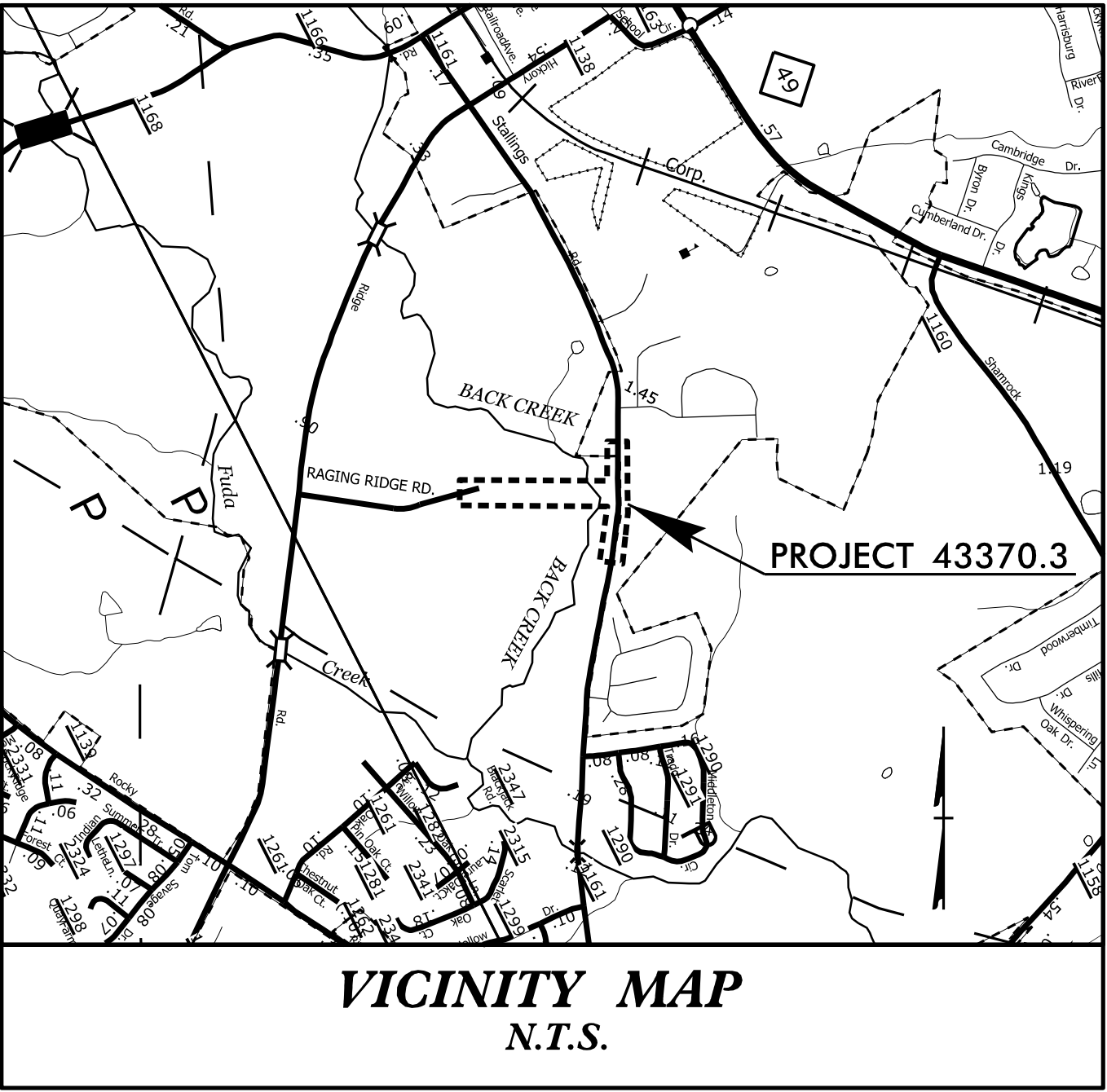


09/08/99

12/21/2015
\\Roadway\Proj\2039_Rdy_rsh.dgn
User:shelms

PROJECT NUMBER: 43370

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



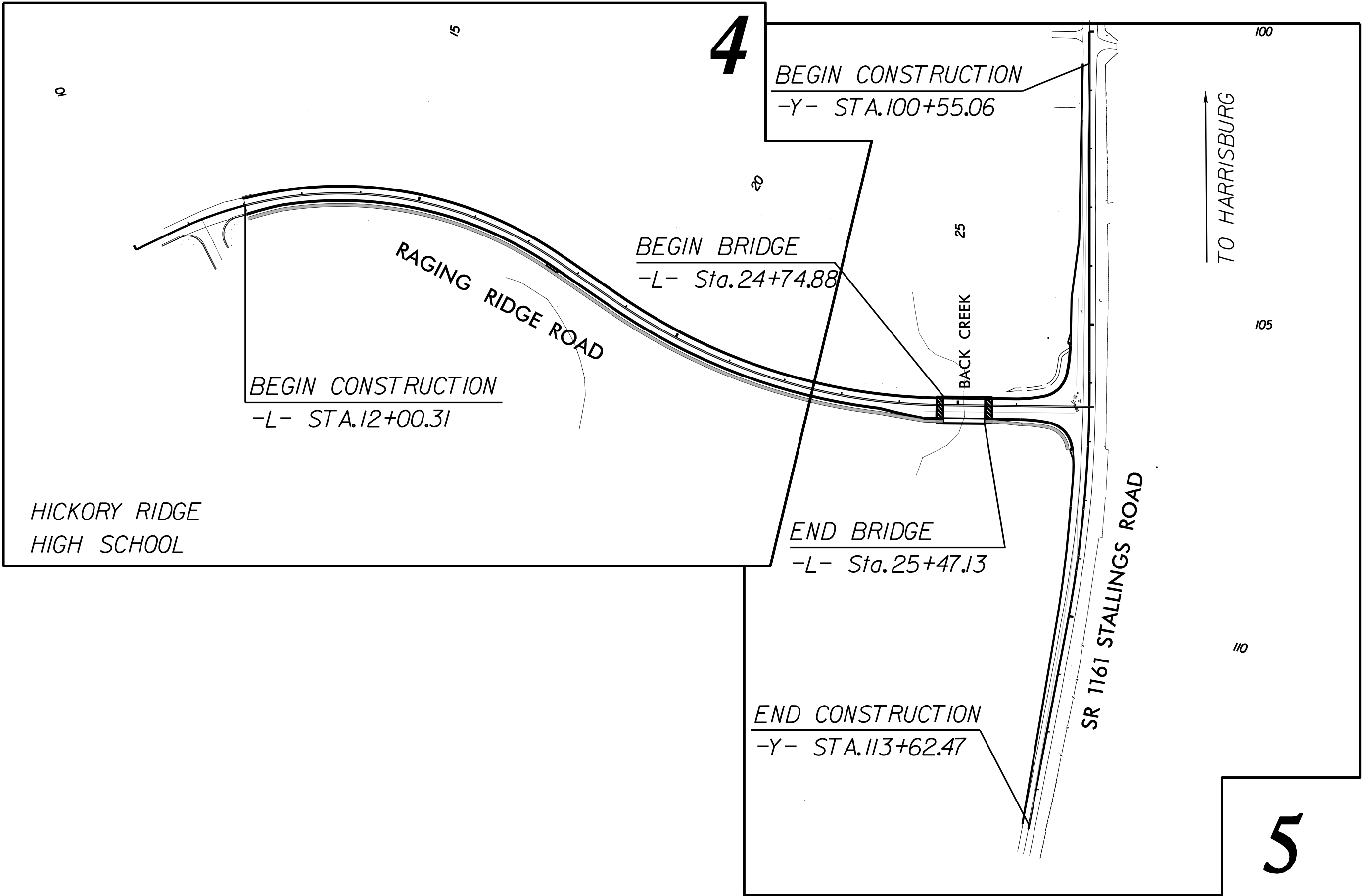
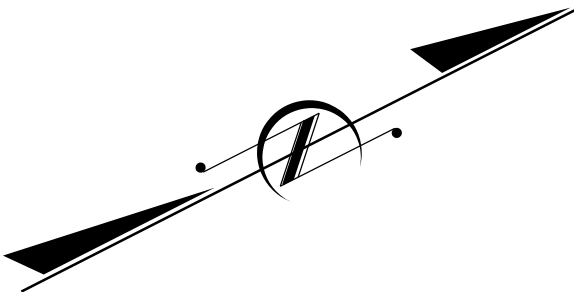
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CABARRUS COUNTY

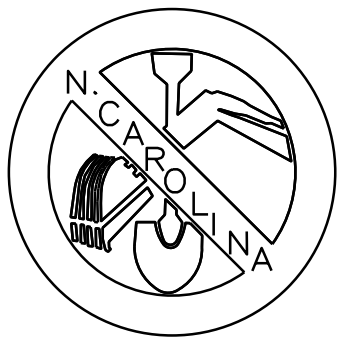
LOCATION: RAGING RIDGE RD
HARRISBURG, NORTH CAROLINA

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

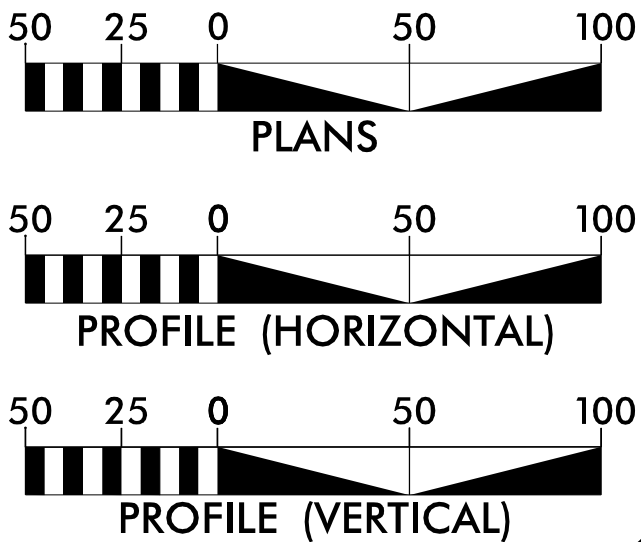
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	43370	1	=
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



BEFORE YOU DIG:
1-800-632-4949



GRAPHIC SCALES



DESIGN DATA

-L- V = 30 MPH
-Y- V = 50 MPH

PROJECT LENGTH

LENGTH ROADWAY:
-L- (RAGING RIDGE RD) 0.269 MILES
-Y- (STALLINGS RD) 0.247 MILES
LENGTH STRUCTURE 0.014 MILES



Prepared in the Office of:
RAMEY KEMP & ASSOCIATES, INC.
Transportation Engineers
5808 Faringdon Place, Suite 100 - Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax. - www.rameykemp.com
NC License No. C-0910

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

MERRICK A. DUGAL, III, P.E.
PROJECT ENGINEER

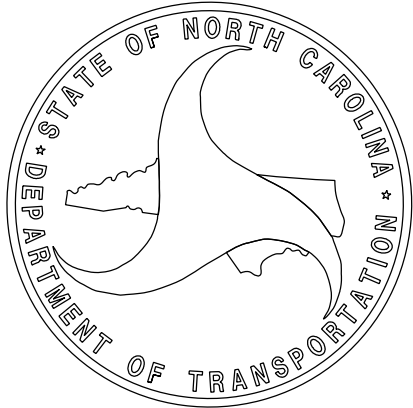
LUCAS S. HELMS, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by:
David L. Smith
3EAE4E737D284D1
12/21/2015
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Merrick A. Dugal
35B7F44BDC0594FE
12/21/2015
SIGNATURE: P.E.



8/17/99

INDEX OF SHEETS, GENERAL NOTES AND 2012 ROADWAY ENGLISH STANDARD DRAWINGS

PROJECT REFERENCE NO.
43370

SHEET NO.
1-A

ROADWAY DESIGN ENGINEER

DocuSign by Merrick A. Dugal, III

022609

ENGINEER

12/21/2015

 RAMEY KEMP ASSOCIATES, INC.
Transportation Engineers
5808 Faringdon Place, Suite 100
Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2 THRU 2-A	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND DETAILS
2-B	INTERSECTION DETAIL
2-C	2'-6" CURB & GUTTER TO 8" X 4" CURB TRANSITION
3-A	DRAINAGE SUMMARY SHEET
3-B	GUARDRAIL SUMMARY SUMMARY OF EARTHWORK BRIDGE WAITING PERIOD
4 THRU 5	PLAN SHEETS
TMP-1	TRAFFIC CONTROL GENERAL NOTES AND PHASING
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
UC-1 THRU UC-10	UTILITY CONSTRUCTION PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-16	CROSS-SECTIONS
S-1 THRU S-17	STURCTURE PLANS

GRADING AND SURFACING 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.

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/OR 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 AND/OR STD. NO. 560.02

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.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

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:

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS. SEE UC PLANS FOR WATERLINE INSTALLATION INFORMATION.

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.

2012 ROADWAY ENGLISH STANDARD DRAWINGS	EFF. 1-17-12
	REV. 10-30-12

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
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 – TWO LANE PAVEMENT
225.06	METHOD OF GRADING SIGHT DISTANCE AT INTERSECTIONS
DIVISION 3 – PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
DIVISION 4 – MAJOR STRUCTURES	
422.11	BRIDGE APPROACH FILLS – SUB REGIONAL TIER
DIVISION 5 – SUBGRADE, BASES, AND PAVEMENTS	
560.01	METHOD OF SHOULDER CONSTRUCTION – HIGH SIDE OF SUPERELEVATED CURVE – METHOD I
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
654.01	PAVEMENT REPAIRS
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 – FOR USE ON STANDARD CATCH BASIN
840.25	ANCHORAGE FOR FRAMES – BRICK OR CONCRETE OR PRECAST
840.30	DRIVEWAY DROP INLET
840.45	PRECAST DRAINAGE STRUCTURE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
840.72	PIPE COLLAR
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
848.01	CONCRETE SIDEWALK
848.05	CURB RAMP – PROPOSED CURB & GUTTER
862.01	GUARDRAIL PLACEMENT
862.02	GUARDRAIL INSTALLATION
862.03	STRUCTURE ANCHOR UNITS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

04/16/11

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
43370	1-B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	- - - - -
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙ EIP
Property Corner	-----x
Property Monument	ECM
Parcel/Sequence Number	(23)
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
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	?? ??

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	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	----- (R/W)
Proposed Right of Way Line with Iron Pin and Cap Marker	----- (R/W) ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	----- (R/W) ▲
Proposed Control of Access Line with Concrete C/A Marker	----- (C/A)
Existing Control of Access	----- (C/A)
Proposed Control of Access	----- (C/A)
Existing Easement Line	----- E
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

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 Curb Ramp	CR
Existing Metal Guardrail	⌢
Proposed Guardrail	⌢
Existing Cable Guiderail	⌢
Proposed Cable Guiderail	⌢
Equality Symbol	⊗
Pavement Removal	XXXXX
<i>VEGETATION:</i>	
Single Tree	☼
Single Shrub	☼
Hedge	~~~~~
Woods Line	~~~~~

Orchard	☼ ☼ ☼ ☼
Vineyard	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:

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	----- TUTL
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

01/06/2016
NORTH CAROLINA
PROFESSIONAL
SEAL
L-4622
LAND SURVEYOR
BRIAN E. CLARK
B. E. Clark

Location and Surveys



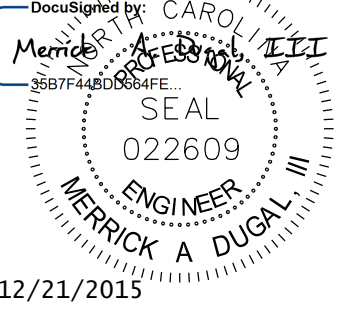
PROJECT CONTROL ESTABLISHED BY GLOBAL POSITIONING SYSTEM



CP #4
ELEVATION: 578.56
COORDINATES: N572670.53, E1512296.11
STATION: -L- STA. 21+05.70
DESCRIPTION: MAG HUB

1/6/2016
20100194_C_SHT_UTILITIES.DWG
USER: TCOLINS

PROJECT REFERENCE NO.
43370

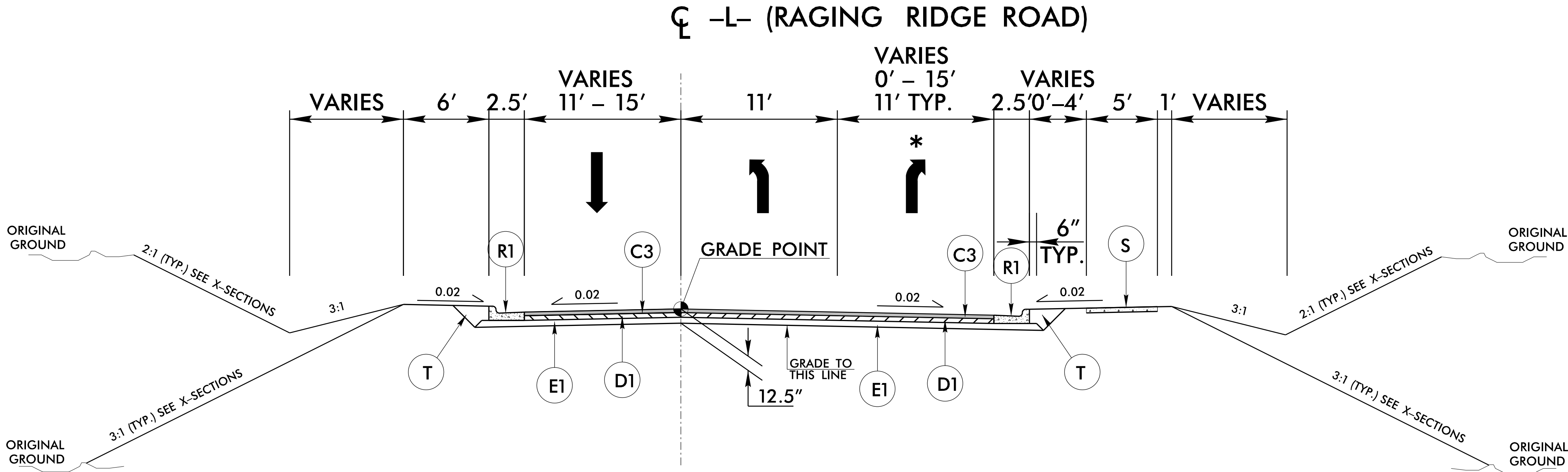
ROADWAY DESIGN ENGINEER

12/21/2015

SHEET NO.
2

PAVEMENT DESIGN ENGINEER



RAMEY KEMP ASSOCIATES, INC.
Transportation Engineers
5808 Faringdon Place, Suite 100
Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910

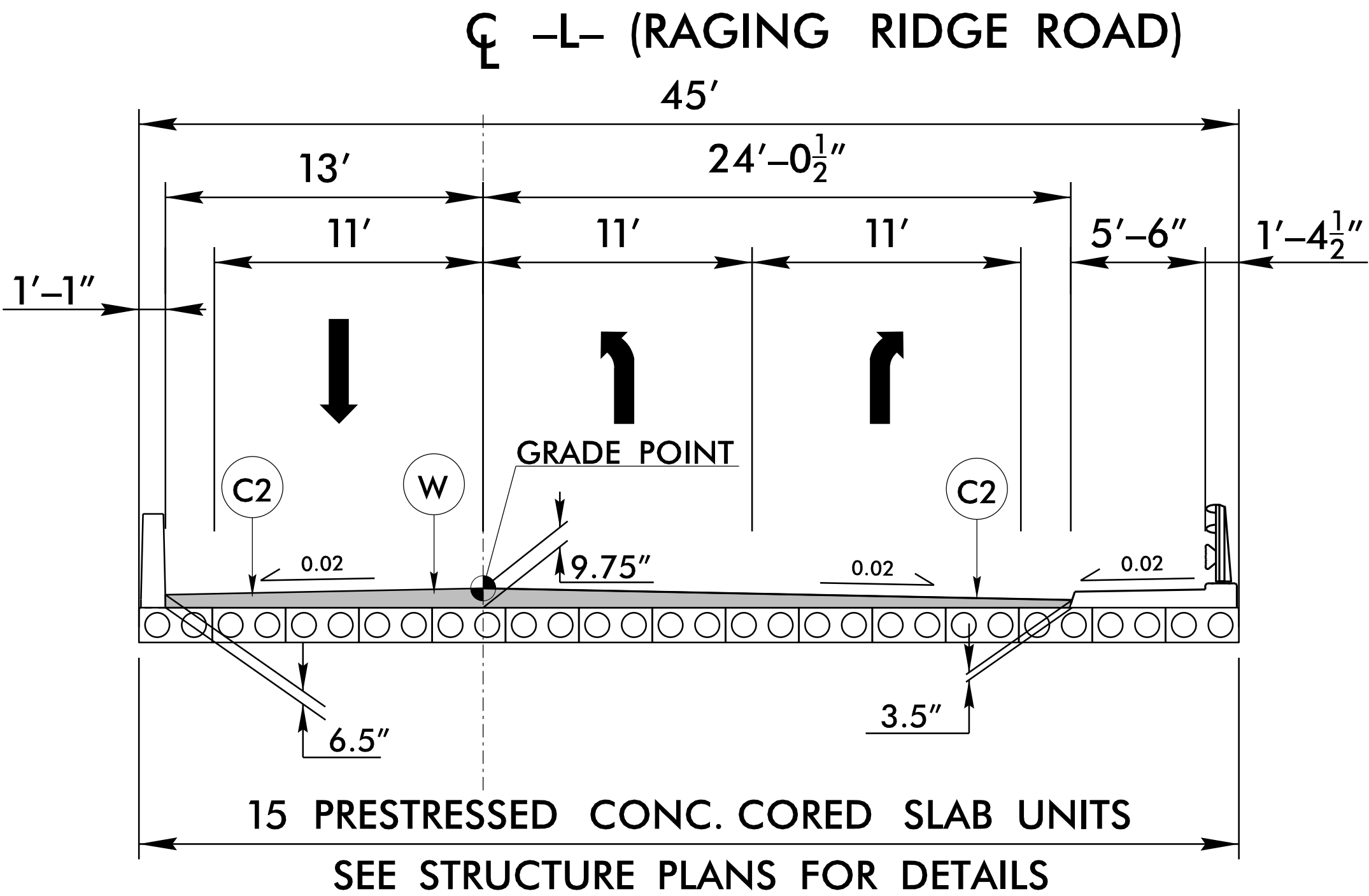


TYPICAL SECTION NO. 1

-L- STA. 12+00.31 TO -L- STA. 24+74.88 (BEGIN BRIDGE)
-L- STA. 25+47.13 (END BRIDGE) TO -L- STA. 26+92.49
*(RIGHT TURN LANE) -L- STA. 23+67.49 TO -L- STA. 26+92.49
NOTE: SEE PLANS FOR GUARDRAIL PLACEMENT AT BRIDGE.

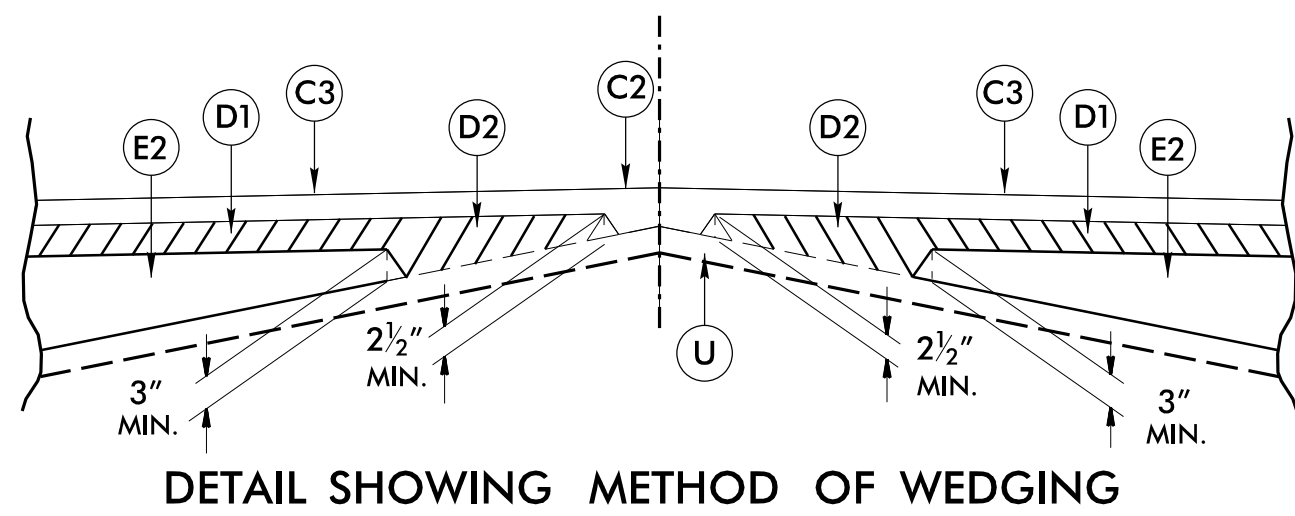
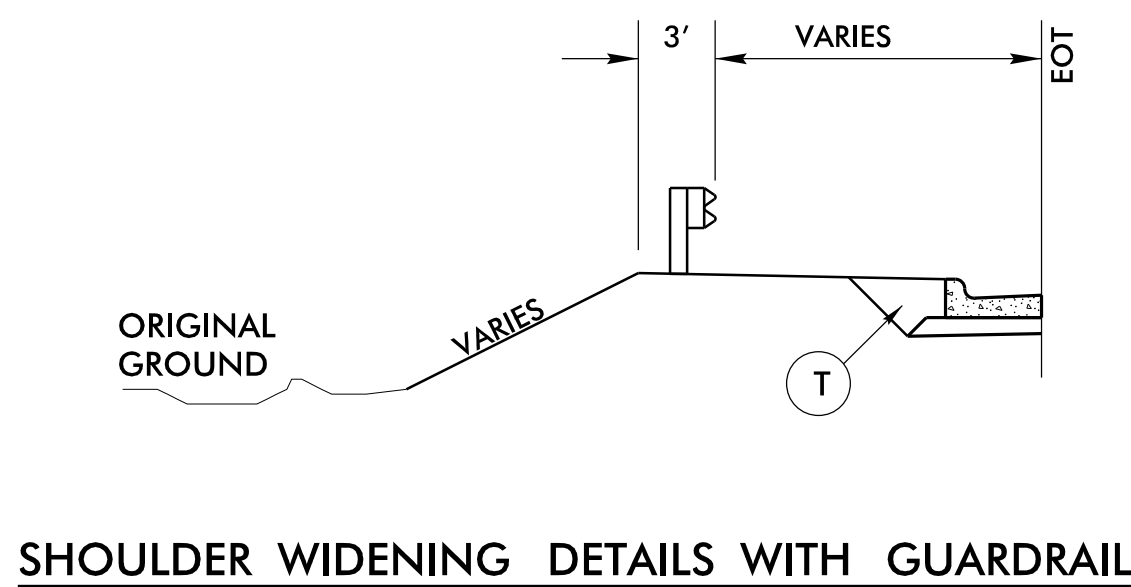
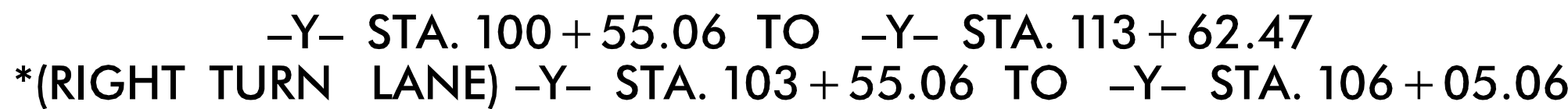
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" IN DEPTH OR GREATER THAN 2" IN DEPTH.
C3	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.
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 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	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 5.5" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING ASPHALT PAVEMENT, VAR. DEPTH 0-1.5"
W	WEDGING

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



TYPICAL SECTION NO. 2

-L- STA. 24+74.88 TO -L- STA. 25+47.13



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

8/17/99

12/21/2015
\\Roadway\Proj\12039_Rdy-2B.dgn
User:helms

REVISIONS

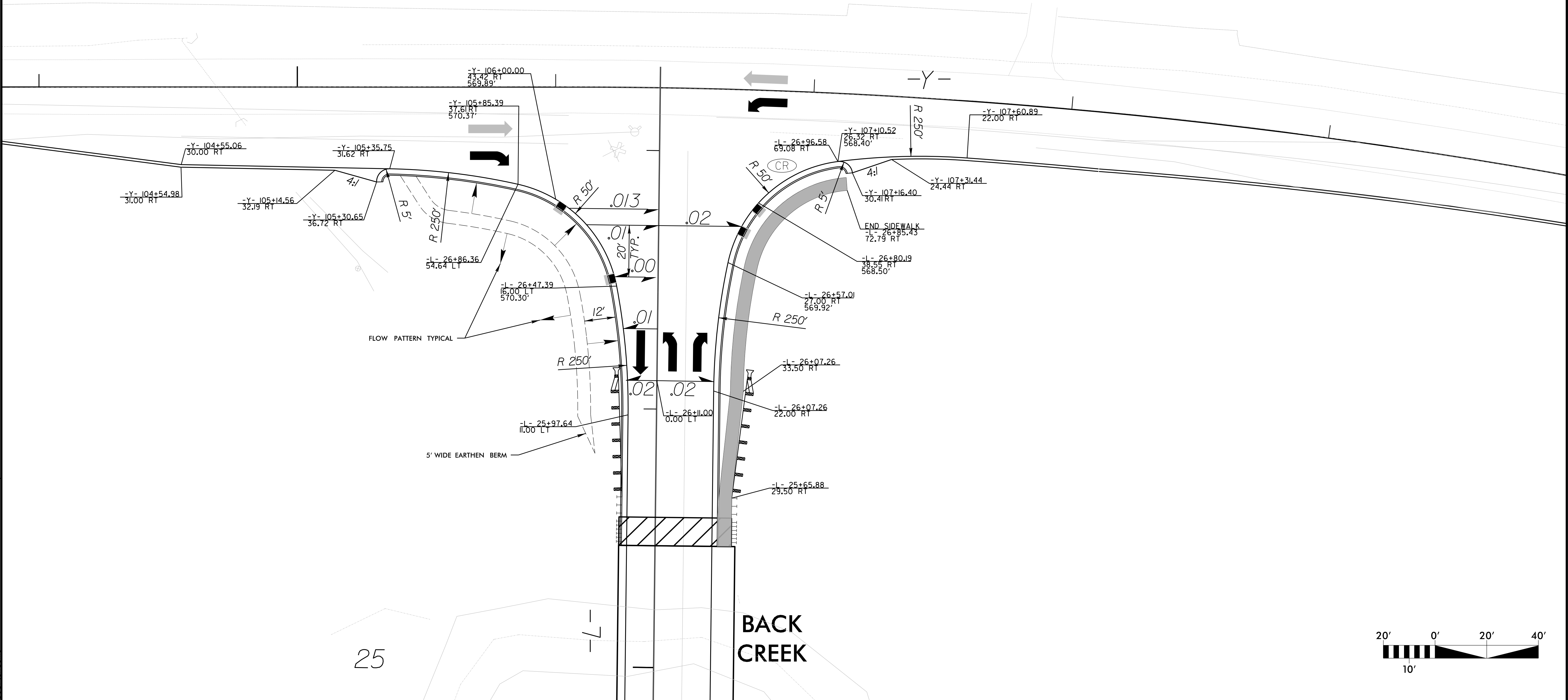
DETAIL FOR INTERSECTION

105

25

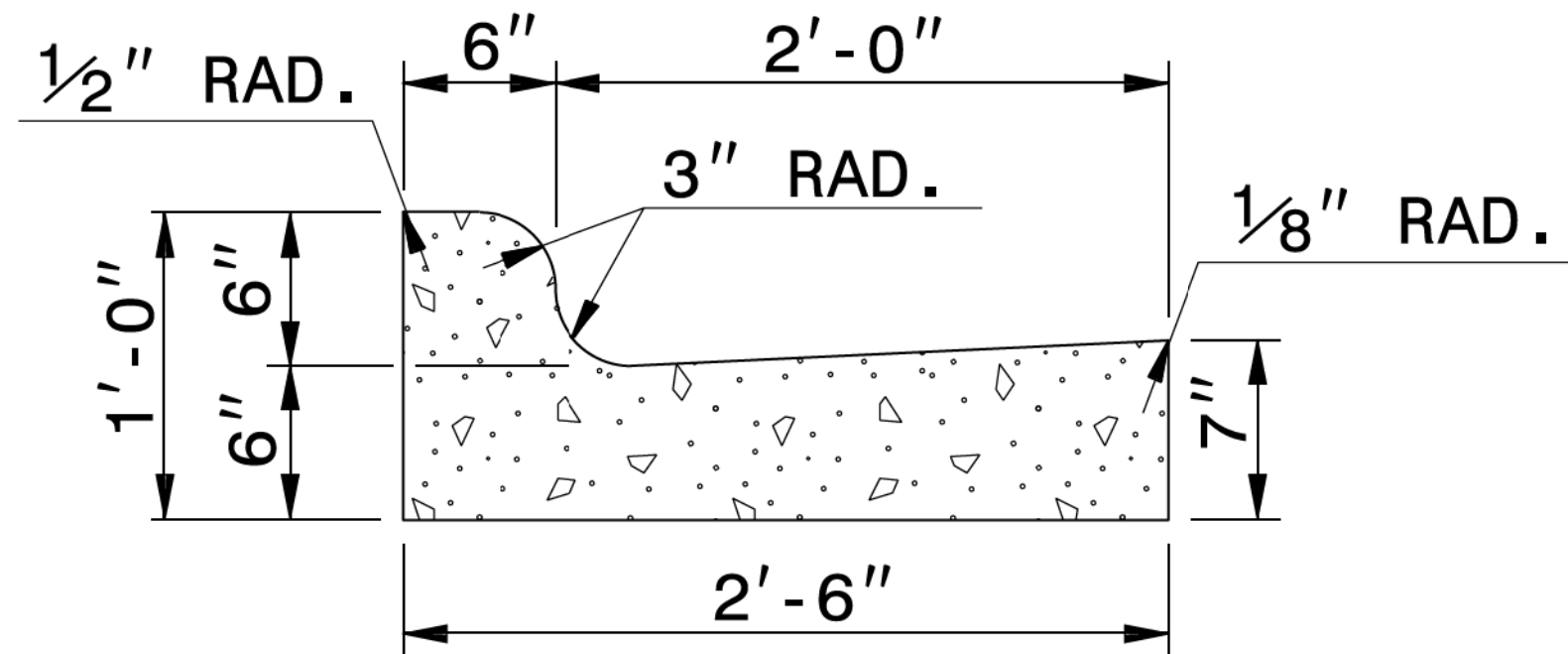
BACK CREEK

PROJECT REFERENCE NO. 43370		SHEET NO. 2-B
RW SHEET NO.		
ROADWAY DESIGN ENGINEER Merrick A. Dugal 022609 12/21/2015	HYDRAULICS ENGINEER David L. Smith 20744 12/21/2015	
 RAMEY KEMP ASSOCIATES, INC. Transportation Engineers 5808 Faringdon Place, Suite 100 Raleigh, North Carolina 27609 919-872-5115 Tel. 919-878-5416 Fax. www.rameykemp.com NC License No. C-0910		



