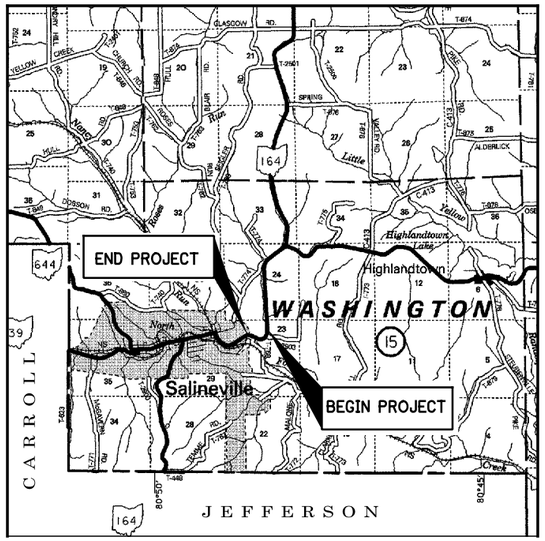
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

COL-39-2.80

WASHINGTON TOWNSHIP
COLUMBIANA COUNTY



LOCATION MAP

LATITUDE: 40°37'24" LONGITUDE: 80°50'03"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED
INTERSTATE & DIVIDED HIGHWAY
UNDIVIDED STATE & FEDERAL ROUTES
OTHER ROADS

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

OIL & GAS PRODUCERS PROTECTIVE
SERVICE CALL: **1-800-925-0988**

INDEX OF SHEETS:

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PROJECT DESCRIPTION

CONSTRUCTION OF COL-39-2.80
EMERGENCY SLOPE REPAIR AND ROADWAY SHIFT

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: NA
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: NA
NOTICE OF INTENT EARTH DISTURBED AREA: NA

2013 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

STATE OF OHIO
SCOTT BOEHM
E-66395
REGISTERED
PROFESSIONAL ENGINEER

PLAN PREPARED BY:

HDR ENGINEERING, INC.
9987 CARVER ROAD, SUITE 200
CINCINNATI, OHIO 45242
513-984-7500

DESIGN DESIGNATION

CURRENT ADT (2014)	2300
DESIGN YEAR ADT (2034)	2600
DESIGN HOURLY VOLUME (2034)	xxx
DIRECTIONAL DISTRIBUTION	xx%
TRUCKS (24 HOUR B&C)	10%
DESIGN SPEED	55 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: RURAL MINOR ARTERIAL	
NHS PROJECT	NO

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
LANE WIDTH	3-16-2015	2
SHOULDER WIDTH	3-16-2015	2
HORIZONTAL CURVATURE	3-16-2015	15,16
STOPPING SIGHT DISTANCE	3-16-2015	15
SUPERELEVATION RATE	3-16-2015	16

ENGINEER'S SEAL:

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-2.5	7/19/13		MT-96.11	7/18/14		800	1/21/2015	
BP-3.1	7/18/14		MT-96.20	7/19/13				
			MT-97.20	7/18/14				
MGS-1.1	7/19/13		MT-101.70	1/7/14				
MGS-2.1	7/19/13		MT-101.90	7/18/14				
MGS-3.1	7/18/14		MT-105.10	7/19/13				
RM-4.1	7/19/13							
RM-4.5	7/18/14							
RM-4.6	7/19/13							
HW-2.1	1/18/13							
DM-1.1	1/18/14							
DM-1.2	1/18/13							
DM-4.3	7/19/13							

SIGNATURES OF CONTRACTORS AND SUBCONTRACTORS INVOLVED IN TSEC PRACTICES.

NAME:
COMPANY:
SIGNATURE:

NAME:
COMPANY:
SIGNATURE:

NAME:
COMPANY:
SIGNATURE:

FEDERAL PROJECT NO. **NON-FEDERAL**

PID NO. **91398**

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT **NONE**

COL-39-2.80

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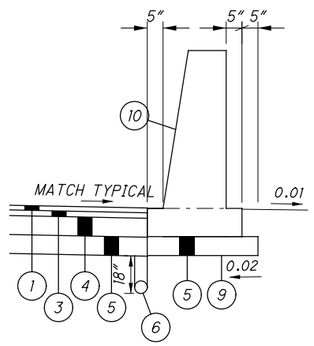


FIGURE 1

STA 16+50.00 TO STA 20+65.60

FOR FURTHER BARRIER INFORMATION
SEE SHEET 42

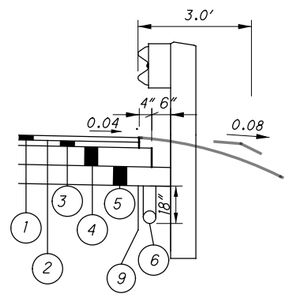
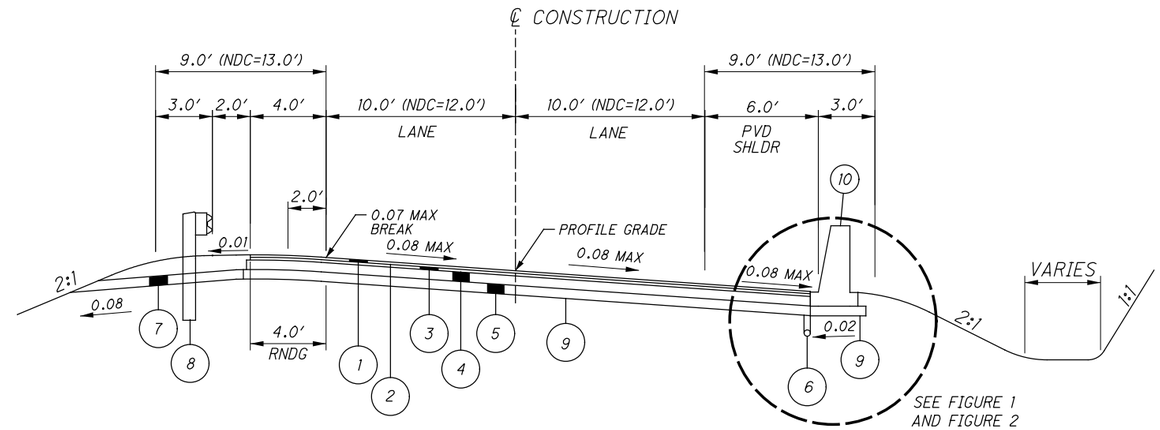


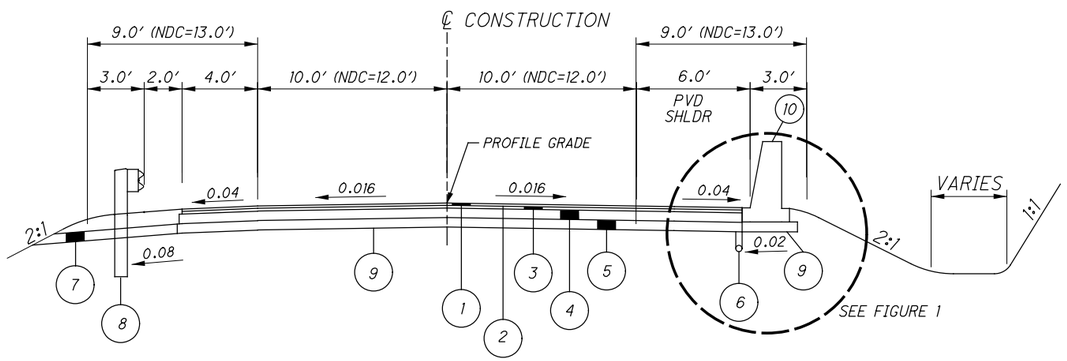
FIGURE 2

STA 15+75.43 TO STA 16+50.00
STA 20+65.60 TO STA 21+40.00



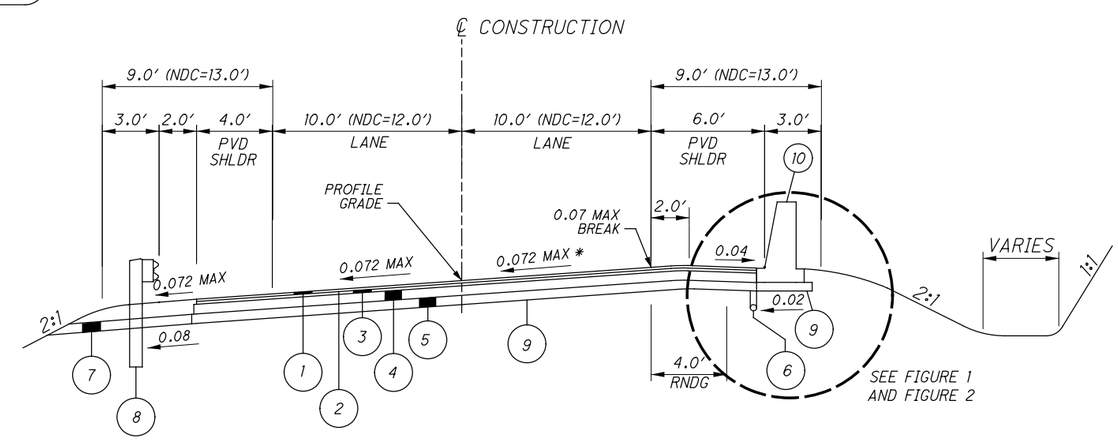
SUPERELEVATED SECTION - STATE ROUTE 39

STA. 12+86.42 TO STA.16+47.17



NORMAL SECTION - STATE ROUTE 39

STA. 16+47.17 TO STA. 18+10.09



SUPERELEVATED SECTION - STATE ROUTE 39

STA.18+10.09 TO STA. 23+99.07

* NDC=0.080 MAX.

LEGEND

1. ITEM 441 - 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22
2. ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (APPLIED AT 0.04 GAL/SY)
3. ITEM 441 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22
4. ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
5. ITEM 304 - 6" AGGREGATE BASE
6. ITEM 605 - 6" BASE PIPE UNDERDRAIN W/ FABRIC WRAP 707.31 OR 707.41
7. ITEM 605 - 6" AGGREGATE DRAINS
8. ITEM 606 - GUARDRAIL, TYPE MGS
9. ITEM 204 - SUBGRADE COMPACTION
10. ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN

CALCULATED
CHECKED

TYPICAL SECTIONS - SR 39

COL-39-2.80

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UTILITIES

ALL EXISTING UTILITIES HAVE BEEN SHOWN IN THE APPROXIMATE LOCATION ACCORDING TO THE BEST AVAILABLE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION TO VERIFY AND OBTAIN ACCURATE LOCATIONS OF SAID UNDERGROUND UTILITIES.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN IN AASHTO M 180. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 662 - CONCRETE BARRIER SINGLE SLOPE, TYPE D, AS PER PLAN

THESE ITEMS SHALL CONFORM TO THE STANDARD CONSTRUCTION DRAWINGS AND SPECIFICATIONS.

CONSTRUCT THE BARRIER WITH REINFORCEMENT AND BASE AS DETAILED ON CONCRETE BARRIER DETAILS, SHEET 46.

THE CONTRACTOR MAY USE STABILIZED CRUSHED AGGREGATE OR OTHER METHOD TO PROVIDE A STABLE AND LEVEL SURFACE FOR EQUIPMENT TO USE WHEN PERFORMING THE CONSTRUCTION OF THESE ITEMS.

UNLESS ITEMIZED SEPARATELY, ALL ACTIVITIES, INCLUDING REINFORCING STEEL, EXPANSION JOINTS, AND BACKFILL NECESSARY TO CONSTRUCT THESE ITEMS SHALL BE AT THE CONTRACT UNIT PRICE BID PER FOOT FOR ITEM 622, CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN AND PER EACH FOR ITEM 622, CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D, AS PER PLAN.

THESE ITEMS SHALL INCLUDE ALL LABOR, MATERIALS EQUIPMENT, AND INCIDENTALS NECESSARY TO PERFORM THE WORK.

ITEM 606 - ANCHOR ASSEMBLY, TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27.75 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

TEMPORARY TRAFFIC CONTROL GENERAL NOTES

1. PROCEDURES FOR MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES CURRENT EDITION, TEMPORARY TRAFFIC CONTROL MANUAL CURRENT EDITION AND STANDARD CONSTRUCTION DRAWINGS. WORK ON OR BEYOND THE SHOULDER SHALL BE IN ACCORDANCE WITH THE OMUTCD.

2. LOCATIONS OF ALL TRAFFIC CONTROL DEVICES SHOWN ON THE TEMPORARY TRAFFIC CONTROL PLAN ARE APPROXIMATE. FINAL LOCATION OF THE TRAFFIC CONTROL DEVICES ARE TO BE ESTABLISHED IN THE FIELD BY THE ENGINEER.

3. ANY EXISTING SIGNS OR DELINEATORS RELOCATED, REMOVED, OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AT HIS EXPENSE.

4. TWO-WAY RADIOS SHALL BE PROVIDED TO THE FLAGGERS WHEN THEY ARE OUT OF SIGHT OF EACH OTHER. WHEN WORK IS PERFORMED AT NIGHT WITH FLAGGERS, THE FLAGGER STATIONS SHALL BE ADEQUATELY ILLUMINATED PER MT 97.20.

5. ALL WORK AND TRAFFIC CONTROL DEVICES, SUCH AS PAVEMENT MARKINGS, SIGNS, DRUMS, BARRICADES, SHALL BE IN ACCORDANCE WITH CURRENT CONSTRUCTION MATERIAL SPECIFICATIONS (CMS) 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE CURRENT OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

6. CONTRACTOR SHALL TRIM TREES NORTH OF SR 164/39 EAST OF THE PROJECT AS NECESSARY FOR VISIBILITY OF THE TEMPORARY TRAFFIC SIGNAL DURING PHASES 1 AND 2.

7. FOR ALL TEMPORARY SIGNAL/FLASHER INSTALLATIONS OR DEVICES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE THROUGHOUT THE PROJECT DURATION.

8. CONTRACTOR MUST MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES.

THE CONTRACTOR SHALL CORRECT ALL OUTAGES OR MALFUNCTIONS WITHIN 24 HOURS. CONTRACTOR'S 24-HOUR EMERGENCY CONTACT (SHOWN TO THE RIGHT) WILL BE RESPONSIBLE FOR RESPONDING TO AND RESOLVING ALL OUTAGES OR MALFUNCTIONS.

THE CONTRACTOR SHALL DEPLOY FULL TRAFFIC CONTROL WHILE ANY SIGNAL IS OUT OF OPERATION.

ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ODOT ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN ONE HOUR AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION.

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF 1 TEN FOOT LANE OF ALTERNATING TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT OR COMPLETED PAVEMENT AND TEMPORARY TRAFFIC SIGNALS OR STOP CONTROL.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ODOT ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS SHOWN IN THE PLANS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

PRE-TIMED OPERATION OF WORK ZONE TRAFFIC SIGNAL

THE WORK ZONE SIGNAL CONTROL REQUIRED FOR THIS PROJECT SHALL BE PRETIMED AND OPERATE IN A MANNER SIMILAR TO THAT DESCRIBED IN SECTION 733.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE INITIAL CONTROLLER TIMING SHALL CONSIST OF
- 45 SECOND GREEN PHASES IN EACH DIRECTION
- 3 SECONDS OF YELLOW
- 40 SECONDS OF ALL RED

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS. THE APPROVED LIST IS AVAILABLE AT THE "ROADWAY STANDARDS: PROPRIETARY ROADSIDE SAFETY DEVICES" WEB PAGE ON THE OFFICE OF ROADWAY ENGINEERING WEBSITE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 622, PORTABLE CONCRETE BARRIER, 32", AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 32-INCH PORTABLE CONCRETE BARRIER (PCB) AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS, SEE SCD RM-4.1. PLEASE NOTE THAT SCD RM-4.1 WAS UPDATED 10-20-06 TO PROVIDE A PCB WHICH IS COMPATIBLE WITH NCHRP 350 CRITERIA.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE CONCRETE BARRIER, 32 INCH, AS PER PLAN.

ITEM 642-17 DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

SEQUENCE OF OPERATION NOTES

PHASE 1: 8+00 TO 21+00
CONSTRUCT NORTH SIDE OF RELOCATED SR 164/39 TO TOP OF INTERMEDIATE COURSE BETWEEN 8+00 AND 21+00, INCLUDING PERMANENT CONCRETE BARRIER.

PHASE 2: 8+00 TO 21+00
CONSTRUCT SOUTH SIDE OF RELOCATED SR 164/39 TO TOP OF INTERMEDIATE COURSE BETWEEN 8+00 AND 21+00.

PHASE 3: 21+00 TO 24+50
CONSTRUCT ENTIRE WIDTH OF RELOCATED SR 164/39 (EITHER IN PORTIONS OR AT ONCE) TO TOP OF INTERMEDIATE COURSE WHILE MAINTAINING ACCESS ALONG SR 164/39 AND TO RESIDENT DRIVEWAYS THROUGHOUT WORK ZONE USING FLAGGERS. THIS PHASE MAY BE DONE SIMULTANEOUSLY WITH PHASE 1 OR 2.

PHASE 4: 8+00 TO 24+50
CONTRACTOR SHALL PLACE 1 1/4" OF ASPHALT CONCRETE SURFACE COURSE WHILE MAINTAINING TRAFFIC ALONG SR 164/39.

WORK DESCRIPTION

1. CONTRACTOR IS TO INSTALL ALL PAVEMENT MARKINGS AS SHOWN IN MT-96.11. PASSING ZONE EAST OF THE PROJECT SHALL BE REMOVED BY ERADICATING THE EXISTING DASHED CENTERLINE AND REPLACING IT WITH A DOUBLE YELLOW CENTERLINE. CONTRACTOR SHALL RETURN PAVEMENT MARKINGS TO ORIGINAL CONDITION AT THE END OF THE PROJECT. ALL PAVEMENT MARKINGS SHALL BE RETROREFLECTIVE PAINT AS DESCRIBED IN THE OMUTCD.

2. CONTRACTOR SHALL COVER ANY EXISTING SIGNS THAT CONFLICT WITH METHOD OF MAINTAINING TRAFFIC.

3. DURING PHASES 1 & 2 WORK HOURS, CONTRACTOR SHALL USE FLAGGERS TO MAINTAIN TRAFFIC THROUGH THE WORK ZONE. DURING THIS TIME, ALL SIGNS PERTAINING TO THE TEMPORARY TRAFFIC SIGNALS SHALL BE COVERED IN ACCORDANCE WITH STANDARD SPECIFICATION 630.10.

4. DURING NON-WORK HOURS, CONTRACTOR SHALL USE TEMPORARY SIGNALS TO MAINTAIN TRAFFIC THROUGH THE WORK ZONE. DURING THIS TIME, ALL SIGNS PERTAINING TO THE FLAGGERS SHALL BE COVERED.

