x-Ohio General Notes.dwg

FOSTER•GEOTECHNICAL

A Division of L. B. Foster Company

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WOODBRIDGE, VA / SAN DIEGO, CA / MELBOURNE, FL
FORT WORTH, TX / MONTICELLO, IN

DESIGN CRITERIA

1. CERTIFIED FOR INTERNAL STABILITY OF RETAINED EARTH™ STRUCTURES ONLY. EXTERNAL STABILITY, INCLUDING BUT NOT LIMITED TO FOUNDATION AND SLOPE STABILITY, IS THE RESPONSIBILITY OF THE OWNER. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE RETAINED EARTH™ MASS, METHODS OF CONSTRUCTION, AND QUALITY OF PREFABRICATED MATERIALS CONFORM TO THE MANUFACTURER'S SPECIFICATION.

2. FACTORS OF SAFETY

   INTERNAL PULLOUT 1.5
   SLIDING 1.5
   OVERTURNING 2.0
   BEARING CAPACITY = 2.5

3. SOIL CHARACTERISTICS ASSUMED FOR DESIGN:

   SELECT GRANULAR BACKFILL
   Ø = 34 degrees, γ = 17.28 KN/m3
   RANDOM BACKFILL
   Ø = 34 degrees, γ = 20.42 KN/m3
   FOUNDATION MATERIAL
   Ø = 30 degrees,

4. THE MAXIMUM APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATIONS FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.

5. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

   THE DESIGN CONTAINED ON THESE DRAWINGS IS BASED ON INFORMATION PROVIDED BY OTHERS. ON THE BASIS OF THIS INFORMATION, THE WALL COMPANY IS RESPONSIBLE FOR INTERNAL STABILITY OF THE STRUCTURE ONLY. EXTERNAL STABILITY DESIGN INCLUDING FOUNDATION AND SLOPE STABILITY IS THE RESPONSIBILITY OF OTHERS.

REINFORCING ELEMENTS

6. REINFORCING MESH ELEMENTS SHALL BE SHOP FABRICATED FROM COLD DRAWN STEEL ROD CONFORMING TO THE MINIMUM REQUIREMENTS OF ASTM A-82M AND SHALL BE WELDED AT THE JUNCTIONS BETWEEN LONGITUDINAL AND TRANSVERSE WIRES IN ACCORDANCE WITH ASTM A-185M. GALVANIZATION SHALL BE APPLIED AFTER MESH FABRICATION AND SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF ASTM A-123M.

   LOOP EMBEDS SHALL BE FABRICATED FROM COLD DRAWN STEEL ROD CONFORMING TO ASTM A-510M OR ASTM A-82M. LOOP EMBEDS SHALL BE WELDED IN ACCORDANCE WITH ASTM A-185M. LOOP EMBEDS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM B-633M.

WALL CONSTRUCTION

7. RETAINED EARTH™ WALLS IN CURVES WILL FORM A SERIES OF SHORT CHORDS OF 1524mm EACH TO MATCH DESIRED WALL ALIGNMENT.

8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE RETAINED EARTH STRUCTURES ARE BEING INSTALLED AT THE PROPER LOCATIONS, WITH RESPECT TO LINE, GRADE, OFFSETS AND OTHER LOCATION DATA. THE CONTRACTOR SHALL USE THE CONTRACT DRAWINGS FOR THE NECESSARY INFORMATION TO ESTABLISH THE ACTUAL LOCATIONS OF THE RETAINED EARTH™ STRUCTURES IN THE FIELD.

9. IF MANHOLES AND DROP INLETS ARE PRESENT, THEY SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS.

10. BACKFILL MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR RETAINED EARTH™ WALLS TO A LEVEL OF 51mm(+/-) ABOVE THE TIE MESH EMBEDDED IN THE PANELS. INSTALLATION OF REINFORCING MESH SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.

11. THE WALL CONSTRUCTION AND SOIL COMPACTION SHALL BE IN ACCORDANCE WITH THE PROPER WALL ERECTION PROCEDURES OUTLINED IN THE FOSTER GEOTECHNICAL "INSTALLATION MANUAL FOR RETAINED EARTH™ WALLS AND PROJECT SPECIFICATIONS.

12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY GUARDRAIL POSTS BEHIND RETAINED EARTH™ PANELS. PRIOR TO PLACEMENT OF THE TOP LAYER OF REINFORCING MESH, INDIVIDUAL REINFORCING MESH MAY BE SKEWED TO AVOID THE POST LOCATIONS IF AUTHORIZED BY THE ENGINEER. ANY DAMAGE DONE TO THE REINFORCING MESH DUE TO THE INSTALLATION OF THE GUARDRAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

13. IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN REINFORCED SOIL VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF REINFORCING MESH AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO DETERMINE WHAT COURSE OF ACTION SHOULD BE TAKEN.

14. TOP PANELS BENEATH CAST-IN-PLACE COPING SHALL HAVE #13 BARS PROTRUDING FROM THEIR TOP EDGE.

15. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING MESH DOWNWARD TO AVOID CONFLICTS WITH PAVING AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPER ELEVATION AND/OR SOIL MIXING ARE ANTICIPATED.

16. CARE SHALL BE TAKEN TO PREVENT DAMAGE TO GALVANIZING. DAMAGED GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT.

17. BEARING PADS AND FILTER FABRIC ARE NOT REQUIRED BETWEEN THE LEVELING PAD AND THE FIRST ROW OF PANELS. TEMPORARY WEDGES MAY BE USED TO PROVIDE PROPER ALIGNMENT.

18. TOP ROW MESH INTERFERING WITH TRAFFIC BARRIER INSTALLATION SHALL BE DISCONNECTED AND CAST INTO THE MOMENT SLAB OR ATTACHED TO COPING CLEVISES.

MATERIAL NOTES

19. NOMINAL MESH LENGTHS

   THE REINFORCING MESH LENGTH SHOWN ON THE PLANS, MEASURED FROM BACK FACE OF PANEL ARE THE NOMINAL LENGTHS REQUIRED BY CALCULATION. THE ACTUAL FABRICATED MESH LENGTHS ARE OFTEN LONGER (UP TO 152mm) DUE TO MANUFACTURING TOLERANCES. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL IS EQUAL TO THE NOMINAL MESH LENGTH. ADDITIONAL GRANULAR BACKFILL BEYOND THE NOMINAL MESH LENGTH IS NOT REQUIRED BY CALCULATION. BUT MAY BE REQUIRED BY OTHERS.

20. PANEL FINISH

   ALL PRECAST PANELS FOR THIS PROJECT SHALL HAVE A PLAIN SMOOTH CONCRETE FINISH.

21. NOTE TO CONTRACTORS

   ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY FOSTER GEOTECHNICAL

   - PRECAST PANEL
   - REINFORCING MESH
   - LOOP EMBED
   - HDPE BEARING PAD
   - FILTER CLOTH AND ADHESIVE (FOR PANELS JOINTS ONLY)

   ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR. ANY JOINT MATERIALS SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES ARE TO BE SUPPLIED BY THE ERECTION CONTRACTOR. ALL SANDBLASTING, PAINTING, SEALERS OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED / INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

22. FOSTER GEOTECHNICAL SUPPLIES PRECAST CONCRETE FACING PANELS AND ACCESSORIES TO BE USED IN CONJUNCTION WITH OTHER MATERIALS IN THE CONSTRUCTION OF RETAINED EARTH™ WALLS DETAILED HEREIN. THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL FURNISHED BY FOSTER GEOTECHNICAL IS INTENDED TO PROVIDE A GENERAL EXPLANATION OF THE SYSTEM. IT IS THE CONTRACTOR'S OBLIGATION TO DEVISE AND EXECUTE A PROJECT SPECIFIC ERECTION SEQUENCE. PANEL UNLOADING, HANDLING AND BRACING SYSTEM. AND FALL PROTECTION SYSTEM. THE BRACING SYSTEM SHOWN IN THE CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL IS GENERAL IN NATURE AND DOES NOT ACCOUNT FOR PROJECT SPECIFIC CRITERIA. COMPLIANCE WITH THE GUIDELINES IN THIS MANUAL DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO ADHERE TO THE PROJECT PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS OR COMPLIANCE WITH ALL FALL PROTECTION, SAFETY, LAWS, STANDARDS AND PROCEDURES AT THE JOBSITE. CONTRACTORS SHOULD TAKE SPECIAL PRECAUTIONS TO PREVENT THE PANELS FROM SHIFTING OR FALLING DURING THE ERECTION PROCESS.

STATE OF OHIO
E. LAMBERSON
E-51228
REGISTERED PROFESSIONAL ENGINEER

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DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE
AF	AF	RW	09-28-01	AF	1/24/01

STRUCTURE FILE NUMBER 6801610

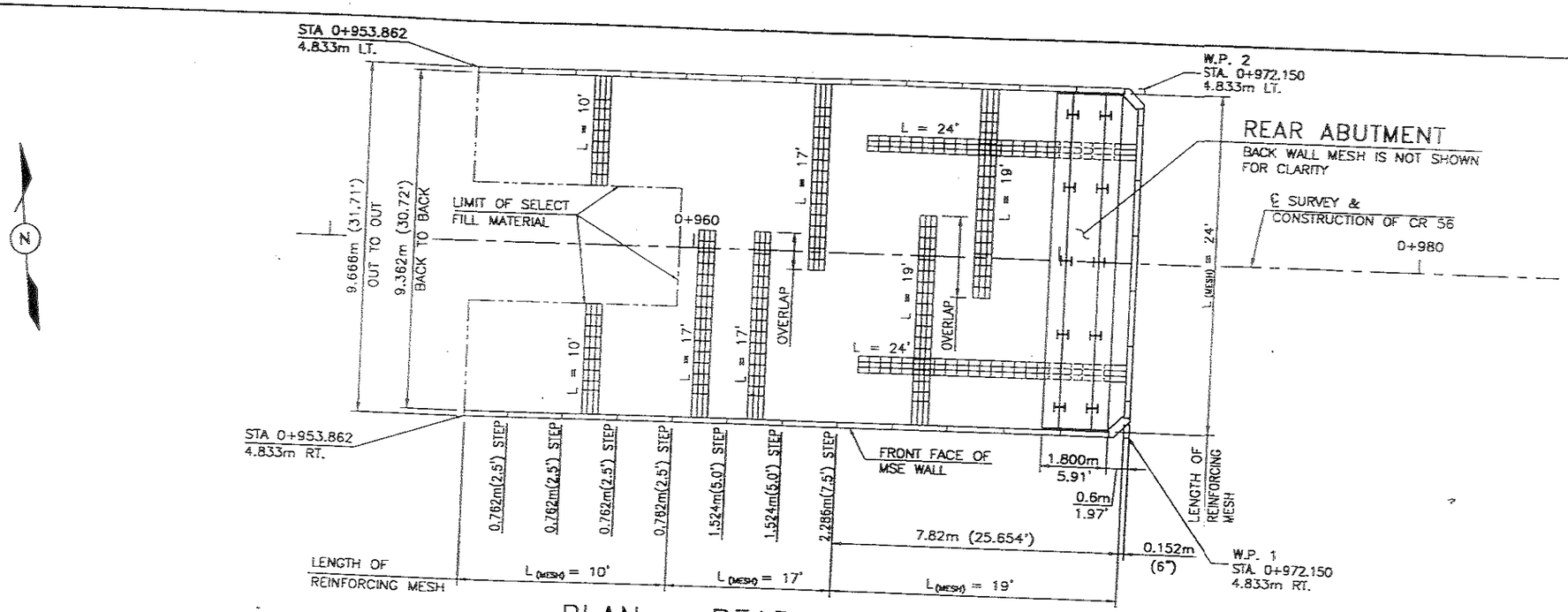
MSE RETAINING WALL - GENERAL NOTES
BRIDGE NO. WYA-23-12429
US 23 UNDER CR-66
WYANDOT COUNTY, OHIO

WYA/CRA-30-28.009

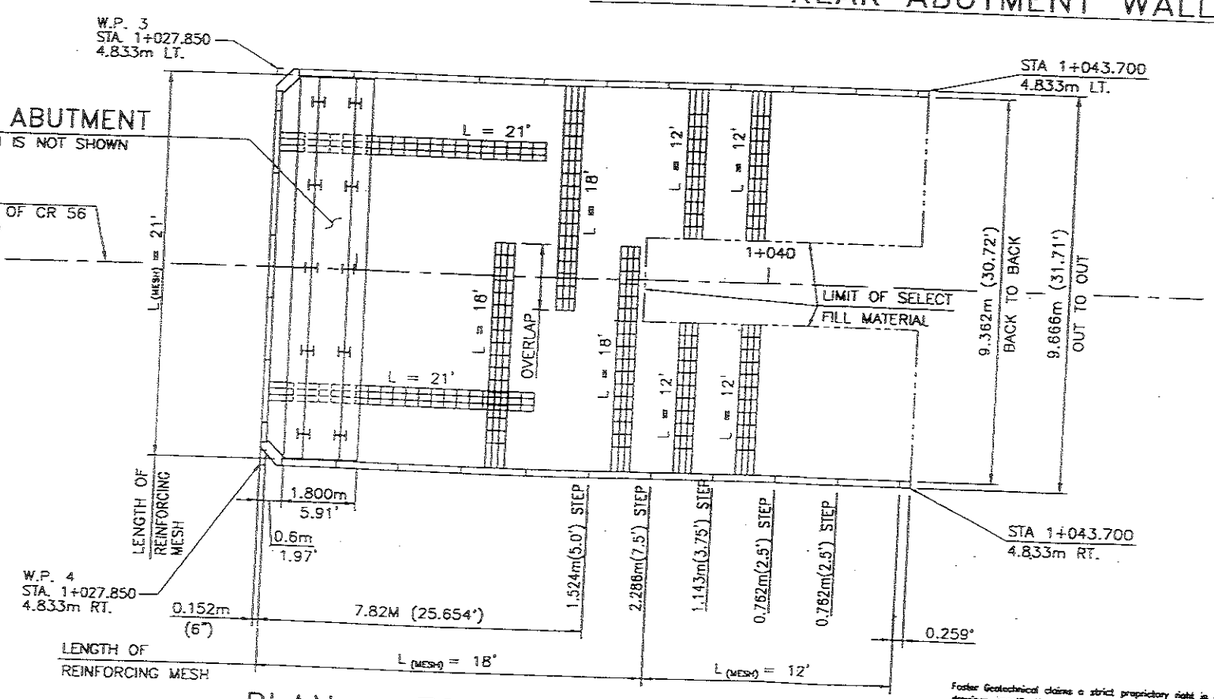
1/7

G50141

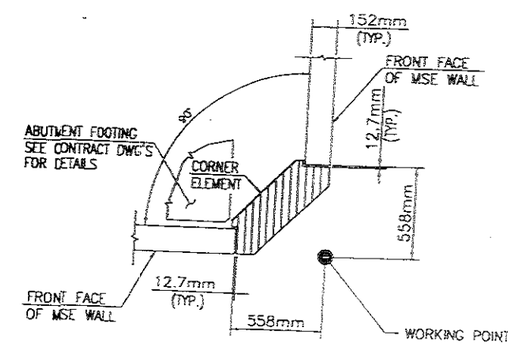
X-Ohio.dwg



PLAN – REAR ABUTMENT WALL



PLAN – FORWARD ABUTMENT WALL



TYPICAL 90° CORNER PLAN

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DESIGNED AF	DRAWN RM	REVIEWED AF	DATE 07/24/01
CHECKED AF	REVISED 08-27-01	STRUCTURE FILE NUMBER 5901810	

MSE RETAINING WALL – PLAN
BRIDGE NO. WYA-23-12429
US 23 UNDER CR-56
WYANDOT COUNTY, OHIO

WYA/CRA-30-28.009

2 / 7

G50141

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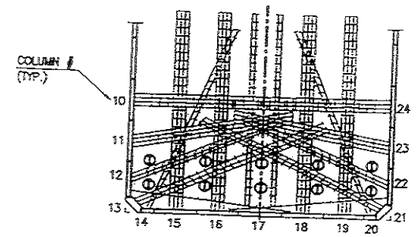
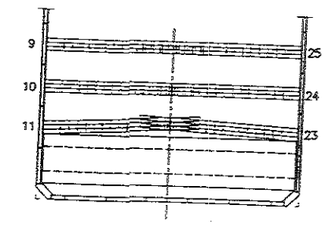
SOIL REINFORCEMENT NOTES:

1. MESH LENGTHS SHOWN ABOVE MESH LENGTH LINE.
2. HEAVY DASHED HORIZONTAL LINES SEPARATE ZONES OF DIFFERENT MESH TYPES.
3. HEAVY DASHED VERTICAL LINES SEPARATE ZONES OF DIFFERENT MESH LENGTHS AND OR DIFFERENT MESH TYPES.
4. MESH TYPES SHOWN BELOW MESH LENGTH LINE. (SEE STANDARD DETAIL SHEET FOR MESH KEY)
5. PARTIAL WIDTH PANELS REQUIRE PROPORTIONALLY FEWER NUMBER OF MESH CONNECTIONS.
6. EXTRA CONNECTORS MAY BE PROVIDED IN PANELS TO PROVIDE ABILITY TO MINIMIZE INTERFERENCE WITH PILES, INLETS OR OTHER SIMILAR OBSTRUCTIONS WHEN CONNECTING SOIL REINFORCEMENT TO PANELS.



MESH OBSTRUCTION BELOW PILE CAP

SCALE: 1:100

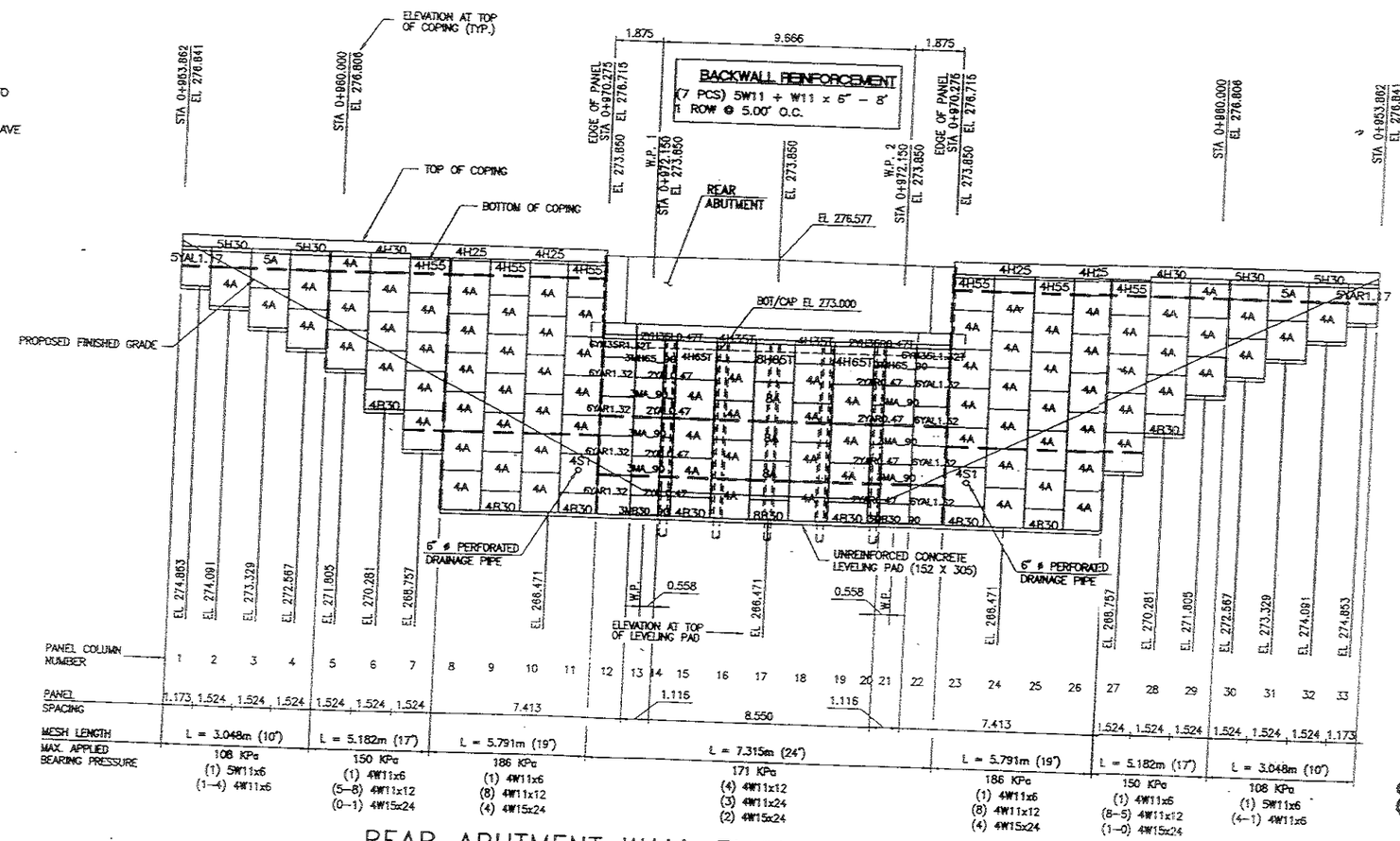


MESH OBSTRUCTION ABOVE PILE CAP

SCALE: 1:100

GENERAL NOTES:

1. ELEVATIONS SHOWN ABOVE WALL ARE TO TOP OF COPING.
2. ELEVATIONS SHOWN BELOW WALL ARE TO TOP OF CAST-IN-PLACE LEVELING PAD.
3. FRONT FACE OF WALL PANELS SHALL HAVE A PLAN SMOOTH FINISH.



REAR ABUTMENT WALL ELEVATION (FRONT FACE)

SCALE: 1:100

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DESIGNED AF	CHECKED AF	DRAWN RM	REVIEWED AF
		REVISED 09-28-01	DATE 07/26/01
		STRUCTURE FILE NUMBER 0501810	

M8E RETAINING WALL - REAR ABUTMENT ELEVATION
BRIDGE NO. WYA-23-12439
US 23 UNDER CR-56
WYANDOT COUNTY, OHIO

WYA/CRA-30-28.009

3 / 7

G50141

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SOIL REINFORCEMENT NOTES:

1. MESH LENGTHS SHOWN ABOVE MESH LENGTH LINE.
2. HEAVY DASHED HORIZONTAL LINES SEPARATE ZONES OF DIFFERENT MESH TYPES.
3. HEAVY DASHED VERTICAL LINES SEPARATE ZONES OF DIFFERENT MESH LENGTHS AND OR DIFFERENT MESH TYPES.
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2. ELEVATIONS SHOWN BELOW WALL ARE TO TOP OF CAST-IN-PLACE LEVELING PAD.
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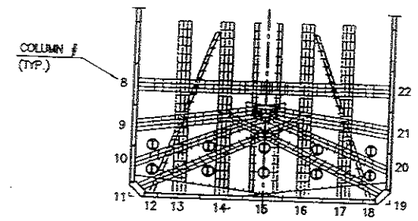
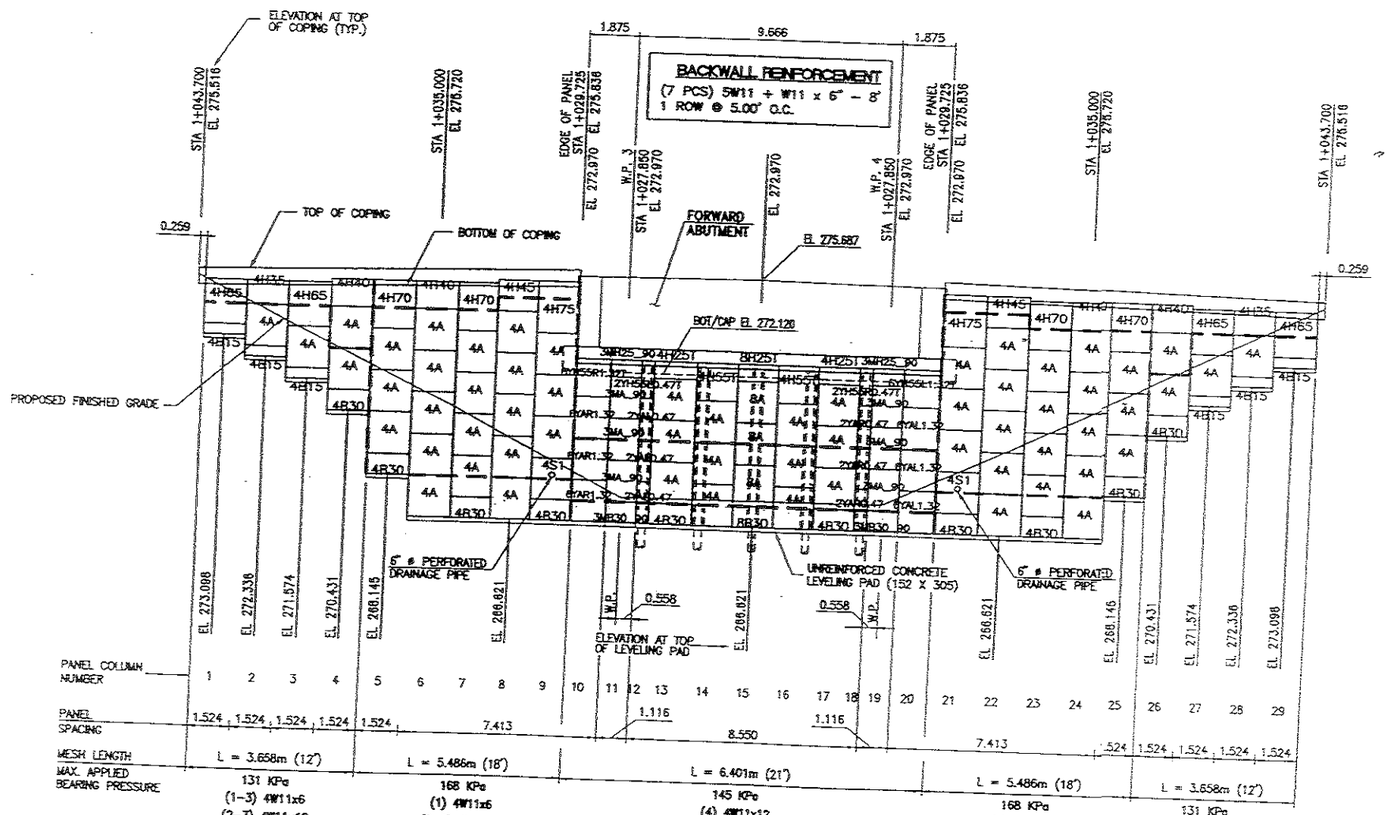


MESH OBSTRUCTION BELOW PILE CAP

SCALE: 1:100

MESH OBSTRUCTION ABOVE PILE CAP

SCALE: 1:100



FORWARD ABUTMENT WALL ELEVATION (FRONT FACE)

SCALE: 1:100

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DATE	REVIEWED BY	DRAWN BY	DESIGNED BY
07/24/01	STRUCTURE FILE NUMBER 9801610	REVISED 09-18-01	CHECKED BY

MSE RETAINING WALL - FORWARD ABUTMENT ELEVATION
BRIDGE NO. WYA-23-12.429
US 23 UNDER CR-18
WYANDOT COUNTY, OHIO.

WYA/CRA-30-28.009

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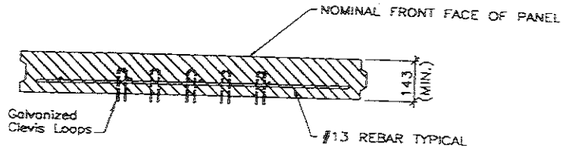
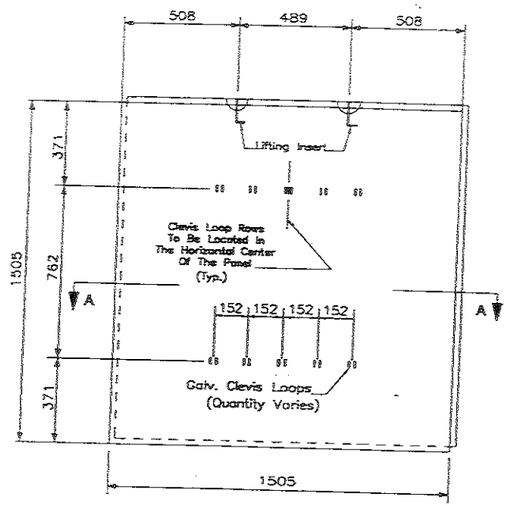
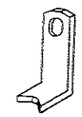


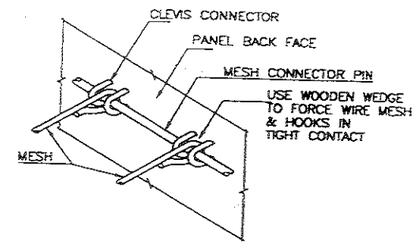
SECTION A-A
N.T.S.



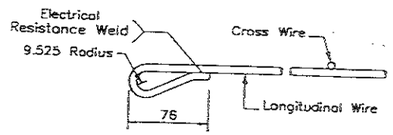
STANDARD "5A" PANEL
Back Face View



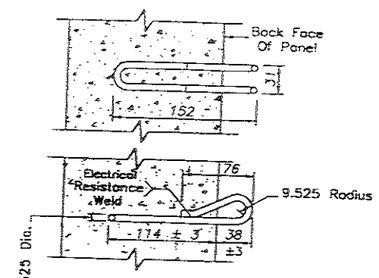
LIFTING INSERT DETAIL
(DAYTON SUPERIOR "L" ANCHOR OR EQUAL)
(ONE TON)



MESH CLEVIS CONNECTOR
FOSTER GEOTECHNICAL RETAINED EARTH IS PROTECTED UNDER U.S. PATENT 4,725,170.



WIRE MESH LOOP DETAIL
N.T.S.



