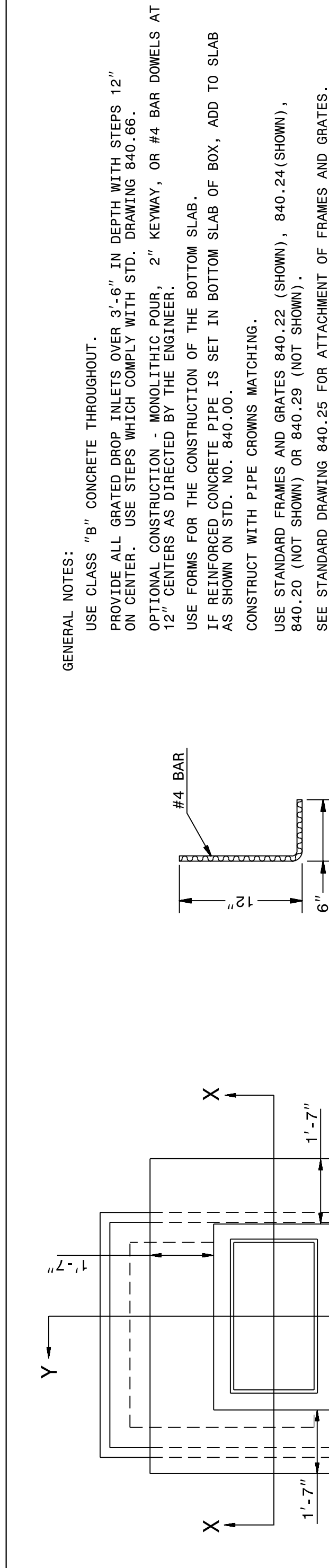
SECTION Y-Y



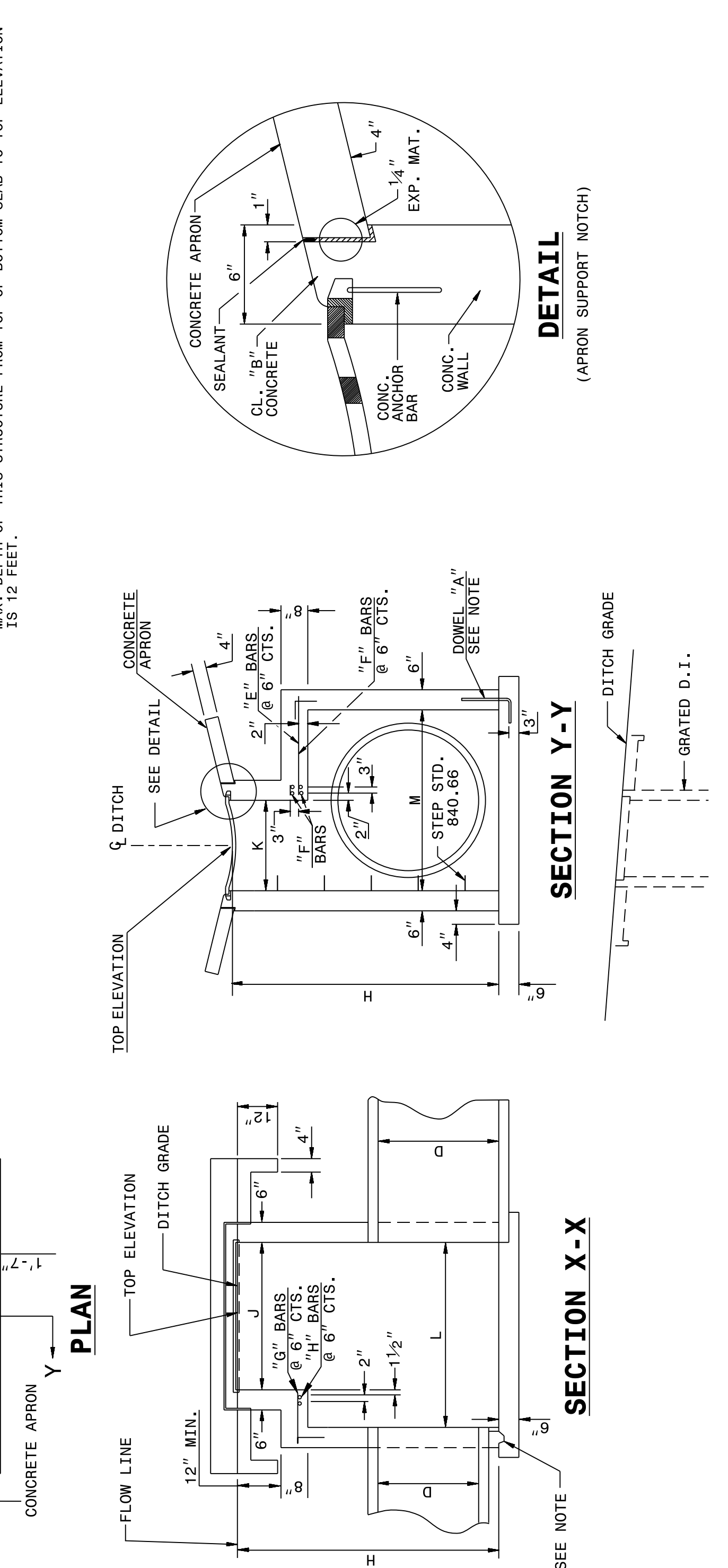
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

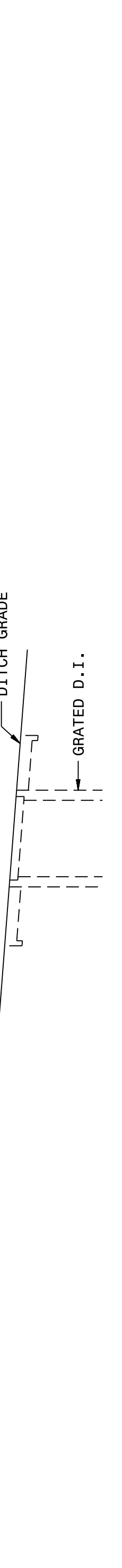
SHEET 2 OF 2 840d17



SECTION Y-Y



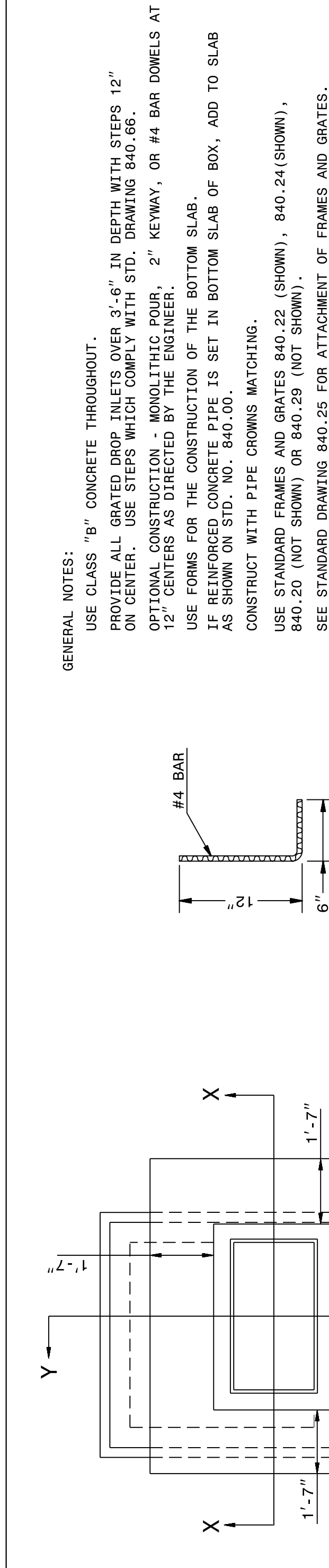
SECTION Y-Y



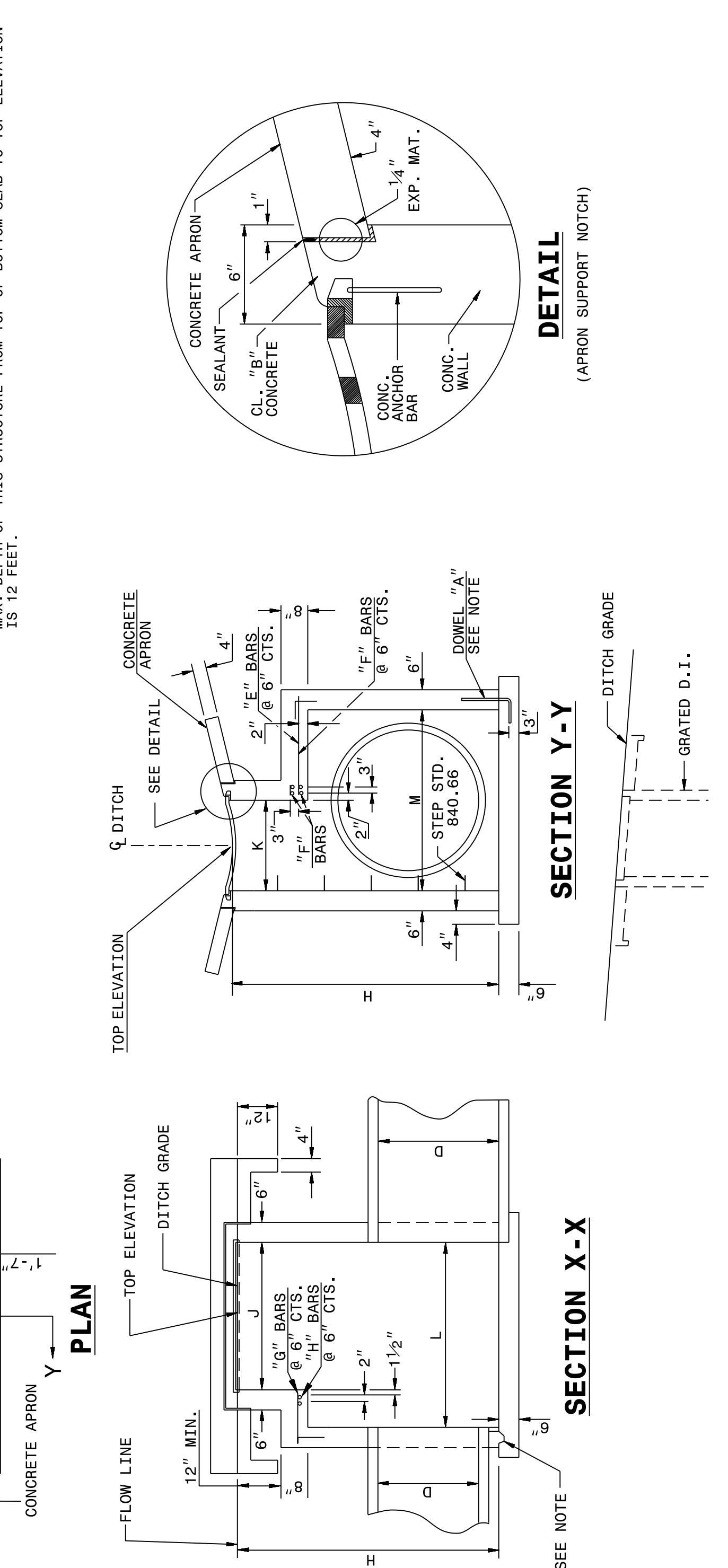
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

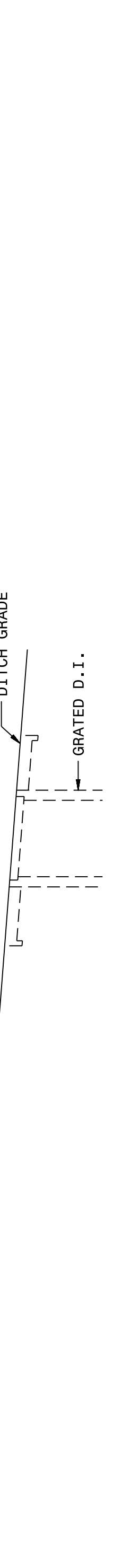
SHEET 2 OF 2 840d17



SECTION Y-Y



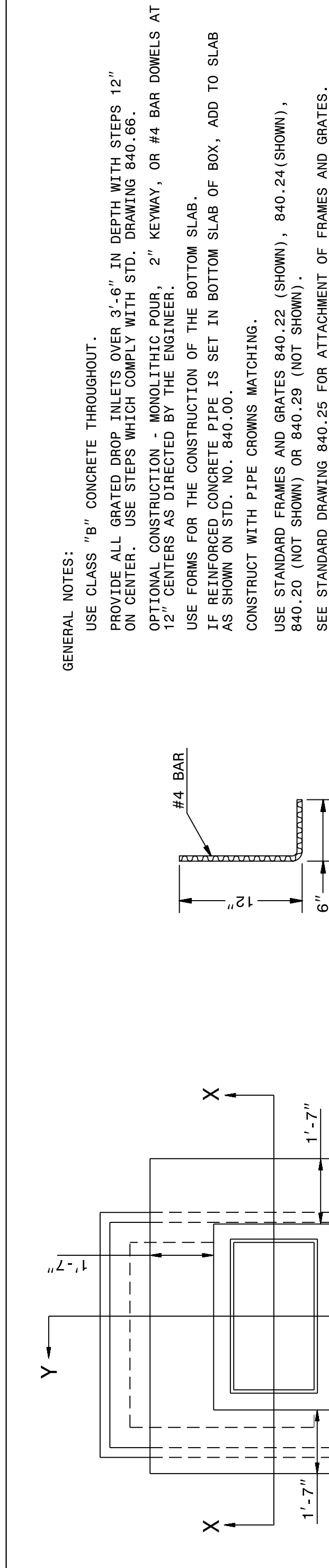
SECTION Y-Y



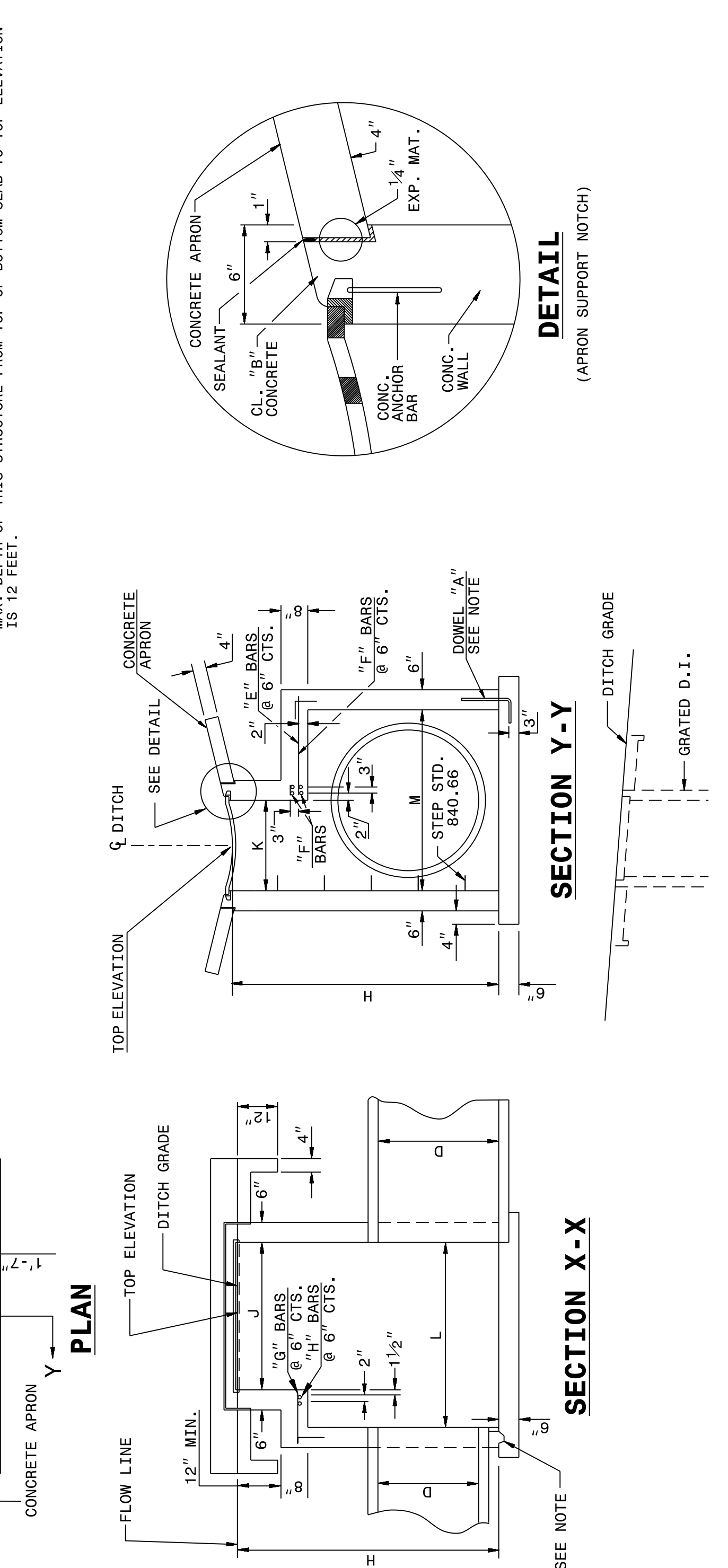
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

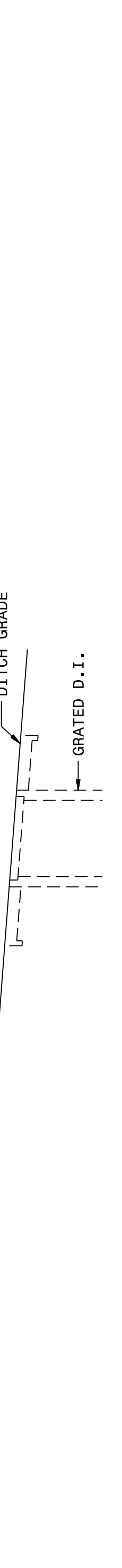
SHEET 2 OF 2 840d17



SECTION Y-Y



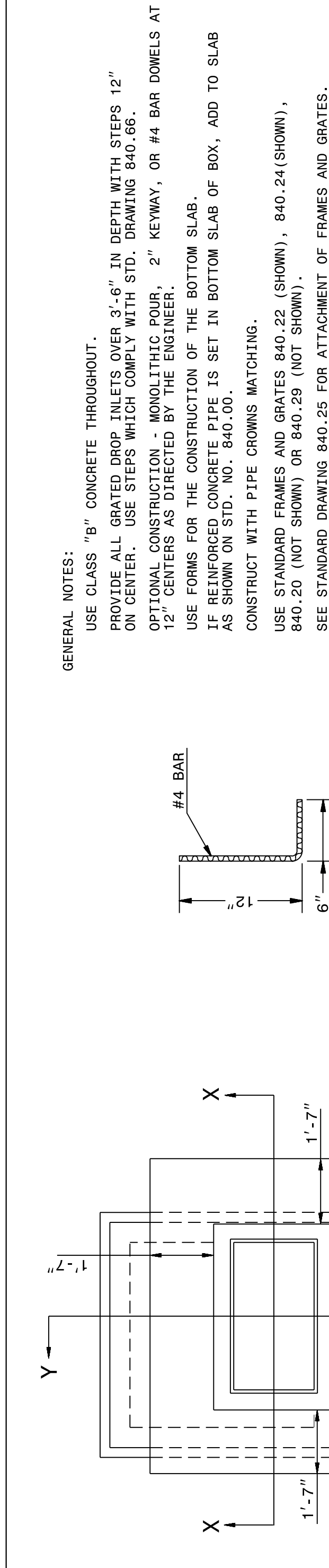
SECTION Y-Y



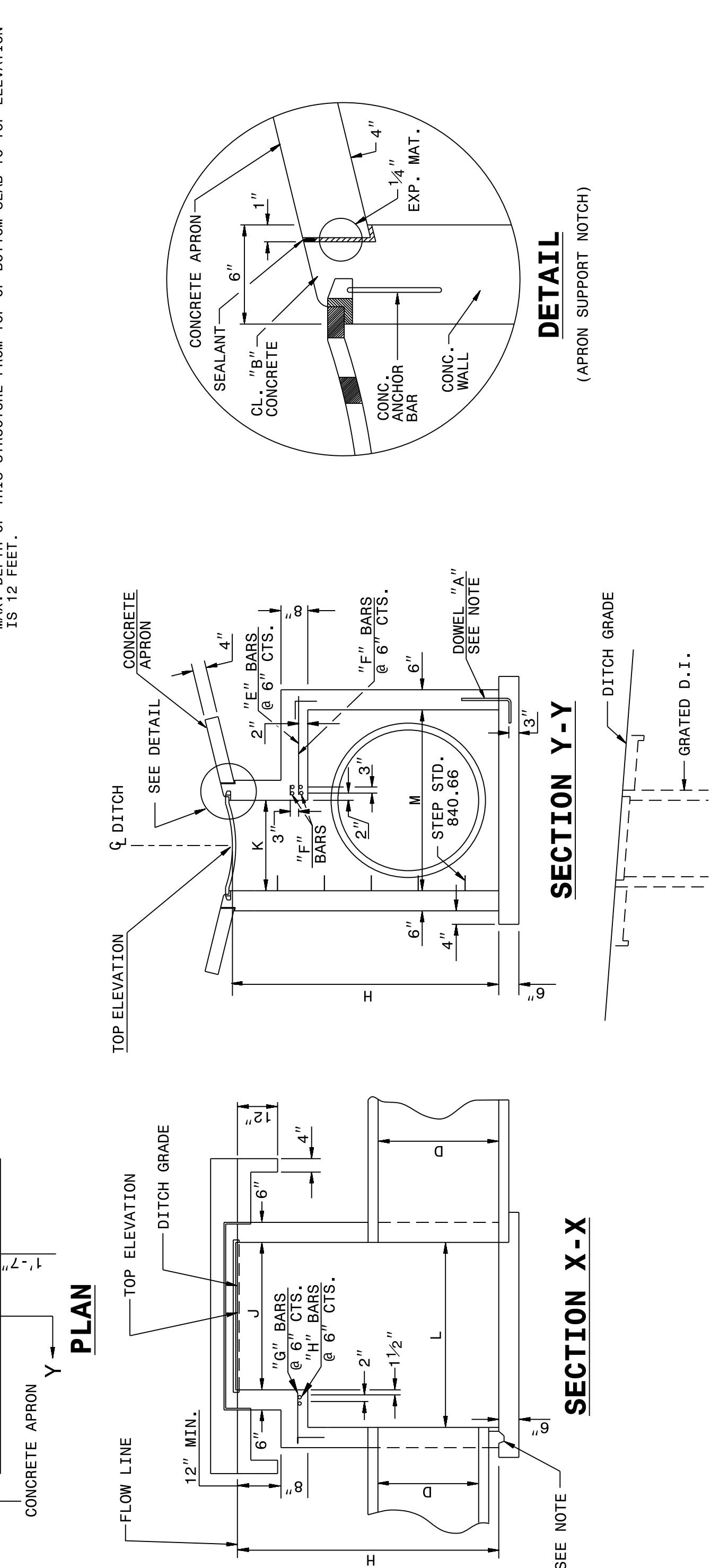
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

