

CONTRACT: C202372 PROJECT: U-3100B

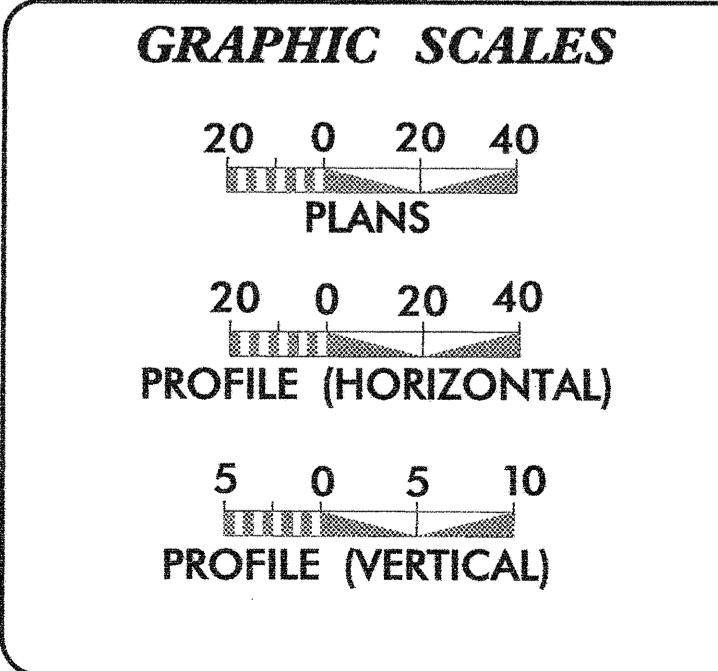
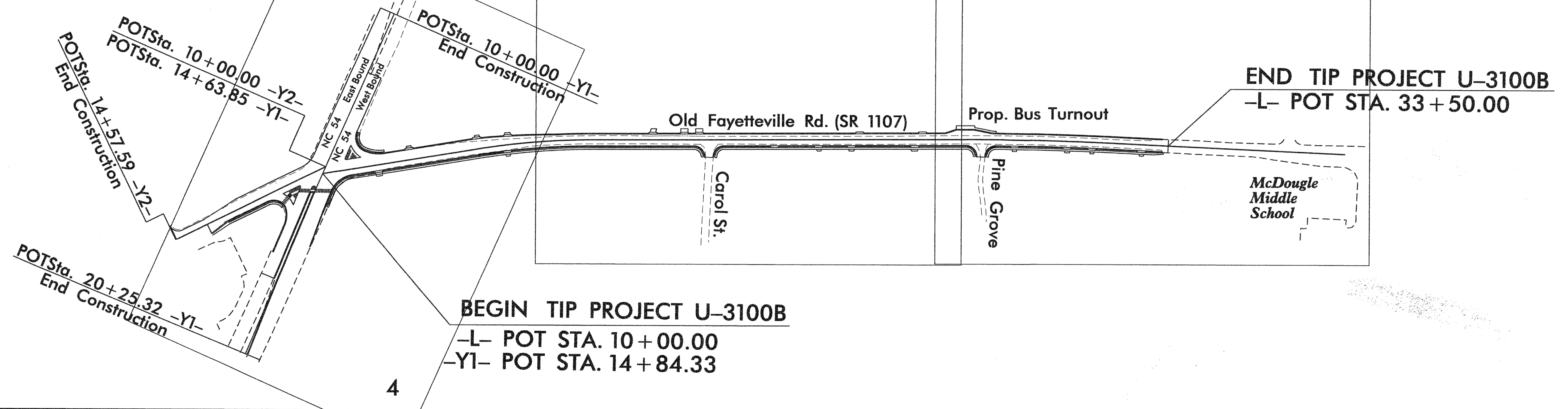
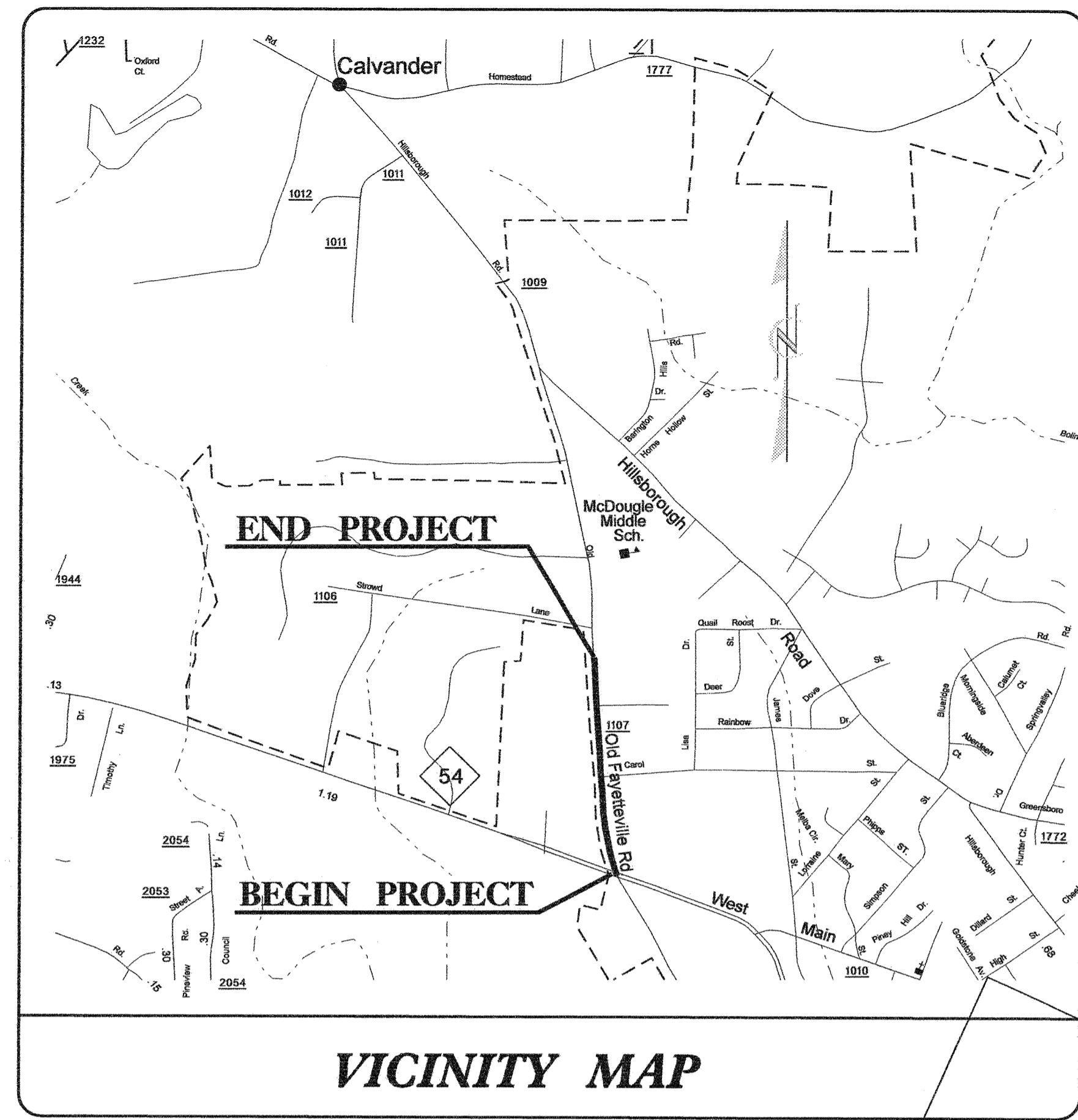
STATE OF NORTH CAROLINA
 DIVISION OF BICYCLE AND
 PEDESTRIAN TRANSPORTATION

ORANGE COUNTY

LOCATION: Carrboro - Old Fayetteville Road
 from NC 54 to McDougle Middle School

TYPE OF WORK: Grading, Widening, Paving, Resurfacing,
 Signal, and Drainage

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3100B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34896.1.1	STM-1107(16)	P.E.	
34896.2.STI	STM-1107(16)	ROW & UTIL.	
34896.3.STI	STM-1107(16)	CONST.	



DESIGN DATA

ADT 2009	=	-
ADT 2029	=	-
DHV	=	- %
D	=	- %
T	=	- %
V	=	35 MPH
TTST	=	- %
DUAL	=	- %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3100B	=	0.45 MI.
LENGTH STRUCTURE TIP PROJECT U-3100B	=	0.00 MI.
TOTAL LENGTH OF TIP PROJECT U-3100B	=	0.45 MI.

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 AUGUST 8, 2008

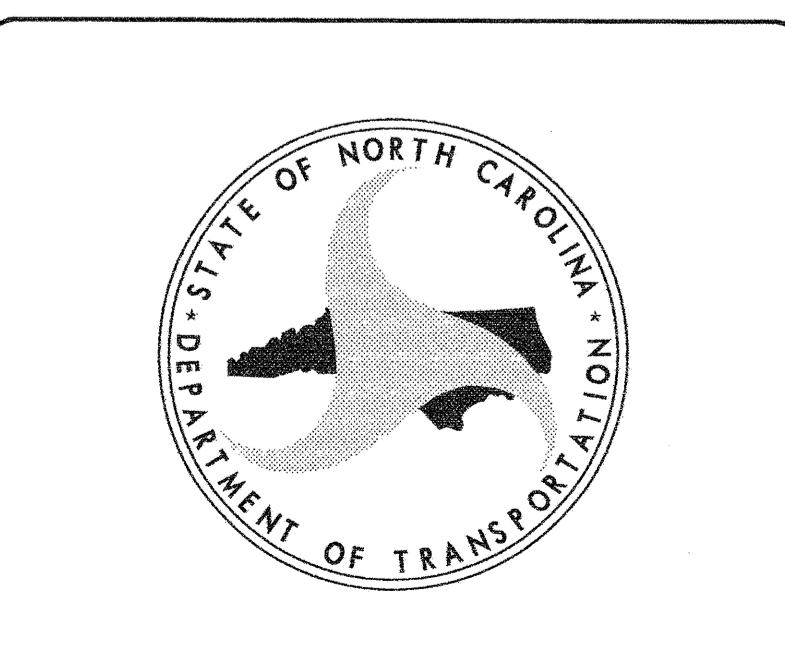
LETTING DATE:
 JANUARY 19, 2010

HYDRAULICS ENGINEER

PROFESSIONAL SEAL 15833
 SIGNATURE: [Signature] 10-12-09 P.E.

BICYCLE FACILITY DESIGN ENGINEER

PROFESSIONAL SEAL 20761
 SIGNATURE: [Signature] 10-6-09 P.E.



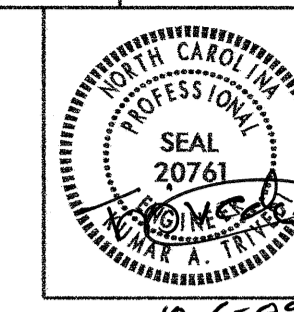
Division of Bicycle & Pedestrian Transportation

Thomas P. Norman
 THOMAS P. NORMAN
 DIRECTOR

29-SEP-2009 08:07 3_01d Fayetteville Rd - Carrboro\TitleSheet\U3100B_tsh.dgn

STATE OF NORTH CAROLINA
DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION

PROJECT REFERENCE NO. U-3100B	SHEET NO. 1-A
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INDEX OF SHEETS

GENERAL NOTES

ROADWAY ENGLISH STANDARD DRAWINGS

<u>SHEET NUMBER</u>	<u>TITLE</u>		
1	TITLE SHEET	<p>2006 SPECIFICATIONS EFFECTIVE: 07-18-06 REVISED: 01-02-07</p> <p>GRADING AND RESURFACING OR RESURFACING AND WIDENING: THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.</p> <p>CLEARING: CLEARING ON THE PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II</p> <p>SUPERELEVATION: ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF ELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.</p> <p>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.</p> <p>DRIVEWAYS: DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.</p> <p>STREET TURNOUT: STREET TURNOUT SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON THE PLANS.</p> <p>SHORING: SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7</p> <p>SUBSURFACE PLANS: NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.</p> <p>UTILITIES: UTILITY OWNERS ON THIS PROJECT ARE: AT & T OF NORTH CAROLINA, PIEDMONT EMC, TIME WARNER CABLE, AND OWASA.</p> <p>UTILITIES: ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.</p> <p>WHEELCHAIR RAMPS: WHEELCHAIR RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE CONSTRUCTION OF ALL WHEELCHAIR RAMPS SHALL BE IN ACCORDANCE WITH STD. NO. 840.06.</p>	<p>2006 ROADWAY ENGLISH STANDARD DRAWINGS</p> <p>EFF. 07-18-06 REV. 01-02-07</p>
1-A	INDEX OF SHEETS, LIST OF STANDARDS, AND GENERAL NOTES		
1-B	SYMBOL SHEET		
2	PAVEMENT SCHEDULE AND TYPICAL SECTION		
2-A	CONVERSION OF DROP INLET OR JUNCTION BOX TO CATCH BASIN		
2-B	DETAIL TO CONVERT EXISTING DROP INLET OR CATCH BASIN TO JUNCTION BOX		
2-C	ANCHORAGE FOR FRAMES		
2-D	METHOD OF PIPE INSTALLATION		
2-E	METHOD OF PIPE INSTALLATION		
3	SUMMARY OF QUANTITIES		
3-A	PIPE SUMMARY, EARTHWORK SUMMARY AND PAVEMENT REMOVAL SUMMARY		
3-B	PIPE SUMMARY		
3-C	PARCEL INDEX		
4 THRU 6	PLAN SHEETS		
PF-1	PROFILE SHEET		
TCP-1 THRU TCP-5	TRAFFIC CONTROL PLANS		
PMP-1 THRU PMP-6	PAVEMENT MARKING PLANS		
EC-1 THRU EC-8	EROSION CONTROL PLANS		
SIGN-1 THRU SIGN-5	SIGNING PLANS		
SIG.-1 THRU SIG.-3	SIGNAL PLANS		
UC-1 THRU UC-3	UTILITIES CONSTRUCTION PLANS		
UO-1 THRU UO-4	UTILITIES BY OTHERS PLANS		
X-0 THRU X-23	CROSS-SECTIONS		

