

See Sheet 1-A For Index of Sheets

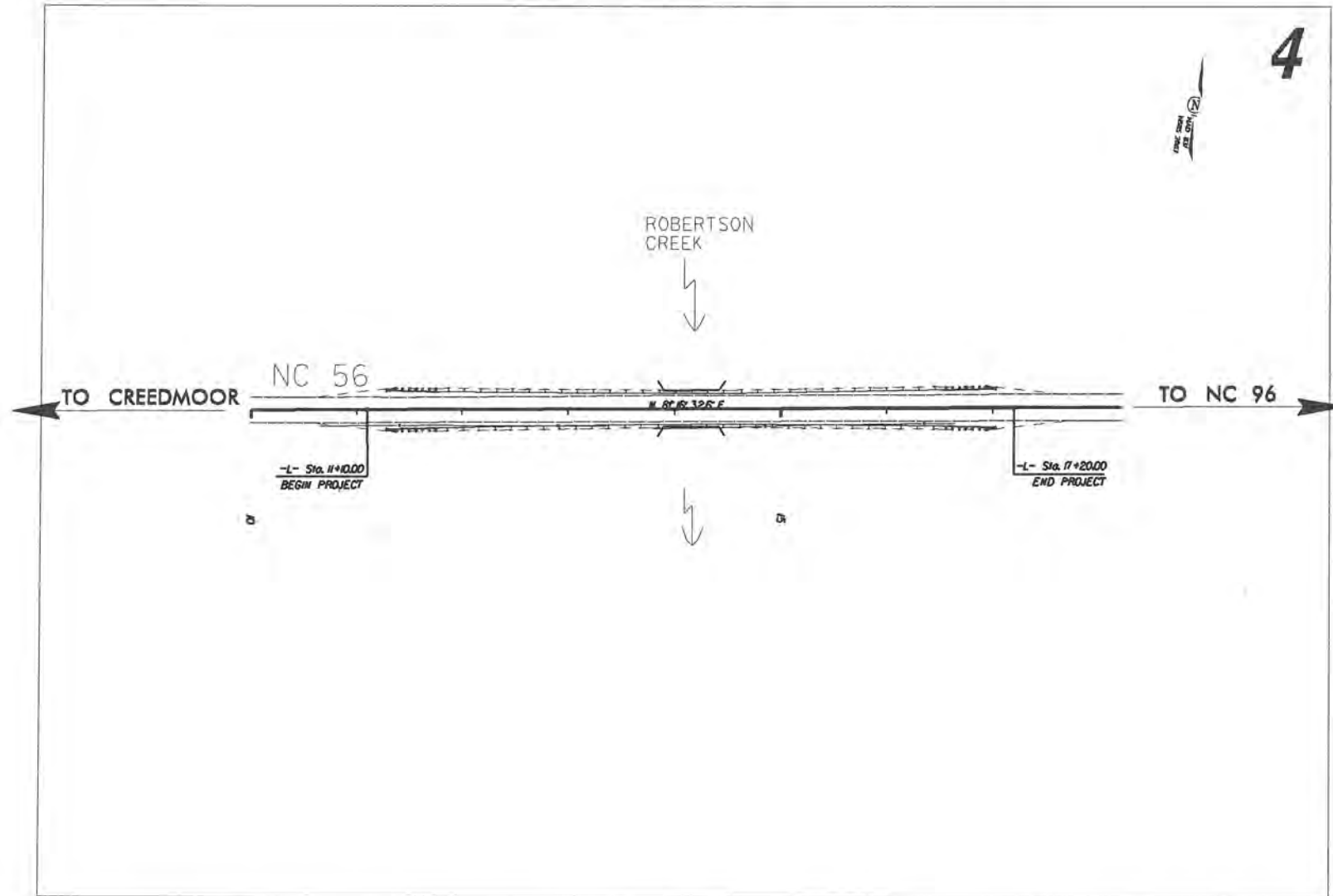
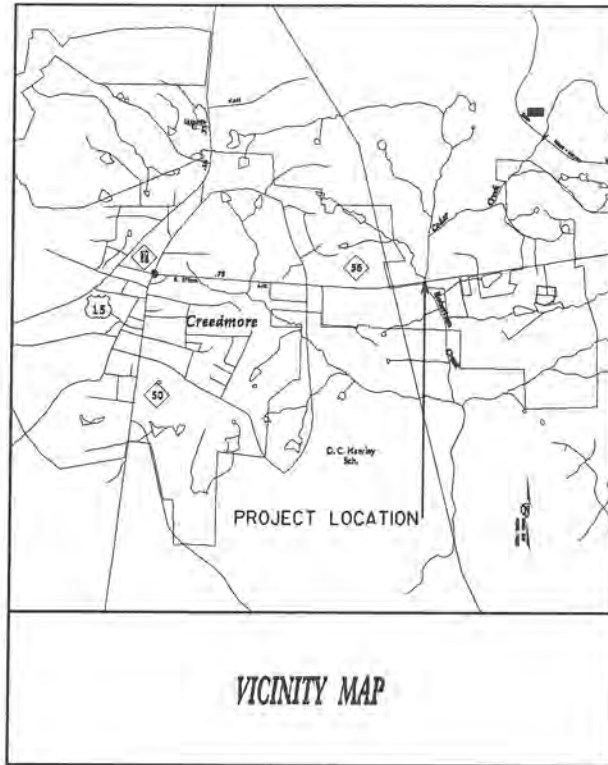
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GRANVILLE COUNTY**

LOCATION: NC 56 AT ROBERTSON CREEK

TYPE OF WORK: INSTALL GUARDRAIL, WIDEN SHOULDERS,  
ROCK PLATE SLOPES, SEWER RELOCATION  
AND CULVERT HEADWALL REPLACEMENT

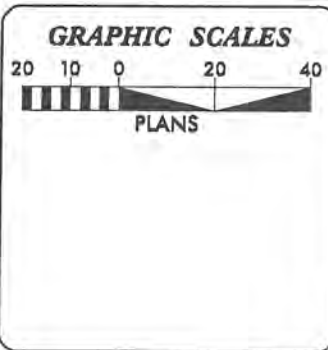
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-4905C	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
43467.1.1	HRRR-0056(6)	PE	
43467.1.2	HRRR-0056(6)	ROW	
43467.1.3	HRRR-0056(6)	CONST	



4

DE00048

PROJECT: SF-4905C



PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT SS-4905C = .11 MI

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
2612 N. DUKE ST

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE:

BEN UPSHAW, PE  
PROJECT ENGINEER

CHRIS HOFFMAN  
PROJECT DESIGN ENGINEER

DIVISION DESIGN ENGINEER  
ROADWAY DESIGN AND HYDRAULICS

2/25/14

SIGNATURE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

FIFTH DIVISION  
J. WALLY BOWMAN, P.E.  
DIVISION ENGINEER

25-FEB-2014 10:25  
R:\Projects\Proj SF-4905C\_Rdwy.tsh.dgn  
c:\naof\lman

PROJECT REFERENCE NO. SF-4905C	SHEET NO. 1-A
DIVISION FIVE DESIGN	

## 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 DATA
2	TYPICAL SECTIONS, AND ROCK PLATING DETAILS
2-A	ANCHOR DETAILS FOR GUARDRAIL POSTS AND REHAB OF HEADWALLS
4	PLAN SHEET
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
UC-1	SEWER RELOCATION PLAN SHEET
X-0 THRU X-12	CROSS-SECTIONS

EFF. 01-17-2012  
REV. 10-30-2012

### 2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 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
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation

### GENERAL NOTES:

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-2012  
REVISED: 07-30-2012

### CLEARING:

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

### 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.

### UTILITIES:

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

04/16/11

Note: Not to Scale

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.  
SF-4905C

SHEET NO.  
1-B

# 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	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-w.s.-
Proposed Wetland Boundary	-w.s.-
Existing Endangered Animal Boundary	-e.a.b.-
Existing Endangered Plant Boundary	-e.p.b.-
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	-j.s.-
Buffer Zone 1	-bz 1-
Buffer Zone 2	-bz 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	-w.s.-
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 Aerial Utility Easement	-----

## ROADS AND RELATED FEATURES:

Proposed Permanent Easement with Iron Pin and Cap Marker	◆
Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-c-
Proposed Slope Stakes Fill	-f-
Proposed Curb Ramp	⊠
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊠
Single Tree	⊙
Single Shrub	⊙
Hedge	-----
Woods Line	-----

## VEGETATION:

Orchard	⊙
Vineyard	⊙

## EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	⊠
Bridge Wing Wall, Head Wall and End Wall	⊠
MINOR:	
Head and End Wall	⊠
Pipe Culvert	⊠
Footbridge	⊠
Drainage Box: Catch Basin, DI or JB	⊠
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	-----
Designated U/G Power Line (S.U.E.*)	-----

## 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	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

## WATER:

Water Manhole	⊙
Water Meter	⊙
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

## TV:

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

## GAS:

Gas Valve	⊙
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

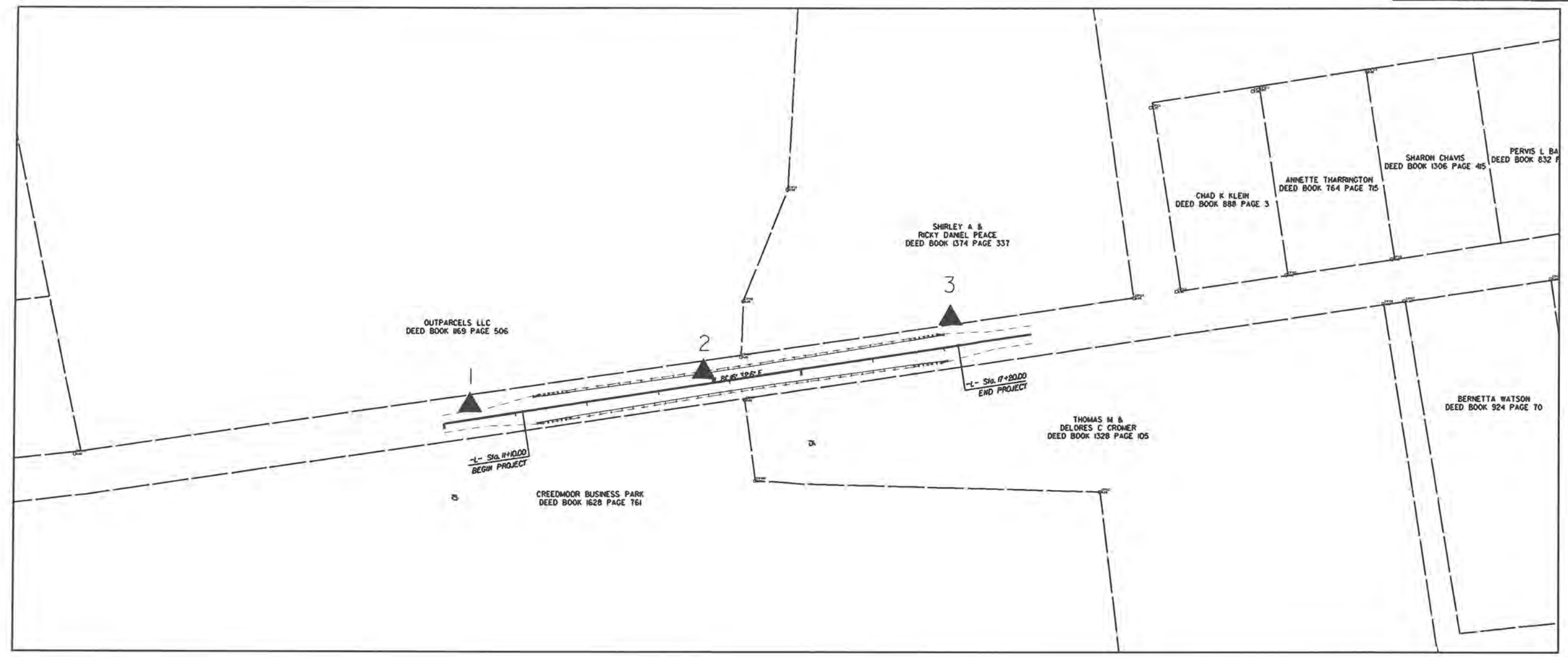
## SANITARY SEWER:


Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

## MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊙
Utility Located Object	⊙
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊠
Underground Storage Tank, Approx. Loc.	⊠
AG 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.