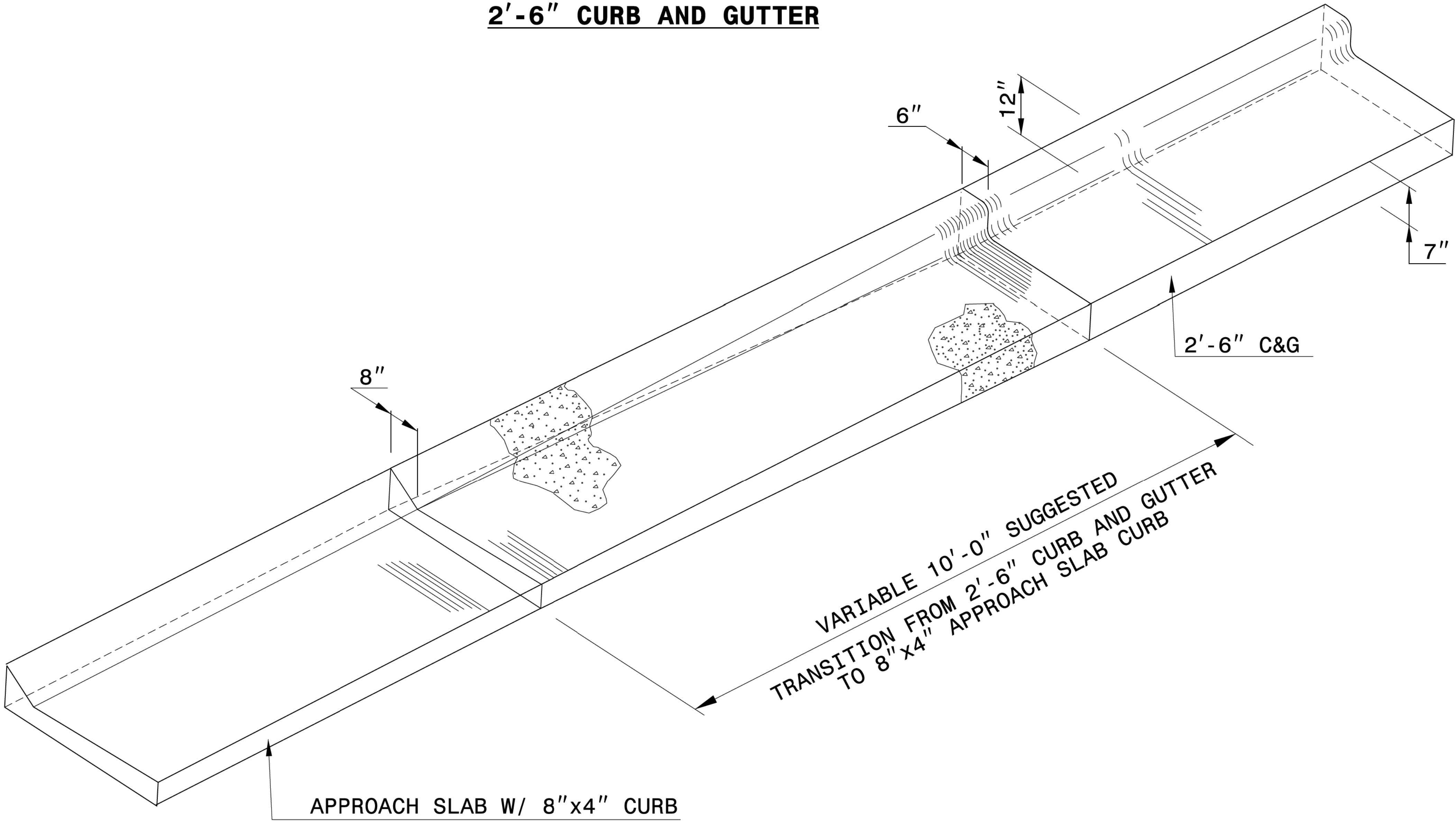
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
43370	2-C



*NOTE: SEE STD. DWG. 846.01
FOR GENERAL NOTES

2'-6" CURB AND GUTTER



ISOMETRIC VIEW OF TRANSITION

CONTRACT STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
DETAIL OF 2'-6" CURB & GUTTER TO 8"x4" APPROACH SLAB CURB TRANSITION SECTION			
ORIGINAL BY: <u>E.E. WARD</u>		DATE: <u>5-29-02</u>	
MODIFIED BY: _____		DATE: _____	
CHECKED BY: _____		DATE: _____	
FILE SPEC.: <u>/usr/details/stand/cgtransit.dgn</u>			

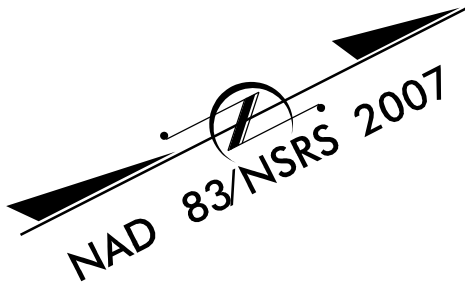
SHEET TOTALS

PROJECT TOTALS

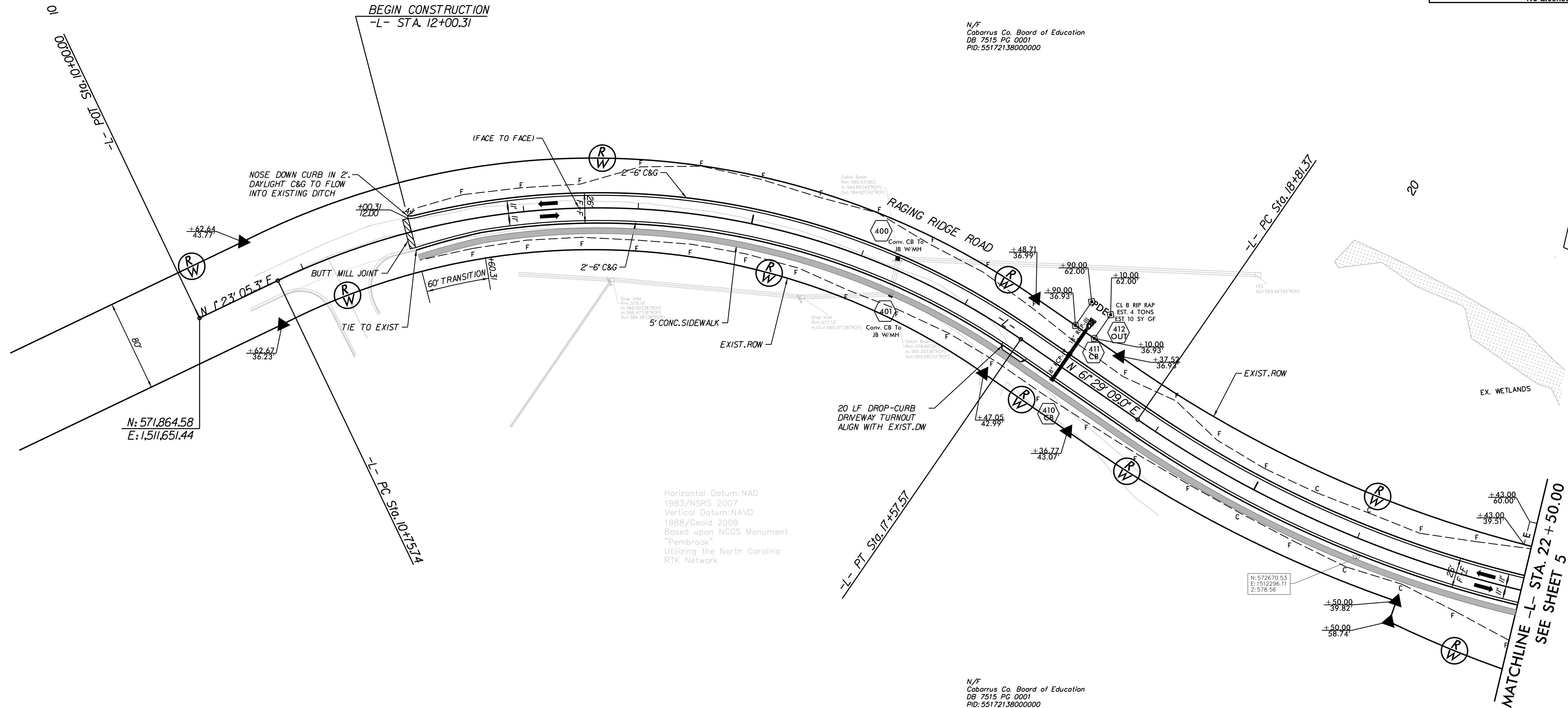
8/17/99

REVISIONS

NOTES: 1. ALL DIMENSION CALLOUTS ARE TO THE EDGE OF TRAVEL UNLESS OTHERWISE SPECIFIED.



PROJECT REFERENCE NO. 43370		SHEET NO. 4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER Merrick A. Dugal SEAL 022609 ENGINEER 12/21/2015	HYDRAULICS ENGINEER David L. Smith SEAL 20744 ENGINEER 12/21/2015	
 RAMHEY KEMP & ASSOCIATES, INC. Transportation Engineers 5808 Farlington Place, Suite 100 Raleigh, North Carolina 27609 919-872-5115 Tel. 919-878-5416 Fax. www.rameykemp.com NC License No. C-0910		



Horizontal Datum: NAD 1983/NSRS 2007
Vertical Datum: NAVD 1988/Geoid 2009
Based upon NCGS Monument "Pembroke"
Utilizing the North Carolina RTK Network

-L-	-L-
PI Sta 14+51.78	PI Sta 21+86.11
$\Delta = 60^{\circ} 06' 03.8''$ (RT)	$\Delta = 33^{\circ} 53' 43.9''$ (LT)
D = 8' 48' 53.0"	D = 5' 43' 46.5"
L = 681.82'	L = 591.59'
T = 376.04'	T = 304.73'
R = 650.00'	R = 1,000.00'
e = NC	e = NC

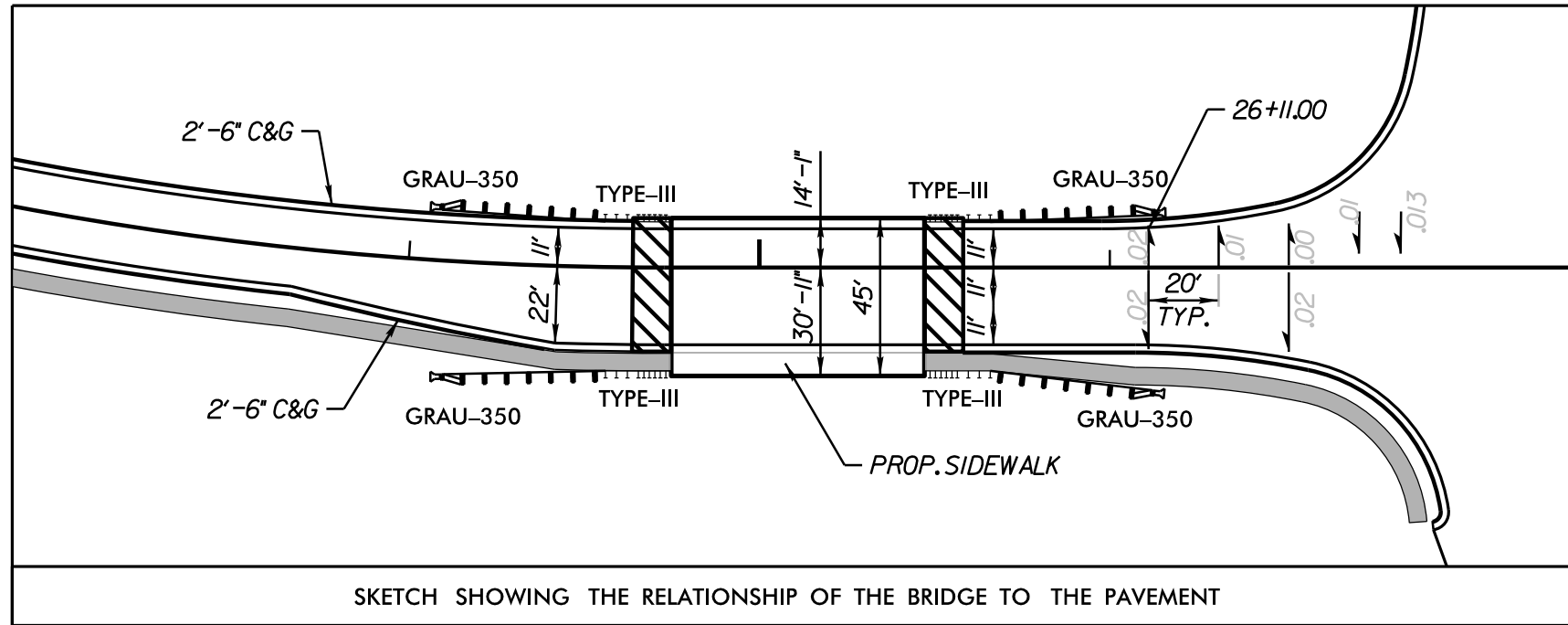
SEE SHEET 6 FOR -L- PROFILE

8/17/99

REVISIONS

12/21/2015
P:\Projects\2015\12039_Rd\psh_s05.dgn
psh

-Y- POT Sta. 100+00.00

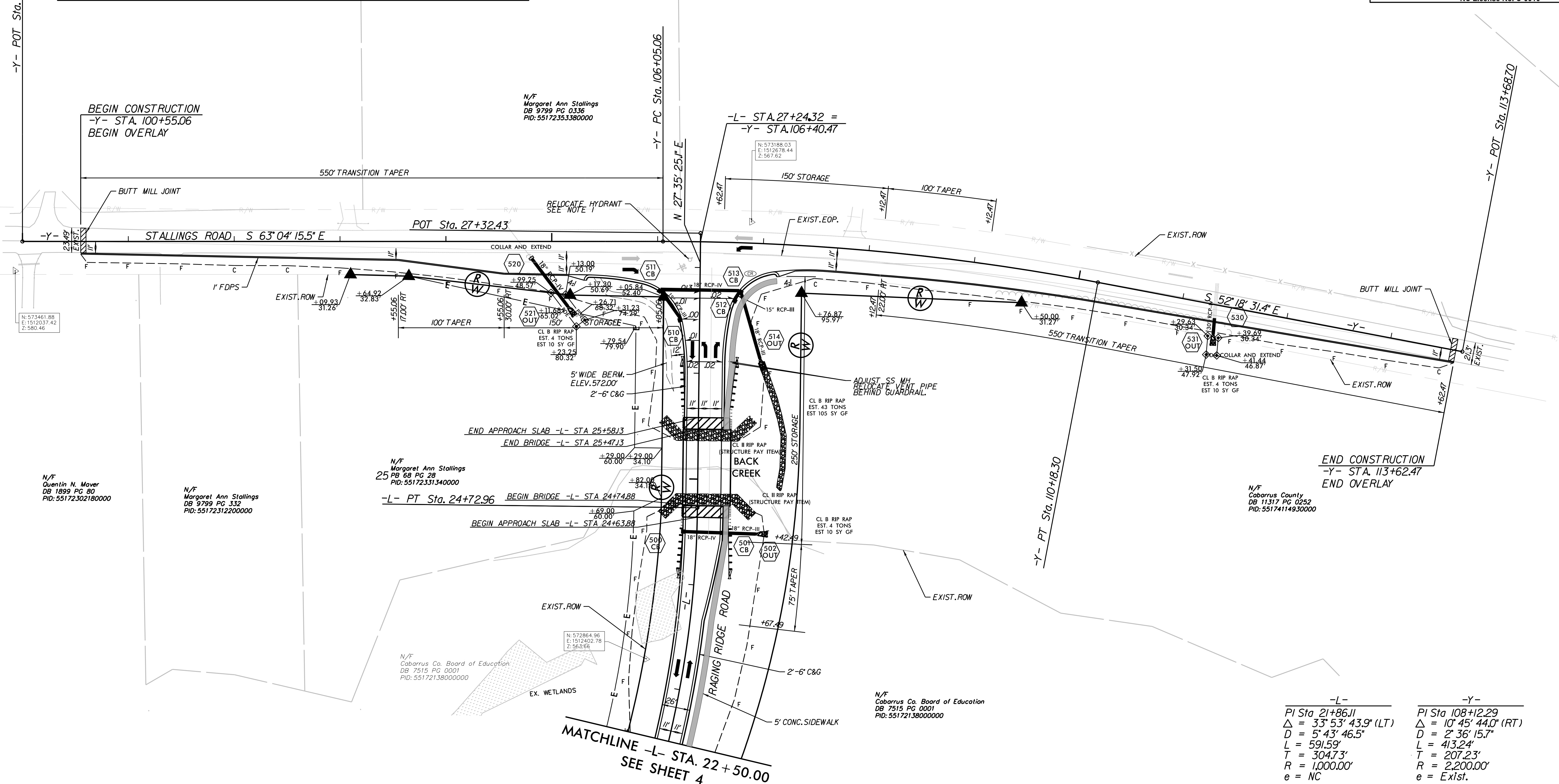


105

NOTES:

1. FOR WATERLINE LOCATION AND HYDRANT RELOCATION, SEE UC PLANS COMPLETED BY W.K.DICKSON.

110



-L-	-Y-
PI Sta 21+86.11	PI Sta 108+12.29
$\Delta = 33^\circ 53' 43.9''$ (LT)	$\Delta = 10^\circ 45' 44.0''$ (RT)
$D = 5^\circ 43' 46.5''$	$D = 2^\circ 36' 15.7''$
$L = 591.59'$	$L = 413.24'$
$T = 304.73'$	$T = 207.23'$
$R = 1,000.00'$	$R = 2,200.00'$
$e = NC$	$e = \text{Exist.}$

- BRIDGE APPROACH SLAB
- SEE SHEET 2-B FOR INTERSECTION DETAIL
- SEE SHEET 6 FOR -L- PROFILE
- SEE S-1 THRU S-17 FOR STRUCTURE PLANS

5/28/99

PROJECT REFERENCE NO.
43370

SHEET NO.
6

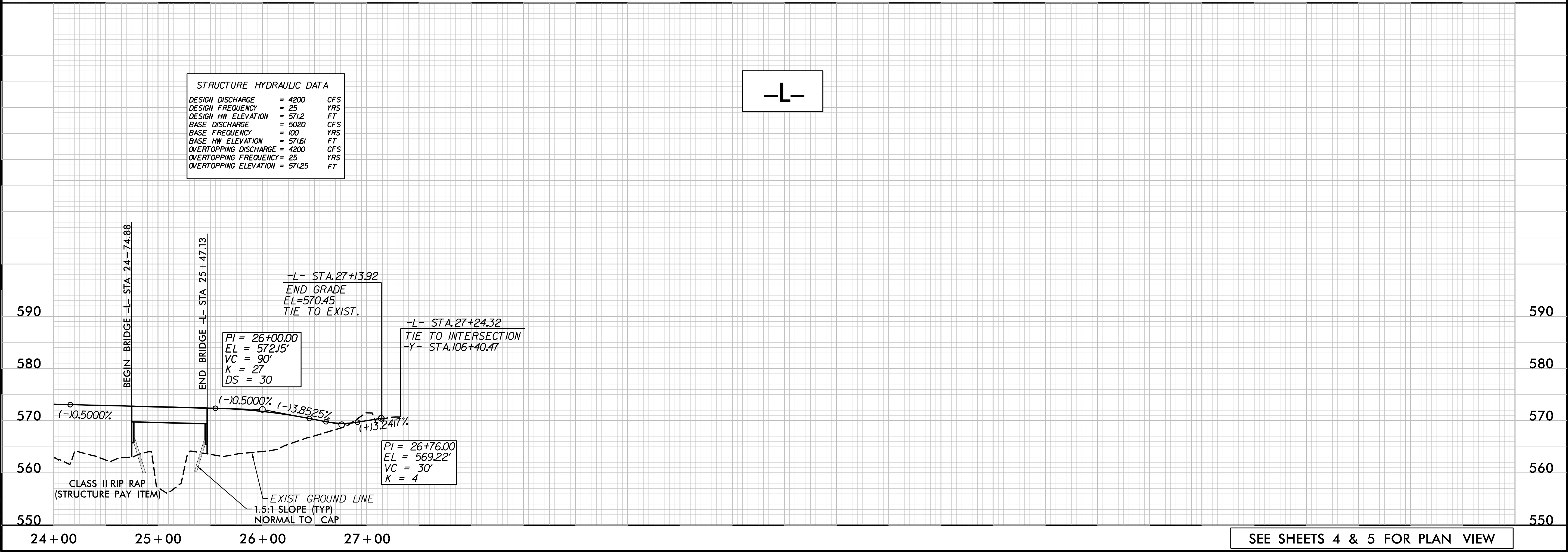
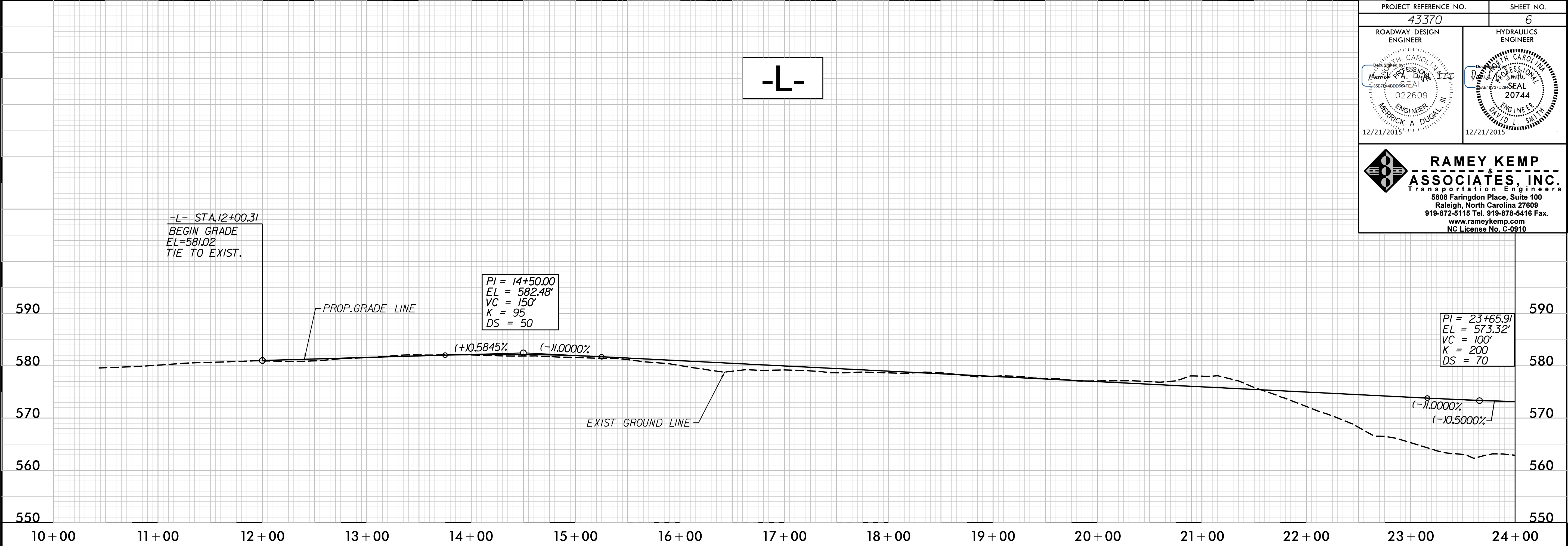
ROADWAY DESIGN
ENGINEER

DAVID A. DUGAN
12/21/2015

HYDRAULICS
ENGINEER

DAVID L. SMITH
12/21/2015

ramey kemp
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Raleigh, North Carolina 27609
919-872-5115 Tel. 919-878-5416 Fax.
www.rameykemp.com
NC License No. C-0910



SEE SHEETS 4 & 5 FOR PLAN VIEW

12/21/2015
\\Prg\12039_Rd\pflsh.dgn
User:rls

12/21/2015
...\\12039_TC_pmp01.dgn
User:lhelms

PAVEMENT MARKING LINES

-----THERMOPLASTIC (24", 120 mils)
T2 - WHITE STOP BAR
T3 - WHITE CROSSWALK LINE

NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE TO NCDOT STANDARDS.
2. REMOVE ALL CONFLICTING EXISTING PAVEMENT MARKINGS AND SIGNS WITHIN THE CONSTRUCTION AREA.

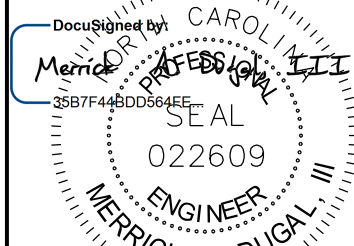
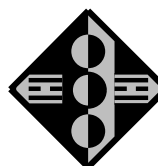
PAVEMENT MARKING SYMBOLS

----- THERMOPLASTIC (120 mils)
UI - ALPHANUMERIC CHAR.

USE NCDOT 2012 STANDARDS

BEGIN CONSTRUCTION
-L- STA. 12+00.31

**MATCHLINE -L- STA. 22 + 50.00
SEE SHEET PMP-2**

PROJECT REFERENCE NO.	43370	SHEET NO.	PMP-I
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
			
		RAMEY KEMP - - - - - & - - - - - ASSOCIATES, INC. Transportation Engineers 5808 Farringdon Place, Suite 100 Raleigh, North Carolina 27609 919-872-5115 Tel. 919-878-5416 Fax. www.rameykemp.com NC License No. C-0910	

PAVEMENT MARKING LINES

-----PAINT (4")
PA - WHITE EDGELINE
PB - YELLOW EDGELINE

PAVEMENT MARKING SYMBOLS

ARROW
----- THERMOPLASTIC (120 mils)
UI - ALPHANUMERIC CHAR.

NOTES:

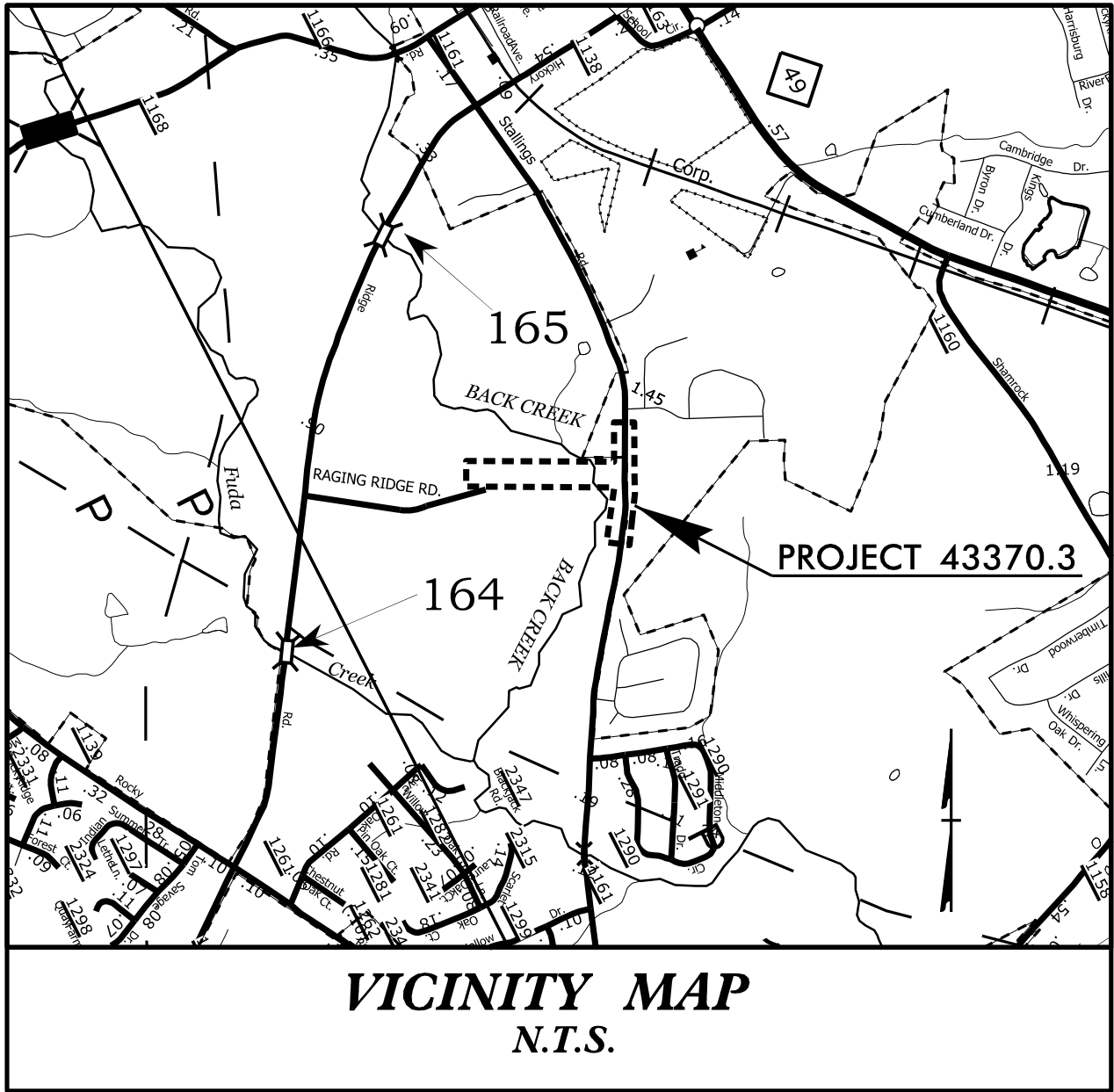
1. ALL PAVEMENT MARKINGS SHALL BE TO NCDOT STANDARDS.

2. REMOVE ALL CONFLICTING EXISTING PAVEMENT MARKINGS AND SIGNS WITHIN THE CONSTRUCTION AREA.

USE NCDOT 2012 STANDARDS

SYMBOL LEGEND

		LEFT ARROW
		RIGHT ARROW
		STRAIGHT ARROW
		ALPHANUMERIC CHARACTERS



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

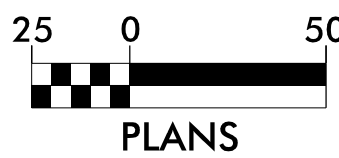
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

THIS PROJECT CONTAINS 303(d) IMPAIRED WATER(S) IMPAIRED FOR TURBIDITY FROM STORMWATER-RELATED IMPACTS OR THE PROJECT IS WITHIN ONE MILE AND DRAINS TO WATER(S) LISTED ON THE 303(d) LIST FOR TURBIDITY IMPAIRMENT. THE CONTRACTOR SHALL ADHERE TO ALL CONDITIONS AND REGULATIONS REQUIRED FOR IMPACTS TO THESE WATERS.

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HOW ZONES.