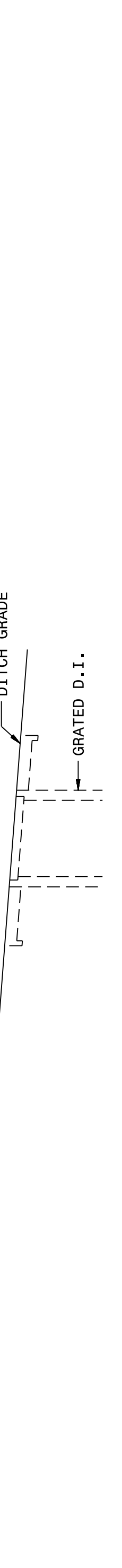
SHEET 2 OF 2 840d17



SECTION Y-Y



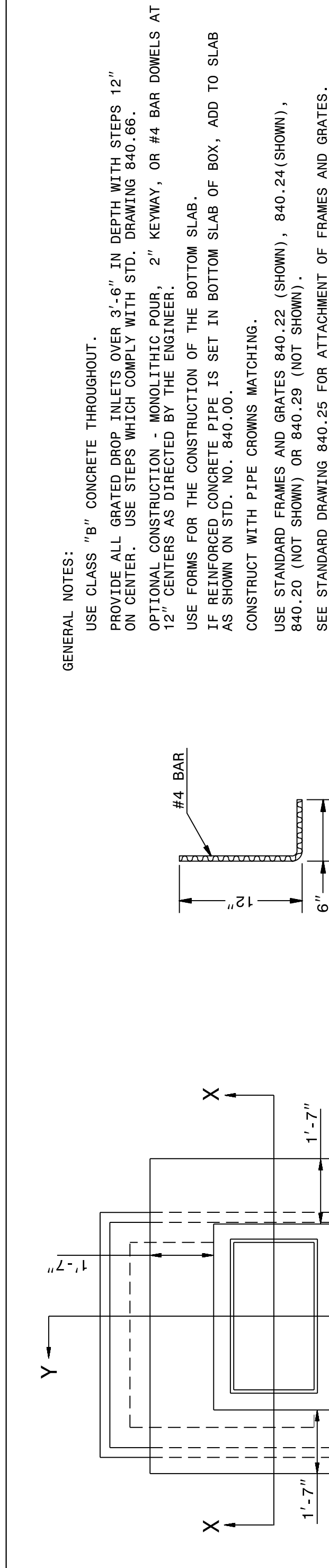
SECTION Y-Y



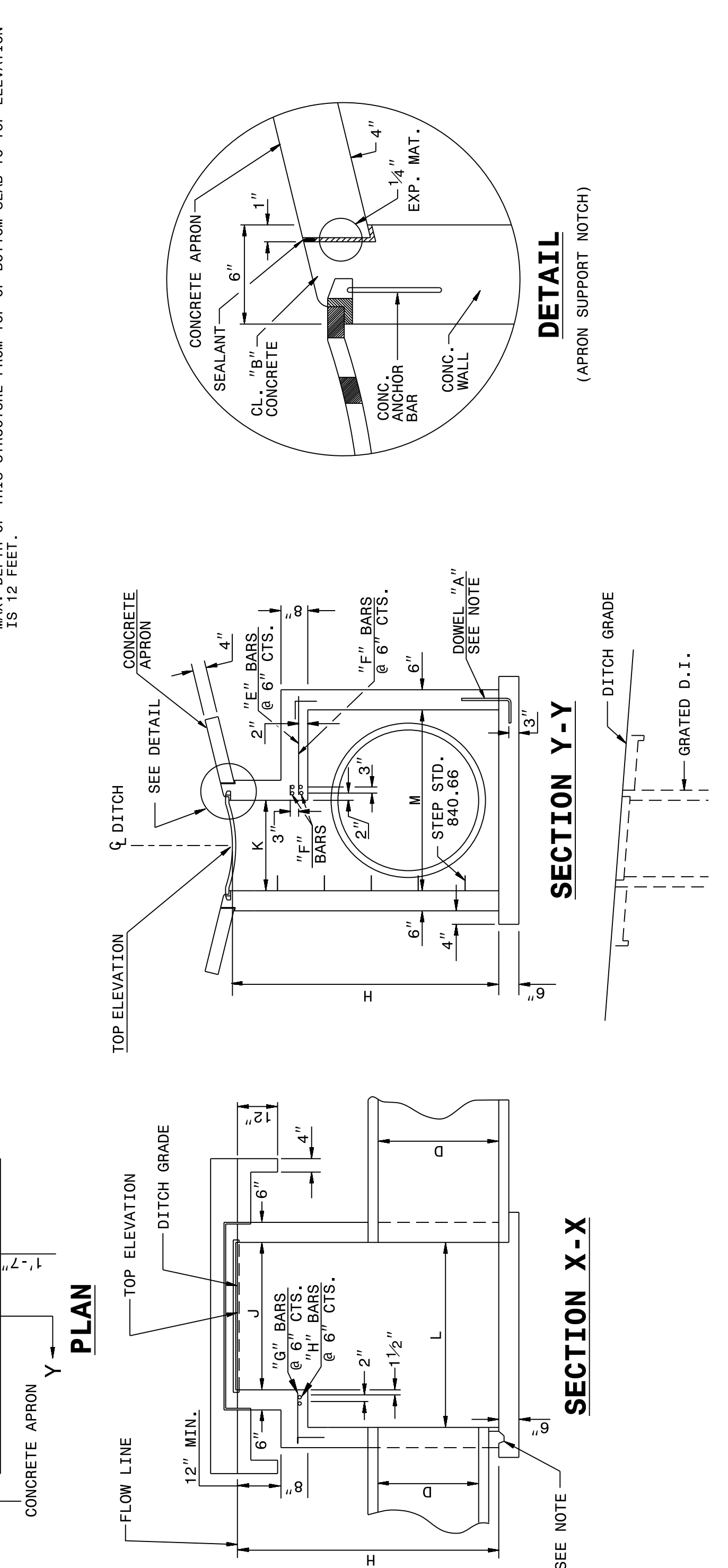
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

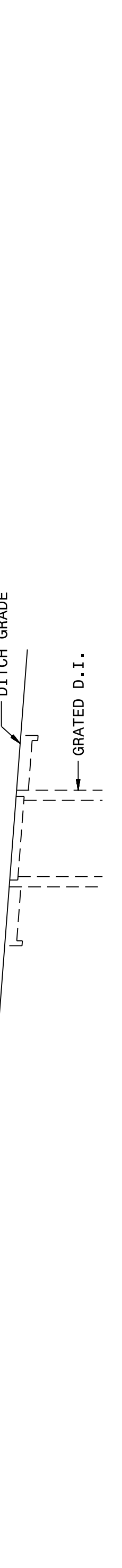
SHEET 2 OF 2 840d17



SECTION Y-Y



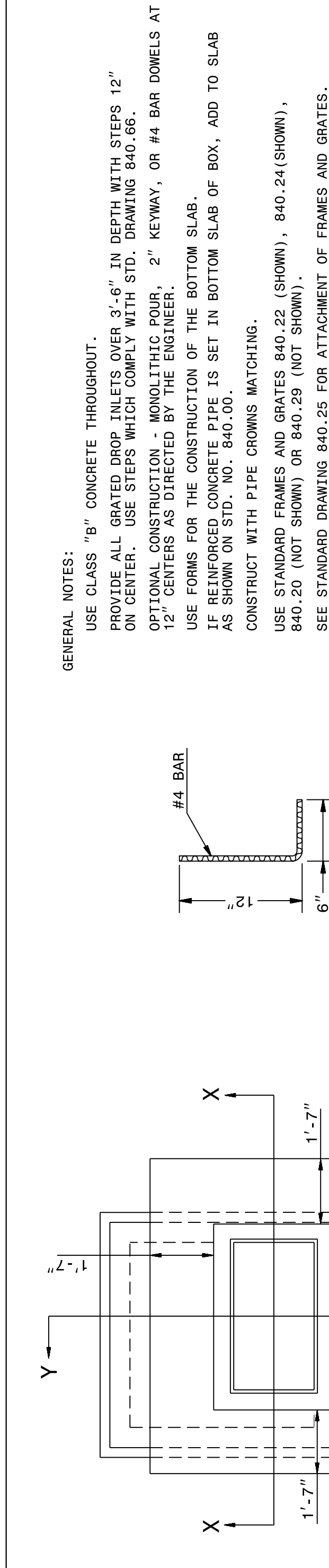
SECTION Y-Y



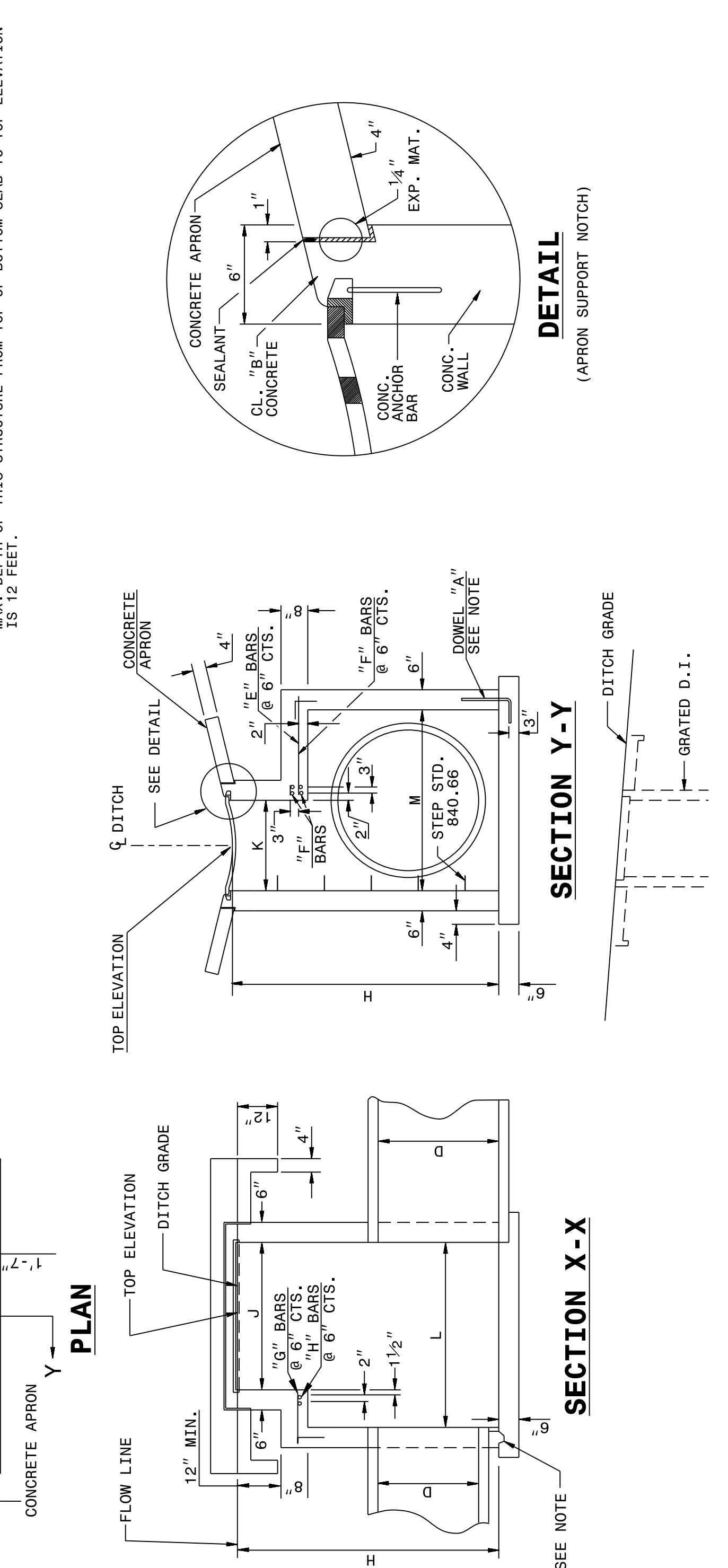
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

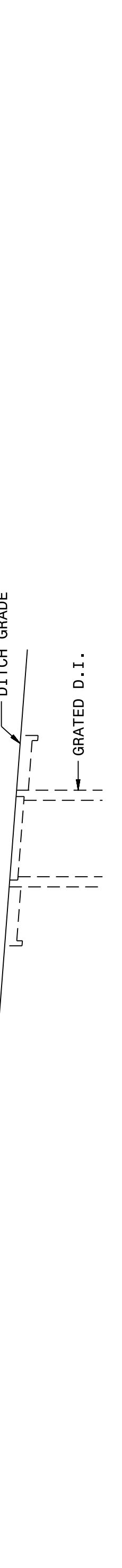
SHEET 2 OF 2 840d17



SECTION Y-Y



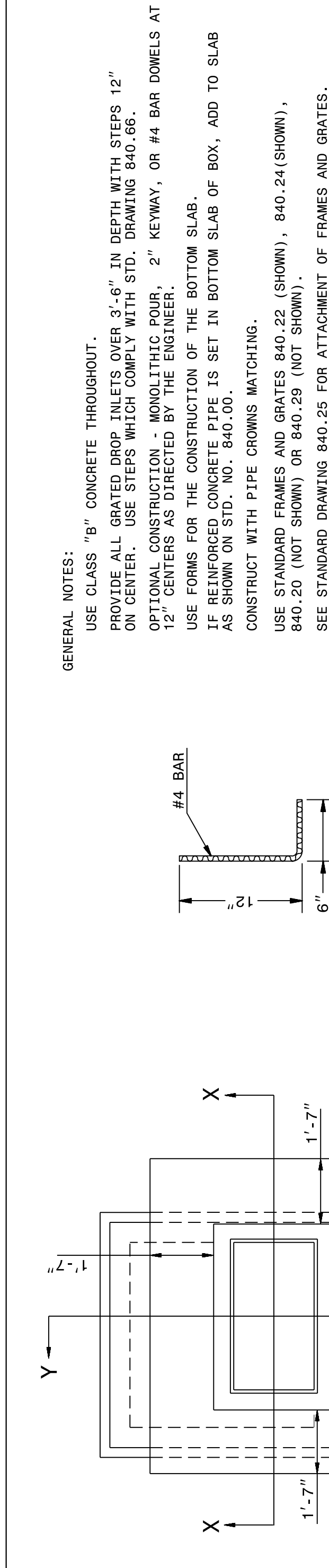
SECTION Y-Y



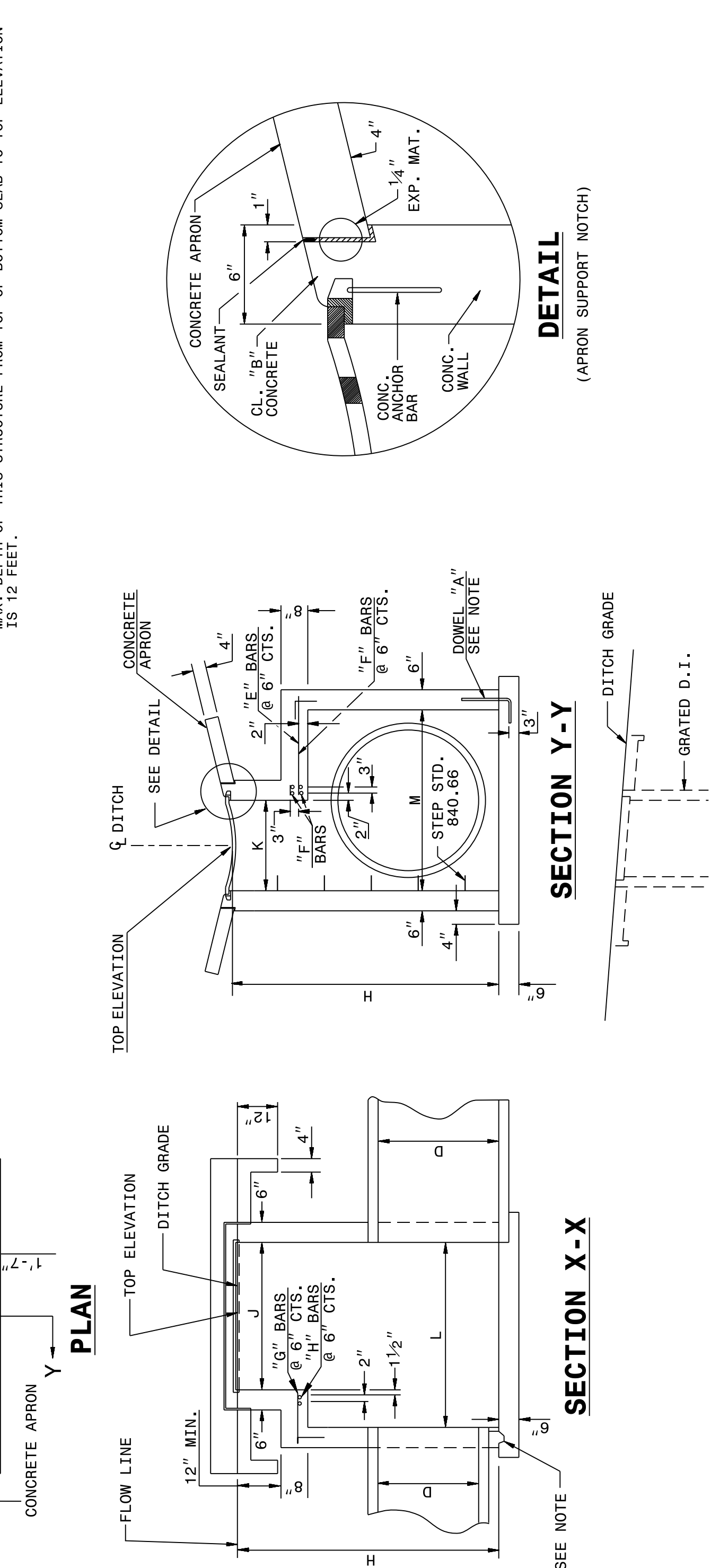
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