SURVEY CONTROL SYMBOL 

SURVEY CONTROL DATA

POINT	NORTH	EAST	ELEVATION
1	863414.3220	2099537.4640	282.53
2	863461.3420	2099860.3310	279.45
3	863536.2250	2100202.2450	279.95
---	---	---	---
---	---	---	---
-L- 11+10	863405.4623	2099610.1610	---
-L- 17+20	863497.9957	2100213.1614	---
---	---	---	---

**SURVEY CONTROL DATA**  
**NC 56 @ Roberson Creek**

DIVISION 05 GRANVILLE COUNTY

REVISIONS	INT.	DATE

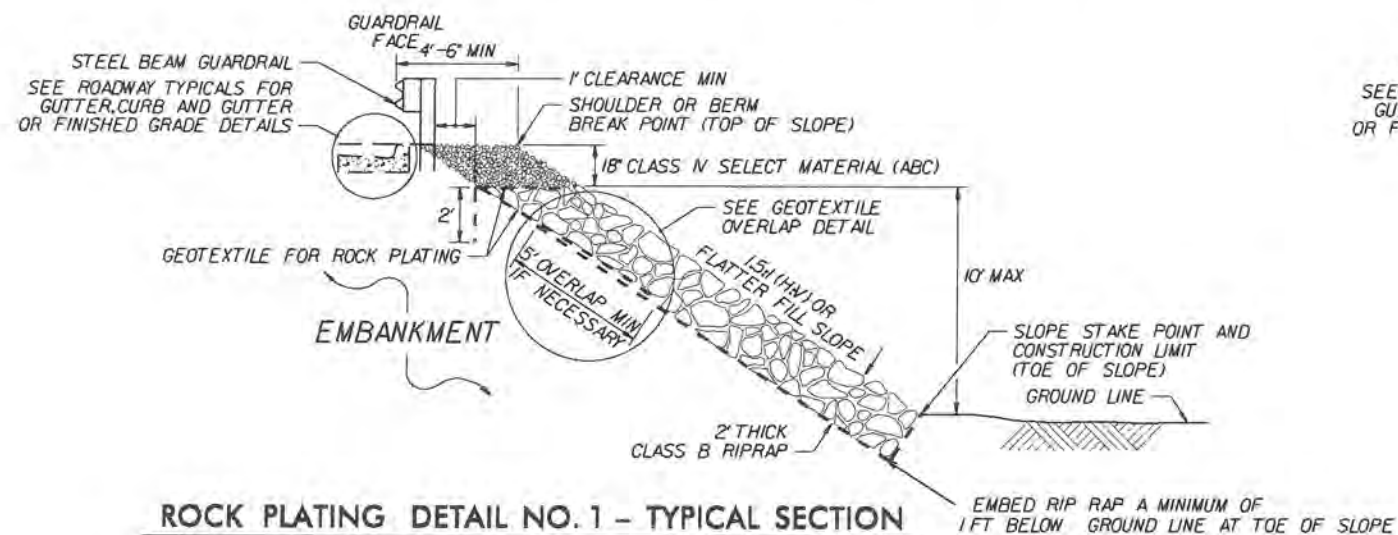
N.C. DEPARTMENT of TRANSPORTATION  
DIVISION of HIGHWAYS  
DIVISION FIVE DESIGN UNIT



SCALE: N/A DATE: 06 FEB 2014

PREPARED BY:	CAH
REVIEWED BY:	BJU
REVIEWED BY:	

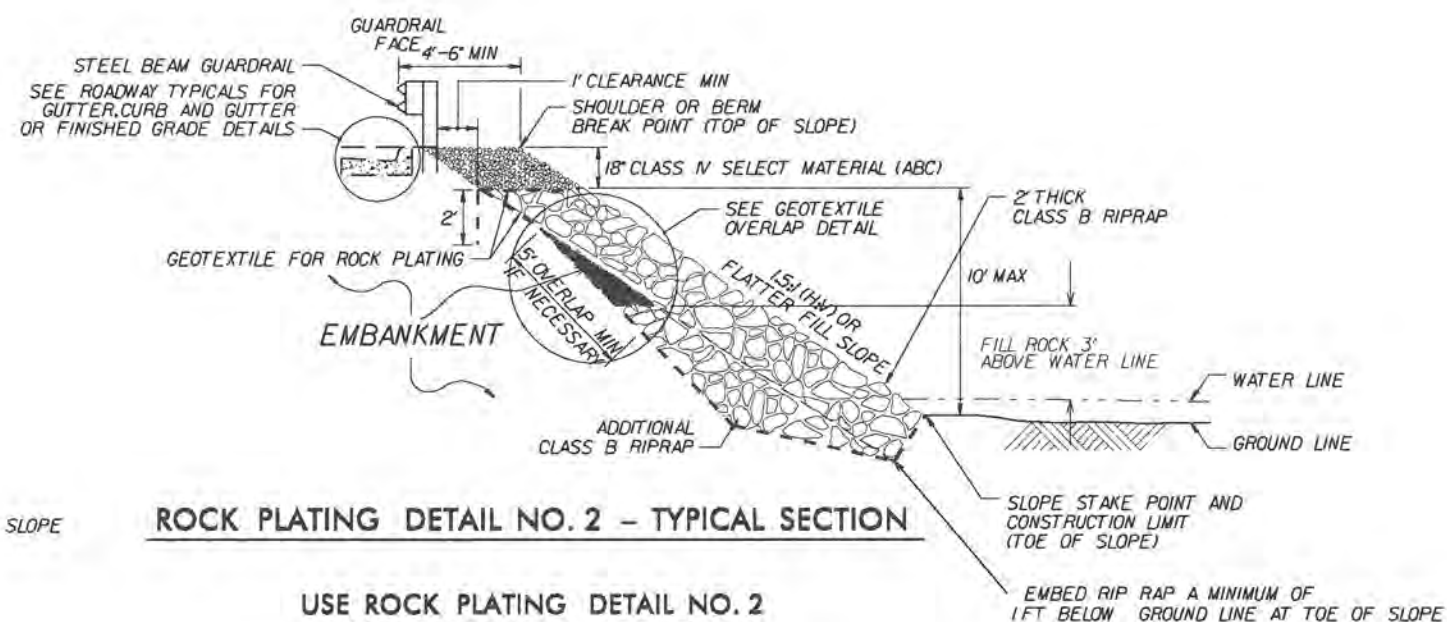
FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.



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

USE ROCK PLATING DETAIL NO. 1  
AT THE FOLLOWING LOCATIONS:

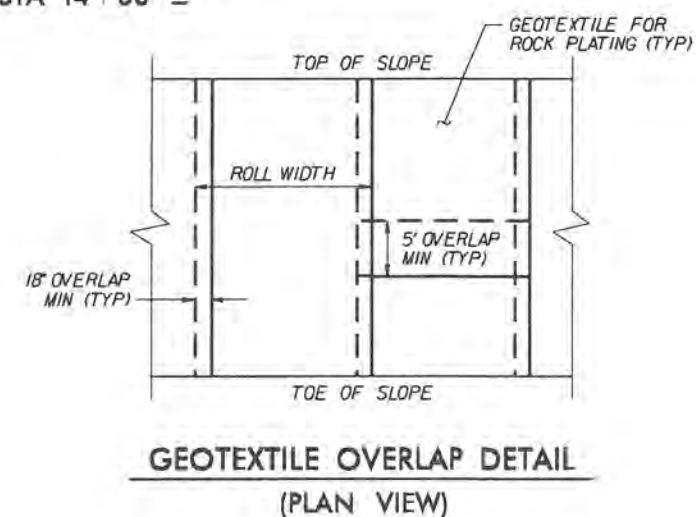
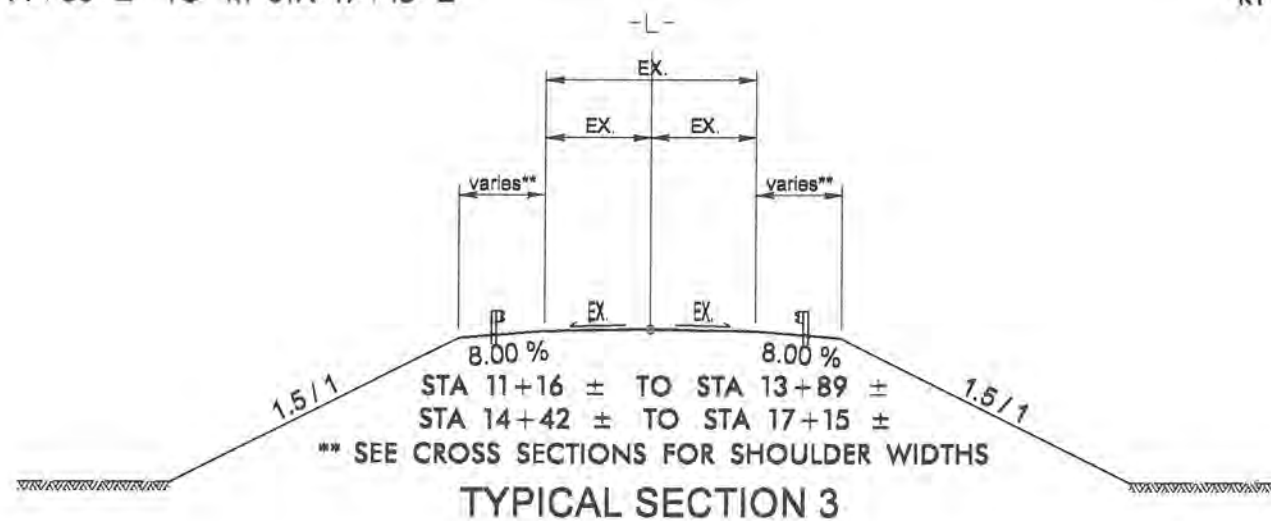
- LT STA 11+16 ± TO LT STA 13+60 ±
- RT STA 11+16 ± TO RT STA 13+60 ±
- LT STA 14+60 ± TO LT STA 16+10 ±
- RT STA 14+60 ± TO RT STA 17+15 ±



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

USE ROCK PLATING DETAIL NO. 2  
AT THE FOLLOWING LOCATIONS:

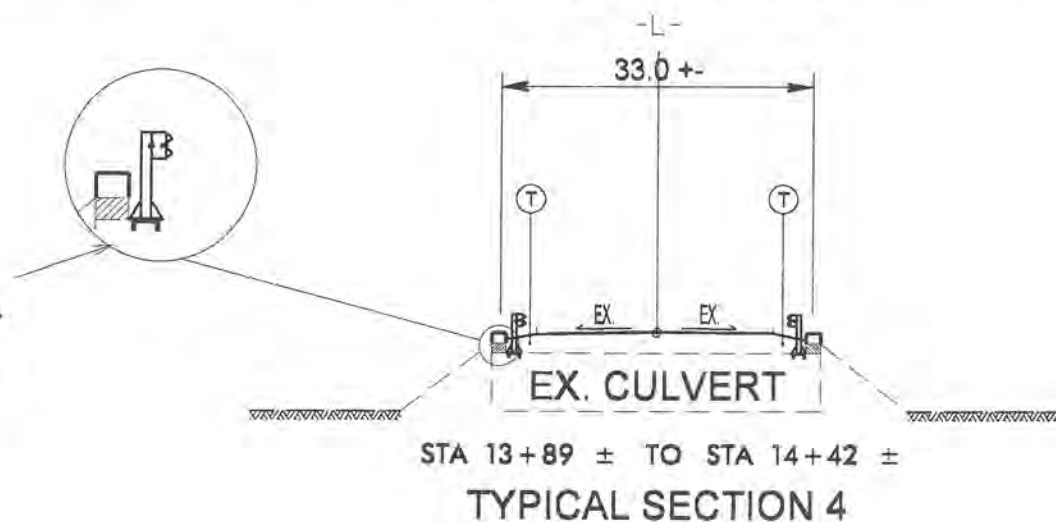
- LT STA 13+60 ± TO LT STA 13+89 ±
- RT STA 13+60 ± TO RT STA 13+89 ±
- LT STA 14+42 ± TO LT STA 14+60 ±
- RT STA 14+42 ± TO RT STA 14+60 ±