<u>STD. NO.</u>	<u>TITLE</u>
	DIVISION 2 - EARTHWORK
200.02	METHOD OF CLEARING - METHOD II
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - 2 LANE PAVEMENT
	DIVISION 6 - ASPHALT BASES AND PAVEMENT
654.01	PAVEMENT REPAIR
	DIVISION 8 - INCIDENTALS
840.00	CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
840.01	BRICK CATCH BASIN - 12" THRU 54" PIPE
840.02	CONCRETE CATCH BASIN - 12' THRU 54" PIPE
840.03	FRAME, GRATES AND HOOD
840.14	CONCRETE DROP INLET - 12" THRU 30" PIPE
840.15	BRICK DROP INLET - 12" THRU 30" PIPE
840.16	DROP INLET FRAME AND GRATES
840.18	CONCRETE GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
840.27	BRICK GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.29	FRAMES AND NARROW SLOT FLAT GRATES
840.45	PRECAST DRAINAGE STRUCTURES
840.66	DRAINAGE STRUCTURE STEPS
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.01	CONCRETE SIDEWALK
848.02	DRIVEWAY TURNOUT - RADIUS TYPE
848.04	STREET TURNOUT
848.05	WHEELCHAIR RAMP - CURB CUT
850.01	CONCRETE PAVED DITCHES
852.01	CONCRETE ISLANDS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

3/15/06

Note: Not to Scale

*S.U.E. = *Subsurface Utility Engineering*

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊗
Property Monument	□
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	-w.l.b.-
Proposed Wetland Boundary	-w.l.b.-
Existing Endangered Animal Boundary	-e.a.b.-
Existing Endangered Plant Boundary	-e.p.b.-

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	-j.s.-
Buffer Zone 1	-b.z. 1-
Buffer Zone 2	-b.z. 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:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite Marker	△
Existing Control of Access	⊕
Proposed Control of Access	⊕
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	○

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-c-
Proposed Slope Stakes Fill	-f-
Proposed Wheel Chair Ramp	WCR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
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	-----

UTILITIES:

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	⊕
H-Frame Pole	●
Recorded U/G Power Line	-p-
Designated U/G Power Line (S.U.E.*)	-p-

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	⊕
Recorded U/G Telephone Cable	-t-
Designated U/G Telephone Cable (S.U.E.*)	-t-
Recorded U/G Telephone Conduit	-tc-
Designated U/G Telephone Conduit (S.U.E.*)	-tc-
Recorded U/G Fiber Optics Cable	-t fo-
Designated U/G Fiber Optics Cable (S.U.E.*)	-t fo-

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-w-
Designated U/G Water Line (S.U.E.*)	-w-
Above Ground Water Line	-a/g water-

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	-tv-
Designated U/G TV Cable (S.U.E.*)	-tv-
Recorded U/G Fiber Optic Cable	-tv fo-
Designated U/G Fiber Optic Cable (S.U.E.*)	-tv fo-

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	-g-
Designated U/G Gas Line (S.U.E.*)	-g-
Above Ground Gas Line	-a/g gas-

SANITARY SEWER:

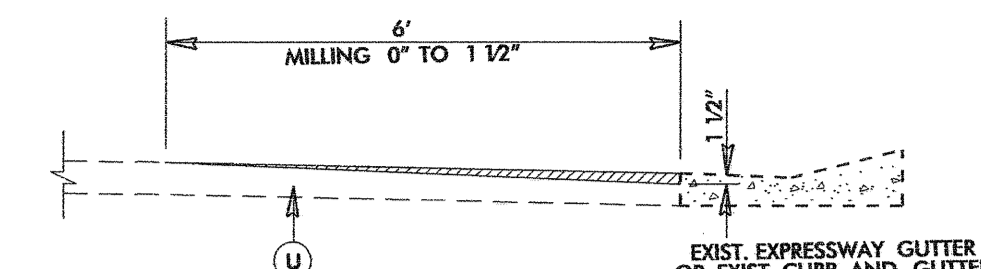
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-ss-
Above Ground Sanitary Sewer	-a/g sanitary sewer-
Recorded SS Forced Main Line	-fss-
Designated SS Forced Main Line (S.U.E.*)	-fss-

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-util-
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

8/17/99

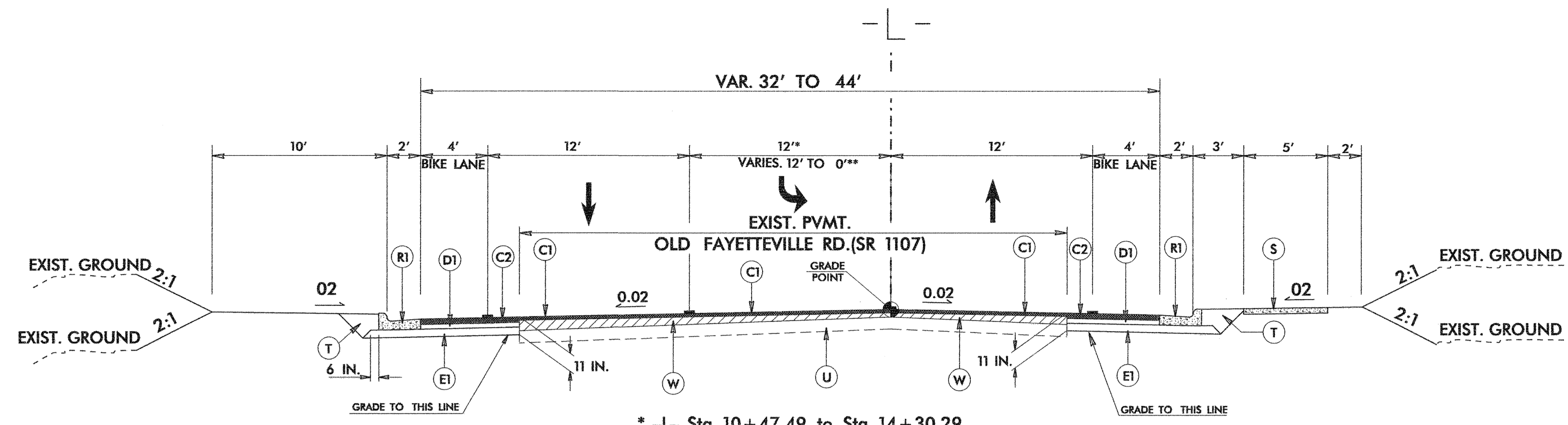
ROADWAY DESIGN ENGINEER



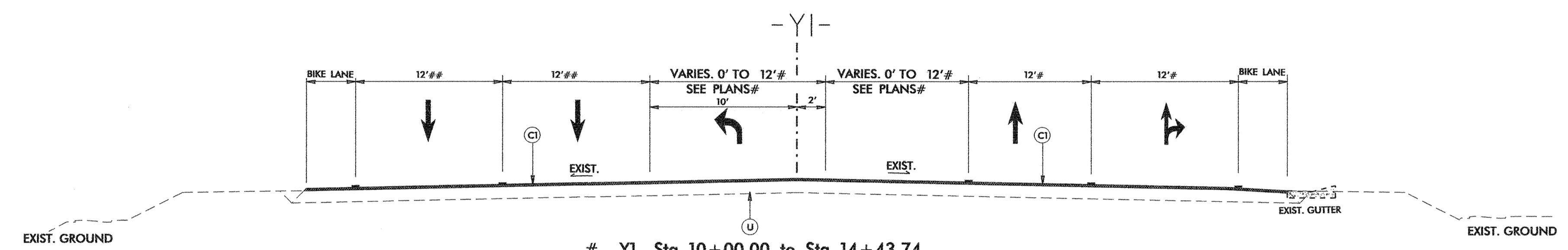
MILLING DETAIL
AS DIRECTED BY THE ENGINEER

-Y1- Sta. 10+00.00 to Sta. 14+58.42 RT.
-Y1- Sta. 17+15.79 to Sta. 18+01.55 RT.
-Y1- Sta. 16+77.43 to Sta. 20+25.32 LT.

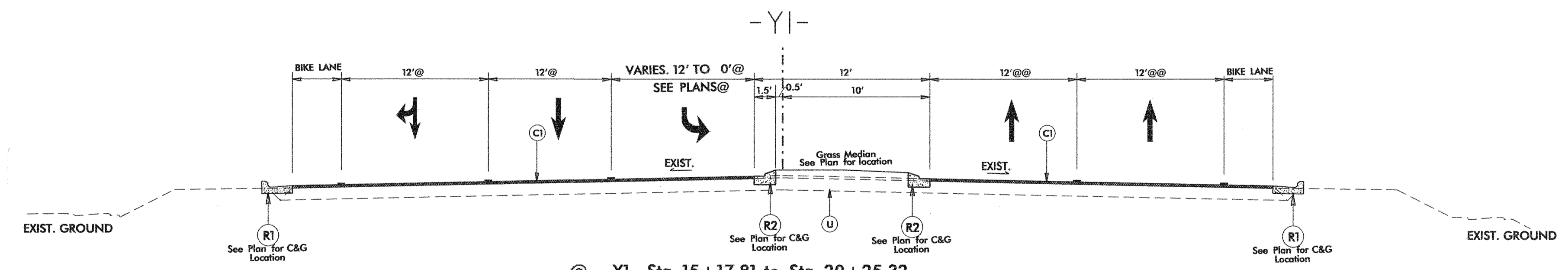
NOTE: THE PROPOSED PAVEMENT DESIGN WAS DERIVED FROM THE TIP PROJECT U-3100A AND REVIEWED BY THE DISTRICT ENGINEER'S OFFICE



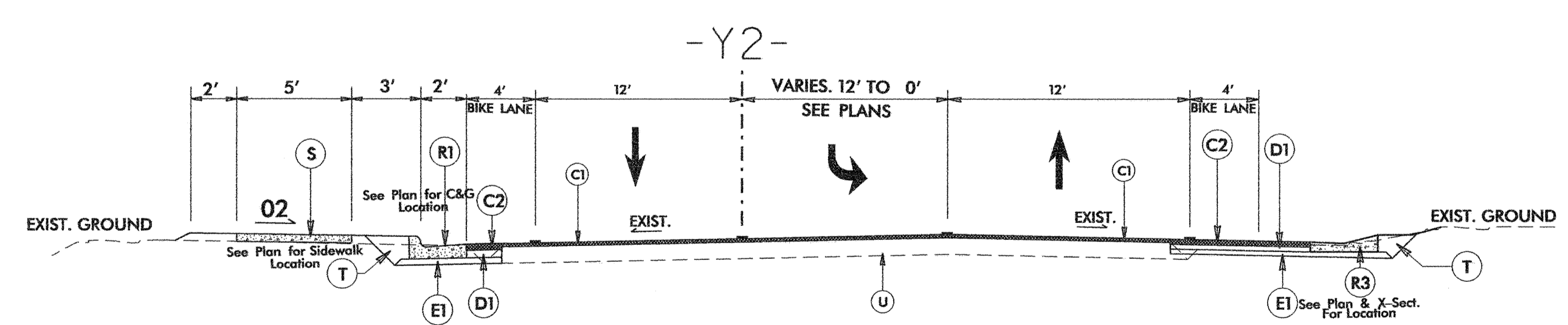
TYPICAL SECTION 1 -L- Sta. 10+00.00 to Sta. 33+50.00



TYPICAL SECTION 2 -Y1- Sta. 10+00.00 to Sta. 14+43.74



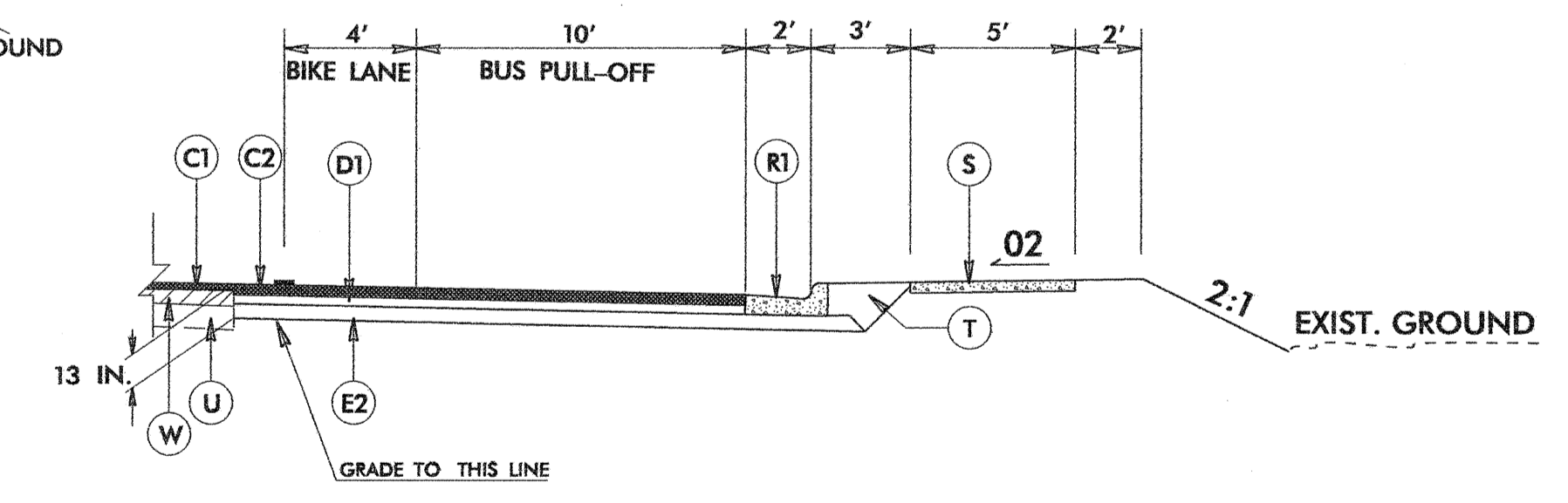
TYPICAL SECTION 3 -Y1- Sta. 15+17.81 to Sta. 20+25.32