CLEVIS LOOP DETAIL
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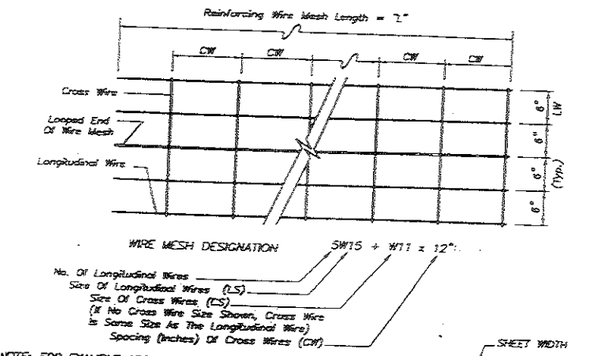
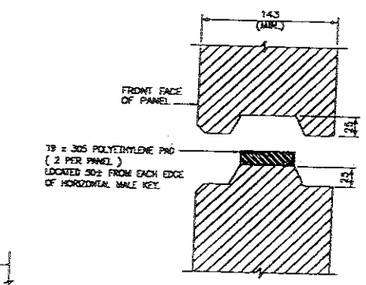


NOTE: FOR EXAMPLE ABOVE,
EQUIVALENT INDUSTRY STANDARD DESIGNATION = 6 X 12 – W15 X W11–24" X 7'
(LW) (CW) (LS) (CS)

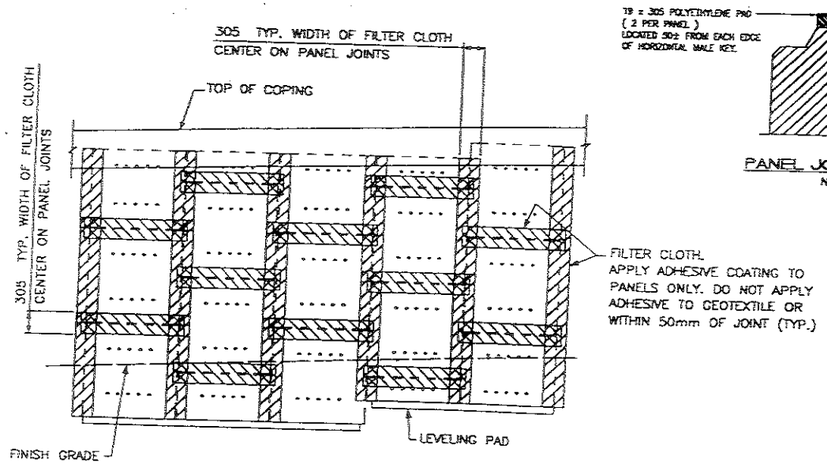
REINFORCING MESH DETAIL

NOTES :

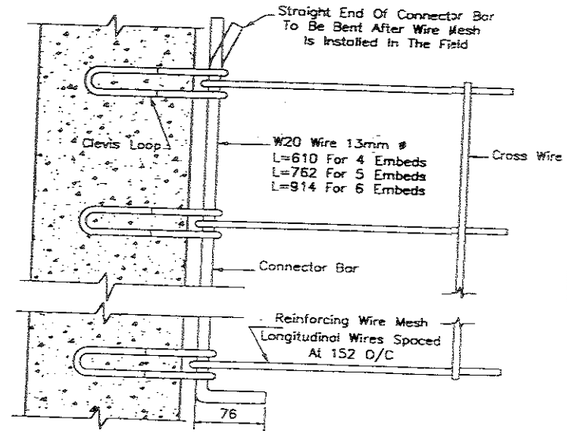
1. The "Reinforcing Mesh Detail" And The "Soil Reinforcement Key" Are Shown In Imperial Units. This Is Done Because The Mesh Is Manufactured, Bundled And Tagged Using The Imperial Industry Standard Designation.
2. 5W15 Mesh Shown, Mesh Configuration Varies. In 5W15, 5 Designates The No. Of Longitudinal Members Per Unit, While W15 Is The ASTM Standard Wire Reinforcement Designation. See Wall Elevations For Individual Mesh Configurations.
3. Number Of Mesh Wire Loops Varies According To Mesh Configuration.
4. All Panel Joints On Back Face Of Panels To Be Covered With Geotextile Fabric. Refer To Partial Wall Elevation Detail, This Sheet.
5. All Connections Must Align Within 3mm Of Alignment.



PANEL JOINT DETAIL
N.T.S.



PARTIAL WALL ELEVATION
(BACK FACE)

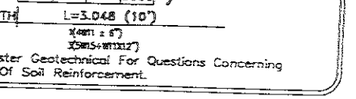


REINFORCING MESH CONNECTION DETAIL
N.T.S.

Soil Reinforcement Key

Mesh Types Are Designated Below Mesh Length Line. Heavy Horizontal Lines On Wall Elev. Separate Zones Of Different Mesh Types. (See "Reinforcing Mesh Detail" This Sheet For Mesh Type Details).

Example:



MESH LENGTH L=3.048 (10')
MESH TYPE 4(4W11 x 6")
3(5W15+W11X12")

Contact Foster Geotechnical For Questions Concerning Placement Of Soil Reinforcement.

NOTE:
ALL DIMENSIONS ARE SHOWN IN MILLIMETERS (MM) U.O.N.

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FOSTER GEOTECHNICAL
209 NORTH MAIN STREET, SUITE 200
MONTICELLO, IN 47960
Telephone: (219) 965-2000 / Fax: (219) 965-2010

DESIGNED AF	CHECKED AF	DRAWN MK	REVIEWED AF
REVISED	STRUCTURE FILE NUMBER 8501810	DATE 07/24/01	

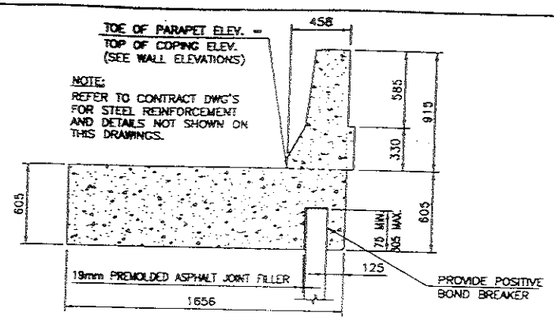
MSE RETAINING WALL – STANDARD DETAIL SHEET
BRIDGE NO. WYA-23-12429
US 23 UNDER CR-68
WYANDOT COUNTY, OHIO

WYA/CRA-30-28.009

5 / 7

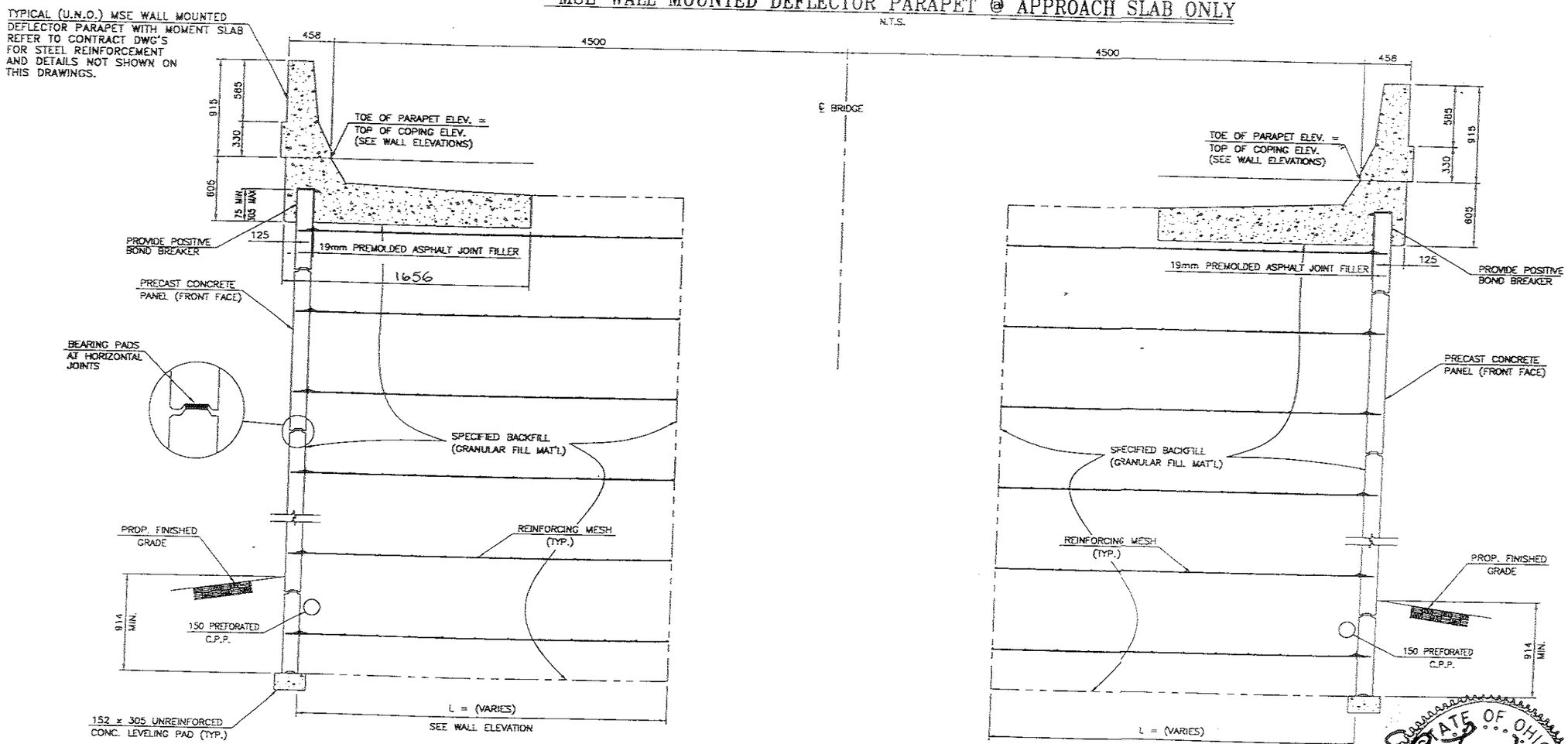
G50141

X-Ohio.dwg



MSE WALL MOUNTED DEFLECTOR PARAPET @ APPROACH SLAB ONLY

N.T.S.



TYPICAL SECTION THRU MSE WALL

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STATE OF OHIO
EUGENE A. LAMBERSON
E-51228
REGISTERED PROFESSIONAL ENGINEER

FOSTER GEOTECHNICAL
209 NORTH MAIN STREET, SUITE 200
MONTICELLO, IN 47960
Telephone: (219) 965-2000 / Fax: (219) 965-2010

DATE	REVIEWED BY	STRUCTURE FILE NUMBER
07/24/01		0901810
DRAWN BW	REVISED 09-28-01	
DESIGNED AF	CHECKED AF	

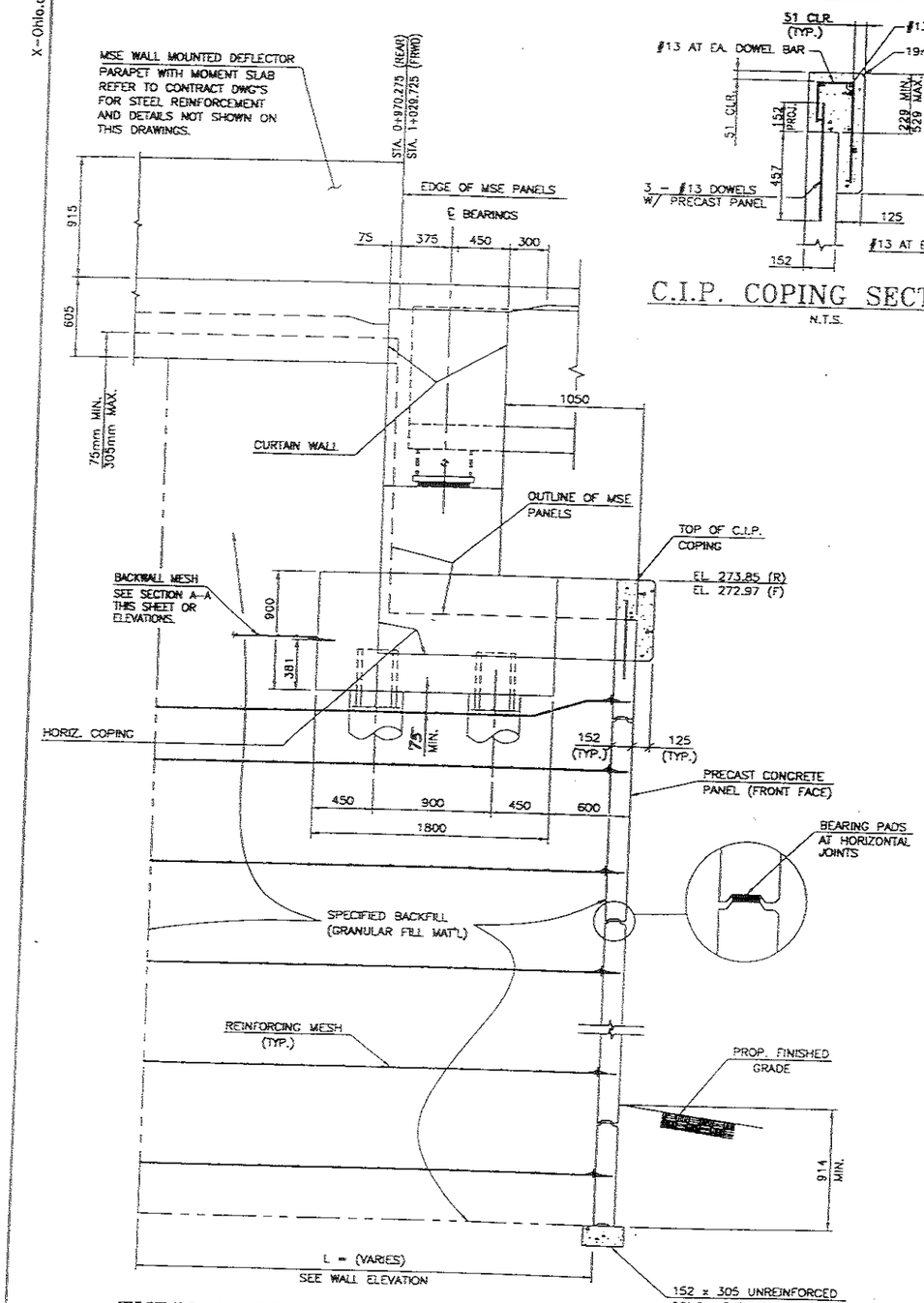
MSE RETAINING WALL - TYPICAL SECTION
BRIDGE NO. WTA-23-12429
US 23 UNDER CR-59
WYANDOT COUNTY, OHIO

WTA/CRA-30-28.009

6 / 7

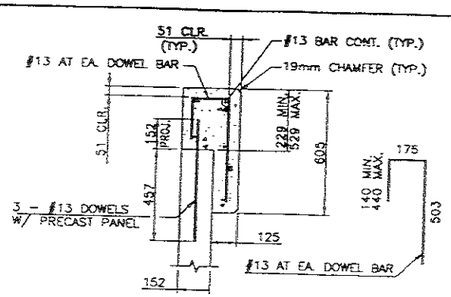
G50141

X-Ohio.dwg



TYPICAL SECTION THRU ABUTMENT

N.T.S.



C.I.P. COPING SECTION

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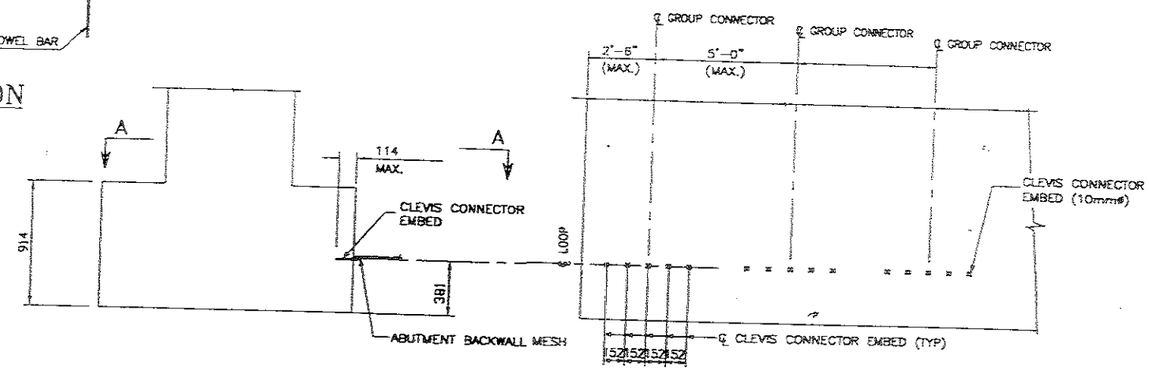
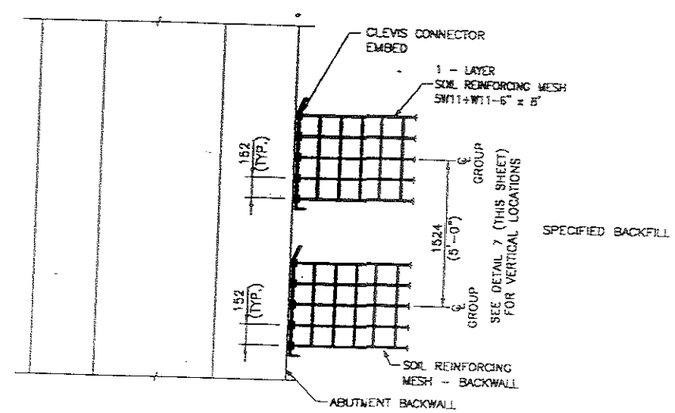


7 SOIL REINFORCING MESH & CONNECTORS @ ABUTMENT



A-A STRAIGHT MESH CONNECTION @ ABUTMENT BACKWALL

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EUGENE J. LAMBERSON
E-51228
REGISTERED PROFESSIONAL ENGINEER

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FOSTER GEOTECHNICAL
209 NORTH MAIN STREET, SUITE 200
MONTICELLO, IN 47960
Telephone: (219) 965-2000 / Fax: (219) 965-2010

DESIGNED	DRAWN	REVIEWED	DATE
AF	RW	AF	09/24/01
CHECKED	REVISED	STRUCTURE FILE NUMBER	
AF	09-28-01	9901910	

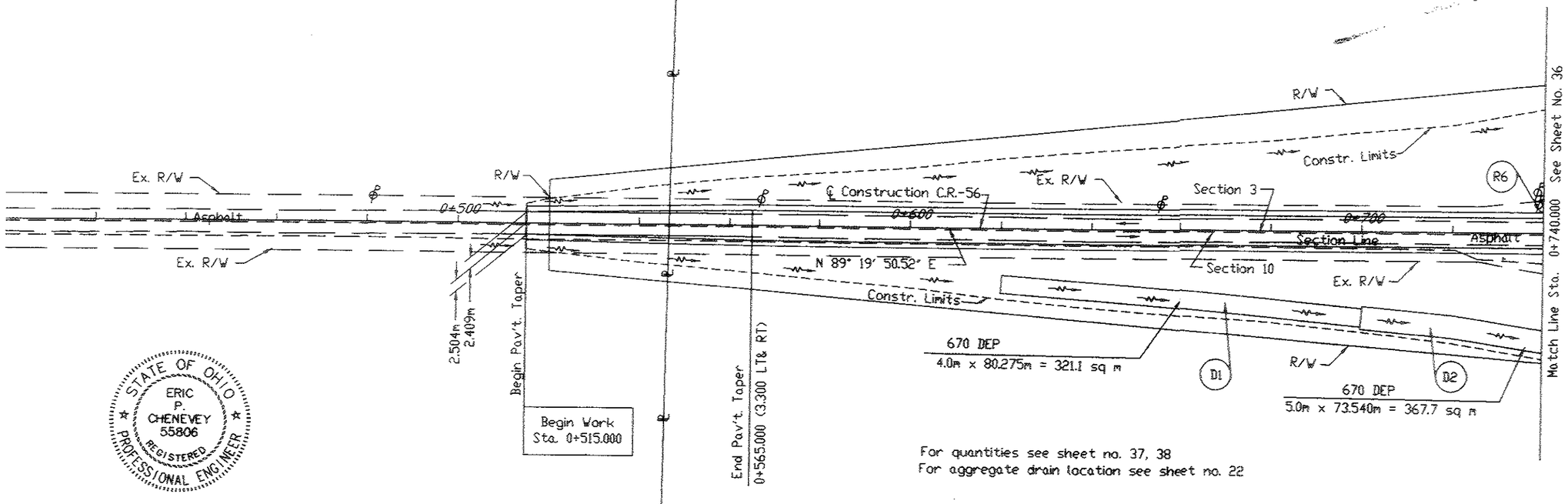
MSE RETAINING WALL - TYPICAL SECTIONS AND DETAILS
BRIDGE NO. WYA-23-12429
US 23 UNDER CR-66
WYANDOT COUNTY, OHIO

WYA/CRA-30-28.009

7/7

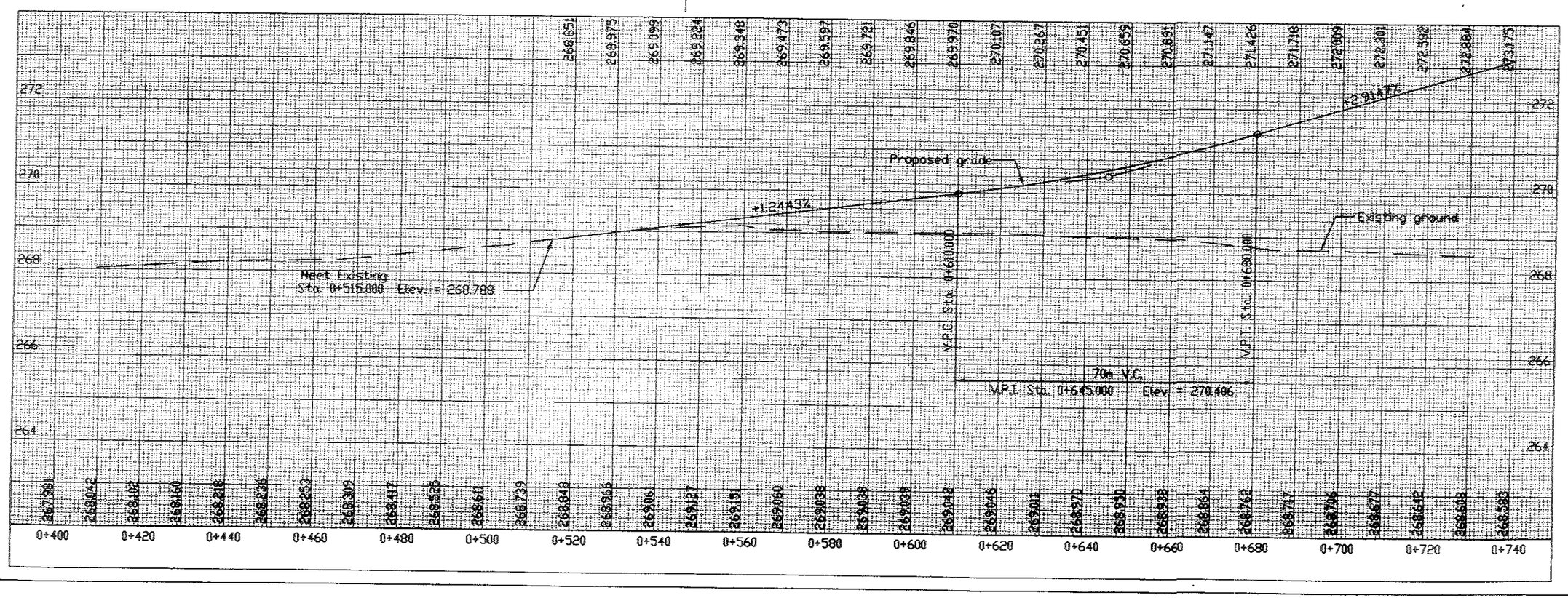
GS0141

Revised



For quantities see sheet no. 37, 38
For aggregate drain location see sheet no. 22

STATE OF OHIO
ERIC P. CHENEVEY
55806
REGISTERED
PROFESSIONAL ENGINEER



HORIZONTAL SCALE IN METERS

CALCULATED EPC
CHECKED JP

PLAN AND PROFILE - C.R. 56
STA. 0+515.000 TO STA. 0+740

WYA/CRA-23/30-
(12.429)(30.006)(05.244)

For quantities see sheet no. 36-37
For aggregate drain location see sheet no. 22
For U.S.-23 see sheet no. 23-24
For CR-60 cul-de-sac see sheet no. 112

Permanent Easement
670 DEP
Ex. Easement
LA-R/W
Constr. Limits
Woven Wire
Ex. LA-R/W
Asph./Conc.
304 Aggregate Base (200 mm)
Sta.= 1+000.000 C.R.-56=
Sta.= 12+433.727 U.S.-23
Bridge WYA-23-12429
660 Reinforced Sodding
Area Plainmetered 37.8 sq. m
0+789.733 See sheet no. 142
Skew 65.431°
1050mm or 1500mm Type A
Plug
Guardrail, Type 5
0+744.295 Begin GR
Type E Anchor Assem.
254mmCMP
Asphalt
0+763.345 Begin GR
Type E Anchor Assem.
254mmCPP
Cutoff wall
Gravel
Construction Limits
601 Riprap
670 DEP
5.0m x 73.540m = 367.7 sq m
2.0m x 77.6m = 155.2 sq m
670 DEP 2.0m x 50.250m = 100.5 sq m
N 89° 19' 50.52" E
0+970.990 End GR
Br. Term. Assem. Type I
1+029.010 Begin GR
Br. Term. Assem. Type I
88° 57' 54.36"
670 DEP 2.0m x 19.750m = 39.5 sq m
℄ Construction C.H.-60
N 1° 15' 54.70" E
℄ U.S.-23
N 1° 42' 15.01" W
Asph./ STA. 1+048.563 C.R.-56
Conc. STA. 1+000.000 C.R.-56
670 DEP 2.0m x 41.100m = 82.2 sq meter
660 Reinforced Sodding
Area Plainmetered 37.8 sq. m
Ex. R/W
Temporary Easement
Work by Others
See Sheet No. 35
See Sheet No. 39
Match Line Sta. 0+740.000
Match Line Sta. 1+080.000
HORIZONTAL SCALE IN METERS
CALCULATED EPC
CHECKED JP

Proposed grade
+2.91477%
-2.90162%
V.P.C. Sta. 0+795.000
V.P.I. Sta. 1+065.000
Existing ground
603, 1050mm or 1500mm Type A
270m V.C.
V.P.I. Sta. 0+930.000 Elev. = 278.713
5.225m Min. Vertical Clearance
Bridge WYA-23-12429
℄ U.S.-23
** Foreslopes graded @ 6:1 by others, for US 23 Improvements
(F4)(F5) - For Quantities See Sht. 41
(F1) - For Quantities see Sht. 25
BRIDGE NO. WYA-30-12429
TYPE: Two span continous prestressed concrete I-Beam, with composite concrete slab, semi- integral abutments and cap and column piers.
SPANS: 29 350, 29 350 (measured c/c Brg.)
ROADWAY WIDTH: 9000 Toe to toe parapets
LIVE LOADING: MS18 (case II) & the alternate military loading
SKEW ANGLE: 0°
WEARING SURFACE: Monolithic concrete
APPROACH SLABS: AS-1-81M (6100)
ALIGNMENT: Tangent
SUPERELEVATION: None
STATE OF OHIO ERIC P. CHENEVEY 55806 REGISTERED PROFESSIONAL ENGINEER

PLAN AND PROFILE - C.R. 56
STA. 0+740 TO STA. 1+080

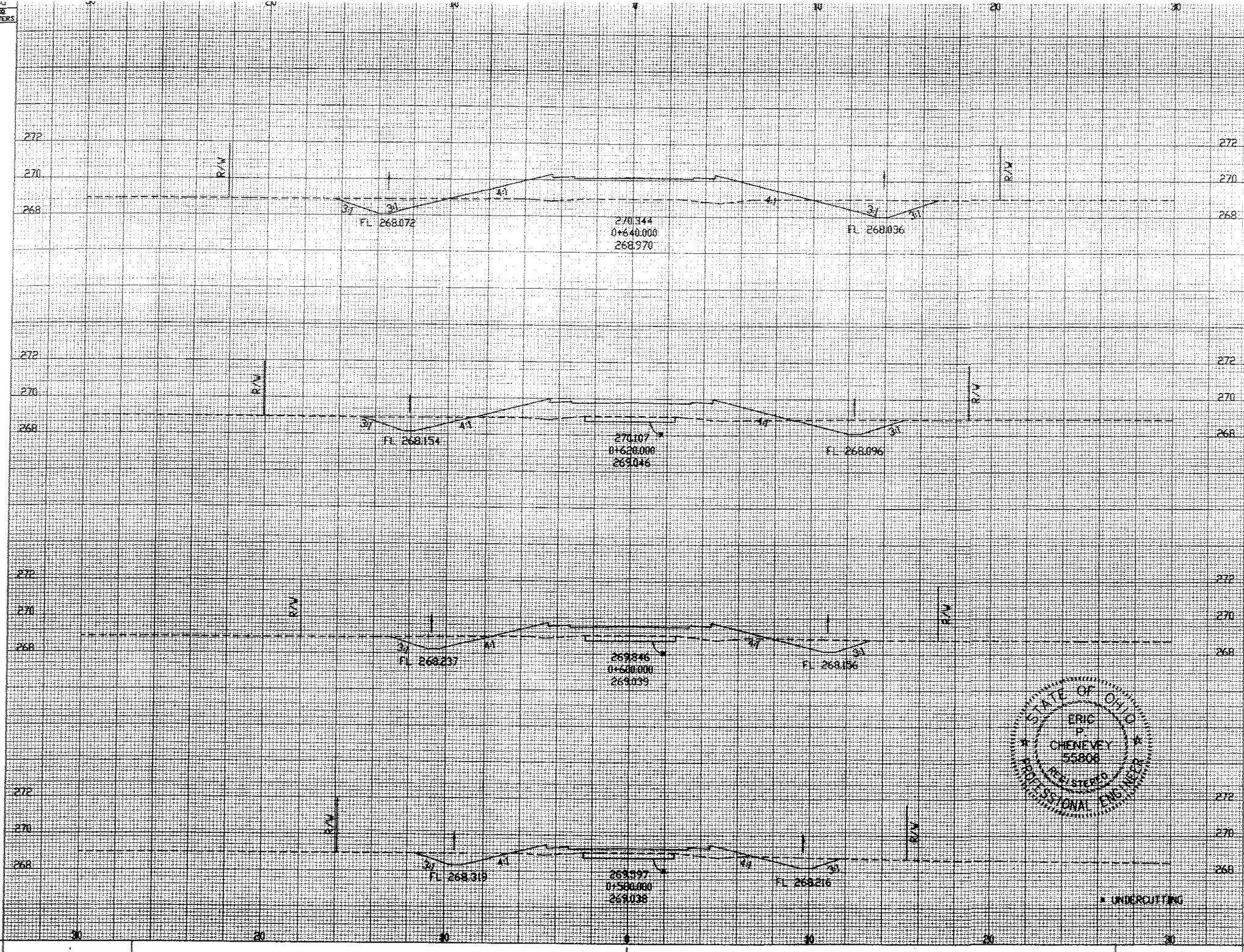
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP



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ERIC P. CHENEVEY
55806
REGISTERED
PROFESSIONAL ENGINEER

CR-56 CROSS SECTIONS
STA 0+580.000 TO STA 0+640.000

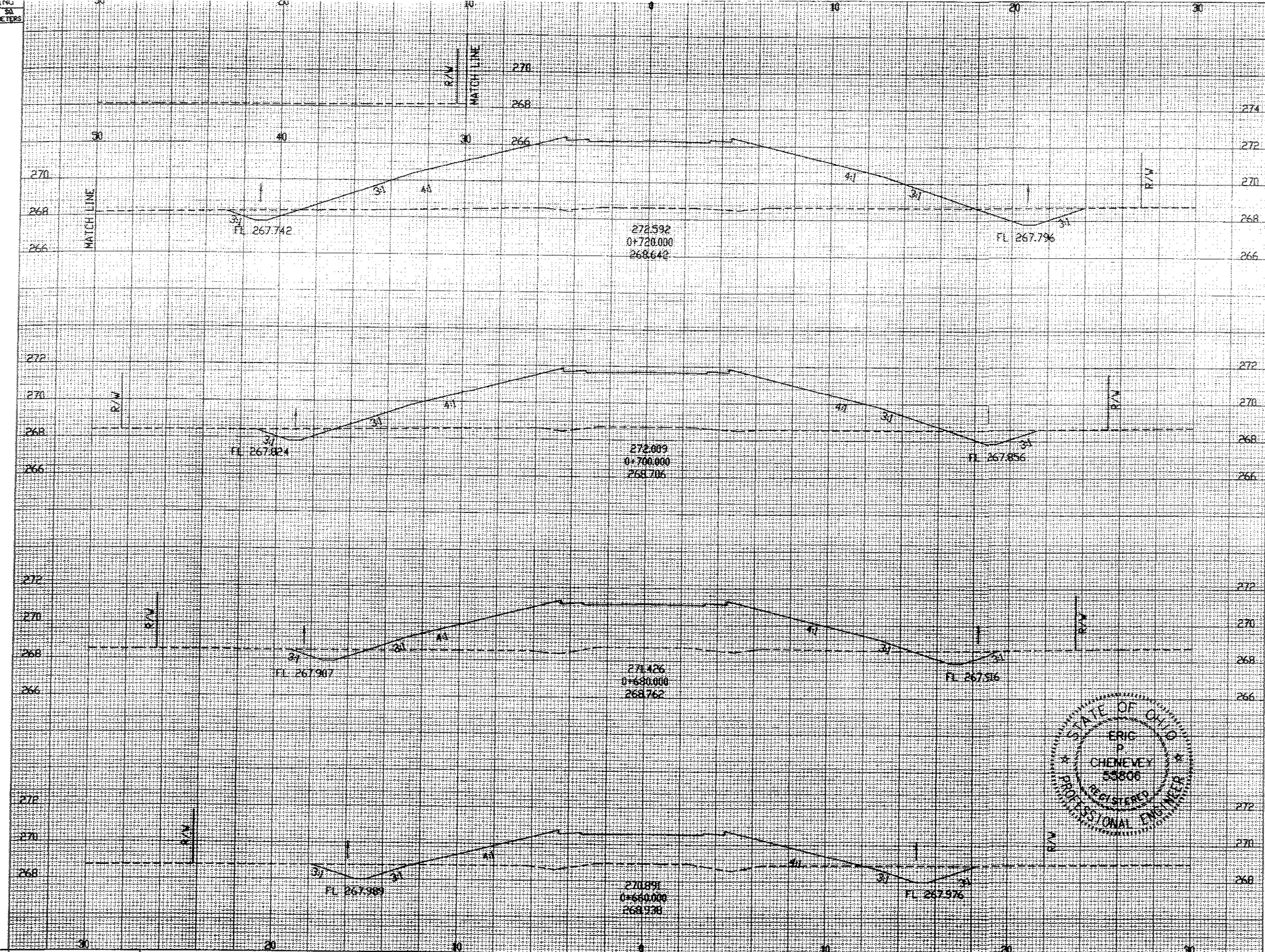
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
CWB WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DMC

CHECKED JP



CR-56 CROSS SECTIONS
STA 0+660.000 TO STA 0+720.000

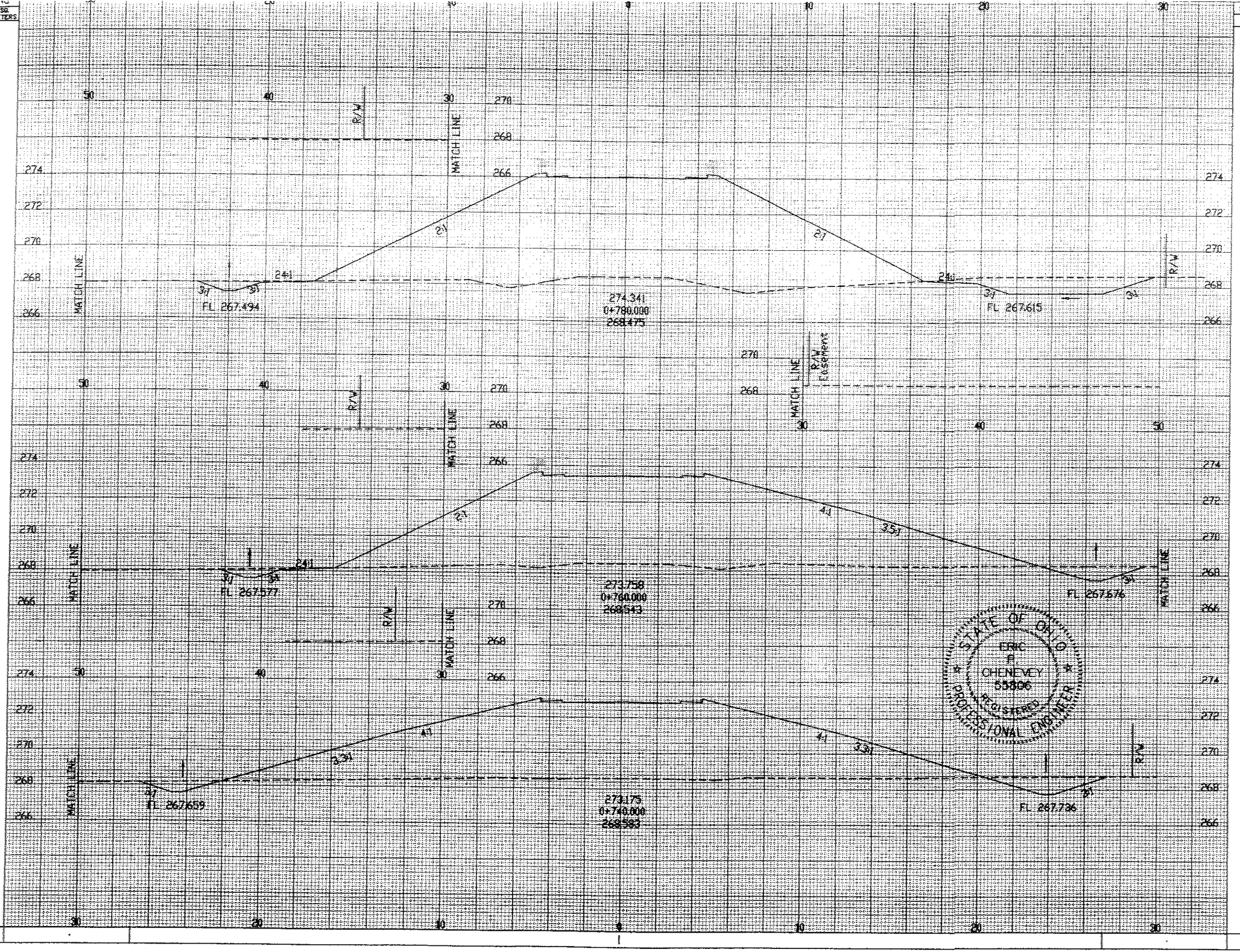
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP



CR-56 CROSS SECTIONS
STA 0+740.000 TO STA 0+780.000

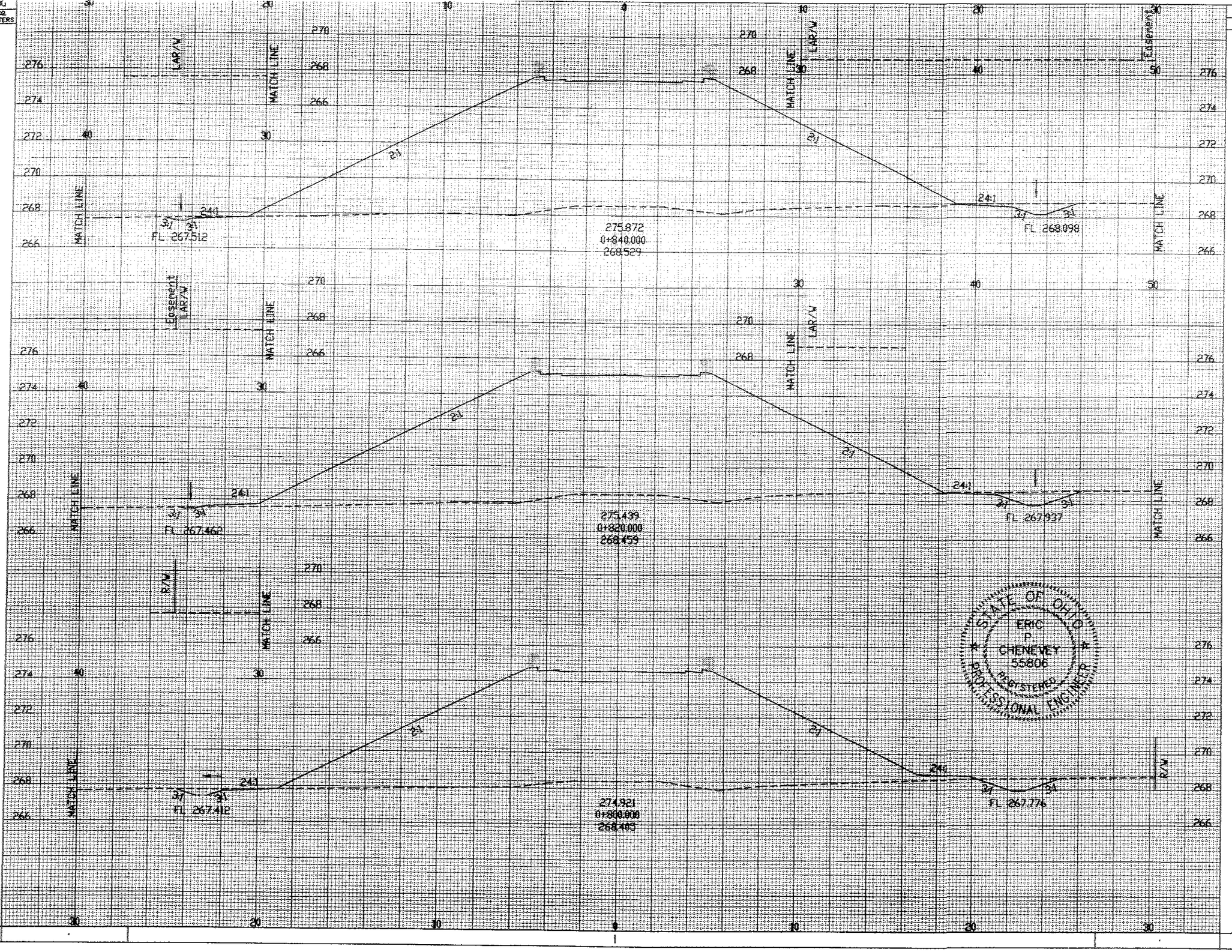
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DK

CHECKED JP



CR-56 CROSS SECTIONS
STA 0+800.000 TO STA 0+840.000

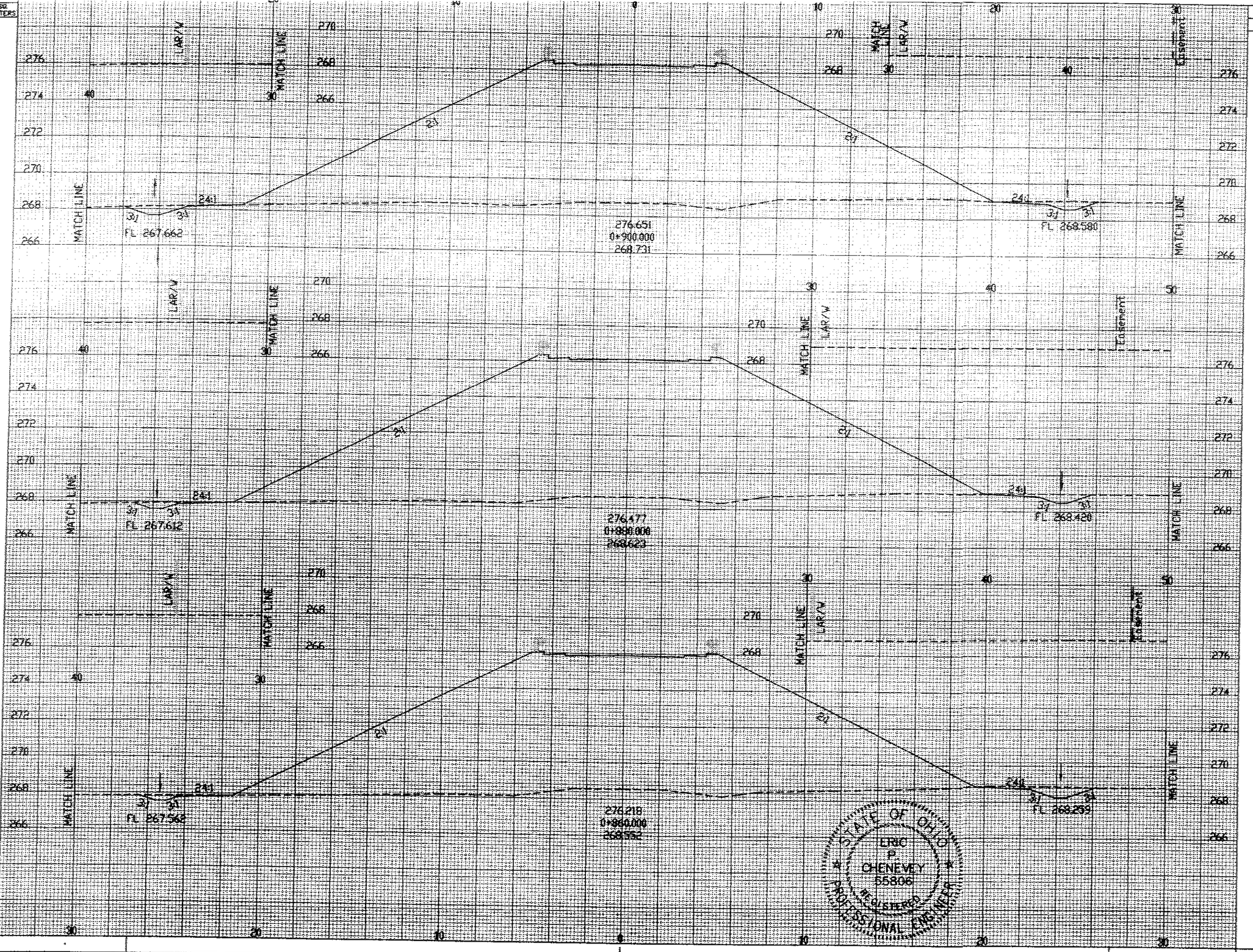
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

END WIDTH	SQ METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP

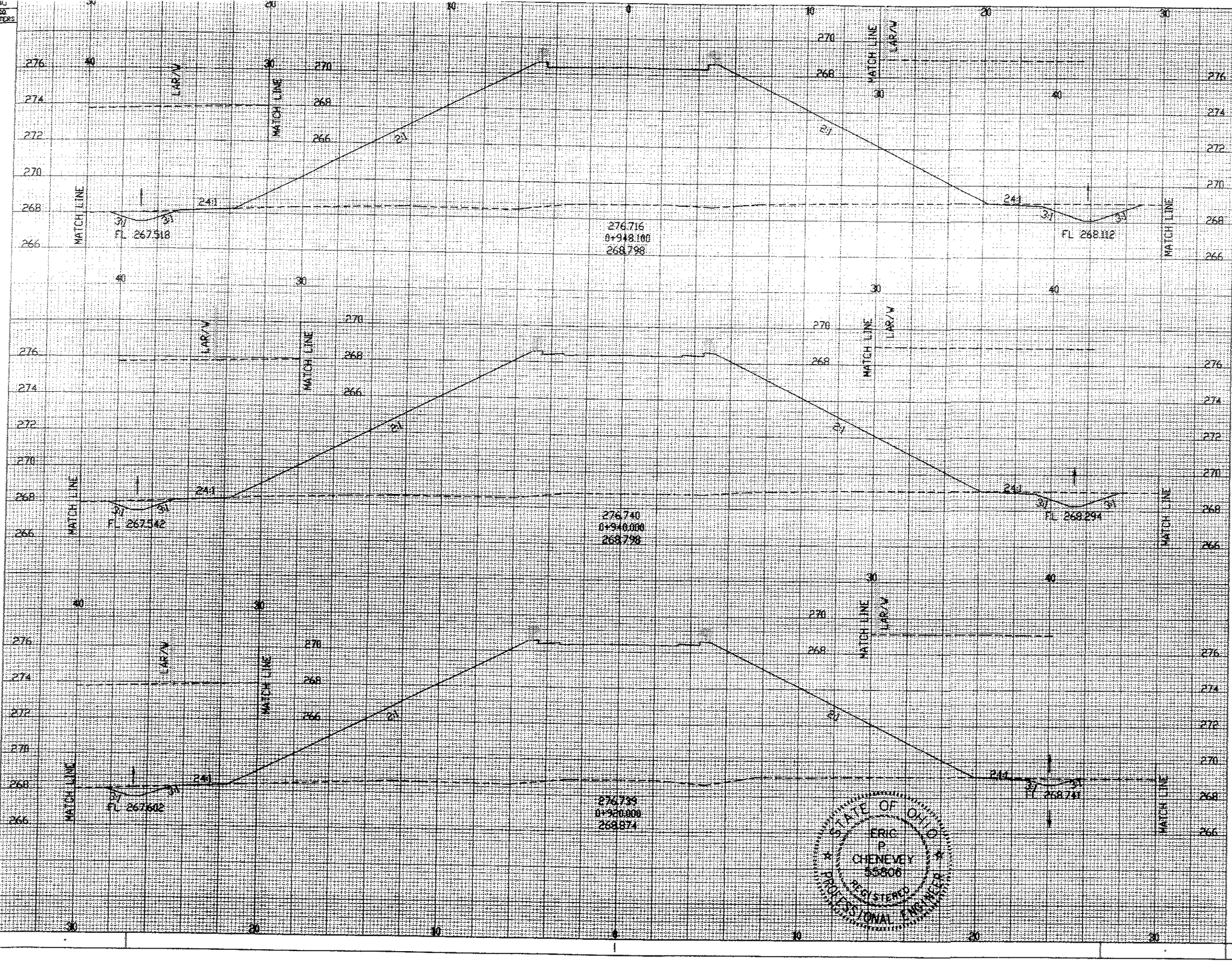


CR-56 CROSS SECTIONS
STA 0+860.000 TO STA 0+900.000

WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING

END WIDTH	50 METERS



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP

CR-56 CROSS SECTIONS
STA 0+920.000 TO STA 0+948.100

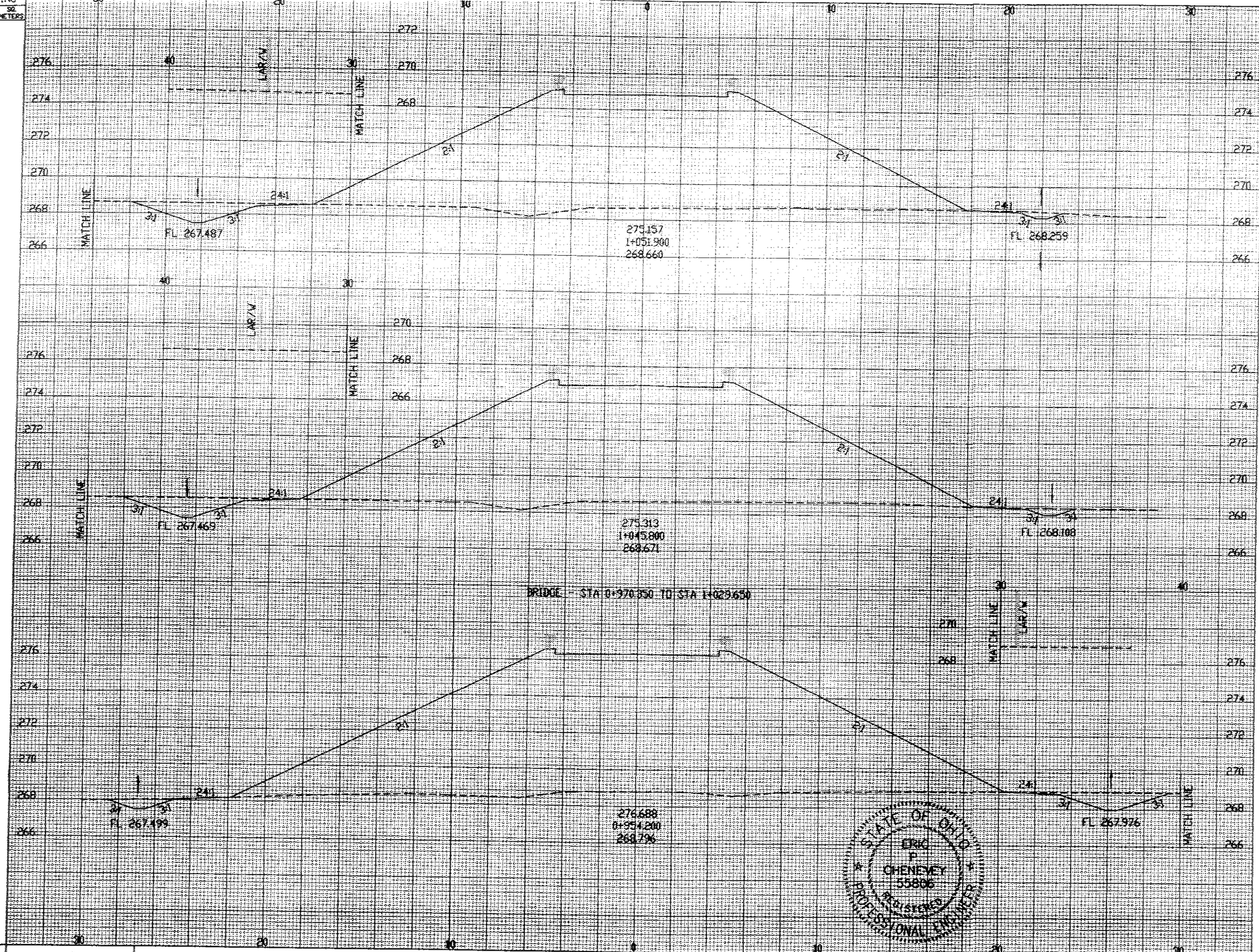
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SECTIONS	
END WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JA

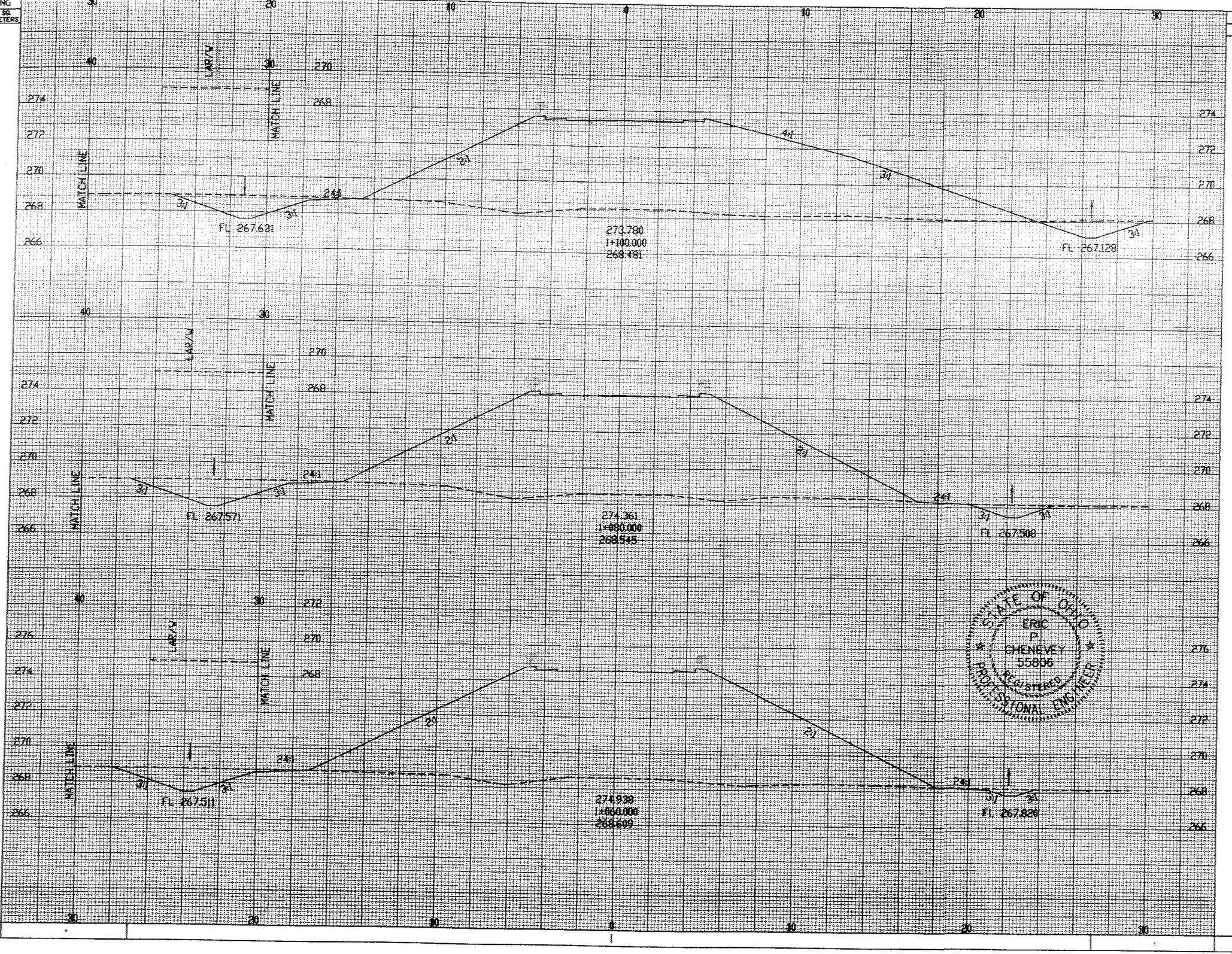


CR-56 CROSS SECTIONS
STA 0+954.200 TO STA 1+051.900

WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ. METERS

END AREA		VOLUME		CALCULATED EPC	CHECKED JP
CUT	FILL	CUT	FILL		



CR-56 CROSS SECTIONS
STA 1+060.000 TO STA 1+100.000

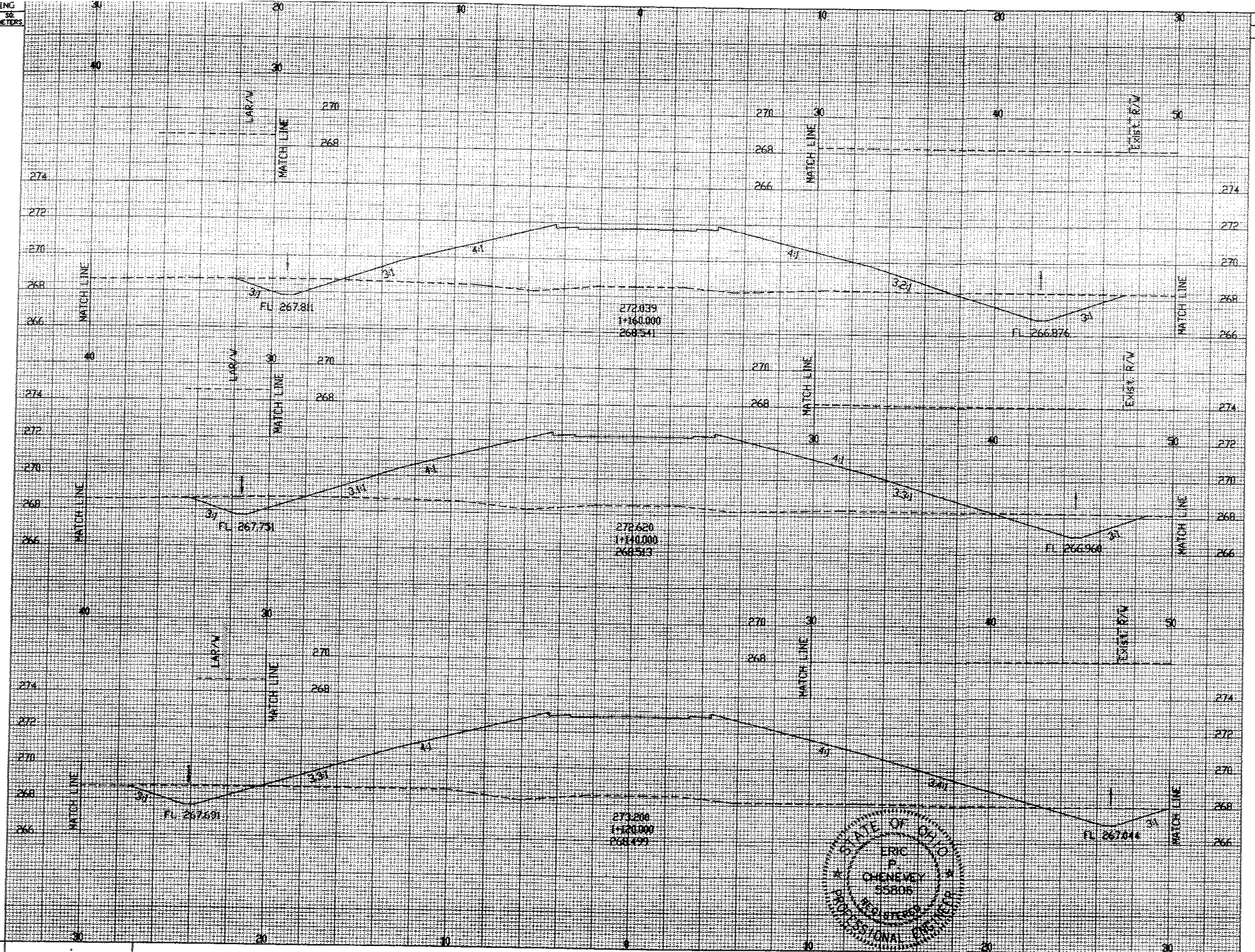
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
CNB WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP



STATE OF OHIO
ERIC P. CHENEVEY
55806
REGISTERED
PROFESSIONAL ENGINEER

CR-56 CROSS SECTIONS
STA 1+120.000 TO STA 1+160.000

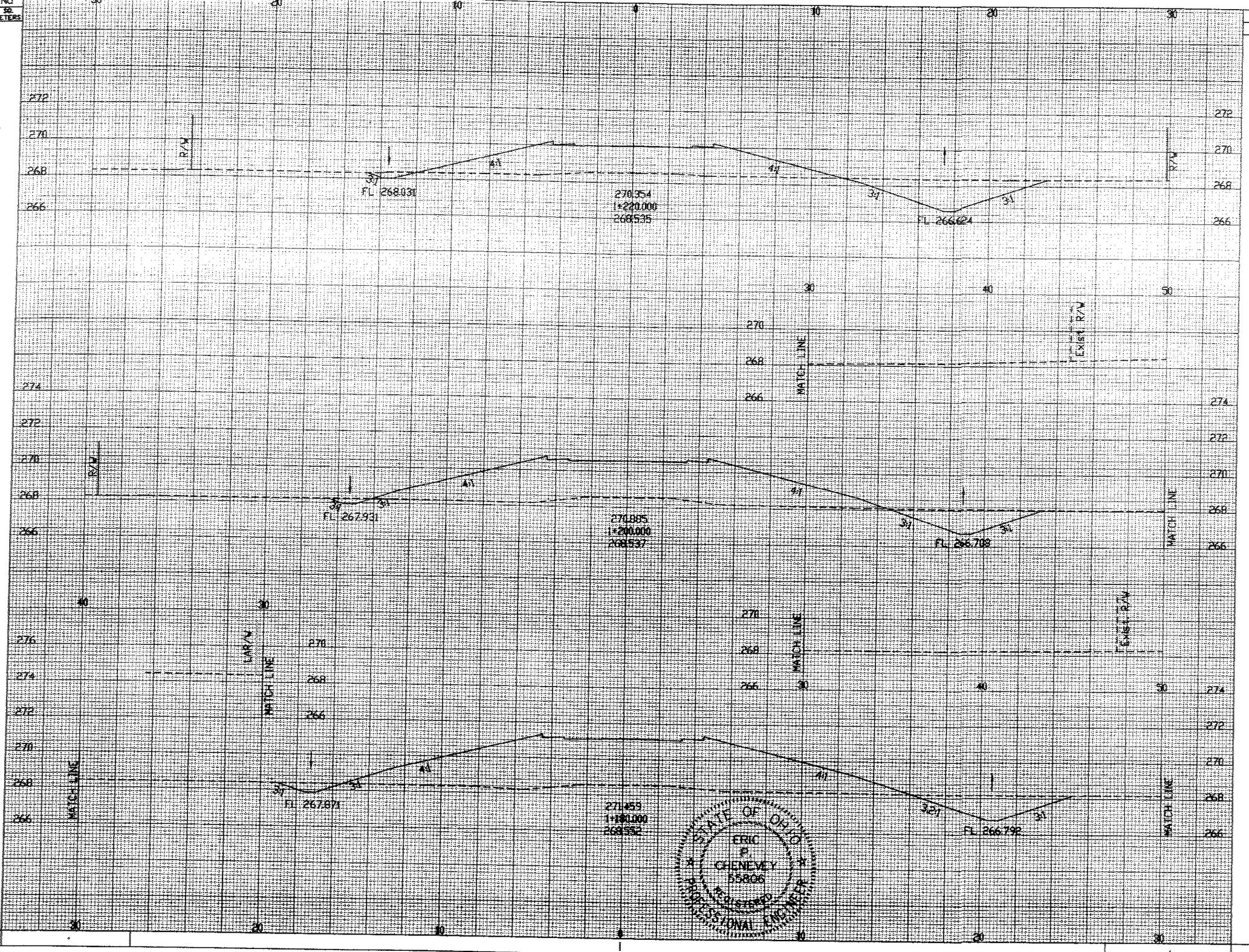
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED BY

CHECKED BY



CR-56 CROSS SECTIONS
STA 1+180.000 TO STA 1+220.000

WYA/CRA-23/30-
(12.429)(30.006)(05.244)

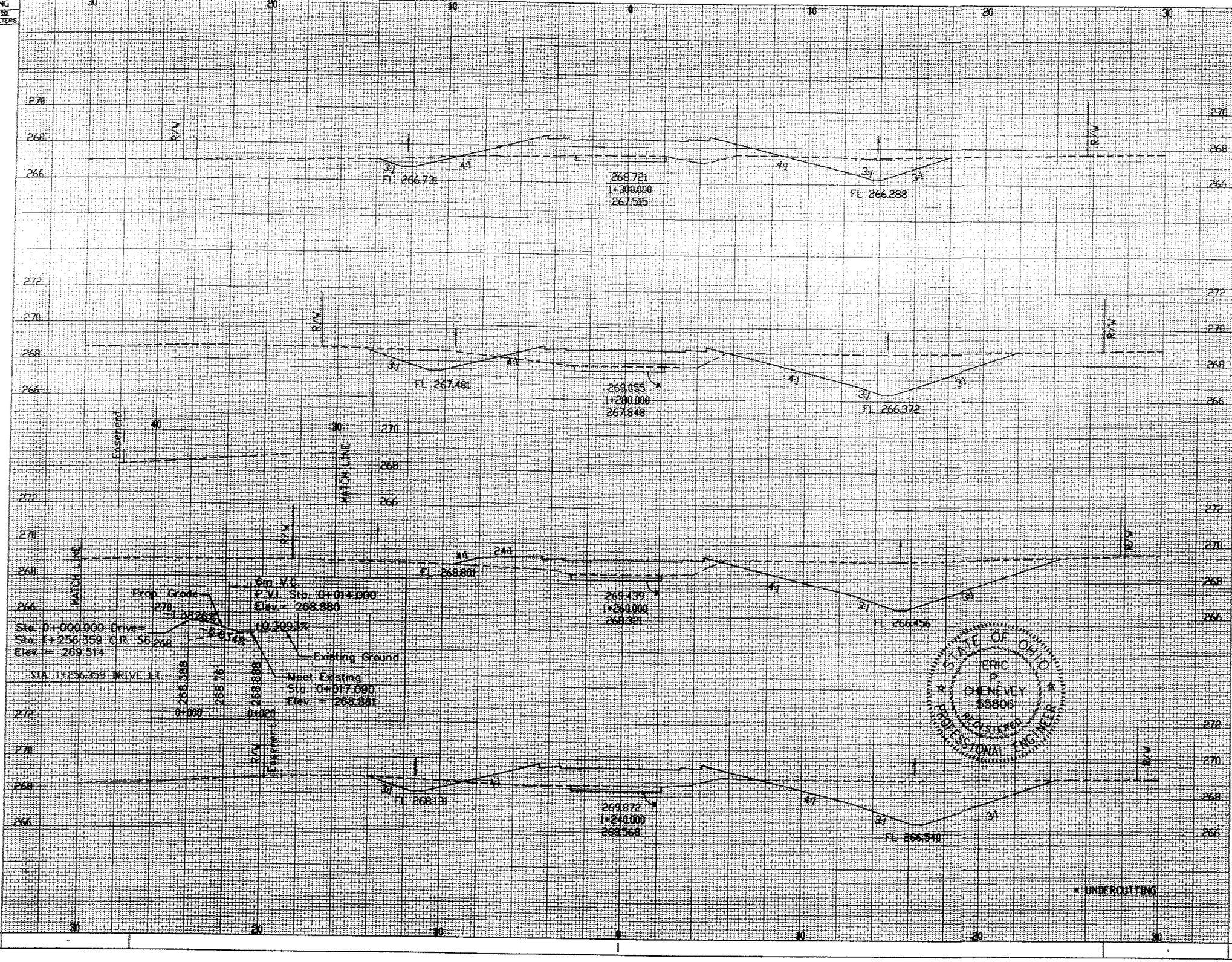
STATE OF OHIO
ERIC
M.
CHENEVEY
55806
REGISTERED
PROFESSIONAL ENGINEER

SEEDING	
END WIDTH	SQ METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP



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ERIC P. CHENEVEY
55806
REGISTERED PROFESSIONAL ENGINEER

CR-56 CROSS SECTIONS
STA 1+240.000 TO STA 1+300.000

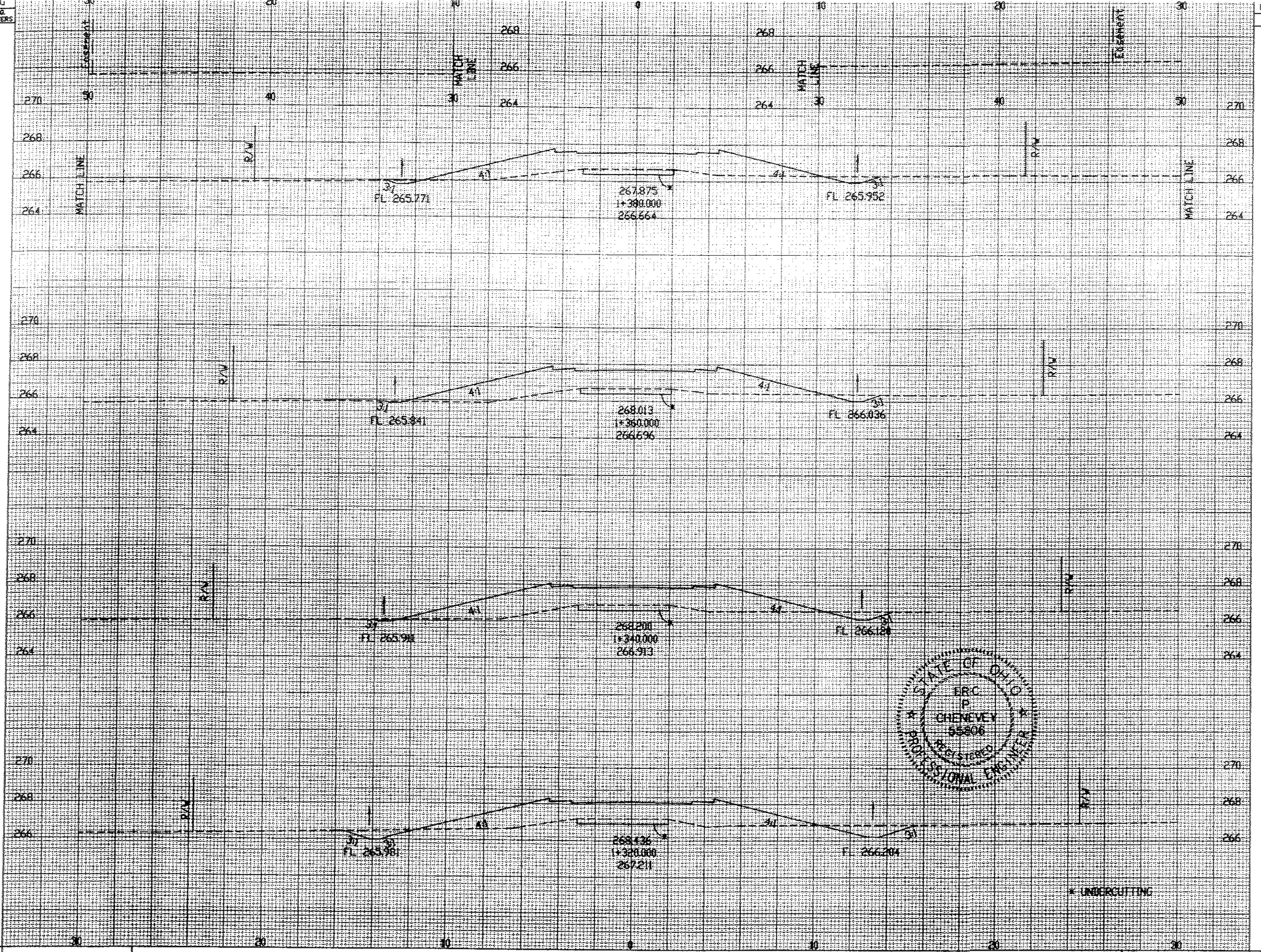
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
END WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED DFC

CHECKED JP



CR-56 CROSS SECTIONS
STA 1+320.000 TO STA 1+380.000

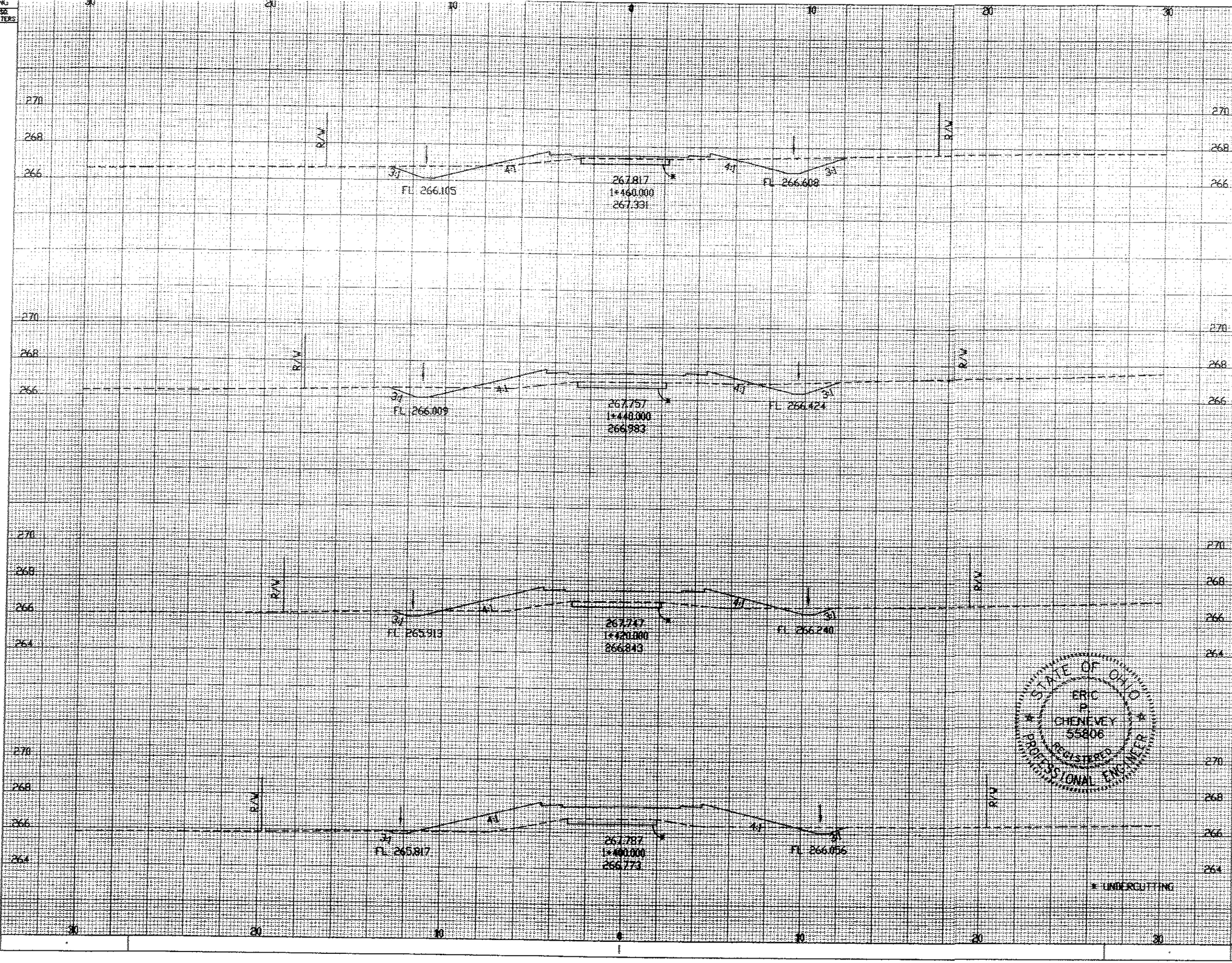
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

SEEDING	
EACH WIDTH	SQ. METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED EPC

CHECKED JP



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ERIC P. CHENEVEY
55806
REGISTERED PROFESSIONAL ENGINEER

CR-56 CROSS SECTIONS
STA 1+400.000 TO STA 1+460.000

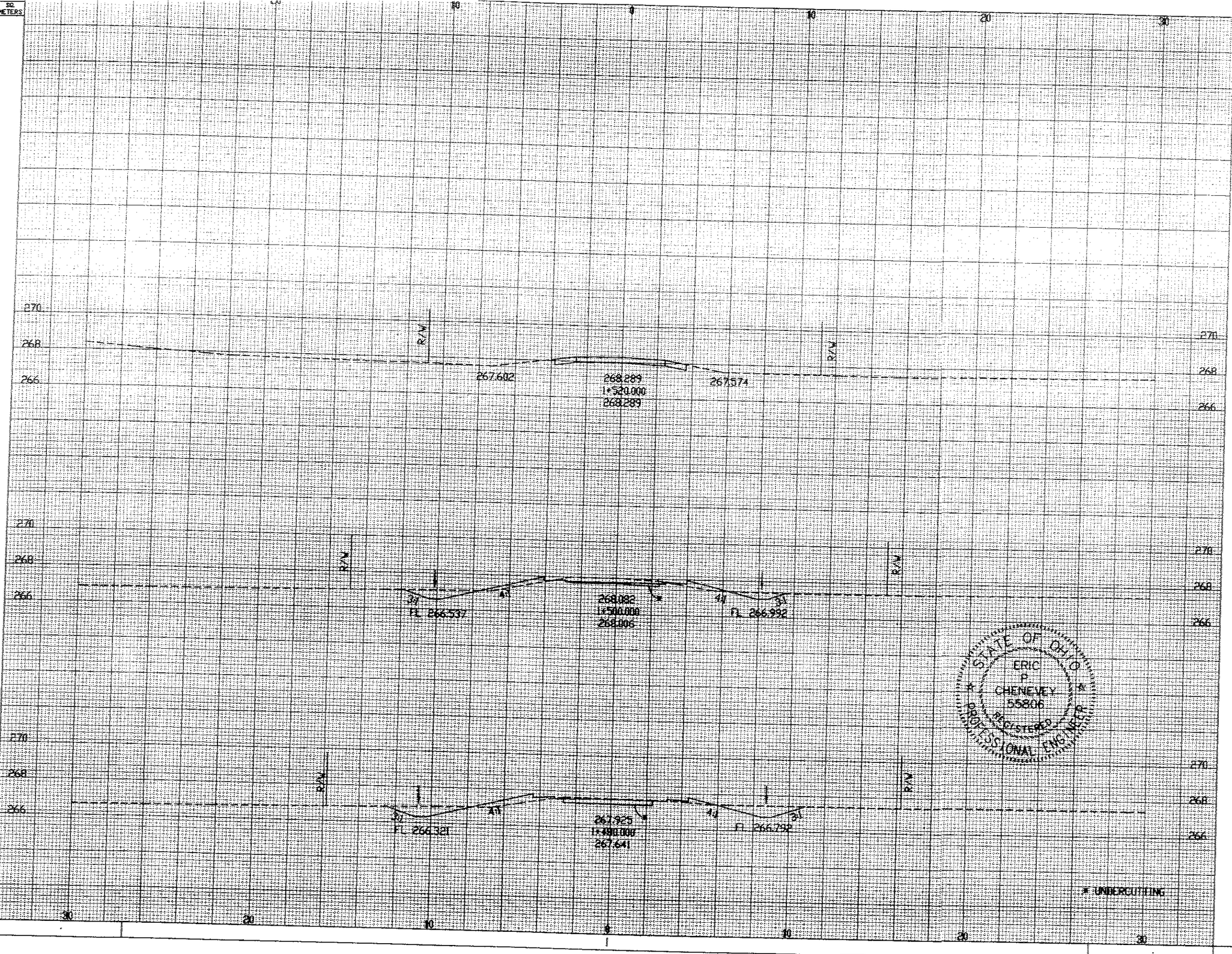
WYA/CRA-23/30-
(12.429)(30.006)(05.244)

END WIDTH	SQ METERS

END AREA		VOLUME	
CUT	FILL	CUT	FILL

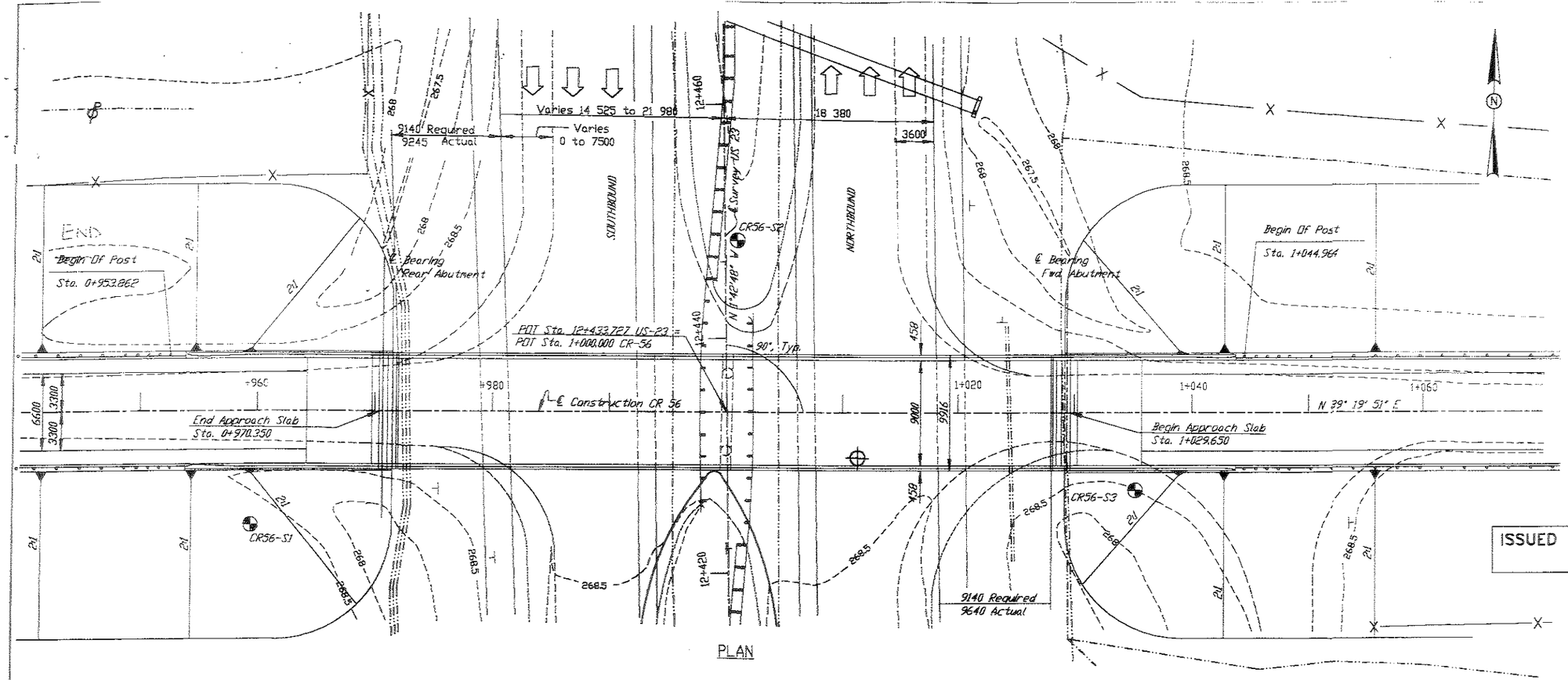
CALCULATED EPC

CHECKED JP

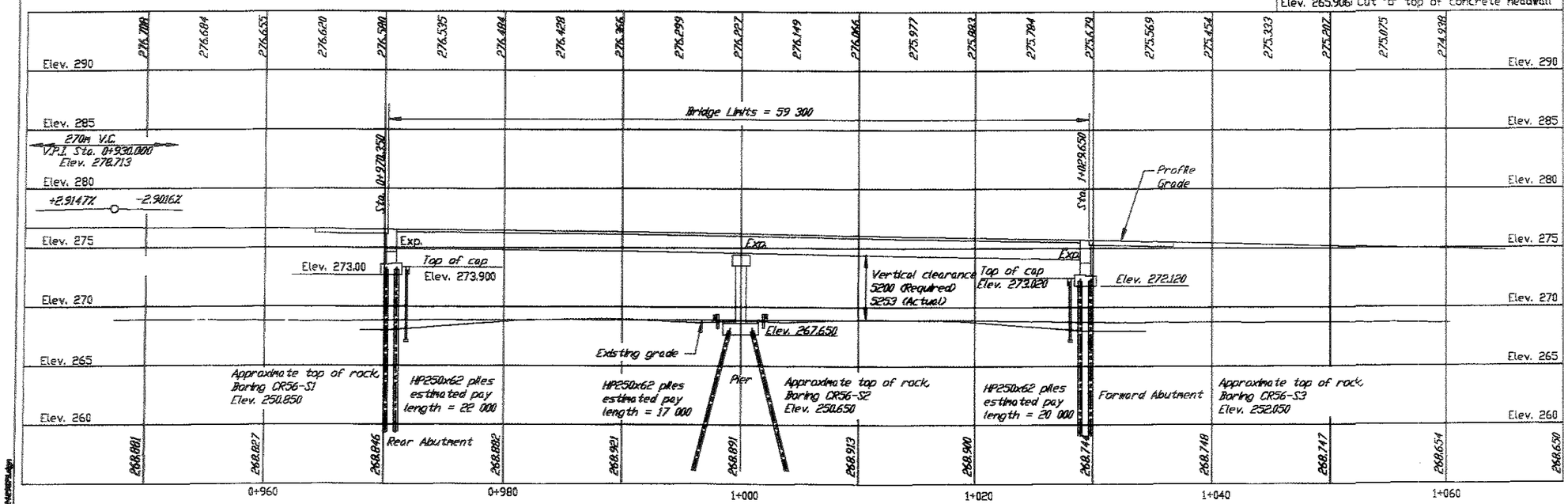


CR-56 CROSS SECTIONS
STA 1+480.000 TO STA 1+520.000

WYA/CRA-23/30-
(12.429)(30.006)(05.244)



PLAN



PROFILE ALONG ℄ BRIDGE

metric units

STATE OF OHIO
GIN
GIM
NG
55872
REGISTERED
PROFESSIONAL ENGINEER

ISSUED FOR CONSTRUCTION
11-2-2001

TRAFFIC DATA

ADT = 1040 (2000) ADT = 1570 (2020)
ADTT = 42 (2000) ADTT = 63 (2020)

Notes:
Earthwork limits shown are approximate. Actual slopes shall conform to plan cross sections.

All stations and elevations are in meters.

All dimensions and lengths are in millimeters.

Point of min. vertical clearance

Boring location

PROPOSED STRUCTURE

Type: Two span continous prestressed concrete I beam with composite concrete slab, semi-integral abutments and cap and column pier.

Spans: 29 350, 29 350 (measured c/c Brg.)

Roadway width: 9000 Toe to toe parapets

Live loading: MS18 & the alternate military loading

Skew angle: 0°
Wearing surface: Monolithic concrete
Approach slabs: AS-1-81M (6100)
Alignment: Tangent
Crown: 0.016
Latitude: 39°8'15"N
Longitude: 83°13'0"W

VENDOR AGENCY
CNP ENGINEERING INC.
7344 MAPLELEAF BLVD.
COLUMBUS, OH 43235
TEL: (614)766-8000

CNP ENGINEERING

REVIEWED	DATE
E.P.C.	8/6/01
STRUCTURE FILE NUMBER	8501610

DRAWN	REVISED
S.F.W.	

DESIGNED	CHECKED
G.G.M.	J.P.