SEE SHEET 2-A  
FOR STRUCTURE DETAILS

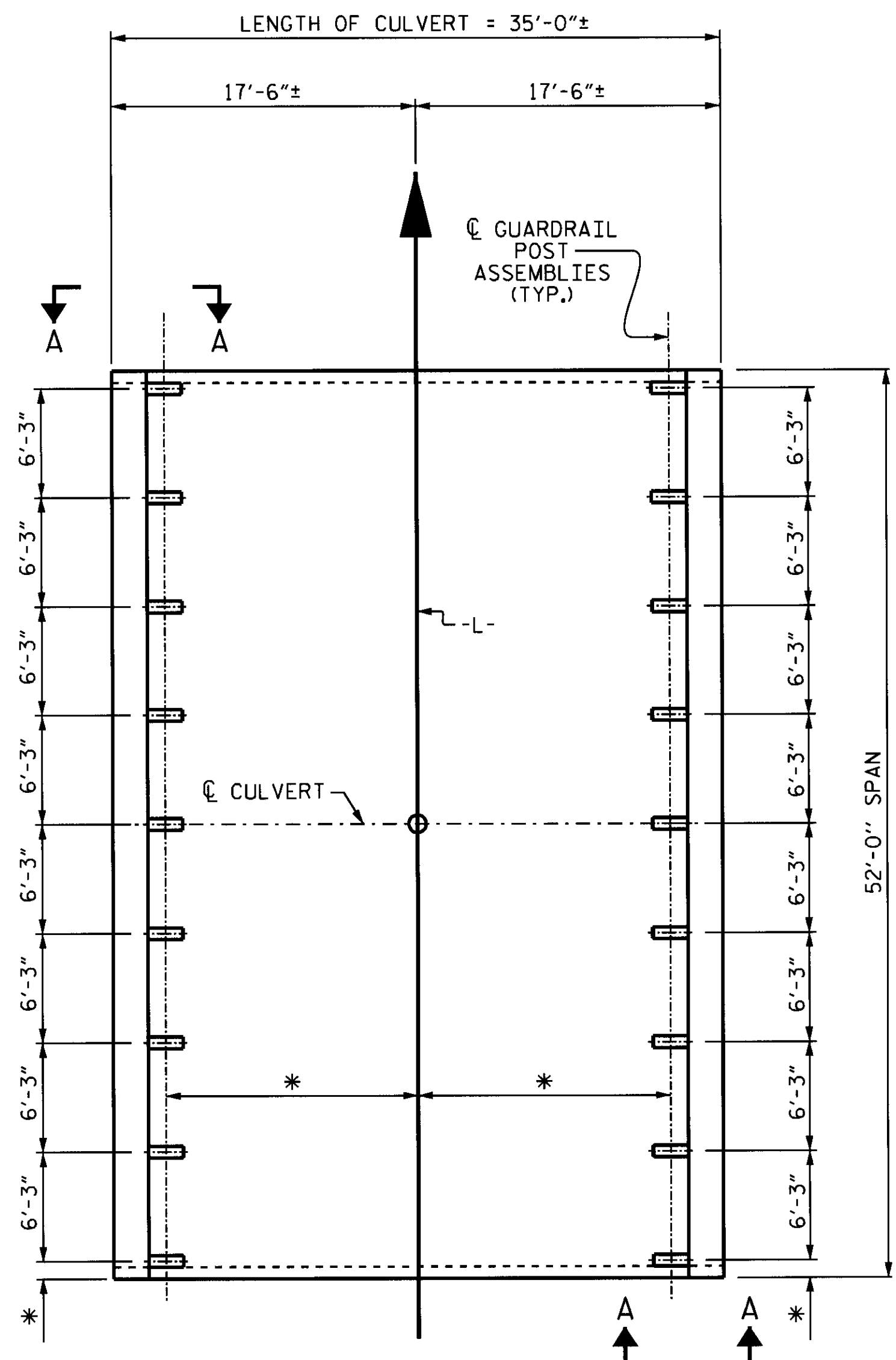
SEE TMP 2 FOR SPECIAL NOTE  
ON EXISTING PARAPET REMOVAL

SEE SHEET 4 FOR SPECIAL NOTE  
ON FORM REMOVAL AND  
BACKFILL OPERATIONS



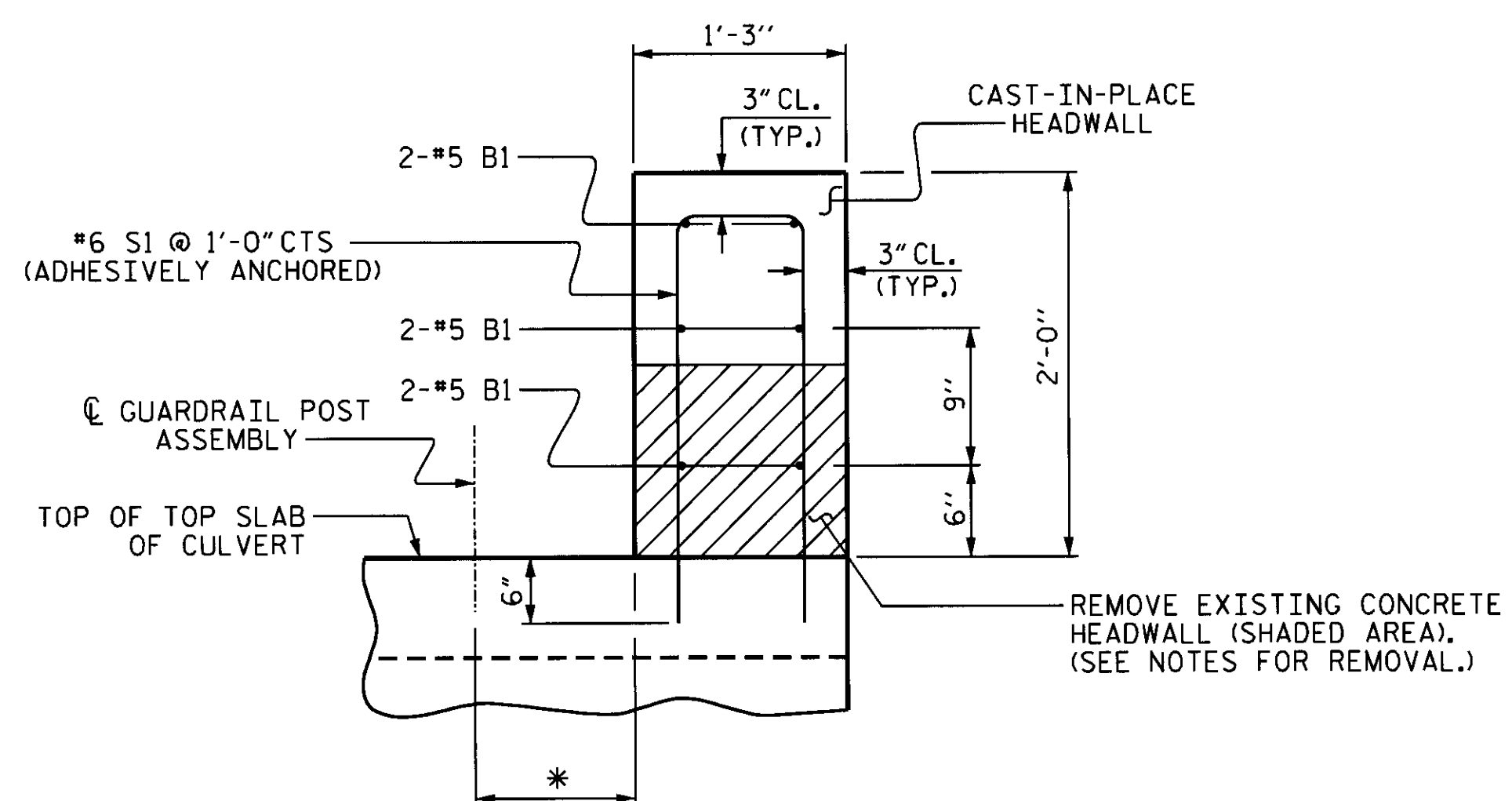
T	AGGREGATE SHOULDER BORROW
<b>ROCK PLATING DETAIL AND TYPICAL SECTION</b>	
DIVISION 05 GRANVILLE COUNTY	
REVISIONS	INT. DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT	
SCALE: NTS	DATE: 6 FEB 2014
PREPARED BY: CAH	
REVIEWED BY: BJU	





**PLAN OF CULVERT GUARDRAIL POST SPACING**

\* THIS DIMENSION TO BE DETERMINED BY THE ENGINEER.



**SECTION THRU HEADWALL**

RIGHT SIDE SHOWN, LEFT SIDE SIMILAR.  
\* THIS DIMENSION TO BE DETERMINED BY THE ENGINEER.

ASSEMBLED BY : E. I. OMILE	DATE : 10/22/12
CHECKED BY : P. K. NEWTON	DATE : 10/22/12
DRAWN BY : FCJ 6/88	REV. 7/10/01 LES/RDR
CHECKED BY : ARB 6/88	REV. 5/7/03 RWW/JTE
	REV. 5/1/06 TLA/GM

13-MAR-2014 10:58  
S:\DPC2\Ting\Div\_ReHob\NC56Culver+SF4905C\_FINAL.dgn  
pknewton

**NOTES**

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE 1" Ø AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

ALL GUARDRAIL ATTACHMENTS TO THE CULVERT SHALL BE MADE USING ADHESIVELY ANCHORED ANCHOR BOLTS. LEVEL TWO FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 1" Ø BOLT IS 21.8 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

PAYMENT FOR GUARDRAIL POST ASSEMBLY IS INCLUDED IN THE GUARDRAIL PAY ITEM.

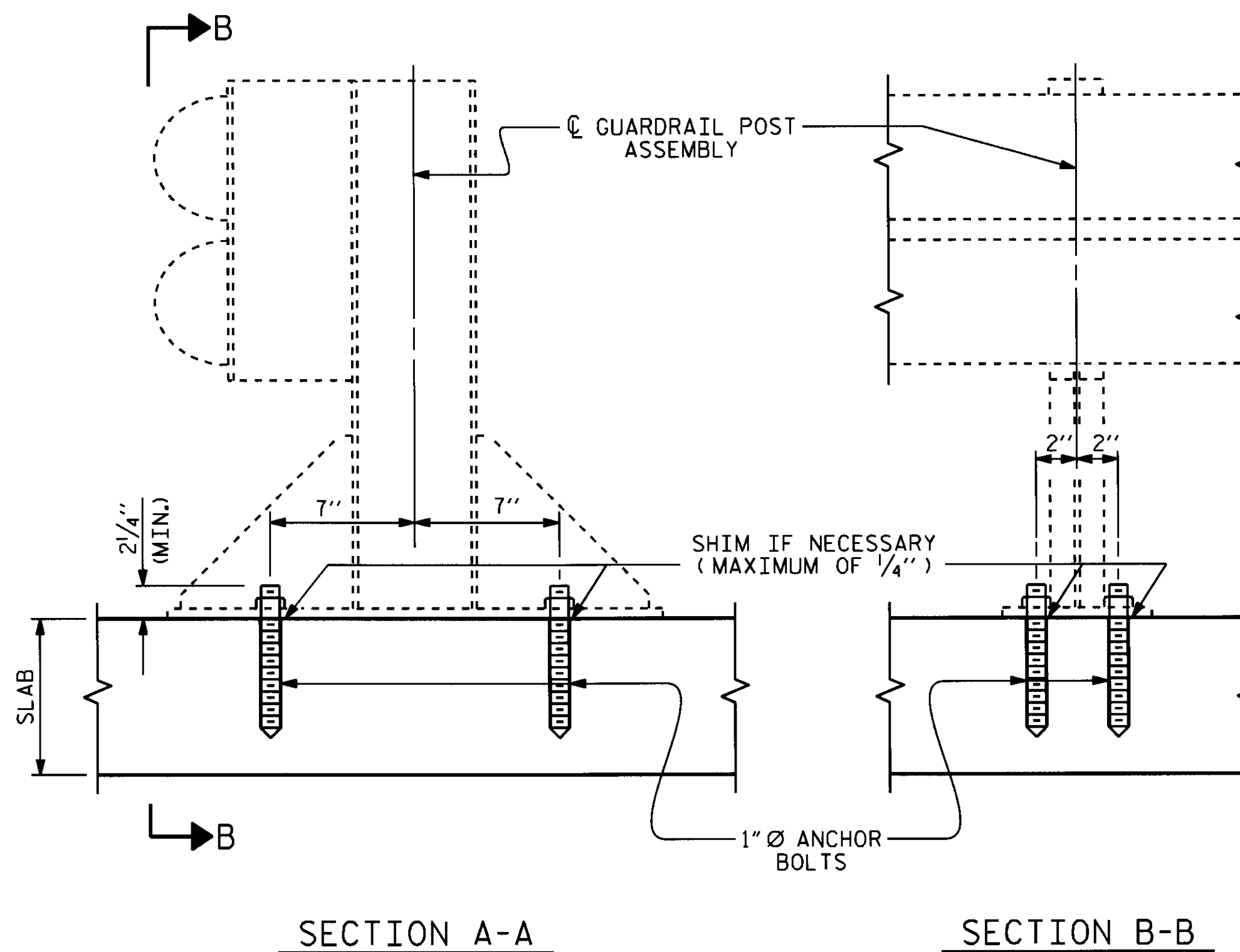
FOR GUARDRAIL POST ASSEMBLY DETAILS, SEE ROADWAY STANDARD DRAWING No. 862.03, SHEET 7 OF 7.

INSTALL #6 S1 BARS IN THE EXISTING SLAB USING AN ADHESIVE ANCHORING SYSTEM. THE YIELD LOAD OF THE BARS IS 26.4 KIPS. LEVEL ONE FIELD TESTING OF THE ANCHORING SYSTEM IS REQUIRED. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SECTION 420-13 OF THE STANDARD SPECIFICATIONS.

CLASS AA CONCRETE SHALL BE USED FOR THE CAST-IN-PLACE HEADWALL.

UPON REMOVAL OF EXISTING HEADWALLS, ANY REINFORCING STEEL WHICH IS EMBEDDED IN THE TOP SLAB OF THE CULVERT SHALL BE RETAINED, CLEANED, AND FREE OF RUST TO THE SATISFACTION OF THE ENGINEER.

UPON REMOVAL OF EXISTING HEADWALLS, ANY DAMAGE TO THE EXISTING CULVERT SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR SUCH REPAIRS.



**SECTION A-A**

**SECTION B-B**

**BILL OF MATERIAL**

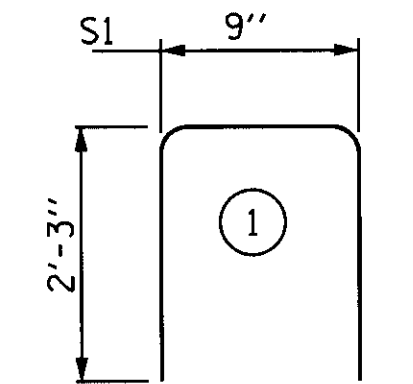
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#5	STR	51'-8"	647
G1	6	#8	STR	51'-8"	828
S1	104	#6	1	5'-3"	820

REINFORCING STEEL 2,295 LBS

CLASS AA CONCRETE 9.6 C.Y.

