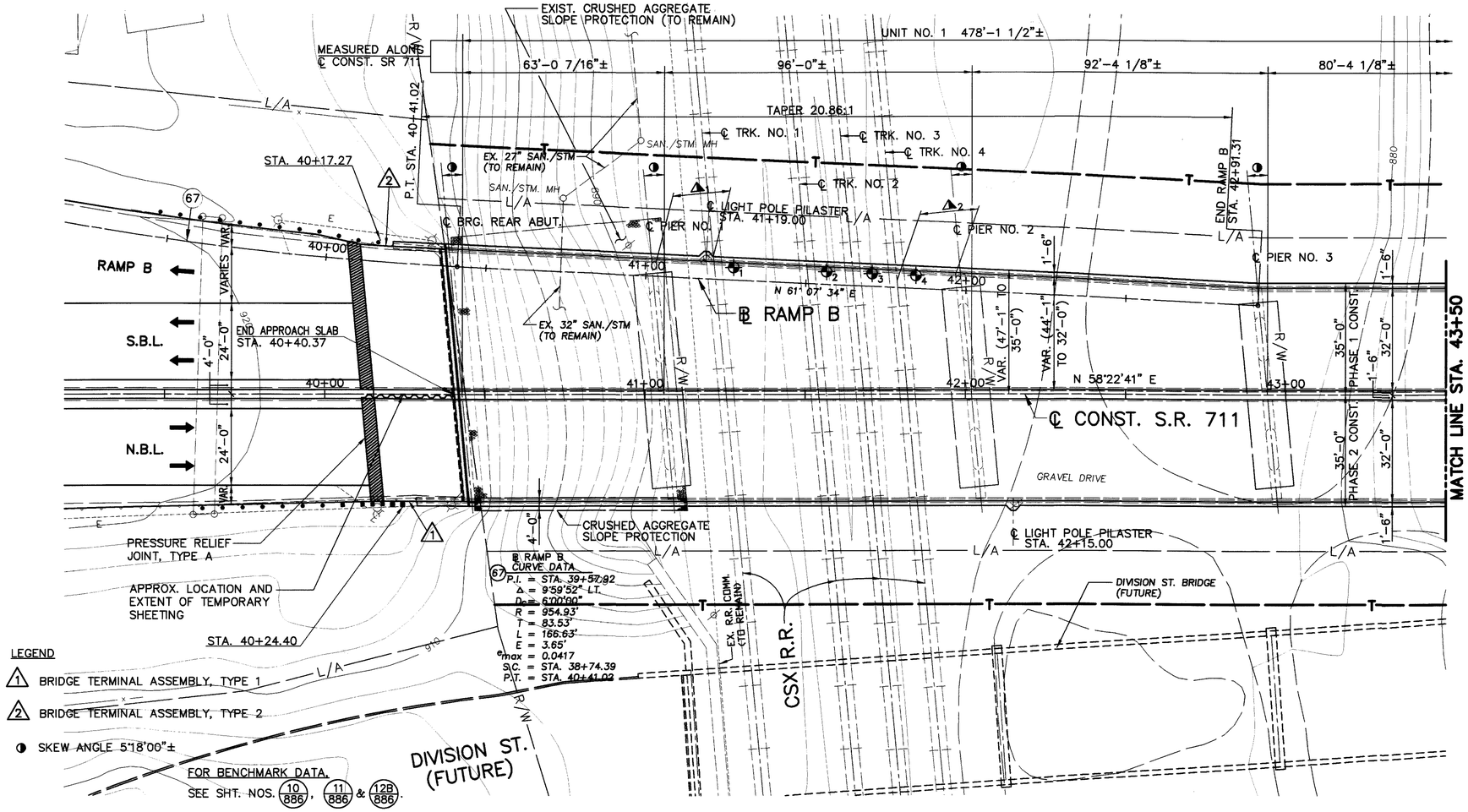

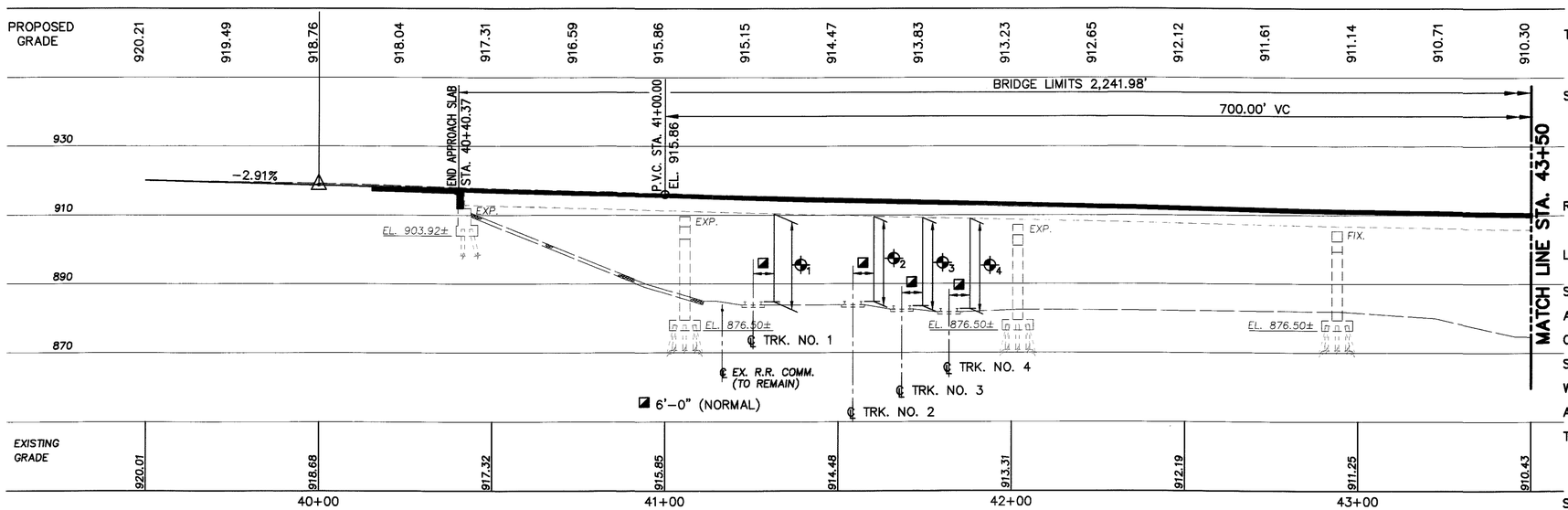

S.R. 711 PROPOSED PROFILE – N.B.L.

VERTICAL CLEARANCES

◆1	23.71' EXIST. ACTUAL	23.00' REQ'D
◆2	23.24' EXIST. ACTUAL	23.00' REQ'D
◆3	23.08' EXIST. ACTUAL	23.00' REQ'D
◆4	23.83' EXIST. ACTUAL	23.00' REQ'D

HORIZONTAL CLEARANCES

◭1	17.94' EXIST. ACTUAL	18.00' REQ'D
◭2	18.25' EXIST. ACTUAL	18.00' REQ'D

EXISTING STRUCTURE

TYPE:	CONTINUOUS STEEL WELDED PLATE GIRDERS WITH REINFORCED CONCRETE DECK SLAB AND SUBSTRUCTURE (ASTM A36 AND A441 STEEL)
SPANS:	63'-0 7/16"±, 96'-0"±, 92'-4 1/8±, 80'-4 1/8"±, 88'-4 9/16"±, 70'-0 1/4"±, 95'-0"±, 115'-0"±, 115'-0"±, 85'-0"±, 180'-6"±, 236'-0"±, 180'-6 1/8"±, 116'-0 1/4"±, 136'-0 3/8"±, 108'-0 1/8"±, 90'-0 1/8"±, 85'-0 1/8", 110'-0 1/8"±, 95'-0"±
ROADWAY:	N.B.L. 30'-6"± F/F CURBS, S.B.L. VARIES (42'-7"± TO 30'-6"±) F/F CURBS, WITH 4'-0" MEDIAN, AND PARAPET WITH RAILING AND CURB EACH SIDE.
LOADING:	CF 2000 (1957)
SKEW:	VARIES
ALIGNMENT:	TANGENT AND SPIRAL / CURVE RT.
CROWN:	.0156'/FT± UNIT NOS. 1 & 2
SUPERELEVATION:	.049'/FT. ± (MAX.) UNIT NOS. 3, 4 & 5
WEARING COURSE:	LMC OVERLAY
APPROACH SLABS:	25'± (AS-1-67)
DATE BUILT:	1972
STRUCTURE FILE NO.:	5008255

PROPOSED STRUCTURE

PROPOSED WORK:	REMOVE EXISTING DECK, REPLACE CORRODED STEEL FRAMING MEMBERS, HEAT STRAIGHTEN GIRDERS (SPAN NO. 5), REPLACE EXIST. GIRDER HINGE ASSEMBLIES WITH BEARING TYPE ASSEMBLIES, RAISE GIRDERS AND RESET / REFURBISH BEARINGS, WELD SHEAR CONNECTORS, REPLACE DECK SLAB, MODIFY BACKWALLS / WINGWALLS, INSTALL NEW EXPANSION JOINTS, REPLACE DRAINAGE SYSTEM, AND PAINT STEEL.
TYPE:	CONTINUOUS STEEL WELDED PLATE GIRDERS WITH REINFORCED CONCRETE DECK SLAB AND SUBSTRUCTURE (EXIST. GIRDERS AND SUBSTRUCTURE SALVAGED)
SPANS:	63'-0 7/16"±, 96'-0"±, 92'-4 1/8±, 80'-4 1/8"±, 88'-4 9/16"±, 70'-0 1/4"±, 95'-0"±, 115'-0"±, 115'-0"±, 85'-0"±, 180'-6"±, 236'-0"±, 180'-6 1/8"±, 116'-0 1/4"±, 136'-0 3/8"±, 108'-0 1/8"±, 90'-0 1/8"±, 85'-0 1/8", 110'-0 1/8"±, 95'-0"±
ROADWAY:	N.B.L. 32'-0" TOE/TOE PARAPETS, S.B.L. VARIES (44'-1" TO 32'-0") TOE/TOE PARAPETS WITH 3'-0" MEDIAN
LOADING:	HS20-44 (CASE I) AND ALTERNATE MILITARY LOADING F.W.S. 60 P.S.F. (SUPERSTRUCTURE ONLY)
SKEW:	VARIES
ALIGNMENT:	TANGENT AND SPIRAL / CURVE RT.
CROWN:	.0156'/FT. UNIT NOS. 1 & 2
SUPERELEVATION:	.050'/FT. (MAX.) UNIT NOS. 3, 4 & 5
WEARING SURFACE:	MONOLITHIC CONCRETE
APPROACH SLABS:	25' (AS-1-81)
TRAFFIC DATA:	ADT (2005) 28,910 ADTT (2005) 3,470 ADT (2025) 38,500 ADTT (2025) 4,620
STRUCTURE COORDINATES:	LAT. N 41° 07' 21" LONG. W 80° 41' 01"

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN, INC.
GPD ASSOCIATES
320 Springside Drive, Suite 320, Akron, Ohio 44333
330-572-2100 Fax 330-572-2101

DATE 6-01-01
REVIEWED K.S.J.
DRAWN R.P.R.
DESIGNED B.J.M.
CHECKED P.J.W.
REVISED
STRUCTURE FILE NUMBER 5008255

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

1 / 80

640 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SITE1.DWG
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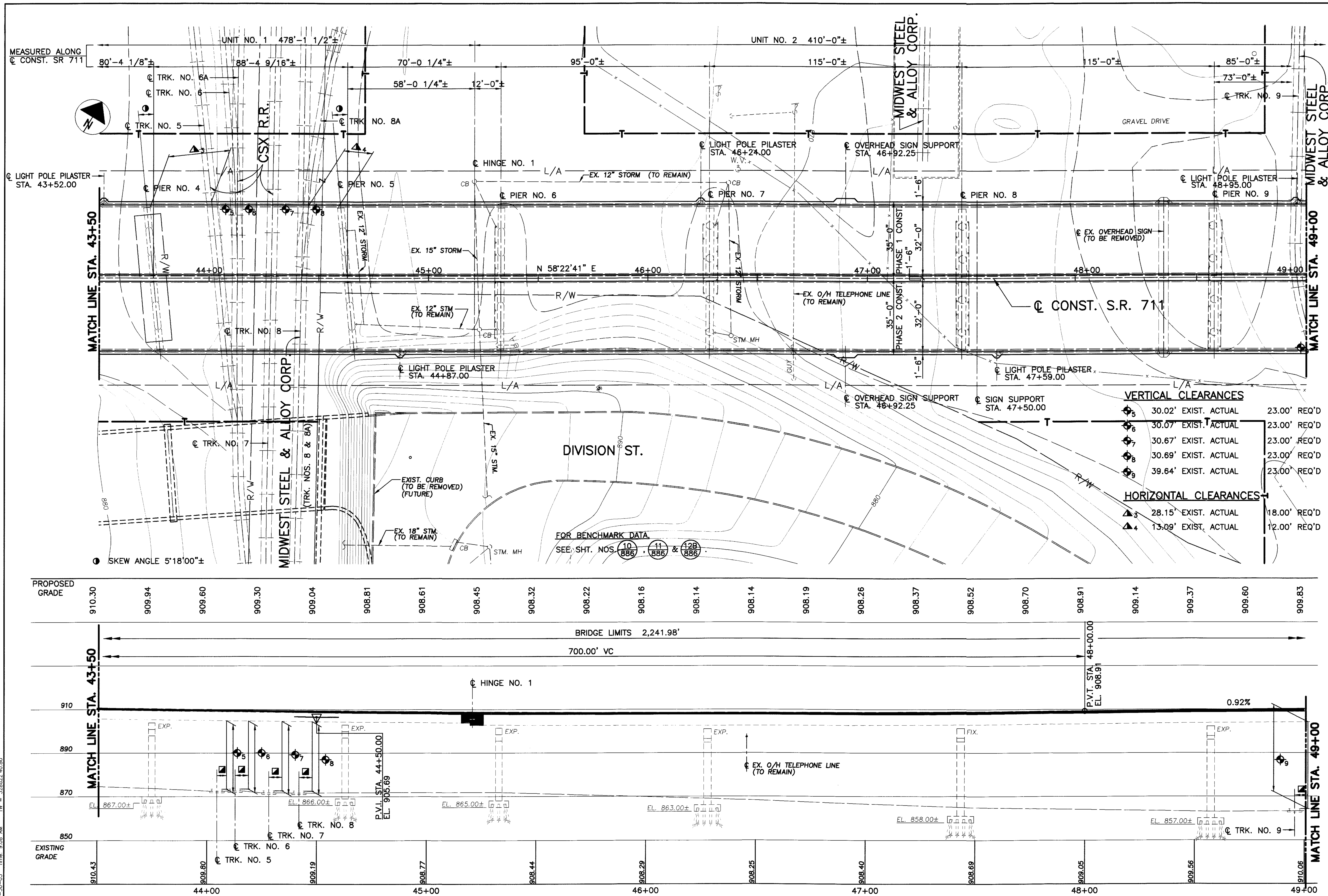
Technician: RPRATT



S.R. 711 PROPOSED PROFILE – N.B.L.

DESIGN AGENCY
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 6-01-01
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SITE2.DWG
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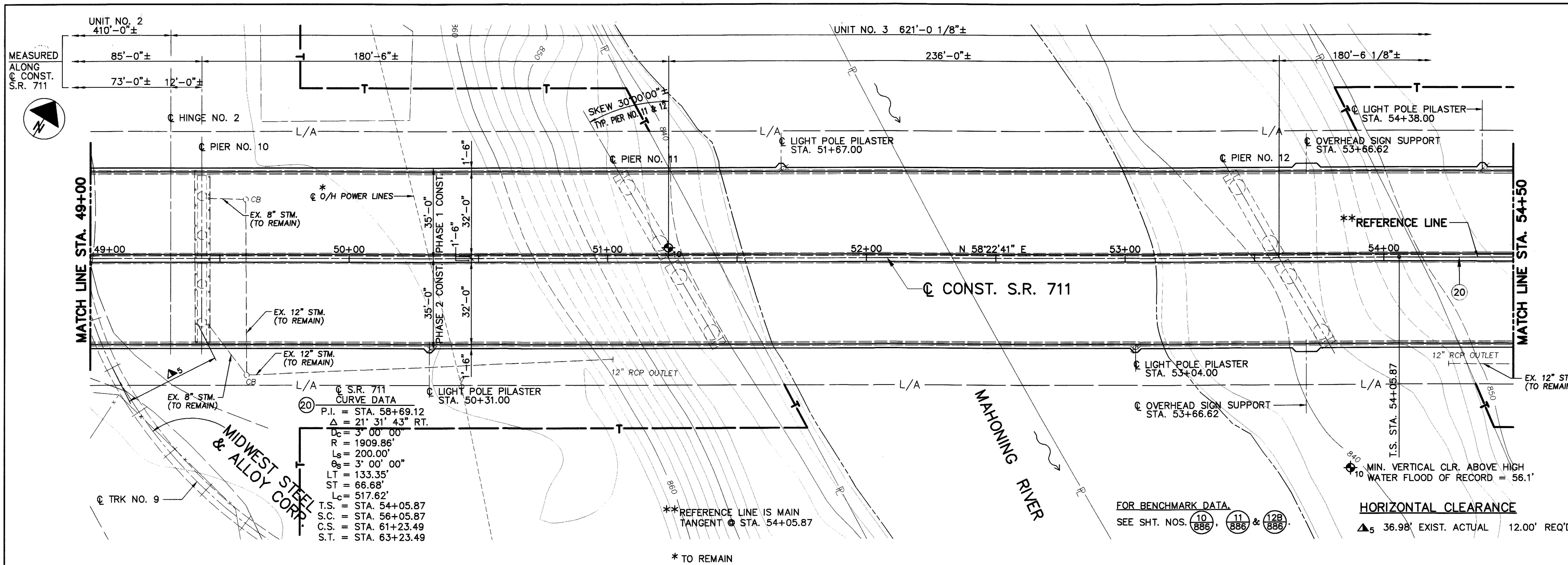
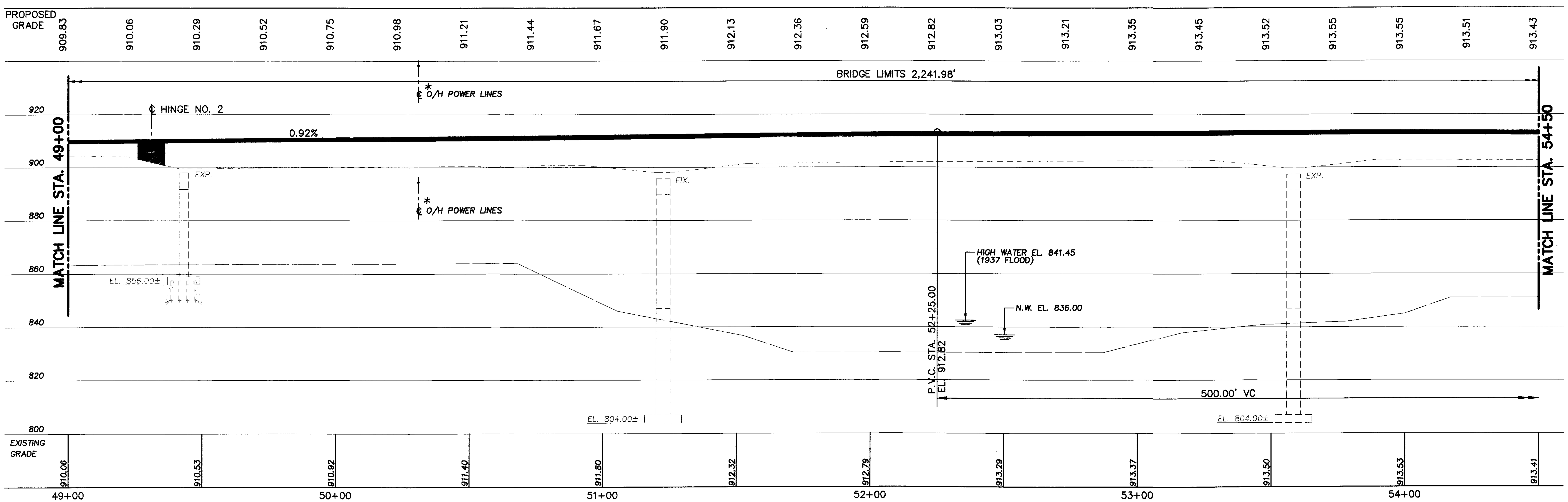
Technician: RPRATT



UNIT NO. 2
410'-0"±
MEASURED ALONG ℄ CONST. S.R. 711
85'-0"±
73'-0"±
12'-0"±
180'-6"±
UNIT NO. 3 621'-0 1/8"±
236'-0"±
180'-6 1/8"±
SKEW 30°00'00"±
TYP. PIER NO. 11 & 12
℄ HINGE NO. 2
℄ PIER NO. 10
℄ PIER NO. 11
℄ PIER NO. 12
L/A
℄ LIGHT POLE PILASTER STA. 51+67.00
℄ LIGHT POLE PILASTER STA. 54+38.00
℄ OVERHEAD SIGN SUPPORT STA. 53+66.62
* ℄ O/H POWER LINES
EX. 8" STM. (TO REMAIN)
EX. 12" STM. (TO REMAIN)
CB
1'-6"
35'-0"
32'-0"
PHASE 1 CONST.
PHASE 2 CONST.
**REFERENCE LINE
MATCH LINE STA. 49+00
MATCH LINE STA. 54+50
49+00
50+00
51+00
52+00
N 58°22'41" E
53+00
54+00
℄ CONST. S.R. 711
12" RCP OUTLET
℄ LIGHT POLE PILASTER STA. 50+31.00
℄ LIGHT POLE PILASTER STA. 53+04.00
℄ OVERHEAD SIGN SUPPORT STA. 53+66.62
T.S. STA. 54+05.87
MAHONING RIVER
MIDWEST STEEL & ALLOY CORP.
℄ TRK NO. 9
EX. 8" STM. (TO REMAIN)
℄ S.R. 711 CURVE DATA
P.I. = STA. 58+69.12
Δ = 21° 31' 43" RT.
Dc = 3° 00' 00"
R = 1909.86'
Ls = 200.00'
θs = 3° 00' 00"
LT = 133.35'
ST = 66.68'
Lc = 517.62'
T.S. = STA. 54+05.87
S.C. = STA. 56+05.87
C.S. = STA. 61+23.49
S.T. = STA. 63+23.49
**REFERENCE LINE IS MAIN TANGENT @ STA. 54+05.87
FOR BENCHMARK DATA, SEE SHT. NOS. 10/886, 11/886 & 12B/886.
MIN. VERTICAL CLR. ABOVE HIGH WATER FLOOD OF RECORD = 56.1'
HORIZONTAL CLEARANCE
5 36.98' EXIST. ACTUAL 12.00' REQ'D
* TO REMAIN



PROPOSED GRADE
909.83
910.06
910.29
910.52
910.75
910.98
911.21
911.44
911.67
911.90
912.13
912.36
912.59
912.82
913.03
913.21
913.35
913.45
913.52
913.55
913.55
913.51
913.43
BRIDGE LIMITS 2,241.98'
* ℄ O/H POWER LINES
℄ HINGE NO. 2
0.92%
MATCH LINE STA. 49+00
MATCH LINE STA. 54+50
EXP.
FIX.
EXP.
EL. 856.00±
HIGH WATER EL. 841.45 (1937 FLOOD)
N.W. EL. 836.00
P.V.C. STA. 52+25.00
EL. 912.82
500.00' VC
EL. 804.00±
EL. 804.00±
920
900
880
860
840
820
800
EXISTING GRADE
910.06
910.53
910.92
911.40
911.80
912.32
912.79
913.29
913.37
913.50
913.53
913.41
49+00
50+00
51+00
52+00
53+00
54+00

S.R. 711 PROPOSED PROFILE – N.B.L.

DESIGN AGENCY
GLAUS, PYLE, SCHOMER, BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	6-01-01
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SITE3.DWG
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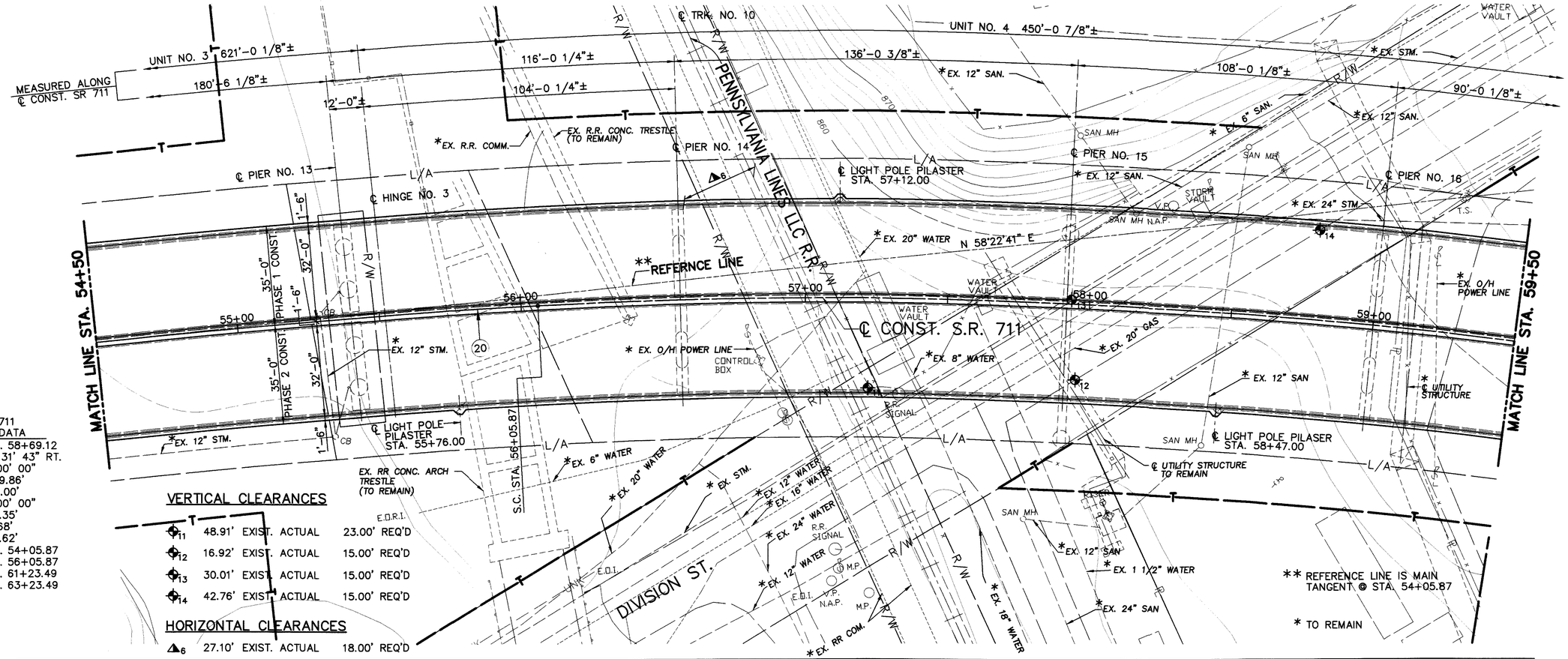
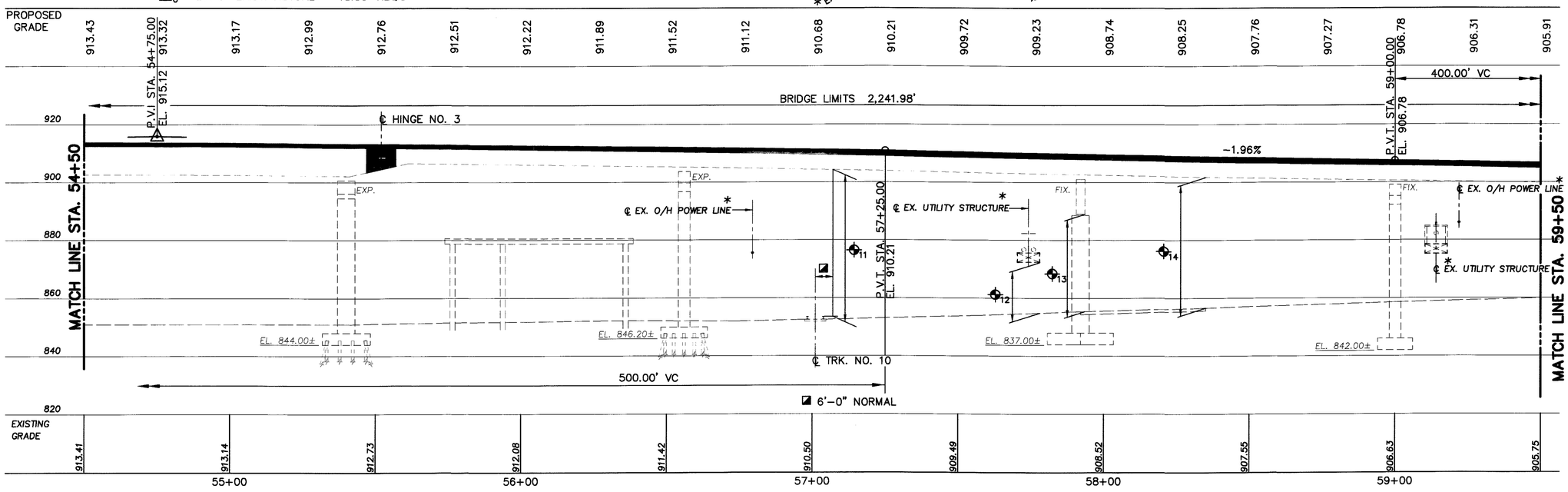
Technician: RPRATT





S.R. 711 PROPOSED PROFILE – N.B.L.

DESIGN AGENCY
GPD ASSOCIATES
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
320 South Main Street, Suite 2121 Akron, Ohio 44311
330.572.2100 Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	6-01-01
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

4 / 80

643
886

Cad File: G:\CIVIL\67028(91)103\DWG\67028_91_103SITE4A.DWG
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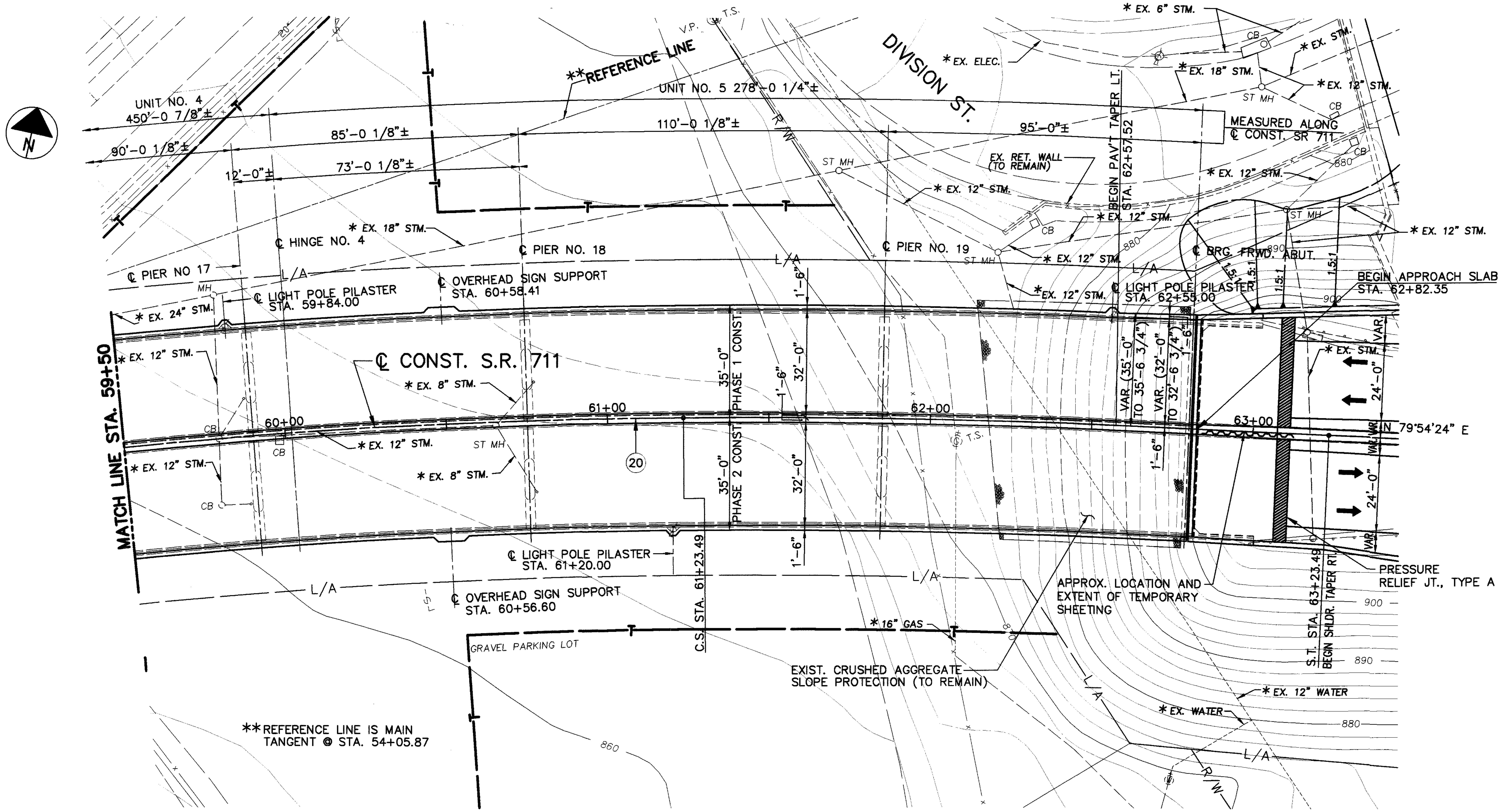

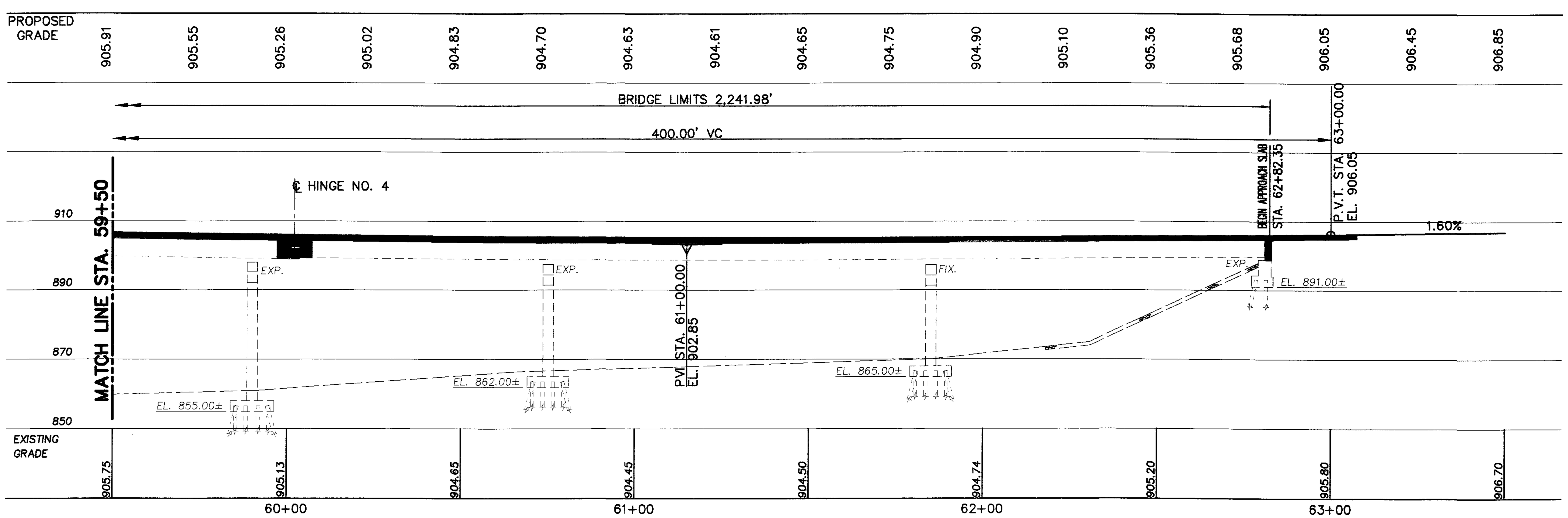

S.R. 711 PROPOSED PROFILE – N.B.L.

⑳ ℄ S.R. 711 CURVE DATA

P.I. = STA. 58+69.12
Δ = 21° 31' 43" RT.
D_c = 3° 00' 00"
R = 1909.86'
L_s = 200.00'
θ_s = 3° 00' 00"
LT = 133.35'
ST = 66.68'
L_c = 517.62'
T.S. = STA. 54+05.87
S.C. = STA. 56+05.87
C.S. = STA. 61+23.49
S.T. = STA. 63+23.49

* TO REMAIN

DESIGN AGENCY: GPD ASSOCIATES, 520 South Main Street, Suite 2531 Akron, Ohio 44311

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
B.J.M.	P.J.W.	R.P.R.		K.S.J.	3-18-02	5008255

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

5/80

644/886

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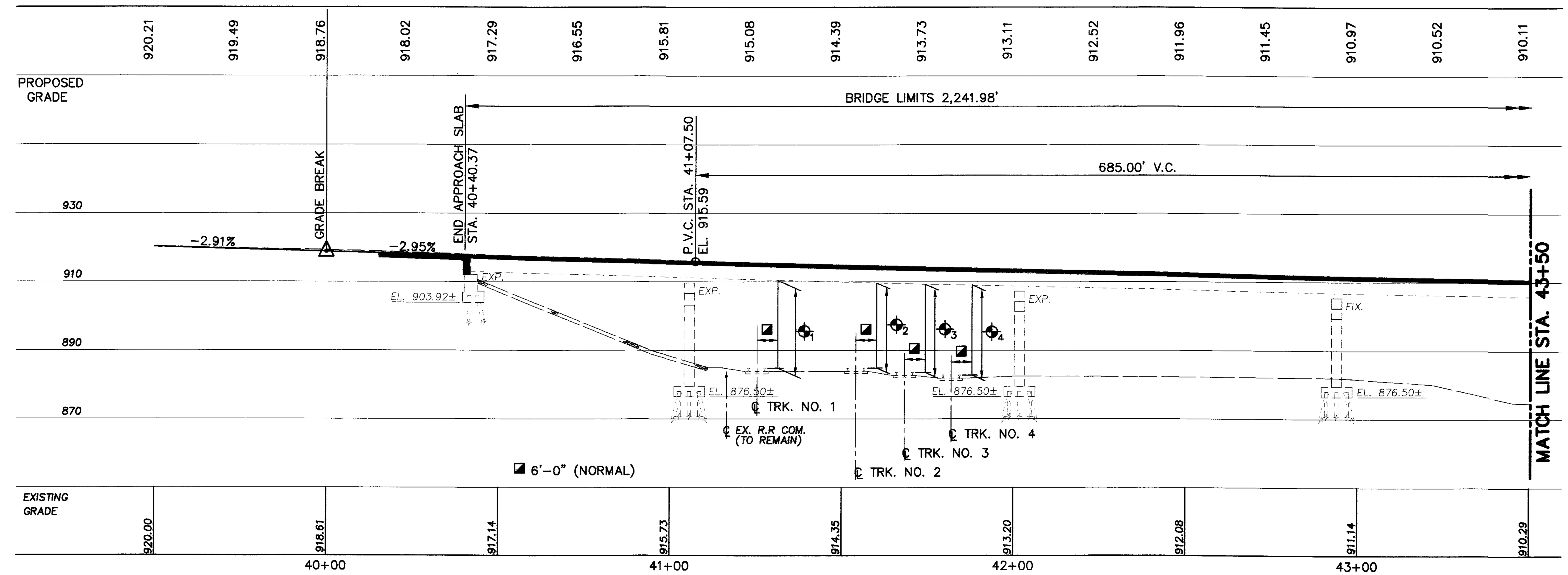
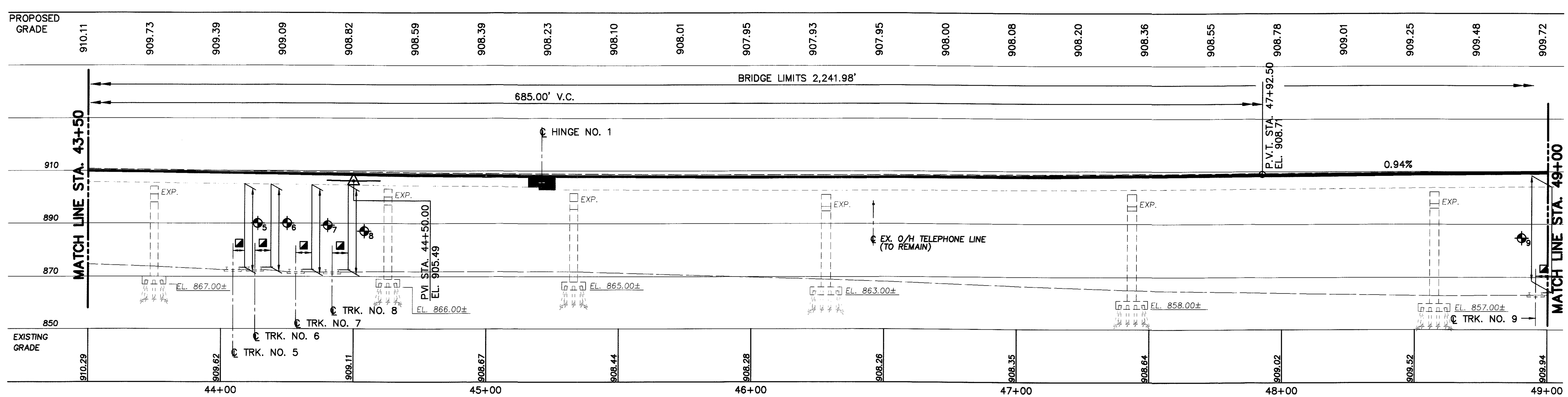
Technician: RPRATT



S.R. 711 PROPOSED PROFILE – S.B.L.



S.R. 711 PROPOSED PROFILE – S.B.L.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 6-01-01
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

645
886

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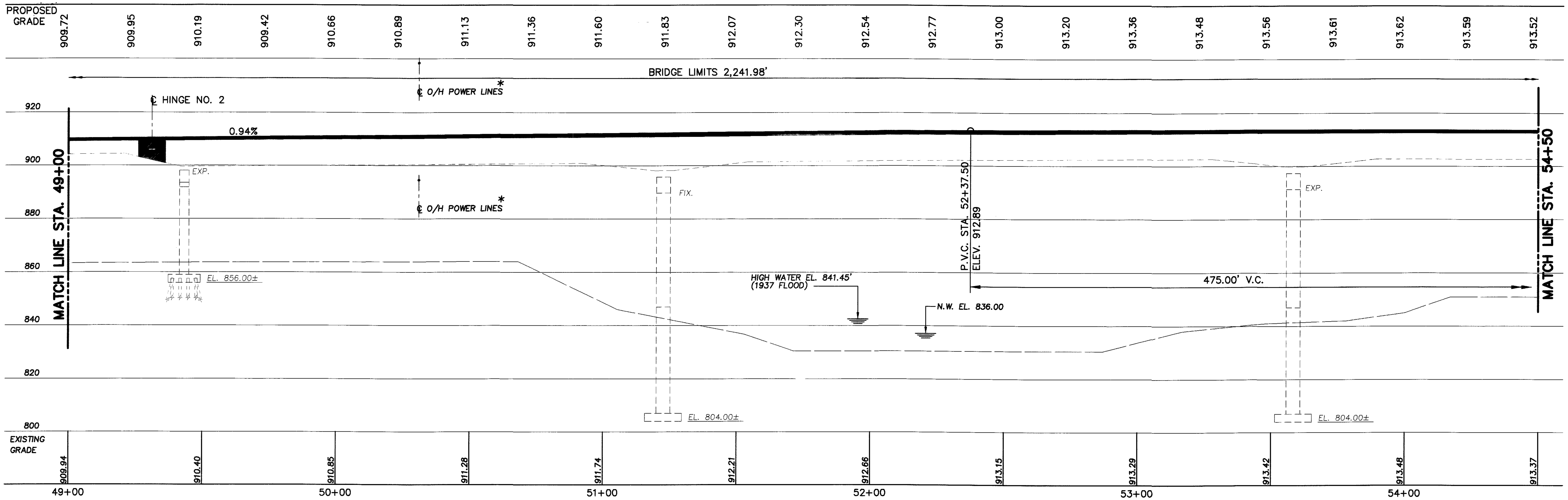
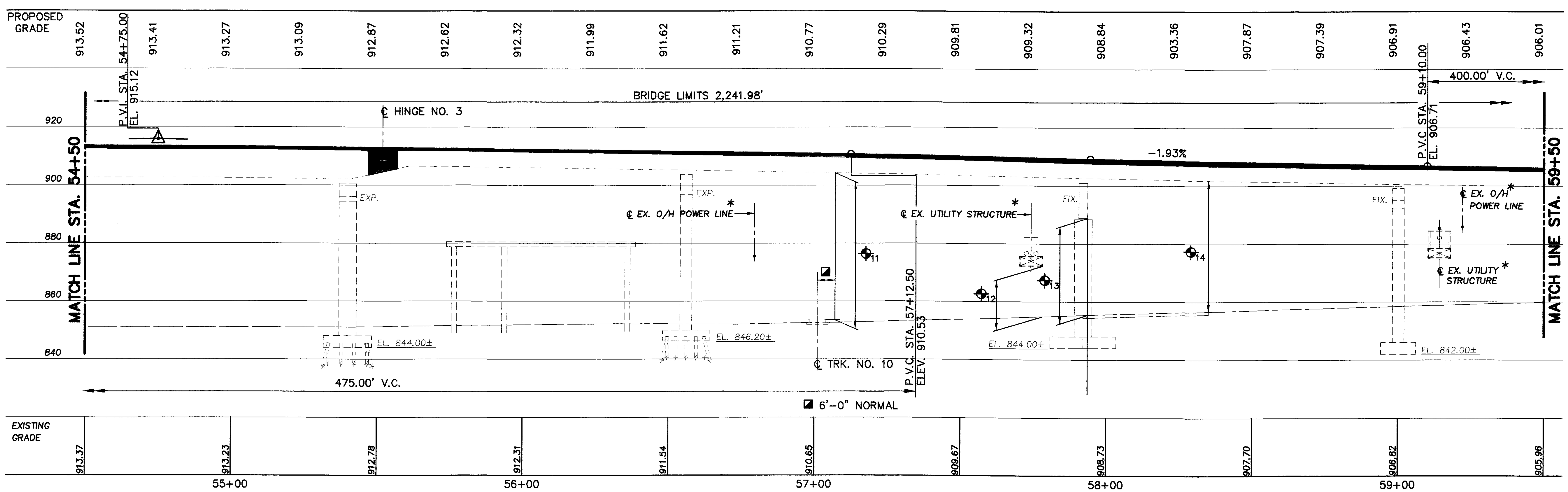
Technician: RPRATT



S.R. 711 PROPOSED PROFILE – S.B.L.

* TO REMAIN



S.R. 711 PROPOSED PROFILE – S.B.L.

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 6-01-01
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

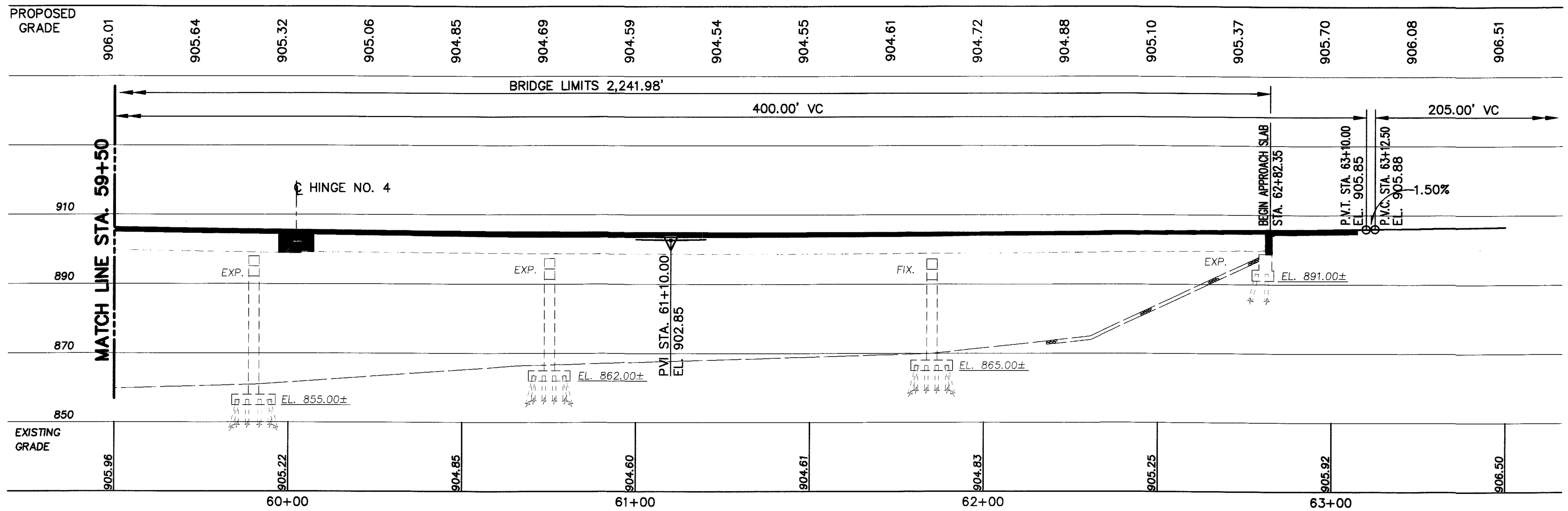
MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Date: 06-30-03 Time: 9:24 AM

Technician: RPRATT



S.R. 711 PROPOSED PROFILE – S.B.L.

DESIGN AGENCY	GPD ASSOCIATES
DESIGNED B.J.M.	CHECKED P.J.W.
DRAWN R.P.R.	REVISED
REVIEWED K.S.J.	DATE 6-01-01
STRUCTURE FILE NUMBER 5008255	

MAHONING COUNTY
STA. 40+40.37
STA. 62+82.35

SITE PLAN
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

DESIGN SPECIFICATIONS

THE PROPOSED REHABILITATION AND WIDENING WORK FOR THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, INCLUDING THE 1997, 1998, 1999 AND 2000 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA

DESIGN LOADING:	HS 20-44 (CASE I) AND THE ALTERNATE MILITARY LOADING FUTURE WEARING SURFACE (FWS) OF 60 PSF (SUPERSTRUCTURE ONLY)
HIGH PERFORMANCE CONCRETE HPC SS844:	COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)
CONCRETE CLASS C:	COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)
REINFORCING STEEL:	ASTM A615, A616 OR A617 GRADE 60, MINIMUM YIELD STRENGTH, 60,000 PSI.
* STRUCTURAL STEEL:	ASTM A36/A709 GRADE 36 – YIELD STRENGTH 36,000 PSI
DECK PROTECTION METHOD:	EPOXY COATED REINFORCING STEEL, 2 1/2" CONCRETE COVER, HIGH PERFORMANCE CONCRETE.
MONOLITHIC WEARING SURFACE:	MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK

* A36 STEEL WAS ASSUMED FOR USE IN DESIGN CALCULATIONS. THE CONTRACTOR MAY SUBSTITUTE A572-50 STEEL FOR A36 STEEL.

REFERENCES

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

NO. AS-1-81 REVISED 04-20-01
NO. EXJ-4-87 REVISED 04-20-01
NO. GSD-1-96 REVISED 04-20-01
NO. HL-20.14M DATED 05-01-95
NO. PCB-91 REVISED 07-19-02
NO. RB-1-55 REVISED 02-02-59
NO. SBR-1-99 DATED 07-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

NO. 815 DATED 02-22-00
NO. 816 DATED 04-21-97
NO. 842 DATED 01-06-99
NO. 844 DATED 01-06-99
NO. 863 DATED 10-12-99
NO. 864 DATED 07-11-00
NO. 899 DATED 10-21-98
NO. 905 DATED 04-01-98
NO. 907 DATED 04-19-02
NO. 910 DATED 07-11-00
NO. 911 DATED 07-10-97
NO. 954 DATED 09-09-97

EXISTING STRUCTURE PLANS

THE EXISTING STRUCTURE PLANS ARE ON FILE AND MAY BE REVIEWED IN THE OFFICE OF THE ODOT DISTRICT 4 DEPUTY DIRECTOR, 705 OAKWOOD ST., RAVENNA, OHIO 44266

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION IN THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

PROPOSED WORK

1. REMOVE ENTIRE EXISTING DECK ABOVE THE GIRDERS INCLUDING EXPANSION JOINTS, SCUPPERS, LIGHTING POLES, AND OVERHEAD SIGN SUPPORTS.
2. REMOVE EXISTING APPROACH SLABS.
3. REMOVE EXISTING ABUTMENT BACKWALLS AND PORTIONS OF WINGWALLS.
4. REPLACE BENT AND CORRODED INTERMEDIATE CROSS-FRAMES MEMBERS.
5. HEAT STRAIGHTEN GIRDERS 1G3, 1G4 AND 1G5 INCLUDING DAMAGED INTERMEDIATE STIFFENERS AND CROSS-FRAMES IN SPAN NO. 5 WHICH HAVE BEEN BENT.
6. RETROFIT BEARING STIFFENERS AT LOCATIONS SHOWN IN THE PLANS.
7. RETROFIT EXISTING LATERAL BRACING CONNECTIONS TO GIRDER WEB BY REPLACING WELDED GUSSET PLATE CONNECTIONS WITH FIELD BOLTED CONNECTIONS AT LOCATIONS SHOWN IN THE PLANS.
8. REPLACE CORRODED LATERAL BRACING MEMBER AND THE GUSSET PLATE CONNECTION IN THE NORTHERN FASCIA BAY ADJACENT TO PIER NO. 11.
9. ERECT TEMPORARY STEEL BENTS WEST OF HINGE NOS. 1, 2, AND 4 AND EAST OF HINGE NO. 3 TO SUPPORT THE SUSUPENDED PORTIONS OF SPAN NOS. 6, 10, 14, AND 18 IN ORDER TO PERFORM RETROFIT OF THE EXIST. HINGE CONNECTIONS.
10. RETROFIT EXISTING HINGE CONNECTIONS AT ALL HINGE LOCATIONS BY REMOVING PIN-AND-HANGER ASSEMBLIES INCLUDING THE END DIAPHRAGMS, CROSS-FRAMES AND PORTIONS OF THE EXISTING GIRDERS, AND INSTALLING NEW BEARING TYPE ASSEMBLIES INCLUDING DIAPHRAGMS, CROSS-FRAMES, AND PORTIONS OF GIRDERS. PROVIDE POT BEARINGS AT ALL HINGE LOCATIONS.
11. REMOVE TEMPORARY STEEL BENTS.
12. RAISE GIRDERS, RESET AND/OR REFURBISH ROCKERS AS SHOWN IN THE PLANS AND PLACE GIRDERS ON REPOSITIONED BEARINGS.
13. WELD SHEAR CONNECTORS TO GIRDERS.
14. INSTALL NEW SCUPPERS AND CONSTRUCT DECK AS PER PLAN.
15. RECONSTRUCT ABUTMENT BACKWALLS AND PORTIONS OF WINGWALLS AS PER PLAN.
16. INSTALL NEW ELASTOMERIC STRIP SEAL EXPANSION JOINTS AT HINGES NO. 2 AND 4 AND AT THE TWO (2) ABUTMENTS. INSTALL NEW MODULAR EXPANSION JOINT AT HINGE NOS. 1 AND 3.
17. PATCH PORTIONS OF ABUTMENT BREASTWALLS AND BEARING SEATS, AND PIERS AS PER PLAN.
18. SEAL CONCRETE SURFACES AS PER PLAN.
19. CONSTRUCT APPROACH SLABS AS PER PLAN.
20. REPAIR SLOPES AND RECONSTRUCT AGGREGATE SLOPE PROTECTION IN THE ERODED AREA AT REAR ABUTMENT.
21. REPLACE EXISTING DRAINAGE SYSTEM WITH A NEW SYSTEM USING PVC PIPING. PROVIDE REQUIRED CONNECTION TO EXISTING STORM SEWER SYSTEM.
22. PAINT EXISTING AND NEW STEEL INCLUDING EXTERIOR OF PIER NO. 15 STEEL CAP.
23. SAND BLAST, CLEAN AND PAINT PORTION OF THE SOUTH END OF STEEL PIER CAP INTERIOR AT PIER NO. 15.
24. INSTALL NEW LIGHTING POLES AND OVERHEAD SIGN SUPPORTS AS PER PLAN.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 863.07.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

DESCRIPTION: THIS WORK SHALL CONSIST OF THE REMOVAL OF CONCRETE DECK INCLUDING CURBS, PARAPETS, RAILINGS, LIGHT POLES, OVERHEAD SIGN SUPPORTS, DECK JOINTS, SCUPPERS AND OTHER APPURTENANCES FROM STEEL SUPPORTING SYSTEMS (GIRDERS, CROSS FRAMES, ETC.), PIN AND HANGER ASSEMBLIES INCL. THE END DIAPHRAGMS/CROSS-FRAMES AND PORTIONS OF EXIST. GIRDERS AT ALL HINGE LOCATIONS, LATERAL BRACING CONNECTIONS AT SPECIFIED LOCATIONS, AND PORTIONS OF THE ABUTMENTS AND WINGWALLS TO THE LIMITS INDICATED IN THE PLANS. CARE SHALL BE TAKEN DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. IN THIS RESPECT, THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAM TYPE OF EQUIPMENT IS PROHIBITED. AS INDICATED IN THE PLANS, PART-WIDTH REMOVAL SHALL BE DONE FOR PHASE 1 AND PHASE 2 CONSTRUCTION. FOR MAINTENANCE OF TRAFFIC DURING EACH PHASE, SEE NOTES ON SHEET NO. 109/886.

PROTECTION OF TRAFFIC: PRIOR TO DEMOLITION OF ANY PORTIONS OF THE EXISTING SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT PLANS FOR THE PROTECTION OF TRAFFIC (VEHICULAR, PEDESTRIAN, RAILROAD, AND BOAT) ADJACENT TO AND/OR UNDER THE STRUCTURE TO THE DIRECTOR FOR APPROVAL. THESE PLANS SHALL INCLUDE PROVISIONS FOR ANY DEVICES AND STRUCTURES THAT MAY BE NECESSARY TO ENSURE SUCH PROTECTION. TEMPORARY VERTICAL CLEARANCES SPECIFIED ON THE PLANS OR IN THE PROPOSAL SHALL BE MAINTAINED AT ALL TIMES EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK SHALL BE DRAWN ON THE SURFACE OF THE DECK. SMALL DIAMETER PILOT HOLES SHALL BE DRILLED 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. DURING CUTTING OF THE DECK SLAB, CARE SHALL BE TAKEN NOT TO DAMAGE STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE.

REMOVAL METHODS: CONCRETE MAY BE REMOVED BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STEEL GIRDERS, A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS MAY BE USED AT THE APPROVAL OF THE ENGINEER. REMOVAL METHODS OVER BRIDGE MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING OF THE PRIMARY STEEL MEMBERS.

STRUCTURAL STEEL WHICH IS INDICATED TO BE REMOVED MAY BE FLAME CUT, PROVIDED A SMOOTH SURFACE FREE FROM CRACKS AND NOTCHES IS SECURED AND PROVIDED THAT AN ACCURATE PROFILE IS SECURED BY THE USE OF A MECHANICAL GUIDE. FLAME CUT SURFACES SHALL MEET THE REQUIREMENTS OF THE AASHTO/AWS BRIDGE WELDING CODE, AS AMENDED BY SUPPLEMENT 1011. BURRS SHALL BE REMOVED. ALL FINS, TEARS, SLIVERS AND BURRED OR SHARP EDGES THAT ARE PRESENT ON ANY STEEL MEMBER SHALL BE REMOVED BY GRINDING. IF THESE CONDITIONS APPEAR DURING THE BLASTING OPERATION, THEY SHALL BE REMOVED BY GRINDING AND THE AREA RE-BLASTED TO THE REQUIRED SURFACE PROFILE.

REMOVAL OF INTERMEDIATE STIFFENERS: EXISTING INTERMEDIATE STIFFENERS WHICH ARE TO BE REMOVED ARE IDENTIFIED ON SHT NO. 47/80. THE STIFFENERS ARE ATTACHED TO THE GIRDER WEBS WITH WELDED CONNECTION. CONTRACTOR SHALL TAKE EXTREME CARE SO AS NOT TO DAMAGE THE EXISTING GIRDERS. AFTER REMOVAL, THE FLANGE AND WEB SURFACES SHALL BE GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE PARALLEL TO THE GIRDER FLANGES.

DECK REMOVALS: DUE TO THE POSSIBLE PRESENCE OF WELDED ATTACHMENTS TO EXISTING STRUCTURAL STEEL (FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) CARE SHALL BE TAKEN DURING DECK REMOVAL TO AVOID DAMAGING STRINGERS WHICH ARE TO REMAIN. STRINGERS INCLUDING THE PAINT THEREON DAMAGED BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL, AT NO COST TO THE PROJECT, BE REPLACED OR REPAIRED. PROPOSED REPAIRS, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED IN WRITING FOR REVIEW AND APPROVAL BY THE DIRECTOR.

SUBSTRUCTURE CONCRETE REMOVAL: SHALL BE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, HAMMERS NOT EXCEEDING 90 POUNDS , MAY BE USED UPON THE APPROVAL OF THE ENGINEER. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

CUT LINE CONSTRUCTION JOINT PREPARATION: SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THE JOINT SURFACE AND EXPOSED REINFORCEMENT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING CONCRETE SURFACES WHICH NEW CONCRETE WILL BE PLACED AGAINST SHALL BE WET, BUT WITHOUT FREE WATER, AT THE TIME OF CONCRETE PLACEMENT.

EXTRANEOUS MEMBERS: EXISTING EXTRANEOUS MEMBERS (I.E. FINISHING MACHINE AND FORM SUPPORTS AND THE SUPPORT FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) ATTACHED BY WELDED CONNECTIONS TO PORTIONS OF THE TOP FLANGES DESIGNATED "TENSION" SHALL BE REMOVED AND THE FLANGE SURFACES GROUND SMOOTH. GRINDING SHALL BE CAREFULLY DONE AND PARALLEL TO THE FLANGES.

LOADING LIMITATIONS: NO PART OF THE STRUCTURE SHALL BE SUBJECTED TO UNIT STRESSES THAT EXCEED 136.5% OF THE ALLOWABLE UNIT STRESSES GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DUE EITHER TO DEMOLITION, ERECTION OR CONSTRUCTION METHODS, OR TO THE USE OR MOVEMENT OF DEMOLITION OR ERECTION EQUIPMENT ON OR ACROSS THE STRUCTURE. STRUCTURAL ANALYSIS COMPUTATIONS, BY AN OHIO REGISTERED PROFESSIONAL ENGINEER, SHOWING THE ALLOWABLE STRESSES AND THE MAXIMUM STRESSES PRODUCED BY THE CONTRACTOR'S METHODS OR EQUIPMENT SHALL BE SUBMITTED TO THE DIRECTOR FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO THE START OF THE WORK.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202, AND TO THE SATISFACTION OF THE ENGINEER.

MOT PLANS

FOR MOT PLAN, SEE SHT. NO. 109/886.

ASBESTOS NOTIFICATION:

AN ASBESTOS SURVEY OF THE S.R. 711 BRIDGE OVER MAHONING RIVER, RAILROADS & DIVISION ST. SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF THE DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

YOUNGSTOWN
MAHONING-TRUMBULL AIR
POLLUTION CONTROL
9 WEST FRONT ST. ROOM 107
YOUNGSTOWN, OHIO 44503
ROBERT RAMHOFF, DIRECTOR
(330)744-1928
FAX (330)744-1928

AT LEAST TEN (10) WORKING DAYS PRIOR TO START OF THE BRIDGE DEMOLITION WORK, THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER.

INFORMATION REQUIRED ON THE FORM WILL INCLUDE: THE CONTRACTOR'S NAME AND ADDRESS, THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL OR RENOVATION AND A DESCRIPTION OF THE PLANNED DEMOLITION OR RENOVATION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 705 OAKWOOD STREET, RAVENNA, OHIO 44266.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 – PORTIONS OF STRUCTURE REMOVED, OVER 20' SPAN, AS PER PLAN.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 , Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

STRUCTURAL GENERAL NOTES
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103GEN.DWG
Date: 06-30-03 Time: 9:19 AM TW = 060'0.00"
Technician: RPRATT

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW REINFORCING STEEL. ANY EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT THE CONTRACTOR'S COST. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER.

THE NUMBER OF POUNDS OF REINFORCING STEEL PAID FOR AT CONTRACT PRICES SHALL BE THE ACTUAL POUNDS OF REPLACEMENT REINFORCING STEEL SPECIFIED BY THE ENGINEER DUE TO CORROSION AND SHALL INCLUDE PLACEMENT, DOWELING, BENDING, SUPPORTING, TIE WIRES AND TYING OF THAT SPECIFIED REINFORCING STEEL.

REQUIRED MINIMUM BAR LAP LENGTHS *

BAR SIZE	OTHER	TOP
#4	1'-11"	2'-9"
#5	2'-5"	3'-5"
#6	2'-11"	4'-1"
#7	3'-8"	5'-2"
#8	4'-11"	6'-10"
#9	6'-2"	8'-8"
#10	7'-10"	11'-0"
#11	9'-8"	13'-6"

* UNLESS NOTED OTHERWISE IN PLANS.

INSPECTION OF EXISTING STRUCTURAL STEEL

THE ENGINEER WILL VISUALLY INSPECT ALL EXISTING BUTT-WELDED SPLICES TO ENSURE THE WELDS AND PLATES ARE FREE OF DEFECTS AND CRACKS. IF THE DECK SLAB HAUNCH FORMS IMMEDIATELY ADJACENT TO SUCH WELDS INTERFERE WITH THE ENGINEER'S INSPECTION THEY SHALL BE REMOVED OR NOT BE ERECTED UNTIL AFTER INSPECTION. THE INSPECTION SHALL NOT TAKE PLACE UNTIL AFTER THE TOP FLANGES ARE CLEANED AS SPECIFIED IN SS 842.08, BUT IT SHALL BE DONE BEFORE THE DECK SLAB REINFORCEMENT IS INSTALLED. THE COST ASSOCIATED WITH THIS INSPECTION SHALL BE INCLUDED WITH ITEM 844, HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE DECK FOR PAYMENT. ANY CRACKS FOUND SHOULD BE REPORTED TO THE OFFICE OF STRUCTURAL ENGINEERING, BRIDGE CONSTRUCTION SPECIALIST, ALONG WITH SPECIFIC INFORMATION ON LOCATION OF THE CRACKS, LENGTH, AND DEPTH SO AN EVALUATION AND REPAIR OR REPLACEMENT RECOMMENDATION CAN BE MADE.

ABBREVIATIONS

B.S.	BOTH SIDES	CLR.	CLEAR
N.S.	NEAR SIDE	EA.	EACH
F.S.	FAR SIDE	MIN.	MINIMUM
SER.	SERIES	EXIST.	EXISTING
TYP.	TYPICAL	BM.	BEAM
EQ.	EQUAL	INT.	INTERMEDIATE
DIM.	DIMENSION	STIFF.	STIFFENER
SPA.	SPACES	GIRD.	GIRDER
SPL.	SPLICE	F.S.	FIELD SPLICE

DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT:

ALL DOWEL HOLES SHALL BE CORE DRILLED AND GROUTED WITH AN EPOXY GROUT MEETING THE REQUIREMENTS OF CMS 510 AND 705.20. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN ITEM 842-CLASS C CONCRETE, ABUTMENT, AS PER PLAN.

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION ANY EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS AND TO CONSTRUCT, PROTECT AND REMOVE TEMPORARY BENTS INCLUDING FOOTINGS AT HINGE NOS. 1, 2, 3, AND 4. THE TEMPORARY BENTS SHALL BE LOCATED WEST OF HINGE NOS. 1, 2, AND 4 AND EAST OF HINGE NO. 3 TO SUPPORT THE SUSPENDED PORTIONS OF SPAN NOS. 6, 10, 14 AND 18 IN ORDER TO PERFORM RETROFIT OF THE EXIST. HINGE CONNECTIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM AND TEMPORARY BENTS AT HINGE NOS. 1, 2, 3 AND 4, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK DESCRIBED IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSES OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES , PUMPS WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR TEMPORARY BENTS AND THEIR FOOTINGS AND ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, FABRICATION DETAILS OF TEMPORARY BENTS AND FOOTINGS AND TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20 % MORE CAPACITY THAN REQUIRED BASED ON CALCULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING EXISTING BEARINGS, NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT DOES NOT EXCEED 1/4 INCH.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE 1" OR LESS.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS TO COMPLETE THIS ITEM OF WORK.

ITEM 844, HIGH-PERFORMANCE CONCRETE TRIAL MIX
ITEM 844, HIGH-PERFORMANCE CONCRETE TESTING

THESE ITEMS ARE INCLUDED WITH THE QUANTITIES OF BRIDGE NO. MAH-711-0038 FOR PAYMENT.

ITEM 815, PAINTING OF EXISTING STEEL, SYSTEM OZEU
ITEM 816, PAINTING OF NEW STEEL, SYSTEM IZEU

COLOR OF THE FINISH COAT OF PAINT SHALL BE "GREY" MEETING FEDERAL COLOR STANDARD NO. 36440.

BONDING GROUT

THE BONDING GROUT TO BE USED BETWEEN OLD AND NEW CONCRETE SHALL BE "SIKA ARMATEC 110" AS MANUFACTURED BY SIKA CORPORATION, 201 POLITO AVENUE, LYNDHURST, NEW JERSEY 07071; "EUCO NO. 452 EPOXY SYSTEM" AS MANUFACTURED BY THE EUCLID CHEMICAL CO., 19218 REDWOOD ROAD, CLEVELAND, OHIO 44110; "CONCRESIVE STANDARD LIQUID" AS MANUFACTURED BY MASTER BUILDERS, INC., 23700 CHAGRIN BOULEVARD, CLEVELAND, OHIO 44122; OR AN APPROVED ALTERNATE. SURFACE PREPARATION MIXING AND PLACING OF GROUT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION. BONDING GROUT IS INCLUDED WITH ITEM 842, CLASS C CONCRETE, ABUTMENT.

SEALING OF CONCRETE SURFACES

EPOXY-URETHANE SHALL BE THE "BUFF" COLOR MEETING FEDERAL COLOR STANDARD NO. 37722 AS PER THE DETAILS IN THE PLANS.

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 203 MATERIAL PLACED IN 6 INCH LIFTS.

STRUCTURE EXCAVATION IN ADDITION TO THAT NECESSARY TO REMOVE PORTIONS OF THE EXISTING STRUCTURE, AND ALL NECESSARY BACKFILL, IS INCLUDED IN THE LUMP SUM BID FOR ITEM 503, "UNCLASSIFIED EXCAVATION," FOR PAYMENT.

BOLTED CONNECTION TO EXISTING STRUCTURAL STEEL

AT LOCATIONS INDICATED IN THE PLANS AND AS DIRECTED BY THE ENGINEER, NEW STRUCTUAL STEEL SHALL BE CONNECTED TO EXISTING STEEL USING NEW BOLTS. HOLES IN NEW MATERIAL SHALL BE MADE BY ANY OF THE FOLLOWING METHODS (TO BE SELECTED BY THE CONTRACTOR).

1. CAREFUL FIELD MEASUREMENTS BY THE CONTRACTOR SHALL BE USED FOR LOCATING HOLES IN NEW MATERIAL TO BE SUBPUNCHED OR DRILLED UNDERSIZE IN THE SHOP. THE HOLE SHALL BE 3/16 INCH LESS IN DIAMETER THAN THE NOMINAL DIAMETER OF THE NEW BOLT. THE HOLE SHALL BE REAMED TO PROPER SIZE IN THE FIELD AFTER ASSEMBLY OF PARTS.
2. FURNISH NEW STRUCTURAL STEEL WITHOUT SHOP HOLES FOR CONNECTION TO EXISTING STRUCTURAL STEEL. HOLES IN NEW MATERIAL TO BE FIELD DRILLED AND REAMED TO PROPER SIZE AFTER ASSEMBLY.

EXISTING MATERIAL FOR CONNECTION TO NEW MATERIAL SHALL BE FIELD DRILLED.

ALL HOLES THROUGH NEW AND EXISTING MATERIAL SHALL BE REAMED AFTER ASSEMBLY. THE FINAL HOLES MAY BE OVERSIZED: 3/16 INCH MORE IN DIAMETER FOR 7/8 INCH AND LESS NOMINAL DIAMETER BOLTS; AND 1/4 INCH MORE IN DIAMETER FOR 1 INCH NOMINAL DIAMETER BOLTS. HARDENED WASHERS SHALL BE USED ON BOTH SIDES OF OVERSIZED HOLES.

ADDITIONAL REQUIREMENTS FOR HOLES SHALL BE PER 863.20.

BASIS OF PAYMENT: PAYMENT FOR H.S. BOLTS WILL BE MADE AT CONTRACT PRICE, PER POUND, FOR ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION, WHICH INCLUDES COST FOR ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR CONNECTING NEW MATERIAL WITH EXISTING MATERIAL.

WORK ABOVE THE PROPERTY OF MIDWEST STEEL & ALLOY CORPORATION (MSAC)

REFER TO THE SPECIAL CLAUSES IN THE PROPOSAL FOR REQUIREMENTS REGARDING WORK ON OR ABOVE THE MSAC PROPERTY.

THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR AND THE MSAC REMOVAL PLANS AND PROCEDURES FOR ALL REMOVAL WORK ABOVE OR ADJACENT TO THE RAILROAD TRACKS AND THE DRIVEWAY. THE PLAN AND PROCEDURE SHALL INDICATE THE METHOD OF PROTECTING THE TRACK STRUCTURE AND DRIVEWAY, THE SEQUENCE OF REMOVAL, AND THE PROCEDURES AND EQUIPMENT TO BE USED. NO DEBRIS SHALL BE ALLOWED TO INTENTIONALLY FALL TO MSAC PROPERTY.

A TEMPORARY MINIMUM VERTICAL CLEARANCE OF 22'-0" ABOVE THE TOP RAIL ELEVATION AND A TEMPORARY MINIMUM HORIZONTAL CLEARANCE OF 14'-0" AS MEASURED FROM THE TRACK CENTERLINE SHALL BE MAINTAINED TO ANY TEMPORARY FORM WORK, FALSE WORK, STOCKPILED MATERIALS, OR OTHER OBSTRUCTIONS WHICH WILL BE LEFT IN PLACE DURING TRAIN MOVEMENT THROUGH THE JOB SITE.

OVERHEAD BRIDGE WORK ABOVE ACTIVE RAILROAD TRACKS SHALL BE RESTRICTED TO THE HOURS OF 7:00 PM TO 5:00 AM FOR ALL WORK REQUIRING CLOSURE OF THE TRACKS TO RR TRAFFIC. THIS INCLUDES, BUT MAY NOT BE LIMITED TO, HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL. DAYTIME RAILROAD TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. MIDWEST STEEL AND ALLOY CORPORATION SHALL BE NOTIFIED 10 WORKING DAYS IN ADVANCE OF ANY NIGHT WORK REQUIRING CLOSURE OF THE TRACKS. FOR CONTACT NAMES AND PHONE NUMBERS, SEE GENERAL NOTES ON SHEET NO. 77 OF 886.

WORK INVOLVING RAILROADS

ALL WORK WITHIN OR DIRECTLY ADJACENT TO THE RAILROAD R/W SHALL BE SUBJECT TO THE APPROVAL OF THE RAILROAD COMPANY AND TO INSPECTION AT ALL TIMES BY ITS PROPERLY DESIGNATED REPRESENTATIVE SAFETY AND CONTINUITY OF OPERATIONS OF THE RAILROAD SHALL BE OF MAJOR IMPORTANCE TO THE CONTRACTOR. THE SAFETY OF THE RAILROAD TRAFFIC, PERSONNEL AND PROPERTY SHALL AT ALL TIMES BE PROTECTED AND SAFEGUARDED. THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE DULY AUTHORIZED REPRESENTATIVE OF THE RAILROAD AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF THE TIME THE CONTRACTOR INTENDS TO COMMENCE ANY WORK ON OR ABOVE THE RAILROAD R/W. WHENEVER ANY WORK SUCH AS REMOVAL OF THE EXISTING SUPERSTRUCTURE OR ERECTION OF THE NEW GIRDER SECTIONS WHICH, IN THE OPINION OF THE ENGINEER, COULD AFFECT RAILROAD OPERATIONS, THE CONTRACTOR SHALL SUBMIT COMPLETE PLANS AND DETAILS OF THE PROPOSED WORK TO BOTH THE RAILROAD AND THE DIRECTOR FOR REVIEW. NO SUCH WORK SHALL BE COMMENCED OR PROSECUTED WITHOUT PRIOR APPROVAL OF THESE AGENCIES. APPROVAL OF SUCH WORK SHALL NOT BE CONSTRUED AS A RELEASE FROM RESPONSIBILITY OR LIABILITY FOR ANY DAMAGE WHICH THE RAILROAD MAY SUFFER.

THE CONTRACTOR SHALL NOT AT ANY TIME PERMIT EQUIPMENT IN HIS USE TO ENTER UPON OR FOUL THE RAILROAD COMPANY'S TRACKS EXCEPT WHEN SUCH EQUIPMENT IS PROTECTED BY THE AUTHORIZED EMPLOYEES OF THE RAILROAD COMPANY.

WORK ABOVE AND ADJACENT TO CSX RAILROAD

RAILROAD TRACKS SHALL BE PROTECTED FROM DAMAGE DURING REMOVAL OF EXISTING STRUCTURE OR REPLACEMENT OF DECK SLAB. EITHER PORTIONS OF THE FOLLOWING METHODS MAY BE USED:

A. DURING DEMOLITION OF THE DECK, A PROTECTION SHIELD SHALL BE ERECTED OVER THE TRACK TO CATCH FALLING DEBRIS. THE PROTECTION SHIELD SHALL BE SUPPORTED FROM THE GIRDERS AND SHALL NOT BE LOWER THAN ALLOWED TEMPORARY CLEARANCE. THE DECK SHALL BE REMOVED BY CUTTING IT IN SECTIONS AND LIFTING OUT.

   LARGE PIECES OF DECK SHALL NOT BE ALLOWED TO FALL ON PROTECTION SHIELD.

B. ON LIGHT TRAFFIC DENSITY LINES OR WHEN OVERHEAD PROTECTION SHIELD CAN NOT BE INSTALLED DUE TO LIMITED CLEARANCE OR TYPE OF SUPERSTRUCTURE, TRACK MAY BE PROTECTED BY TIMBER MATS PLACED OVER THE TRACK STRUCTURE, SUBJECT TO APPROVAL BY DIVISION MANAGER. TIMBER MATS SHALL BE MADE IN SECTIONS SUCH THAT THEY MAY BE LIFTED IN AND OUT QUICKLY. MATS SHALL NOT REST ON TIES OR RAILS. GEOFABRIC OR CANVAS SHALL BE PLACED OVER THE TRACK STRUCTURE TO KEEP THE BALLAST CLEAN.

C. BLASTING WILL NOT BE PERMITTED TO REMOVE A STRUCTURE OVER OR WITHIN RAILROAD RIGHT-OF-WAY.

THE CONTRACTOR SHALL SUBMIT DETAILED PLANS OF THE PROTECTION SHIELD OR THE TIMBER MATS TO THE DIRECTOR AND THE DIVISION MANAGER FOR APPROVAL PRIOR TO THE START OF REMOVAL OPERATIONS.

A TEMPORARY MINIMUM VERTICAL CLEARANCE OF 22'-0" ABOVE THE TOP OF RAIL AND A TEMPORARY MINIMUM HORIZONTAL CLEARANCE OF 14'-0" AS MEASURED FROM THE TRACK CENTERLINE SHALL BE MAINTAINED TO ANY TEMPORARY FORM WORK, FALSE WORK, STOCKPILED MATERIALS, OR OTHER OBSTRUCTION, WHICH WILL BE LEFT IN PLACE DURING TRAIN MOVEMENTS THROUGH THE JOB SITE.

WORK ABOVE AND ADJACENT TO PENNSYLVANIA LINES LLC RAILROAD

REFER TO THE SPECIAL CLAUSES IN THE PROPOSAL FOR REQUIREMENTS REGARDING WORK ON OR ABOVE RAILWAY PROPERTY.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE RAILWAY REMOVAL PLANS AND PROCEDURES FOR ALL REMOVAL WORK ABOVE OR ADJACENT TO THE TRACKS OF THE RAILWAY. THE PLAN AND PROCEDURE SHALL INDICATE THE METHOD OF PROTECTING THE TRACK STRUCTURE, THE SEQUENCE OF REMOVAL, AND THE PROCEDURES AND EQUIPMENT TO BE USED. NO DEBRIS SHALL BE ALLOWED TO INTENTIONALLY FALL TO RAILWAY PROPERTY.

A TEMPORARY MINIMUM VERTICAL CLEARANCE OF 22'-0" ABOVE THE TOP OF RAIL ELEVATION AND A TEMPORARY MINIMUM HORIZONTAL CLEARANCE OF 14'-0" AS MEASURED FROM THE TRACK CENTERLINE SHALL BE MAINTAINED TO ANY TEMPORARY FORM WORK, FALSE WORK, STOCKPILED MATERIALS, OR OTHER OBSTRUCTION WHICH WILL BE LEFT IN PLACE DURING TRAIN MOVEMENT THROUGH THE JOB SITE.

UPON COMPLETION OF THE WORK ON RAILROAD PROPERTY, THE CONTRACTOR SHALL REQUEST THE ENGINEER TO ARRANGE A FINAL INSPECTION OF THE PROJECT WITH THE RAILWAY'S DIVISION ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.

DESIGN AGENCY: GPD ASSOCIATES

DESIGNED B.J.M. | DRAWN R.P.R. | REVIEWED K.S.J. | DATE 3-18-02 | CHECKED P.J.W. | REVISED | STRUCTURE FILE NUMBER 5008255

STRUCTURE GENERAL NOTES
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103GEN.DWG Date: 06-30-03 Time: 9:19 AM TW = 0d0'0.00"
Technician: RPRATT

ESTIMATED QUANTITIES

CALCULATED: M.D.P./R.H.C. DATE: 12/11/01
CHECKED: B.J.M. DATE: 2/11/02

MAJOR BRIDGE FUNDS									
ITEM	EXT	TOTAL	UNITS	DESCRIPTION	ABUT	PIER	SUPER	GENERAL	AS PER PLAN SHT. NO.
202	11203	LUMP		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LUMP	9
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING				LUMP	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	LUMP				10
509	20001	1,000	POUND	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN				1,000	10
516	11210	287	LIN FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL (SEE PROPOSAL NOTE)			287		
SPECIAL	51645001	32	EACH	STEEL POT BEARINGS, AS PER PLAN			32		12, 13
516	46801	51	EACH	REFURBISH AND RESET BEARING, AS PER PLAN			51		36
516	47001	LUMP		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN				LUMP	10
518	12500	49	EACH	NEW SCUPPER MISC.: TYPE 1, AS PER PLAN			49		11, 17
518	12500	10	EACH	NEW SCUPPER MISC.: TYPE 2, AS PER PLAN			10		11, 19
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC	LUMP				
518	51100	510	LIN FT	8" PIPE DOWNSPOUT, INCLUDING SPECIALS		510			
518	60030	2,150	LIN FT	PIPE HORIZONTAL CONDUCTOR			2,150		
◪ 519	11100	2,970	SQ FT	PATCHING CONCRETE STRUCTURE	154	2,816			
815	00100	LUMP		SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU			LUMP		
815	00200	LUMP		FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU			LUMP		
815	00300	LUMP		FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU			LUMP		
815	00400	LUMP		FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU			LUMP		
815	00504	200	MAN HR	GRINDING FINS, TEARS, SLIVERS			200		
816	00610	271,800	POUND	FIELD PAINTING OF NEW STEEL, INTERMEDIATE AND FINISH COAT, SYSTEM IZEU			271,800		
842	45701	93	CU YD	CLASS C CONCRETE, ABUTMENT, AS PER PLAN	93				10
844	48000	4,714	CU YD	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK)			4,714		
844	48020	1,506	CU YD	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET)			1,506		
863	10300	271,800	POUND	STRUCTURAL STEEL MEMBERS, LEVEL FIVE (5) FABRICATION			271,800		
863	19000	LUMP		HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL (SEE PROPOSAL NOTE)			LUMP		
863	20000	33,681	EACH	WELDED STUD SHEAR CONNECTORS			33,681		
863	95020	LUMP		STRUCTURAL STEEL, MISC.: MODULAR EXPANSION JOINT, AS PER PLAN			LUMP		14
864	10100	16,429	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	275	6,326	9,828		

◪ ITEM 519 AN ALLOWANCE OF 1,485 SQ. FT. HAS BEEN INCLUDED FOR FUTURE DETERIORATION.