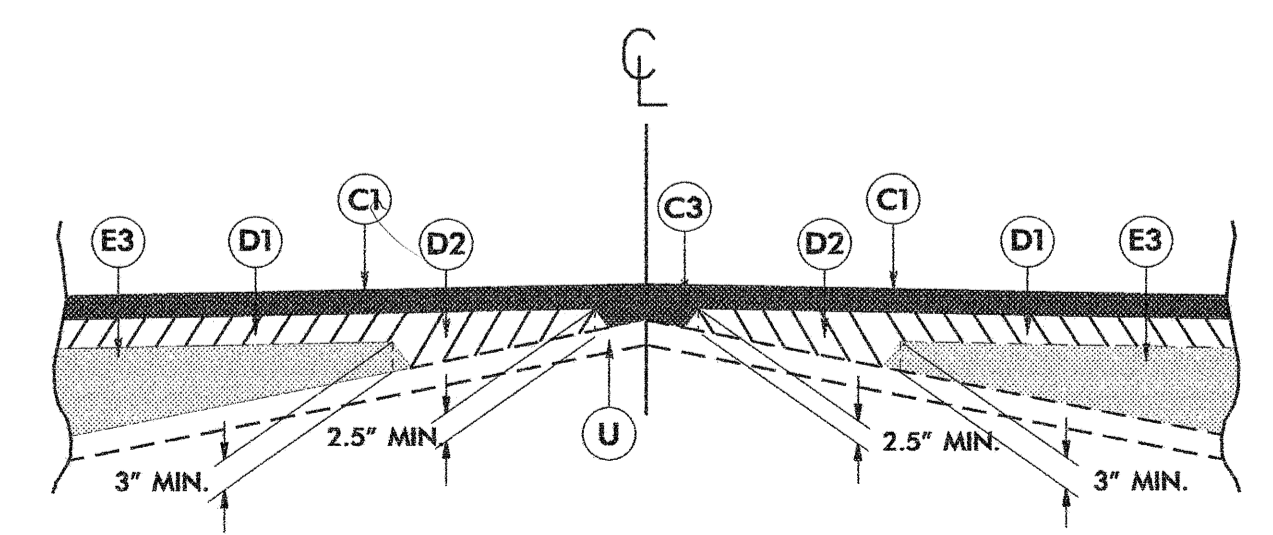
TYPICAL SECTION 4 -Y2- Sta. 10+60.00 to Sta. 14+57.59

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 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 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 6" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	1'-6" CONCRETE CURB AND GUTTER.
R3	CONCRETE EXPRESSWAY GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE STANDARD WEDGING DETAIL).

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS NOTED OTHERWISE.

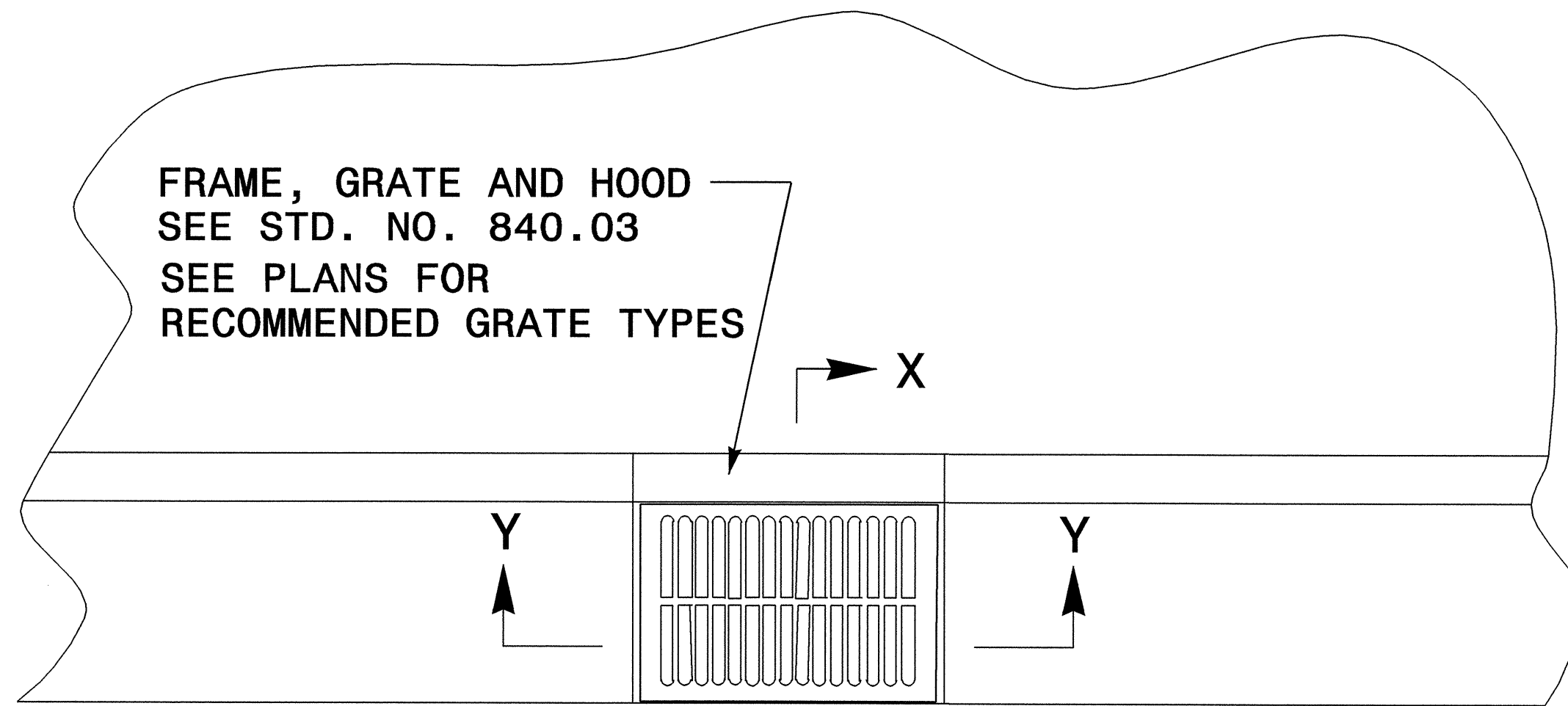


BUS PULL-OFF PAVEMENT DETAIL



DETAIL SHOWING METHOD OF WEDGING

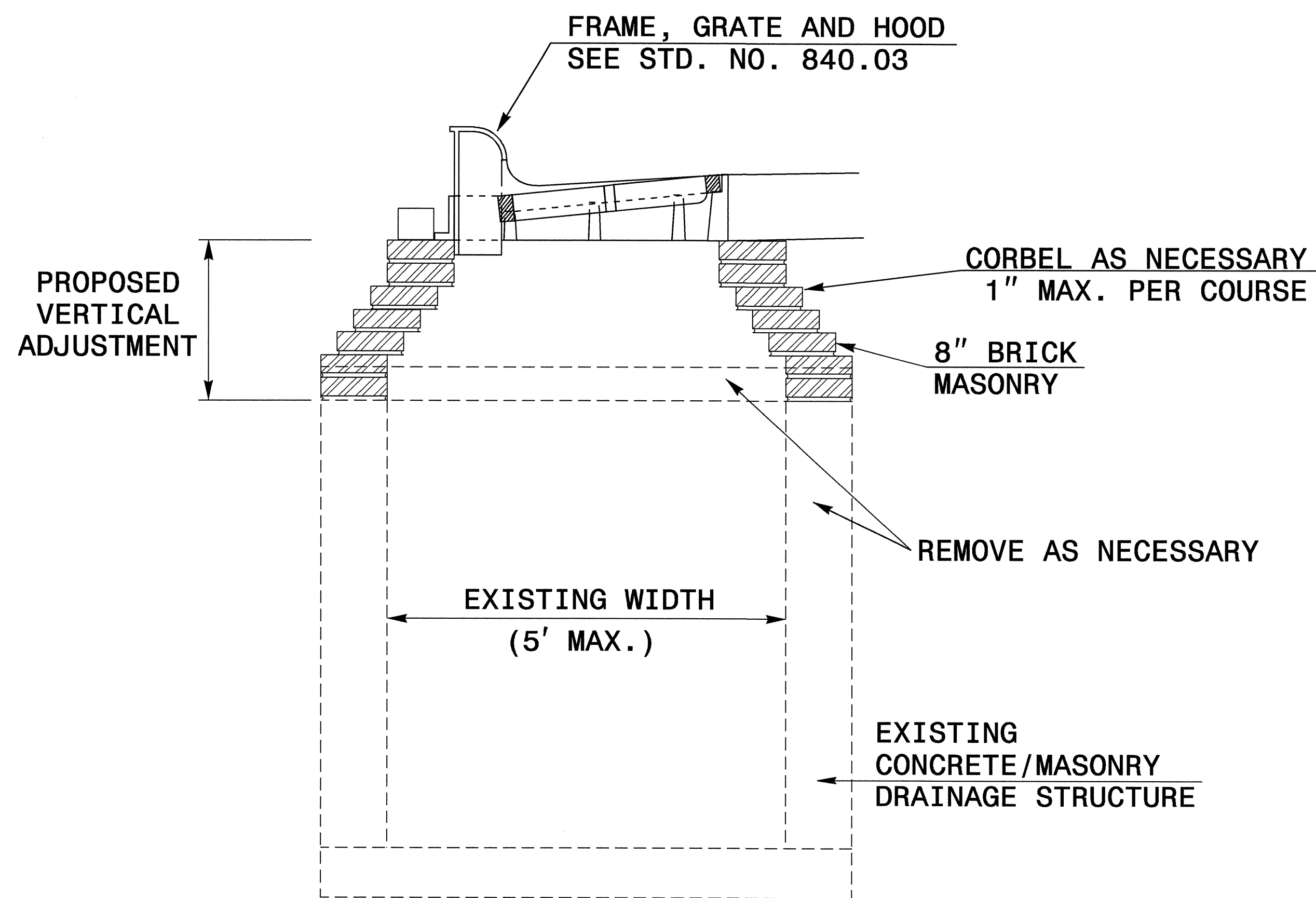
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10/12/2003 11:11:11 AM



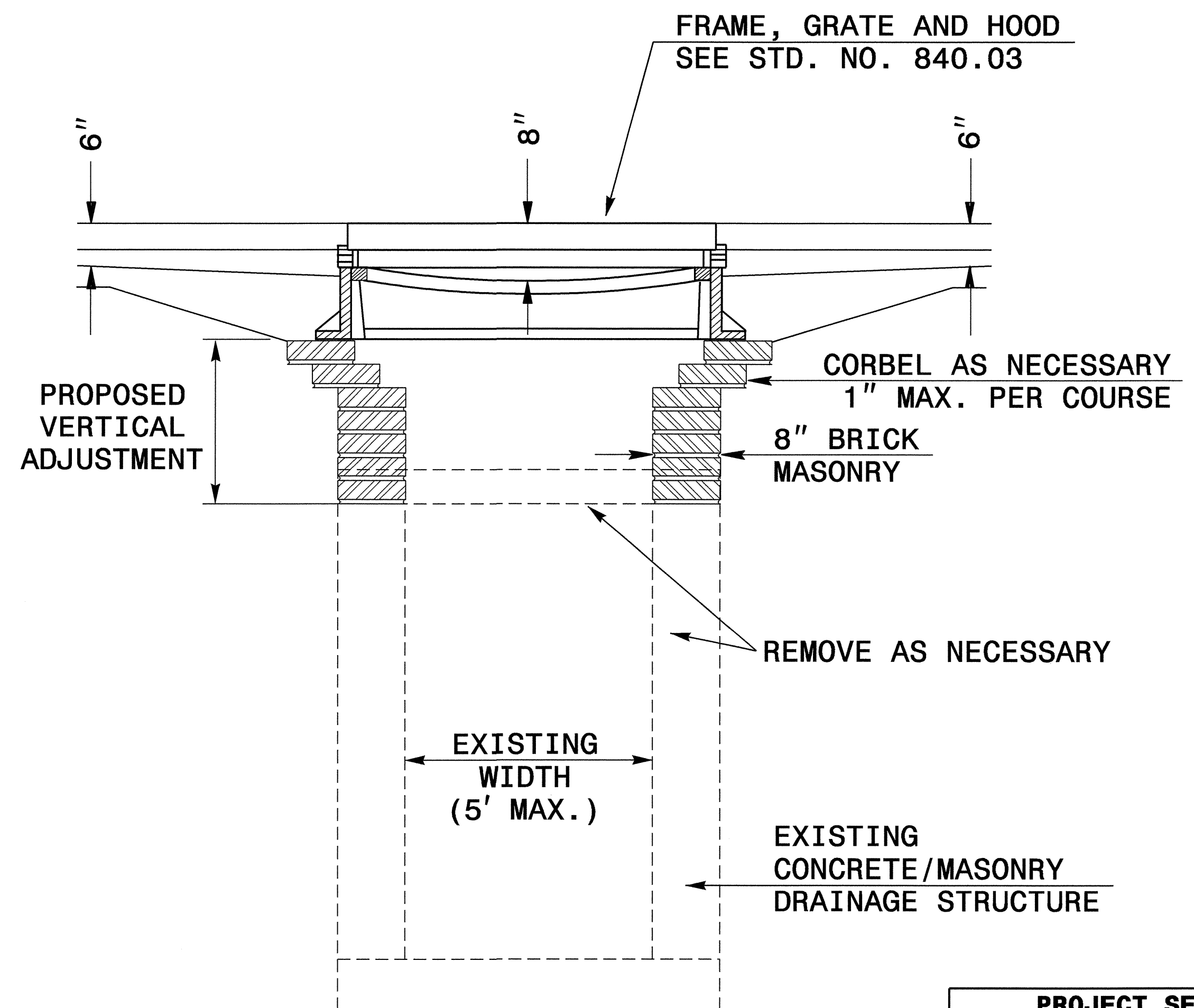
PLAN

GENERAL NOTES:

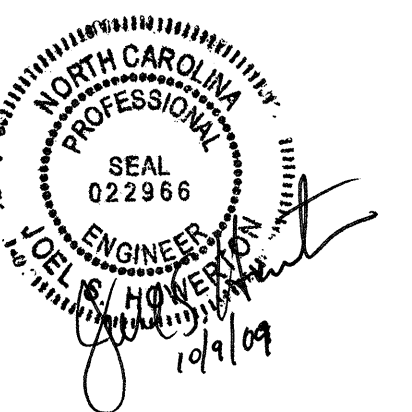
- THE ROADWAY PLANS INDICATE STRUCTURES TO BE CONVERTED.
- AFTER REMOVAL, STORE GRATES AND FRAMES AS DIRECTED BY THE ENGINEER.
- 4" SOLID CLAY BRICK, JUMBO BRICK, CONCRETE, OR 4" SOLID CONCRETE BLOCK MAY BE USED FOR VERTICAL ADJUSTMENT OF THE STRUCTURE.
- CONVERT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.