WYANDOT COUNTY
STA. 0+970.350
STA. 1+029.650

SITE PLAN
BRIDGE NO. WYA-23-12.429
US 23 under CR-56

WYA/CRA-30-28.009/0.000

COMPUTED BY : G.G.N DATE : 8-6-01
CHECKED BY : S.F.W. DATE : 8-6-01

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUTS.	PIER	SUPER	GEN	AS PER PLAN SHEET NO.
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION				LUMP	
507	00200	764	METER	STEEL PILES HP250x62, FURNISHED	460	324			
507	00250	726	METER	STEEL PILES HP250x62, DRIVEN	420	306			
507	50500	29	EACH	STEEL PILE SPLICES	20	9			
507	93301	38	EACH	STEEL POINT (OR SHOE) AS PER PLAN	20	18			
516	13900	4	SQ. METER	50 mm PREFORMED EXPANSION JOINT FILLER	4				
516	44100	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (380x380x40 WITH 405x405x 38 MIN. LOAD PLATE)	8				
516	44100	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (350x450x40 WITH 375x650x 50 MIN. LOAD PLATE)		8			
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC	LUMP				
518	40000	106	METER	150 mm PERFORATED CORRUGATED PLASTIC PIPE, 707.33	106				
518	40010	6	METER	150 mm NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, 707.33	6				
601	20000	6	SQ. METER	CRUSH AGGREGATE SLOPE PROTECTION	6				
842	41000	23	CU. METER	CLASS C CONCRETE, PIER ABOVE FOOTING (CAP AND COLUMN)		23			
842	43501	45	CU. METER	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN	45				
842	46500	21	CU. METER	CLASS C CONCRETE, FOOTING		21			
842	46000	3	CU. METER	CLASS C CONCRETE, COPING				3	
863	10000	LUMP		STRUCTURAL STEEL MEMBERS, MISCELLANEOUS LEVEL FABRICATION.			LUMP		
864	10100	613	SQ. METER	SEALING OF CONCRETE SURFACES (EPOXY)*	80	62	471		
865	50000	8	EACH	DRAPED STRAND PRESTRESSED CONCRETE I BEAM MEMBERS, LEVEL 3, TYPE 4			8		
892	10000	279	CU. METER	HIGH PERFORMANCE CONCRETE, FOR BRIDGE DECK WITH WARRANTY	30	6	243		
SPECIAL	61013800	LUMP	LUMP	RETAINED EARTH WALL (BY FOSTER GEOTECHNICAL)			LUMP		

* SEE PROPOSAL NOTE

ISSUED FOR CONSTRUCTION
8-6-2001

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7244 MAPLELEAF BLVD.
COLUMBIA, SC 29203
TEL: (803) 799-8800

C.N.P. ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

ESTIMATED QUANTITIES
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

GENERAL NOTES

REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:

AS-1-81M	DATED 10-25-94
BR-1M	REVISED 01-06-99
PSID-1-99M	DATED 10-20-00
SICD-1-96M	DATED 02-12-97

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

841	DATED 10-12-99
842	DATED 01-06-99
844	DATED 05-05-98
865	DATED 02-22-00
894	DATED 10-12-99
899	DATED 04-21-98

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996 INCLUDING THE INTERIM SPECIFICATIONS THRU 2000 AND THE O.D.O.T BRIDGE DESIGN MANUAL.

DESIGN LOADING:

MS18 AND THE ALTERNATE MILITARY LOADING.

DESIGN STRESSES:

HIGH PERFORMANCE CONCRETE HPC SS 844-COMPRESSIVE STRENGTH 31 MPa (SUPERSTRUCTURE)
CONCRETE CLASS C - UNIT STRENGTH 27.5 MPa (SUBSTRUCTURE)

CONCRETE FOR PRESTRESSED I-BEAMS:
COMPRESSIVE STRENGTH-48.3 MPa (28 DAYS),
COMPRESSIVE STRENGTH-34.5 MPa (RELEASE)
UNIT STRESS : 19.3 MPa COMPRESSION
3.0 MPa TENSION

PRESTRESS STRAND - ASTM A416M GRADE 270, 12.7mm
DIAMETER, SEVEN-WIRE, LOW RELAXATION STRANDS, UNCOATED.
Fs - 1860 MPa
INITIAL STRESS - 0.75 fs
NOMINAL STRAND AREA - 108 mm^2

REINFORCING STEEL - ASTM A615M, A616M OR A617M
GRADE 420 MINIMUM YIELD STRENGTH 420 MPa
SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82M OR A615M.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL
65 mm CONCRETE COVER
SEALING OF CONCRETE SURFACES
HIGH PERFORMANCE CONCRETE.

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 25 mm THICK.

PILE DRIVING CONSTRAINTS:

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 60 METER BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED AND HAS UNDERGONE A WAITING PERIOD OF 30 DAYS MINIMUM.

PILES TO BEDROCK :

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL MILLIMETERS WITH A MINIMUM RESISTANCE OF 20 BLOWS PER 25 mm OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):

THE ULTIMATE BEARING VALUE IS 948 KN PER PILE FOR THE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 990 KN PER PILE FOR THE PIER PILES

REAR ABUTMENT PILES
10 PILES 22 METERS LONG, ESTIMATED LENGTH
10 PILES OF ORDER LENGTH 18 METERS LONG
10 PILES OF ORDER LENGTH 6 METERS LONG
10 SPLICES

FORWARD ABUTMENT PILES
10 PILES 20 METERS LONG, ESTIMATED LENGTH
10 PILES OF ORDER LENGTH 18 METERS LONG
10 PILES OF ORDER LENGTH 4 METERS LONG
10 SPLICES

PIER PILES
18 PILES 17 METERS LONG, ESTIMATED LENGTH
18 PILES OF ORDER LENGTH 18 METERS LONG
9 SPLICES

ITEM 507, STEEL POINTS, AS PER PLAN:

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED STEEL "H" PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BLVD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC.,301 WAREHOUSE DRIVE,

MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC,3601 N.W. YEON AVE., P.O. BOX 10559, PORTLAND, OREGON 97210; PILING ACCESSORIES, INC, 3467 GRIBBLE ROAD, MATHEWS, NORTH CAROLINA 28105; OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR. THE MATERIAL USED FOR THE MANUFACTURING OF PILE POINTS SHALL CONFORM TO ASTM A27M 450/240-CLASS 2-HEAT TREATED OR AASHTO M103M 450/240-HEAT TREATED. A NOTARIZED COPY OF THE MILL TEST REPORT SHALL BE SUBMITTED TO THE ENGINEER.

ITEM 842 CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING, AS PER PLAN:

INSTALL A 900 mm WIDE STRIP, 2.5 mm THICK, GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT AT LOCATIONS SHOWN IN THE PLANS. SECURE THE 1 METER WIDE NEOPRENE SHEETING TO THE CONCRETE WITH 32 X 3 mm (LENGTH X SHANK DIA.) GALVANIZED BUTTON HEAD SPIKE THROUGH A 25 mm OUTSIDE DIAMETER, 3 mm GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 225 mm. OTHER SIMILAR GALVANIZED DEVICES WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 150 mm (+/-) FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS,STARTING AT 150 mm (+/-) FORM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS, AT 150 mm CENTER-TO-CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS WHERE THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHOULD COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAPS IN THE LENGTH OF THE HORIZONTAL STRIPS DUE TO MATERIAL MANUFACTURING SHALL BE AT LEAST 300 mm IN LENGTH, IF NOT VULCANIZED OR ADHESIVE BONDED, OR 150 mm IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 2.5 mm THICK GENERAL PURPOSE,HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E.I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, mm	D 751	2.5 +/-.25
BREAKING STRENGTH, GRAB WXF, N, MINIMUM	D 751	3130 X 3130
ADHESIVE 25 mm STRIP, 50 mm MINIMUM, N, MINIMUM	D 751	27
BURST STRENGTH (MULLEN) MPa, MINIMUM	D 751	9.65
HEAT AGING 70 HOURS T 100° C, 180 BEND WITHOUT CRACKING	D 2136	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLENESS 1 HOUR AT -40° C, BEND AROUND 6 mm MANDREL OF COATING	D 2136	NO CRACKING

PAYMENT FOR LABOR, MATERIALS AND INSTALLATION OF THESE ITEMS SHALL BE INCLUDED IN ITEM 842, CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

CONCRETE PARAPE'S:

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, 32 mm DEEP CONTROL JOINTS SHALL BE SAWED INTO THE PERIMETER OF THE CONCRETE PARAPET. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE SAWCUTS SHALL BE PLACED AS SHOWN ON DETAIL PLANS. THE USE OF AN EDGE GUIDE, FENCE, OR JIG IS REQURED TO INSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, A NOMINAL WIDTH OF 6 mm. THE PERIMETER OF THE DEFLECTION CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 25 mm WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

ITEM 512, SEALING OF CONCRETE SURFACES, (EPOXY-URETHANE):

THE COLOR OF THE URETHANE TOP COAT SHALL BE FEDERAL COLOR NO. 17778 (OFF-WHITE)

UTILITY LINES:

ALL EXPENSE INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE UTILITY(IES). THE CONTRACTOR AND THE UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

APPROACH SLAB CONCRETE : SHALL BE PLACED TOWARDS THE SUPERSTRUCTURE DURING DAYS WHEN SUDDEN TEMPERATURE CHANGES ARE UNLIKELY AND BE COMPLETED AT LEAST 4 HOURS PRIOR TO THE CONCRETE PLACEMENT DAY'S PEAK AMBIENT TEMPERATURE.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE PLACED IN 150 mm LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

ISSUED FOR CONSTRUCTION
8-6-2001

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7044 BRECKSVILLE ROAD,
CLEVELAND, OHIO 44141
TEL (216)526-4800

CNP ENGINEERING

DESIGNED	DRAWN	REVIEWED	DATE
G.G.N	SFW	E.P.C.	8-6-01
CHECKED	REVISED	STRUCTURE FILE NO.	
J.P.		8501610	

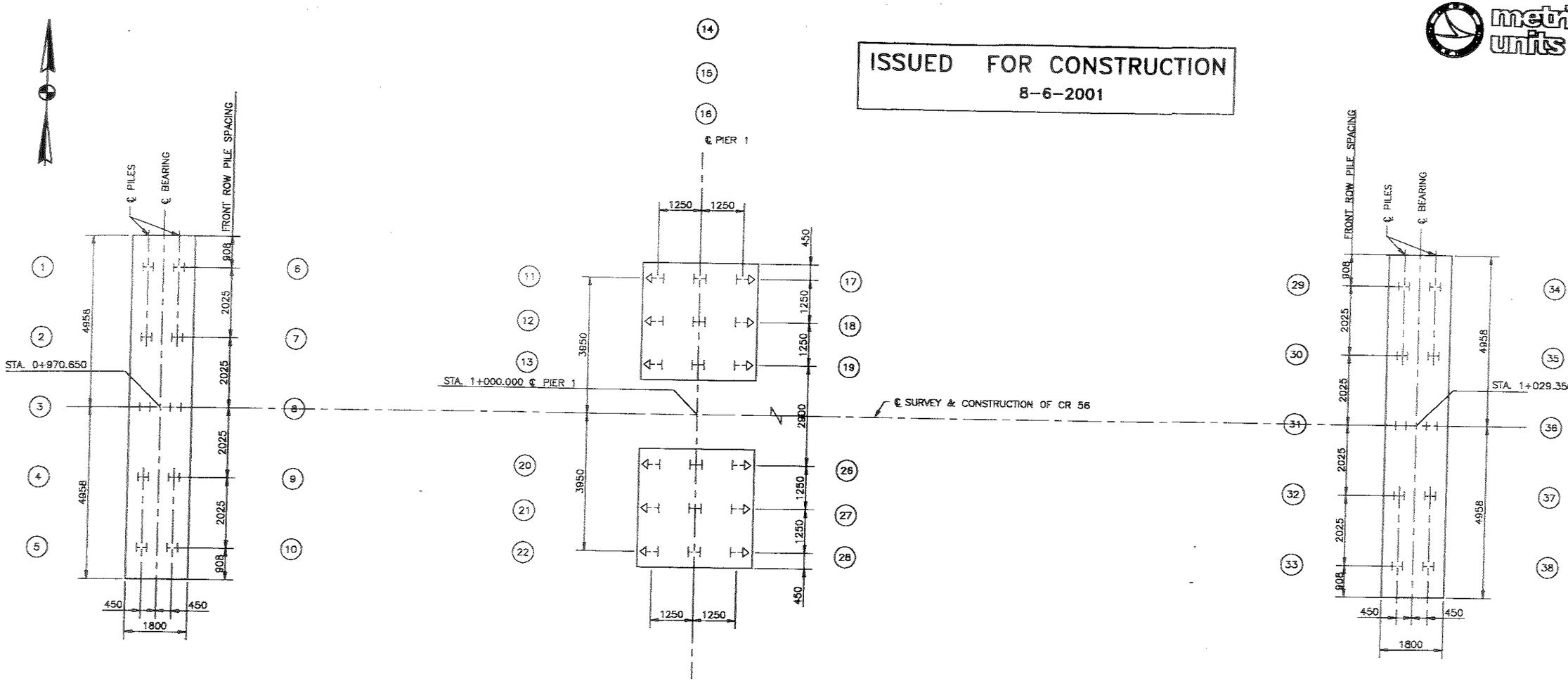
GENERAL NOTES
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

3/15

169/248

ISSUED FOR CONSTRUCTION
8-6-2001



PILE LAYOUT - ABUTMENTS

REAR ABUTMENT PILING TABLE				
PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	REMARK
1 TO 10	HP250X62	273.300	22 000	VERTICAL

PILE DESIGN LOAD = 474 kN
ALLOWABLE PILE LOAD = 500 kN

FORWARD ABUTMENT PILING TABLE				
PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	REMARK
29 TO 38	HP250X62	272.420	20 000	VERTICAL

PILE DESIGN LOAD = 474 kN
ALLOWABLE PILE LOAD = 500 kN

PIER PILE TABLE				
PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	
11 TO 28	HP250X62	267.950	17 000	

PILE DESIGN LOAD = 495 kN
ALLOWABLE PILE LOAD = 500 kN

PILE SYMBOL

PILES BATTERED AT 1:4
HP250X62 PILES

VERTICAL PILES
HP250X62 PILES

NOTES

1. FOR ABUTMENT FOUNDATION DETAILS SEE SHEET 5 OF 15.
2. FOR PIER FOUNDATION DETAILS SEE SHEET 7 OF 15.
3. ALL THE PILE AT THE ABUTMENTS SHALL BE WITH 16" DIAMETER PILE SLEEVE. PILE SLEEVE SHALL BE INCLUDED WITH MSE WALL FOR PAYMENT.

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

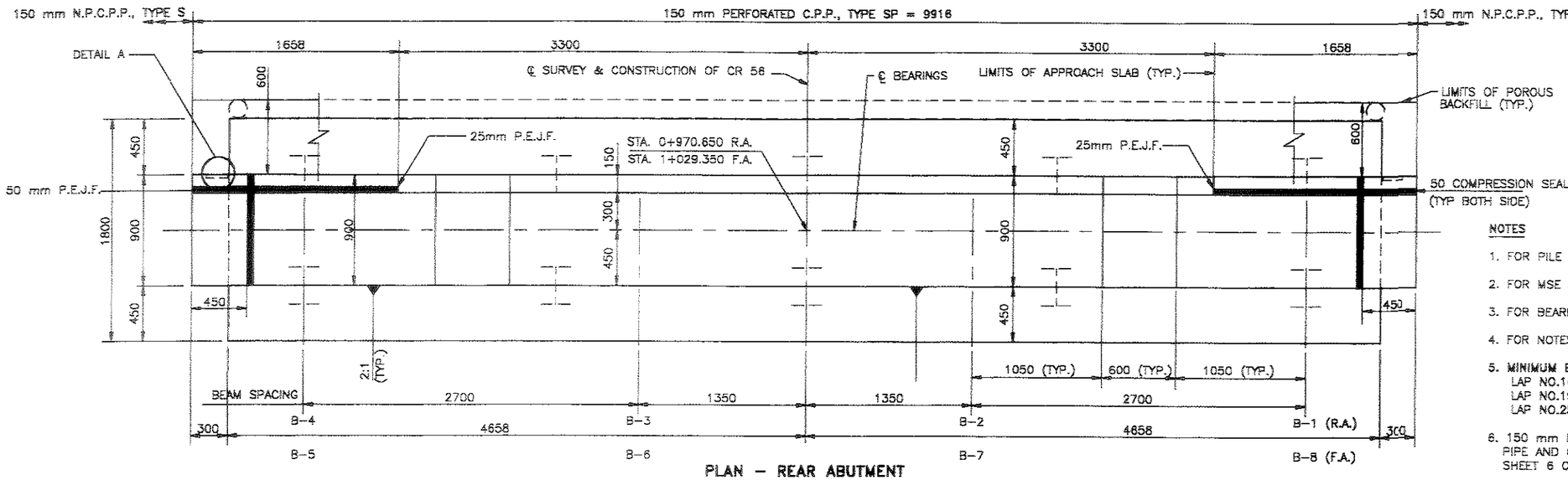
DESIGN AGENCY
CNP ENGINEERING INC.
7344 MAPLEDALE BLVD.
BRUNSWICK, OH 44060
TEL: (216) 225-0000

C N P ENGINEERING

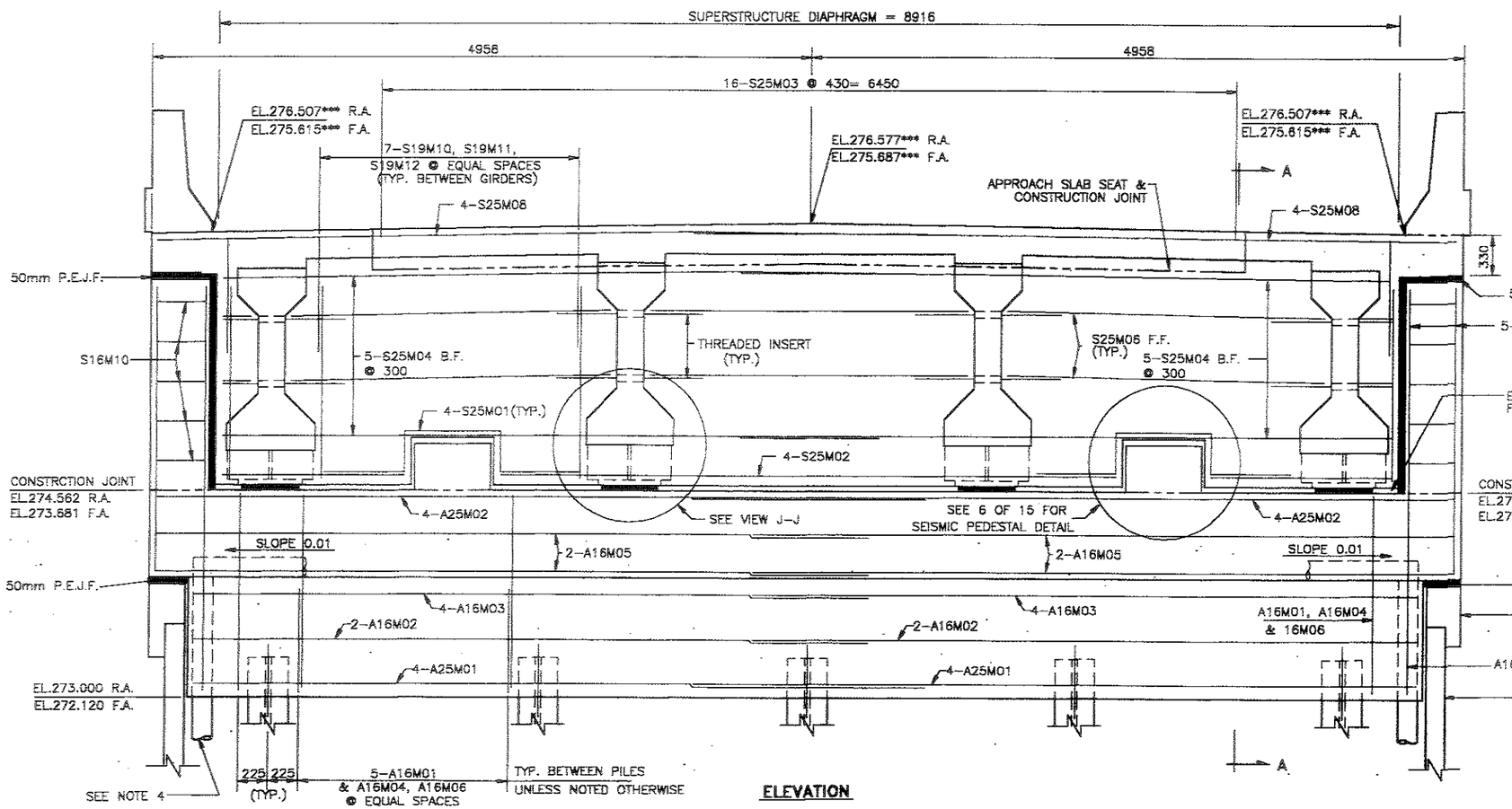
DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501810
DRAWN S.F.W.
REVISED
DESIGNED G.G.N.
CHECKED J.P.

PILE LAYOUT - ABUTMENTS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

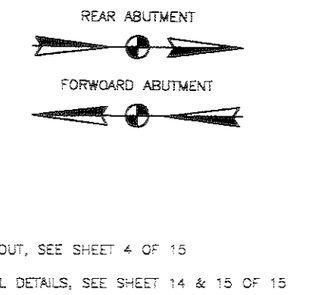
WYA/CRA-30-28.009



PLAN – REAR ABUTMENT



ELEVATION



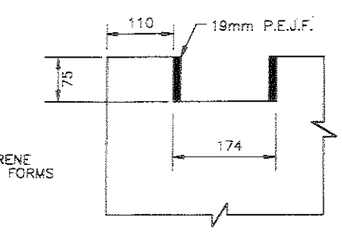
NOTES

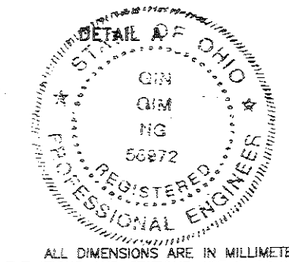
1. FOR PILE LAYOUT, SEE SHEET 4 OF 15
2. FOR MSE WALL DETAILS, SEE SHEET 14 & 15 OF 15
3. FOR BEARING DETAILS, SEE SHEET 13 OF 15
4. FOR NOTES AND SECTIONS A–A SEE SHEET 6 OF 15
5. MINIMUM BAR LAPS
   LAP NO.16M BARS 875 mm.
   LAP NO.19M BARS 1041 mm.
   LAP NO.25M BARS 1753 mm.
6. 150 mm DIA. N.P.C.P.P. AT ENDS SPLICED TO PERFORATED PIPE AND OUTLET AS SHOWN IN PIPE TERMINATION DETAIL ON SHEET 6 OF 15

ABBREVIATIONS

F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE
R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
C.P.P. = CORRUGATED POLYETHYLENE PIPE
N.P.C.P.P. = NON–PERFORATED CORRUGATED POLYETHYLENE PIPE

** 2–S19M10, S19M11 & S19M12
*** ELEVATIONS ARE GIVEN @ BRIDGE LIMIT





ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

ISSUED FOR CONSTRUCTION
11-2-2001

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
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DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

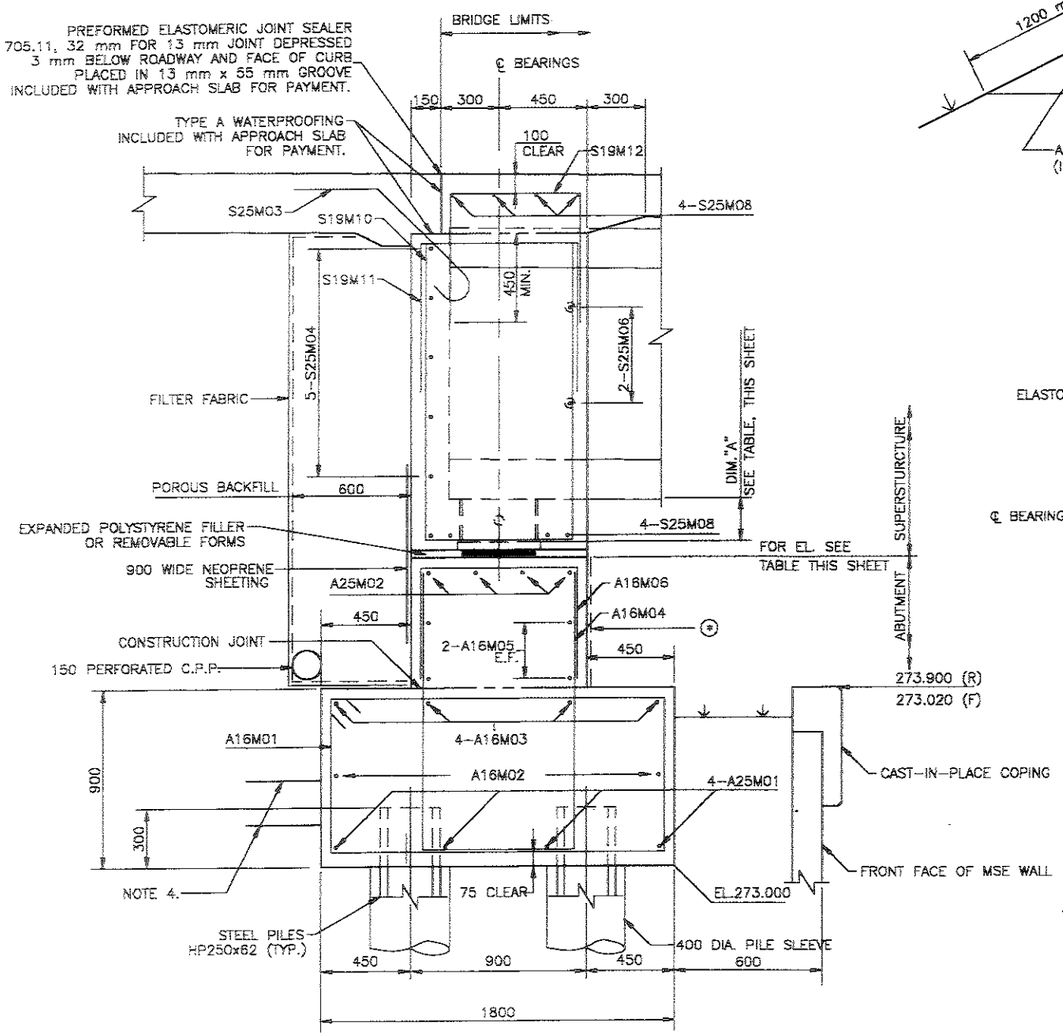
REAR ABUTMENT DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

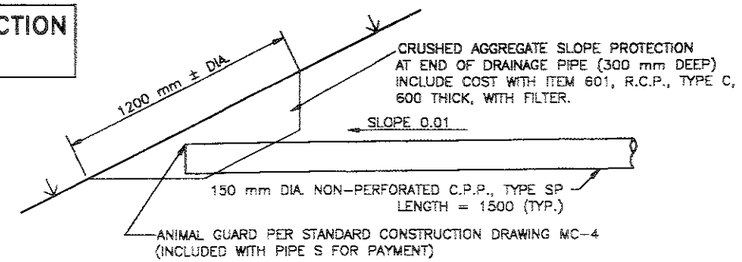
5/15

171/248

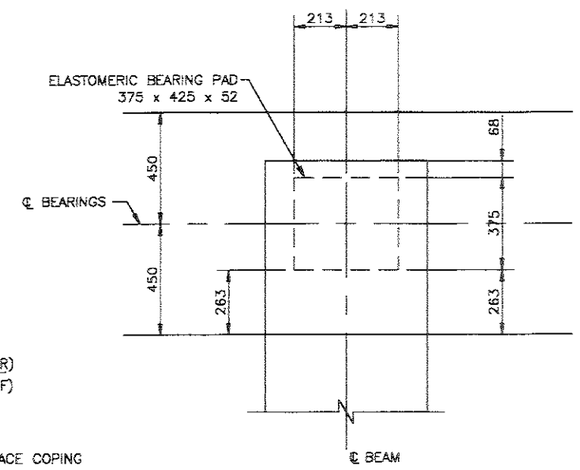
ISSUED FOR CONSTRUCTION
11-2-2001



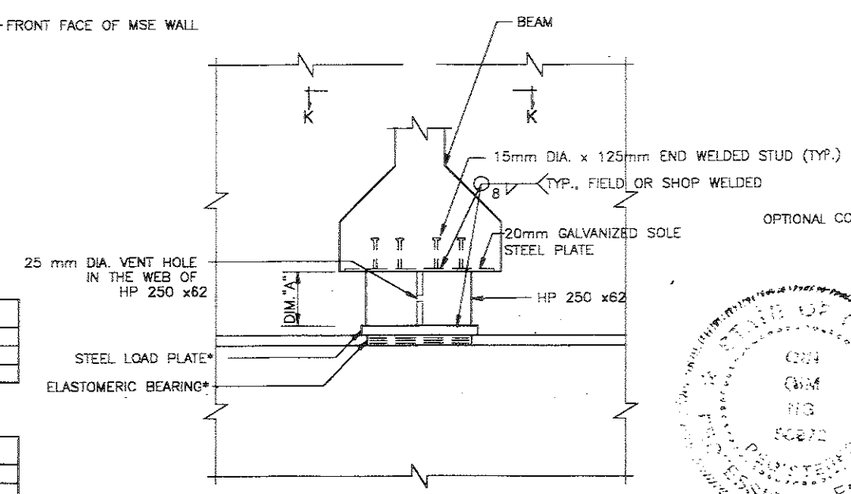
SECTION A-A



TERMINATION OF 150 mm N.P.C.P.P. DETAIL



SECTION K-K



VIEW J-J

*FOR LOAD PLATE AND ELASTOMER BEARING DIMENSIONS SEE SHEET 13 OF 15

NOTES:

1. POROUS BACKFILL

POROUS BACKFILL WITH FILTER FABRIC SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE, TO 300 mm BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WINGWALLS. FILTER FABRIC SHALL CONFORM WITH 712.09, TYPE A. FILTER FABRIC IS INCLUDED WITH POROUS BACKFILL FOR PAYMENT.