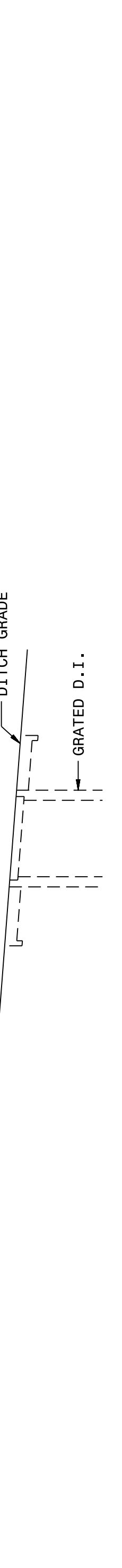
SHEET 2 OF 2 840d17



SECTION Y-Y



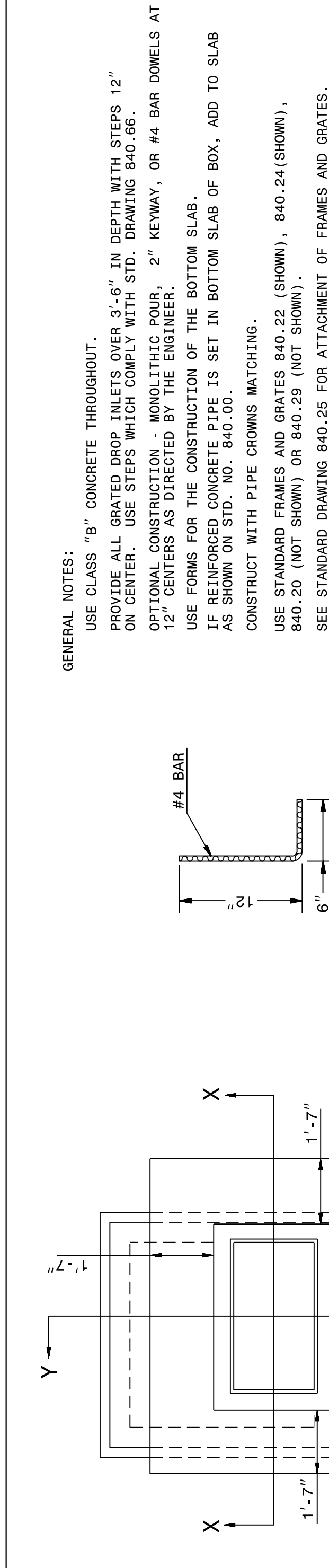
SECTION Y-Y



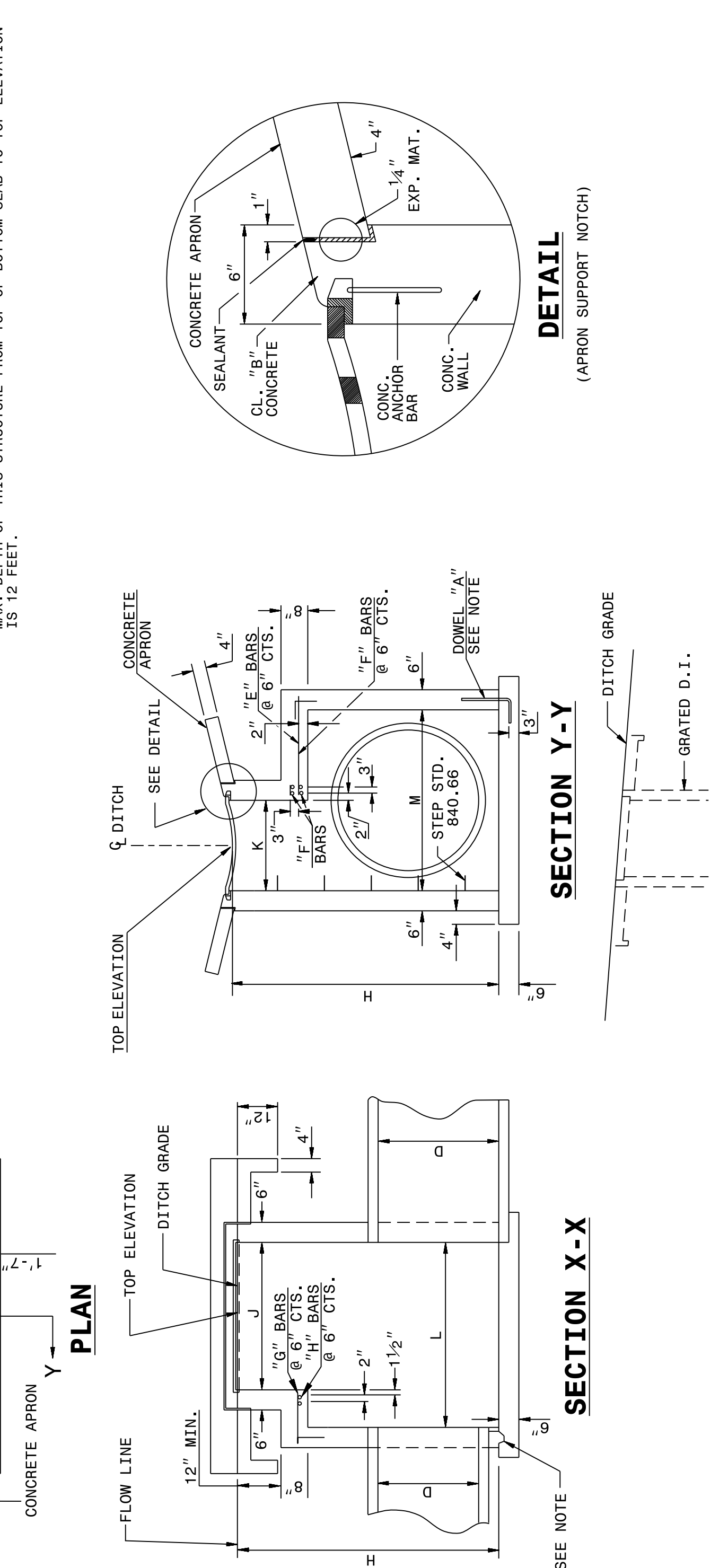
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

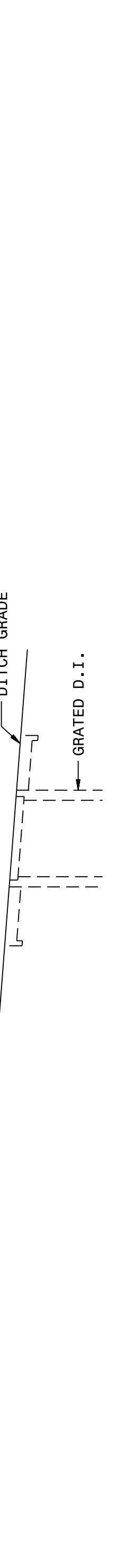
SHEET 2 OF 2 840d17



SECTION Y-Y



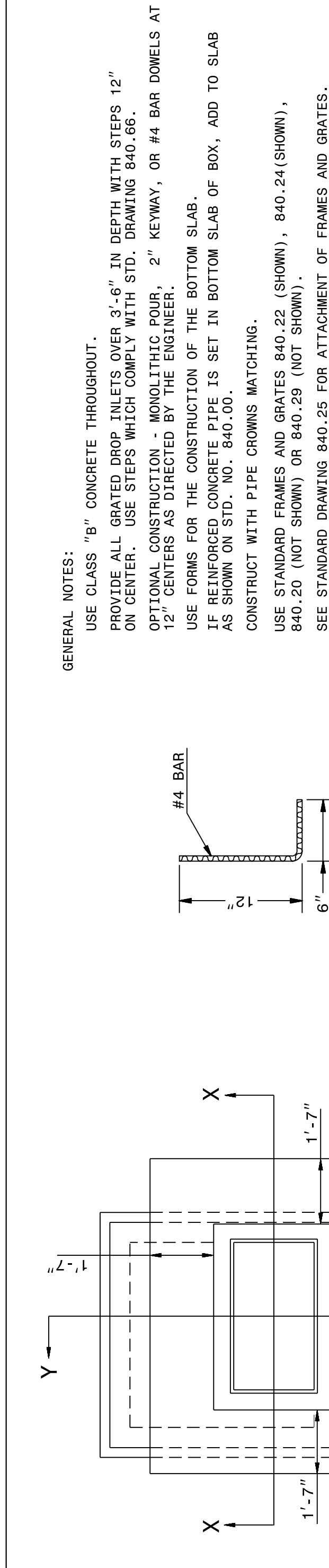
SECTION Y-Y



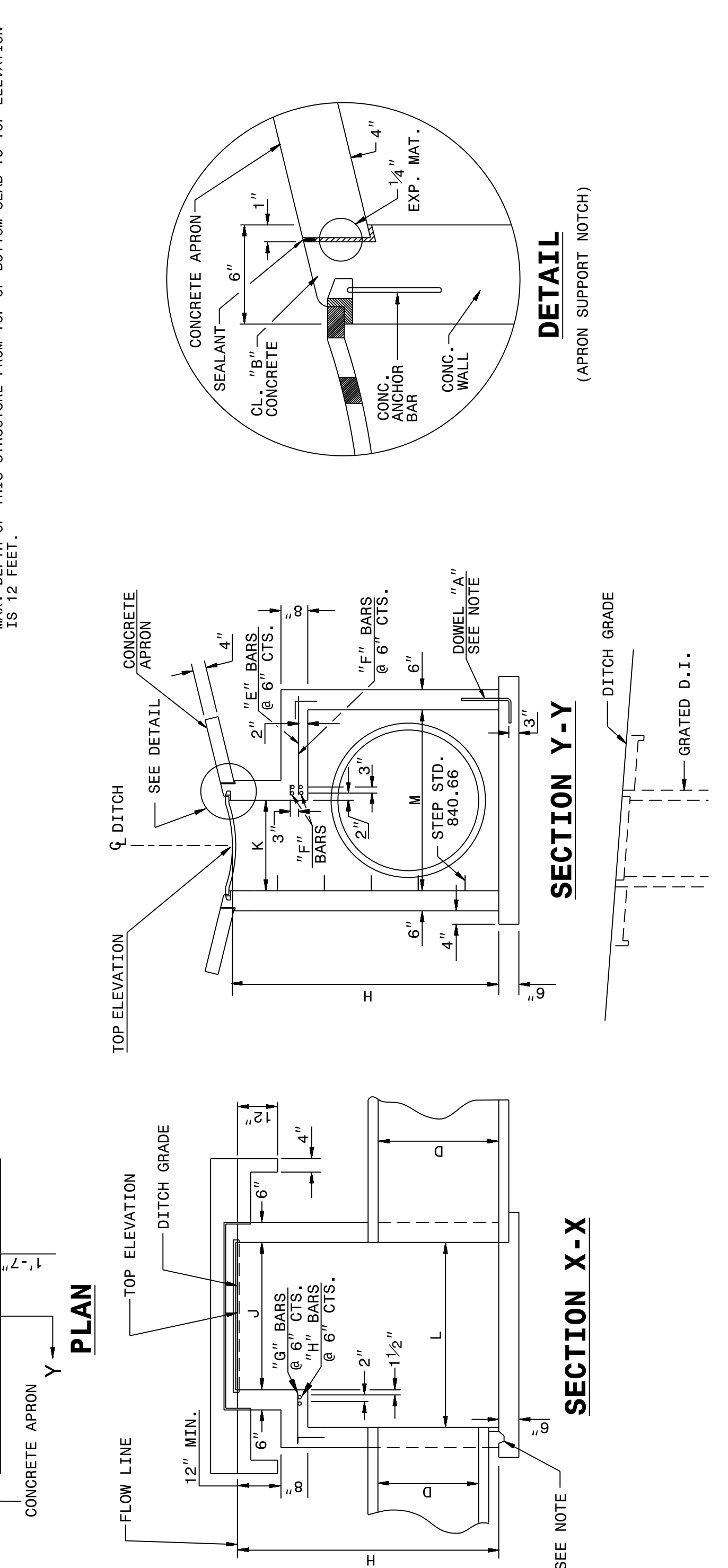
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR CONCRETE GRATED DROP INLET TYPE 'A' MINIMUM DEPTH 12" THRU 72" PIPE

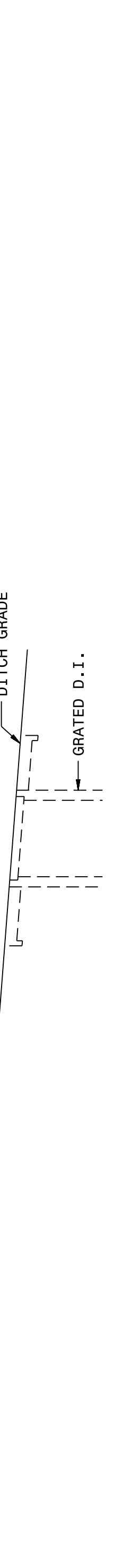
SHEET 2 OF 2 840d17

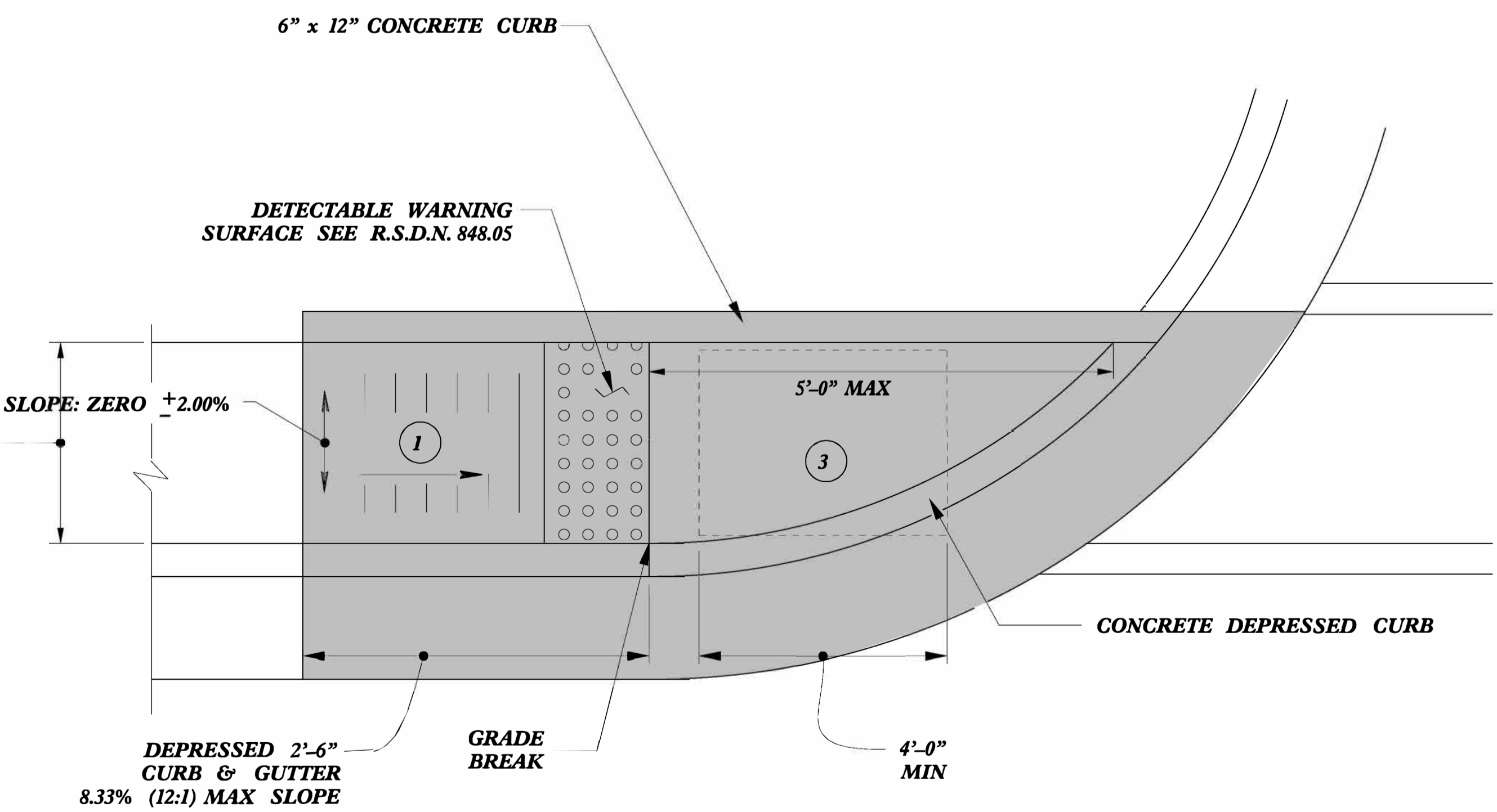
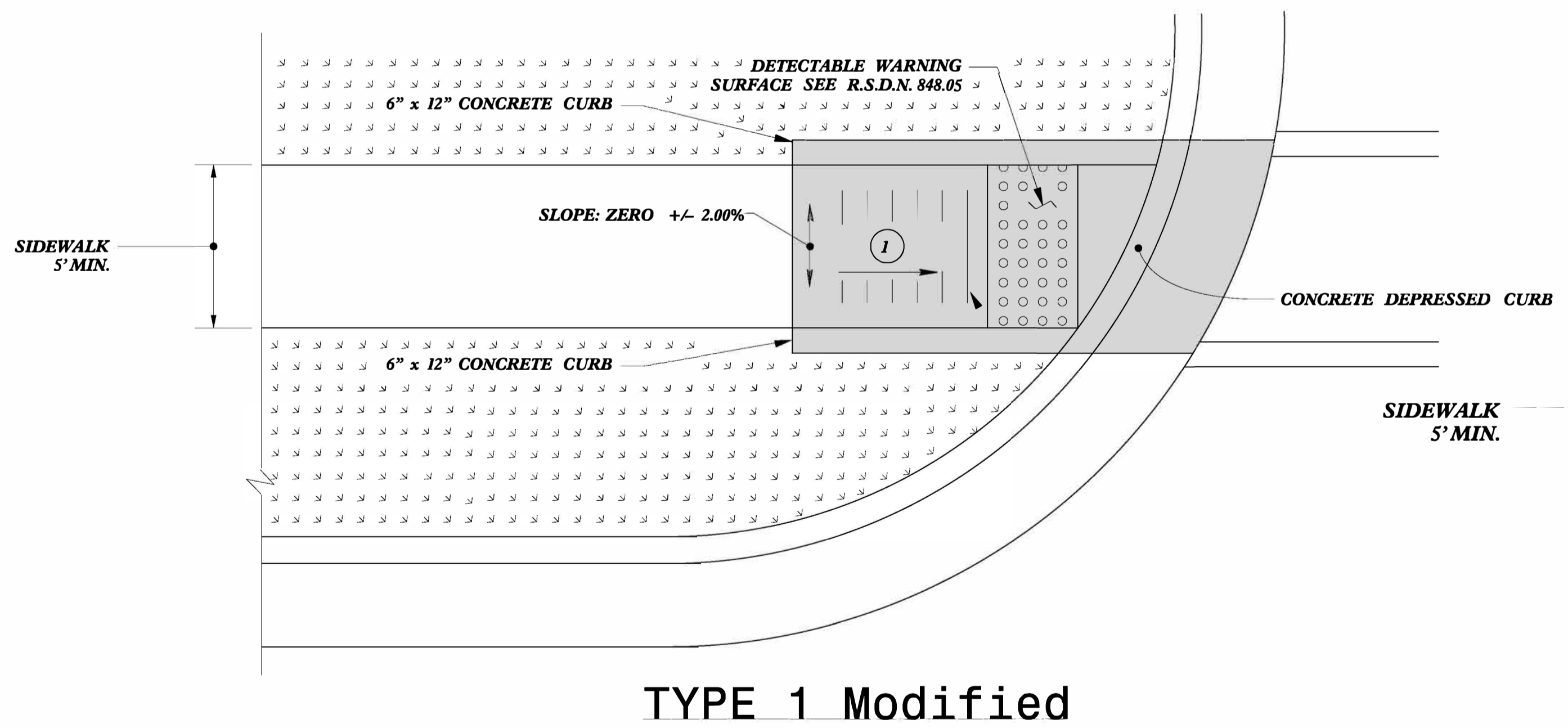
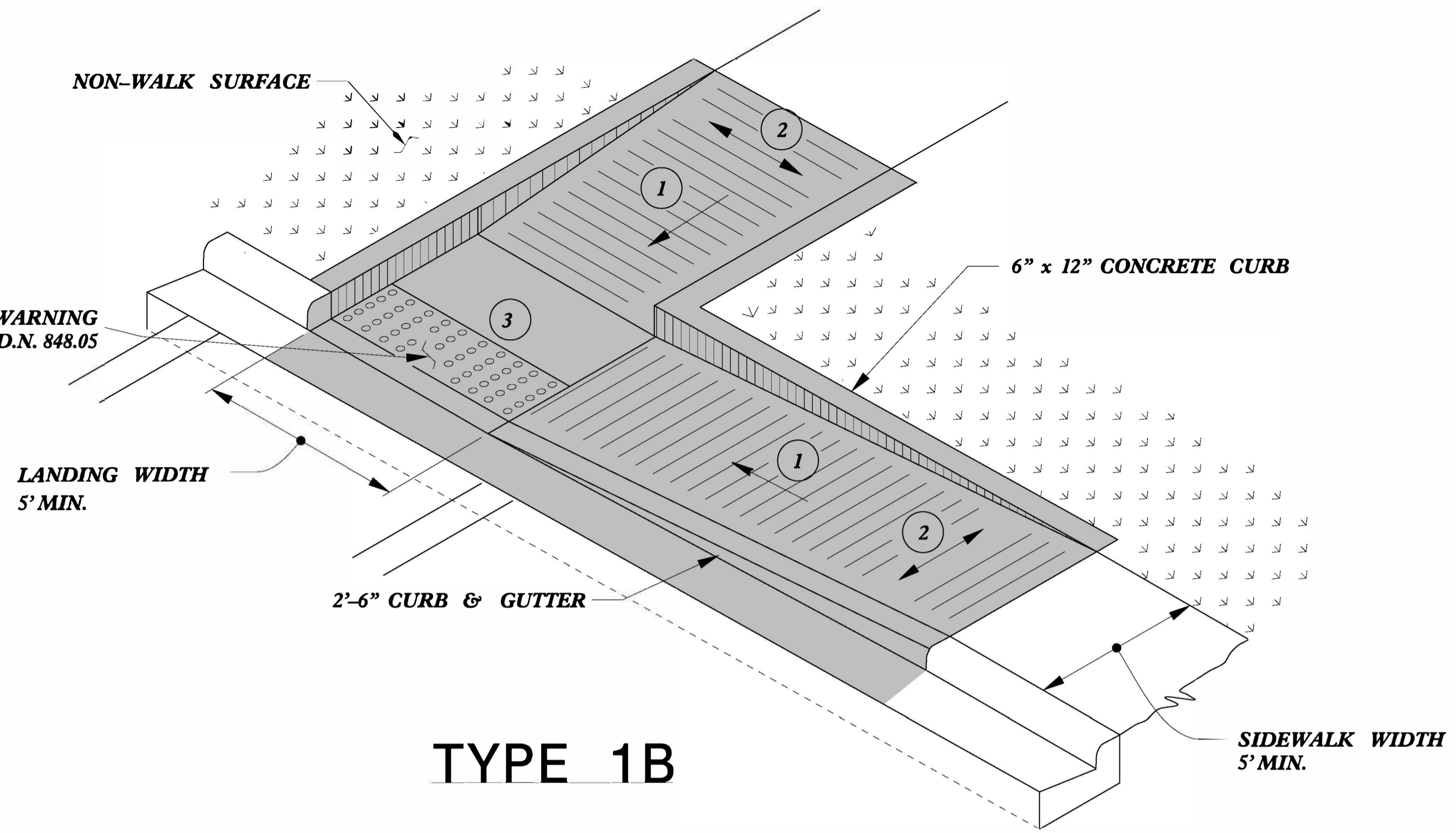
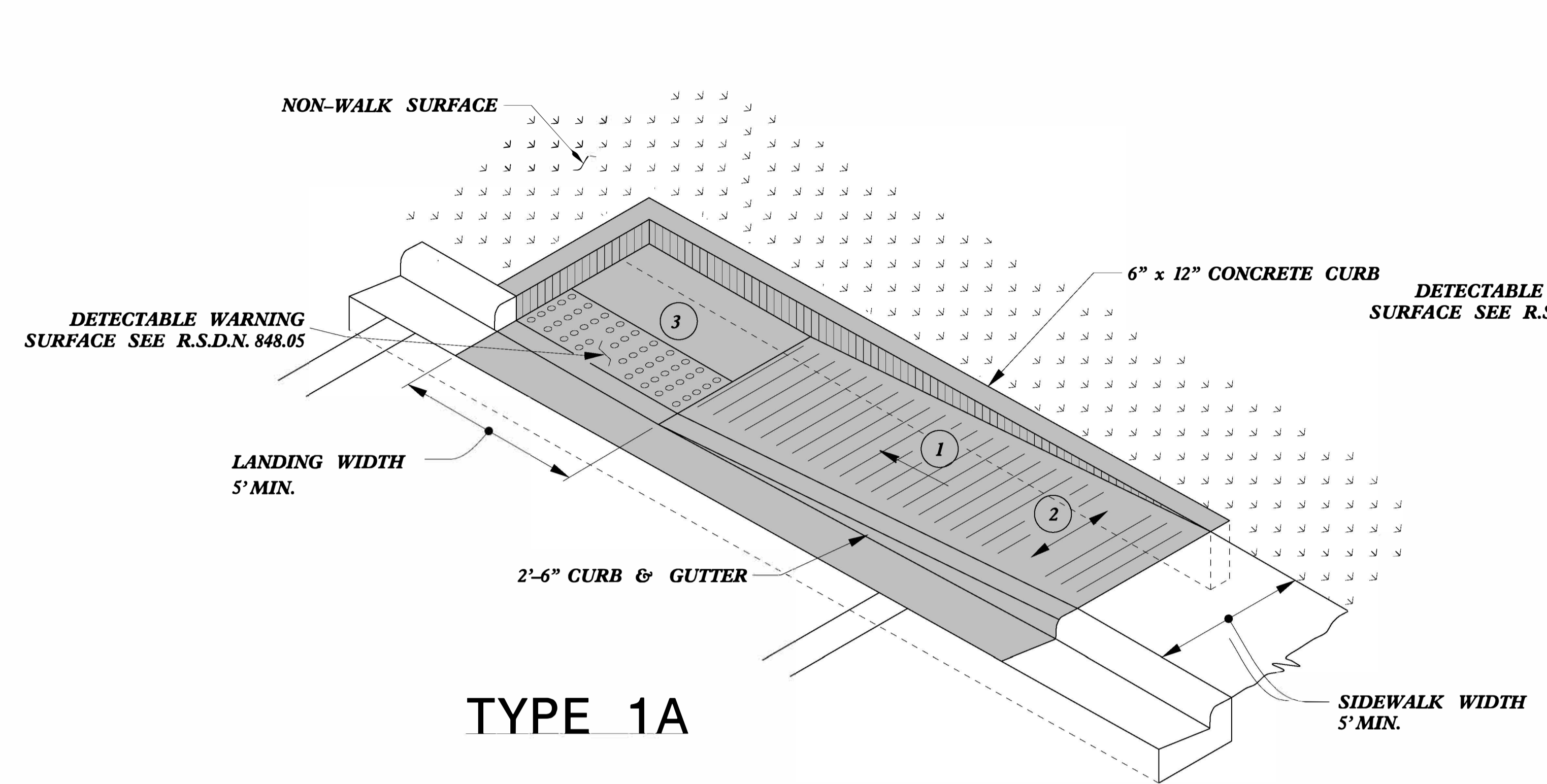