PROJECT CONTACT INFORMATION

THE RUHLIN COMPANY (CONTRACTOR) CONTACT INFORMATION:

24 HOUR EMERGENCY CONTACT:
CHRIS GOODYEAR 330-352-5580

NON-EMERGENCY CONTACTS:
ERIC COLLINS 330-414-2631
ROD WHITE 330-949-7094

ODOT CONTACT INFORMATION:

NICK SUSICH 330-204-2653

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS
	MT-96.11	7-18-2014			
	MT-96.20	7-19-2013			
	MT-97.20	7-18-2014			
	MT-101.70	1-7-2014			
	MT-101.90	7-18-2014			
	MT-105.10	7-19-2013			
					SPECIAL PROVISIONS

CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC
GENERAL NOTES

HDR ENGINEERING INC. 1100 SUPERIOR AVE. CLEVELAND, OHIO 44114 216.241.2046

COL-39-2.80

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REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	614 Workzone EdgeLine Class 1 (White)	614 Workzone Stop Line Class 1	614 WorkZone Centerline Class 1	614 Workzone Impact Attenuator	614 Special - Workzone Traffic Signal	614 Maintaining Traffic	622 Portable Barrier 32"
					MILE	FEET	MILE	EACH	EACH	LS	FEET
CL-1	6 - 7	3+00	8+00	CL			0.095				
EL-1	7 - 8	8+50	21+50	CL	0.24						
PB-1	7 - 8	8+50	21+50	CL							1,250
SL-1	7	8+20		RT		10					
SL-2	7	21+75		RT		10					
IA-1	7	8+50		RT				1			
IA-2	8	21-00		LT				1			
TS-1	7 - 8	8+00	21+00						1		
	10 - 11	8+00	21+00								
EL-2	10 - 11	8+50	21+50	RT	0.24						
EL-3	10 - 11	8+50	21+50	CL	0.24						
PB-2	10 - 11	8+50	21+50	CL							1,250
		1+00	38+00							1	
TOTALS					0.72	20	0	2	1		2,500

CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC SUBSUMMARY

COL-39-2.80

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HORIZONTAL SCALE IN FEET
0 10 50 100

CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PHASE ONE
STA. 1+00 TO STA. 6+00

COL-39-2.80

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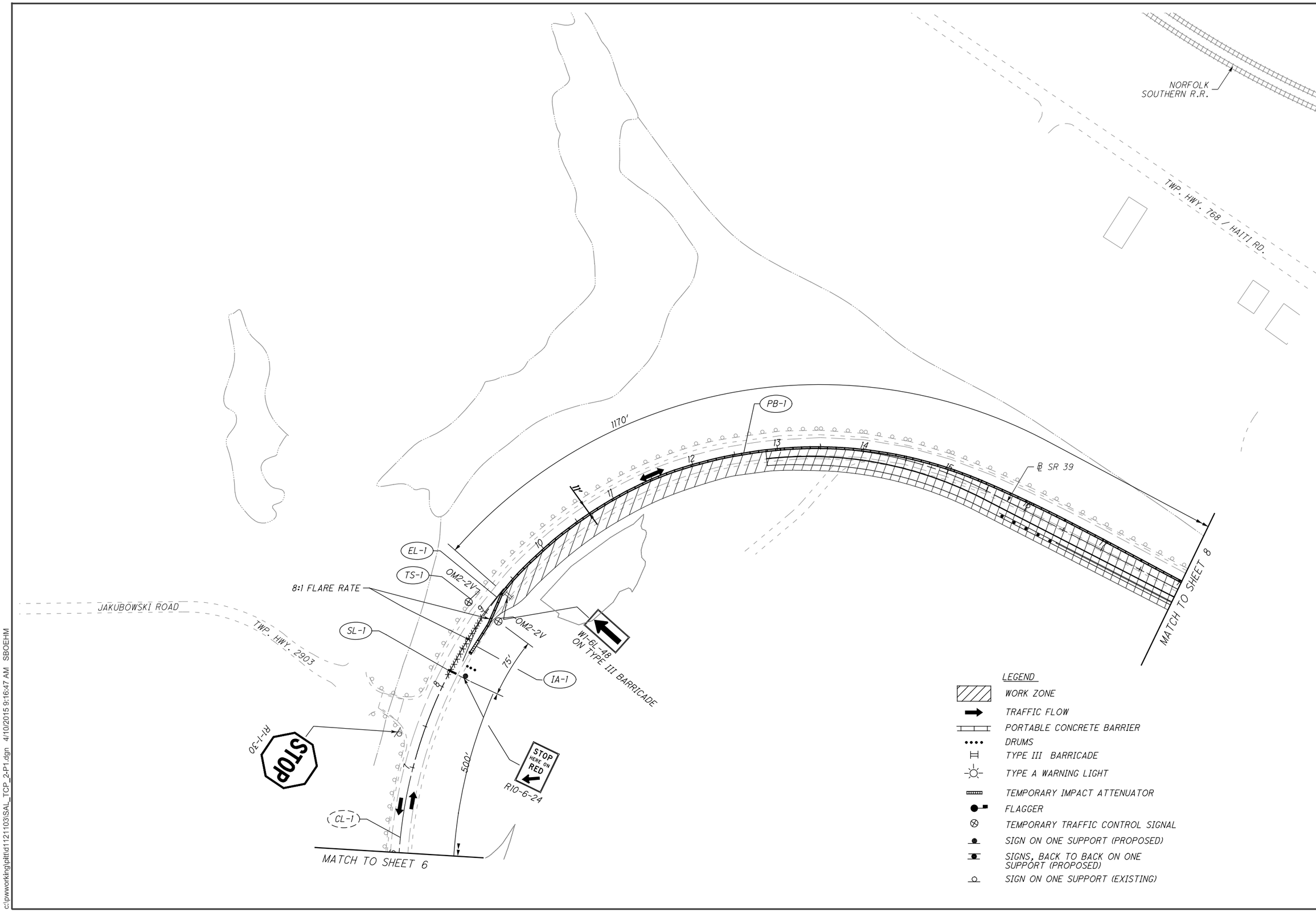

MAINTENANCE OF TRAFFIC PHASE ONE
STA. 6+00 TO STA. 18+00

COL-39-2.80

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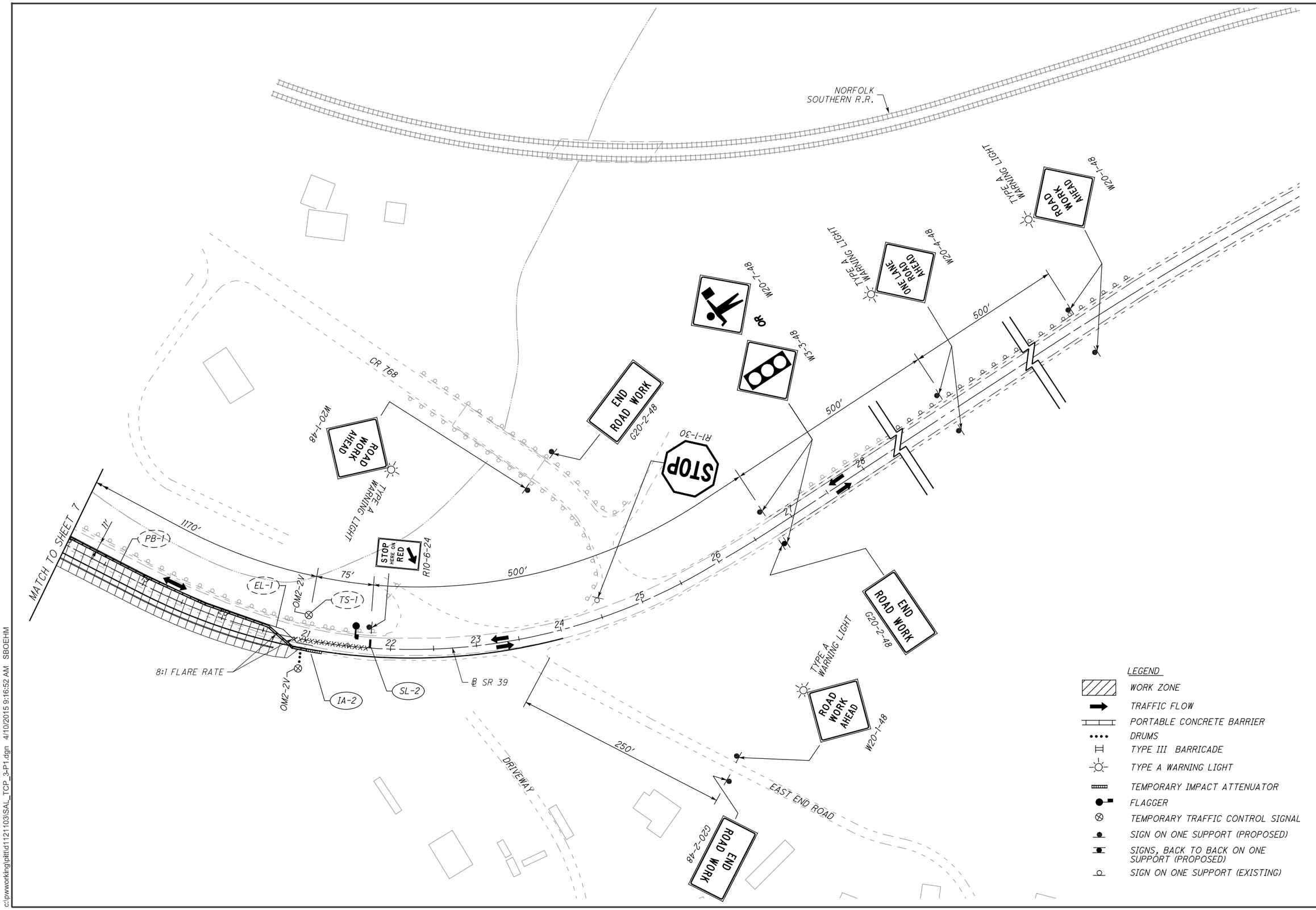

MAINTENANCE OF TRAFFIC PHASE ONE
STA. 18+00 TO STA. 36+75

COL-39-2.80

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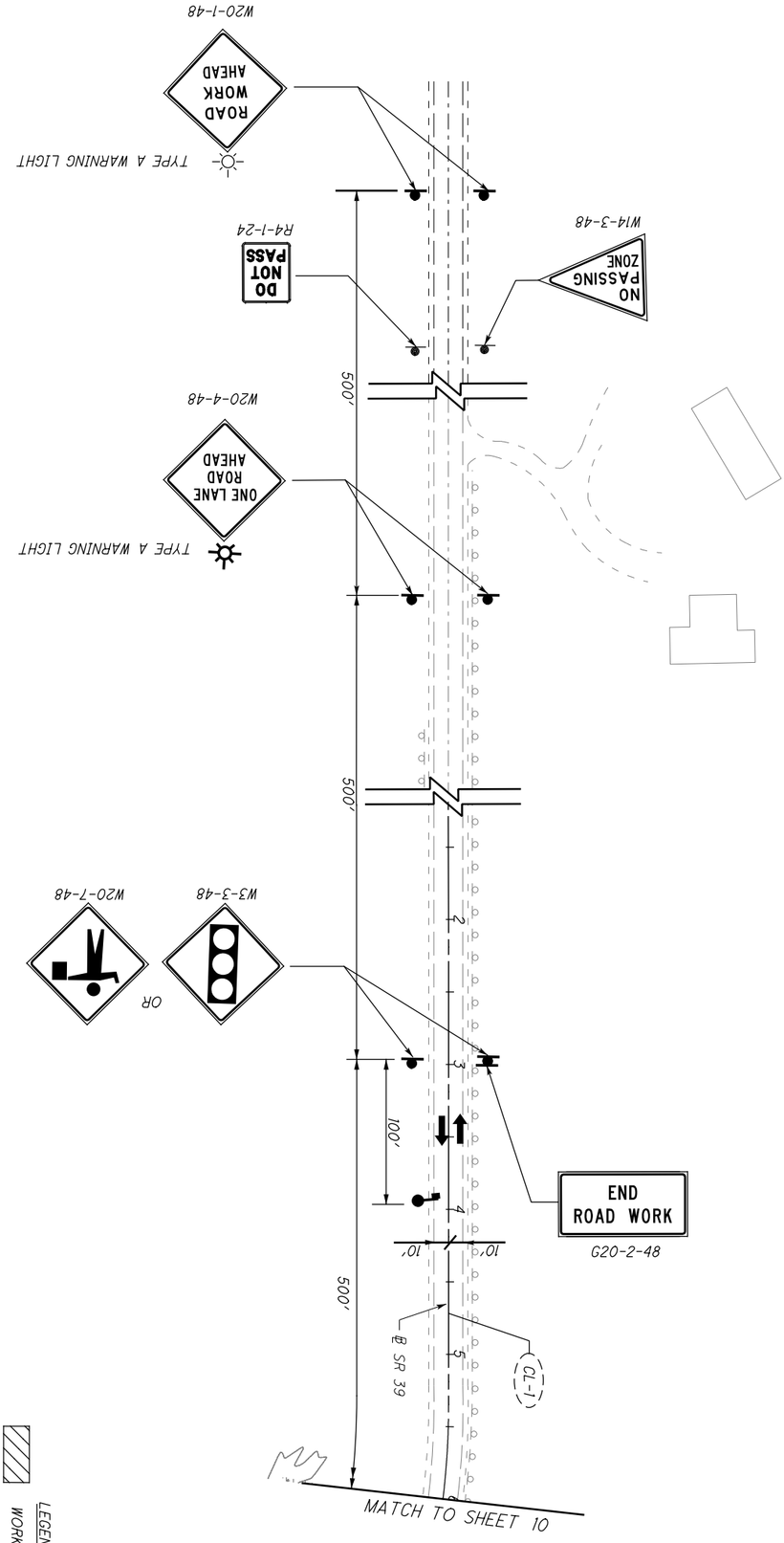


LEGEND

- WORK ZONE
- TRAFFIC FLOW
- PORTABLE CONCRETE BARRIER
- DRUMS
- TYPE III BARRICADE
- TYPE A WARNING LIGHT
- TEMPORARY IMPACT ATTENUATOR
- FLAGGER
- TEMPORARY TRAFFIC CONTROL SIGNAL
- SIGN ON ONE SUPPORT (PROPOSED)
- SIGNS, BACK TO BACK ON ONE SUPPORT (PROPOSED)
- SIGN ON ONE SUPPORT (EXISTING)