GUARDRAIL POST ASSEMBLY No. 18

**— BAR TYPES —**



BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. SF-4905C

GRANVILLE COUNTY

STATION: \_\_\_\_\_

REHABILITATE CULVERT \* CO08

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**ANCHORAGE DETAILS  
FOR GUARDRAIL POSTS  
AND  
REHABILITATION  
OF HEADWALLS**

PROFESSIONAL SEAL  
ENGINEER  
KOREY NEWTON  
3/13/2014

REVISIONS						SHEET NO. 2-A
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



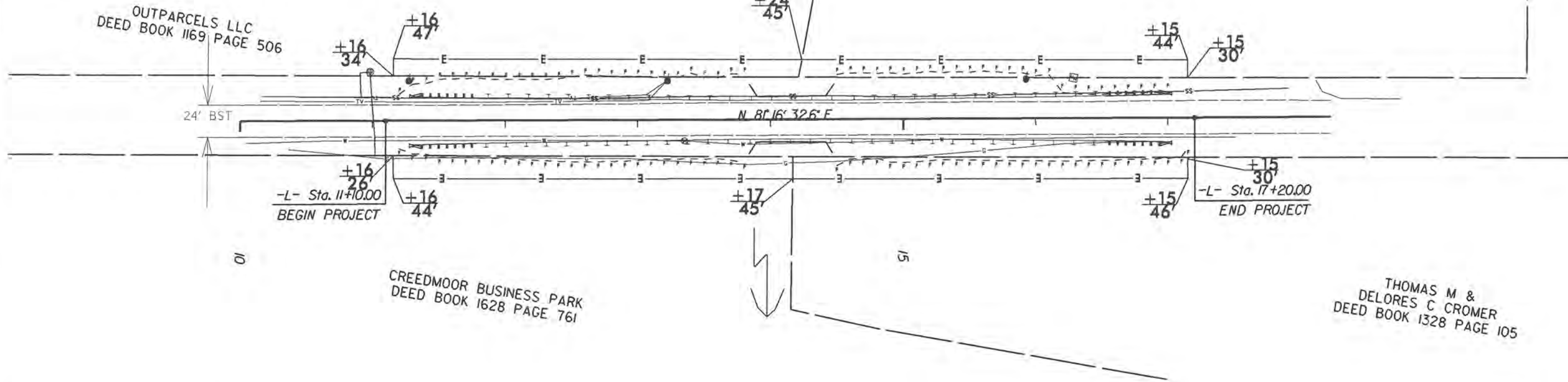
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HOW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS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

NAD 83 SENS 2007

ROBERTSON CREEK

NOTE: IF THE SHOULDERS ARE SEEDED AND MULCHED WITHIN 48 HOURS, NO EROSION CONTROL DEVICES WILL BE REQUIRED.

SHIRLEY A &  
RICKY DANIEL PEACE  
DEED BOOK 1374 PAGE 337



"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
G = GATING IMPACT ATTENUATOR TYPE 350.  
NG = NON-GATING IMPACT ATTENUATOR TYPE 350.

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM CL	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS							
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	XII	CAT-1	VI MOD	BIC	AT-1						EA	G	NG				
-L-	11+28.02	13+90.52	LT.	262.50					17	10																									
-L-	11+27.84	13+90.34	RT.	**262.50					17	10	50			1																					
-L-	14+40.52	17+03.02	LT.	262.50					17	10																									
-L-	14+40.34	17+02.84	RT.	**262.50					17	10	50			1																					
-L- ON CULVERT	13+90.52	14+40.52	LT.	**50																														** POST SPACING OF 6' 3" FROM CL OF CULVERT	
-L- ON CULVERT	13+90.34	14+40.34	RT.	**50																														** POST SPACING OF 6' 3" FROM CL OF CULVERT	
PROJECT TOTALS				1150																															
DEDUCTIONS FOR ANCHORS 4 GRAU @ 50				-200																															
GRAND TOTAL				950																															

\*\* NOTE: THE STRUCTURE MOUNTED GUARDRAIL (ROADWAY STANDARD 862.03 SHEET 7 OF 7) WILL BE PAID AS PER THE STANDARD PAY ITEM FOR STEEL BEAM GUARDRAIL, NO ADDITIONAL COMPENSATION WILL BE PROVIDED.

CONTRACTOR IS RESPONSIBLE TO DETERMINE HOW MANY GUARDRAIL POST ANCHORS ARE REQUIRED TO COMPLETE INSTALLATION.

GUARDRAIL TO BE PLACED PRIOR TO REMOVAL OF PARAPET. (SEE SPECIAL NOTE ON TMP SHEET 2)

\*\*\*NOTE: THE CLEAR SPAN GUARDRAIL (ROADWAY STANDARD 862.01 SHEET 10 OF 12) WILL BE PAID AS PER THE STANDARD PAY ITEM FOR STEEL BEAM GUARDRAIL, NO ADDITIONAL COMPENSATION WILL BE PROVIDED.

SHOULD IT BE DEEMED THAT EITHER ONE OR BOTH OF THE CLEAR SPAN GUARDRAIL SECTIONS ARE NOT REQUIRED, THE CONTRACTOR WILL INSTALL STEEL BEAM GUARDRAIL AND WILL BE PAID AS PER THE STANDARD PAY ITEM FOR STEEL BEAM GUARDRAIL, NO ADDITIONAL COMPENSATION WILL BE PROVIDED.

REFER TO UTILITY PLAN FOR CLEAR SPAN LOCATIONS AND AS DIRECTED BY THE ENGINEER.

SPECIAL NOTE: AS SOON AS THE PROPOSED CONCRETE PARAPET REACHES 2400 PSI, CONTRACTOR IS TO REMOVE FORMS AND BACKFILL REMAINING AREA.

DIVISION FIVE DESIGN

*Ben Upshaw* P.E.  
SIGNATURE

**Guardrail Install**  
**NC 56 @ Roberson Creek**

DIVISION 05 GRANVILLE COUNTY

REVISIONS	INT.	DATE

SCALE: 40'=1" DATE: 25 FEB 2014

PREPARED BY: CAH  
REVIEWED BY: BJU  
REVIEWED BY:   
N.C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DIVISION FIVE DESIGN UNIT

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.		SHEET NO.
SF-4905C		TMP-1
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION
43467.1.1		PE

**TRANSPORTATION MANAGEMENT PLAN**  
**GRANVILLE COUNTY**

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-  
ROADWAY DESIGN UNIT-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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUM

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, INDEX OF SHEETS AND LEGEND
TMP-2	PROJECT NOTES

**LEGEND**

**GENERAL**

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. EXIST. PVMT.
- WORK AREA
- REMOVAL OF EXISTING PAVEMENT

**TRAFFIC CONTROL DEVICES**

- TYPE I BARRICADE
- TYPE II BARRICADE
- TYPE III BARRICADE
- CONE
- DRUM
- FLASHING ARROW PANEL (TYPE C)
- TYPE 'B' WARNING LIGHT
- STATIONARY SIGN
- PORTABLE SIGN
- WARNING FLAGS
- CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- POLICE
- FLAGGER

**PAVEMENT MARKINGS**

- CRYSTAL PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- CRYSTAL/RED PAVEMENT MARKER
- PAVEMENT MARKING SYMBOLS

**PROJECT: 43467**



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.		SHEET NO.
SF-4905C		TMP-2
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
43467.1.1		PE

**TRANSPORTATION MANAGEMENT PLAN**  
**WAKE COUNTY**

**PROJECT NOTES**

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

**TIME RESTRICTIONS**

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 56	MONDAY THRU FRIDAY 7AM TO 9AM & 4PM TO 6PM

**LANE AND SHOULDER CLOSURE REQUIREMENTS**

- B) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.  
  
WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

**PAVEMENT EDGE DROP OFF REQUIREMENTS**

G) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

H) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

I) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

**TRAFFIC CONTROL DEVICES**

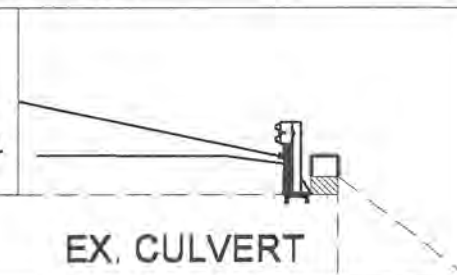
J) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

**SPECIAL NOTES**

1. CONTRACTOR WILL BE REQUIRED TO BACKFILL ANY OPEN TRENCHES AT THE END OF EACH DAY PRIOR TO OPENING LANES TO TRAFFIC.
2. CONTRACTOR SHALL COMPLETE THE FOLLOWING WORK PRIOR TO THE REMOVAL OF EXISTING PARAPET:

INSTALL THE PROPOSED GUARDRAIL, PLACE AN ACCEPTABLE TEMPORARY RETAINING WALL TO CONTAIN THE BACK FILL MATERIAL NEEDED FOR THE SHOULDER. (TEMPORARY RETAINING WALL MAY BE PLACED AGAINST THE INSIDE OF THE GUARDRAIL POSTS.) BACK FILL THE SHOULDER WITH INCIDENTAL STONE OR EARTH MATERIAL, THEN PROCEED WITH WORK ON THE PARAPETS.

INSTALL GUARDRAIL, PLACE AN ACCEPTABLE TEMPORARY RETAINING WALL AGAINST THE INSIDE OF THE GUARDRAIL POSTS. BACK FILL THE SHOULDER WITH INCIDENTAL STONE OR EARTH MATERIAL



EX. CULVERT

**PROJECT: 43467**

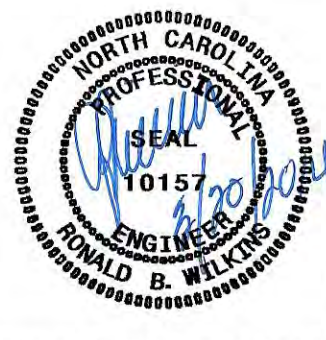


5/14/99

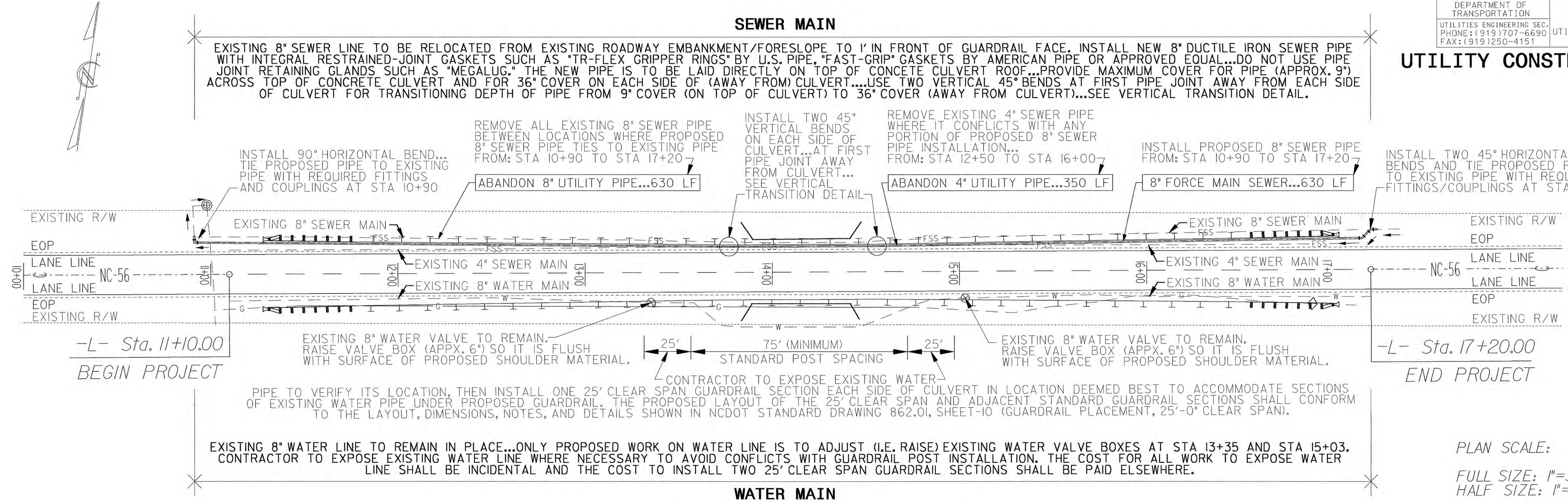
NOTE:

CONTRACTOR TO COORDINATE ANY WORK INVOLVING INTERRUPTIONS TO EXISTING WATER OR SEWER MAIN PIPES WITH UTILITY OWNER... CONTACT: STEVE COLEND...919-691-7214 (CITY OF CREEDMOOR, PUBLIC WORKS DIRECTOR)

# SF-4905C SEWER RELOCATION

PROJECT REFERENCE NO.	SHEET NO.
SF-4905C	UC-1
DESIGNED BY: EWH	
DRAWN BY: EWH	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