SECTION Y-Y



SECTION Y-Y





- 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

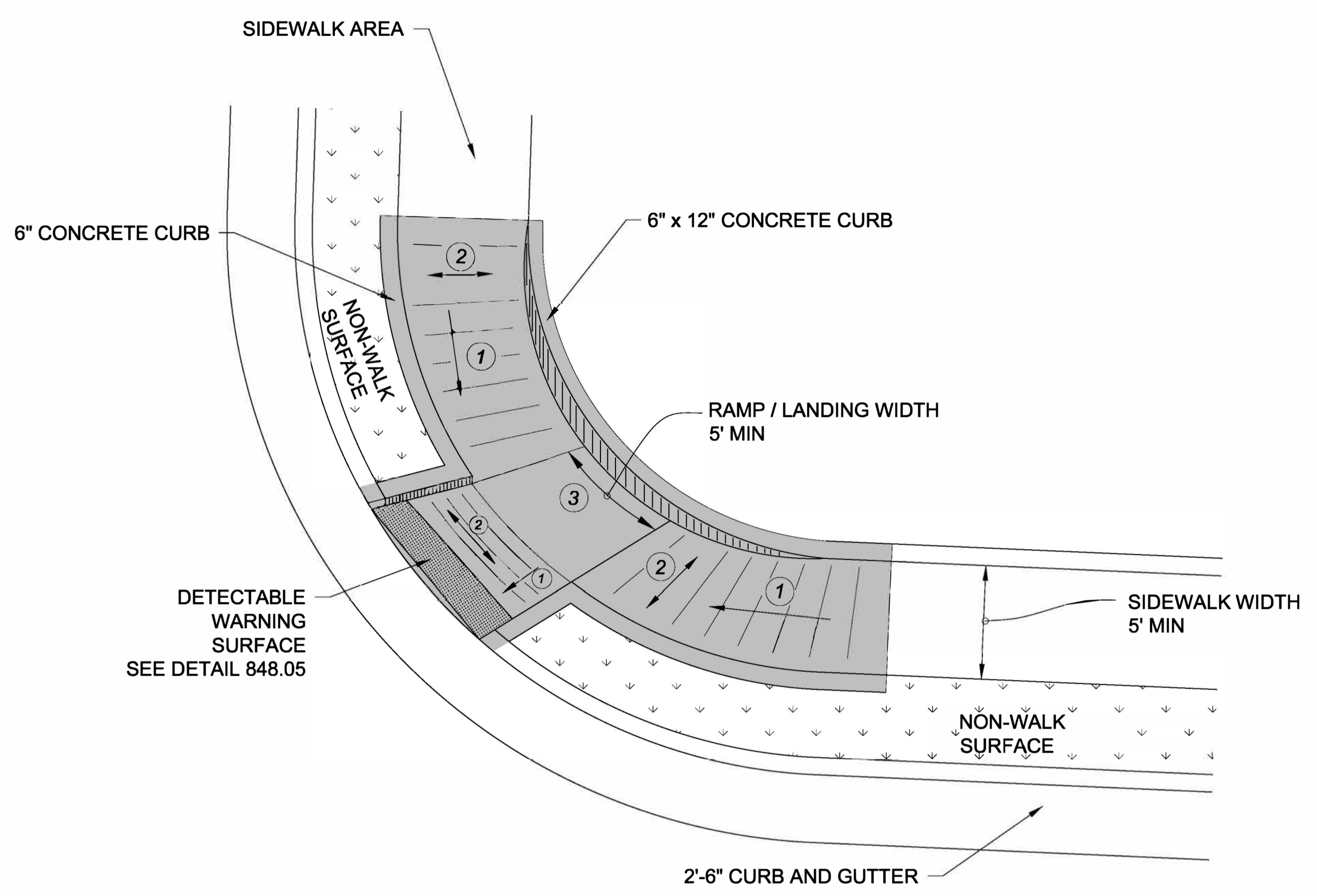
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11  
 MODIFIED BY: DATE:  
 CHECKED BY: DATE:  
 FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn

DATE PLOTTED: 5/14/99 10:58:58 AM USERNAME: JSM

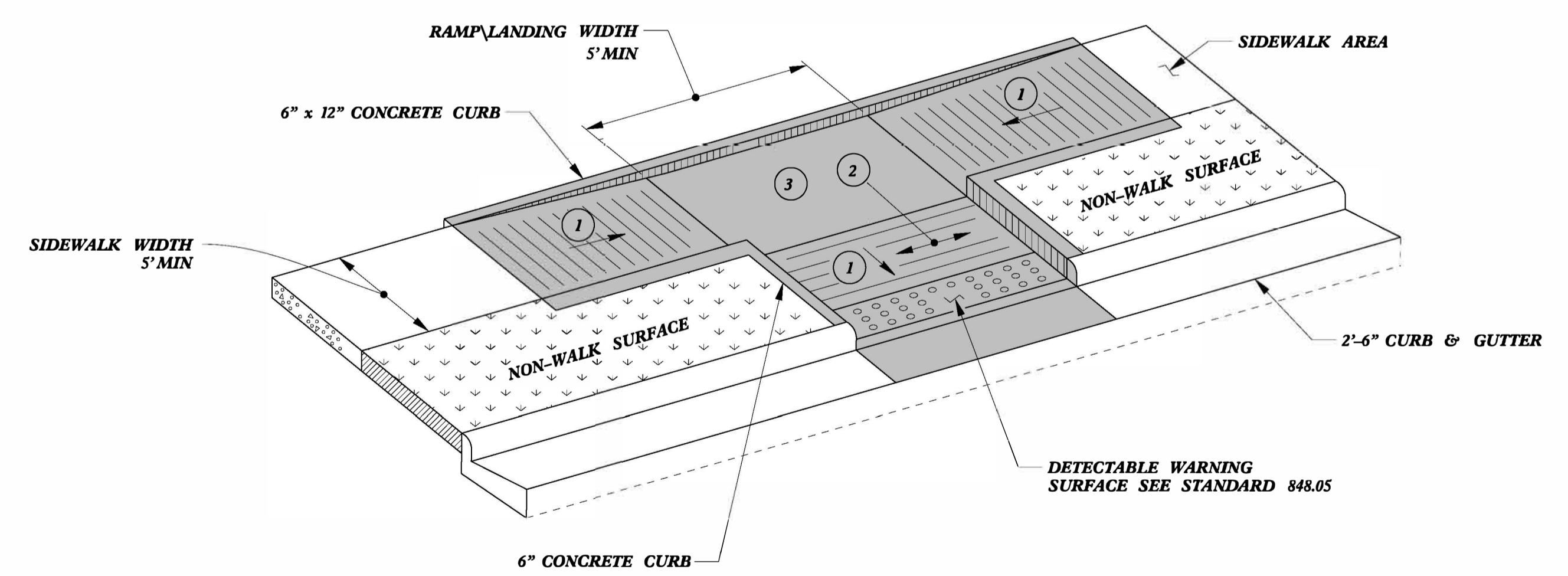




PAY LIMITS FOR 1 CURB RAMP



TYPE 3 MODIFIED  
INSTALLATION IN A RADIUS



TYPE 3

- 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

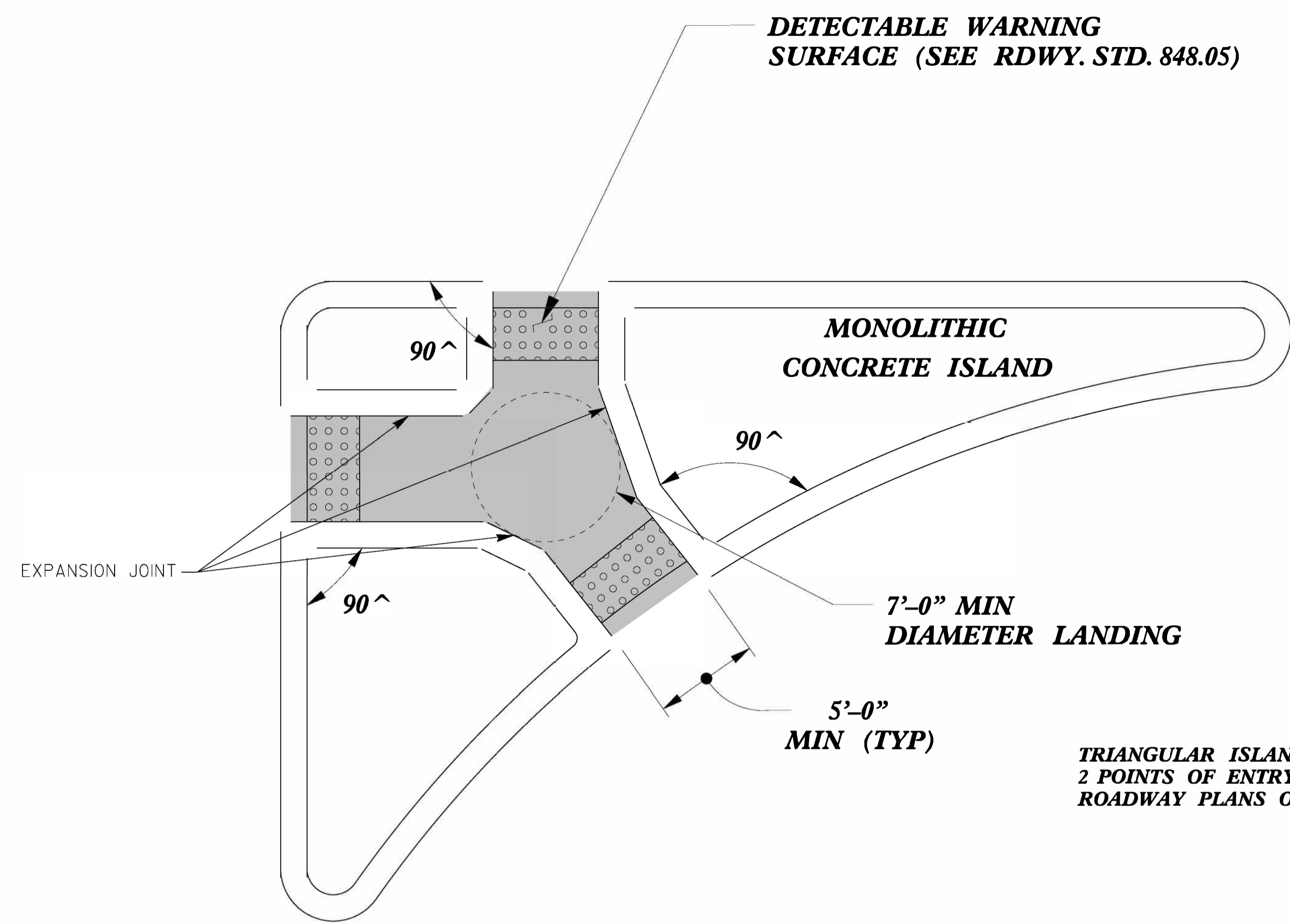
**CONTRACT STANDARDS  
AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**CURB RAMPS**