ITEM 863 – HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL

THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL MATERIALS AND LABOR NECESSARY TO STRAIGHTEN THE BENT SECTIONS OF THE EXISTING GIRDERS AS IDENTIFIED IN THE PLAN. THE GIRDER STRAIGHTENING SHALL BE ACCOMPLISHED BY HEAT TREATMENT METHOD. THE CONTRACTOR SHALL SUBMIT THE DETAILED PROCEDURE INCLUDING NECESSARY CALCULATIONS ALONG WITH THE SHOP DRAWINGS TO THE DIRECTOR FOR APPROVAL PRIOR TO STARTING WORK. PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR "ITEM 863 – HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL" AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS TO COMPLETE THIS ITEM OF WORK.

ITEM 518 – NEW SCUPPER, MISC.: TYPE 1, AS PER PLAN
ITEM 518 – NEW SCUPPER, MISC.: TYPE 2, AS PER PLAN

SCUPPERS SHALL CONFORM TO CMS SECT. 518 EXCEPT AS MODIFIED IN THE PLANS. THE SCUPPERS SHALL BE FABRICATED AFTER THE APPROVAL OF SHOP DRAWINGS BY THE ENGINEER. FOR DETAILS, SEE SHT. NOS. 17/80 THRU 21/80. FOR ADDITIONAL NOTES, SEE SHT. SHT. NOS. 17/80 & 19/80.

NOTE:
FOR DECK SCREED ELEVATIONS, SEE SHT. NOS. 72/80 THRU 76/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
325 South Main Street, Suite 233, Akron, Ohio 44311
330.572.2100 Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5006255	

ESTIMATED QUANTITIES & STRUCTURE GENERAL NOTES
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

11/80

650/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_1030TY.DWG
Date: 07-18-03 Time: 8:38 AM TW = 0.00'0.00"
Technician: RPRATT

ITEM SPECIAL – STEEL POT BEARINGS, AS PER PLAN

1. DESCRIPTION

1.1 THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, TEST AND INSTALL POT BEARINGS IN ACCORDANCE WITH THE PLANS AND THIS SPECIFICATION. UNLESS MODIFIED BY THIS SPECIFICATION, THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863 SHALL APPLY. THE FABRICATOR SHALL BE PRE-QUALIFIED FOR MISCELLANEOUS LEVEL FABRICATION.

1.2 THE POT BEARING SHALL CONSIST OF THE FOLLOWING PARTS:

(1) RECTANGULAR SOLE PLATE – TOP SIDE BEVELED TO THE SLOPE OF THE GIRDER AND FIELD WELDED TO THE GIRDER FLANGE. BOTTOM SIDE LEVEL AND FACED WITH STAINLESS STEEL FOR EXPANSION BEARINGS.

(2) POT – CONTAINMENT FOR THE ELASTOMERIC DISC. INVERTED POT IS USED AND TOP IS FACED WITH PTFE.

(3) ELASTOMERIC DISC – CONFINED WITHIN POT FOR THE PURPOSE OF PROVIDING ROTATION AND SUPPORT FOR THE PISTON. SILICONE GREASE SHALL BE PROVIDED ABOVE AND BELOW THE ELASTOMERIC DISC. THE DISC IS SEALED WITH BRASS SEALING RINGS.

(4) CIRCULAR PISTON – TOP FACED WITH PTFE IN CONTACT WITH ELASTOMERIC DISC. BOTTOM OF PISTON IS ATTACHED TO THE BEARING PLATE.

(5) SEALING RINGS – SEAL BETWEEN POT AND PISTON USED TO CONTAIN THE ELASTOMERIC DISC.

(6) GUIDE BAR/BARS (FOR GUIDED BEARINGS) – ATTACHED TO OR INTEGRAL WITH SOLE PLATE FOR PURPOSE OF GUIDING EXPANSION BEARINGS AND TRANSMITTING LATERAL LOADS TO THE POT. BEARINGS MAY BE EDGE OR CENTER GUIDED.

(7) BEARING PLATE – DISTRIBUTE VERTICAL AND HORIZONTAL FORCES FROM THE PISTON TO THE BEARING SEAT. BEARING PLATE SITS ON A HINGE ASSEMBLY GIRDER FLANGE AND IS CONNECTED TO IT BY WELDING.

(8) HORIZONTAL BRIDGE MOVEMENT SHALL BE ACCOMMODATED THROUGH THE PROVISION OF MATED SLIDING SURFACES CONSISTING OF STAINLESS STEEL AND PTFE. SEE THE APPLICABLE SECTIONS OF THIS SPECIFICATION FOR SPECIFIC REQUIREMENTS.

1.3 BEARING HEIGHT

IF NECESSARY, THE CONTRACTOR SHALL ADJUST BEAM SEAT ELEVATIONS TO ACCOUNT FOR DIFFERENCES IN THE BEARING HEIGHT DETAILED IN THE PLANS VERSUS THE BEARING HEIGHT PROVIDED.

AS AN ALTERNATIVE, THE TOTAL BEARING HEIGHT SHOWN IN THE PLANS CAN BE MET BY INCREASING THE SOLE PLATE THICKNESS, POT BASE THICKNESS, BEARING PLATE THICKNESS, PISTON THICKNESS OR A COMBINATION THEREOF.

2. DESIGN AND MATERIALS REQUIREMENTS

2.1 THE DESIGN CRITERIA AND MATERIALS REQUIREMENTS SHALL BE GOVERNED BY THESE PROVISIONS AND ALL APPLICABLE SECTIONS OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, INCLUDING THE CURRENT INTERIM SPECIFICATIONS, DIVISION I, SECTION 14 AND DIVISION II, SECTION 18. BEARINGS SHALL BE DESIGNED TO ACCOMMODATE THE LOADS, FORCES AND MOVEMENTS SPECIFIED HEREIN OR IN THE BEARING SCHEDULE WHICH IS LOCATED IN THE PLANS.

2.2 SOLE PLATE

(1) ASTM A588 OR A572 GRADE 50 STEEL. TOP SIDE BEVELED TO THE SLOPE OF THE GIRDER UNDER FULL UN-FACTORED PERMANENT LOAD. BOTTOM SIDE LEVEL.

(2) RECTANGULAR OR SQUARE IN PLAN.

(3) MINIMUM THICKNESS SHALL BE 0.75 INCHES.

2.3 PISTON

(1) ASTM A572 GRADE 50 OR A588 STEEL.

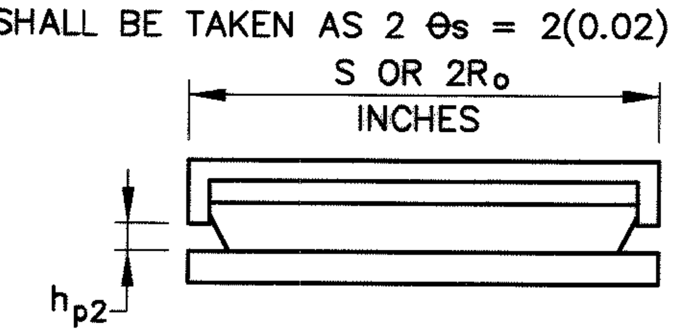
(2) DIAMETER OF PISTON SHALL BE 0.03 INCH LESS THAN THE INSIDE DIAMETER OF THE POT.

(3) PISTON THICKNESS SHALL BE SUFFICIENT TO PROVIDE A CLEARANCE BETWEEN THE TOP OF THE POT WALL AND SURFACE ABOVE THE POT WALL WHEN THE PISTON IS IN A FULLY ROTATED POSITION.

POTS WITH SQUARE EXTERIOR:
$hp2 = (0.7 \times \theta u \times S) + 0.125$ (INCH)

POTS WITH CIRCULAR EXTERIOR:
$hp2 = (Ro \times \theta u) + 0.125$ (INCH)

θu = MAXIMUM ROTATION; UNLESS OTHERWISE SHOWN IN THE PLANS,
θu SHALL BE TAKEN AS $2\ \theta s = 2(0.02) = 0.04$ RADIANS



(4) PISTON WALLS SHALL BE TAPERED INWARD, TOWARD THE TOP, TO PREVENT BINDING AGAINST THE POT WALLS DURING ROTATION. A PISTON RIM OF MINIMUM HEIGHT "W" SHALL BE PROVIDED.

$$W \geq \frac{2.5H_s}{D_p F_y} \geq 0.125"$$

WHERE:
Hs = SERVICE LATERAL LOAD = 0.1(1.0 x DLR + 1.3 x LLR) KIPS
OR
Hs = SERVICE LATERAL LOAD = 0.2(1.0 x DLR) KIPS
WHICHEVER IS GREATER

DLR = DEAD LOAD REACTION
LLR = LIVE LOAD REACTION
Dp = INTERNAL DIAMETER OF POT (INCHES)
Fy = YIELD OF STEEL (KSI)

(5) THE PISTON SHALL BE MACHINED FROM A SINGLE PIECE OF STRUCTURAL STEEL.

2.4 PTFE

(1) PTFE FABRIC FIBERS SHALL CONFORM TO THE FOLLOWING:

A. THE RESIN FROM WHICH THE FIBERS ARE PRODUCED SHALL BE 100 PERCENT PTFE CONFORMING TO ASTM D4894.

B. TENSILE STRENGTH – ASTM D2256 – 24,000 PSI (MINIMUM).

C. ELONGATION – ASTM D2256 – 75 PERCENT (MINIMUM).

D. THE TFE FABRIC SHALL HAVE A MINIMUM THICKNESS OF 0.0625 INCH (COMPRESSED). MAXIMUM THICKNESS SHALL BE 0.125 INCH (COMPRESSED).

(2) FINISHED UNFILLED PTFE SHEET SHALL BE MADE FROM 100 PERCENT VIRGIN PTFE RESIN AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

A. TENSILE STRENGTH D4894 – 2800 PSI (MINIMUM).

B. ELONGATION ASTM D4894 – 200 PERCENT (MINIMUM).

C. SPECIFIC GRAVITY – ASTM D792 – 2.13 (MINIMUM).

D. MELTING POINT – ASTM D4894 – 623°F +/- 2

E. MINIMUM THICKNESS SHALL BE 0.125 INCH WHEN THE MAXIMUM PTFE DIMENSION IS LESS THAN OR EQUAL TO 24 INCHES AND 0.1875 INCH WHEN THE MAXIMUM DIMENSION OF THE PTFE IS GREATER THAN 24 INCHES. SHEET SHALL BE RECESSED AND EPOXY BONDED INTO A STEEL SUBSTRATE. THE SHOULDERS OF THE RECESS SHALL BE SHARP AND SQUARE AND THE DEPTH SHALL BE EQUAL TO ONE-HALF OF THE PTFE SHEET THICKNESS.

F. PTFE SHEET SHALL BE COMMERCIALLY ETCHED ON ITS BONDING SIDE.

(3) MAXIMUM CONTACT STRESSES SHALL CONFORM TO THE FOLLOWING:

MATERIAL	AVERAGE CONTACT STRESS		EDGE CONTACT STRESS	
	PERMANENT LOADS	ALL LOADS	PERMANENT LOADS	ALL LOADS
WOVEN PTFE FIBER OVER A METALLIC SUBSTRATE	4.0 KSI	6.0 KSI	5.0 KSI	7.5 KSI
CONFINED UNFILLED SHEET PTFE	4.0 KSI	6.0 KSI	5.0 KSI	7.5 KSI

(4) THE MATING SURFACE TO PTFE, SHALL BE LARGE ENOUGH TO COVER THE PTFE DURING ALL CONDITIONS OF EXPANSION OR CONTRACTION THAT THE BRIDGE WILL UNDERGO PLUS AN ADDITIONAL TWO (2) INCHES.

2.5 STAINLESS STEEL

1. STAINLESS STEEL SHEET SURFACE SHALL CONFORM TO ASTM A167 OR A240 TYPE 304. THE MINIMUM THICKNESS SHALL BE AT LEAST 16 GAUGE WHEN THE MAXIMUM DIMENSION OF THE SURFACE IS LESS THAN 12 INCHES AND 13 GAUGE WHEN THE MAXIMUM DIMENSION OF THE SURFACE IS GREATER THAN 12 INCHES. STAINLESS STEEL IN CONTACT WITH PTFE SHALL HAVE A #8 MIRROR FINISH OR BETTER. MATERIAL AND FINISH SHALL BE SUCH THAT THE REQUIREMENTS OF 4.2 (2) ARE MET.

2. WHEN STAINLESS STEEL IS USED AS A MATING SURFACE TO PTFE, THE STAINLESS STEEL SURFACE SHALL BE LARGE ENOUGH TO COVER THE PTFE DURING ALL CONDITIONS OF EXPANSION OR CONTRACTION THAT THE BRIDGE WILL UNDERGO PLUS AN ADDITIONAL TWO (2) INCHES.

2.6 ELASTOMERIC DISC

(1) THE ELASTOMERIC DISC SHALL MEET THE FOLLOWING AVERAGE COMPRESSIVE STRESS REQUIREMENTS: MAXIMUM OF 3,500 PSI WHEN THE BEARING VERTICAL SERVICE LOAD DESIGN CAPACITY SPECIFIED IN THE PLAN IS APPLIED TO THE AREA OF THE DISC.

(2) MINIMUM DISC THICKNESS:

$hr \geq 3.33Dp\ \theta u$ (INCHES)

Dp = INSIDE DIAMETER OF POT (INCHES)

θu = MAXIMUM ROTATION; UNLESS OTHERWISE SHOWN IN THE PLANS,
θu SHALL BE TAKEN AS $2\ \theta s = 2(0.02) = 0.04$ RADIANS

(3) THE ELASTOMERIC DISC SHALL CONSIST OF 100 PERCENT VIRGIN POLYCHLOROPRENE (NEOPRENE) MEETING THE REQUIREMENTS OF CMS ITEM 711.23 OR 100 PERCENT VIRGIN NATURAL POLYISOPRENE (NATURAL RUBBER) MEETING THE REQUIREMENTS OF THE CURRENT AASHTO M251.

(4) HARDNESS SHALL BE 50 DUROMETER +/- 10.

(5) THE DISC SHALL CONSIST OF ONE SOLID PIECE OF ELASTOMER.

(6) THE ELASTOMERIC DISC SHALL BE LUBRICATED WITH SILICONE GREASE MEETING THE REQUIREMENTS OF MIL-S-8660C.

(7) THE UPPER EDGE OF THE ELASTOMERIC DISC SHALL BE RECESSED TO RECEIVE THE SEALING RINGS SO THAT THEY SIT FLUSH WITH THE UPPER SURFACE OF THE DISC.

2.7 SEALING RING

(1) RINGS SHALL BE FLAT AND SHALL BE MADE OF BRASS CONFORMING TO THE REQUIREMENTS OF ASTM B36, HALF HARD.

(2) MINIMUM WIDTH SHALL BE THE LARGER OF 0.25 INCH OR 0.02 Dp BUT NOT TO EXCEED 0.50 INCH.

(3) MINIMUM THICKNESS SHALL BE 0.2 TIMES THE WIDTH BUT SHALL NOT EXCEED 0.08 INCH.

(4) THE RINGS SHALL HAVE A SMOOTH FINISH OF 64 MICRO-INCH (RMS) OR LESS.

(5) THREE RINGS ARE REQUIRED.

(6) THE RINGS SHALL BE SPLIT AND SNUGLY FIT THE RECESS IN THE ELASTOMERIC DISC AS WELL AS THE INSIDE DIAMETER OF THE POT. NO WHERE SHALL THE GAP BETWEEN THE RING AND THE WALL EXCEED 0.01". THE RINGS CAN BE MADE OVERSIZE AND SPRUNG INTO POSITION, HOWEVER, NO DISHING OR DISTORTION WILL BE PERMITTED. THE ENDS OF THE RINGS AT THE SPLIT SHALL BE CUT AT 45 DEGREES TO THE VERTICAL. THE MAXIMUM GAP SHALL BE 0.050 INCH WHEN INSTALLED. THE RINGS SHALL BE ARRANGED SO THAT THE SPLITS ON EACH OF THE THREE RINGS ARE EQUALLY SPREAD AROUND THE CIRCUMFERENCE OF THE POT.

2.8 GUIDE BARS

(1) ASTM A36, OR A572 GRADE 50 OR A588 FACED WITH STAINLESS STEEL.

(2) GUIDE BARS MAY BE INTEGRAL BY MACHINING FROM A SOLID SOLE PLATE OR THEY MAY BE ATTACHED TO THE SOLE PLATE BY PRESS FIT INTO RECESS AND WELDING THE ENDS. THE SIDE SURFACES OF THE GUIDE BARS SHALL BE FACES WITH STAINLESS STEEL, SEE SECTION 2.5. WELDING OF GUIDE BARS TO THE SOLE PLATE SHALL BE PERFORMED PRIOR TO WELDING OF STAINLESS STEEL TO THE SOLE PLATE OR GUIDE BARS.

(3) THE TOTAL SPACE (BOTH SIDES) BETWEEN THE GUIDE BARS AND GUIDED MEMBERS SHALL BE A MAXIMUM OF 0.125 INCH.

(4) THE GUIDE BARS SHALL BE DESIGNED FOR Hs.

Hs = SERVICE LATERAL LOAD = 0.1(1.0 x DLR + 1.3 x LLR)(KIPS)
OR
Hs = SERVICE LATERAL LOAD = 0.2(1.0 x DLR) (KIPS)
WHICHEVER IS GREATER

(5) GUIDING ARRANGEMENTS SHALL BE DESIGNED SO THAT THE STATIONARY PORTION OF THE BEARING IS ALWAYS WITHIN THE GUIDES AT ALL POINTS OF TRANSLATION AND ROTATION OF THE BEARING.

(6) ON GUIDED BEARINGS, GUIDE BARS SHALL BE DESIGNED SO THAT THE CLEARANCES BETWEEN ROTATING AND NON-ROTATING PARTS ARE MAINTAINED IN SUCH A MANNER THAT BINDING OF THE BEARING IS PREVENTED.

2.9 POT

(1) A572 GRADE 50 OR A588 STEEL.

(2) THE POT SHALL CONSIST OF A SOLID PLATE INTO WHICH A CIRCULAR RECESS HAS BEEN MACHINED.

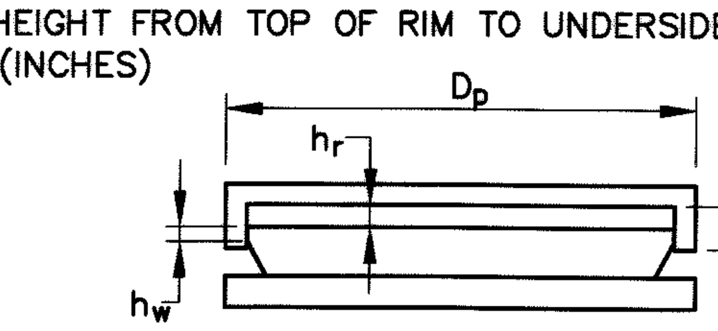
(3) IN ORDER TO ENSURE THAT THE PISTON SEAL AND RIM REMAIN IN FULL CONTACT WITH THE POT WALL, THE DEPTH OF THE POT CAVITY SHALL BE EQUAL TO OR GREATER THAN THE FOLLOWING:

$hp1 \geq 0.5Dp\ \theta u + hr + hw$

θu = MAXIMUM ROTATION; UNLESS OTHERWISE SHOWN IN THE PLANS,
θu SHALL BE TAKEN AS $2\ \theta s = 2(0.02) = 0.04$ RADIANS

hr = THICKNESS OF ELASTOMERIC PAD (INCHES)

hw = HEIGHT FROM TOP OF RIM TO UNDERSIDE OF PISTON (INCHES)



(4) THE POT INSIDE DIAMETER SHALL BE THE SAME AS THE ELASTOMERIC DISC.

(5) THE THICKNESS OF THE POT WALL SHALL BE SUFFICIENT TO TRANSMIT A LATERAL HORIZONTAL FORCE TO THE POT BASE WITHOUT CAUSING DEFLECTION/DISTORTION TO THE POT WALL OR BASE AND SHALL SATISFY THE FOLLOWING EQUATION:

$$0.75 \leq Tw \geq (40\ Hs\ \theta s/Fy)^{1/2}$$

WHERE:
Hs = SERVICE LATERAL LOAD = 0.1(1.0 x DLR + 1.3 x LLR)(KIPS)
OR
Hs = SERVICE LATERAL LOAD = 0.2(1.0 X DLR) (KIPS)
WHICHEVER IS GREATER

θs = MAXIMUM SERVICE ROTATION = 0.02 RADIANS UNLESS SHOWN OTHERWISE IN THE PLANS
Fy = YIELD STRENGTH OF STEEL (KSI)

(6) THE MINIMUM THICKNESS OF THE POT BENEATH THE ELASTOMER FOR A BEARING DIRECTLY ON A MASONRY PLATE SHALL BE THE GREATER OF 0.045 X POT I.D. OR 0.50 INCH. THE MINIMUM THICKNESS OF THE POT BENEATH THE ELASTOMER FOR A BEARING DIRECTLY ON CONCRETE SHALL SATISFY THE GREATER OF 0.06 X POT I.D. OR 0.75 INCH WHICHEVER IS THE GREATER. THE DESIGN SHALL BE SUFFICIENT TO PREVENT DISTORTION OF THE POT WALL OR BASE.

(7) THE INSIDE SURFACES OF POT WALLS AND BASE SHALL BE MACHINED TO A FINE SURFACE FINISH OF 64 MICROINCHES OR BETTER. NO METALIZING, GALVANIZING OR PAINT SHALL BE APPLIED TO THESE SURFACES.

2.10 BEARING PLATE

ASTM A572 GRADE 50 OR A588 STEEL.

(CONTD. ON SHT. NO. 13/80)

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

POT BEARING NOTES
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103GEN.DWG
Date: 06-30-03 Time: 9:26 AM TW = 000'0.00"
Technician: RPRATT

(CONTD. FROM SHT. NO. 12/80)

ITEM SPECIAL – STEEL POT BEARINGS, AS PER PLAN

3. FABRICATION

3.1 ATTACHMENT OF SHEET PTFE TO SUBSTRATE.

(1) PTFE SHEET SHALL BE RECESSED INTO AND BONDED TO A STEEL SUBSTRATE.

(2) PTFE SHALL BE RECESSED FOR ONE HALF ITS THICKNESS.

(3) THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN WIPED CLEAN WITH A CLEANING SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.

(4) THE ADHESIVE MATERIAL, AND THE BONDING PROCEDURES TO BE USED, AND SURFACE PREPARATION SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION MMM–A–134 AND THE MANUFACTURER'S RECOMMENDATIONS. ADHESION STRENGTH SHALL BE SUCH THAT THE REQUIREMENTS OF SECTION 4.4 OF THIS SPECIFICATION ARE SATISFIED.

(5) AFTER COMPLETION OF THE BONDING OPERATION, THE PTFE SURFACE SHALL BE SMOOTH AND FREE FROM BUBBLES.

3.2 ATTACHMENT OF PTFE FABRIC TO SUBSTRATE

(1) PTFE FABRIC SHALL BE MECHANICALLY INTERLOCKED AND BONDED TO THE STEEL SUBSTRATE.

(2) THE BONDING SURFACE OF THE STEEL SHALL BE CLEANED OF RUST, SCALE, OIL AND GREASE BY BLAST CLEANING AND THEN CLEANED WITH SOLVENT. BLAST CLEANING SHALL BE PERFORMED WITHIN A MAXIMUM OF FOUR HOURS PRIOR TO BONDING.

(3) THE MECHANICAL INTERLOCK, ADHESIVE BONDING MATERIAL AND PROCEDURES, AND SURFACE PREPARATION SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION MMM–A–134 AND THE MANUFACTURER'S RECOMMENDATIONS. ADHESION STRENGTH SHALL BE SUCH THAT THE REQUIREMENTS OF SECTION 4.4 OF THIS SPECIFICATION ARE SATISFIED.

(4) MIGRATION OF EPOXY THROUGH THE FABRIC WILL NOT BE PERMITTED.

(5) FABRIC SHALL BE FURNISHED IN ONE PIECE. EDGES SHALL BE OVERSEWN OR RECESSED SO THAT NO CUT FABRIC EDGES ARE EXPOSED.

3.3 ATTACHMENT OF SHEET STAINLESS STEEL

STAINLESS STEEL SHALL BE ATTACHED TO ITS STEEL SUBSTRATE BY A CONTINUOUS SEAL WELD AROUND ITS ENTIRE PERIMETER. WELDS SHALL CONFORM TO THE AWS REQUIREMENTS FOR STAINLESS STEEL. THE WELDER SHALL BE PRE–QUALIFIED BY TEST WELDS PREPARED, WELDED AND TESTED IN ACCORDANCE WITH 6.7 OF ANSI/AWS D1.3, STRUCTURAL WELDING CODE – SHEET STEEL. AFTER WELDING, THE STAINLESS STEEL SHEET SHALL BE FLAT, FREE FROM WRINKLES AND IN CONTINUOUS CONTACT WITH ITS BACKING PLATE. AFTER WELDING THE ENTIRE STAINLESS STEEL SURFACE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 2.5 OF THIS SPECIFICATION AFTER WELDING. NO ROUGHNESS FROM THE WELD PROTRUDING ABOVE THE SURFACE OF THE STAINLESS STEEL WILL BE PERMITTED.

3.4 CORROSION PROTECTION

ALL STEEL SURFACES (INCLUDING A588 STEEL) EXPOSED TO THE ATMOSPHERE, EXCEPT STAINLESS STEEL SURFACES AND THE INSIDES OF THE POT, SHALL BE METALIZED. THE THICKNESS OF THE COATING SHALL BE 12 TO 14 MILS. THE WIRE USED FOR THE METALIZING SHALL CONSIST OF 100% ZINC. SURFACE PREPARATION AND APPLICATION SHALL CONFORM TO SSPC COATING SYSTEM GUIDE 23.00 "GUIDE FOR THERMAL SPRAY METALLIC COATING SYSTEMS".

3.5 WELDING

WELDING AS A MEANS OF ATTACHMENT SHALL BE DONE IN A CONTROLLED MANNER AND SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 863. WELDING TO A STEEL PLATE WHICH HAS BONDED TFE SURFACE MAY BE PERMITTED PROVIDING WELDING PROCEDURES ARE ESTABLISHED WHICH RESTRICT THE MAXIMUM TEMPERATURE REACHED BY THE BOND AREA TO LESS THAN 300 F, AS DETERMINED BY TEMPERATURE INDICATING PENCILS, OR OTHER SUITABLE MEANS.

3.6 TOLERANCES

ALL BEARINGS SHALL BE CHECKED FOR TOLERANCES.

GENERAL FLATNESS CRITERIA

A. FLATNESS TOLERANCES SHALL BE DEFINED AS:

1. CLASS A TOLERANCE = 0.0005 X NOMINAL DIMENSION.
2. CLASS B TOLERANCE = 0.001 X NOMINAL DIMENSION.
3. CLASS C TOLERANCE = 0.002 X NOMINAL DIMENSION.
4. NOMINAL DIMENSION SHALL BE DEFINED AS THE ACTUAL DIMENSION OF THE PLATE, IN INCHES, SPANNED BY THE STRAIGHTEDGE.

B. FLATNESS SHALL BE DETERMINED BY PLACING A STRAIGHTEDGE, LONGER THAN THE NOMINAL DIMENSION TO BE MEASURED, IN CONTACT WITH THE SURFACE TO BE MEASURED OR AS PARALLEL TO IT AS POSSIBLE. SELECT A FEELER GAUGE HAVING A TOLERANCE OF + OR – 0.001 INCH AND ATTEMPT TO INSERT IT UNDER THE STRAIGHTEDGE (THE SMALLEST NUMBER OF BLADES SHALL BE USED). FLATNESS IS ACCEPTABLE IF THE FEELER DOES NOT PASS UNDER THE STRAIGHTEDGE. THE STRAIGHTEDGE MAY BE LOCATED AT ANY POSITION ON THE SURFACE AND NOT NECESSARILY AT 90 DEGREES TO THE EDGES.

C. TOLERANCES – SOLE PLATE

1. PLAN DIMENSIONS ±0.125".
2. THICKNESS: ±0.0625".
3. FLATNESS OF SURFACE IN CONTACT WITH BEAM OR GIRDER – CLASS B.
4. FLATNESS OF BACKING SURFACE FOR STAINLESS STEEL – CLASS A. (EXPANSION BEARINGS).
5. BEVEL SLOPE (RADIANS): ±0.002

D. TOLERANCES – PISTON

1. RIM DIAMETER: ±0.003"
2. DIAMETERS LESS THAN 20": +0.005"
3. FOR EXPANSION BEARINGS WHERE UPPER SIDE IS FACED WITH PTFE, FLATNESS OF UPPER SIDE SHALL BE CLASS A.
4. FLATNESS OF LOWER SIDE: CLASS B
5. FINISH OF SIDE IN CONTACT WITH ELASTOMERIC DISC SHALL BE 63 MICRO–INCHES OR LESS.
6. FINISH ON PISTON RIM SHALL BE 32 MICRO–INCHES OR LESS.

E. TOLERANCES – SOLE PLATE/PISTON

ALL APPLICABLE PROVISIONS OF C AND D

F. TOLERANCES – ELASTOMERIC DISC (UNSTRESSED)

1. DIAMETER: –0.0", +0.125"
2. THICKNESS: –0.0, +0.125"

G. TOLERANCES – GUIDE BAR

1. CONTACT SURFACE: –0.0", +0.125"
2. FLATNESS OF BACKING SURFACE FOR STAINLESS STEEL: CLASS A
3. INSIDE OF BAR TO INSIDE OF BAR: –0.0", +0.030"
4. PARALLELISM OF GUIDES (RADIANS): ±0.005

H. TOLERANCES – POT

1. INSIDE DIAMETER: ±0.003"
2. POT UNDERSIDE SHALL BE MACHINED PARALLEL TO THE INSIDE AND TO A CLASS A FLATNESS TOLERANCE.
3. WALL THICKNESS: –0.0", +0.125"

I. TOLERANCES – PTFE SUBSTRATES SUBSTRATE FLATNESS: CLASS A

J. TOLERANCE OF STEEL (NOT STAINLESS) IN CONTACT WITH STEEL (NOT STAINLESS): CLASS B

K. THE EDGES OF ALL PARTS SHALL BE BROKEN BY GRINDING SO THERE ARE NO SHARP EDGES.

L. TOLERANCES – OVERALL HEIGHTS OF BEARING: – 0.0625", + 0.125"

M. TOLERANCES – BEARING PLATE

1. PLAN DIMENSIONS: –0", +1/8"
2. THICKNESS: –1/32", +1/8"
3. FLATNESS – CLASS B FOR THE UNDERSIDE AND THE UPPER SIDE.

4. TESTING

4.1 GENERAL

TESTS SHALL BE PERFORMED BY THE MANUFACTURER OR BY AN INDEPENDENT TESTING LABORATORY. THE TESTING AGENT CHOSEN BY THE CONTRACTOR WILL BE SUBJECT TO APPROVAL BY THE DIRECTOR. APPROVAL WILL BE BASED ON 1) THE ABILITY OF THE TESTING FACILITY TO PERFORM THE REQUIRED TEST – POSSESSION OF PROPER TESTING EQUIPMENT AND TRAINED PERSONNEL, AND 2) SUBMITTAL OF A REPORT DESCRIBING THE TESTING PROCEDURES TO BE USED INCLUDING SETUP OF TESTING APPARATUS, STEPS TO BE FOLLOWED IN THE TESTING APPARATUS, STEPS TO BE FOLLOWED IN THE TESTING PROCEDURES, READINGS, CONVERSION OF READINGS TO FINAL DATA, AND SAMPLE CALCULATIONS SHOWING HOW THE FINAL RESULTS ARE OBTAINED FROM THE RAW DATA.

4.2 SAMPLING

ONE GUIDED EXPANSION BEARING AND SHALL BE CHOSEN, SELECTED AT RANDOM FROM EACH APPLICABLE LOT OF COMPLETED BEARINGS.

(1) ONE LOT SHALL CONSIST OF NO MORE THAN 25 BEARINGS OF ONE LOAD CATEGORY.

(2) ONE LOAD CATEGORY SHALL CONSIST OF BEARINGS HAVING VERTICAL LOAD CAPACITY WITHIN A RANGE OF NO MORE THAN 200 KIPS.

4.3 FRICTION TEST SHALL BE PERFORMED ON EXPANSION BEARING SAMPLES CHOSEN AS DESCRIBED IN SECTION 4.2 ABOVE.

1. THE TEST SHALL BE CONDUCTED AT THE MAXIMUM SERVICE LOAD STRESS (100% OF DEAD LOAD PLUS LIVE LOAD) APPLIED TO THE PTFE AREA FOR THE BEARING WITH THE LOAD BEING HELD CONSTANT FOR ONE HOUR PRIOR TO AND THROUGHOUT THE DURATION OF THE SLIDING TEST.
2. AT LEAST 100 CYCLES OF SLIDING, EACH CONSISTING OF AT LEAST ±1 INCH OF MOVEMENT, SHALL THEN BE APPLIED AT A TEMPERATURE OF 68°F ±10°F. THE BREAKAWAY FRICTION COEFFICIENT SHALL BE COMPUTED FOR EACH DIRECTION OF CYCLE. THE INITIAL STATIC BREAKAWAY FRICTION COEFFICIENT FOR THE FIRST CYCLE SHALL NOT EXCEED TWICE THE DESIGN COEFFICIENT OF FRICTION AND THE MAXIMUM VALUE FOR ALL SUBSEQUENT CYCLES SHALL NOT EXCEED THE DESIGN COEFFICIENT OF FRICTION. FOLLOWING THE 100 CYCLES OF TESTING, THE BREAKAWAY COEFFICIENT OF FRICTION SHALL BE DETERMINED AGAIN AND SHALL NOT EXCEED THE INITIAL VALUE.
3. UNLESS SHOWN OTHERWISE IN THE PLANS, THE DESIGN COEFFICIENT OF FRICTION SHALL BE 0.03.

4.4 PROOF LOAD TEST SHALL BE PERFORMED ON BEARING SAMPLES CHOSEN AS DESCRIBED IN SECTION 4.2 ABOVE. THE EXPANSION BEARING MAY BE THE ONES USED FOR THE FRICTION TEST DESCRIBED IN 4.2 ABOVE.

A TEST BEARING SHALL BE LOADED TO 150 PERCENT OF THE BEARING'S DESIGN CAPACITY AND SIMULTANEOUSLY SUBJECTED TO A ROTATIONAL RANGE OF 0.02 RADIANS (1.146°) OR DESIGN ROTATION, WHICHEVER IS GREATER, FOR A PERIOD OF ONE (1) HOUR. THE BEARING WILL BE VISUALLY EXAMINED BOTH DURING THE TEST AND UPON DISASSEMBLY AFTER THE TEST. ANY RESULTANT VISUAL DEFECTS, SUCH AS EXTRUDED OR DEFORMED ELASTOMER, POLYETHER URETHANE OR TFE, DAMAGED SEALS, OR CRACKED STEEL, OR INTERFERENCE BETWEEN ROTATING AND STATIONARY PARTS SHALL BE CAUSE FOR REJECTION OF THE LOT.

DURING THE TEST, FOR POT BEARINGS THE STEEL BEARING PLATE AND STEEL PISTON SHALL MAINTAIN CONTINUOUS AND UNIFORM CONTACT FOR THE DURATION OF THE TEST. ANY OBSERVED LIFT–OFF WILL BE CAUSE FOR REJECTION OF THE LOT. BEARINGS NOT DAMAGED DURING TESTING MAY BE USED IN THE WORK.

4.5 ADHESION BETWEEN THE PTFE AND SUBSTRATE SHALL BE TESTED ON EXPANSION BEARING SAMPLES, CHOSEN IN ACCORDANCE WITH SECTION 4.2 AND TESTED IN ACCORDANCE WITH ASTM D429, METHOD B. THE MINIMUM PEEL STRENGTH SHALL BE 25 LBS. PER INCH. THIS TEST IS IN ADDITION TO ADHESION DETERMINED UNDER 4.2 AND 4.3 ABOVE.

4.6 TEST RESULTS SHALL BE PRESENTED IN A QUALITY CONTROL REPORT SHOWING RAW TEST DATA, REDUCED TEST DATA, SAMPLE CALCULATIONS, MEASURED TOLERANCES AND FINAL RESULTS ALONG WITH PHOTOGRAPHS AND CONCLUSIONS. INCLUDED SHALL BE A STATEMENT OF COMPLIANCE.

4.7 CERTIFIED TEST DATA FOR ALL STAINLESS STEEL, A36 STEEL A572 STEEL, A588 STEEL, METALIZING WIRE AND PTFE SHALL BE FURNISHED TO THE DIRECTOR SHOWING COMPLIANCE WITH THE REQUIREMENTS OF THIS SPECIFICATION.

5. SHIPPING AND PACKING

5.1 BEARINGS SHALL BE SECURELY BANDED TOGETHER AS UNITS SO THAT THEY MAY BE SHIPPED TO THE JOB SITE AND STORED WITHOUT RELATIVE MOVEMENT OF THE BEARING PARTS OR DISASSEMBLY AT ANY TIME. BEARINGS SHALL BE WRAPPED IN MOISTURE PROOF AND DUST PROOF MATERIAL TO PROTECT AGAINST SHIPPING AND JOB SITE CONDITIONS.

5.2 CARE SHALL BE TAKEN TO ENSURE THAT BEARINGS AT THE JOB SITE ARE STORED IN A DRY, SHELTERED AREA FREE FROM DIRT OR DUST UNTIL INSTALLATION.

5.3 CENTERLINES SHALL BE MARKED ON APPROPRIATE BEARING PARTS FOR CHECKING ALIGNMENT IN THE FIELD AND BE SHOWN ON SHOP DRAWINGS.

5.4 EACH BEARING AND BEARING PLATE SHALL HAVE A MARK NUMBER AND THE MARK NUMBER AND PLACEMENT LOCATION SHALL BE SHOWN ON THE SHOP DRAWINGS.

6. INSTALLATION

6.1 A REPRESENTATIVE FROM THE BEARING MANUFACTURER SHALL BE PRESENT ON SITE FOR A SUFFICIENT PERIOD OF TIME TO ENSURE THAT THE CONTRACTOR IS INSTALLING THE BEARINGS PROPERLY.

6.2 FIELD WELDING OF BEARING PLATE TO GIRDER FLANGE OR SOLE PLATE TO GIRDER FLANGE SHALL MEET THE REQUIREMENT OF SECTION 3.5 OF THIS SPECIFICATION.

6.3 BEARINGS SHALL BE EVENLY SUPPORTED OVER THEIR UPPER AND LOWER SURFACES UNDER ALL ERECTION AND SERVICE CONDITIONS. BEARINGS SHALL NOT BE DIS–ASSEMBLED FOR ERECTION PURPOSES.

6.4 ALIGN THE CENTERLINES OF THE BEARING ASSEMBLY WITH THAT OF THE HINGE. ON GUIDED BEARINGS ALIGN THE BEARINGS, TAKING INTO CONSIDERATION THE AMBIENT TEMPERATURE (TO ALLOW FOR THE DESIGN EXPANSION OR CONTRACTION OF THE STRUCTURE). UPPER AND LOWER BEARING PARTS SHALL BE OFFSET TO COMPENSATE FOR AMBIENT TEMPERATURE.

6.5 BEARING STRAPS OR RETAINING CLAMPS SHALL BE LEFT IN PLACE AS LONG AS POSSIBLE TO ENSURE PARTS OF BEARINGS ARE NOT INADVERTENTLY DISPLACED RELATIVE TO EACH OTHER.

6.6 FIELD REPAIR METALIZED COATING IN ACCORDANCE WITH ASTM 780, TYPE A1 OR A3.

6.7 IF THE BEARING HAS BEEN UNSEALED FOR ANY REASON, AT THE DISCRETION OF THE ENGINEER, IT MAY BE REQUIRED TO SHIP THE BEARING BACK TO THE MANUFACTURER FOR RESEALING.

7. METHOD OF MEASUREMENT

THE QUANTITY SHALL BE THE ACTUAL NUMBER OF POT BEARINGS FURNISHED WITHIN THE CATEGORIES LISTED BELOW. A COMPLETE AND ACCEPTABLE BEARING SYSTEM FURNISHED AND INSTALLED INCLUDING BEARING AND BEARING PLATE WILL BE MEASURED ON AN EACH BASIS. THE CATEGORY OF EACH BEARING IS DETERMINED BY THE MAXIMUM VERTICAL REACTION LISTED IN THE CONSTRUCTION DRAWINGS.

8. BASIS OF PAYMENT

8.1 PAYMENT FOR POT BEARINGS WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH LISTED UNDER:

ITEM SPECIAL, EACH, STEEL POT BEARINGS, AS PER PLAN

8.2 NO SEPARATE PAYMENT WILL BE MADE FOR THE WORK LISTED UNDER TESTING AND ACCEPTANCE OF THIS SPECIFICATION. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE BEARINGS.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 Springside Drive, Suite 320, Akron, Ohio 44333
330.572.2100, Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3–18–02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

POT BEARING NOTES
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

652/886

ITEM 863 STRUCTURAL STEEL, MISC.: MODULAR EXPANSION JOINT, AS PER PLAN

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, INSPECT, TEST AND INSTALL MODULAR EXPANSION JOINTS IN ACCORDANCE WITH THE PLANS AND THESE NOTES. ALL REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 863, MISCELLANEOUS LEVEL FABRICATION APPLY, UNLESS MODIFIED BY THESE NOTES.

B. DESIGN

THE DESIGN SHALL BE PREPARED BY AND CHECKED UNDER THE AUTHORITY OF A OHIO REGISTERED PROFESSIONAL ENGINEER AND BEAR HIS OR HER PROFESSIONAL ENGINEER SEAL.

1. THE DESIGN CALCULATIONS SHALL BE INCLUDED WITH THE CONTRACTOR'S SUBMISSION OF SHOP DRAWINGS PER SS 863.08.
2. THE SHOP DRAWINGS SHALL CONTAIN A DETAILED INSTALLATION PROCEDURE AND INCLUDE ANY SPECIFIC MANUFACTURER'S NOTES NECESSARY FOR COMPLETION OF THE WORK AND CONSTRUCTION PHASING.
3. THE MODULAR JOINT COMPONENTS, JOINT ARMOR AND ANCHORAGES SHALL BE DESIGNED AND TESTED ACCORDING TO THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT # 402 APPENDIX A AND B.
4. TEMPORARY AND FIELD CONNECTIONS TO THE BRIDGE SHALL BE DESIGNED TO ACCOMMODATE ADJUSTMENTS FOR ROADWAY GEOMETRY AND VARYING TEMPERATURE.
5. THE MODULAR JOINT SHALL ACCOMMODATE THE PLAN SPECIFIED MOVEMENT FOR A COLD CLIMATE AS SPECIFIED BY 1996 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES SECTION 3.16.
6. SUPPORT BAR BEARINGS WILL BE SUPPLIED TO TRANSFER THE LOAD FROM THE SUPPORT BARS TO THE JOINT ARMOR.
7. EQUALIZATION SPRINGS WHICH WORK COUNTER TO THE COMPRESSION FORCES OF THE SEALING ELEMENTS SHALL BE USED TO MAINTAIN EQUALIZATION EXPANSION PROPERTIES FOR EACH ELEMENT ACROSS THE JOINT.
8. CONTROL SPRINGS WHICH WORK LONGITUDINALLY SHALL BE USED TO MAINTAIN EQUIDISTANT SPACING BETWEEN TRANSVERSE SEPARATION BEAMS.
9. SEPARATION BEAMS/ TRANSVERSE DIVIDERS. SHALL BE SUPPLIED AS NEEDED.
10. THE SEAL SHALL BE A STRIP SEAL TYPE CONNECTED TO MATCHING RETAINERS CONNECTED TO THE JOINT ARMOR AND MACHINED GROOVES IN THE CENTER BEAM. EACH INDIVIDUAL STRIP SEAL SHALL NOT EXCEED 3.15 INCHES OF TOTAL HORIZONTAL MOVEMENT.
11. THE NEOPRENE SEALS, SUPPORT BAR BEARINGS AND EQUALIZATION SPRINGS SHALL BE REMOVABLE AND REPLACEABLE.
12. THE SEALS AND RETAINERS SHALL BE SET 1/8" LOWER THAN THE ROADWAY SURFACE.
13. THE MODULAR EXPANSION JOINT SHALL BE DESIGNED AND FABRICATED AS A CONTINUOUS FULL LENGTH JOINT WITHOUT FIELD SPLICES, UNLESS PHASED CONSTRUCTION OR EXCESSIVE LENGTHS (GREATER THAN 70'–0") PROHIBITS MONOLITHIC FABRICATION.

C. MATERIALS

1. STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 50. CENTER BEAMS, EDGE BEAMS AND JOINT ARMOR SHALL BE CHARPY V NOTCH IMPACT TESTED PER ASTM A709 TABLE S1.2 ZONE 2 TEMPERATURE RANGE. TUBE SECTIONS SHALL BE ASTM A501 OR A500 GRADE B.
2. STAINLESS STEEL SHALL BE ASTM A240 TYPE 304, NO. 8 FINISH WITH A MINIMUM THICKNESS OF 13 GAGE.
3. ELASTOMERIC, PTFE, URETHANE AND PREFORMED FABRIC MATERIALS SHALL BE TESTED AND REPORTED BY THE MANUFACTURER OR AN INDEPENDENT TESTING LABORATORY FOR EACH BEARING AND SPRING TYPE. THE SUBMISSION OF MATERIAL CERTIFICATION AND TESTING DATA SHALL BE PER 863.09. THESE MATERIALS SHALL BE TESTED ACCORDING TO THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT # 402 APPENDIX A " GUIDELINE FOR DURABILITY TESTING OF SPRINGS AND BEARINGS FOR MBEJ".
4. STRIP SEALS SHALL BE EXTRUDED POLYCHLOROPRENE CONFORMING ASTM D2628. THE RECOVERY TEST IS NOT APPLICABLE, DUE TO CONFIGURATION OF THE SEAL. PHYSICAL PROPERTIES OF THE STRIP SEAL SHALL CONFORM TO TABLE "A". THE MANUFACTURER OR AN ACCREDITED LABORATORY SHALL TEST EACH LOT AS SPECIFIED AND SUBMIT CERTIFIED TEST DATA PER 863.09. THE SEAL AND RETAINER ARE AN INTEGRAL SYSTEM SUPPLIED BY ONE MANUFACTURER.

TABLE A (PHYSICAL PROPERTIES OF SEAL ELEMENT)		
PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGH, MIN. PSI	2000	D412
ELONGATION @ BREAK, MIN. PSI	250	D412
HARDNESS, TYPE A DUROMETER, POINTS	60 ± 5	D2240 (MODIFIED)
OVER AGING, 70 HR @ 212°F, TENSILE STRENGTH LOSS, MAX. ELONGATION, LOSS, MAX. HARDNESS, TYPE A DUROMETER, POINTS CHANGE	 20% 30% 0 TO 10	D573 D2240 (MODIFIED)
OIL SWELL, ASTM OIL 3, 70 HR @ 104°F, WEIGHT CHANGE MAX.	45%	D471
OZONE RESISTANCE 20% STRAIN, 300 PPHM IN AIR, 70 HR @ 104°F (WIPED WITH TOLUENE TO REMOVE SURFACE CONTAMINATION)	NO CRACKS	D1149
LOW TEMPERATURE STIFFENING 7 DAYS @ 14°F. HARDNESS, TYPE A DUROMETER, POINTS CHANGE COMPRESSION SET, 70 HR @ 212°F, MAX.	 0 TO 15 40%	D2240 D2240 (MODIFIED) D395 METHOD B

5. SEAL RETAINERS: EXTRUDE, HOT ROLL OR MACHINE, STEEL RETAINERS INTO A SOLID SHAPE. RETAINERS MANUFACTURED FROM BENT PLATE OR BUILT UP PIECES ARE NOT ACCEPTABLE. THE INTERNAL DIMENSIONS OF THE RETAINER SHALL BE SPECIFIED BY THE MANUFACTURER TO ACHIEVE POSITIVE SEAL ANCHORAGE.
6. CENTER BEAMS SHALL BE A SOLID, NON WELDED MACHINED OR EXTRUDED STEEL SECTION.
7. LUBRICANT – ADHESIVE. ONE PART MOISTURE CURING POLYURETHANE COMPOUND MEETING THE REQUIREMENTS OF ASTM D4070 AND AS SPECIFIED BY THE SEAL MANUFACTURER.
8. HARDWARE SHALL BE ASTM A325 TYPE 1, GALVANIZED OR A449 GALVANIZED.

D. FABRICATION

1. THE MODULAR JOINTS SHALL BE FABRICATED ACCORDING TO SS863.
2. THE MODULAR JOINT SHALL BE SHOP ASSEMBLED WITH ALL COMPONENTS EXCEPT, NEOPRENE SEALS, PER SS863.26 EXCEPT THAT FULL ASSEMBLY IS REQUIRED WITH PHASED CONSTRUCTION.
3. JOINTS IN STRIP SEALS: NO JOINTS ARE ALLOWED, UNLESS APPROVED BY THE DIRECTOR.
4. JOINTS IN RETAINERS: WELDS ARE WATER TIGHT, PARTIAL PENETRATION WELDS AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES. SLICES SHALL ONLY BE MADE IN THE COMPRESSION ZONE OF THE JOINT ARMOR. GRIND FLUSH ALL WELDS IN CONTACT WITH THE SEAL AND JOINTA ARMOR. DO NOT USE SHORT PIECES OF RETAINERS LESS THAN 6'–0" LONG, UNLESS REQUIRED AT CURBS OR SIDEWALKS. DO NOT PROVIDE ADDITIONAL SPLICES IN RETAINERS AT CURB OR SIDEWALK SECTIONS OTHER THAN REQUIRED FOR GEOMETRY.
5. SHOP OR FIELD WELDS OF CENTER BEAMS AND JOINT ARMOR, SHALL BE COMPLETE PENETRATION WELDS, GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE100 % ULTRASONICALLY TESTED PER AWS D1.5–95 BRIDGE WELDING CODE, WITH ACCEPTANCE CRITERIA PER TABLE 9.1, WITNESSED BY THE DEPARTMENT.
6. THE CENTER BEAM TO SUPPORT BAR CONNECTIONS SHALL BE COMPLETE PENETRATION WELDS, GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE 100% ULTRASONICALLY TESTED PER AWS D1.5 BRIDGE WELDING CODE, WITH ACCEPTANCE CRITERIA PER TABLE 9.1, WITNESSED BY THE DEPARTMENT.
7. TEMPORARY SUPPORTS: FABRICATOR DESIGNED AND INSTALLED SUPPORTS ARE REQUIRED TO SUPPORT SHIPPING, ERECTION AND CONSTRUCTION FORCES WITHOUT DAMAGE TO THE STEEL ARMOR OR COATINGS. THESE SUPPORTS SHALL BE ADJUSTABLE FOR FIELD TEMPERATURE SETTING.

E. COATING

1. ALL STEEL SURFACES AND COMPONENTS, EXCEPT AT STAINLESS STEEL AND PTFE SLIDING SURFACES SHALL BE GALVANIZED OR METALIZED. THESE COATING MAY BE MIXED ON ONE ASSEMBLY, IF ALL SIMILAR COMPONENTS OF THE ASSEMBLY HAVE THE SAME COATING TYPE.
2. THE GALVANIZED COATING SHALL BE PER ASTM A123, WITH A MINIMUM THICKNESS OF 4 MILS. THE FABRICATOR WILL CLEAN EXCESSIVE GALVANIZING AS NECESSARY TO ACHIEVE MECHANICAL MOVEMENT AND SEAL INSTALLATION.
3. SURFACE PREPARATION AND METALIZED COATING SHALL BE PERFORMED ACCORDING TO THE SOCIETY FOR PROTECTIVE COATINGS (SSPC) INTERIM SPECIFICATION SSPC–CS23.00(I) FOR THERMAL SPRAY METALLIC COATINGS. THE COATING SHALL BE A MINIMUM OF 8 MILS THICK. THE METALIZING WIRE SHALL BE 100% ZINC. AREAS OF STRUCTURAL STEEL THAT ARE IN CONTACT WITH CAST–IN–PLACE CONCRETE SHALL HAVE AN ADDITIONAL COATING. THE COATING SHALL BE THE EPOXY INTERMEDIATE COAT SPECIFIED IN SUPPLEMENT 910. THE COATING THICKNESS WILL COVER ALL PEAKS, VALLEYS AND SURFACE ROUGHNESS ATTRIBUTED TO METALIZING.
4. COATING REPAIRS: DAMAGED COATINGS SHALL BE REPAIRED BY ASTM A780, ANNEX "A1. REPAIR USING ZINC BASED ALLOYS". THE PROCEDURE SHALL BE AS FOLLOWS: REMOVE SURFACE CONTAMINATES, PREHEAT TO 600 DEGREES F , APPLY ZINC COATING BY RUBBING WITH A PURE ZINC STICK OR SPRINKLING ZINC POWDER ON THE PREHEATED SURFACE, TO ACHIEVE A MINIMUM COATING THICKNESS OF 6 MILS.
5. THE GALVANIZED OR METALIZED COATINGS SHOULD NOT BE FIELD PAINTED, EXCEPT FOR AREAS DAMAGED BY CONNECTION TO PAINTED SUPERSTRUCTURE STEEL MEMBERS. THESE AREAS SHALL BE PAINTED USING THE SAME SYSTEM SPECIFIED FOR THE SUPERSTRUCTURE.
6. PRIOR TO SHIPPING RETAINER GROOVES SHALL BE PROTECTED FROM CONSTRUCTION DEBRIS BY THE INSTALLATION OF BACKER RODS OR OTHER EFFECTIVE MASKING TECHNIQUES.

F. INSTALLATION

1. THE JOINT MANUFACTURER'S TECHNICAL REPRESENTATIVE SHALL PHYSICALLY OVERSEE THE FABRICATION, INSTALLATION, ADJUSTMENT AND TESTING DURING ALL OPERATIONS. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN OR ELSEWHERE IN THESE NOTES, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TECHNICAL REPRESENTATIVE.
2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE THE TECHNICAL REPRESENTATIVE.
3. THE SUPERSTRUCTURE SUPPORTING UNITS SHALL BE IN PLACE BEFORE INSTALLING THE MODULAR JOINT. THE JOINT SHALL BE POSITIONED TO MATCH ROADWAY GEOMETRY, SUPERSTRUCTURE CONNECTIONS AND TEMPERATURE OPENING. CARE SHALL BE TAKEN TO MAINTAIN EXACT ALIGNMENT OF ADJACENT ENDS OF THE ARMOR AND CENTER BEAMS FOR FIELD WELDED UNITS. TEMPORARY SUPPORTS SHALL BE PROVIDED AS DIRECTED BY THE MANUFACTURER TO MAINTAIN THE PROPER POSITIONING. FOR PHASED CONSTRUCTION, THE CONTRACTOR'S METHODS FOR INSTALLATION AND TEMPORARY SUPPORTS SHALL ACHIEVE SEPARATION OF THE PHASES AND UNRESTRICTED TEMPERATURE MOVEMENT.
4. THE CONTRACTOR'S METHODS OF CONCRETE PLACEMENT SHALL INCLUDE VIBRATION AND HAND WORK AS NECESSARY TO ACHIEVE CONSOLIDATION AND ELIMINATE AIR VOIDS.
5. PLACE THE DECK CONCRETE FIRST AND ALLOW TO CURE. CHECK THE ABUTMENT OR ADJACENT SPAN SIDE OF THE MODULAR JOINT FOR ALIGNMENT AND TEMPERATURE ADJUSTMENT. TEMPERATURE SHALL BE MEASURED AT THE UNDERSIDE OF THE CONCRETE DECK AT EACH END AND MID–SPAN TO ACHIEVE THE AVERAGE SUPER STRUCTURE TEMPERATURE. PLACE THE BACKWALL OR ADJACENT SPAN CONCRETE SECOND. THE MANUFACTURER'S REPRESENTATIVE SHALL CHECK THAT TEMPERATURE MOVEMENT HAS NOT CAUSED ANY DAMAGE TO THE BOND BETWEEN THE JOINT AND THE CONCRETE.
6. EXAMINE SEAL RETAINERS FOR SOIL OR DEFECTS THAT CAN DAMAGE THE SEAL. REPAIR ANY DEFECTS AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE.
7. THE NEOPRENE SEAL ELEMENTS AND THE RETAINER GROOVES SHALL BE SOLVENT CLEANED TO REMOVE OIL, GREASE OR OTHER SOIL IMMEDIATELY PRIOR TO INSTALLING THE SEALS. THE SEALS SHALL BE INSTALLED WITH THE RECOMMENDED ADHESIVE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 45° F.
8. THE COMPLETE, INSTALLED EXPANSION DEVICE SHALL BE TESTED FOR WATERTIGHTNESS, BY FLOODING THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD OF NOT LESS THAN ONE HOUR. THE ENTIRE JOINT SYSTEM SHALL BE COVERED EITHER BY PONDING OR FLOWING WATER. SHOULD THE JOINT SYSTEM EXHIBIT ANY EVIDENCE OF WATER LEAKAGE. THE CONTRACTOR SHALL LOCATE THE POINTS OF LEAKAGE AND SHALL TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. AFTER ALL REPAIRS HAVE BEEN MADE AN ADDITIONAL TEST FOR WATERTIGHTNESS SHALL BE PERFORMED.

G. METHOD OF MEASUREMENT

THE LUMP SUM PRICE BID SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO DESIGN, SUPPLY, INSTALL AND TEST A MODULAR EXPANSION JOINT ACCORDING TO THE PLAN DIMENSION AND THESE NOTES.

H. BASIS OF PAYMENT

PAYMENT WILL BE MADE AT CONTRACT PRICES FOR:

ITEM	UNIT	DESCRIPTION
863	LUMP SUM	STRUCTURAL STEEL, MISC: MODULAR EXPANSION JOINT AS PER PLAN.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
537 South Main Street, Suite 201, Akron, Ohio 44311
330.572.2100 | Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3–18–02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

MODULAR EXP. JOINT NOTES
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

Cad File: G:\CIVIL\67028 (91)\103\DWG\67028_91_103GEN.DWG
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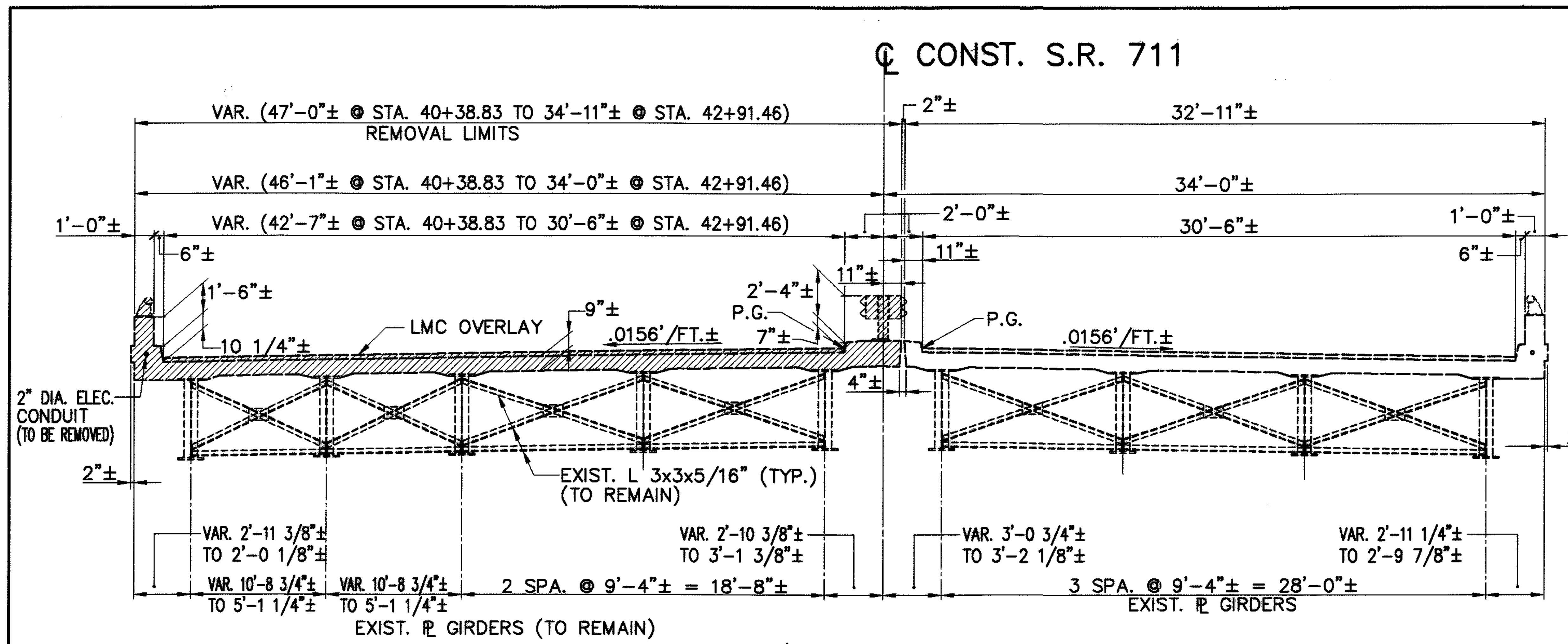
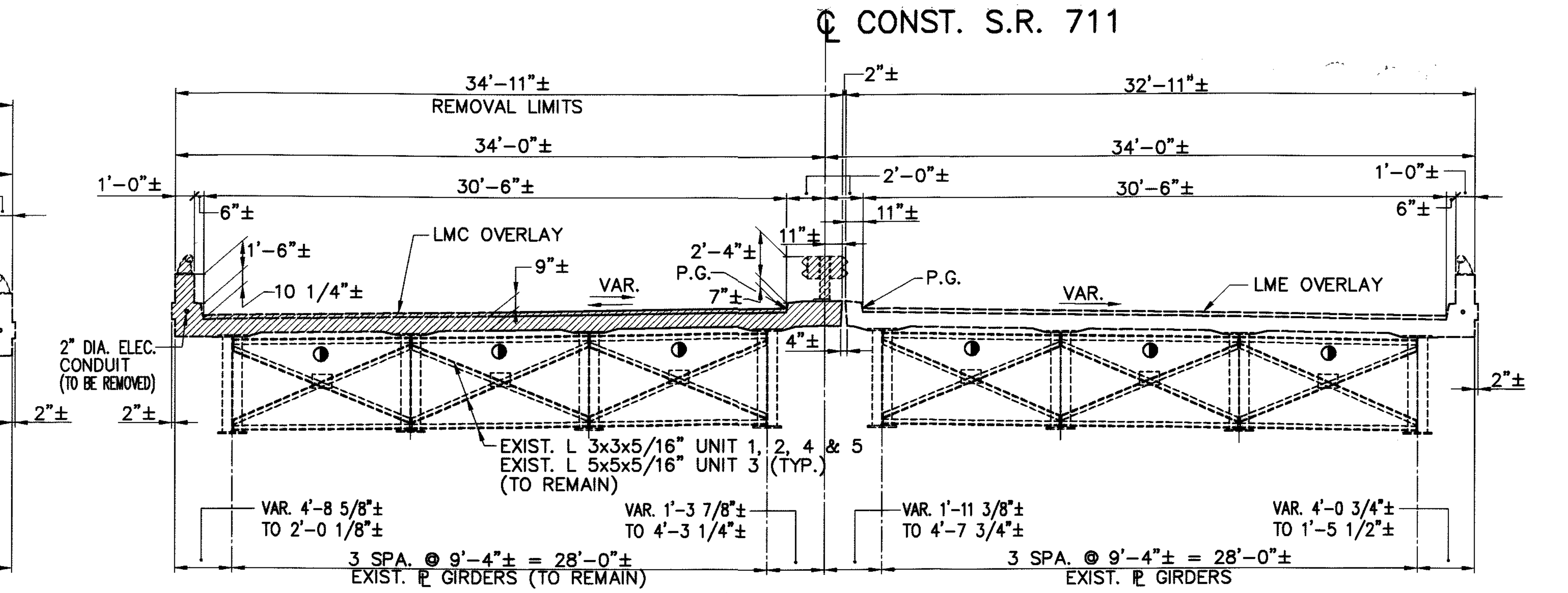


* PHASE 1

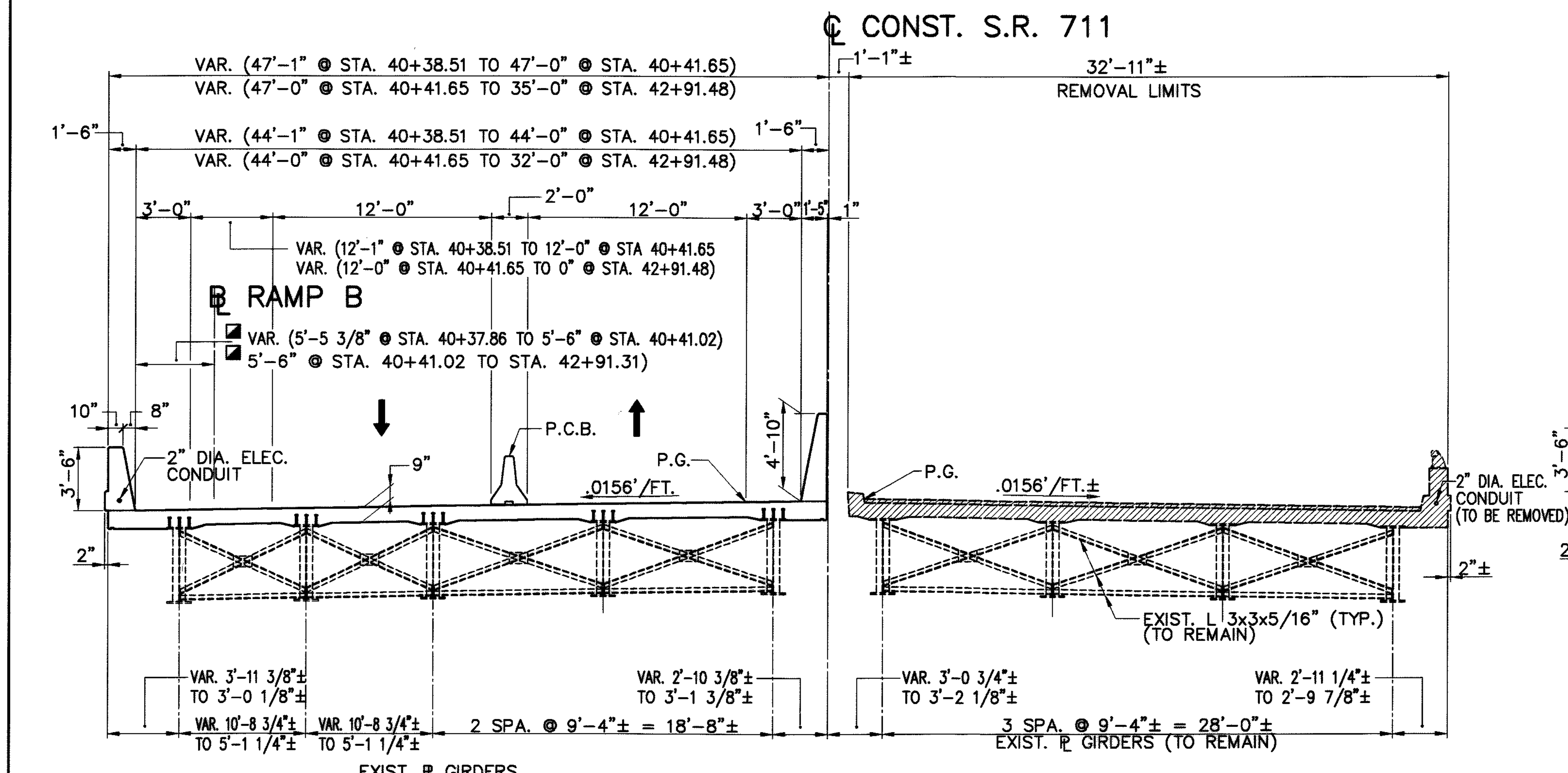
UNIT NO. 1 (℄ BRG. REAR ABUT. TO PIER NO. 3)

*STRUCTURE CLOSED TO TRAFFIC



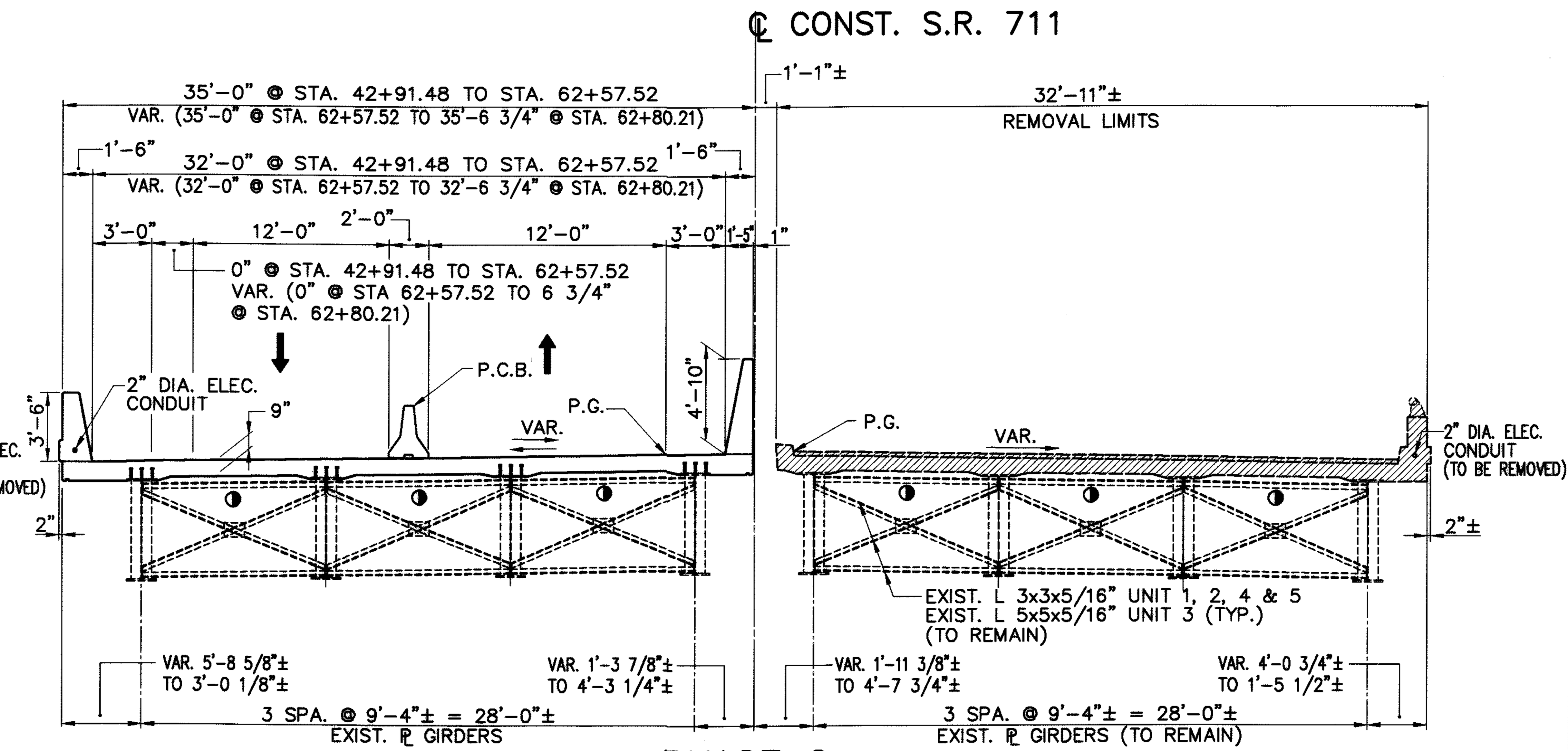
* PHASE 1

TYPICAL EXCEPT UNIT NO.1 (℄ BRG. REAR ABUT. TO PIER NO. 3)



PHASE 2

UNIT NO. 1 (℄ BRG. REAR ABUT. TO PIER NO. 3)



PHASE 2

TYPICAL EXCEPT UNIT NO.1 (℄ BRG. REAR ABUT. TO PIER NO. 3)

LEGEND

(hatched)	INDICATES REMOVAL LIMITS ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN
P.C.B.	PORTABLE CONCRETE BARRIER
◪	MEASURED NORMAL TO ℙ RAMB B
◑	L 3x3x5/16 @ SPECIFIED LOCATIONS SEE SHT. NOS. 39/80 & 40/80.

NOTES:

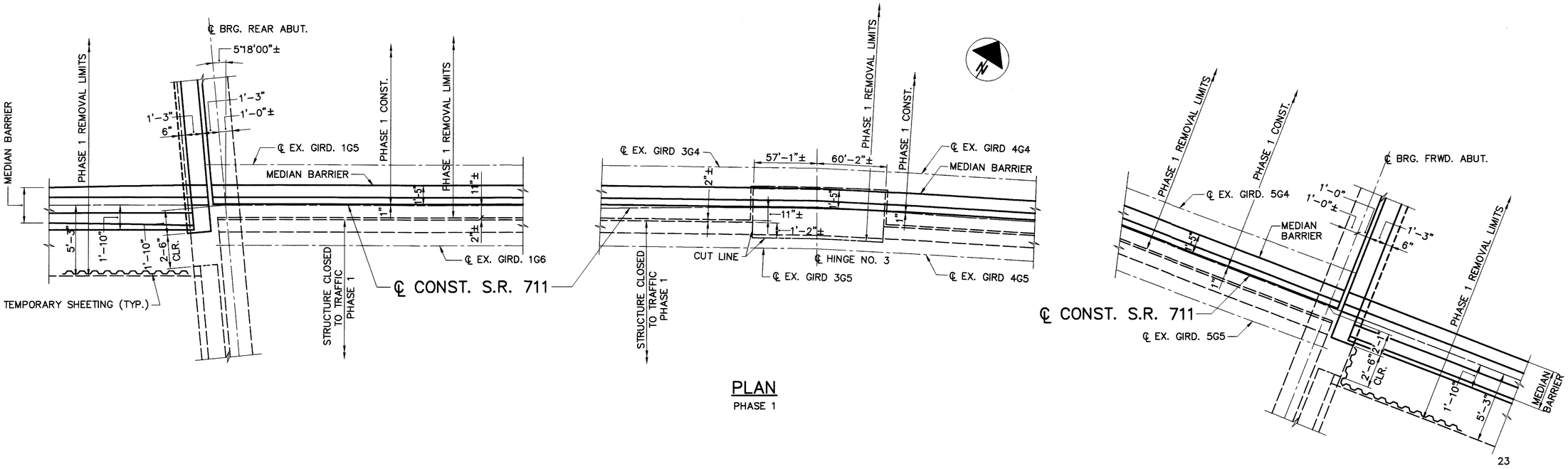
1. FOR ADD'L REMOVAL & PHASING DETAILS, SEE SHT. NO. 16/80.
2. FOR ABUTMENT REMOVAL PLAN, SEE SHT. NOS. 22/80 & 23/80.
3. FOR NOTE "PORTIONS OF STRUCTURE REMOVED OVER 20 FT. SPAN, AS PER PLAN", SEE SHT. NO. 9/80.
4. PORTABLE CONCRETE BARRIER:
   A. FOR DETAILS, REFER TO STD. DWG. NO. PCB-91.
   B. BARRIER CHAIN SHALL BE UNANCHORED.
   C. PAYMENT FOR BARRIER SHALL BE MADE AT THE CONTRACT BID PRICE PER PER LIN. FT. FOR ITEM 622, PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, AS PER PLAN, WHICH IS CARRIED IN ROADWAY QUANTITES.
   D. DRAINAGE SLOTS SHALL BE MAINTAINED CLEAR OF DEBRIS, SNOW, AND ICE TO PERMIT DRAINAGE DURING PHASE 2.
5. FOR FINAL TRANSVERSE SECTIONS, SEE SHT. NOS. 64/80, 66/80, 68/80, 71/80 & 73/80.

DESIGN AGENCY
GPD ASSOCIATES

REVIEWED K.S.J.	DATE 3-18-02
STRUCTURE FILE NUMBER 5008255	
DRAWN R.P.R.	REVISED
DESIGNED P.J.W.	CHECKED B.J.M.

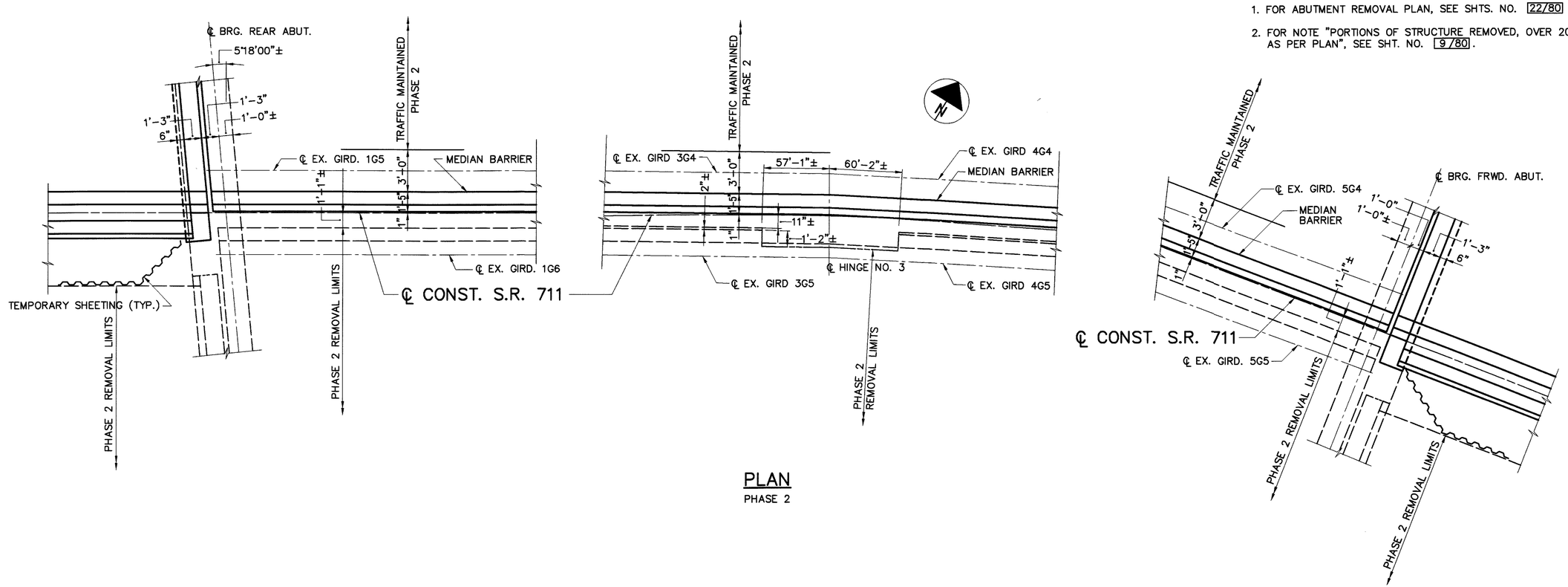
REMOVAL & CONSTRUCTION PHASING
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47



PLAN
PHASE 1

23



PLAN
PHASE 2

NOTES:

1. FOR ABUTMENT REMOVAL PLAN, SEE SHTS. NO. 22/80 & 23/80.
2. FOR NOTE "PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN", SEE SHT. NO. 9/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
395 Wolf Ledges Parkway, Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

REMOVAL & CONSTRUCTION PHASING
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

16 / 80

655
886

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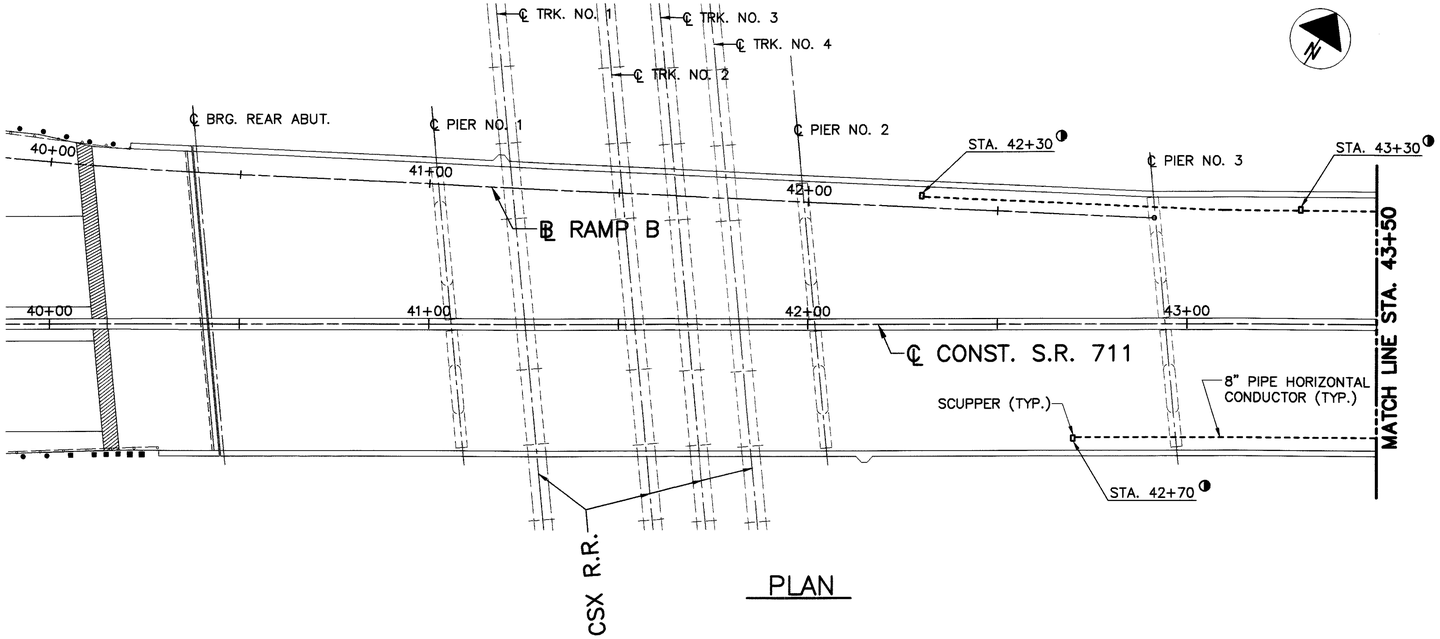
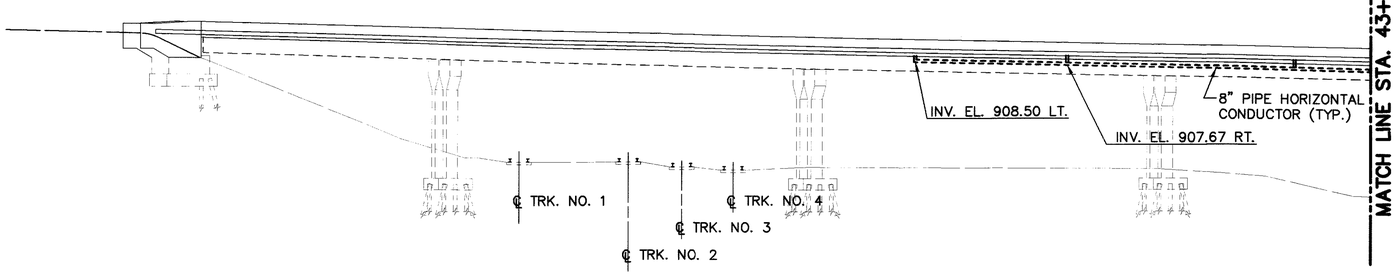
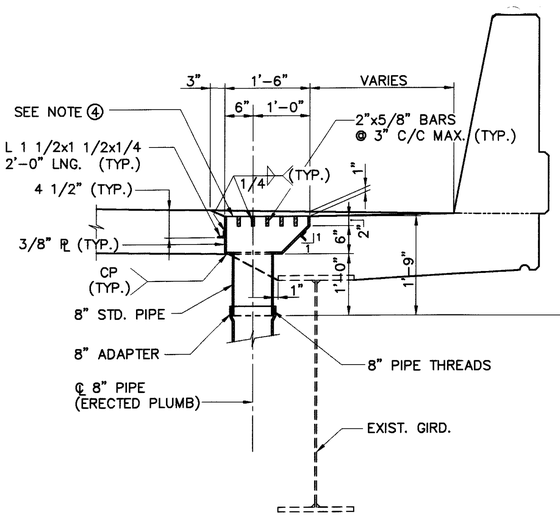


PLAN



ELEVATION

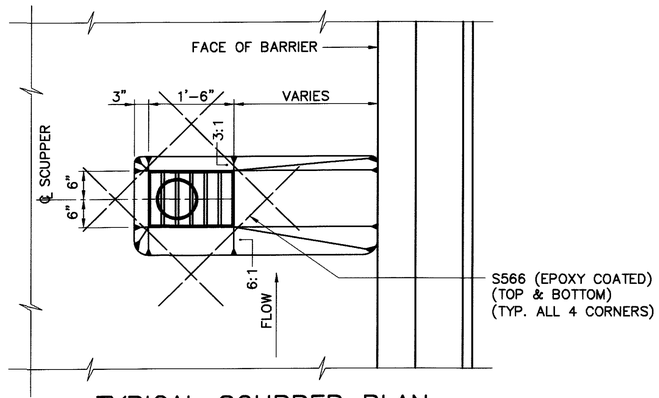
◑ TYPE 1 SCUPPER



TYPE 1 SCUPPER DETAIL

DETAIL AT PARAPET SHOWN,
DETAIL AT MED. BARRIER SIMILAR

ITEM 518 – PIPE HORIZONTAL CONDUCTOR ITEM 518 – SCUPPER, INCLUDING SUPPORTS



TYPICAL SCUPPER PLAN

NOTES:

1. ALL DOWNSPOUT & HORIZONTAL CONDUCTOR PIPING AND FITTINGS SHALL BE PLASTIC PER CMS 707.45.
2. SCUPPER STRUCTURAL STEEL: PIPING SHALL BE ASTM A53, GRADE B. PLATES & SHAPES SHALL BE ASTM A572/A709, GRADE 50.
3. SCUPPER STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH CMS 711.02.
4. FOR CROSS SLOPES 1/2" PER FOOT AND LESS, THE TOP OF SCUPPER SHALL BE FABRICATED SQUARE. FOR CROSS SLOPES GREATER THAN 1/2" PER FOOT, THE TOP OF THE SCUPPER SHALL BE FABRICATED PARALLEL TO THE DECK SURFACE.
5. FOR ADDITIONAL DETAILS, SEE SHT. NOS. 18/80 THRU 21/80.