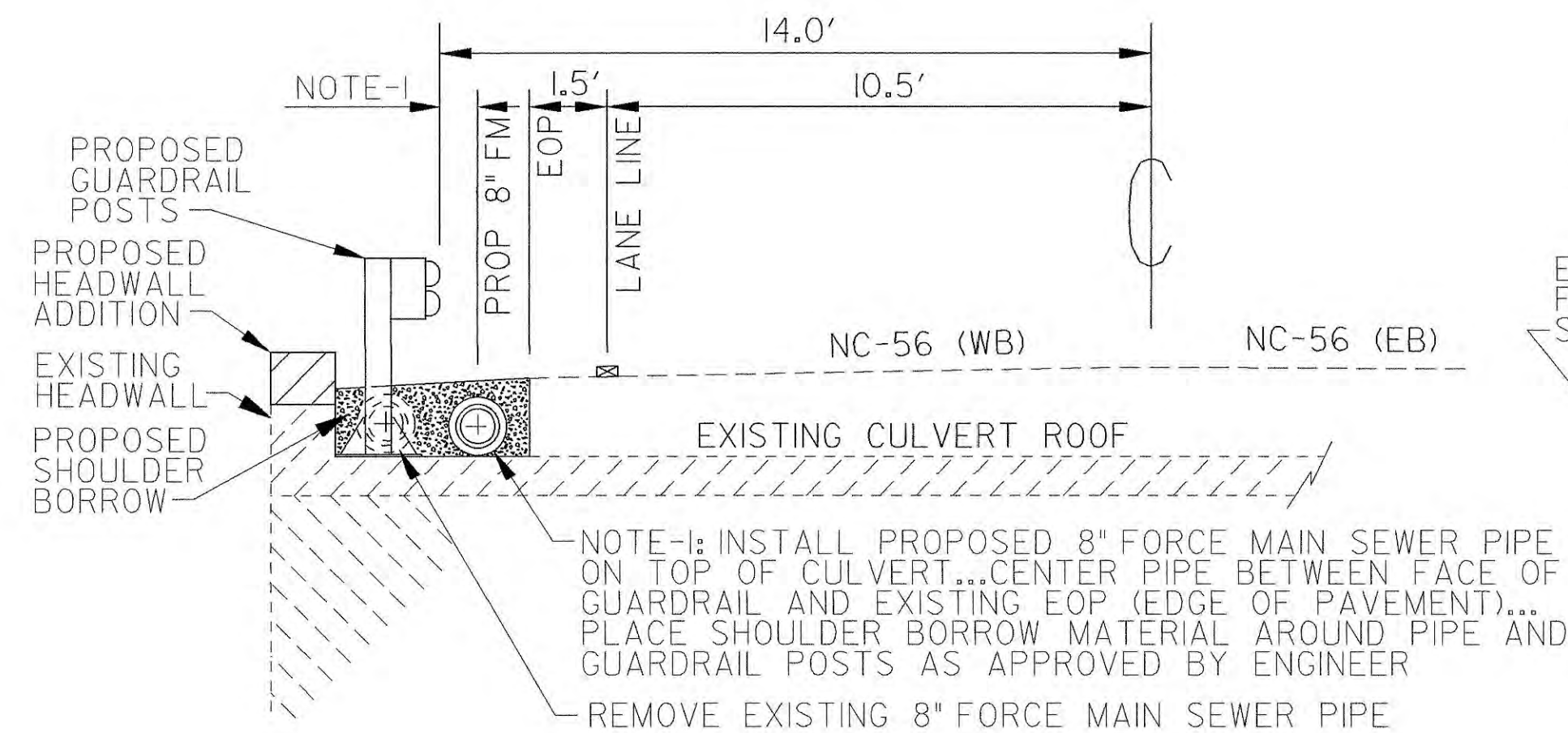
## UTILITY CONSTRUCTION



PLAN SCALE:  
FULL SIZE: 1"=30'  
HALF SIZE: 1"=60'

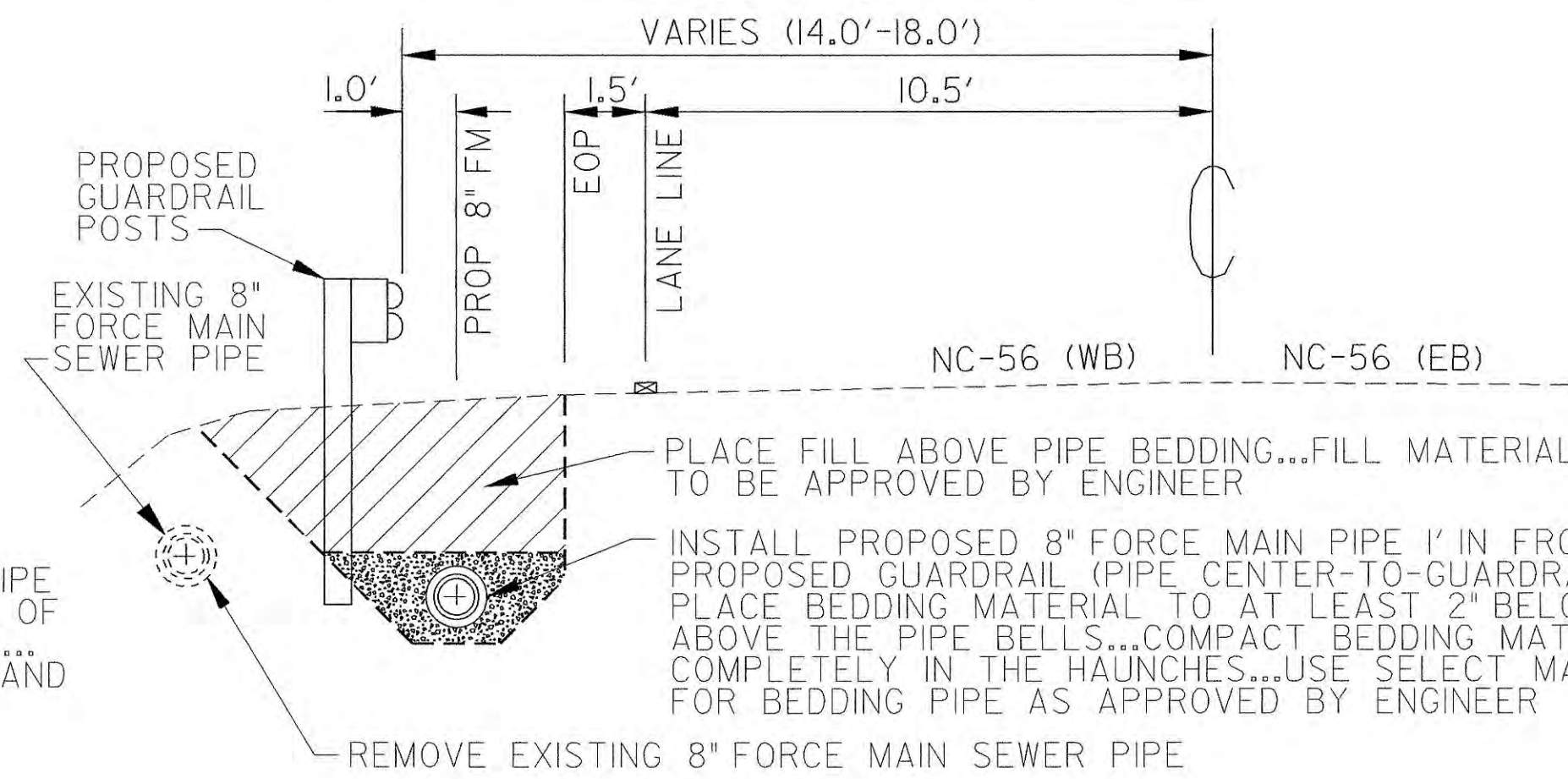
### TYPICAL CROSS-SECTION SHOWING PROPOSED 8" SEWER PIPE LOCATION OVER EXISTING CULVERT

APPLIES: FROM STA 13+90 TO STA 14+40



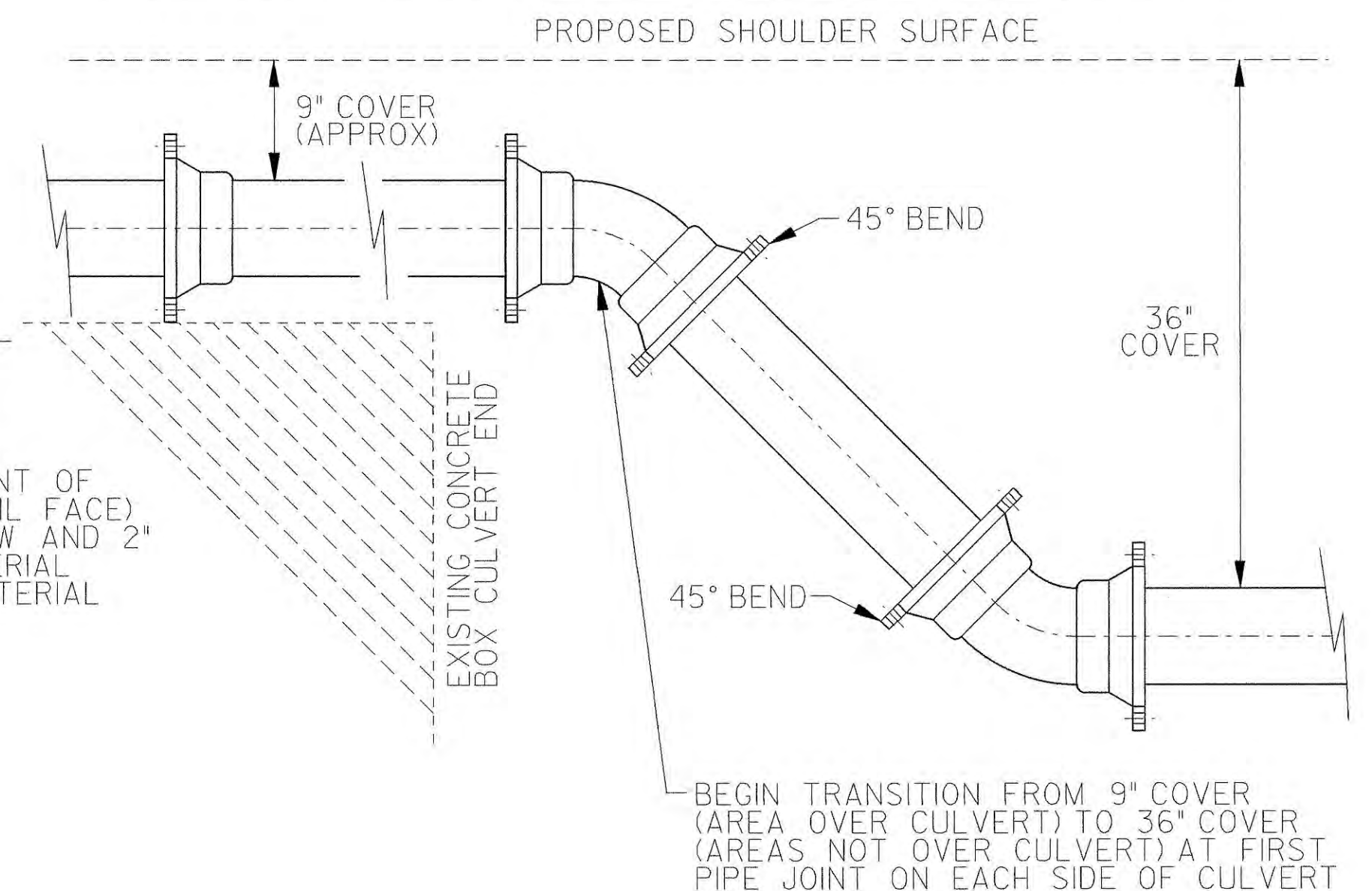
### TYPICAL CROSS-SECTION SHOWING PROPOSED 8" SEWER PIPE LOCATION EACH SIDE OF CULVERT

APPLIES: FROM STA 11+10 TO STA 13+90  
APPLIES: FROM STA 14+40 TO STA 17+20



### VERTICAL TRANSITION DETAIL PROPOSED 8" SEWER PIPE AT EACH END OF CULVERT

APPLIES: NEAR STA 13+80 (MIRROR DIAGRAM)  
APPLIES: NEAR STA 14+50 (ORIENT AS SHOWN)



20-MAR-2014 06:07 (08-29-13)\SF-4905C\_ewh\_main\_designn\_file\_REVISED\_03-19-14.dgn



PROJ. REFERENCE NO.	SHEET NO.
SF-4905C	X-0

## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

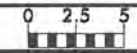
### CROSS-SECTION SUMMARY

Station	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)																			
1130	0	0																			
1140	0	1																			
1150	0	2																			
1160	0	2																			
1170	0	2																			
1180	0	2																			
1190	0	3																			
1200	0	4																			
1210	0	5																			
1220	0	5																			
1230	0	4																			
1240	0	4																			
1250	0	4																			
1260	0	5																			
1270	0	5																			
1280	0	5																			
1290	0	5																			
1300	0	6																			
1310	0	5																			
1320	0	4																			
1330	0	3																			
1340	0	3																			
1350	0	3																			
1360	0	3																			
1370	0	5																			
1380	0	10																			
1450	0	0																			
1460	0	5																			
1470	0	5																			
1480	0	4																			
1490	0	4																			
1500	0	5																			
1510	0	4																			
1520	0	4																			
1530	0	4																			
1540	0	4																			
1550	0	4																			
1560	0	4																			
1570	0	5																			
1580	0	6																			
1590	0	6																			
1600	0	6																			
1610	0	6																			
1620	0	6																			
1630	0	6																			
1640	0	4																			
1650	0	3																			
1660	0	2																			
1670	0	2																			
1680	0	2																			
1690	0	2																			
1700	0	3																			
		207																			

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".