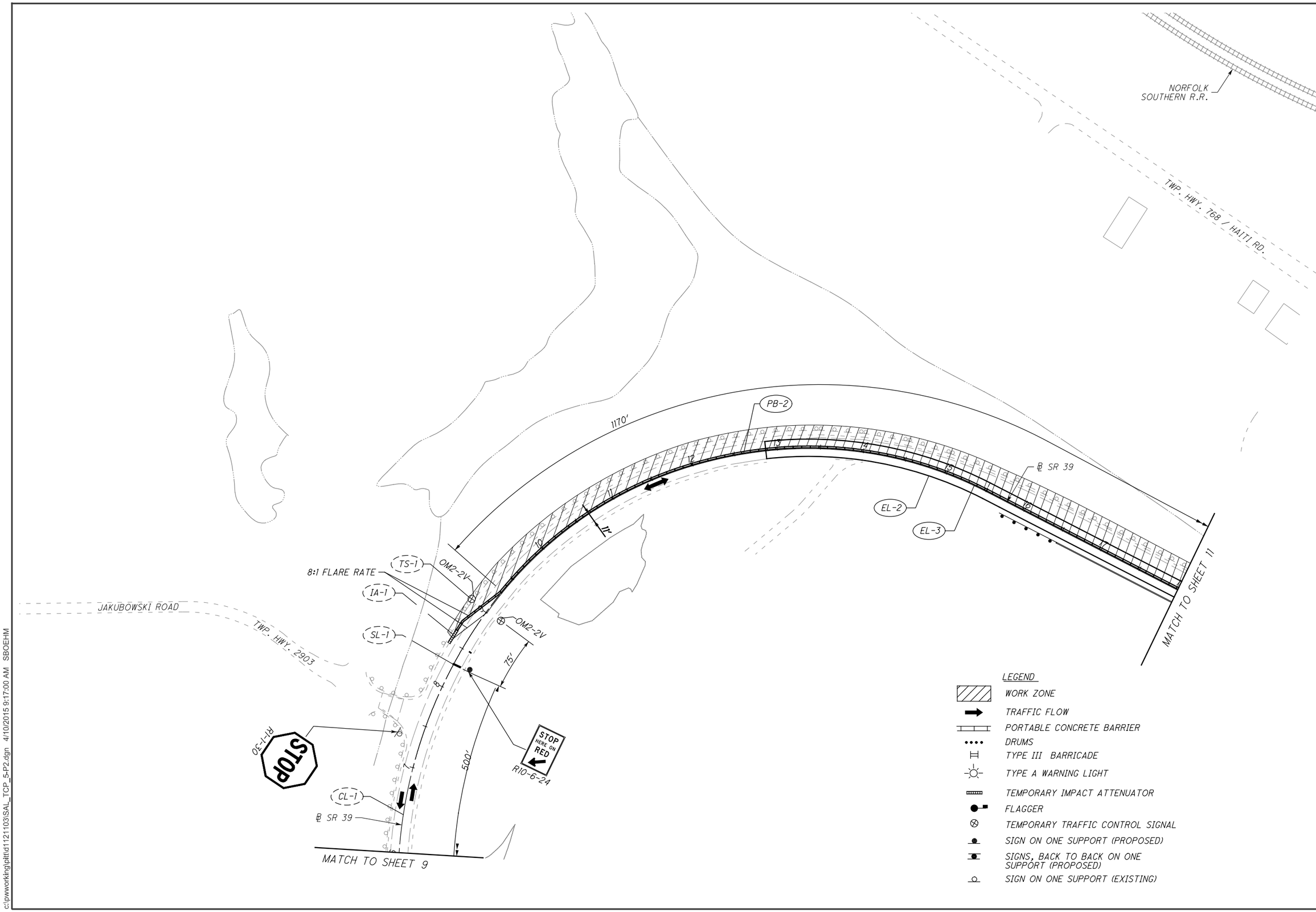
COL-39-2.80

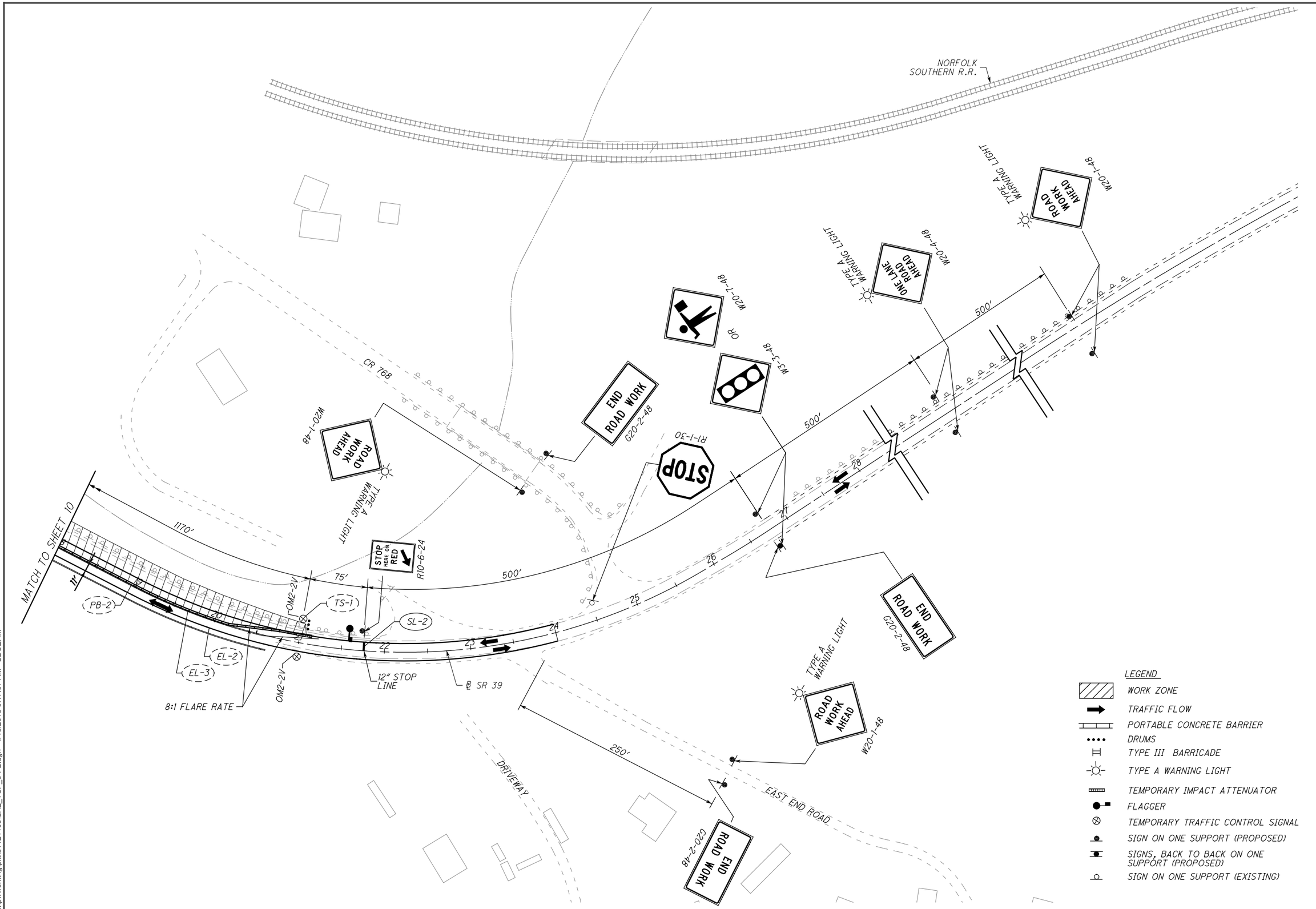
MAINTENANCE OF TRAFFIC PHASE TWO
STA. 1+00 TO STA. 6+00

CALCULATED
CHECKED

0 50
10 100
HORIZONTAL SCALE IN FEET

N

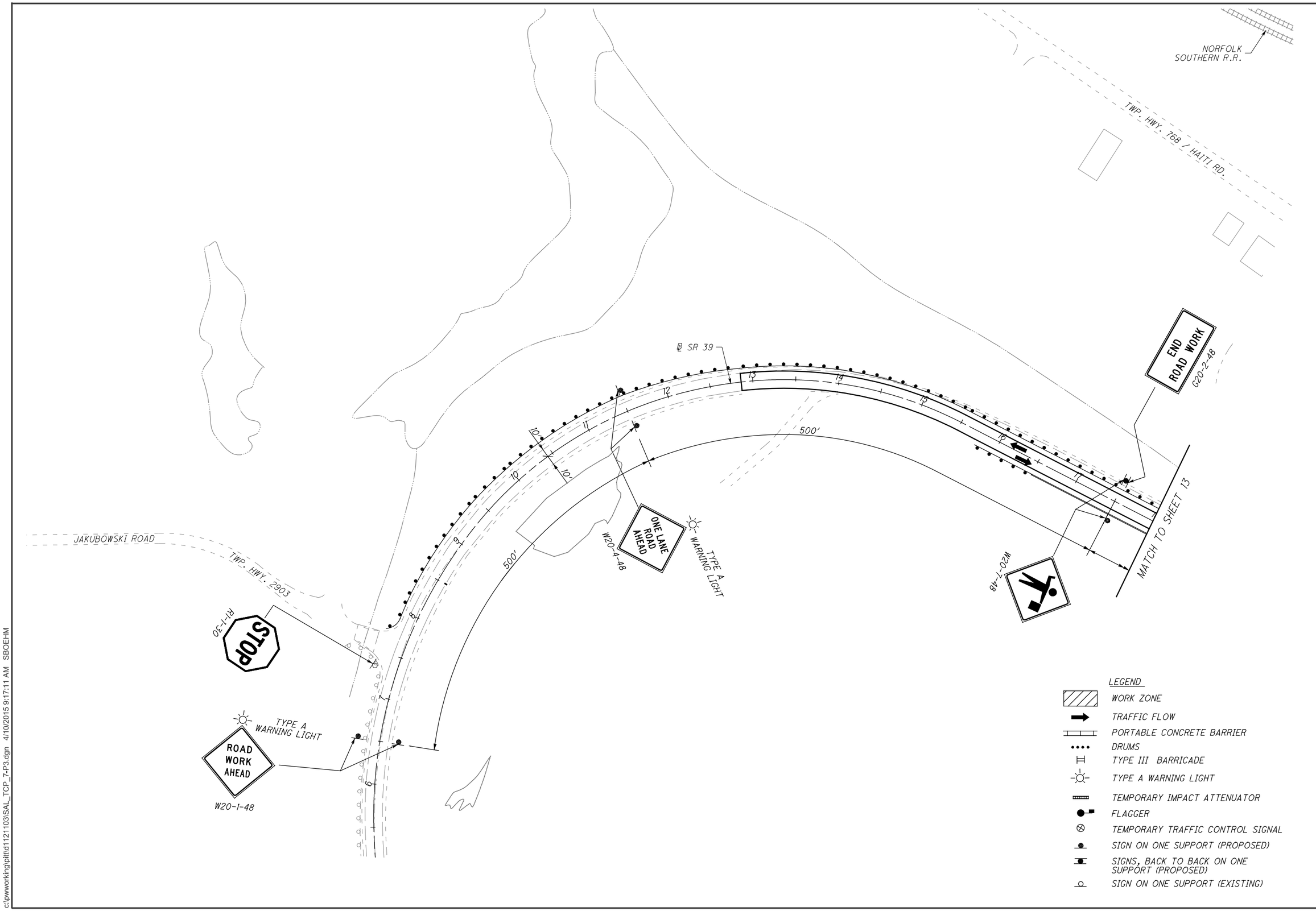

NORFOLK SOUTHERN R.R.
TWP. HWY. 768 / HAITI RD.
PB-2
1170'
SR 39
EL-2
EL-3
MATCH TO SHEET 11
8:1 FLARE RATE
TS-1
OM2-2V
IA-1
SL-1
OM2-2V
JAKUBOWSKI ROAD
TWP. HWY. 2903
75'
500'
STOP
R1-1-30
STOP HERE ON RED
R10-6-24
CL-1
SR 39
MATCH TO SHEET 9
LEGEND
WORK ZONE
TRAFFIC FLOW
PORTABLE CONCRETE BARRIER
DRUMS
TYPE III BARRICADE
TYPE A WARNING LIGHT
TEMPORARY IMPACT ATTENUATOR
FLAGGER
TEMPORARY TRAFFIC CONTROL SIGNAL
SIGN ON ONE SUPPORT (PROPOSED)
SIGNS, BACK TO BACK ON ONE SUPPORT (PROPOSED)
SIGN ON ONE SUPPORT (EXISTING)
0 10 50 100
HORIZONTAL SCALE IN FEET
CALCULATED
CHECKED
MAINTENANCE OF TRAFFIC PHASE TWO
STA. 6+00 TO STA. 18+00
COL-39-2.80
10
42
c:\pwworking\pitt\d1121103\SAL_TCP_5-P2.dgn 4/10/2015 9:17:00 AM SBOEHM



MAINTENANCE OF TRAFFIC PHASE TWO
STA. 18+00 TO STA. 36+75

COL-39-2.80

c:\pwworking\pitt\d1121103\SAL_TCP_6-P2.dgn 4/10/2015 9:17:07 AM SBOEHM



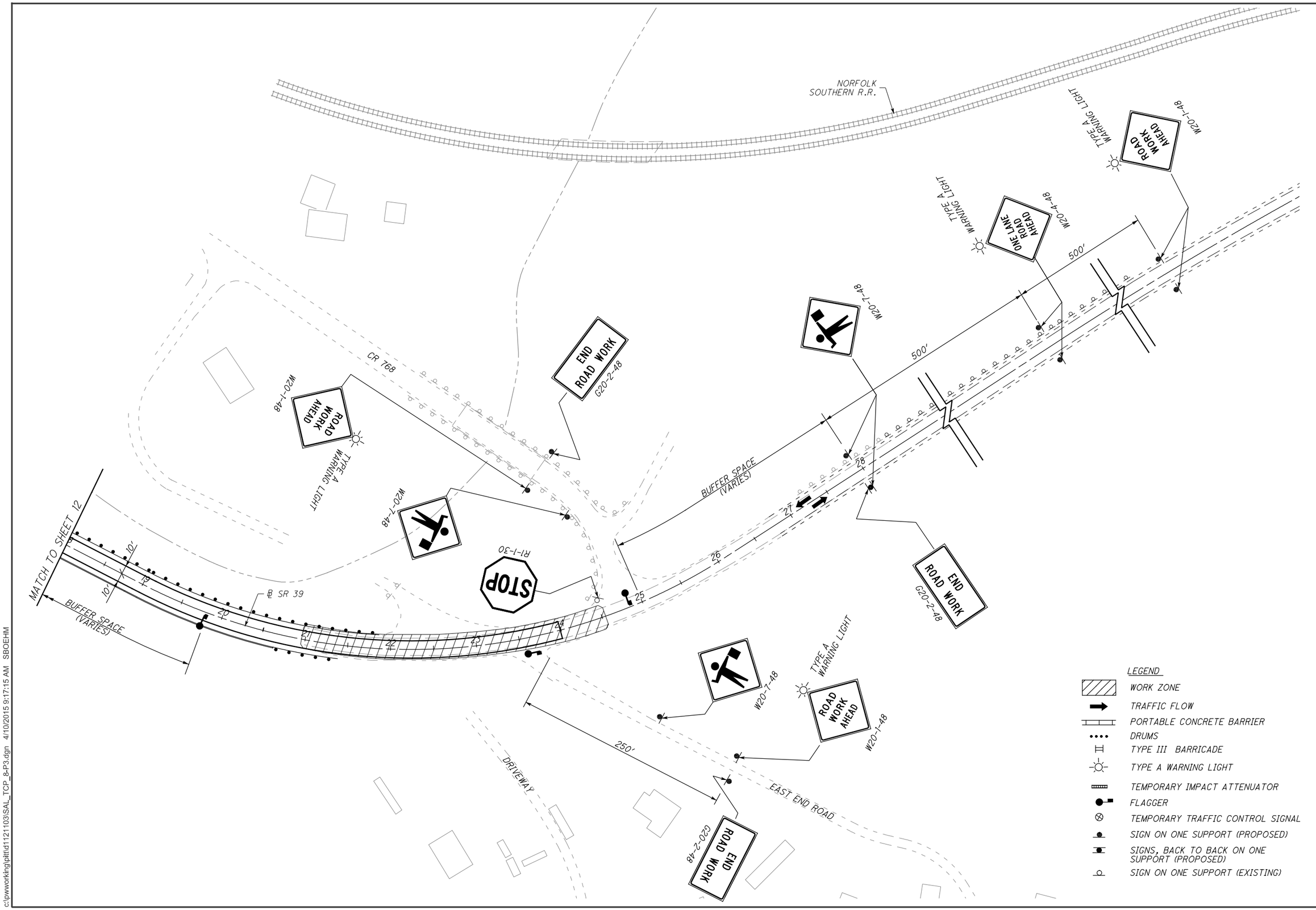
HORIZONTAL SCALE IN FEET
0 10 50 100

CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC PHASE THREE
STA. 6+00 TO STA. 18+00

COL-39-2.80

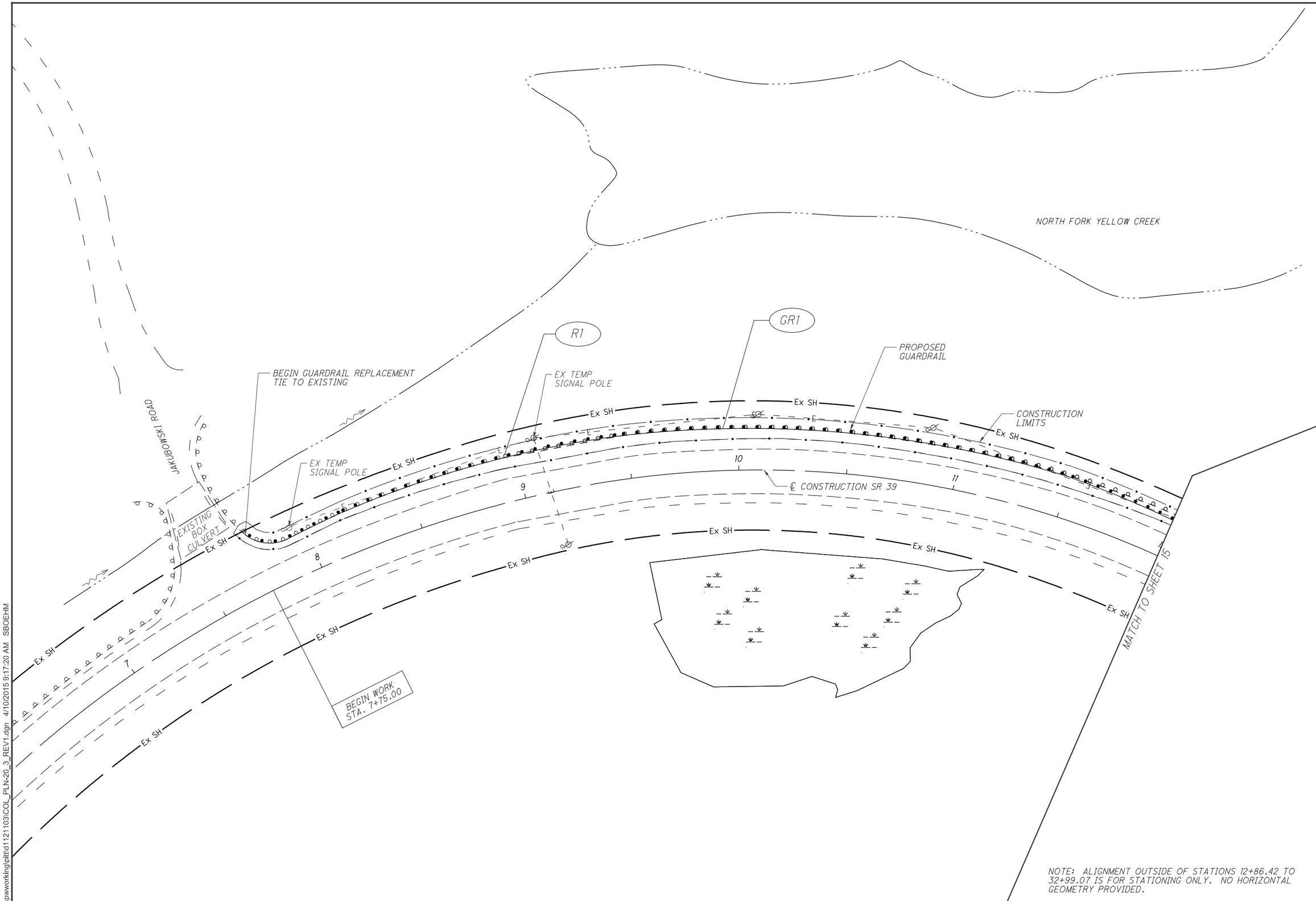
c:\pwworking\pitt\d1121103\SAL_TCP_7-P3.dgn 4/10/2015 9:17:11 AM SBOEHM



MAINTENANCE OF TRAFFIC PHASE THREE
STA. 18+00 TO STA. 38+00

COL-39-2.80

c:\pwworking\pitt\d1121103\SAL_TCP_8-P3.dgn 4/10/2015 9:17:15 AM SBOEHM



NOTE: ALIGNMENT OUTSIDE OF STATIONS 12+86.42 TO 32+99.07 IS FOR STATIONING ONLY. NO HORIZONTAL GEOMETRY PROVIDED.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED
CHECKED

PLAN - SR 39
STA. 7+00 TO STA. 12+00

COL-39-2.80

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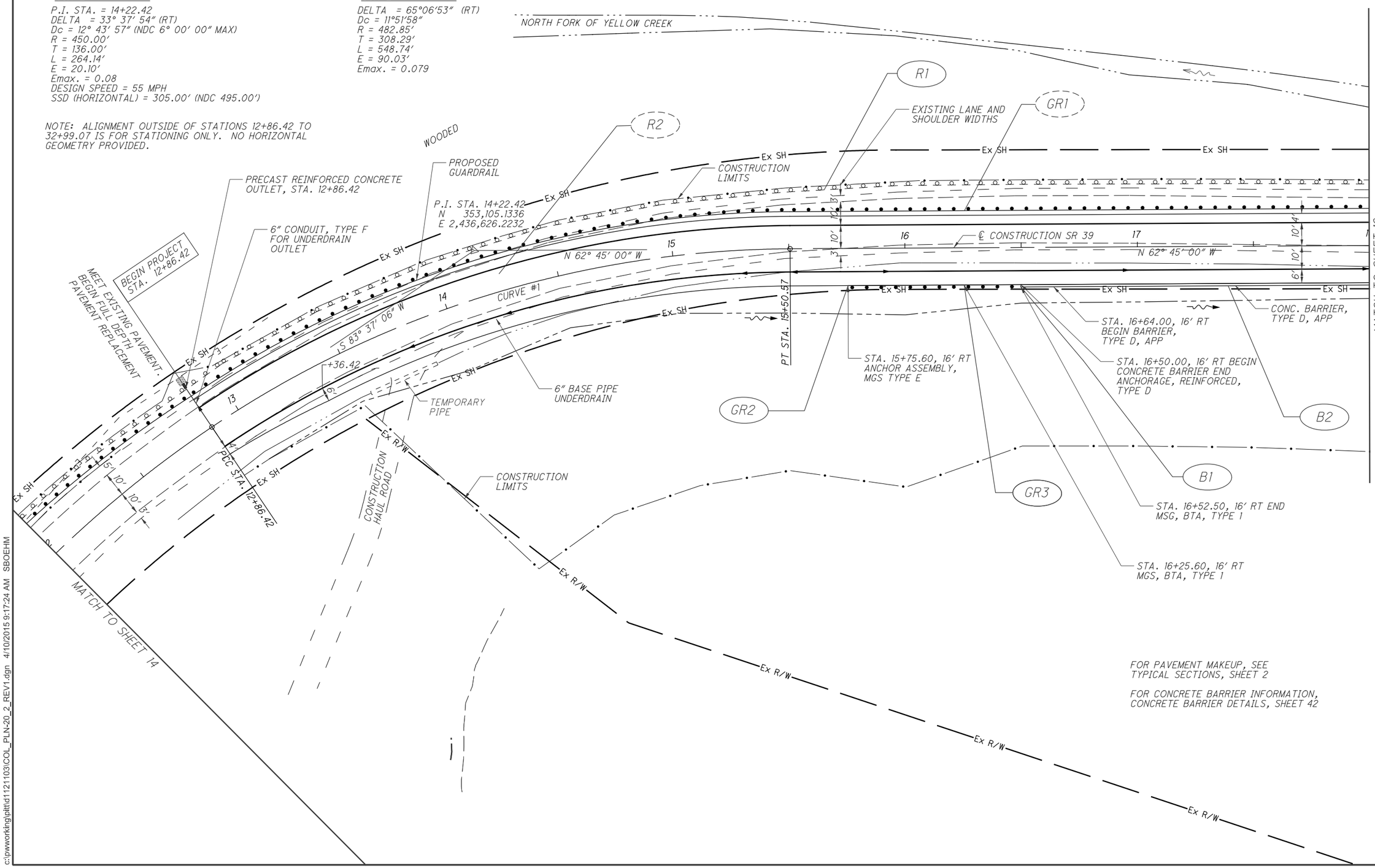
PROPOSED
CURVE #1

P.I. STA. = 14+22.42
DELTA = 33° 37′ 54″ (RT)
Dc = 12° 43′ 57″ (NDC 6° 00′ 00″ MAX)
R = 450.00′
T = 136.00′
L = 264.14′
E = 20.10′
Emax. = 0.08
DESIGN SPEED = 55 MPH
SSD (HORIZONTAL) = 305.00′ (NDC 495.00′)

EXISTING
CURVE #1

DELTA = 65°06′53″ (RT)
Dc = 11°51′58″
R = 482.85′
T = 308.29′
L = 548.74′
E = 90.03′
Emax. = 0.079

NOTE: ALIGNMENT OUTSIDE OF STATIONS 12+86.42 TO 32+99.07 IS FOR STATIONING ONLY. NO HORIZONTAL GEOMETRY PROVIDED.



FOR PAVEMENT MAKEUP, SEE TYPICAL SECTIONS, SHEET 2

FOR CONCRETE BARRIER INFORMATION, CONCRETE BARRIER DETAILS, SHEET 42

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED

CHECKED

PLAN - SR 39
STA. 12+00 TO 18+00

COL-39-2.80

c:\pwworking\pitt\d1121103\COL_PLN-20_2_REV1.dgn 4/10/2015 9:17:24 AM SBOEHM

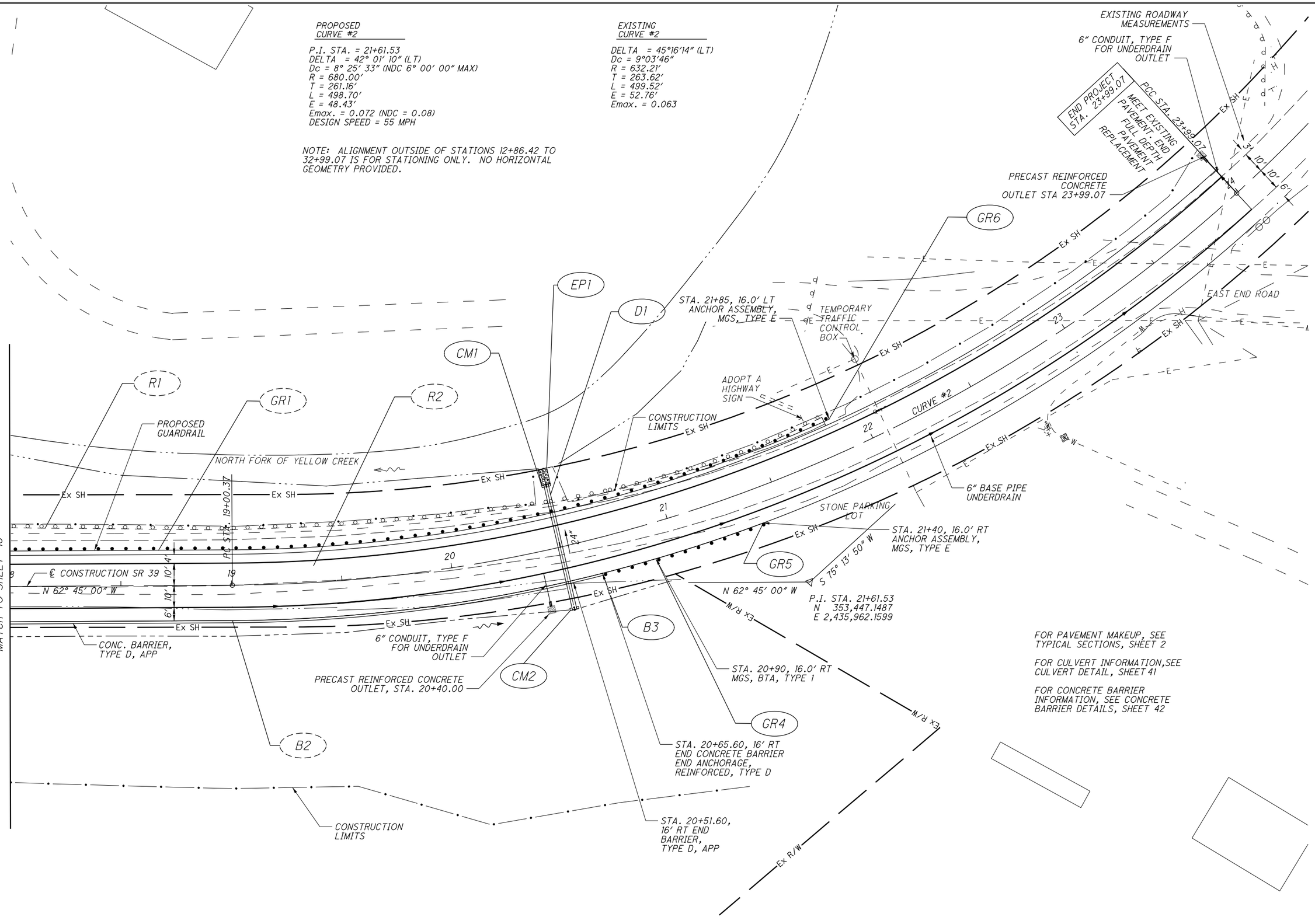
PROPOSED
CURVE #2

P.I. STA. = 21+61.53
DELTA = 42° 01′ 10″ (LT)
Dc = 8° 25′ 33″ (NDC 6° 00′ 00″ MAX)
R = 680.00′
T = 261.16′
L = 498.70′
E = 48.43′
Emax. = 0.072 (NDC = 0.08)
DESIGN SPEED = 55 MPH

EXISTING
CURVE #2

DELTA = 45°16′14″ (LT)
Dc = 9°03′46″
R = 632.21′
T = 263.62′
L = 499.52′
E = 52.76′
Emax. = 0.063

NOTE: ALIGNMENT OUTSIDE OF STATIONS 12+86.42 TO 32+99.07 IS FOR STATIONING ONLY. NO HORIZONTAL GEOMETRY PROVIDED.