DESIGN AGENCY
GPD ASSOCIATES
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
320 South Main Street, Suite 2337, Akron, Ohio 44311
330-372-2100, Fax 330-372-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

DRAINAGE DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

17/80

656/886

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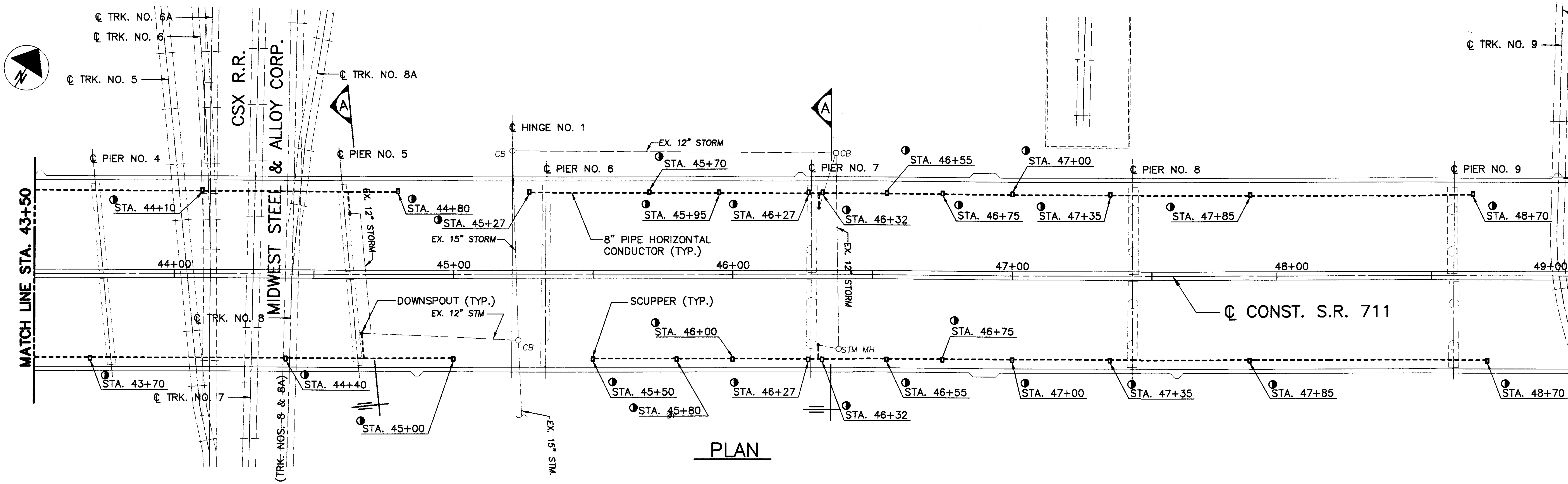
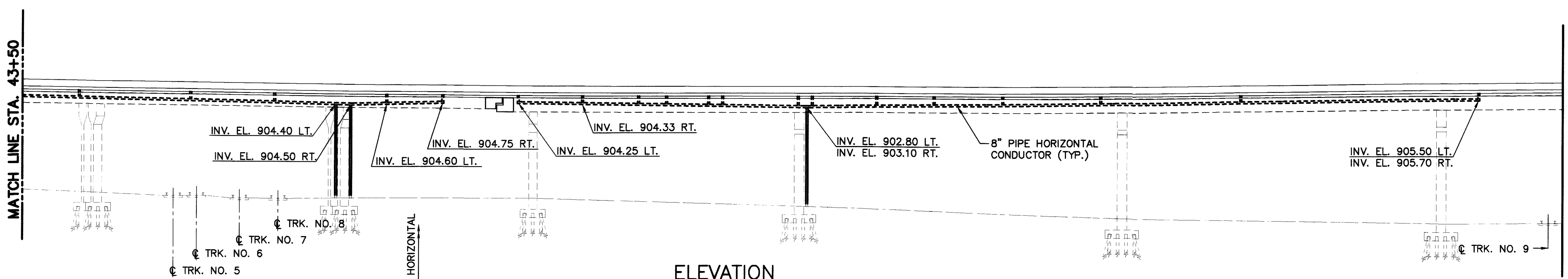
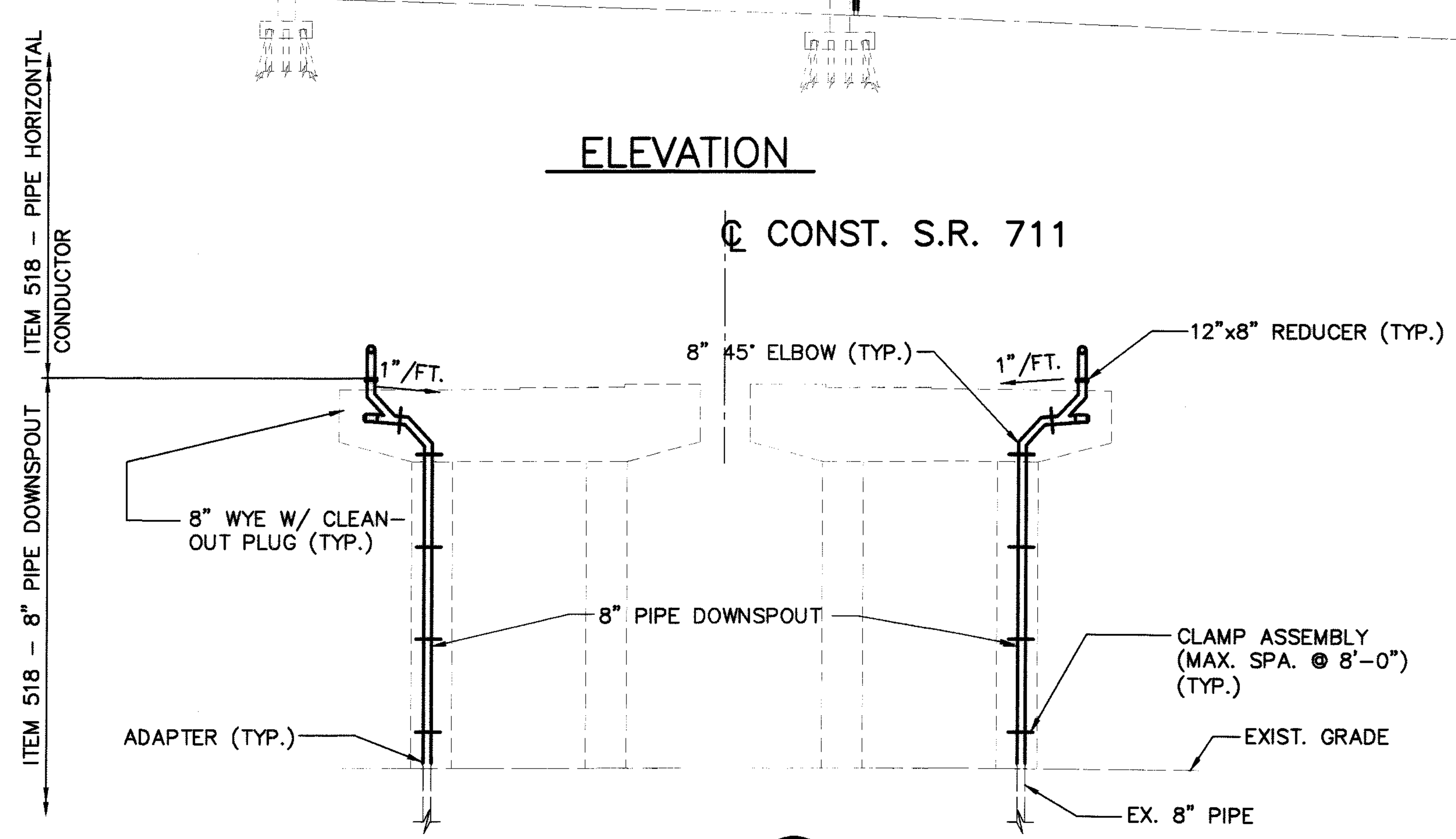


PLAN



ELEVATION



VIEW (A)

PIER NOS. 7 & 10
PIER NO. 5 SIM.

◑ TYPE 1 SCUPPER. FOR DETAIL, SEE SHT. NO. 17/80.

NOTES:

1. FOR ADDITIONAL LOCATION OF VIEW A, SEE SHT. NO. 19/80.
2. FOR ADDTIONAL NOTES & DETAILS, SEE SHT. NOS. 17/80 & 21/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

DRAINAGE DETAILS

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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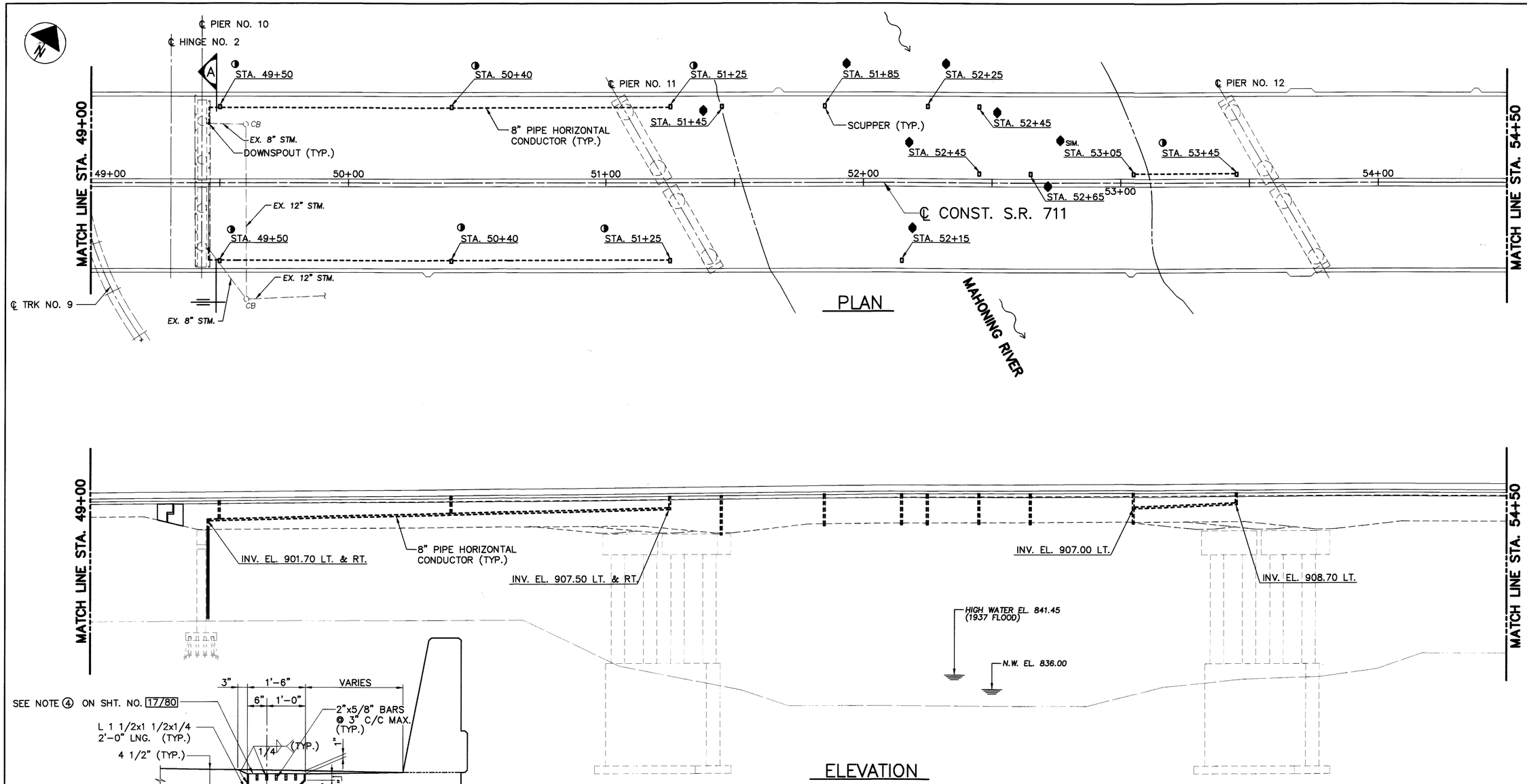
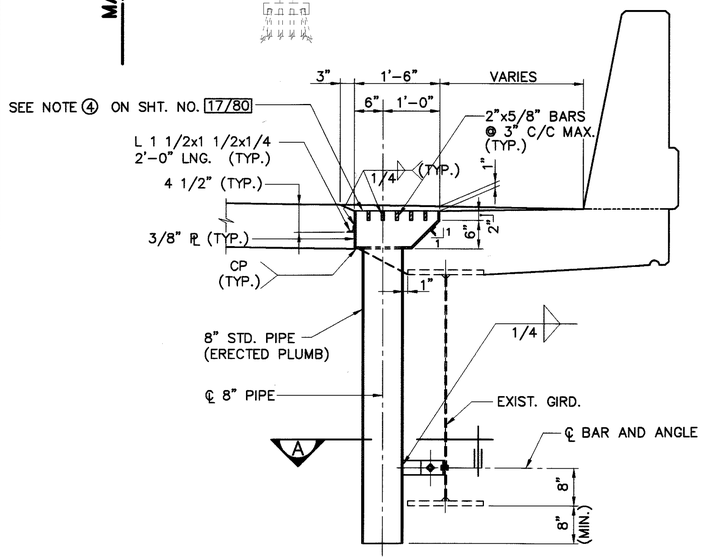
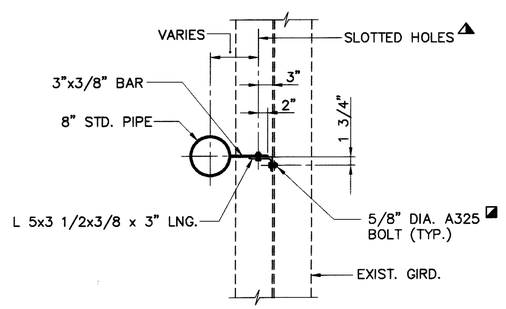




TYPE 2 SCUPPER DETAIL

DETAIL AT PARAPET SHOWN,
DETAIL AT MED. BARRIER SIMILAR



SECTION A

◑ TYPE 1 SCUPPER. FOR DETAIL, SEE SHT. NO. 17/80 .

◆ TYPE 2 SCUPPER

⚠ SEE FASTENER NOTE NO. 1 ON STD. DWG. GSD-1-96.

◪ SEE FASTENER NOTE NO. 2 ON STD. DWG. GSD-1-96.

NOTES:

1. FOR ADDTIONAL NOTES & DETAILS, SEE SHT. NOS. 17/80 & 21/80 .
2. FOR VIEW A, SEE SHT. NO. 18/80 .

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 S. Main St., Suite 400, Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

DRAINAGE DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

19 / 80

658
886

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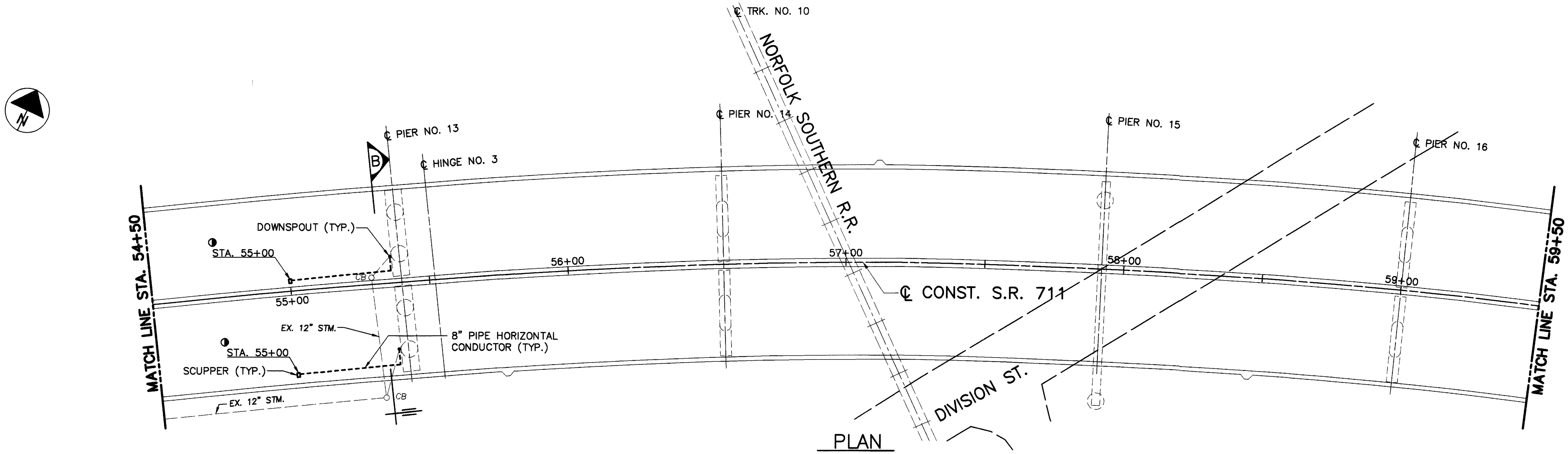
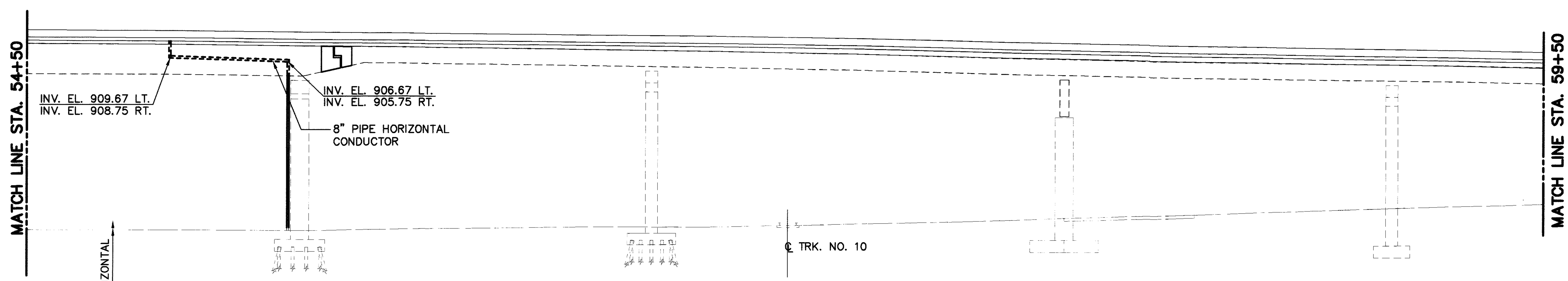
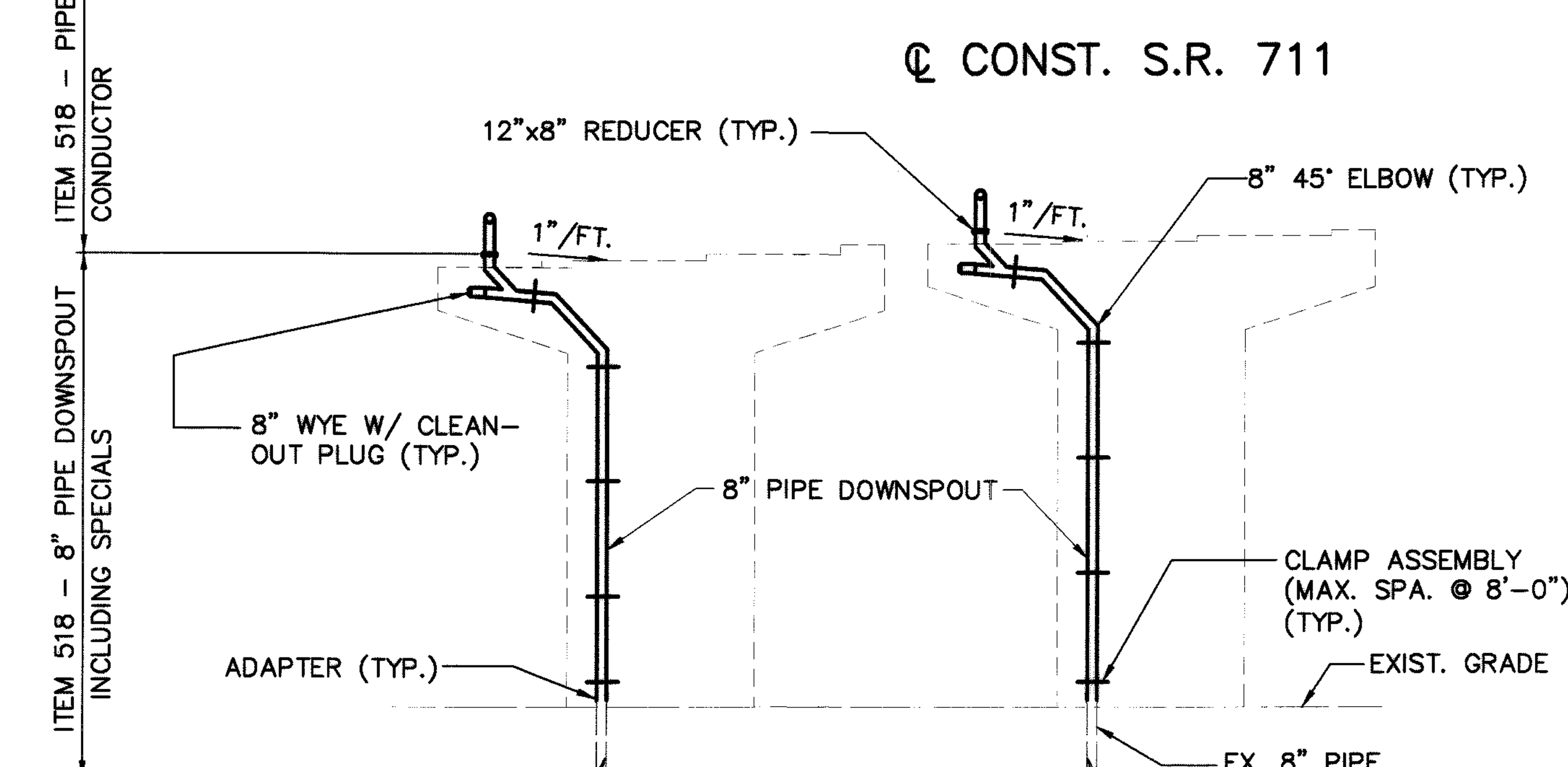


PLAN



ELEVATION



VIEW B

PIER NO. 18
PIER NOS. 13 & 17 SIM. & OPP. HAND

◑ TYPE 1 SCUPPER. FOR DETAIL, SEE SHT. NO. 17/80.

NOTES:

1. FOR ADDTIONAL LOCATION OF VIEW B, SEE SHT. NO. 21/80.
2. FOR ADDITIONAL NOTES & DETAILS, SEE SHT. NOS. 17/80 & 21/80.

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

DRAINAGE DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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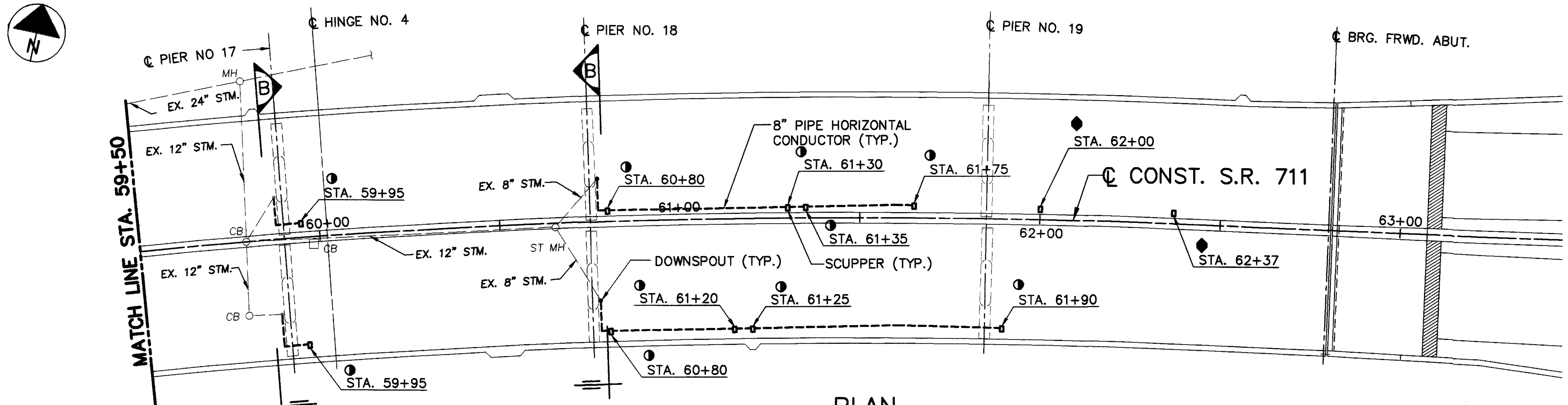
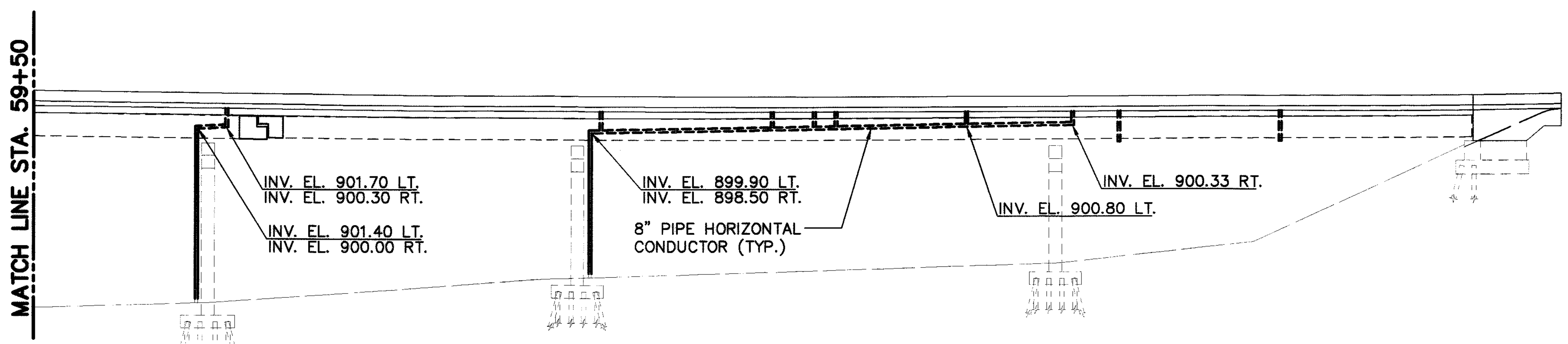


PLAN



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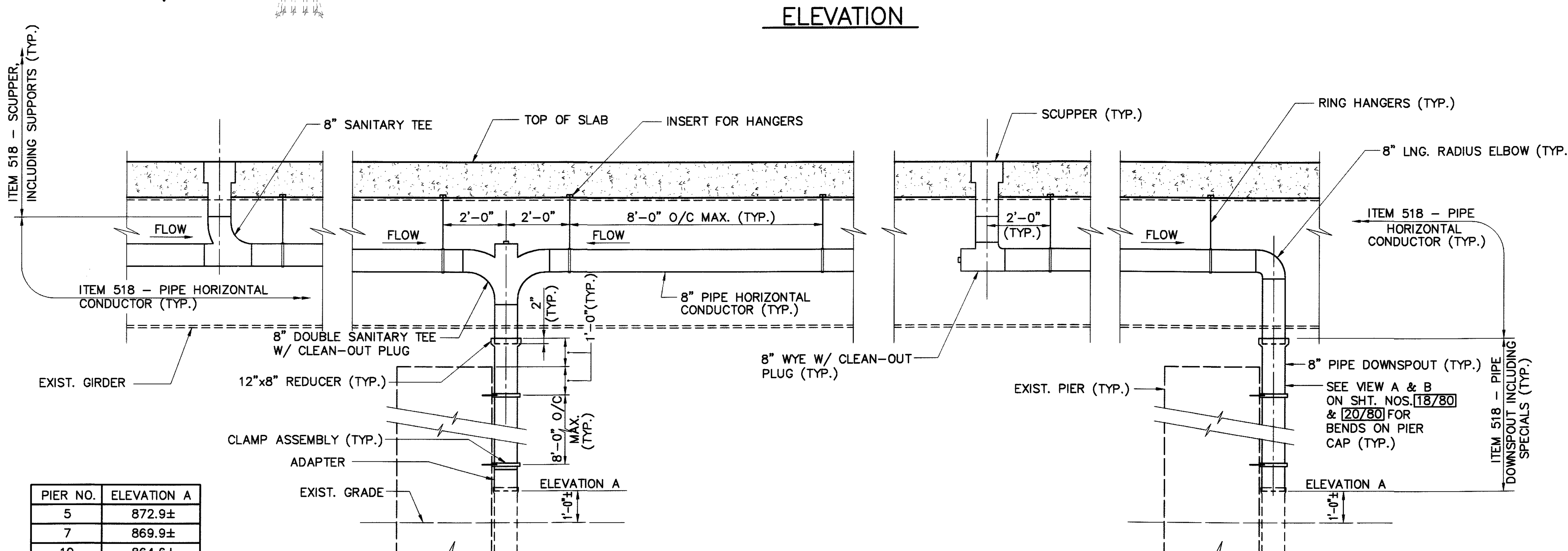


TYPICAL SCUPPER AND DOWNSPOUT ELEVATION

PIER NO.	ELEVATION A
5	872.9±
7	869.9±
10	864.6±
13	852.0±
17	862.0±
18	867.6±

◑ TYPE 1 SCUPPER. FOR DETAIL, SEE SHT. NO. 17/80 .

⬥ TYPE 2 SCUPPER. FOR DETAIL, SEE SHT. NO. 19/80 .

NOTE:

1. FOR ADDITIONAL NOTES, SEE SHT. NO. 17/80 .
2. FOR VIEW B, SEE SHT. NO. 20/80 .

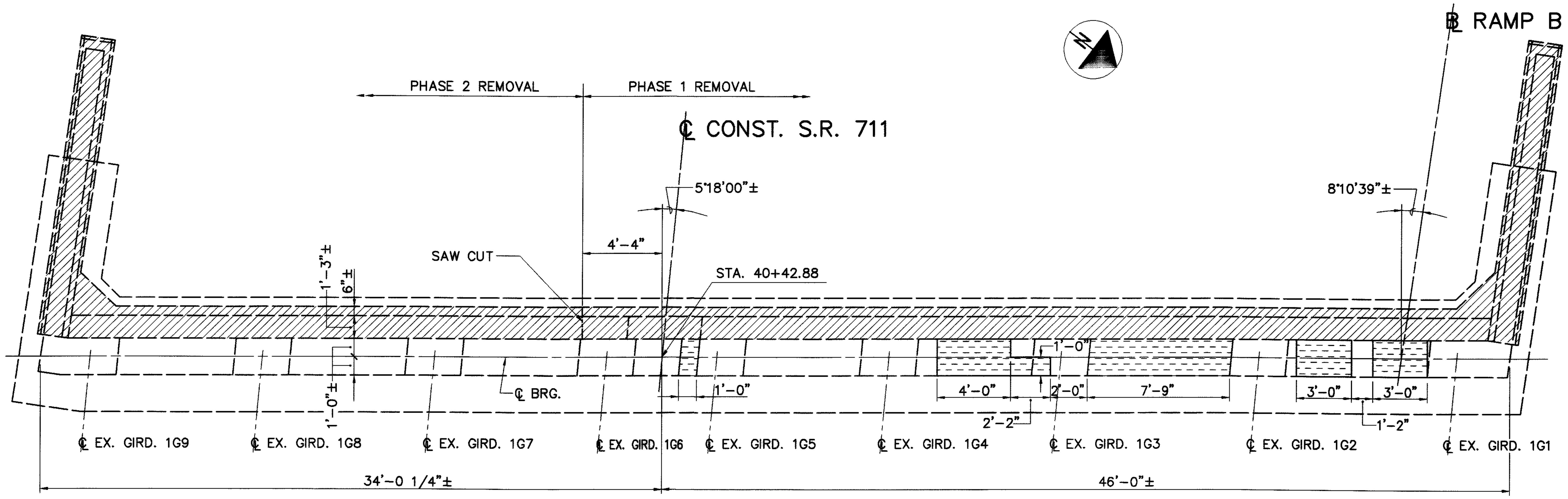
DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M.	DRAWN R.P.R	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

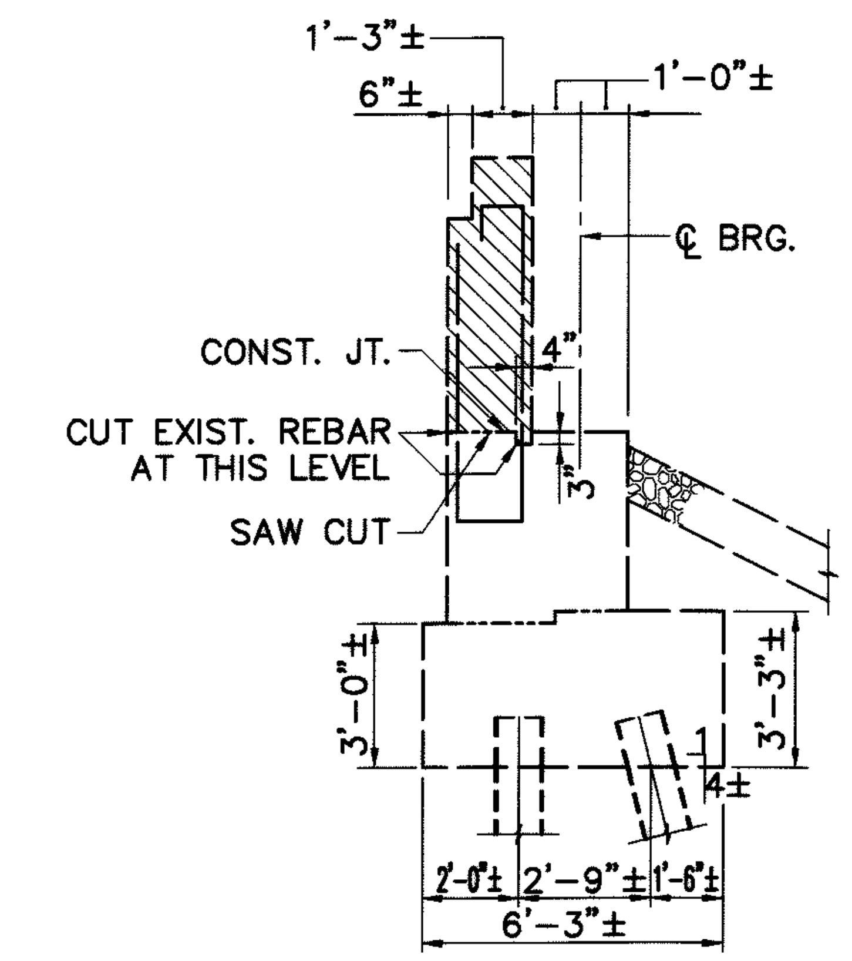
DRAINAGE DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

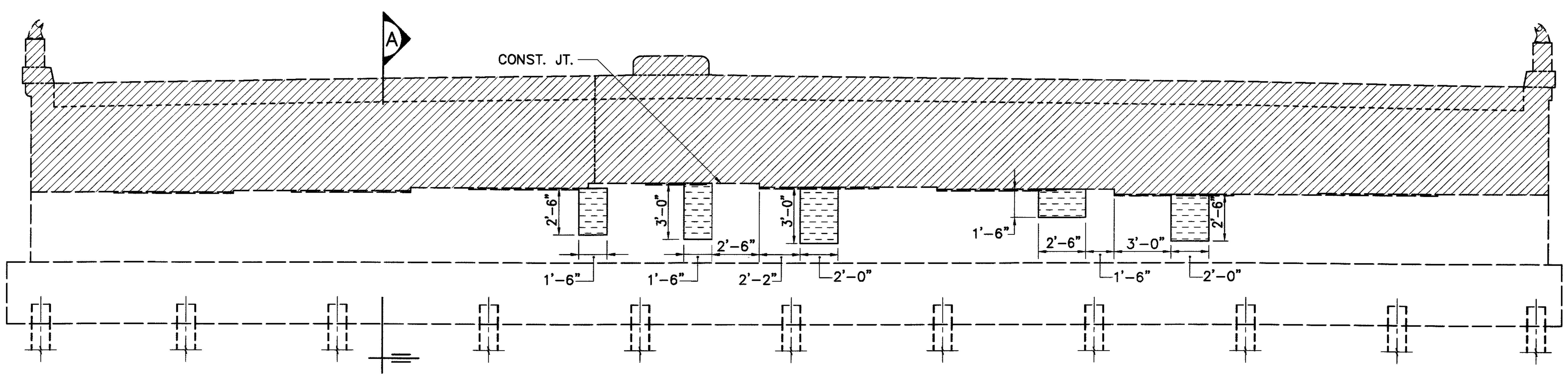
Technician: RPRATT



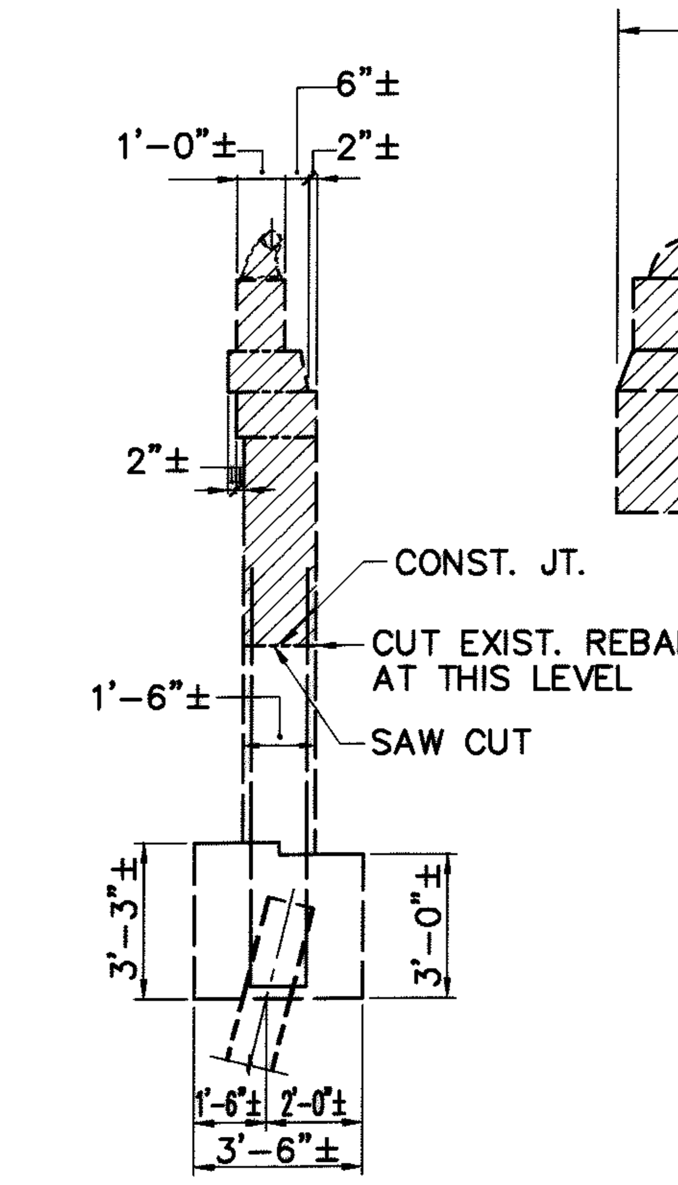
PLAN



SECTION (A)



ELEVATION
REAR ABUTMENT



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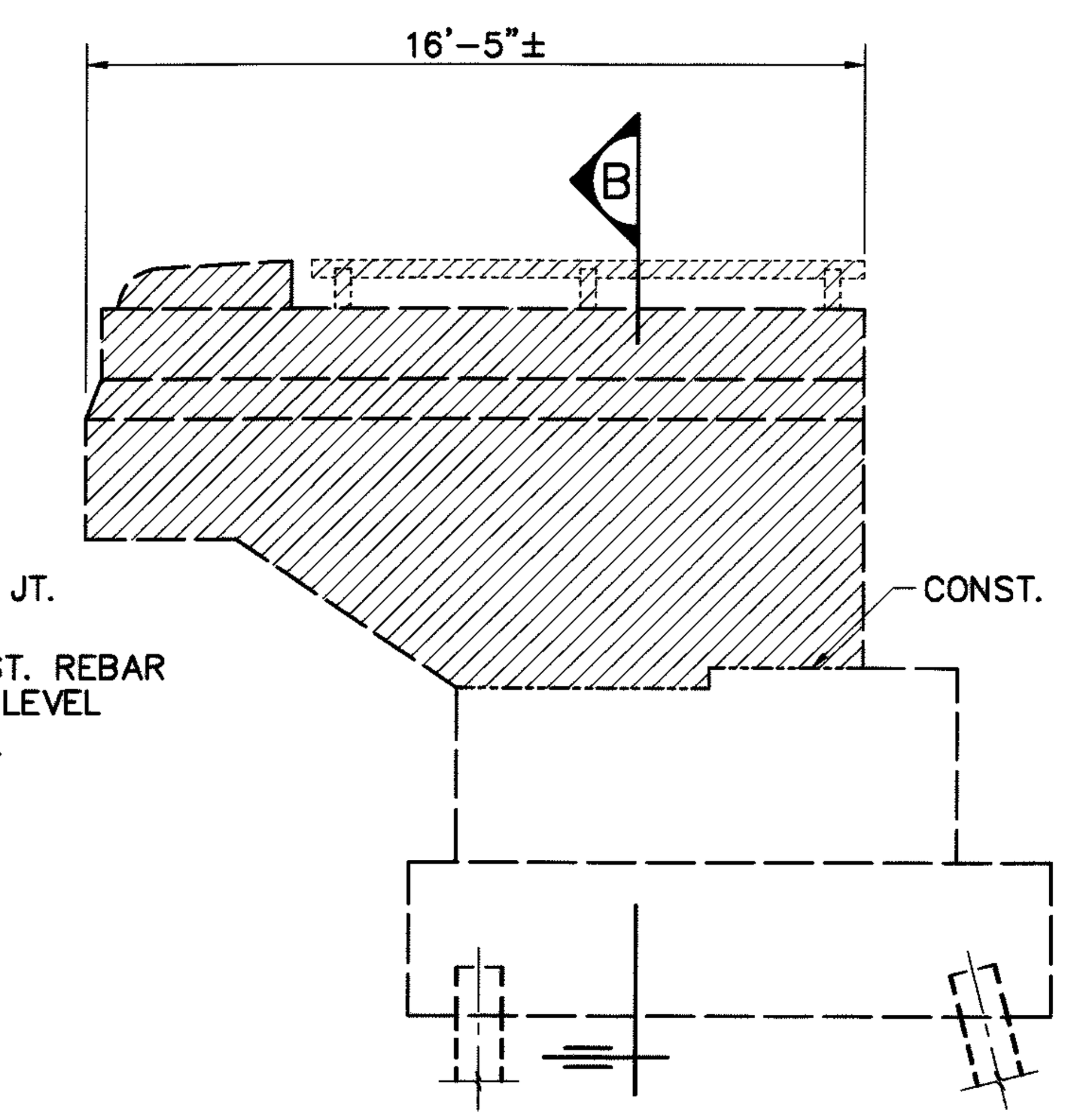

TYPICAL WINGWALL
ELEVATION

STRUCTURE INSPECTION PERFORMED
ON 7/13/99

PATCHING CONCRETE STRUCTURES

ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

LEGEND

- (hatched) INDICATES REMOVAL LIMITS, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN
- (dashed) INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED P.J.W.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED B.J.M.	REVISED	STRUCTURE FILE NUMBER 5008255	

REMOVAL PLAN & REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103ABUT-REM.DWG
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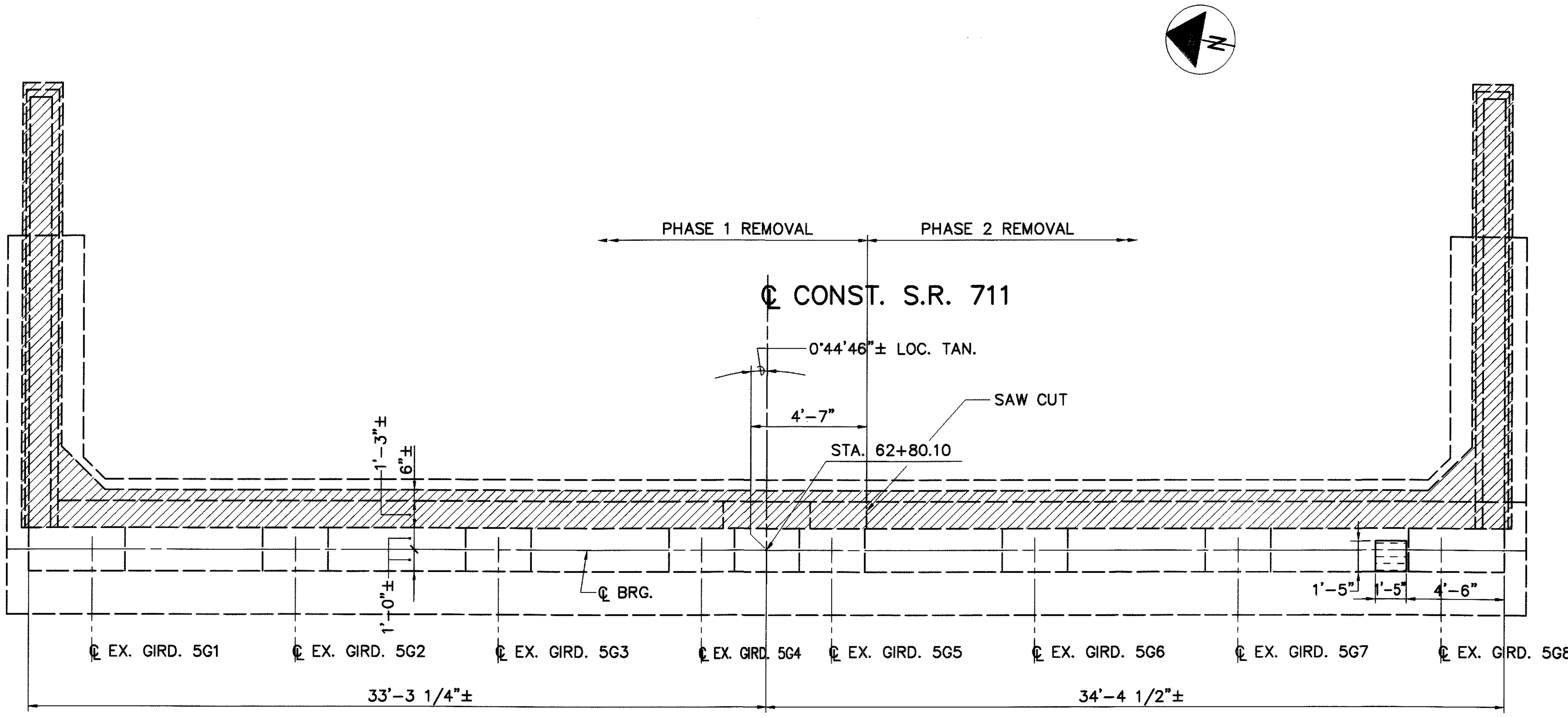
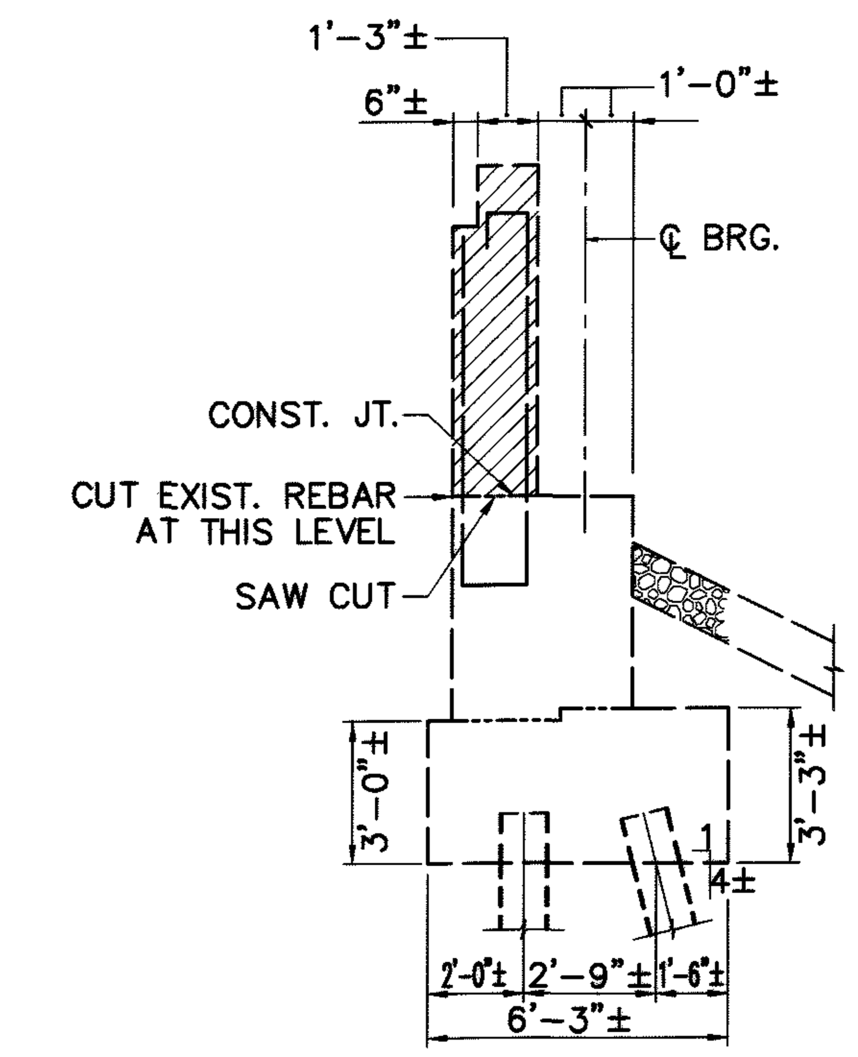


PLAN



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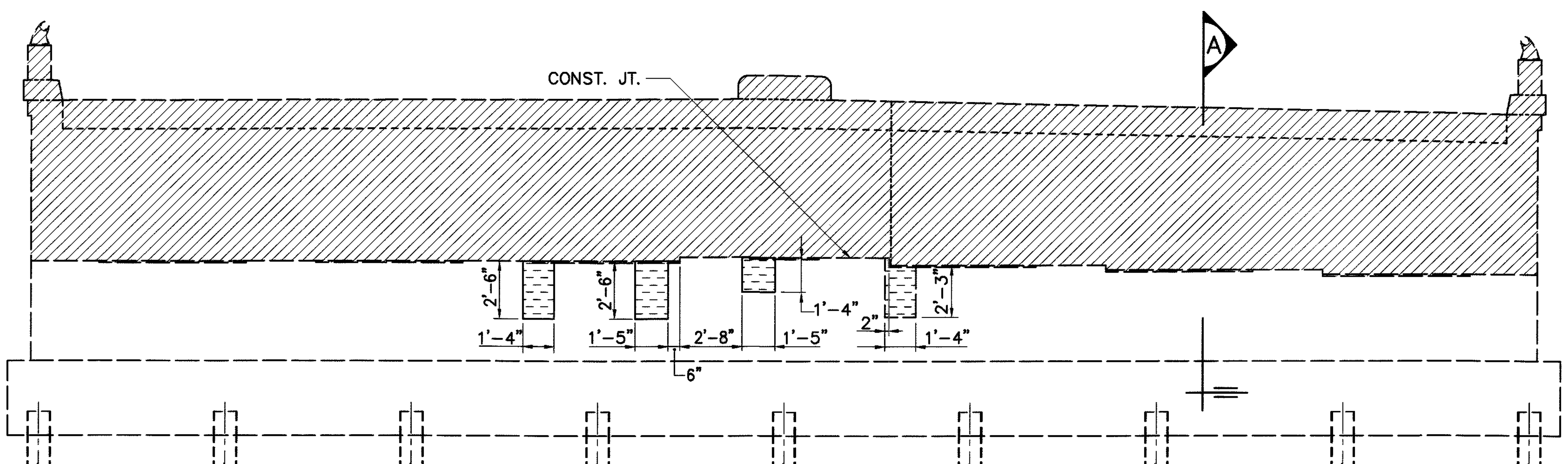
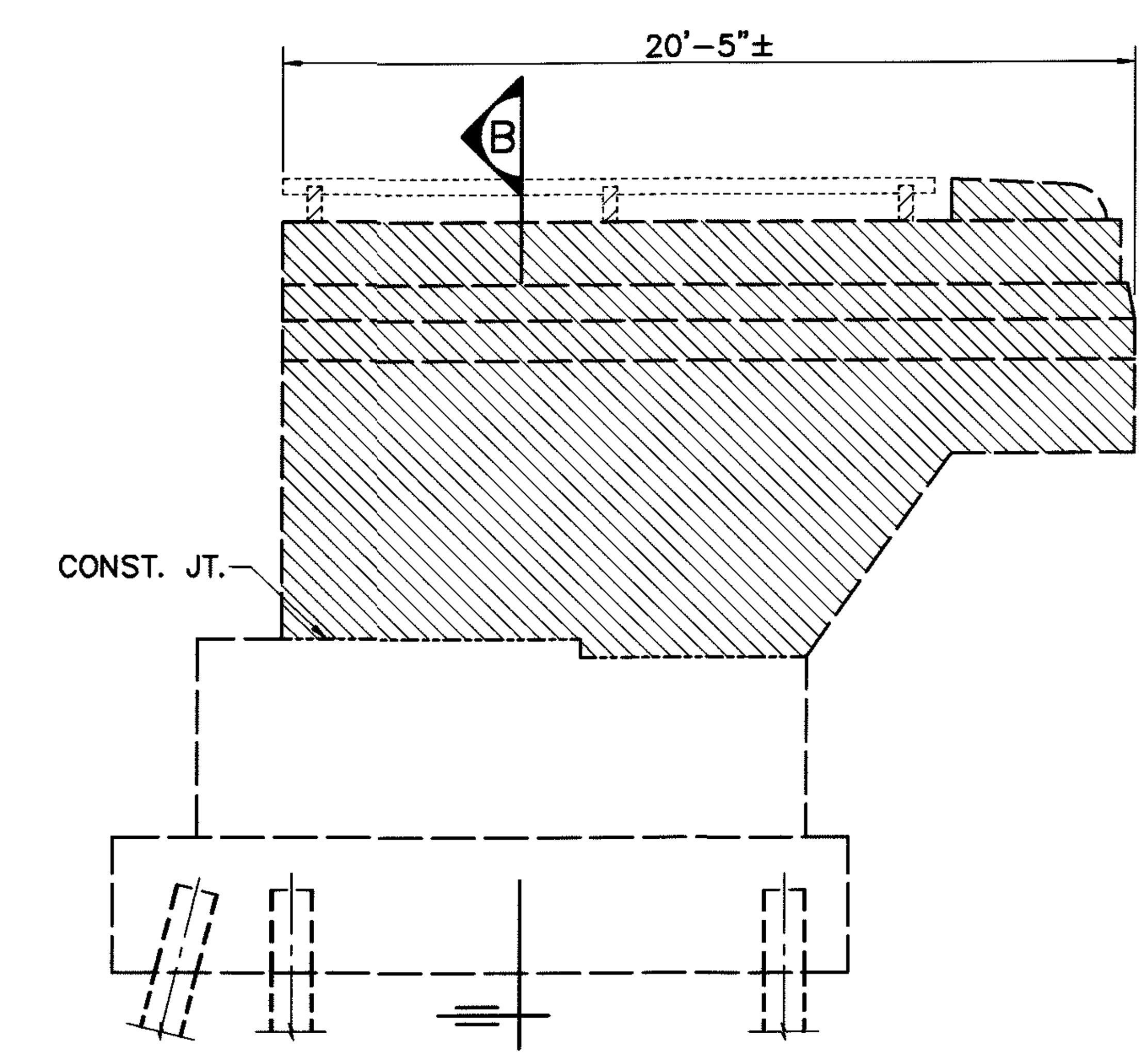
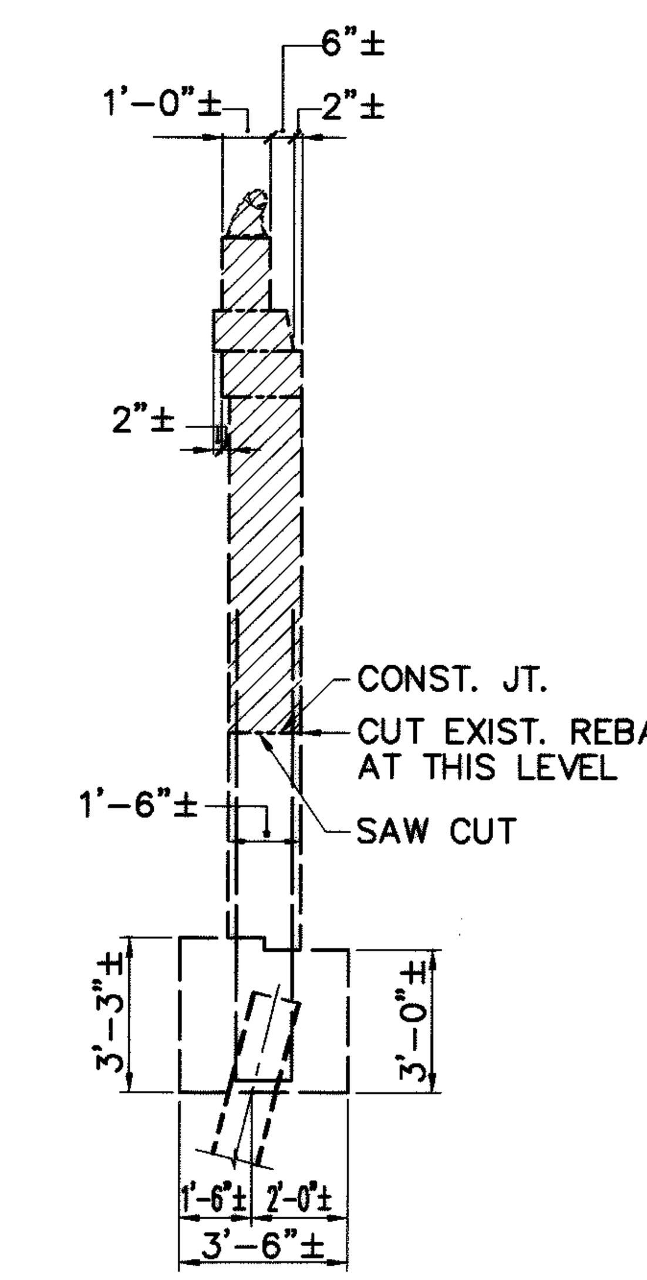


ELEVATION
FRWD. ABUTMENT



TYPICAL WINGWALL
ELEVATION



SECTION (B)

PATCHING CONCRETE STRUCTURES

ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

LEGEND

INDICATES REMOVAL LIMITS, ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

STRUCTURE INSPECTION PERFORMED ON 7/13/99

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

REMOVAL PLAN & REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103ABUT-REM.DWG
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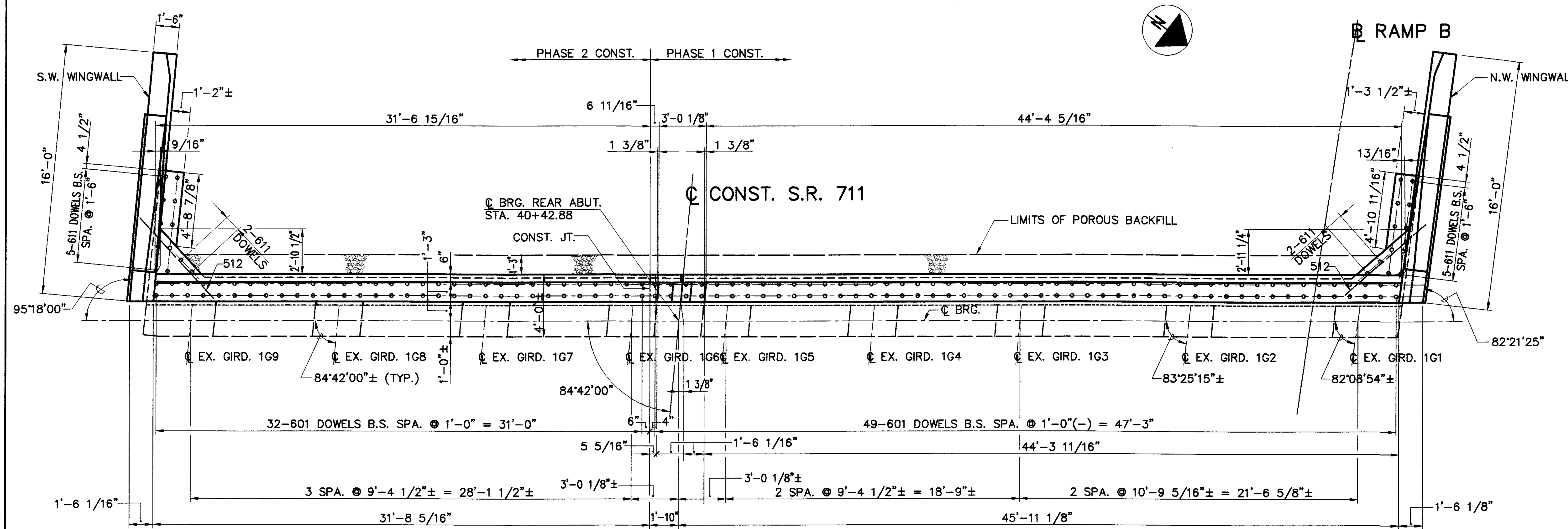
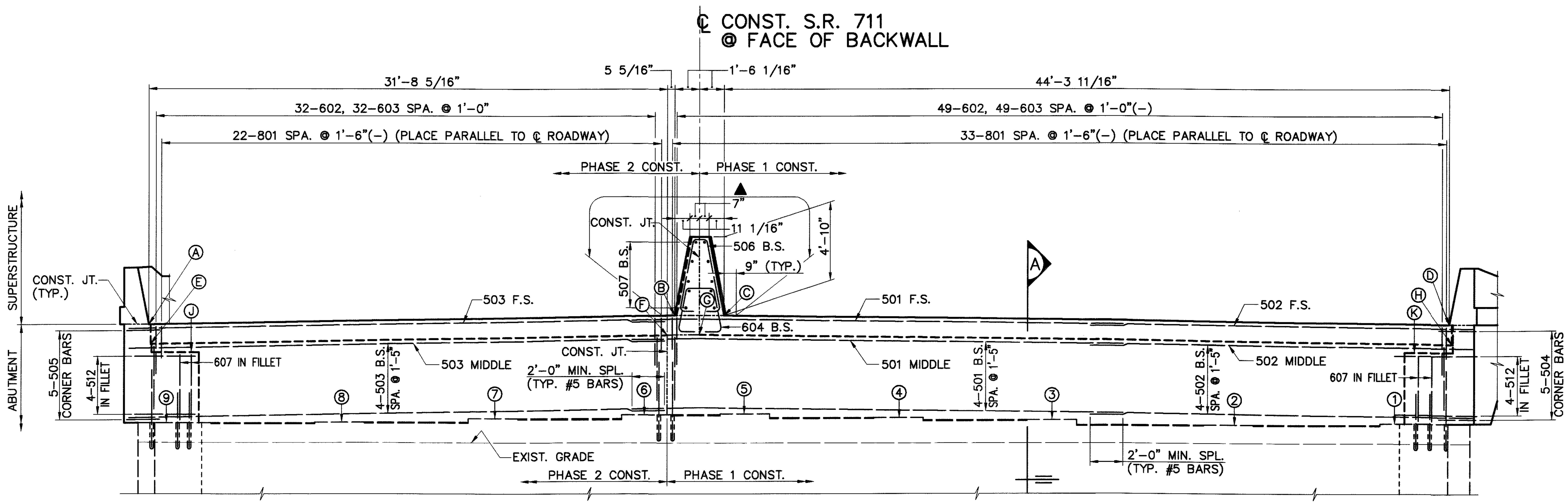
Technician: RPRATT



PLAN



ELEVATION

ELEVATIONS

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ
917.01	917.59	917.59	917.02	915.80	916.37	916.39
Ⓗ	Ⓙ	Ⓚ	⑨	⑧	⑦	⑥
915.80	915.30	915.30	910.86±	911.00±	911.22±	911.47±
⑤	④	③	②	①		
911.52±	911.29±	911.13±	910.83±	910.92±		

NOTES:

1. PREFIX "A" SHALL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE ABUTMENTS. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. DEFLECTOR PARAPET AND MEDIAN BARRIER CONCRETE AND REINFORCING STEEL ARE INCLUDED WITH ITEM 844, HIGH PERFORMANCE CONCRETE (PARAPET), FOR PAYMENT.
4. PRIOR TO THE PLACEMENT OF NEW CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE THOROUGHLY CLEANED BY SAND-BLASTING AND/OR OTHER APPROVED METHODS SO THAT IT IS FREE OF LOOSE OR DISINTEGRATED CONCRETE, DUST, LAITANCE, GREASE, RUST AND OTHER FOREIGN MATTER. ALL EXISTING REBARS SHALL BE CLEANED BY WIRE BRUSH OR SANDBLASTED TO REMOVE ANY RUST. A BONDING GROUT SHALL BE USED BETWEEN OLD CONCRETE AND NEW CONCRETE. BONDING GROUT IS INCLUDED WITH ITEM 842, CLASS C CONCRETE, ABUTMENT, FOR PAYMENT.
5. FOR BONDING GROUT NOTE, SEE SHT. NO. 10/80.
6. BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 842.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
7. NEW REINFORCING MAY REQUIRE FIELD CUTTING OR BENDING FOR PROPER FIT. INCLUDED WITH ITEM 842 FOR PAYMENT.
8. FOR SECTION A, SEE SHT. NO. 25/80.
9. FOR SOUTHWEST & NORTHWEST WINGWALL DETAILS AND PARAPET DETAILS, SEE SHT. NO. 25/80.

LEGEND

▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

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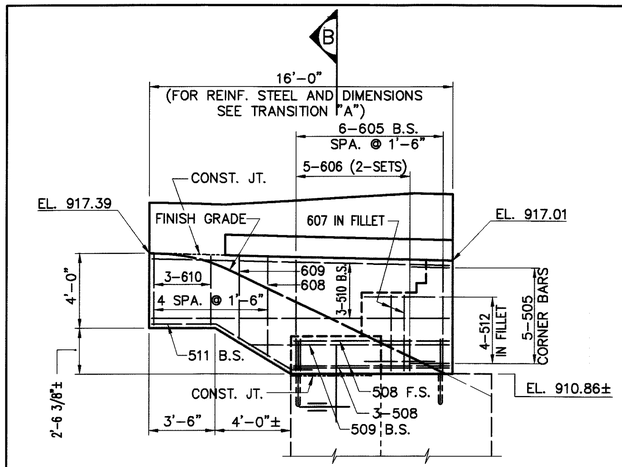
Technician: RPRATT

DESIGN AGENCY
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311

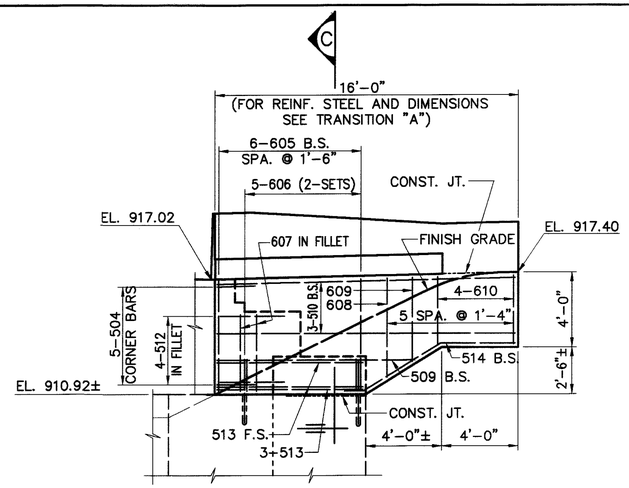
DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

REAR ABUTMENT
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

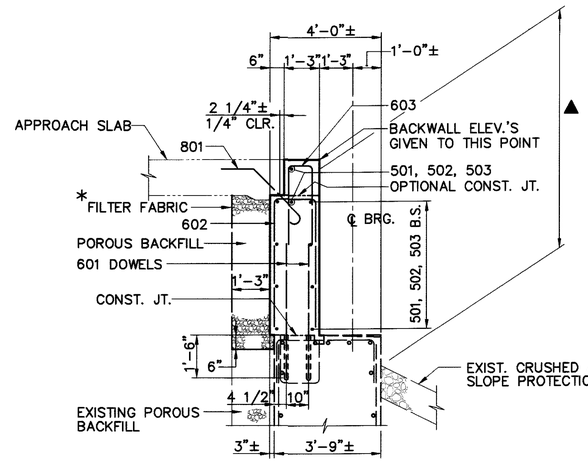
MAH-711-0.47



ELEVATION – S.W. WINGWALL

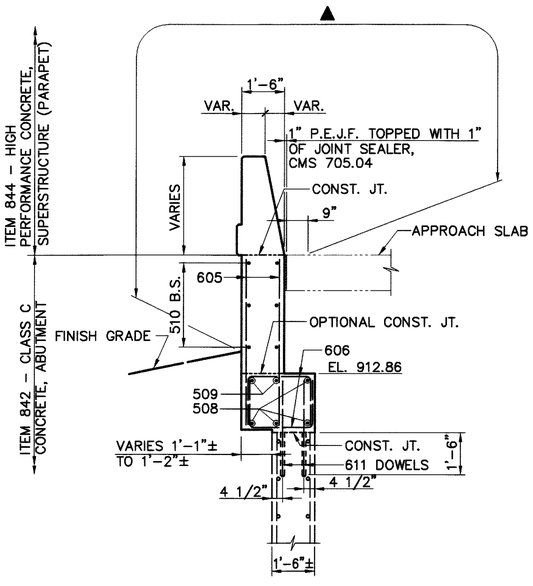


ELEVATION – N.W. WINGWALL

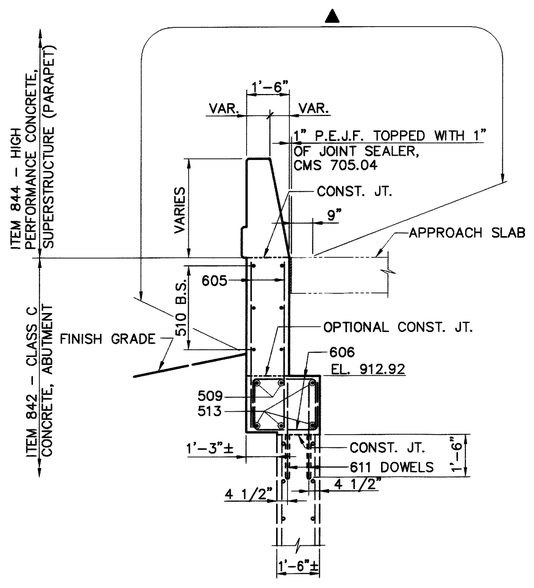


SECTION A

* TO BE TURNED UP 6" AT THE BACKWALL



SECTION B



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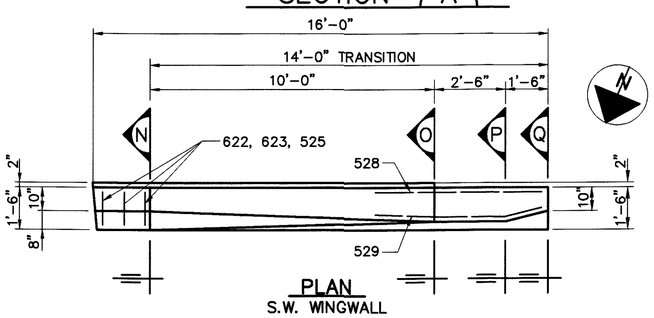
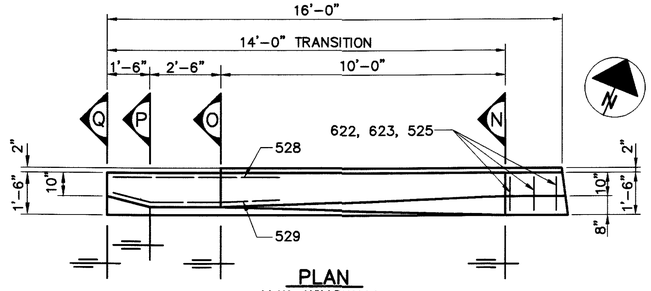
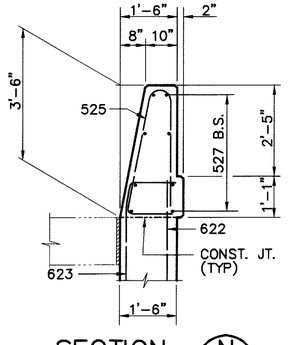


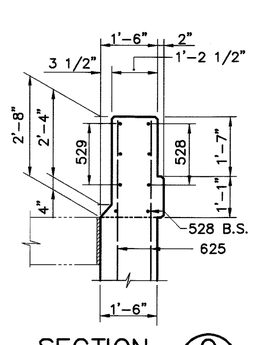
PLAN
S.W. WINGWALL



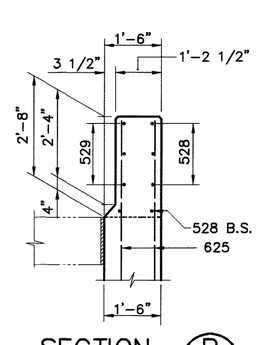
PLAN
N.W. WINGWALL



SECTION N



SECTION O



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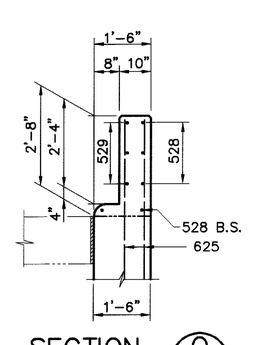
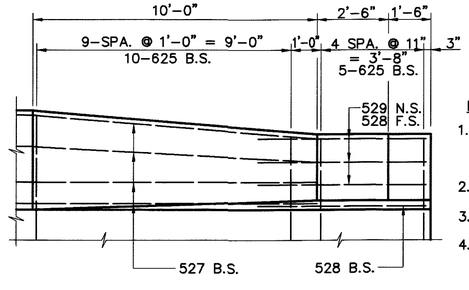


SECTION Q



ELEVATION
TRANSITION "A"
S.W. WINGWALL SHOWN,
N.W. WINGWALL SIMILAR, BUT OPP. HAND

NOTES:

1. PREFIX "A" SHALL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE ABUTMENTS. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR LOCATION OF SECTION A, SEE SHT. NO. 24/80.
4. FOR ADDITIONAL NOTES, SEE SHT. NO. 24/80.

LEGEND

▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY–URETHANE).

DESIGN AGENCY
CLAUS PYLE RICHOMB BURNS & STEHAVEN INC.
GPD ASSOCIATES
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

REAR ABUTMENT DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

25 / 80

664 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_1034BUT.DWG
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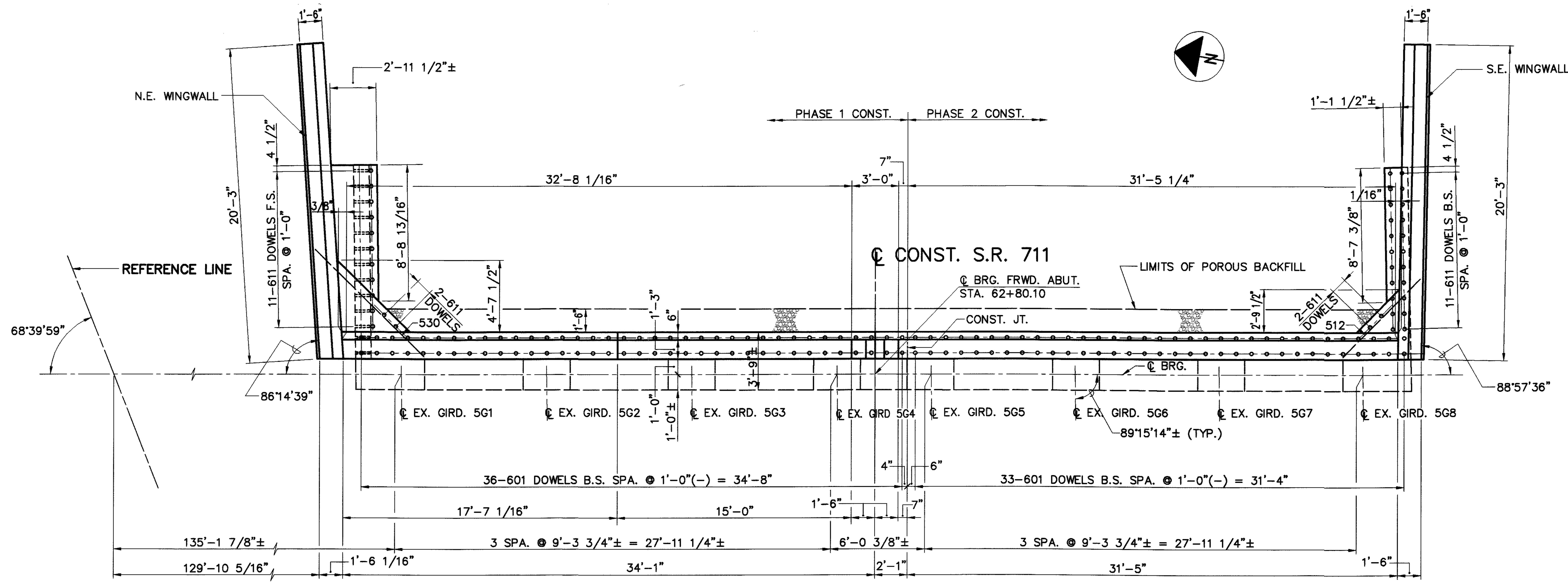
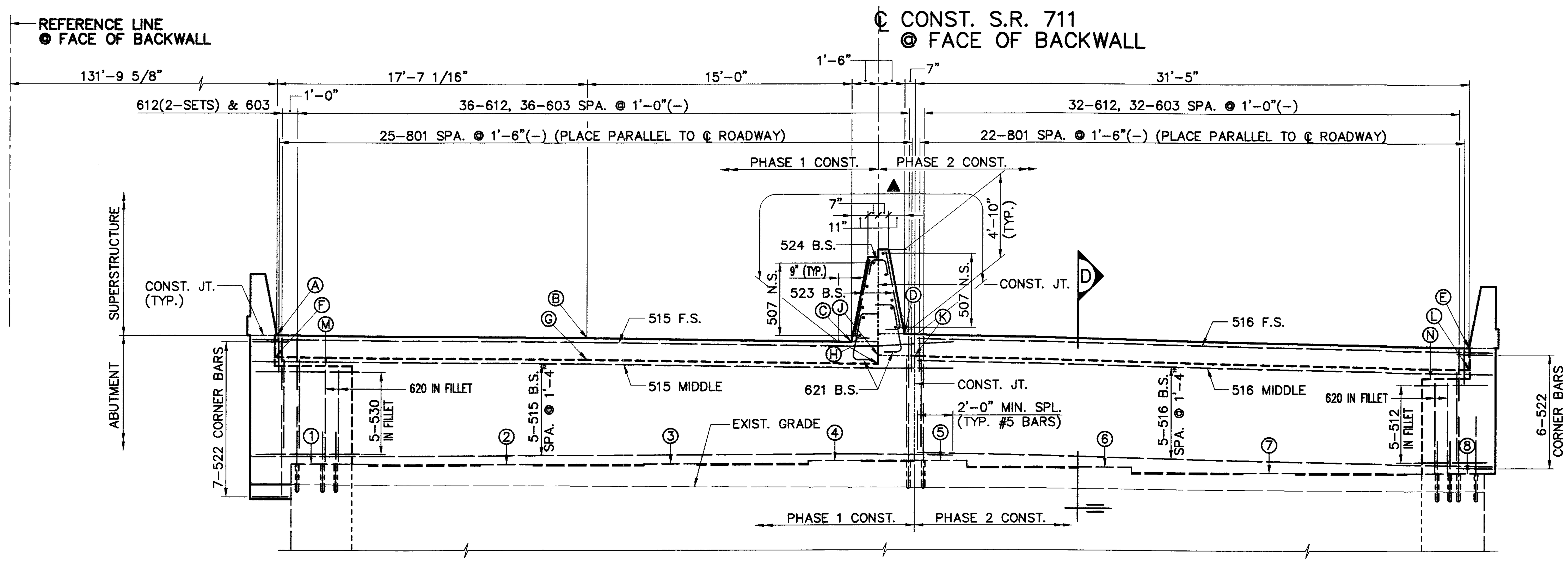
Technician: RPRATT



PLAN



ELEVATION

ELEVATIONS							
Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
905.78	905.64	905.40	905.84	905.11	904.54	904.41	904.15
Ⓙ	Ⓚ	Ⓛ	Ⓜ	Ⓝ	①	②	③
904.63	904.58	903.87	904.04	903.37	898.39±	898.41±	898.45±
④	⑤	⑥	⑦	⑧			
898.53±	898.54±	898.27±	897.96±	897.95±			

NOTES:

1. PREFIX "A" SHALL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE ABUTMENTS. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR NORTHEAST & SOUTHEAST WINGWALL DETAILS AND PARAPET DETAILS, SEE SHT. NO. 27/80.
4. FOR SECTION D, SEE SHT. NO. 27/80 .
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 24/80 .