SECTION X-X

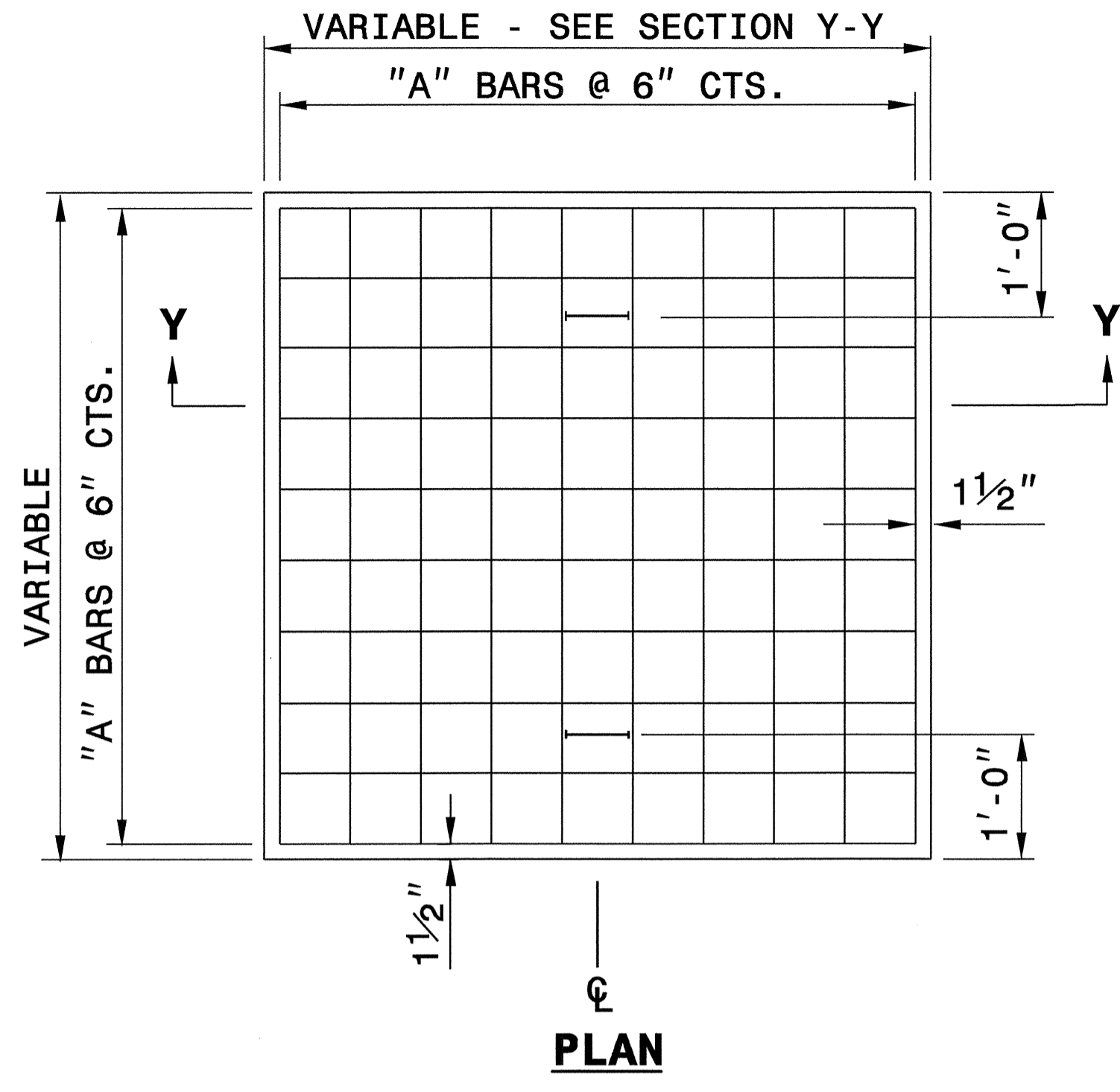
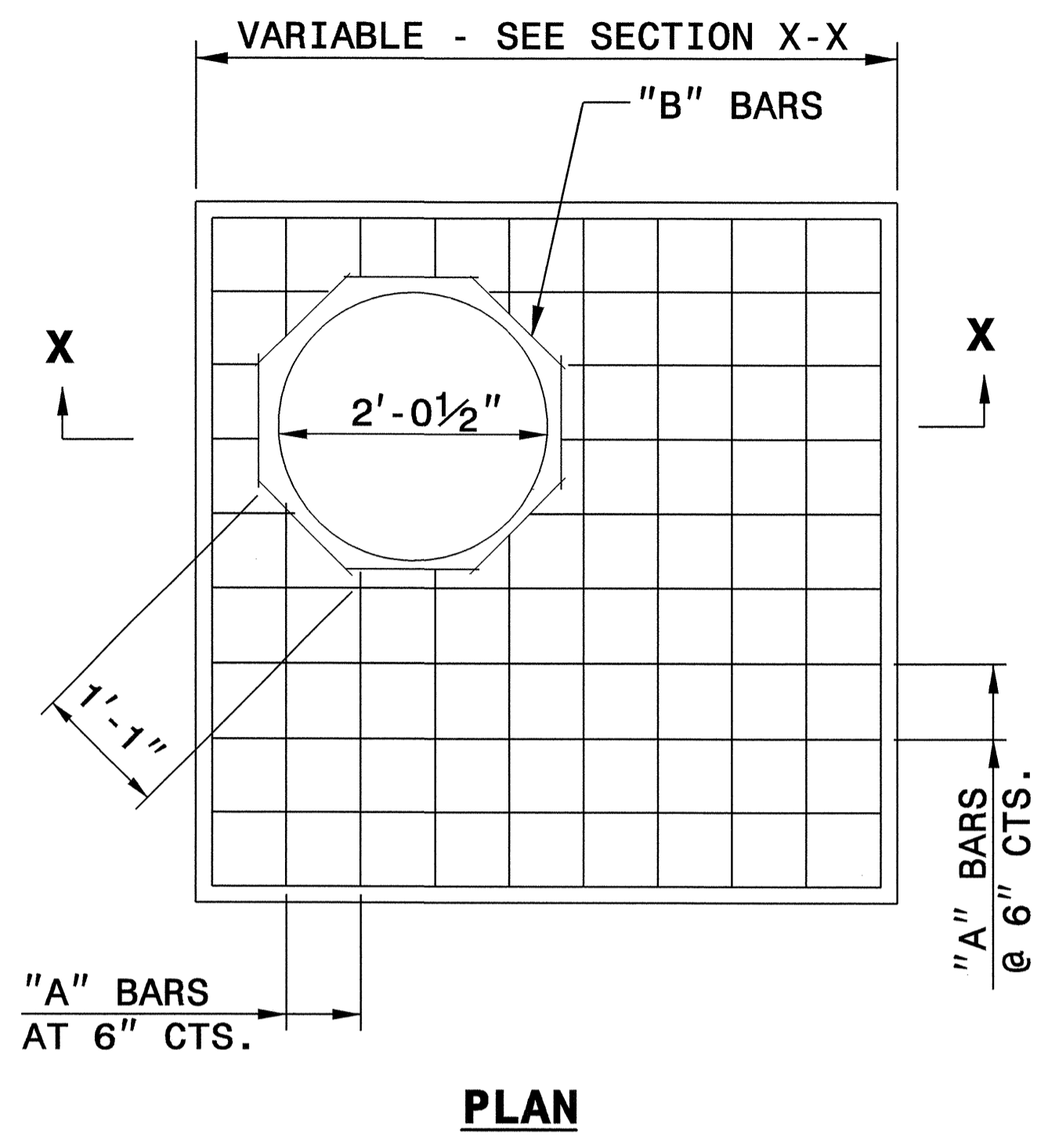
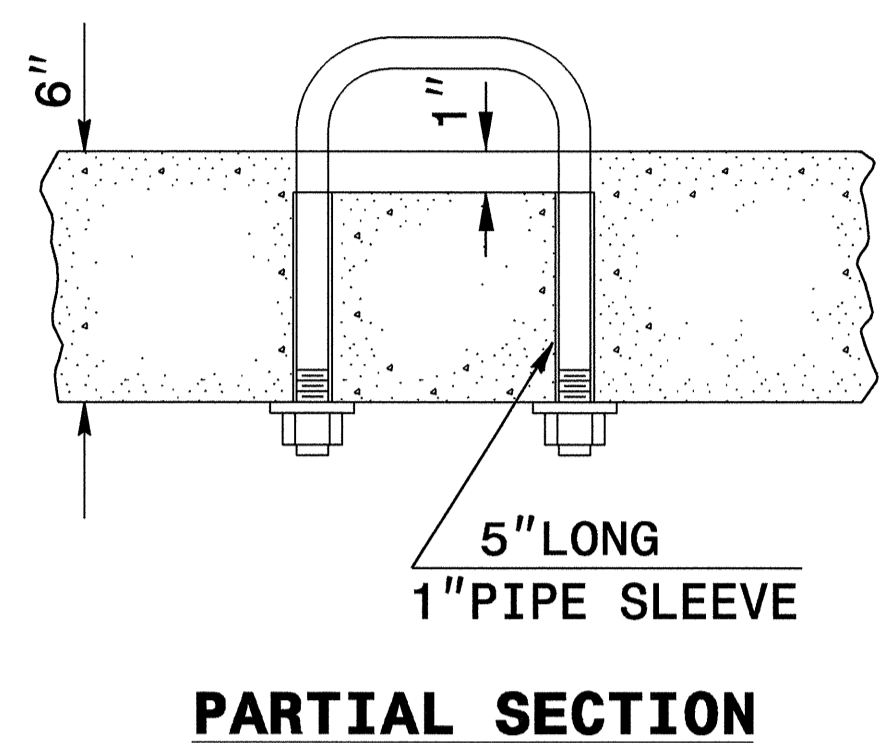


SECTION Y-Y



PROJECT SERVICES UNIT	
STANDARDS AND SPECIAL DESIGN	
Office 919-250-4128 FAX 919-250-4119	
CONVERSION OF DROP INLET OR JUNCTION BOX TO CATCH BASIN	
ORIGINAL BY: E.E. WARD	DATE: 11-97
MODIFIED BY: <i>E.E. Ward</i>	DATE: 1/23/09
CHECKED BY: <i>E.E. Ward</i>	DATE: 1/23/09
FILE SPEC.: 0937:usr\details\stand\jbtocb.dgn	

5/14/99
25-SEP-2009 07:49
s:\contracts\contract\special\details\verticalward\uar\details\stand\ditocb_eng.dgn
jhowerton AT PS237501