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

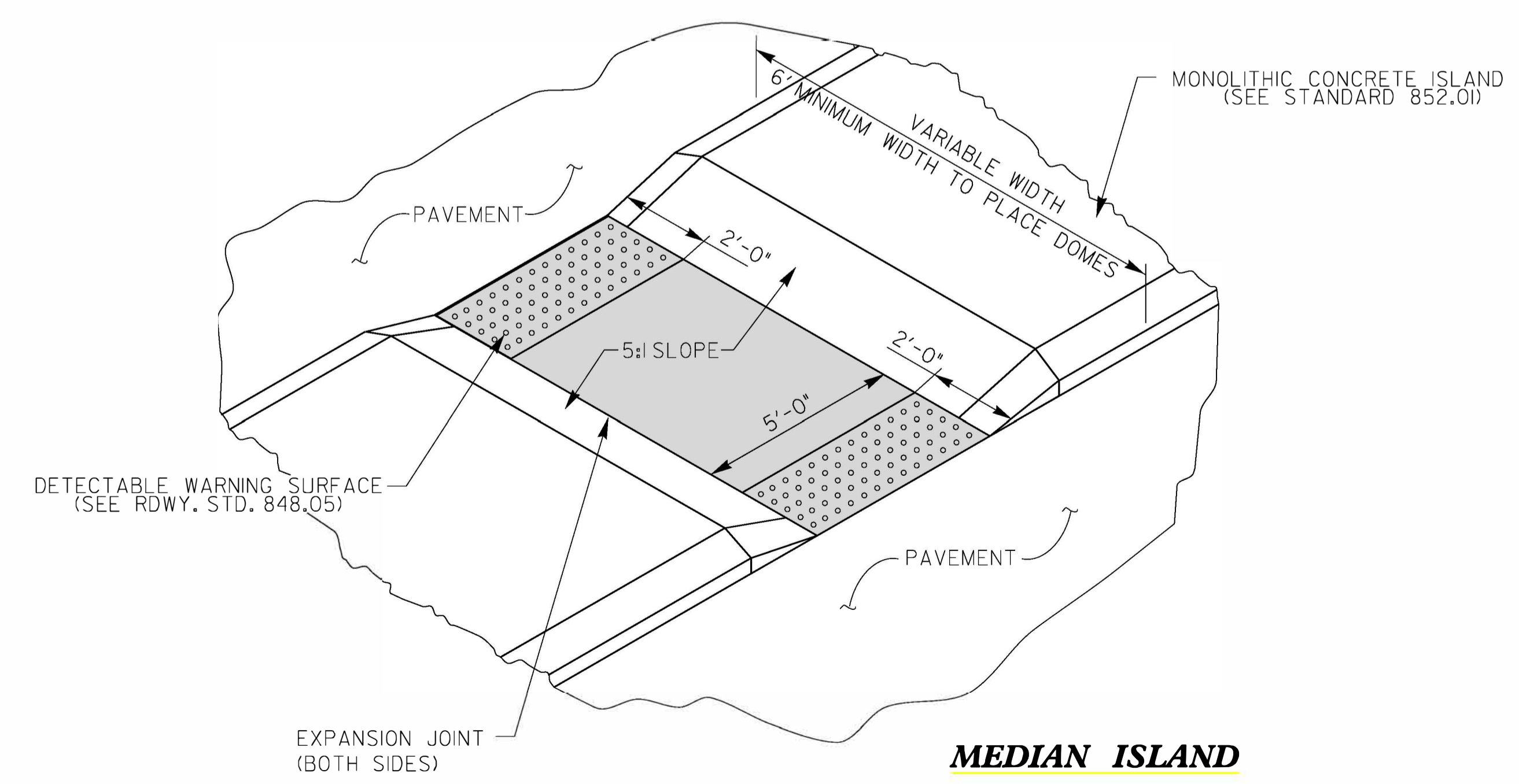
5/14/99

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

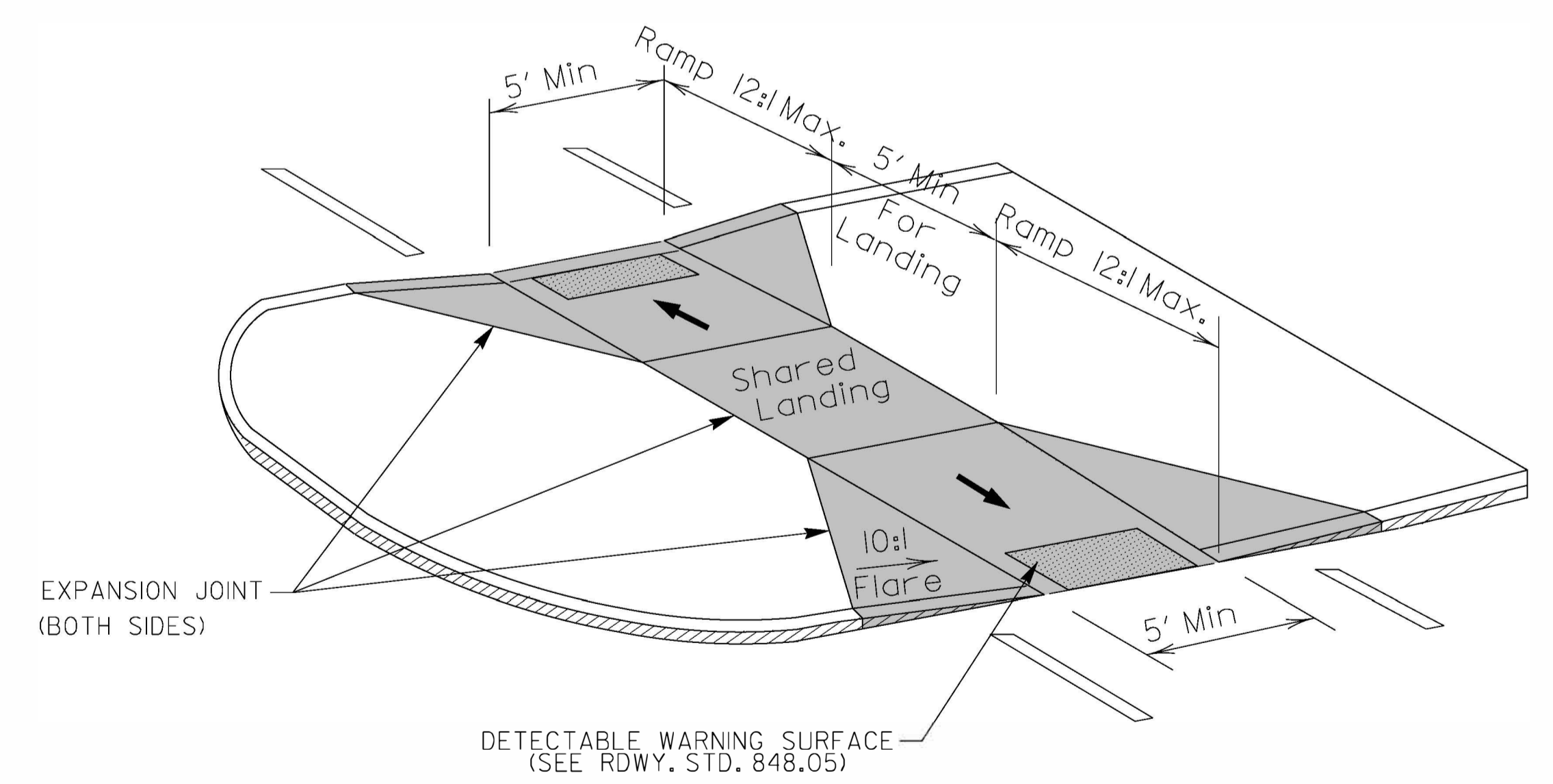


**TRIANGULAR ISLANDS MAY BE CONSTRUCTED WITH ONLY 2 POINTS OF ENTRY AND EXIT AS SHOWN IN THE ROADWAY PLANS OR AS DIRECTED BY THE ENGINEER.**

**TRIANGULAR ISLAND WITH CUT THROUGH  
TYPE 6**



**MEDIAN ISLAND WITH CUT THROUGH  
TYPE 7**



**MEDIAN ISLAND CURB RAMPS  
TYPE 8**

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

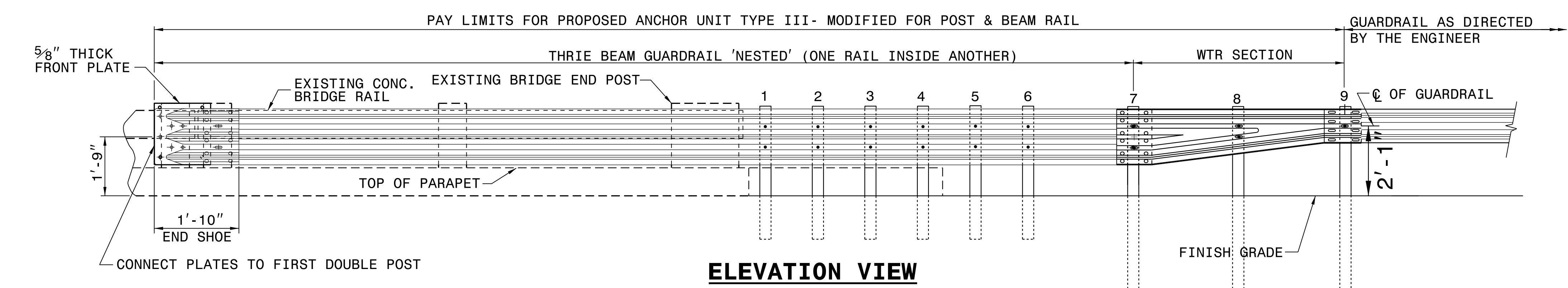
**CONTRACT STANDARDS AND DEVELOPMENT UNIT**  
Office 919-707-6950 FAX 919-250-4119

**CURB RAMPS**  
Median or Turn Lane Islands

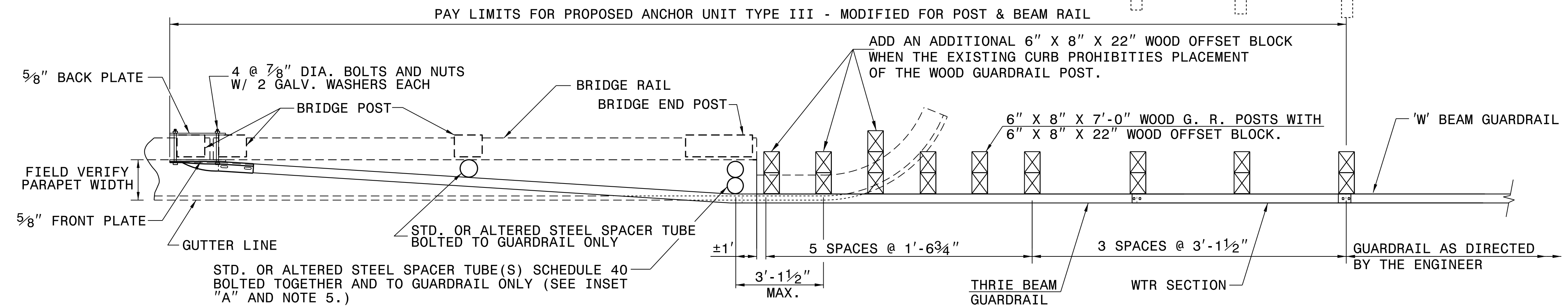
ORIGINAL BY: J.S. HOWERTON DATE: 7/7/11  
MODIFIED BY: DATE:  
CHECKED BY: DATE:  
FILE SPEC: stds/2012CurbRamp/CurbRampDetails.dgn



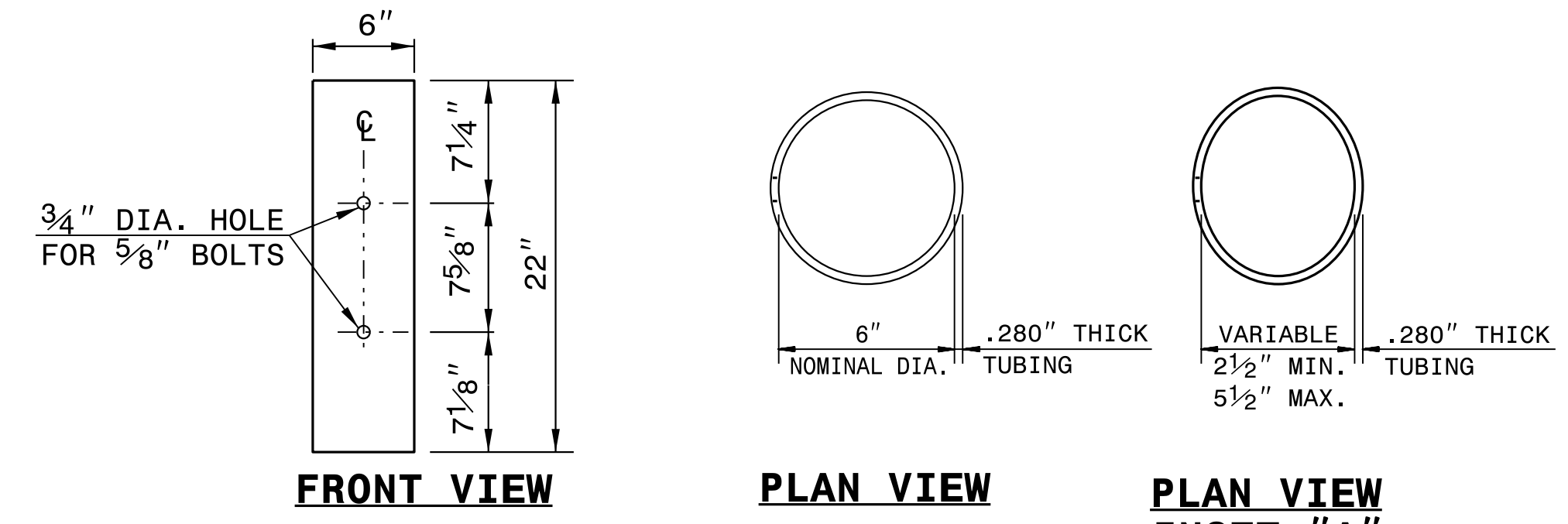
5/14/99  
SYTIME  
CONSULTING  
SURNAME



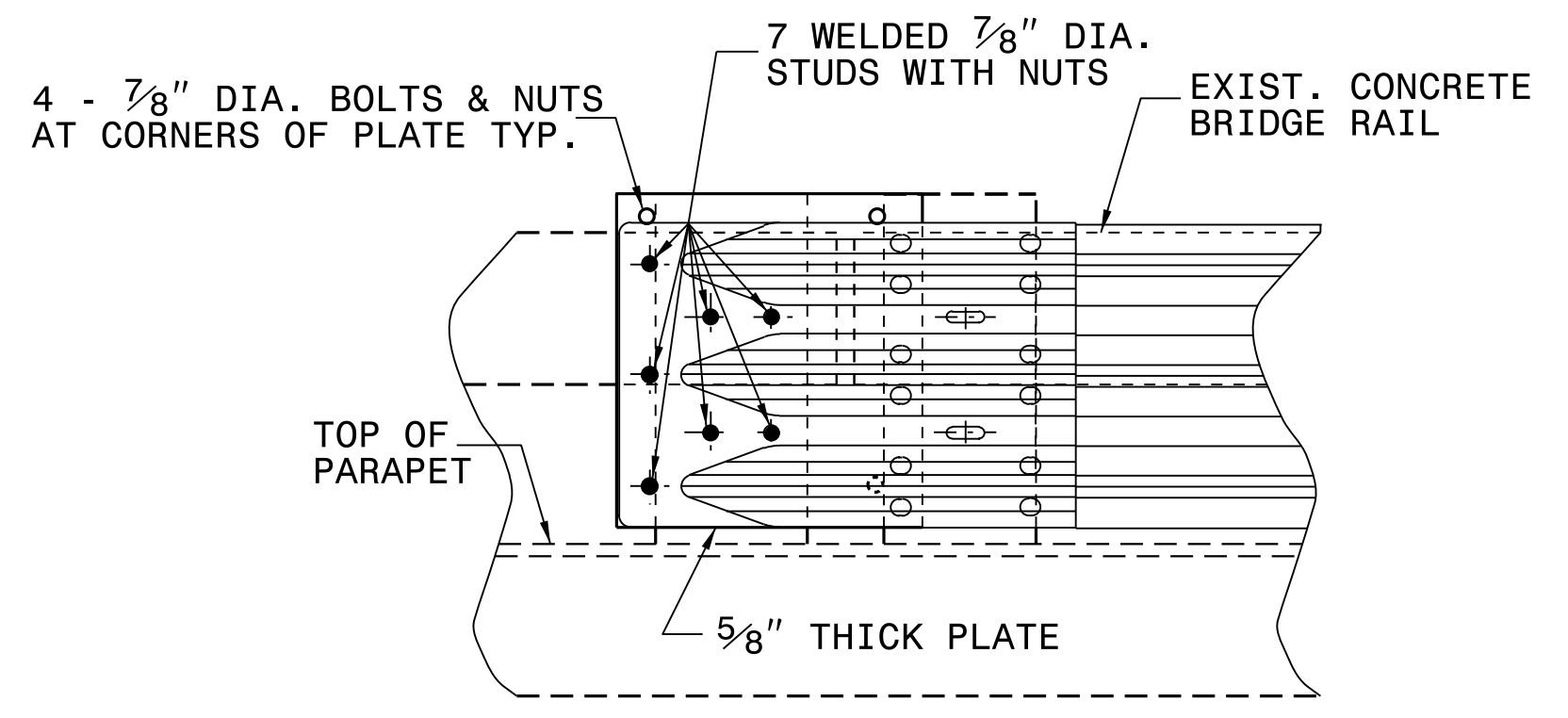
**ELEVATION VIEW**



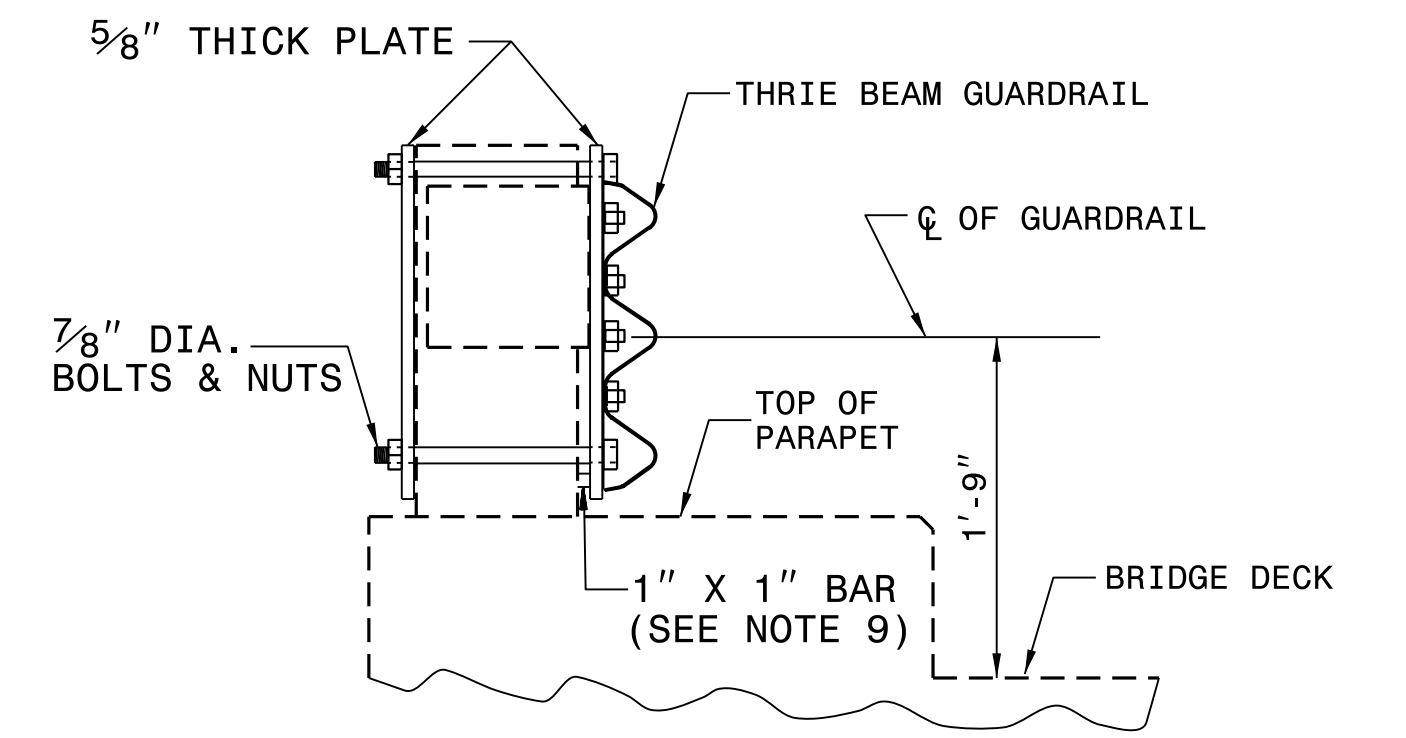
**PLAN VIEW**



**STEEL SPACER TUBE**

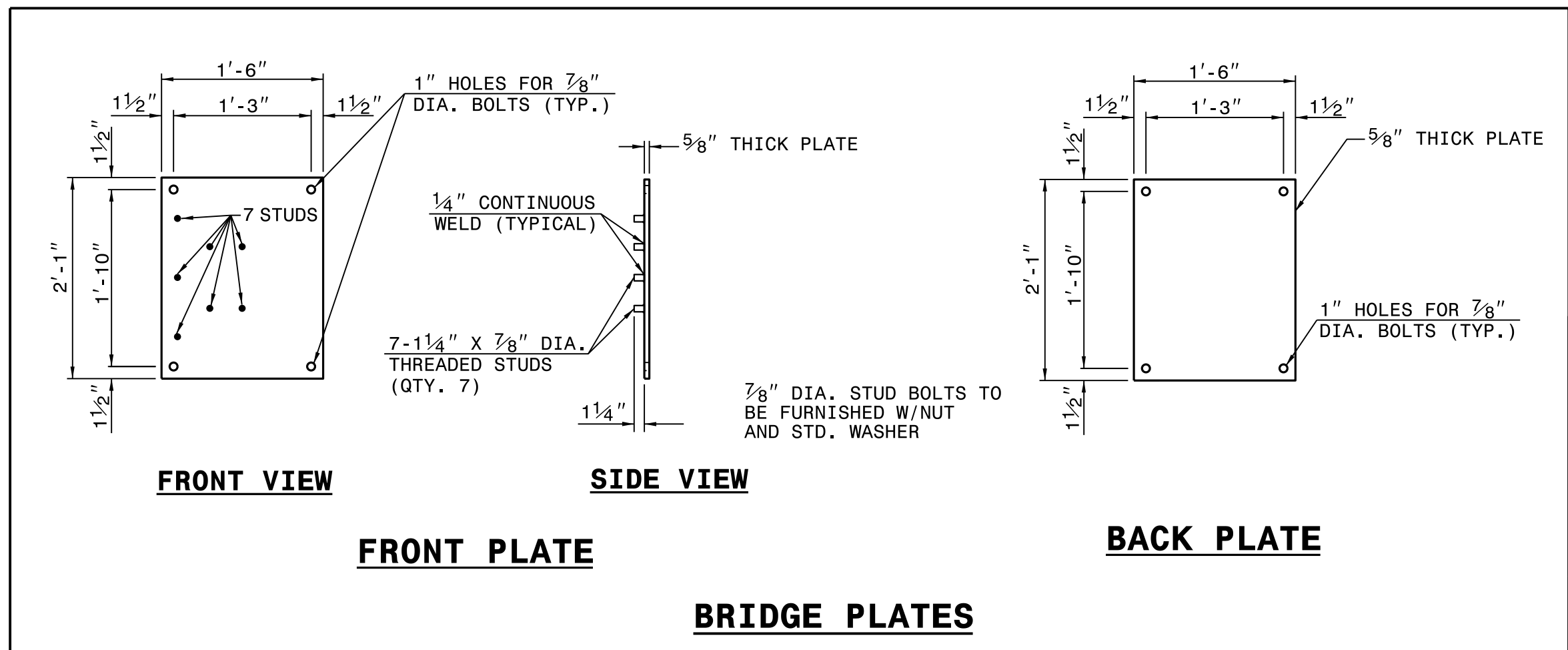


**ELEVATION VIEW**



**SECTION VIEW**

- GENERAL NOTES:**
1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
  2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
  3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
  4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
  5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
  6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
  7. USE THIS DETAIL ONLY FOR BRIGES WITH POST AND BEAM TYPE RAIL.
  8. ATTACH 1" X 1" BAR AND THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
  9. 1" X 1" BAR MAY NOT BE NEEDED ON BRIDGE RAILS WHERE FACE OF RAIL DOES NOT PROJECT BEYOND FACE OF POST.
  10. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
  11. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
  12. SEE ROADWAY STANDARD DRAWING 862.03 SHEET 3 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT



**FRONT VIEW**

**SIDE VIEW**

**FRONT PLATE**

**BACK PLATE**

**BRIDGE PLATES**



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

**TYPE III MODIFIED FOR POST AND BEAM RAIL**

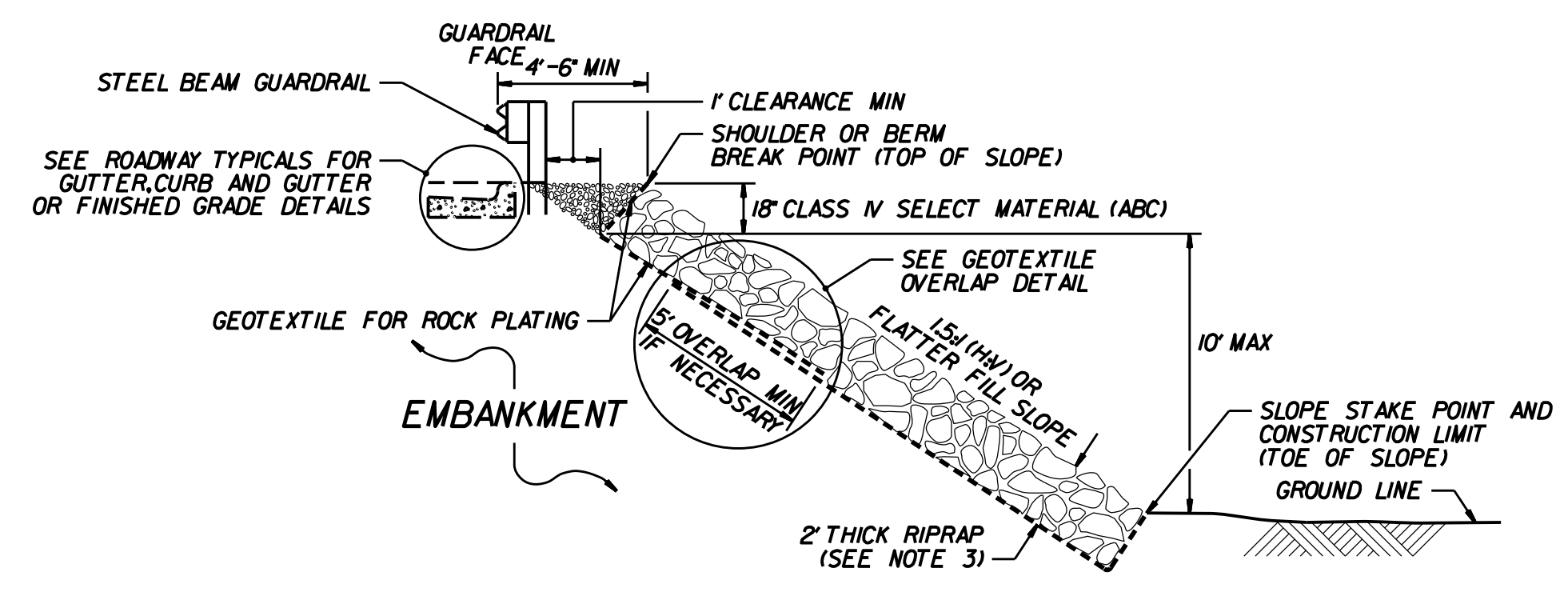
ORIGINAL BY: E.E. WARD DATE: 01-03  
MODIFIED BY: JS Howerton DATE: 01-18  
CHECKED BY: DATE:  
FILE SPEC.: s:details\stand\bp\_iii\_original.dgn

24-JAN-2018 14:51 S:\Contracts\Special\Details\stand\bp\_iii\_original.dgn J:\power\ton AT\_CSD-292595

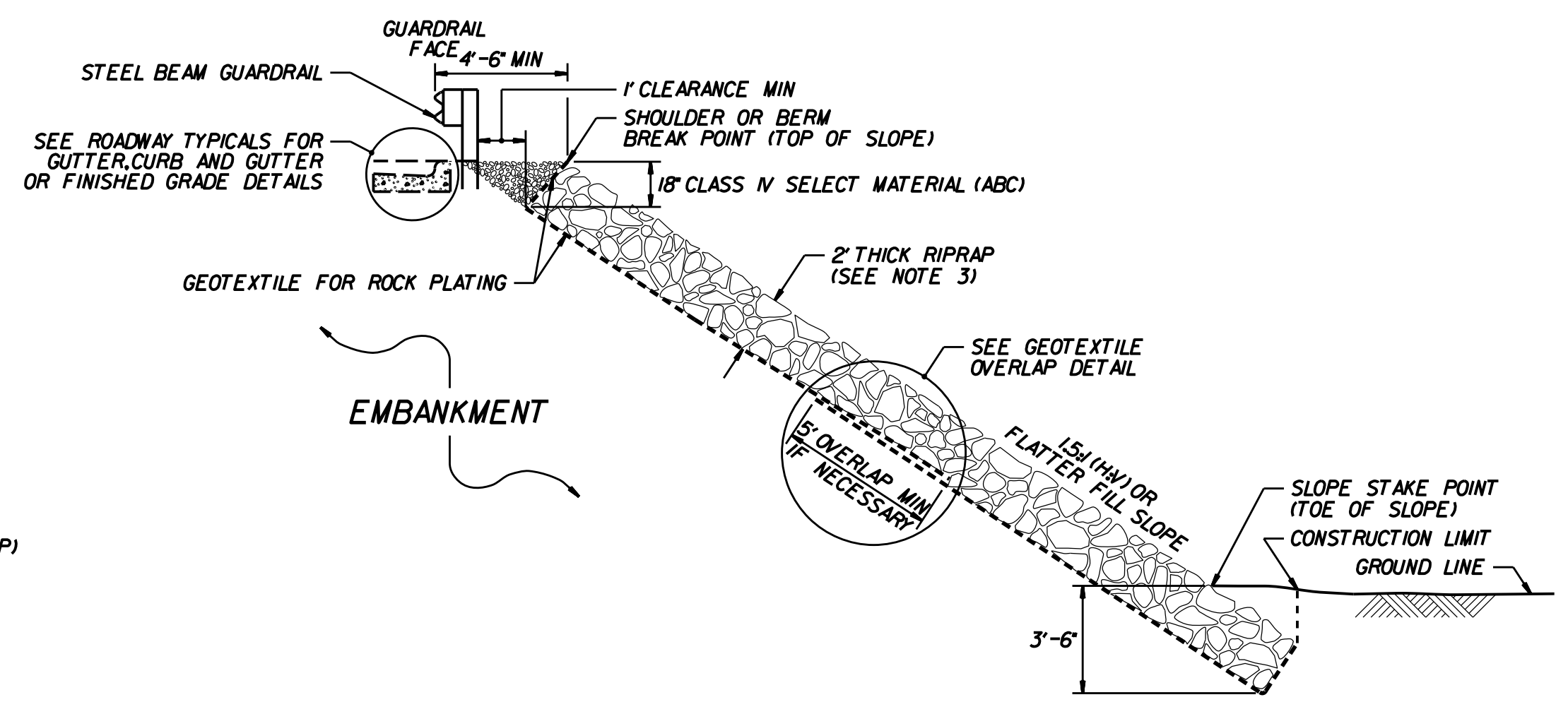
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

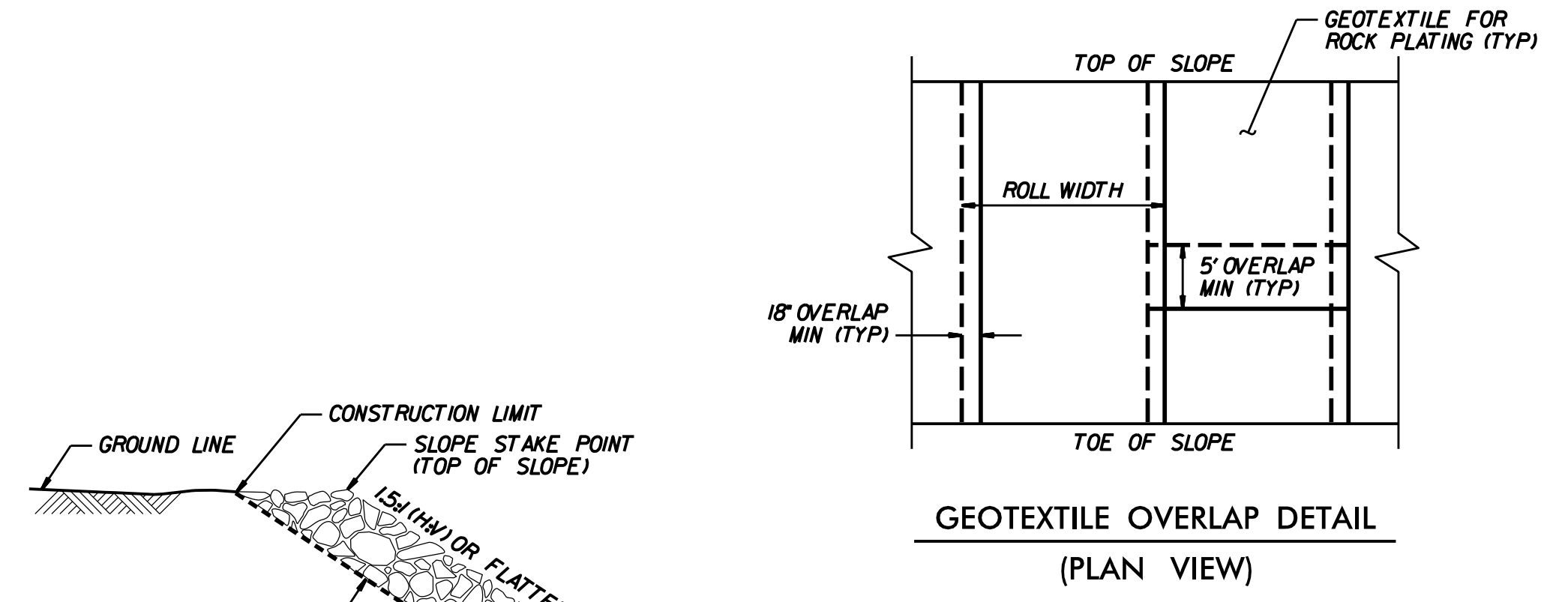
SHEET 1 OF 1  
**275D01**



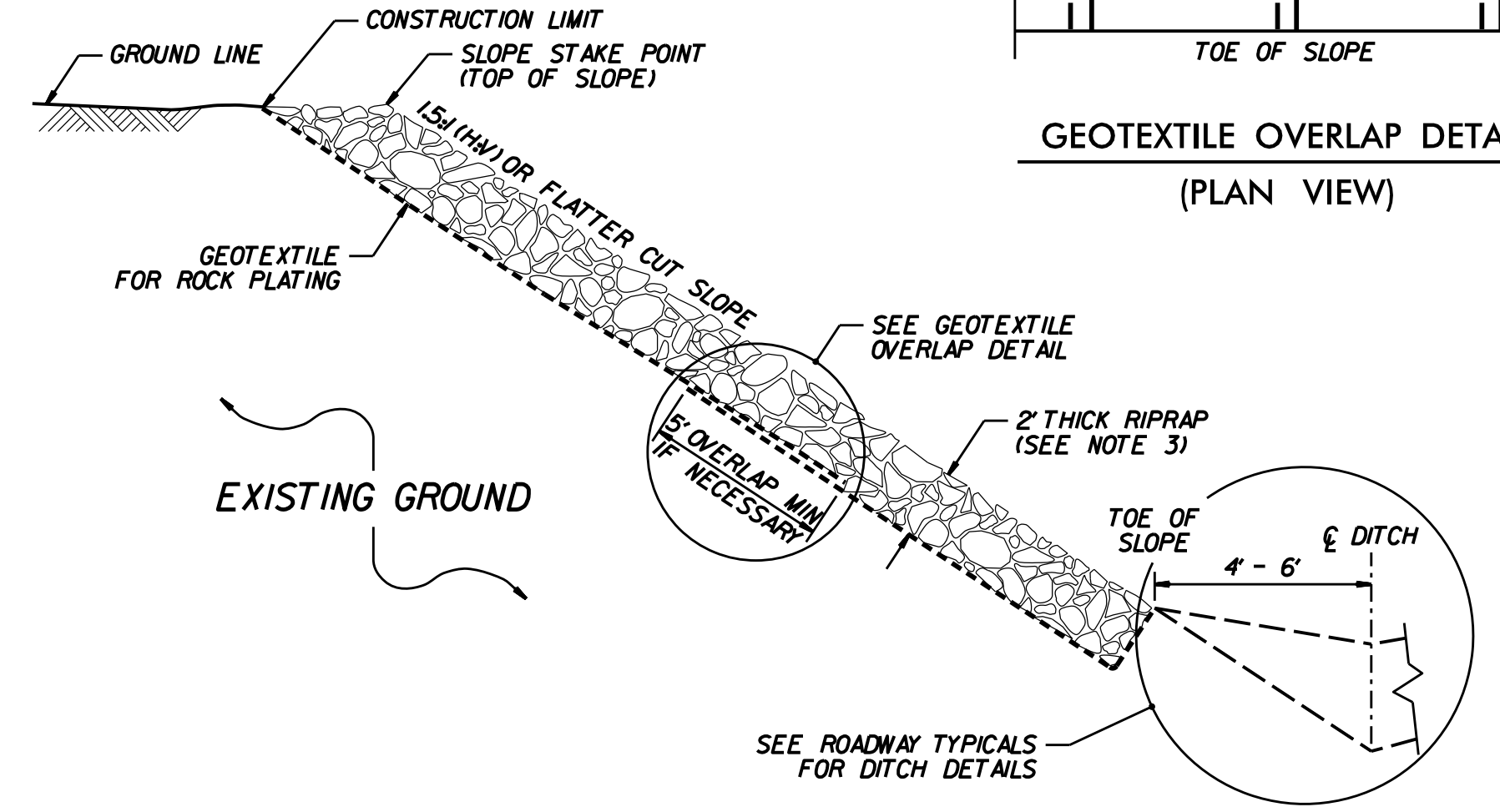
**ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION**



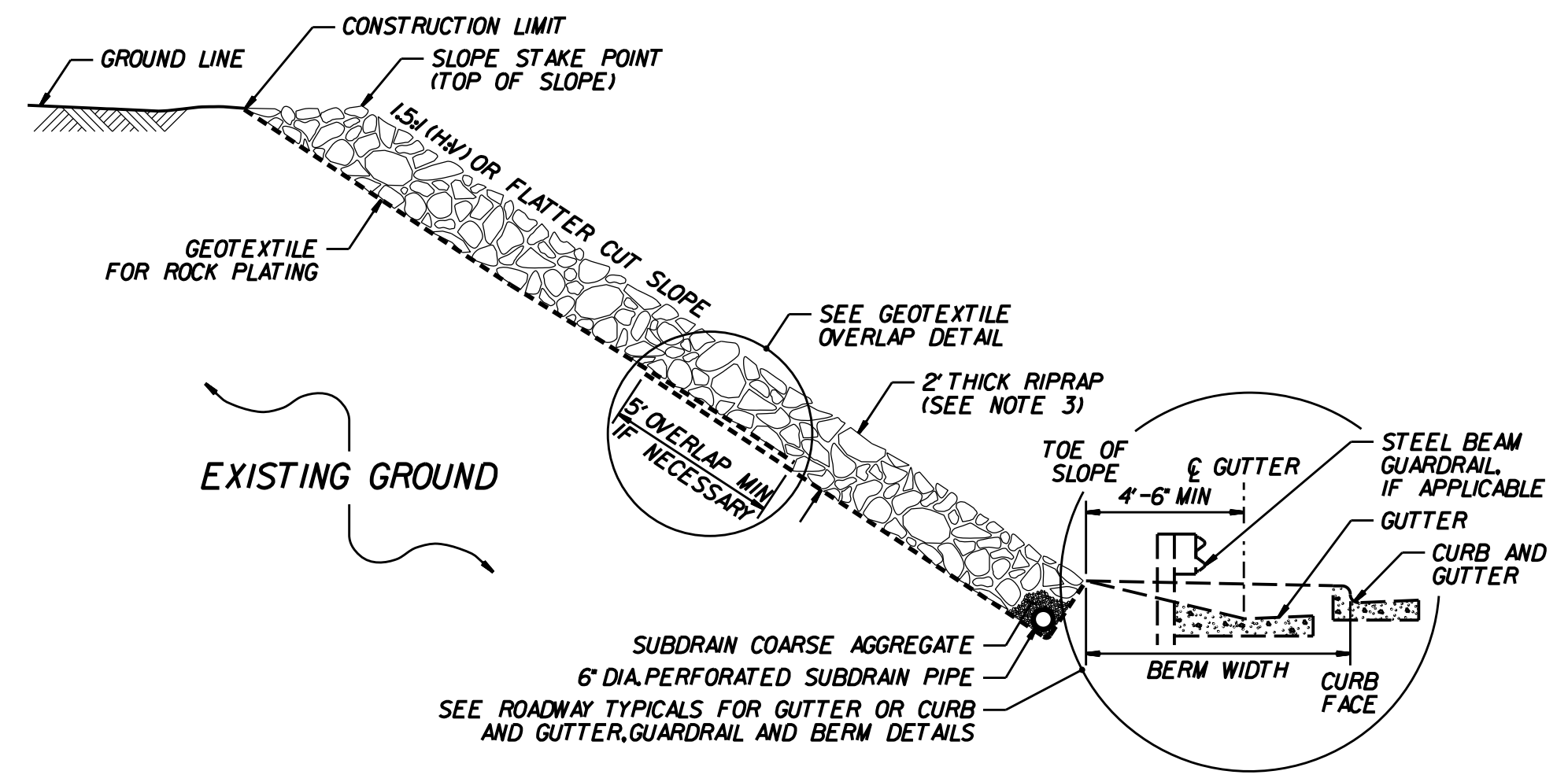
**ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION**



**GEOTEXTILE OVERLAP DETAIL (PLAN VIEW)**



**ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION**



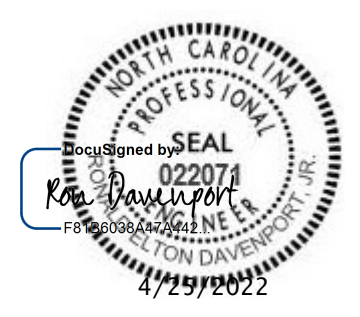
**ROCK PLATING DETAIL NO. 4 - TYPICAL SECTION**

- NOTES:**
- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
  - FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
  - USE CLASS 1, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