FOR PAVEMENT MAKEUP, SEE TYPICAL SECTIONS, SHEET 2

FOR CULVERT INFORMATION, SEE CULVERT DETAIL, SHEET 41

FOR CONCRETE BARRIER INFORMATION, SEE CONCRETE BARRIER DETAILS, SHEET 42

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED
CHECKED

PLAN - SR 39
STA. 18+00 TO 23+99.07

COL-39-2.80

c:\pwworking\pitt\d1121103\COL_PLN-20_1_REV1.dgn 4/10/2015 9:17:26 AM SBOEHM

ESTIMATED QUANTITIES

REF	SHEET	STATION FROM	STATION TO	SIDE	202 GUARDRAIL REMOVAL	202 PAVEMENT REMOVED	602 CONCRETE MASONRY	606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE E	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	611 24" CONDUIT TYPE B	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	622 CONCRETE BARRIER END ANCHORAGE, REINFORCED, TYPE D	670 EROSION PROTECTION	204 SUBGRADE COMPACTION	301 6" ASPHALT CONCRETE BASE, PG64-22	304 6" AGGREGATE BASE	407 TACK COAT FOR INTERMEDIATE COURSE (APPLIED AT 0.04 GAL/SY)	441 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446)	441 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446)	601 TIED CONCRETE BLOCK MAT, TYPE 1	605 6" BASE PIPE UNDERDRAINS (707.31 OR 707.41)	605 AGGREGATE DRAINS	611 6" CONDUIT, TYPE F, FOR UNDERDRAIN OUTLET	611 PRECAST REINFORCED CONCRETE OUTLET
					FT	SQ.YD.	CU.YD.	FT	EACH	EACH	FT	FT	EACH	SQ.YD.	SQ. YD.	CU. YD.	CU. YD.	GALLON	CU. YD.	CU. YD.	SQ. YD.	FT	FT	FT	EACH
R 1	14, 15, 16	7+75.00	21+82.40	LT	1500																				
R 2	15, 16	12+86.42	23+99.07	RT/LT		3705																			
CM1	16	20+50.00	20+50.00	LT			0.52																		
CM2	16	20+50.00	20+50.00	RT			0.52																		
GR 1	14, 15, 16	7+75.00	21+35.00	LT				1562.5																	
GR 2	15	15+75.60	16+25.60	RT					1																
GR 3	15	16+25.60	16+52.50	RT						1															
GR 4	16	20+63.10	20+90.00	RT						1															
GR 5	16	20+90.00	21+40.00	RT					1																
GR 6	16	21+35.00	21+85.00	LT					1																
D 1	16	20+50.00	20+50.00	RT/LT							58														
B 1	15	16+50.00	16+64.00	RT									1												
B 2	15, 16	16+64.00	20+51.60	RT								387.60													
B 3	16	20+51.60	20+65.60	RT									1												
EP 1	16	20+50.00	20+50.00	LT										4.5											
PAVEMENT CALCULATIONS																									
	2, 15, 16	12+86.42	23+99.07	RT/LT											4000										
	2, 15, 16	12+86.42	23+99.07	RT/LT												625									
	2, 15, 16	12+86.42	23+99.07	RT/LT													665								
	2, 15, 16	12+86.42	23+99.07	RT/LT														150							
	2, 15, 16	12+86.42	23+99.07	RT/LT															129						
	2, 15, 16	12+86.42	23+99.07	RT/LT																181					
	15	12+86.42	12+86.42	LT																	1.8				
	16	20+40.00	20+40.00	RT																	1.8				
	16	23+99.07	23+99.07	LT																	1.8				
	15, 16	12+86.42	23+99.07	RT																		1150			
	15, 16	12+86.42	23+99.07	LT																			1150		
	15	12+86.42	12+86.42	RT/LT																				31	
	16	20+40.00	20+40.00	RT																				14	
	16	23+99.07	23+99.07	RT/LT																				35	
	15	12+86.42	12+86.42	LT																					1
	16	20+40+00	20+40.00	RT																					1
	16	23+99.07	23+99.07	LT																					1
				TOTAL	1500	3705	1.04	1562.5	3	2	58	387.60	2	4.5	4000	625	665	150	129	181	5.4	1150	1150	80	3

CALCULATED

CHECKED

GENERAL SUMMARY

COL-39-2.80

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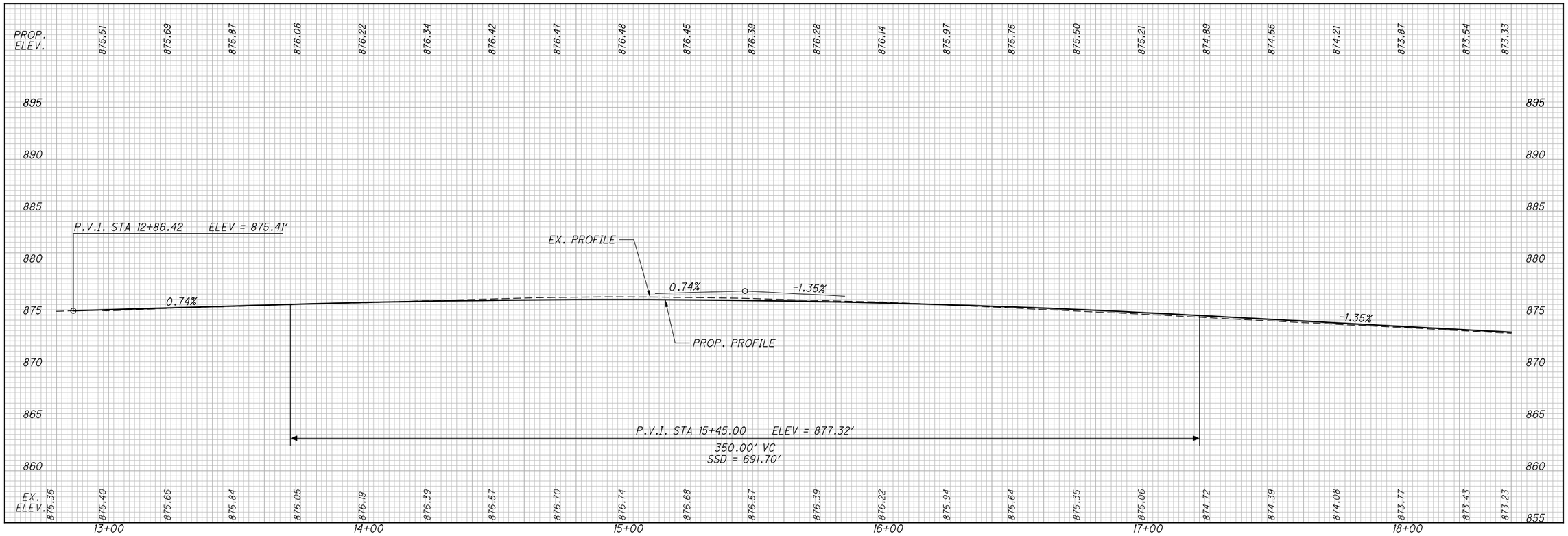

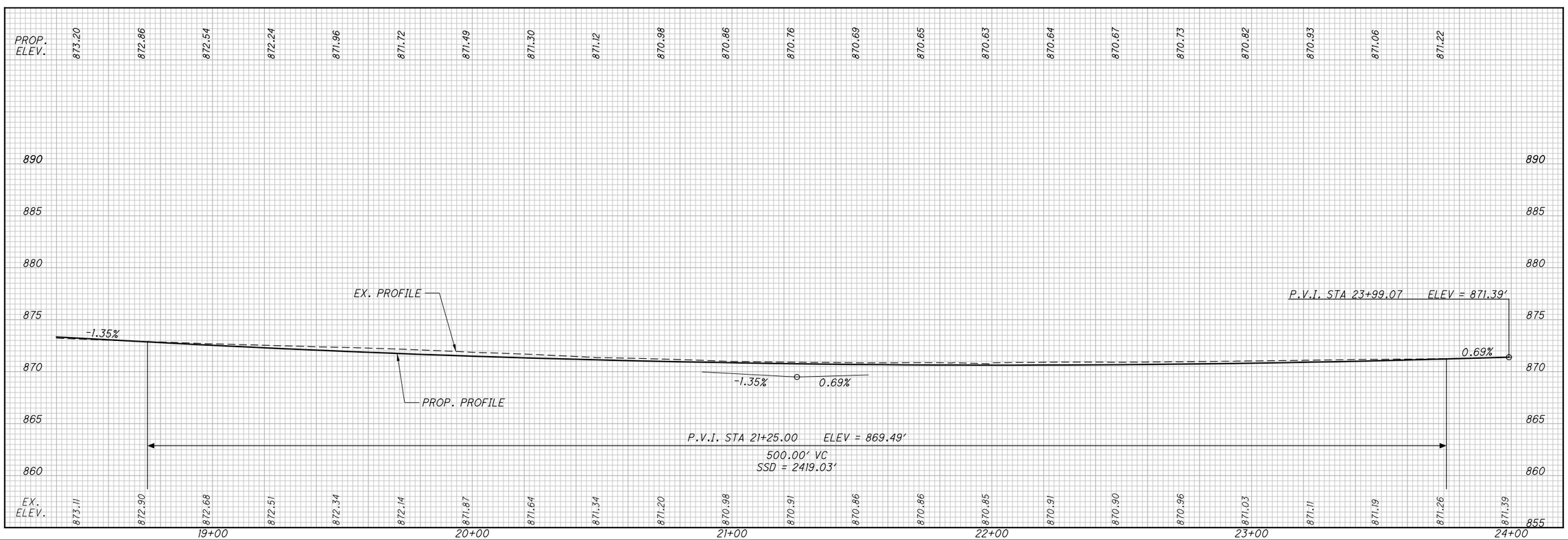

CALCULATED

CHECKED

PROFILE - SR 39

STA. 12+80 TO STA. 24+00

COL-39-2.80

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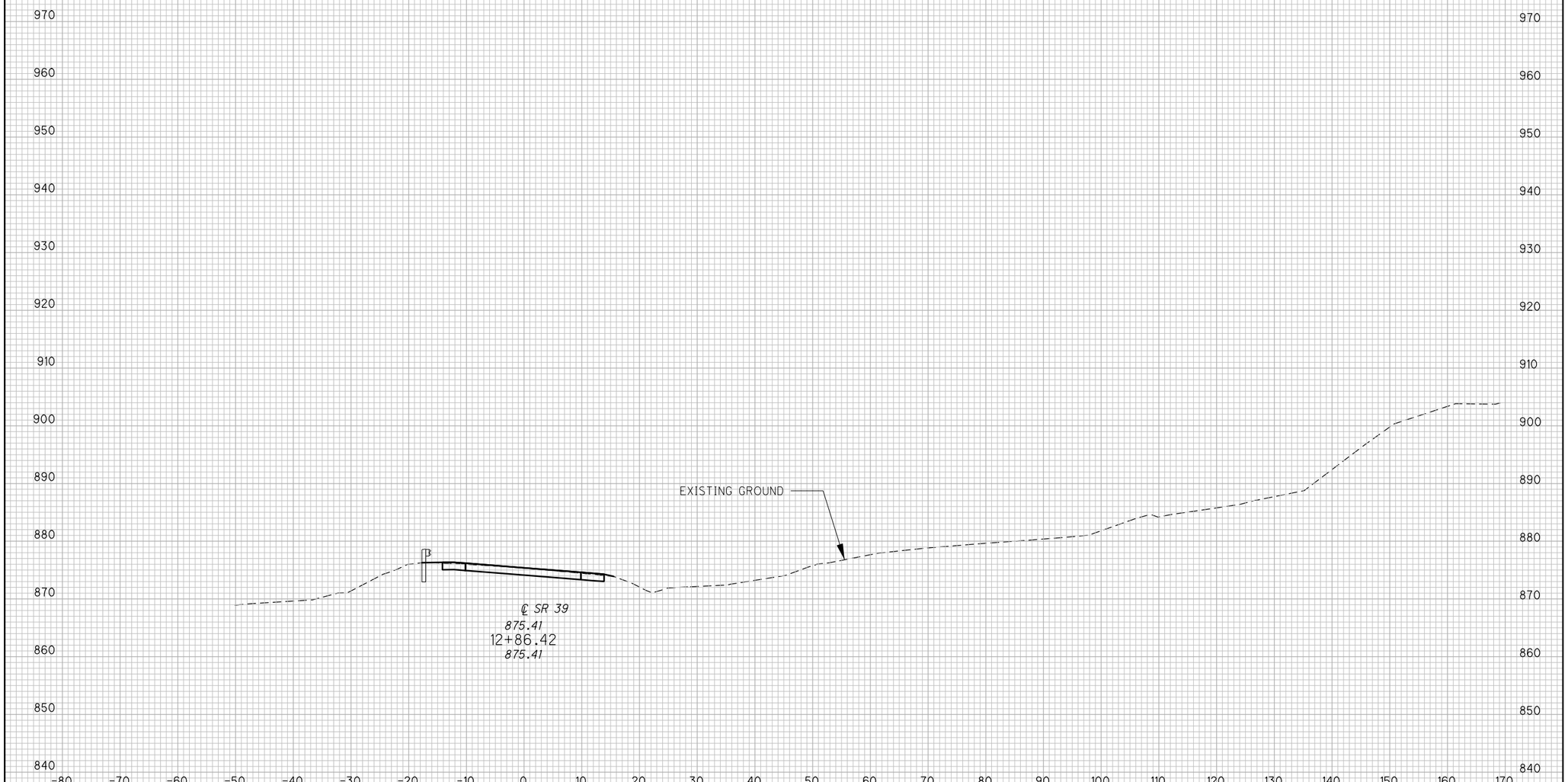
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:40 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

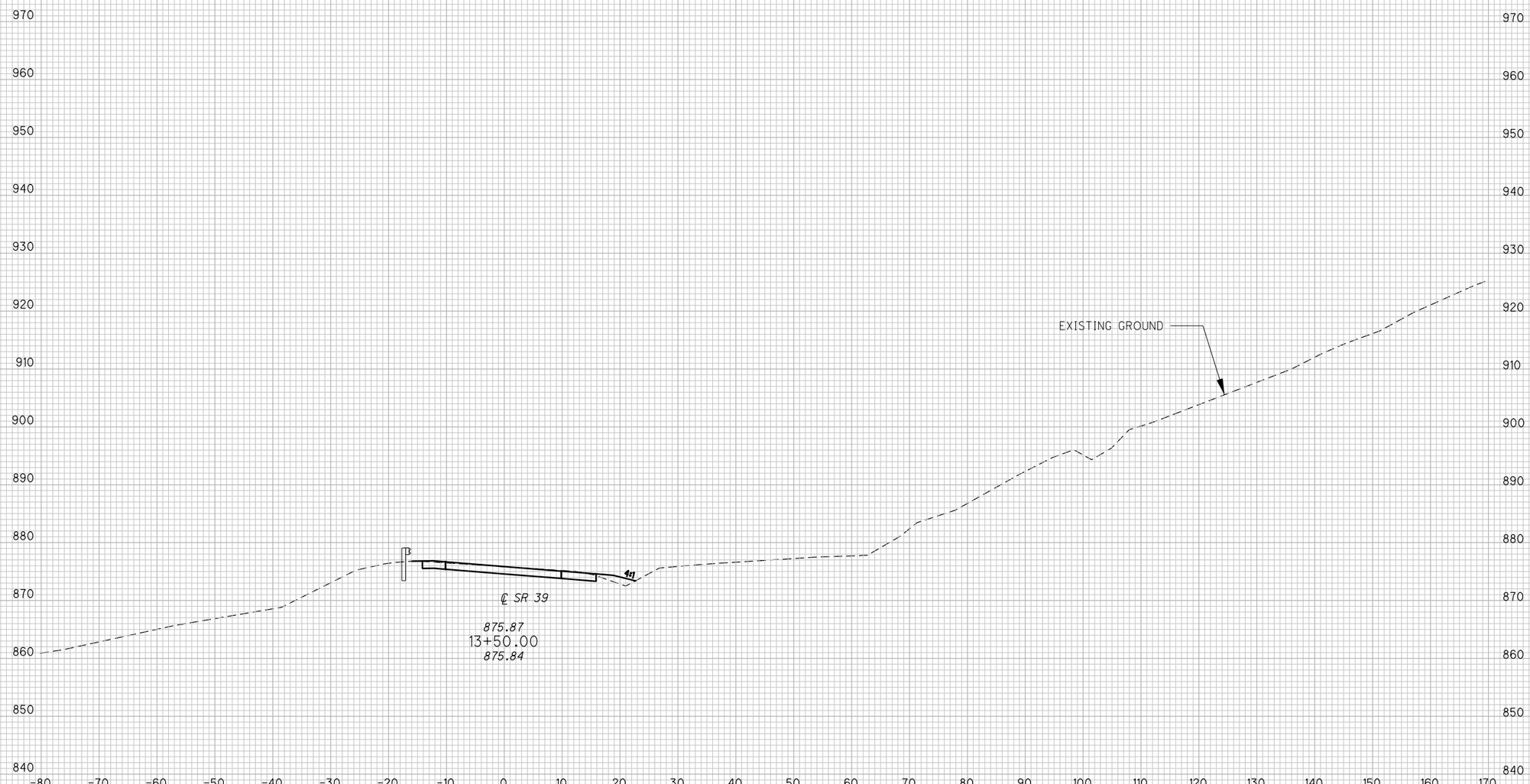
c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:40 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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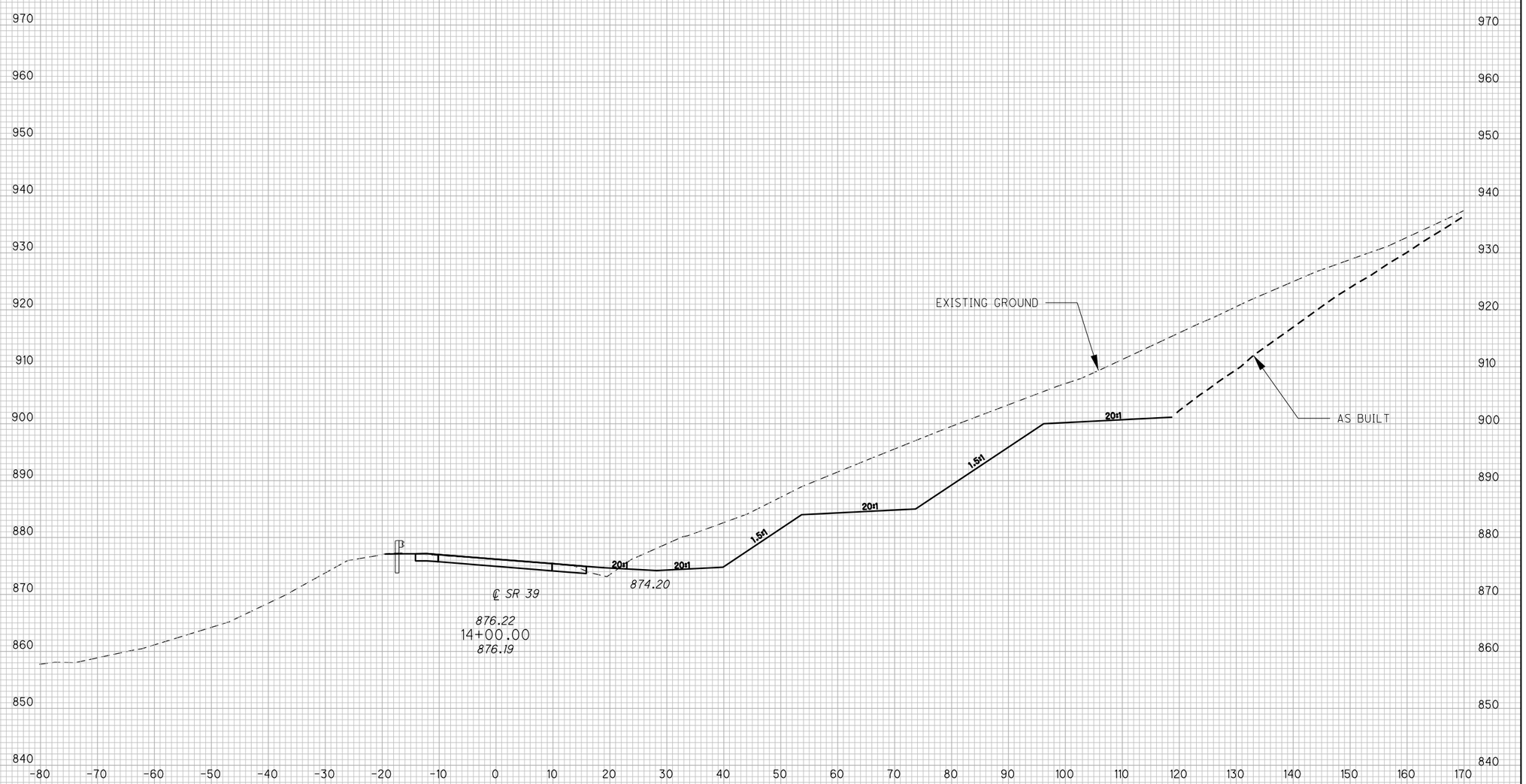
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