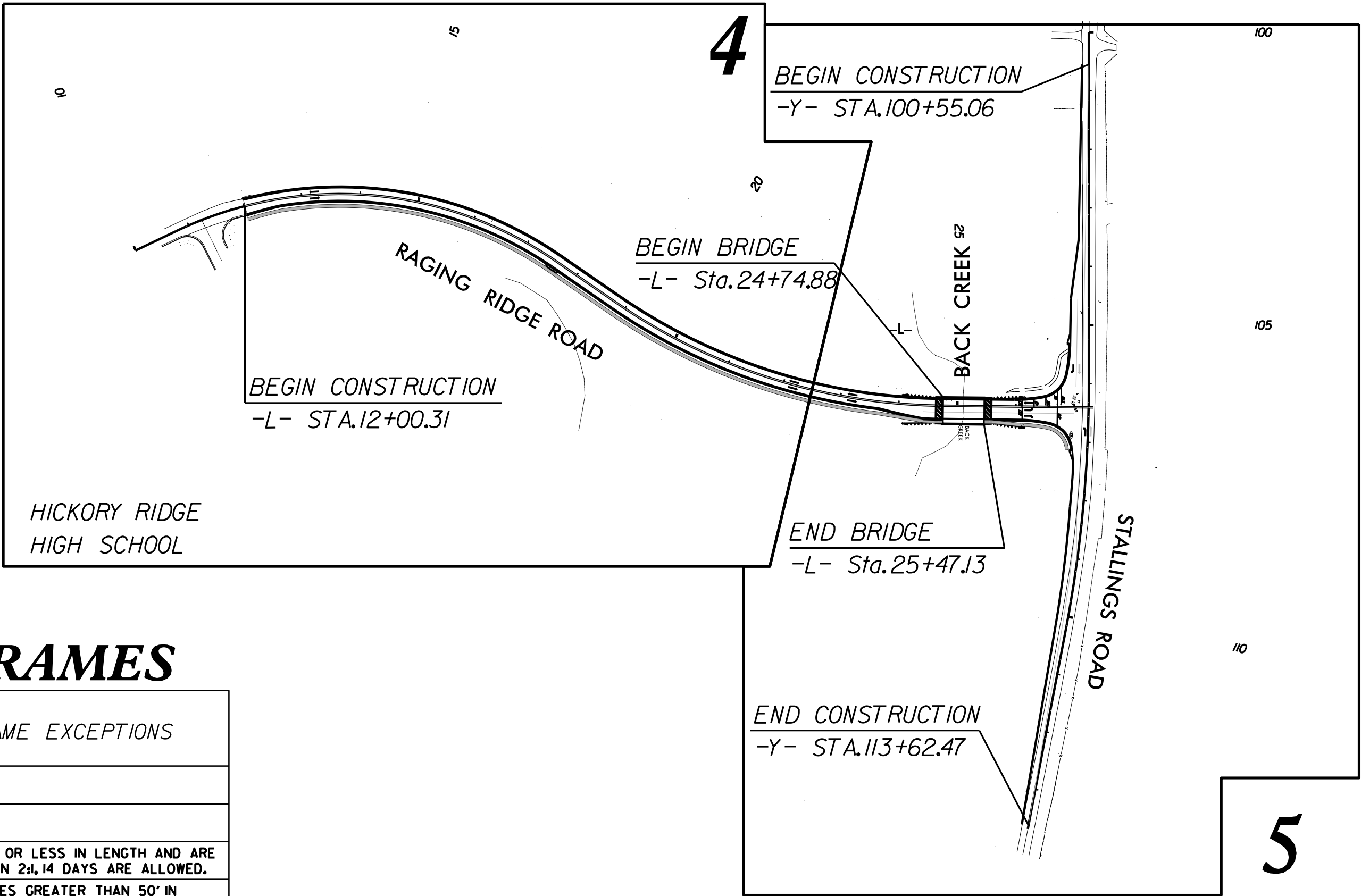
GRAPHIC SCALE



ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS PLAN FOR PROPOSED HIGHWAY EROSION CONTROL



DISTURBED AREA
3.50 ACRES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	43370	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	III III III
1630.02	Silt Basin Type B	III III III
1633.01	Temporary Rock Silt Check Type-A	III III III
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	III III III
1633.02	Temporary Rock Silt Check Type-B	III III III
	Wattle / Coir Fiber Wattle	III III III
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	III III III
1634.01	Temporary Rock Sediment Dam Type-A	III III III
1634.02	Temporary Rock Sediment Dam Type-B	III III III
1635.01	Rock Pipe Inlet Sediment Trap Type-A	III III III
1635.02	Rock Pipe Inlet Sediment Trap Type-B	III III III
1630.04	Stilling Basin	III III III
1630.06	Special Stilling Basin	III III III
	Rock Inlet Sediment Trap:	III III III
1632.01	Type A	III III III
1632.02	Type B	III III III
1632.03	Type C	III III III
	Skimmer Basin	III III III
	Tiered Skimmer Basin	III III III
	Infiltration Basin	III III III

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS SHOWN ON EC-3

Prepared In the Office of:

RAMEY KEMP & ASSOCIATES

5808 Faringdon Place, Ste. 100, Raleigh NC, 27609

2012 STANDARD SPECIFICATIONS

Designed by:

DAVID L. SMITH, P.E.

NAME

590

LEVEL III CERTIFICATION NO.

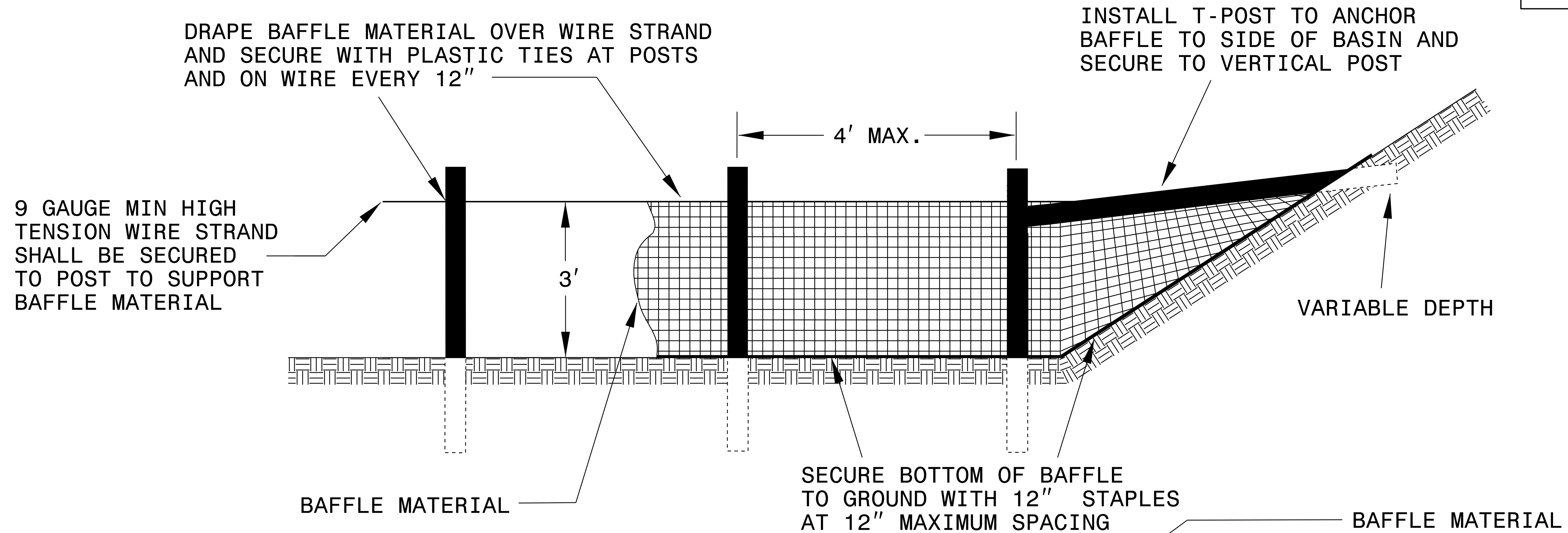
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

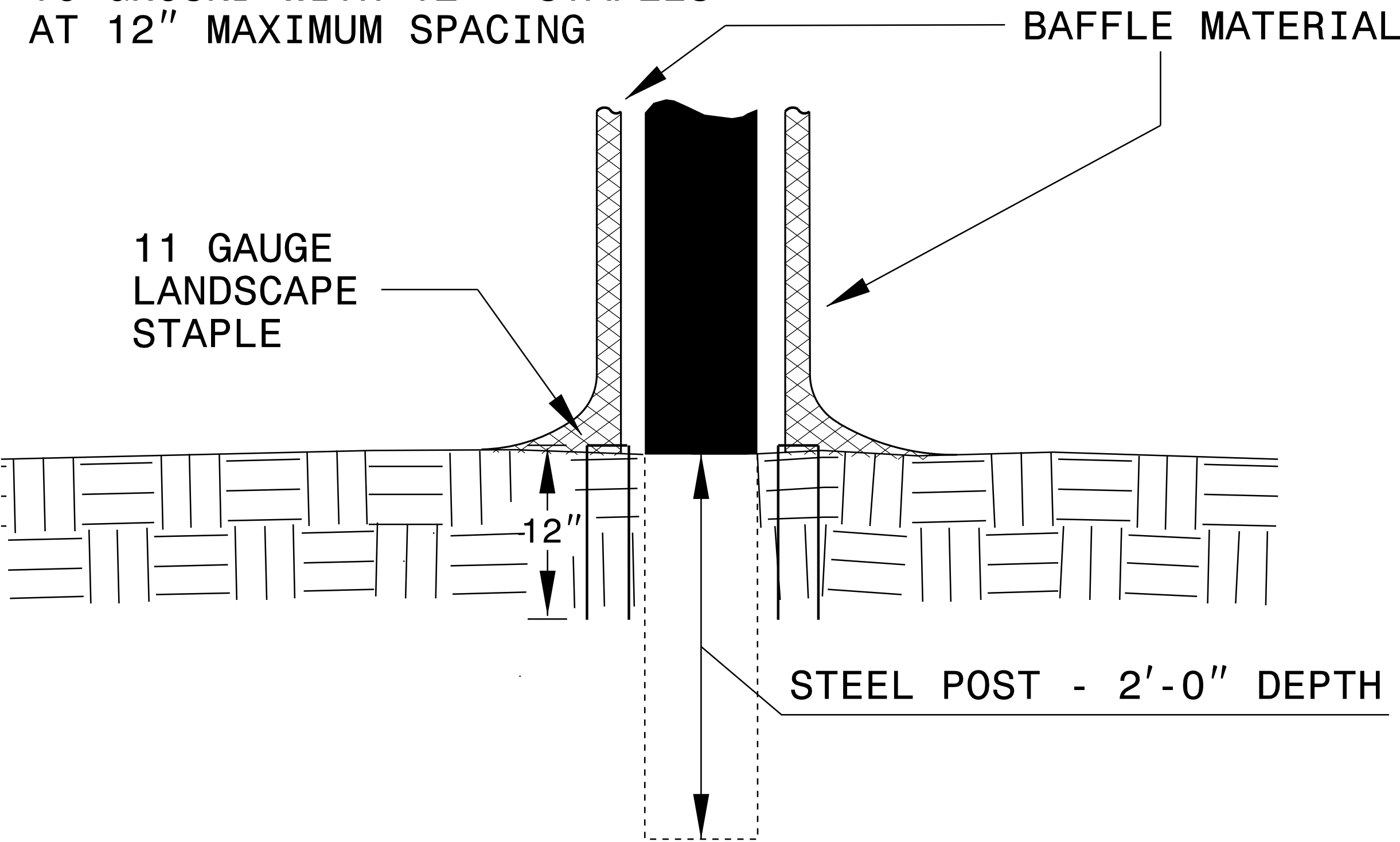
PROJECT REFERENCE NO.	SHEET NO.
43370	EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL



NOTES:

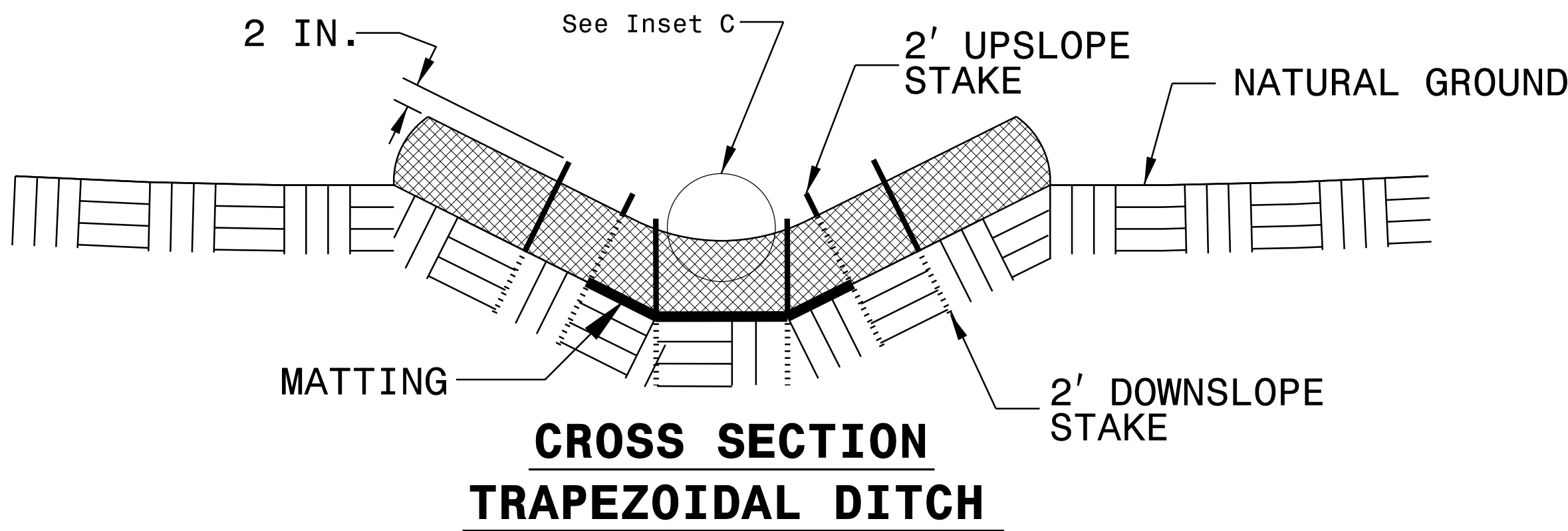
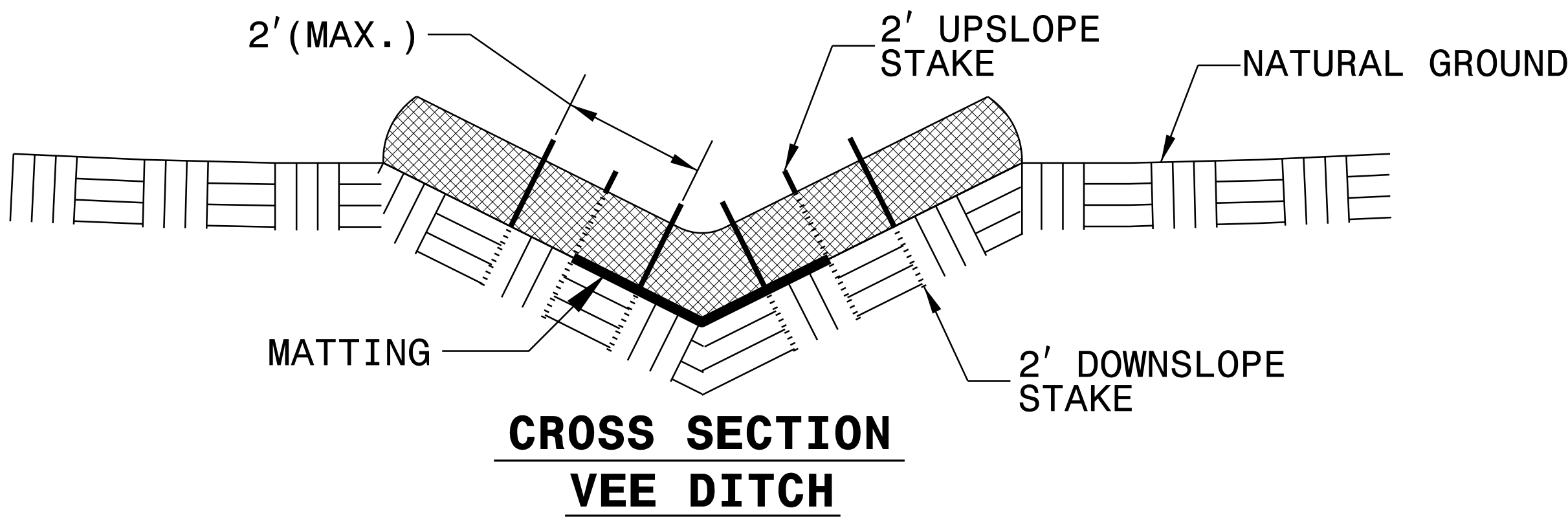
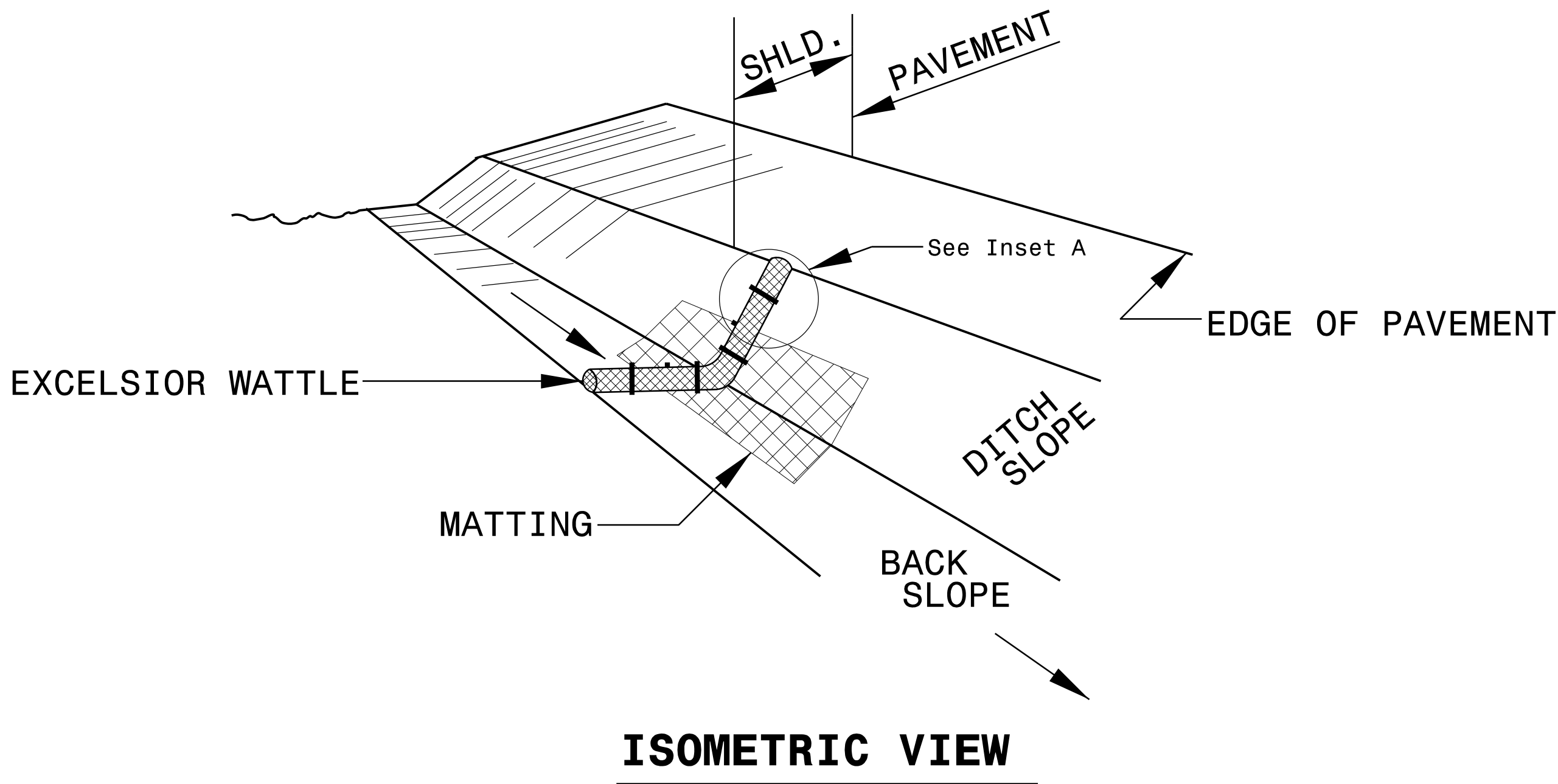
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF $\frac{1}{4}$ THE BASIN LENGTH.
2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF $\frac{1}{3}$ THE BASIN LENGTH.
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.



BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO.	SHEET NO.
43370	EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

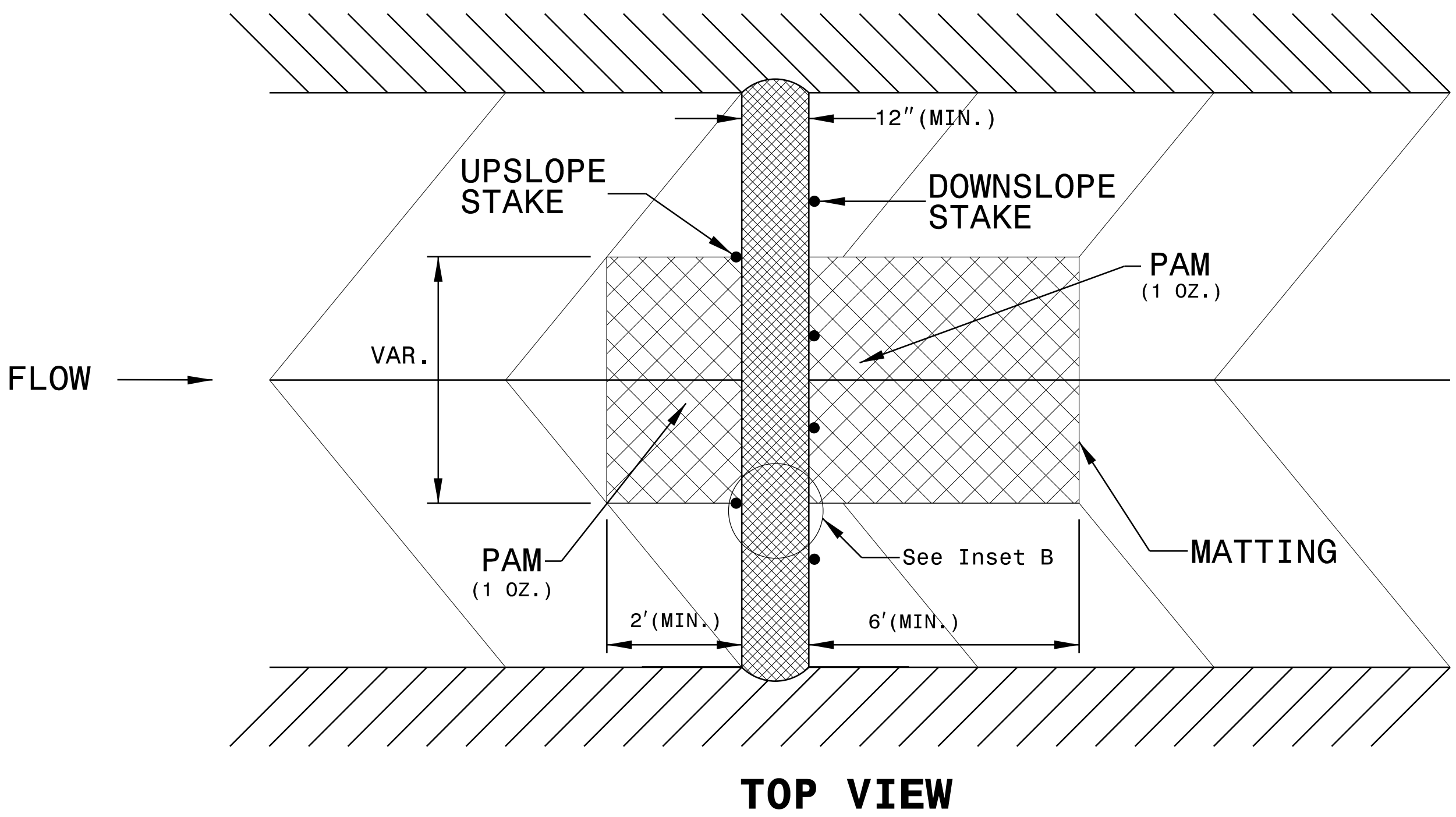
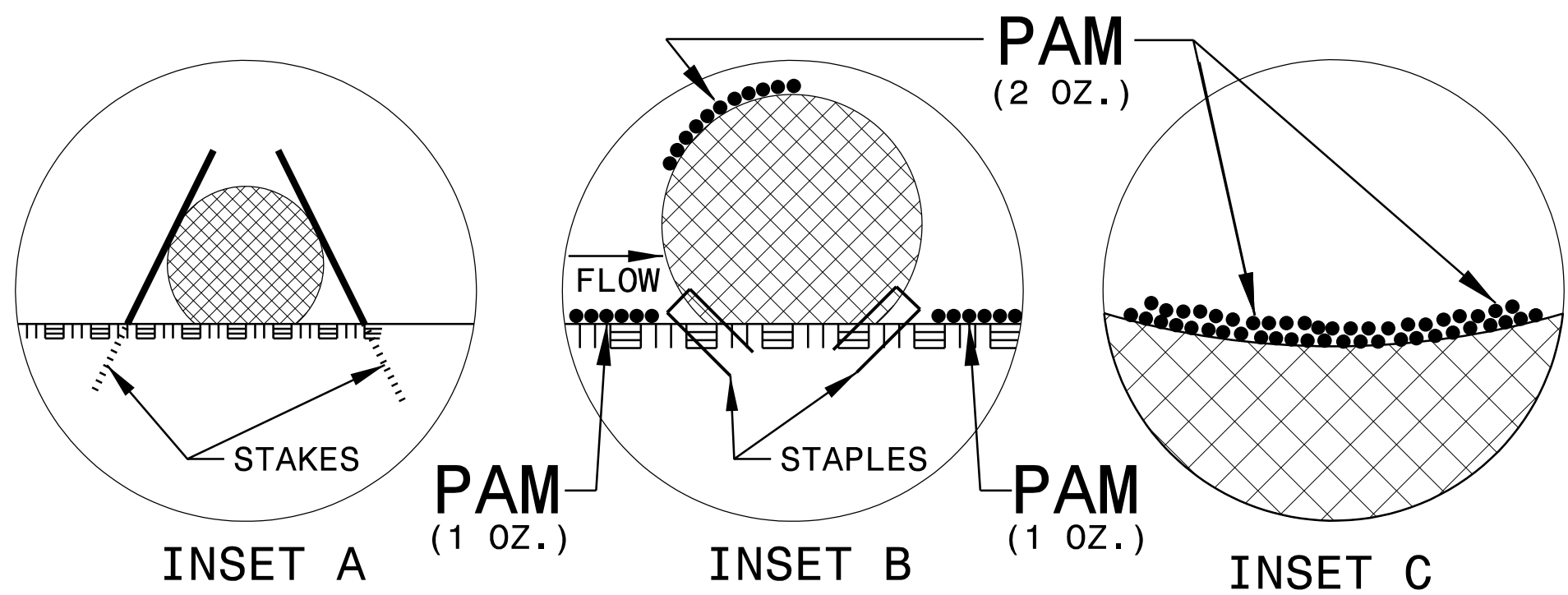
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



8/17/99

REVISIONS

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11/21/2015

GENERAL EROSION CONTROL NOTES:

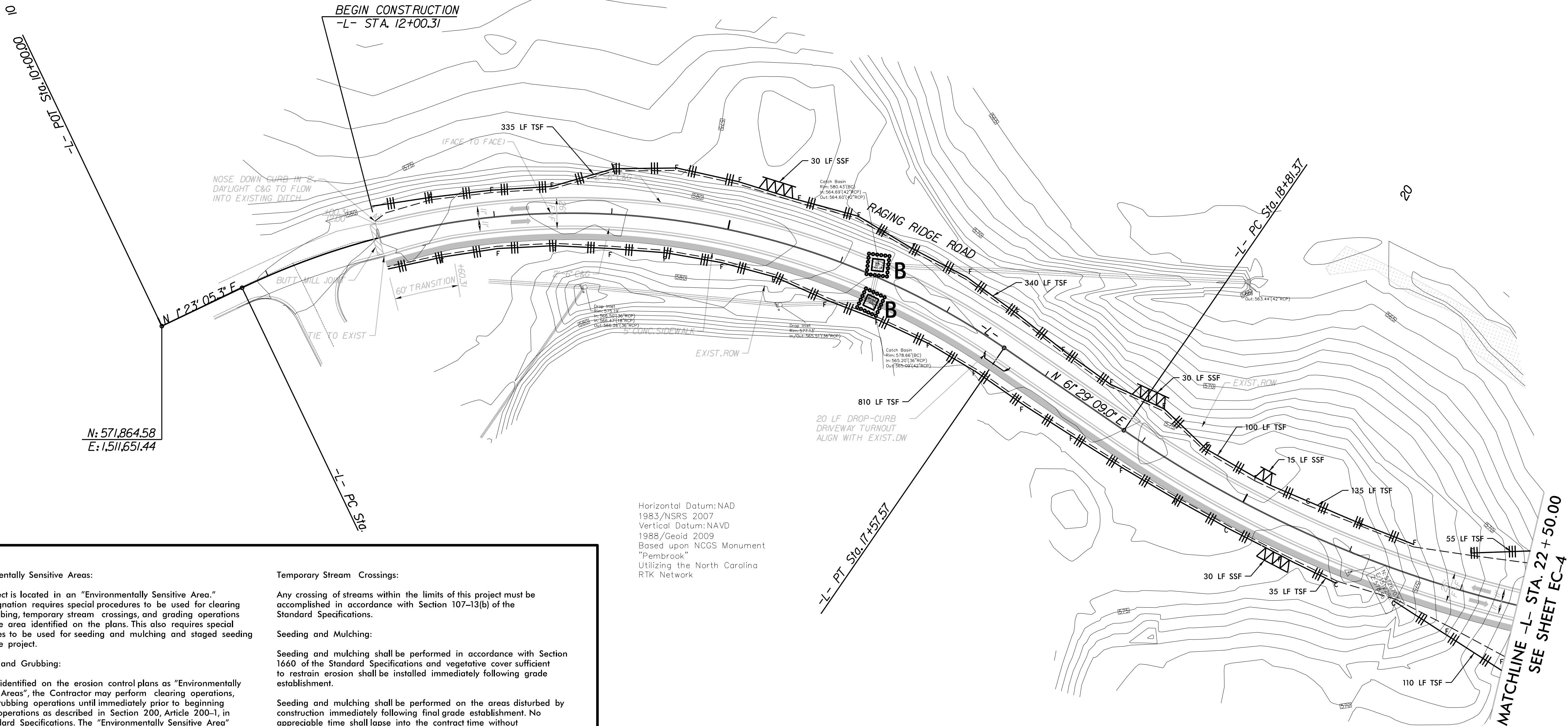
1. ALL EROSION CONTROL DEVICES AND MAINTAINANCE SHOULD FOLLOW THE 2012 NCDOT STANDARDS AND SPECIFICATIONS.
2. INSTALL INLET PROTECTION DEVICES ON ALL EXISTING AND PROPOSED INLETS AND CATCH BASINS WITHIN THE PROJECT LIMITS.
3. SEEDING AND MULCHING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 1660 OF THE STANDARD SPECIFICATIONS AND VEGETATIVE COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE INSTALLED IMMEDIATELY FOLLOWING GRADE ESTABLISHMENT.
4. SEEDING AND MULCHING SHALL BE PERFORMED ON THE AREAS DISTURBED BY CONSTRUCTION IMMEDIATELY FOLLOWING FINAL GRADE ESTABLISHMENT TO MATCH EXISTING CONDITIONS. GRASS SEED TO MATCH EXISTING SITE GRASS.
5. STABILIZE DITCHES WITH STRAW.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

PROJECT REFERENCE NO.	SHEET NO.
43370	EC-3/CONST.4



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www.rameykemp.com
NC License No. C-0910



Horizontal Datum: NAD
1983/NSRS 2007
Vertical Datum: NAVD
1988/Geoid 2009
Based upon NCGS Monument
"Pembroke"
Utilizing the North Carolina
RTK Network

Environmentally Sensitive Areas:

This project is located in an "Environmentally Sensitive Area." This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the area identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200-1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Areas", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108-7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107-13(b) of the Standard Specifications.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "Environmentally Sensitive Areas" as indicated on the erosion control plans.

Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

-L-
PI Sta 14+51.78
Δ = 60° 06' 03.8" (RT)
D = 8° 48' 53.0"
L = 681.82'
T = 376.04'
R = 650.00'
e = NC

-L-
PI Sta 21+86.11
Δ = 33° 53' 43.9" (LT)
D = 5° 43' 46.5"
L = 591.59'
T = 304.73'
R = 1,000.00'
e = NC

Place Matting for Erosion Control
on Slopes Adjacent to Permitted
Wetlands as Work Allows.