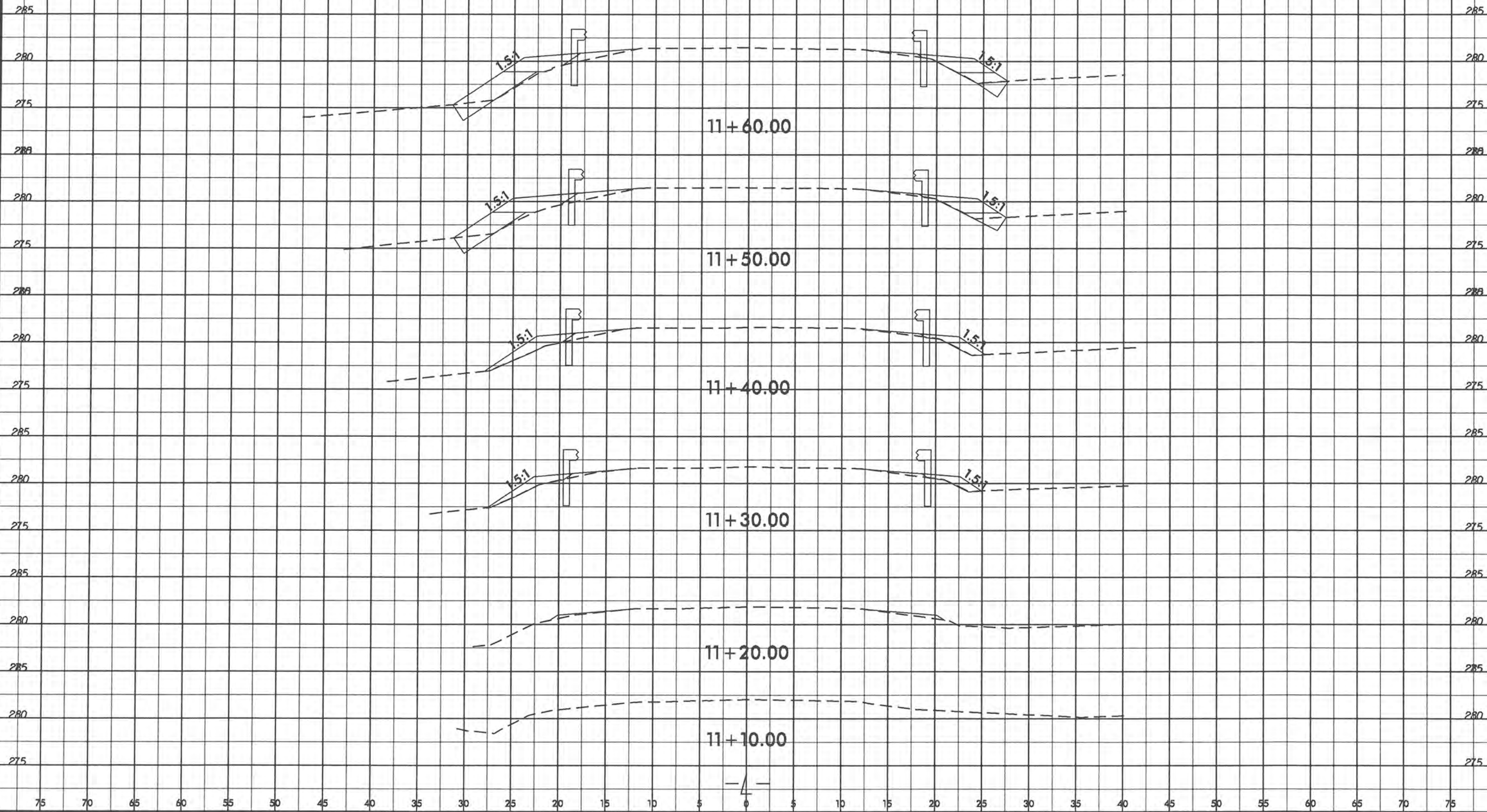
8/23/19



PROJ. REFERENCE NO.  
SF-4905C

SHEET NO.  
X-1

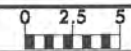
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



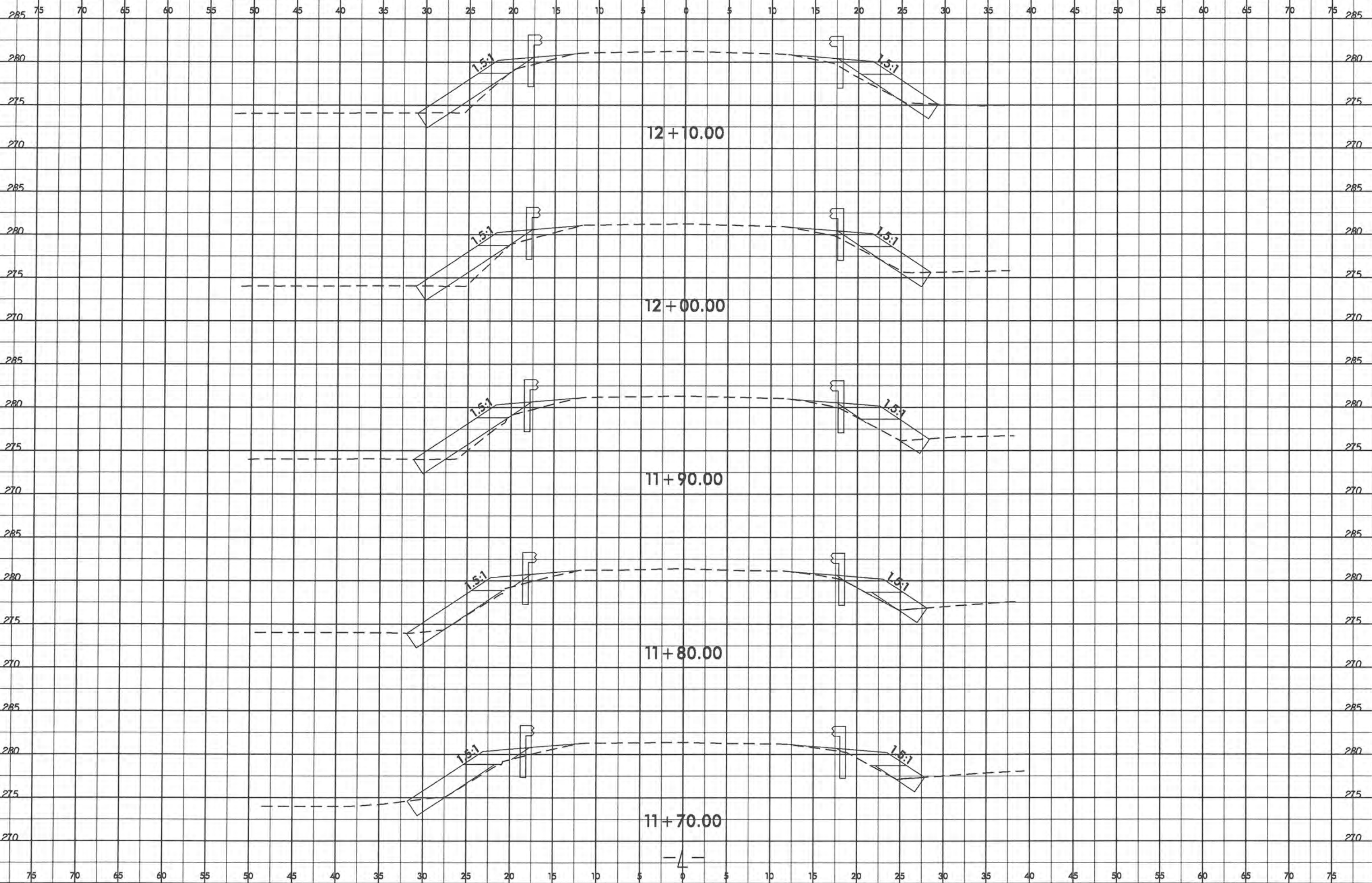
25-FEB-2014 14:37  
R:\Projects\CorridorModeling\_SF4905C\_RdJ.rpt.dgn  
USER:RAMESS

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99

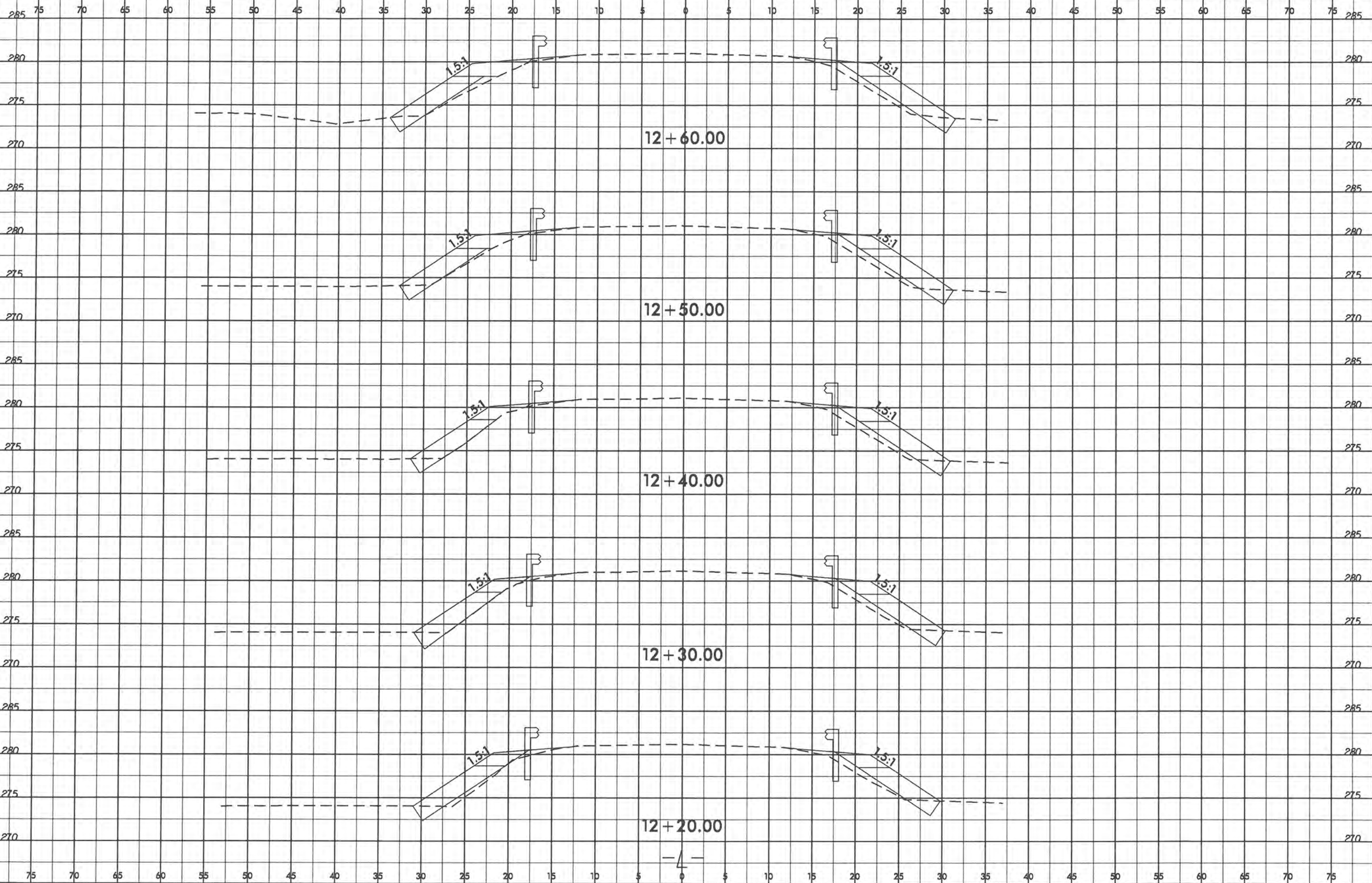
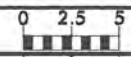


PROJ. REFERENCE NO.	SHEET NO.
SF-4905C	X-2



25-FEB-2014 14:37  
 R:\Roadway\Corridor-Modeling\SF-4905C-Rdy-rpl.dgn  
 \$\$\$USERNAME\$\$\$

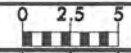








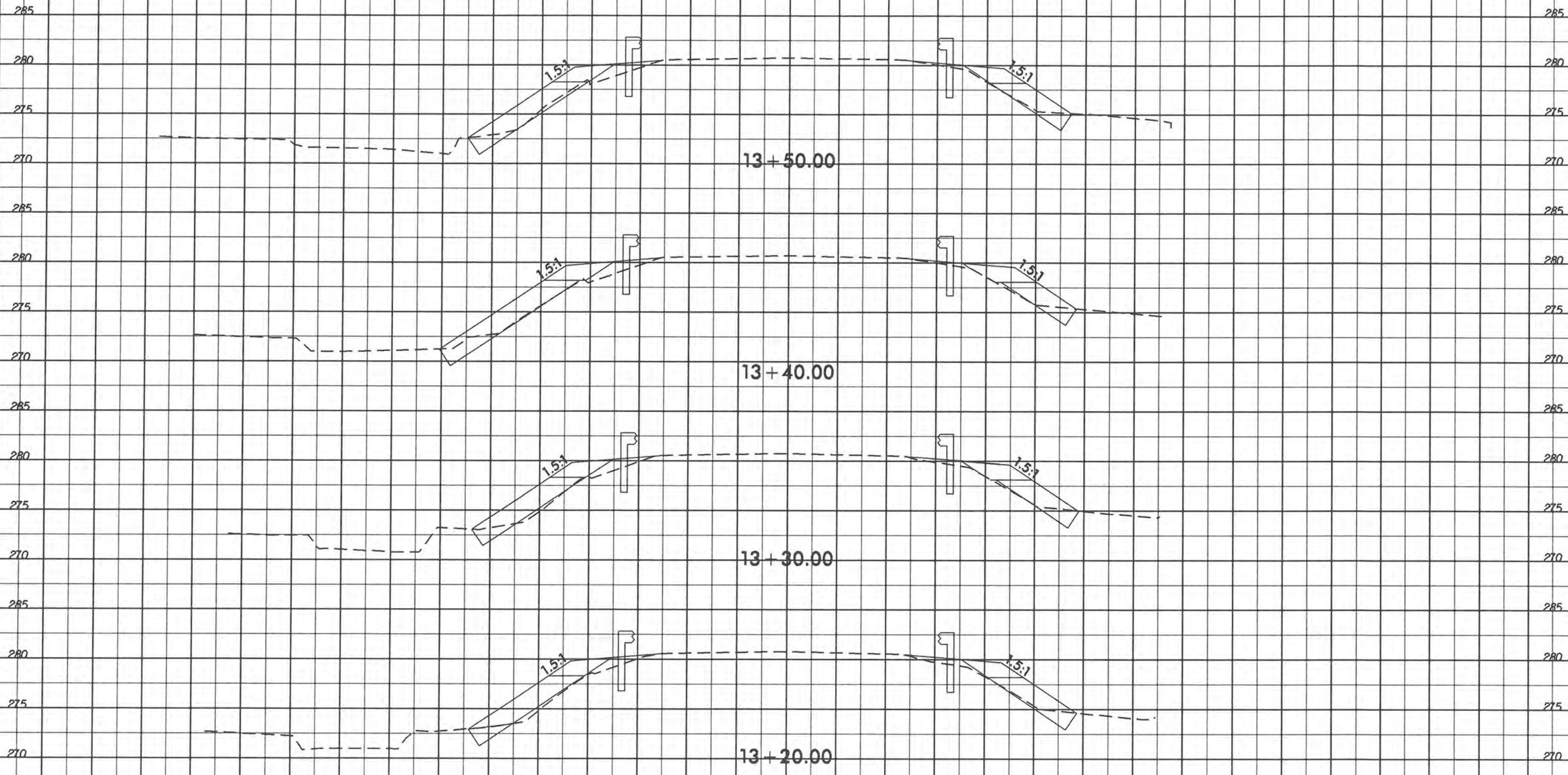
8/23/99



PROJ. REFERENCE NO.  
SF-4905C

SHEET NO.  
X-5

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

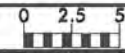


-4-

25-FEB-2014 14:37  
R:\GIS\BROW\Corr\Corr-Made\img\SF4905C\_Rdy\_xpl.dgn  
39393SERNAME\$88\$