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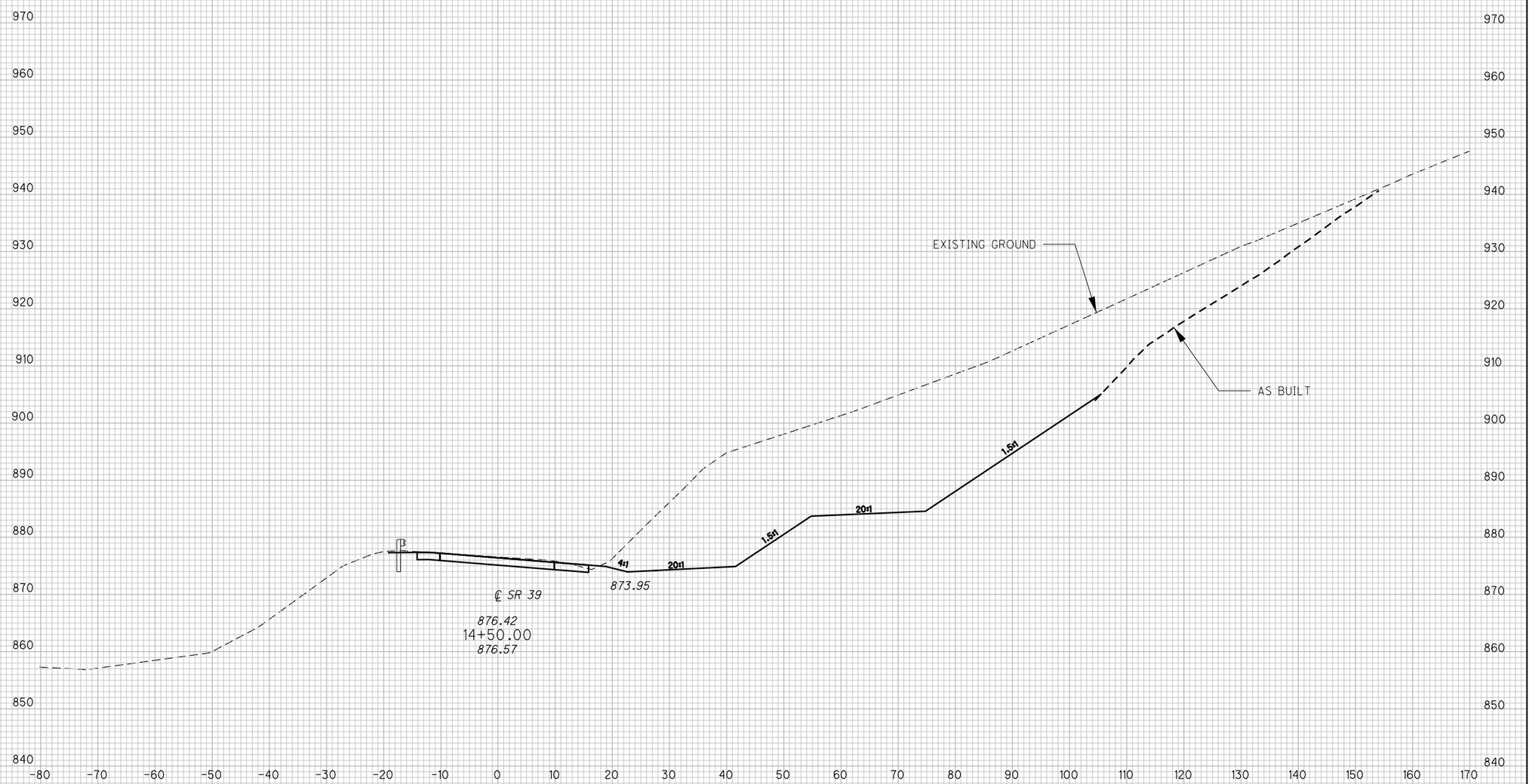

CROSS SECTIONS SR 39

COL-39-2.80

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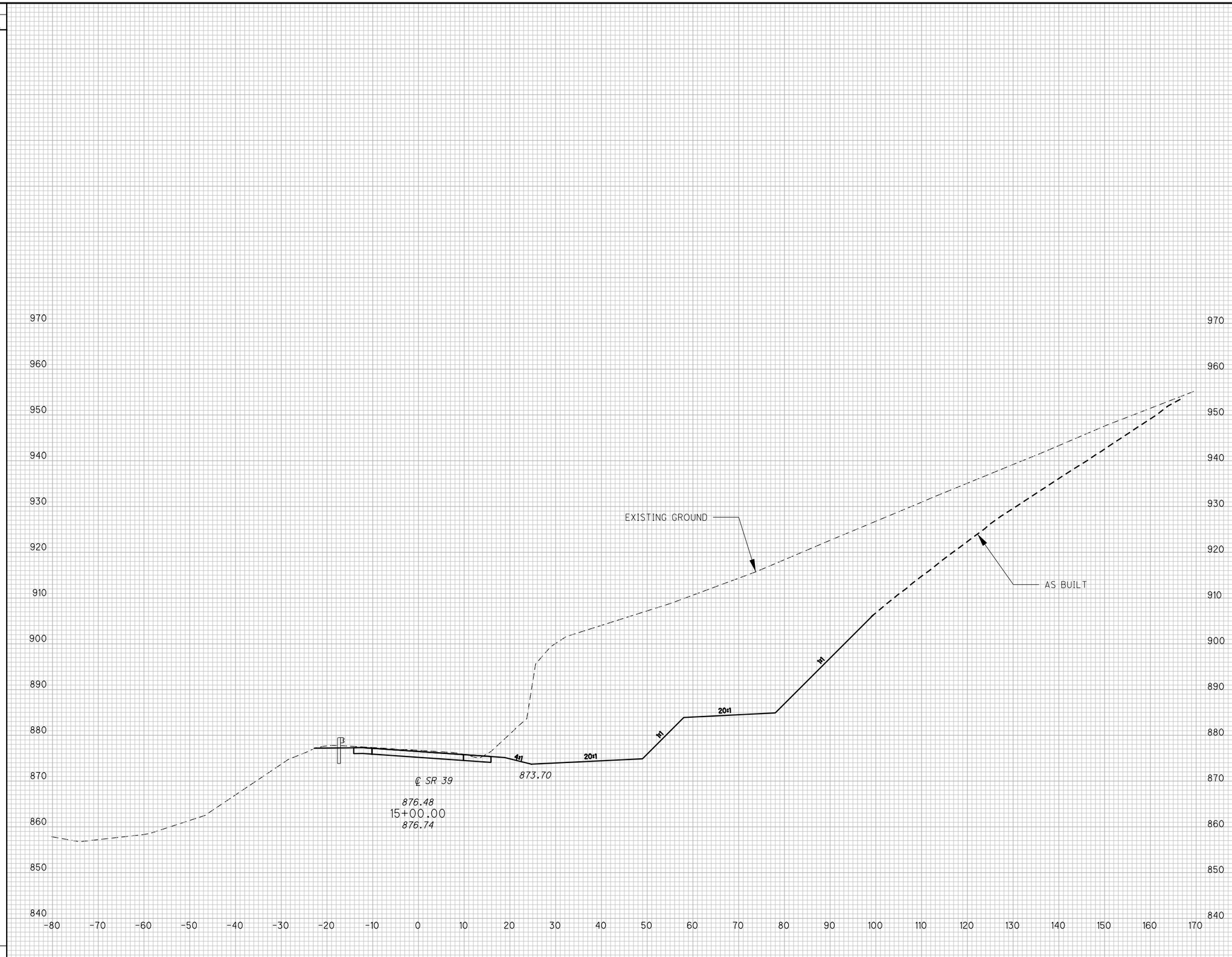
SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

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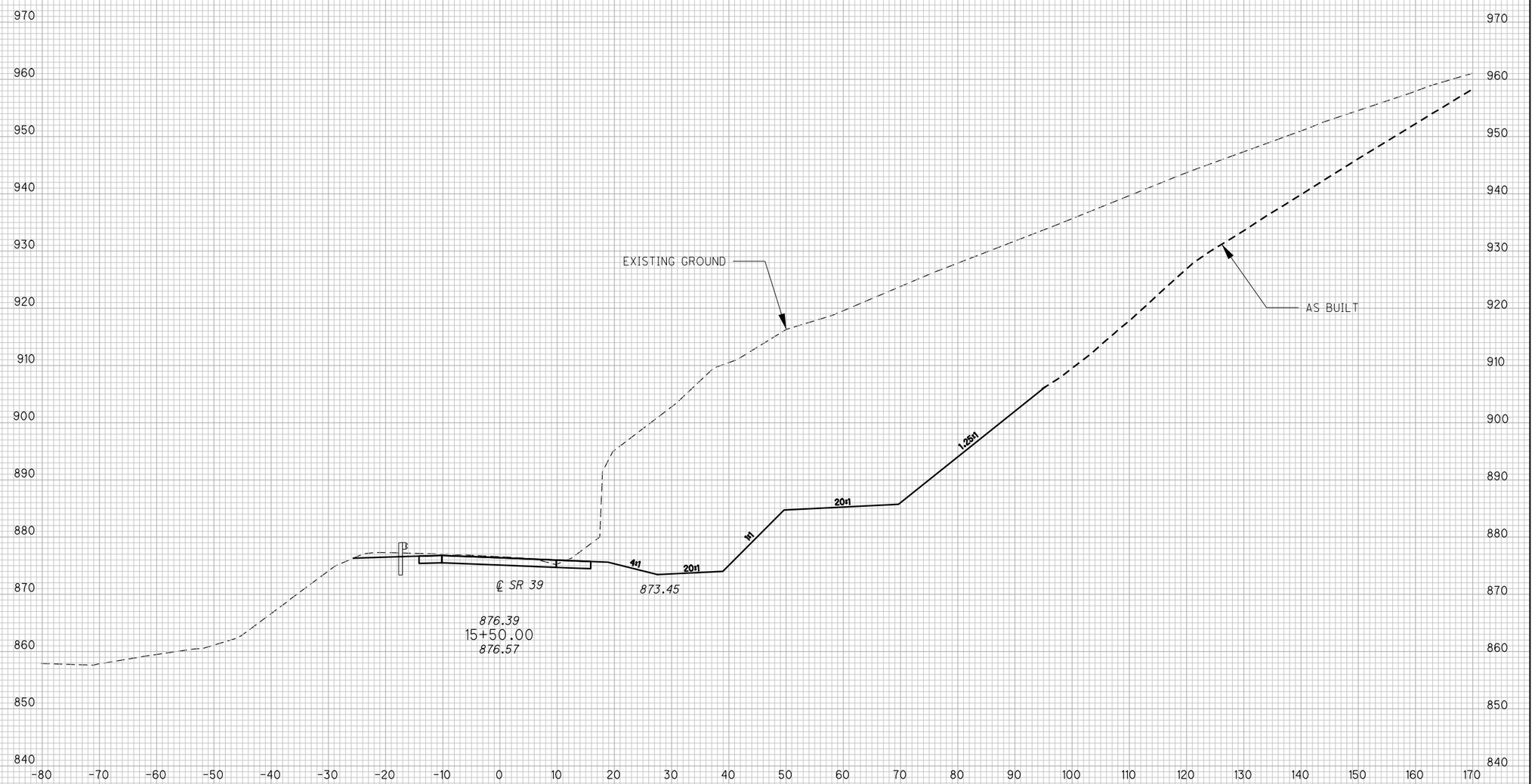
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

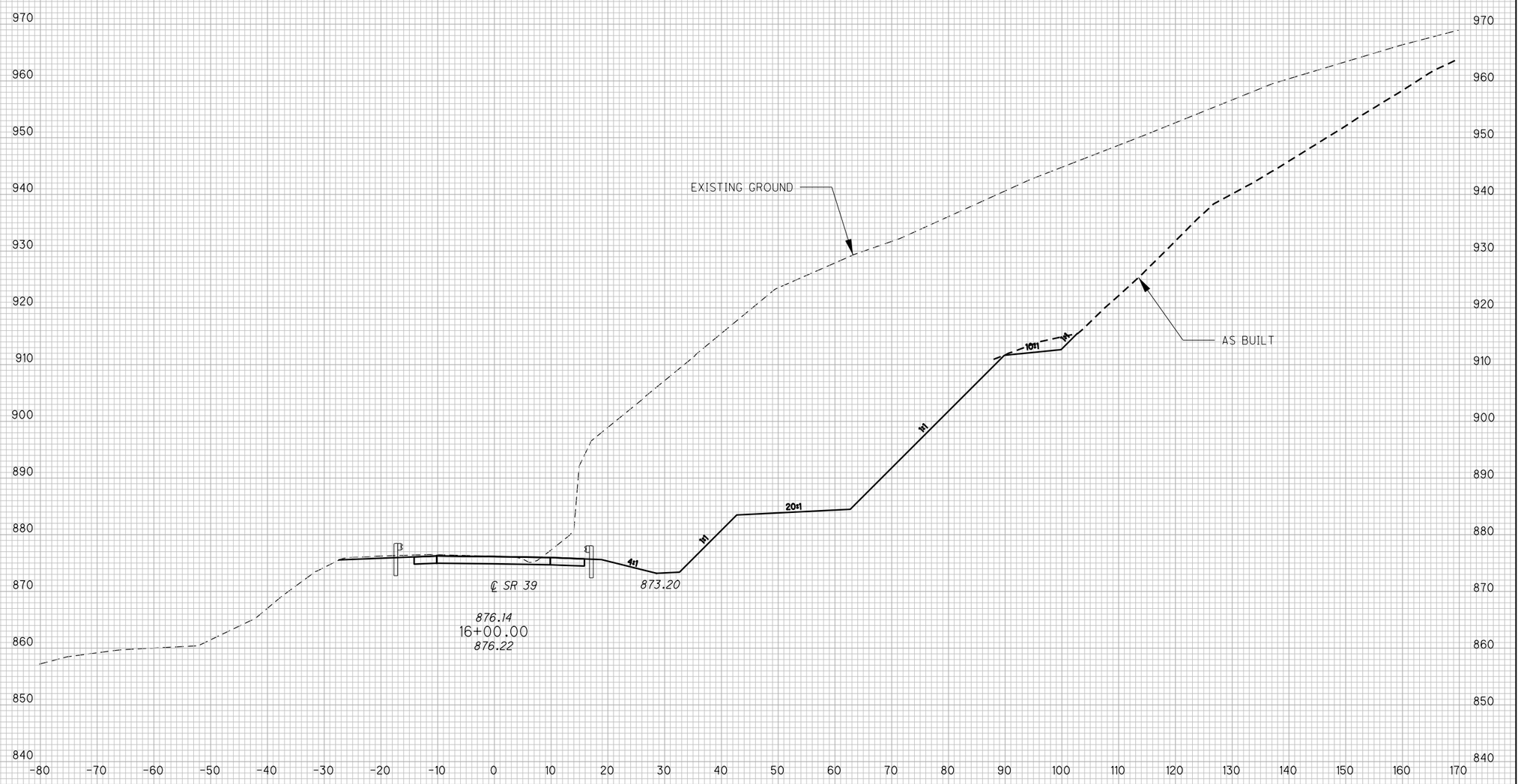
c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:42 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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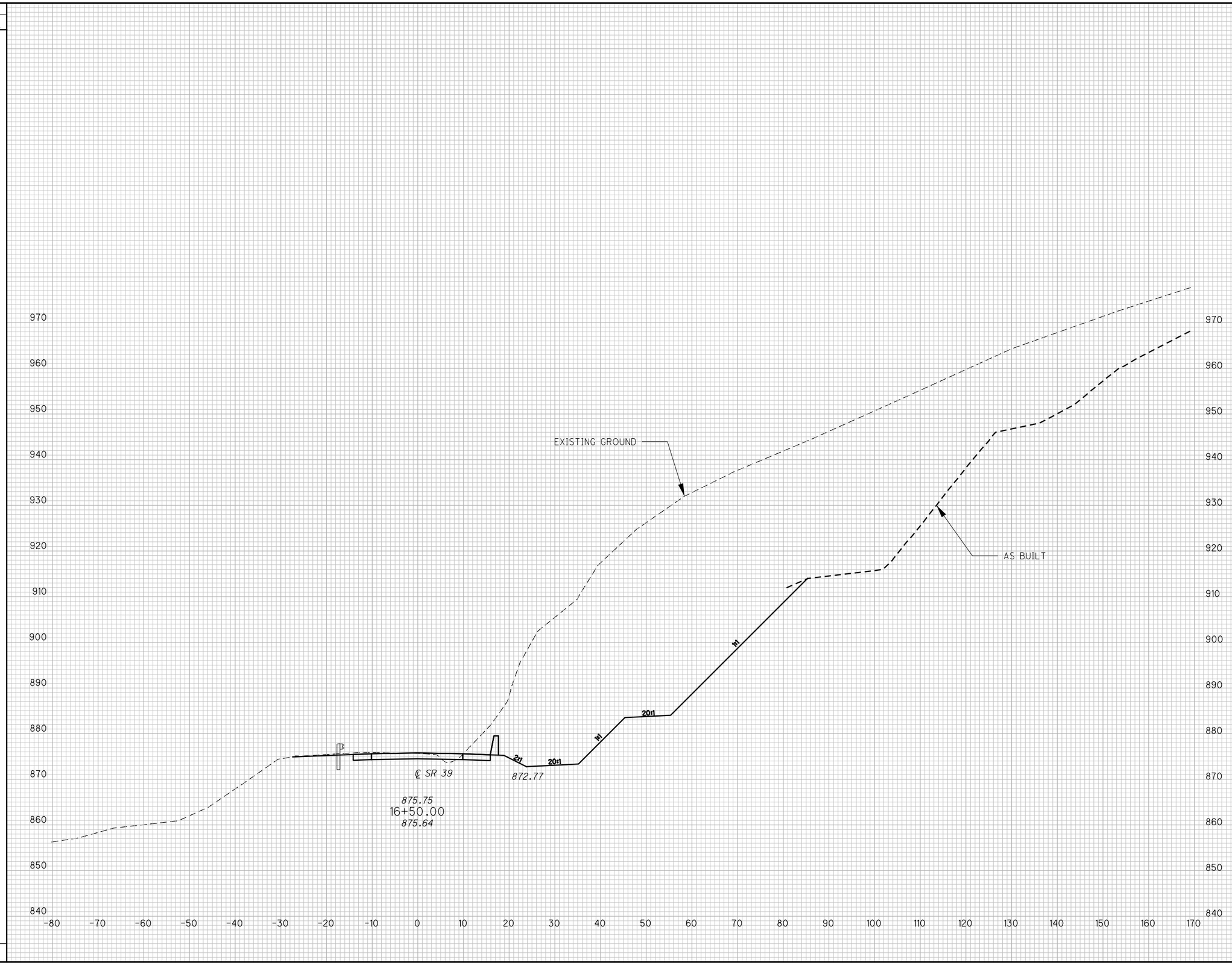
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