LEGEND

▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

DESIGN AGENCY
GPD ASSOCIATES

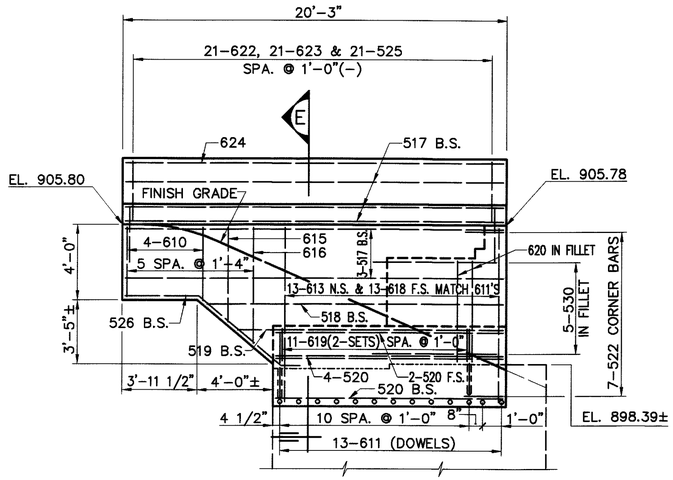
DESIGNED P.J.W.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED B.J.M.	REVISED	STRUCTURE FILE NUMBER 5008255	

FORWARD ABUTMENT

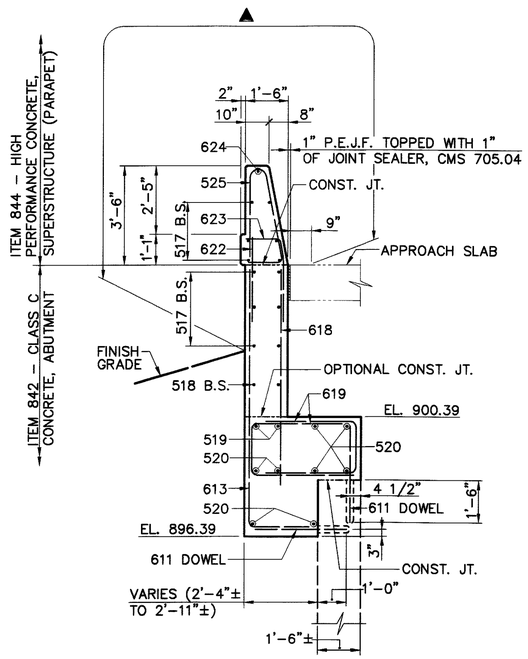
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

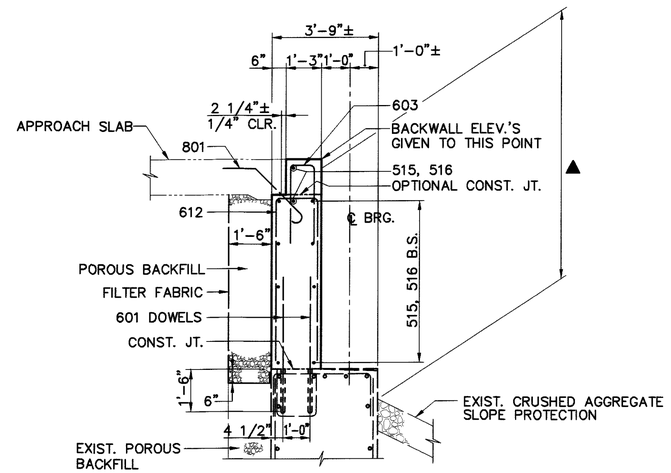
Technician: RPRATT



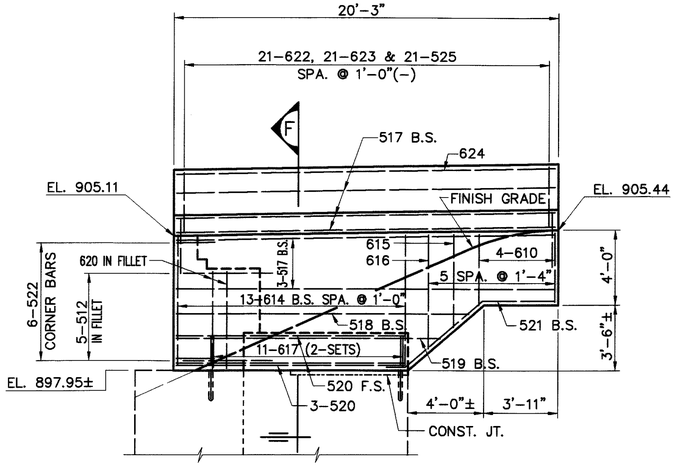
ELEVATION – N.E. WINGWALL



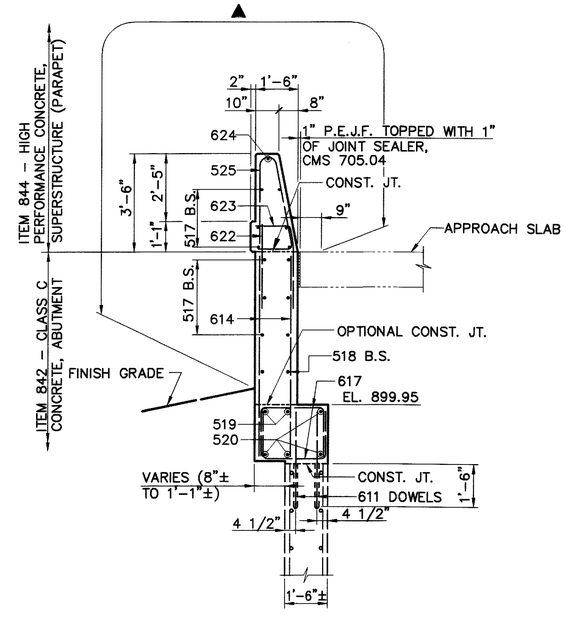
SECTION E



SECTION D



ELEVATION – S.E. WINGWALL



SECTION F

NOTES:

1. PREFIX "A" SHALL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE ABUTMENTS. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR LOCATION OF SECTION D, SEE SHT. NO. 26/80.
4. FOR ADDITIONAL NOTES, SEE SHT. NO. 24/80.

LEGEND

▲ LIMITS OF ITEM 864, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE).

DESIGN AGENCY
CLAUS PAUL SCHOMER BURNS & DREAMEN INC.
GPD ASSOCIATES
320 South Main Street, Suite 2311 Akron, Ohio 44311
(330) 253-8780 Fax (330) 253-8187

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

FORWARD ABUTMENT DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

27/80

666
886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103ABUT.DWG
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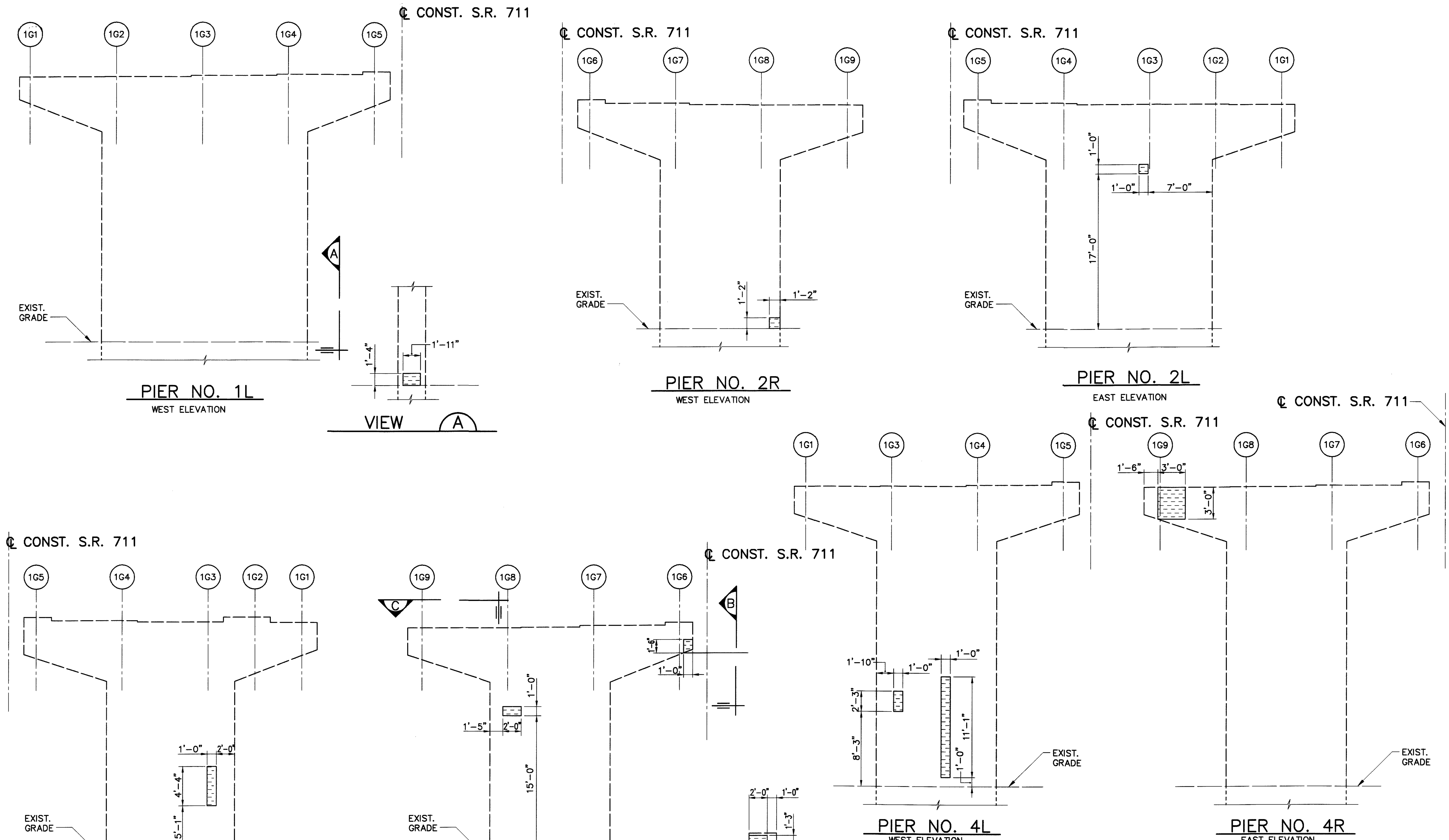

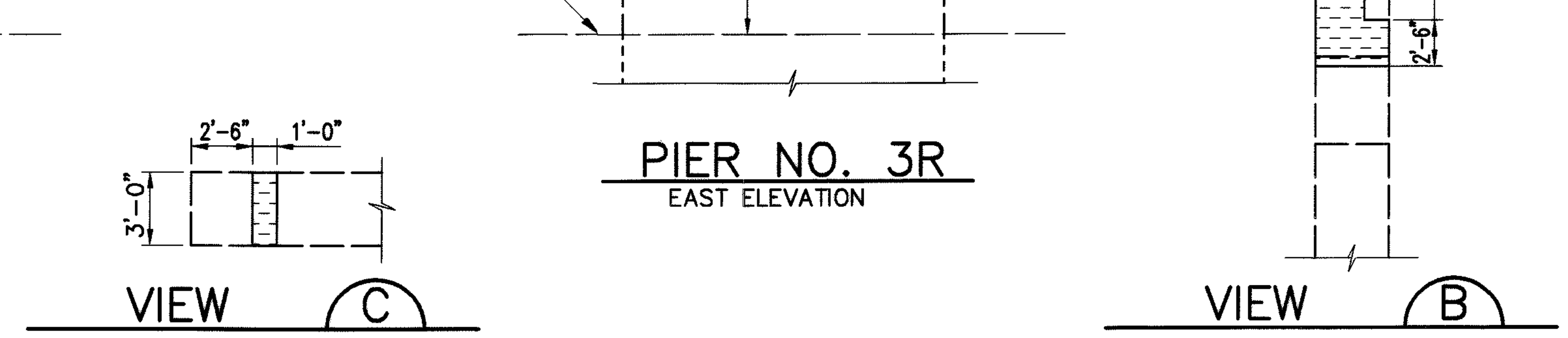

STRUCTURE INSPECTION PERFORMED ON 7/13/99

PATCHING CONCRETE STRUCTURES

ALL SURFACES TO BE PATCHED AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

SEALING OF CONCRETE SURFACES

AN EPOXY-URETHANE SEALER SHALL BE APPLIED TO THE EXPOSED SURFACES OF THE ENTIRE PIER NOS. 1 THRU 19 INCLUDING PIER CAP.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED P.J.W.	DRAWN F.V.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED B.J.M.	REVISED	STRUCTURE FILE NUMBER 5008255	

PIER REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103PIER.DWG
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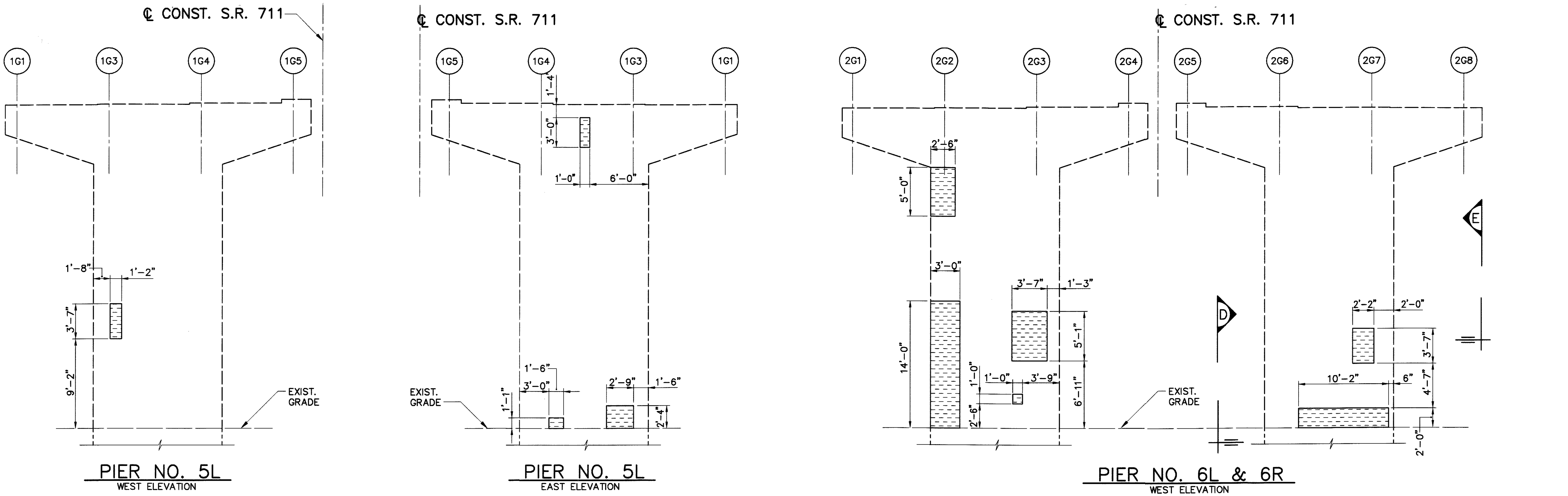
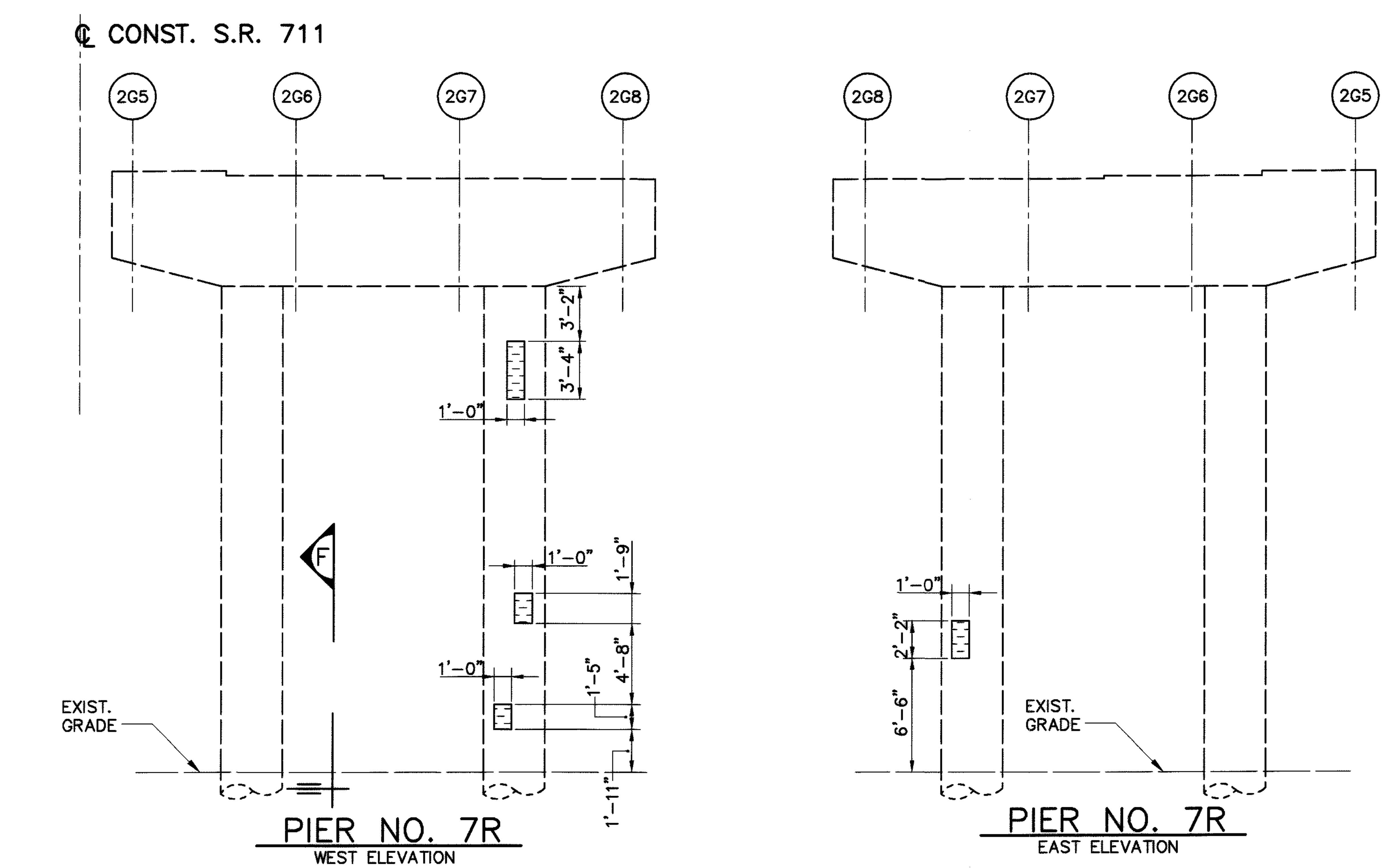
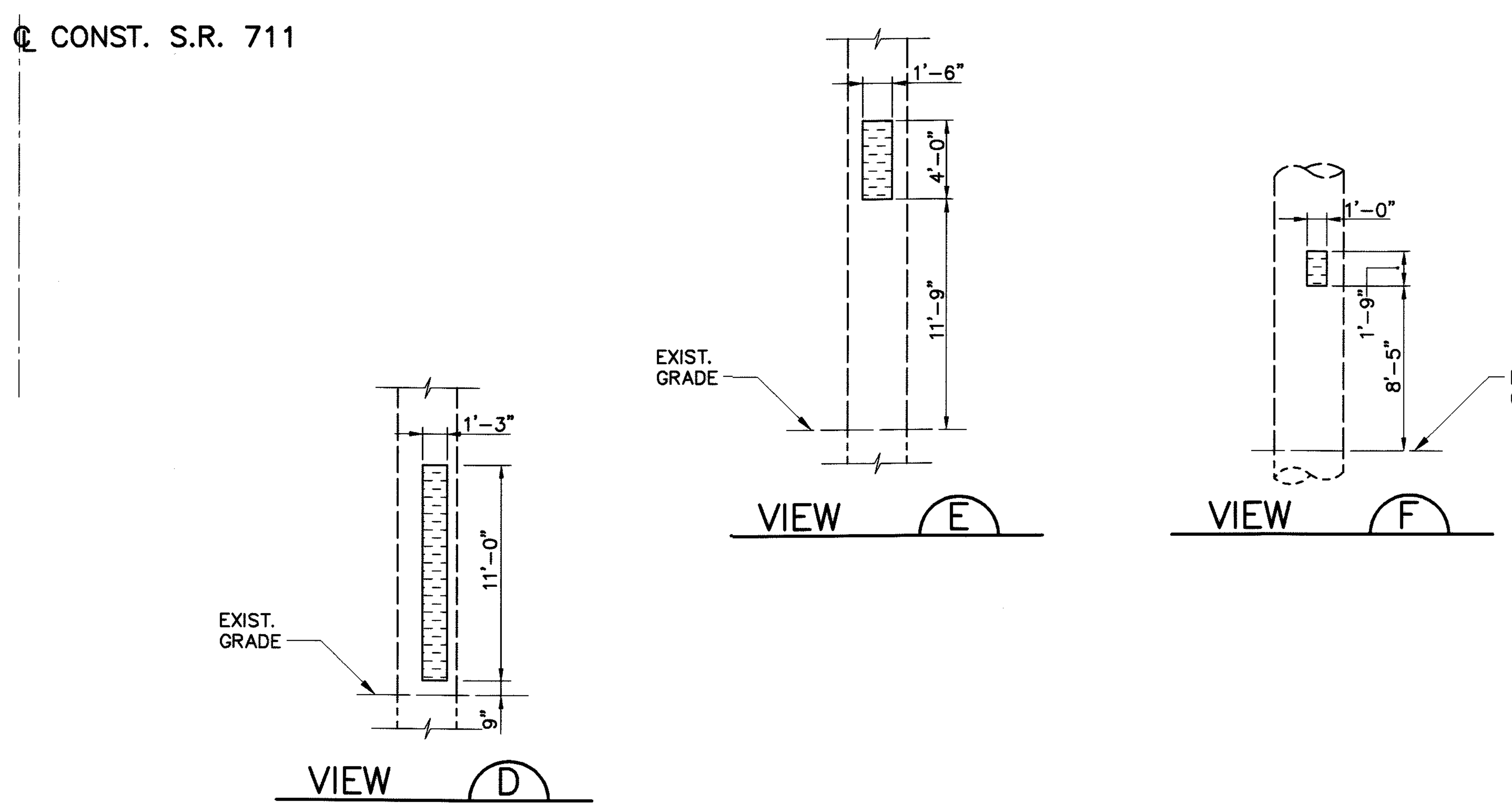
Technician: RPRATT







STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

DESIGN AGENCY

CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.

GPD ASSOCIATES

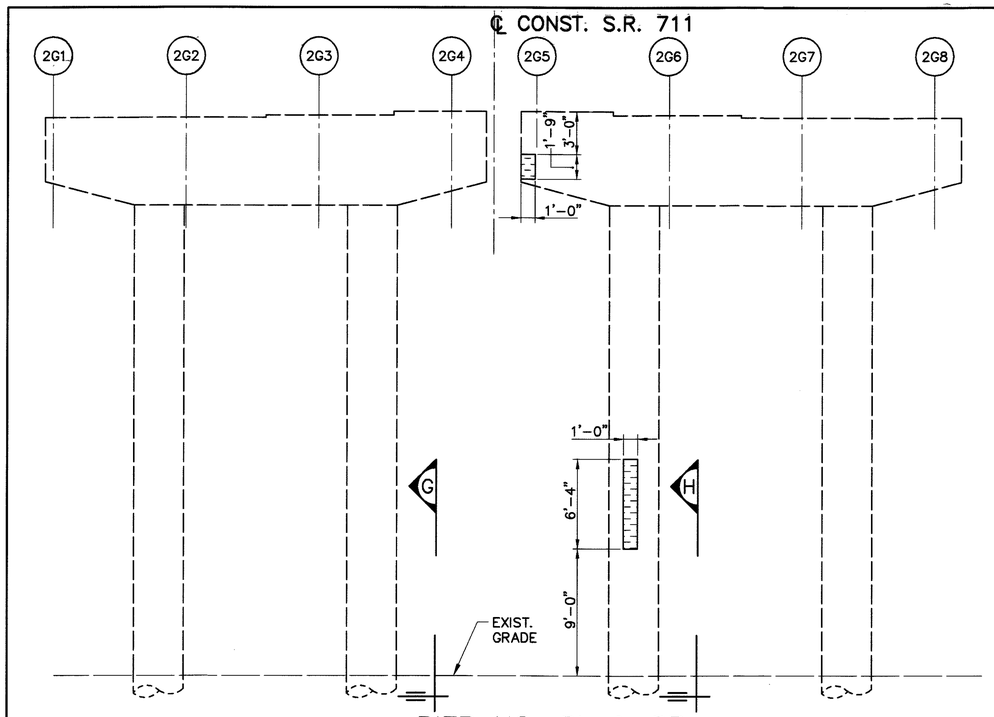
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 , Fax 330-572-2101

PIER REPAIR DETAILS

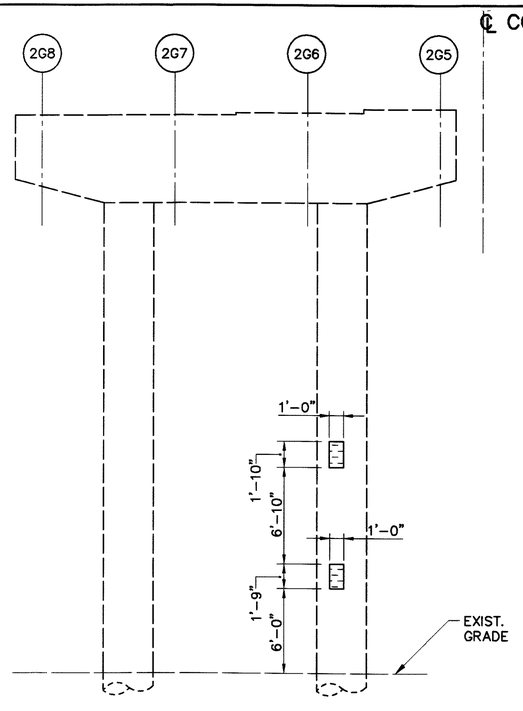
BRIDGE NO. MAH - 711 - 0067

S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

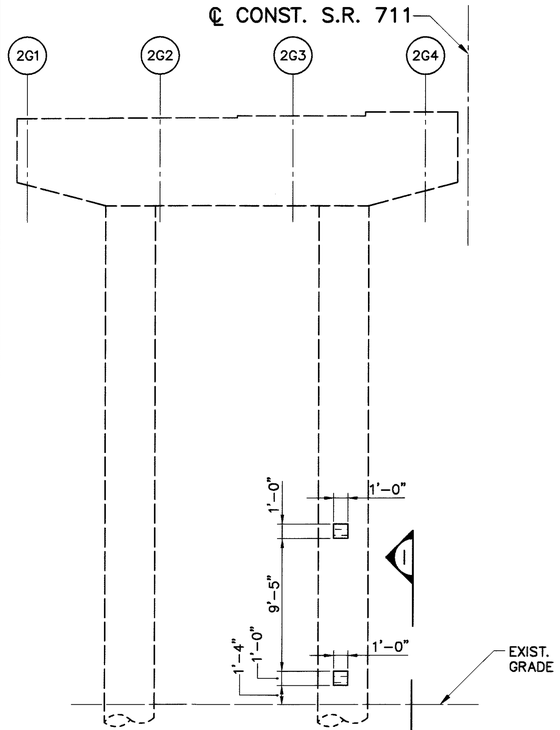
MAH-711-0.47



PIER NO. 8L & 8R
WEST ELEVATION



PIER NO. 8R
EAST ELEVATION



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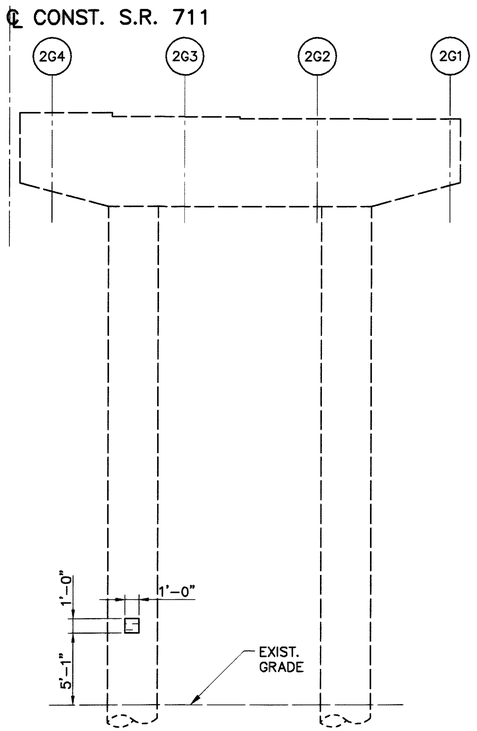
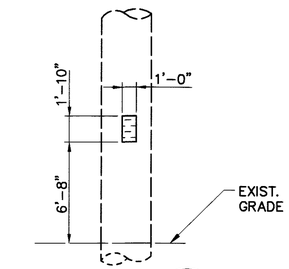
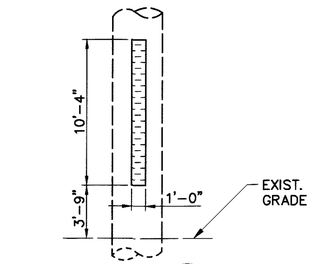
WEST ELEVATION



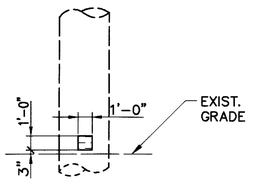
PIER NO. 9L
EAST ELEVATION



VIEW G



VIEW H



VIEW I

STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330-372-2100 Fax 330-372-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

PIER REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

30/80

669/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103PIER.DWG
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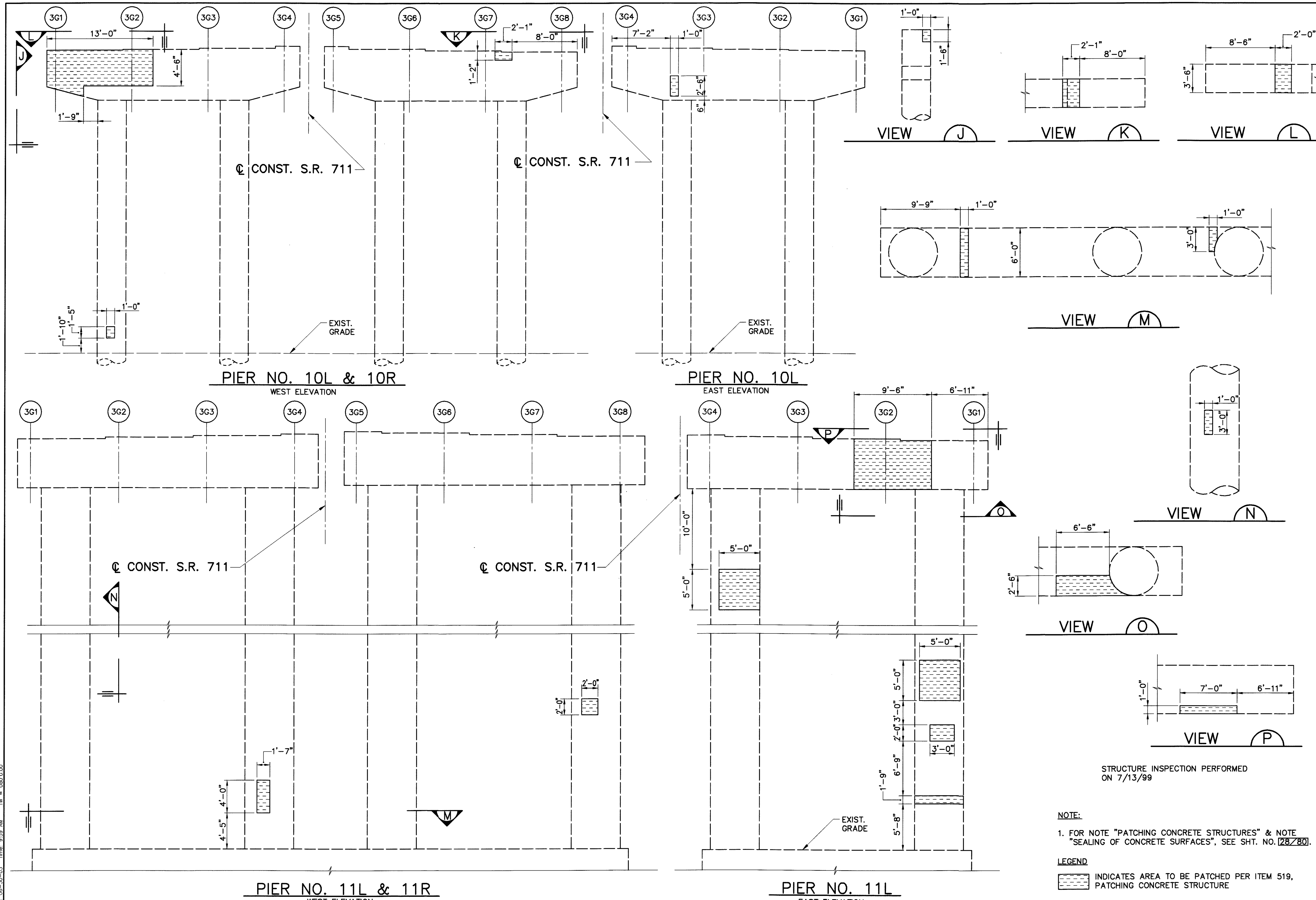
Technician: RPRATT



STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

PIER REPAIR DETAILS

BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103PIER.DWG
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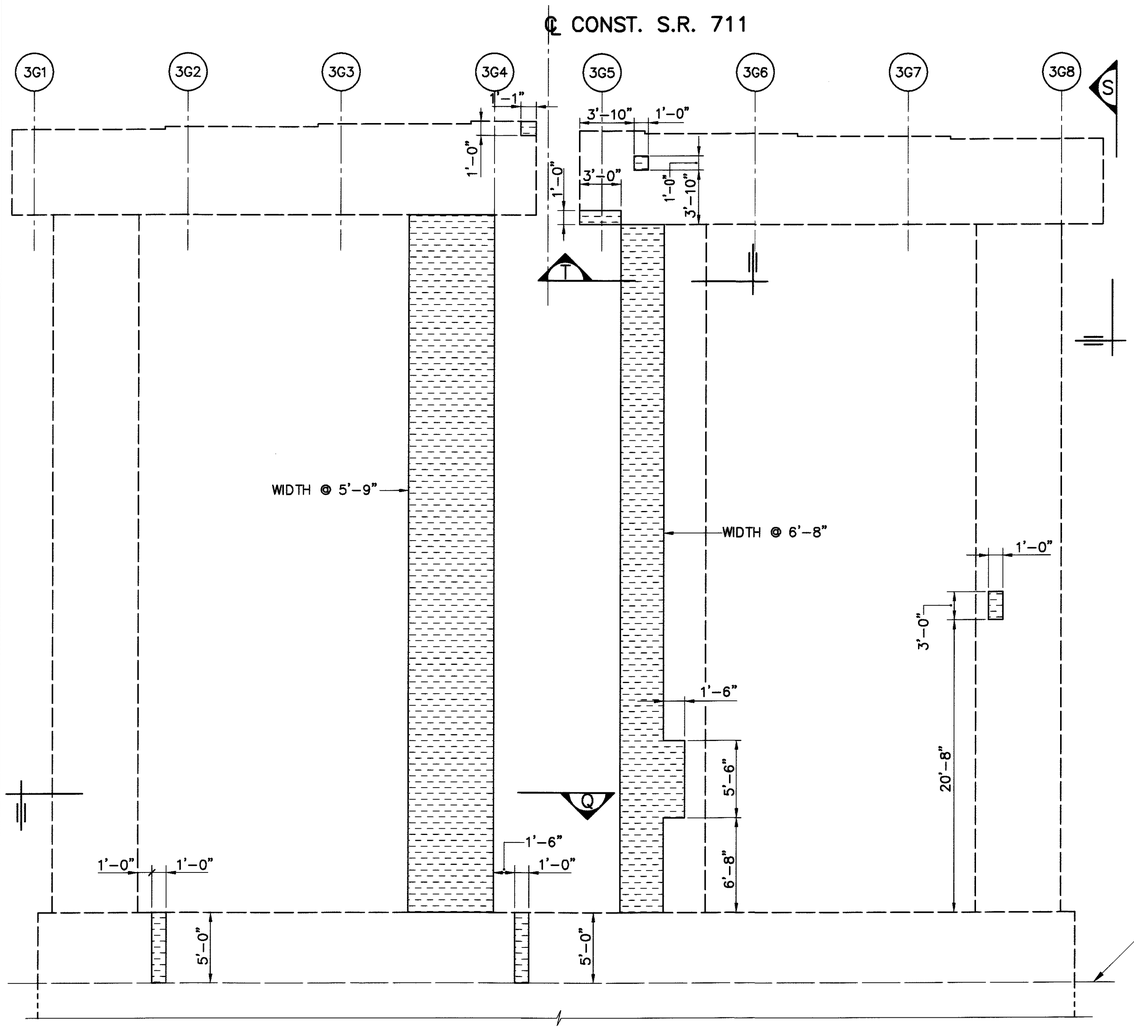
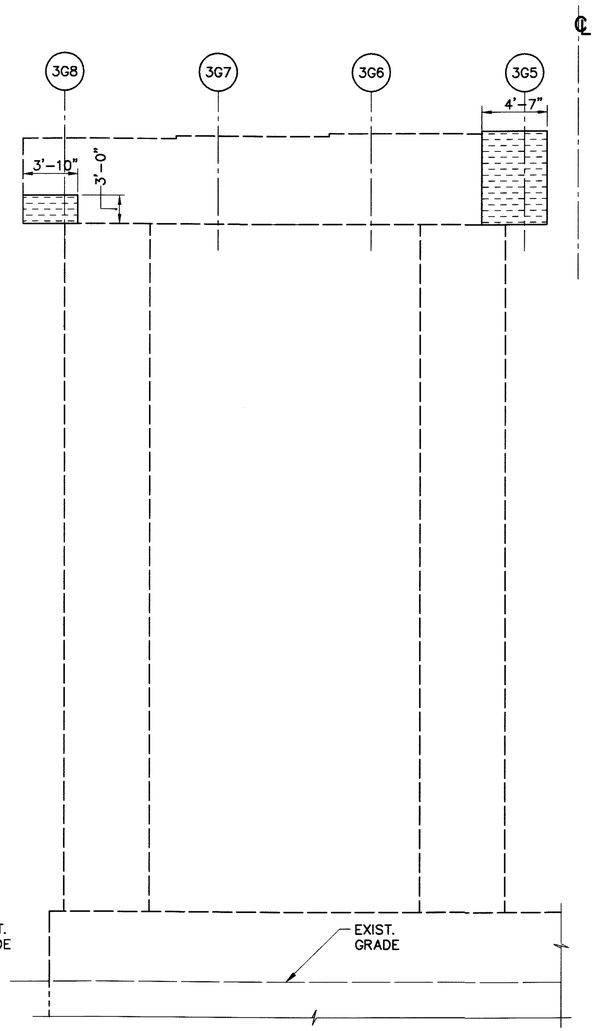
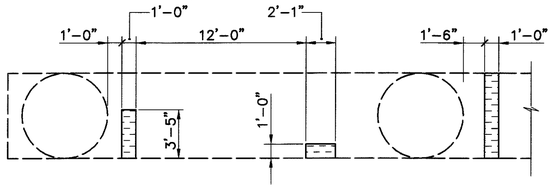
Technician: RPRATT



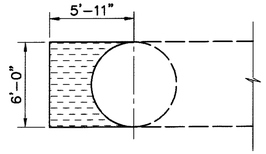
PIER NO. 12L & 12R
WEST ELEVATION



PIER NO. 12R
EAST ELEVATION



VIEW Q



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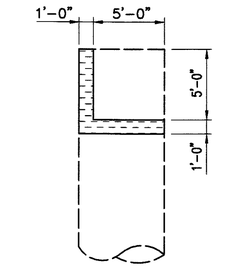

VIEW S

STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
GPD ASSOCIATES
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
380 SOUTH MAIN PLACE, SUITE 201, AKRON, OHIO 44311
330.572.2100 Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

DIVISION ST.

PIER REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

32/80

671/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103PIER.DWG
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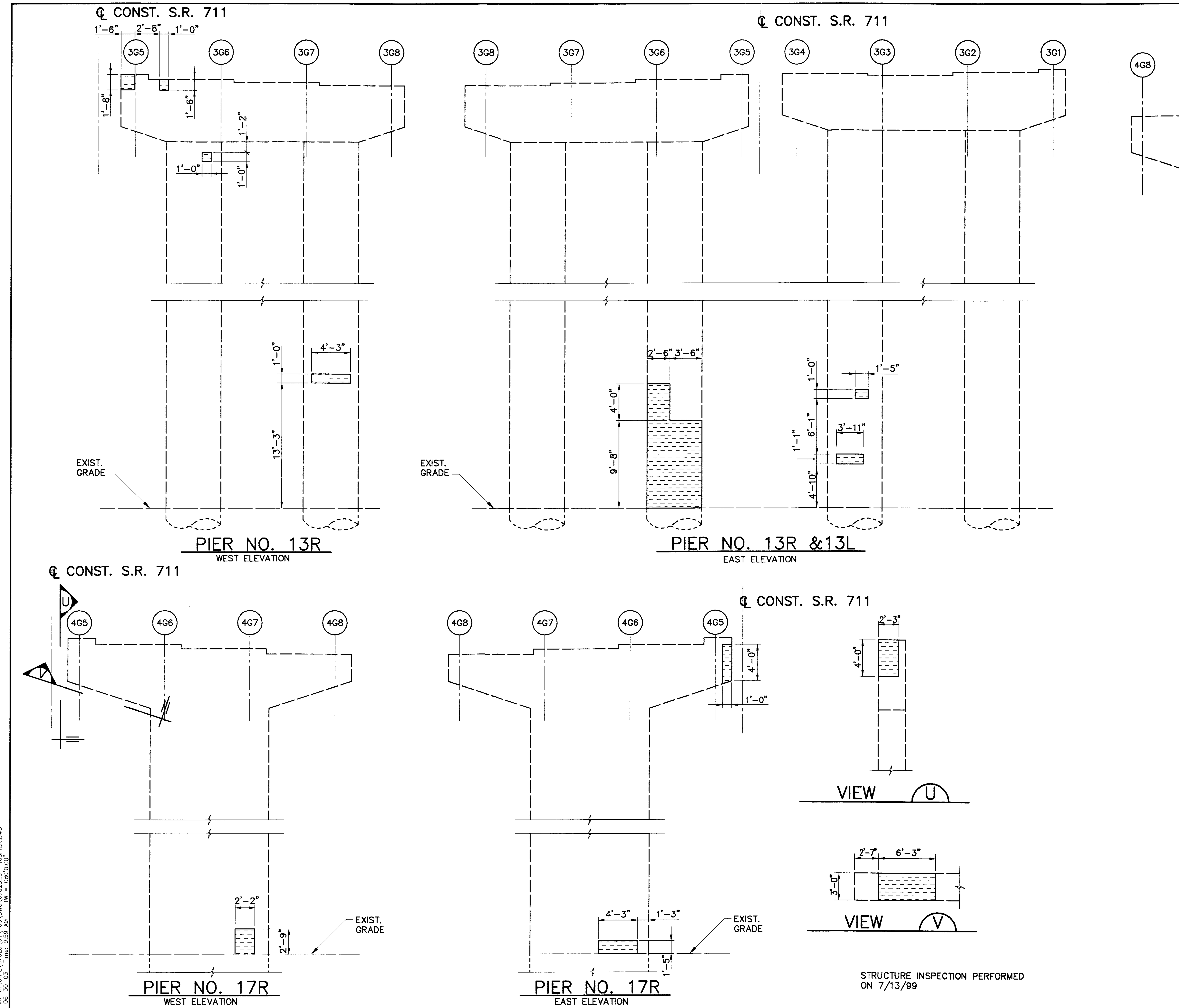

STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 , Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

PIER REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103PIER.DWG
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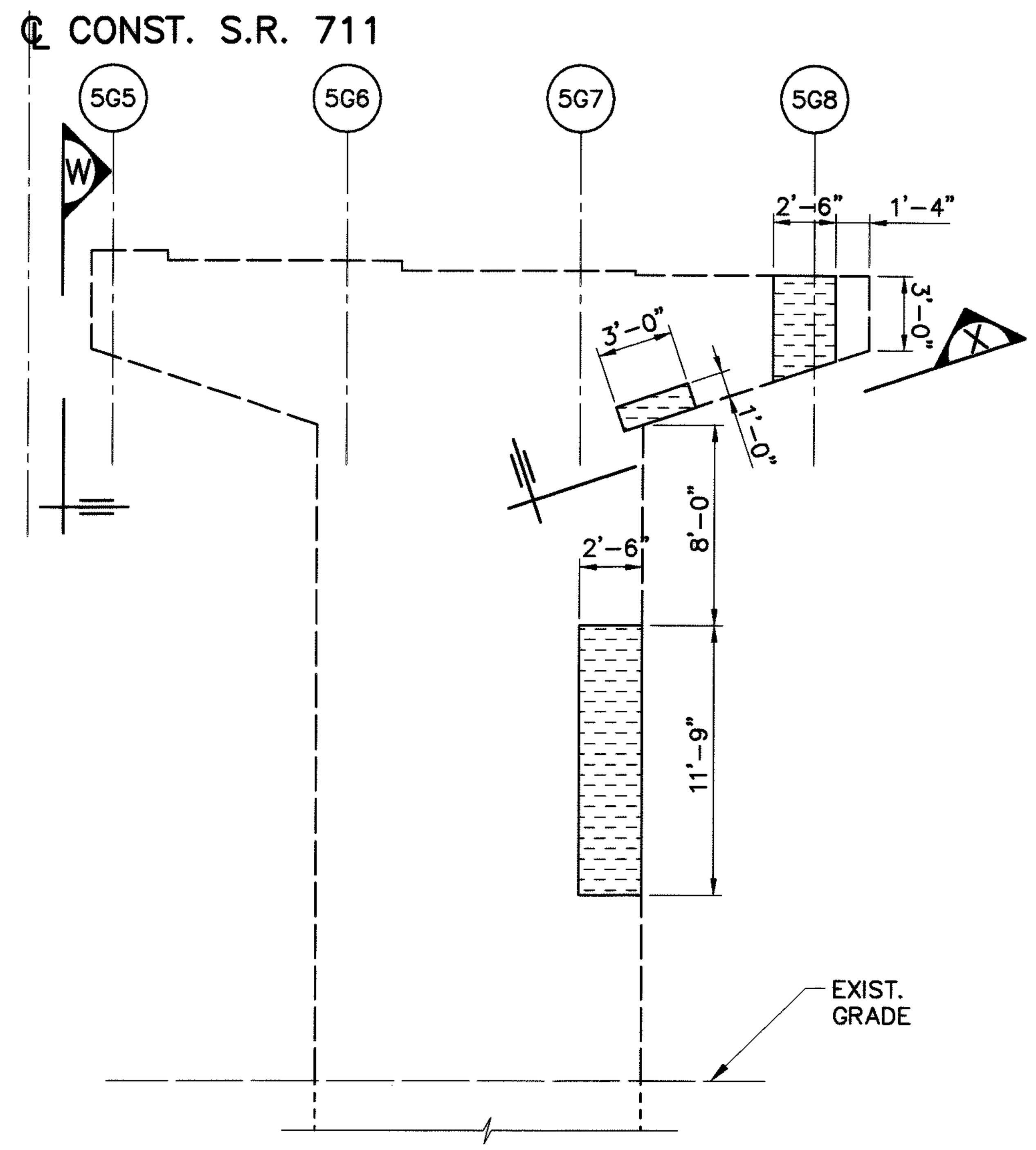
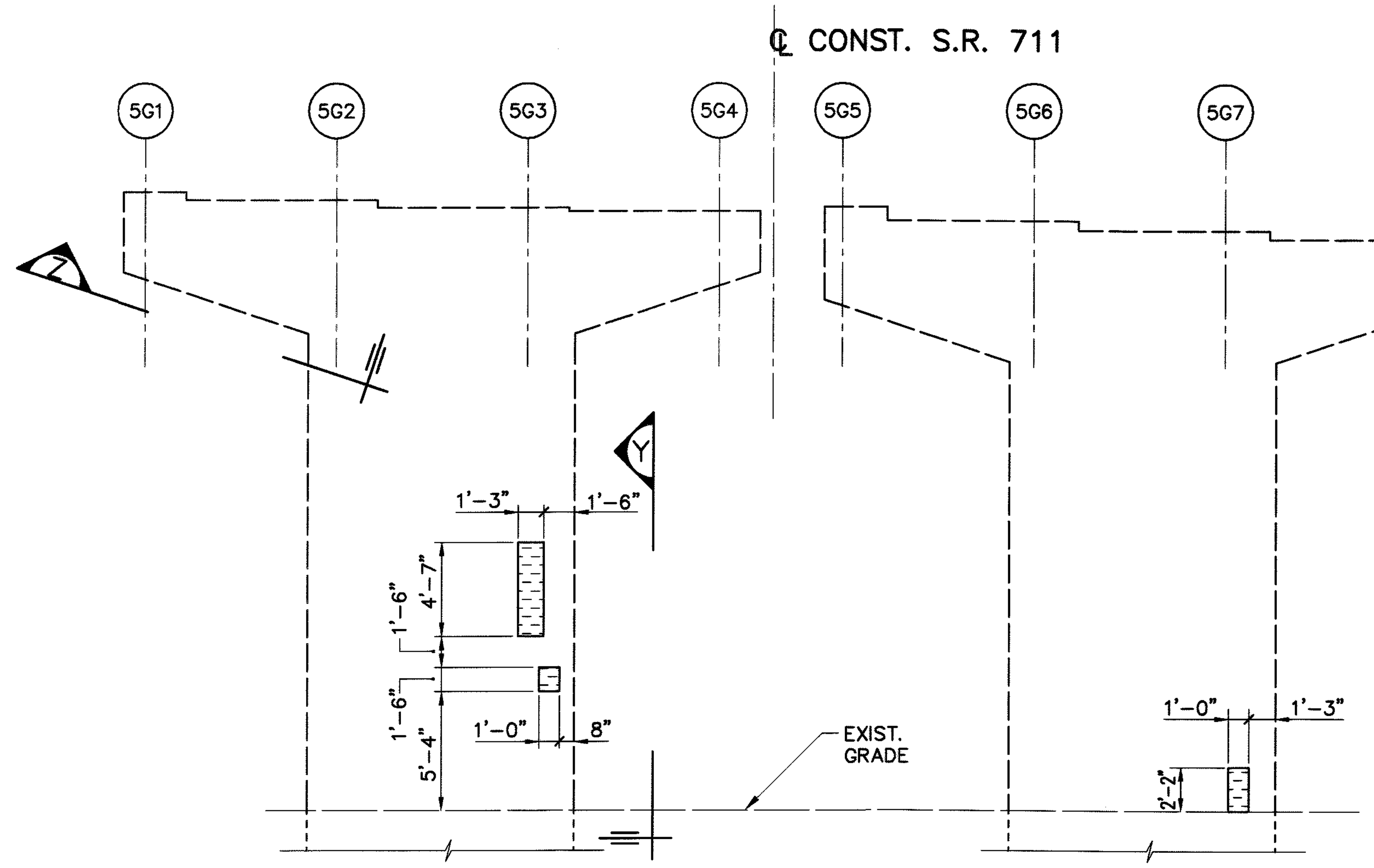
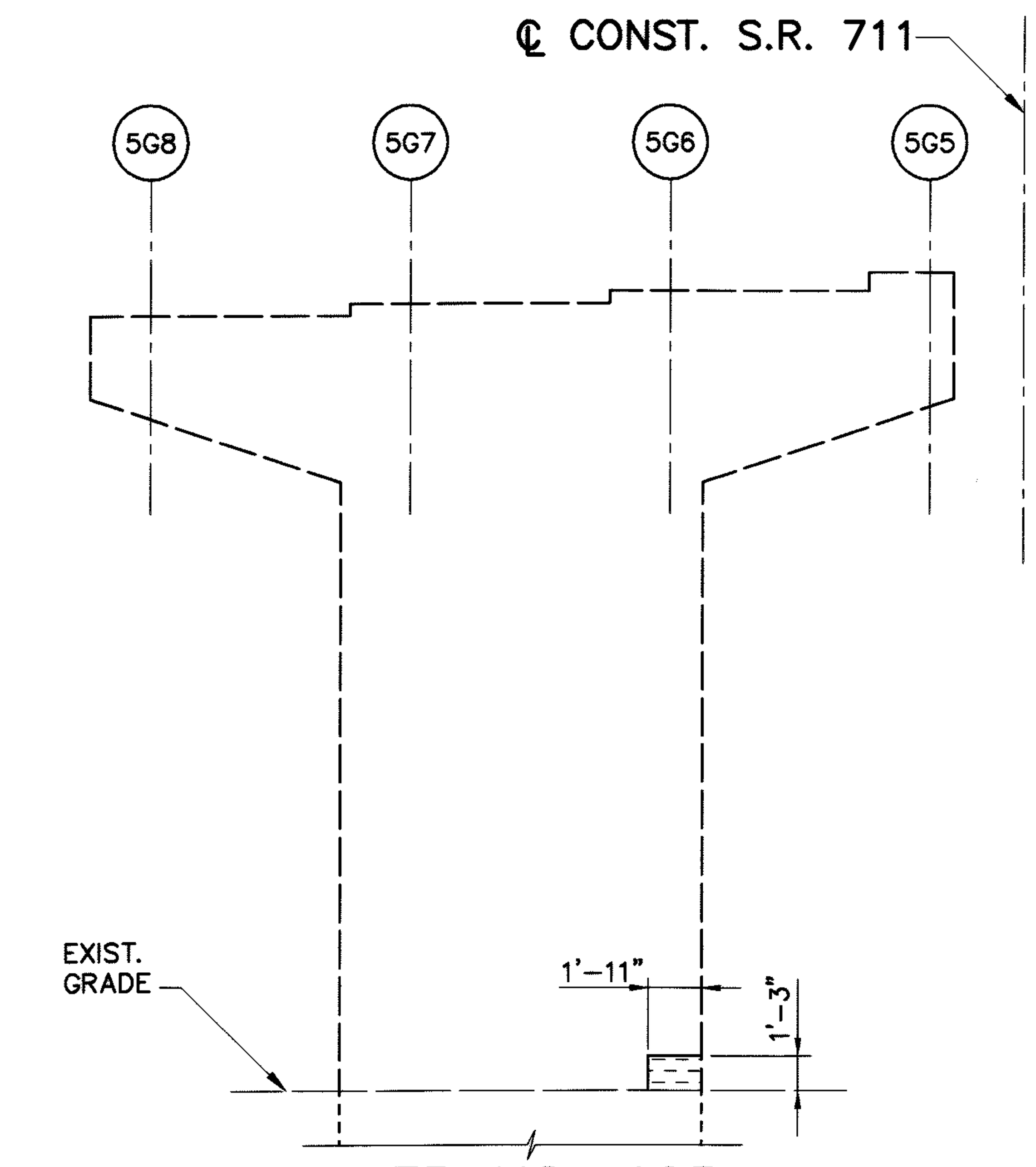
Technician: RPRATT



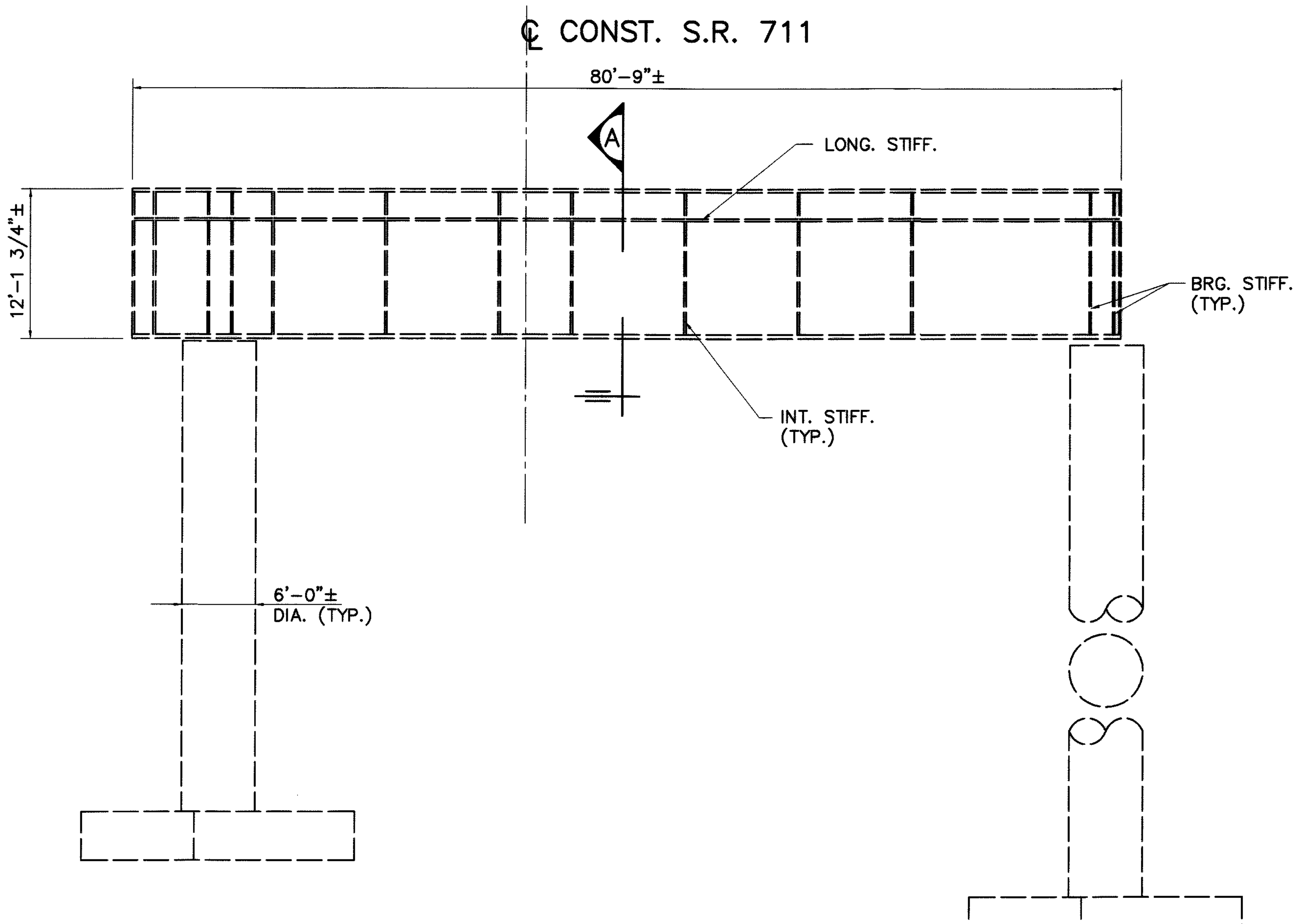
PIER NO. 18R
WEST ELEVATION



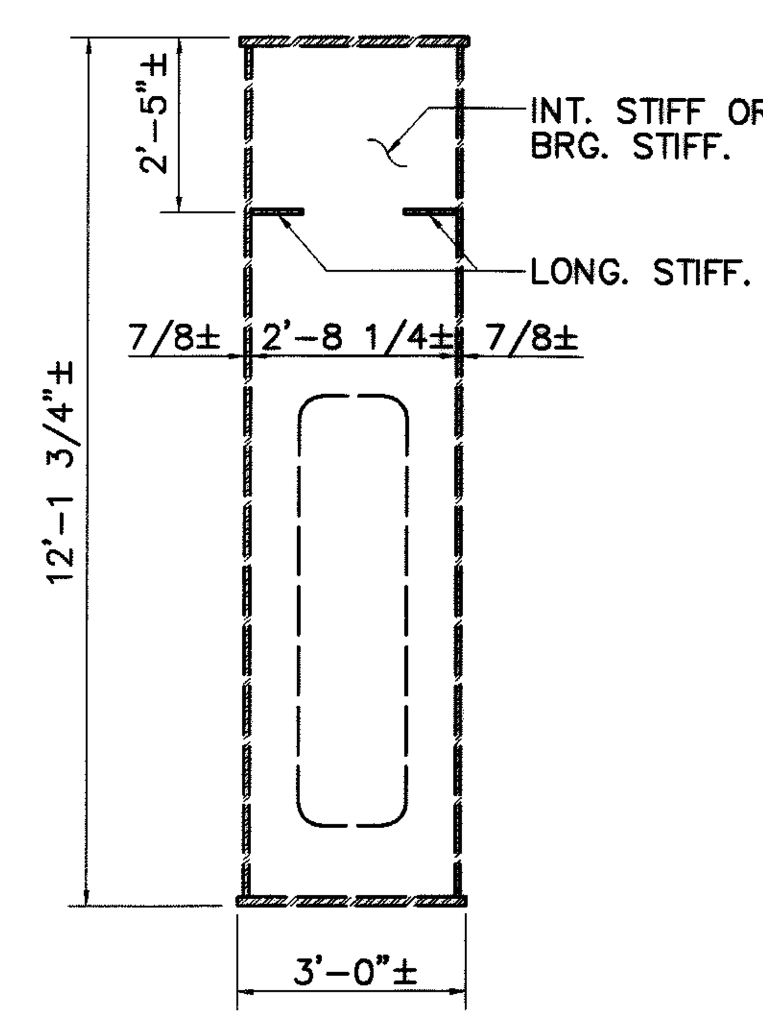
PIER NO. 19L & 19R
WEST ELEVATION



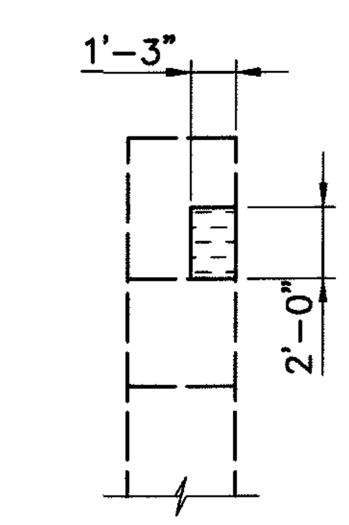
PIER NO. 19R
EAST ELEVATION



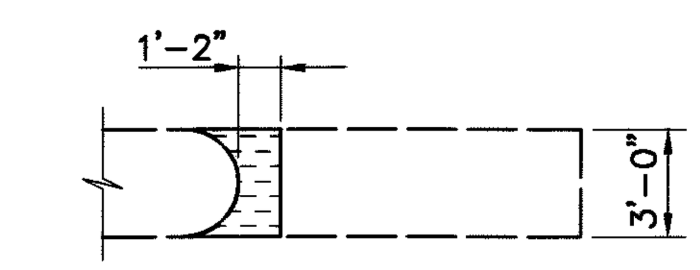
PIER NO. 15



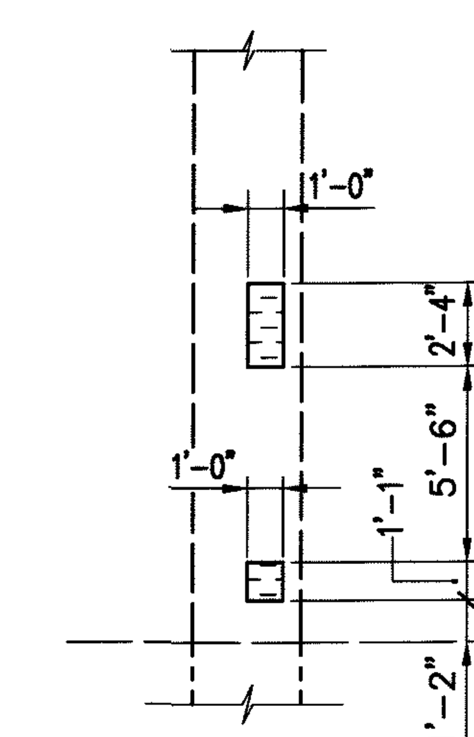
SECTION A



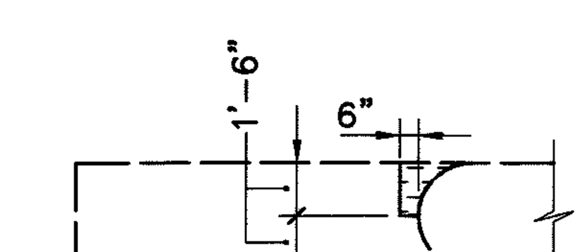
VIEW W



VIEW X



VIEW Y



VIEW Z

NOTE:

SAND BLAST, CLEAN AND PAINT PORTION OF THE SOUTH END OF STEEL PIER CAP INTERIOR AND ENTIRE EXTERIOR OF STEEL PIER CAP OF PIER NO. 15. APPROX. AREA TO BE CLEANED AND PAINTED = 6,600 SQ. FT. COST OF THIS CLEANING AND PAINTING WITH OZEU PAINT SYSTEM SHALL BE INCLUDED IN THE SEVERAL OZEU ITEMS.

STRUCTURE INSPECTION PERFORMED ON 7/13/99

NOTE:

1. FOR NOTE "PATCHING CONCRETE STRUCTURES" & NOTE "SEALING OF CONCRETE SURFACES", SEE SHT. NO. 28/80.

LEGEND

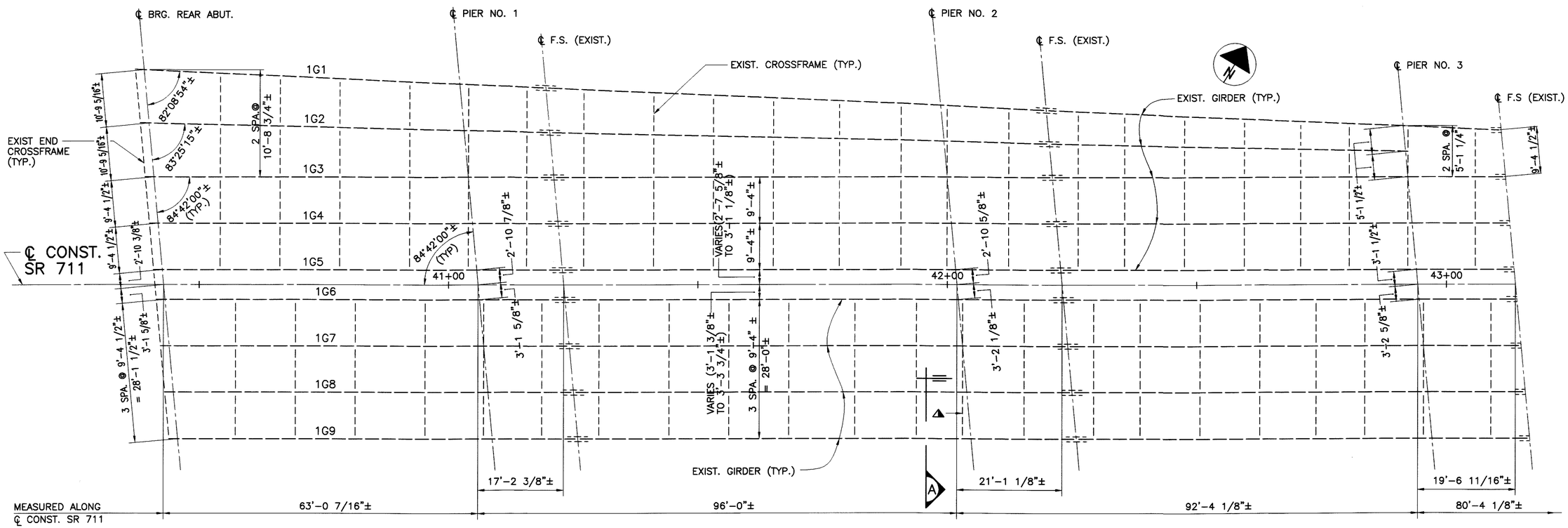
[hatched box] INDICATES AREA TO BE PATCHED PER ITEM 519, PATCHING CONCRETE STRUCTURE

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
P.J.W.	F.V.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
B.J.M.		5008255	

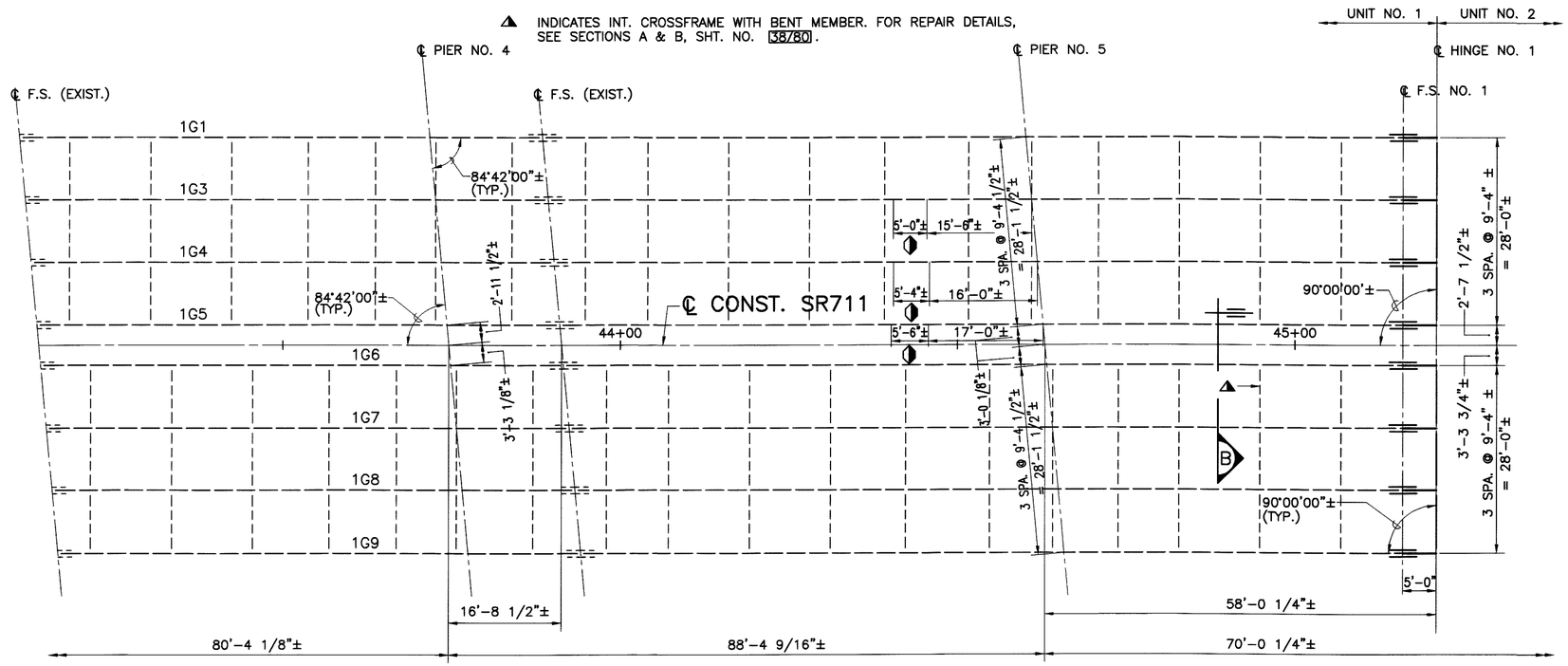
PIER REPAIR DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47



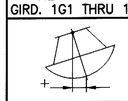
◗ INDICATES LIMITS OF COLLISION DAMAGE TO THE GIRDER. FOR GIRDER REPAIR DETAILS, SEE SHT. NO. 46/80.

▲ INDICATES INT. CROSSFRAME WITH BENT MEMBER. FOR REPAIR DETAILS, SEE SECTIONS A & B, SHT. NO. 38/80.



PLAN

BEARING RESETTING TABLE *

TEMPERATURE AT TIME OF RESETTING	REAR ABUT. GIRD. 1G1 THRU 1G9	PIER NO. 1 GIRD. 1G1 THRU 1G9	PIER NO. 2 GIRD. 1G1 THRU 1G5
			
100°F	+ 3/4"	+ 9/16"	+ 5/16"
80°F	+ 3/8"	+ 5/16"	+ 1/8"
60°F	0"	0"	0"
40°F	– 3/8"	– 5/16"	– 1/8"
20°F	– 3/4"	– 9/16"	– 5/16"

* THE EXIST. BEARINGS IDENTIFIED ABOVE SHALL BE RESET ACCORDING TO THE ABOVE SCHEDULE.

\+ INDICATES ROCKERS TILT AWAY FROM PIER NO. 3 (FIXED PIER).
– INDICATES ROCKERS TILT TOWARDS PIER NO. 3 (FIXED PIER).

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER ELEVATION, SEE SHT. NOS. 41/80 & 42/80.
3. FOR HINGE NO. 1 REMOVAL AND RETROFIT DETAILS, SEE SHT. NOS. 47/80 & 48/80.
4. FOR F.S. NO. 1 DETAILS, SEE SHT. NO. 50/80.
5. FOR EXP. JOINT DETAILS AT ABUTMENTS, SEE SHT. NO. 58/80.
6. FOR END CROSSFRAMES AND EXP. JOINT DETAILS AT HINGES, SEE SHT. NOS. 52/80 THRU 57/80.
7. FOR POT BEARING DETAILS AT HINGES, SEE SHT. NO. 46/80.
8. FOR EXIST. ROCKER REFURBISH AND RESET NOTE, SEE SHT. NO. 36/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
380 South Fifth Street, Suite 1300, Columbus, Ohio 43215-4311
330.572.2100, Fax 330.572.2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

FRAMING PLAN – UNIT NO. 1
BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

35 / 80

674 / 886

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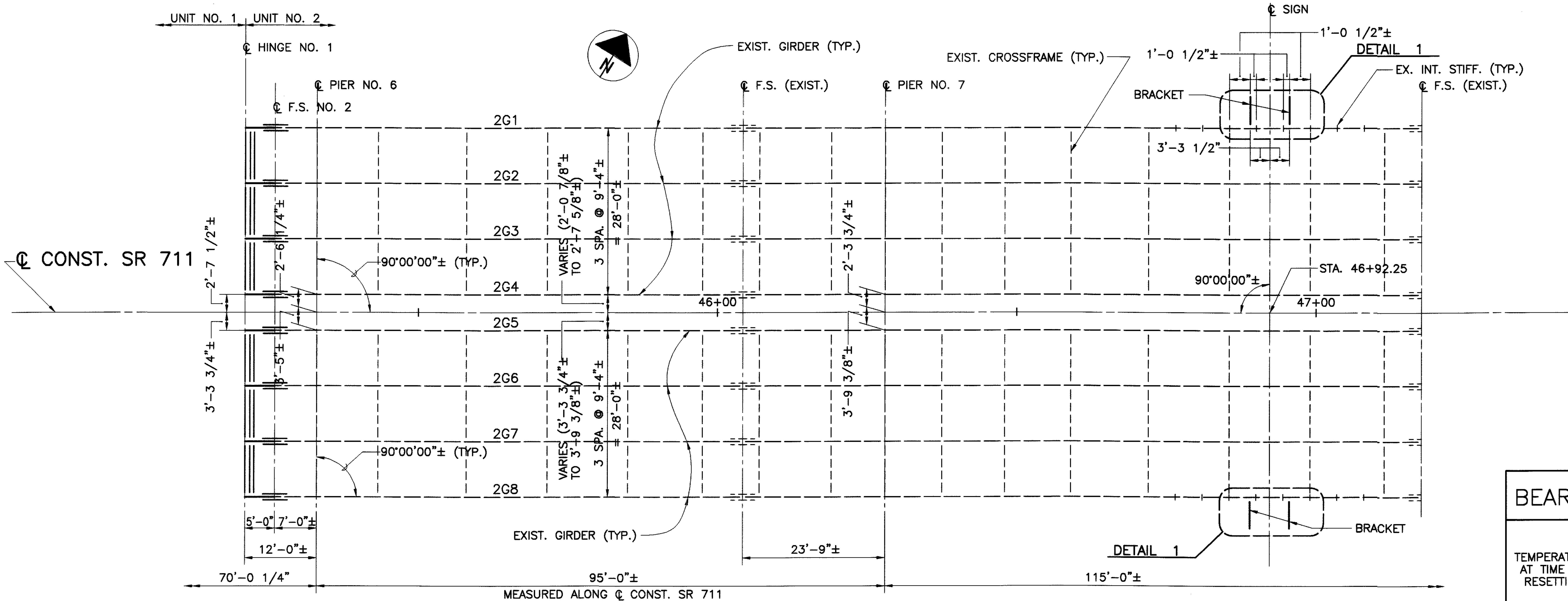

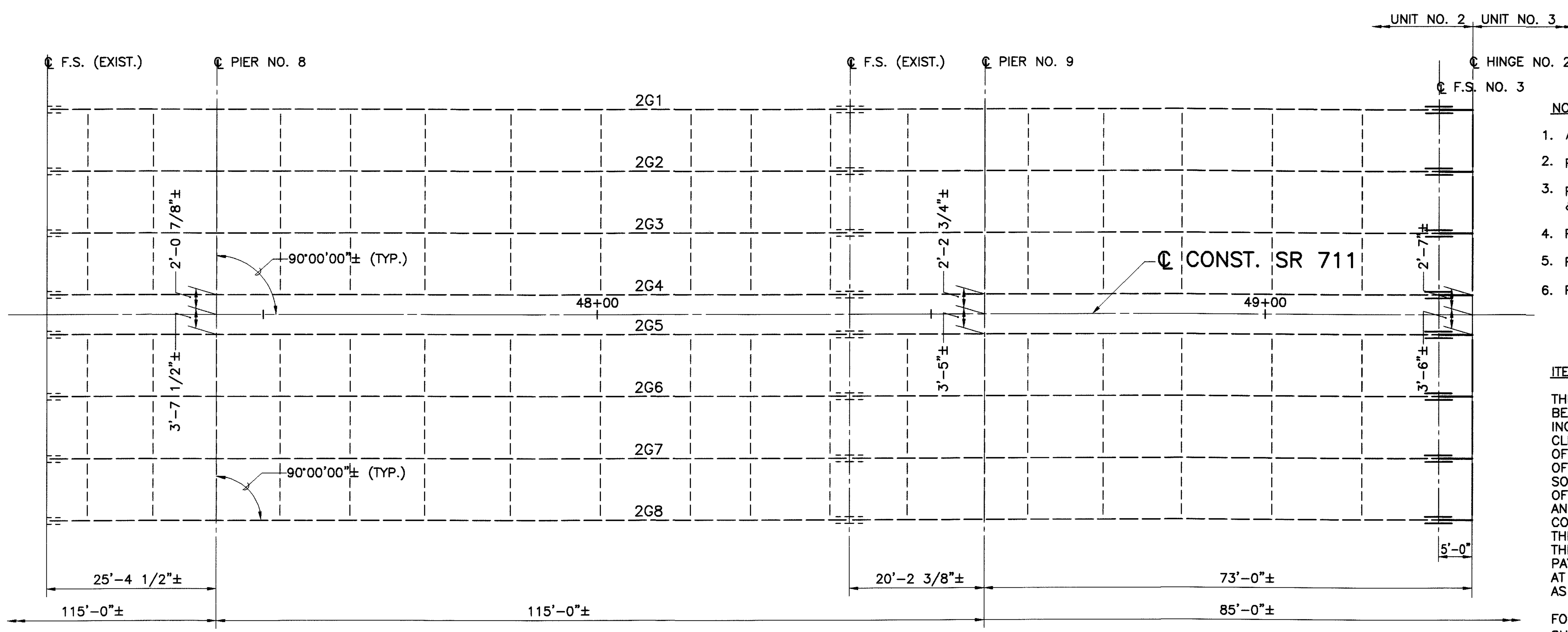

PLAN

BEARING RESETTING TABLE*

TEMPERATURE AT TIME OF RESETTING	PIER NO. 6 GIRD. 2G5 THRU 2G8	PIER NO. 7 GIRD. 2G5 THRU 2G8
	+	+
100°F	+ 11/16"	+ 3/8"
80°F	+ 5/16"	+ 3/16"
60°F	0"	0"
40°F	– 5/16"	– 3/16"
20°F	– 11/16"	– 3/8"

* THE EXIST. BEARINGS IDENTIFIED ABOVE SHALL BE RESET ACCORDING TO THE ABOVE SCHEDULE.

+ INDICATES ROCKERS TILT AWAY FROM PIER NO. 8 (FIXED PIER)
– INDICATES ROCKERS TILT TOWARDS FROM PIER NO. 8 (FIXED PIER)

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER ELEVATIONS, SEE SHT. NO. 42/80.
3. FOR HINGE NOS. 1 & 2 REMOVAL AND RETROFIT DETAILS, SEE SHT. NOS. 47/80 & 48/80.
4. FOR F.S. NOS. 2 & 3 DETAILS, SEE SHT. NOS. 50/80 & 51/80.
5. FOR DETAIL 1, SEE SHT. NO. 68/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80.

ITEM 516 REFURBISH AND RESET BEARING, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS IDENTIFIED IN THE PLAN, AS WELL AS THEIR CLEANING AND PAINTING. INCLUDED SHALL BE THE DISASSEMBLY OF THE BEARINGS, A HAND TOOL CLEANING (GRINDING IF NECESSARY), PAINTING WITH SYSTEM OZEU, REPLACEMENT OF SHEET LEAD WITH PREFORMED BEARING PADS (711.21), REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60°F, AND REASSEMBLY OF THE BEARINGS. THE CONTRACTOR SHALL ASSURE THAT NO GIRDERS AND/OR BEARING DEVICES ARE "FLOATING". AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN PLACE OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR ALL THE ABOVE DESCRIBED LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516–REFURBISH AND RESET BEARING, AS PER PLAN.

FOR ADDITIONAL BEARING DETAILS SEE STD. DWG. NO. RB–1–55, AND SHT. NO. 43/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

FRAMING PLAN – UNIT NO. 2

BRIDGE NO. MAH–711–0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103FRAM2.DWG
Date: 06–30–03 Time: 10:23 AM TW = 328d22'41.00"
Technician: RPRATT

UNIT NO. 2 | UNIT NO. 3

℄ HINGE NO. 2

℄ F.S. NO. 4

℄ PIER NO. 10

EXIST. GIRD. (TYP.)

℄ F.S. (EXIST.)

EXIST. CROSSFRAME (TYP.)

℄ PIER NO. 11

L6x6x3/8"

EXIST. LATERAL BRACING (TYP.)

℄ F.S (EXIST.)

3G1

3G2

3G3

3G4

3G5

3G6

3G7

3G8

℄ CONST. SR 711

2'-6 5/8"±

3'-6 1/2"±

90°00'00"± (TYP.)

90°00'00"± (TYP.)

60°00'00"±

3 SPA. @ 10'-9 5/16"± = 32'-4"±

2'-10"±

3'-7 3/4"±

3 SPA. @ 10'-9 5/16"± = 32'-4"±

60°00'00"± (TYP.)

50+00

51+00

5'-0" 7'-0"±

12'-0"±

85'-0"±

180'-6"±

55'-3"±

55'-3"±

236'-0"±

MEASURED ALONG ℄ CONST. SR 711

EXIST. GIRD. (TYP.)

LEGEND

○ INDICATES LOCATION OF LATERAL BRACING CONNECTION RETROFIT. FOR DETAILS, SEE SHT. NO. 46/80.

■ REPLACE EXIST. L 6x6x5/16" WITH NEW L 6x6x3/8". INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION, FOR PAYMENT.

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER ELEVATIONS, SEE SHT. NO. 43/80.
3. FOR HINGE NOS. 2 & 3 REMOVAL AND RETROFIT DETAILS, SEE SHT. NOS. 47/80 THRU 49/80.
4. FOR F.S. NOS. 4 & 5 DETAILS, SEE SHT. NO. 51/80.
5. FOR DETAIL 1, SEE SHT. NO. 68/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80.

℄ SIGN

2'-2 3/8"±

5'-6 5/8"±

4'-4 5/8"±

3'-4 3/8"±

DETAIL 1

BRACKETS

℄ F.S. (EXIST.)

℄ PIER NO. 12

EX. INT. STIFF. (TYP.)

3'-3 1/2"

2'-8 1/4"±

60°00'00"±

STA. 53+66.62

52+00

53+00

54+00

4'-4"±

3'-0"±

9'-4"±

9'-4"±

9'-4"±

9'-4"±

MATCH LINE A-A SEE SHT. NO. 36/80

REFERENCE LINE (MAIN TAN. @ STA. 54+05.87±)

℄ CONST. SR 711

60°00'00"± (TYP.)

T.S. STA. 54+05.87

EX. INT. STIFF. (TYP.)