8/17/99

REVISIONS

12/21/2015 EC_psh_S04.dgn
11:23:10
11/23/2015 EC_psh_S04.dgn
11:23:10

GENERAL EROSION CONTROL NOTES:

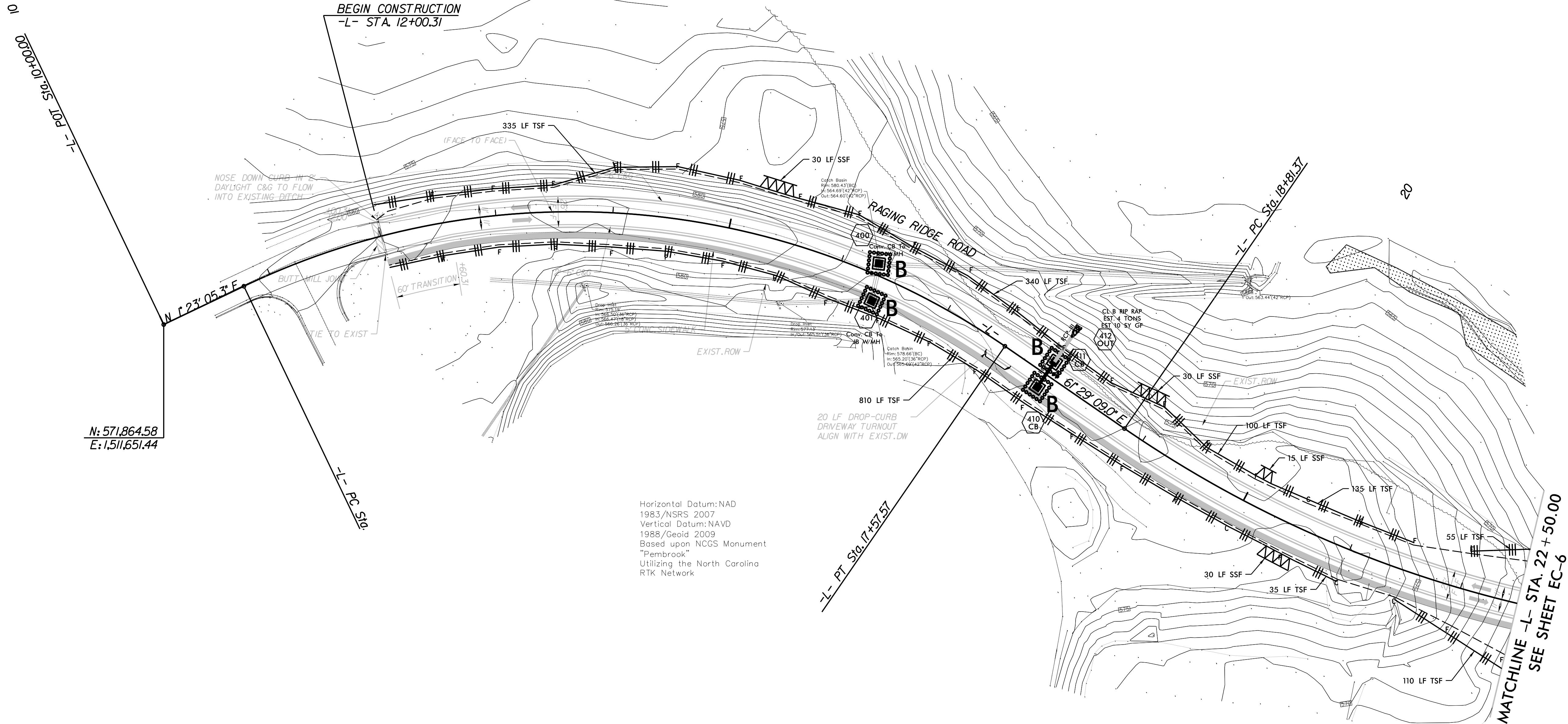
1. ALL EROSION CONTROL DEVICES AND MAINTAINANCE SHOULD FOLLOW THE 2012 NCDOT STANDARDS AND SPECIFICATIONS.
2. INSTALL INLET PROTECTION DEVICES ON ALL EXISTING AND PROPOSED INLETS AND CATCH BASINS WITHIN THE PROJECT LIMITS.
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4. SEEDING AND MULCHING SHALL BE PERFORMED ON THE AREAS DISTURBED BY CONSTRUCTION IMMEDIATELY FOLLOWING FINAL GRADE ESTABLISHMENT TO MATCH EXISTING CONDITIONS. GRASS SEED TO MATCH EXISTING SITE GRASS.
5. STABILIZE DITCHES WITH STRAW.

CONSTRUCTION PHASE
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

PROJECT REFERENCE NO.	SHEET NO.
43370	EC-5/CONST.4



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REVISIONS

12/14/2015
20100194_C_SHT_UTILITIES.DWG
JSEA-ROLLINS

PROPOSED WATER SYMBOLS

W W PROPOSED WATER LINE



PROPOSED GATE VALVE



PROPOSED FIRE HYDRANT



PROPOSED REDUCER

PROPOSED SEWER SYMBOLS

PROPOSED SEWER LINE



PROPOSED SANITARY SEWER MANHOLE

PROPOSED MISCELLANEOUS SYMBOLS

PAY ITEM

PAY ITEM NOTE

NOTE

PLAN NOTE

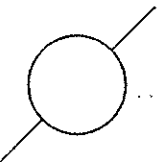
EXISTING UTILITY SYMBOLS

SS SS EXISTING SANITARY SEWER LINE

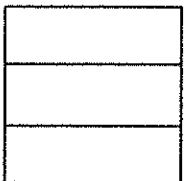
W W W EXISTING WATER LINE

EXISTING STORM WATER LINE

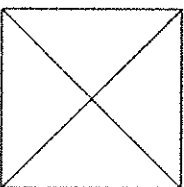
OE OE EXISTING OVERHEAD ELECTRICAL WIRE



EXISTING POWER POLE



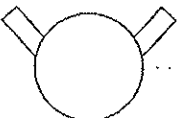
EXISTING CATCH BASIN



EXISTING WATER METER



EXISTING SANITARY SEWER MANHOLE

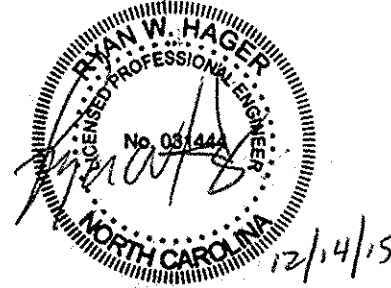


EXISTING FIRE HYDRANT



EXISTING GATE VALVE

PROJECT REFERENCE NO. 43370 SHEET NO. UC-2



616 COLONNADE DRIVE
CHARLOTTE, NC 28205
(704) 334-5348
(704) 334-0078
WWW.WKDICKSON.COM
NC LICENSE NO. F-0374

UTILITY CONSTRUCTION

GENERAL NOTES:

1.

THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2.

THE EXISTING WATER UTILITIES BELONG TO THE TOWN OF HARRISBURG. THE EXISTING SEWER UTILITIES BELONG TO THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY. CONTRACTOR SHALL CONTACT THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY PRIOR TO THE TIE-INS TO THE BACK CREEK INTERCEPTOR SO THAT THEY MAY OBSERVE THE TIE-INS.
3.

ALL WATER LINES TO BE INSTALLED WITHIN THE COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF ENVIRONMENTAL HEALTH.
4.

ALL MATERIALS, EQUIPMENT, LABOR, AND WORKMANSHIP ASSOCIATED WITH THE SEWER LINES SHALL BE IN ACCORDANCE WITH AND SUBJECT TO THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS, THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES", RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY, AND THE NORTH CAROLINA ADMINISTRATIVE CODE FOR WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEMS. IN THE EVENT OF CONFLICT BETWEEN THE WATER AND SEWER AUTHORITY OF CABARRUS COUNTY'S STANDARD SPECIFICATIONS, THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS OF ROADS AND STRUCTURES", OR THE NORTH CAROLINA ADMINISTRATIVE CODE, THE MORE RESTRICTIVE REQUIREMENTS SHALL APPLY.
5.

THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
6.

PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO
7.

WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.
7.

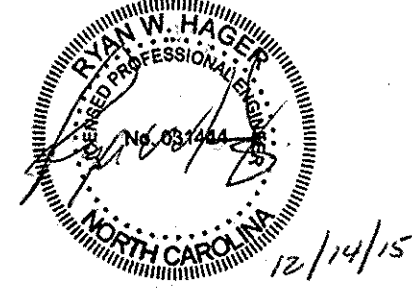
THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION , SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE OF MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
8.

MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
9.

MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKEND, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
10.

ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, "SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT REFERENCE NO.	SHEET NO.
43370	UC-3





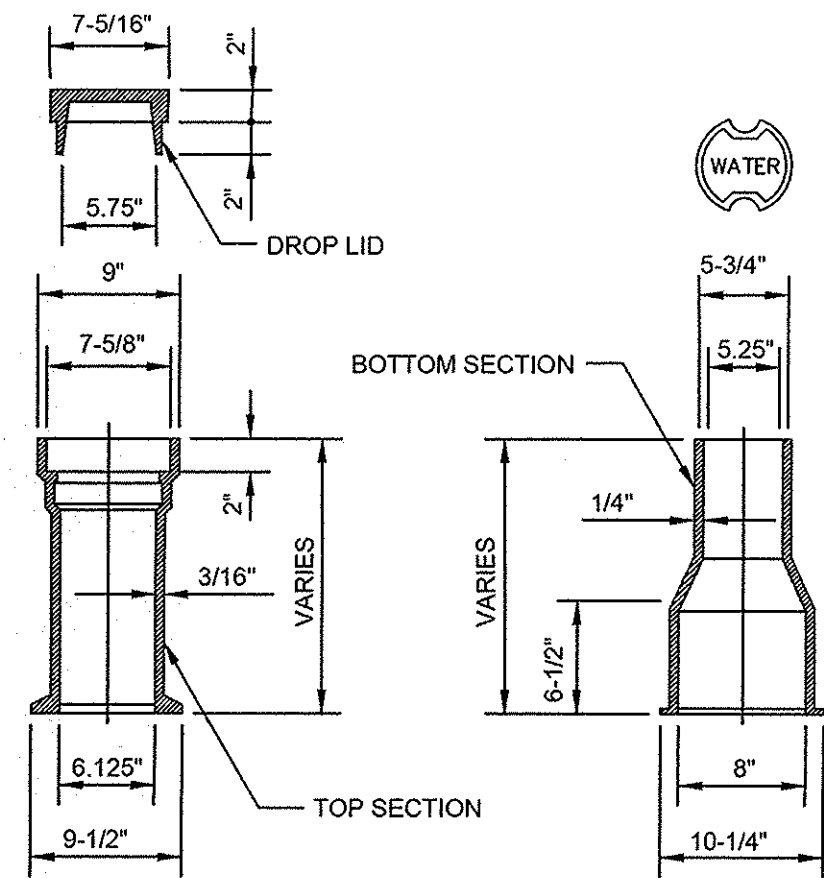
community infrastructure consultants

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20100194_C_SHT_UTILITIES.DWG
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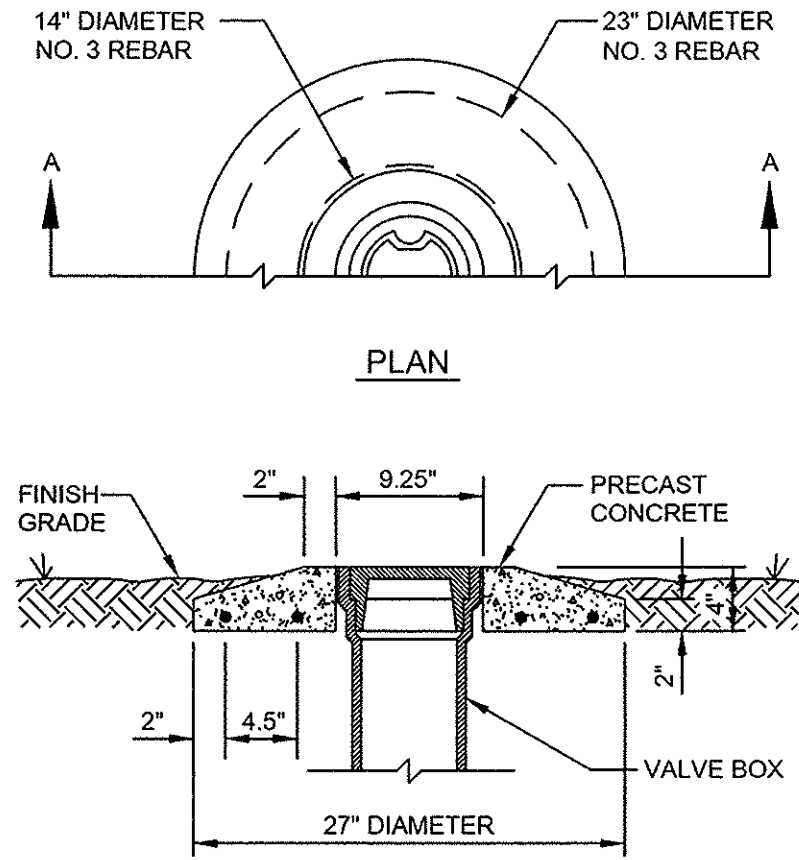
REVISIONS



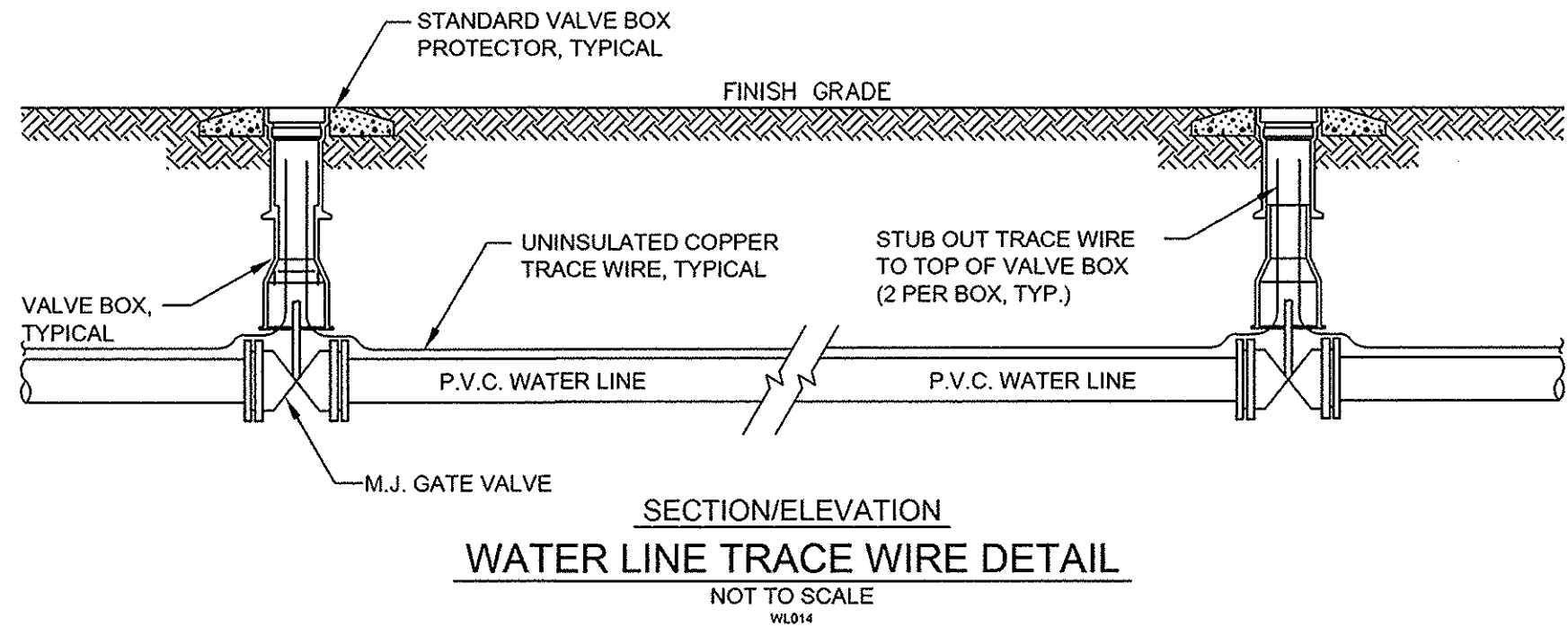
NOTES:

1. LID CASTING TO BE TYLER MANUFACTURE NO. 6850-SERIES, 5-1/4" DROP LID OR APPROVED EQUAL.
2. BODY CASTING TO BE TYLER MANUFACTURE NO. 6855-SERIES, 5-1/4" SHAFT, SLIP OR SCREW TYPE, OR APPROVED EQUAL.
3. THIS VALVE BOX ACCOMODATES 4" THRU 12" VALVES.

THREE PIECE WATER VALVE BOX
NOT TO SCALE



SECTION A-A
STANDARD VALVE BOX PROTECTOR
NOT TO SCALE
WL003



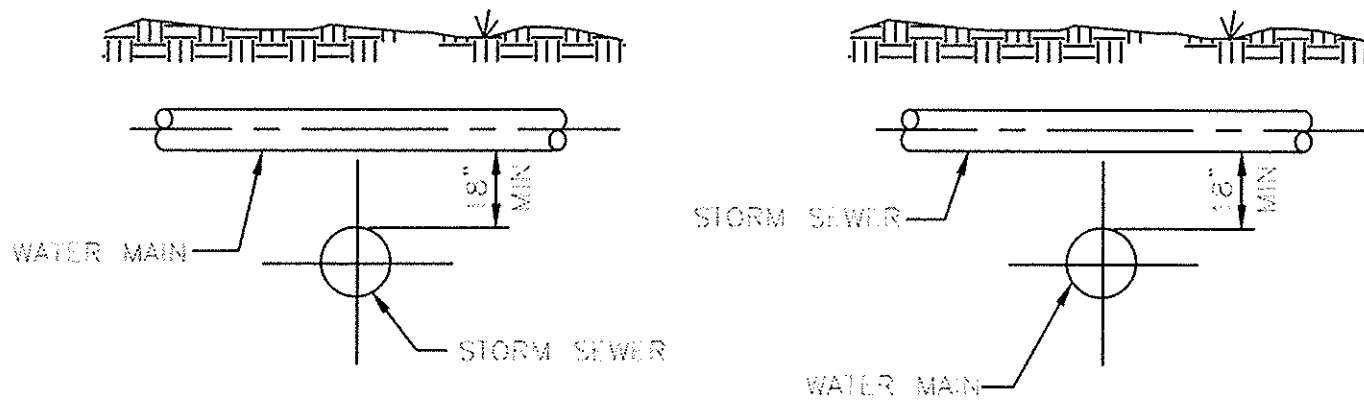
NOM. SIZE	POLY WRAPPED	90° BEND (HORIZ)	45° BEND (HORIZ)	22-1/2° BEND (HORIZ)	11-1/4° BEND (HORIZ)	TEE	DEAD END	90° BEND (VERT)	45° BEND (VERT)	22-1/2° BEND (VERT)	11-1/4° BEND (VERT)
16"	NO	150	62	30	15	101	105	209	87	42	21
	YES	191	79	38	19	144	150	299	124	60	30
12"	NO	114	47	23	11	79	79	158	66	32	16
	YES	145	60	29	14	113	113	226	94	45	22
8"	NO	78	33	16	8	54	54	109	45	22	11
	YES	100	42	20	10	78	78	155	64	31	15

PIPE MATERIAL: DIP
SAFETY FACTOR: 1.5 to 1.0
SOIL TYPE: CLAY 1

TEST PRESSURE: 200
DEPTH OF BURY: 3'
TRENCH TYPE: TYPE 2

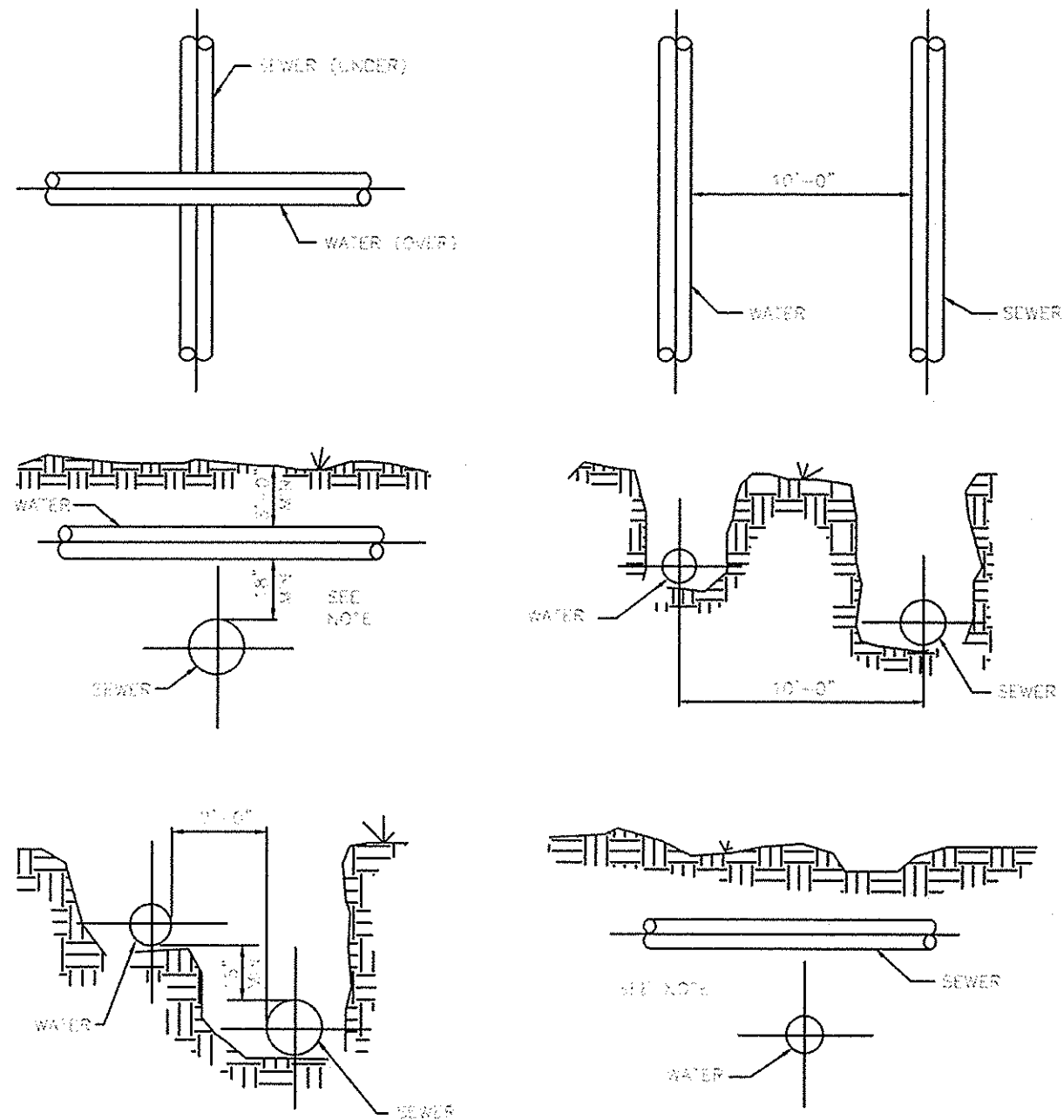
NOTE: ALL RESTRAINT LENGTHS (FT) REQUIRED EACH SIDE OF FITTING

RESTRAINED JOINT TABLE (DIP)



NOTE:
WHEN A WATER MAIN OR SANITARY SEWER MAIN CROSSES OVER OR UNDER A STORM SEWER AND CONDITIONS PREVENT THE REQUIRED 12" MIN VERTICAL SEPARATION, THE WATER MAIN OR SANITARY SEWER MAIN SHALL BE CONSTRUCTED OF RUSTIC RCP PIPE WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

RELATION OF WATER MAINS
TO STORM SEWERS
NOT TO SCALE



NOTE:
WHEN WATER MAIN IS ABOVE SEWER, BUT WITH LESS THAN 12" CLEARANCE, OR WHEN THE SEWER IS ABOVE THE WATER MAIN, BOTH THE WATER MAIN AND THE SEWER LINE SHALL BE CONSTRUCTED OF FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A MINIMUM LATERAL DISTANCE, MEASURED AT RIGHT ANGLES TO THE SEWER, OF 10 FEET ON EACH SIDE OF THE CROSSING.

RELATION OF WATER MAINS
TO SEWER MAINS
NOT TO SCALE

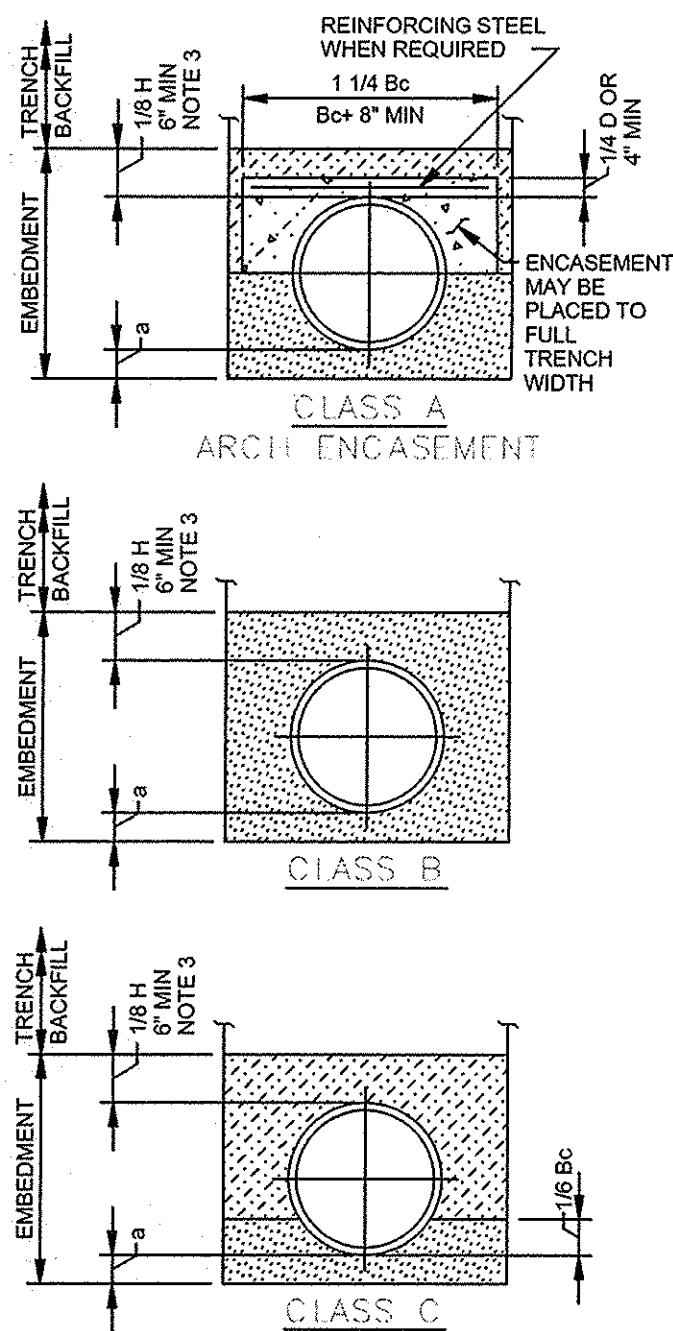
PROJECT REFERENCE NO. 43370 SHEET NO. UC-4

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TABLE OF EMBEDMENT DEPTHS BELOW PIPE

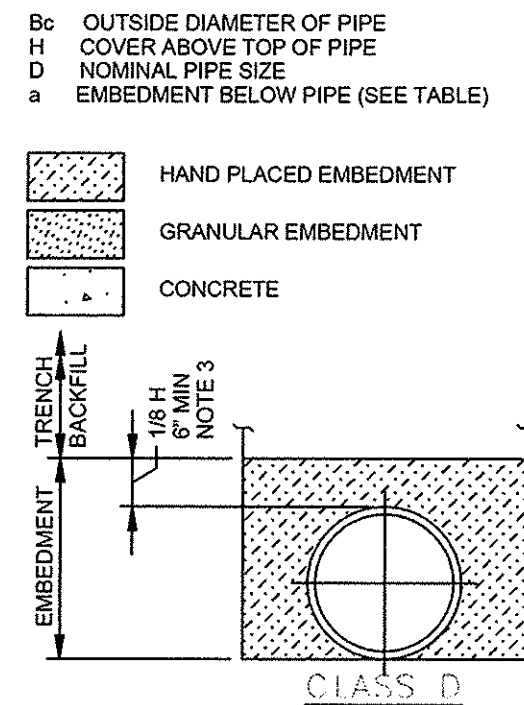
D	a	a
	MIN	MIN
27" & SMALLER	SOIL	ROCK
	6"	6"



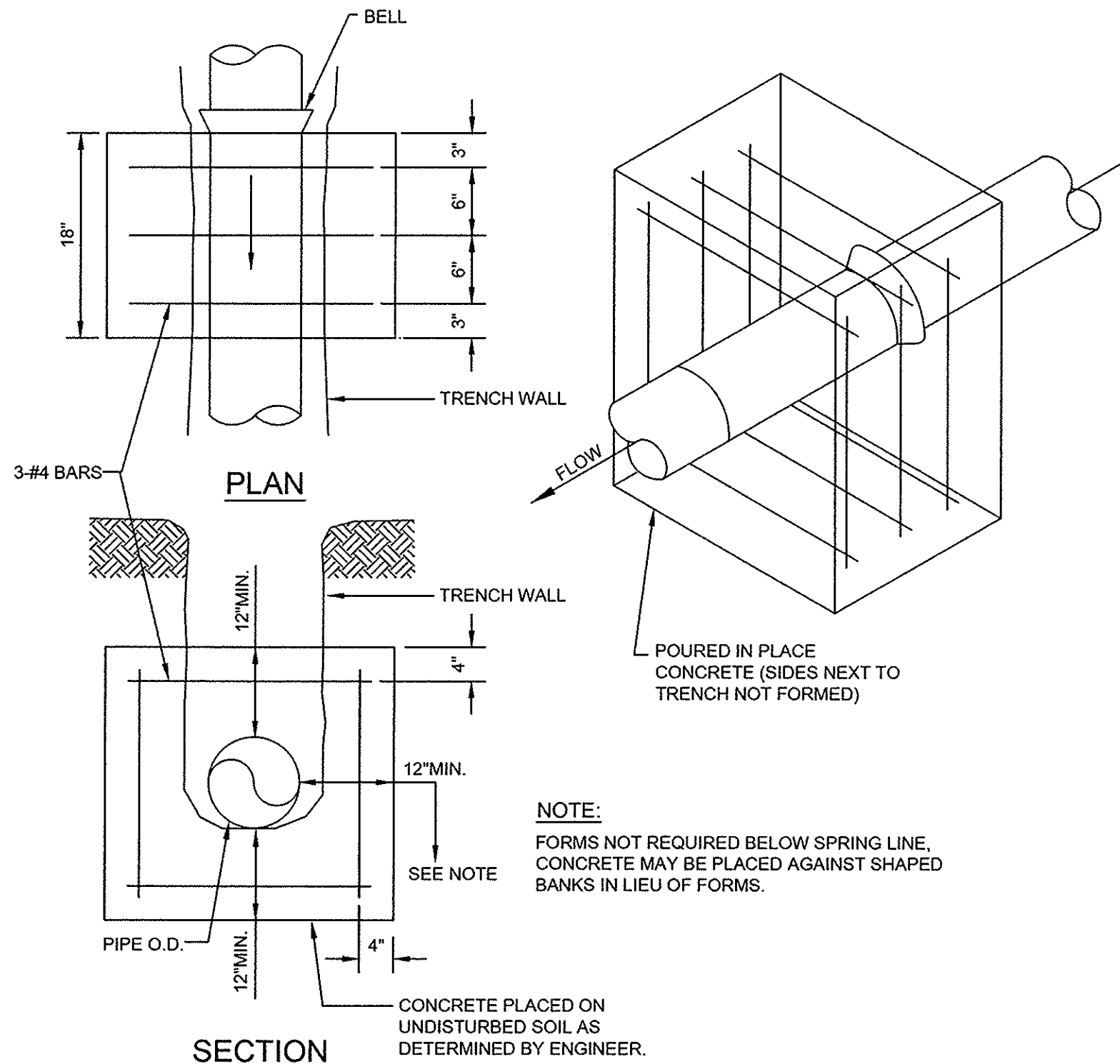
NOTES:

1. GRANULAR EMBEDMENT MATERIAL SHALL BE CRUSHED ROCK, PEA GRAVEL, COARSE AGGREGATE SIZE NUMBER 57. EMBEDMENT MATERIAL SHALL BE PLACED IN LAYERS NOT MORE THAN 6" DEEP AND COMPACTED AS SPECIFIED.
2. HAND PLACED EMBEDMENT SHALL BE COMPACTED FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES.
3. EMBEDMENT ABOVE THE TOP OF THE PIPE SHALL BE AN UNCOMPACTED LAYER FOR ALL INSTALLATIONS.
4. REFER TO SPECIFICATIONS FOR GEOTECHNICAL FABRIC OR SPECIAL EMBEDMENT REQUIREMENTS FOR TRENCHES IN FINE SOILS EXTENDING BELOW GROUNDWATER LEVEL.
5. TRENCH OUTLINES DO NOT INDICATE ACTUAL TRENCH EXCAVATION SHAPE, SOIL CONDITIONS, OR PRESENCE OF SHEETING LEFT IN PLACE. EMBEDMENT MATERIAL SHALL EXTEND THE FULL WIDTH OF THE ACTUAL TRENCH EXCAVATION.
6. SEE SPECIFICATIONS FOR PIPE MATERIAL BEDDING TYPE.