2. ABUTMENT DIAPHRAGM CONCRETE

CONCRETE ENCASING THE PRESTRESSED I BEAM STRUCTURAL MEMBERS IN SEMI-INTEGRAL AND INTEGRAL TYPE ABUTMENTS MAY BE PLACED AT LEAST 48 HOURS BEFORE THE ACTUAL DECK CONCRETE IS PLACED

3. FOR ADDITIONAL DETAILS, REFER TO STANDARD DWG. SICD-1-96M.

4. SEE MANUFACTURER'S MSE WALL PLANS FOR ADDITIONAL STRAPS ATTACHED TO ABUTMENT FOOTING.

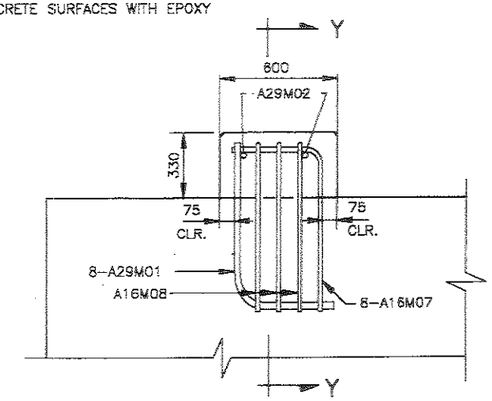
5. SEE SHEET 14 & 15 OF 15 FOR MSE WALL DETAILS.

6. ABUTMENT BACKFILL ABOVE THE BRIDGE SEAT SHALL NOT BE PLACED UNTIL AFTER THE CONCRETE DECK SLAD HAS CURED FOR AT LEAST 48 HOURS. BACKFILL SHALL THEN BE PLACED SIMULTANEOUSLY AT BOTH ABUTMENTS.

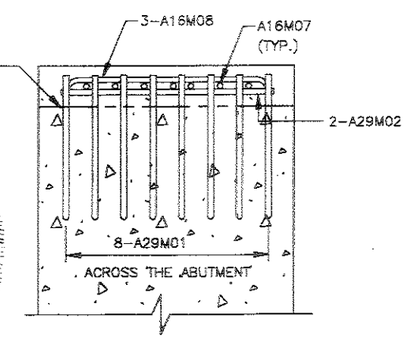
ABBREVIATIONS

F = FORWARD ABUTMENT
R = REAR ABUTMENT
F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE
C.P.P. = CORRUGATED POLYETHYLENE PIPE
N.P.C.P.P. = NON-PERFORATED CORRUGATED POLYETHYLENE PIPE

(*) SEALING OF CONCRETE SURFACES WITH EPOXY SEALER.



SEISMIC PEDESTAL DETAILS



SECTION Y-Y

BEAM SEAT ELEVATIONS				
	BEAM NO. 1	BEAM NO. 2	BEAM NO. 3	BEAM NO. 4
REAR ABUTMENT	274.562	274.562	274.562	274.562
FORWARD ABUTMENT	273.681	273.681	273.681	273.681

DIMENSION "A" TABLE				
	BEAM NO. 1	BEAM NO. 2	BEAM NO. 3	BEAM NO. 4
REAR ABUTMENT	190	233	233	190
FORWARD ABUTMENT	190	233	233	190

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7244 HAMILTON BLVD.
COLUMBUS, OH 43235
TEL.(614)792-0000

DESIGNED G.G.N | DRAWN SFW | REVIEWED E.P.C. | DATE 8-6-01
CHECKED J.P. | REVISED | STRUCTURE FILE NO. 8501610

REAR ABUTMENT DETAILS
BRIDGE NO. WYA-23-12429
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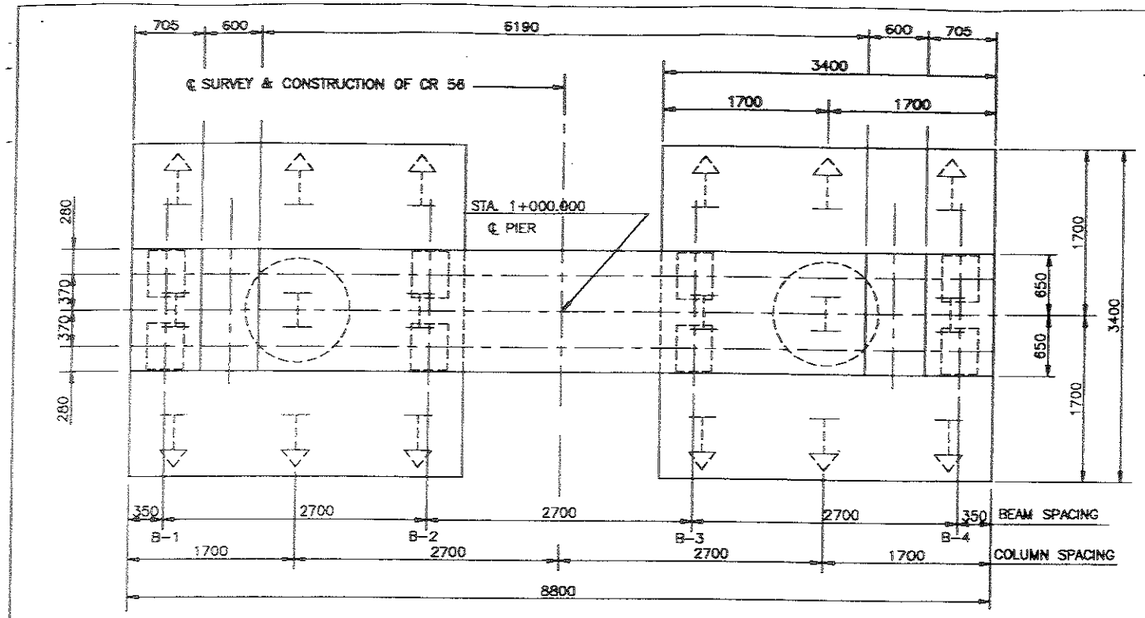
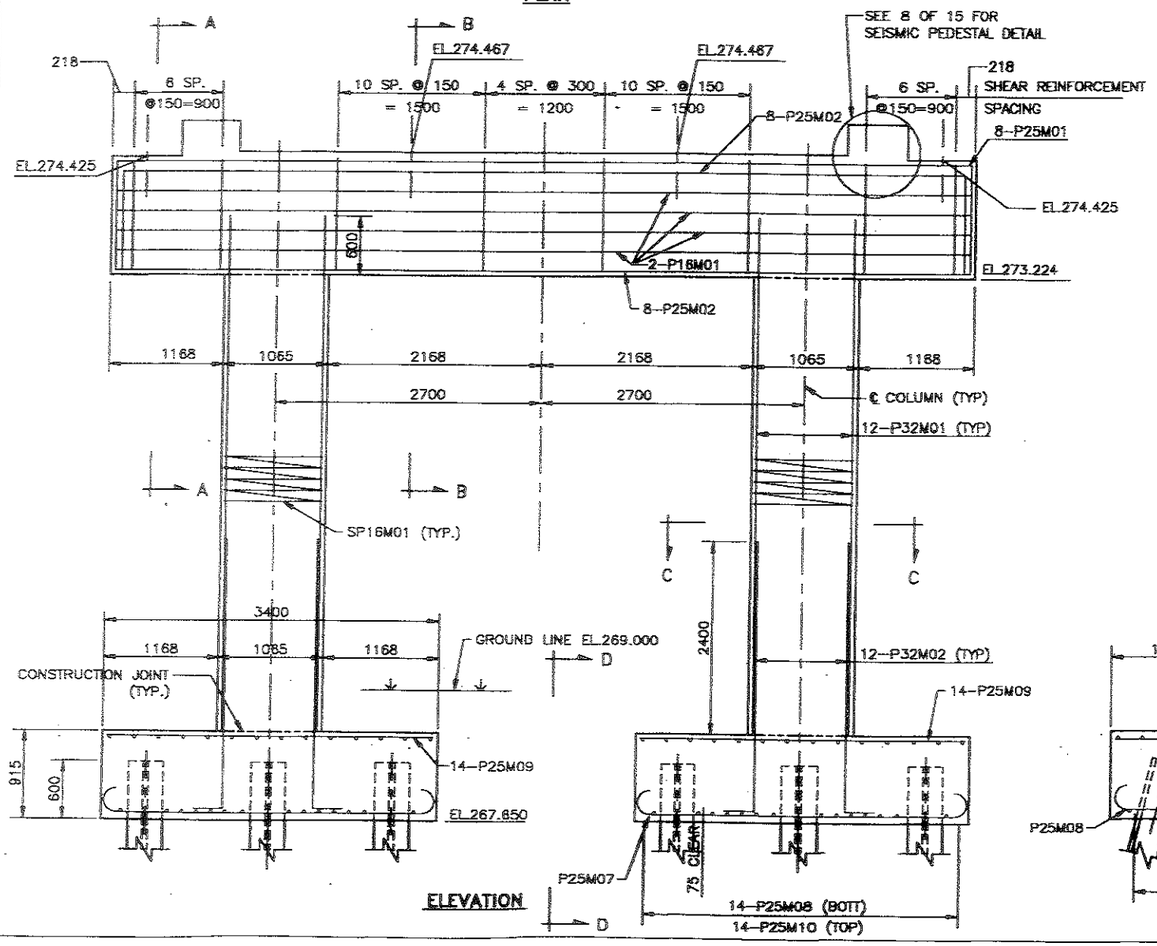
6/15

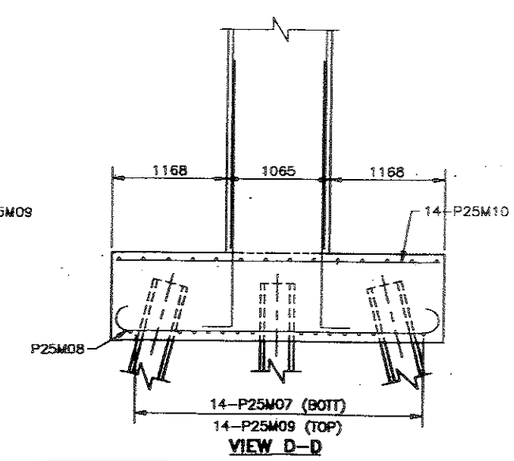
172/248



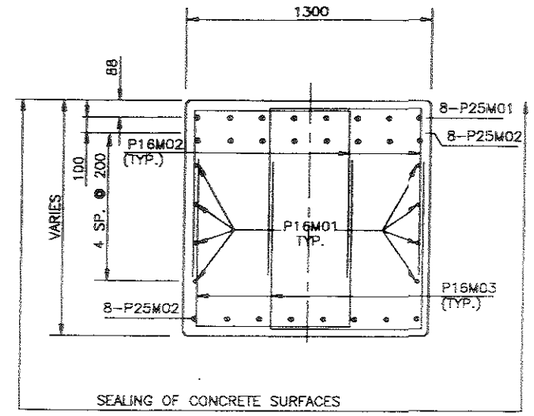
PLAN



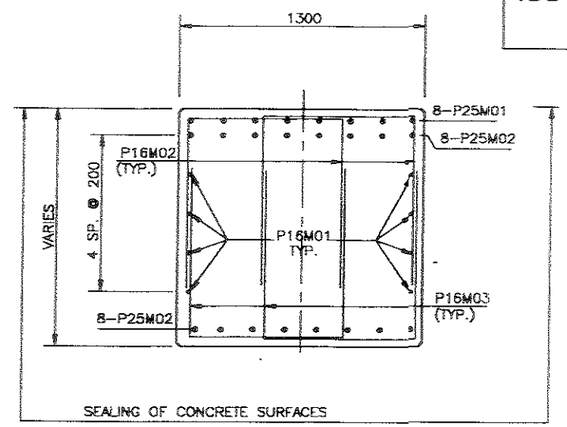
ELEVATION



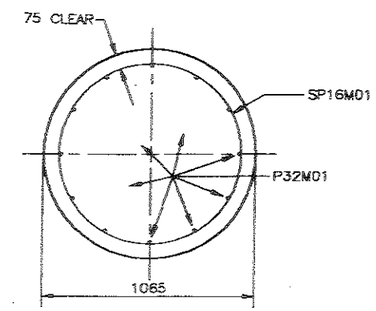
VIEW D-D



SECTION A-A



SECTION B-B



SECTION C-C

ISSUED FOR CONSTRUCTION
8-6-2001

NOTES:

1. BRIDGE SEAT REINFORCING
REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.

2. SPIRAL REINFORCEMENT
TOP OF THE COLUMN SPIRAL REINFORCEMENT SHALL BE EMBEDDED A MINIMUM OF 50 mm INTO THE PIER CAP CONCRETE.

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

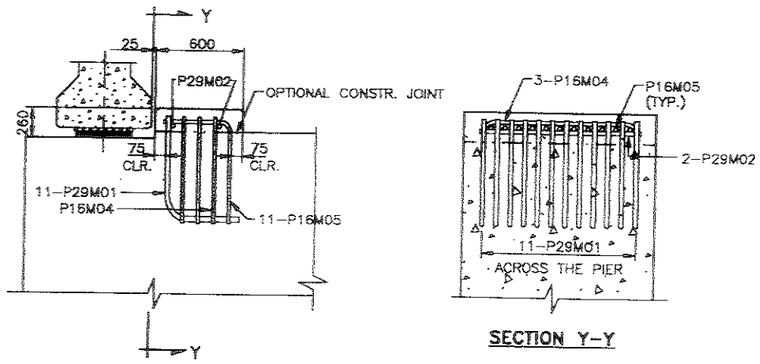
DESIGN AGENCY
CNP ENGINEERING INC.
7944 MAYBURY ROAD
COLUMBUS, OH 43069
TEL: 614-866-0000

C.N.P. ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN S.F.W.
REVISED
DESIGNED G.G.N
CHECKED J.P.

PIER DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

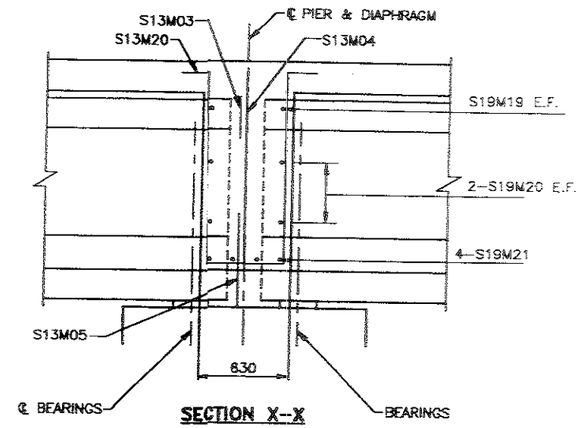
WYA/CRA-30-28.009



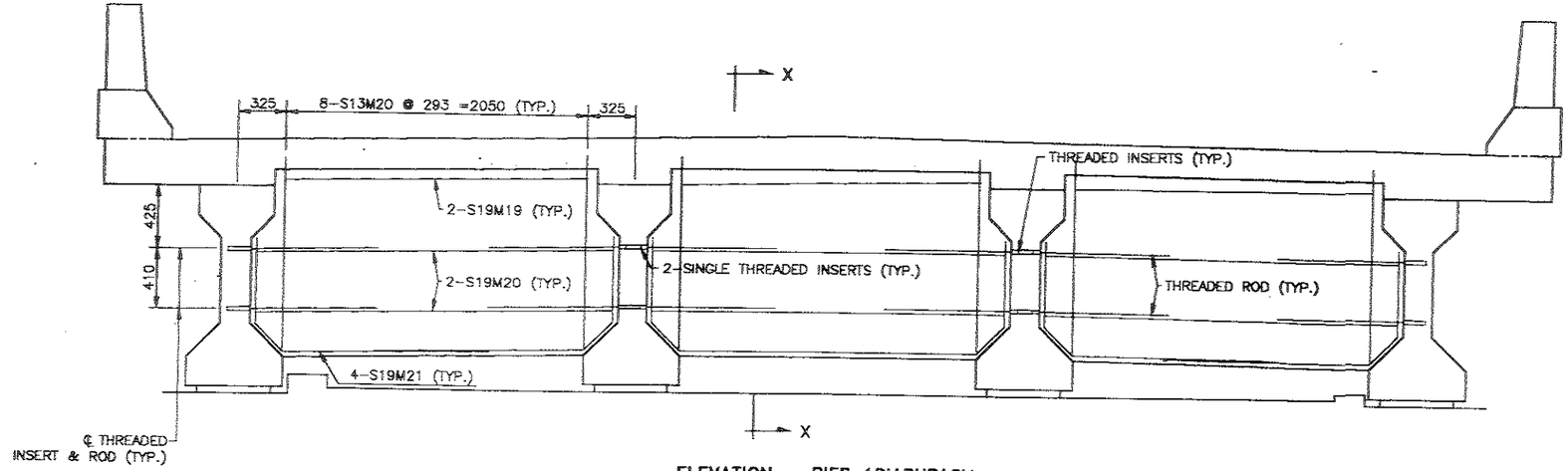
SECTION Y–Y

SEISMIC PEDESTAL DETAILS

(TYPICAL AT PIER)



SECTION X–X



ELEVATION – PIER 1DIAPHRAGM

NOTES:

1 PIER DIAPHRAGM SHALL BE HIGH PERFORMANCE CONCRETE.

ISSUED FOR CONSTRUCTION

8–6–2001

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7244 WAYNESBURY ROAD,
COLUMBUS, OH 43235
TEL: (614) 431-7444 FAX: 431-8883

C.N.P. ENGINEERING

DATE 8–6–01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N.
CHECKED J.P.

PIER DIAPHRAGM DETAILS
BRIDGE NO. WYA–23–12429
US 23 under CR–56

WYA/CRA–30–28.009

8/15

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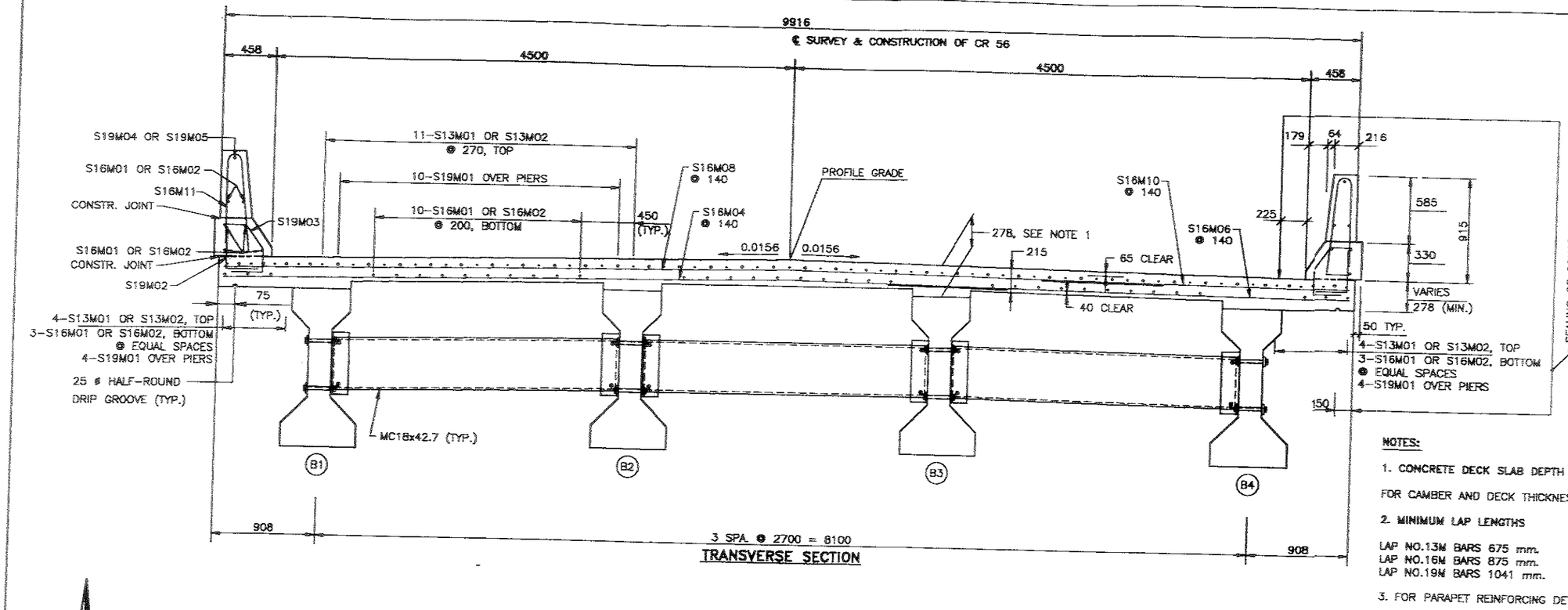


TRANSVERSE SECTION

NOTES:

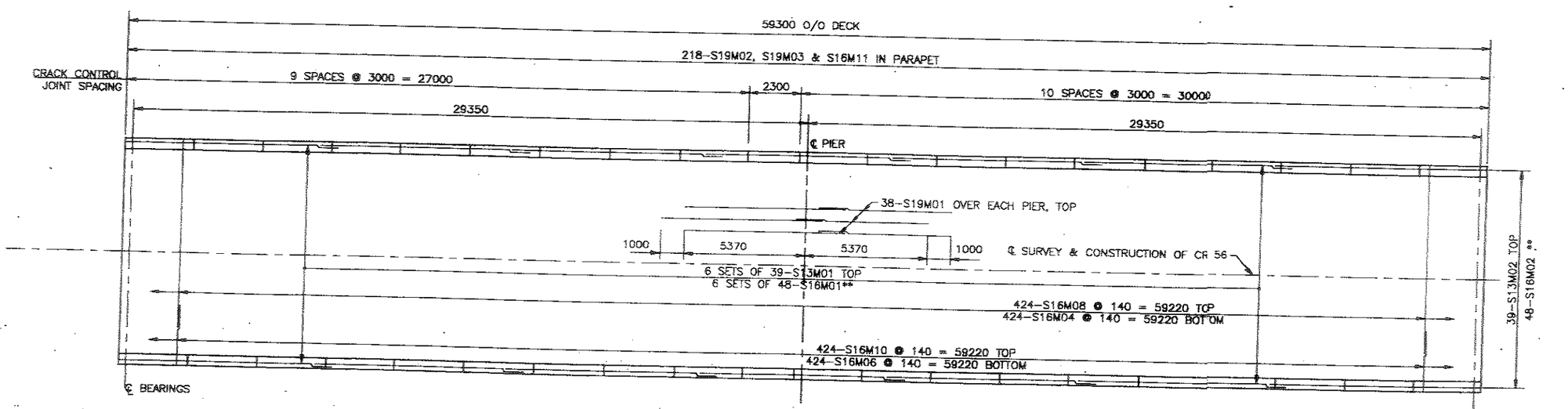
1. CONCRETE DECK SLAB DEPTH

FOR CAMBER AND DECK THICKNESS DIAGRAM SEE SHEET 10 OF 15

2. MINIMUM LAP LENGTHS

LAP NO.13M BARS 675 mm.
LAP NO.16M BARS 875 mm.
LAP NO.19M BARS 1041 mm.

3. FOR PARAPET REINFORCING DETAILS SEE SHEET 12 & 14 OF 15



DECK REINFORCING PLAN

** 36-S16M01 OR S16M02 IN BOTTOM MAT
6-S16M01 OR S16M02 IN LEFT PARAPET
6-S16M01 OR S16M02 IN RIGHT PARAPET

ISSUED FOR CONSTRUCTION
8-6-2001

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7044 MAPLEWAY BLVD.
COLUMBIA, MD 21046
TEL:(410)730-8800
FAX:(410)730-8803

C N P ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501810
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

DECK REINFORCING PLAN & TRANSVERSE SECTION
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

9/15

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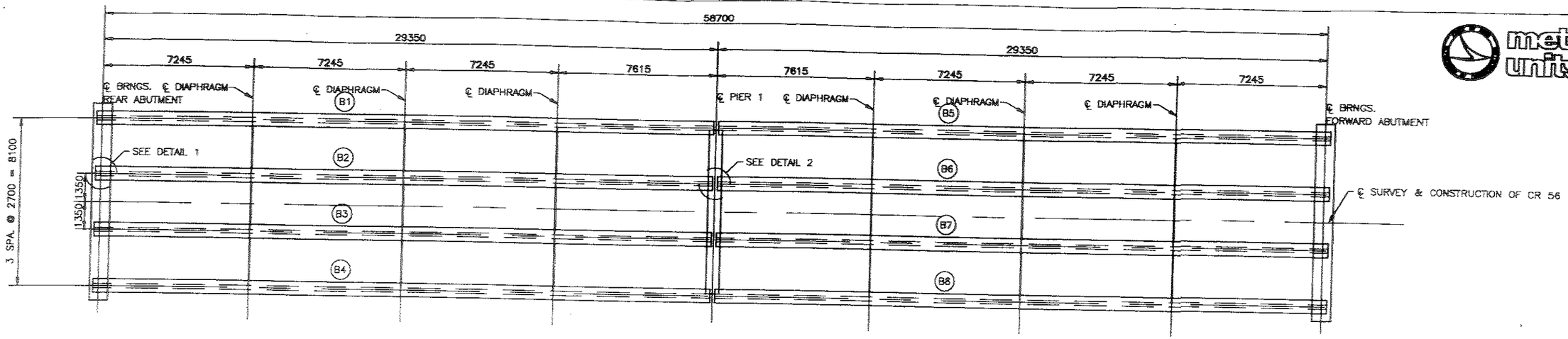
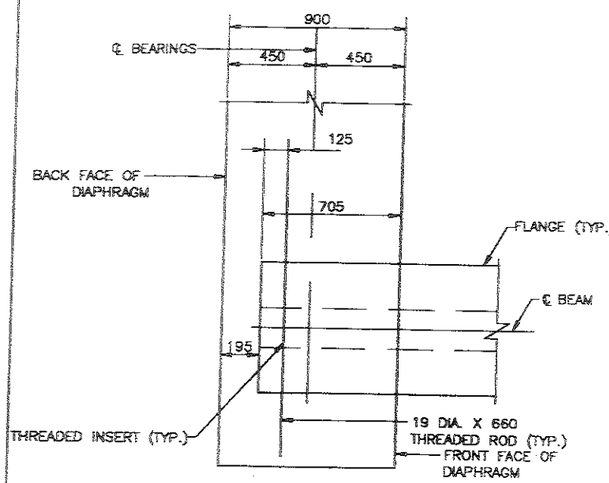
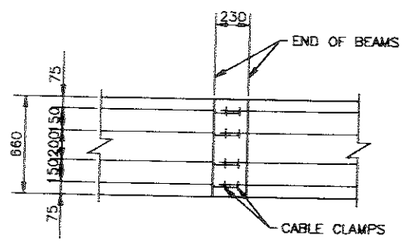
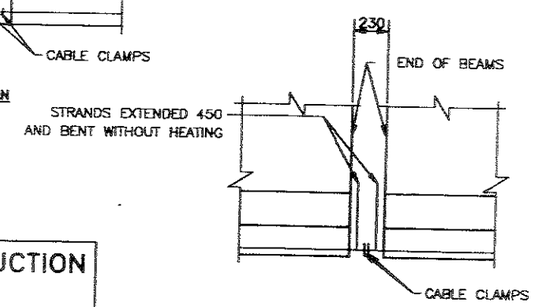




DETAIL 1

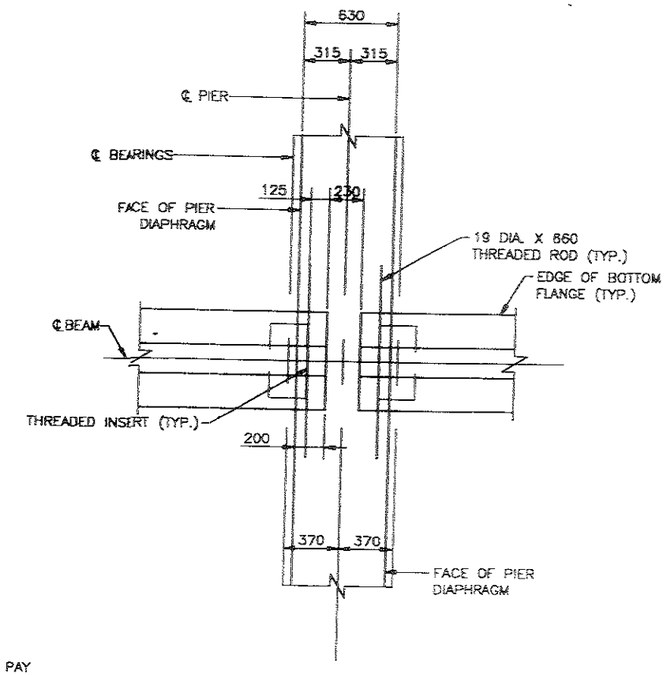


PLAN



ELEVATION

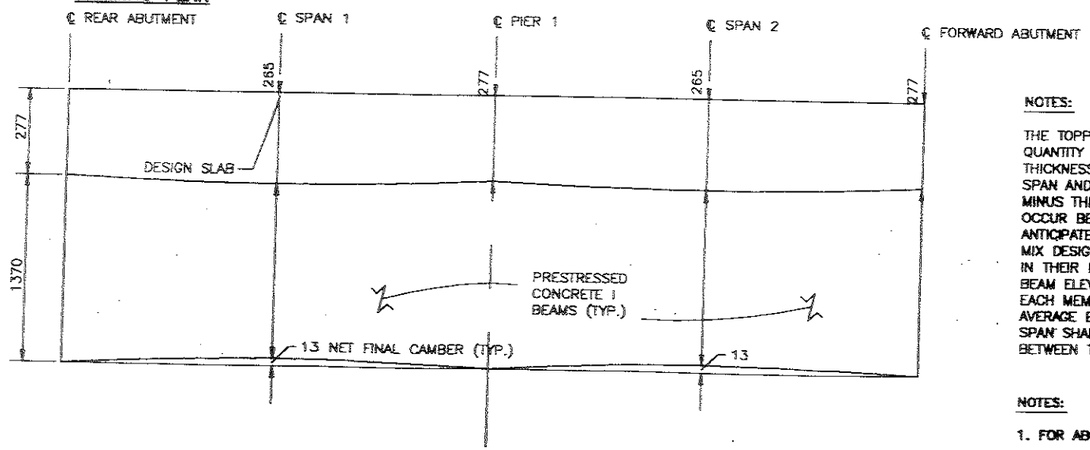
STRAND SPLICING DETAIL AT PIERS



DETAIL 2

ISSUED FOR CONSTRUCTION
8-6-2001

FRAMING PLAN



NOTES:

THE TOPPING THICKNESSES SHOWN ARE NOMINAL DIMENSIONS. THE PAY QUANTITY FOR DECK CONCRETE SHALL BE BASED ON THE DESIGN SLAB THICKNESS AND THE AVERAGE OF THE NOMINAL HAUNCH DEPTHS AT MID-SPAN AND AT THE BEARINGS. THE HAUNCH DEPTH IS THE TOPPING THICKNESS MINUS THE DESIGN SLAB THICKNESS. DEVIATION FROM THIS AVERAGE MAY OCCUR BECAUSE THE TOP OF THE BEAM MAY NOT HAVE THE EXACT CAMBER ANTICIPATED BY DESIGN DUE TO THE CONTRACTOR'S TIME OF ERECTION MIX DESIGN, AND OTHER FABRICATION FACTORS. ONCE ALL BEAMS ARE SET IN THEIR FINAL POSITION, THE CONTRACTOR SHALL RECORD THE TOP OF BEAM ELEVATIONS AT EACH BEARING AND MID-SPAN. THE ACTUAL CAMBER FOR EACH MEMBER SHALL BE THE MEASURED ELEVATION AT MID-SPAN MINUS THE AVERAGE ELEVATION AT EACH BEARING. THE ACTUAL HAUNCH DEPTH AT MID-SPAN SHALL BE THE NOMINAL DIMENSION PLUS OR MINUS THE DIFFERENCE BETWEEN THE ACTUAL AND ANTICIPATED CAMBER.