BRACKETS

DETAIL 1

3'-3 1/2"±

2'-1 1/8"±

55'-3"±

55'-3"±

236'-0"±

180'-6 1/8"±

PLAN

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
300 North Main Street, Suite 200, Kent, Ohio 44240
330-672-2100, Fax 330-672-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

FRAMING PLAN – UNIT NO. 3 (PARTIAL)
BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

37 / 80

676 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103FRAM3.DWG
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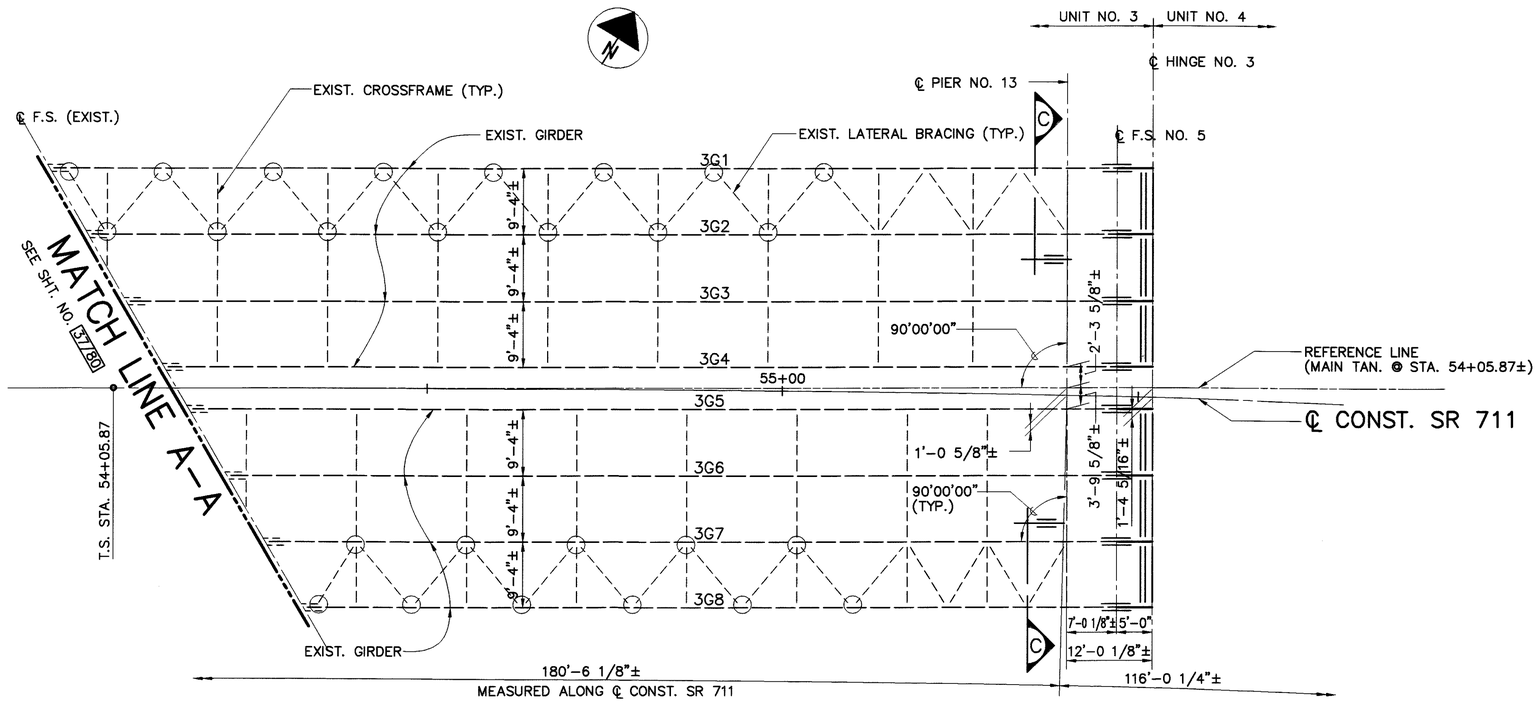
Technician: RPRATT



PLAN

LEGEND

○ INDICATES LOCATION OF LATERAL BRACING CONNECTION RETROFIT. FOR DETAILS, SEE SHT. NO. 46/80.

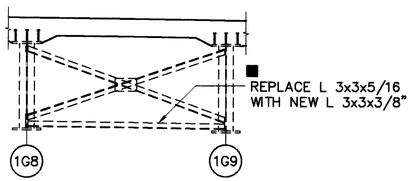
■ INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION, FOR PAYMENT.

BEARING RESETTING TABLE*

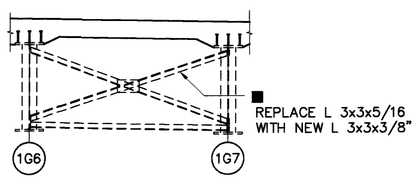
TEMPERATURE AT TIME OF RESETTING	PIER NO. 10 GIRD. 3G5 THRU 3G8	PIER NO. 13 GIRD. 3G1 THRU 3G8
		
100°F	+ 9/16"	+ 1 5/16"
80°F	+ 1/4"	+ 5/8"
60°F	0"	0"
40°F	– 1/4"	– 5/8"
20°F	– 9/16"	– 1 5/16"

* THE EXIST. BEARINGS IDENTIFIED ABOVE SHALL BE RESET ACCORDING TO THE ABOVE SCHEDULE.

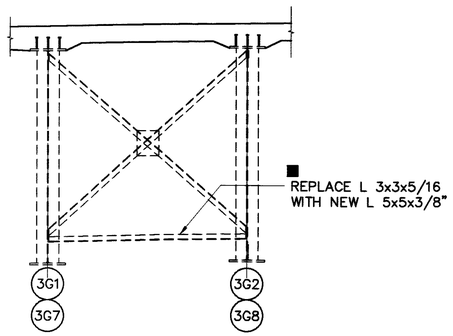
\+ INDICATES ROCKERS TILT AWAY FROM PIER NO. 11 (FIXED PIER).
– INDICATES ROCKERS TILT TOWARDS PIER NO. 11 (FIXED PIER).



SECTION A



SECTION B



SECTION C

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR LOCATION OF SECTIONS A & B, SEE SHT. NO. 35/80.
3. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80.
4. FOR GIRDER ELEVATIONS, SEE SHT. NO. 43/80.

DESIGN AGENCY
CLAUS PILE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
380 S. Fifth St., Suite 1035, Columbus, OH 43215-4311
330-372-2100, Fax 330-372-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

FRAMING PLAN – UNIT NO. 3 (PARTIAL)
BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

38 / 80

677 / 886

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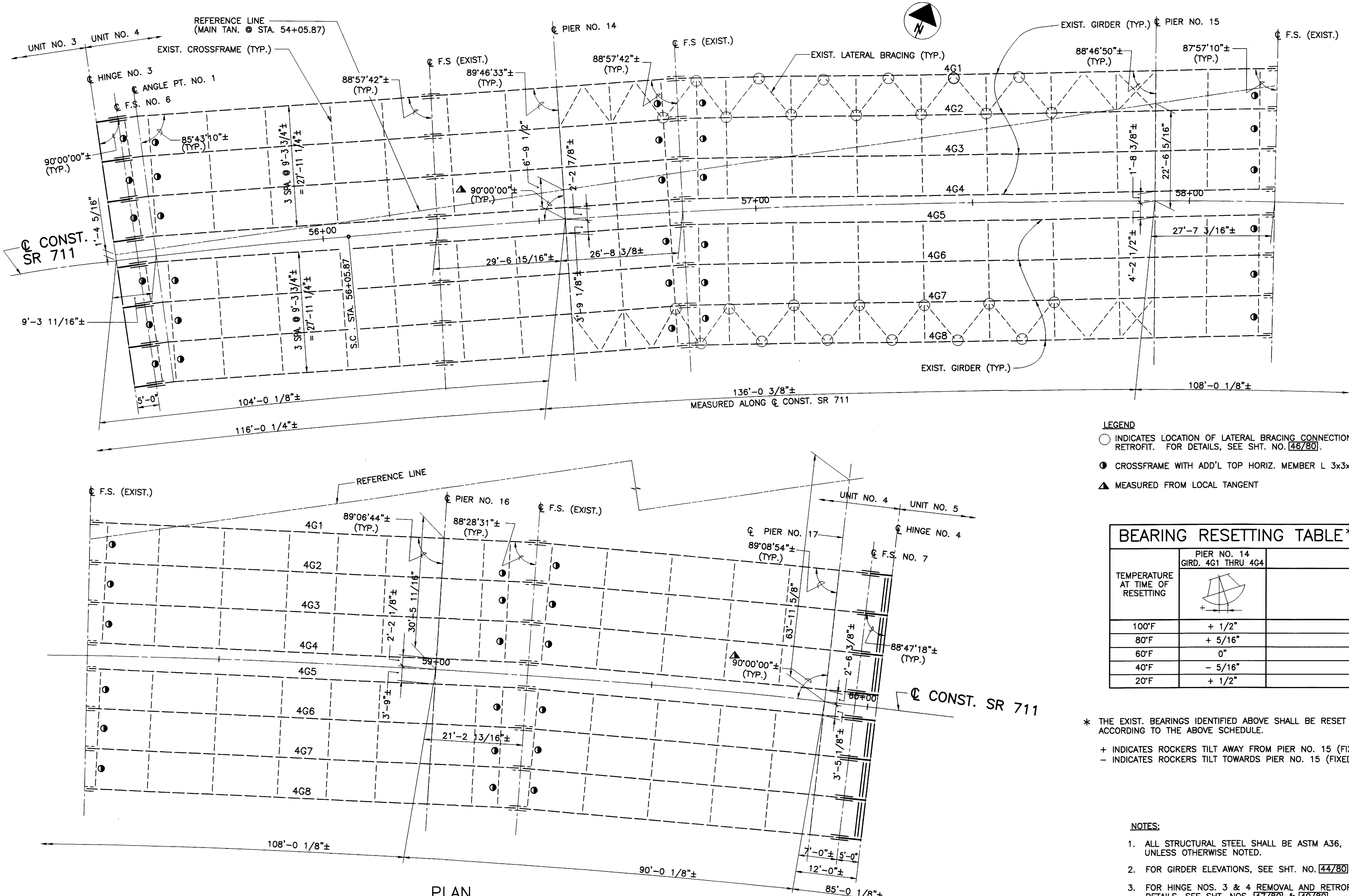


PLAN

LEGEND

○ INDICATES LOCATION OF LATERAL BRACING CONNECTION RETROFIT. FOR DETAILS, SEE SHT. NO. 46/80.

◑ CROSSFRAME WITH ADD'L TOP HORIZ. MEMBER L 3x3x5/16

▲ MEASURED FROM LOCAL TANGENT

BEARING RESETTING TABLE*

TEMPERATURE AT TIME OF RESETTING	PIER NO. 14 GIRD. 4G1 THRU 4G4	
	+ ← →	
100°F	+ 1/2"	
80°F	+ 5/16"	
60°F	0"	
40°F	− 5/16"	
20°F	+ 1/2"	

* THE EXIST. BEARINGS IDENTIFIED ABOVE SHALL BE RESET ACCORDING TO THE ABOVE SCHEDULE.

\+ INDICATES ROCKERS TILT AWAY FROM PIER NO. 15 (FIXED PIER).
− INDICATES ROCKERS TILT TOWARDS PIER NO. 15 (FIXED PIER).

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER ELEVATIONS, SEE SHT. NO. 44/80.
3. FOR HINGE NOS. 3 & 4 REMOVAL AND RETROFIT DETAILS, SEE SHT. NOS. 47/80 & 49/80.
4. FOR F.S. NOS. 6 & 7 DETAILS, SEE SHT. NOS. 50/80 & 51/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80.

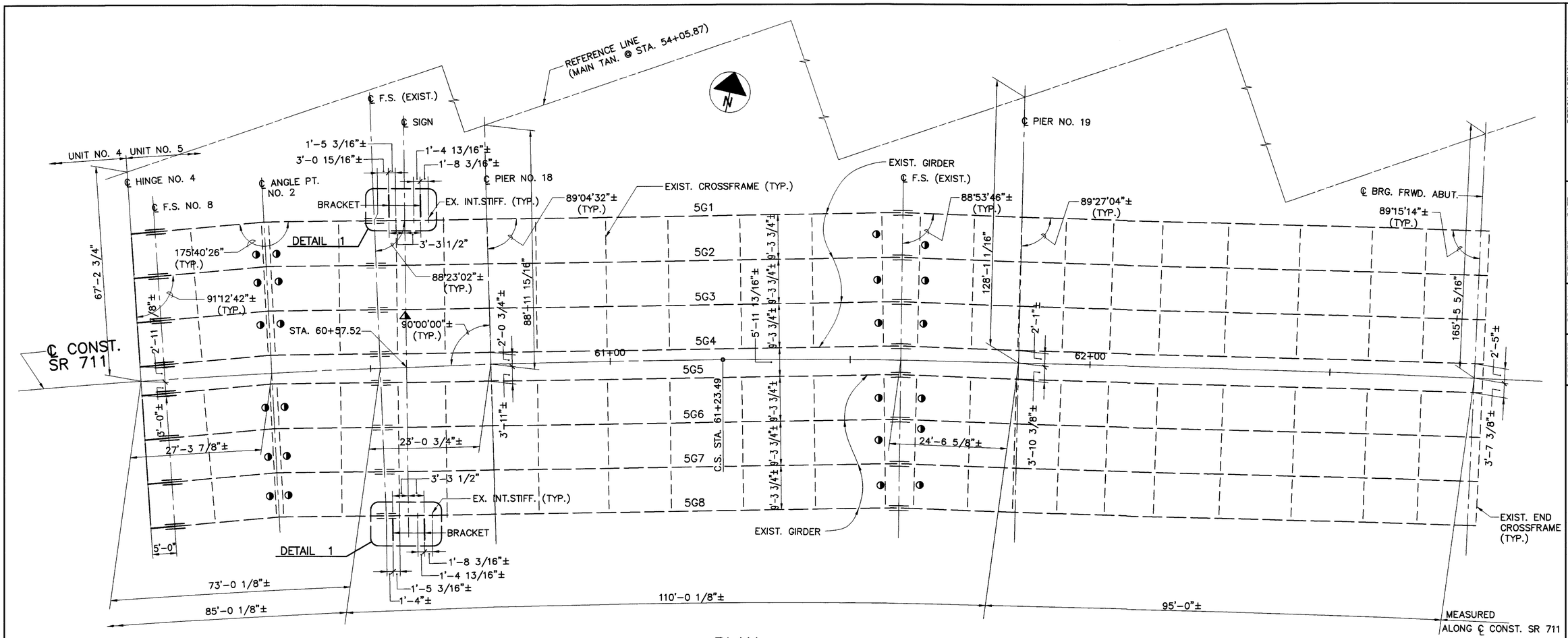
DESIGN AGENCY
GPD ASSOCIATES
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
520 South Main Street, Suite 2531 Akron, Ohio 44311

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

FRAMING PLAN – UNIT NO. 4

BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47



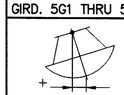
PLAN

LEGEND

◑ CROSSFRAME WITH ADD'L TOP HORIZ. MEMBER L 3x3x5/16

▲ MEASURED FROM LOCAL TANGENT

BEARING RESETTING TABLE*

TEMPERATURE AT TIME OF RESETTING	FRWD. ABUT. GIRD. 5G1 THRU 5G4	
		
100°F	+ 5/16"	
80°F	+ 1/8"	
60°F	0"	
40°F	– 1/8"	
20°F	– 5/16"	

* THE EXIST. BEARINGS IDENTIFIED ABOVE SHALL BE RESET ACCORDING TO THE ABOVE SCHEDULE.

\+ INDICATES ROCKERS TILT AWAY FROM PIER NO. 19 (FIXED PIER).
– INDICATES ROCKERS TILT TOWARDS PIER NO. 19 (FIXED PIER).

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER ELEVATIONS, SEE SHT. NO. 45/80.
3. FOR HINGE NO 4 REMOVAL AND RETROFIT DETAILS, SEE SHT. NOS. 47/80 & 49/80.
4. FOR F.S. NO. 8 DETAILS, SEE SHT. NO. 50/80.
5. FOR DETAIL 1, SEE SHT. NO. 68/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330 North Main Street, Suite 231, Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

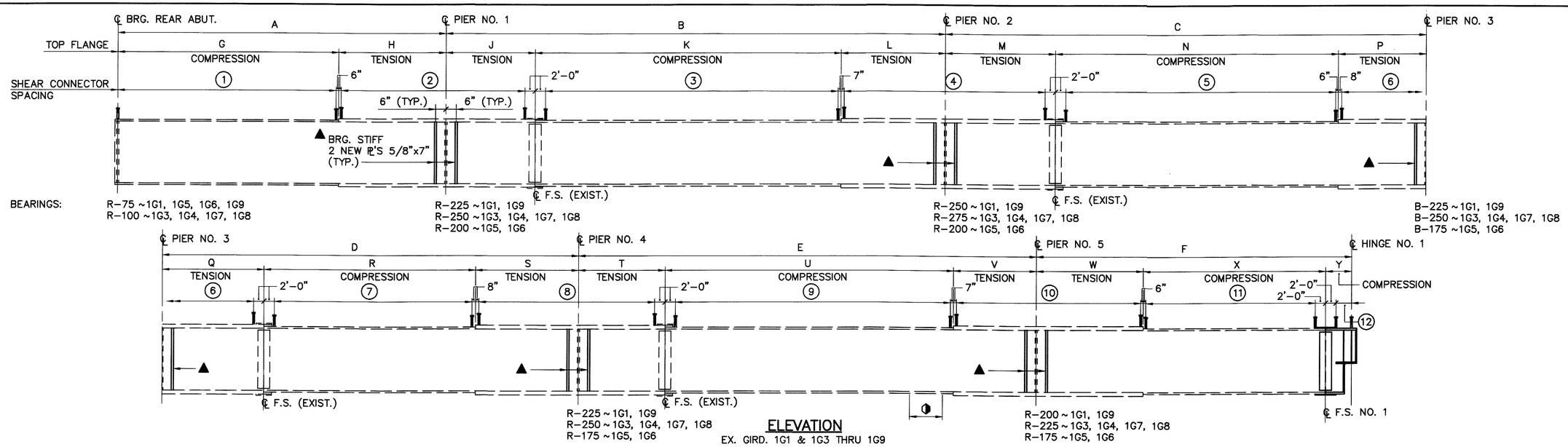
FRAMING PLAN – UNIT NO. 5
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

40 / 80

679 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103FRAM5.DWG
Date: 06-30-03 Time: 10:28 AM IW = 347.65 47.00
Technician: RPRATT



ELEVATION
EX. GIRD. 1G1 & 1G3 THRU 1G9

GIRDER DIMENSIONS

LOCATION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y
1G1	63'-4 3/8"±	96'-6"±	92'-9 3/4"±	80'-5 1/4"±	88'-4 5/8"±	60'-10 3/4"±	42'-7 3/4"±	20'-8 5/8"±	17'-3 3/8"±	59'-0 1/4"±	20'-2 3/8"±	21'-2 3/8"±	54'-7 1/4"±	17'-0 1/8"±	19'-7 7/8"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	35'-2 7/8"±	5'-0"
1G2	63'-2 1/4"±	96'-2 5/8"±	92'-6 3/4"±				42'-5 1/8"±	20'-9 1/8"±	17'-2 7/8"±	58'-8 3/4"±	20'-3"±	21'-1 3/4"±	71'-5"±										
1G3	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	60'-0 3/8"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	34'-4 1/2"±	5'-0"
1G4	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	59'-2"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	33'-6 1/8"±	5'-0"
1G5	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	58'-0 1/4"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	32'-7 5/8"±	5'-0"
1G6	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	57'-9"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	32'-1"±	5'-0"
1G7	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	56'-10 1/2"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	31'-2 5/8"±	5'-0"
1G8	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	56'-0 1/8"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	30'-4 1/4"±	5'-0"
1G9	63'-0 1/2"±	96'-0"±	92'-4 1/8"±	80'-4 1/8"±	88'-4 5/8"±	55'-1 3/4"±	42'-2 7/8"±	20'-9 5/8"±	17'-2 3/8"±	58'-6"±	20'-3 5/8"±	21'-1 1/8"±	54'-1 3/4"±	17'-1 1/4"±	19'-6 3/4"±	40'-10"±	19'-11 3/8"±	16'-8 5/8"±	55'-8"±	16'-0"±	20'-8"±	29'-5 7/8"±	5'-0"

SHEAR CONNECTOR SPACING DIMENSIONS

LOCATION	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫
1G1	49 SPA. @ 10" (+) = 42'-1 3/4"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 56'-5 1/4"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	48 SPA. @ 1'-1" (+) = 52'-1 1/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	33 SPA. @ 1'-0" (-) = 32'-8 7/8"±	3 SPA. @ 1'-0" = 3'-0"
1G2	49 SPA. @ 10" (+) = 41'-11 1/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 56'-1 3/4"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	45 SPA. @ 1'-1" (+) = 49'-5"±	24 SPA. @ 10" = 20'-0"						
1G3	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	32 SPA. @ 1'-0" (-) = 31'-10 1/2"±	3 SPA. @ 1'-0" = 3'-0"
1G4	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	31 SPA. @ 1'-0" (+) = 31'-0 1/8"±	3 SPA. @ 1'-0" = 3'-0"
1G5	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	31 SPA. @ 1'-0" (-) = 30'-1 5/8"±	3 SPA. @ 1'-0" = 3'-0"
1G6	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	30 SPA. @ 1'-0" (-) = 29'-7"±	3 SPA. @ 1'-0" = 3'-0"
1G7	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	29 SPA. @ 1'-0" (-) = 28'-8 5/8"±	3 SPA. @ 1'-0" = 3'-0"
1G8	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	28 SPA. @ 1'-0" (-) = 27'-10 1/4"±	3 SPA. @ 1'-0" = 3'-0"
1G9	49 SPA. @ 10" (+) = 41'-8 7/8"±	18 SPA. @ 2'-0" (-) = 35'-6"±	47 SPA. @ 1'-2" (+) = 55'-11"±	20 SPA. @ 2'-0" (-) = 38'-9 3/4"±	47 SPA. @ 1'-1" (+) = 51'-7 3/4"±	17 SPA. @ 2'-0" = 34'-0"±	33 SPA. @ 1'-2" (-) = 38'-2"±	17 SPA. @ 2'-0" = 34'-0"±	45 SPA. @ 1'-2" (+) = 53'-1"±	18 SPA. @ 2'-0" (-) = 35'-7"±	27 SPA. @ 1'-0" (-) = 26'-11 7/8"±	3 SPA. @ 1'-0" = 3'-0"

LEGEND

▲ INCLUDED FOR PAYMENT WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION. FOR WELD DETAILS, SEE STD. DWG. NO. GSD-1-96, SHT. NO. 2 OF 3.

◑ INDICATES LIMITS OF COLLISION DAMAGE TO GIRDERS 1G3, 1G4 & 1G5. FOR REPAIR DETAILS, SEE SHT. NO. 46/80 .

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER 1G2 ELEV., SEE SHT. NO. 42/80 .
3. FOR SHEAR CONN. DETAIL, SEE SHT. NO. 61/80 .
4. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN 1/4" FOR THICKNESS UP TO 3/4" AND 5/16" FOR GREATER THAN 3/4" THICK.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 35/80 .

DESIGN AGENCY
CLAUS PYKE BECHMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330-572-2100

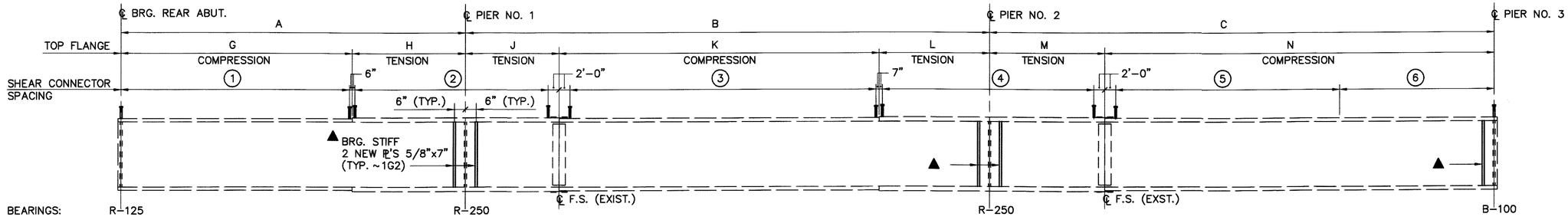
DESIGNED B.J.M. | DRAWN R.P.R. | CHECKED P.J.W. | REVIEWED K.S.J. | DATE 3-18-02 | REVISED | STRUCTURE FILE NUMBER 5008255

GIRDER ELEVATION - UNIT NO. 1
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

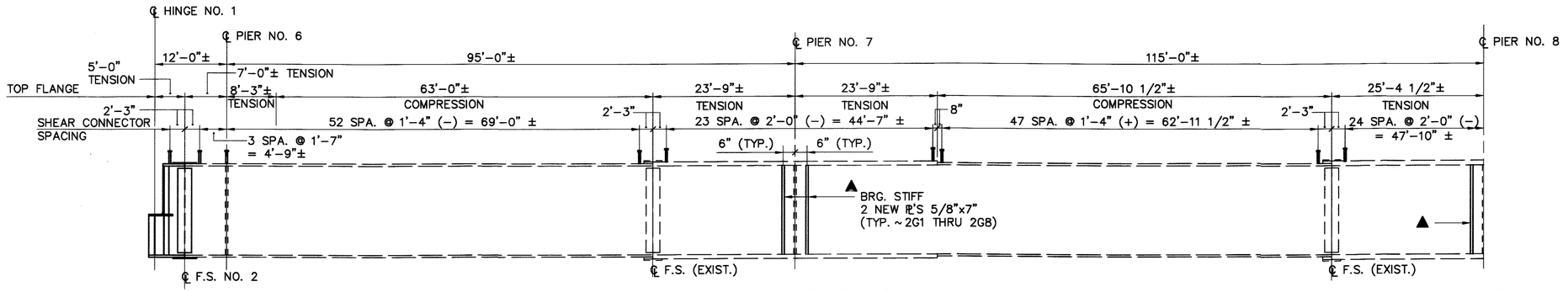
MAH-711-0.47

41/80

680/886



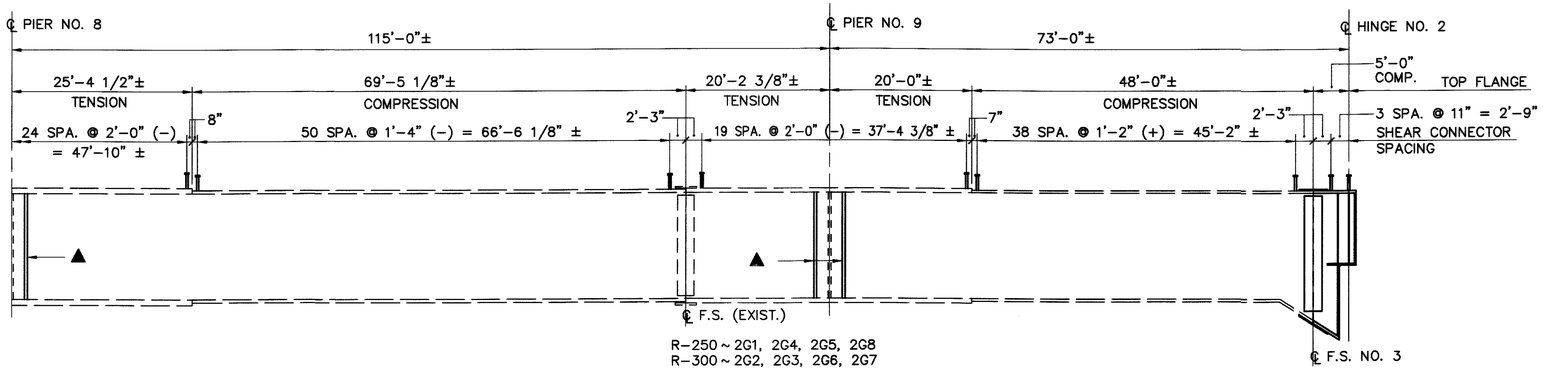
ELEVATION
EX. GIRD. 1G2



BEARINGS:
R-175 ~2G1, 2G4, 2G5, 2G8
R-200 ~2G2, 2G3, 2G6, 2G7

R-250 ~ 2G1, 2G8
R-300 ~ 2G2, 2G3, 2G6, 2G7
R-275 ~ 2G4, 2G5

B-275 ~ 2G1, 2G4, 2G5, 2G8
B-300 ~ 2G2, 2G3, 2G6, 2G7



R-250 ~ 2G1, 2G4, 2G5, 2G8
R-300 ~ 2G2, 2G3, 2G6, 2G7

ELEVATION
EX. GIRD. 2G1 THRU 2G8

LEGEND

▲ INCLUDED FOR PAYMENT WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION. FOR WELD DETAILS, SEE STD. DWG. NO. GSD-1-96, SHT. NO. 2 OF 3.

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR GIRDER DIMENSIONS & SHEAR CONN. SPACING TABLES OF GIRD. 1G2, SEE SHT. NO. 41/80 .
3. FOR ADDITIONAL NOTES, SEE SHT. NOS. 35/80 & 41/80 .

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
395 Wolf Ledges Parkway, Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

GIRDER ELEVATION - UNIT NOS. 1 & 2
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

42 / 80

681
886

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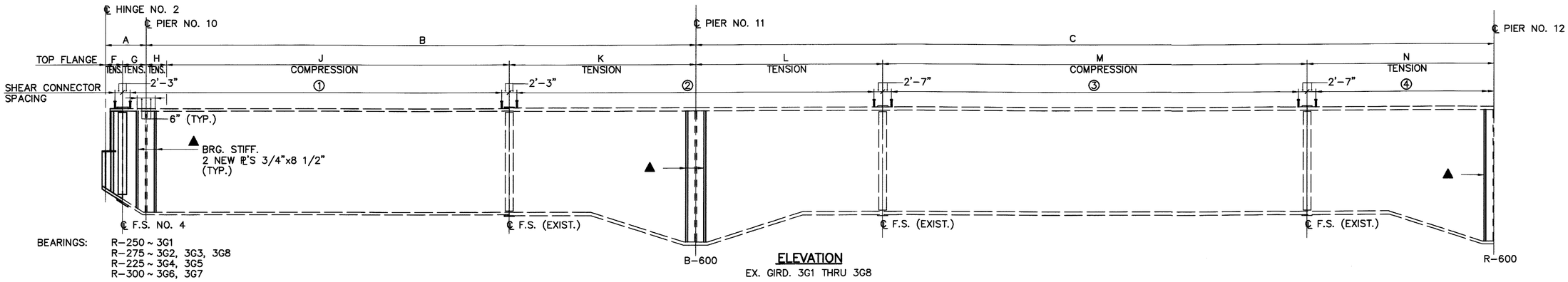
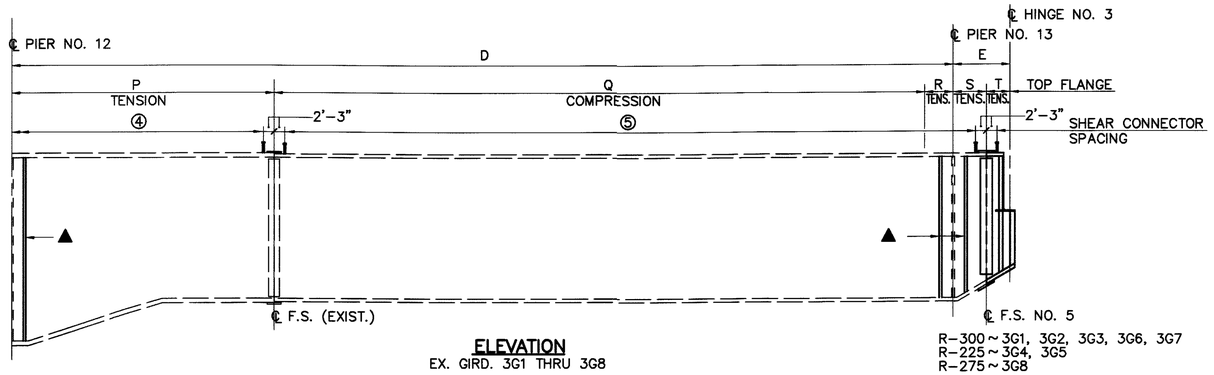
Technician: RPRATT



ELEVATION
EX. GIRD. 3G1 THRU 3G8



ELEVATION
EX. GIRD. 3G1 THRU 3G8

SHEAR CONNECTOR SPACING DIMENSIONS

LOCATION	①	②	③	④	⑤
3G1	55 SPA. @ 2'-0" (-) = 109'-10 1/4"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	73 SPA. @ 2'-0" (-) = 145'-7 3/4"±
3G2	58 SPA. @ 2'-0" (-) = 115'-2 7/8"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	71 SPA. @ 2'-0" (-) = 140'-3 1/8"±
3G3	61 SPA. @ 2'-0" (-) = 120'-7 5/8"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	68 SPA. @ 2'-0" (-) = 134'-10"±
3G4	63 SPA. @ 2'-0" (+) = 126'-0 1/4"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	65 SPA. @ 2'-0" (-) = 129'-5 7/8"±
3G5	65 SPA. @ 2'-0" (-) = 129'-5 7/8"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	63 SPA. @ 2'-0" (+) = 126'-0 1/4"±
3G6	68 SPA. @ 2'-0" (-) = 134'-10"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 120'-7 5/8"±
3G7	71 SPA. @ 2'-0" (-) = 140'-3 1/8"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	58 SPA. @ 2'-0" (-) = 115'-2 7/8"±
3G8	73 SPA. @ 2'-0" (-) = 145'-7 3/4"±	53 SPA. @ 2'-0" = 106'-0"±	61 SPA. @ 2'-0" (-) = 121'-4"±	53 SPA. @ 2'-0" = 106'-0"±	55 SPA. @ 2'-0" = 109'-10 1/4"±

GIRDER DIMENSIONS

LOCATION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
3G1	12'-0"±	162'-7 1/4"±	236'-0"±	198'-4 3/4"±	12'-0"±	5'-0"	7'-0"±	6'-9 1/2"±	100'-6 3/4"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	137'-9 3/4"±	5'-4"±	7'-0"±	5'-0"
3G2	12'-0"±	167'-11 7/8"±	236'-0"±	193'-0 1/8"±	12'-0"±	5'-0"	7'-0"±	6'-7"±	106'-1 7/8"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	132'-3 1/8"±	5'-6"±	7'-0"±	5'-0"
3G3	12'-0"±	173'-4 5/8"±	236'-0"±	187'-7 1/2"±	12'-0"±	5'-0"	7'-0"±	6'-4 1/2"±	111'-9 1/8"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	126'-8"±	5'-8 1/2"±	7'-0"±	5'-0"
3G4	12'-0"±	178'-9 1/4"±	236'-0"±	182'-2 7/8"±	12'-0"±	5'-0"	7'-0"±	6'-1 1/2"±	117'-4 3/4"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	121'-0 7/8"±	5'-11"±	7'-0"±	5'-0"
3G5	12'-0"±	182'-2 7/8"±	236'-0"±	178'-9 1/4"±	12'-0"±	5'-0"	7'-0"±	5'-11"±	121'-0 7/8"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	117'-4 3/4"±	6'-1 1/2"±	7'-0"±	5'-0"
3G6	12'-0"±	187'-7 1/2"±	236'-0"±	173'-4 5/8"±	12'-0"±	5'-0"	7'-0"±	6'-8 1/2"±	126'-8"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	111'-9 1/8"±	6'-4 1/2"±	7'-0"±	5'-0"
3G7	12'-0"±	193'- 0 1/8"±	236'-0"±	167'-11 7/8"±	12'-0"±	5'-0"	7'-0"±	5'-6"±	132'-3 1/8"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	106'-1 7/8"±	6'-7"±	7'-0"±	5'-0"
3G8	12'-0"±	198'-4 3/4"±	236'-0"±	162'-7 1/4"±	12'-0"±	5'-0"	7'-0"±	5'-4"±	137'-9 3/4"±	55'-3"±	55'-3"±	125'-6"±	55'-3"±	55'-3"±	100'-6 3/4"±	6'-9 1/2"±	7'-0"±	5'-0"

EXIST. SPECIAL BEARINGS

BOLSTER NO.	ROCKER NO.	DIMENSIONS													WEIGHT	
		A	B	C	D	F	G	H	K	L	M	R	T	Y	BOLSTER	ROCKER
B-350	R-350	3 1/2"	22"	4"	3 1/2"	3/4"	14"	21 5/8"	20"	30"	27"	14"	3 1/2"	1 11/16"	1225	1325
B-350 SPECIAL		3 1/2"	22"	4"	3 1/2"	3/4"	14"	21 7/8"	20"	30"	27"	14"	3 3/4"	1 11/16"	1230	
B-600	B-600	4"	24"	4"	3 3/4"	1 1/4"	16"	28 1/8"	6 1/4"	38"	34"	20"	4"	1 15/16"	1728	2163

FOR ADDITIONAL DETAILS AND NOTES, SEE STD. DWG. NO. RB-1-55.

LEGEND

▲ INCLUDED FOR PAYMENT WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION. FOR WELD DETAILS, SEE STD. DWG. NO. GSD-1-96, SHT. NO. 2 OF 3.

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR ADDITIONAL NOTES, SEE SHT. NOS. 35/80 & 41/80 .

DESIGN AGENCY
CLAUS PYLE SCHOOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 South Main Street, Suite 333 Akron, Ohio 44311
330-572-2100 FAX 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

GIRDER ELEVATION - UNIT NO. 3
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

43 / 80

682 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103BEAM-ELEV.DWG
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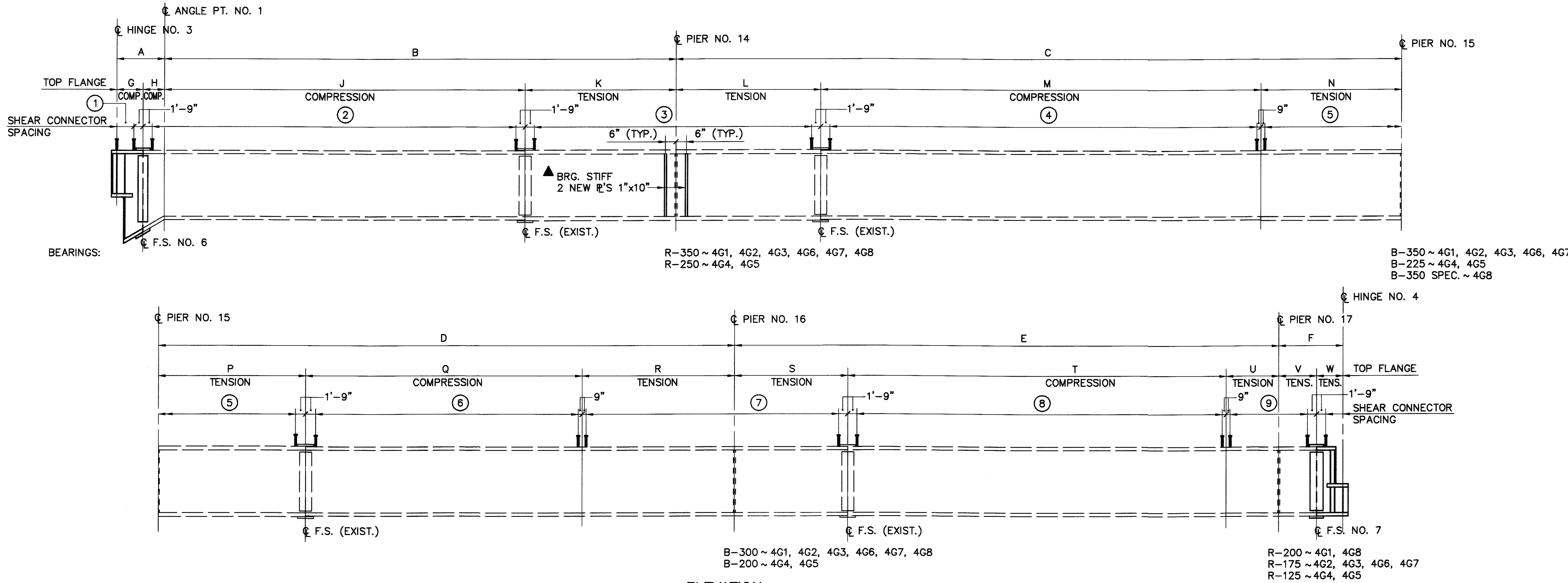
Technician: RPRATT



ELEVATION

EX. GIRD. 4G1 THRU 4G8

GIRDER DIMENSIONS

LOCATION	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
4G1	9'-5 7/8"±	97'-0 3/4"±	138'-2 3/8"±	109'-9 1/4"±	91'-5 5/8"±	12'-2 3/8"±	5'-0"	4'-5 7/8"±	68'-4 1/8"±	28'-8 1/2"±	27'-6 7/8"±	83'-10"±	26'-9 1/2"±	28'-0 5/8"±	59'-4 5/8"±	22'-4"±	21'-7"±	59'-3 5/8"±	10'-7"±	7'-2 3/8"±	5'-0"
4G2	9'-5 1/8"±	96'-4 1/2"±	137'-6 1/2"±	109'-2 3/4"±	91'-0 3/8"±	12'-1 5/8"±	5'-0"	4'-5 1/8"±	67'-6 1/2"±	28'-10"±	27'-5 3/8"±	83'-2"±	26'-11 1/8"±	27'-11"±	59'-1"±	22'-2 3/4"±	21'-5 3/4"±	59'-0 3/8"±	10'-6 1/4"±	7'-1 5/8"±	5'-0"
4G3	9'-4 1/2"±	95'-8 1/2"±	136'-10 1/2"±	108'-8 1/2"±	90'-7"±	12'-1"±	5'-0"	4'-4 1/2"±	66'-8 7/8"±	28'-11 5/8"±	27'-3 3/4"±	82'-6"±	27'-0 3/4"±	27'-9 3/8"±	58'-9 5/8"±	22'-1 1/2"±	21'-4 1/2"±	58'-8 7/8"±	10'-5 5/8"±	7'-1"±	5'-0"
4G4	9'-3 3/4"±	94'-11 3/8"±	136'-2 1/2"±	108'-1 1/8"±	90'-1 3/4"±	12'-0 1/4"±	5'-0"	4'-3 3/4"±	65'-10 1/8"±	29'-1 1/4"±	27'-2 1/8"±	81'-10"±	27'-2 3/8"±	27'-7 3/4"±	58'-5 1/8"±	22'-0 1/4"±	21'-3 1/4"±	58'-5 5/8"±	10'-4 7/8"±	7'-0 1/4"±	5'-0"
4G5	9'-3 1/4"±	94'-6 1/4"±	135'-9 3/8"±	107'-10 1/8"±	89'-10 3/8"±	11'-11 7/8"±	5'-0"	4'-3 1/4"±	65'-4"±	29'-2 1/4"±	27'-1 1/8"±	81'-4 7/8"±	27'-3 3/8"±	27'-6 3/4"±	58'-3 7/8"±	21'-11 1/2"±	21'-2 1/2"±	58'-3 1/2"±	10'-4 3/8"±	6'-11 3/4"±	5'-0"
4G6	9'-2 1/2"±	93'-11 1/4"±	135'-1 3/8"±	107'-3 7/8"±	89'-5 1/8"±	11'-11 1/8"±	5'-0"	4'-2 1/2"±	64'-7 3/8"±	29'-3 7/8"±	26'-11 1/2"±	80'-8 7/8"±	27'-5"±	27'-5 1/8"±	58'-0 1/2"±	21'-10 1/4"±	21'-1 1/4"±	58'-0 1/8"±	10'-3 3/4"±	6'-11 1/8"±	5'-0"
4G7	9'-1 3/4"±	93'-3 1/8"±	134'-5 1/2"±	106'-9 1/2"±	88'-11 7/8"±	11'-10 3/8"±	5'-0"	4'-1 3/4"±	63'-9 3/4"±	29'-5 3/8"±	26'-10"±	80'-0 7/8"±	27'-6 5/8"±	27'-3 1/2"±	57'-9"±	21'-9"±	21'-0"±	57'-8 7/8"±	10'-3"±	6'-10 3/8"±	5'-0"
4G8	9'-1"±	92'-7"±	133'-9 1/2"±	106'-3 1/2"±	88'-6 1/2"±	11'-9 3/4"±	5'-0"	4'-1"±	63'-0"±	29'-7"±	26'-8 3/8"±	79'-4 7/8"±	27'-8 1/4"±	27'-1 3/4"±	57'-6"±	21'-7 3/4"±	20'-10 3/4"±	57'-5 3/8"±	10'-2 3/8"±	6'-9 3/4"±	5'-0"

SHEAR CONNECTOR SPACING DIMENSIONS

LOCATION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4G1	2 SPA. @ 1'-7 1/2" = 3'-3"	47 SPA. @ 1'-6" (-) = 69'-4"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	55 SPA. @ 1'-6" (-) = 81'-4"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 56'-10 5/8"±	21 SPA. @ 2'-0" (-) = 41'-5"±	38 SPA. @ 1'-6" (-) = 56'-9 5/8"±	8 SPA. @ 2'-0" (-) = 15'-3 3/8"±
4G2	2 SPA. @ 1'-7 1/2" = 3'-3"	46 SPA. @ 1'-6" (-) = 68'-5 5/8"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	54 SPA. @ 1'-6" (-) = 80'-8"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 56'-7"±	21 SPA. @ 2'-0" (-) = 41'-2 1/2"±	38 SPA. @ 1'-6" (-) = 56'-6 3/8"±	8 SPA. @ 2'-0" (-) = 15'-1 7/8"±
4G3	2 SPA. @ 1'-7 1/2" = 3'-3"	46 SPA. @ 1'-6" (-) = 67'-7 3/8"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	54 SPA. @ 1'-6" (-) = 80'-0"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 56'-3 5/8"±	21 SPA. @ 2'-0" (-) = 41'-0"±	38 SPA. @ 1'-6" (-) = 56'-2 7/8"±	8 SPA. @ 2'-0" (-) = 15'-0 5/8"±
4G4	2 SPA. @ 1'-7 1/2" = 3'-3"	45 SPA. @ 1'-6" (-) = 66'-7 7/8"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	53 SPA. @ 1'-6" (-) = 79'-4"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 55'-11 1/8"±	21 SPA. @ 2'-0" (-) = 40'-9 1/2"±	38 SPA. @ 1'-6" (-) = 55'-11 5/8"±	8 SPA. @ 2'-0" (-) = 14'-11 1/8"±
4G5	2 SPA. @ 1'-7 1/2" = 3'-3"	45 SPA. @ 1'-6" (-) = 66'-1 1/4"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	53 SPA. @ 1'-6" (-) = 78'-6 7/8"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 55'-9 7/8"±	21 SPA. @ 2'-0" (-) = 40'-8"±	38 SPA. @ 1'-6" (-) = 55'-9 1/2"±	8 SPA. @ 2'-0" (-) = 14'-10 1/8"±
4G6	2 SPA. @ 1'-7 1/2" = 3'-3"	44 SPA. @ 1'-6" (-) = 65'-3 7/8"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	53 SPA. @ 1'-6" (-) = 78'-2 7/8"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	38 SPA. @ 1'-6" (-) = 55'-6 1/2"±	21 SPA. @ 2'-0" (-) = 40'-5 1/2"±	37 SPA. @ 1'-6" (-) = 55'-6 1/8"±	8 SPA. @ 2'-0" (-) = 14'-8 7/8"±
4G7	2 SPA. @ 1'-7 1/2" = 3'-3"	43 SPA. @ 1'-6" (-) = 64'-5 1/2"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	52 SPA. @ 1'-6" (-) = 77'-6 7/8"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	37 SPA. @ 1'-6" (-) = 55'-3"±	21 SPA. @ 2'-0" (-) = 40'-3"±	37 SPA. @ 1'-6" (-) = 55'-2 7/8"±	8 SPA. @ 2'-0" (-) = 14'-7 3/8"±
4G8	2 SPA. @ 1'-7 1/2" = 3'-3"	43 SPA. @ 1'-6" (-) = 63'-7"±	27 SPA. @ 2'-0" (-) = 52'-9 3/8"	52 SPA. @ 1'-6" (-) = 76'-10 7/8"±	27 SPA. @ 2'-0" (-) = 52'-4 1/8"±	37 SPA. @ 1'-6" (-) = 55'-0"±	21 SPA. @ 2'-0" (-) = 40'-0 1/2"±	37 SPA. @ 1'-6" (-) = 54'-11 3/8"±	8 SPA. @ 2'-0" (-) = 14'-6 1/8"±

LEGEND

▲ INCLUDED FOR PAYMENT WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION. FOR WELD DETAILS, SEE STD. DWG. NO. GSD-1-96, SHT. NO. 2 OF 3.

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR ADDITIONAL NOTES, SEE SHT. NOS. 35/80 & 41/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED B.J.M. | CHECKED P.J.W. | DRAWN R.P.R. | REVISED | REVIEWED K.S.J. | DATE 3-18-02 | STRUCTURE FILE NUMBER 5008255

GIRDER ELEVATION – UNIT NO. 4

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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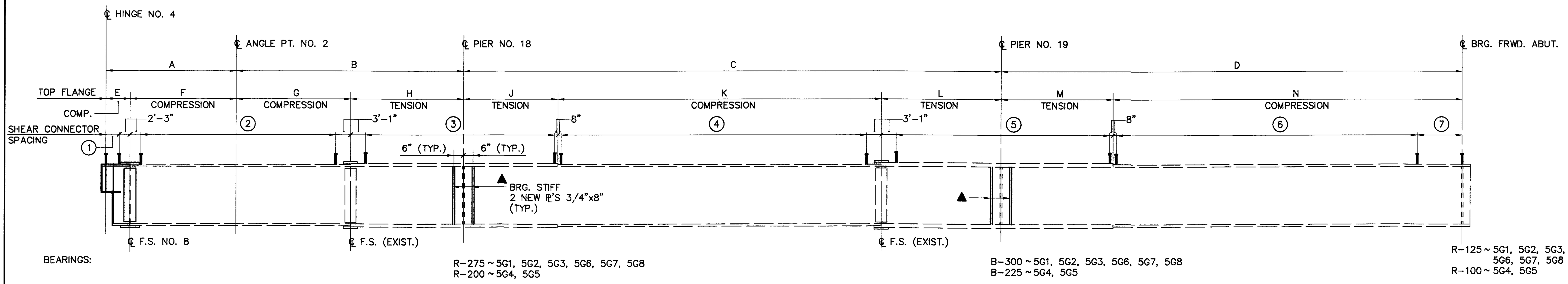
Technician: RPRATT



ELEVATION

EX. GIRD. 5G1 THRU 5G8

GIRDER DIMENSIONS

LOCATION	A	B	C	D	E	F	G	H	J	K	L	M	N
5G1	27'-9 1/4"±	46'-5 1/2"±	111'-7 1/2"±	95'-8 3/8"±	5'-0"	22'-9 1/4"±	23'-0 1/4"±	23'-5 1/4"±	19'-7 1/2"±	67'-1 3/4"±	24'-10 1/4"±	23'-3"±	72'-5 3/8"±
5G2	27'-7 5/8"±	46'-2 7/8"±	111'-1 5/8"±	95'-5 7/8"±	5'-0"	22'-7 5/8"±	22'-10 7/8"±	23'-4"±	19'-8 7/8"±	66'-7 5/8"±	24'-9 1/8"±	23'-4 1/8"±	72'-1 3/4"±
5G3	27'-6"±	46'-0 1/4"±	110'-7 7/8"±	95'-3 3/8"±	5'-0"	22'-6"±	22'-9 5/8"±	23'-2 5/8"±	19'-10 1/4"±	66'-1 1/2"±	24'-8 1/8"±	23'-5 1/8"±	71'-10 1/4"±
5G4	27'-4 3/8"±	45'-9 5/8"±	110'-1 7/8"±	95'-0 7/8"±	5'-0"	22'-4 3/8"±	22'-8 3/8"±	23'-1 1/4"±	19'-11 5/8"±	65'-7 1/4"±	24'-7"±	23'-6 1/4"±	71'-6 5/8"±
5G5	27'-3 3/8"±	45'-7 3/4"±	109'-10 1/4"±	94'-11 1/8"±	5'-0"	22'-3 3/8"±	22'-7 3/8"±	23'-0 3/8"±	20'-0 1/2"±	65'-3 3/8"±	24'-6 3/8"±	23'-6 7/8"±	71'-4 1/4"±
5G6	27'-1 7/8"±	45'-5 1/8"±	109'-4 3/8"±	94'-8 5/8"±	5'-0"	22'-1 7/8"±	22'-6 1/8"±	22'-11"±	20'-1 7/8"±	64'-9 1/4"±	24'-5 1/4"±	23'-8"±	71'-0 5/8"±
5G7	27'-0 1/4"±	45'-2 1/2"±	108'-10 3/8"±	94'-6 1/8"±	5'-0"	22'-0 1/4"±	22'-4 7/8"±	22'-9 5/8"±	20'-3 1/4"±	64'-3"±	24'-4 1/8"±	23'-9 1/8"±	70'-9"±
5G8	26'-10 5/8"±	44'-11 7/8"±	108'-4 1/2"±	94'-3 5/8"±	5'-0"	21'-10 5/8"±	22'-3 1/2"±	22'-8 3/8"±	20'-4 1/2"±	63'-8 7/8"±	24'-3 1/8"±	23'-10 1/8"±	70'-5 1/2"±

SHEAR CONNECTOR SPACING DIMENSIONS

LOCATION	(1)	(2)	(3)	(4)	(5)	(6)	(7)
5G1	3 SPA. @ 11" = 2'-9"	33 SPA. @ 1'-3" (-) = 40'-5 1/2"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	48 SPA. @ 1'-4" (-) = 63'-4 3/4"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	45 SPA. @ 1'-5" (-) = 62'-5 3/8"±	8 SPA. @ 1'-2" = 9'-4"
5G2	3 SPA. @ 11" = 2'-9"	33 SPA. @ 1'-3" (-) = 40'-2 1/2"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	48 SPA. @ 1'-4" (-) = 62'-10 5/8"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	44 SPA. @ 1'-5" (-) = 62'-1 3/4"±	8 SPA. @ 1'-2" = 9'-4"
5G3	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 39'-11 5/8"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	47 SPA. @ 1'-4" (-) = 62'-4 1/2"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	44 SPA. @ 1'-5" (-) = 61'-10 1/4"±	8 SPA. @ 1'-2" = 9'-4"
5G4	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 39'-8 3/4"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	47 SPA. @ 1'-4" (-) = 61'-10 1/4"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	44 SPA. @ 1'-5" (-) = 61'-6 5/8"±	8 SPA. @ 1'-2" = 9'-4"
5G5	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 39'-6 3/4"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	47 SPA. @ 1'-4" (-) = 61'-6 3/8"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	44 SPA. @ 1'-5" (-) = 61'-4 1/4"±	8 SPA. @ 1'-2" = 9'-4"
5G6	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 39'-4"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	46 SPA. @ 1'-4" (-) = 61'-0 1/4"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	44 SPA. @ 1'-5" (-) = 61'-0 5/8"±	8 SPA. @ 1'-2" = 9'-4"
5G7	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 39'-1 1/8"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	46 SPA. @ 1'-4" (-) = 60'-6"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	43 SPA. @ 1'-5" (-) = 60'-9"±	8 SPA. @ 1'-2" = 9'-4"
5G8	3 SPA. @ 11" = 2'-9"	32 SPA. @ 1'-3" (-) = 38'-10 1/8"±	20 SPA. @ 2'-0" (-) = 39'-3 7/8"±	46 SPA. @ 1'-4" (-) = 59'-11 7/8"±	23 SPA. @ 1'-11" (+) = 44'-4 1/4"±	43 SPA. @ 1'-5" (-) = 60'-5 1/2"±	8 SPA. @ 1'-2" = 9'-4"

LEGEND

▲ INCLUDED FOR PAYMENT WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION. FOR WELD DETAILS, SEE STD. DWG. NO. GSD-1-96, SHT. NO. 2 OF 3.

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. FOR ADDITIONAL NOTES, SEE SHT. NOS. 35/80 & 41/80 .

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

GIRDER ELEVATON - UNIT NO. 5
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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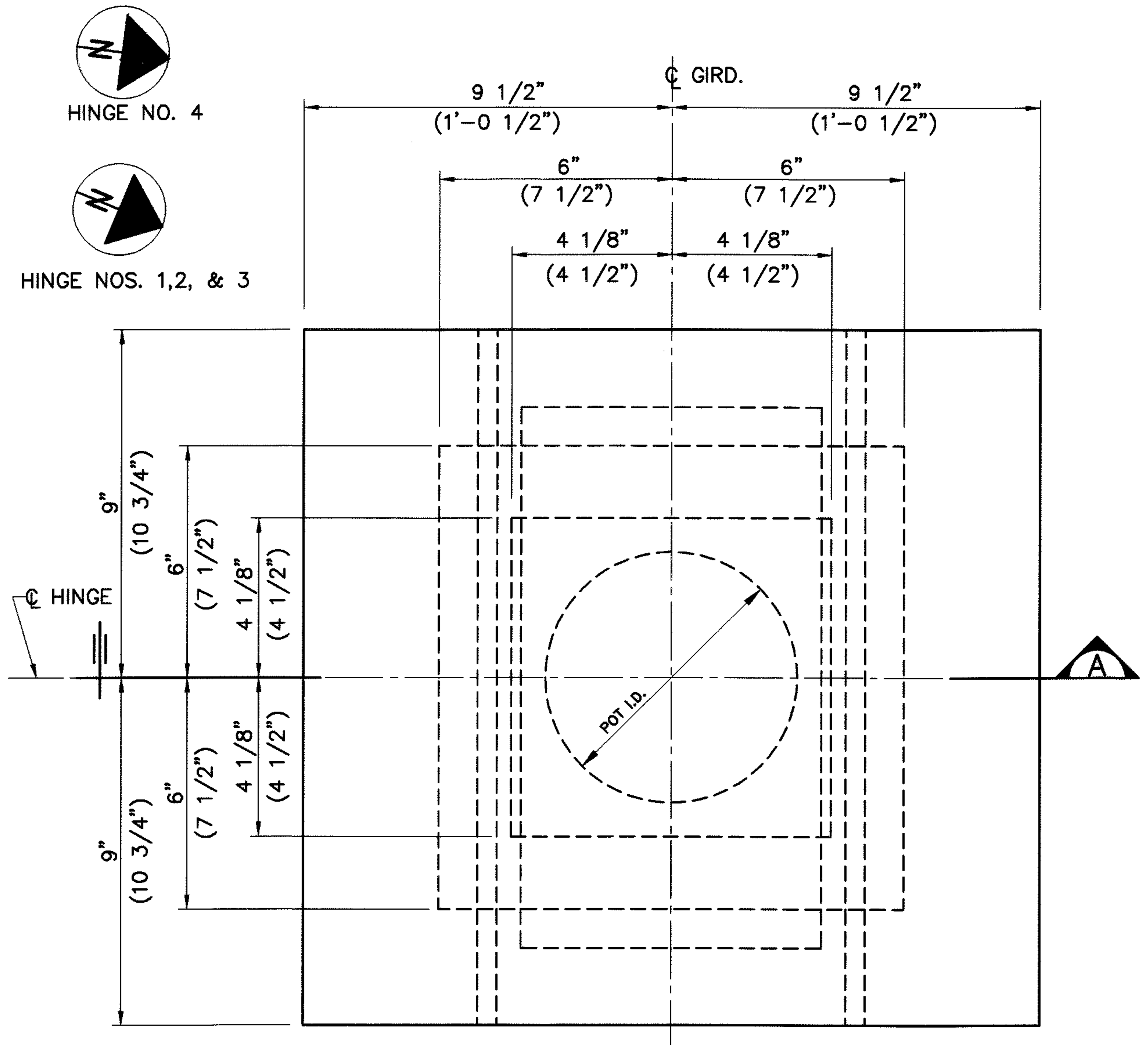
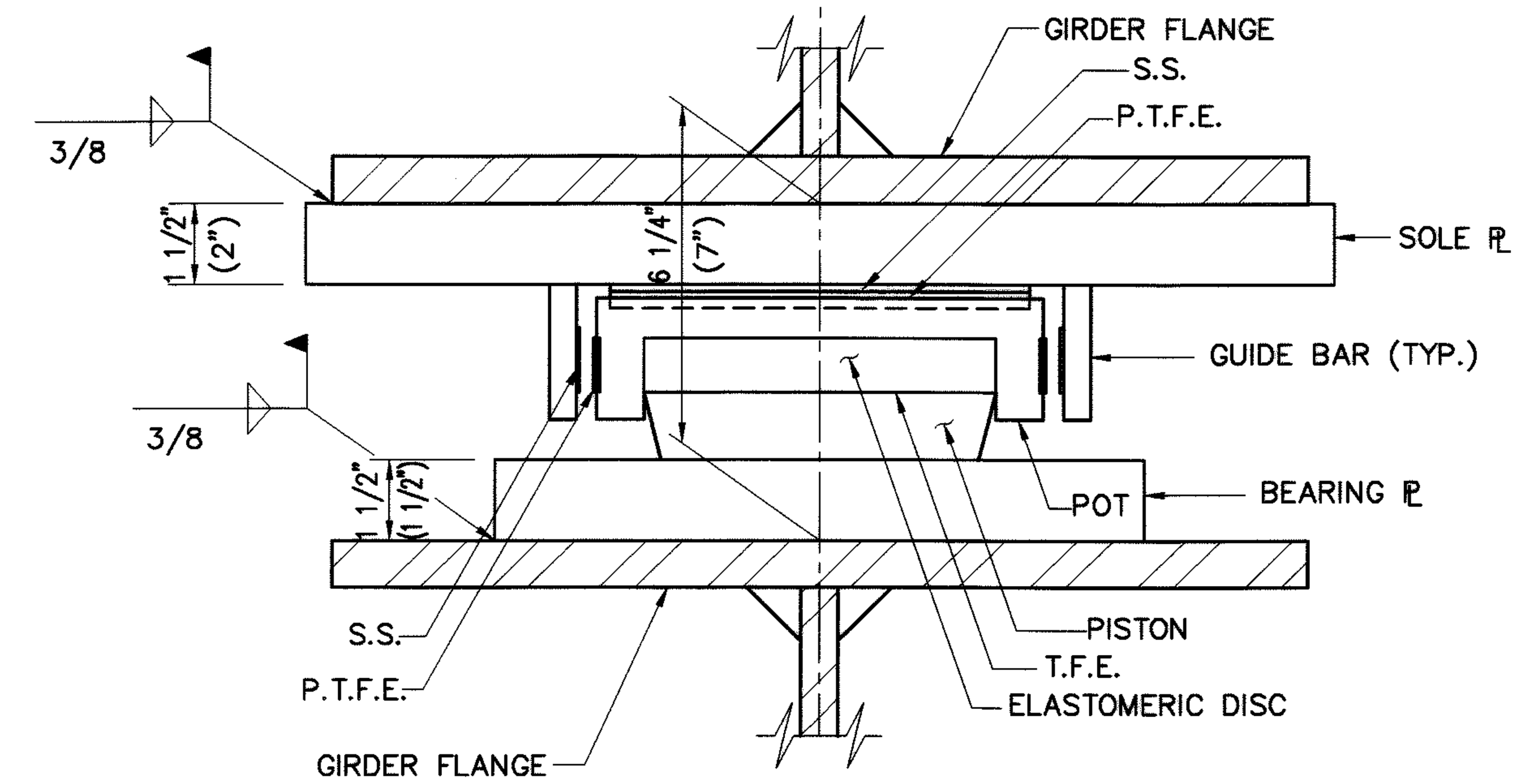


PLAN



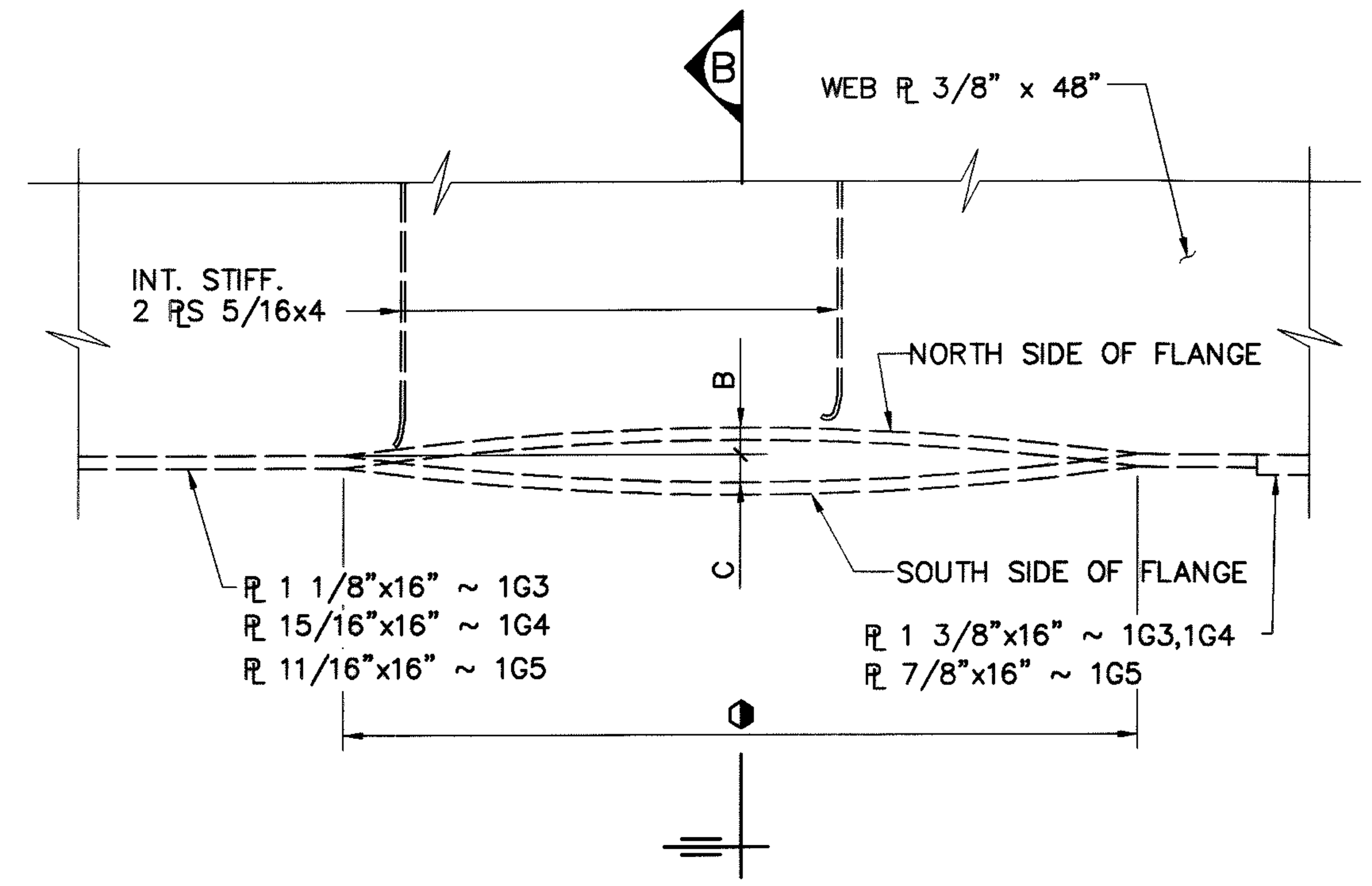
SECTION (A)

POT BEARING DETAIL

BEARINGS AT HINGE NOS. 1, 2, & 4 SHOWN
BEARINGS AT HINGE NO. 3 SIMILAR AND
AS NOTED IN PARENTHESIS

FOR BEARING NOTES, SEE
SHT. NOS. 12/80 AND 13/80.

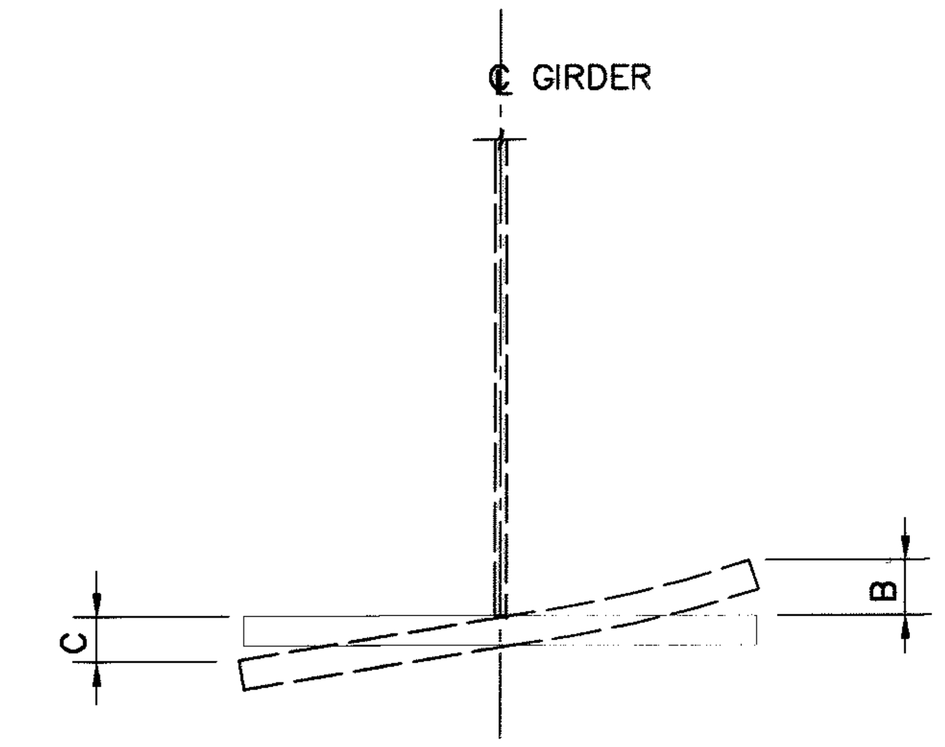
LOCATION	DESIGN LOADS(k)			DESIGN MOVEMENT
	MAX. VERT.	MIN. VERT.	HORIZ.	
HINGE NOS. 1, 2, & 4	118	38	14	3.00"
HINGE NO. 3	149	58	17	4.58"



GIRDER ELEVATION

GIRDERS 1G3, 1G4, 1G5

EXIST. CONDITION IN SPAN NO. 5

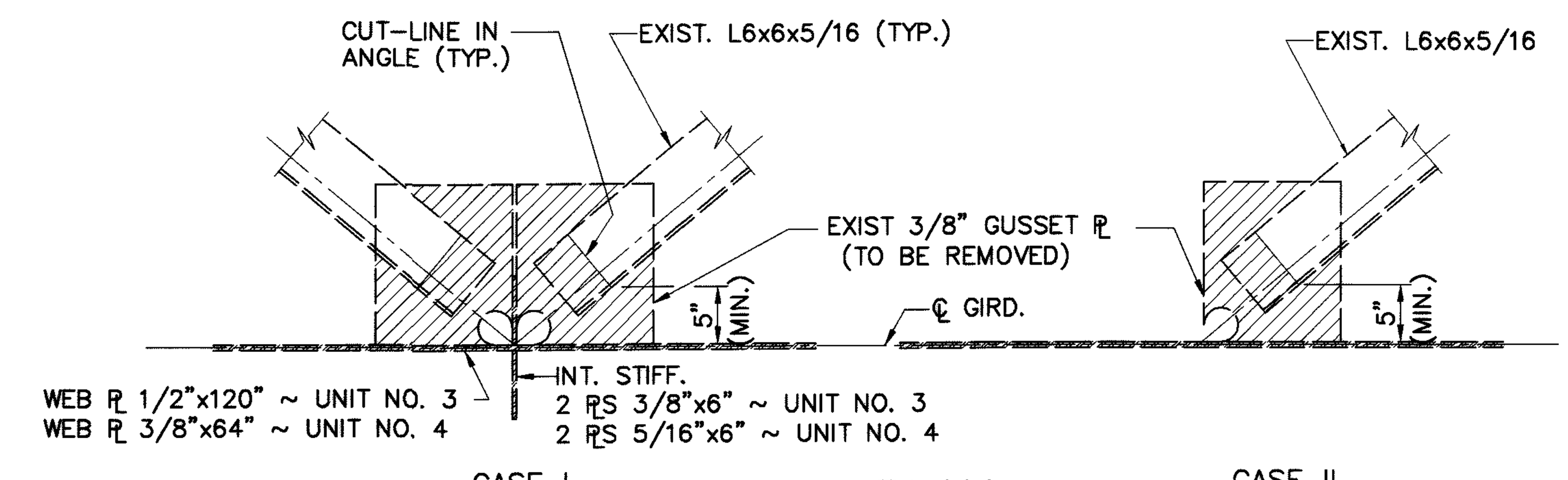


SECTION (B)

EXIST CONDITION IN SPAN NO. 5				
GIRDER	◑	DIM. B	DIM. C	DIM. B + C
1G3	5'-0"±	1 1/2"±	1"±	2 1/2"±
1G4	5'-4"±	1 3/8"±	7/8"±	2 1/4"±
1G5	5'-6"±	1 3/4"±	1 1/4"±	3"±

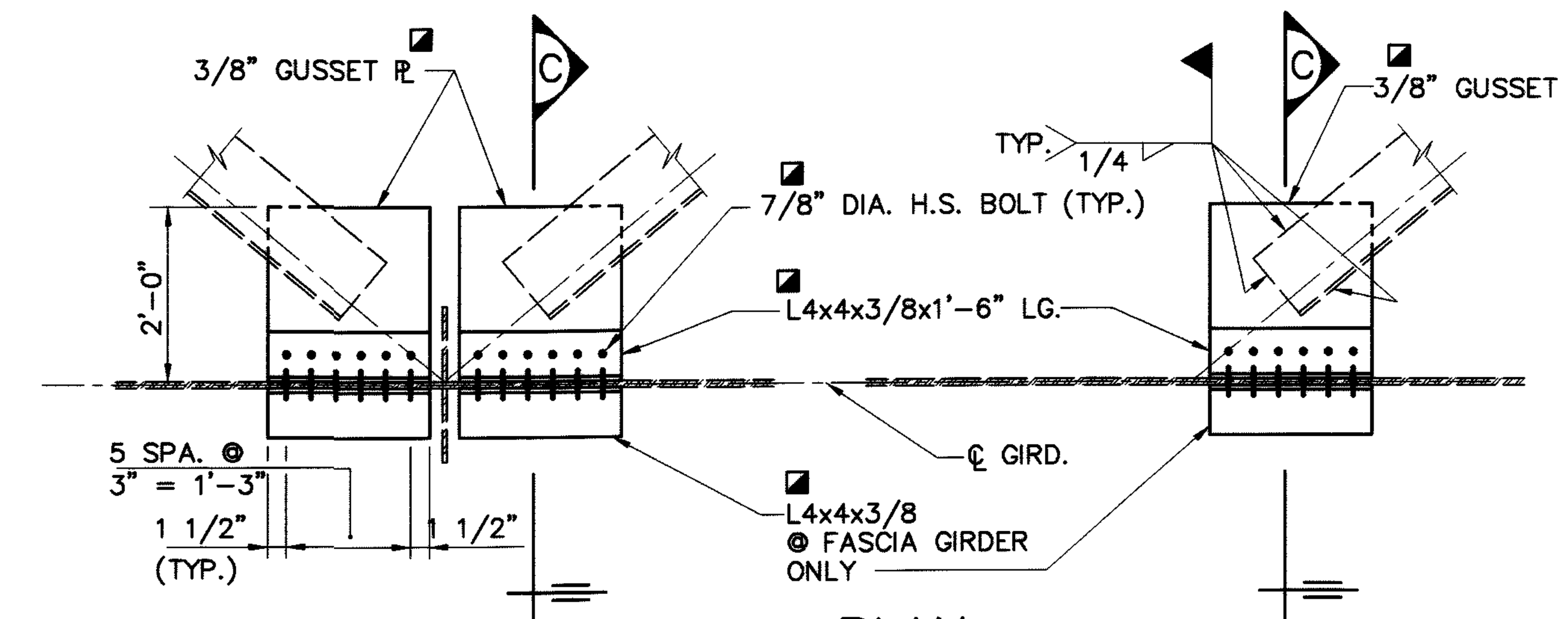
NOTES:

1. TYP. DAMAGE TO EXISTING GIRDERS 1G3, 1G4 AND 1G5 IS SCHEMATICALLY SHOWN HERE. FOR LOCATIONS, SEE SHT. NO. 35/80.
2. FOR GIRDER STRAIGHTENING NOTE, SEE SHT. NO. 11/80.