B:23/99



PROJ. REFERENCE NO.  
SF-4905C

SHEET NO.  
X-6

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

285 285

280 280

275 275

270 270

14 + 50.00

285 285

280 280

275 275

270 270

13 + 80.00

285 285

280 280

275 275

270 270

13 + 70.00

285 285

280 280

275 275

270 270

13 + 60.00

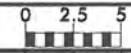
265 265

-4-

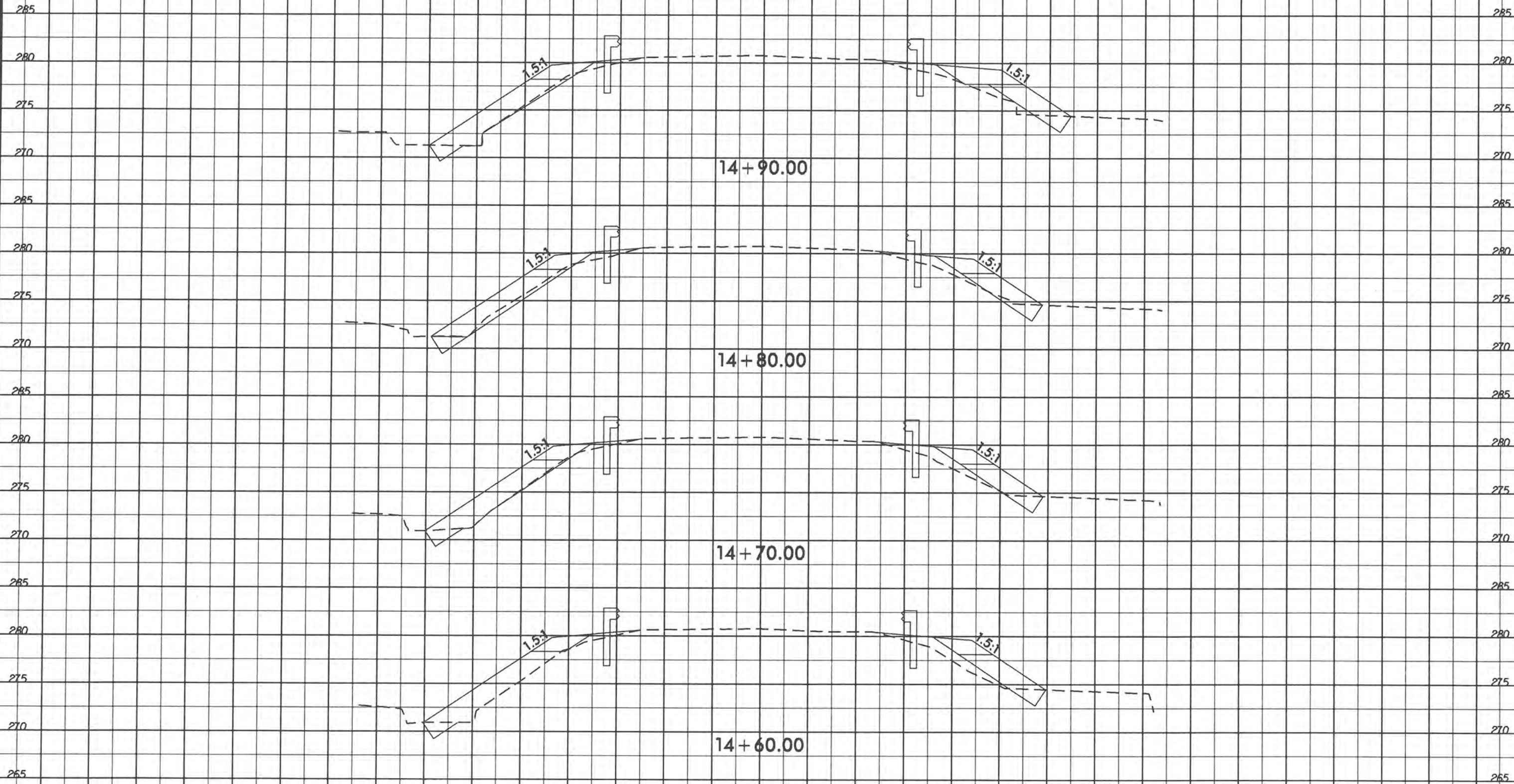
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

25-FEB-2014 14:37  
R:\Roadway\Corridor Modeling\SF-4905C\_Rdly\_xp1.dgn  
3388 USER:RAMESES



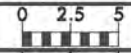


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

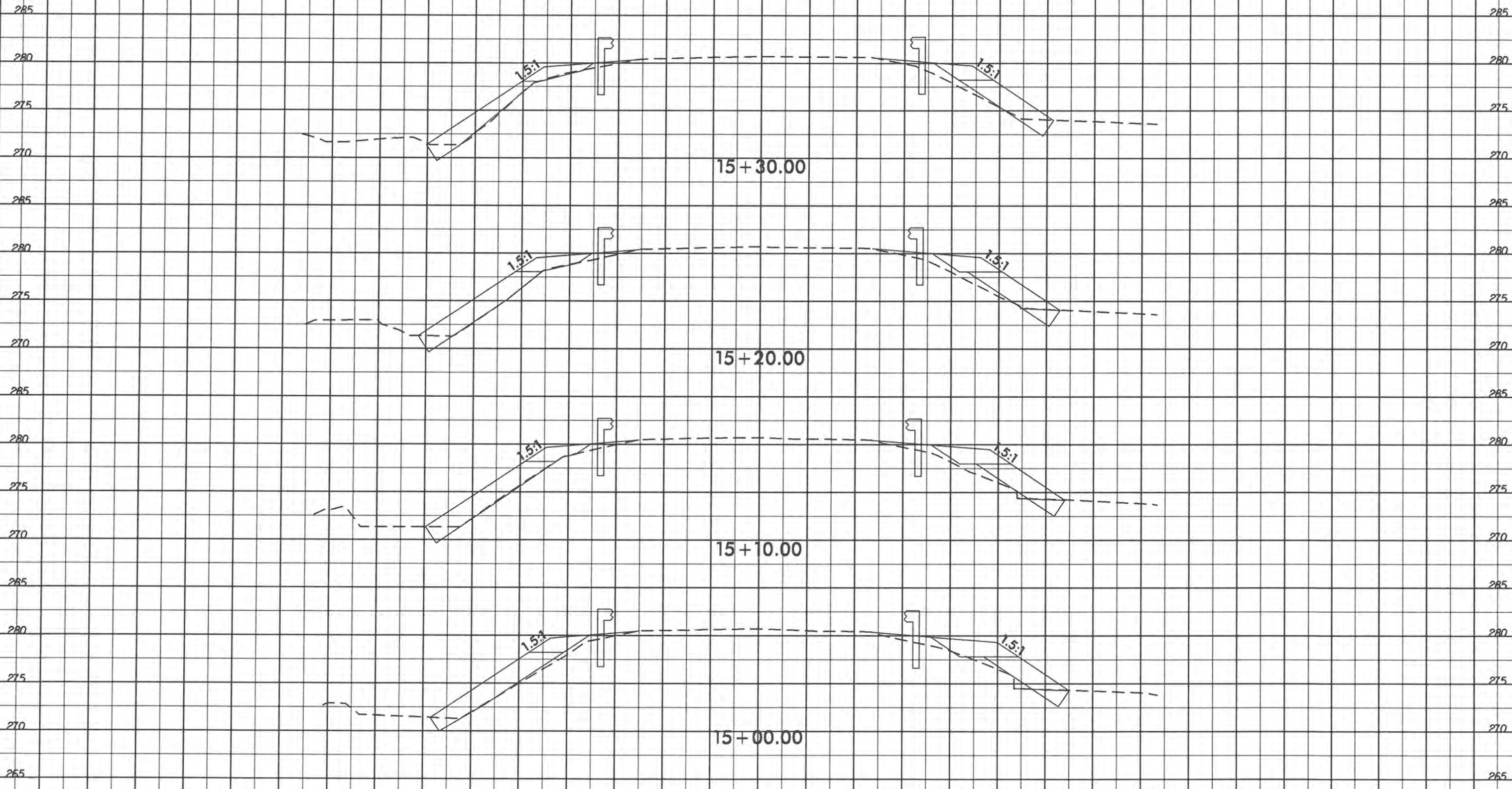
8/23/99



PROJ. REFERENCE NO.  
SF-4905C

SHEET NO.  
X-8

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

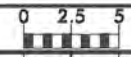


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

25-FEB-2014 14:37  
R:\GIS\SRM\Copri\3d-Modeling\SF4905C\_Rdy\_xpl.dgn  
2005SERVING