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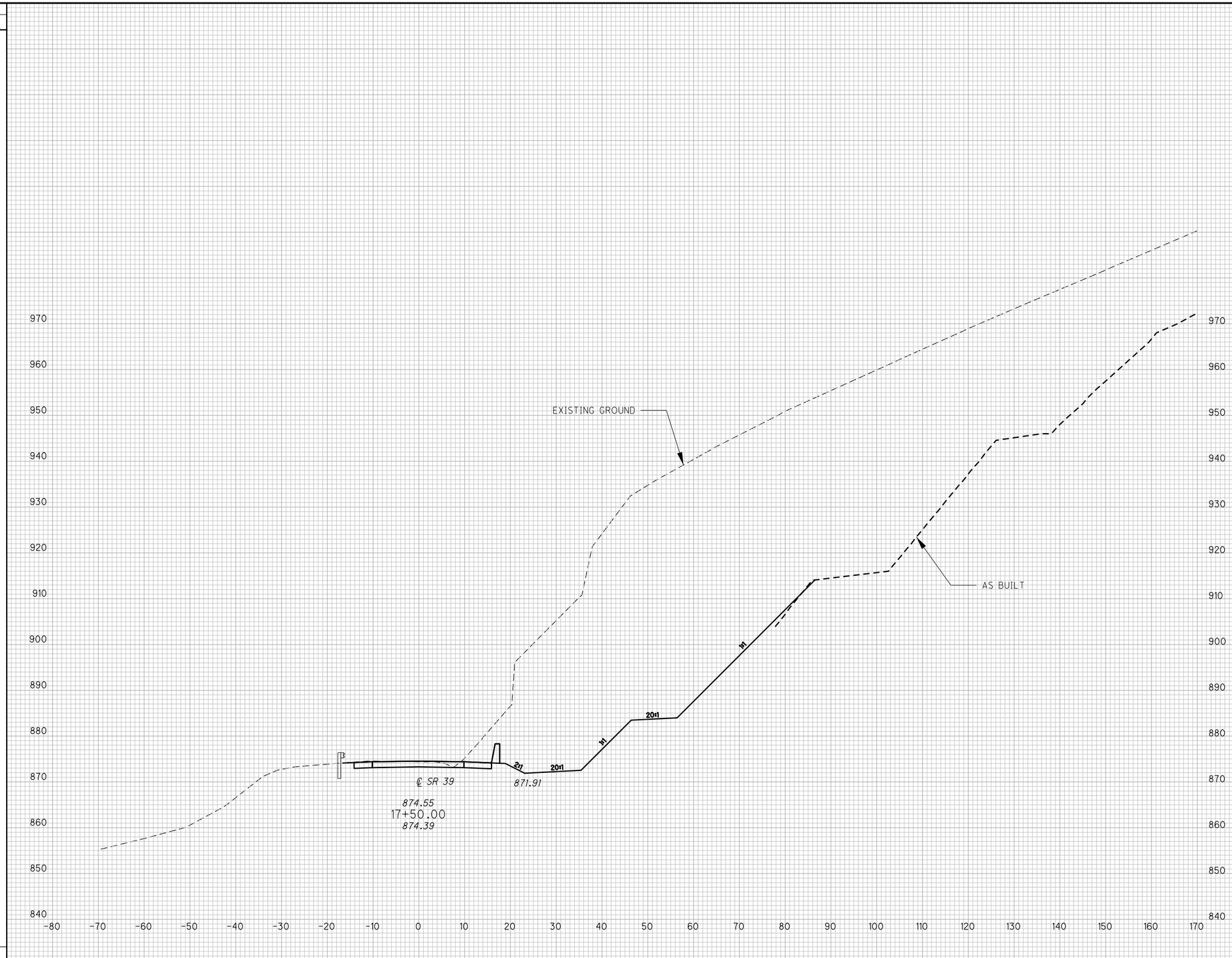
SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

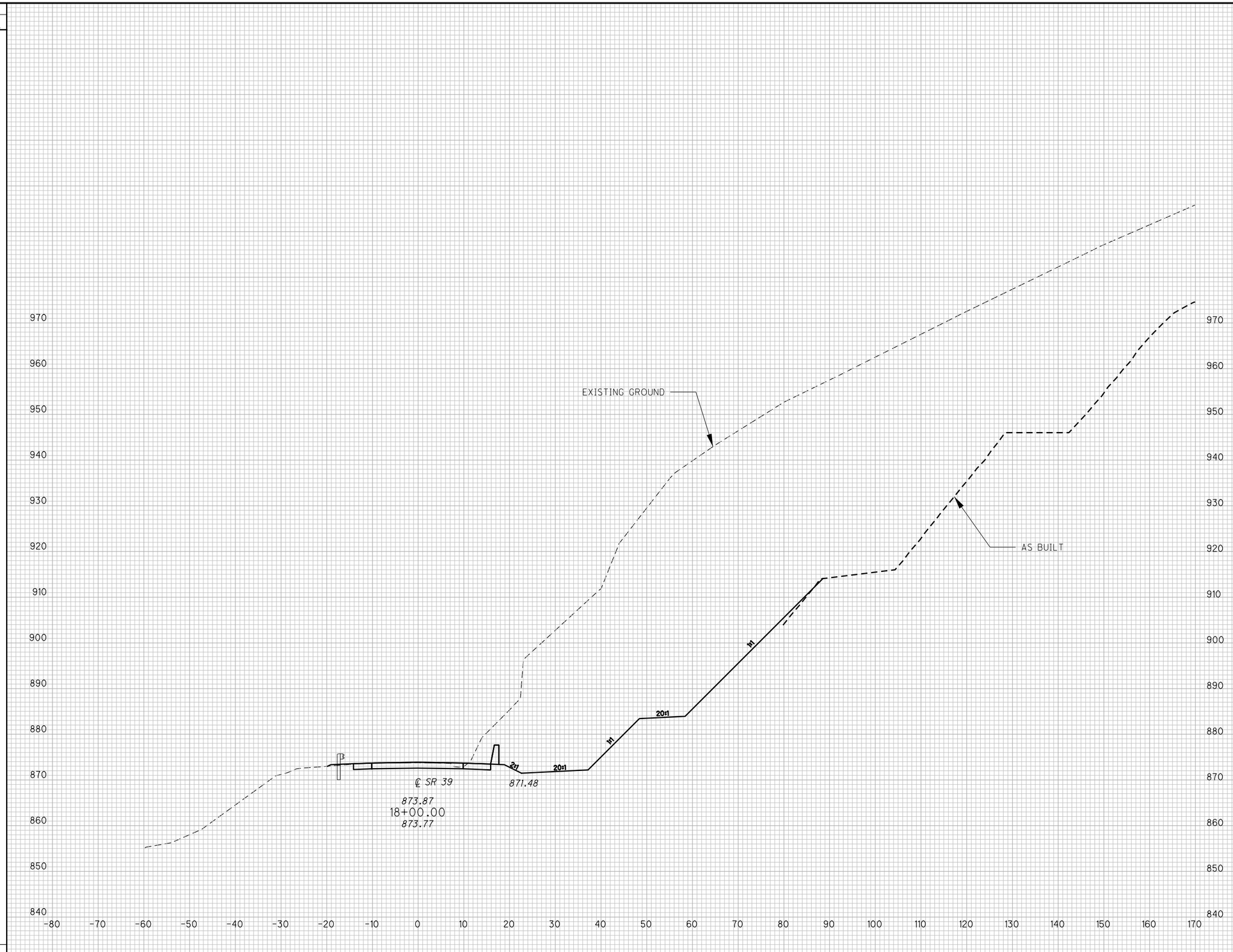
CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:43 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

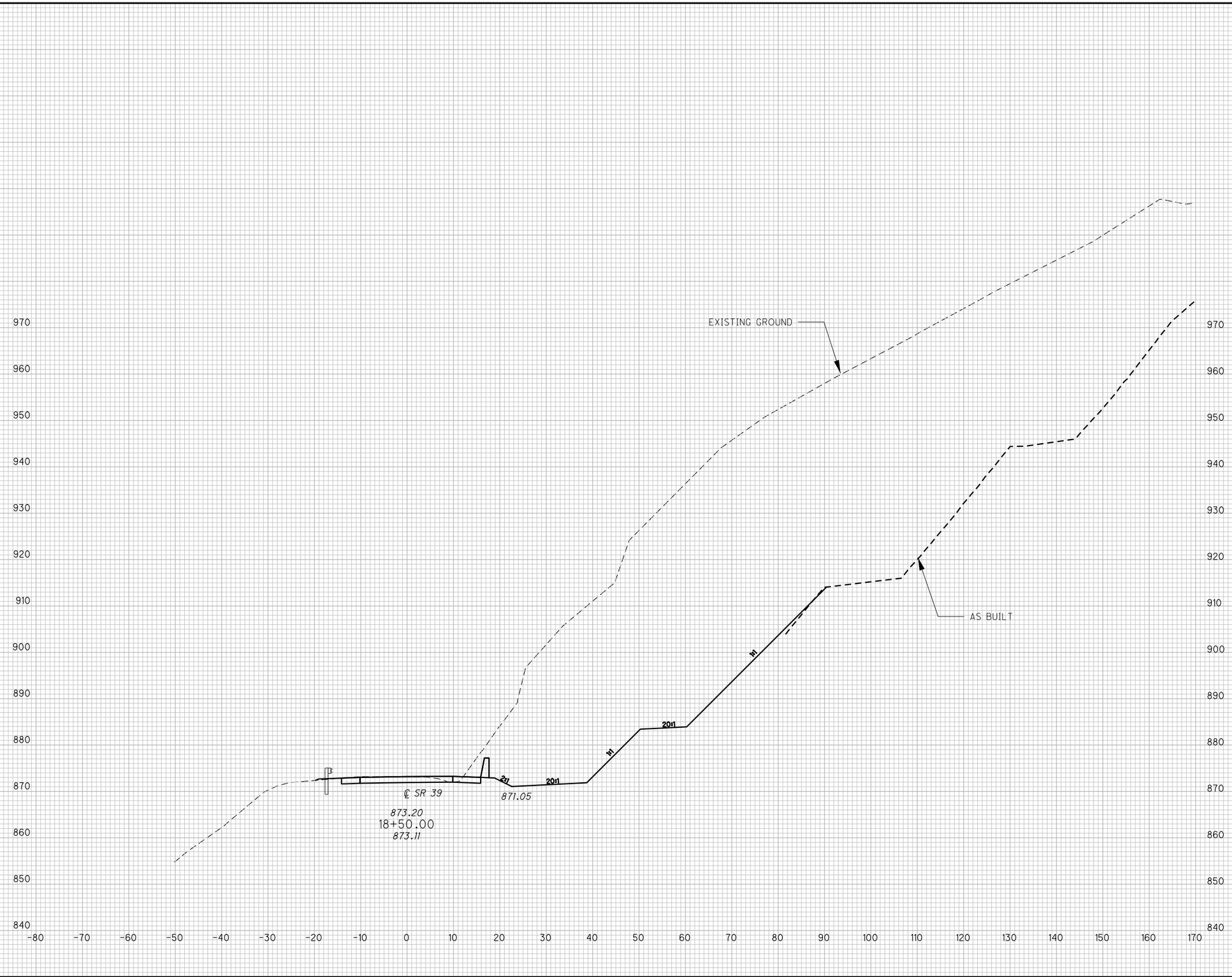
c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:43 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

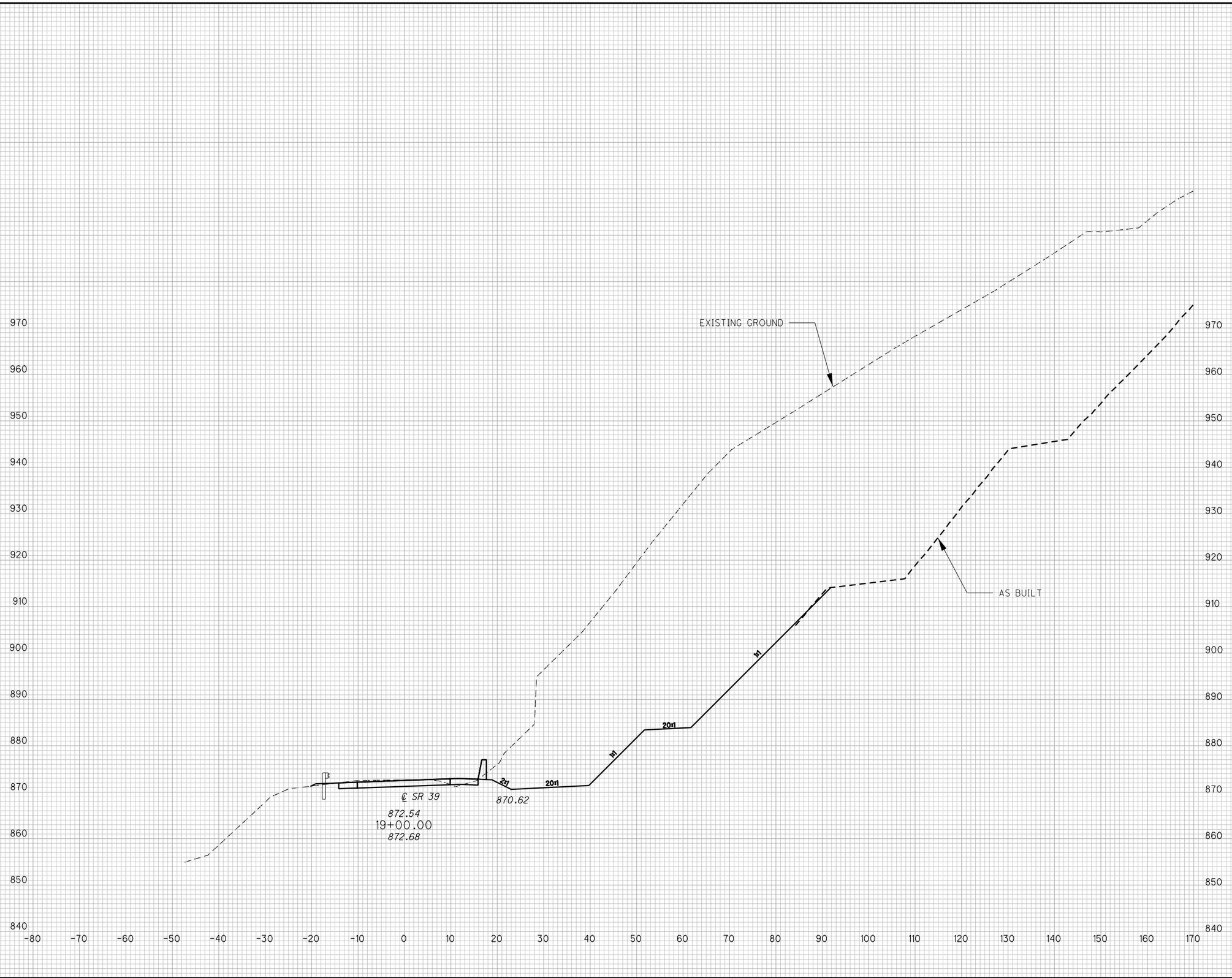
c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:43 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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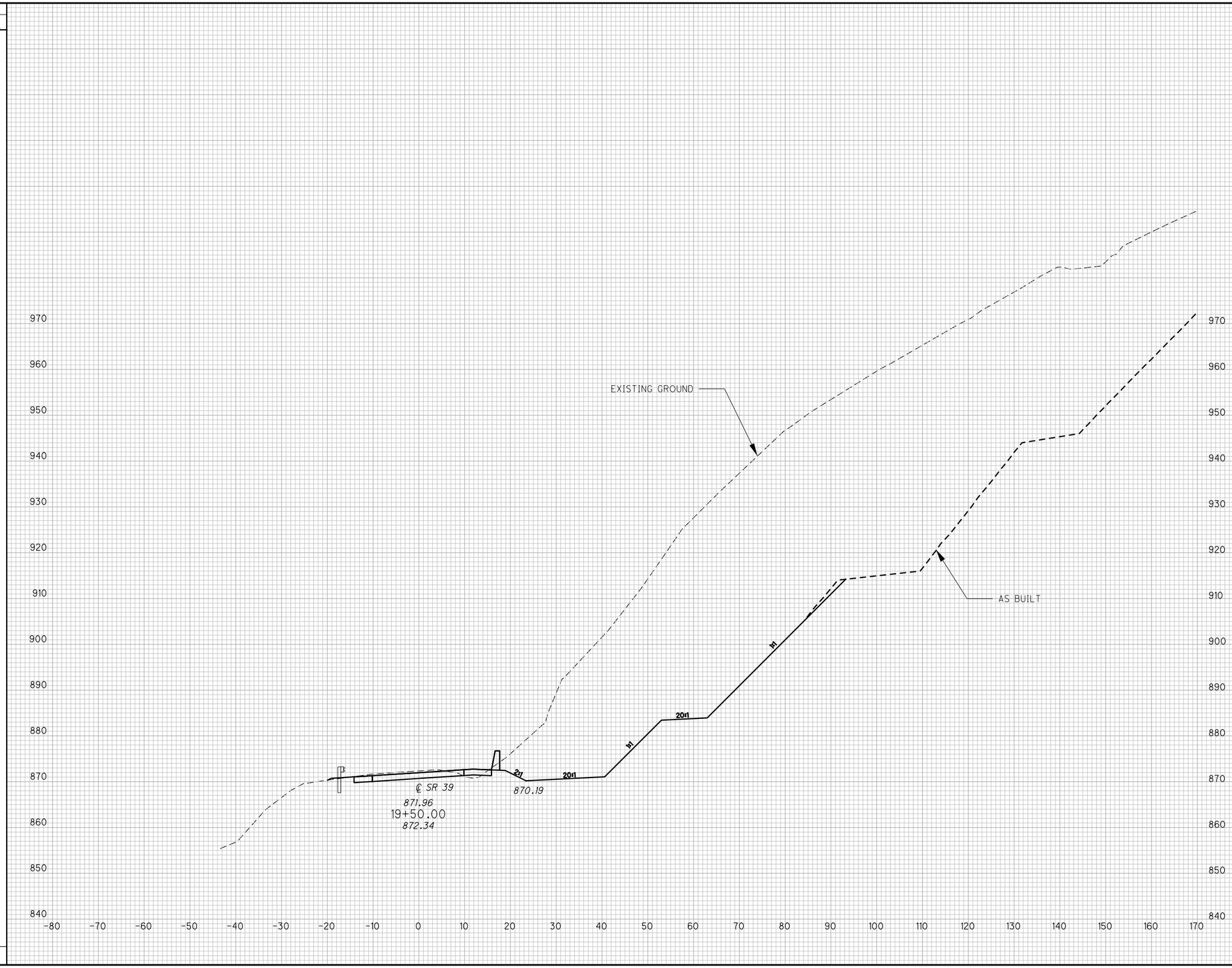
SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED

CROSS SECTIONS SR 39

COL-39-2.80

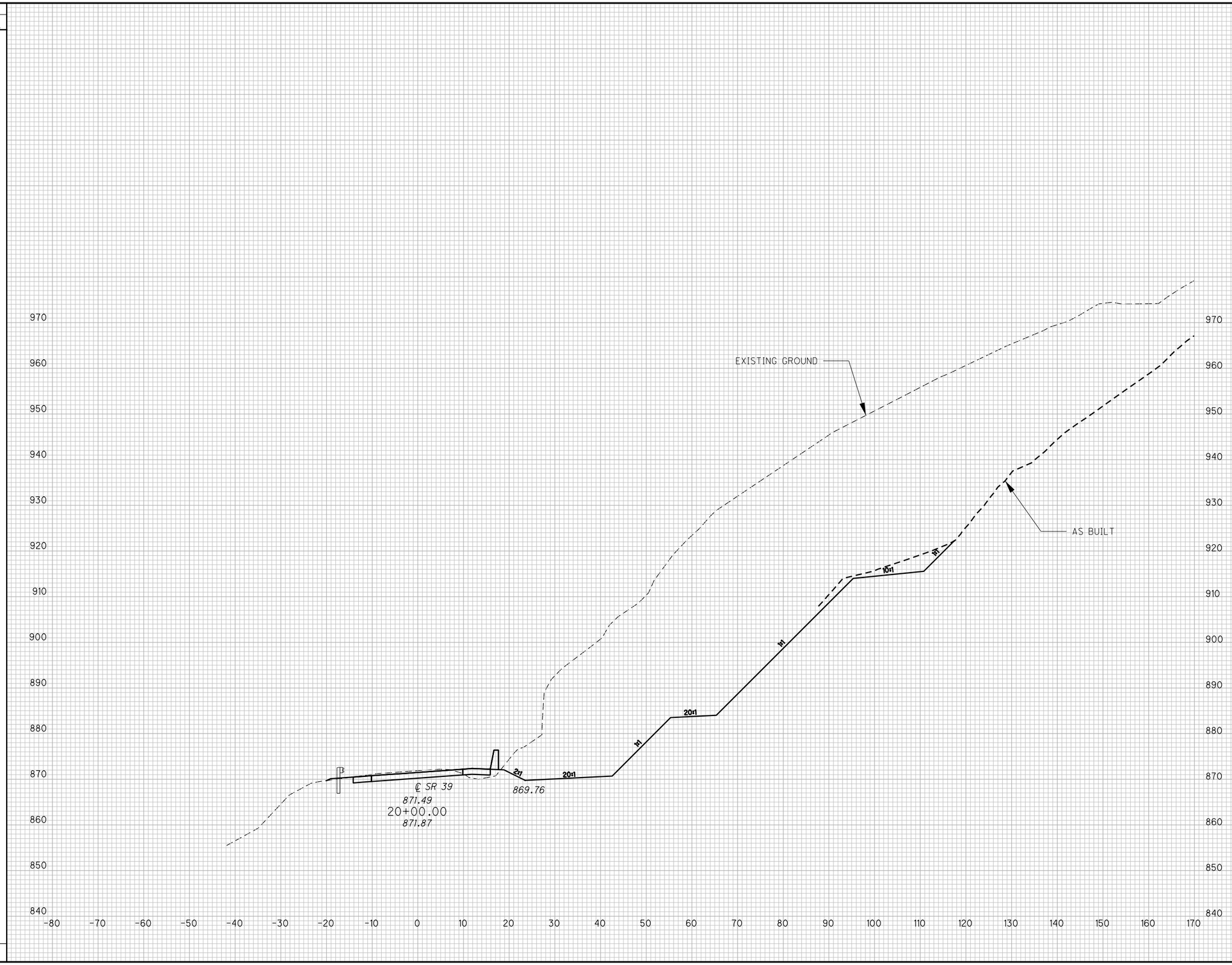
c:\pwworking\pitt\d1121103\COL_XSC.dgn 4/10/2015 9:17:44 AM SBOEHM

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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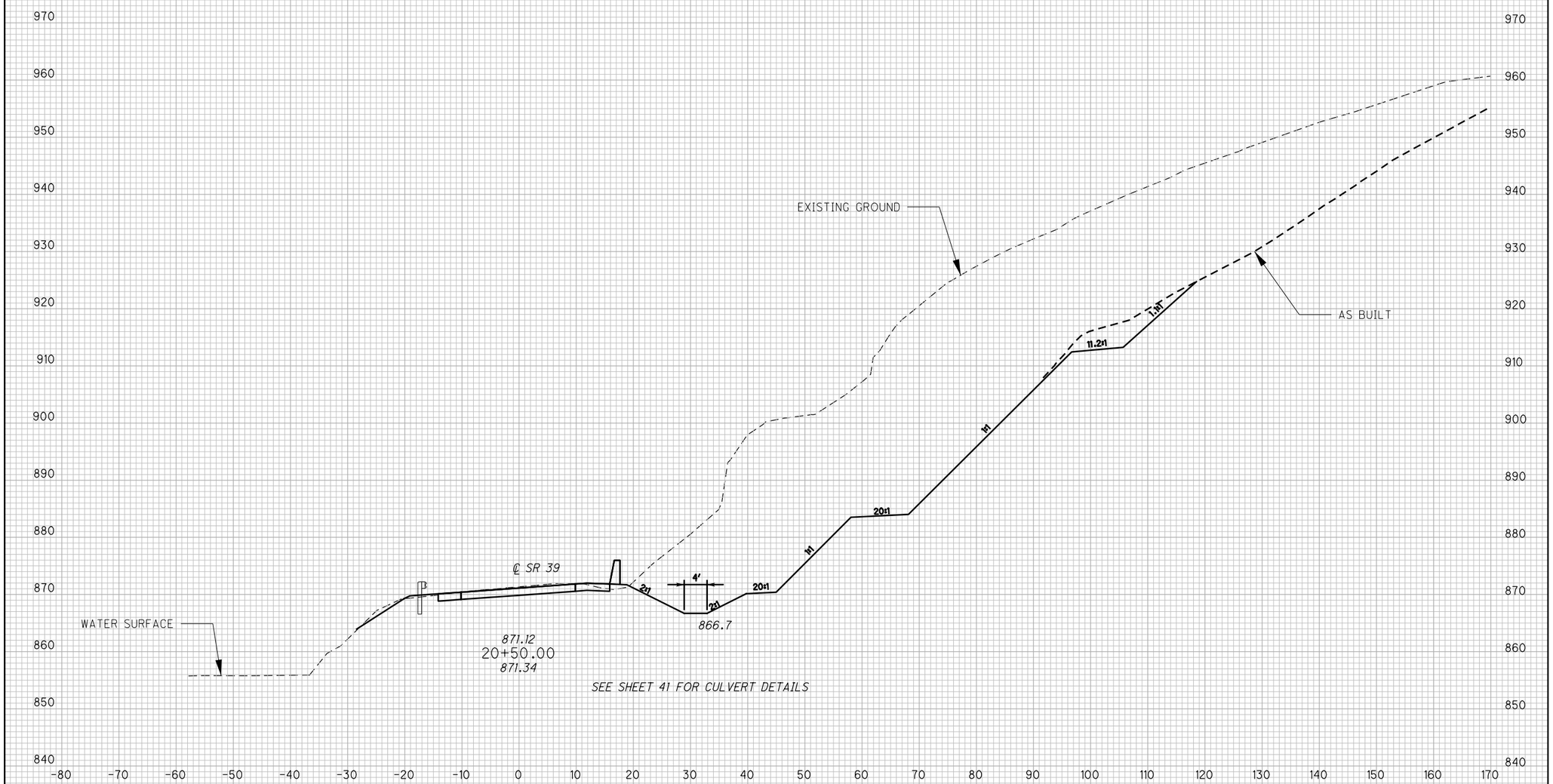
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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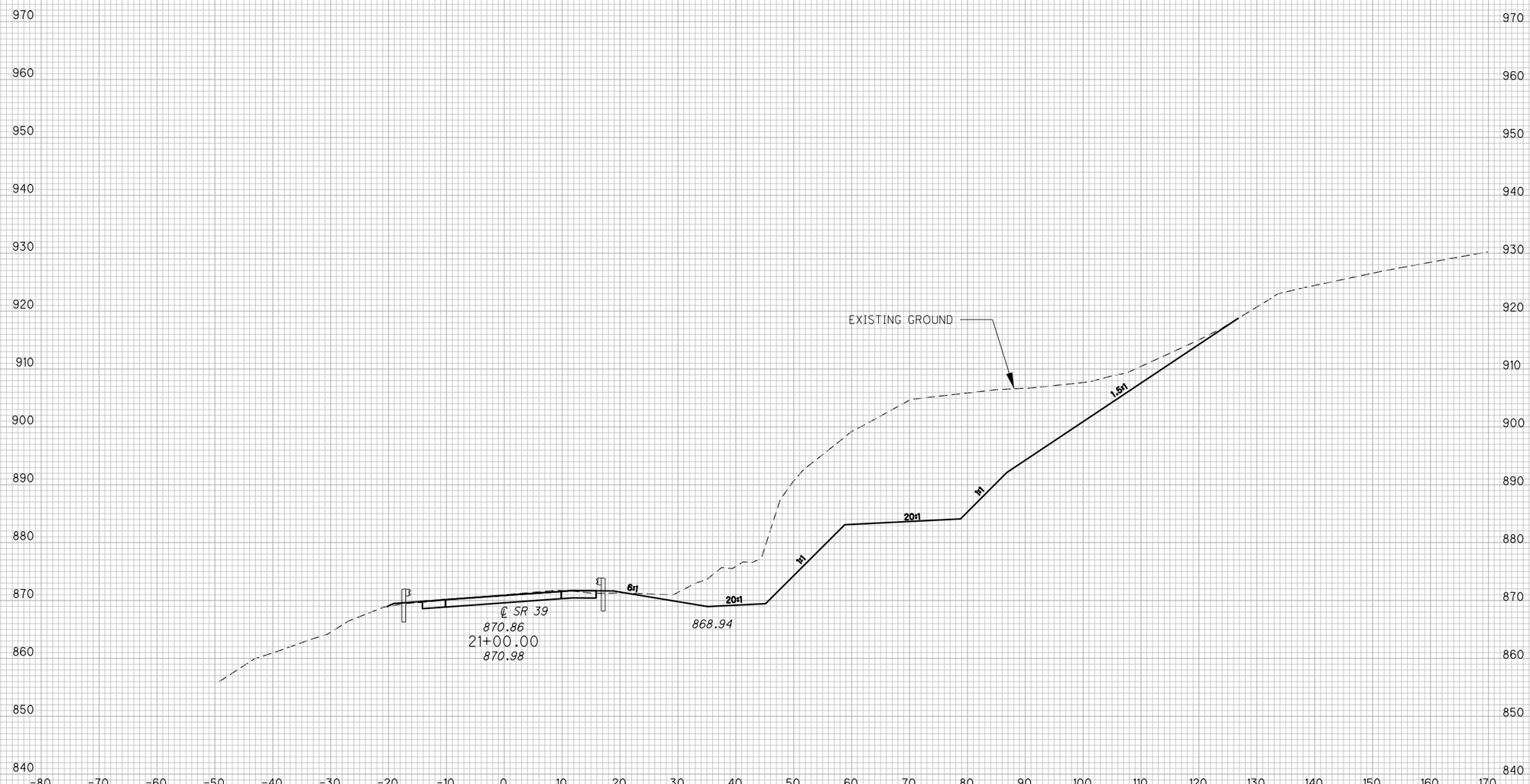
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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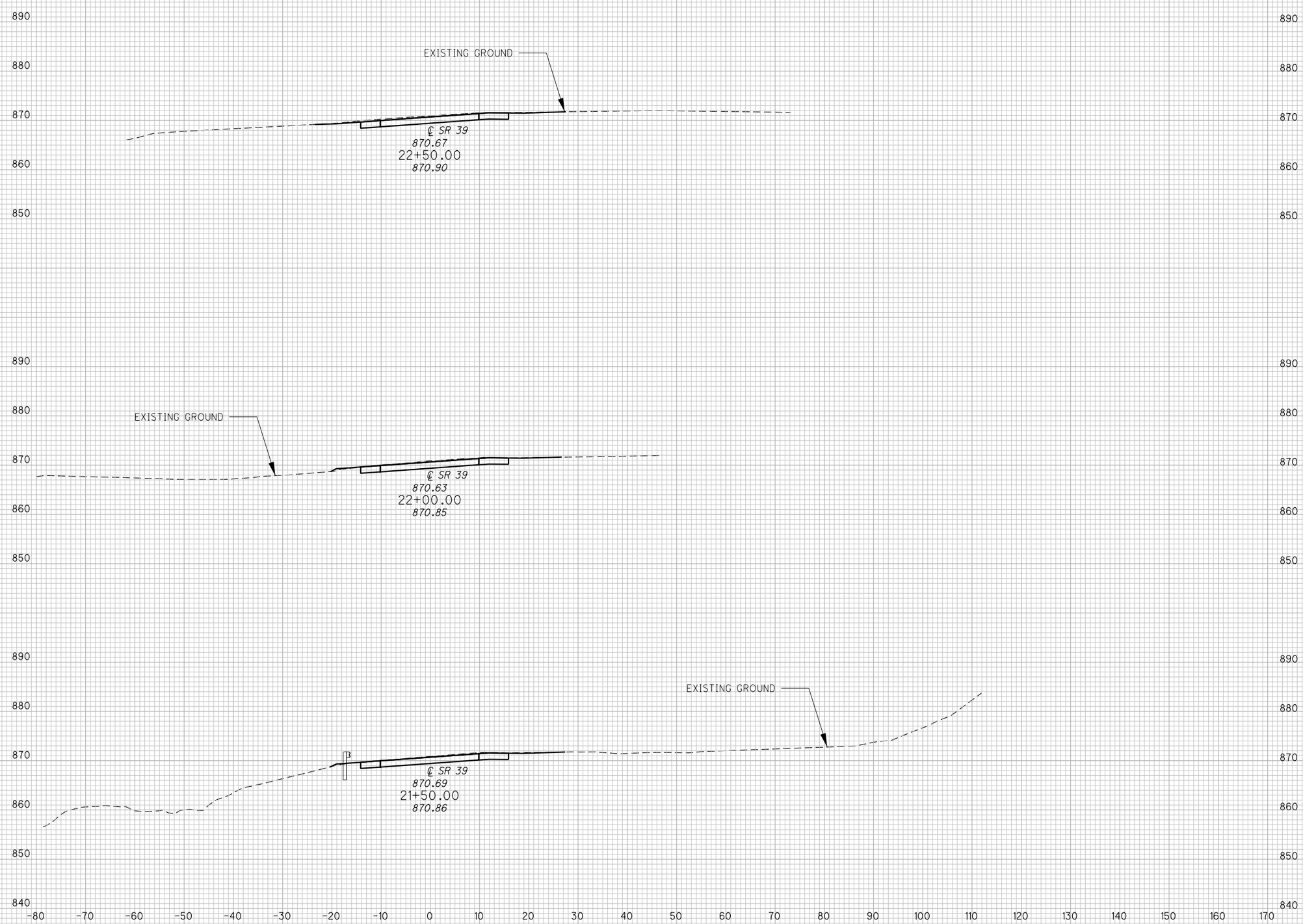
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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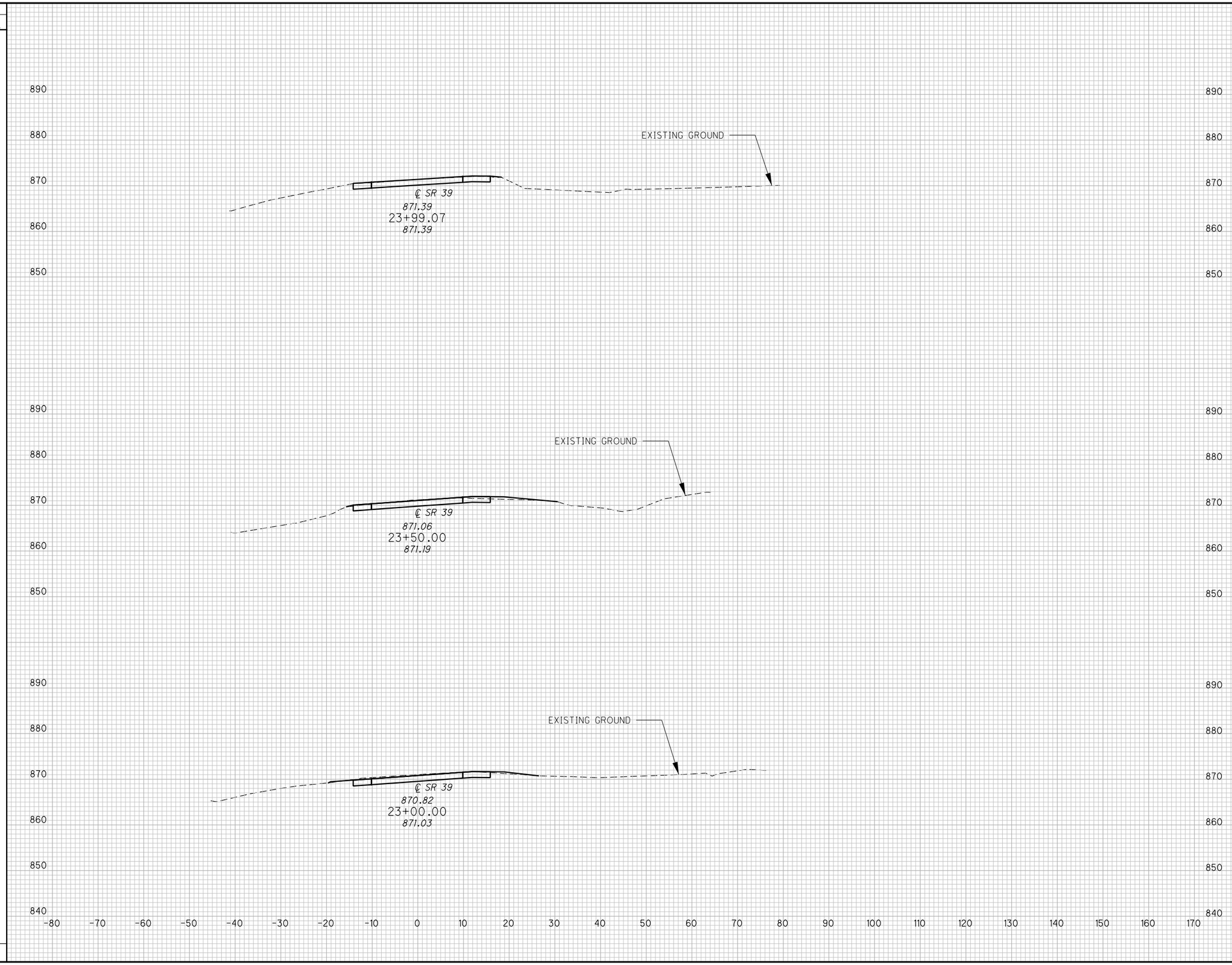
SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED

CHECKED



CROSS SECTIONS SR 39

COL-39-2.80

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SUPERELEVATION TABLE

CURVE 1: P.I. STA =14+22.42 Dc = 12°43'57"