LEGEND

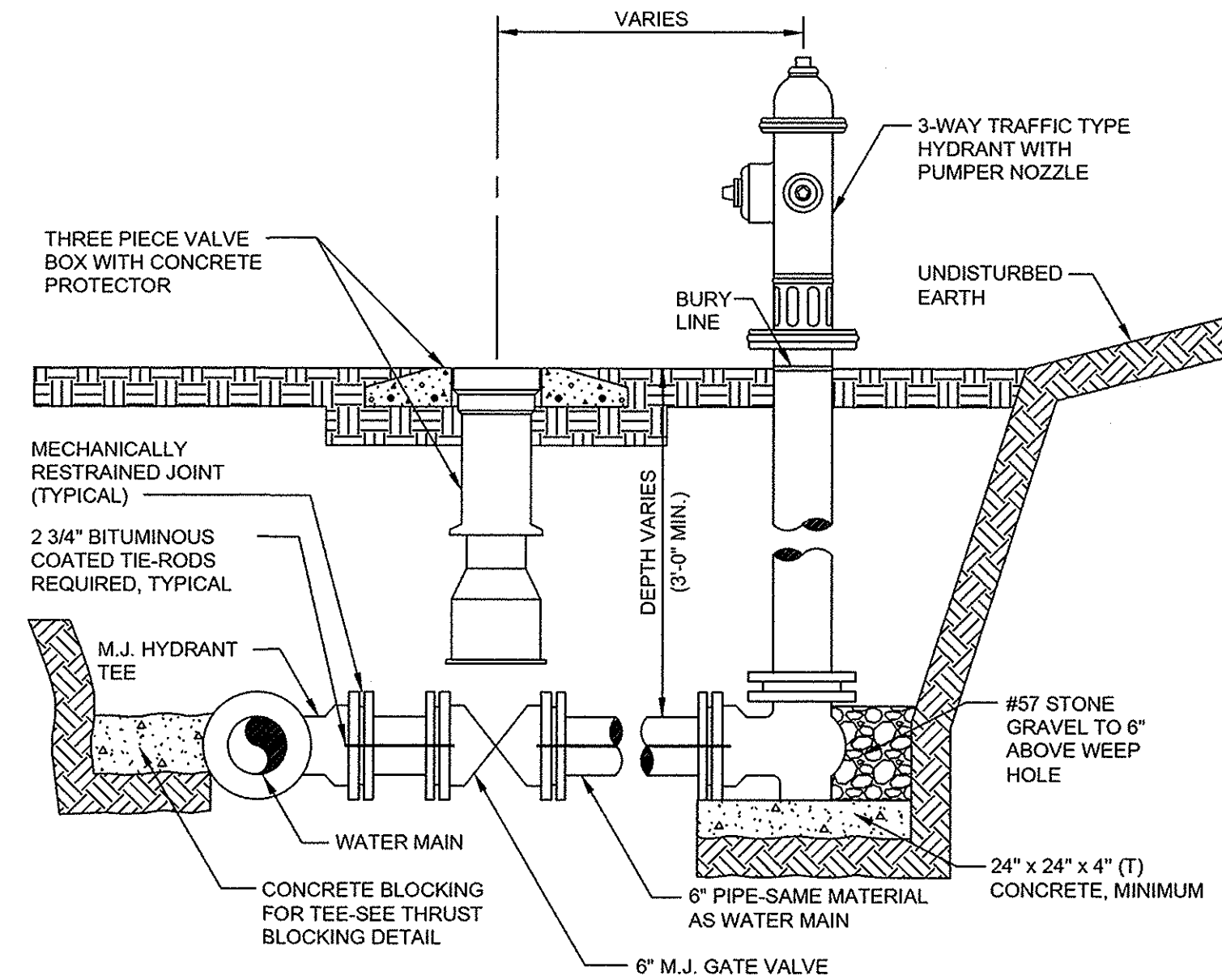


STANDARD BEDDING DETAIL FOR WATER AND SEWER



CONCRETE SEEPAGE COLLAR

NOT TO SCALE
SL020.dwg



STANDARD FIRE HYDRANT ASSEMBLY

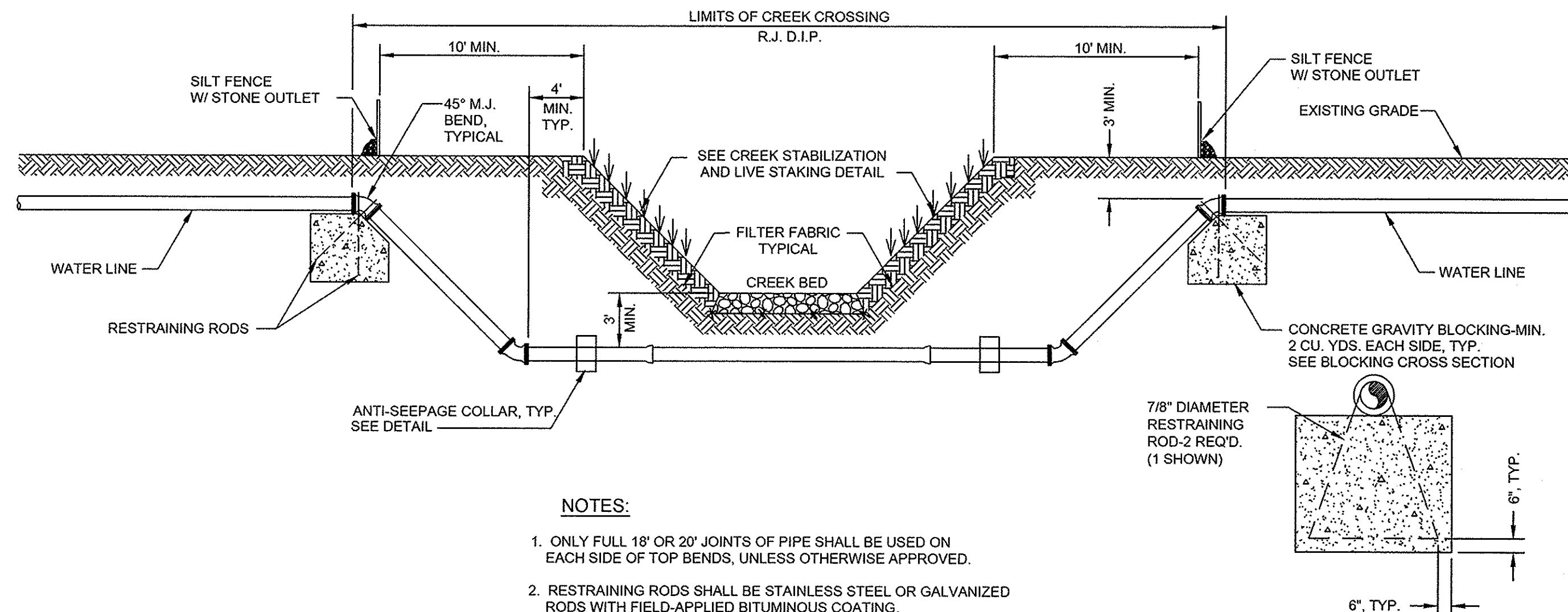
NOT TO SCALE

NOTES:

1. BACKFILL TO 95% OF MAXIMUM DENSITY WHERE EXCAVATIONS CUT THROUGH PAVEMENTS, CURBS, DRIVEWAYS AND SIDEWALKS, AND UNDER OR ADJACENT TO STRUCTURES.
2. STONE IS REQUIRED, IN ACCORDANCE WITH SPECIFICATIONS, BELOW PIPE WHEN ENCOUNTERING ROCK OR WET CONDITIONS. STONE TO RANGE IN SIZE FROM 1/2" TO 1-1/2". SEE NCDOT ROADWAY STANDARD DRAWING 300.01 FOR APPROVED PIPE BEDDING WITHIN NCDOT RIGHT-OF-WAY.
3. HAND CARVE BOTTOM AND SHAPE FOR LOWER QUADRANT OF PIPE. EXCAVATE ADDITIONALLY FOR BELLS.
4. INVERT OF PROPOSED TRENCH LINE SHALL BE AT A MAXIMUM 1:1 SLOPE AS PROJECTED FROM EDGE OF EXISTING PAVEMENT.
5. PROVIDE MINIMUM 36" COVER OVER PIPE, OR DEEPER AS REQUIRED TO MAINTAIN A MINIMUM OF 36" BELOW ELEVATION OF EDGE OF EXISTING PAVEMENT.
6. STOCKPILE EXCAVATED MATERIAL UPGRADIENT OF THE TRENCH WHEREVER POSSIBLE.
7. ROAD SCREENINGS SHALL BE PLACED ON PAVED SURFACES IF EXCAVATED MATERIAL IS PLACED ON ROADWAYS. CLEAN UP OF ROADWAY MUST OCCUR IMMEDIATELY AFTER PIPE INSTALLATION.
8. WHEN DEWATERING OF TRENCH IS REQUIRED, DISCHARGE SHALL BE PUMPED THROUGH A SILT SACK CAPABLE OF FILTERING 8 OZ./SQ YD @ 80 GPM
9. AREAS LOCATED WITHIN THE PROJECTED 1:1 SLOPE FROM EDGE OF PAVEMENT AND NOT UNDER PAVEMENT SHALL BE BACKFILLED WITH FLOWABLE FILL. SEE PAVEMENT REPLACEMENT DETAILS FOR AREAS UNDER PAVEMENT.
10. TRENCH BOXES REQUIRED FOR ALL TRENCH WALLS INSTALLED AT 1:1 AND STEEPER.
11. STOCK PILES SHALL BE LOCATED SUCH THAT THEY DO NOT INTERFERE WITH ROADWAY SIGHT DISTANCES.
12. POSITIVE SHORING SHALL BE PROVIDED IN AREAS LOCATED WITHIN THE PROJECTED 1:1 SLOPE WHERE TRAFFIC IS MAINTAINED.
13. ALL TRENCH EXCAVATION INSIDE THE LIMITS OF THE THEORETICAL 1:1 SLOPE, AS DEFINED BY POLICY, SHALL BE COMPLETELY AND COMPACTED AT THE END OF EACH CONSTRUCTION DAY. NO PORTION OF THE TRENCH MAY BE LEFT OPEN OVERNIGHT.

STANDARD WATER MAIN TRENCH

NOT TO SCALE



NOTES:

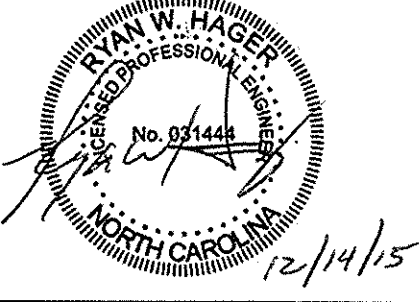
1. ONLY FULL 18" OR 20" JOINTS OF PIPE SHALL BE USED ON EACH SIDE OF TOP BENDS, UNLESS OTHERWISE APPROVED.
2. RESTRAINING RODS SHALL BE STAINLESS STEEL OR GALVANIZED RODS WITH FIELD-APPLIED BITUMINOUS COATING.
3. PIPE UNDER CREEK AND BETWEEN BENDS TO BE R.J. D.I.P.

CREEK CROSSING DETAIL WITH GRAVITY BLOCKING

NOT TO SCALE

BLOCKING CROSS SECTION

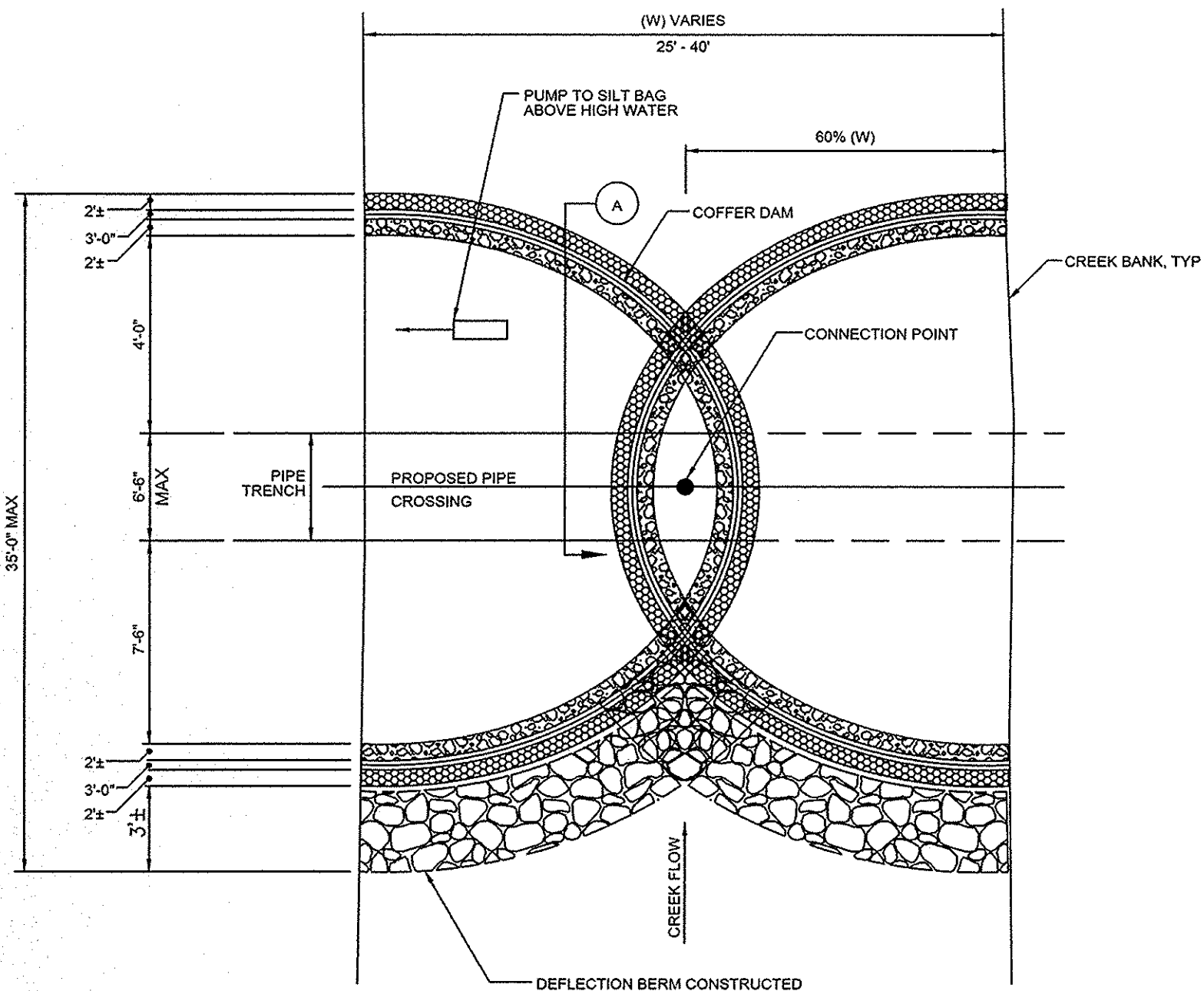
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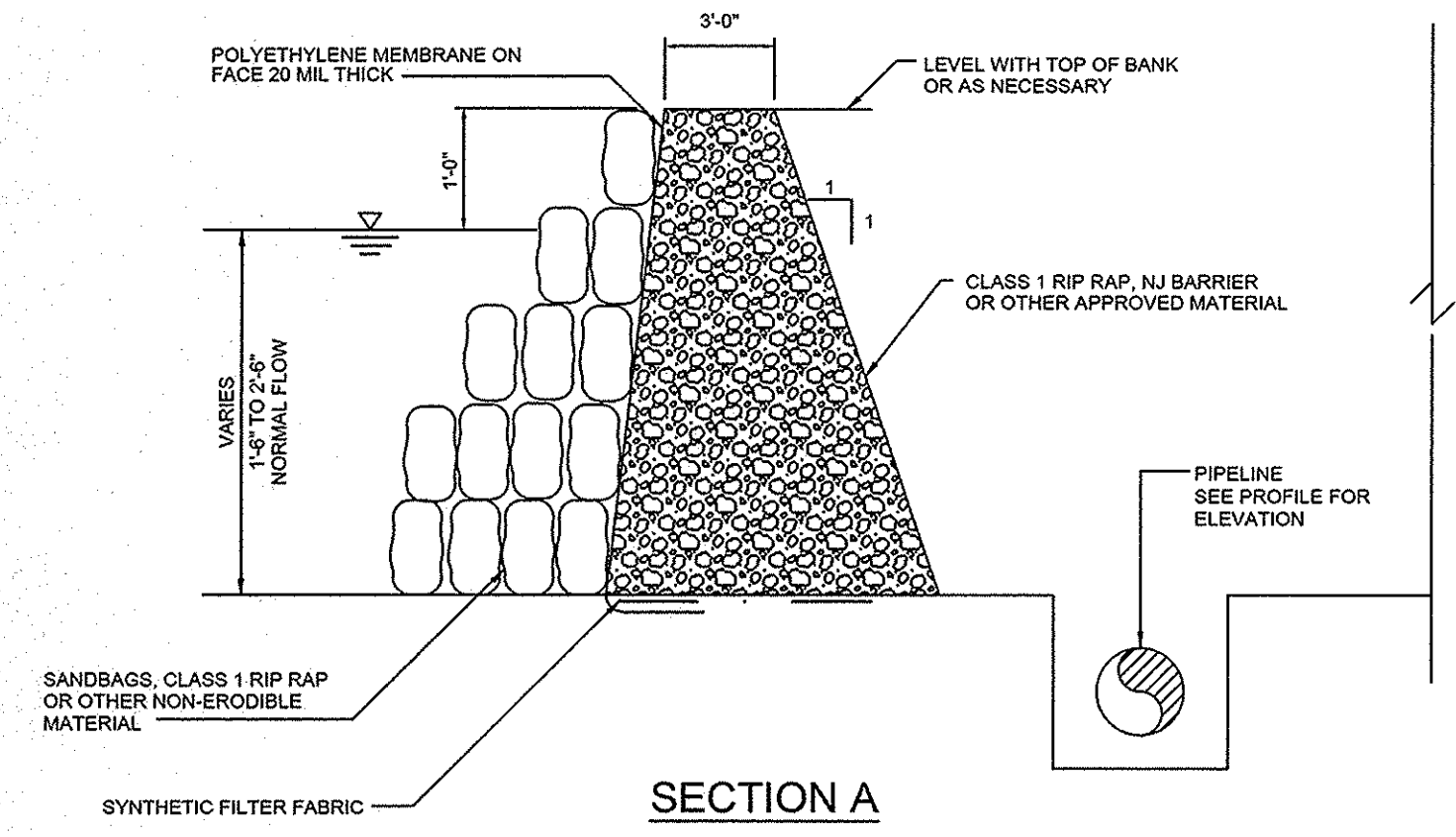
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RICK L. HART

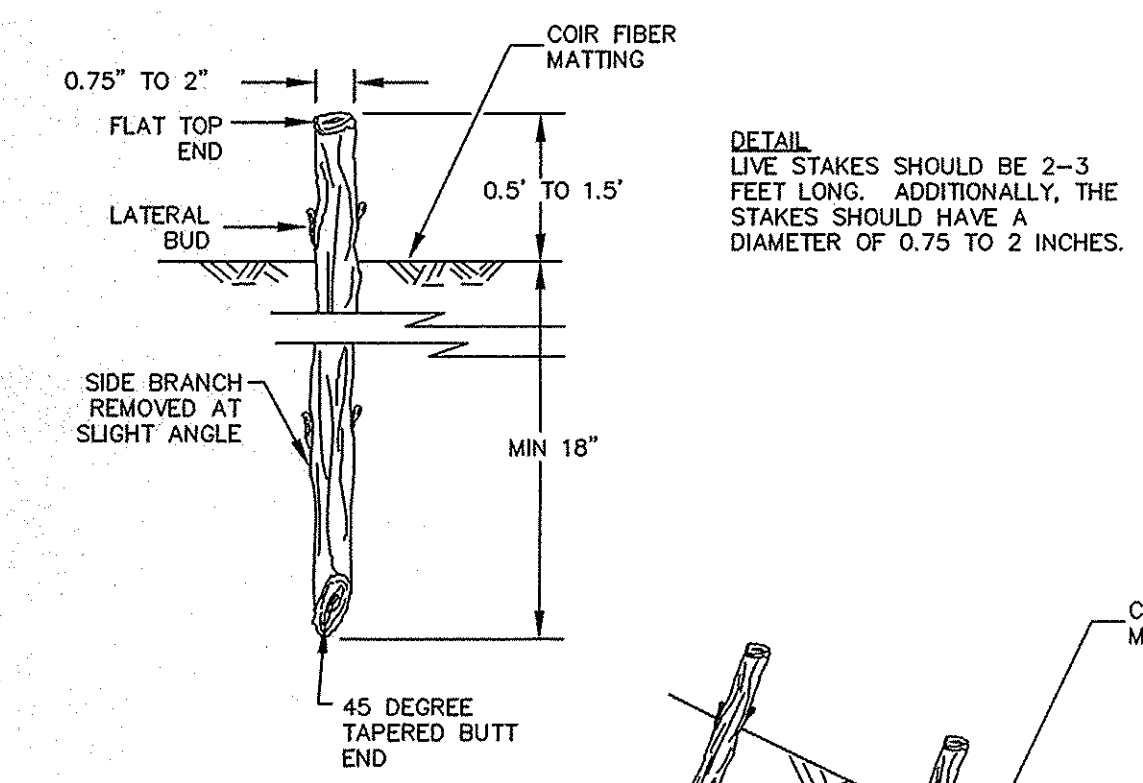


NOTES:
1) CONTRACTOR SHALL FOLLOW CONSTRUCTION SEQUENCE AS NOTED ON CONTRACT DRAWINGS.
2) EXCAVATION SPOIL IS TO BE LOCATED OUTSIDE OF 100 YEAR FLOODWAY.

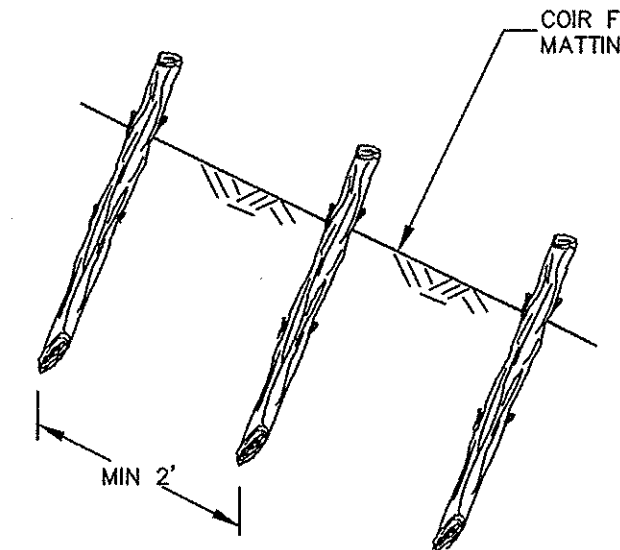
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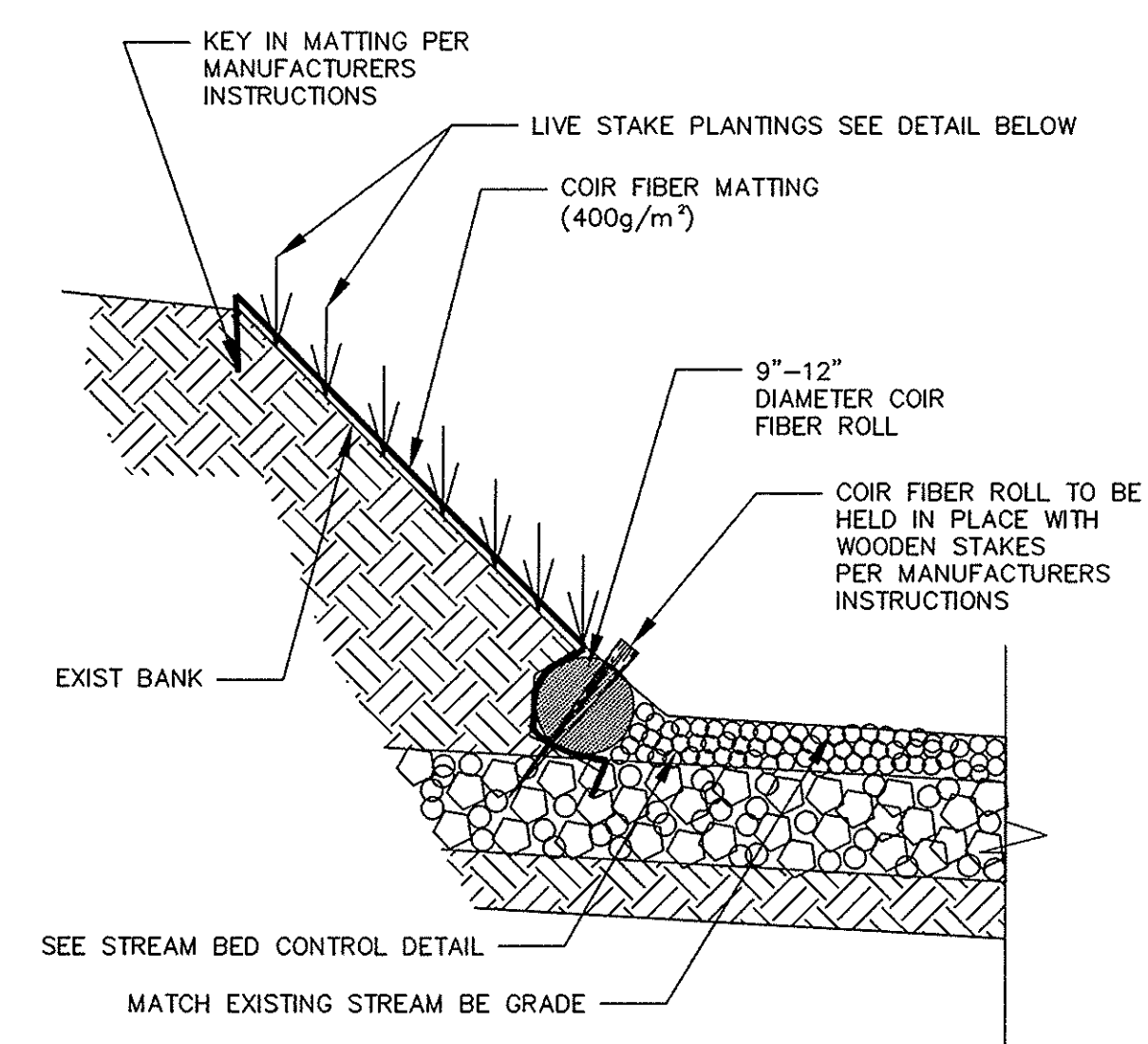
SECTION A
COFFER DAM - HORSESHOE
NOT TO SCALE



SECTION VIEW
LIVE STOUT STAKES
SHALL BE SPACED 2
FEET APART.



LIVE STAKE
NOT TO SCALE



CREEK CROSSING STABILIZATION
NOT TO SCALE

- CHANNEL SEEDING**
- TEMPORARY SEED MIX**
- LATE WINTER/EARLY SPRING
- RYE (GRAIN) @ 120 LB/ACRE
- SUMMER
- GERMAN MILLET @ 40 LB/ACRE
- SUDANGRASS @ 50 LB/ACRE (AS A SUBSTITUTE)
- FALL
- RYE (GRAIN) @ 120 LB/ACRE
- PERMANENT RIPARIAN SEED MIX (IDEALLY PLANTED EITHER AUG-SEPT OR MAR-APR)**
- REDTOP @ 7 LB/ACRE
- SWITCH GRASS @ 50 LB/ACRE
- SEDGE @ 10 LB/ACRE
- RICE CUTGRASS @ 20 LB/ACRE

NOTE:
ALTERNATIVE SPECIES MAY BE USED UPON APPROVAL BY THE ENGINEER.

STREAM STABILIZATION NOTES
NOT TO SCALE

PLANT LIST

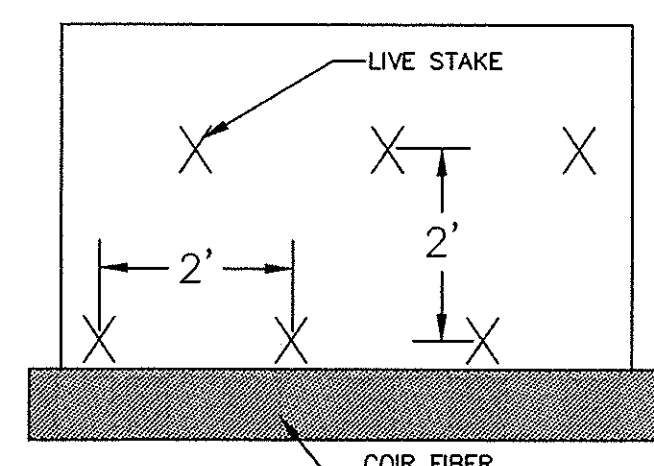
LIVE STAKE SPECIES	COMMON NAME	PERCENT
SCIENTIFIC NAME		
Cornus amomum	Silky Dogwood	50%
Viburnum dentatum	Arrowwood	25%
Sambucus Canadensis	Elderberry	25%

ALL PLANTING AREAS

COIR FIBER FABRIC MAT NOT BE CUT WITH PLANTING IMPLEMENTS. THE SMALLEST OPENING NECESSARY TO ACCOMMODATE EACH PLANT SHALL BE CUT INTO THE FABRIC USING A SHARP KNIFE OR SHEARS.

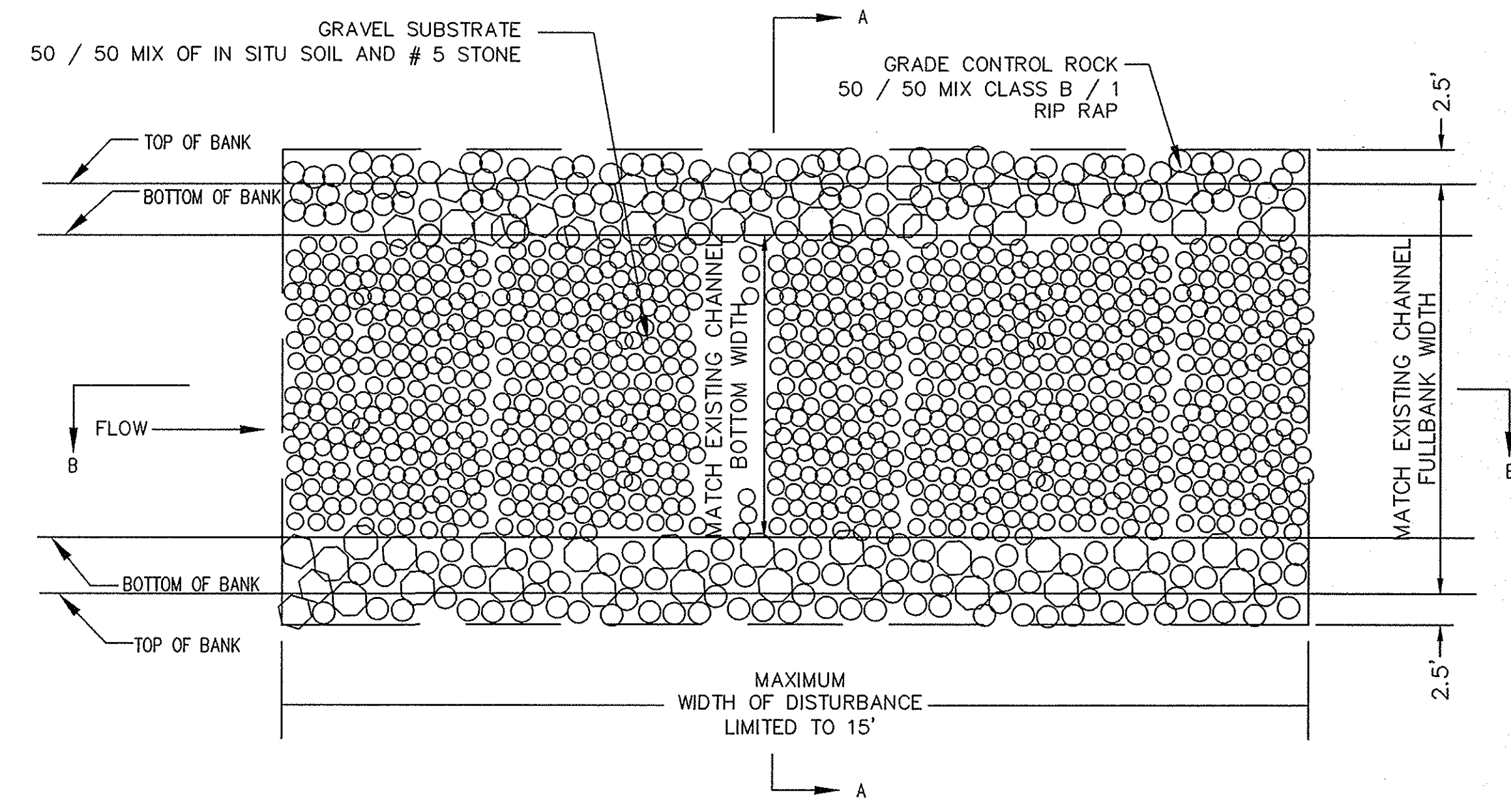
PLANT SPACING

PLANTS SHALL BE INSTALLED IN STAGGERED ROWS. PLANT SPACING SHALL BE APPROXIMATELY TWO FEET (2.0') BETWEEN PLANTS IN THE SAME ROW. ROWS SHALL BE STAGGERED SUCH THAT ROWS ARE APPROXIMATELY TWO FEET (2.0') APART. CONTRACTOR REQUIRED TO USE COMBINATION OF ALL PLANT SPECIES.