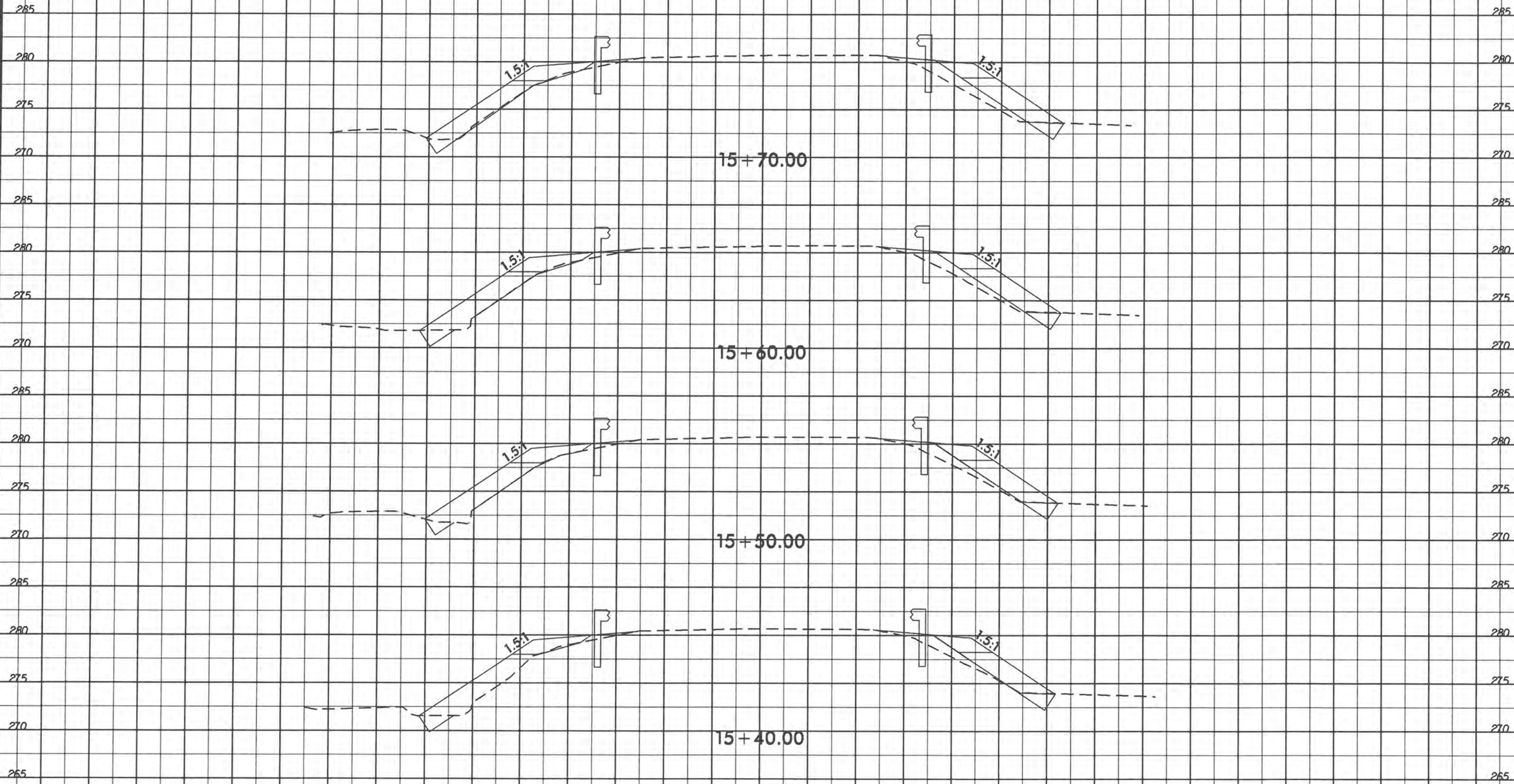


8/23/99



PROJ. REFERENCE NO.	SHEET NO.
SF-4905C	X-9

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



-4-

25-FEB-2014 14:37  
 R:\PROJECTS\4905C\Drawings\4905C-X-9.dwg  
 \$USER\$

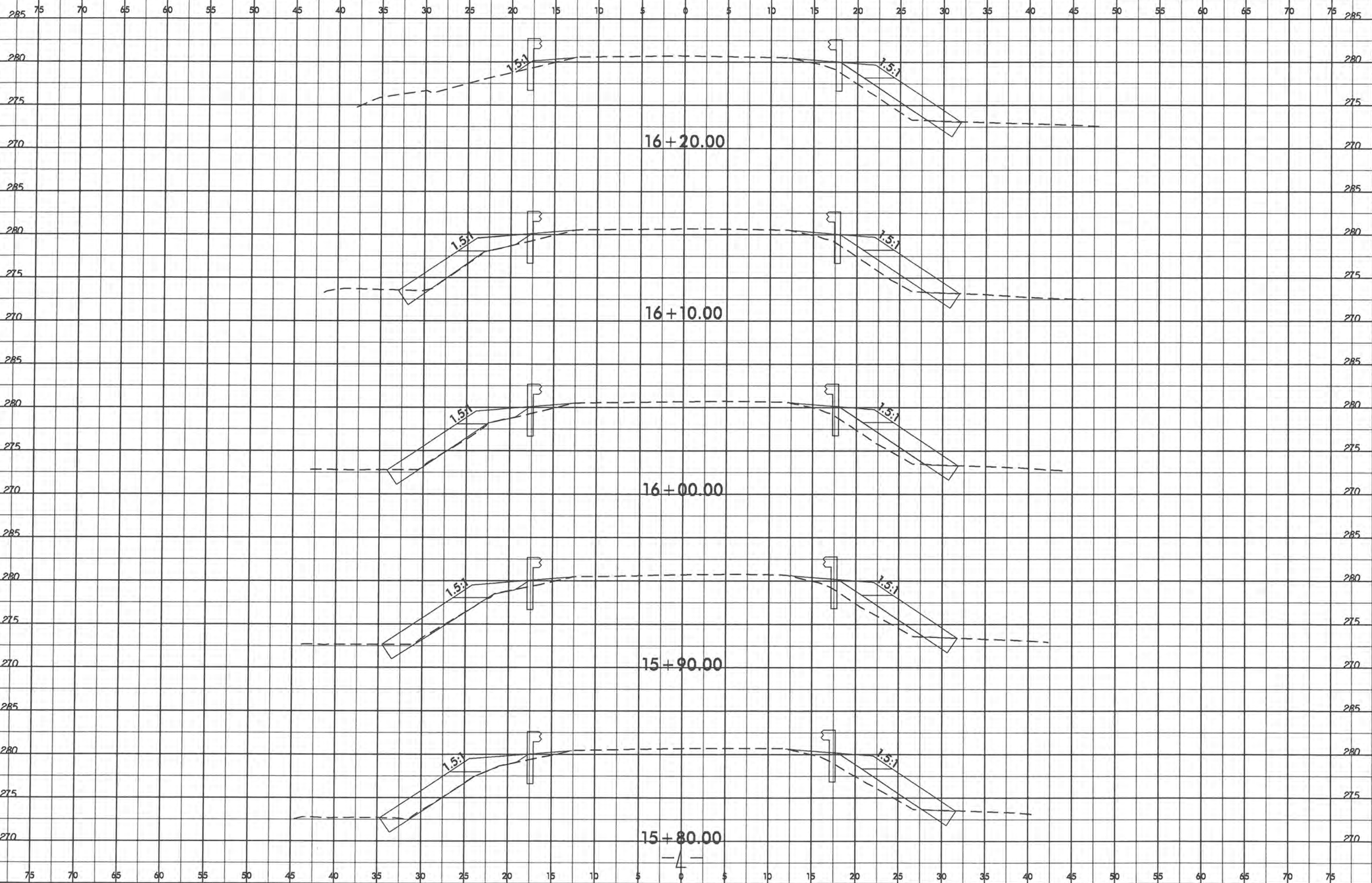
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

8/23/99



PROJ. REFERENCE NO.  
SF-4905C

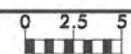
SHEET NO.  
X-10



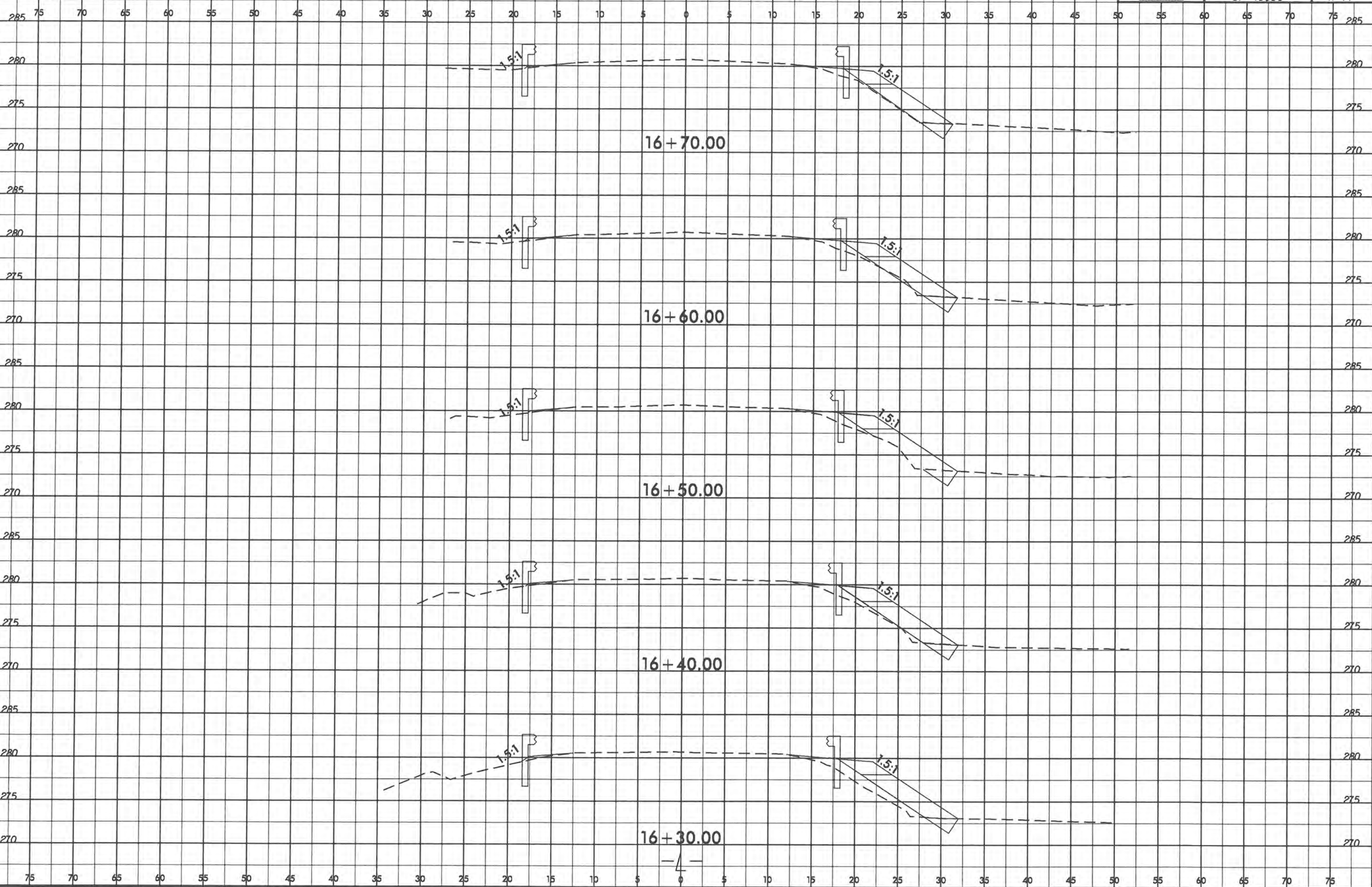
25-FEB-2014 14:37  
R:\PROJECTS\SF-4905C-Rdy...xp1.dgn  
\$USER\$



B723/99

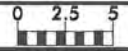


PROJ. REFERENCE NO.	SHEET NO.
SF-4905C	X-11



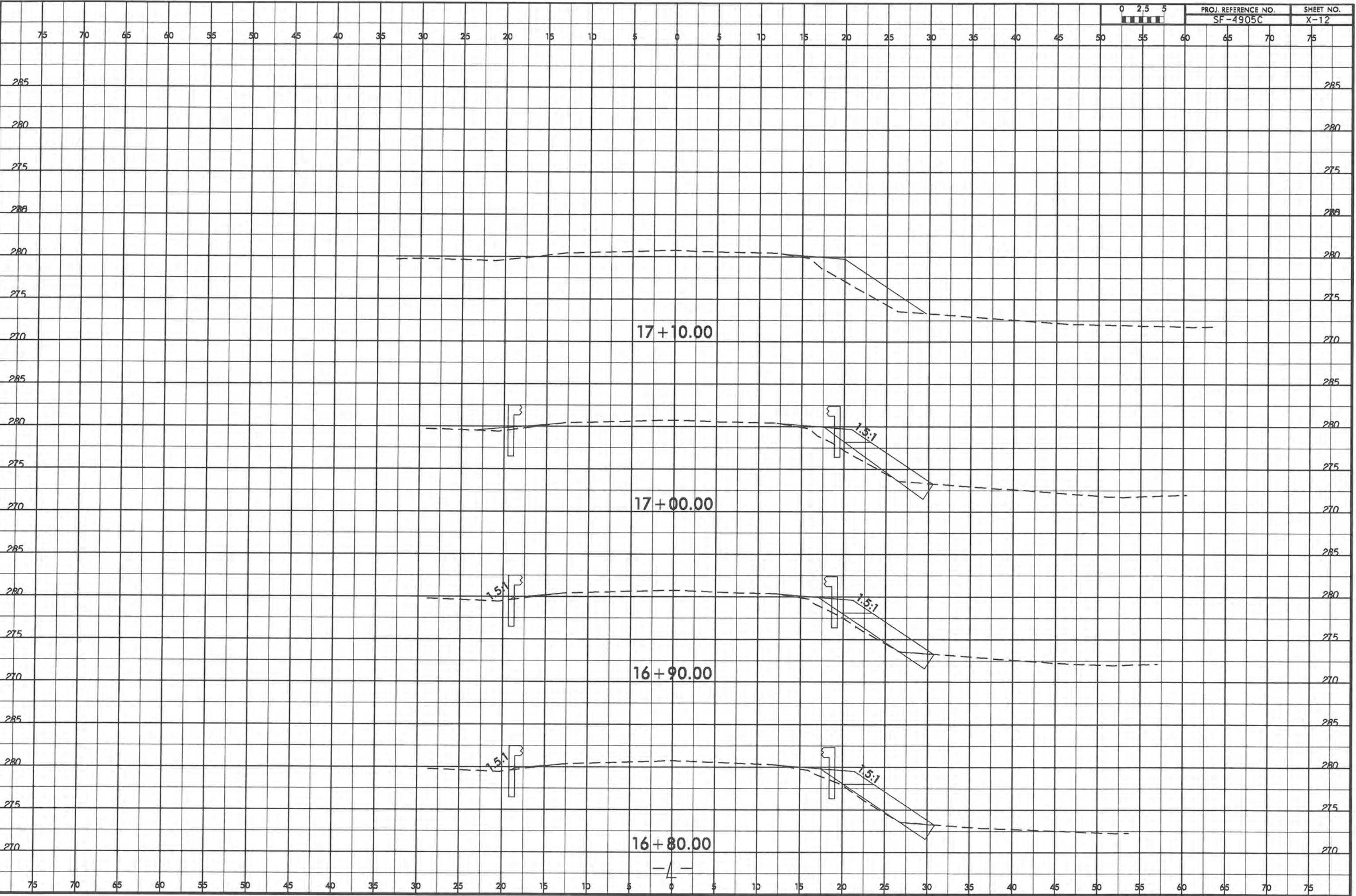
25-FEB-2014 14:37  
 R:\PROJECTS\SF 4905C\Drawings\SF 4905C\_Rdy\_xpl.dgn  
 USER:RMB

8/23/09



PROJ. REFERENCE NO.  
SF-4905C

SHEET NO.  
X-12



25-FEB-2014 14:41  
C:\Users\jgarcia\Documents\Projects\25-FEB-2014\25-FEB-2014.dwg  
25-FEB-2014 14:41