NOTES:

1. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 5 OF 15 .
2. FOR PIER DIAPHRAGM DETAILS, SEE SHEET 8 OF 15

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7244 MARBLEDOF BLVD.
COLUMBIA, GA 63005
TEL: (314) 576-0000

DESIGNED G.G.N | DRAWN S.F.W. | REVIEWED E.P.C. | DATE 8-6-01
CHECKED J.P. | REVISED | STRUCTURE FILE NO. 8501610

FRAMING PLAN & BEAM DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

10/15

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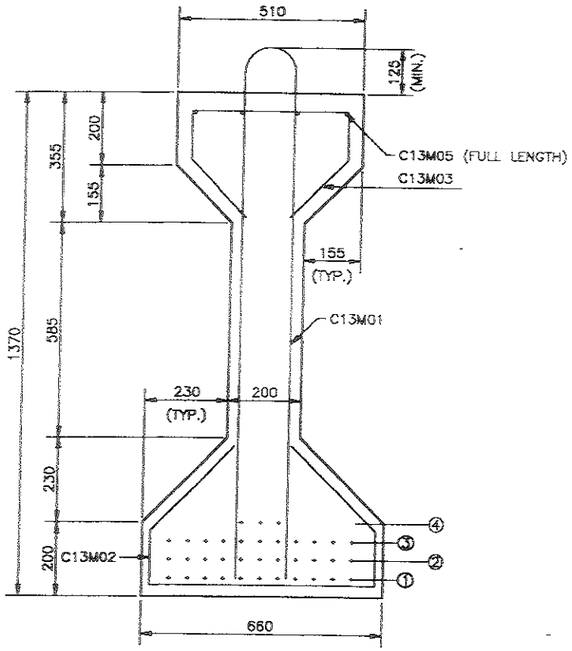
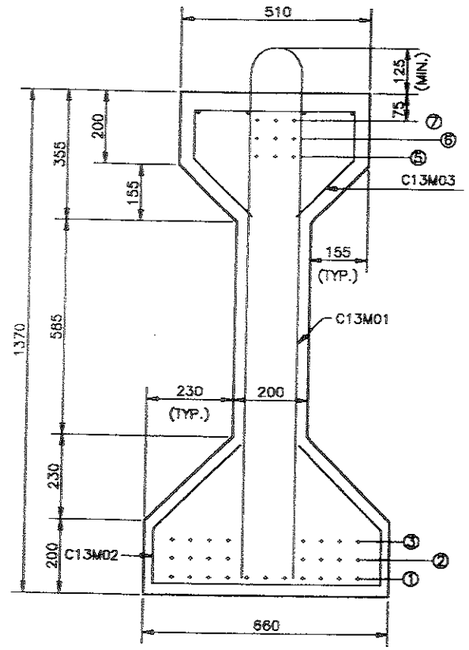
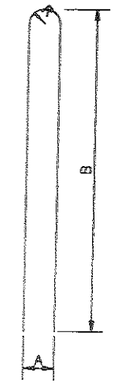


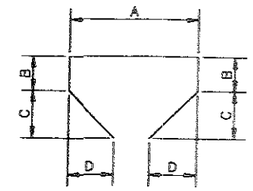
AASHTO TYPE 4 (1370") – MID SPAN



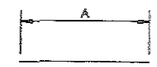
AASHTO TYPE 4 (1370") – END SPAN



TYPE 1



TYPE 2

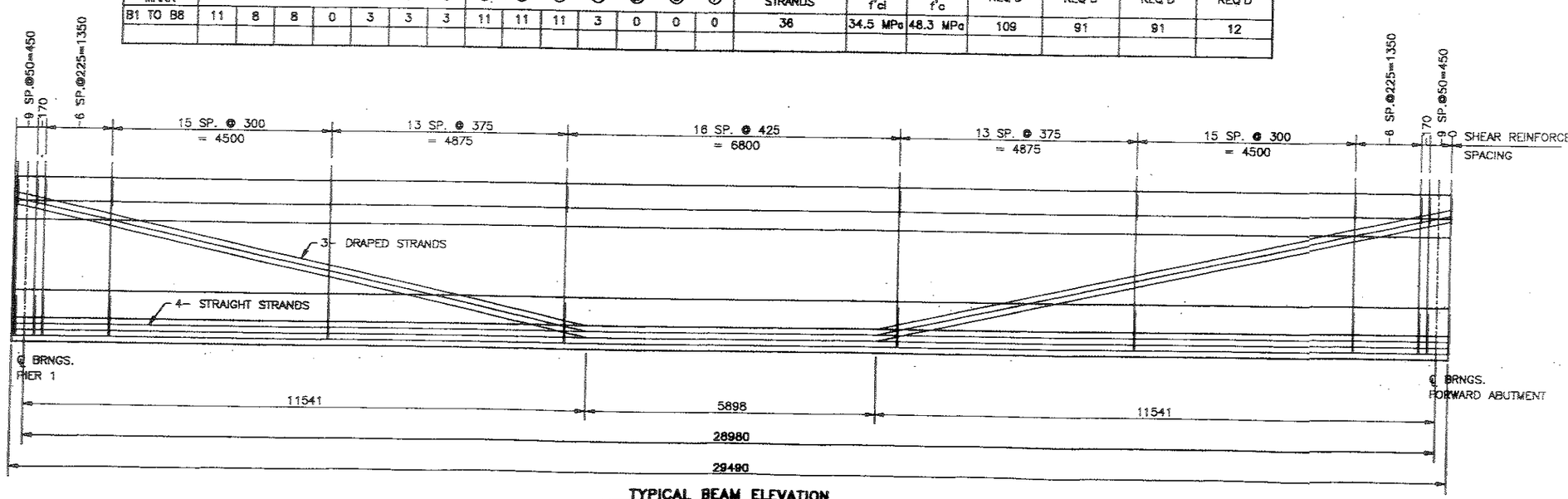


TYPE 3

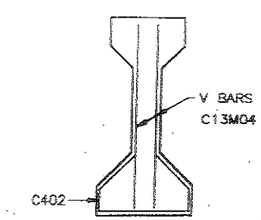
MARK	TYPE	A	B	C	D	R	
C13M01	1	140	1465			70	
C13M02	2	155	800	220	220		
C13M03	2	140	430	135	135		
C13M04	3	1290					

ISSUED FOR CONSTRUCTION
8-6-2001

BEAM MARK	NUMBER OF STRANDS PER ROW: END SPAN – ROW NUMBER ①	②	③	④	⑤	⑥	⑦	MID SPAN – ROW NUMBER ①	②	③	④	⑤	⑥	⑦	TOTAL STRANDS	CONCRETE STRENGTHS f'ci	f'c	C13M01 BARS REQ'D	C13M02 BARS REQ'D	C13M03 BARS REQ'D	C13M04 BARS REQ'D
B1 TO B8	11	8	8	0	3	3	3	11	11	11	3	0	0	0	36	34.5 MPa	48.3 MPa	109	91	91	12



TYPICAL BEAM ELEVATION
AASHTO TYPE 4



SECTION A–A

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7944 MARKLEY RD.
CELINA, OH 45822
TEL: 419-586-3365

C N P ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501810
DRAWN S.F.W.
REVISED
DESIGNED G.G.N
CHECKED J.P.

BEAM DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

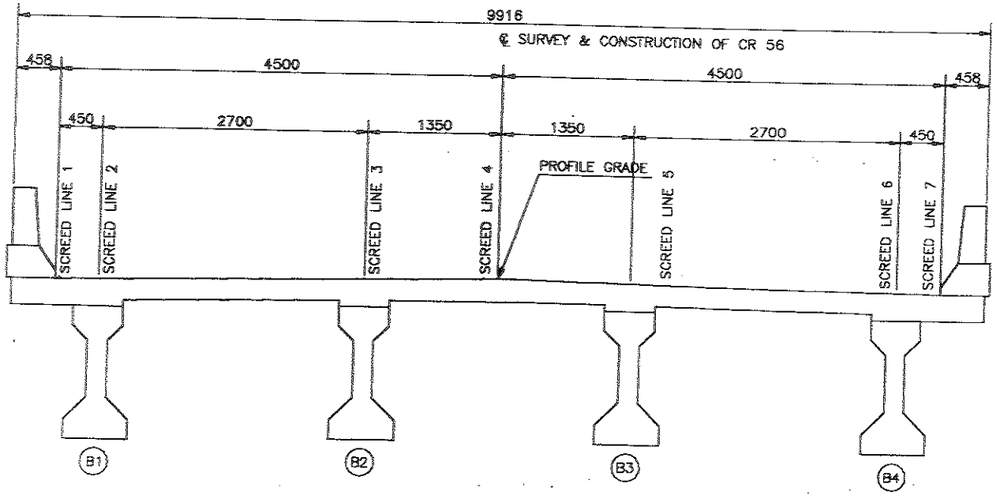
WYA/CRA-30-28.009

11/15

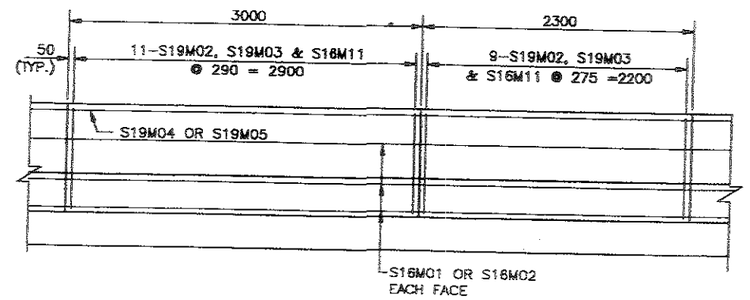
metric units

SCREED ELEVATIONS TABLE

SPAN NO.	LOCATION	SCREED LINE 1 STATION	SCREED LINE 1 SCREED ELEVATION	SCREED LINE 2 STATION	SCREED LINE 2 SCREED ELEVATION	SCREED LINE 3 STATION	SCREED LINE 3 SCREED ELEVATION	SCREED LINE 4 STATION	SCREED LINE 4 SCREED ELEVATION	SCREED LINE 5 STATION	SCREED LINE 5 SCREED ELEVATION	SCREED LINE 6 STATION	SCREED LINE 6 SCREED ELEVATION	SCREED LINE 7 STATION	SCREED LINE 7 SCREED ELEVATION
SPAN NO.1	0.00 L	0+970.650	276.504	0+970.650	276.512	0+970.650	276.554	0+970.650	276.575	0+970.650	276.554	0+970.650	276.512	0+970.650	276.504
	0.25 L	0+977.988	276.460	0+977.988	276.467	0+977.988	276.509	0+977.988	276.530	0+977.988	276.509	0+977.988	276.467	0+977.988	276.460
	0.50 L	0+985.325	276.390	0+985.325	276.397	0+985.325	276.439	0+985.325	276.460	0+985.325	276.439	0+985.325	276.397	0+985.325	276.390
	0.75 L	0+992.663	276.286	0+992.663	276.293	0+992.663	276.335	0+992.663	276.356	0+992.663	276.335	0+992.663	276.293	0+992.663	276.286
SPAN NO.2	0.00 L	1+000.000	276.157	1+000.000	276.164	1+000.000	276.206	1+000.000	276.227	1+000.000	276.206	1+000.000	276.164	1+000.000	276.157
	0.25 L	1+007.337	276.066	1+007.337	276.073	1+007.337	276.115	1+007.337	276.136	1+007.337	276.115	1+007.337	276.073	1+007.337	276.066
	0.50 L	1+014.675	275.949	1+014.675	275.956	1+014.675	275.998	1+014.675	276.019	1+014.675	275.998	1+014.675	275.956	1+014.675	275.949
	0.75 L	1+022.013	275.799	1+022.013	275.806	1+022.013	275.848	1+022.013	275.869	1+022.013	275.848	1+022.013	275.806	1+022.013	275.799
	1.00 L	1+029.350	275.623	1+029.350	275.630	1+029.350	275.672	1+029.350	275.693	1+029.350	275.672	1+029.350	275.630	1+029.350	275.623



SCREED LINE LOCATIONS



PARAPET REINFORCING DETAIL

NOTES

1. SCREED ELEVATIONS

SCREED ELEVATIONS ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR THE ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.

L = SPAN LENGTH

ISSUED FOR CONSTRUCTION
8-6-2001

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

DESIGN AGENCY
CNP ENGINEERING INC.
7344 MAYFIELD RD.
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C N P ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

SCREED ELEVATIONS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

12/15

178/248

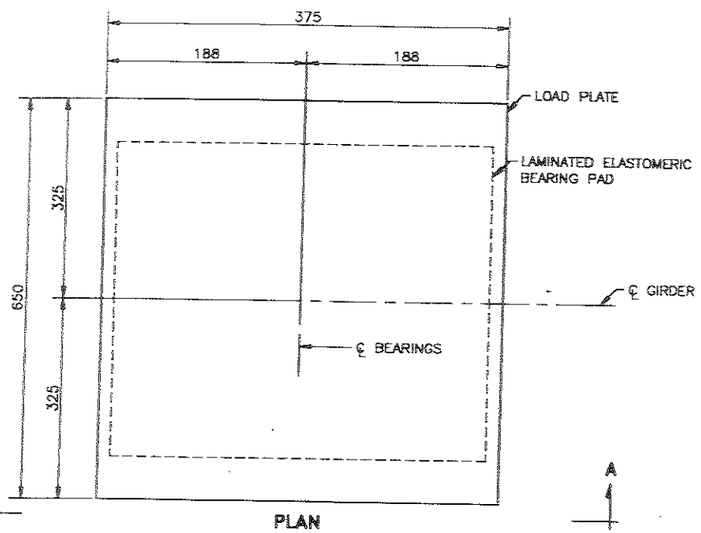
metric units

LAMINATED ELASTOMERIC BEARINGS

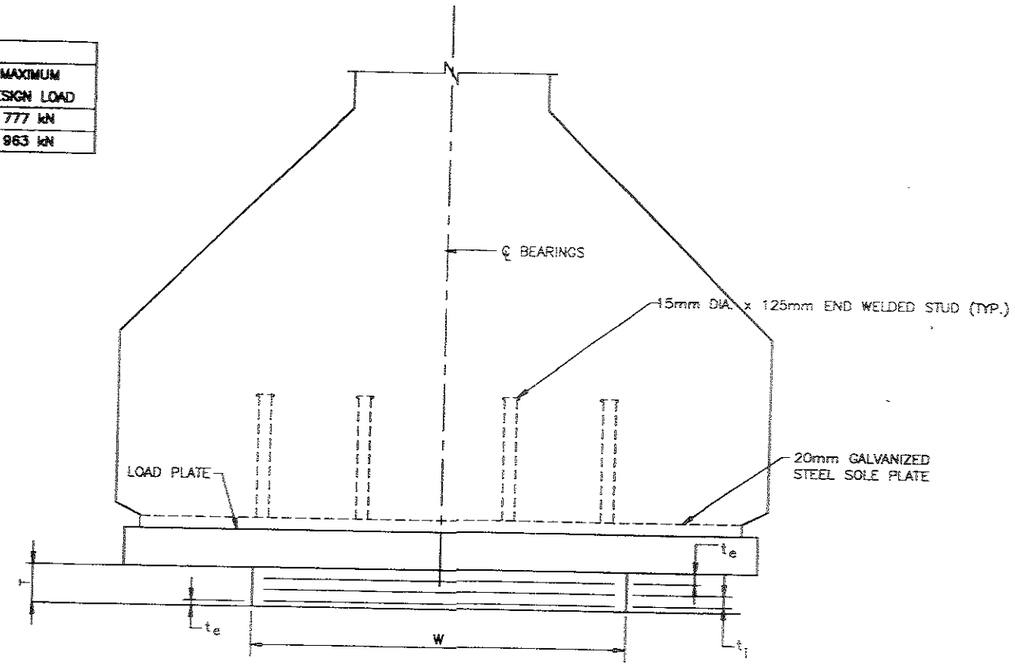
LOCATION	BEARING DIMENSIONS						STEEL LOAD PLATE	REACTIONS		MAXIMUM
	L	W	ti	te	T	N	LENGTH X WIDTH X THICKNESS	DL	LL	DESIGN LOAD
ABUTMENTS	380	380	10	7	52	4	405 X 405 X 38 MIN.	550 kN	284 kN	777 kN
PIER	350	450	10	7	40	3	375 x 650 x 50 MIN.	594 kN	461 kN	963 kN

ti = THICKNESS OF INTERNAL LAYER
te = THICKNESS OF EXTERNAL LAYER
T = TOTAL THICKNESS OF ELASTOMERIC BEARING

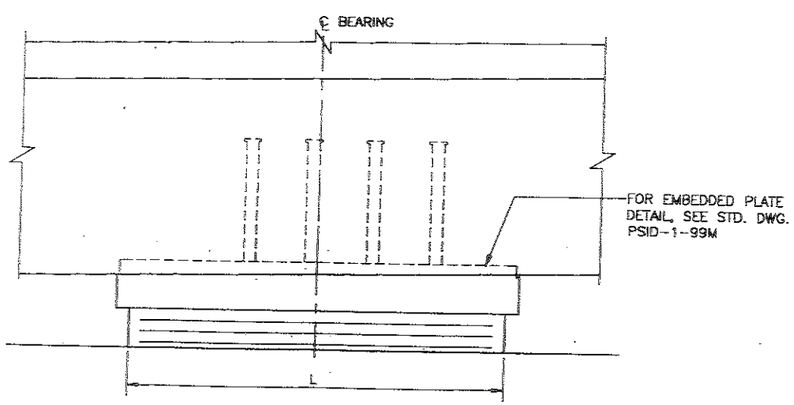
N = NO. OF STEEL LAMINATES
INTERNAL STEEL LAMINATE THICKNESS = 1.89 mm
DUROMETER OF ELASTOMER = 50 DUROMETER
LOAD PLATE THICKNESS IS MEASURED AT CL BEARINGS.



PLAN



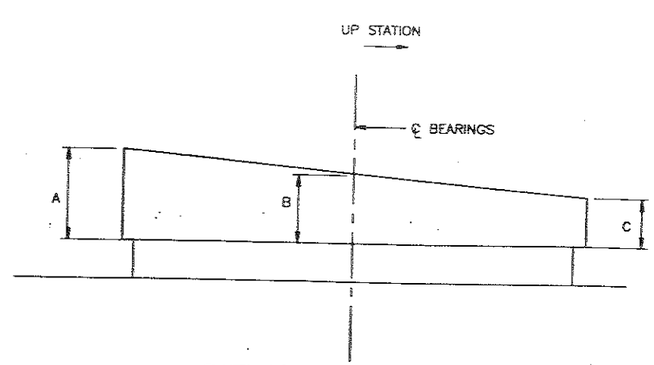
LAMINATED ELASTOMERIC PIER BEARING



VIEW A-A

STEEL LOAD PLATE TABLE

LOCATION	LOAD PLATE THICKNESS		
	A	B	C
REAR ABUTMENT	42	40	38
PIER	56	53	50
FORWARD ABUTMENT	47	43	38



STEEL LOAD PLATE TABLE

ISSUED FOR CONSTRUCTION
8-6-2001

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

DESIGN AGENCY
CNP ENGINEERING INC.
7544 MAYHEWSTOWN RD.
COLUMBIA, ON K0E0B0
TEL: (613)-575-0000

CNP ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
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BEARING DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

13/15

179/248

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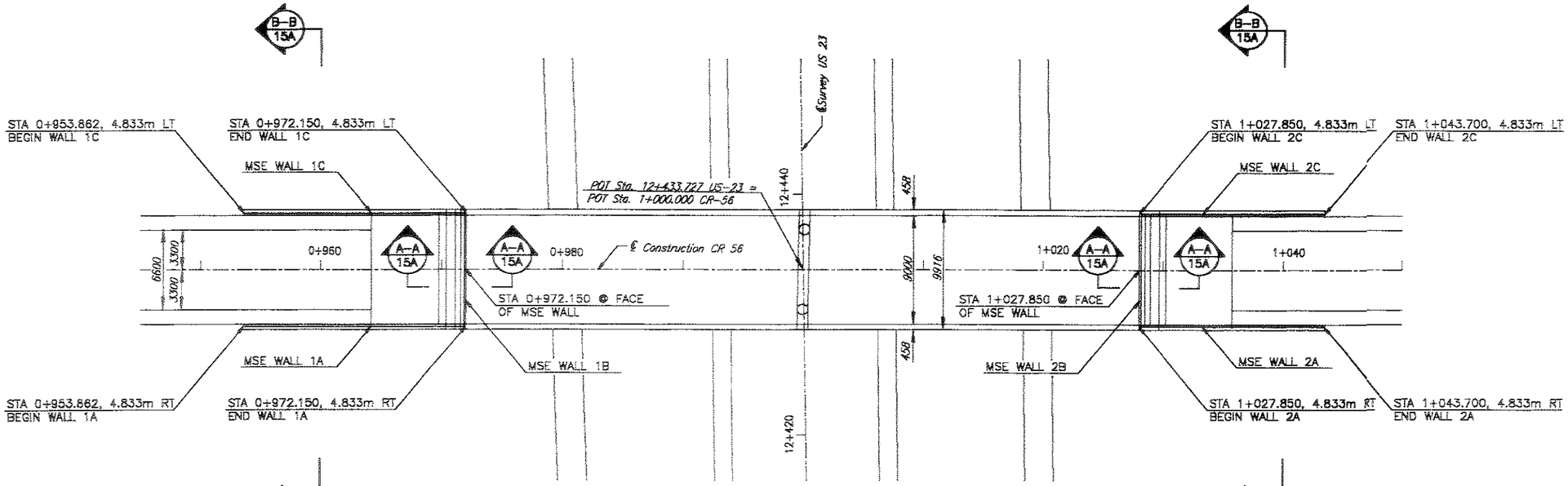


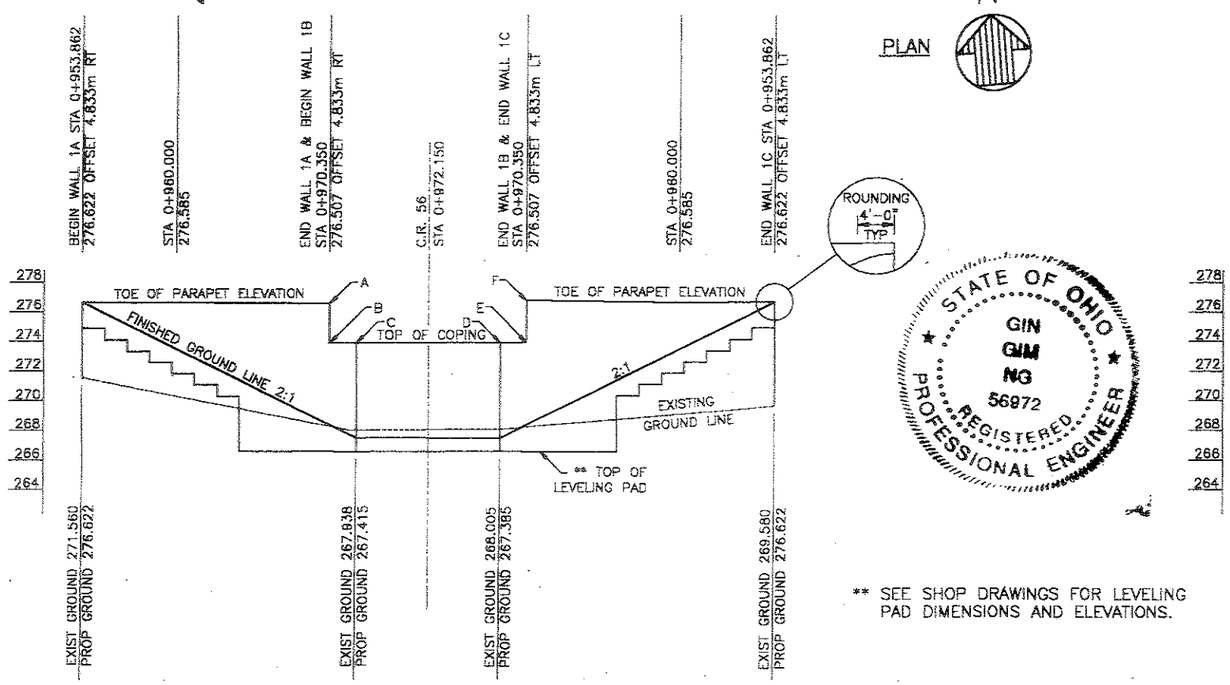
LEGEND

℄	=	CENTERLINE
Dc	=	DEGREE OF CURVE
EL	=	ELEVATION
E	=	EXTERNAL DISTANCE
L	=	LENGTH OF CURVE
LT	=	LEFT
MSE	=	MECHANICALLY STABILIZED EARTH
PI	=	POINT OF INTERSECTION
PVC	=	POINT OF VERTICAL CURVE
PVI	=	POINT OF VERTICAL INTERSECTION
PVT	=	POINT OF TANGENT
R	=	RADIUS OF CURVE
RT	=	RIGHT
SR	=	STATE ROUTE
STA	=	STATION
T	=	TANGENT DISTANCE

VERTICAL CURVE DATA:

PVI STA	=	0+930.000
PVI EL	=	278.713
PVC STA	=	0+795.000
PVC EL	=	274.778
PVT STA	=	1+065.000
PVT EL	=	274.796
L	=	270m

PLAN



PROFILE WALL AT REAR ABUTMENT

LOCATION	STATION	ELEVATION
A	0+970.350	276.507
B	0+970.350	273.850
C	0+972.150	273.850
D	0+972.150	273.850
E	0+970.350	273.850
F	0+970.350	276.507

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** SEE SHOP DRAWINGS FOR LEVELING PAD DIMENSIONS AND ELEVATIONS.

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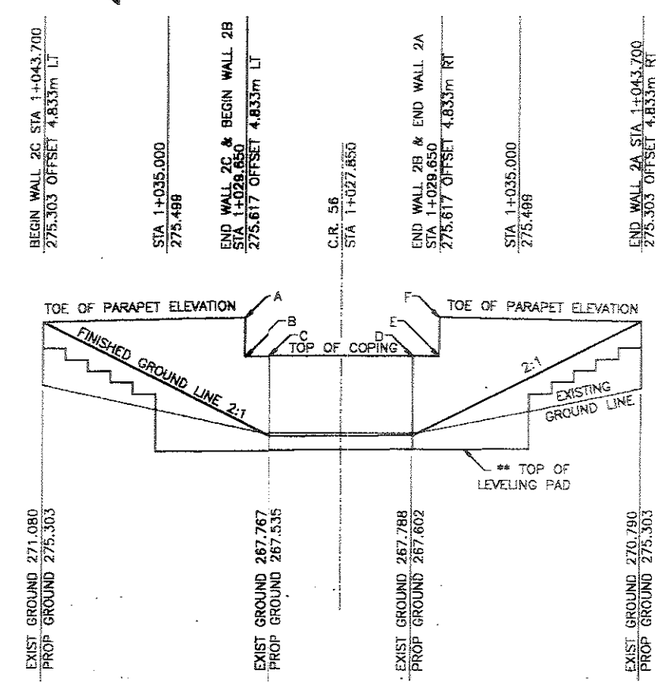


PROFILE WALL AT FORWARD ABUTMENT

LOCATION	STATION	ELEVATION
A	1+029.650	275.617
B	1+029.650	272.970
C	1+027.850	272.970
D	1+027.850	272.970
E	1+029.650	272.970
F	1+029.650	275.617

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7944 MARKLEY BLVD.
COLUMBUS, OH 43235
TEL: (614) 889-9800

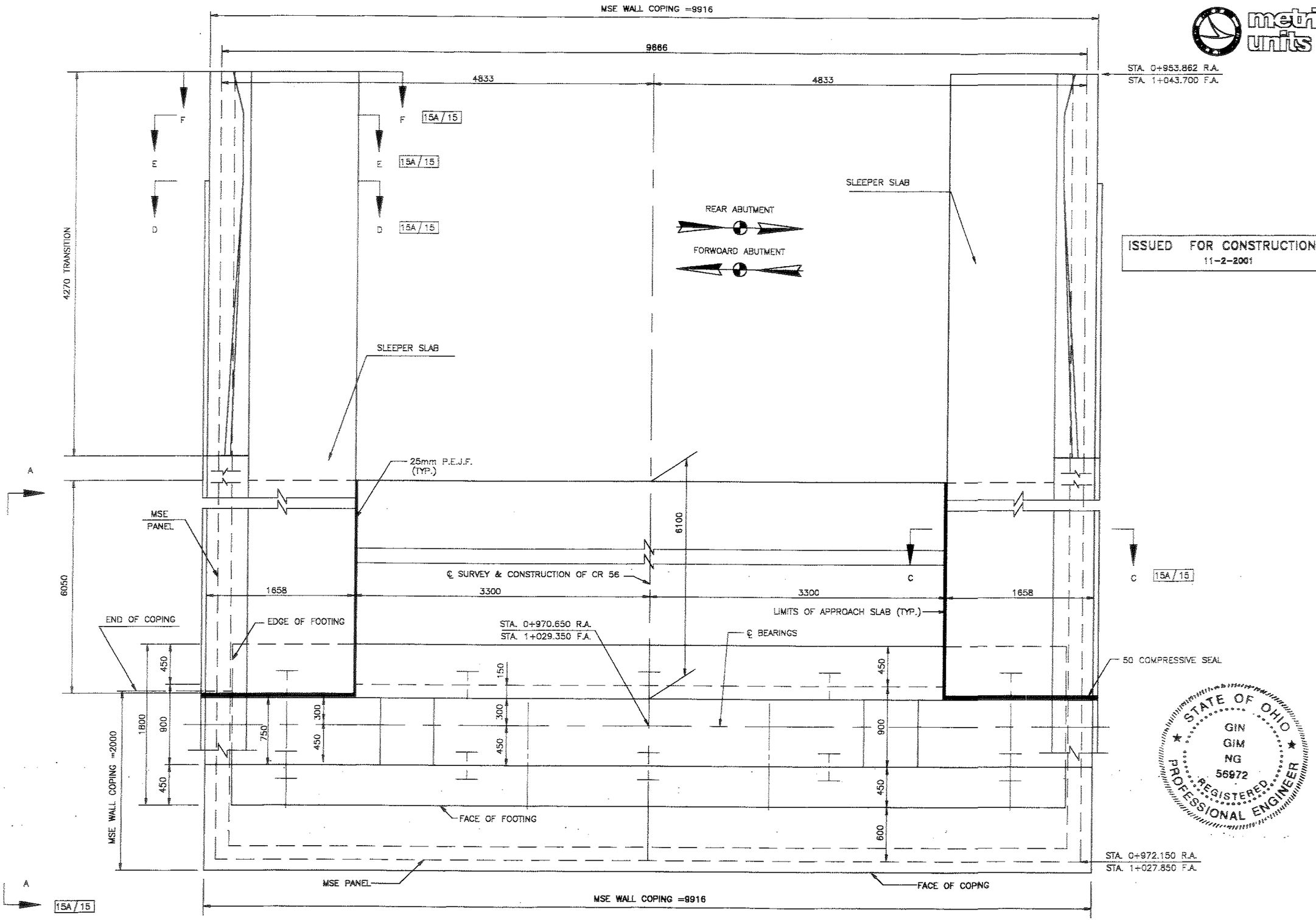
DATE 7-5-01
REVIEWED J.P.
STRUCTURE FILE NO. 8501610
DRAWN E.P.C.
REVISED
DESIGNED E.P.C.
CHECKED G.G.N.