Left Side									Centerline Control		Right Side									
EDGE OF PAVED SHOULDER ELEVATION	SHOULDER SLOPE	SHOULDER WIDTH	EDGE OF PAVEMENT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	LANE CROSS SLOPE EXTENSION	LANE WIDTH	STATION	PROFILE GRADE	LANE WIDTH	LANE CROSS SLOPE EXTENSION	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE OF PAVEMENT ELEVATION	SHOULDER WIDTH	SHOULDER SLOPE	WALL BASE ELEVATION	REMARKS
876.09	-0.0100	2.0	876.11		0.70	0.0580	2.0	10.0	12+86.42	875.41	10.0	0.0	-0.1030	-1.03		874.38	6.0	-0.1030	873.76	P.C.C.
876.19	-0.0100	2.0	876.21	228:1	0.70	0.0580	2.0	10.0	13+00.00	875.51	10.0	0.0	-0.1030	-1.03	218:1	874.48	6.0	-0.1030	873.86	MATCH EXISTING CROSS SLOPE
876.50	-0.0100	2.0	876.52		0.83	0.0690	2.0	10.0	13+25.00	875.69	10.0	0.0	-0.0915	-0.92		874.78	6.0	-0.0915	874.23	
876.81	-0.0100	2.0	876.83		0.96	0.0800	2.0	10.0	13+50.00	875.87	10.0	0.0	-0.0800	-0.80		875.07	6.0	-0.0800	874.59	BEGIN FULL SUPER
877.00	-0.0100	2.0	877.02		0.96	0.0800	2.0	10.0	13+75.00	876.06	10.0	0.0	-0.0800	-0.80		875.26	6.0	-0.0800	874.78	
877.16	-0.0100	2.0	877.18		0.96	0.0800	2.0	10.0	14+00.00	876.22	10.0	0.0	-0.0800	-0.80		875.42	6.0	-0.0800	874.94	
877.28	-0.0100	2.0	877.30		0.96	0.0800	2.0	10.0	14+25.00	876.34	10.0	0.0	-0.0800	-0.80		875.54	6.0	-0.0800	875.06	
877.36	-0.0100	2.0	877.38		0.96	0.0800	2.0	10.0	14+50.00	876.42	10.0	0.0	-0.0800	-0.80		875.62	6.0	-0.0800	875.14	
877.40	-0.0100	2.0	877.42		0.96	0.0800	2.0	10.0	14+65.07	876.46	10.0	0.0	-0.0800	-0.80		875.66	6.0	-0.0800	875.18	END FULL SUPER
877.35	-0.0100	2.0	877.37		0.90	0.0754	2.0	10.0	14+75.00	876.47	10.0	0.0	-0.0754	-0.75		875.72	6.0	-0.0754	875.26	
877.22	-0.0100	2.0	877.24		0.76	0.0637	2.0	10.0	15+00.00	876.48	10.0	0.0	-0.0637	-0.64		875.84	6.0	-0.0637	875.46	
877.17	-0.0100	2.0	877.19		0.72	0.0600	2.0	10.0	15+07.82	876.47	10.0	0.0	-0.0600	-0.60		875.87	6.0	-0.0600	875.51	
876.90	-0.0180	4.0	876.97		0.52	0.0520	0.0	10.0	15+25.00	876.45	10.0	0.0	-0.0520	-0.52		875.93	6.0	-0.0520	875.62	
876.67	-0.0297	4.0	876.79		0.40	0.0403	0.0	10.0	15+50.00	876.39	10.0	0.0	-0.0403	-0.40	213:1	875.99	6.0	-0.0403	875.75	
876.66	-0.0300	4.0	876.78		0.40	0.0400	0.0	10.0	15+50.57	876.38	10.0	0.0	-0.0400	-0.40		875.98	6.0	-0.0400	875.74	P.T.
876.44	-0.0400	4.0	876.60	213:1	0.30	0.0300	0.0	10.0	15+71.94	876.30	10.0	0.0	-0.0300	-0.30		876.00	6.0	-0.0400	875.76	
876.41	-0.0400	4.0	876.57		0.29	0.0286	0.0	10.0	15+75.00	876.28	10.0	0.0	-0.0286	-0.29		875.99	6.0	-0.0400	875.75	
876.15	-0.0400	4.0	876.31		0.17	0.0169	0.0	10.0	16+00.00	876.14	10.0	0.0	-0.0169	-0.17		875.97	6.0	-0.0400	875.73	
876.13	-0.0400	4.0	876.29		0.16	0.0160	0.0	10.0	16+01.87	876.13	10.0	0.0	-0.0160	-0.16		875.97	6.0	-0.0400	875.73	REVERSE CROWN
875.86	-0.0400	4.0	876.02		0.05	0.0052	0.0	10.0	16+25.00	875.97	10.0	0.0	-0.0160	-0.16		875.81	6.0	-0.0400	875.57	
875.72	-0.0400	4.0	875.88		0.00	0.0000	0.0	10.0	16+36.07	875.88	10.0	0.0	-0.0160	-0.16		875.72	6.0	-0.0400	875.48	1/2 LEVEL
875.52	-0.0400	4.0	875.68		-0.07	-0.0065	0.0	10.0	16+50.00	875.75	10.0	0.0	-0.0160	-0.16		875.59	6.0	-0.0400	875.35	
875.23	-0.0400	4.0	875.39		-0.16	-0.0160	0.0	10.0	16+70.27	875.55	10.0	0.0	-0.0160	-0.16		875.39	6.0	-0.0400	875.15	NORMAL CROWN N.C.
875.18	-0.0400	4.0	875.34		-0.16	-0.0160	0.0	10.0	16+75.00	875.50	10.0	0.0	-0.0160	-0.16		875.34	6.0	-0.0400	875.10	
874.89	-0.0400	4.0	875.05		-0.16	-0.0160	0.0	10.0	17+00.00	875.21	10.0	0.0	-0.0160	-0.16		875.05	6.0	-0.0400	874.81	
874.57	-0.0400	4.0	874.73		-0.16	-0.0160	0.0	10.0	17+25.00	874.89	10.0	0.0	-0.0160	-0.16		874.73	6.0	-0.0400	874.49	

CALCULATED
CHECKED

SUPERELEVATION TABLE
PI STA. 14+22.42

COL-39-2.80

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SUPERELEVATION TABLE

CURVE 2: P.I. STA = 21+61.53 Dc = 8°25'33"

Left Side									Centerline Control		Right Side									
EDGE OF PAVED SHOULDER ELEVATION	SHOULDER SLOPE	SHOULDER WIDTH	EDGE OF PAVEMENT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	LANE CROSS SLOPE EXTENSION	LANE WIDTH	STATION	PROFILE GRADE	LANE WIDTH	LANE CROSS SLOPE EXTENSION	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE OF PAVEMENT ELEVATION	SHOULDER WIDTH	SHOULDER SLOPE	WALL BASE ELEVATION	REMARKS
874.23	-0.0400	4.0	874.39		-0.16	-0.0160	0.0	10.0	17+50.00	874.55	10.0	0.0	-0.0160	-0.16		874.39	6.0	-0.0400	874.15	
873.89	-0.0400	4.0	874.05		-0.16	-0.0160	0.0	10.0	17+75.00	874.21	10.0	0.0	-0.0160	-0.16		874.05	6.0	-0.0400	873.81	
873.70	-0.0400	4.0	873.86		-0.16	-0.0160	0.0	10.0	17+89.14	874.02	10.0	0.0	-0.0160	-0.16		873.86	6.0	-0.0400	873.62	NORMAL CROWN
873.55	-0.0400	4.0	873.71		-0.16	-0.0160	0.0	10.0	18+00.00	873.87	10.0	0.0	-0.0109	-0.11		873.76	6.0	-0.0400	873.52	
873.24	-0.0400	4.0	873.40		-0.16	-0.0160	0.0	10.0	18+23.37	873.56	10.0	0.0	0.0000	0.00		873.56	6.0	-0.0400	873.32	1/2 LEVEL
873.22	-0.0400	4.0	873.38		-0.16	-0.0160	0.0	10.0	18+25.00	873.54	10.0	0.0	0.0008	0.01		873.55	6.0	-0.0400	873.31	
872.88	-0.0400	4.0	873.04		-0.16	-0.0160	0.0	10.0	18+50.00	873.20	10.0	0.0	0.0125	0.12		873.32	6.0	-0.0400	873.08	
872.78	-0.0400	4.0	872.94		-0.16	-0.0160	0.0	10.0	18+57.60	873.10	10.0	0.0	0.0160	0.16		873.26	6.0	-0.0400	873.02	REVERSE CROWN
872.46	-0.0400	4.0	872.62		-0.24	-0.0241	0.0	10.0	18+75.00	872.86	10.0	0.0	0.0241	0.24		873.10	6.0	-0.0400	872.86	
872.23	-0.0400	4.0	872.39		-0.30	-0.0300	0.0	10.0	18+87.53	872.69	10.0	0.0	0.0300	0.30	213:1	872.99	6.0	-0.0400	872.75	
872.02	-0.0400	4.0	872.18		-0.36	-0.0358	0.0	10.0	19+00.00	872.54	10.0	2.0	0.0358	0.43		872.97	4.0	-0.0400	872.81	
872.01	-0.0400	4.0	872.17	213:1	-0.36	-0.0360	0.0	10.0	19+00.37	872.53	10.0	2.0	0.0360	0.43		872.96	4.0	-0.0400	872.80	P.C.
871.57	-0.0475	4.0	871.76		-0.48	-0.0475	0.0	10.0	19+25.00	872.24	10.0	2.0	0.0475	0.57		872.81	4.0	-0.0400	872.65	
871.13	-0.0592	4.0	871.37		-0.59	-0.0592	0.0	10.0	19+50.00	871.96	10.0	2.0	0.0592	0.71		872.67	4.0	-0.0400	872.51	
870.73	-0.0709	4.0	871.01		-0.71	-0.0709	0.0	10.0	19+75.00	871.72	10.0	2.0	0.0709	0.85		872.57	4.0	-0.0400	872.41	
870.68	-0.0720	4.0	870.97		-0.72	-0.0720	0.0	10.0	19+77.37	871.69	10.0	2.0	0.0720	0.86		872.55	4.0	-0.0400	872.39	FULL SUPER
870.48	-0.0720	4.0	870.77		-0.72	-0.0720	0.0	10.0	20+00.00	871.49	10.0	2.0	0.0720	0.86		872.35	4.0	-0.0400	872.19	
870.29	-0.0720	4.0	870.58		-0.72	-0.0720	0.0	10.0	20+25.00	871.30	10.0	2.0	0.0720	0.86		872.16	4.0	-0.0400	872.00	
870.11	-0.0720	4.0	870.40		-0.72	-0.0720	0.0	10.0	20+50.00	871.12	10.0	2.0	0.0720	0.86		871.98	4.0	-0.0400	871.82	Barrier ends at 20+65.60
869.97	-0.0720	4.0	870.26		-0.72	-0.0720	0.0	10.0	20+75.00	870.98	10.0	2.0	0.0720	0.86		871.84	4.0	-0.0100	871.80	
869.85	-0.0720	4.0	870.14		-0.72	-0.0720	0.0	10.0	21+00.00	870.86	10.0	2.0	0.0720	0.86		871.72	4.0	-0.0100	871.68	
869.75	-0.0720	4.0	870.04		-0.72	-0.0720	0.0	10.0	21+25.00	870.76	10.0	2.0	0.0720	0.86		871.62	4.0	-0.0100	871.58	
869.68	-0.0720	4.0	869.97		-0.72	-0.0720	0.0	10.0	21+50.00	870.69	10.0	2.0	0.0720	0.86		871.55	4.0	-0.0100	871.51	
869.64	-0.0720	4.0	869.93		-0.72	-0.0720	0.0	10.0	21+75.00	870.65	10.0	2.0	0.0720	0.86		871.51	4.0	-0.0100	871.47	
869.62	-0.0720	4.0	869.91		-0.72	-0.0720	0.0	10.0	22+00.00	870.63	10.0	2.0	0.0720	0.86		871.49	4.0	-0.0100	871.45	
869.63	-0.0720	4.0	869.92		-0.72	-0.0720	0.0	10.0	22+25.00	870.64	10.0	2.0	0.0720	0.86		871.50	4.0	-0.0100	871.46	
869.66	-0.0720	4.0	869.95		-0.72	-0.0720	0.0	10.0	22+50.00	870.67	10.0	2.0	0.0720	0.86		871.53	4.0	-0.0100	871.49	
869.72	-0.0720	4.0	870.01		-0.72	-0.0720	0.0	10.0	22+75.00	870.73	10.0	2.0	0.0720	0.86		871.59	4.0	-0.0100	871.55	
869.81	-0.0720	4.0	870.10		-0.72	-0.0720	0.0	10.0	23+00.00	870.82	10.0	2.0	0.0720	0.86		871.68	4.0	-0.0100	871.64	
869.92	-0.0720	4.0	870.21		-0.72	-0.0720	0.0	10.0	23+25.00	870.93	10.0	2.0	0.0720	0.86		871.79	4.0	-0.0100	871.75	
870.05	-0.0720	4.0	870.34		-0.72	-0.0720	0.0	10.0	23+50.00	871.06	10.0	2.0	0.0720	0.86		871.92	4.0	-0.0100	871.88	END FULL SUPER
870.20	-0.0730	4.0	870.49	2454:1	-0.73	-0.0730	0.0	10.0	23+75.00	871.22	10.0	2.0	0.0613	0.74	234:1	871.96	4.0	-0.0100	871.92	
870.40	-0.0630	4.0	870.65		-0.74	-0.0740	0.0	10.0	23+99.07	871.39	10.0	2.0	0.0510	0.61		872.00	4.0	-0.0100	871.96	P.C.C. MATCH EXISTING CROSS SLOPE

CALCULATED

CHECKED

SUPERELEVATION TABLE
PI STA. 21+61.53

COL-39-2.80

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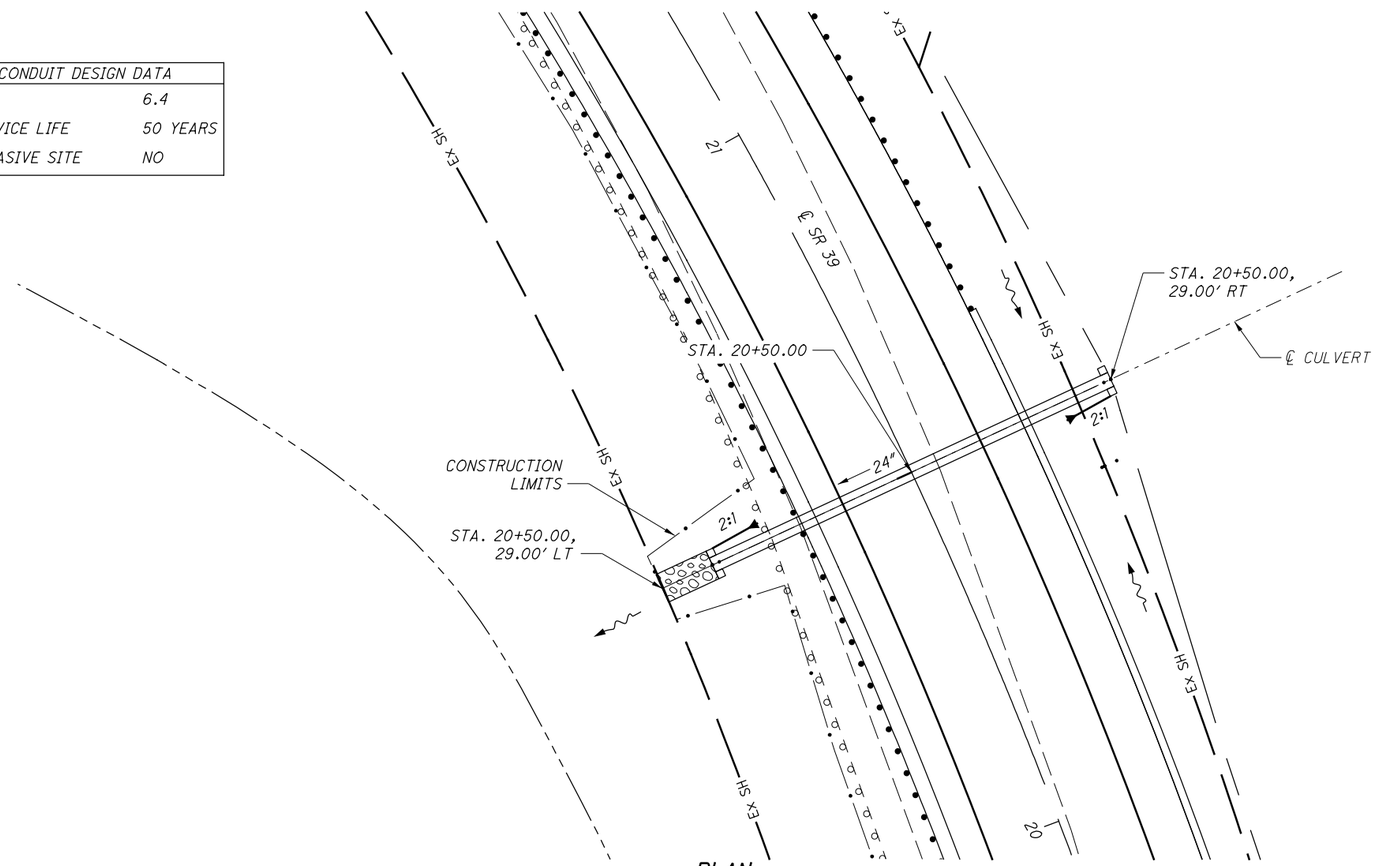
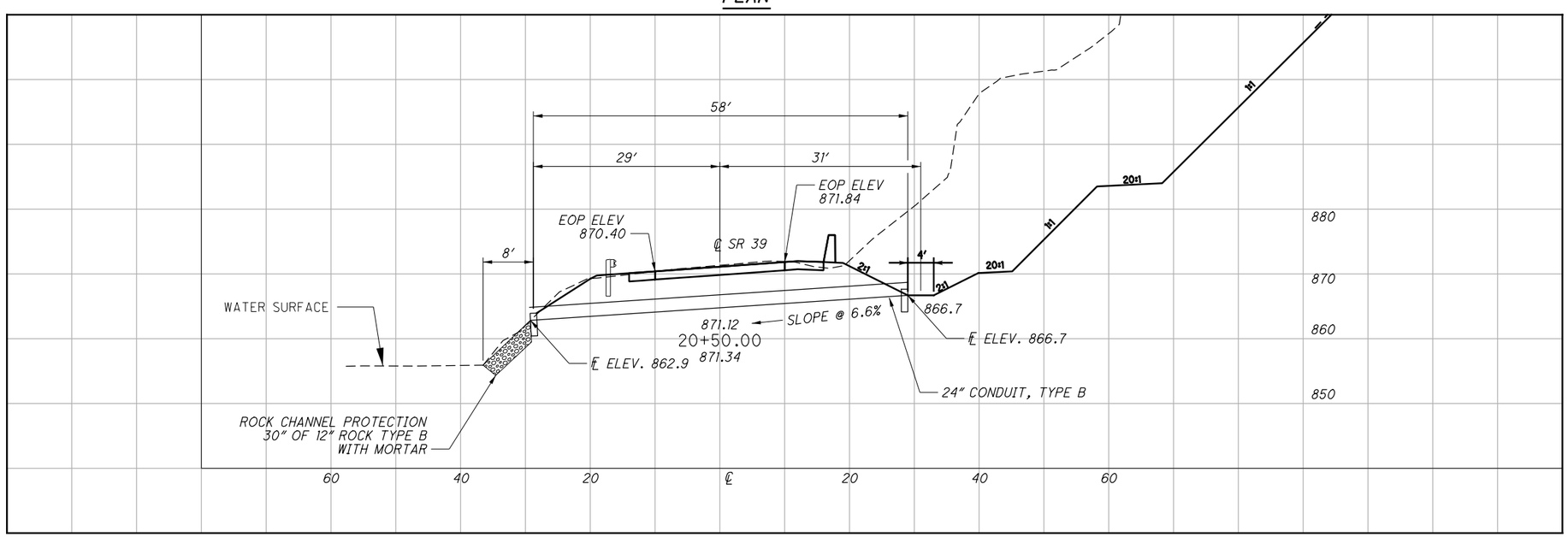
PROPOSED STRUCTURE
TYPE: 24" CORRUGATED METAL
SKEW: 90.0°
ALIGNMENT: CURVE

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 13.8 AC.
Q_{25}	= 22 CFS
Q_{100}	= 26 CFS
PROPOSED	
HW_{25}	870.4 FT
HW_{100}	871.4 FT
V_{25}	10.6 FPS
V_{100}	10.9 FPS

CONDUIT DESIGN DATA	
pH	6.4
SERVICE LIFE	50 YEARS
ABRASIVE SITE	NO



PLAN



HORIZONTAL SCALE IN FEET
0 10 20

CALCULATED
CHECKED

CULVERT DETAIL
SR39 STA. 20+50.00

COL-39-2.80

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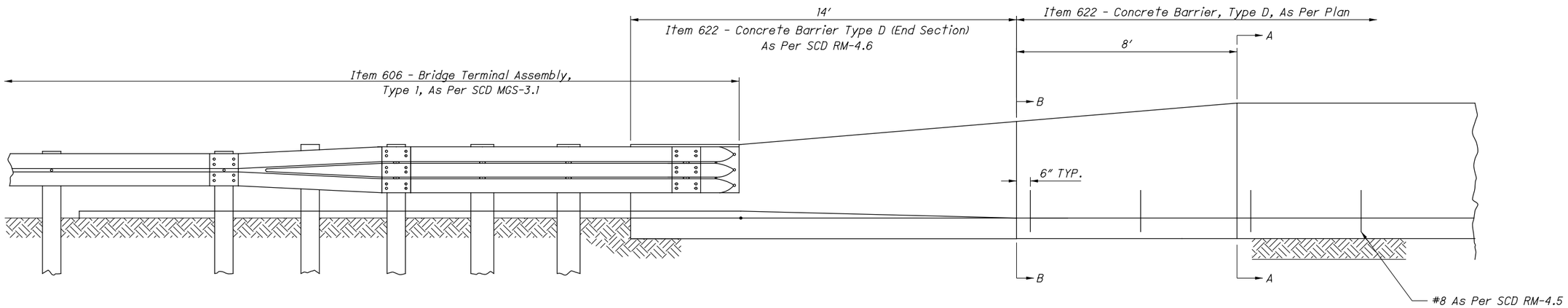
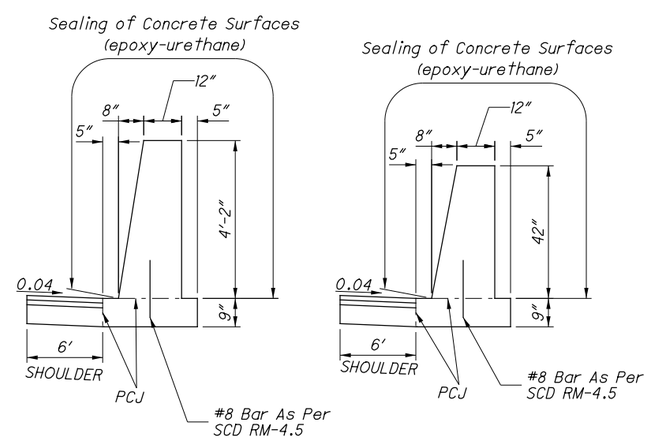


ELEVATION



SECTION A-A

SECTION B-B

PCJ = Permissible Construction Joint

CALCULATED

CHECKED

BARRIER DETAIL, TYPE D, APP

COL-39-2.80

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