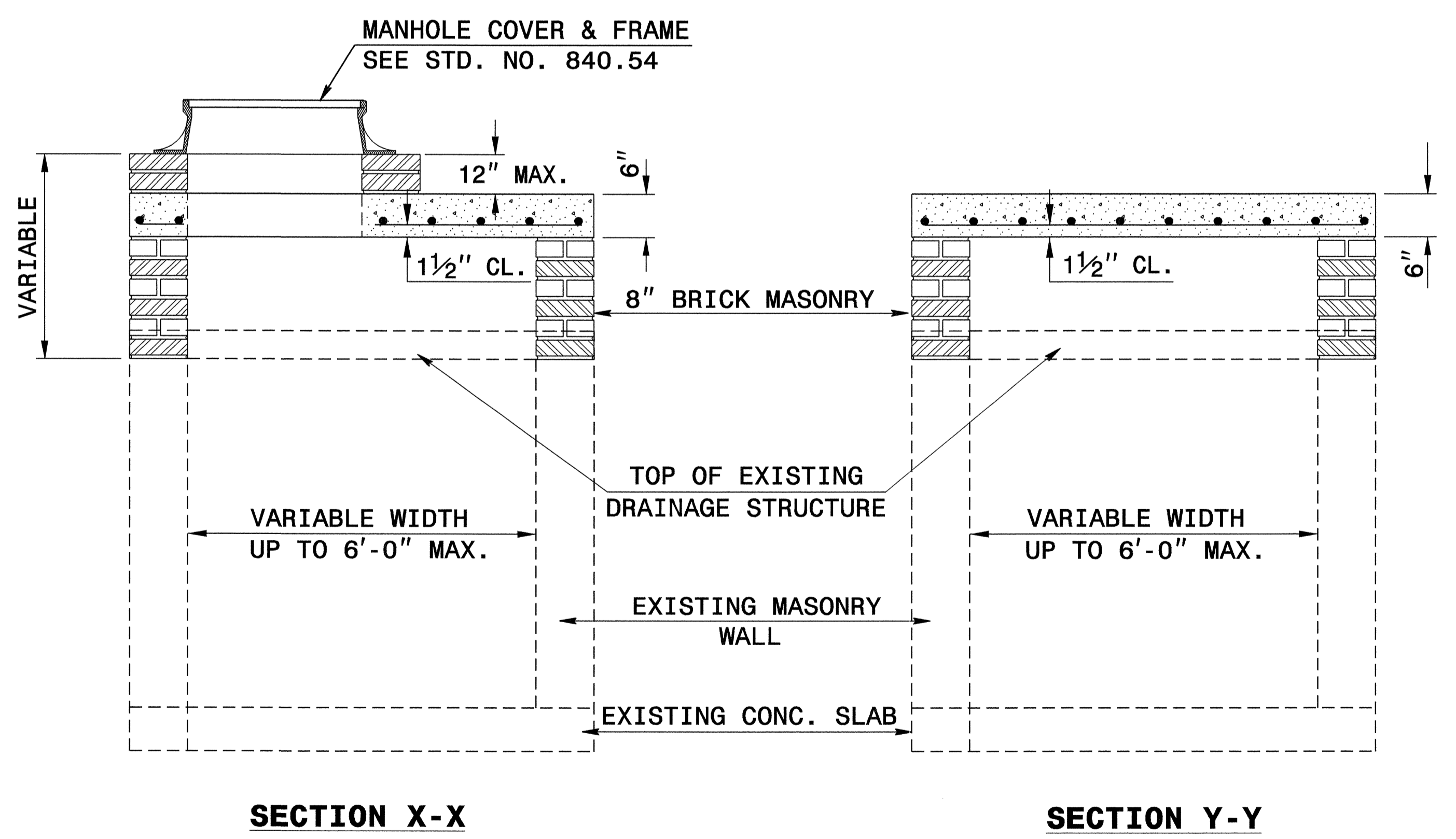
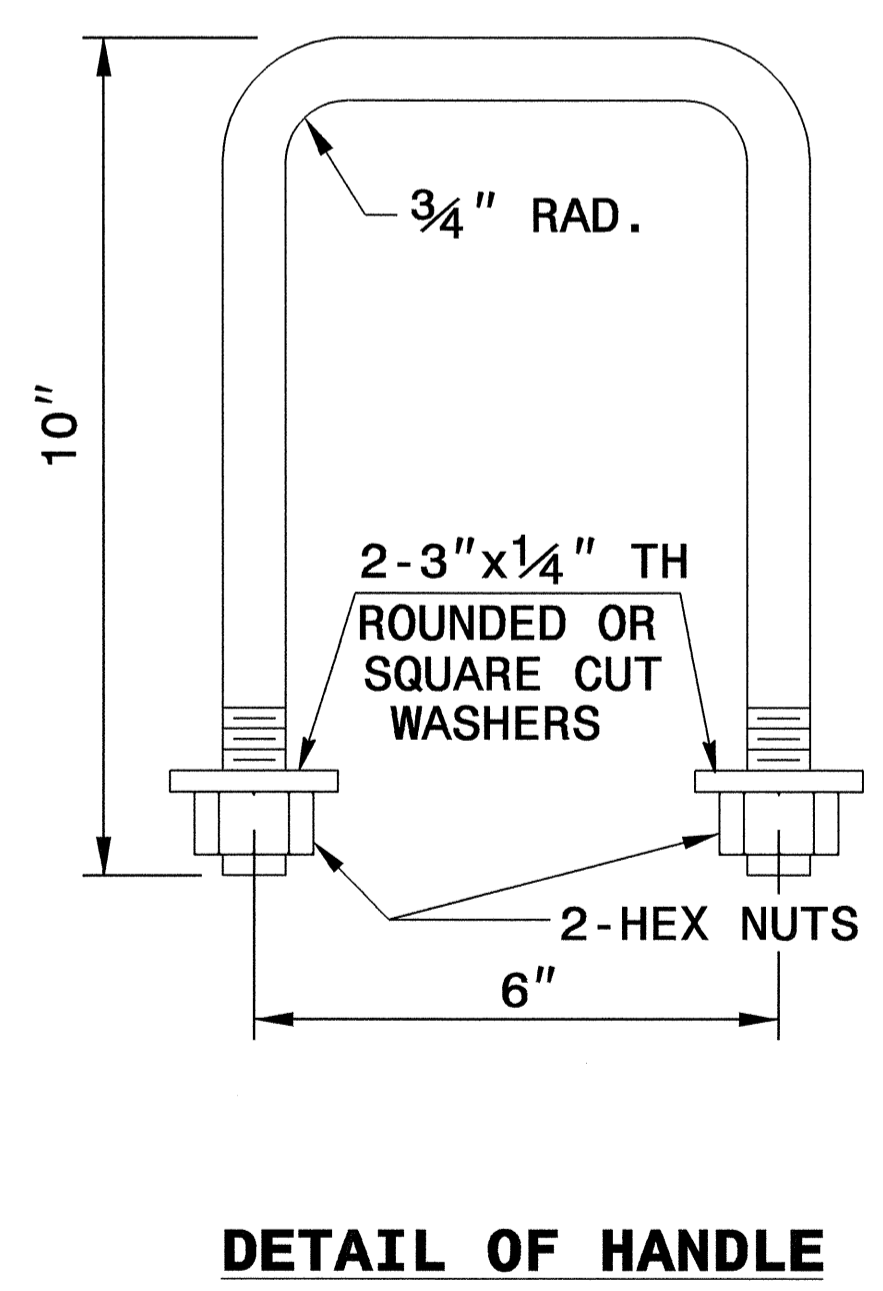
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

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

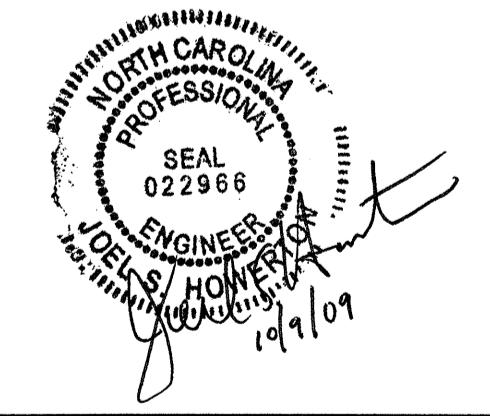
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

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



*** NOTE:**

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



**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

**DETAIL TO CONVERT EXISTING
DROP INLET OR CATCH BASIN
TO JUNCTION BOX
(MANHOLE OPTIONAL)**

ORIGINAL BY: T.S.S. DATE: NOV. 1997
 MODIFIED BY: T.S.S. DATE: FEB. 2000
 CHECKED BY: *Joel S. Howerton* DATE: 9/25/09
 FILE SPEC.: 43174:/usr/details/stand/boxtoibe.dgn

5/14/99
25-SEP-2009 07:48
s:\contracts\stand\details\stand\boxtoibe.dgn
jhowerton PS237501

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

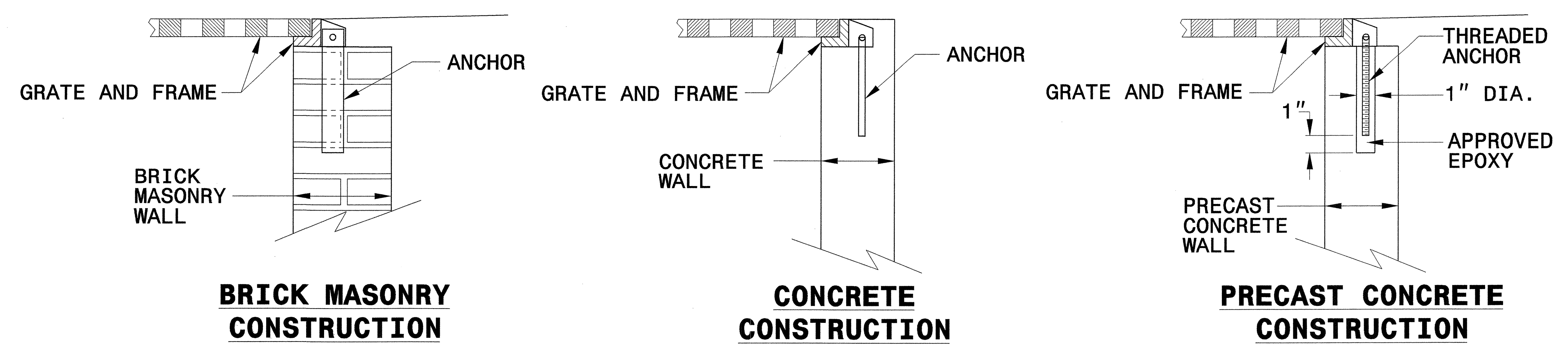
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25

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

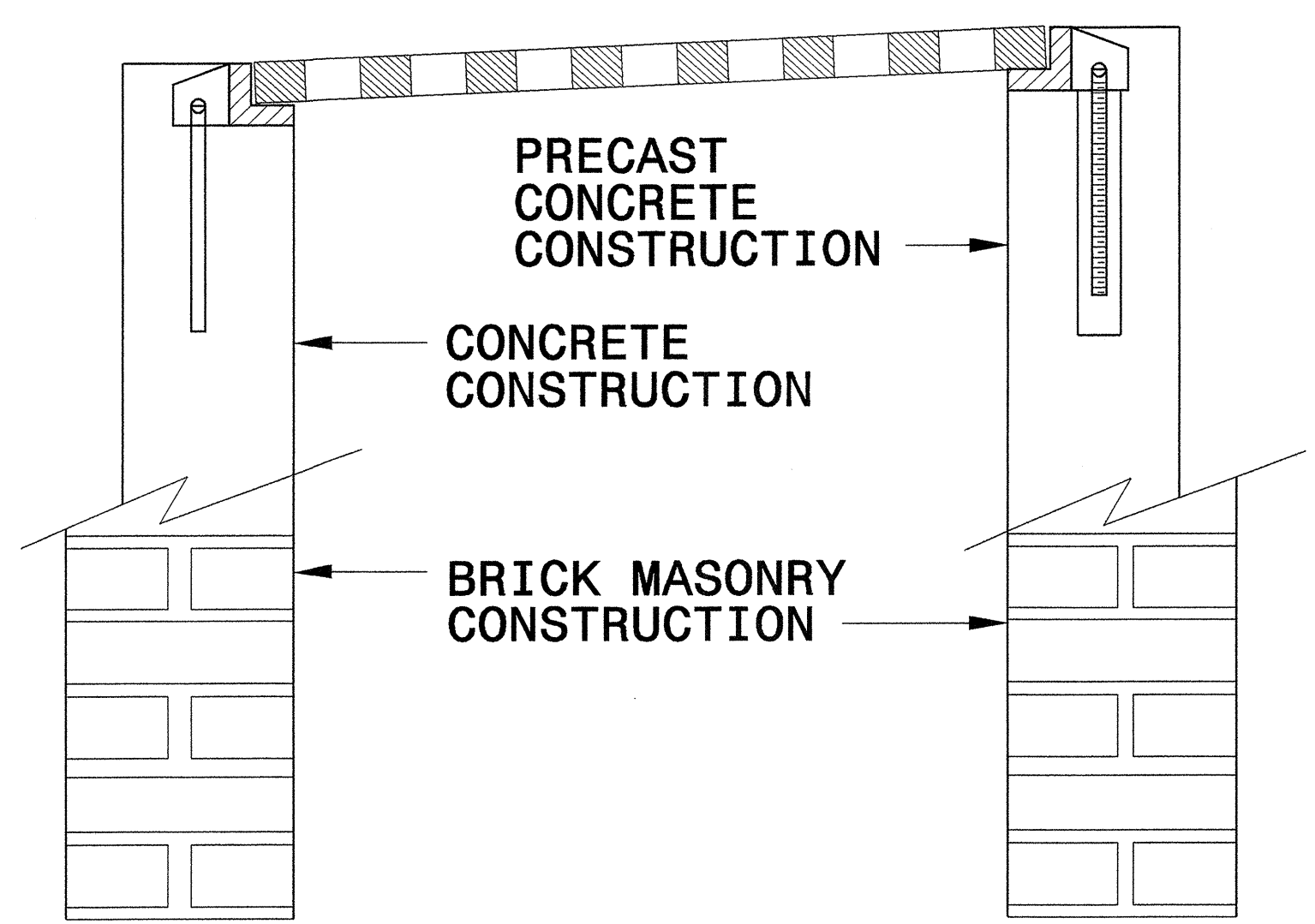
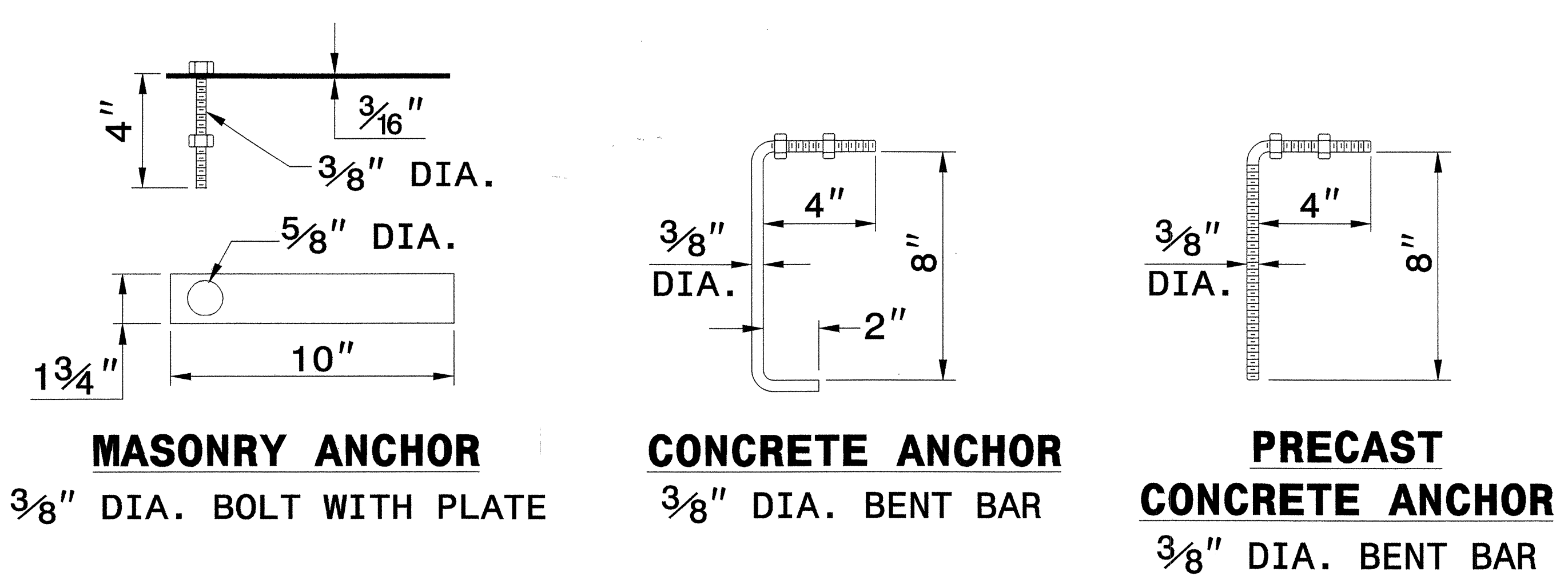
ENGLISH DETAIL DRAWING FOR
ANCHORAGE FOR FRAMES
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1
840D25