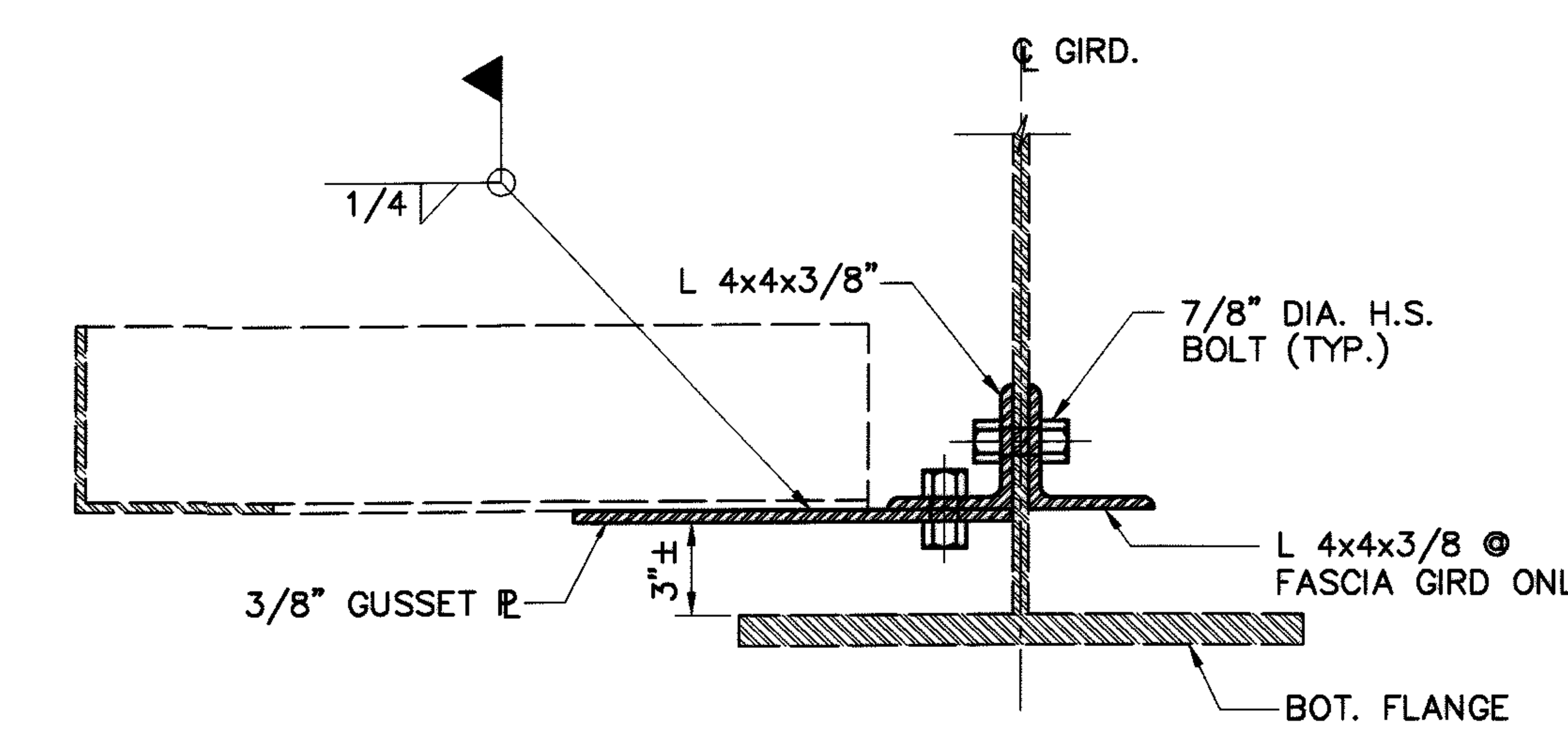
PLAN

REMOVAL



PLAN

RETROFIT



SECTION (C)

LATERAL BRACING END CONNECTION

LEGEND:

(hatched) INDICATES ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN

NOTE:

1. FOR LOCATIONS OF LATERAL BRACING CONNECTION RETROFIT, SEE SHT. NOS. 37/80, 38/80 & 39/80.
2. ALL NEW STRUCTURAL STEEL SHOWN ABOVE SHALL BE FABRICATED TO FIELD MEASURED DIMENSIONS, AND IS INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION, FOR PAYMENT.
3. FOR "BOLTED CONNECTION TO EXIST. STEEL" NOTE, SEE SHT. NO. 10/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101
DESIGNED B.J.M. | CHECKED P.J.W. | DRAWN R.P.R. | REVISED | REVIEWED K.S.J. | DATE 3-18-02 | STRUCTURE FILE NUMBER 5008255

MISCELLANEOUS DETAILS

BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103POT_BEARING.DWG
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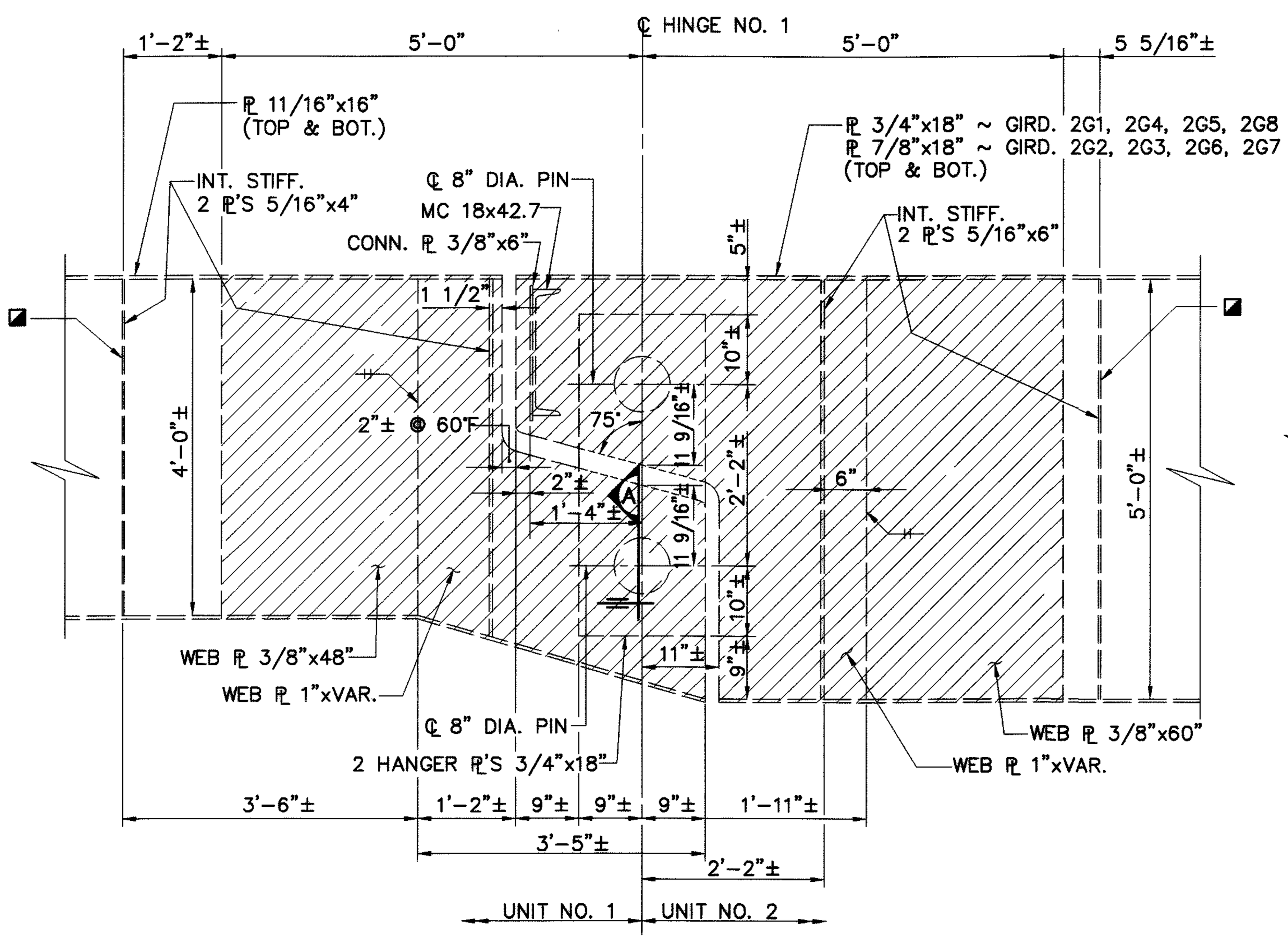
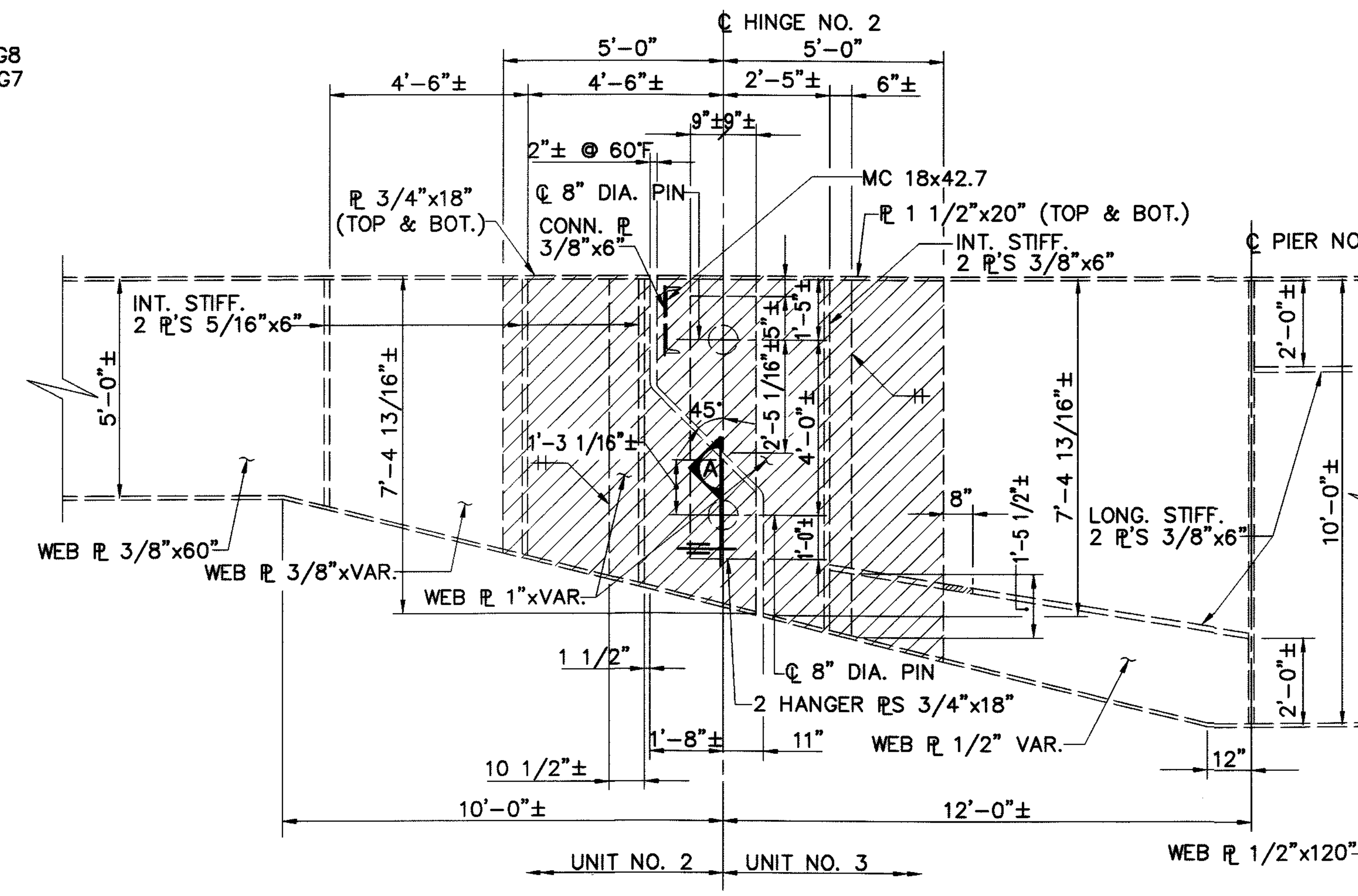
Technician: RPRATT



HINGE NO. 1



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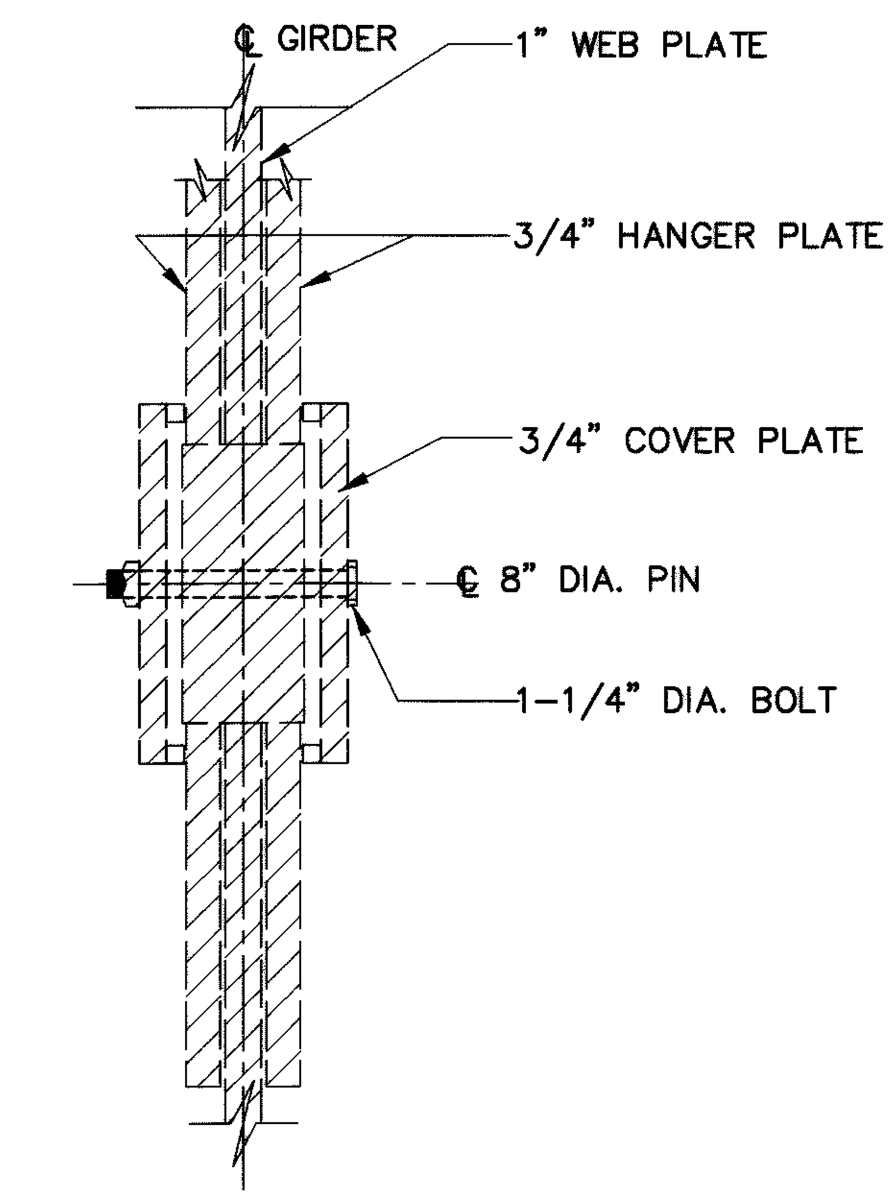
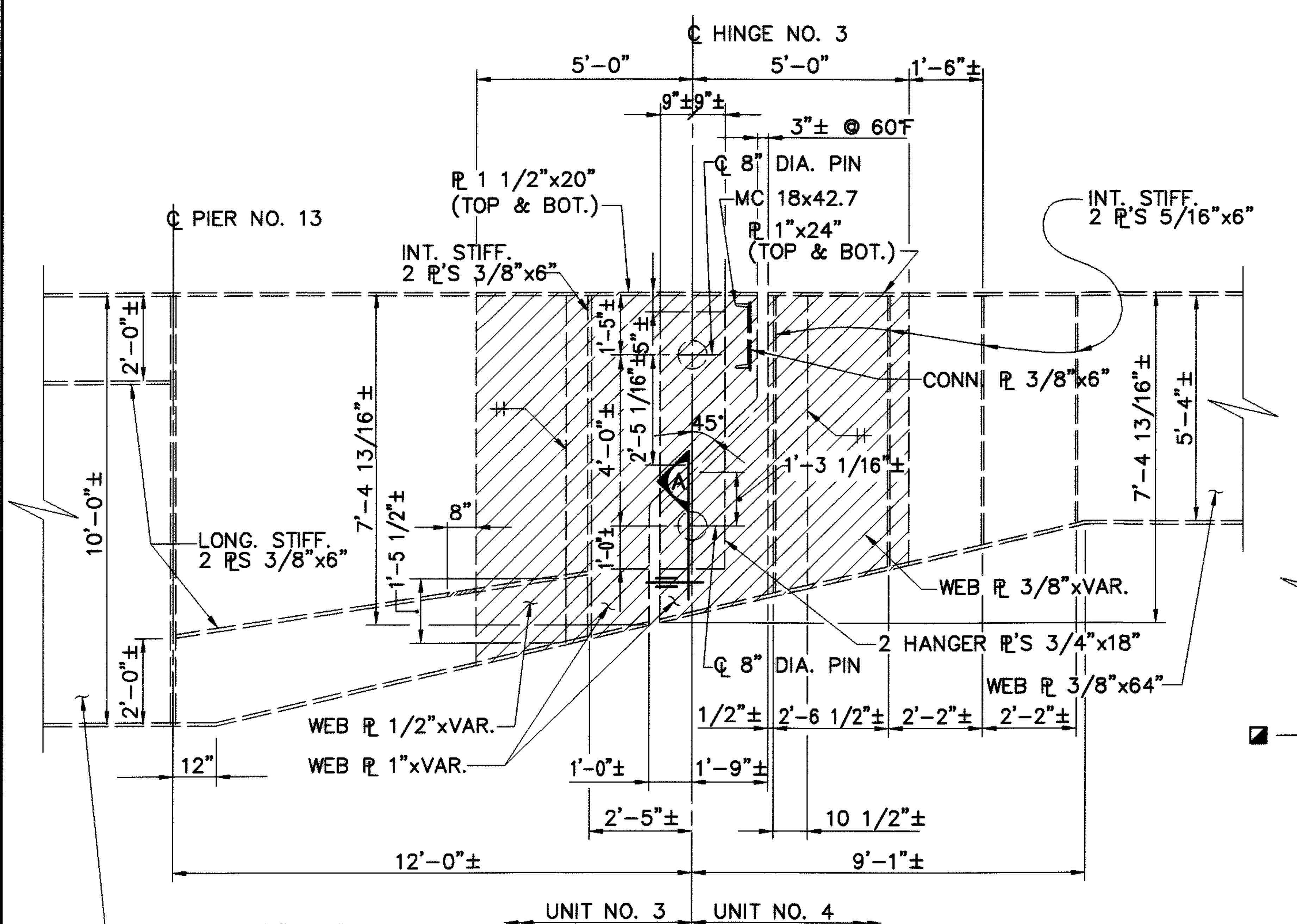
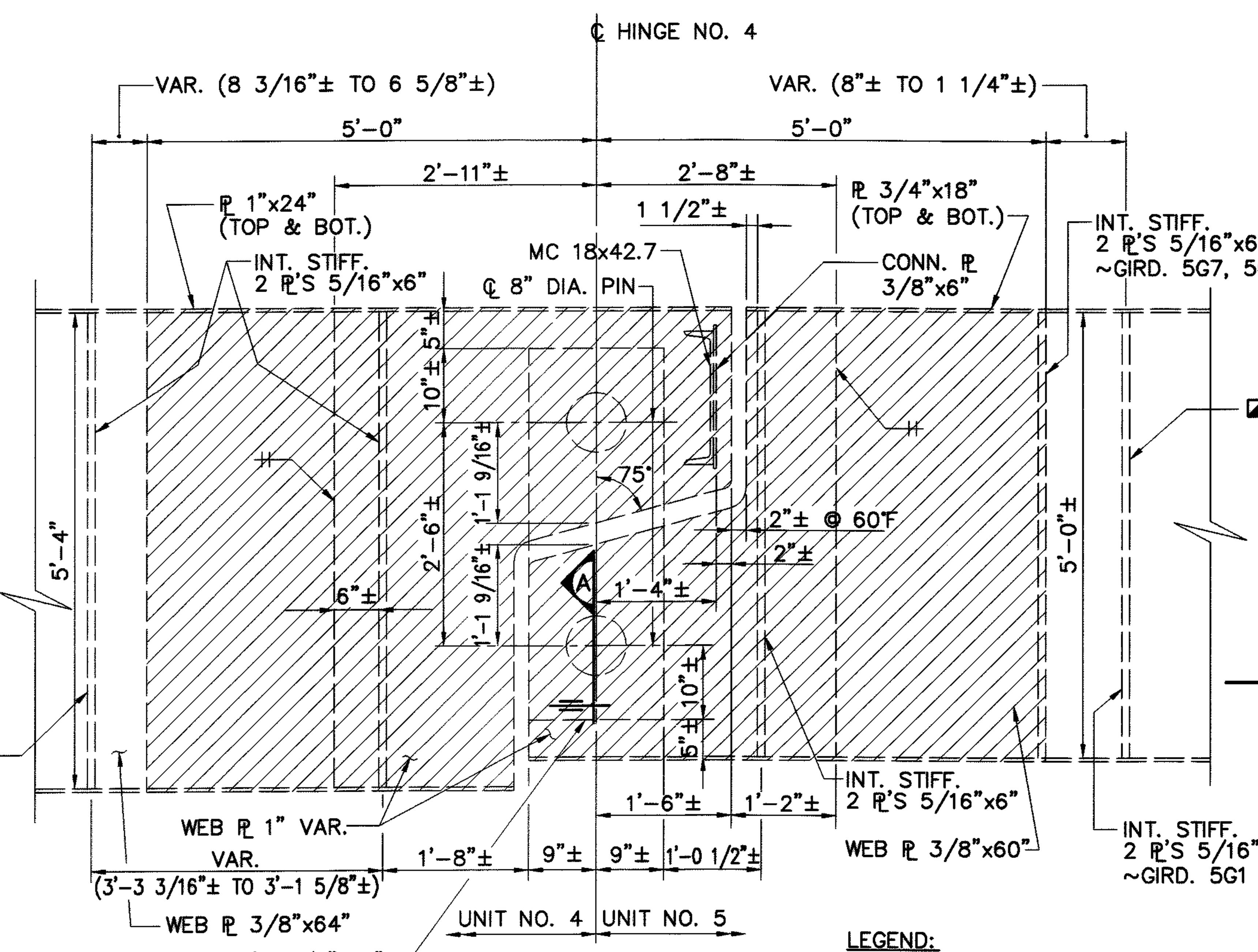


SECTION (A)
CASE 1
STRAIGHT COVER PLATES
(43 LOCATIONS)

◪ INT. STIFF. TO BE REMOVED. INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN, FOR PAYMENT.



HINGE NO. 3



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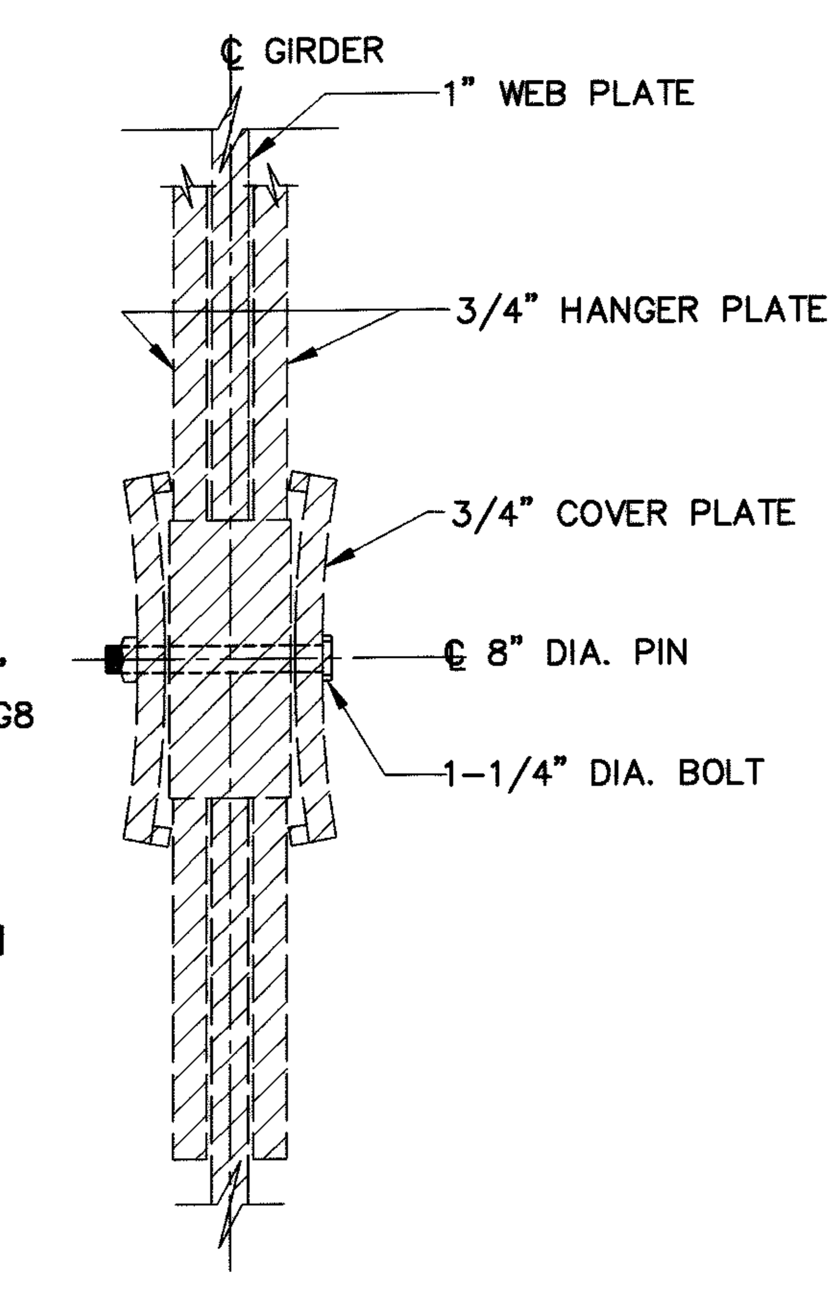
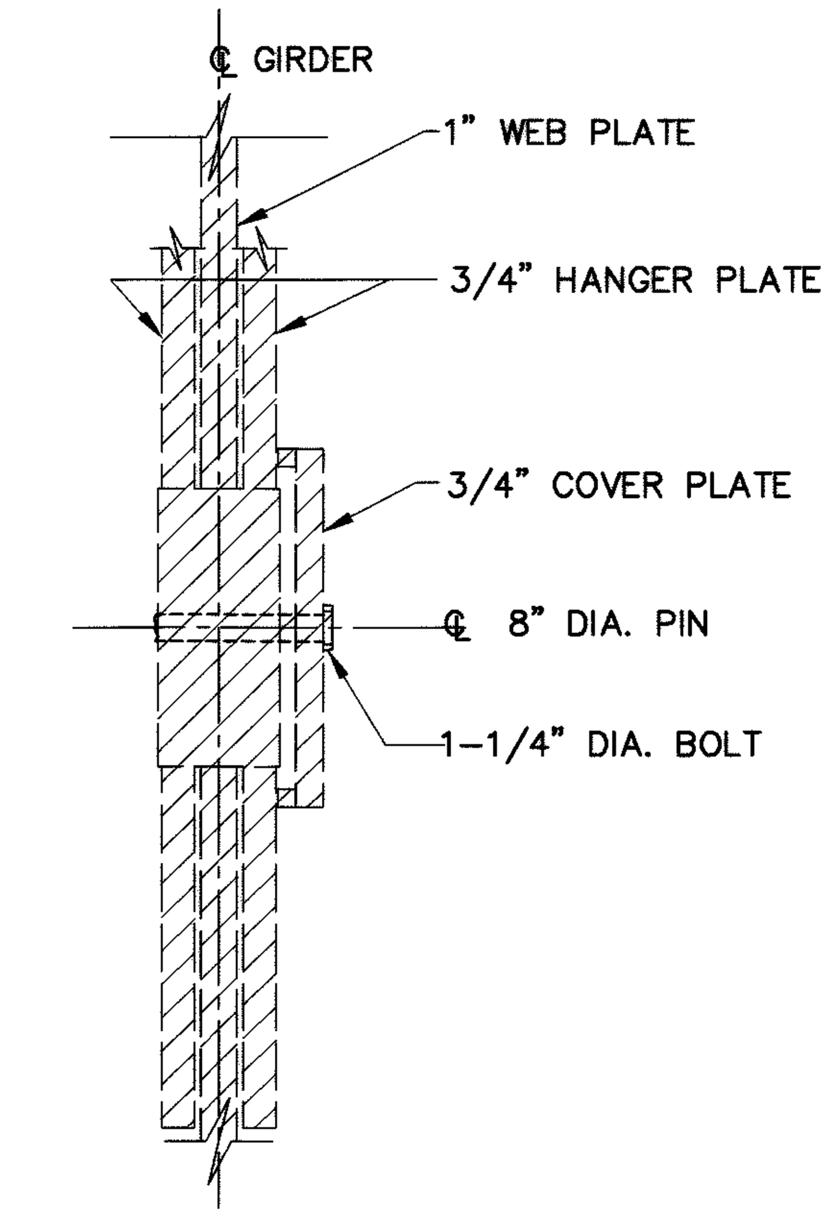


SECTION (A)
CASE 2
BENT COVER PLATES
(20 LOCATIONS)



SECTION (A)
CASE 3
COVER PLATE MISSING
(1 LOCATION)

LEGEND:

▨ INDICATES REMOVAL LIMITS OF ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN.

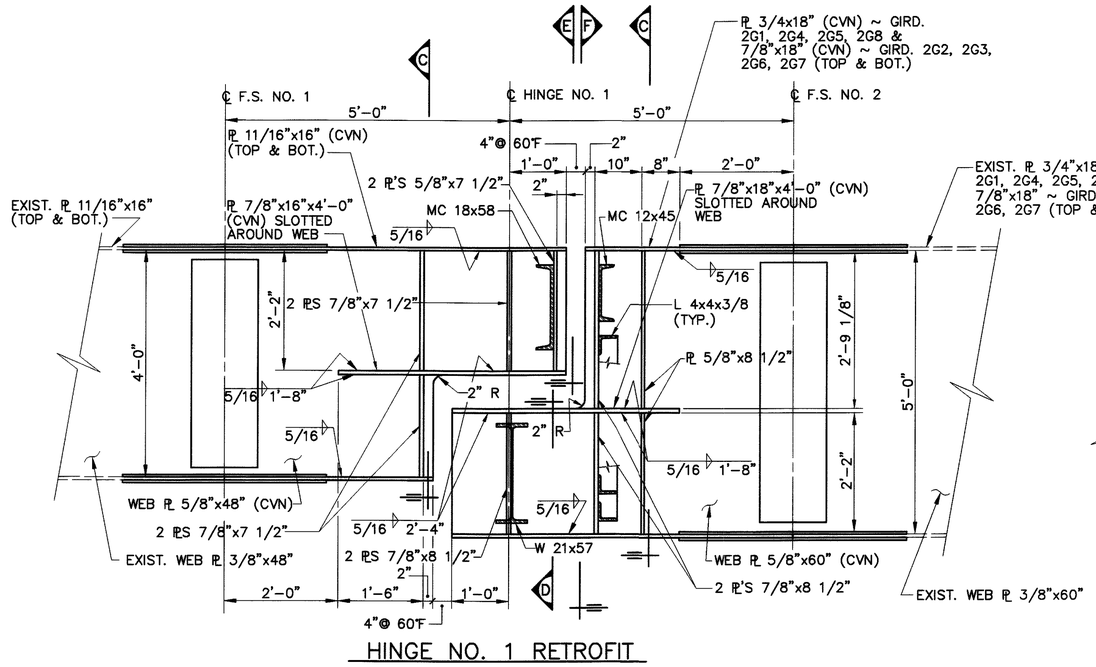
FOR NOTE "PORTIONS OF STRUCTURE REMOVED, AS PER PLAN", SEE SHT. NO. 9/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

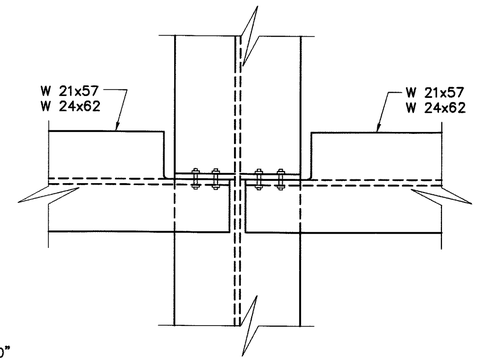
DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

HINGE REMOVAL PLAN
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47



HINGE NO. 1 RETROFIT



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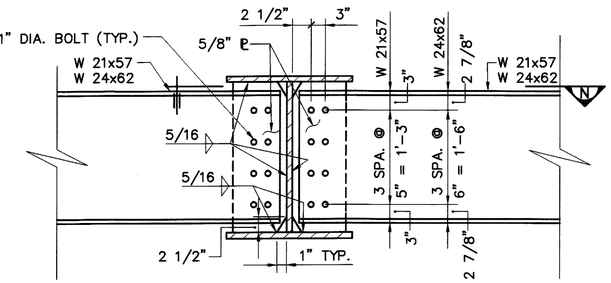

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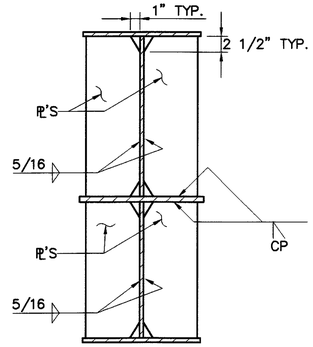
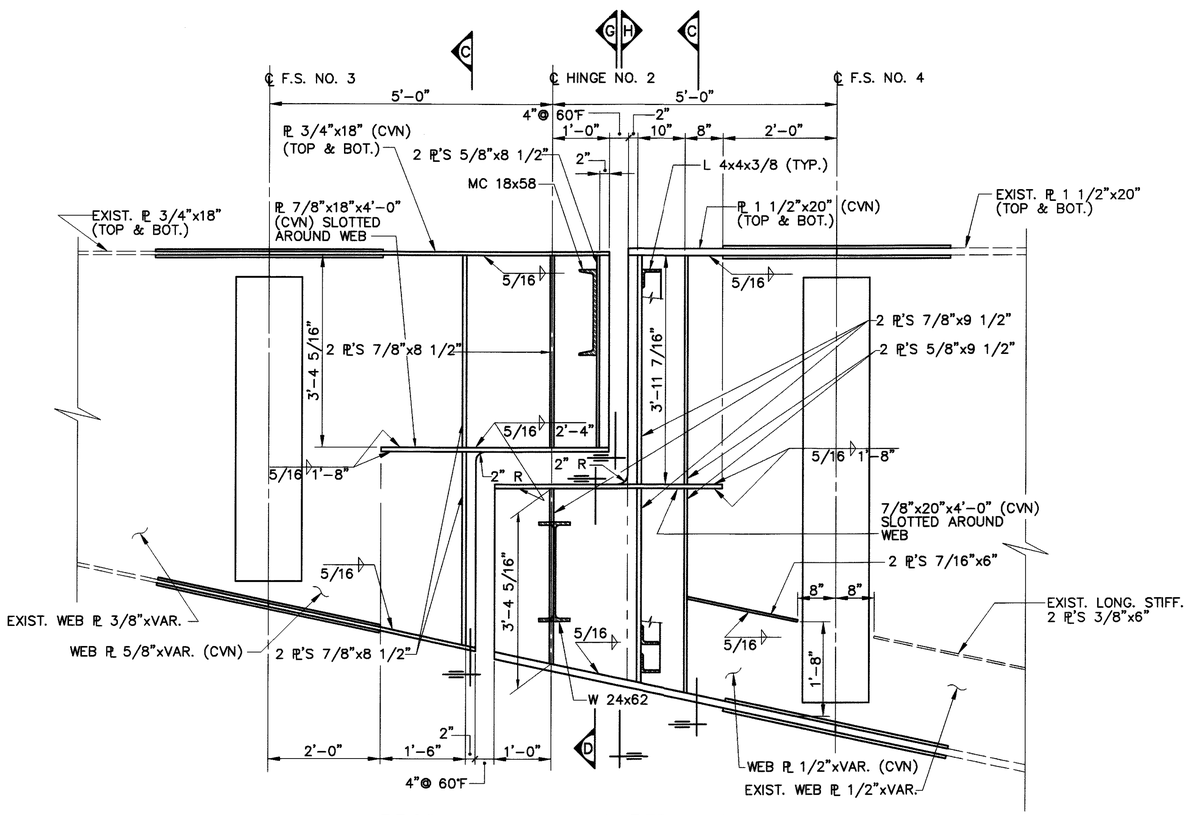


SECTION C



PROP. HINGE NO. 2 RETROFIT

NOTES:

1. ALL NEW STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE ASTM A325, TYPE 1, GALVANIZED, UNLESS NOTED OTHERWISE.
2. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.
3. ALL NEW STRUCTURAL STEEL SHOWN ABOVE SHALL BE FABRICATED TO FIELD MEASURED DIMENSIONS, AND IS INCLUDED WITH ITEM 863, STRUCTURAL STEEL MEMBERS, LEVEL FIVE FABRICATION, FOR PAYMENT.
4. FOR F.S. NO. 1 AND 2 DETAILS, SEE SHT. NO. 50/80. FOR F.S. NO. 3 AND 4, SEE SHT. NO. 51/80.
5. FOR POT BEARING DETAILS, SEE SHT. NO. 46/80.
6. FOR SECTIONS E AND F, SEE SHT. NO. 52/80. FOR SECTIONS G & H, SEE SHT. NO. 53/80.
7. FOR ADDITIONAL LOCATIONS OF SECTIONS C AND D, SEE SHT. NO. 49/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 South Main Street, Suite 331 Akron, Ohio 44311
330-572-2100 FAX 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

HINGE RETROFIT DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

48 / 80

687
886

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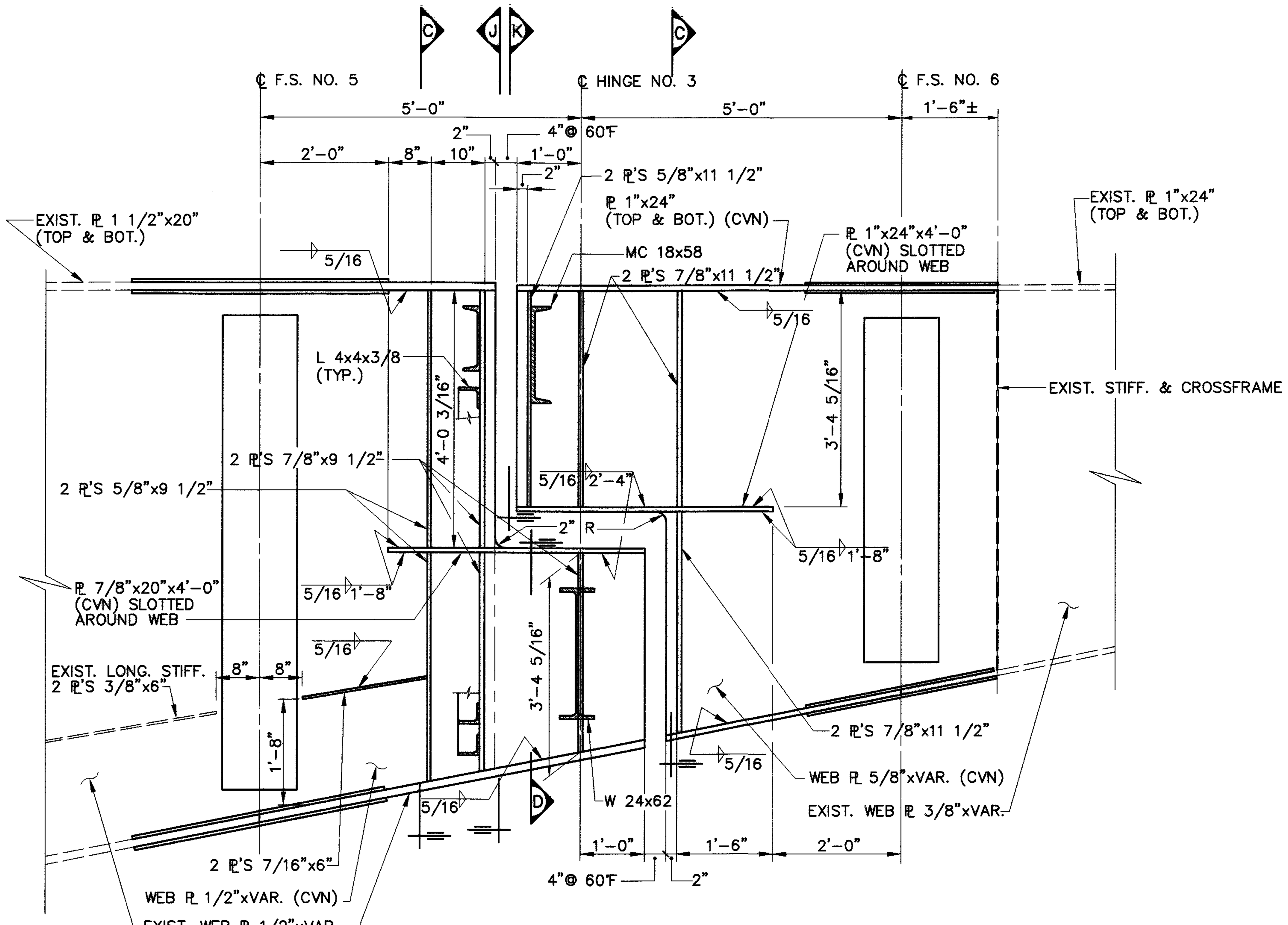
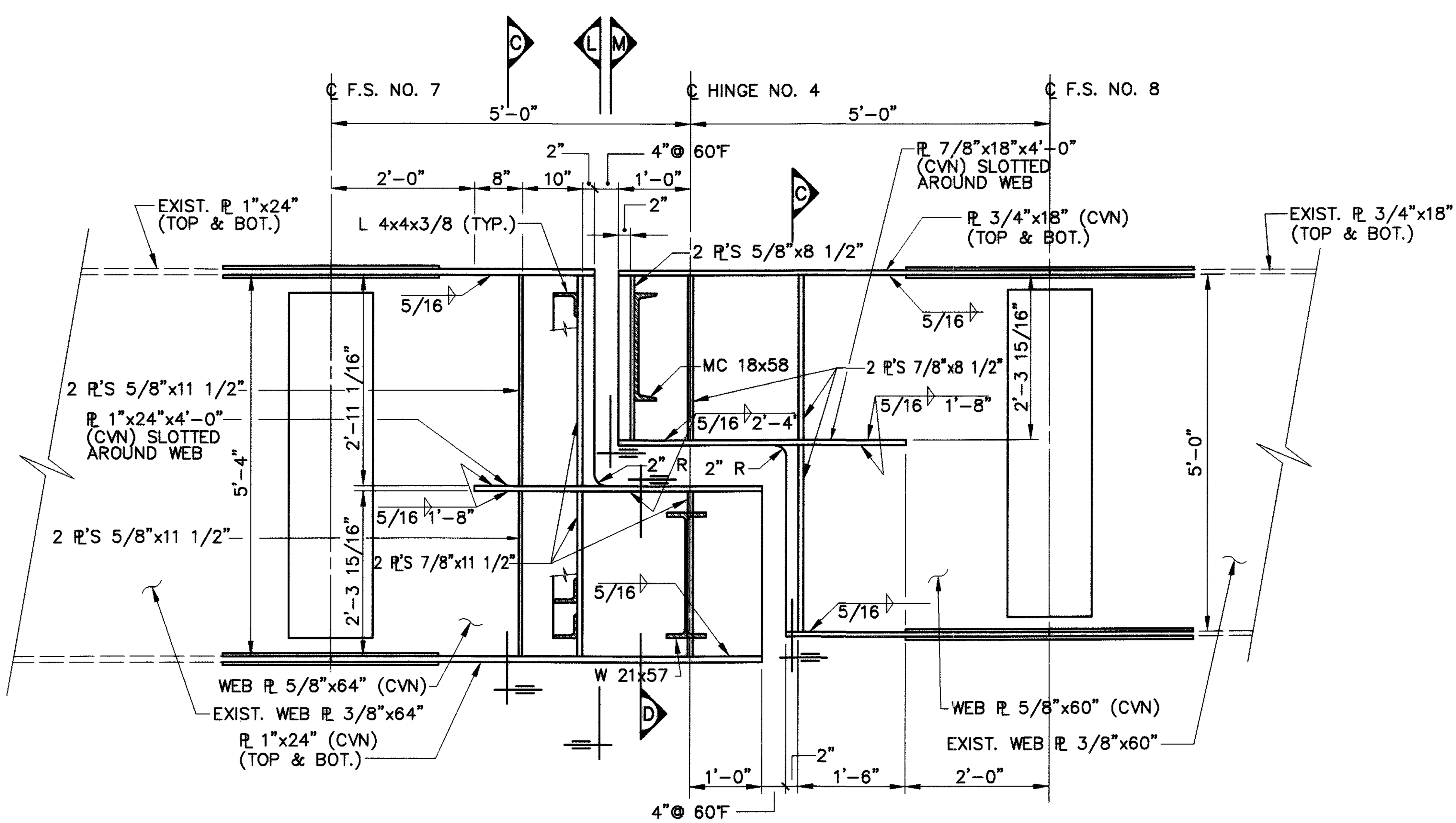
Technician: RPRATT



HINGE NO. 3 RETROFIT



HINGE NO. 4 RETROFIT

NOTES:

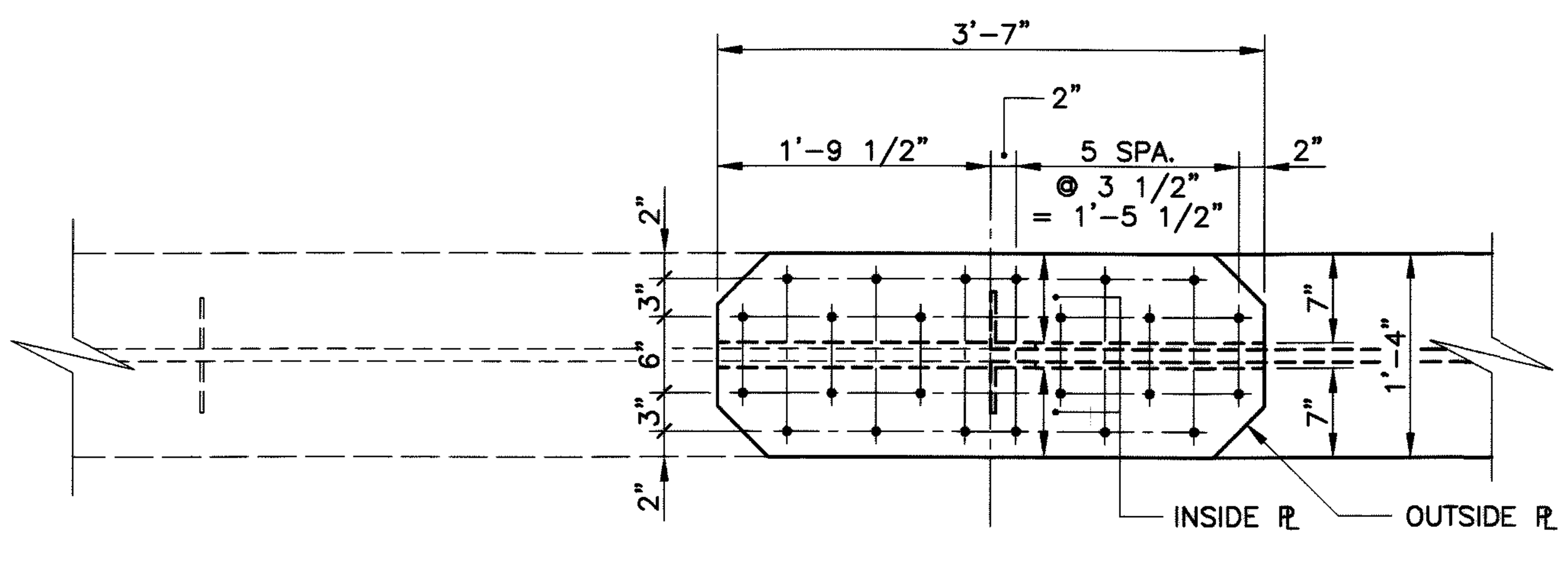
1. FOR F.S. NOS. 5 & 6 DETAILS, SEE SHT. NO. 51/80.
   FOR F.S. NOS. 7 & 8 DETAILS, SEE SHT. NO. 50/80.
2. FOR SECTIONS C & D, SEE SHT. NO. 48/80.
   FOR SECTIONS J & K, SEE SHT. NO. 54/80.
3. FOR SECTIONS L & M, SEE SHT. NO. 55/80.
4. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

DESIGN AGENCY
GPD ASSOCIATES

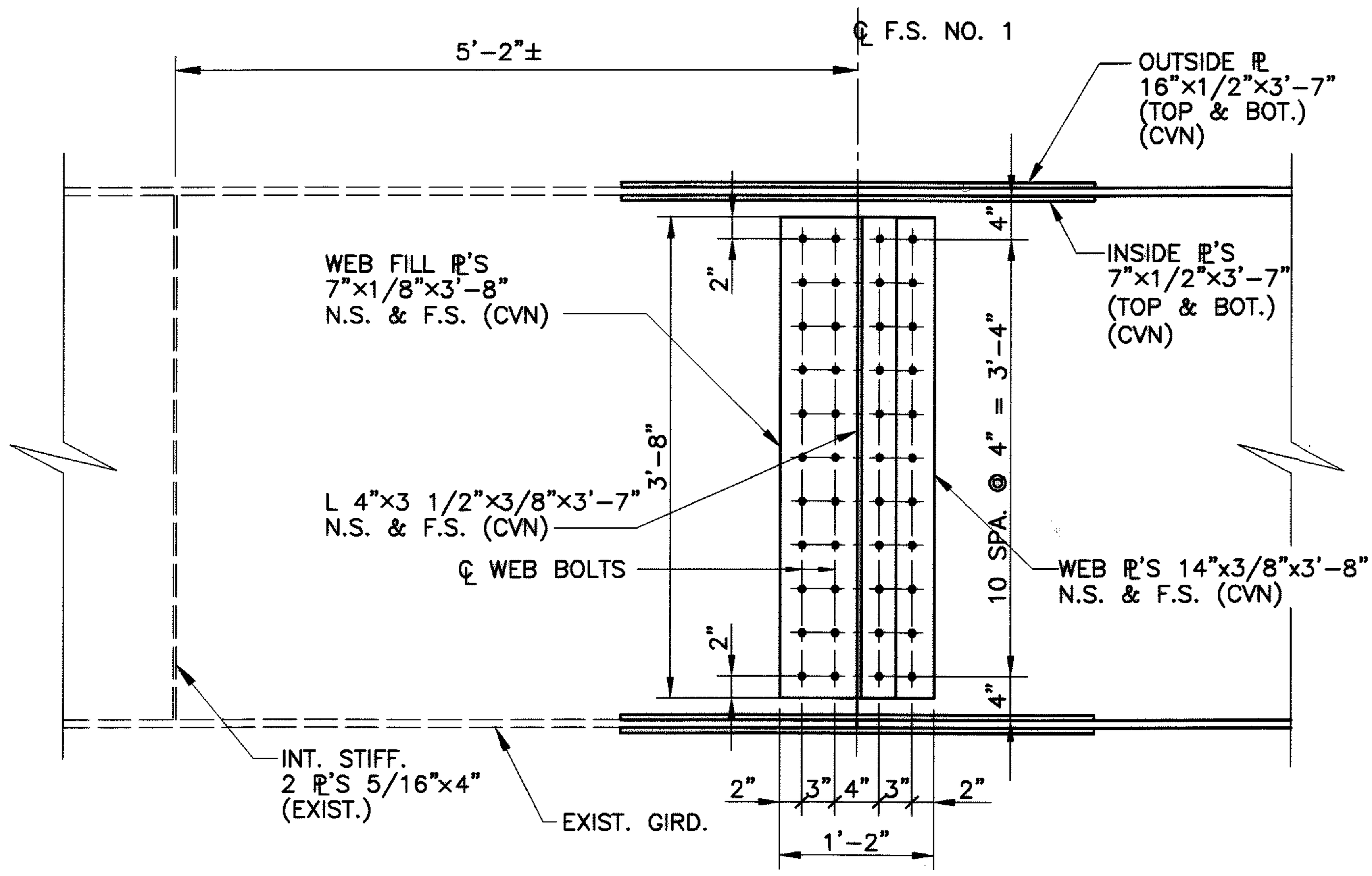
DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

HINGE RETROFIT DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

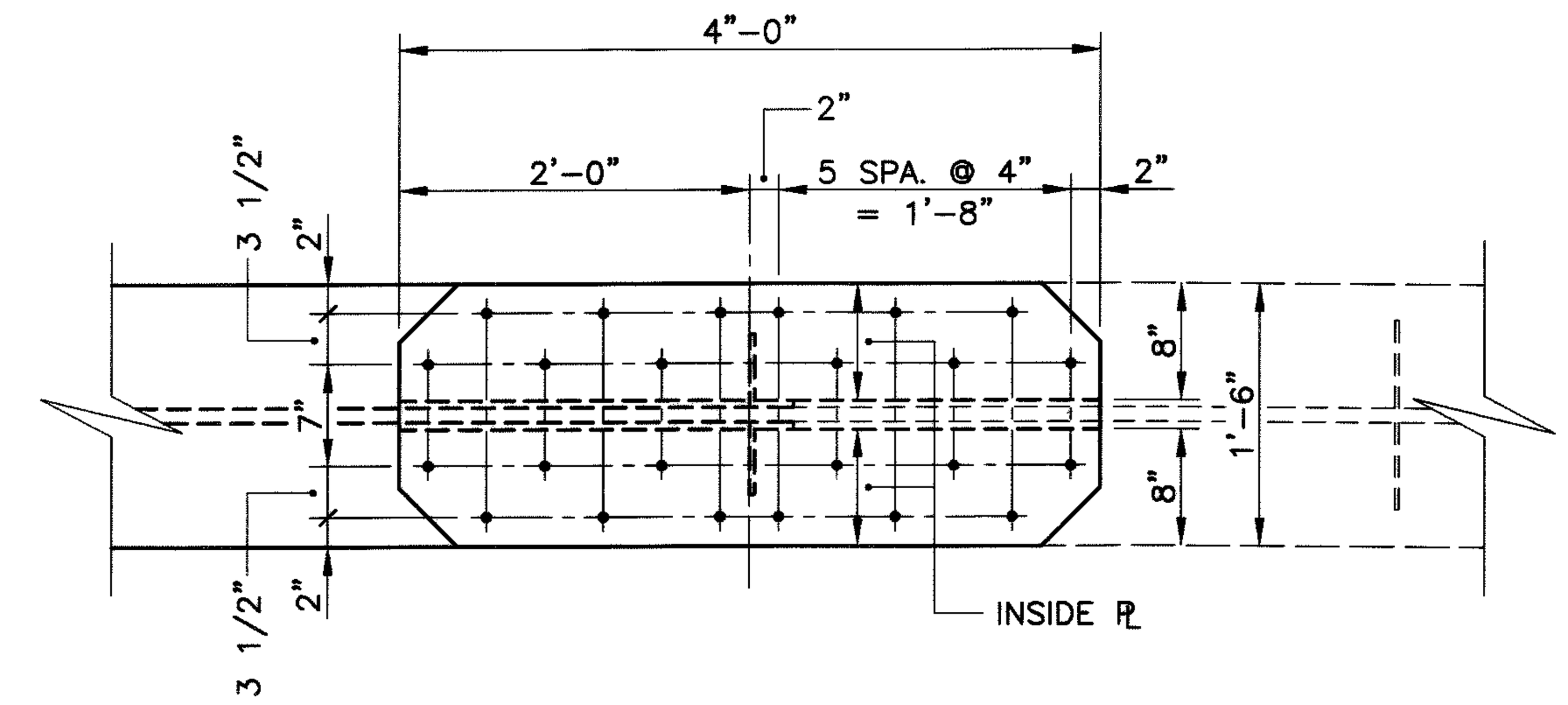


TOP & BOTTOM FLANGE SPLICE

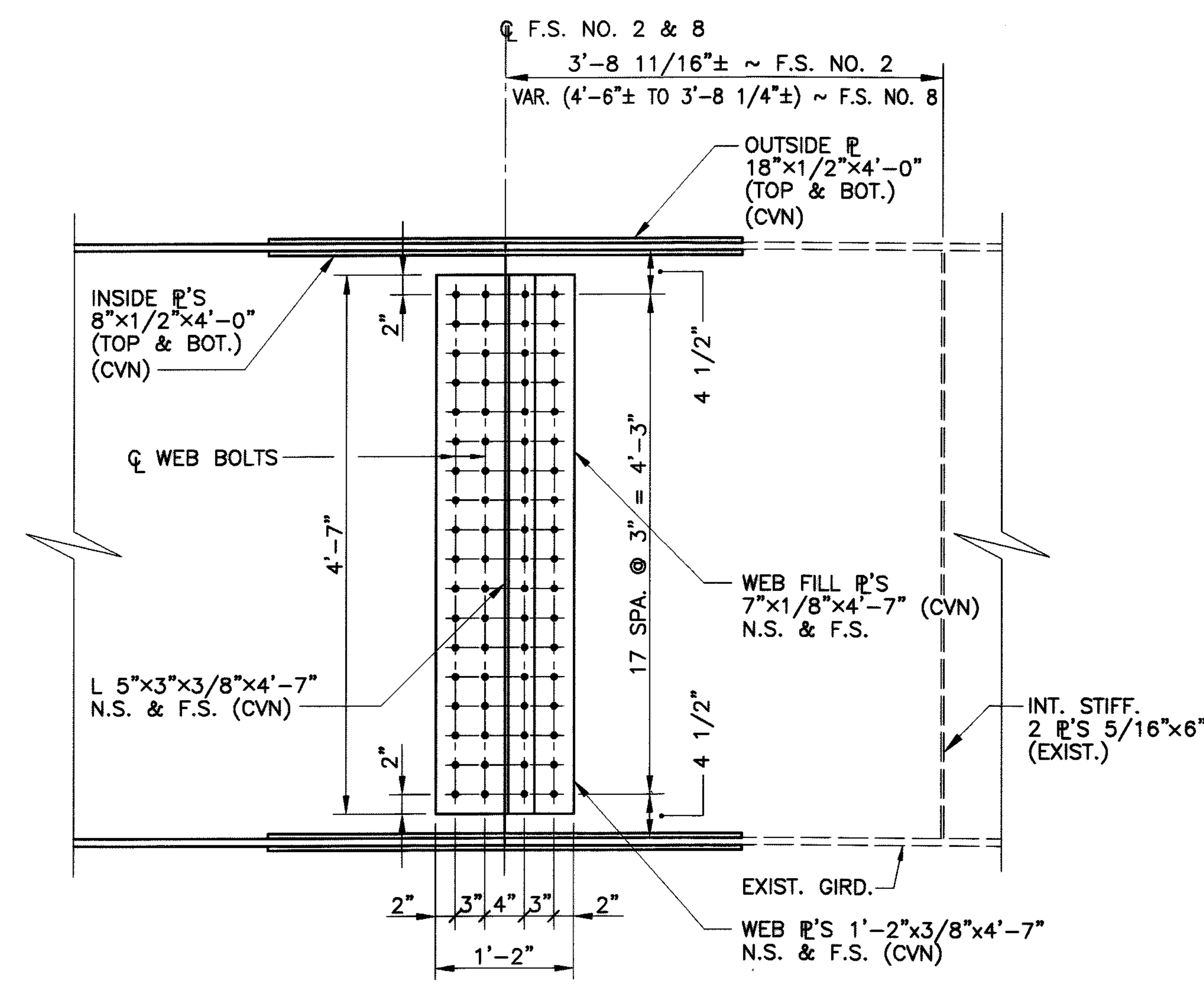


WEB SPLICE

F.S. NO. 1

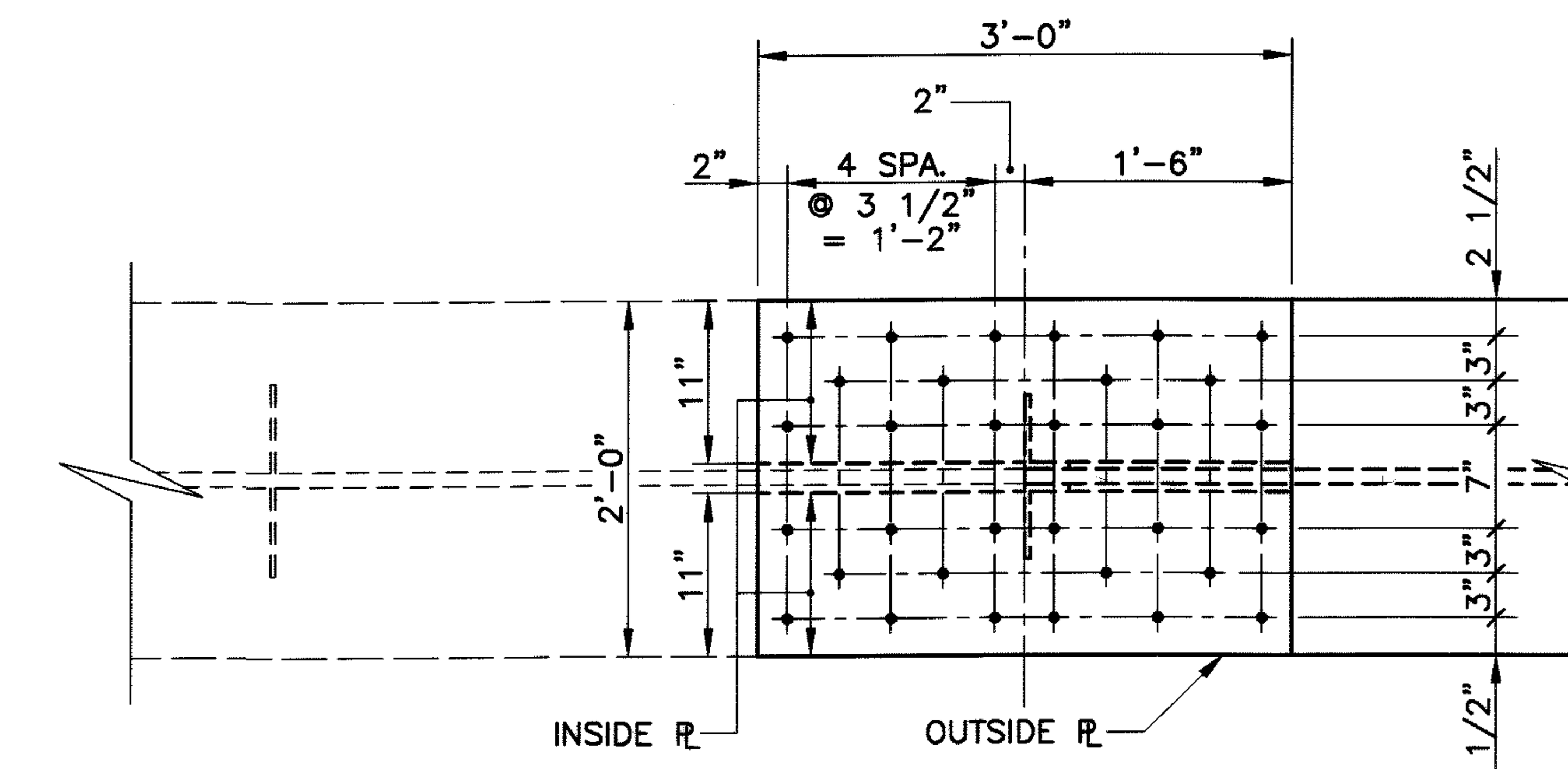


TOP & BOTTOM FLANGE SPLICE



WEB SPLICE

F.S. NO. 2 & 8



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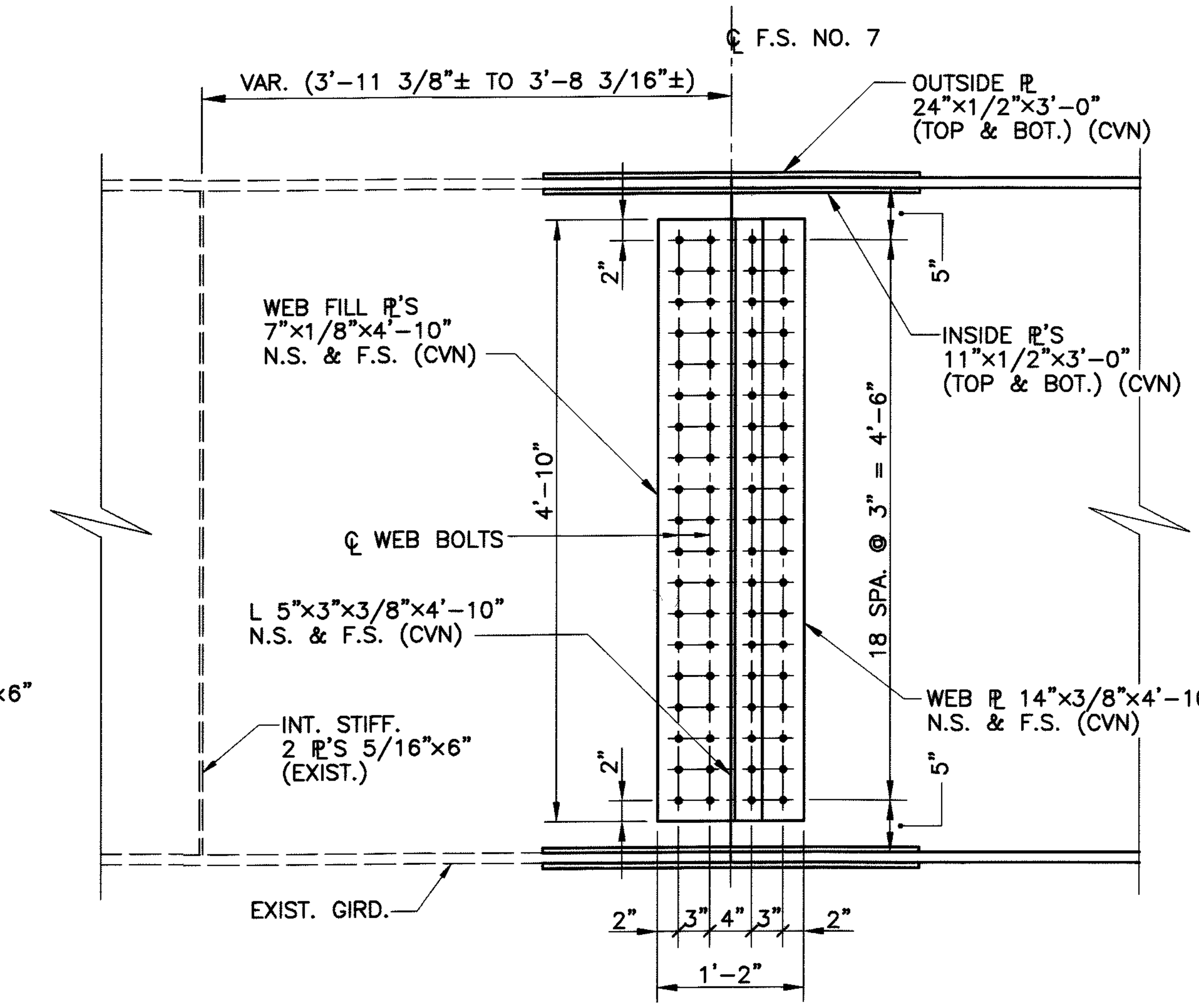

WEB SPLICE

F.S. NO. 7

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE ASTM A36, UNLESS OTHERWISE NOTED.
2. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.
3. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER, ASTM A325 TYPE 1, GALVANIZED, UNLESS NOTED OTHERWISE.
4. FOR "BOLTED CONNECTION TO EXIST. STEEL" NOTE, SEE SHT. NO. 10/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	C.M.K.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

HINGE RETROFIT DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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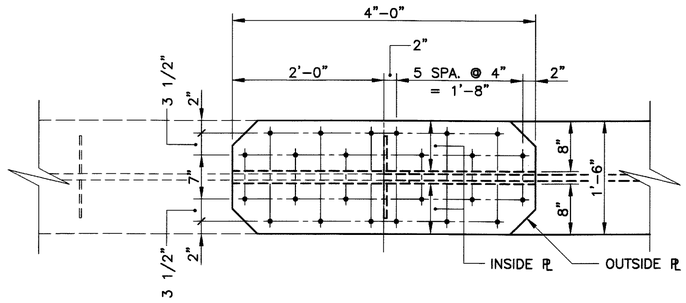
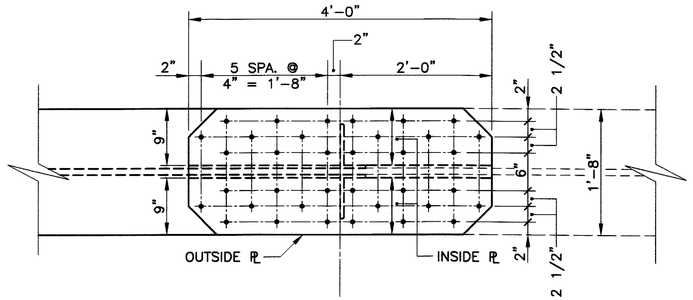
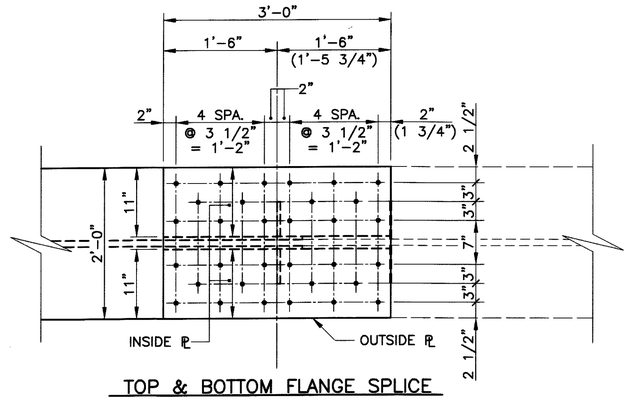
Technician: RPRATT



TOP & BOTTOM FLANGE SPLICE

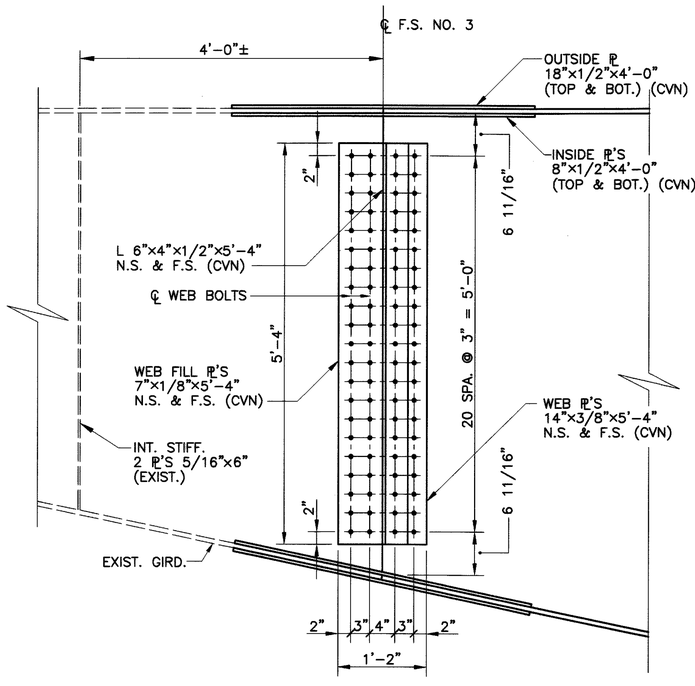


TOP & BOTTOM FLANGE SPLICE



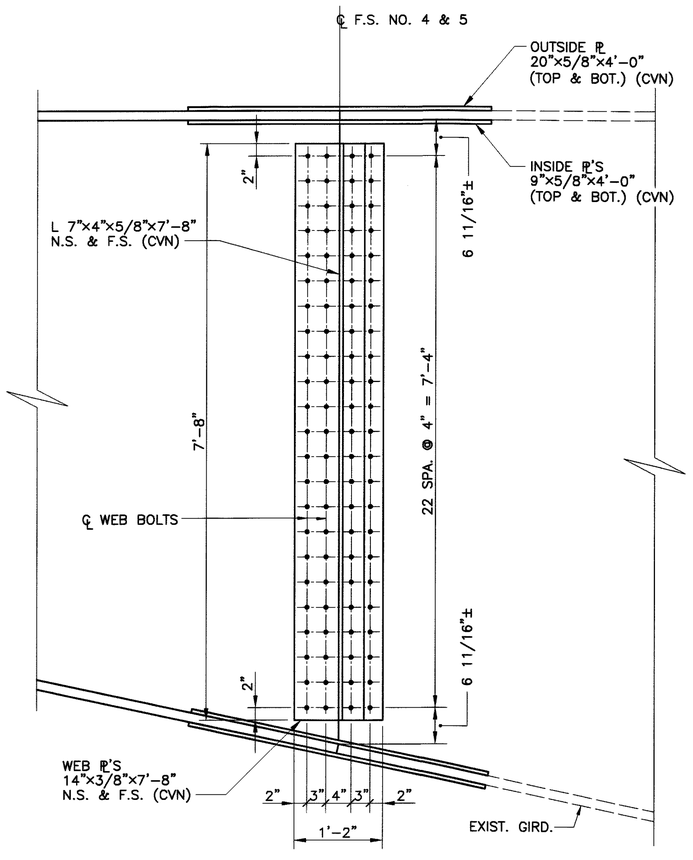
TOP & BOTTOM FLANGE SPLICE

OUTSIDE ℄ AS SHOWN,
INSIDE ℄ IN ( ).



WEB SPLICE

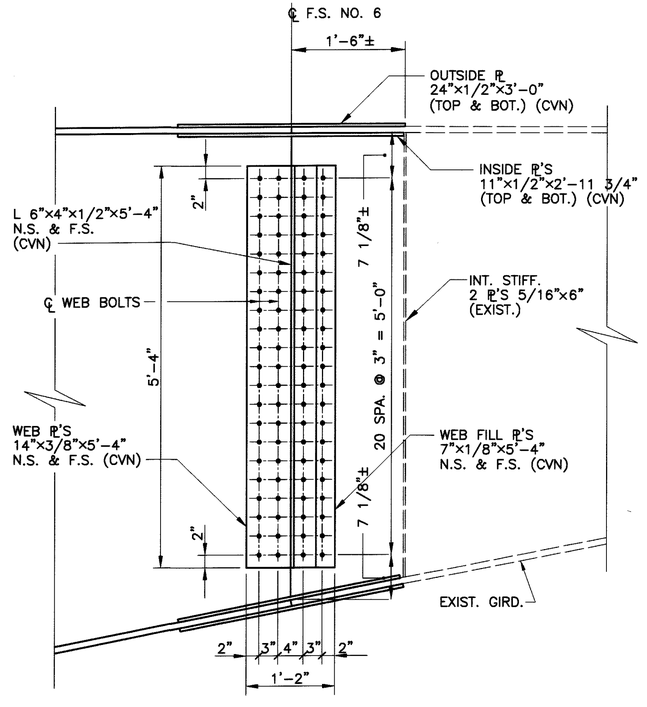
F.S. NO. 3



WEB SPLICE

F.S. NO. 4

F.S. NO. 5 SIM., BUT OPP. HAND



WEB SPLICE

F.S. NO. 6

FOR NOTES, SEE SHT. NO. 50/80 .

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
DESIGNED B.J.M.
DRAWN C.M.K.
CHECKED P.J.W.
REVIEWED K.S.J.
DATE 3-18-02
STRUCTURE FILE NUMBER 5008255
REVISED

HINGE RETROFIT DETAILS
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

690/886

Cad File: G:\CIVIL\67028\Final\1035\DWG\67028_91_1035PLICE.DWG
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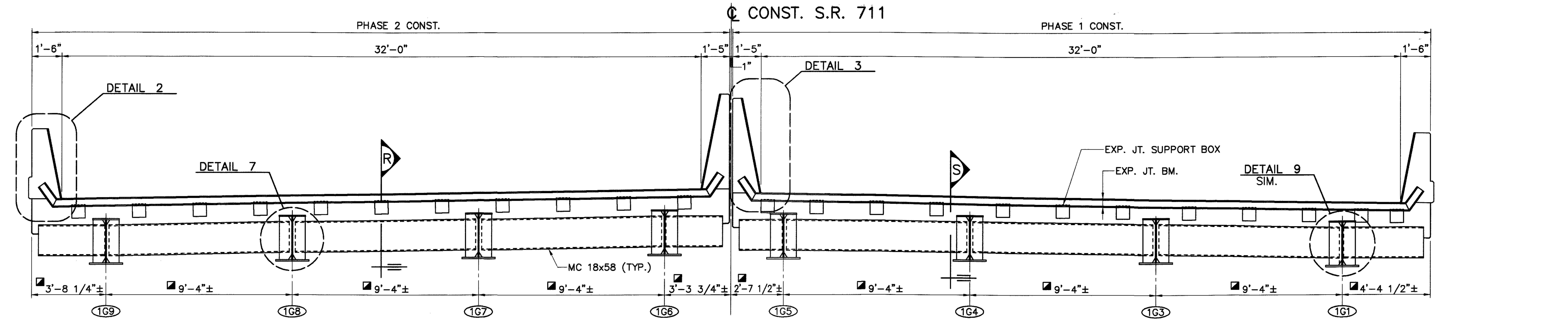
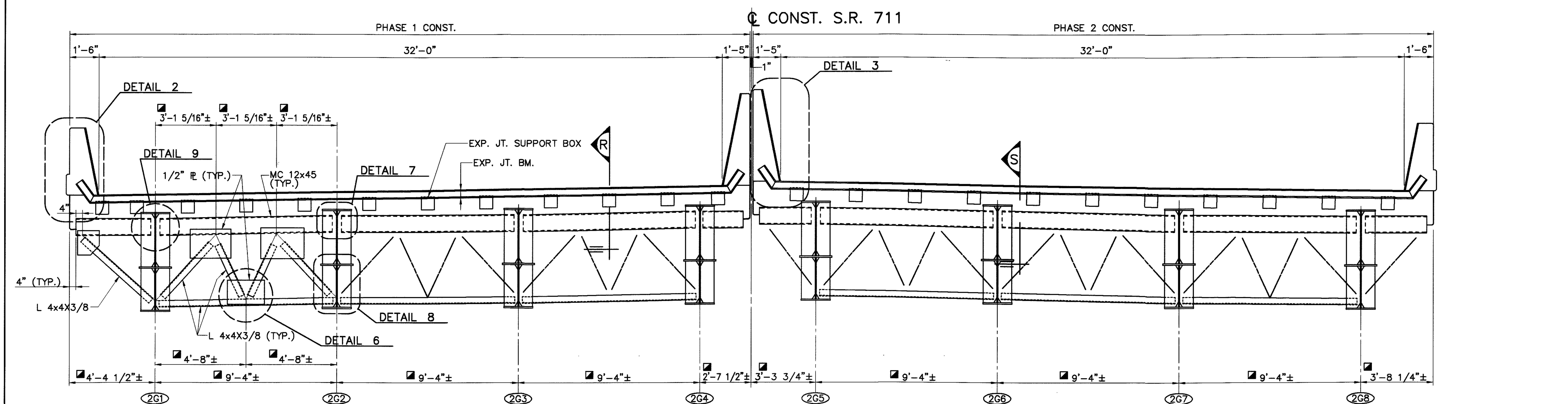
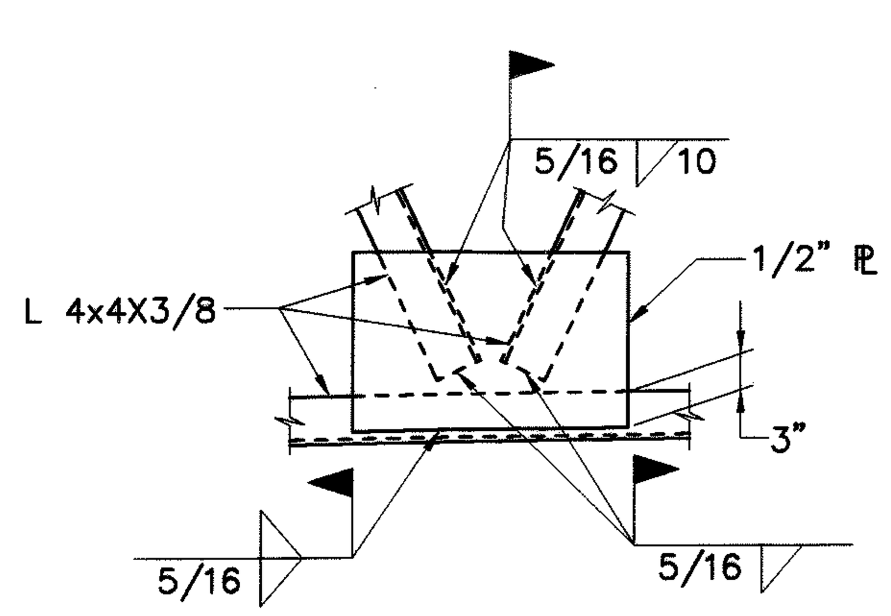


SECTION E

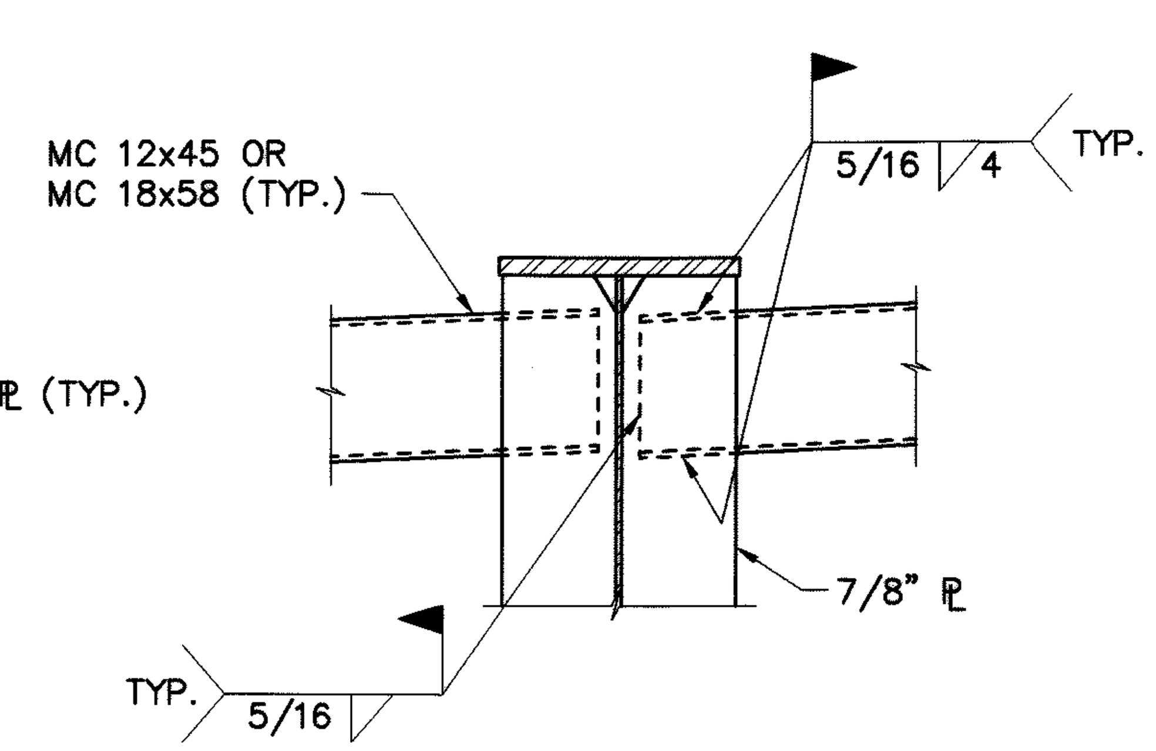


SECTION F

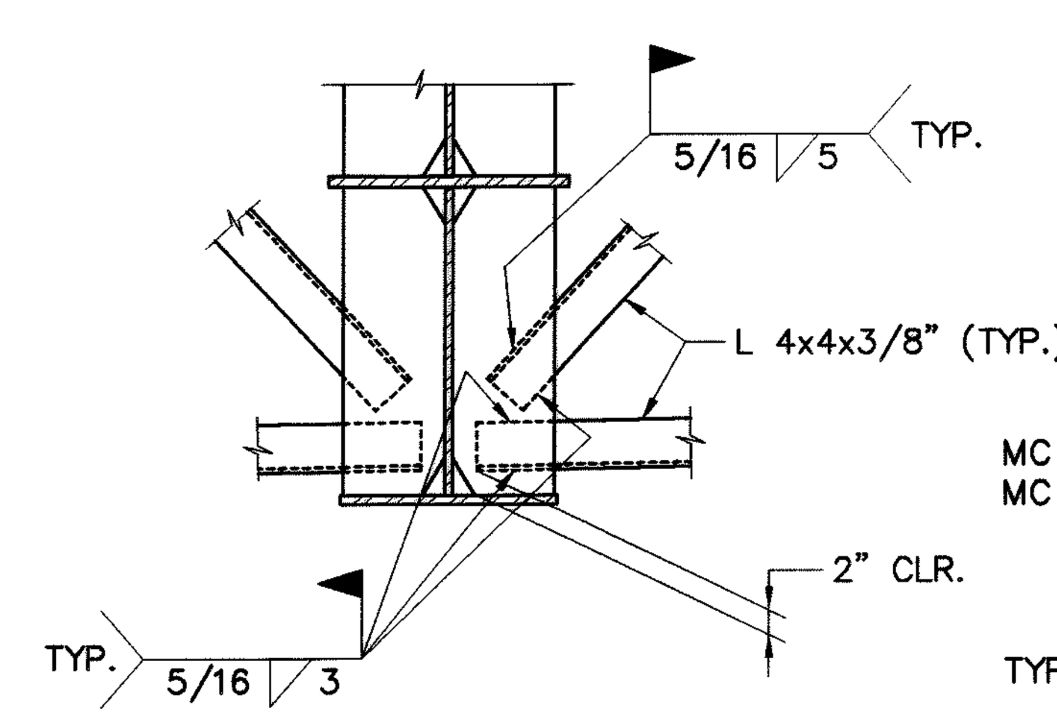
■ TO BE FIELD VERIFIED



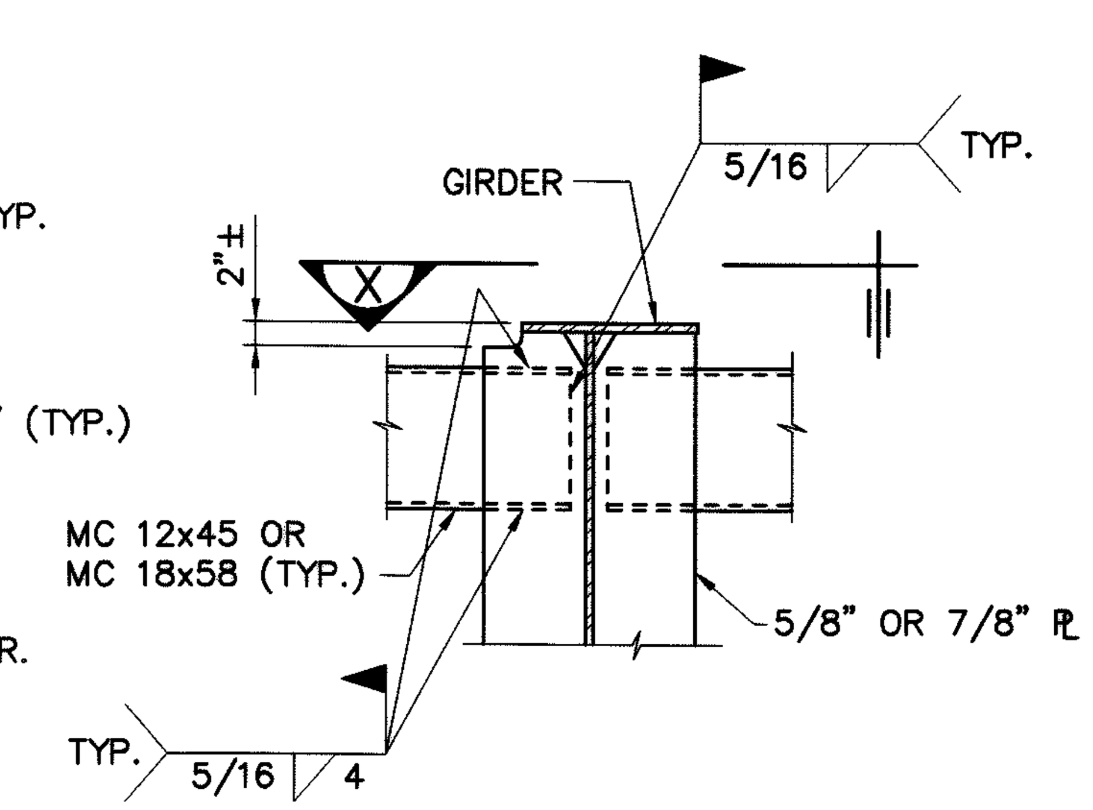
DETAIL 6



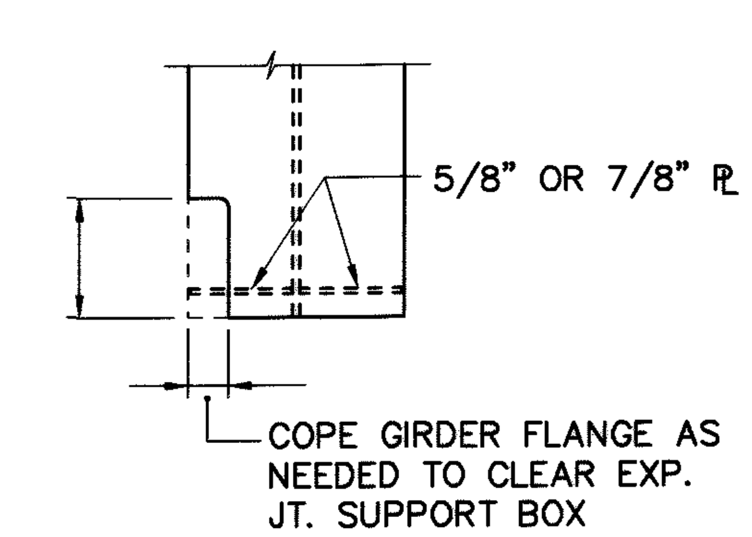
DETAIL 7



DETAIL 8



DETAIL 9



SECTION X

NOTES:

1. FOR MODULAR EXPANSION JOINT NOTES, SEE SHT. 14/80.
2. FOR LOCATION OF SECTIONS E & F, SEE SHT. NO. 48/80.
3. FOR DETAILS 2 & 3 AND SECTIONS R & S, SEE SHT. 56/80.
4. FOR ADDITIONAL LOCATIONS OF DETAILS 6, 7 & 8, SEE SHT. NOS. 53/80, 54/80, & 55/80. FOR ADDITIONAL LOCATION OF DETAIL 9, SEE SHT. NO. 54/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

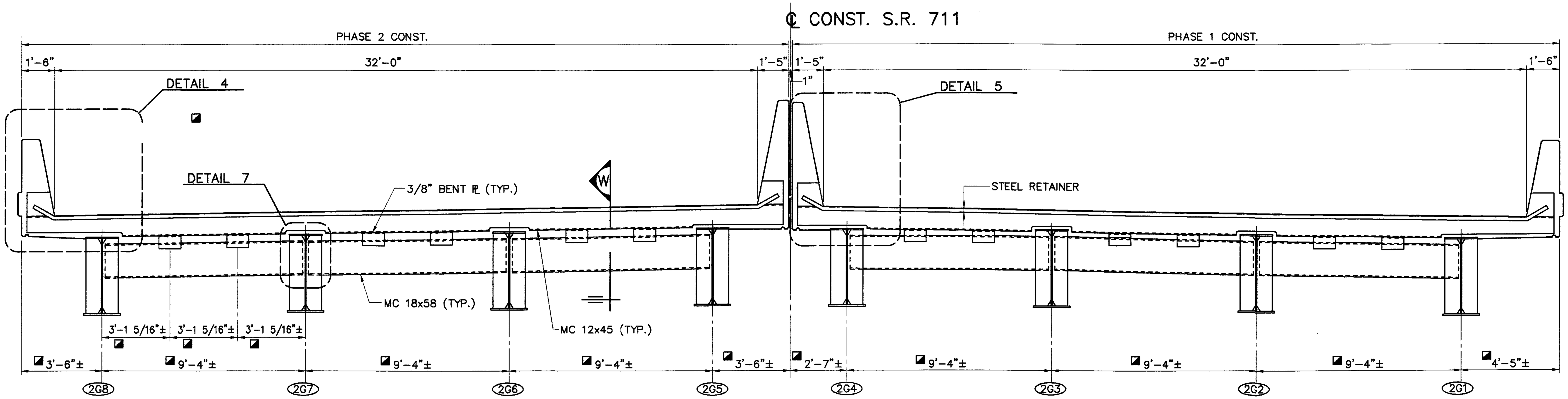
DESIGN AGENCY
GPD ASSOCIATES

DESIGNED	CHECKED	DRAWN	REVISED	REVIEWED	DATE	STRUCTURE FILE NUMBER
B.J.M.	P.J.W.	R.P.R.		K.S.J.	3-18-02	5008255

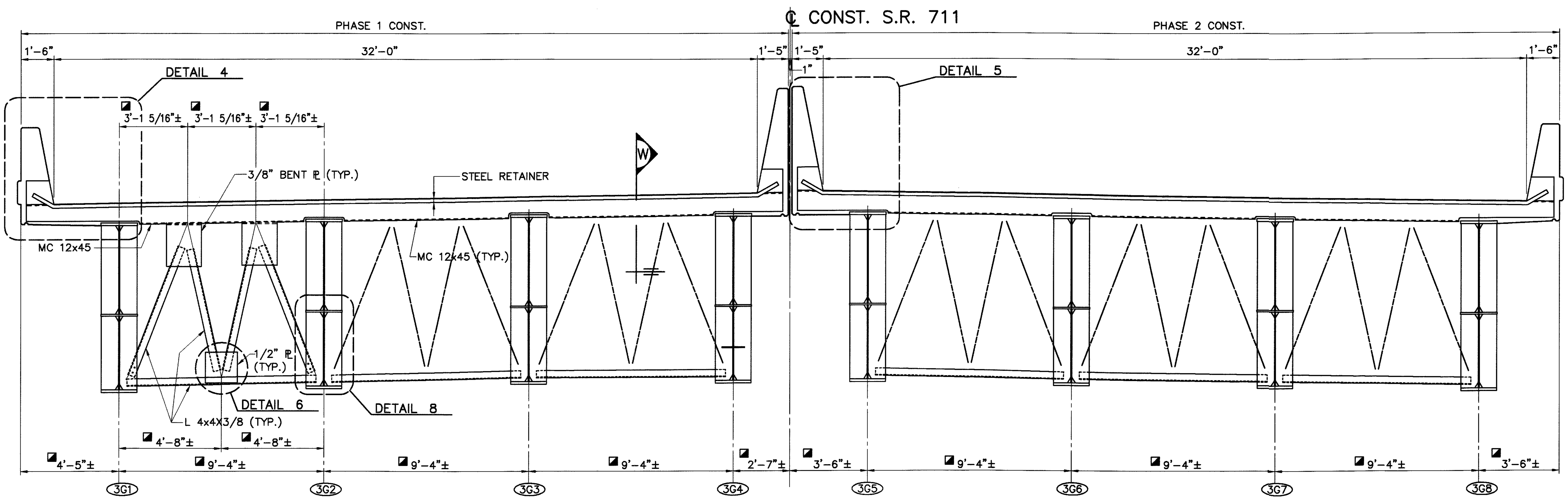
EXP. JOINT & END CROSSFRAME – HINGE NO. 1
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\...\67028_91_103CROSSFRAMES.DWG
Date: 06-30-03 Time: 10:37 AM
Technician: RPRATT