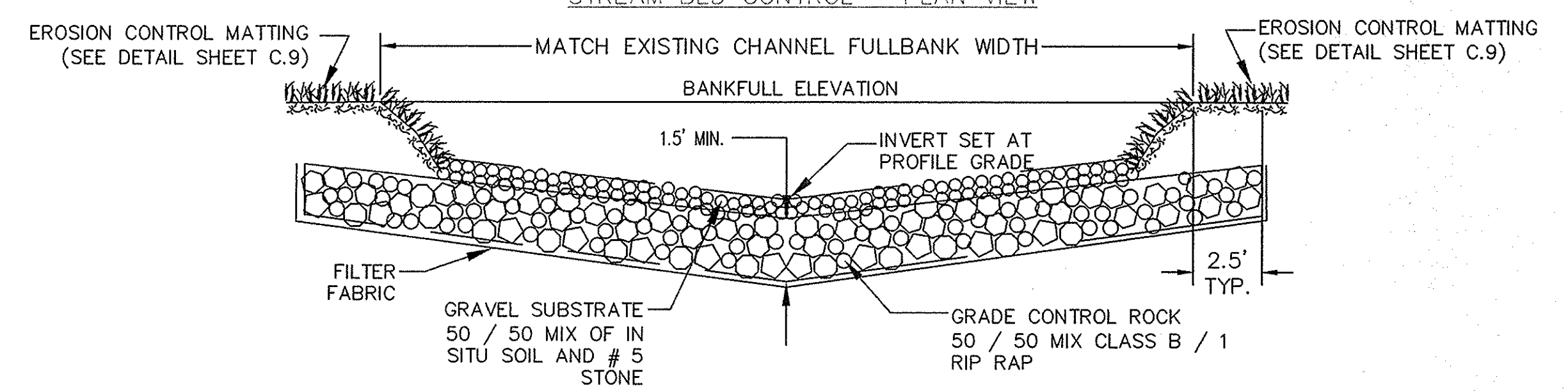


NOTE:

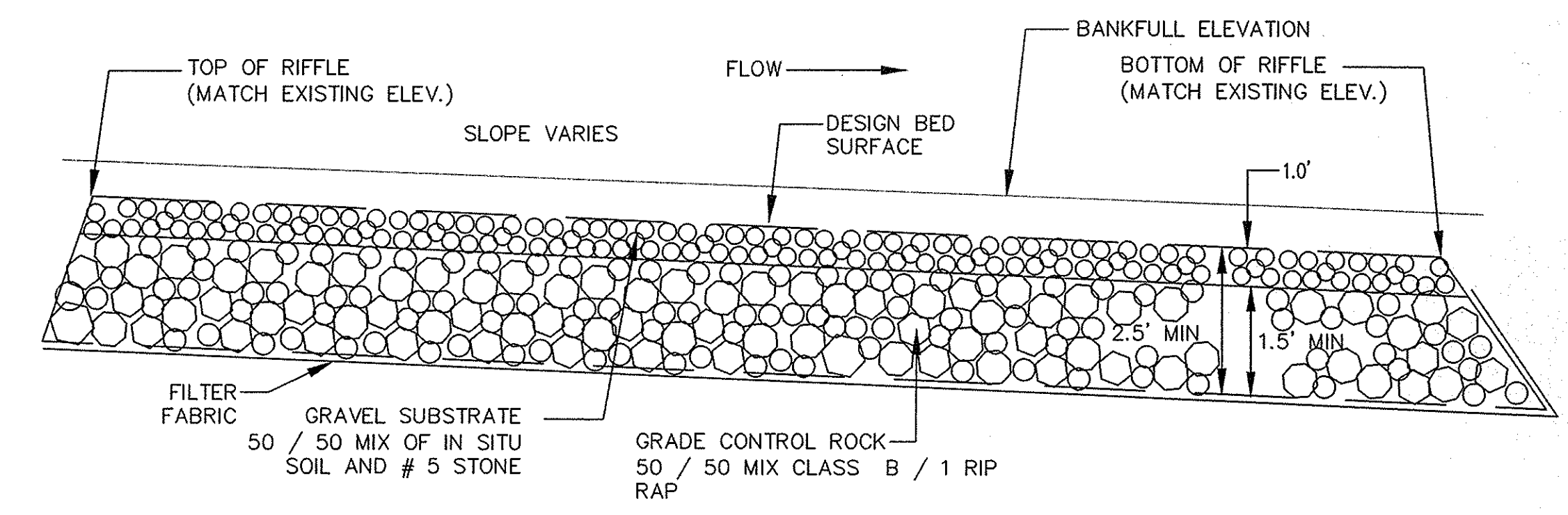
PRIOR TO ANY LAND DISTURBING ACTIVITIES, CONTRACTOR SHALL CLEARLY MARK WITH ORANGE FABRIC FENCING ALL WETLANDS, STREAMS, SURFACE WATERS, AND RIPARIAN BUFFERS LOCATED ON THE PROJECT SITE WHERE IMPACTS ARE NOT ALLOWED.



STREAM BED CONTROL - PLAN VIEW



STREAM BED CONTROL - SECTION A-A

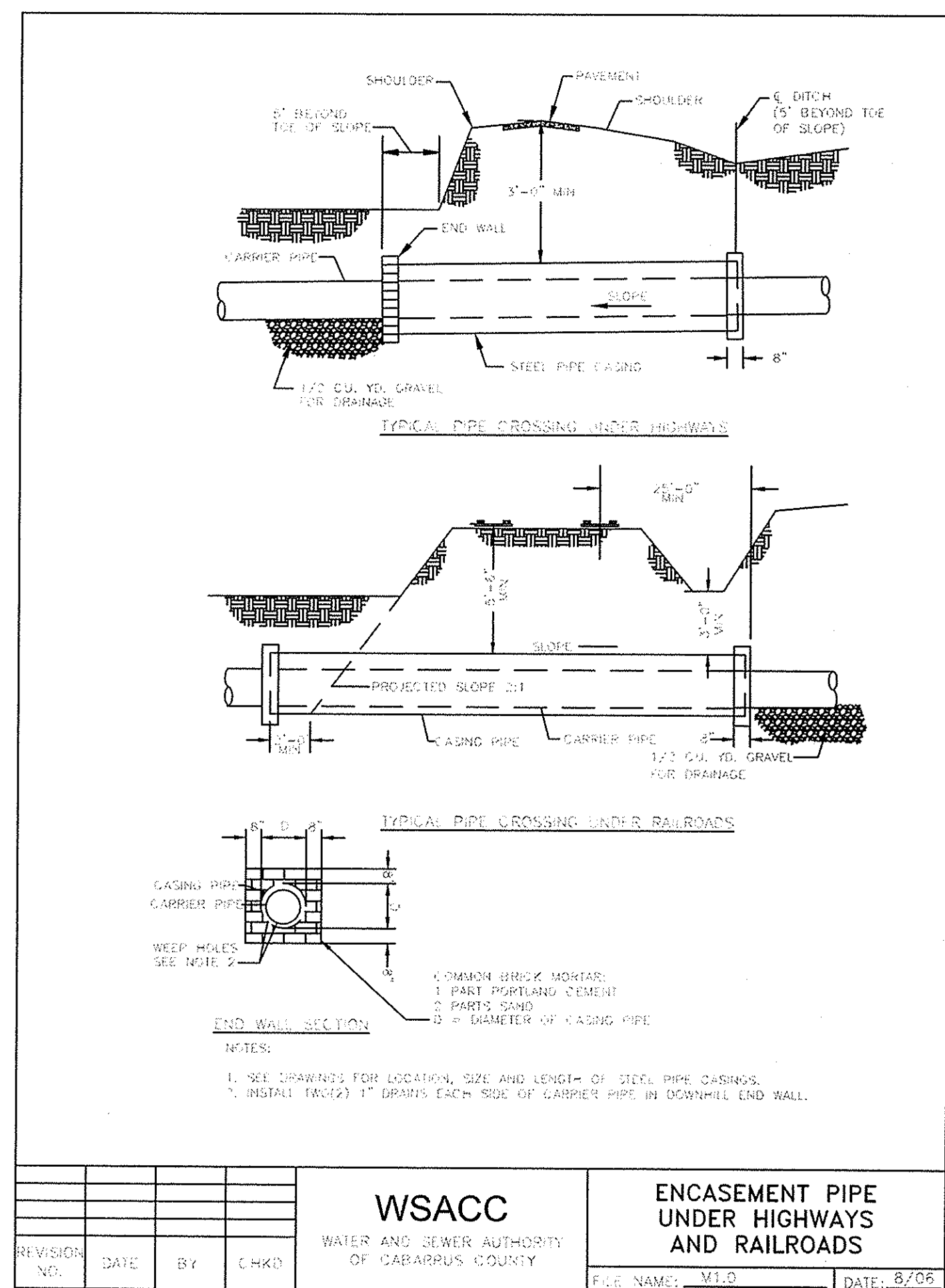
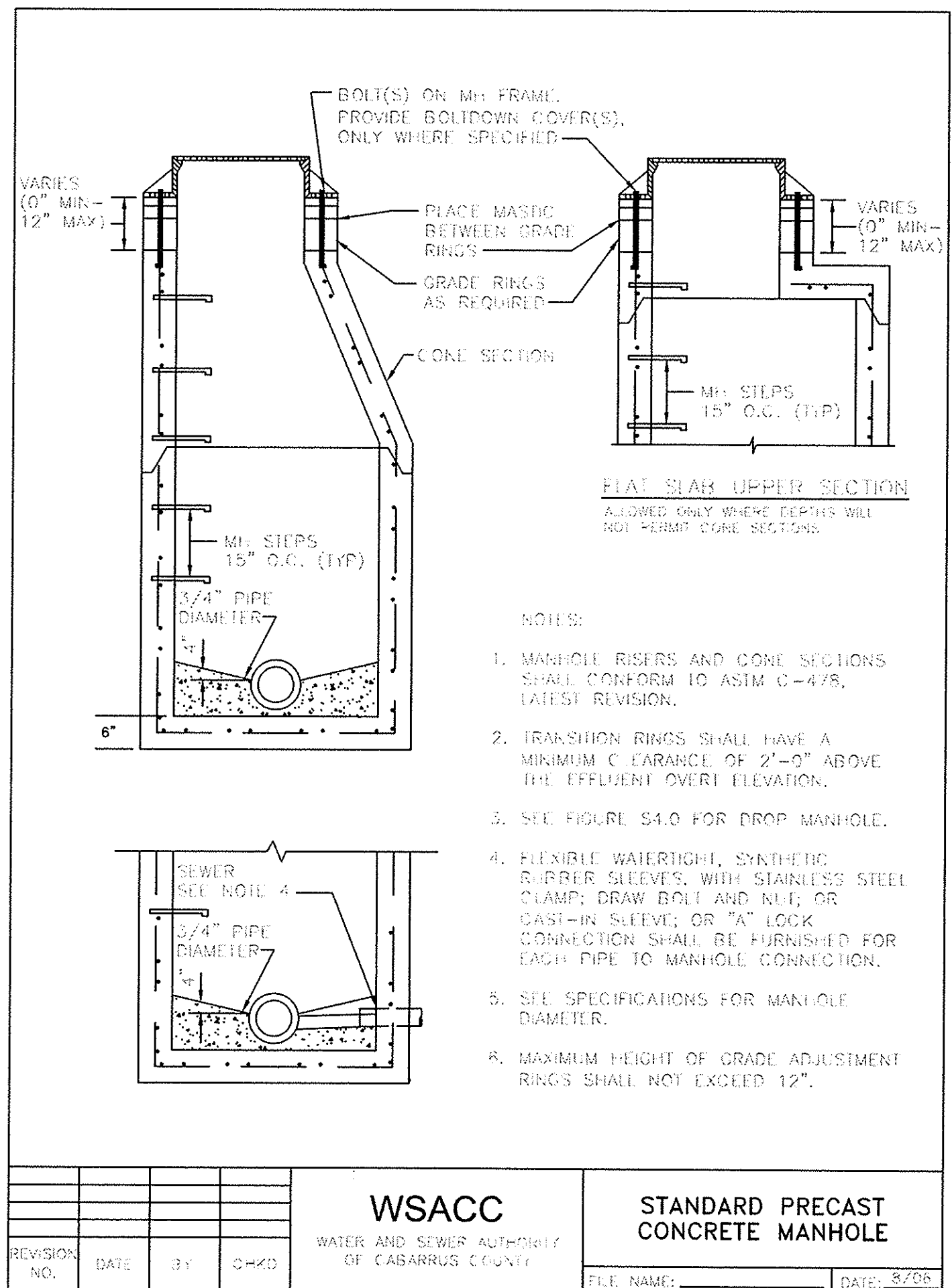
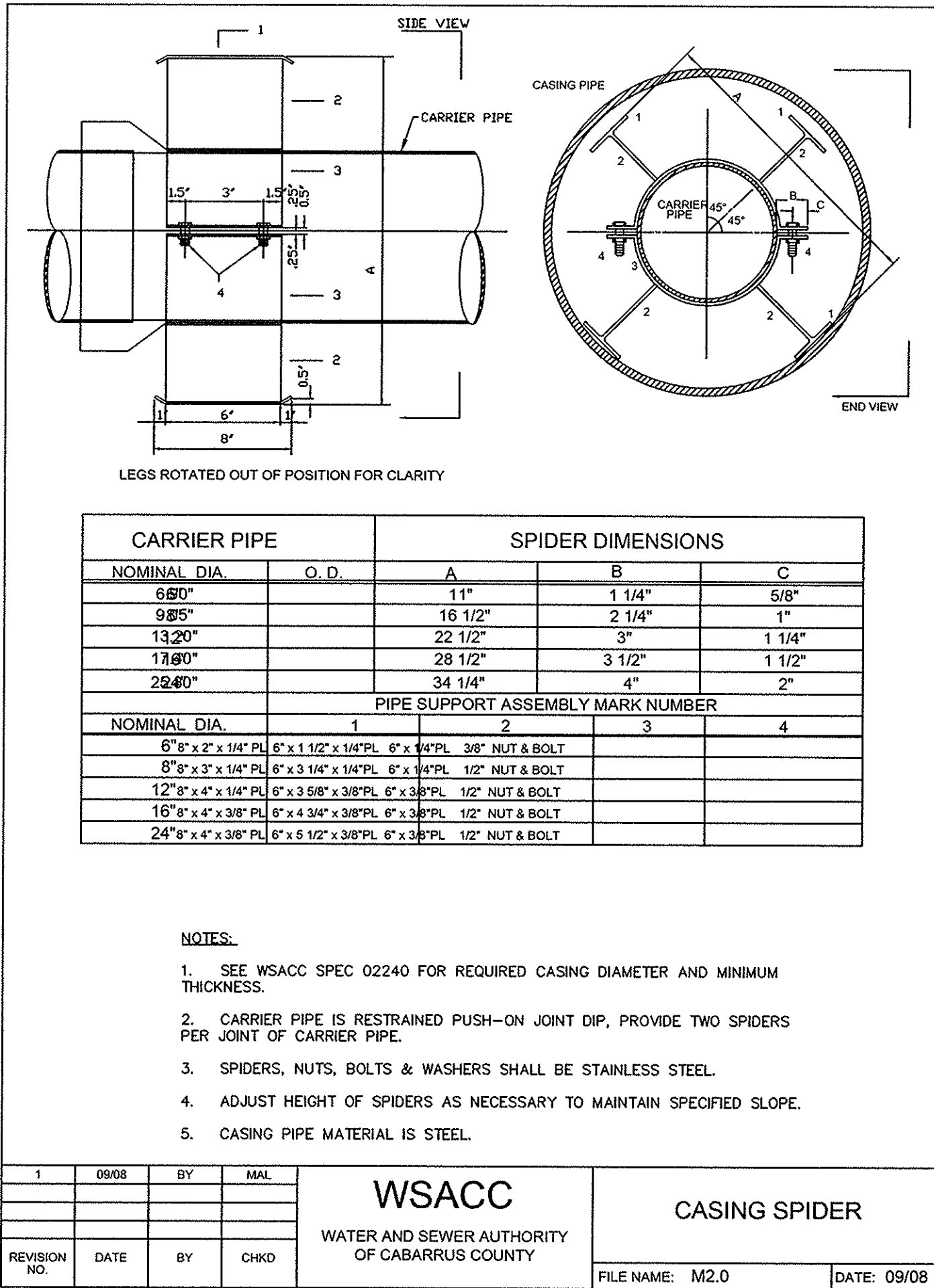
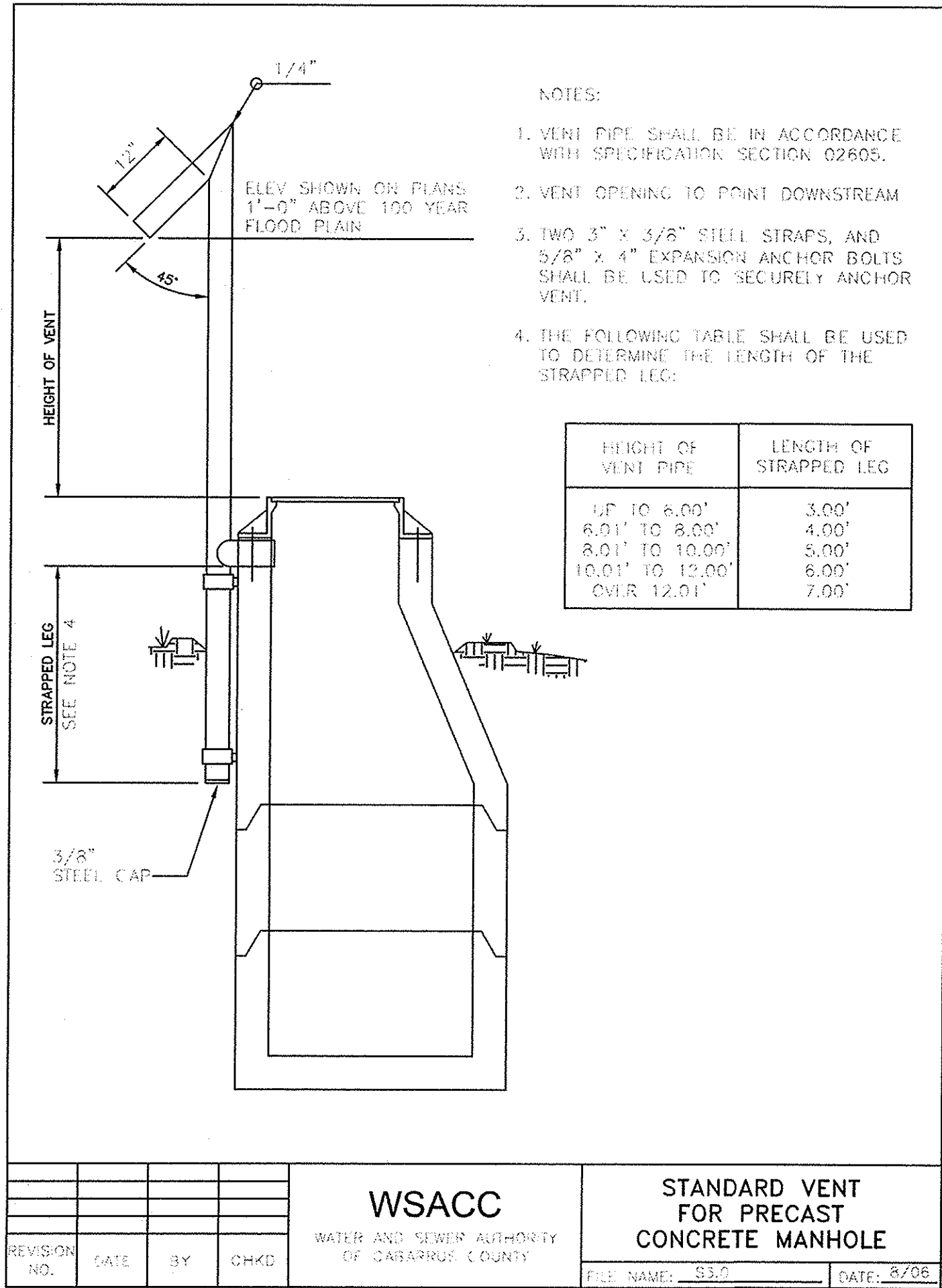
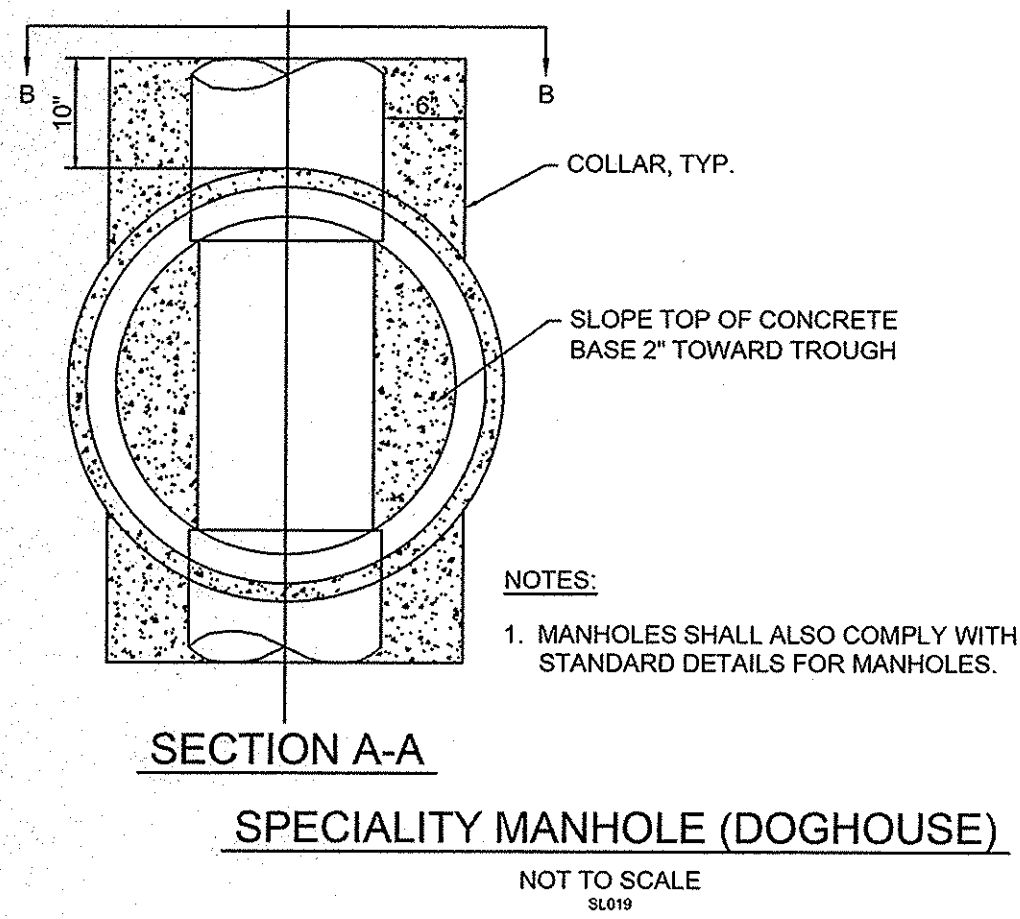
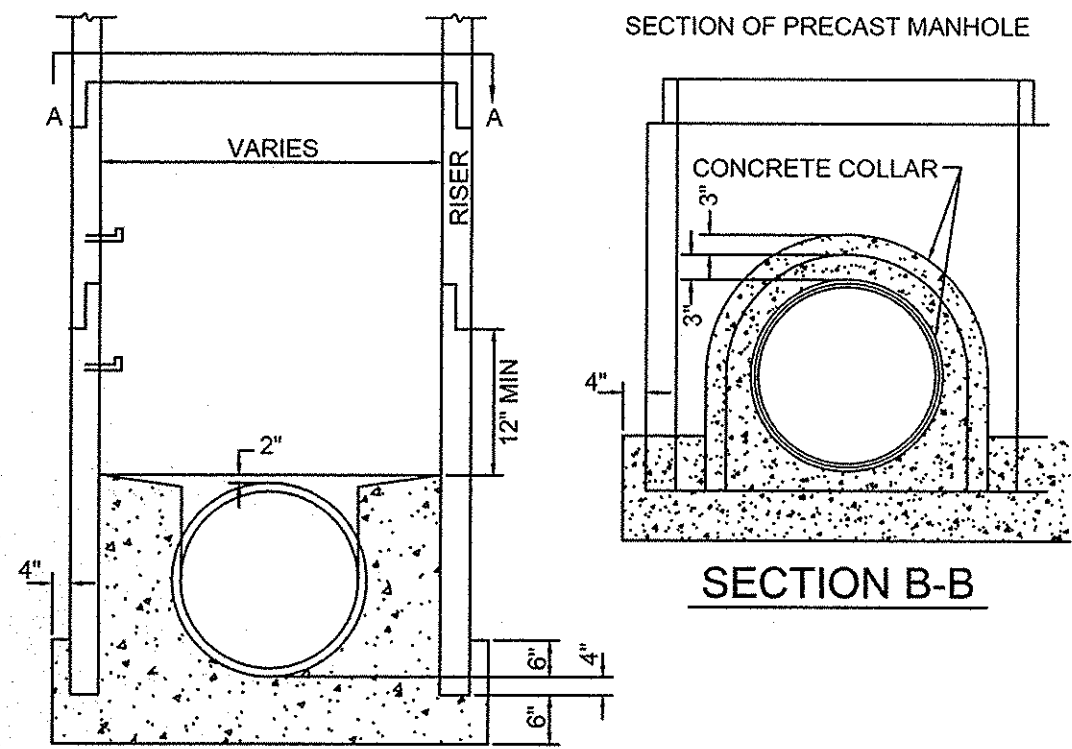


STREAM BED CONTROL - PROFILE B-B

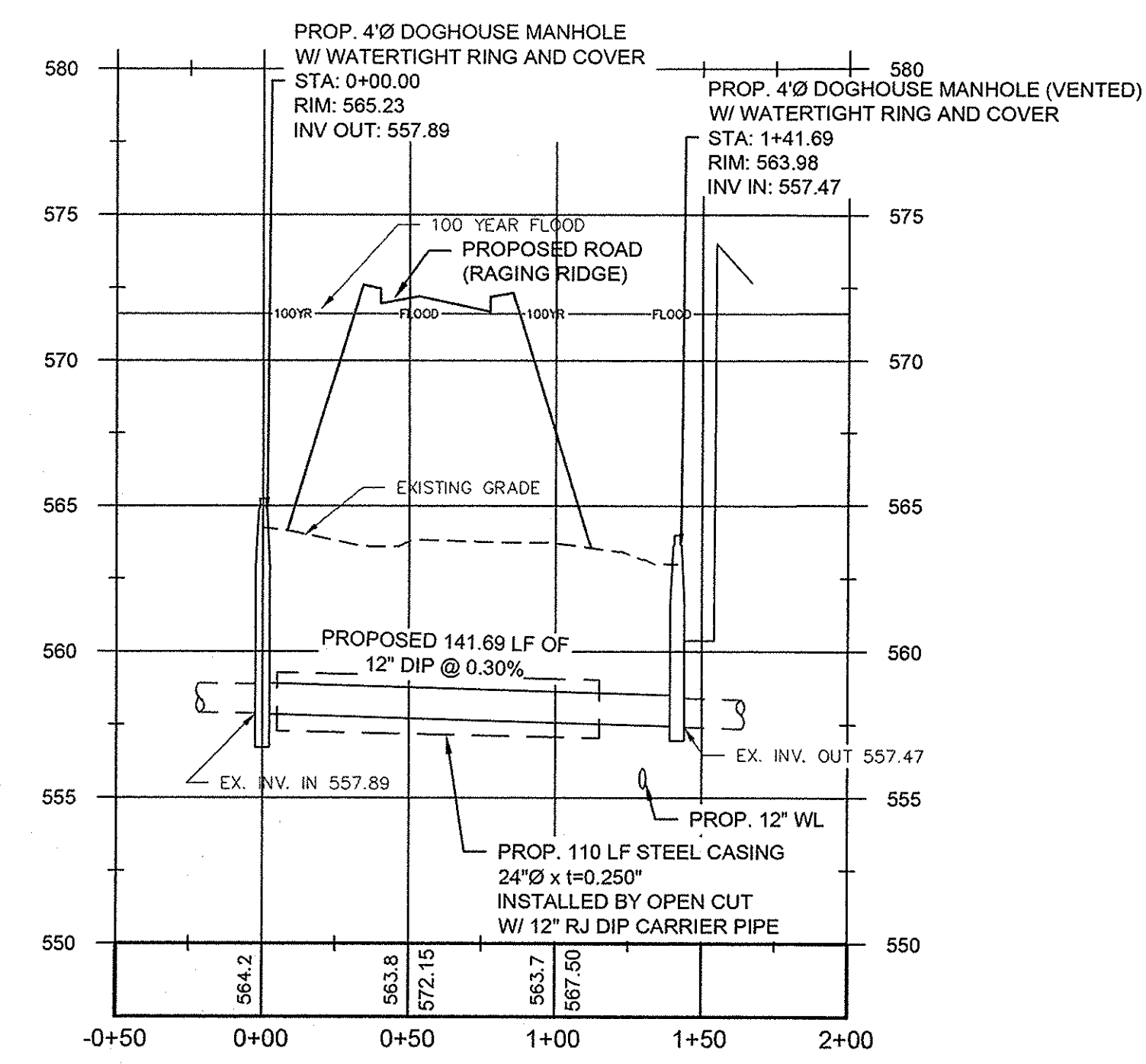
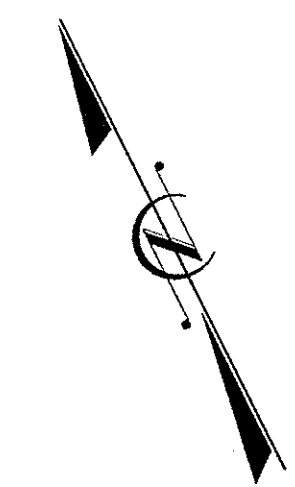
STREAM BED CONTROL DETAIL
NOT TO SCALE

REVISIONS

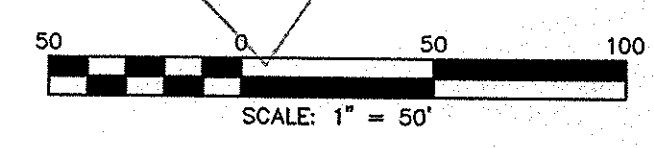
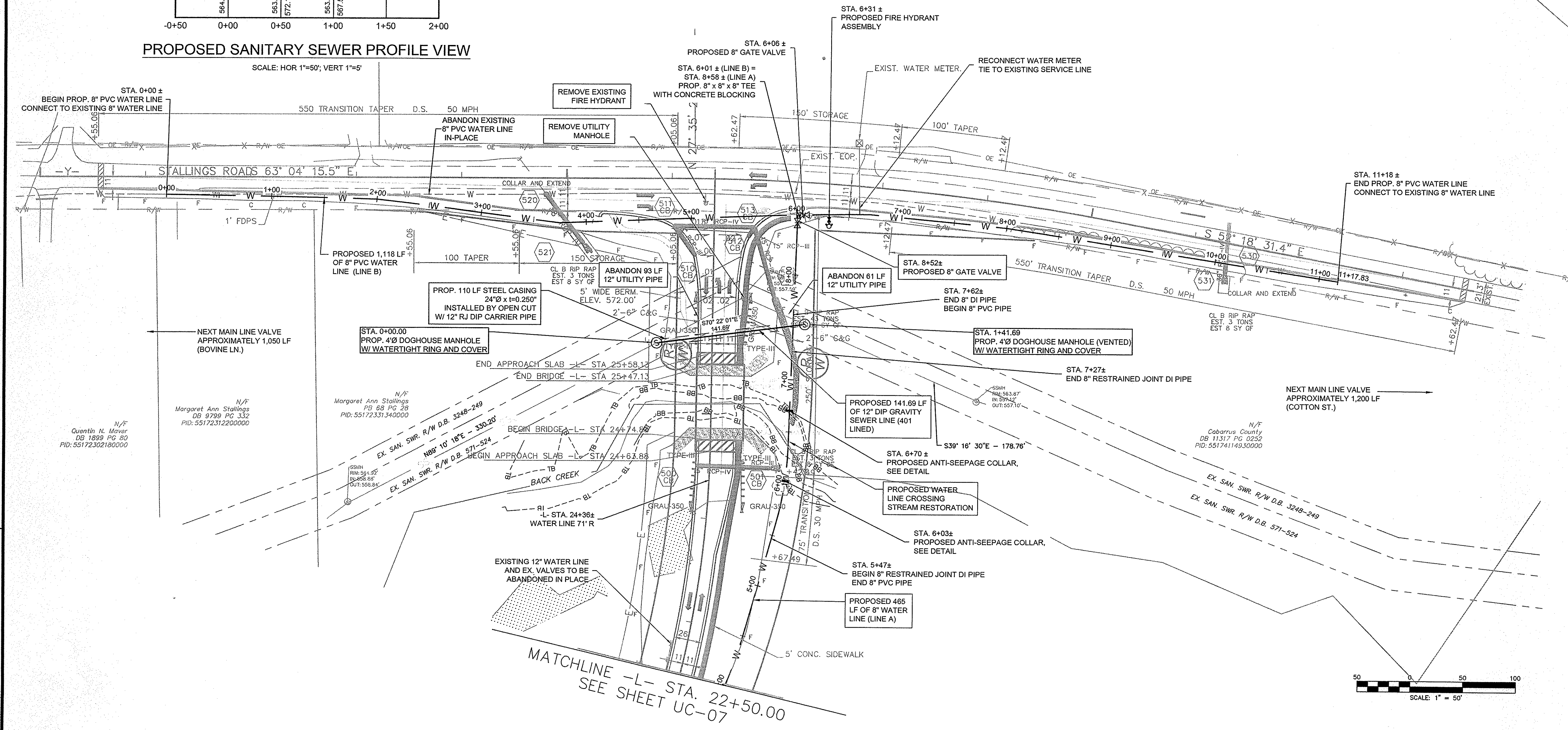
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NOTE:
THE 8" WATER LINE ALONG STALLINGS ROAD IS NOT PART OF THIS CONTRACT. IT WILL BE INSTALLED CONCURRENTLY WITH THIS PROJECT BY THE TOWN OF HARRISBURG. CONTRACTOR SHALL COORDINATE FINAL TIE-IN OF THE TWO WATER LINES WITH THE TOWN OF HARRISBURG.