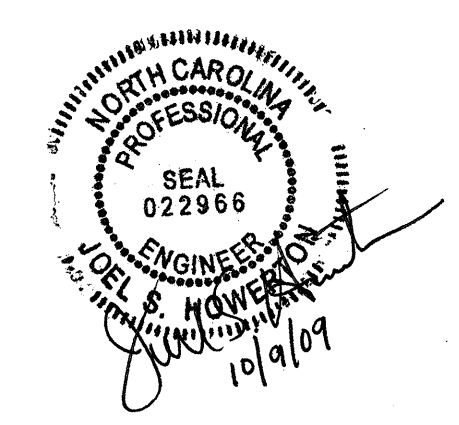


DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

NOTE:
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS



**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06
 MODIFIED BY: E.E. WARD DATE: 9/25/06
 CHECKED BY: *[Signature]* DATE: 11/3/08
 FILE SPEC.: *[Signature]*

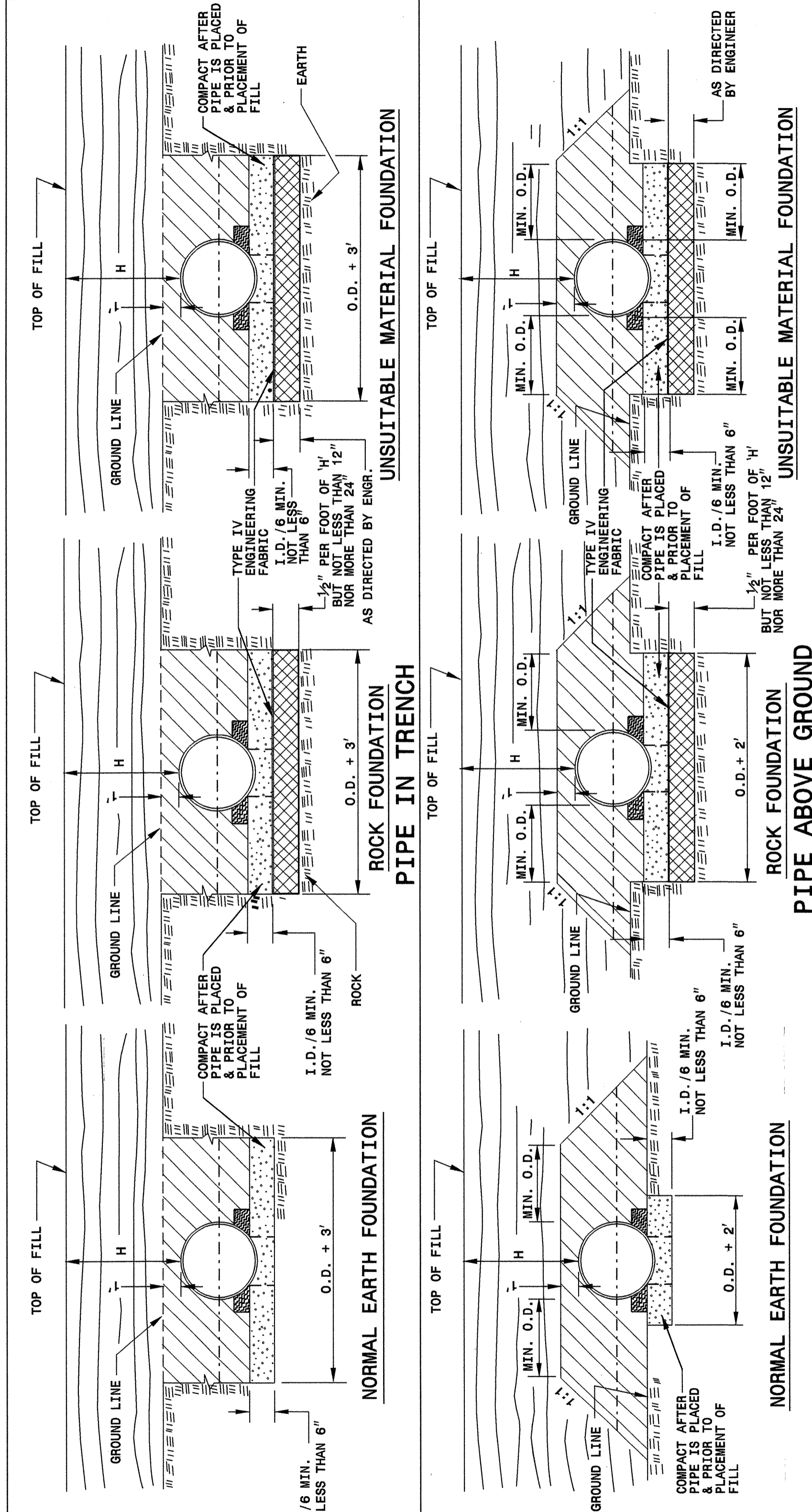
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STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 FLEXIBLE PIPE

SHEET 1 OF 3
300D01



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
 SPRINGLINE OF PIPE
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

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

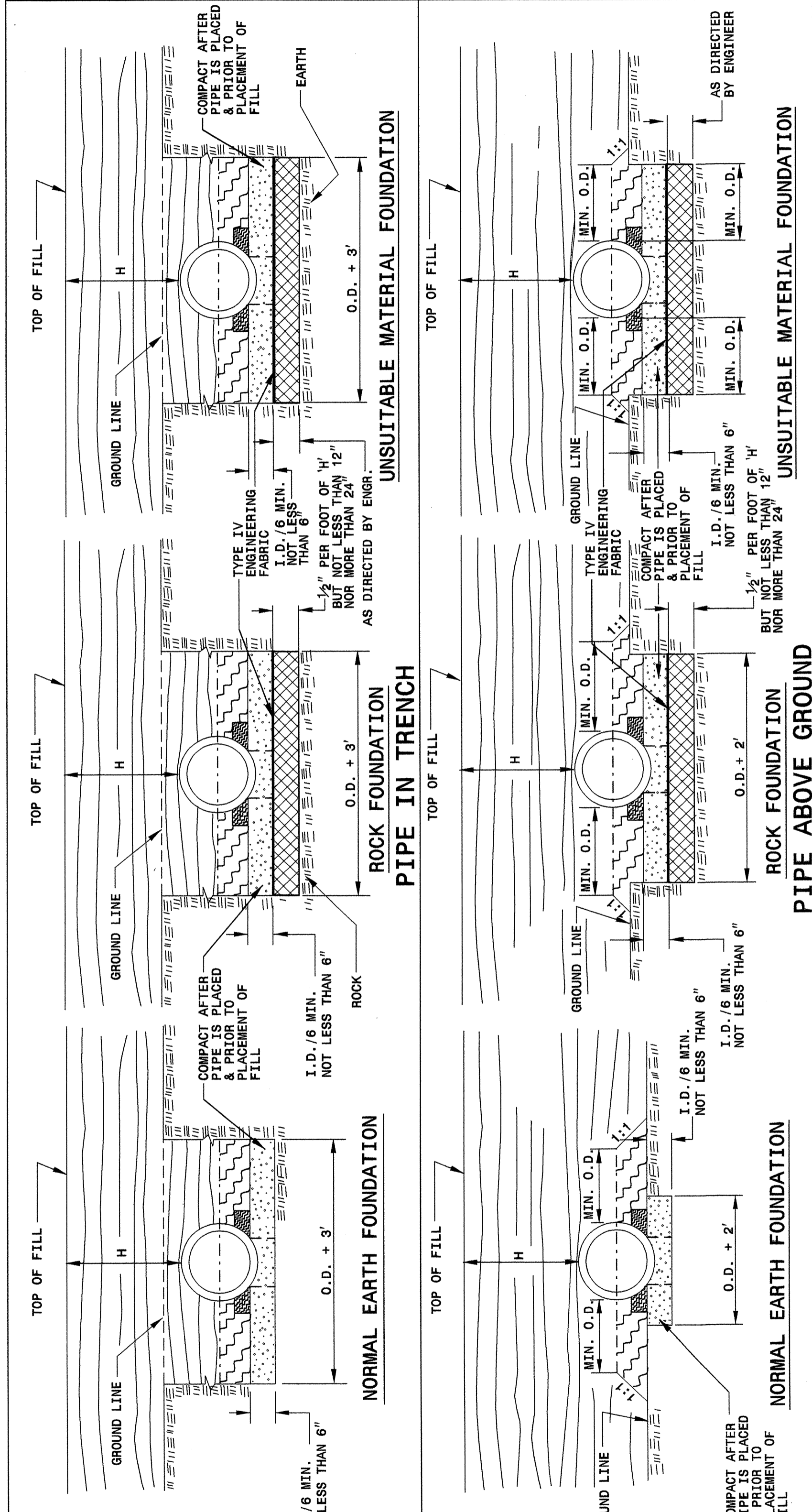
ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 FLEXIBLE PIPE

SHEET 1 OF 3
300D01

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

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 RIGID PIPE

SHEET 2 OF 3
300D01



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.
 TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
 LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.
 SPRINGLINE OF PIPE
 SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.
 UNDISTURBED EARTH MATERIAL
 SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH ENGINEERING FABRIC AS DIRECTED BY THE ENGINEER.