SECTION G



SECTION H

◪ TO BE FIELD VERIFIED

NOTES:

1. FOR ADDITIONAL EXP. JOINT DETAILS AND NOTES, REFER TO STD. DWG. NO. EXJ-4-87.
2. FOR LOCATION OF SECTIONS G & H, SEE SHT. NO. 48/80.
3. FOR SECTION W AND DETAILS 4 & 5, SEE SHT. NO. 57/80.
4. FOR DETAILS 6, 7, & 8, SEE SHT. NO. 52/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

EXP. JOINT & END CROSSFRAME – HINGE NO. 2
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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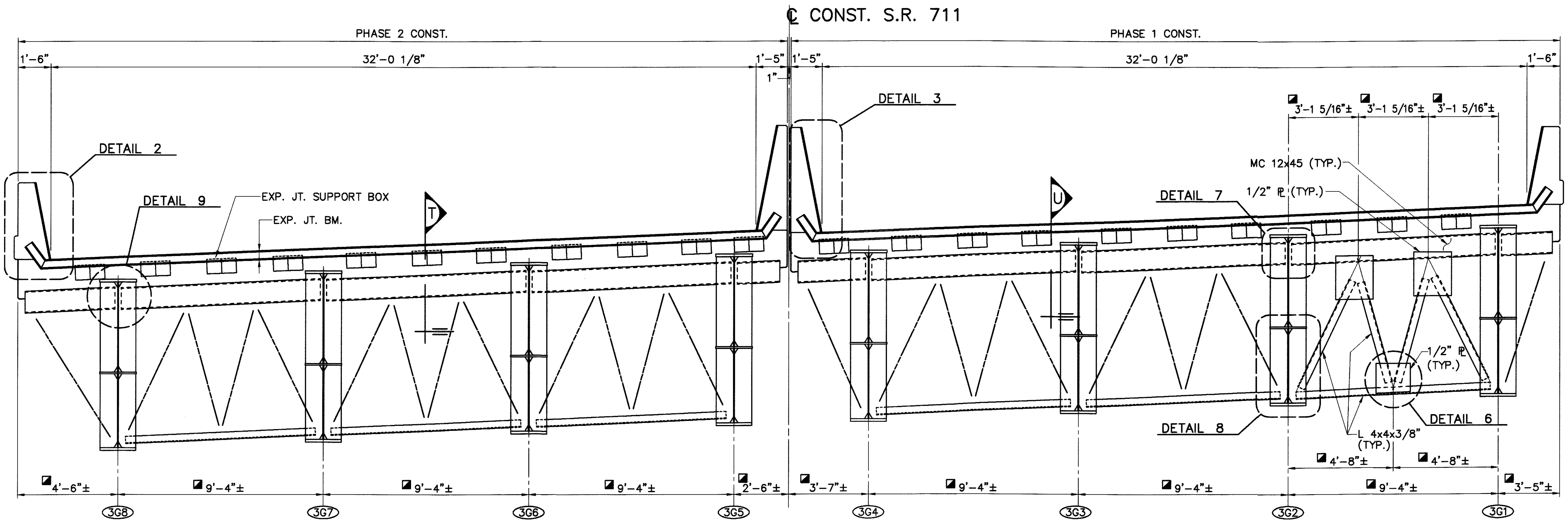
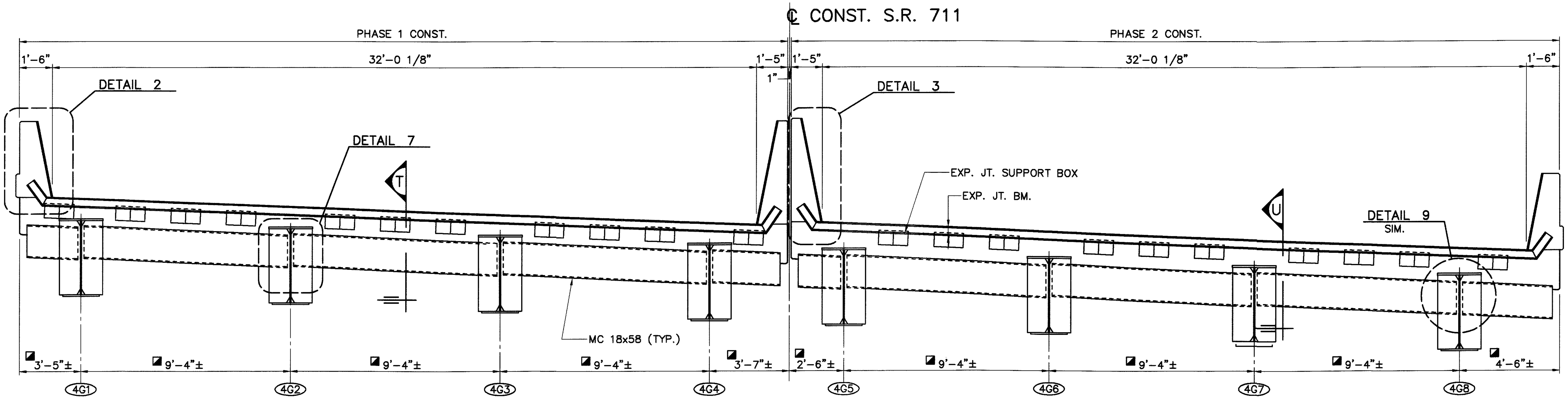
Date: 06-30-03 Time: 10:37 AM
Technician: RPRATT



SECTION J



SECTION K

■ TO BE FIELD VERIFIED

NOTES:

1. FOR MODULAR EXPANSION JOINT NOTES, SEE SHT. NO. 14/80.
2. FOR LOCATION OF SECTIONS J & K, SEE SHT. NO. 49/80.
3. FOR DETAILS 2 & 3 AND SECTIONS T & U, SEE SHT. NO. 56/80.
4. FOR DETAILS 6,7,8 & 9, SEE SHT. NO. 52/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

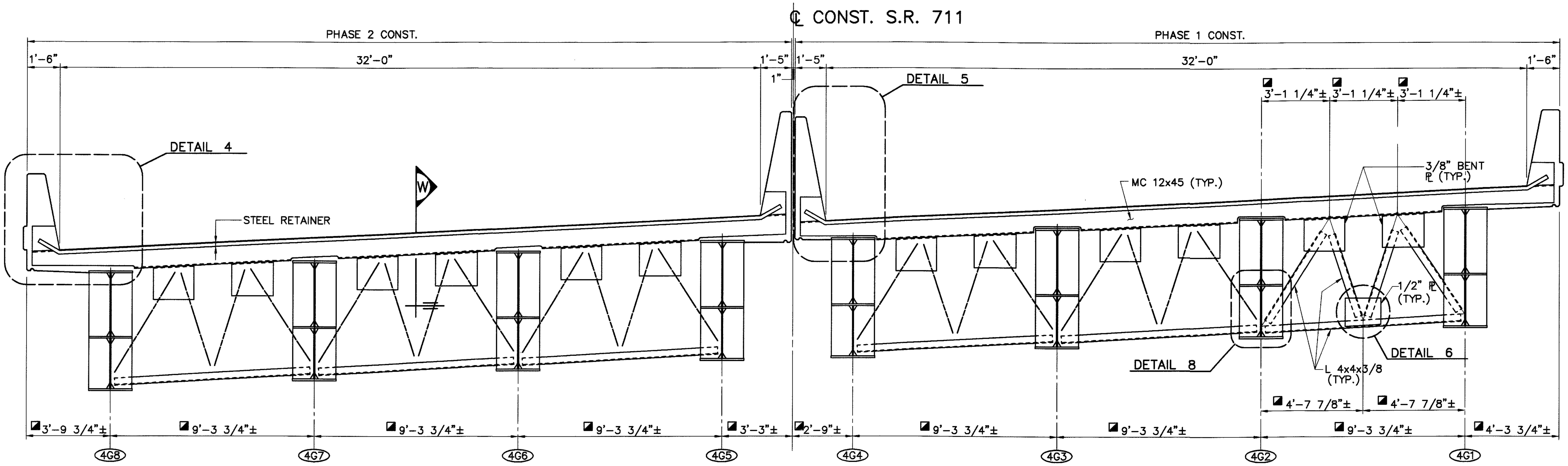
DESIGN AGENCY	GPD ASSOCIATES
DESIGNED B.J.M.	CHECKED P.J.W.
DRAWN R.P.R.	REVISED
REVIEWED K.S.J.	DATE 3-18-02
STRUCTURE FILE NUMBER	5008255

EXP. JOINT & END CROSSFRAME – HINGE NO. 3

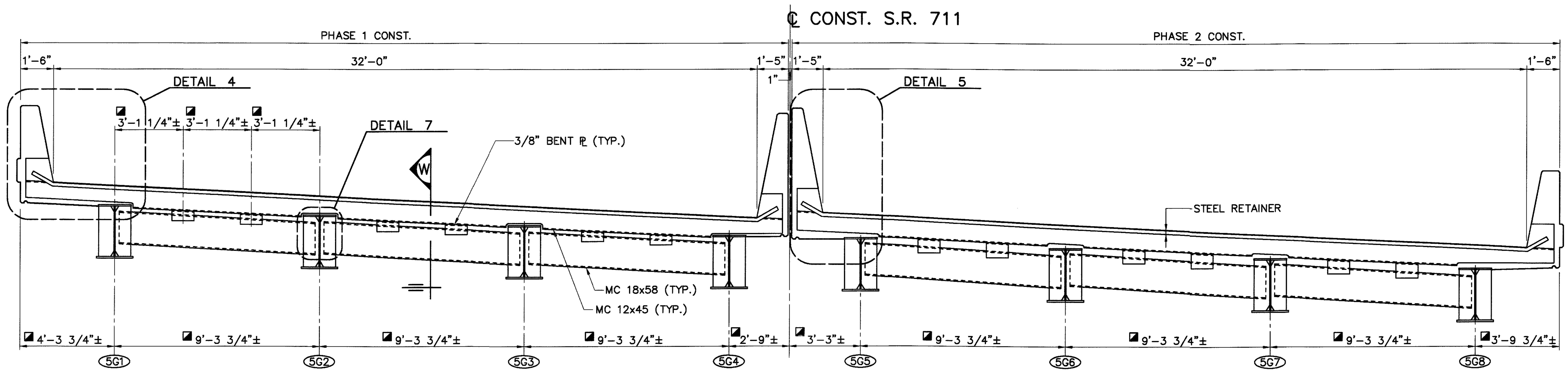
BRIDGE NO. MAH – 711 – 0067

S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47



SECTION (L)



SECTION (M)

◪ TO BE FIELD VERIFIED

NOTES:

1. FOR ADDITIONAL EXP. JOINT DETAILS AND NOTES, REFER TO STD. DWG. NO. EXJ-4-87.
2. FOR LOCATION OF SECTIONS L & M, SEE SHT. NO. 49/80.
3. FOR SECTION W AND DETAILS 4 & 5, SEE SHT. NO. 57/80.
4. FOR DETAILS 6, 7 & 8, SEE SHT. NO. 52/80.
5. FOR ADDITIONAL NOTES, SEE SHT. NO. 48/80.

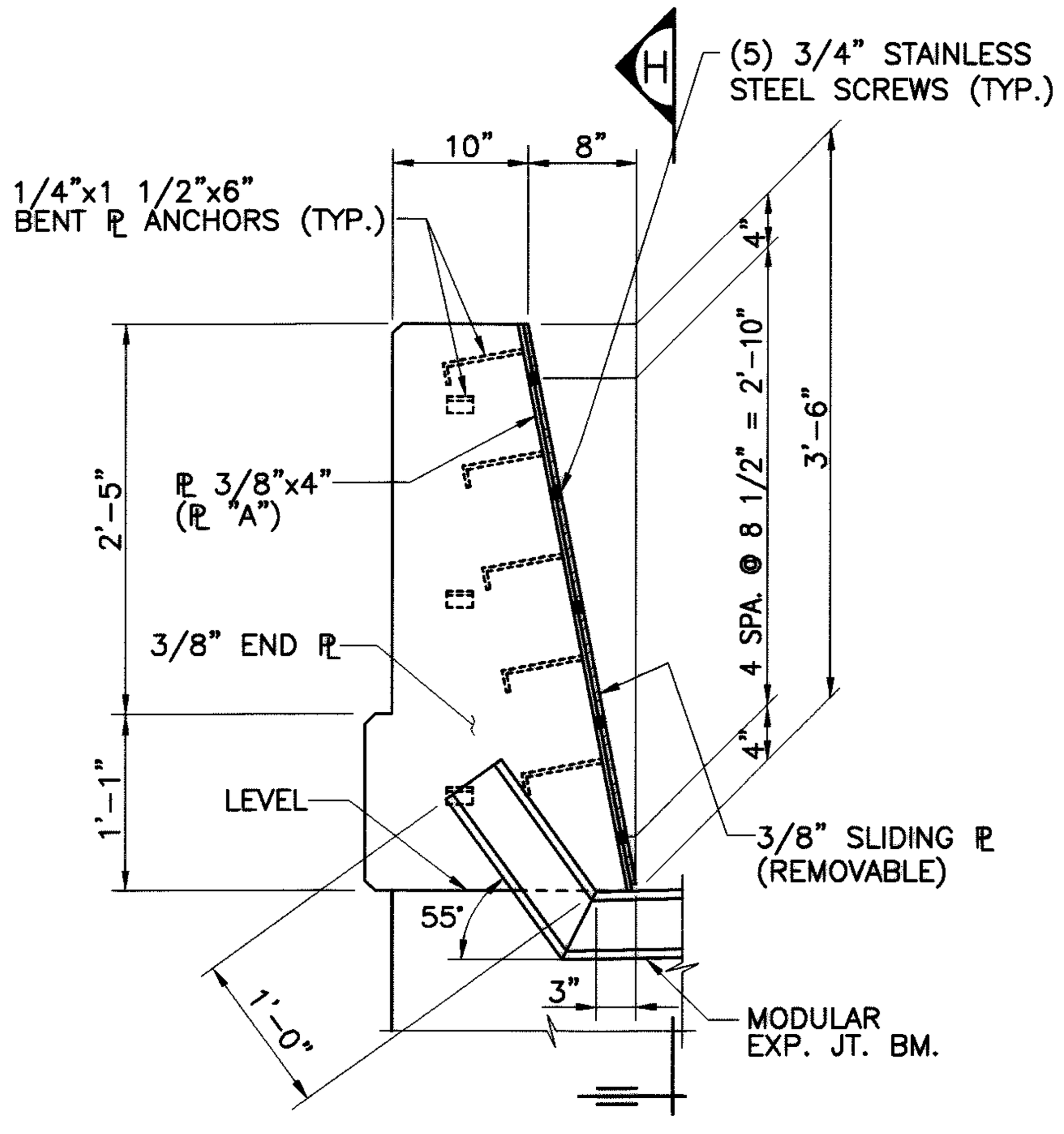
DESIGN AGENCY: GPD ASSOCIATES

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

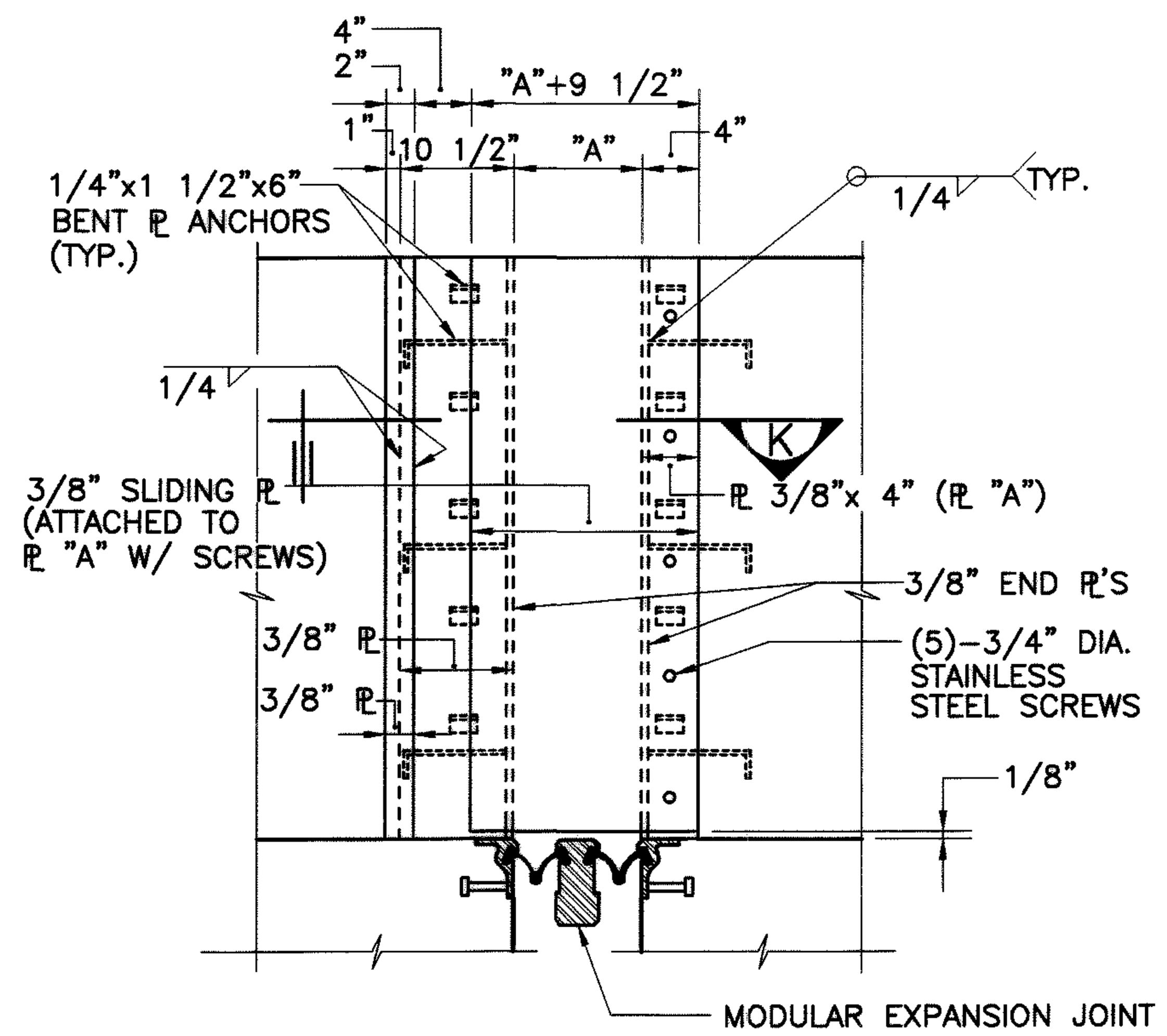
EXP. JOINT & END CROSSFRAME – HINGE NO. 4
BRIDGE NO. MAH-711-0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Technician: RPRATT

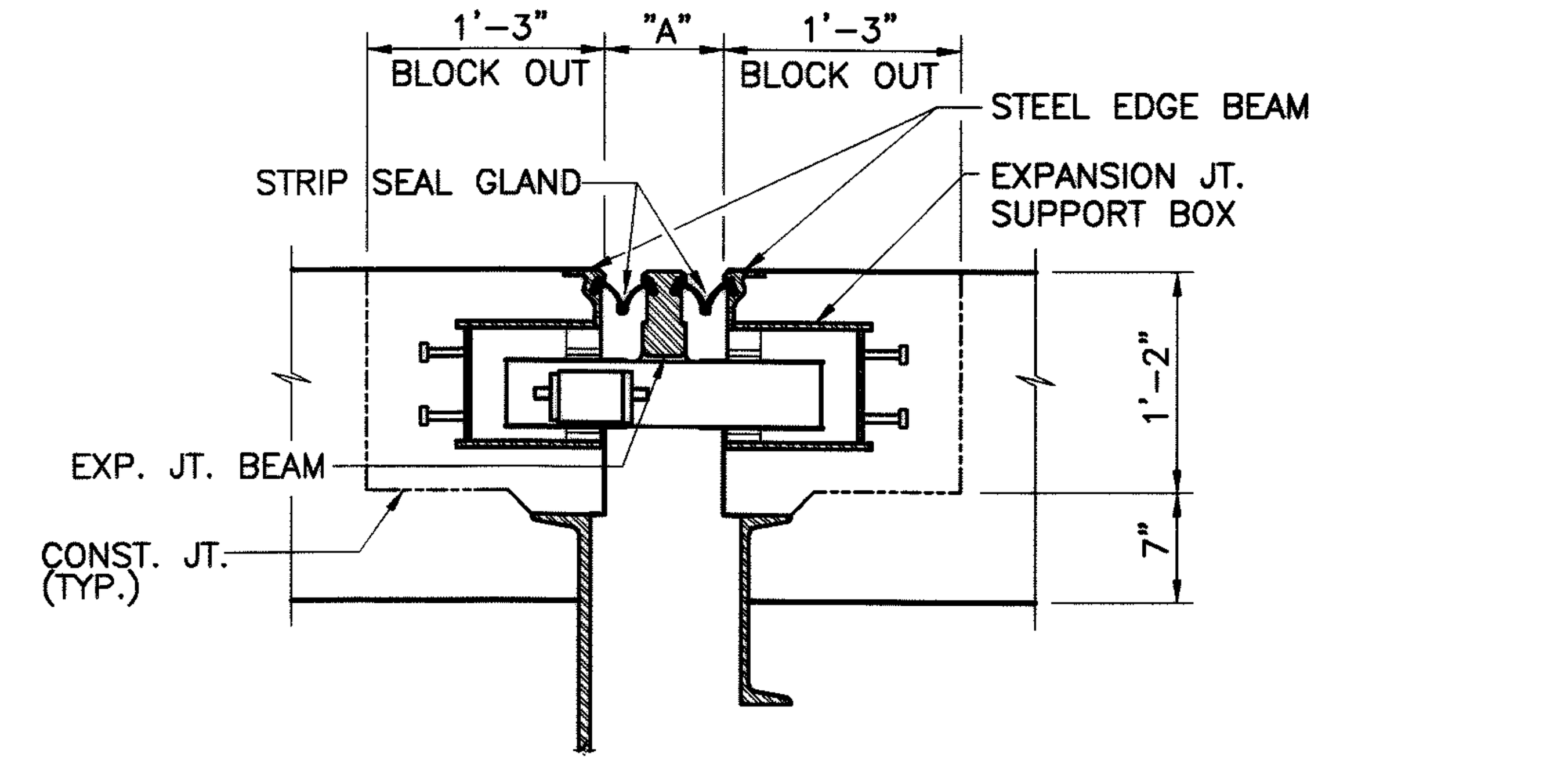


DETAIL 2



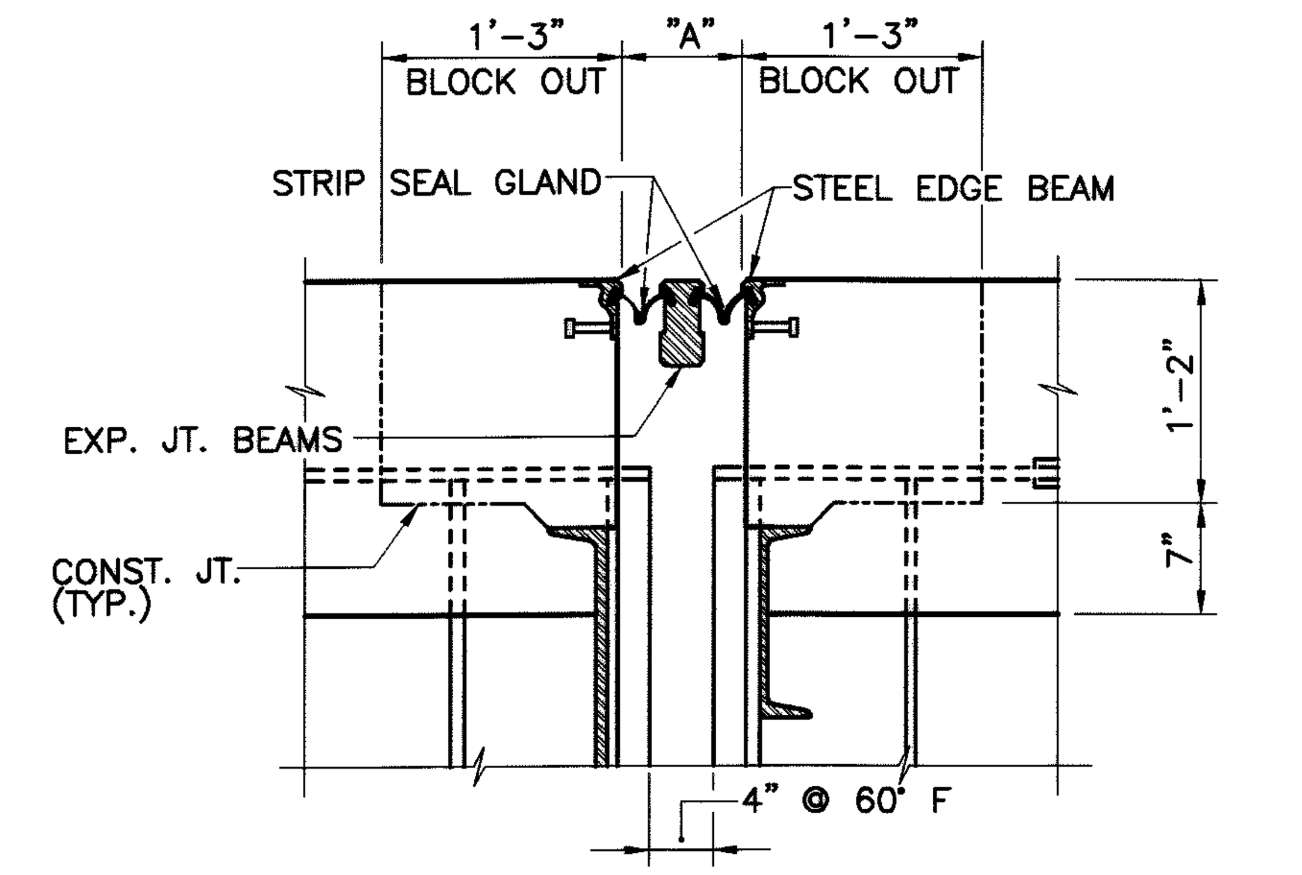
SECTION H

EXP. JT. @ HINGE NO. 1 SHOWN,
EXP. JT. @ HINGE NO. 3 SIMILAR BUT WITH 3 SEALS



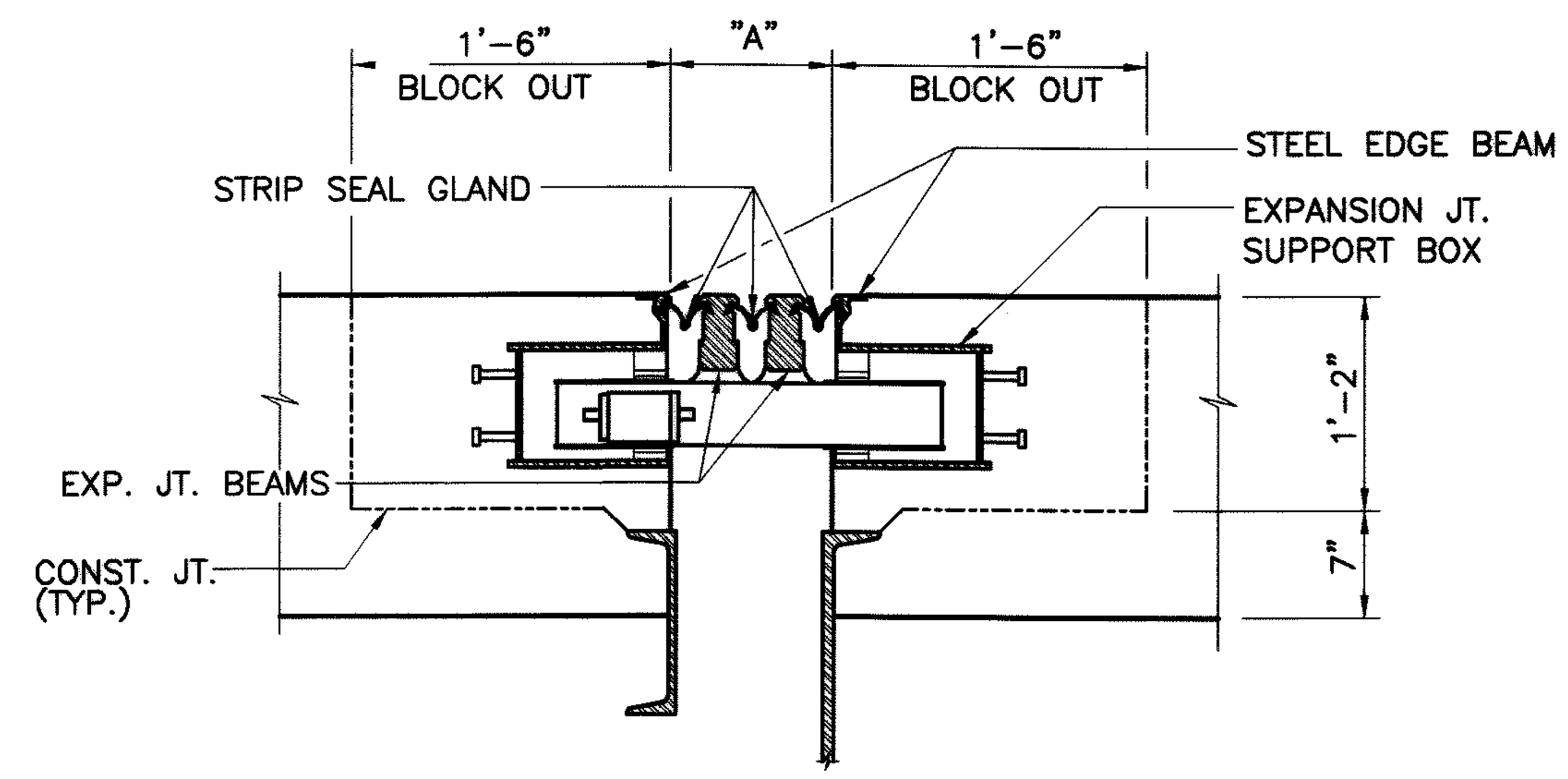
SECTION R

(HINGE NO. 1)



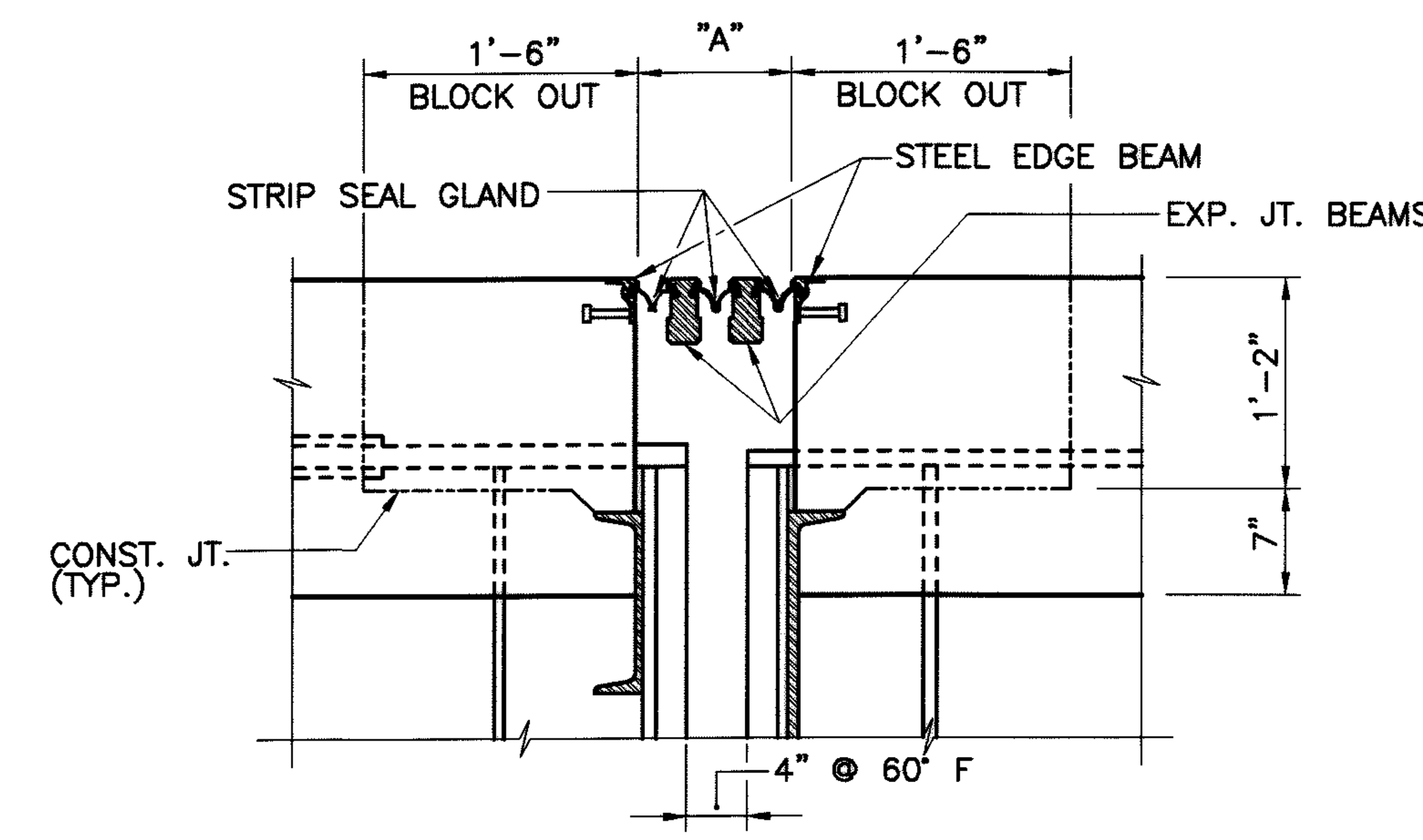
SECTION S

(HINGE NO. 1)



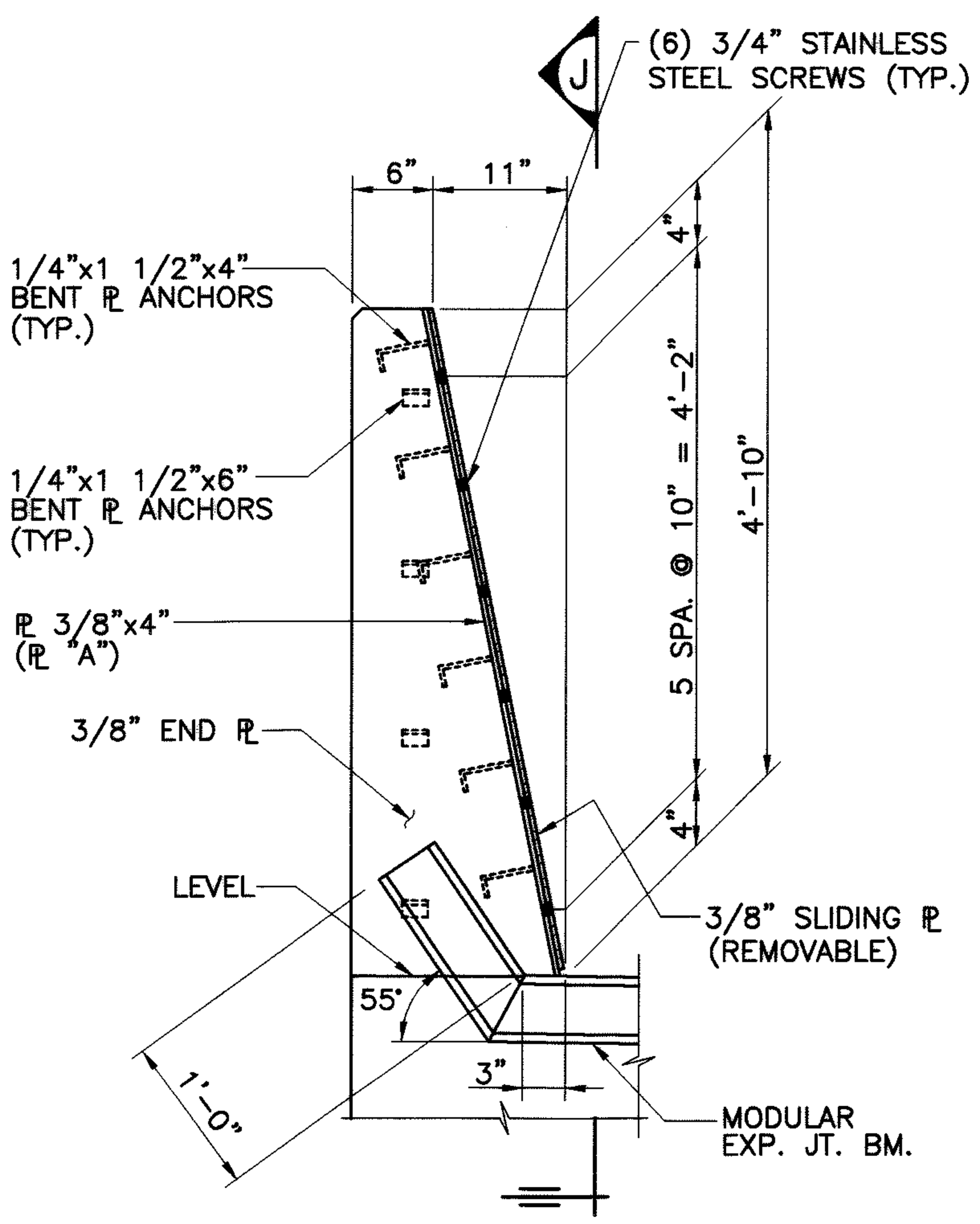
SECTION T

(HINGE NO. 3)

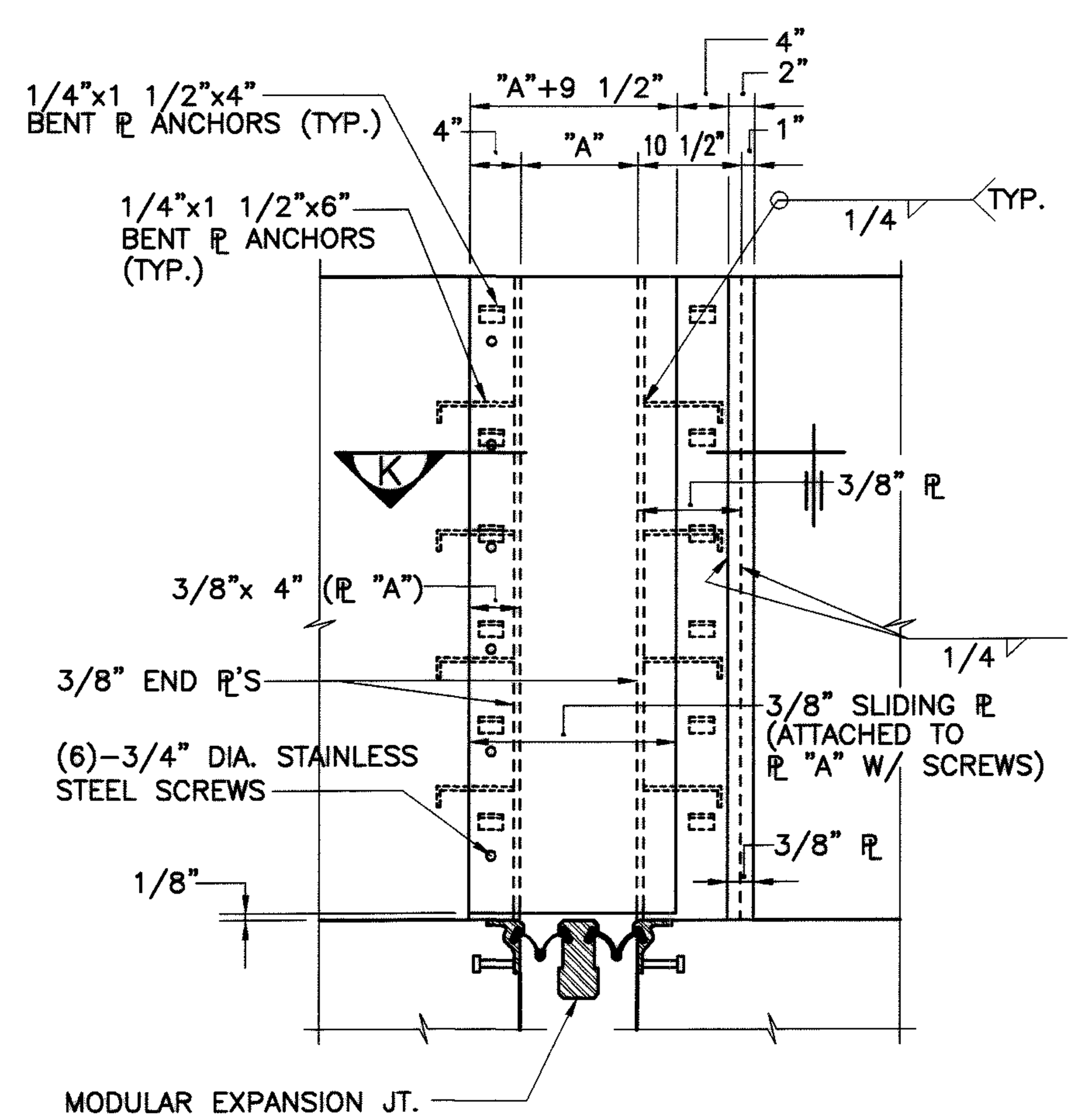


SECTION U

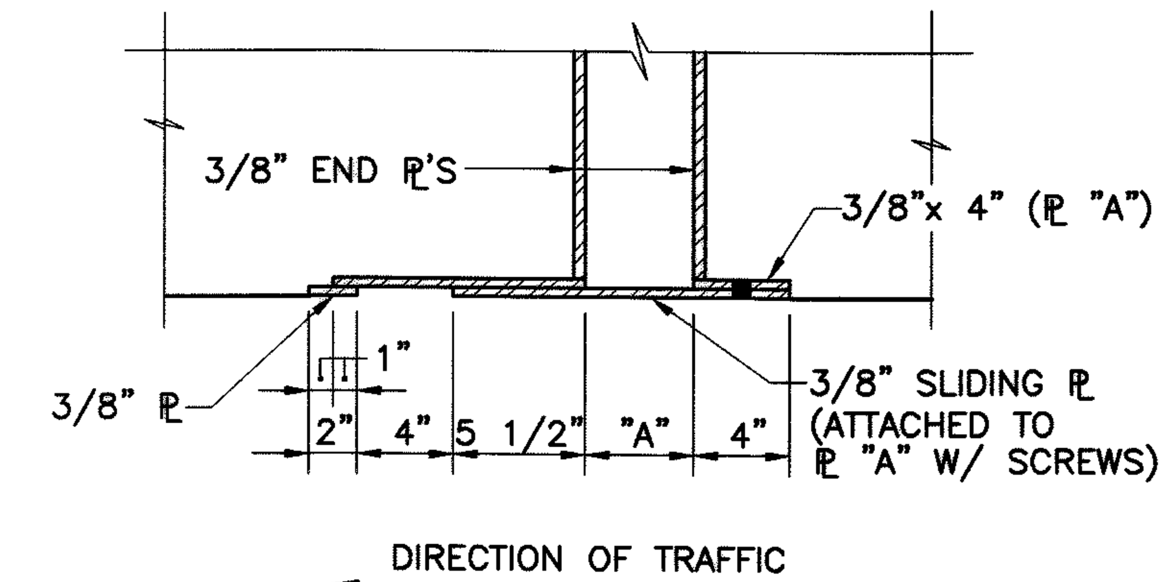
(HINGE NO. 3)



DETAIL 3



VIEW J



SECTION K

JOINT INSTALLATION TABLE

AMBIENT TEMPERATURE AT JOINT INSTALLATION (°F)	DIMENSION "A" (IN.) HINGE NO. 1	HINGE NO. 3
90	3 7/8"	6 5/16"
80	4 1/4"	6 7/8"
70	4 5/8"	7 7/16"
60	5"	8"
50	5 3/8"	8 9/16"
40	5 3/4"	9 1/8"
30	6 1/8"	9 11/16"

NOTES:

1. FOR LOCATIONS OF DETAILS 2 & 3, SEE SHT. NOS. 52/80 & 54/80.
2. FOR LOCATION OF SECTIONS R & S, SEE SHT. NO. 52/80. FOR LOCATION OF SECTIONS T & U, SEE SHT. NO. 54/80.
3. FOR MODULAR EXP. JOINT NOTES, SEE SHT. NO. 14/80.
4. FOR ADDITIONAL NOTES, SEE SHT. NOS. 48/80 & 52/80.

DESIGN AGENCY
GPD ASSOCIATES

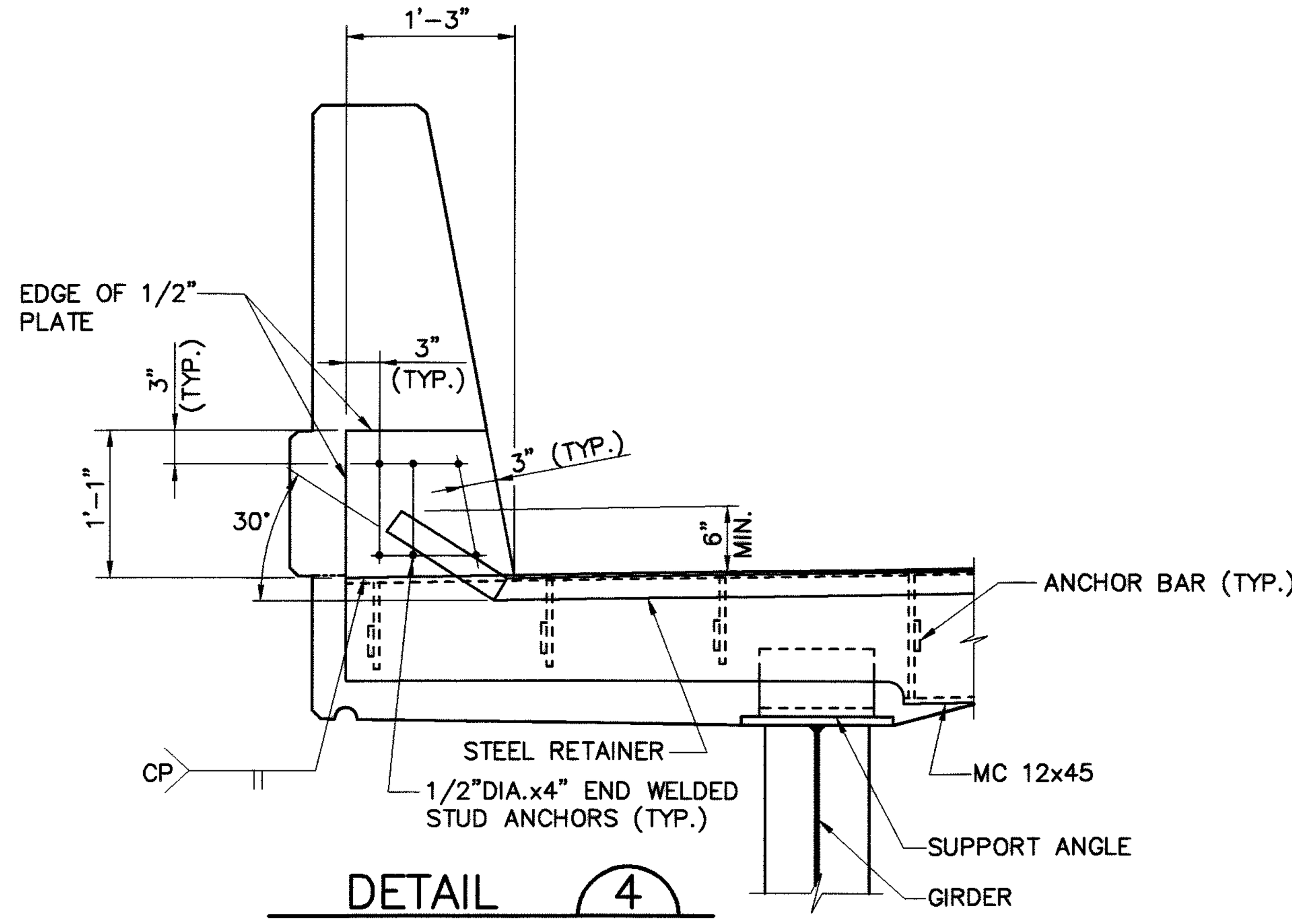
DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

EXPANSION JOINT DETAILS – HINGE NOS. 1 & 3

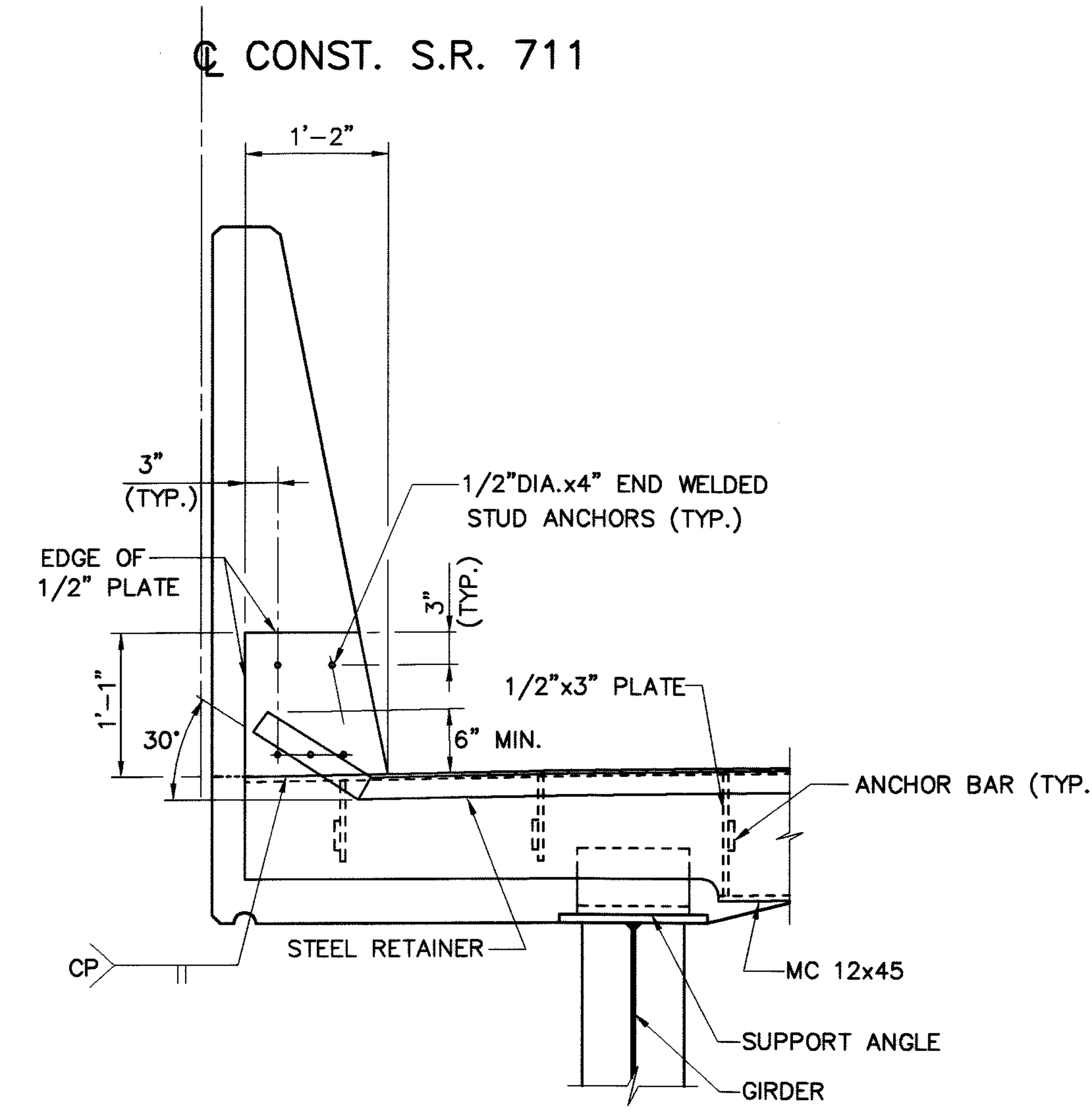
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Technician: RPRATT



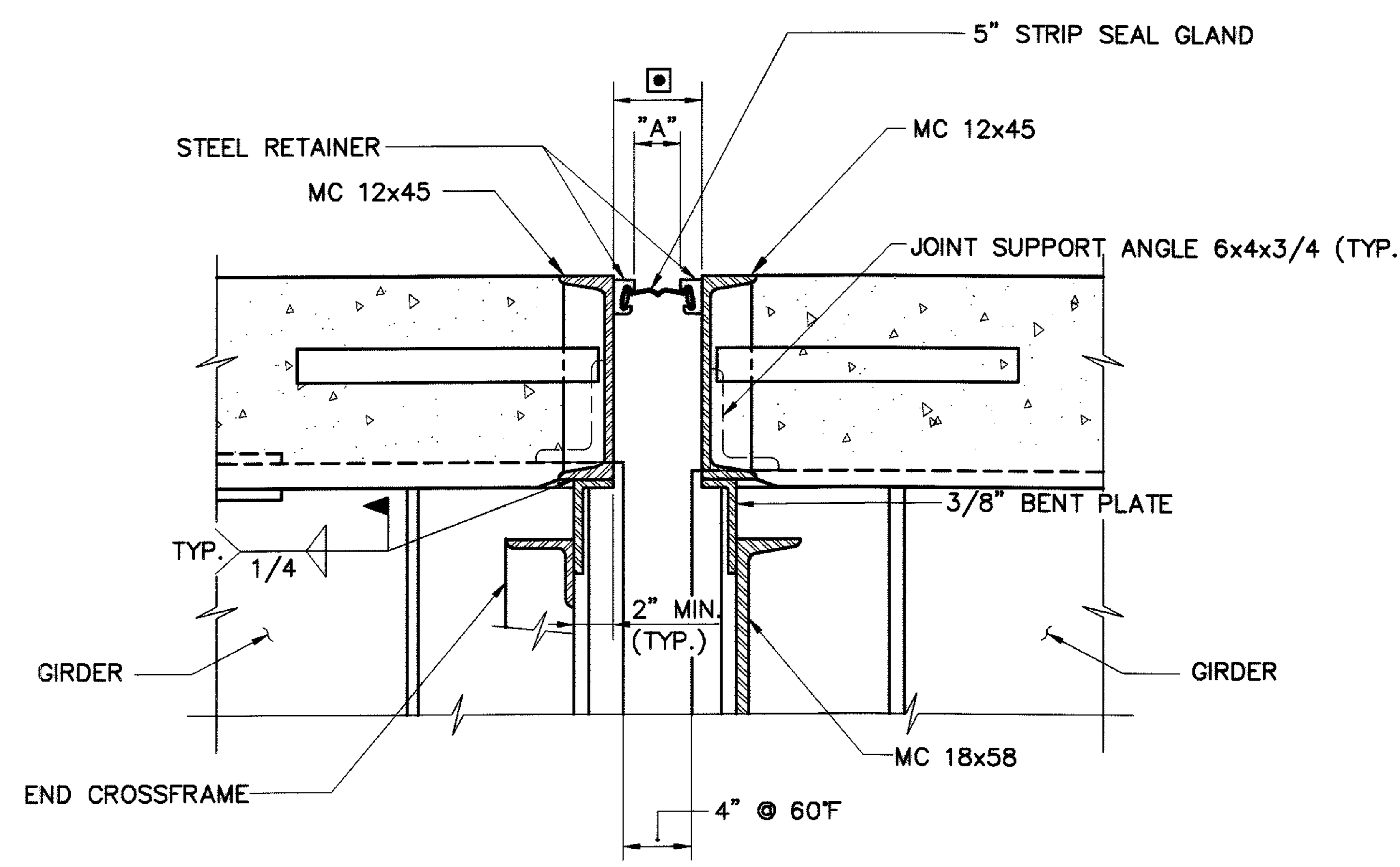
DETAIL 4



DETAIL 5

SECTION E

JOINT INSTALLATION TABLE		
AMBIENT TEMPERATURE AT JOINT INSTALLATION (°F)	DIMENSION "A" (IN.)	
	HINGE NO. 2	HINGE NO. 4
90	1 3/8"	1 9/16"
80	1 11/16"	1 7/8"
70	2"	2 1/8"
60	2 5/16"	2 3/8"
50	2 9/16"	2 11/16"
40	2 7/8"	2 15/16"
30	3 3/16"	3 3/16"



SECTION W

NOTES:

1. FOR LOCATIONS OF SECTION W AND DETAILS 4 & 5, SEE SHT. NOS. 53/80 & 55/80.
2. FOR LOCATION OF SECTION E, SEE SHT. NO. 58/80.
3. FOR ADDITIONAL NOTES, SEE SHT. NOS. 48/80 & 53/80.

LEGEND

▣ THIS DIMENSION IS THE SUM OF (2 x STEEL RETAINER WIDTH) AND (DIM. "A")

DESIGN AGENCY
CPD ASSOCIATES

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

EXPANSION JOINT DETAILS - HINGE NOS. 2 & 4

BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103EXP_JOINT.DWG
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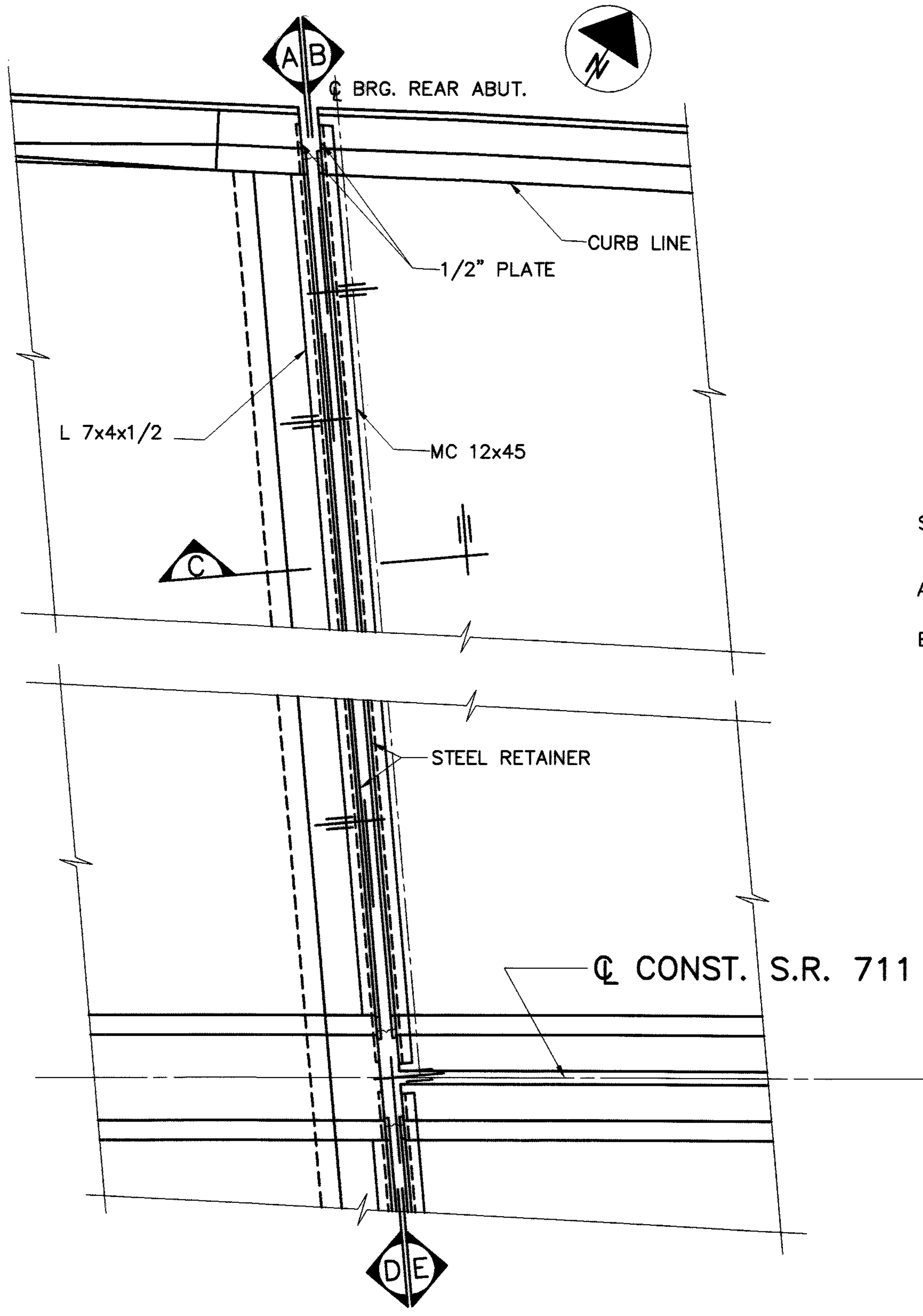
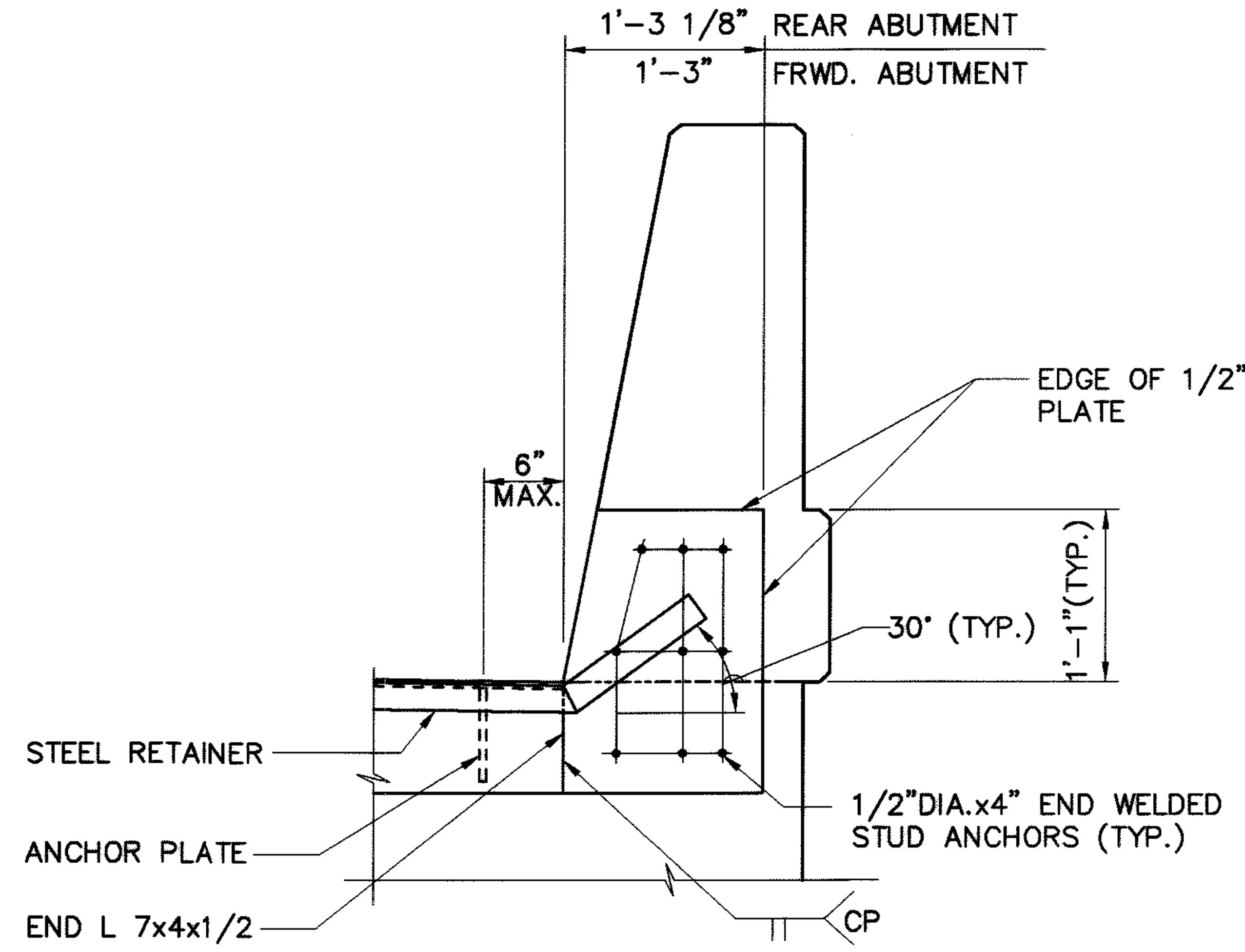
Technician: RPRATT

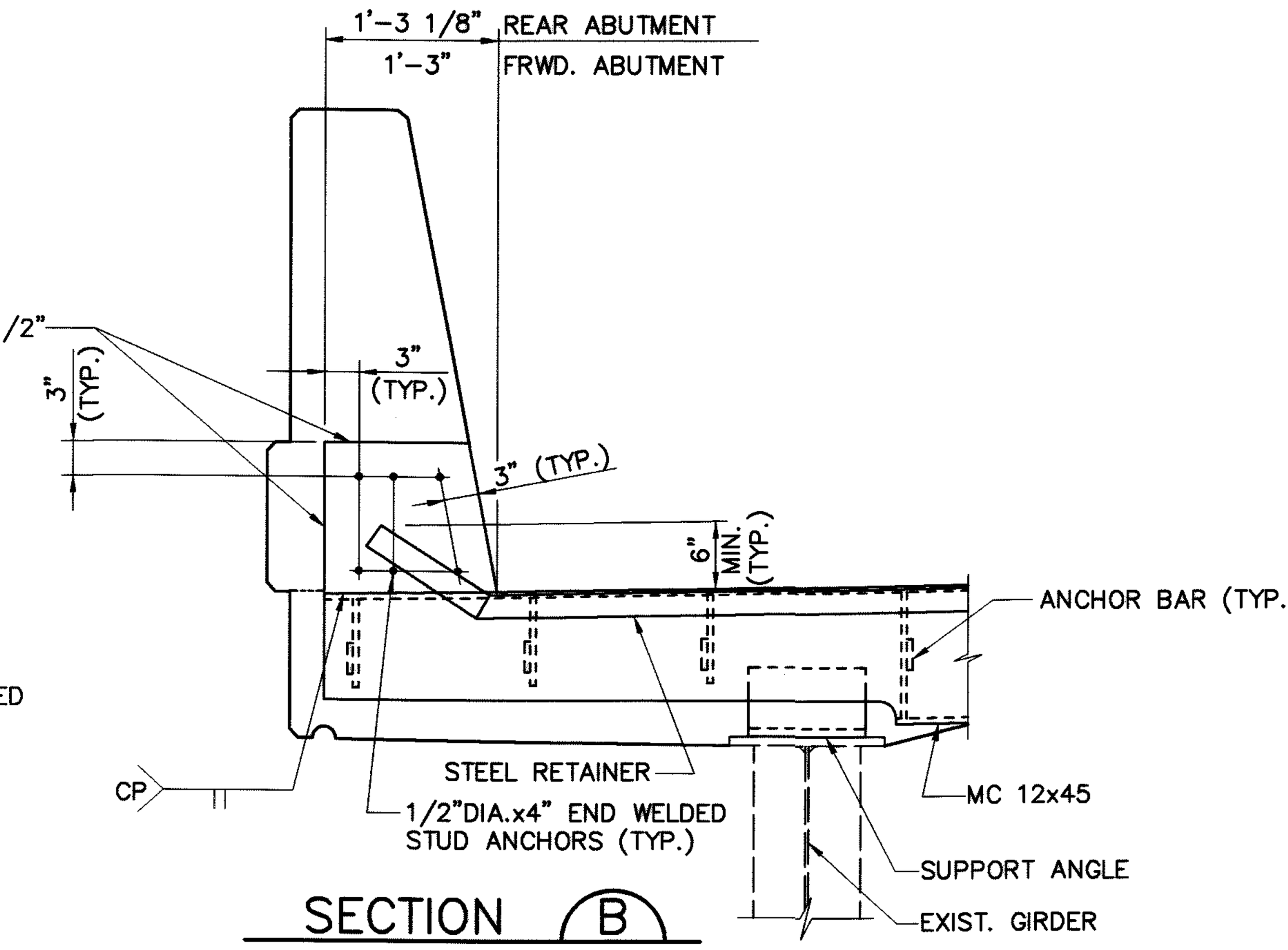


PARTIAL PLAN VIEW

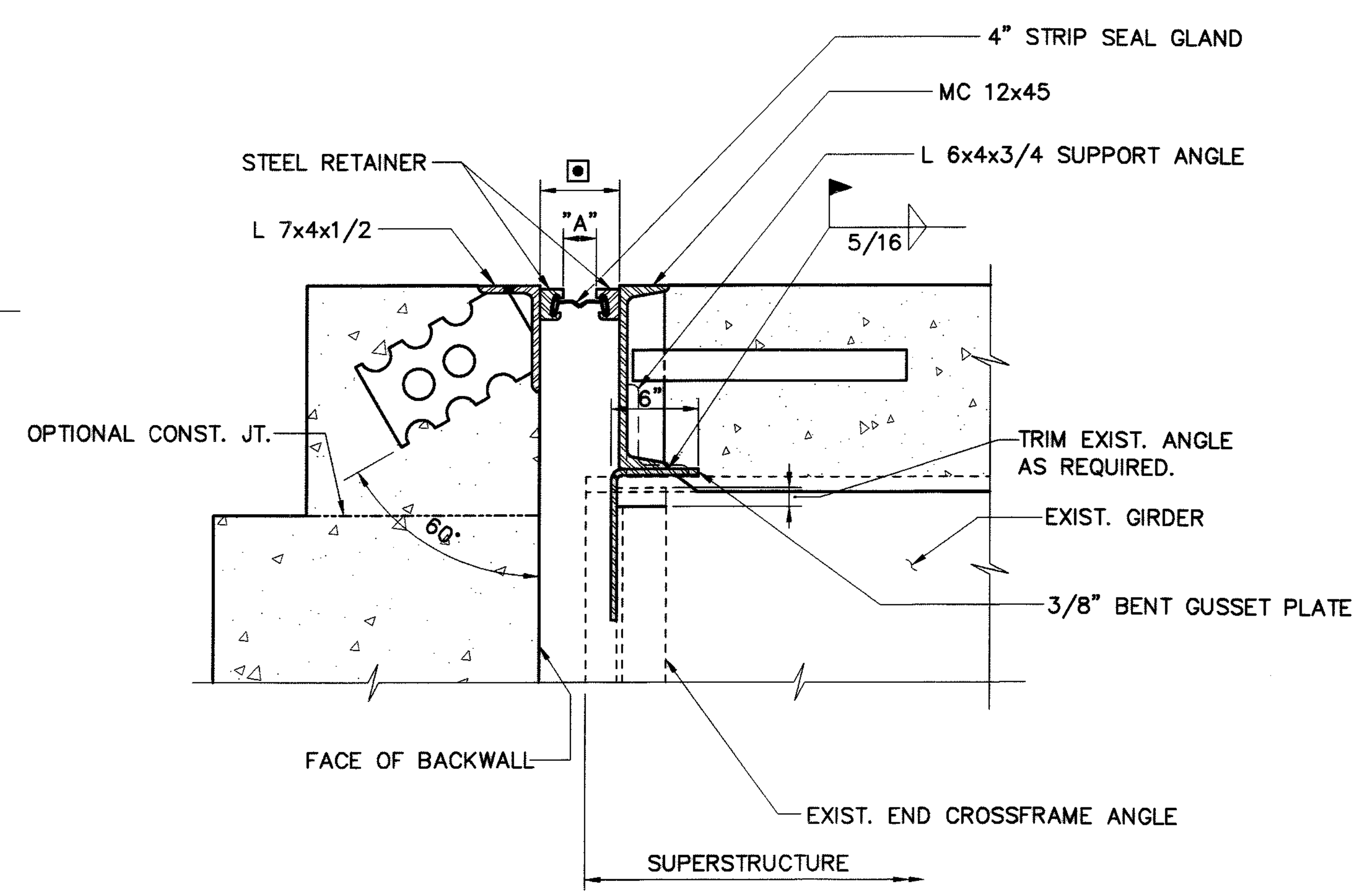
REAR ABUT. EXPANSION JT. SHOWN
FRWD. ABUT. EXPANSION JT. SIM. & OPP. HAND



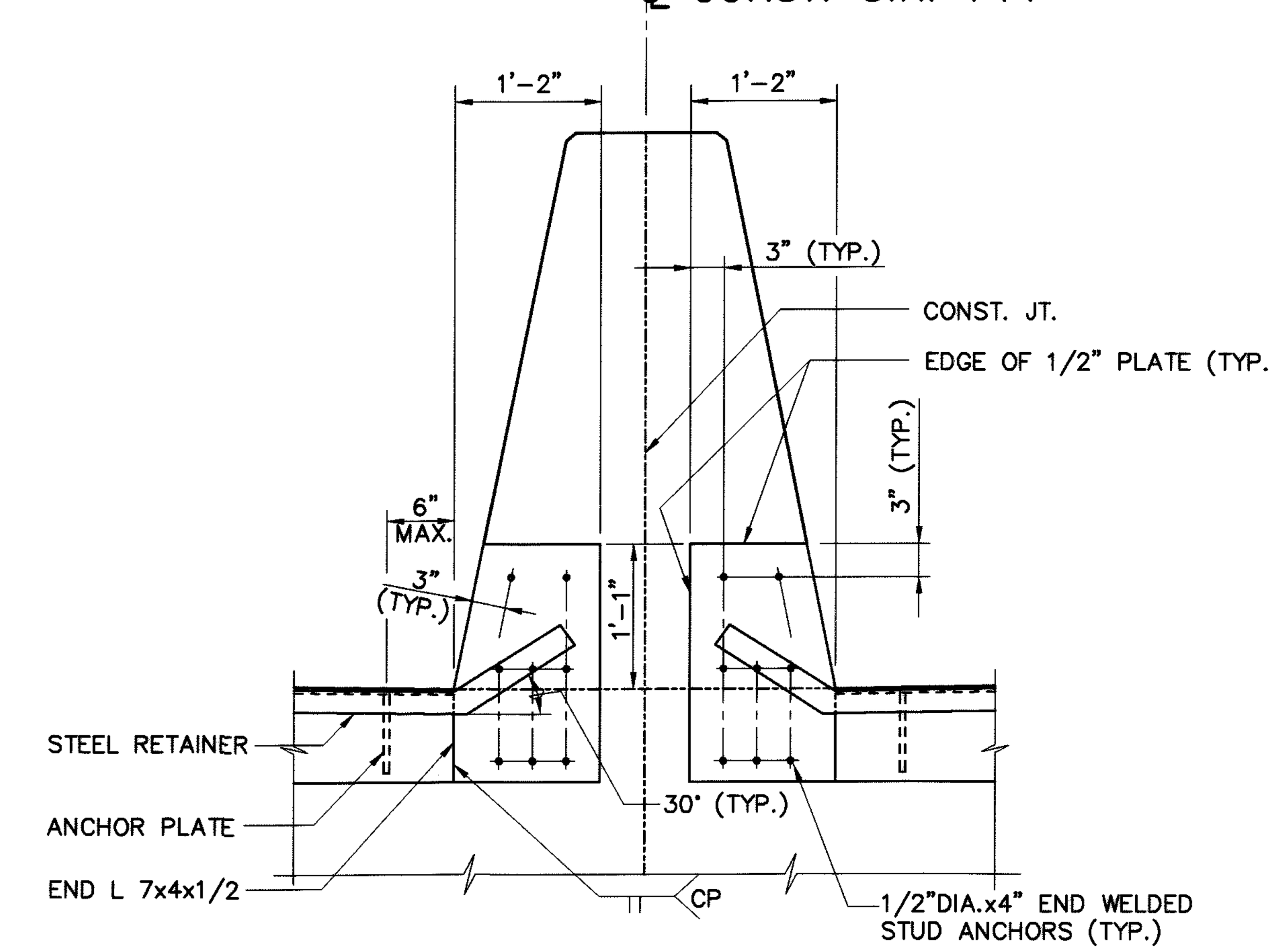
SECTION A



SECTION B



SECTION C



SECTION D

JOINT INSTALLATION TABLE

AMBIENT TEMPERATURE AT JOINT INSTALLATION (°F)	DIMENSION "A" (IN.)	
	REAR ABUT.	FRWD. ABUT.
90	1 3/8"	1 7/8"
80	1 5/8"	2"
70	1 3/4"	2 1/16"
60	2"	2 1/8"
50	2 1/4"	2 3/16"
40	2 3/8"	2 1/4"
30	2 5/8"	2 3/8"

LEGEND

▣ THIS DIMENSION IS THE SUM OF (2 x STEEL RETAINER WIDTH) AND (DIM. "A")

NOTES:

1. INSTALLATION OF SEAL: DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER ELEVATION OF THE SUPPORT/ARMOR SHALL BE ACHIEVED BY ADJUSTING THE CONNECTION ANGLES AND BOLTS BETWEEN BEAM AND EXPANSION JOINT.
2. FOR ADDITIONAL EXP. JT. DETAILS AND NOTES, REFER TO STD. DWG. NO. EXJ-4-87.
3. FOR SECTION E, SEE SHT. NO. 57/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

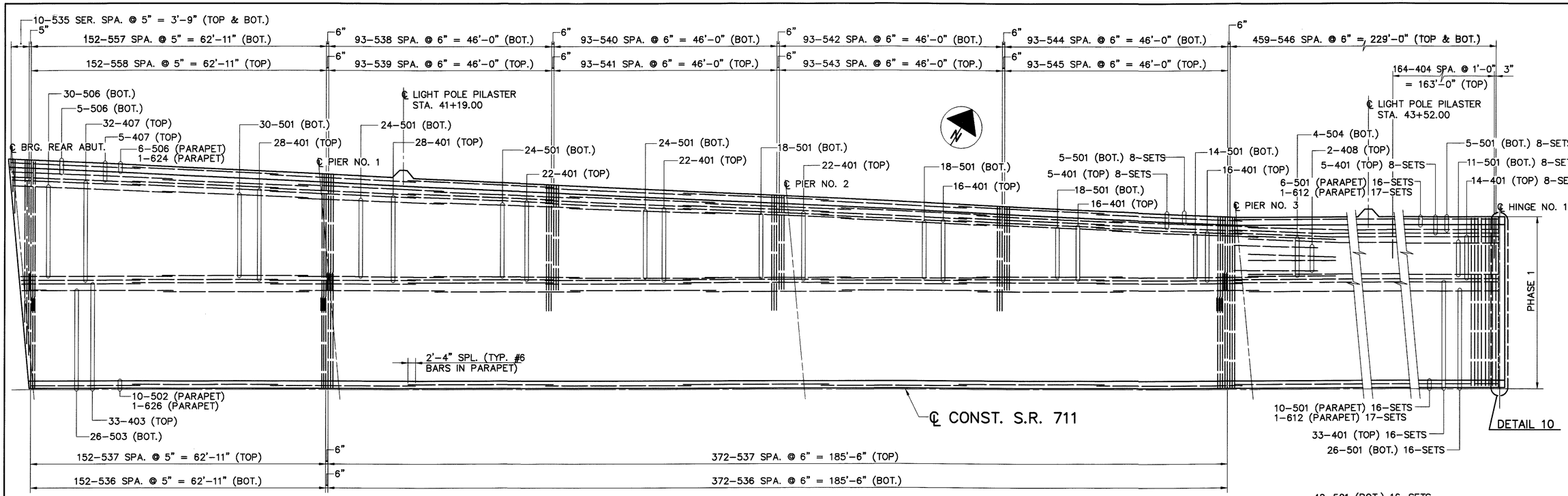
DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

EXPANSION JOINT DETAILS - REAR & FRWD. ABUTMENTS

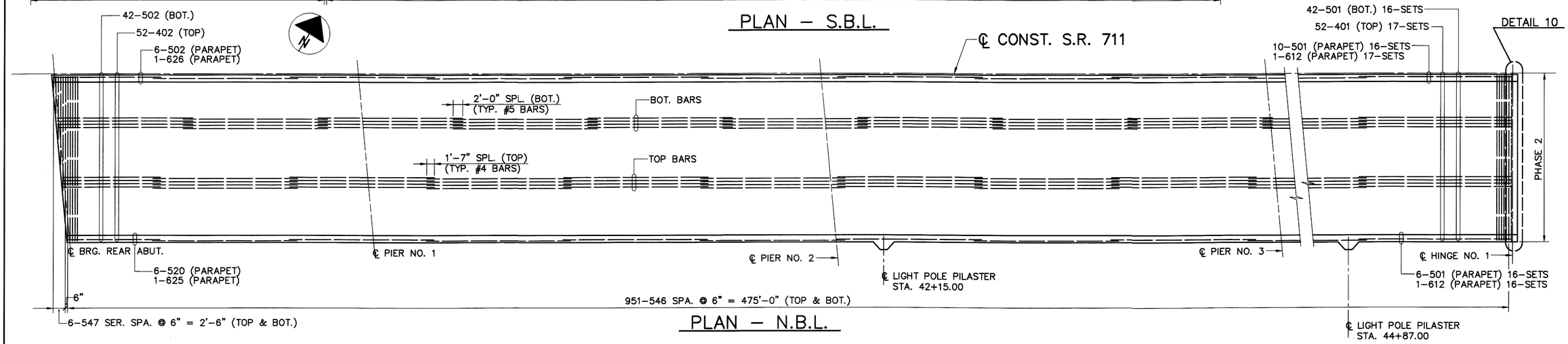
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

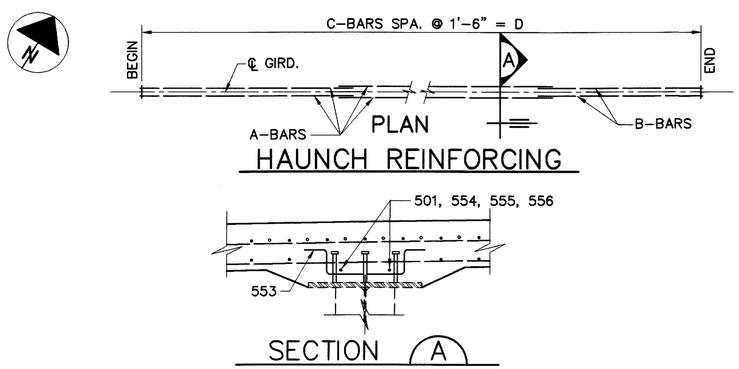
Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103EXP_JOINT.DWG
Date: 06-30-03 Time: 10:40 AM TW = 0d0'0.00"
Technician: RPRATT



PLAN – S.B.L.



PLAN – N.B.L.