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

ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

SHEET 1 OF 1  
**275D01**



CONTRACT STANDARDS AND DEVELOPMENT UNIT  
Office 919-707-6900 FAX 919-250-4119

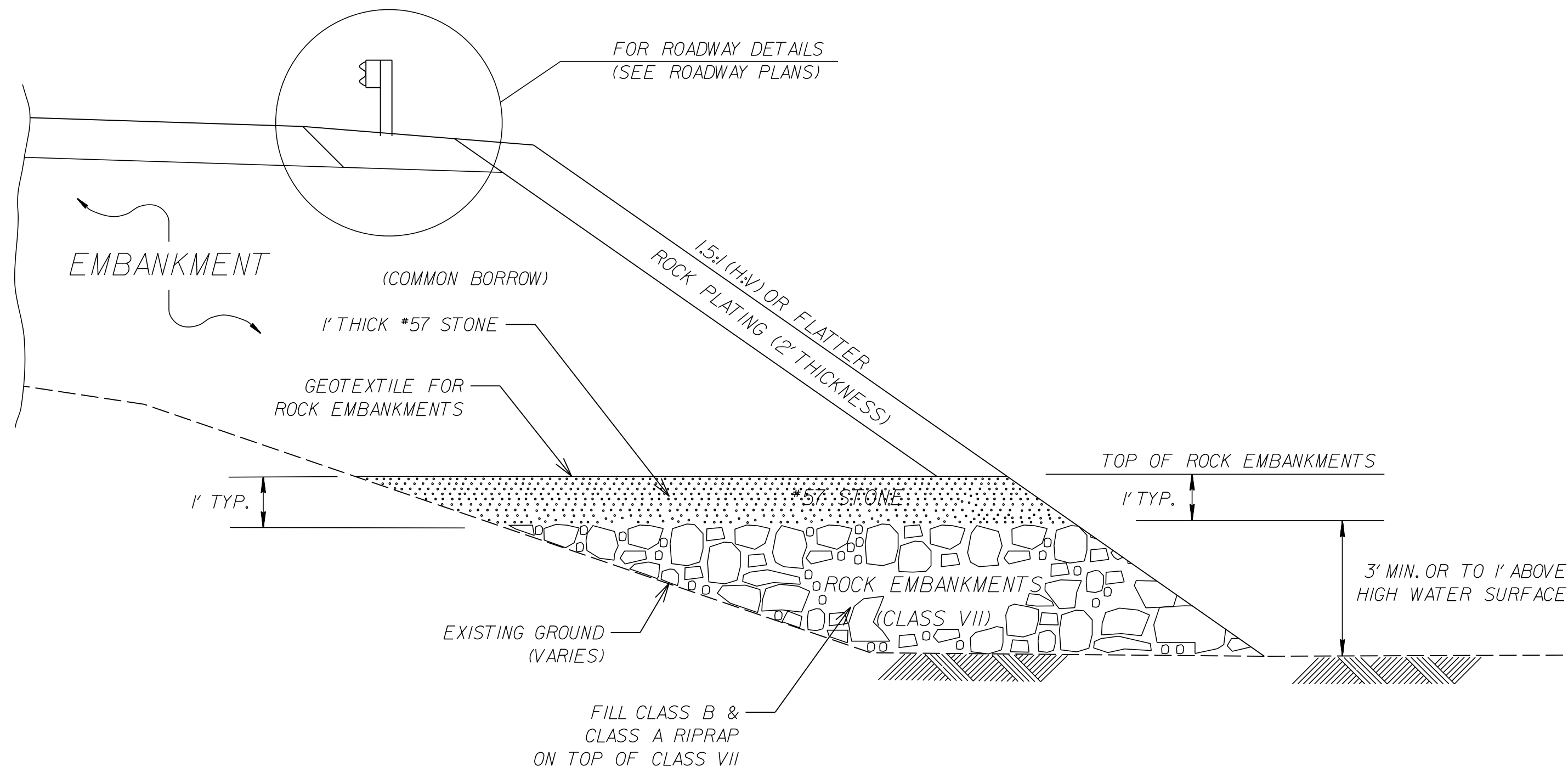
**SEE TITLE BLOCK**

ORIGINAL BY: S. HIDDEN DATE: 03-11-22  
 MODIFIED BY: DATE: \_\_\_\_\_  
 CHECKED BY: DATE: \_\_\_\_\_  
 FILE SPEC.: \_\_\_\_\_

SYTIME\$\$\$\$\$  
 U\$\$\$\$\$  
 C\$\$\$\$\$  
 D\$\$\$\$\$  
 USERNAME\$\$\$\$\$

### ROCK EMBANKMENTS TYPICAL SECTION

(SEE TABLE FOR LOCATIONS)  
(NOT TO SCALE)



ROCK PLATING

FOR ROCK PLATING, SEE STANDARD ROCK PLATING DETAIL SHEET 2750D01.

ROCK EMBANKMENTS

FOR ROCK EMBANKMENTS, SEE ROCK EMBANKMENTS SPECIAL PROVISION.

USE ROCK EMBANKMENTS AT FOLLOWING LOCATIONS:

-ALIGNMENT-	STA.(t) to STA.(t)	OFFSET (t)
-L-	13+25 to 17+75	75' LT to 85' LT
-L-	17+75 to 20+45	70' RT to 75' RT
-L-	19+25 to 20+60	70' LT to 85' LT

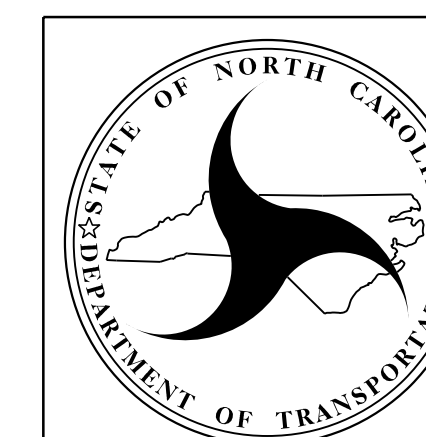
CONSTRUCT ROCK EMBANKMENTS AS SHOWN IN THE ROCK EMBANKMENTS TYPICAL SECTION AND ACCORDING TO THE ROCK EMBANKMENTS SPECIAL PROVISION.

FILL VOIDS IN THE TOP OF ROCK EMBANKMENTS WITH CLASS B AND CLASS A RIP RAP.

PLACE #57 STONE AS SHOWN IN THE ROCK EMBANKMENTS TYPICAL SECTION.

INSTALL GEOTEXTILE ON TOP OF #57 STONE IN ACCORDANCE WITH THE ARTICLE 270-3 OF THE STANDARD SPECIFICATIONS.

ESTIMATED MATERIAL QUANTITIES FOR ROCK EMBANKMENTS	
ROCK EMBANKMENTS (SELECT MATERIAL, CLASS VII)	= 430 TONS
RIP RAP CLASS A	= 135 TONS
RIP RAP CLASS B	= 135 TONS
#57 STONE (SELECT MATERIAL, CLASS VI)	= 355 TONS
GEOTEXTILE FOR ROCK EMBANKMENTS	= 710 SY
GEOTEXTILE FOR ROCK PLATING	= 1,135 SY
RIP RAP FOR ROCK PLATING	= 1,135 SY



REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		











COMPUTED BY: Paul Weaver DATE: 5/10/2021  
 CHECKED BY: John Fargher DATE: 5/10/2021

(12-17-19)

PROJECT NO.  
B-5717

SHEET NO.  
3G-1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				<b>TOTAL LF:</b>	200

\*UD = Underdrain  
 \*BD = Blind Drain  
 \*SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY					100	200	300		
					<b>TOTAL CY/TONS/SY:</b>	100	200**	300**	0

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)  
 \*AST = Aggregate Stabilization  
 \*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities 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 ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY	
L	1.5:1	13+25	1.5:1	17+75	LT	1	B	640	
L	1.5:1	17+75	1.5:1	20+45	RT	1	B	275	
L	1.5:1	19+25	1.5:1	20+60	LT	1	B	220	
								<b>TOTAL SY:</b>	1,135

\*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.



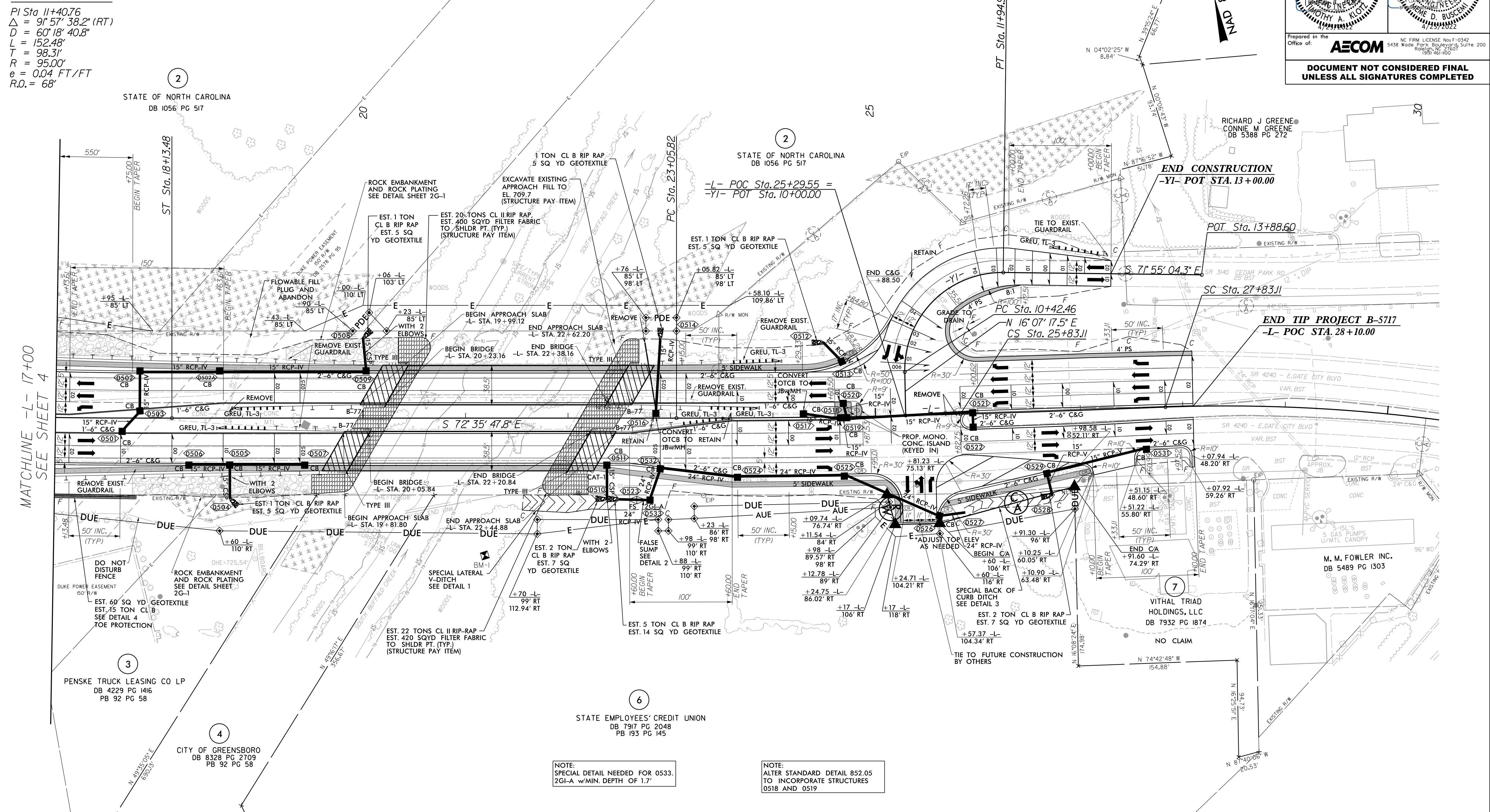
PROJECT REFERENCE NO. B-5717	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared in the Office of: <b>AECOM</b>	
NC FIRM LICENSE No F-0342 5438 Wade Park Boulevard, Suite 200 Raleigh, NC 27607 (919) 461-4000	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**-L-**

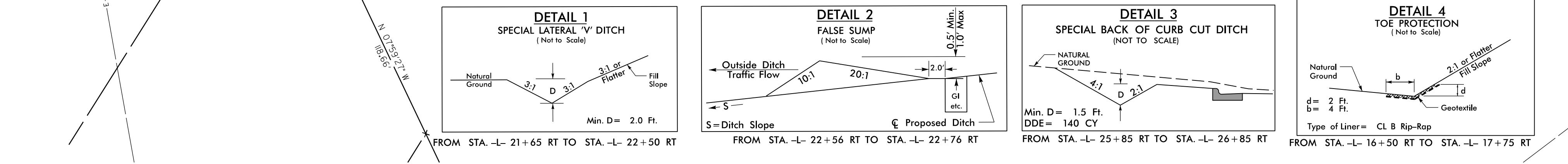
PIs Sta 16+80.16 Δs = 2° 51' 53.2" Ls = 200.00' LT = 133.35' ST = 66.68'	PIs Sta 24+44.47 Δ = 1° 35' 19.6" (LT) D = 0° 34' 22.6" L = 277.29' T = 138.65' R = 10,000.00' e = NC	PIs Sta 26+49.78 Δs = 0° 34' 22.6" Ls = 200.00' LT = 133.33' ST = 66.67'	PIs Sta 29+71.34 Δ = 1° 32' 43.3" (RT) D = 3° 36' 53.6" L = 374.71' T = 188.23' R = 1,585.00'
--	---	--	--

**-YI-**

PIs Sta 11+40.76 Δ = 9° 57' 38.2" (RT) D = 60° 18' 40.8" L = 152.48' LT = 98.31' R = 95.00' e = 0.04 FT/FT R.O. = 68'
--



MATCHLINE -L- 17+00  
SEE SHEET 4



FOR TRANSPORTATION MANAGEMENT PLAN SEE SHEETS TMP-1 THROUGH TMP-9

FOR STRUCTURES SEE SHEETS S1-01 THROUGH S2-38

FOR -L- RT- PROFILE, SEE SHEET NO. 6

FOR -L- LT- PROFILE, SEE SHEET NO. 6


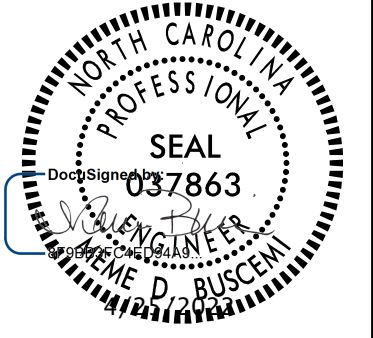
FOR -L- PROFILE, SEE SHEET NO. 7

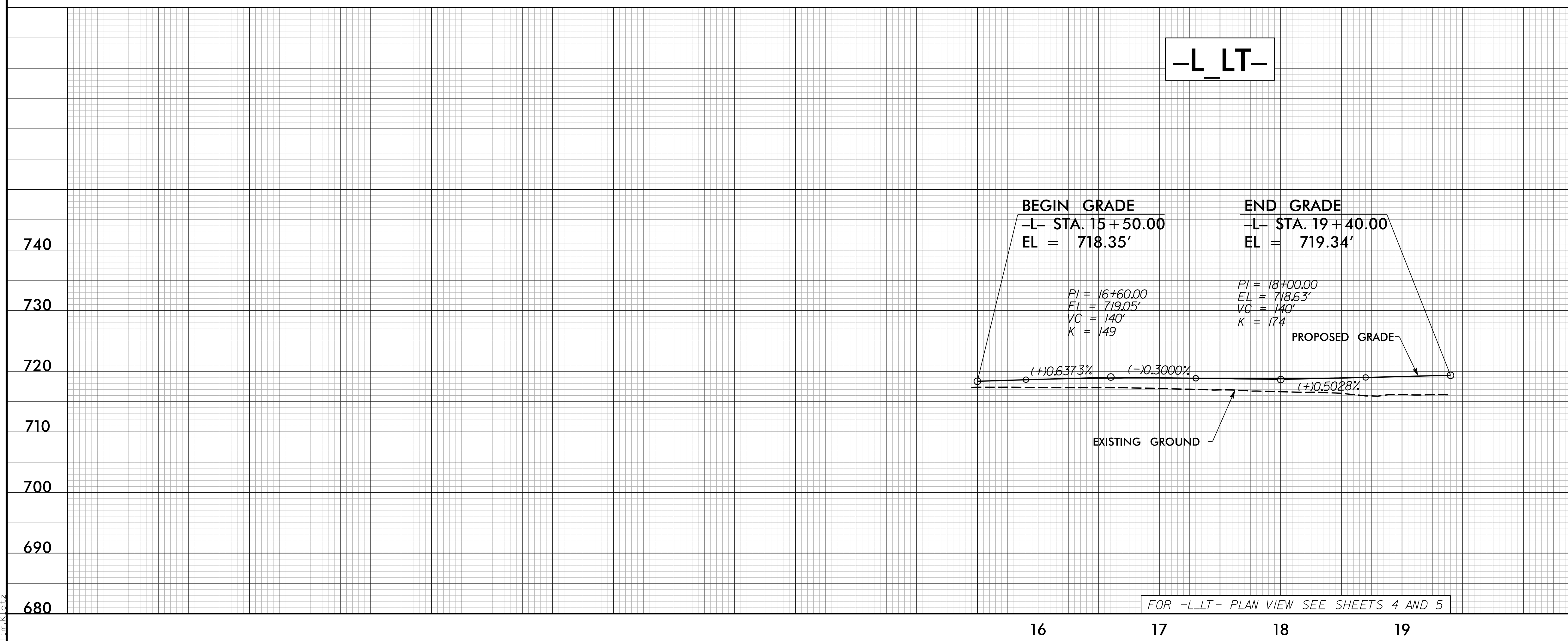
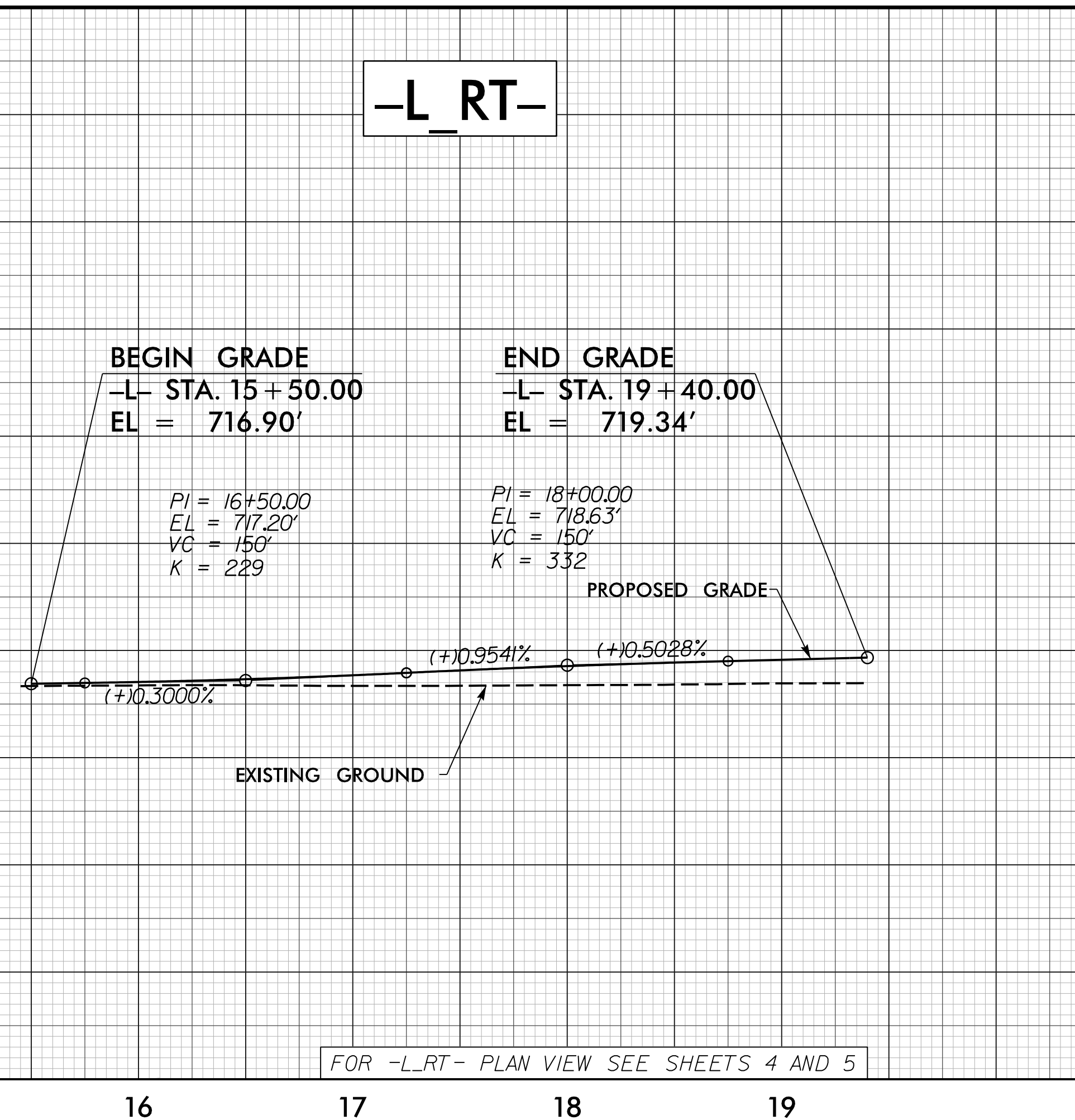
FOR -YI- PROFILE, SEE SHEET NO. 7