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

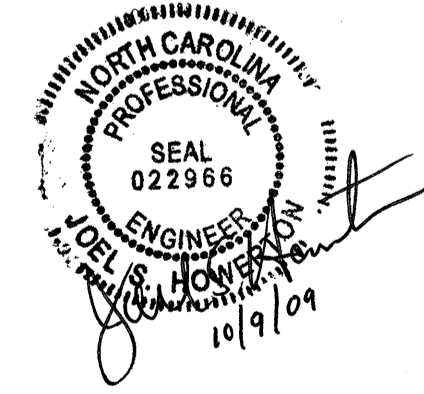
ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
 RIGID PIPE

SHEET 2 OF 3
300D01

PROJECT SERVICES UNIT
 STANDARDS AND SPECIAL DESIGN
 Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: K Kempf DATE: 5-15-09
 MODIFIED BY: DATE: 7/29/09
 CHECKED BY: DATE: 7/29/09
 FILE SPEC/erloward/stds/stdstodetails/30001/0300d01.dgn



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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

FLEXIBLE PIPE

Round Corrugated Steel Pipe
 2 2/3 x 1/2 corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)			
		16 (Ga)	14	12	10 g
12	12	204	256		
15	12	162	204		
18	12	135	169	239	
21	12	115	145	204	
24	12	100	126	178	
30	12	79	100	142	
36	12	65	83	117	152
42	12	55	70	100	130
48	12	48	61	87	113
54	12		54	77	100
60	12			69	90
66	12				81
72	12				74
78	12				81
84	12				69

- HDPE - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 60"
 * (Maximum fill) 20' for pipe diameters ≤ 24"
 17' for pipe diameters ≥ 30" and ≤ 60"
- PVC - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 36"
 * (Maximum fill) 30' for pipe diameters ≥ 12" and ≤ 36"

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

RIGID PIPE

- RCP - * (Minimum fill) 1' for Class IV & CLASS V
 2' for Class III & Class II
- * (Maximum fill) 10' - Class II pipe
 20' - Class III pipe
 30' - Class IV pipe
 40' - Class V pipe

(For fills > 40' & < 80' use LRFD Direct Design Method)

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

Round Corrugated Aluminum Pipe
 2 2/3 x 1/2 corrugation **

Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)			
		16 (Ga)	14	12	10 g
12	12	123	155	218	281
15	12	98	123	174	224
18	12	81	102	144	187
21	12	69	87	123	160
24	12	60	76	108	139
27	12		67	95	123
30	12		60	85	111
36	12		50	71	92
42	12			60	78
48	12			52	68
54	12			46	50
60	12				50
66	12				62
72	12				51
	12				41

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

- CSP - AASHTO M36
 CAAP - AASHTO M196
 HDPE - AASHTO M294
 PVC - ASTM F949 or AASHTO M304

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS

- RCP - AASHTO M170

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

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

7-06

ENGLISH DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION

FILL HEIGHT TABLES

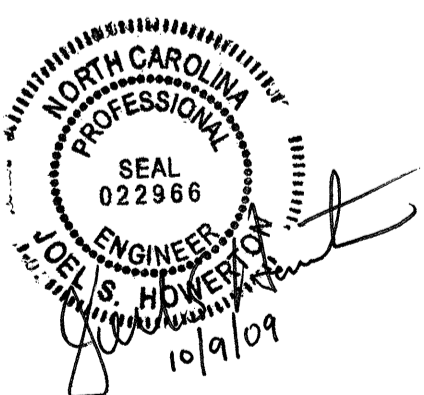
SHEET 3 OF 3
300D01

SHEET 3 OF 3
300D01

**PROJECT SERVICES UNIT
 STANDARDS AND SPECIAL DESIGN**
 Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: K Kempf DATE: 5-15-09
 MODIFIED BY: *[Signature]* DATE: *[Blank]*
 CHECKED BY: *[Signature]* DATE: 7/30/09
 FILE SPEC: s:\contracts\contract\special details\vericard\stds\stdstodetails\30001\0300d01.dgn



STATE OF NORTH CAROLINA DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION

PROJECT REFERENCE NO. <i>U-3100B</i>	SHEET NO. <i>3</i>
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202372

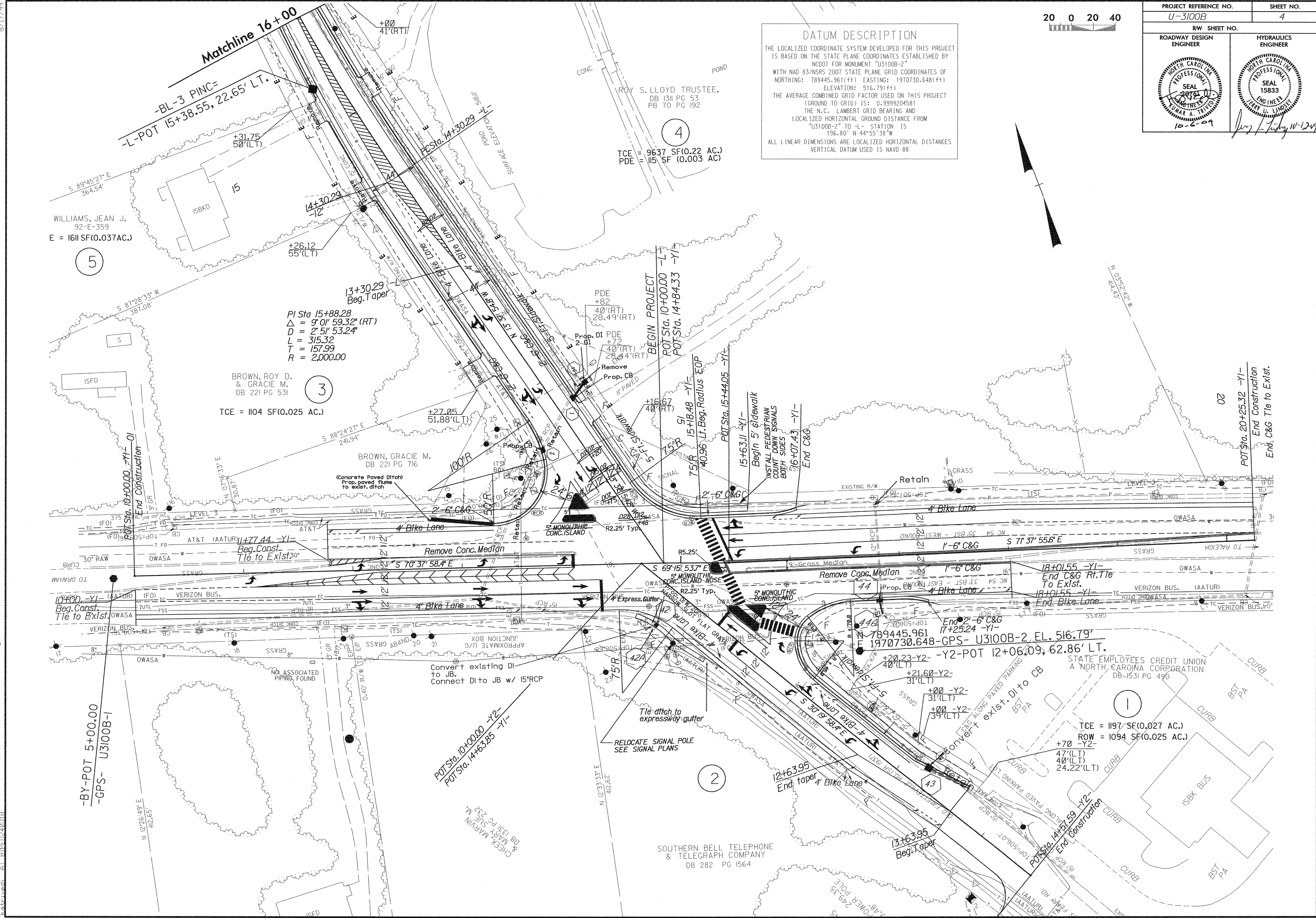
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	4405000000-E	1110	224	SF	WORK ZONE SIGNS (PORTABLE)	7060000000-E	1705	1,760	LF	SIGNAL CABLE
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	4415000000-N	1115	2	EA	FLASHING ARROW PANELS, TYPE C	7120000000-E	1705	9	EA	VEHICLE SIGNAL HEAD (12", 3 SECTION)
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	4420000000-N	1120	2	EA	CHANGEABLE MESSAGE SIGN	7232000000-N	SP	2	EA	AUDIBLE PEDESTRIAN SIGNAL
0063000000-N	SP	Lump Sum		GRADING	4430000000-N	1130	209	EA	DRUMS	7264000000-E	1710	725	LF	MESSENGER CABLE (3/8")
0106000000-E	230	6,000	CY	BORROW EXCAVATION	4435000000-N	1135	20	EA	CONES	7288000000-E	1715	20	LF	PAVED TRENCHING (***** (1, 2"))
0192000000-N	260	1.5	HR	PROOF ROLLING	4455000000-N	1150	80	MD	FLAGGER	7300000000-E	1715	750	LF	UNPAVED TRENCHING (***** (1, 2"))
0320000000-E	SP	283	SY	FOUNDATION CONDITIONING FABRIC	4480000000-N	1165	2	EA	TMIA	7301000000-E	1715	110	LF	DIRECTIONAL DRILL (***** (1, 2"))
0330000000-E	SP	230	TON	GENERIC DRAINAGE ITEM FOUNDATION CONDITIONING MATERIAL, MINOR STRS	4510000000-N	SP	56	HR	LAW ENFORCEMENT	7324000000-N	1716	9	EA	JUNCTION BOX (STANDARD SIZE)
0335100000-E	SP	200	LF	12" DRAINAGE PIPE	4516000000-N	1180	10	EA	SKINNY DRUM	7360000000-N	1720	6	EA	WOOD POLE
0335200000-E	SP	1,124	LF	15" DRAINAGE PIPE	4686000000-E	1205	7,824	LF	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	7372000000-N	1721	8	EA	GUY ASSEMBLY
0335300000-E	SP	152	LF	18" DRAINAGE PIPE	4695000000-E	1205	1,141	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	7396000000-E	1722	1	EA	1/2" RISER WITH WEATHERHEAD
0335400000-E	SP	332	LF	24" DRAINAGE PIPE	4697000000-E	1205	180	LF	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)	7408000000-E	1722	1	EA	1" RISER WITH WEATHERHEAD
0335500000-E	SP	32	LF	30" DRAINAGE PIPE	4710000000-E	1205	559	LF	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	7420000000-E	1722	7	EA	2" RISER WITH WEATHERHEAD
0335600000-E	SP	32	LF	36" DRAINAGE PIPE	4721000000-E	1205	6	EA	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	7444000000-E	1725	1,050	LF	INDUCTIVE LOOP SAWCUT
0986000000-E	SP	132	LF	GENERIC PIPE ITEM 12" SIDE DRAIN PIPE	4725000000-E	1205	48	EA	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	7456000000-E	1726	5,015	LF	LEAD-IN CABLE (***** (14-2))
0986000000-E	SP	112	LF	GENERIC PIPE ITEM 15" SIDE DRAIN PIPE	4810000000-E	1205	28,465	LF	PAINT PAVEMENT MARKING LINES (4")	7636000000-N	1745	3	EA	SIGNAL PEDESTAL WITH FOUNDATION
0995000000-E	340	884	LF	PIPE REMOVAL	4820000000-E	1205	1,488	LF	PAINT PAVEMENT MARKING LINES (8")	7675000000-N	SP	1	EA	SIGN FOR SIGNALS
1220000000-E	545	250	TON	INCIDENTAL STONE BASE	4835000000-E	1205	1,040	LF	PAINT PAVEMENT MARKING LINES (24")	7684000000-N	1750	1	EA	LED BLANKOUT SIGN
1308000000-E	607	600	SY	MILLING ASPHALT PAVEMENT, **** TO ***** DEPTH (0" TO 1-1/2")	4840000000-N	1205	12	EA	PAINT PAVEMENT MARKING CHARACTER	7780000000-N	1751	6	EA	SIGNAL CABINET FOUNDATION
1489000000-E	610	1,760	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4845000000-N	1205	150	EA	PAINT PAVEMENT MARKING SYMBOL	7901000000-N	1753	1	EA	CONTROLLER WITH CABINET (TYPE 2070L, BASE MOUNTED)
1498000000-E	610	1,400	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B	4860000000-E	1205	460	LF	REMOVAL OF PAVEMENT MARKING LINES (8")					DETECTOR CARD (TYPE 2070L)
1519000000-E	610	2,100	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	4900000000-N	1251	145	EA	PERMANENT RAISED PAVEMENT MARKERS					CABINET BASE EXTENDER
1560000000-E	620	270	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	5326600000-E	1510	104	LF	16" WATER LINE					
1693000000-E	654	80	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR	5648000000-N	1515	3	EA	RELOCATE WATER METER					
2286000000-N	840	39	EA	MASONRY DRAINAGE STRUCTURES	5649000000-N	1515	3	EA	RECONNECT WATER METER					
2308000000-E	840	7.3	LF	MASONRY DRAINAGE STRUCTURES	5672000000-N	1515	1	EA	RELOCATE FIRE HYDRANT					
2364000000-N	840	16	EA	FRAME WITH TWO GRATES, STD 840.16	5691100000-E	1520	48	LF	4" SANITARY GRAVITY SEWER					
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24	5768000000-N	1520	1	EA	SANITARY SEWER CLEAN-OUT					
2367000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29	5810000000-E	1530	94	LF	ABANDON 16" UTILITY PIPE					
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	5828000000-N	1530	1	EA	REMOVE UTILITY MANHOLE					
2374000000-N	840	10	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	6000000000-E	1605	2,250	LF	TEMPORARY SILT FENCE					
2374000000-N	840	10	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	6006000000-E	1610	250	TON	STONE FOR EROSION CONTROL, CLASS A					
2542000000-E	846	760	LF	1'-6" CONCRETE CURB & GUTTER	6009000000-E	1610	250	TON	STONE FOR EROSION CONTROL, CLASS B					
2549000000-E	846	4,570	LF	2'-6" CONCRETE CURB & GUTTER	6012000000-E	1610	500	TON	SEDIMENT CONTROL STONE					
2577000000-E	846	100	LF	CONCRETE EXPRESSWAY GUTTER	6015000000-E	1615	4.5	ACR	TEMPORARY MULCHING					
2591000000-E	848	1,520	SY	4" CONCRETE SIDEWALK	6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING					
2605000000-N	848	10	EA	CONCRETE WHEELCHAIR RAMPS	6021000000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING					
2612000000-E	848	300	SY	6" CONCRETE DRIVEWAY	6030000000-E	1630	450	CY	SILT EXCAVATION					
2619000000-E	850	20	SY	4" CONCRETE PAVED DITCH	6036000000-E	1631	7,500	SY	MATting FOR EROSION CONTROL					
2647000000-E	852	90	SY	5" MONOLITHIC CONCRETE ISLANDS (SURFACE MOUNTED)	6042000000-E	1632	1,575	LF	1/4" HARDWARE CLOTH					
2905000000-N	859	1	EA	CONVERT EXISTING DROP INLET TO JUNCTION BOX	6071030000-E	SP	50	LF	COIR FIBER BAFFLES					
2920000000-N	SP	1	EA	CONVERT EXISTING DROP INLET TO CATCH BASIN	6084000000-E	1660	5	ACR	SEEDING & MULCHING					
3628000000-E	876	20	TON	RIP RAP, CLASS I	6087000000-E	1660	2	ACR	MOWING					
3656000000-E	876	290	SY	FILTER FABRIC FOR DRAINAGE	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING					
4072000000-E	903	572	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING					
4102000000-N	904	48	EA	SIGN ERECTION, TYPE E	6096000000-E	1662	100	LB	SEED FOR SUPPLEMENTAL SEEDING					
4155000000-N	907	23	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	6108000000-E	1665	2.5	TON	FERTILIZER TOPDRESSING					
4400000000-E	1110	152	SF	WORK ZONE SIGNS (STATIONARY)	6114500000-N	SP	5	MHR	SPECIALIZED HAND MOWING					
					6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL					
					7000000000-E	1705	2	EA	PEDESTRIAN SIGNAL HEAD (***, ** SECTION) (16", 1 SECTION W/COUNTDOWN)					