MSE WALL SECTION DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

14/15

180/248



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PLAN

ALL DIMENSIONS ARE IN MILLIMETERS.
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metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7394 MAPLELEAF BLVD.
COLUMBUS, OH 43085
TEL: (614) 476-0060

C N P ENGINEERING

DATE 9-26-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N.
CHECKED J.P.

MSE WALL LAYOUT
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

15/15

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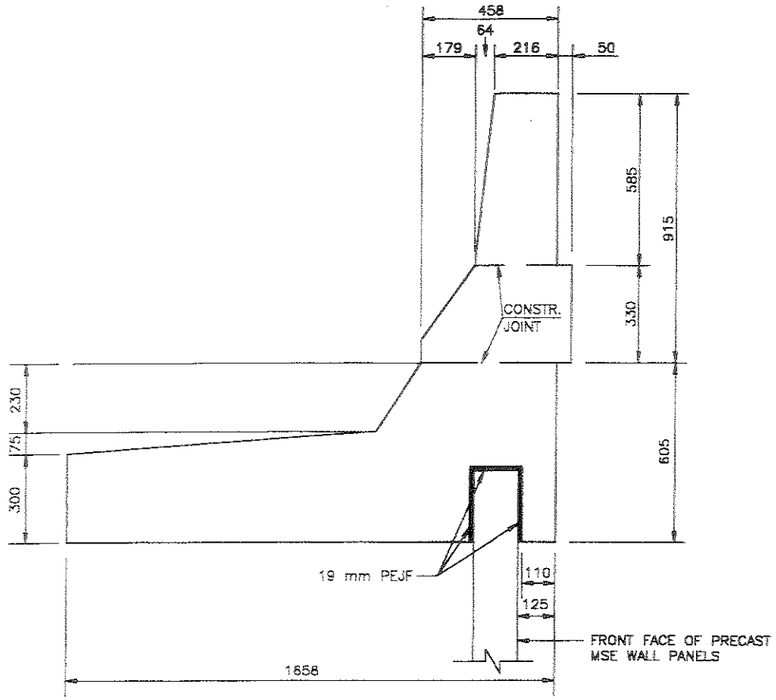
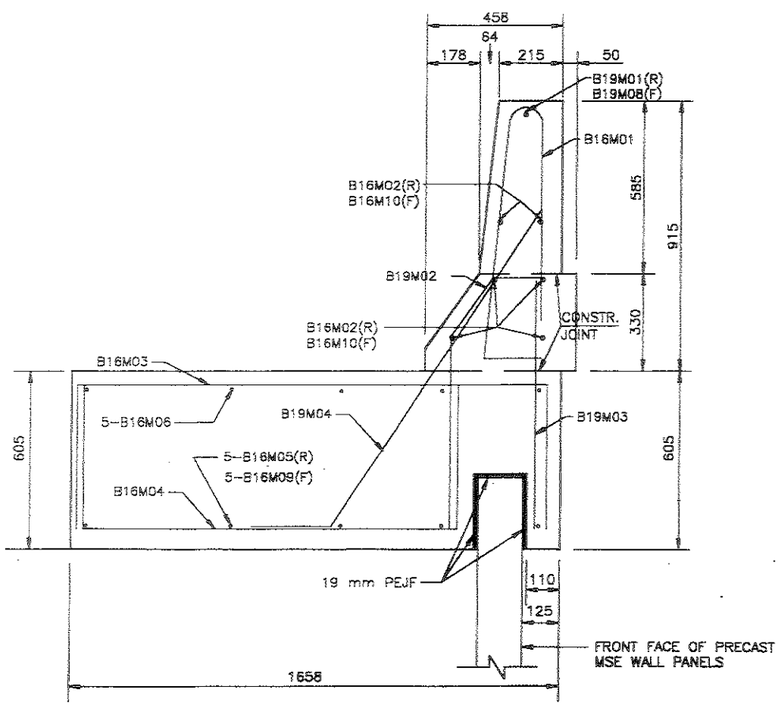
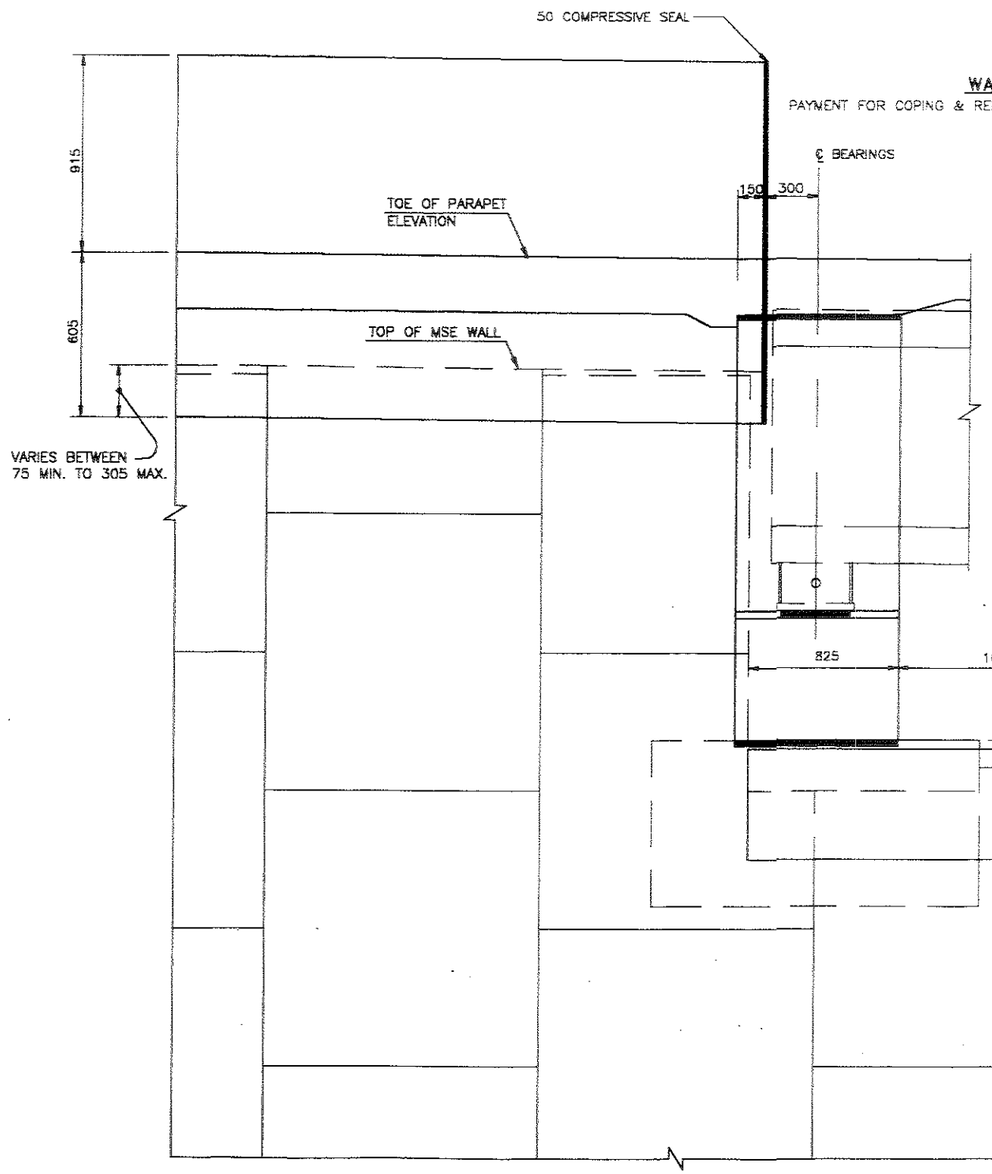


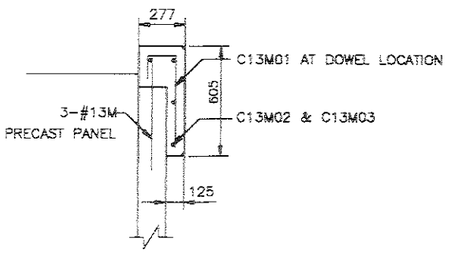
MSE WALL MOUNTED DEFLECTOR PARAPET
SECTION B-B



MSE WALL MOUNTED DEFLECTOR PARAPET
SECTION A-A



VIEW A-A



WALL COPING DETAILS
PAYMENT FOR COPING & REBAR ARE INCLUDED WITH THE COST OF MSE WALL

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metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7044 MARKISHAF BLVD.
COLUMBUS, OH 43085
TEL: (614)-0000-0000

C N P ENGINEERING

DATE 9-26-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN S.F.W.
REVISED
DESIGNED G.G.N
CHECKED J.P.

MSE WALL SECTION DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

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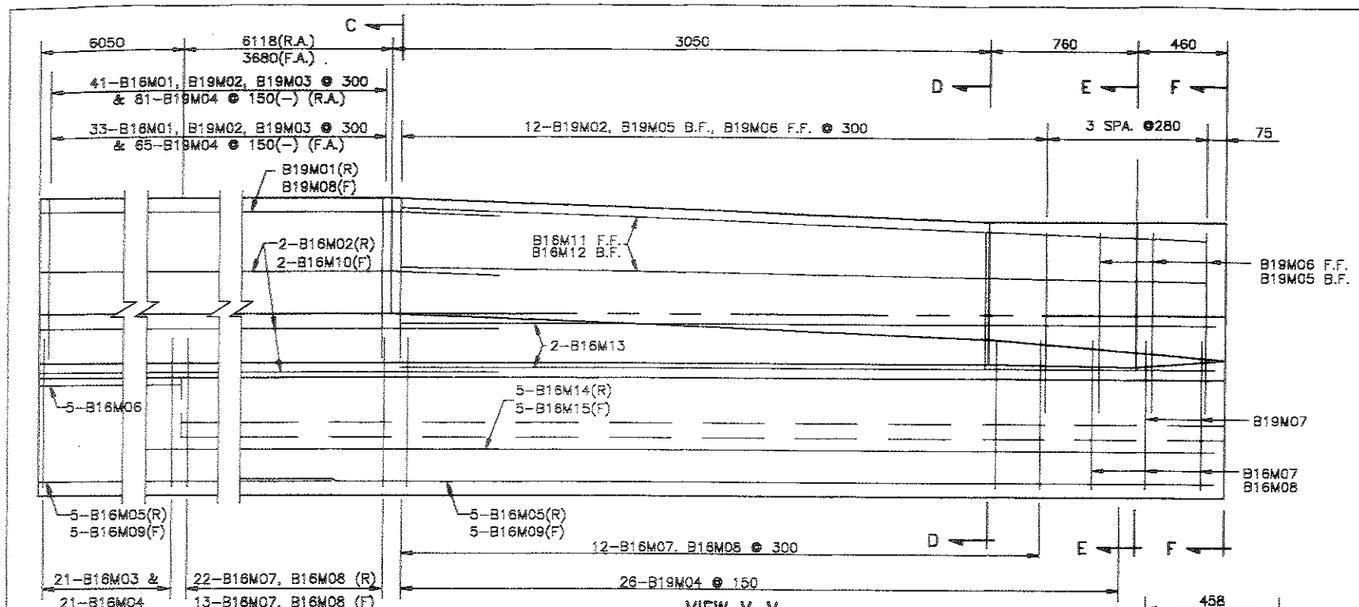
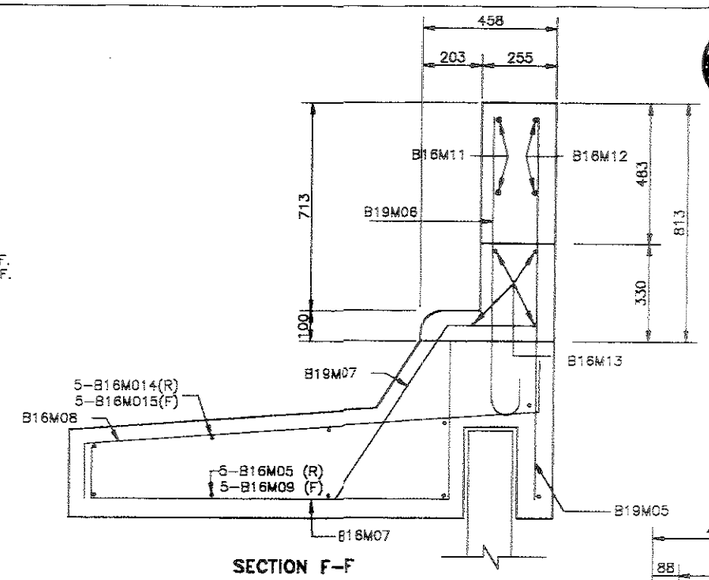
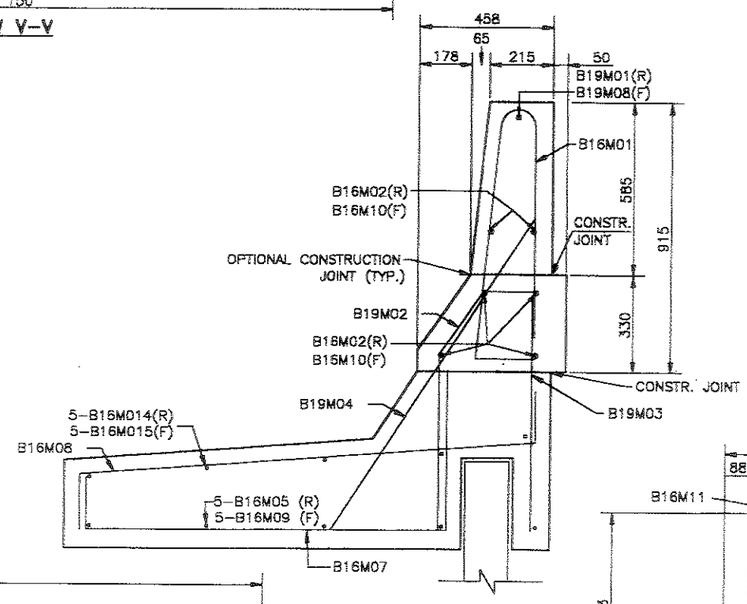


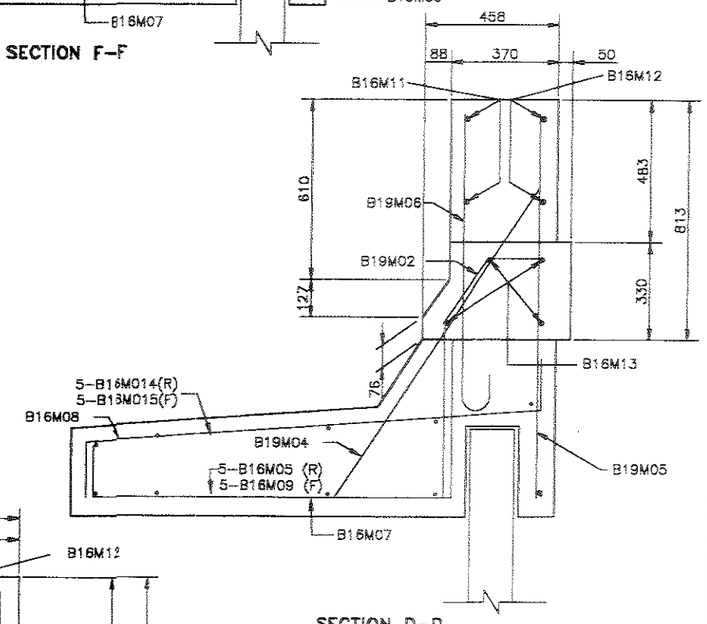
VIEW V-V



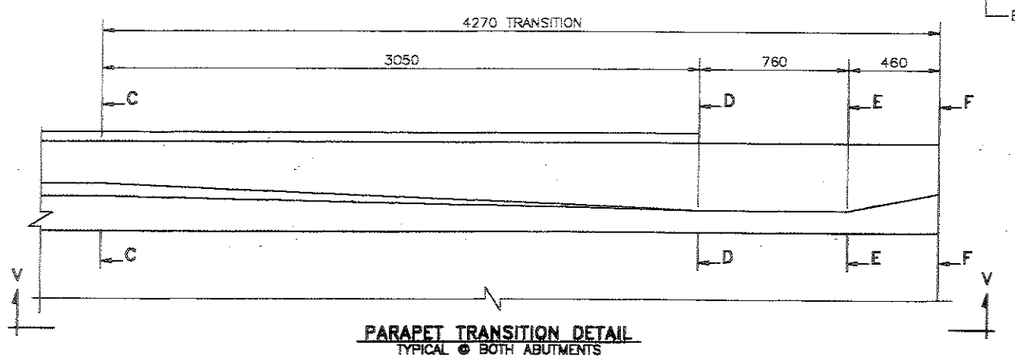
SECTION F-F



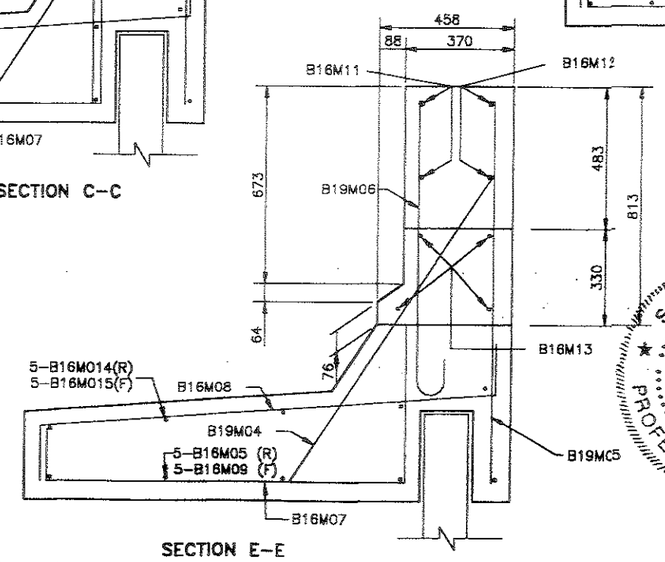
SECTION C-C



SECTION D-D



PARAPET TRANSITION DETAIL
TYPICAL @ BOTH ABUTMENTS
SEE STD. DWG. BR-1M FOR ADDITIONAL DETAILS.



SECTION E-E

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NOTES

LEGEND
F.F. = FRONT FACE
B.F. = BACK FACE
E.F. = EACH FACE

ALL DIMENSIONS ARE IN MILLIMETERS.
ALL ELEVATIONS AND STATIONS ARE IN METERS.

metric units

DESIGN AGENCY
CNP ENGINEERING INC.
7044 MARKLEY BLVD.
CLEVELAND, OH 44805
TEL.(216)-272-0555

CNP ENGINEERING

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 8501610
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

PARAPET DETAILS
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

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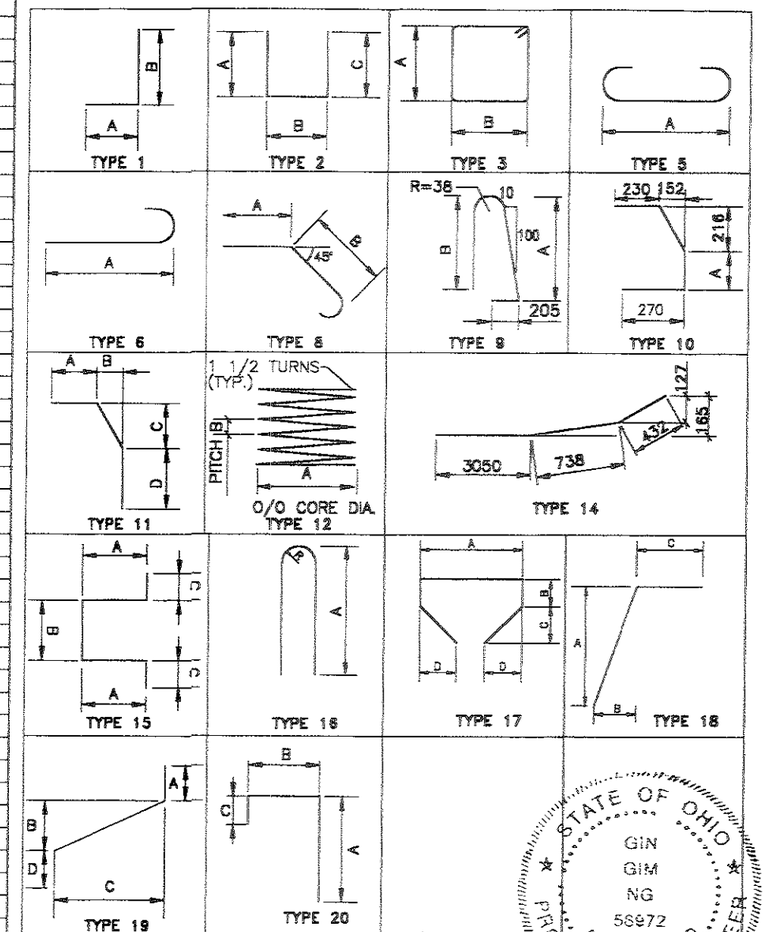
REINFORCING STEEL LIST

MARK	REAR NO.	FWD. NO.	LENGTH	WEIGHT	TYPE	A	B	C	D
ABUTMENT-DIAPHRAGMS									
S19M10	25	25	3606	404	2	1450	800	1450	
S19M11	25	25	2789	312	2	1041	800	1041	
S19M12	25	25	1866	208	2	655	650	655	
S25M01	8	8	2466	157	15	310	725	900	
S25M02	8	8	4650	296	STR				
S25M03	22	22	1368	240	8	425	681		
S25M04	10	10	5784	460	STR				
S25M05	2	2	708	12	STR				
S25M06	6	6	2400	114	STR				
S25M07	2	2	708	12	STR				
S25M08	6	6	1850	118	STR				
TOTAL ABUTMENT DIAPHRAGM				2333	Kg				
ABUTMENTS									
A16M01	24	24	5103	380	3	775	1700		
A16M02	4	4	5346	66	STR				
A16M03	8	8	5346	132	STR				
A16M04	24	24	3578	267	2	1437	800	1437	
A16M05	8	8	5346	132	STR				
A16M06	22	22	1828	125	2	562	800	562	
A16M07	16	16	1428	71	1	450	1020		
A16M08	6	6	2756	52	2	1020	800	1020	
A16M09	10	10	2160	67	STR				
A16M10	10	10	1343	42	2	350	725	350	
A25M01	8	8	5784	368	STR				
A25M02	8	8	5784	368	STR				
A29M01	16	16	1534	249	1	600	1020		
A29M02	4	4	800	33	STR				
TOTAL ABUTMENT				2351	Kg				

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	R
PIER DIAPHRAGM									
S13M03	4	1200	5	17	140	430	135	135	
S13M04	4	3000	12	16	1465				70
S13M05	4	1725	7	17	155	600	220	220	
S13M20	24	3446	82	15	1316	530	200		
S19M19	6	2050	28	STR					
S19M20	12	2400	64	STR					
S19M21	24	2245	120	11	585	196	193	1408	
TOTAL PIER DIAPHRAGM			318	Kg					
SUPERSTRUCTURE									
S13M01	234	9144	2127	STR					
S13M02	39	9400	365	STR					
S16M01	288	9144	4087	STR					
S16M02	48	10576	788	STR					
S16M04	424	6828	4493	STR					
S16M06	424	4028	2651	STR					
S16M08	424	8178	5382	STR					
S16M10	424	2678	1762	STR					
S16M11	436	1829	1238	9	840	765			
S19M01	76	6490	1102	STR					
S19M02	436	673	650	1	275	445			
S19M03	436	875	853	10	215				
S19M04	14	9144	287	STR					
S19M05	2	2472	11	STR					
TOTAL SUPERSTRUCTURE			25799	Kg					

MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	INCR.
PIER									
P16M01	8	8700	108	STR					
P16M02	82	2890	368	2	1101	784	1101		
P16M03	82	2890	368	2	1101	784	1101		
P16M04	6	3184	30	2	950	1200	950		
P16M05	22	1358	47	1	450	950			
P25M01	8	10777	343	2	1101	8700	1101		
P25M02	16	8700	328	2	975	8500	975		
P25M07	28	3860	430	5	3300				
P25M08	28	3860	430	5	3300				
P25M09	28	3300	367	STR					
P25M10	28	3300	367	STR					
P29M01	24	1389	169	1	525	950			
P29M02	4	1200	25	STR					
P32M01	24	6174	949	STR					
P32M02	24	3505	540	1	550	2764			
SP16M01	2	4659	445	12	915	114			
TOTAL PIER			5314	Kg					
TRANSITION PARAPETS									
B16M01	148	1825	419	9	840	765			
B16M02	24	7000	261	STR					
B16M03	84	2568	335	2	1550	550	550		
B16M04	84	2298	300	2	1280	550	550		
B16M05	20	8630	268	STR					
B16M06	20	5800	180	STR					
B16M07	128	1878	373	2	1280	480	200		
B16M08	128	1850	368	19	173	110	1545	186	
B16M09	20	7270	226	STR					
B16M10	12	10550	196	STR					
B16M11	8	4220	52	14					
B16M12	8	4220	52	STR					
B16M13	16	4220	105	STR					
B16M14	20	5540	172	STR					
B16M15	20	4370	136	STR					
B19M01	4	7180	64	STR					
B19M02	196	1050	460	11	205	152	216	600	
B19M03	148	830	275	STR					
B19M04	396	1558	1379	18	1055	685	300		
B19M05	60	1310	176	STR					
B19M06	60	1215	163	6	1010				
B19M07	8	1000	18	18	587	370	300		
B19M08	2	10900	49	STR					
TOTAL TRANSITION PARAPETS			6025	Kg					
MSE WALL COPING									
C13M01	66	795	52	20	500	170	175		
C13M02	8	9800	78	STR					
C13M03	16	1900	30	STR					
TOTAL MSE WALL COPING			160	Kg					
GRAND TOTAL			43538	Kg					

BENDING DIAGRAMS



ISSUED FOR CONSTRUCTION
11-2-2001

STATE OF OHIO
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REGISTERED PROFESSIONAL ENGINEER

NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING BARS SHALL BE INCLUDED WITH APPROPRIATE ITEM 842 CONCRETE ITEMS.
2. "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
3. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
4. SPIRAL REINFORCING BAR SPACERS:
CONCRETE SPACERS OR OTHER APPROVED NONCORROSIVE SPACING DEVICES SHALL BE USED AT SUFFICIENT INTERVAL (NEAR THE BOTTOM AND AT INTERVALS NOT EXCEEDING 3050 mm) TO INSURE CONCENTRIC SPACING FOR THE ENTIRE CAGE LENGTH. SPACERS SHALL BE CONSTRUCTED OF APPROVED MATERIAL EQUAL IN QUALITY AND DURABILITY TO THE CONCRETE SPECIFIED FOR THE SHAFT. THE SPACERS SHALL HAVE ADEQUATE DIMENSIONS TO ENSURE A MINIMUM 75 mm CLEAR SPACE BETWEEN BETWEEN THE OUTSIDE OF THE REINFORCING CAGE AND THE DESIGN DIMENSION OF THE DRILLED SHAFT OR COLUMN. CYLINDRICAL CONCRETE FEET (BOTTOM SUPPORTS) SHALL BE PROVIDED TO ENSURE THAT THE BOTTOM OF THE CAGE IS MAINTAINED AT THE PROPER DISTANCE ABOVE THE BASE.

DESIGN AGENCY
CNP ENGINEERING INC.
7344 MARBLEUP BLVD.
COLUMBUS, OH 43085
TEL: (614)-575-0000

DATE 8-6-01
REVIEWED E.P.C.
STRUCTURE FILE NO. 5501810
DRAWN SFW
REVISED
DESIGNED G.G.N
CHECKED J.P.

REINFORCING STEEL LIST
BRIDGE NO. WYA-23-12429
US 23 under CR-56

WYA/CRA-30-28.009

15/15

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