REVISIONS  
 5/14/99  
 3/23/2000  
 5/14/2000  
 6/15/2000  
 7/27/2000  
 8/14/2000  
 9/14/2000  
 10/14/2000  
 11/14/2000  
 12/14/2000  
 1/14/2001  
 2/14/2001  
 3/14/2001  
 4/14/2001  
 5/14/2001  
 6/14/2001  
 7/14/2001  
 8/14/2001  
 9/14/2001  
 10/14/2001  
 11/14/2001  
 12/14/2001  
 1/14/2002  
 2/14/2002  
 3/14/2002  
 4/14/2002  
 5/14/2002  
 6/14/2002  
 7/14/2002  
 8/14/2002  
 9/14/2002  
 10/14/2002  
 11/14/2002  
 12/14/2002  
 1/14/2003  
 2/14/2003  
 3/14/2003  
 4/14/2003  
 5/14/2003  
 6/14/2003  
 7/14/2003  
 8/14/2003  
 9/14/2003  
 10/14/2003  
 11/14/2003  
 12/14/2003  
 1/14/2004  
 2/14/2004  
 3/14/2004  
 4/14/2004  
 5/14/2004  
 6/14/2004  
 7/14/2004  
 8/14/2004  
 9/14/2004  
 10/14/2004  
 11/14/2004  
 12/14/2004  
 1/14/2005  
 2/14/2005  
 3/14/2005  
 4/14/2005  
 5/14/2005  
 6/14/2005  
 7/14/2005  
 8/14/2005  
 9/14/2005  
 10/14/2005  
 11/14/2005  
 12/14/2005  
 1/14/2006  
 2/14/2006  
 3/14/2006  
 4/14/2006  
 5/14/2006  
 6/14/2006  
 7/14/2006  
 8/14/2006  
 9/14/2006  
 10/14/2006  
 11/14/2006  
 12/14/2006  
 1/14/2007  
 2/14/2007  
 3/14/2007  
 4/14/2007  
 5/14/2007  
 6/14/2007  
 7/14/2007  
 8/14/2007  
 9/14/2007  
 10/14/2007  
 11/14/2007  
 12/14/2007  
 1/14/2008  
 2/14/2008  
 3/14/2008  
 4/14/2008  
 5/14/2008  
 6/14/2008  
 7/14/2008  
 8/14/2008  
 9/14/2008  
 10/14/2008  
 11/14/2008  
 12/14/2008  
 1/14/2009  
 2/14/2009  
 3/14/2009  
 4/14/2009  
 5/14/2009  
 6/14/2009  
 7/14/2009  
 8/14/2009  
 9/14/2009  
 10/14/2009  
 11/14/2009  
 12/14/2009  
 1/14/2010  
 2/14/2010  
 3/14/2010  
 4/14/2010  
 5/14/2010  
 6/14/2010  
 7/14/2010  
 8/14/2010  
 9/14/2010  
 10/14/2010  
 11/14/2010  
 12/14/2010  
 1/14/2011  
 2/14/2011  
 3/14/2011  
 4/14/2011  
 5/14/2011  
 6/14/2011  
 7/14/2011  
 8/14/2011  
 9/14/2011  
 10/14/2011  
 11/14/2011  
 12/14/2011  
 1/14/2012  
 2/14/2012  
 3/14/2012  
 4/14/2012  
 5/14/2012  
 6/14/2012  
 7/14/2012  
 8/14/2012  
 9/14/2012  
 10/14/2012  
 11/14/2012  
 12/14/2012  
 1/14/2013  
 2/14/2013  
 3/14/2013  
 4/14/2013  
 5/14/2013  
 6/14/2013  
 7/14/2013  
 8/14/2013  
 9/14/2013  
 10/14/2013  
 11/14/2013  
 12/14/2013  
 1/14/2014  
 2/14/2014  
 3/14/2014  
 4/14/2014  
 5/14/2014  
 6/14/2014  
 7/14/2014  
 8/14/2014  
 9/14/2014  
 10/14/2014  
 11/14/2014  
 12/14/2014  
 1/14/2015  
 2/14/2015  
 3/14/2015  
 4/14/2015  
 5/14/2015  
 6/14/2015  
 7/14/2015  
 8/14/2015  
 9/14/2015  
 10/14/2015  
 11/14/2015  
 12/14/2015  
 1/14/2016  
 2/14/2016  
 3/14/2016  
 4/14/2016  
 5/14/2016  
 6/14/2016  
 7/14/2016  
 8/14/2016  
 9/14/2016  
 10/14/2016  
 11/14/2016  
 12/14/2016  
 1/14/2017  
 2/14/2017  
 3/14/2017  
 4/14/2017  
 5/14/2017  
 6/14/2017  
 7/14/2017  
 8/14/2017  
 9/14/2017  
 10/14/2017  
 11/14/2017  
 12/14/2017  
 1/14/2018  
 2/14/2018  
 3/14/2018  
 4/14/2018  
 5/14/2018  
 6/14/2018  
 7/14/2018  
 8/14/2018  
 9/14/2018  
 10/14/2018  
 11/14/2018  
 12/14/2018  
 1/14/2019  
 2/14/2019  
 3/14/2019  
 4/14/2019  
 5/14/2019  
 6/14/2019  
 7/14/2019  
 8/14/2019  
 9/14/2019  
 10/14/2019  
 11/14/2019  
 12/14/2019  
 1/14/2020  
 2/14/2020  
 3/14/2020  
 4/14/2020  
 5/14/2020  
 6/14/2020  
 7/14/2020  
 8/14/2020  
 9/14/2020  
 10/14/2020  
 11/14/2020  
 12/14/2020  
 1/14/2021  
 2/14/2021  
 3/14/2021  
 4/14/2021  
 5/14/2021  
 6/14/2021  
 7/14/2021  
 8/14/2021  
 9/14/2021  
 10/14/2021  
 11/14/2021  
 12/14/2021  
 1/14/2022  
 2/14/2022  
 3/14/2022  
 4/14/2022  
 5/14/2022  
 6/14/2022  
 7/14/2022  
 8/14/2022  
 9/14/2022  
 10/14/2022  
 11/14/2022  
 12/14/2022  
 1/14/2023  
 2/14/2023  
 3/14/2023  
 4/14/2023  
 5/14/2023  
 6/14/2023  
 7/14/2023  
 8/14/2023  
 9/14/2023  
 10/14/2023  
 11/14/2023  
 12/14/2023  
 1/14/2024  
 2/14/2024  
 3/14/2024  
 4/14/2024  
 5/14/2024  
 6/14/2024  
 7/14/2024  
 8/14/2024  
 9/14/2024  
 10/14/2024  
 11/14/2024  
 12/14/2024  
 1/14/2025  
 2/14/2025  
 3/14/2025  
 4/14/2025  
 5/14/2025  
 6/14/2025  
 7/14/2025  
 8/14/2025  
 9/14/2025  
 10/14/2025  
 11/14/2025  
 12/14/2025  
 1/14/2026  
 2/14/2026  
 3/14/2026  
 4/14/2026  
 5/14/2026  
 6/14/2026  
 7/14/2026  
 8/14/2026  
 9/14/2026  
 10/14/2026  
 11/14/2026  
 12/14/2026  
 1/14/2027  
 2/14/2027  
 3/14/2027  
 4/14/2027  
 5/14/2027  
 6/14/2027  
 7/14/2027  
 8/14/2027  
 9/14/2027  
 10/14/2027  
 11/14/2027  
 12/14/2027  
 1/14/2028  
 2/14/2028  
 3/14/2028  
 4/14/2028  
 5/14/2028  
 6/14/2028  
 7/14/2028  
 8/14/2028  
 9/14/2028  
 10/14/2028  
 11/14/2028  
 12/14/2028  
 1/14/2029  
 2/14/2029  
 3/14/2029  
 4/14/2029  
 5/14/2029  
 6/14/2029  
 7/14/2029  
 8/14/2029  
 9/14/2029  
 10/14/2029  
 11/14/2029  
 12/14/2029  
 1/14/2030  
 2/14/2030  
 3/14/2030  
 4/14/2030  
 5/14/2030  
 6/14/2030  
 7/14/2030  
 8/14/2030  
 9/14/2030  
 10/14/2030  
 11/14/2030  
 12/14/2030  
 1/14/2031  
 2/14/2031  
 3/14/2031  
 4/14/2031  
 5/14/2031  
 6/14/2031  
 7/14/2031  
 8/14/2031  
 9/14/2031  
 10/14/2031  
 11/14/2031  
 12/14/2031  
 1/14/2032  
 2/14/2032  
 3/14/2032  
 4/14/2032  
 5/14/2032  
 6/14/2032  
 7/14/2032  
 8/14/2032  
 9/14/2032  
 10/14/2032  
 11/14/2032  
 12/14/2032  
 1/14/2033  
 2/14/2033  
 3/14/2033  
 4/14/2033  
 5/14/2033  
 6/14/2033  
 7/14/2033  
 8/14/2033  
 9/14/2033  
 10/14/2033  
 11/14/2033  
 12/14/2033  
 1/14/2034  
 2/14/2034  
 3/14/2034  
 4/14/2034  
 5/14/2034  
 6/14/2034  
 7/14/2034  
 8/14/2034  
 9/14/2034  
 10/14/2034  
 11/14/2034  
 12/14/2034  
 1/14/2035  
 2/14/2035  
 3/14/2035  
 4/14/2035  
 5/14/2035  
 6/14/2035  
 7/14/2035  
 8/14/2035  
 9/14/2035  
 10/14/2035  
 11/14/2035  
 12/14/2035  
 1/14/2036  
 2/14/2036  
 3/14/2036  
 4/14/2036  
 5/14/2036  
 6/14/2036  
 7/14/2036  
 8/14/2036  
 9/14/2036  
 10/14/2036  
 11/14/2036  
 12/14/2036  
 1/14/2037  
 2/14/2037  
 3/14/2037  
 4/14/2037  
 5/14/2037  
 6/14/2037  
 7/14/2037  
 8/14/2037  
 9/14/2037  
 10/14/2037  
 11/14/2037  
 12/14/2037  
 1/14/2038  
 2/14/2038  
 3/14/2038  
 4/14/2038  
 5/14/2038  
 6/14/2038  
 7/14/2038  
 8/14/2038  
 9/14/2038  
 10/14/2038  
 11/14/2038  
 12/14/2038  
 1/14/2039  
 2/14/2039  
 3/14/2039  
 4/14/2039  
 5/14/2039  
 6/14/2039  
 7/14/2039  
 8/14/2039  
 9/14/2039  
 10/14/2039  
 11/14/2039  
 12/14/2039  
 1/14/2040  
 2/14/2040  
 3/14/2040  
 4/14/2040  
 5/14/2040  
 6/14/2040  
 7/14/2040  
 8/14/2040  
 9/14/2040  
 10/14/2040  
 11/14/2040  
 12/14/2040  
 1/14/2041  
 2/14/2041  
 3/14/2041  
 4/14/2041  
 5/14/2041  
 6/14/2041  
 7/14/2041  
 8/14/2041  
 9/14/2041  
 10/14/2041  
 11/14/2041  
 12/14/2041  
 1/14/2042  
 2/14/2042  
 3/14/2042  
 4/14/2042  
 5/14/2042  
 6/14/2042  
 7/14/2042  
 8/14/2042  
 9/14/2042  
 10/14/2042  
 11/14/2042  
 12/14/2042  
 1/14/2043  
 2/14/2043  
 3/14/2043  
 4/14/2043  
 5/14/2043  
 6/14/2043  
 7/14/2043  
 8/14/2043  
 9/14/2043  
 10/14/2043  
 11/14/2043  
 12/14/2043  
 1/14/2044  
 2/14/2044  
 3/14/2044  
 4/14/2044  
 5/14/2044  
 6/14/2044  
 7/14/2044  
 8/14/2044  
 9/14/2044  
 10/14/2044  
 11/14/2044  
 12/14/2044  
 1/14/2045  
 2/14/2045  
 3/14/2045  
 4/14/2045  
 5/14/2045  
 6/14/2045  
 7/14/2045  
 8/14/2045  
 9/14/2045  
 10/14/2045  
 11/14/2045  
 12/14/2045  
 1/14/2046  
 2/14/2046  
 3/14/2046  
 4/14/2046  
 5/14/2046  
 6/14/2046  
 7/14/2046  
 8/14/2046  
 9/14/2046  
 10/14/2046  
 11/14/2046  
 12/14/2046  
 1/14/2047  
 2/14/2047  
 3/14/2047  
 4/14/2047  
 5/14/2047  
 6/14/2047  
 7/14/2047  
 8/14/2047  
 9/14/2047  
 10/14/2047  
 11/14/2047  
 12/14/2047  
 1/14/2048  
 2/14/2048  
 3/14/2048  
 4/14/2048  
 5/14/2048  
 6/14/2048  
 7/14/2048  
 8/14/2048  
 9/14/2048  
 10/14/2048  
 11/14/2048  
 12/14/2048  
 1/14/2049  
 2/14/2049  
 3/14/2049  
 4/14/2049  
 5/14/2049  
 6/14/2049  
 7/14/2049  
 8/14/2049  
 9/14/2049  
 10/14/2049  
 11/14/2049  
 12/14/2049  
 1/14/2050  
 2/14/2050  
 3/14/2050  
 4/14/2050  
 5/14/2050  
 6/14/2050  
 7/14/2050  
 8/14/2050  
 9/14/2050  
 10/14/2050  
 11/14/2050  
 12/14/2050  
 1/14/2051  
 2/14/2051  
 3/14/2051  
 4/14/2051  
 5/14/2051  
 6/14/2051  
 7/14/2051  
 8/14/2051  
 9/14/2051  
 10/14/2051  
 11/14/2051  
 12/14/2051  
 1/14/2052  
 2/14/2052  
 3/14/2052  
 4/14/2052  
 5/14/2052  
 6/14/2052  
 7/14/2052  
 8/14/2052  
 9/14/2052  
 10/14/2052  
 11/14/2052  
 12/14/2052  
 1/14/2053  
 2/14/2053  
 3/14/2053  
 4/14/2053  
 5/14/2053  
 6/14/2053  
 7/14/2053  
 8/14/2053  
 9/14/2053  
 10/14/2053  
 11/14/2053  
 12/14/2053  
 1/14/2054  
 2/14/2054  
 3/14/2054  
 4/14/2054  
 5/14/2054  
 6/14/2054  
 7/14/2054  
 8/14/2054  
 9/14/2054  
 10/14/2054  
 11/14/2054  
 12/14/2054  
 1/14/2055  
 2/14/2055  
 3/14/2055  
 4/14/2055  
 5/14/2055  
 6/14/2055  
 7/14/2055  
 8/14/2055  
 9/14/2055  
 10/14/2055  
 11/14/2055  
 12/14/2055  
 1/14/2056  
 2/14/2056  
 3/14/2056  
 4/14/2056  
 5/14/2056  
 6/14/2056  
 7/14/2056  
 8/14/2056  
 9/14/2056  
 10/14/2056  
 11/14/2056  
 12/14/2056  
 1/14/2057  
 2/14/2057  
 3/14/2057  
 4/14/2057  
 5/14/2057  
 6/14/2057  
 7/14/2057  
 8/14/2057  
 9/14/2057  
 10/14/2057  
 11/14/2057  
 12/14/2057  
 1/14/2058  
 2/14/2058  
 3/14/2058  
 4/14/2058  
 5/14/2058  
 6/14/2058  
 7/14/2058  
 8/14/2058  
 9/14/2058  
 10/14/2058  
 11/14/2058  
 12/14/2058  
 1/14/2059  
 2/14/2059  
 3/14/2059  
 4/14/2059  
 5/14/2059  
 6/14/2059  
 7/14/2059  
 8/14/2059  
 9/14/2059  
 10/14/2059  
 11/14/2059  
 12/14/2059  
 1/14/2060  
 2/14/2060  
 3/14/2060  
 4/14/2060  
 5/14/2060  
 6/14/2060  
 7/14/2060  
 8/14/2060  
 9/14/2060  
 10/14/2060  
 11/14/2060  
 12/14/2060  
 1/14/2061  
 2/14/2061  
 3/14/2061  
 4/14/2061  
 5/14/2061  
 6/14/2061  
 7/14/2061  
 8/14/2061  
 9/14/2061  
 10/14/2061  
 11/14/2061  
 12/14/2061  
 1/14/2062  
 2/14/2062  
 3/14/2062  
 4/14/2062  
 5/14/2062  
 6/14/2062  
 7/14/2062  
 8/14/2062  
 9/14/2062  
 10/14/2062  
 11/14/2062  
 12/14/2062  
 1/14/2063  
 2/14/2063  
 3/14/2063  
 4/14/2063  
 5/14/2063  
 6/14/2063

5/28/99

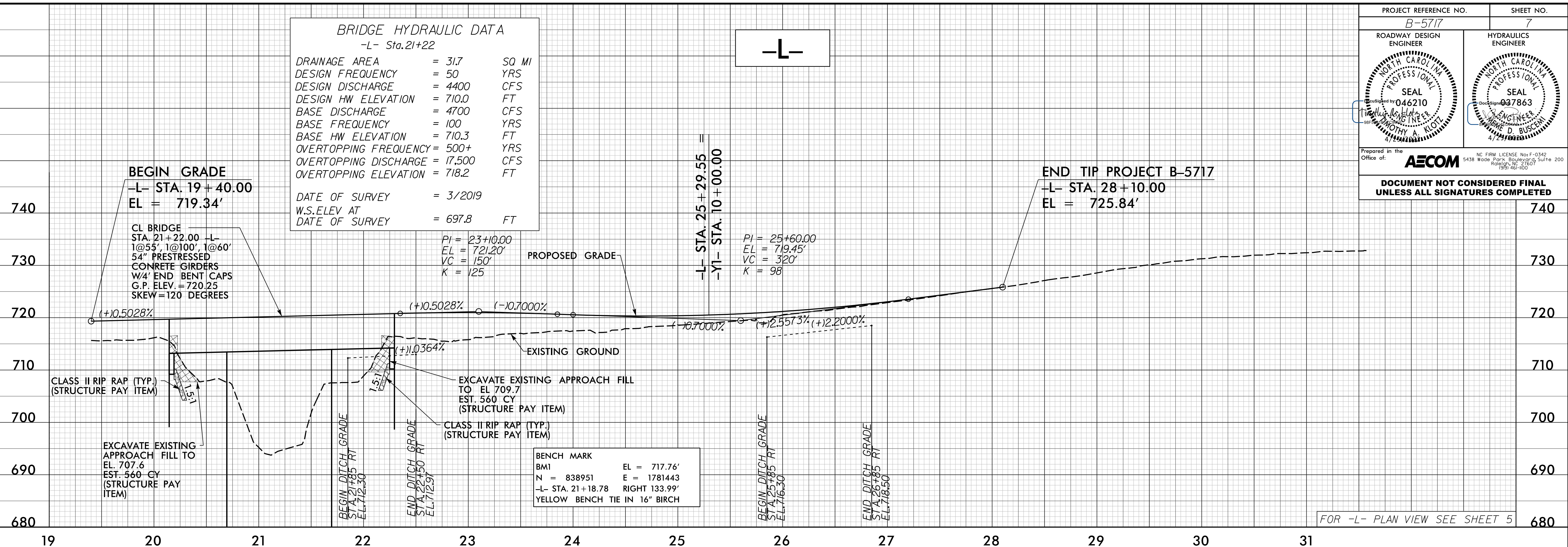
2/8/2022  
C:\Users\ben\OneDrive\Documents\60592827-NCDDT\_SMU\_B-5717\900-CAD\_GIS\910\_CAD\70\_NCDDT\_TIP\Roadway\Proj\B5717\_Rdy\_pf106.dgn

PROJECT REFERENCE NO. <b>B-5717</b>	SHEET NO. <b>6</b>
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
Prepared in the Office of: <b>AECOM</b>	
<small>NC FIRM LICENSE No. F-0342 5436 Wade Park Boulevard, Suite 200 Raleigh, NC 27607 (919) 461-1000</small>	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



5/28/2019

2/8/2022  
C:\Users\paw.bentley\OneDrive\Documents\60592827-NC001\_SMU\_B-5717\900-CAD\_GIS\910\_CAD\70\_NC001\_TIP\Roadway\Proj\B5717\_Rdy\_pf107.dgn



PROJECT REFERENCE NO.	B-5717	SHEET NO.	7
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
Prepared in the Office of: <b>AECOM</b>			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