STATE OF NORTH CAROLINA
DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION

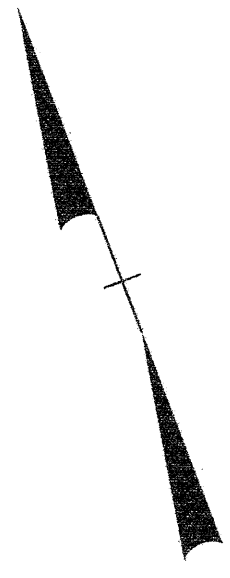
PARCEL INDEX SHEET

PARCEL NUMBER	SHEET NUMBER	PRPOERT OWNER NAME
①	4	STATE EMPLOYEES CREDIT UNION
②	4	SOUTHERN BELL TELEPHONE
③	4	BROWN GRACIE M
④	4,5	LLOYD ROY S TRUSTEE
⑤	4	WILLIAMS JEAN J
⑥	5	CHEEK MILTON HOLT
⑥A	5	RICE LEROYCE A
⑦	5	COLLINS HOYT CLIFTON
⑧	5	CHARLES HAL CECIL
⑨	5	DUFF, MARIA ESPERANZA & JOHN J. DUFF III
⑩	5	JENSEN HARRY M JR
⑪	5	RAGAN CLARA MRS
⑫	5,6	RAGAN BILLIE D
⑬	6	POPLIN NORENA C
⑭	6	CHEEK JESSIE B
⑮	6	CHEEK W TOY
⑯	6	SUSTAINABLE PROPERTIES LLC
⑰	6	NORTH CHATHAM INV. COMMON AREA & SARITA LANE HOMEOWNERS ASSOC.
⑱	6	ANDREWS DENNIS G.
⑲	6	JONES MILDRED H
⑳	6	MCDOUGLE MIDDLE SCHOOL

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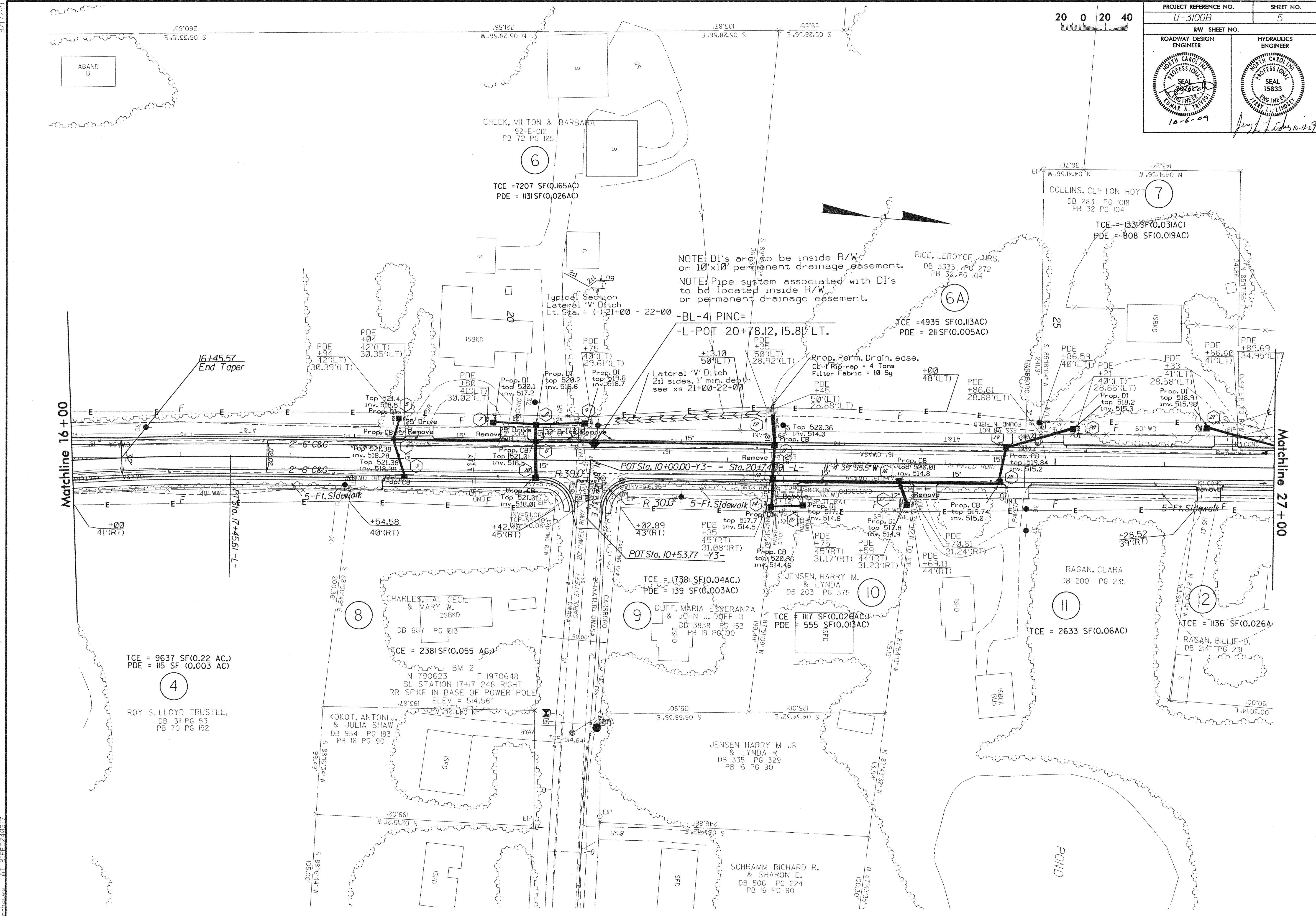
DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3100B-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 789445.961 (ft); EASTING: 1970730.648 (ft); ELEVATION: 516.791 (ft). THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999204581. THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3100B-2" TO "4" STATION IS 196.80' N 44°55'38" W. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES. VERTICAL DATUM USED IS NAVD 88.



PROJECT REFERENCE NO. U-3100B		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

20 0 20 40

PROJECT REFERENCE NO. U-3100B		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



NOTE: DI's are to be inside R/W or 10'x10' permanent drainage easement.
 NOTE: Pipe system associated with DI's to be located inside R/W or permanent drainage easement.

Typical Section Lateral 'V' Ditch Lt. Sta. + (-) 21+00 - 22+00

-BL-4 PINC-
-L-POT 20+78.12, 15.81 LT.

Prop. Perm. Drain. ease. CL 1' Rip-rap = 4 Tons Filter Fabric = 10 Sy

Lateral 'V' Ditch 2:1 sides, 1' min. depth see xs 21+00-22+00

Matchline 16 + 00

Matchline 27 + 00

TCE = 9637 SF(0.22 AC.)
PDE = 115 SF (0.003 AC.)

ROY S. LLOYD TRUSTEE,
DB 1311 PG 53
PB 70 PG 192

TCE = 2381 SF(0.055 AC.)

KOKOT, ANTONI J. & JULIA SHAW
DB 954 PG 183
PB 16 PG 90

TCE = 1738 SF(0.04 AC.)
PDE = 139 SF(0.003 AC.)

DUFF, MARIA ESPERANZA & JOHN J. DUFF III
DB 3838 PG 153
PB 19 PG 90

TCE = 1117 SF(0.026 AC.)
PDE = 555 SF(0.013 AC.)

JENSEN, HARRY M. & LYNDA R.
DB 203 PG 375

JENSEN HARRY M JR & LYNDA R
DB 335 PG 329
PB 16 PG 90

SCHRAMM RICHARD R. & SHARON E.
DB 506 PG 224
PB 16 PG 90

TCE = 2633 SF(0.06 AC.)

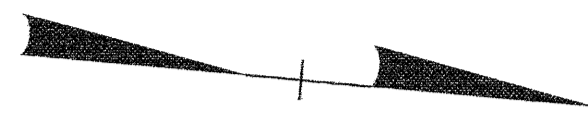
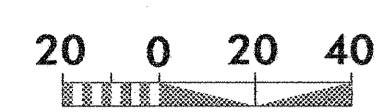
RAGAN, CLARA
DB 200 PG 235

TCE = 1136 SF(0.026 AC.)

RAGAN, BILLIE-D.
DB 214 PG 231

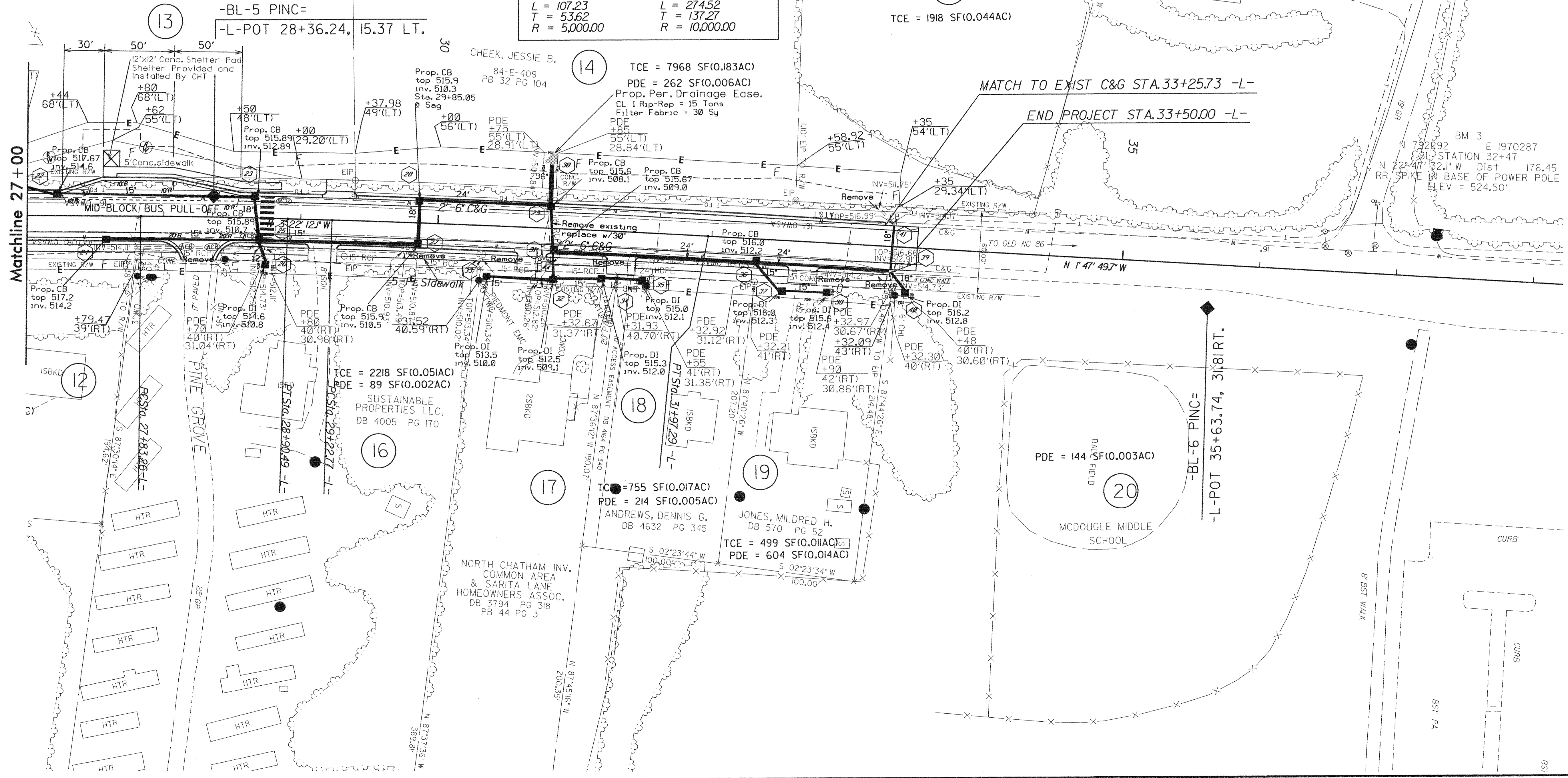
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POPLIN, NORENA & DEWY P. SR
TCE = 3995 SF(0.092AC)
PDE = 144 SF(0.003AC)
DB 347 PG 541
PB 32 PG 104 ROW = 3078 SF(0.071AC)

PI Sta 28+36.87 Δ = 1°13' 43.39" (RT) D = 1°08' 45.30" L = 107.23 T = 53.62 R = 5,000.00	-L-	PI Sta 30+60.04 Δ = 1°34' 22.38" (RT) D = 0°34' 22.65" L = 274.52 T = 137.27 R = 10,000.00
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Matchline 27 + 00

MATCH TO EXIST C&G STA.33+25.73 -L-

END PROJECT STA.33+50.00 -L-

-BL-6 PINC=
-L-POT 35+63.74, 31.81 RT.

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PROJECT REFERENCE NO. U-3100B	SHEET NO. PF-1
ROADWAY DESIGN ENGINEER KUNAR A. TRIVEDI	HYDRAULICS ENGINEER KUNAR A. TRIVEDI
PROFESSIONAL SEAL 10-2-09	PROFESSIONAL SEAL 15833