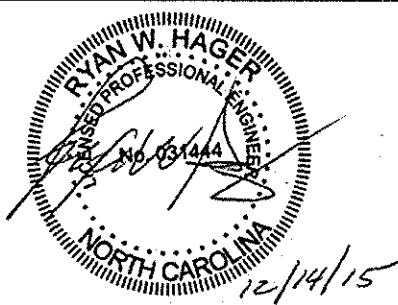


PROPOSED SANITARY SEWER PROFILE VIEW
SCALE: HOR 1"=50'; VERT 1"=5'

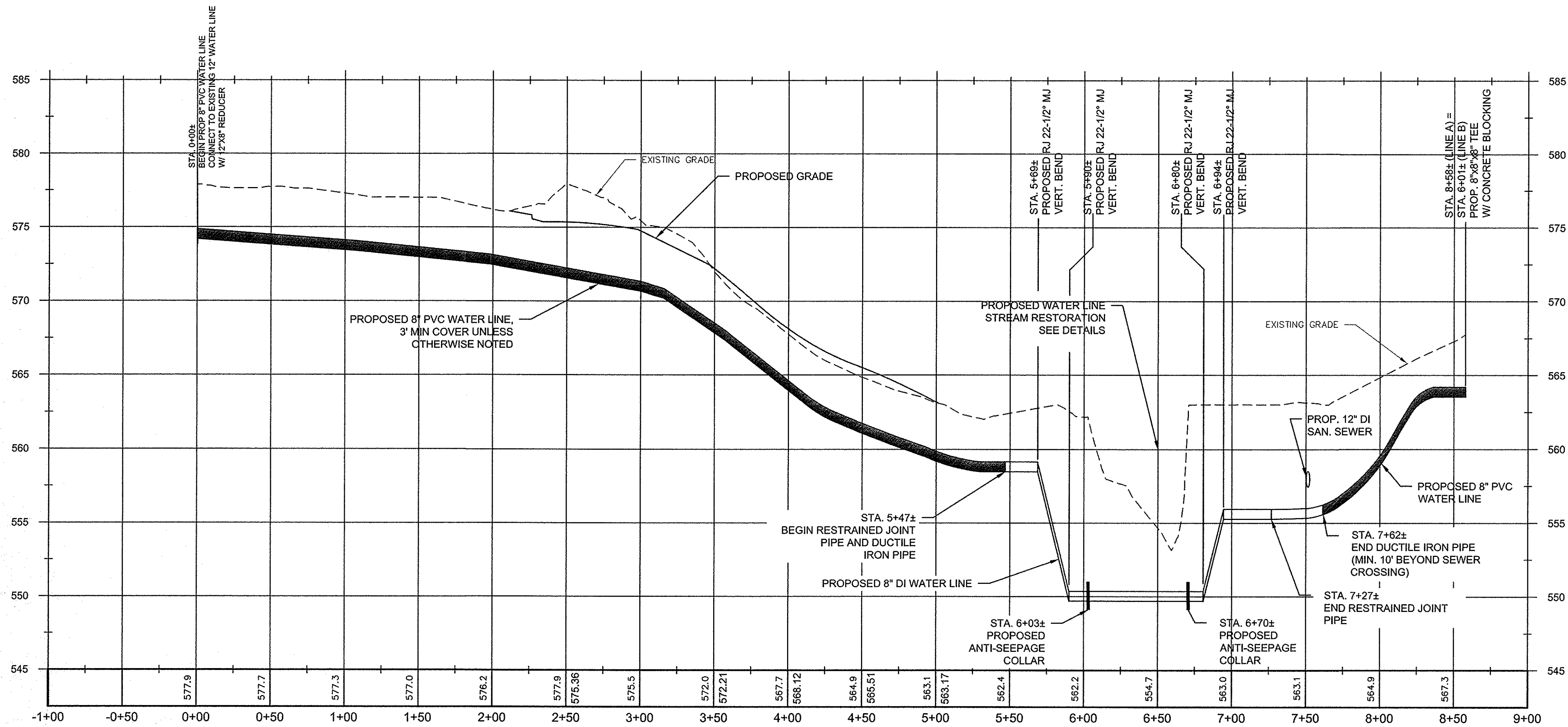
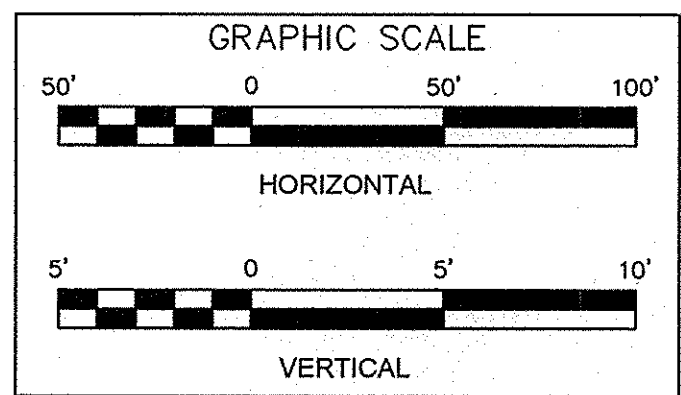


REVISIONS

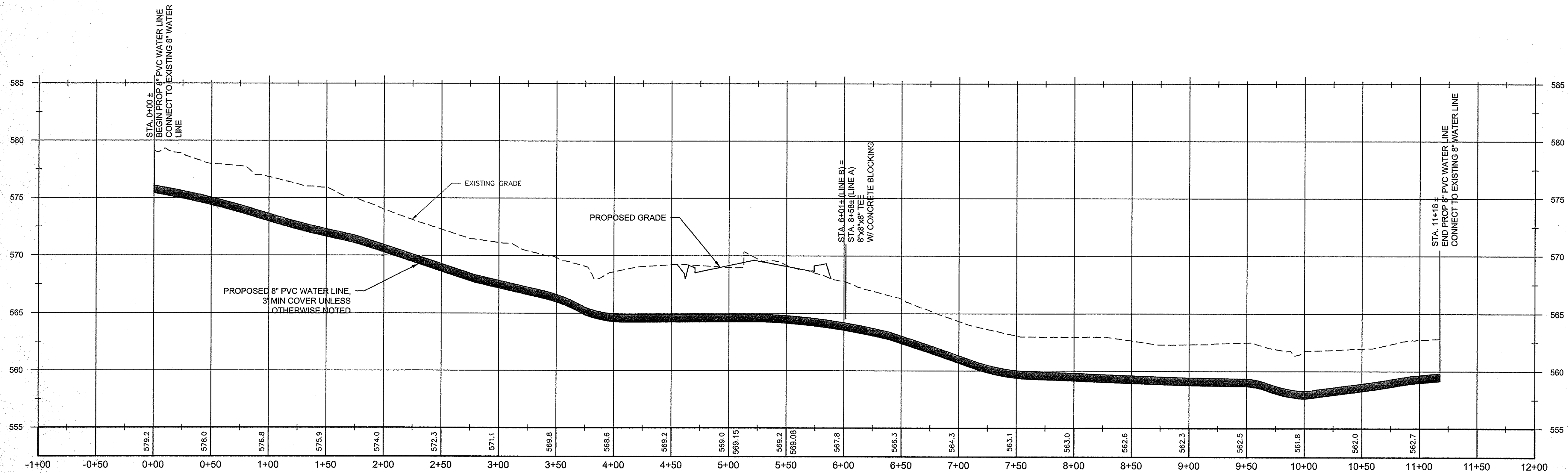
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USER: TCD/MS



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PROPOSED RAGING RIDGE RD. WATERLINE PROFILE VIEW (LINE A)



PROPOSED STALLINGS RD. WATERLINE PROFILE VIEW (LINE B)

REVISIONS

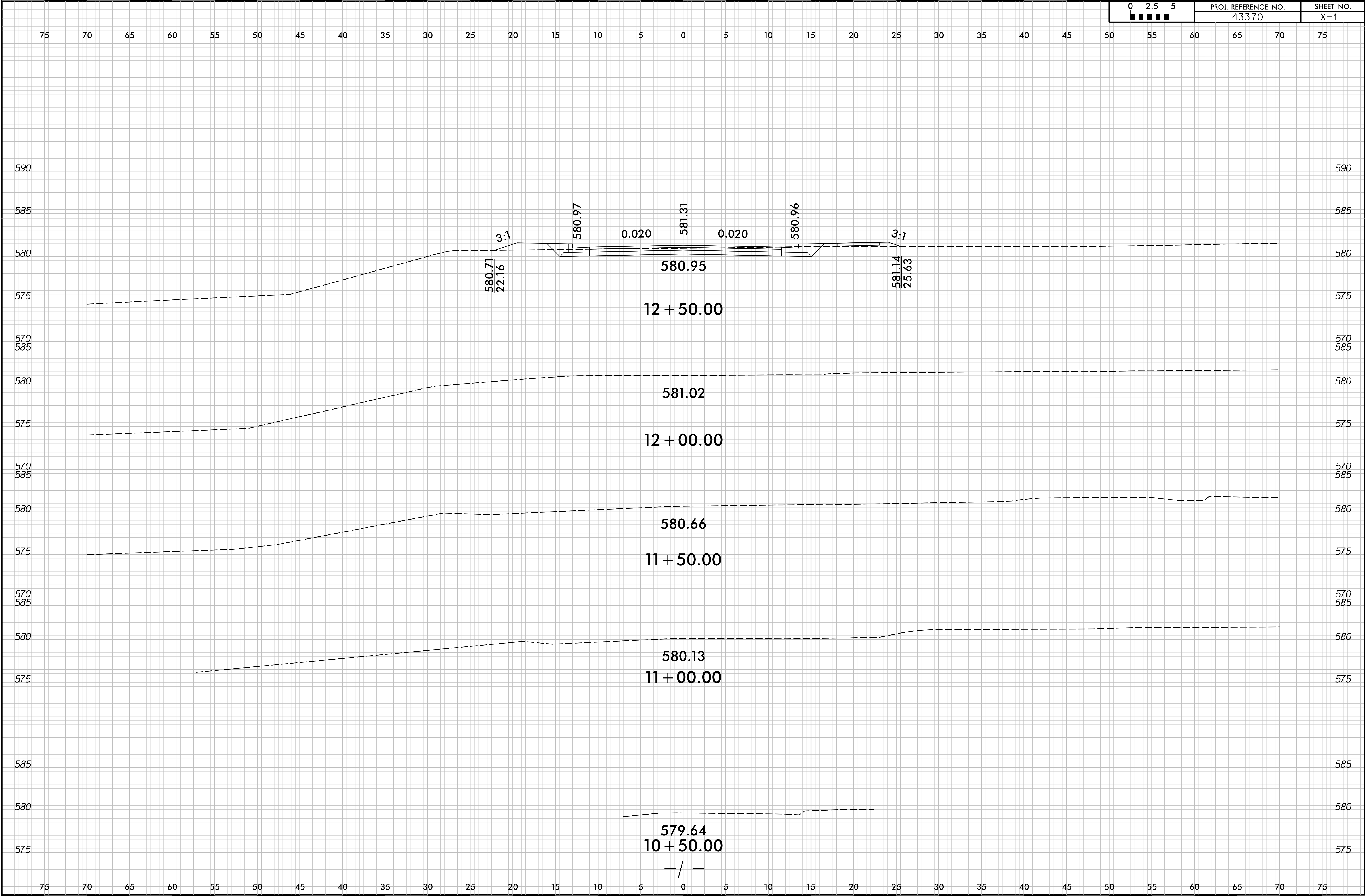
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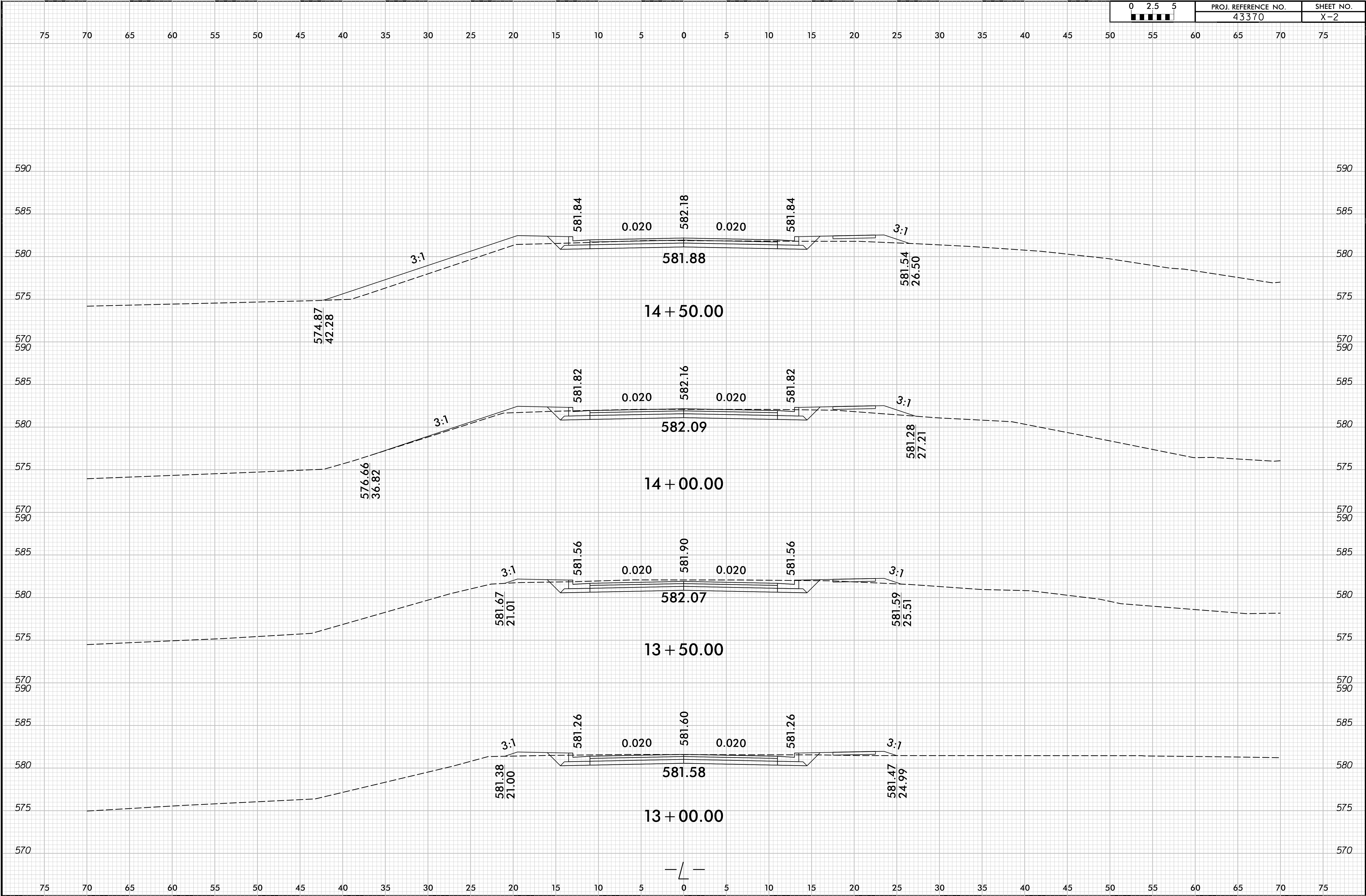
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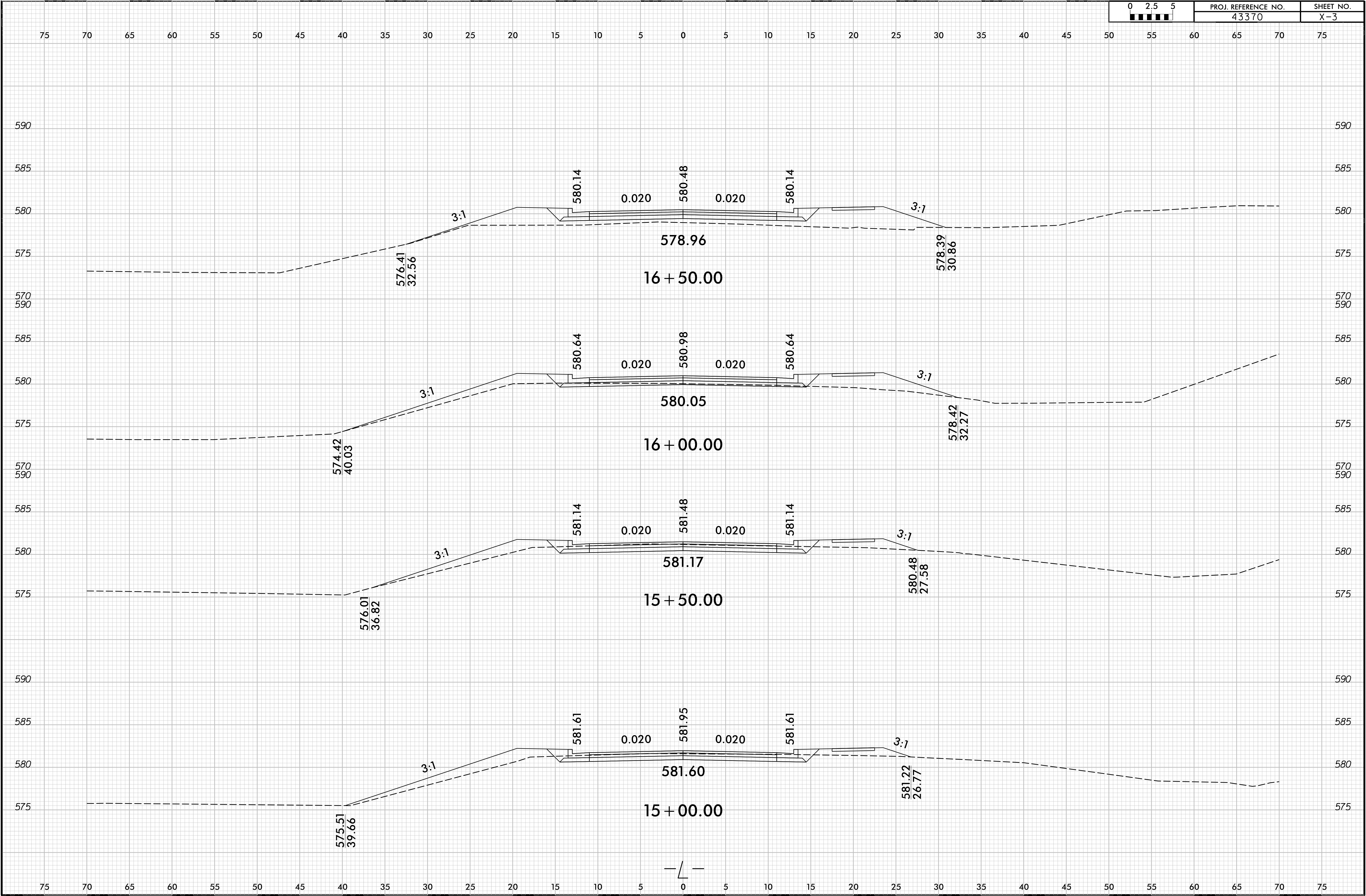
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

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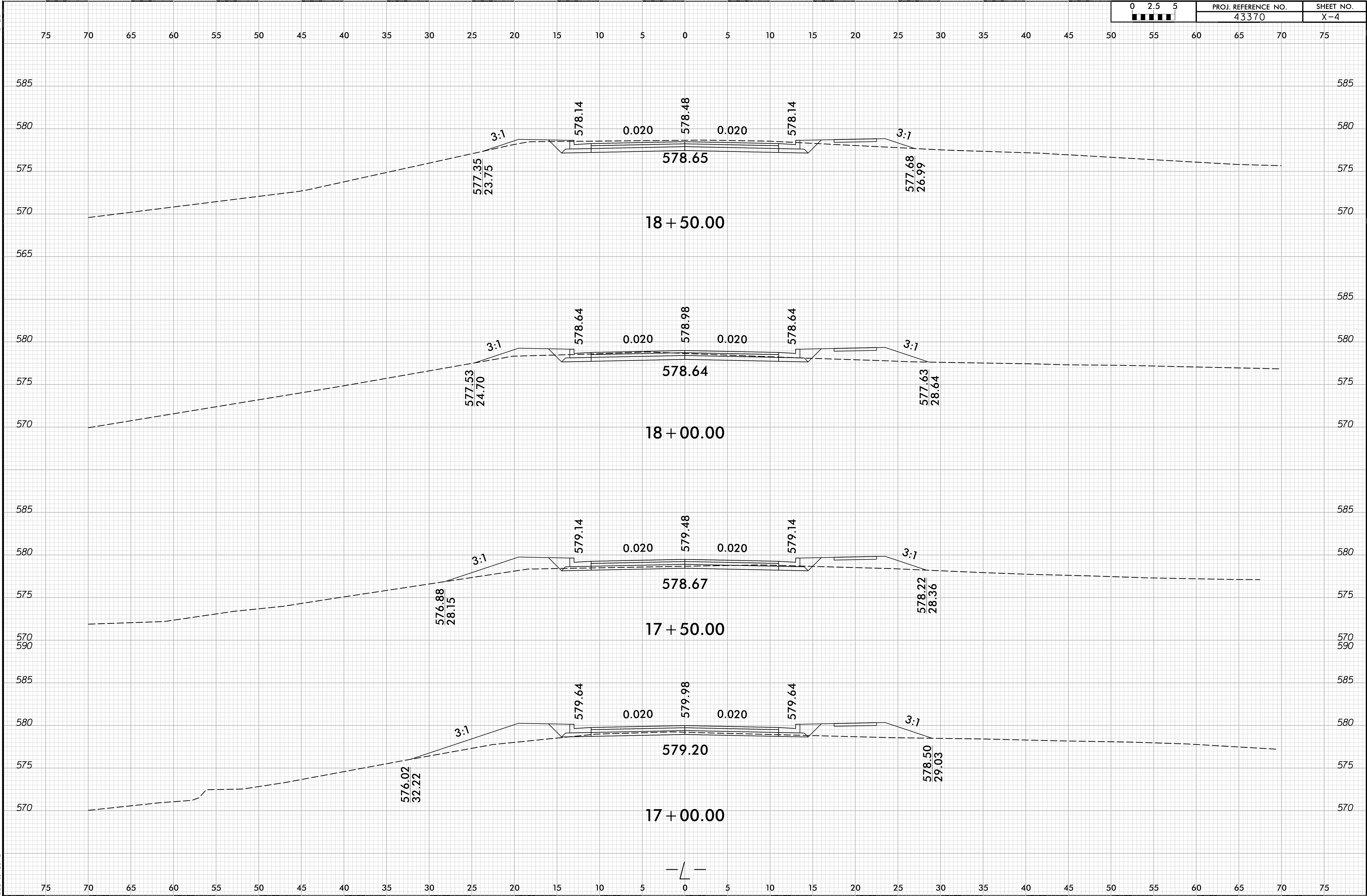
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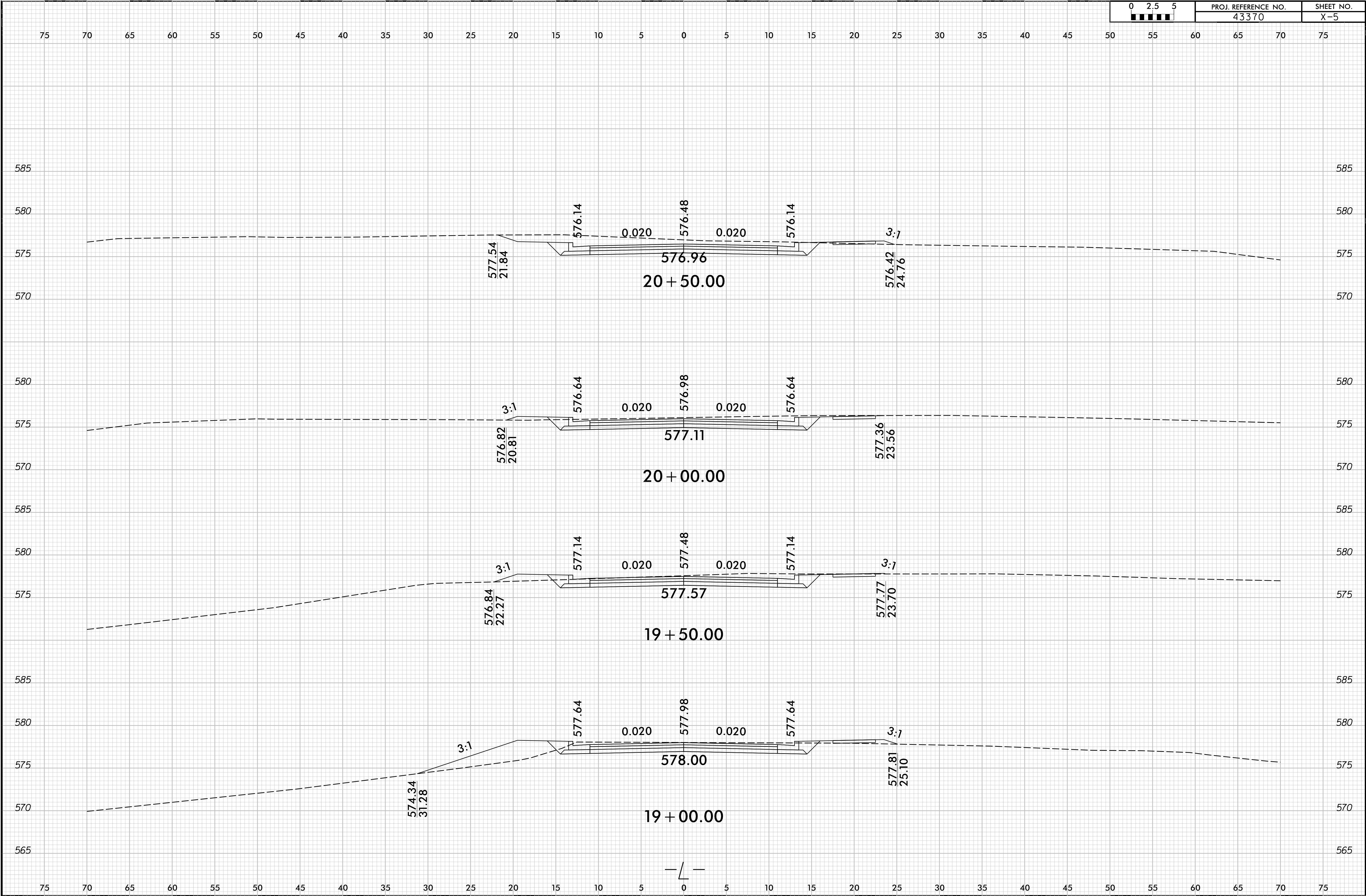




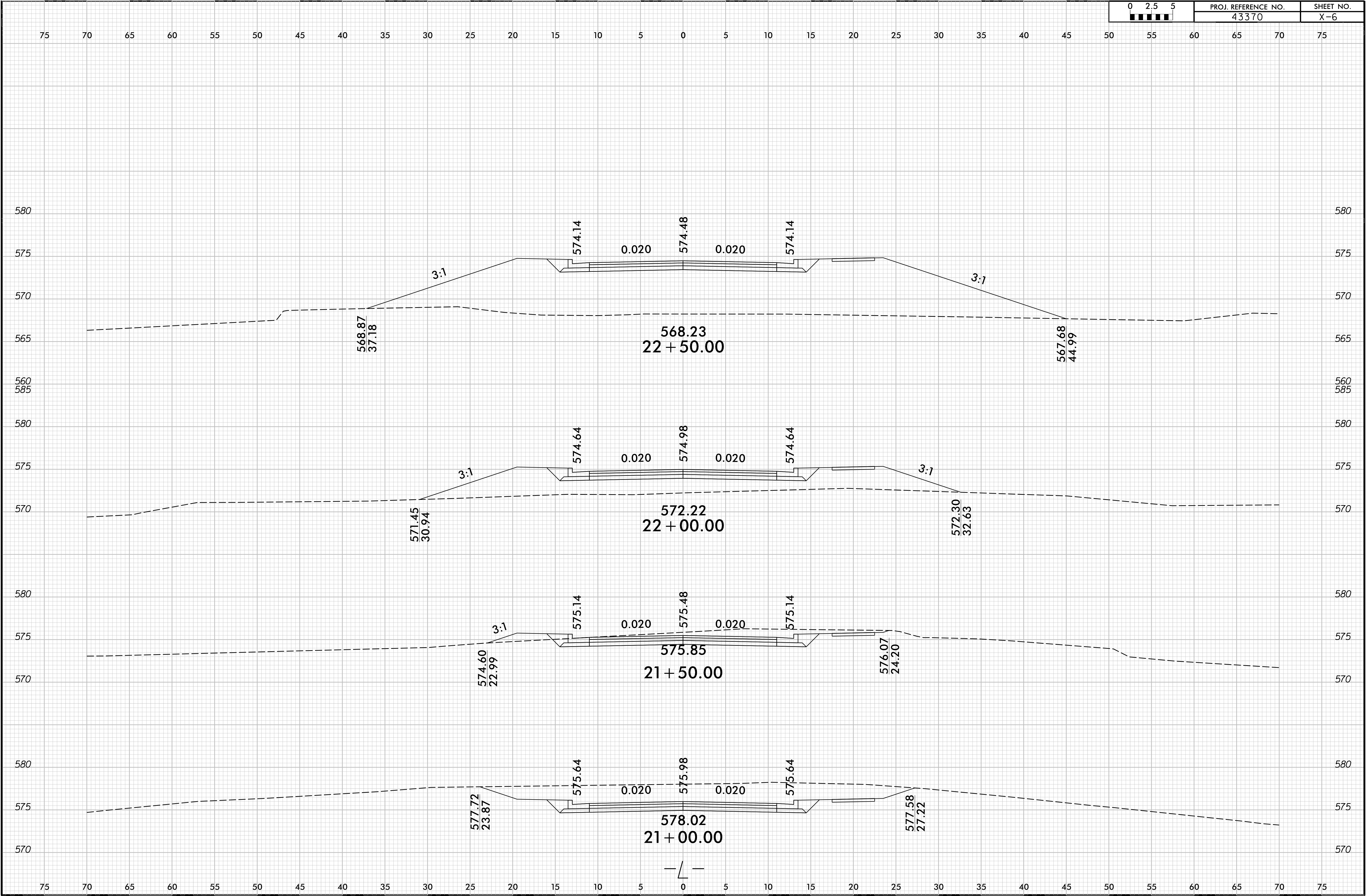


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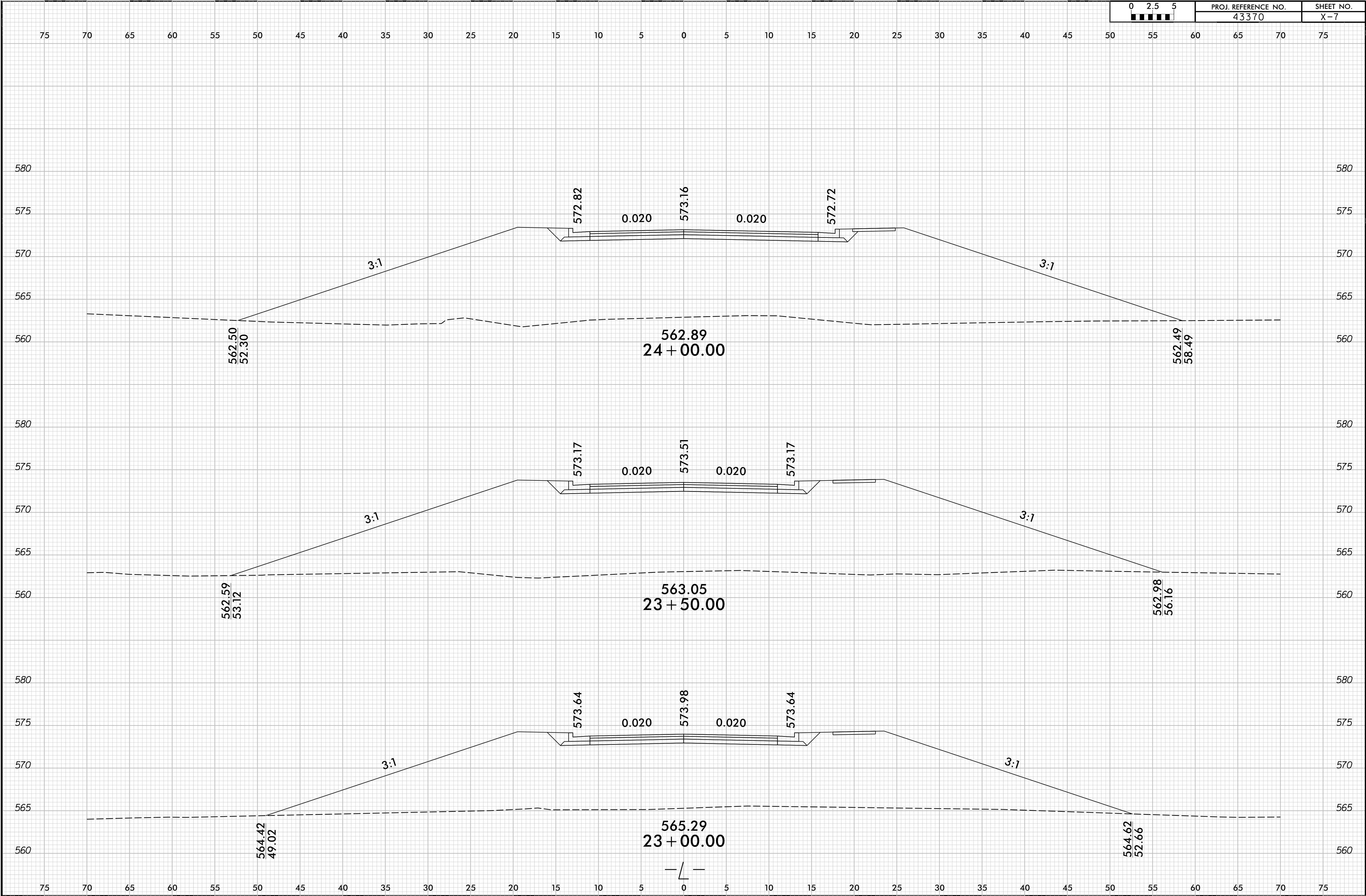




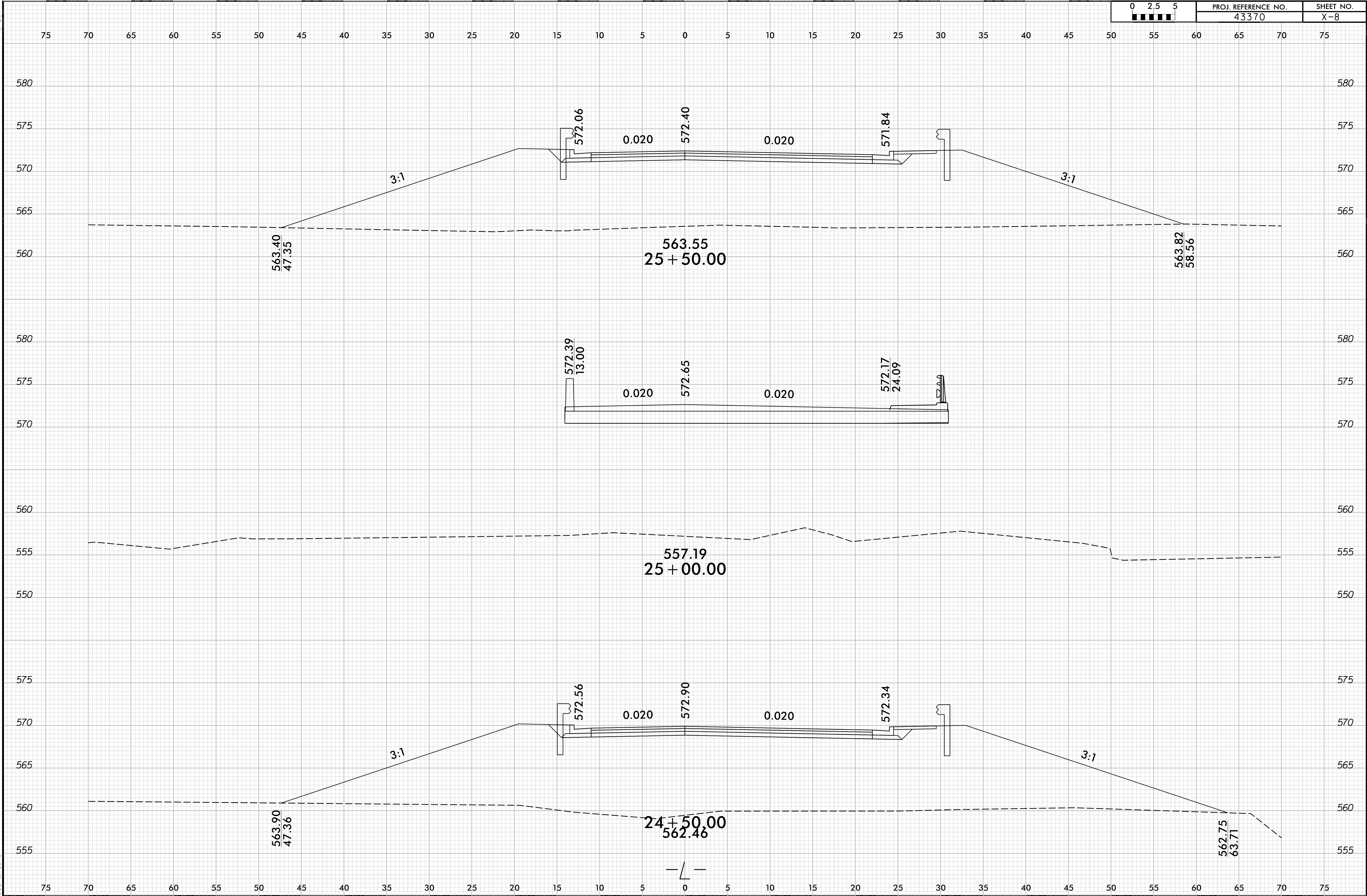
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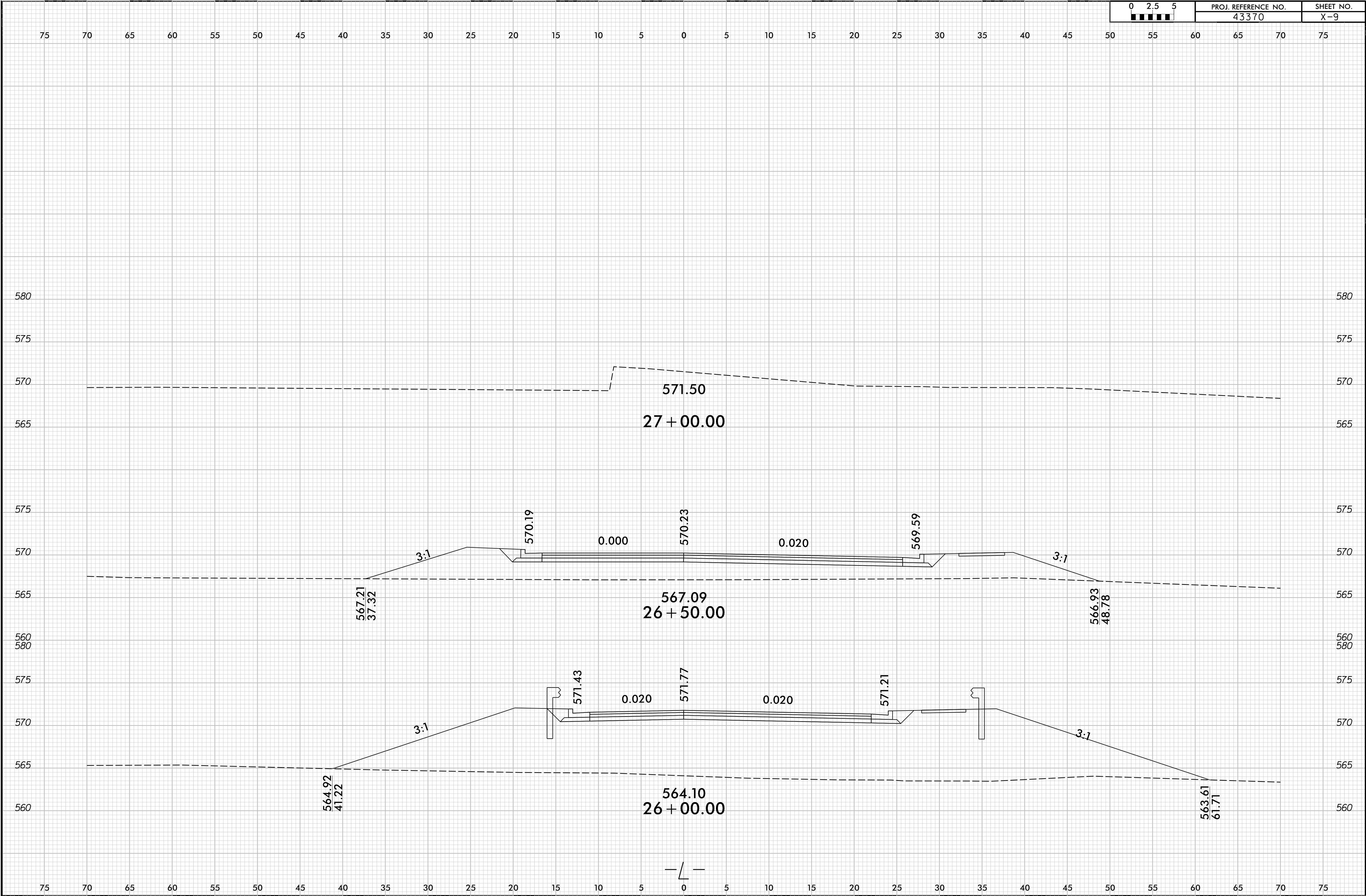
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8/23/99

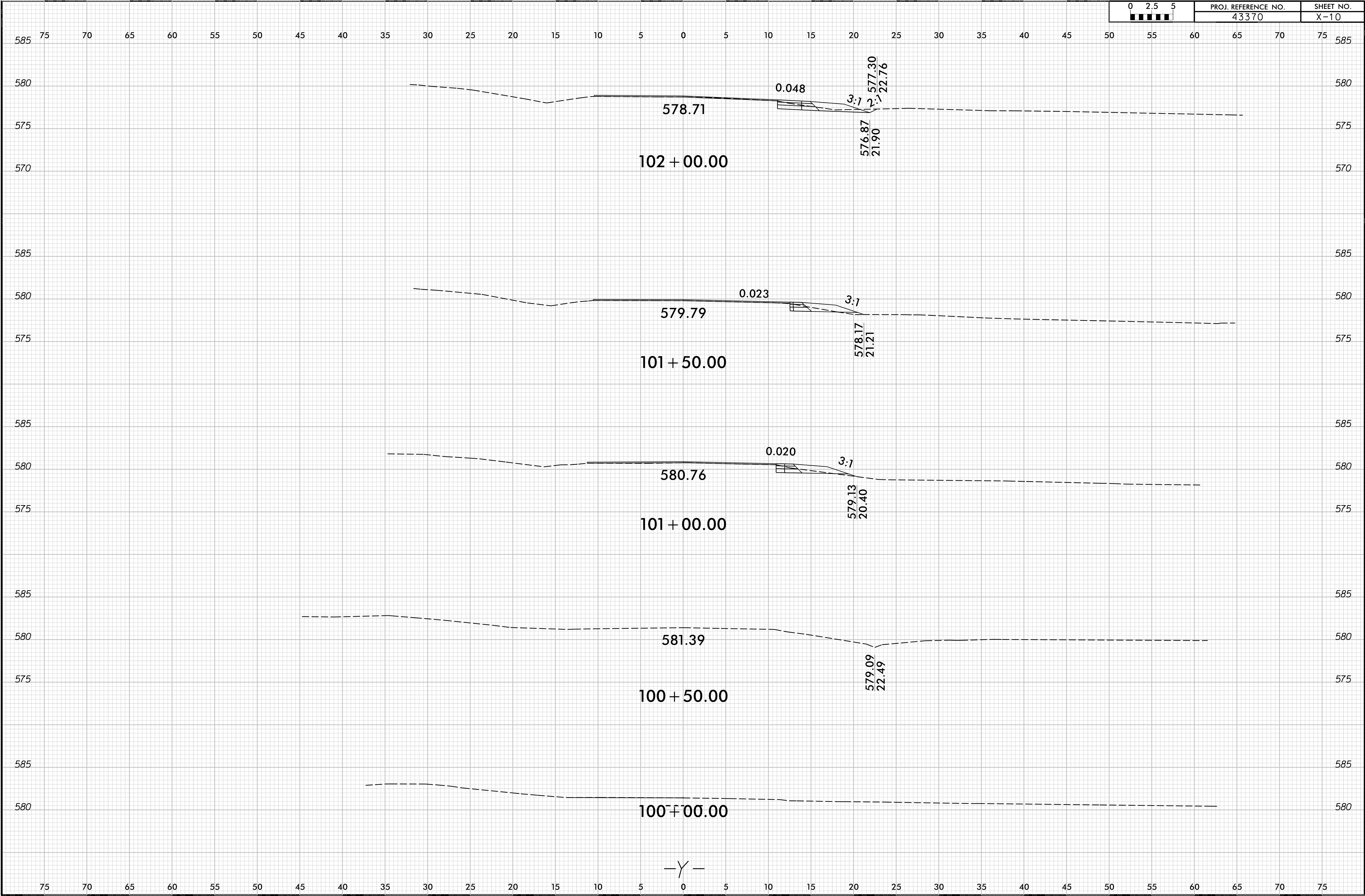


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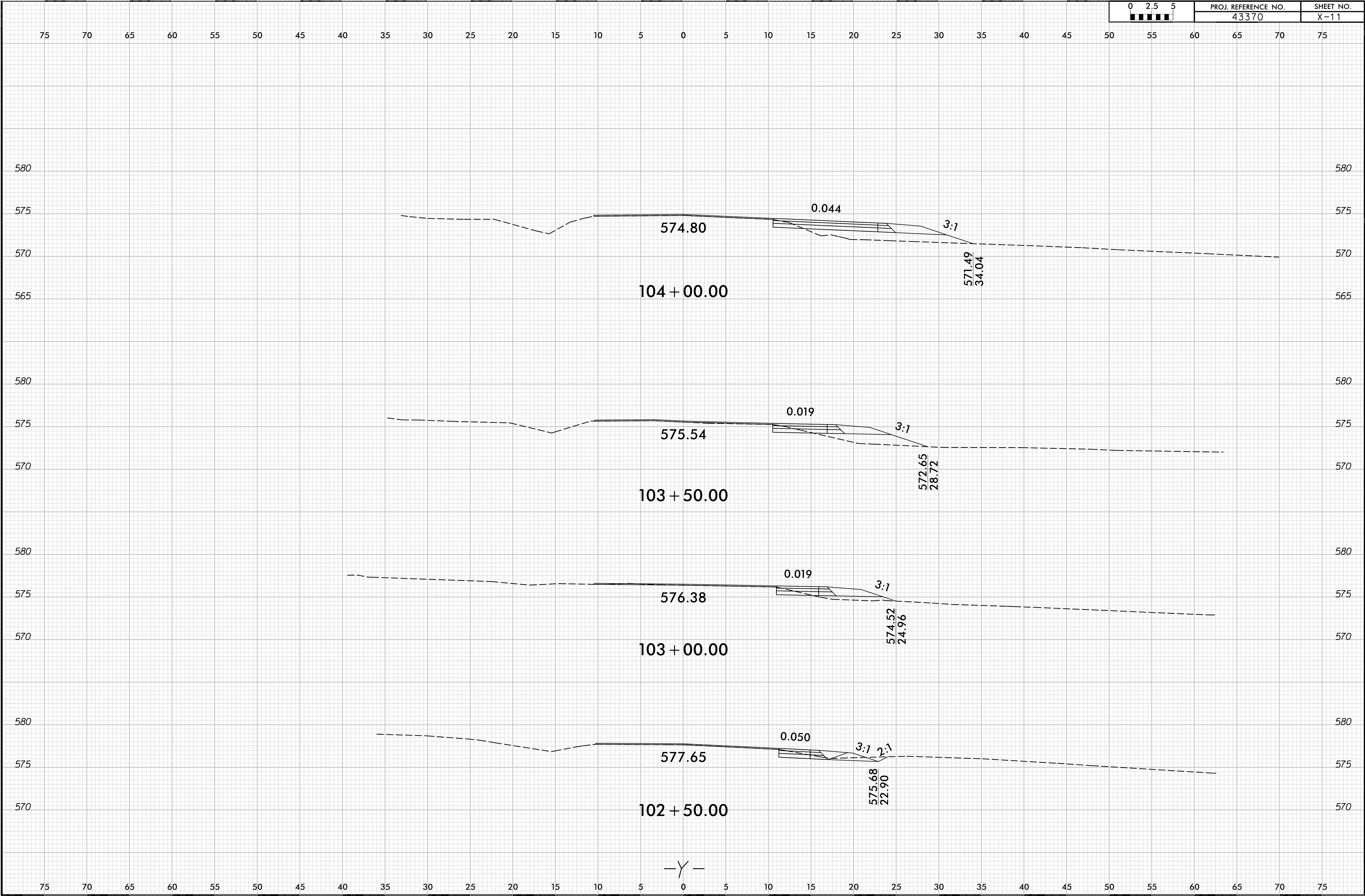


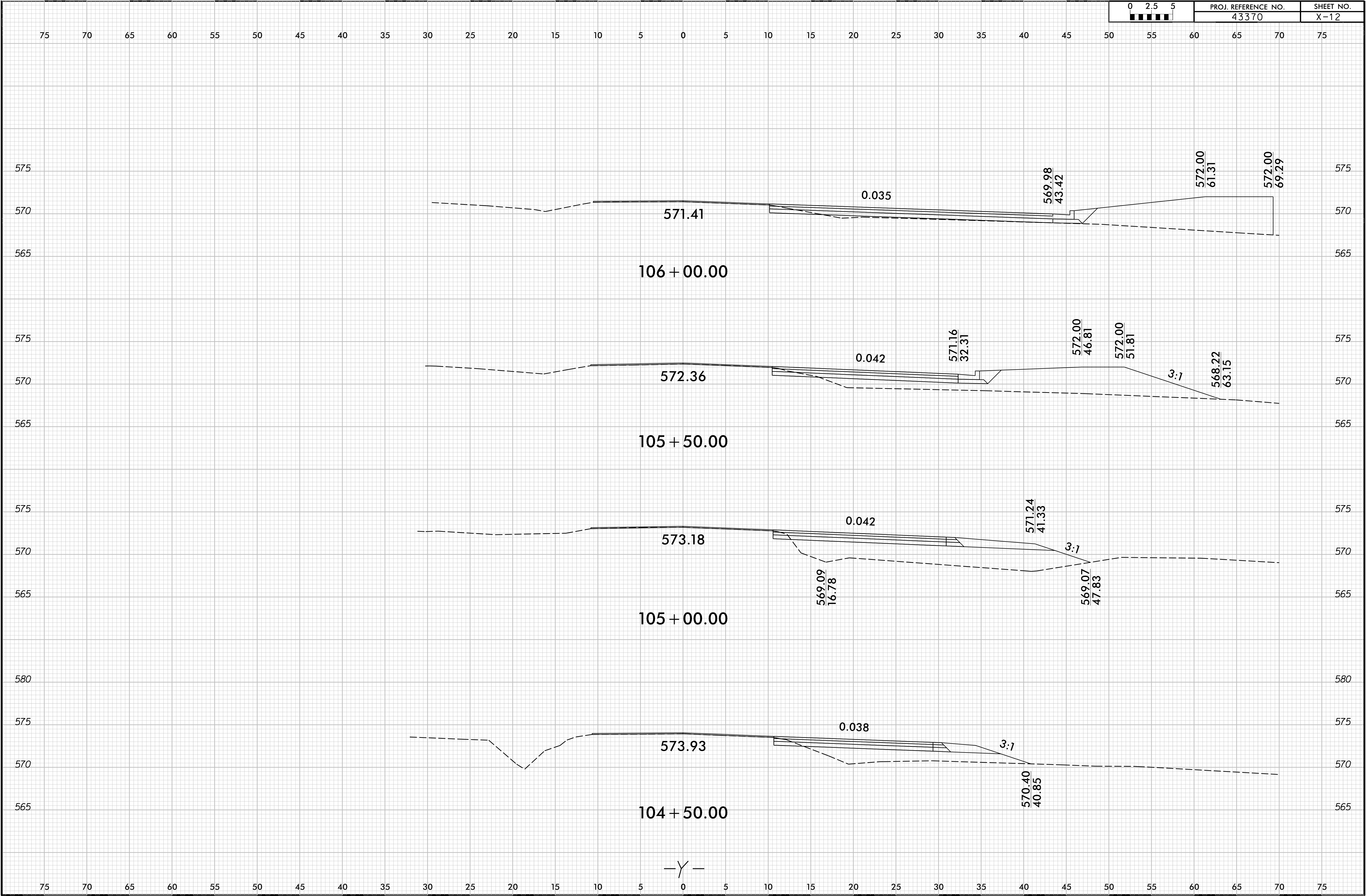
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02.55	PROJ. REFERENCE NO.	SHEET NO.
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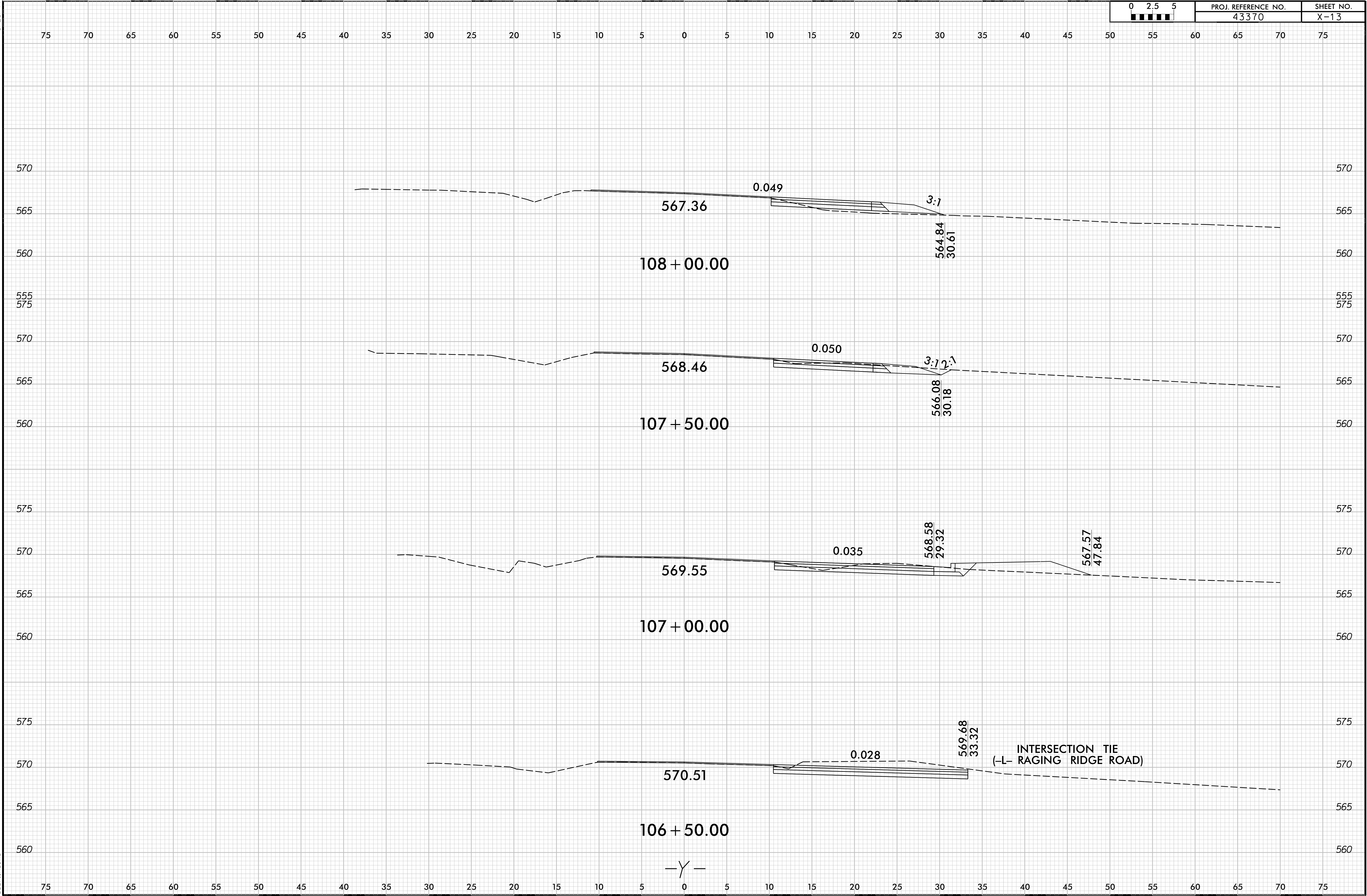


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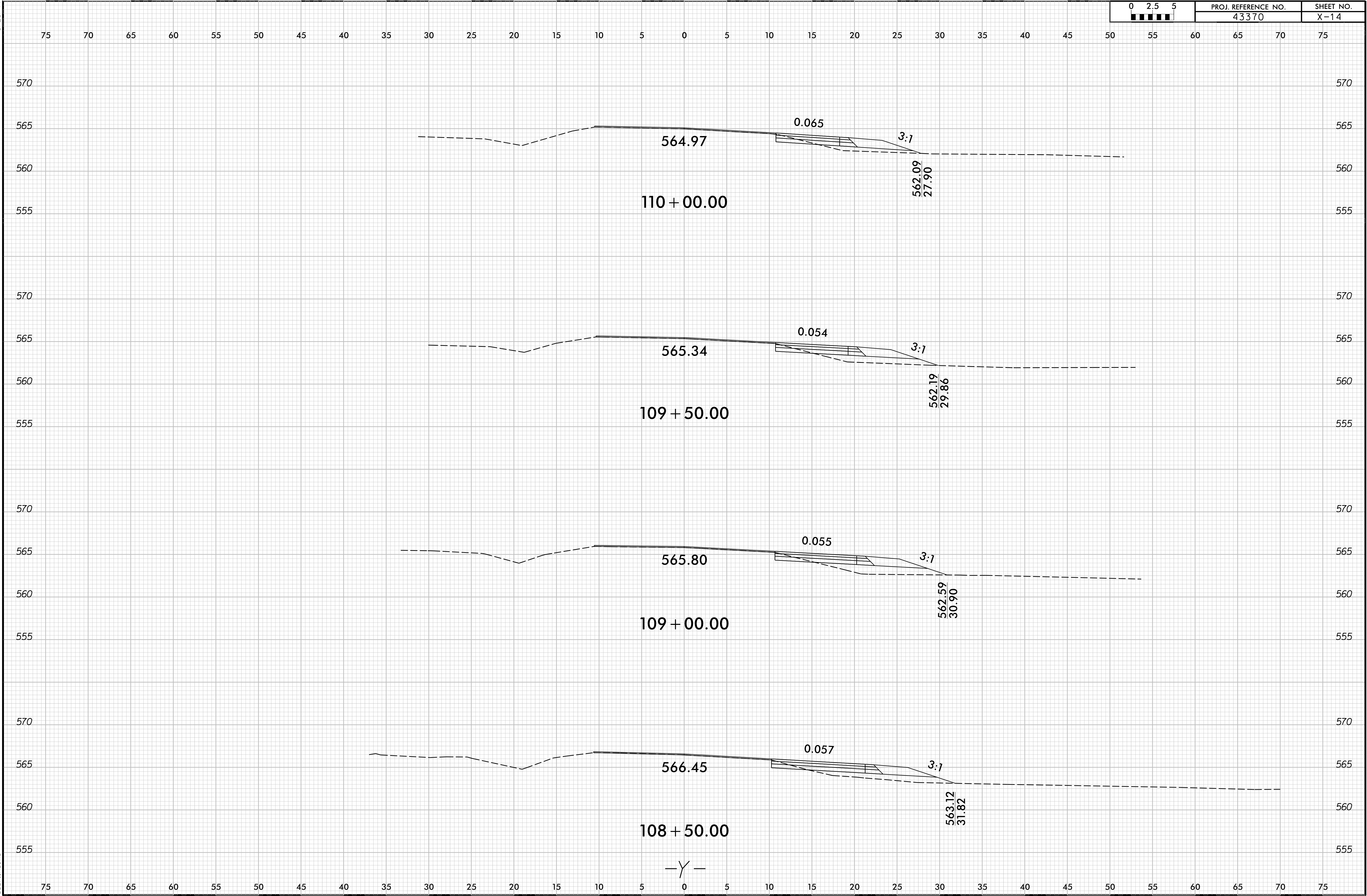


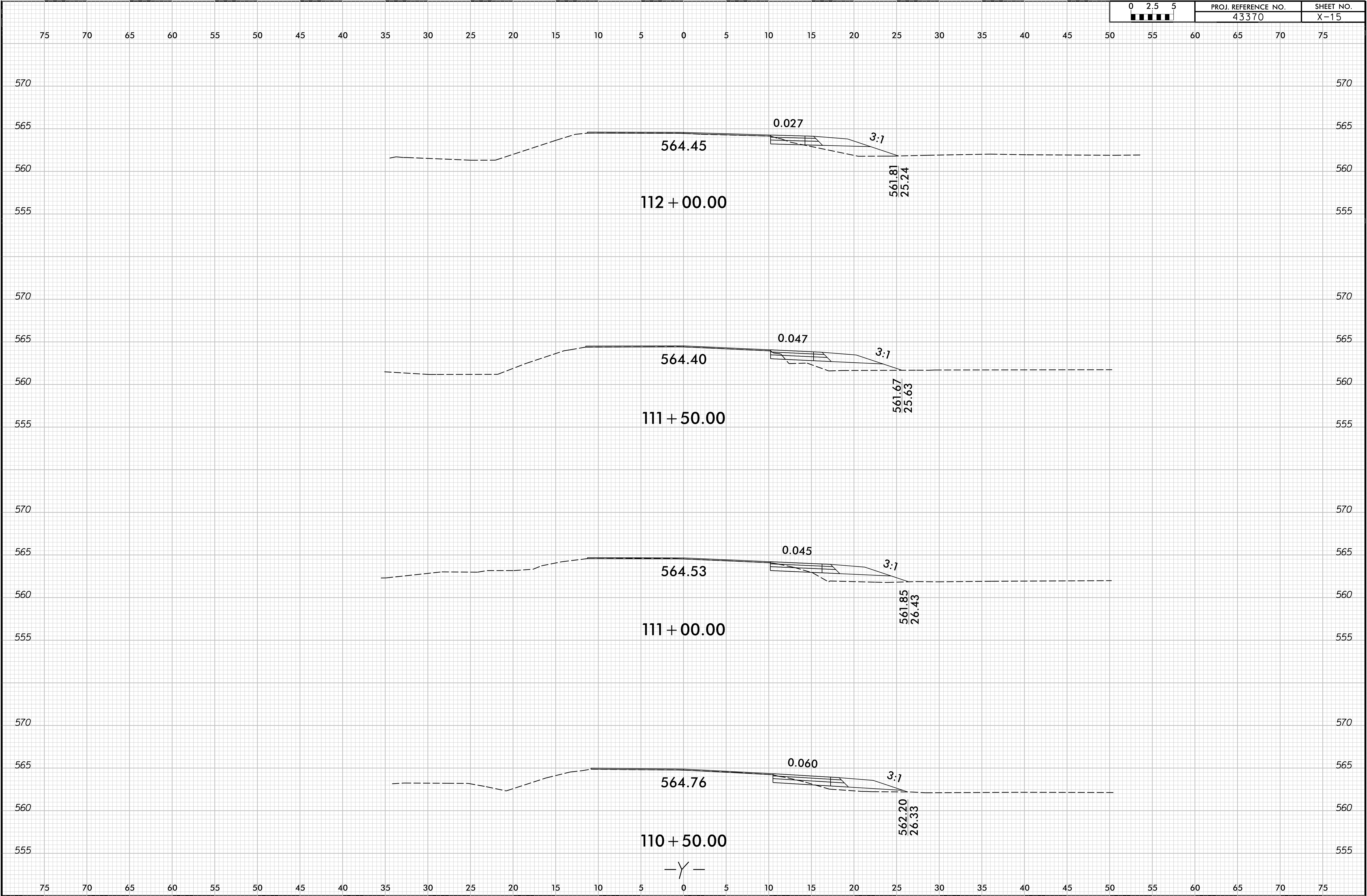


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