HAUNCH REINFORCING TABLE

GIRDER	LIMITS		REINFORCING STEEL			D
	BEGIN	END	A–BARS	B–BARS	C–BARS	
1G1	℄ PIER NO. 1	℄ PIER NO. 2	2–501 2–SETS	2–554	65–553	96'–0"
1G2	℄ PIER NO. 1	℄ PIER NO. 2	2–501 2–SETS	2–554	65–553	96'–0"
1G3	℄ PIER NO. 1	℄ PIER NO. 2	2–501 2–SETS	2–554	65–553	96'–0"
1G6	℄ REAR ABUT.	℄ PIER NO. 2	2–501 5–SETS	2–555	107–553	159'–0"
1G7	℄ REAR ABUT.	℄ PIER NO. 2	2–501 5–SETS	2–555	107–553	159'–0"
1G8	℄ REAR ABUT.	℄ PIER NO. 2	2–501 5–SETS	2–555	107–553	159'–0"
1G9	℄ REAR ABUT.	℄ PIER NO. 2	2–501 5–SETS	2–555	107–553	159'–0"
1G6	℄ PIER NO. 5	℄ HINGE NO. 1	2–501 1–SET	2–556	40–553	58'–6"
1G7	℄ PIER NO. 5	℄ HINGE NO. 1	2–501 1–SET	2–556	41–553	60'–0"

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR TRANSVERSE SECTION, SEE SHT. NO. 61/80.
4. FOR ADDITIONAL REINFORCING OVER PIERS AND PARAPET REINF. STEEL, SEE SHT. NO. 60/80.
5. FOR LIGHT POLE PILASTER DETAIL, SEE SHT. NO. 69/80.
6. FOR DETAIL 10, SEE SHT. NO. 71/80.

DESIGN AGENCY
CLAUS PILZ SCHOMER BURNS & DIPAVLYN INC.
GPD ASSOCIATES
320 South Main Street, Suite 231 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED M.D.P. | DRAWN R.P.R. | CHECKED S.A.M. | REVIEWED K.S.J. | DATE 3–18–02 | REVISED | STRUCTURE FILE NUMBER 5008255

SLAB PLAN – UNIT NO. 1

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & ROADS & DIVISION ST.

MAH–711–0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SLAB.DWG
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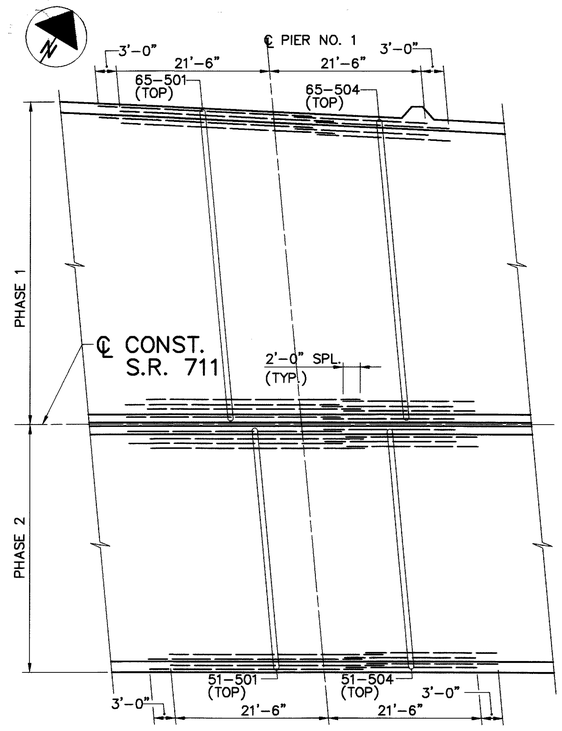
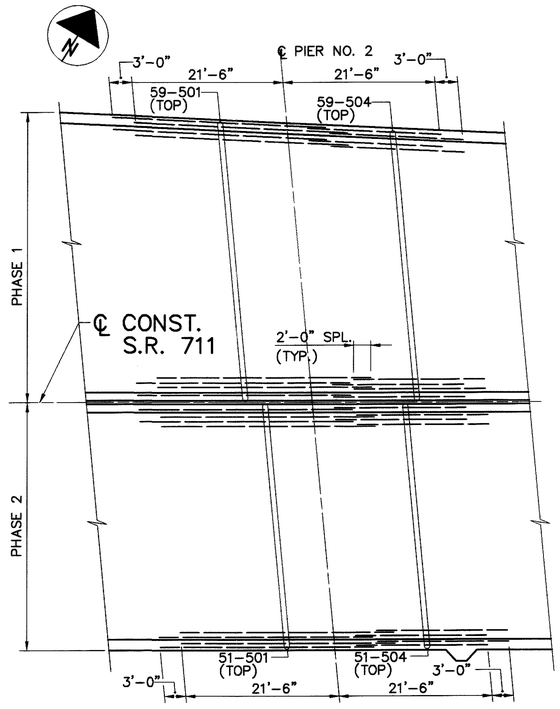
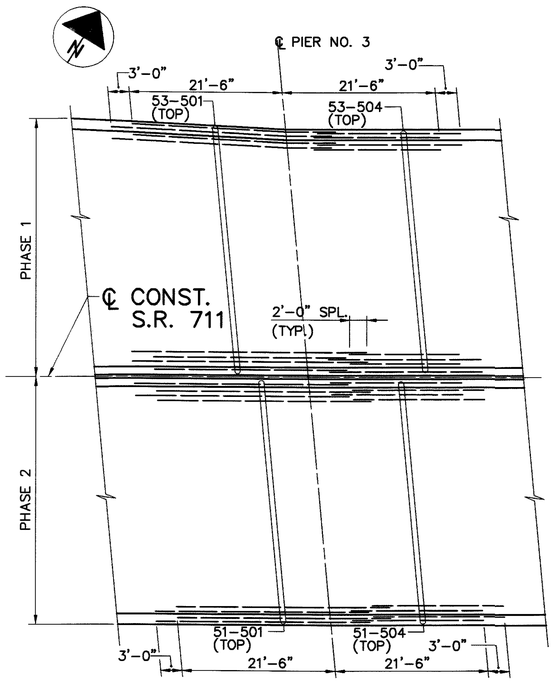
Technician: RPRATT



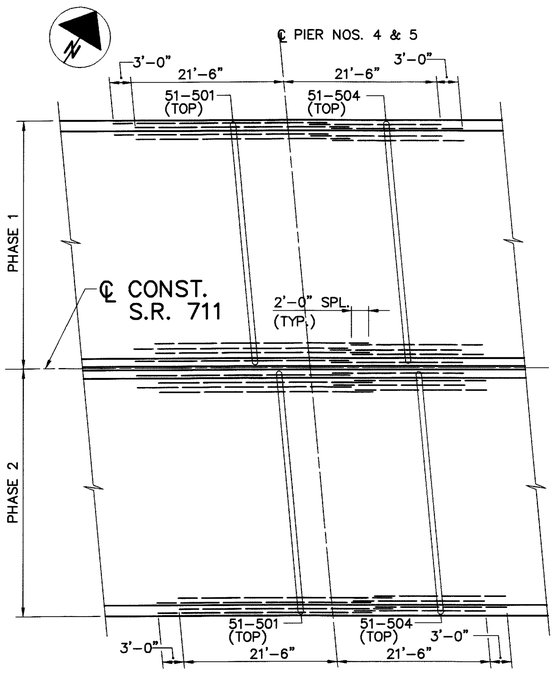
ADDITIONAL REINFORCING OVER PIER NO. 1



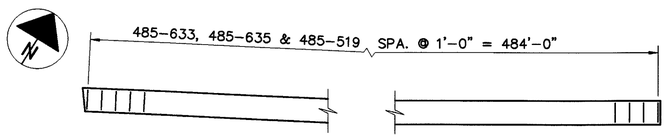
ADDITIONAL REINFORCING OVER PIER NO. 2



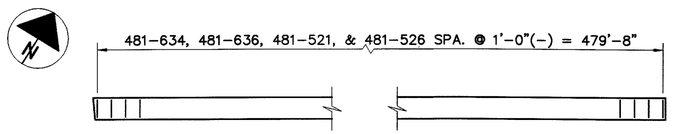
ADDITIONAL REINFORCING OVER PIER NO. 3



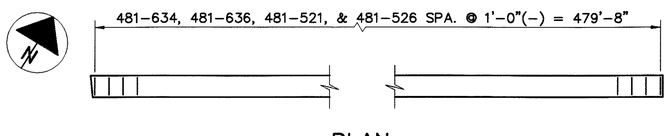
ADDITIONAL REINFORCING OVER PIER NOS. 4 & 5



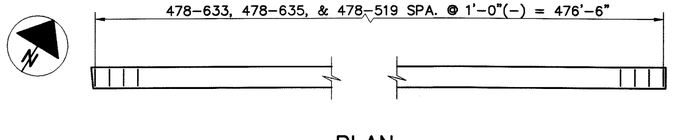
PLAN
NORTH PARAPET



PLAN
SOUTH MEDIAN BARRIER



PLAN
NORTH MEDIAN BARRIER



PLAN
SOUTH PARAPET

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR ADDITIONAL NOTES, SEE SHT. NO. 59/80.

DESIGN AGENCY
CLAUS PAUL SCHOMER BURNS & OSTHAVEN, INC.
GPD ASSOCIATES
320 South Main Street, Suite 201, Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

SLAB DETAILS – UNIT NO. 1
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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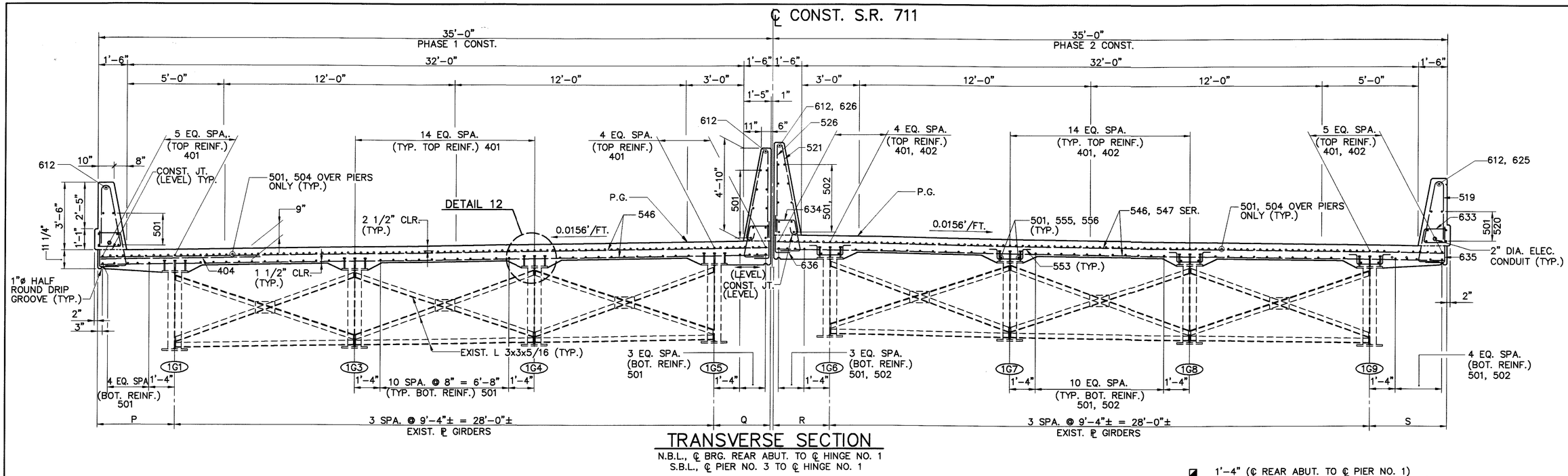
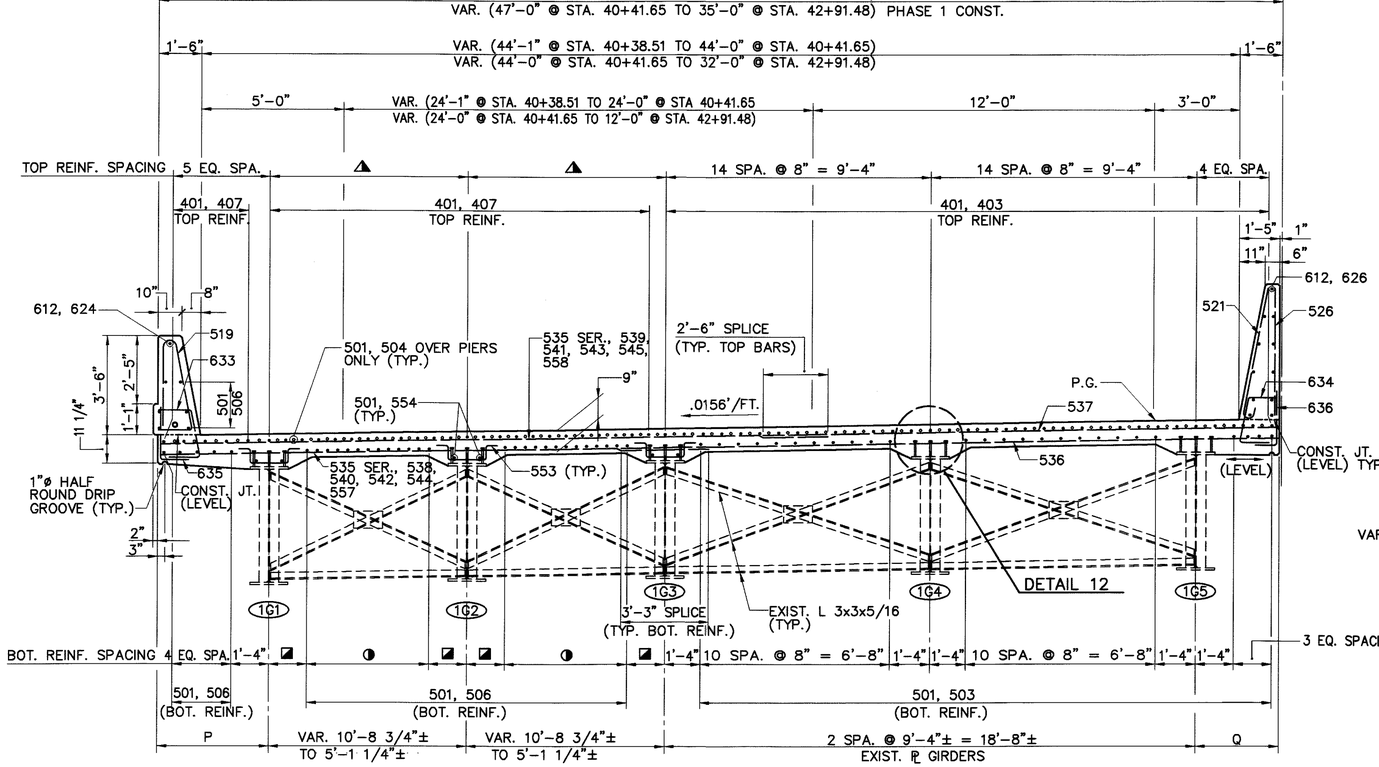
Technician: RPRATT



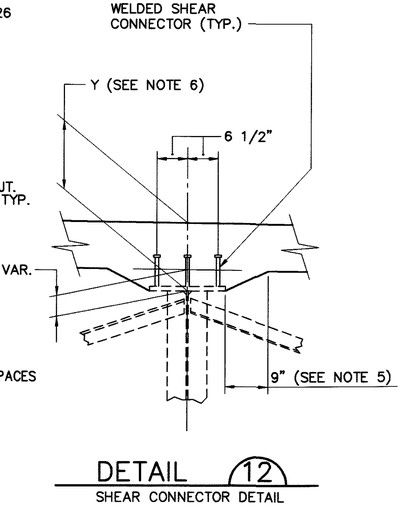
TRANSVERSE SECTION

N.B.L., ℄ BRG. REAR ABUT. TO ℄ HINGE NO. 1
S.B.L., ℄ PIER NO. 3 TO ℄ HINGE NO. 1



TRANSVERSE SECTION

S.B.L., ℄ BRG. REAR ABUT. TO ℄ PIER NO. 3



DETAIL 12

SHEAR CONNECTOR DETAIL

◪ 1'-4" (℄ REAR ABUT. TO ℄ PIER NO. 1)
1'-4" (℄ PIER NO. 1) TO 8" (℄ PIER NO. 2)
8" (℄ PIER NO 3)

▲ 16 EQ. SPACES (℄ BRG. REAR ABUT.), 14 EQ. SPACES (℄ PIER NO. 1)
11 EQ. SPACES (℄ PIER NO. 2), 8 EQ. SPACES (℄ PIER NO. 3)

◑ 14 EQ. SPACES (℄ BRG. REAR ABUT.), 11 EQ. SPACES (℄ PIER NO. 1)
8 EQ. SPACES (℄ PIER NO. 2), 6 EQ. SPACES (℄ PIER NO. 3)

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTED OTHERWISE.
4. FOR SLAB PLAN AND DETAILS, SEE SHT. NOS. 59/80 & 60/80.
5. A HAUNCH WIDTH OF 9 INCHES SHALL BE USED. HOWEVER, THE HAUNCH MAY VARY BETWEEN 6 INCHES AND 12 INCHES.
6. DECK SLAB DEPTH FOR CONCRETE QUANTITY (Y): DIMENSIONS SHOWN FROM THE TOP OF THE CONCRETE DECK TO THE BOTTOM OF THE TOP FLANGE, MINUS THE AVERAGE DESIGN HAUNCH THICKNESS OF 3 1/2 INCHES, MINUS TOP FLANGE THICKNESS HAS BEEN USED FOR COMPUTING THE DECK CONCRETE QUANTITIES. CONCRETE REQUIRED TO FILL THE HAUNCHES, INCLUDING ADDITIONAL OR LESS MATERIAL REQUIRED DUE TO HAUNCH CONSTRUCTION TOLERANCES, SHALL BE CONSIDERED AS INCIDENTAL AND WILL NOT BE INCLUDED IN THE QUANTITY CALCULATIONS FOR PAYMENT. FOR DECK SLAB DEPTH (Y) TABLES, SEE SHT. NO. 63/80.
7. REBARS WHICH INTERFERE WITH SCUPPERS SHALL BE FIELD CUT AS NEEDED.
8. FOR SCREED ELEVATIONS, SEE SHT. NOS. 72/80 THRU 76/80.
9. QUANTITIES OF CONCRETE AND REINFORCING STEEL FOR PARAPETS AND BARRIER ARE INCLUDED WITH ITEM 844 – HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET).
10. FOR OVERHANG DIMENSIONS P, Q, R, & S, SEE SHT. NO. 77/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
534 South Main Street, Suite 231 Akron, Ohio 44311
330-572-2100 , Fax 330-572-2101

DESIGNED M.D.P. | DRAWN R.P.R. | REVIEWED K.S.J. | DATE 3-18-02
CHECKED S.A.M. | REVISED | STRUCTURE FILE NUMBER 5008255

TRANSVERSE SECTION – UNIT NO. 1
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

61 / 80

700 / 886

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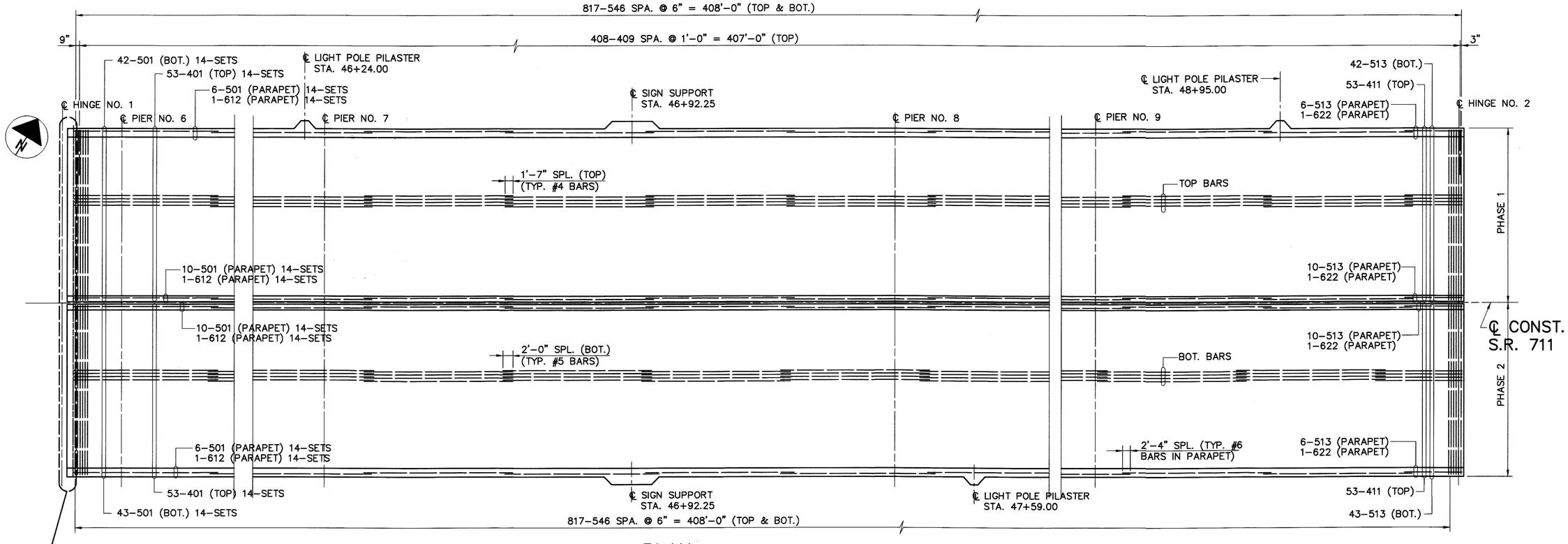
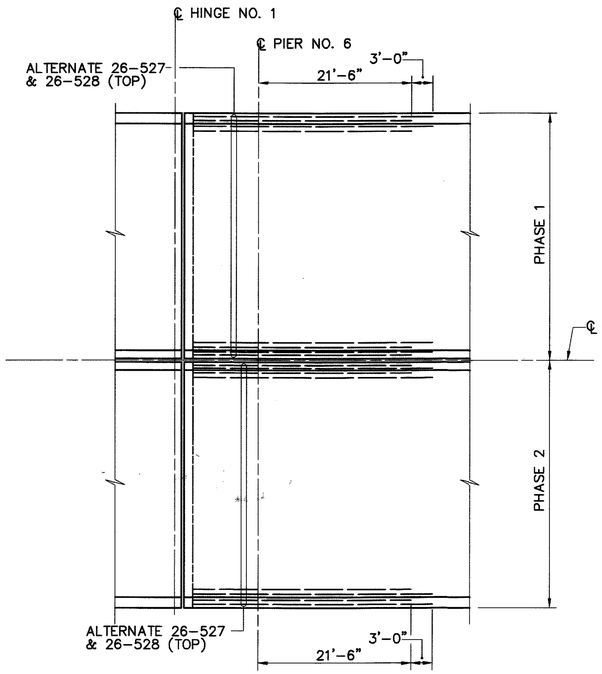
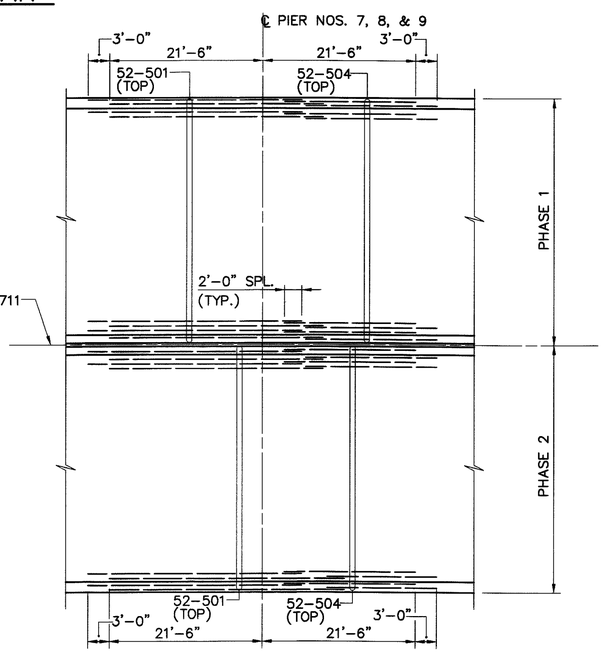


PLAN

DETAIL 11



ADDITIONAL REINFORCING OVER PIER NO. 6



ADDITIONAL REINFORCING OVER PIER NOS. 7, 8, & 9

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR TRANSVERSE SECTION AND PARAPET REINF. STEEL, SEE SHT. NO. 63/80.
4. FOR LIGHT POLE PILASTER DETAIL, SEE SHT. NO. 69/80.
5. FOR SIGN SUPPORT DETAIL, SEE SHT. NO. 68/80.
6. FOR DETAIL 11, SEE SHT. NO. 71/80.

DESIGN AGENCY
CLAUS PYLE SCHRADER BURNS & DEHAVEN INC.
GPD ASSOCIATES
333 North Main Street, Suite 210 Akron, Ohio 44308
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DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3–18–02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

SLAB PLAN – UNIT NO. 2
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

62 / 80

701 / 886

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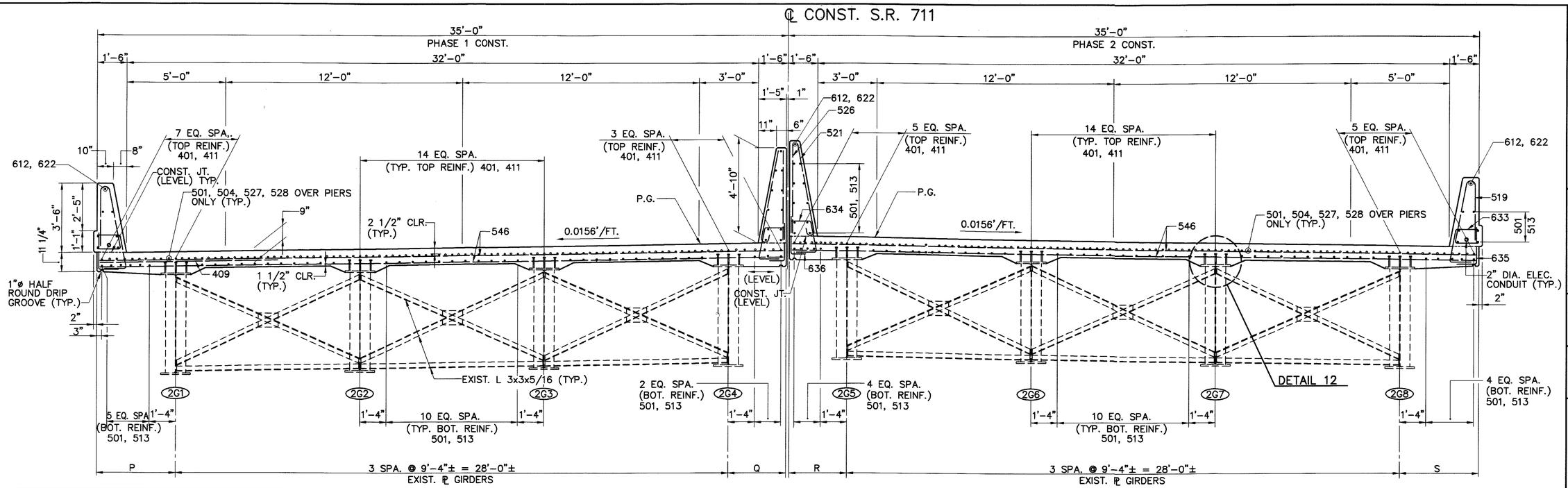


TRANSVERSE SECTION

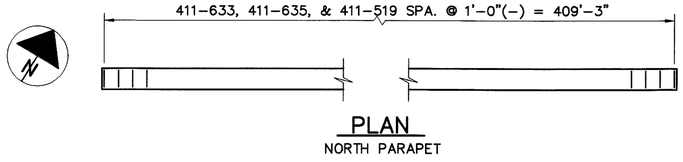
DEPTH OF SLAB OVER GIRDER, Y						
LOCATION	REAR ABUT.	PIER NO. 1	PIER NO. 2	PIER NO. 3	PIER NO. 4	PIER NO. 5
1G1	1'-2 5/8"	1'-2"	1'-0 1/16"	11 1/4"	1'-2 1/4"	1'-1 9/16"
1G2	1'-2 11/16"	1'-1 5/8"	1'-0 5/16"	11 5/16"	–	–
1G3	1'-2 1/2"	1'-2 3/8"	1'-0 1/4"	11 1/8"	1'-1 3/4"	1'-0 13/16"
1G4	1'-2"	1'-2"	1'-0 1/8"	11 1/8"	1'-1 1/2"	1'-1 7/16"
1G5	1'-1 11/16"	1'-1 7/16"	1'-0 13/16"	11 3/4"	1'-2 5/16"	1'-1 11/16"
1G6	1'-2 5/16"	1'-3"	1'-2"	1'-1 1/4"	1'-0 1/2"	11 3/8"
1G7	1'-2 1/4"	1'-2 1/8"	1'-2 1/16"	1'-1 1/8"	1'-0 11/16"	1'-0 9/16"
1G8	1'-2 13/16"	1'-2"	1'-1 11/16"	1'-1 1/4"	1'-0 11/16"	1'-0 11/16"
1G9	1'-3 1/2"	1'-2 3/4"	1'-2 3/8"	1'-1 5/16"	1'-1 3/16"	1'-0 13/16"

DEPTH OF SLAB OVER GIRDER, Y				
LOCATION	PIER NO. 6	PIER NO. 7	PIER NO. 8	PIER NO. 9
2G1	1'-0 1/8"	1'-1 1/4"	1'-1 5/8"	11 15/16"
2G2	11 7/8"	1'-2 1/4"	1'-1 11/16"	11 3/4"
2G3	1'-0 1/8"	1'-0 3/8"	1'-1 5/16"	1'-0 1/4"
2G4	1'-0 3/4"	1'-1 15/16"	1'-1 7/16"	1'-0 3/16"
2G5	1'-0 15/16"	1'-3 1/4"	1'-0 3/4"	1'-0 15/16"
2G6	1'-1"	1'-2 11/16"	1'-0 11/16"	1'-1 5/16"
2G7	1'-0 7/8"	1'-2 1/16"	1'-0 13/16"	1'-1 1/16"
2G8	1'-1 3/16"	1'-1 1/8"	1'-0 7/8"	1'-1 3/16"

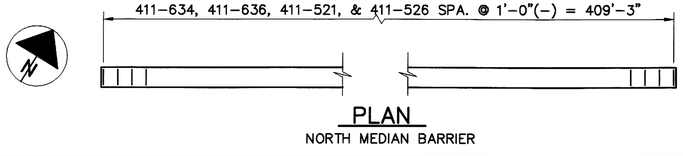
DEPTH OF SLAB OVER GIRDER, Y				
LOCATION	PIER NO. 10	PIER NO. 11	PIER NO. 12	PIER NO. 13
3G1	1'-0 9/16"	1'-0 1/8"	11 9/16"	1'-0 1/2"
3G2	1'-0 3/16"	1'-1 1/16"	1'-0 1/8"	1'-0 1/4"
3G3	11 7/16"	1'-0"	11 5/8"	1'-0 1/4"
3G4	1'-0 11/16"	1'-0"	11 3/16"	11 3/4"
3G5	1'-1 1/16"	1'-1 13/16"	1'-1 13/16"	1'-2"
3G6	1'-1 7/16"	1'-1 13/16"	1'-1 9/16"	1'-1 13/16"
3G7	1'-1 1/16"	1'-1 11/16"	1'-1 13/16"	1'-2 1/16"
3G8	1'-1"	1'-1 7/16"	1'-1 3/16"	1'-1 5/8"

DEPTH OF SLAB OVER GIRDER, Y				
LOCATION	PIER NO. 14	PIER NO. 15	PIER NO. 16	PIER NO. 17
4G1	1'-0 3/8"	1'-0 5/8"	1'-1 1/4"	11 5/16"
4G2	1'-0 5/16"	1'-0 7/8"	1'-0 11/16"	11 11/16"
4G3	1'-0 1/8"	1'-0 5/8"	1'-0 15/16"	11 3/16"
4G4	11 11/16"	1'-0 5/8"	1'-0 1/16"	11"
4G5	1'-2 3/16"	1'-3 1/16"	1'-2 5/16"	1'-1 15/16"
4G6	1'-2"	1'-2 15/16"	1'-2 3/8"	1'-1 15/16"
4G7	1'-2 1/4"	1'-2 11/16"	1'-2 3/8"	1'-1 11/16"
4G8	1'-1 9/16"	1'-2"	1'-1 11/16"	1'-1 11/16"

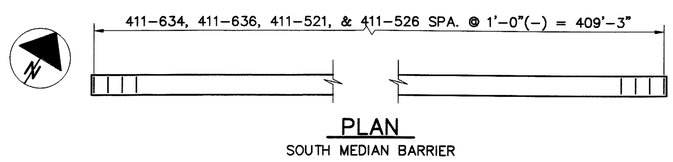
DEPTH OF SLAB OVER GIRDER, Y			
LOCATION	PIER NO. 18	PIER NO. 19	FRWD. ABUT.
5G1	1'-1 5/8"	1'-2 9/16"	1'-3"
5G2	1'-0 3/16"	1'-1 1/16"	1'-1 7/8"
5G3	11 3/16"	1'-0 11/16"	1'-0 1/16"
5G4	11 5/8"	10 3/4"	10 7/8"
5G5	1'-1 13/16"	1'-1 13/16"	1'-3 1/4"
5G6	1'-1 15/16"	1'-1 15/16"	1'-2 3/8"
5G7	1'-1 3/4"	1'-2 1/16"	1'-3 7/16"
5G8	1'-1 7/8"	1'-1 9/16"	1'-0 15/16"



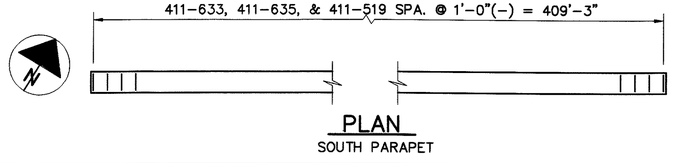
PLAN
NORTH PARAPET



PLAN
NORTH MEDIAN BARRIER



PLAN
SOUTH MEDIAN BARRIER



PLAN
SOUTH PARAPET

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR SLAB PLAN, SEE SHT, NO. 62/80.
4. FOR OVERHANG DIMENSIONS P, Q, R, & S, SEE SHT. NO. 77/80.
5. FOR DETAIL 12, SEE SHT. NO. 61/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 61/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330 South Main Street, Suite 300, Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

DESIGNED M.D.P. | DRAWN R.P.R. | CHECKED S.A.M. | REVISED | REVIEWED K.S.J. | DATE 3-18-02 | STRUCTURE FILE NUMBER 5008255

TRANSVERSE SECTION – UNIT NO. 2
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

63/80

702/886

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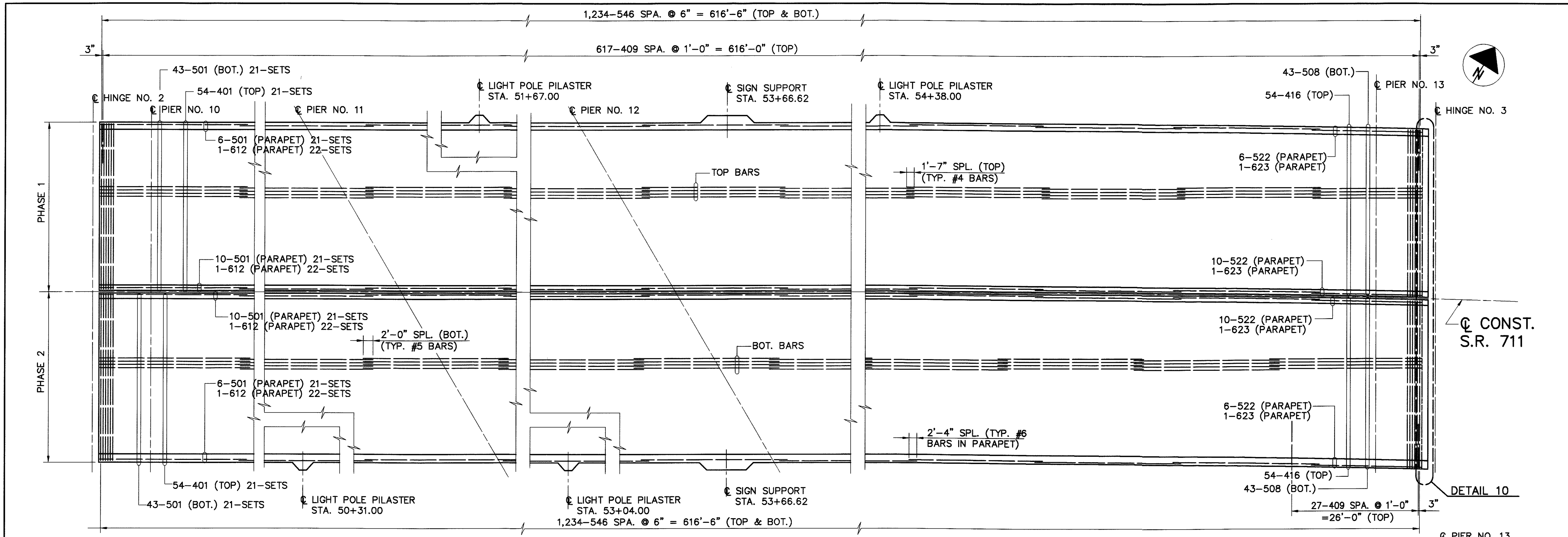
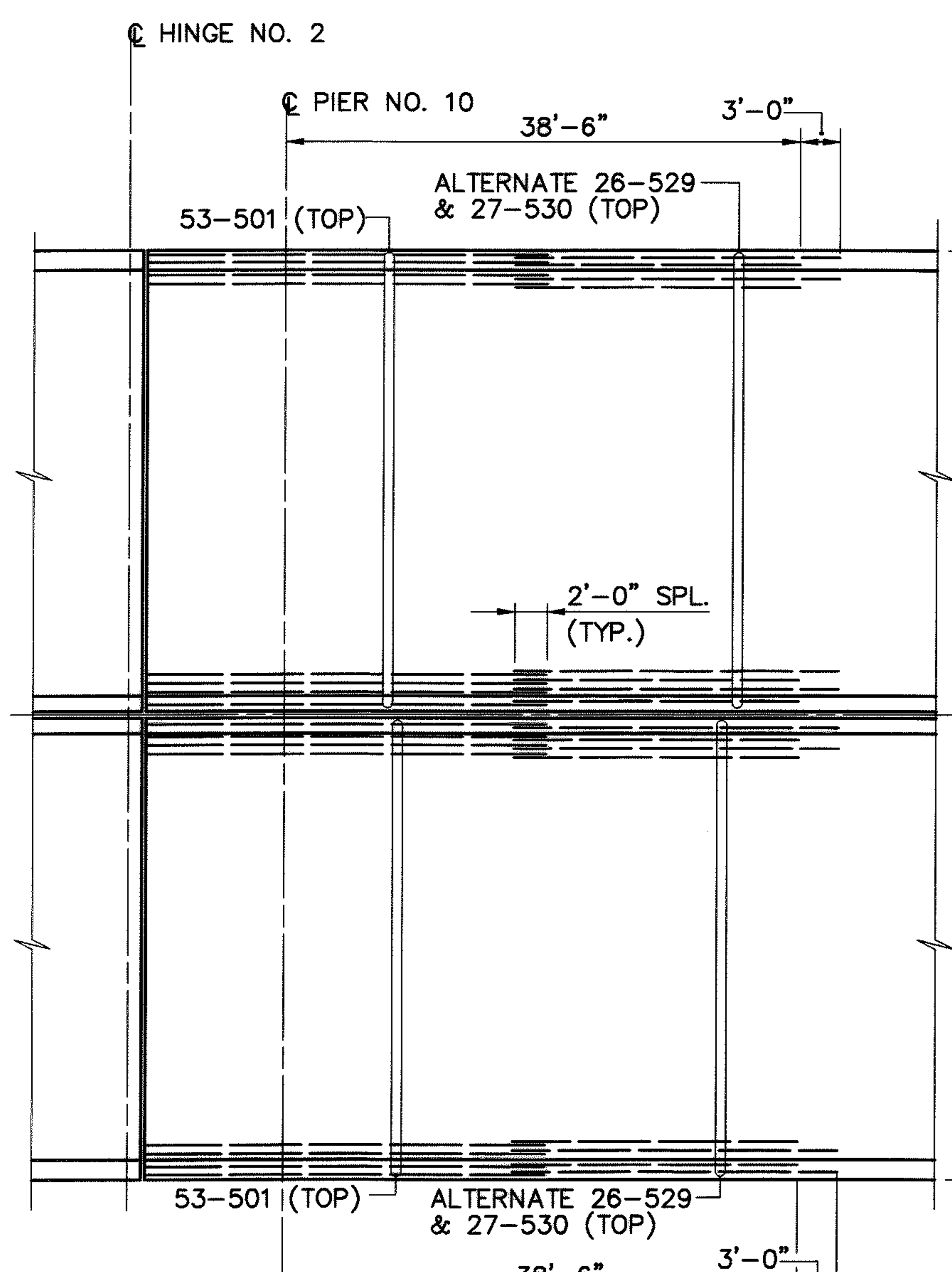
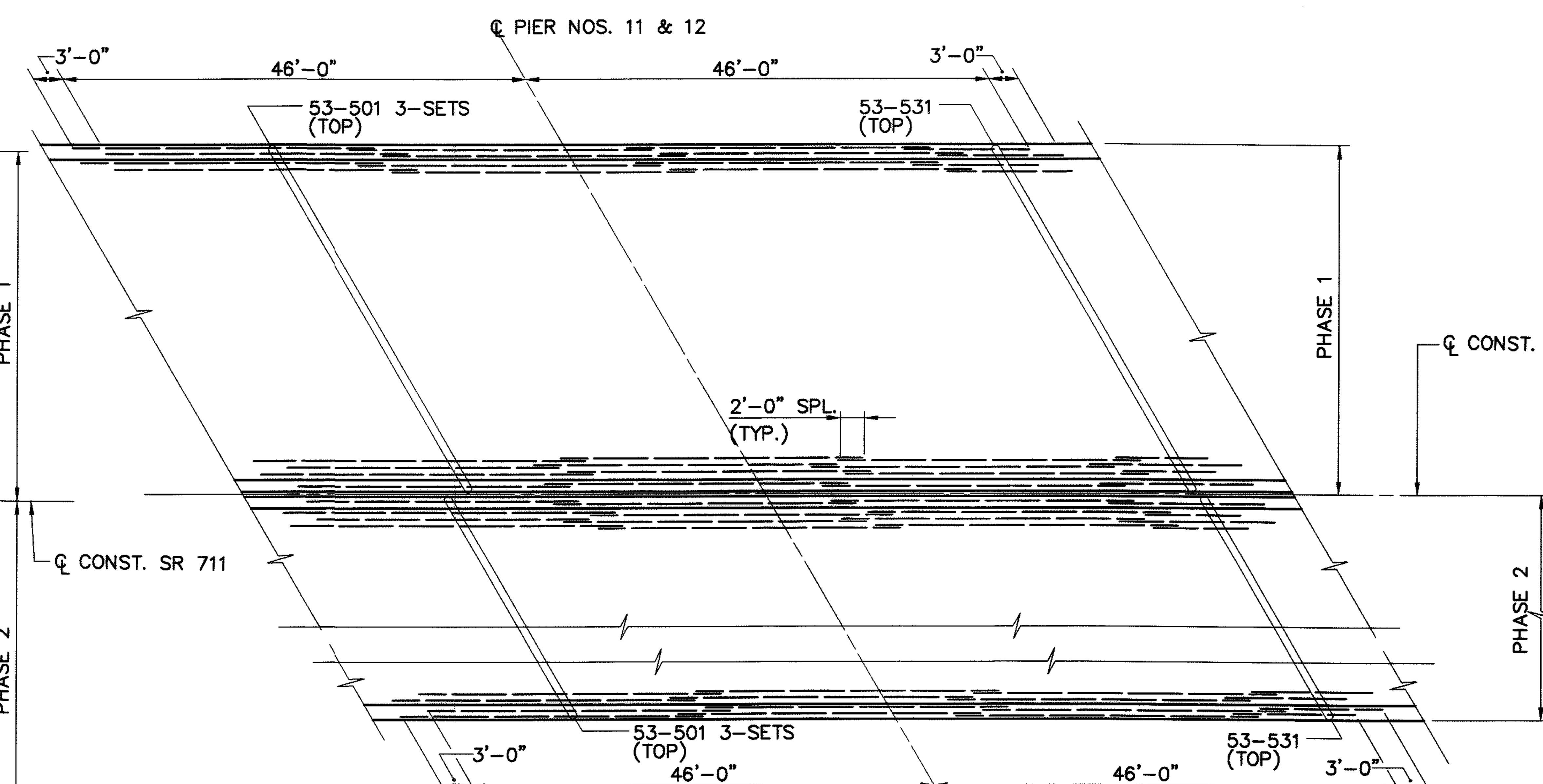


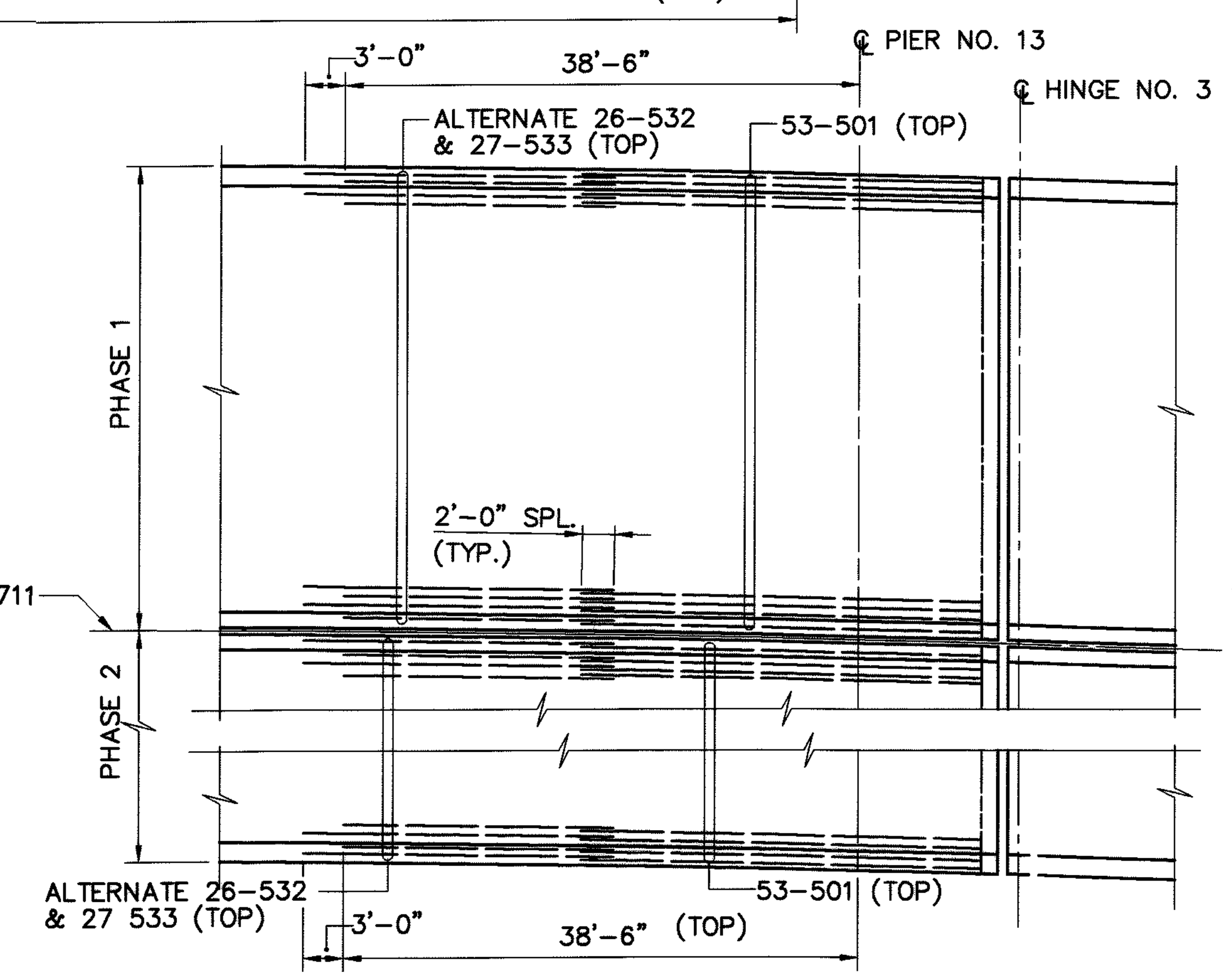
PLAN



ADDITIONAL REINFORCING
OVER PIER NO. 10



ADDITIONAL REINFORCING
OVER PIER NOS. 11 & 12



ADDITIONAL REINFORCING
OVER PIER NO. 13

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR TRANSVERSE SECTION AND PARAPET REINF. STEEL, SEE SHT. NO. 65/80.
4. FOR LIGHT POLE PILASTER DETAIL, SEE SHT. NO. 69/80.
5. FOR SIGN SUPPORT DETAIL, SEE SHT. NO. 68/80.
6. FOR DETAIL 10, SEE SHT. NO. 71/80.

DESIGN AGENCY
GLAUS, PYLE, SCHOMER, BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

SLAB PLAN - UNIT NO. 3
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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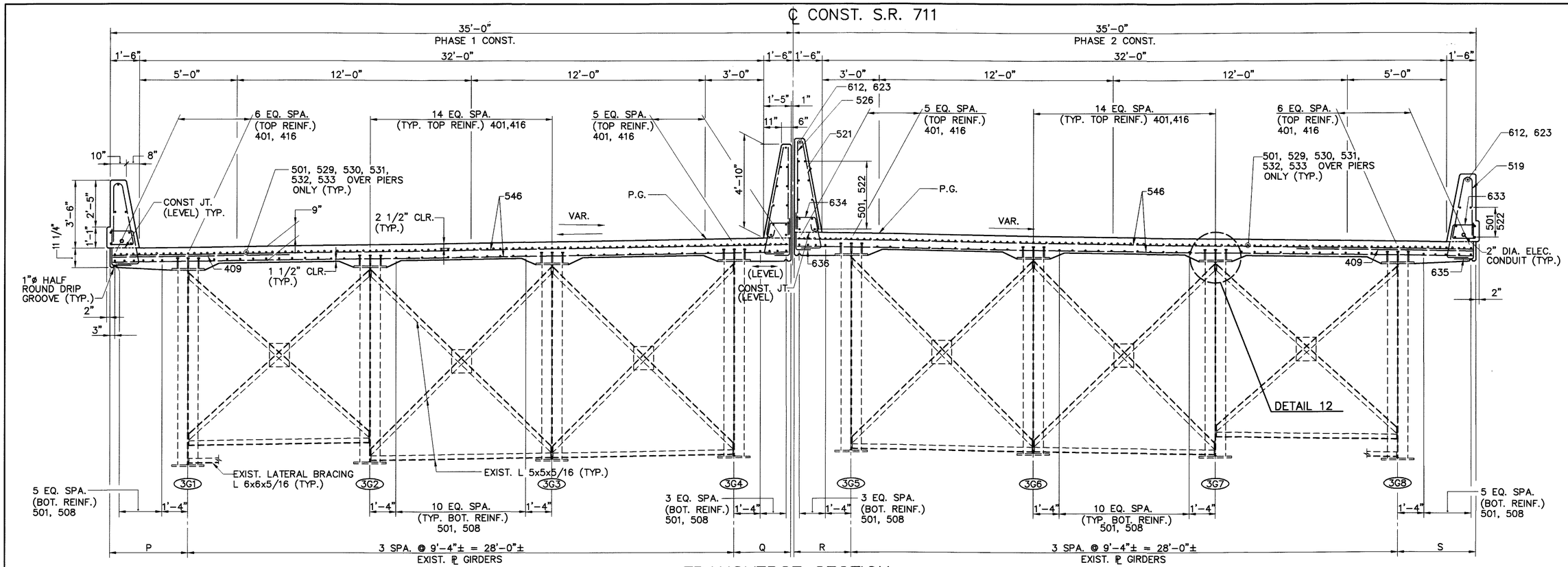

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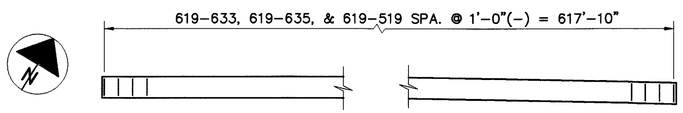
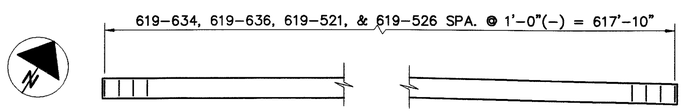
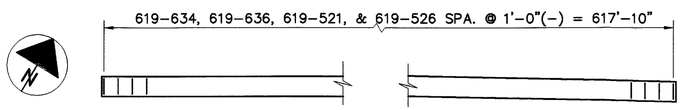


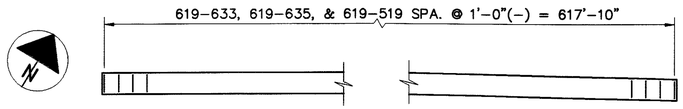
PLAN
NORTH PARAPET



PLAN
SOUTH MEDIAN BARRIER



PLAN
NORTH MEDIAN BARRIER



PLAN
SOUTH PARAPET

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR SLAB PLAN, SEE SHT, NOS. 64/80.
4. FOR OVERHANG DIMENSIONS P, Q, R, & S, SEE SHT. NO. 77/80.
5. FOR DETAIL 12, SEE SHT. NO. 61/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 61/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
33 South Main Street, Hale 233 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED M.D.P. | DRAWN R.P.R. | CHECKED S.A.M. | REVISED | REVIEWED K.S.J. | DATE 3-18-02 | STRUCTURE FILE NUMBER 5008255

TRANSVERSE SECTION – UNIT NO. 3
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

65 / 80

704 / 886

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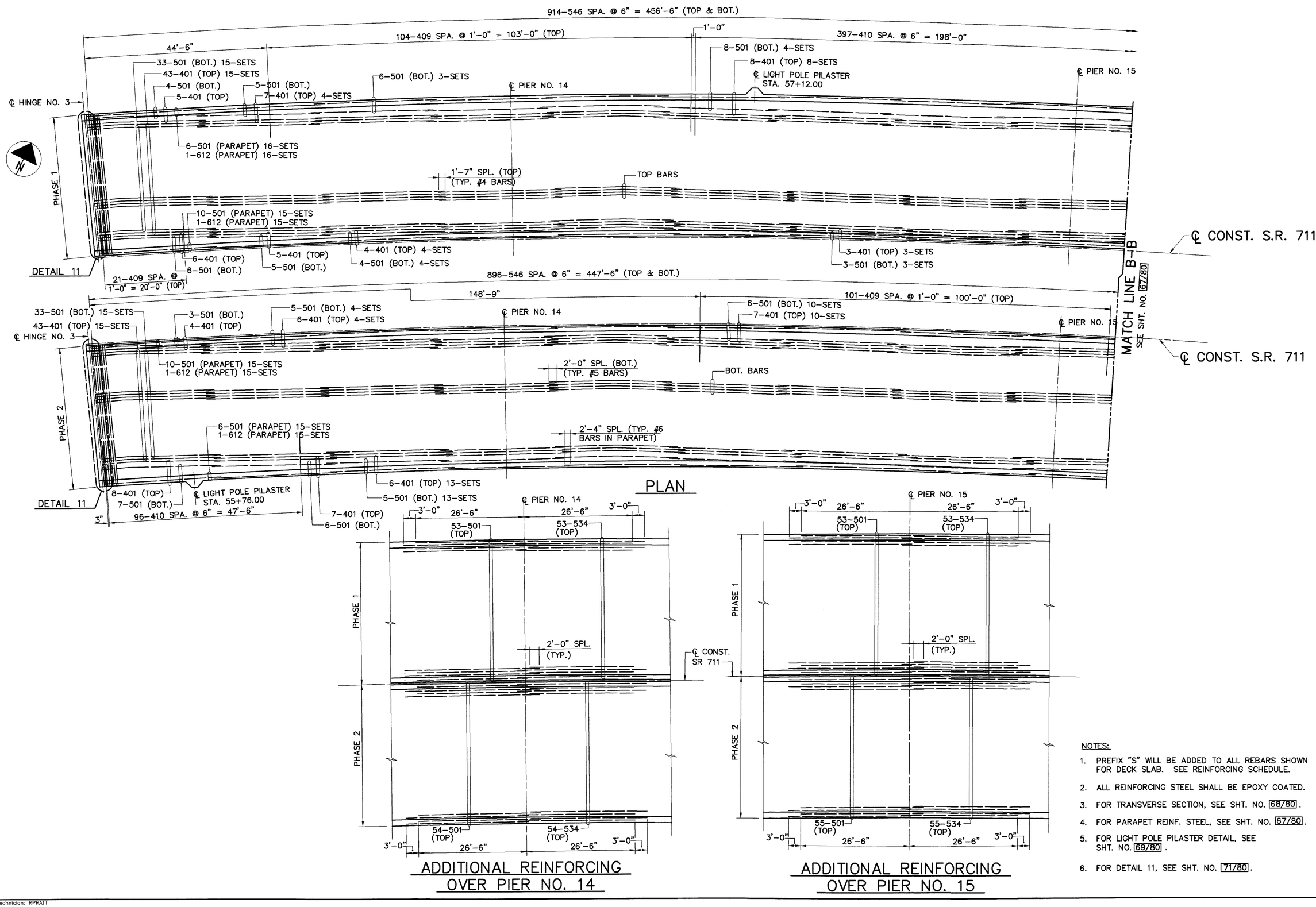

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR TRANSVERSE SECTION, SEE SHT. NO. 68/80.
4. FOR PARAPET REINF. STEEL, SEE SHT. NO. 67/80.
5. FOR LIGHT POLE PILASTER DETAIL, SEE SHT. NO. 69/80.
6. FOR DETAIL 11, SEE SHT. NO. 71/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
343 Wolf Ledges Pkwy, Akron, Ohio 44311
330-572-2100 / Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3–18–02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

SLAB PLAN – UNIT NO. 4 (PARTIAL)

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

66 / 80

705 / 886

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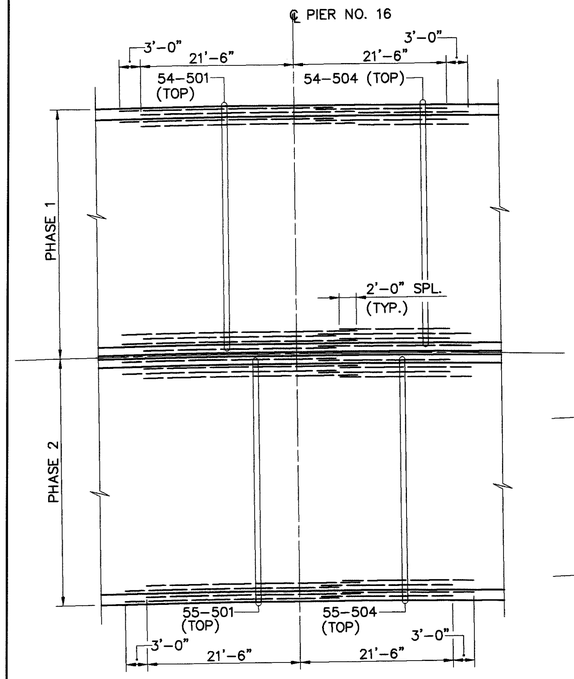
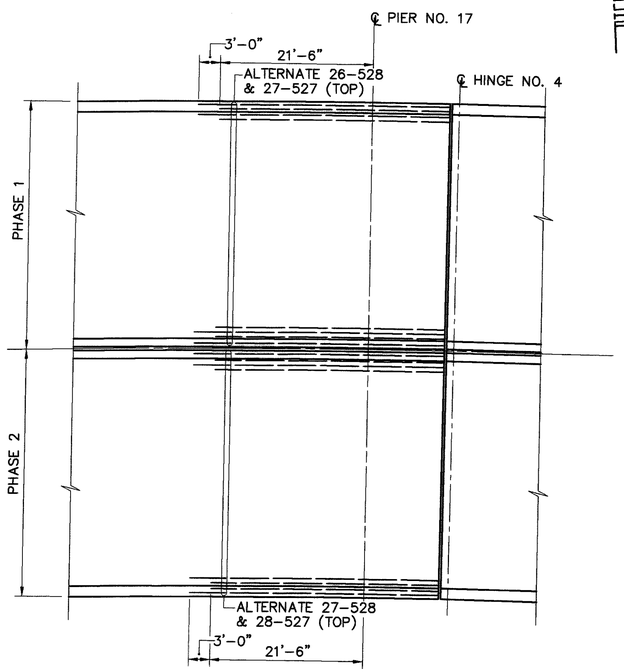
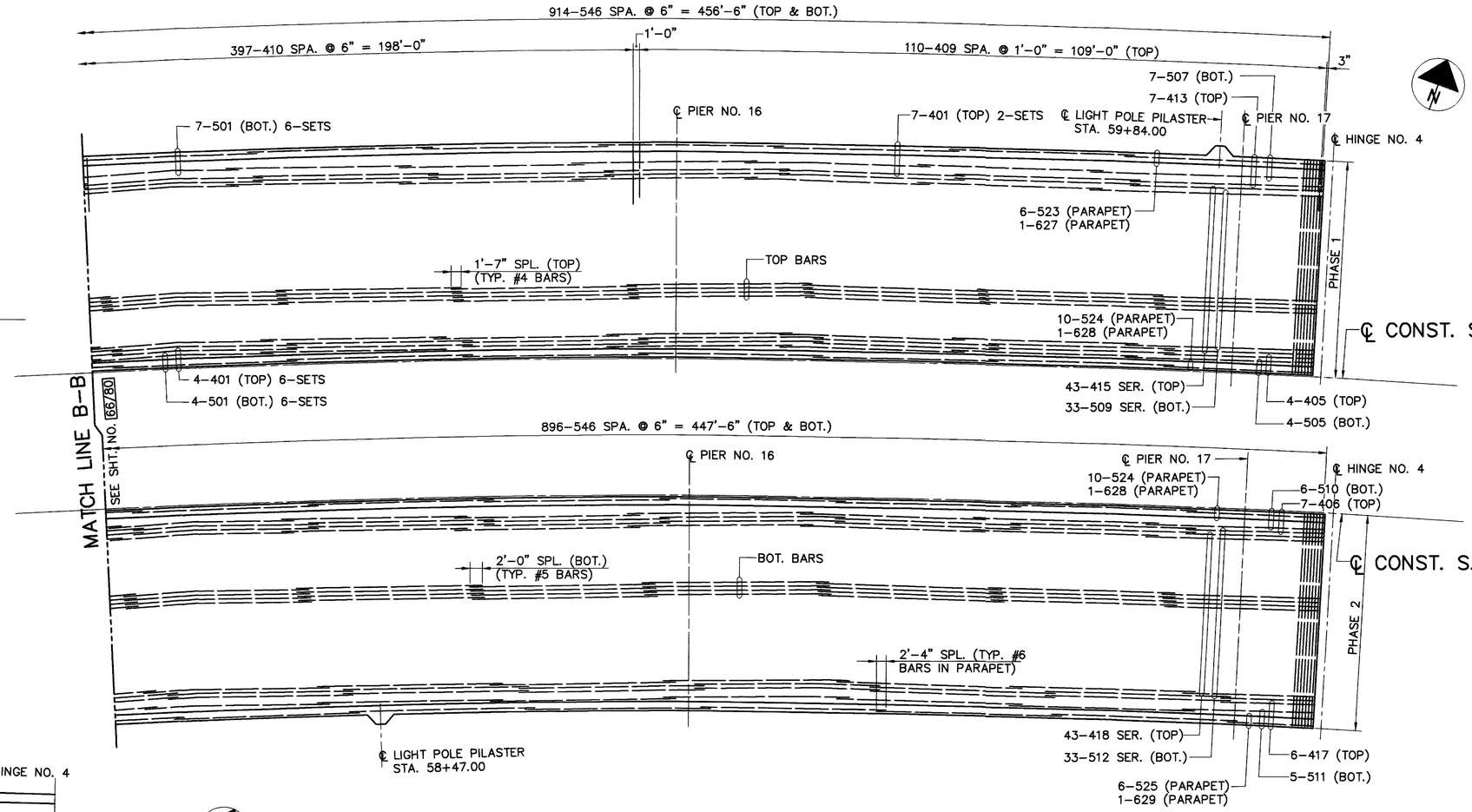
Technician: RPRATT

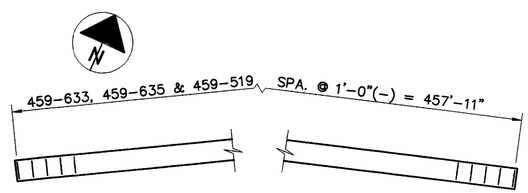


ADDITIONAL REINFORCING OVER PIER NO. 16

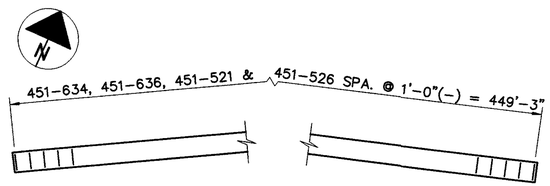


ADDITIONAL REINFORCING OVER PIER NO. 17

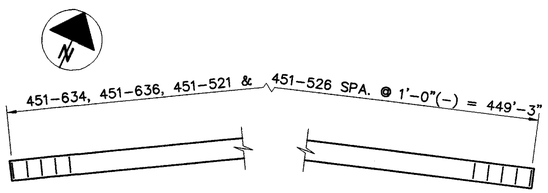




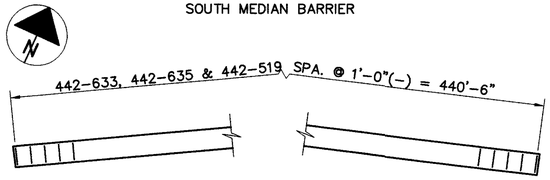
PLAN
NORTH PARAPET



PLAN
SOUTH MEDIAN BARRIER



PLAN
NORTH MEDIAN BARRIER



PLAN
SOUTH PARAPET

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR ADDITIONAL NOTES, SEE SHT. NO. 66/80.

DESIGN AGENCY
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

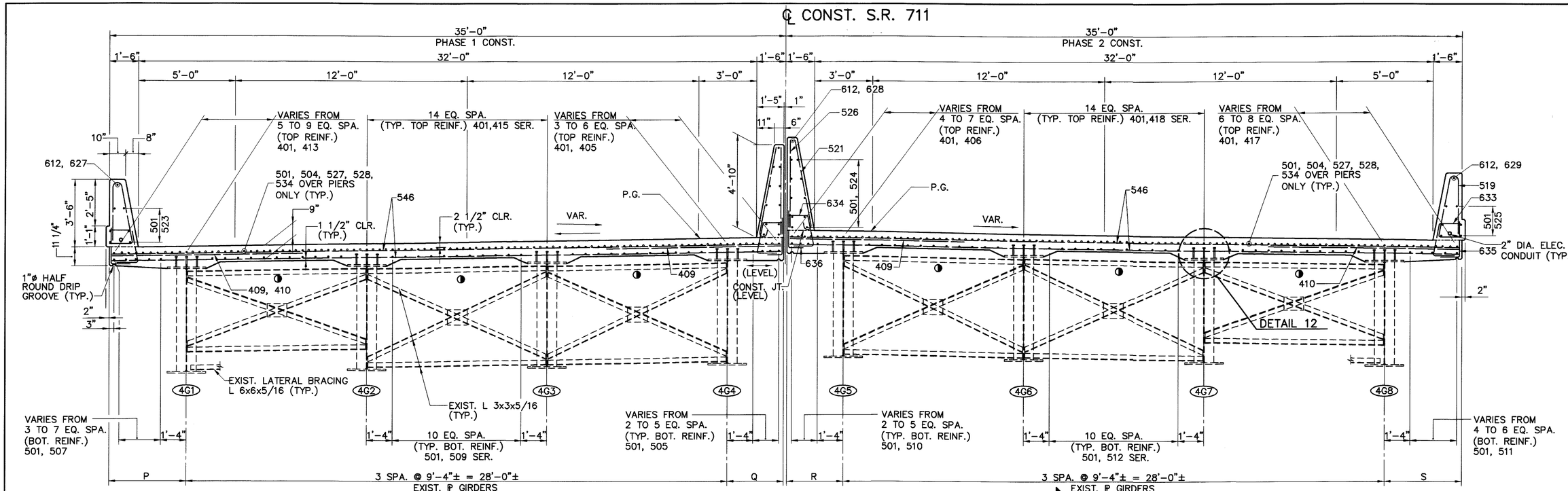
SLAB PLAN – UNIT NO. 4 (PARTIAL)
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

67/80

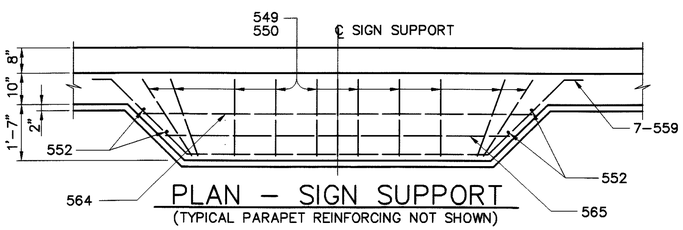
706/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91-103SLAB.DWG
Date: 06-20-03 Time: 10:43 AM TN = 0000'0.000"
Technician: RPRATT

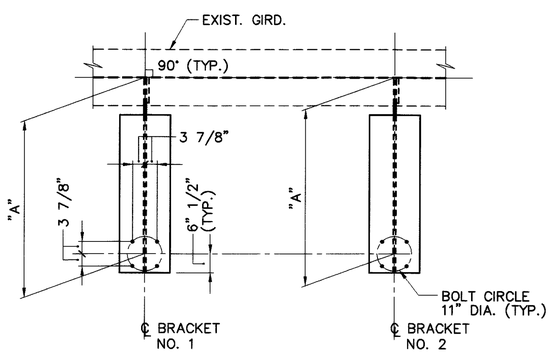


TRANSVERSE SECTION

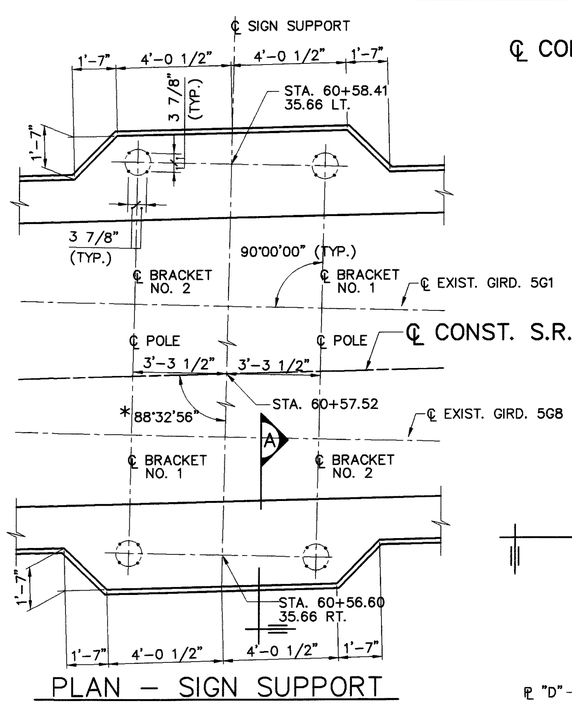
◑ L 3x3x5/16 @ SPECIFIED LOCATIONS. SEE SHT. NO. 39/80.



PLAN – SIGN SUPPORT
(TYPICAL PARAPET REINFORCING NOT SHOWN)

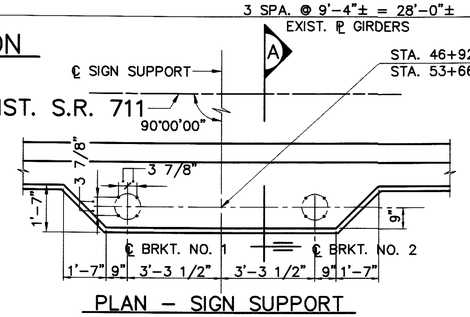


SECTION (E) BRACKET PLAN
DETAIL (1)



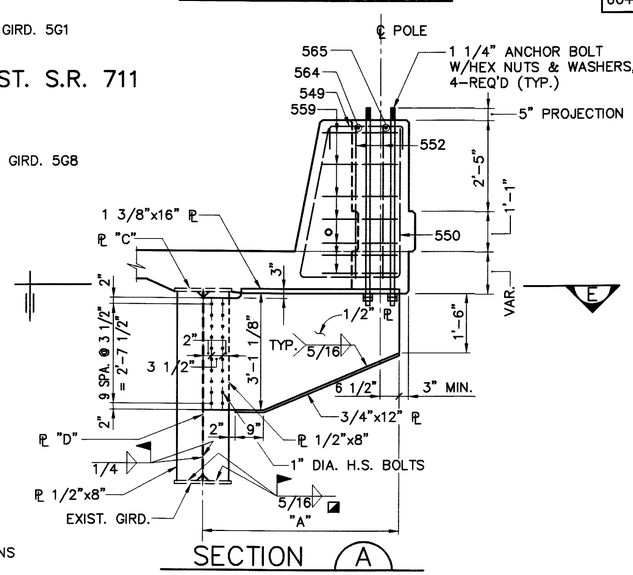
PLAN – SIGN SUPPORT

* TO LOC. TANGENT



PLAN – SIGN SUPPORT

℄ STATION	SIDE	◭ DIMENSION A	EXIST. GIRD.	
			℄ "C"	℄ "D"
46+92.25	LT	6'-0 3/8"	18"x3/4"	3/8"x5'-0"
46+92.25	RT	4'-11 3/8"	18"x3/4"	3/8"x5'-0"
53+66.62	LT	5'-11 3/8"	20"x2"	1/2"x10'-0"
53+66.62	RT	4'-5 3/8"	20"x2"	1/2"x10'-0"
60+57.52	LT	5'-9 5/8"	18"x1 1/4"	3/8"x5'-0"
60+57.52	RT	4'-11 5/8"	18"x1 1/4"	3/8"x5'-0"



SECTION (A)

◭ FIELD VERIFY DIMENSIONS

◪ WELD TO BOT. FLANGE FOR SIGN SUPPORTS AT STA. 53+66.62 AND STA. 60+57.52 ONLY. WELD TO TOP FLANGE FOR SIGN SUPPORT AT STA. 46+92.25 ONLY.

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR SLAB PLANS, SEE SHT, NOS. 66/80 & 67/80 .
4. FOR OVERHANG DIMENSIONS P, Q, R, & S, SEE SHT. NO. 77/80 .
5. FOR DETAIL 12, SEE SHT. NO. 61/80 .
6. FOR LOCATIONS OF DETAIL 1, SEE SHT. NOS. 36/80, 37/80 & 40/80 .
7. FOR STRUCTURAL STEEL NOTES, SEE SHT. NO. 41/80 .
8. FOR ADDITIONAL NOTES, SEE SHT. NO. 61/80 .

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
330-572-2100 Fax 330-572-2101

DATE 3-18-02
REVIEWED K.S.J.
STRUCTURE FILE NUMBER 5008255
DRAWN R.P.R.
REVISED
DESIGNED M.D.P.
CHECKED S.A.M.

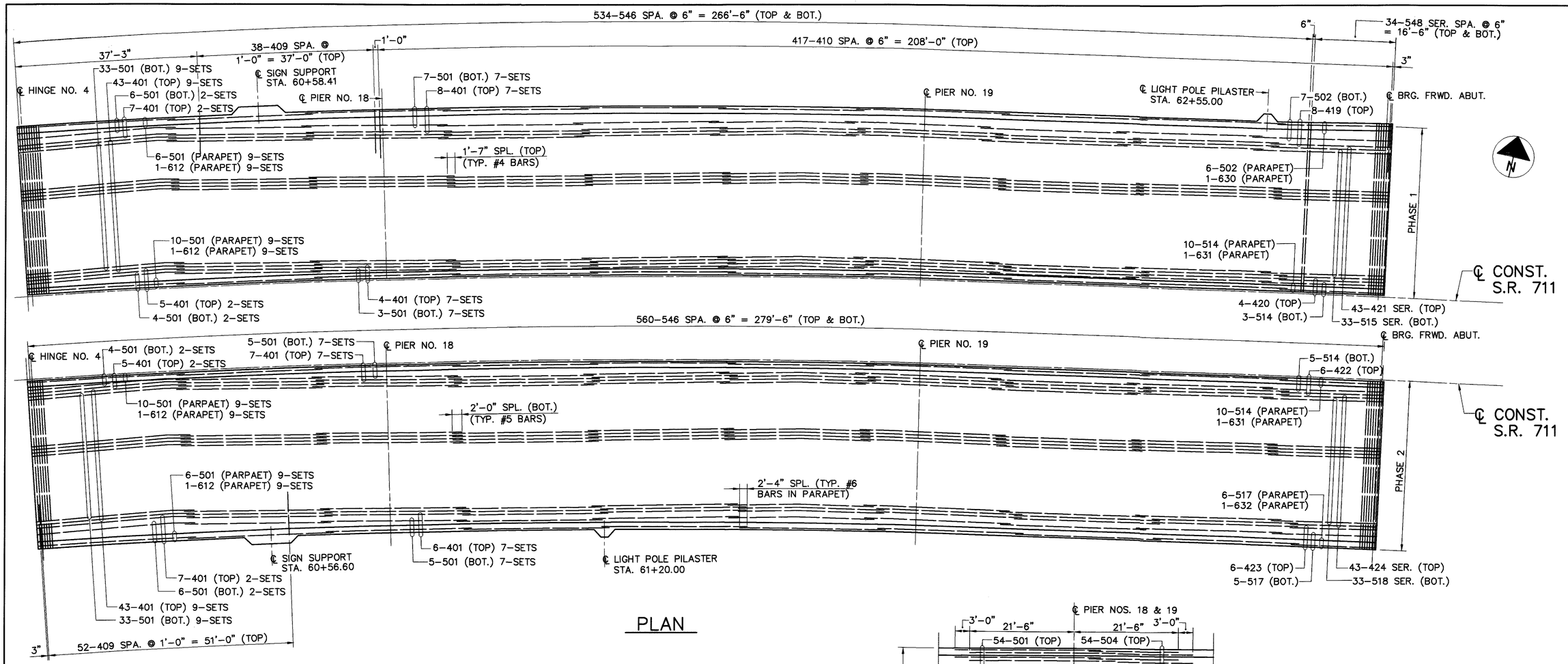
TRANSVERSE SECTION – UNIT NO. 4
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

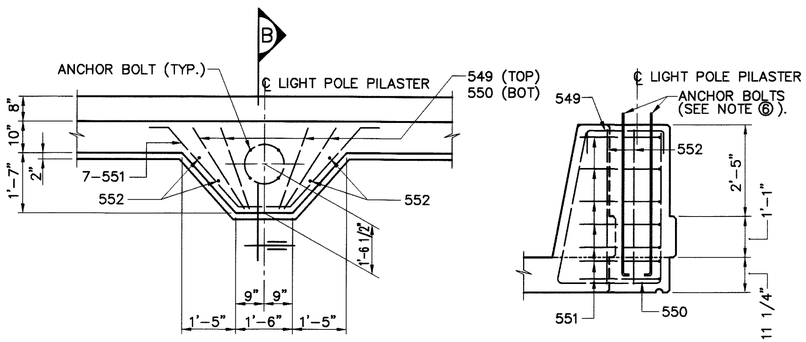
68 / 80

707 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SLAB.DWG
Date: 06-30-03 Time: 10:43 AM IW = 060'0.00"
Technician: RPRATT

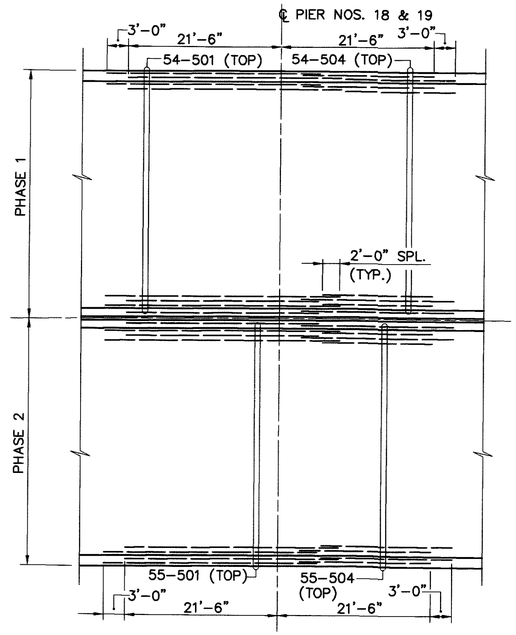


PLAN



LIGHT POLE PILASTER DETAIL
(TYPICAL PARAPET REINFORCING NOT SHOWN)

SECTION B



ADDITIONAL REINFORCING OVER PIER NOS. 18 & 19

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR TRANSVERSE SECTION, AND PARAPET REINF. STEEL, SEE SHT. NO. 70/80 .
4. FOR SIGN SUPPORT DETAIL, SEE SHT. NO. 68/80 .
5. FOR DETAILS NOT SHOWN, SEE STD. DWG. HL–20.14M.
6. ANCHOR BOLTS PAID FOR WITH ITEM 625, LIGHT POLE, ANCHOR BOLTS ON STRUCTURE, SEE SHT. NO. 570/886 .

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
395 Wolf Ledges Parkway, Akron, Ohio 44311
330-572-2100 Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3–18–02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

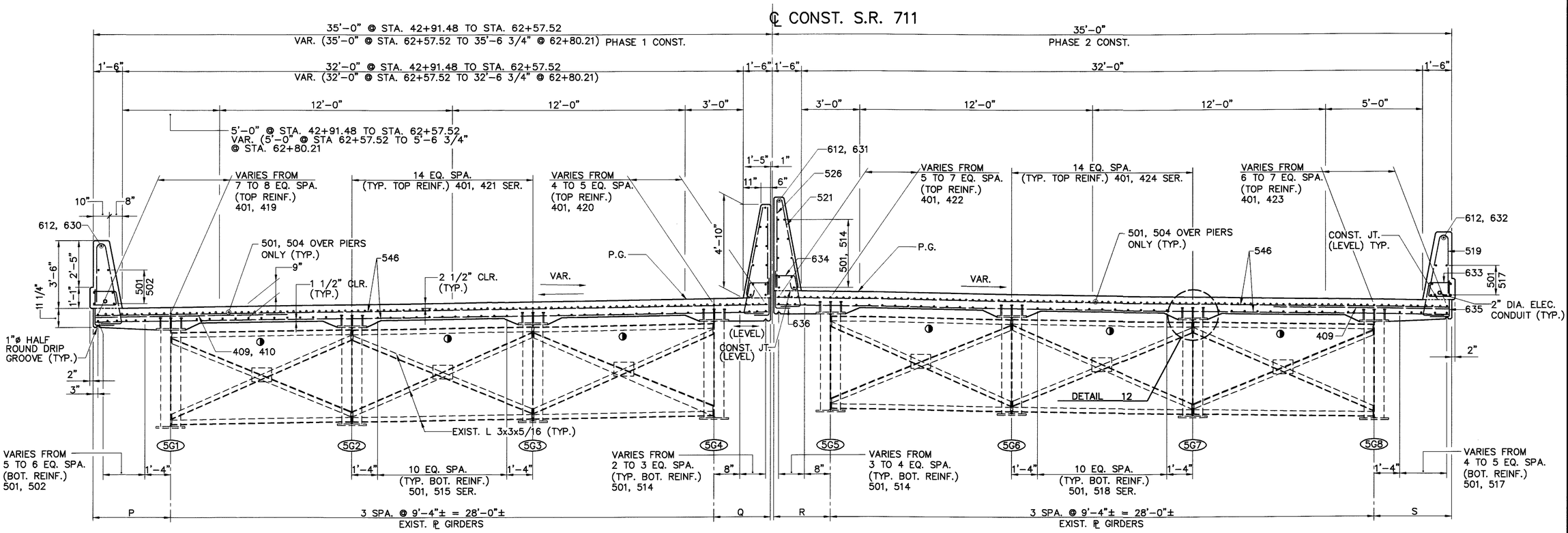
SLAB PLAN – UNIT NO. 5
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

69 / 80

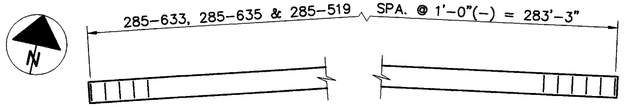
708 / 886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_1035LAB.DWG
Date: 05–20–02 Time: 10:43 AM IN = 0.00 0.00
Technician: RPRATT

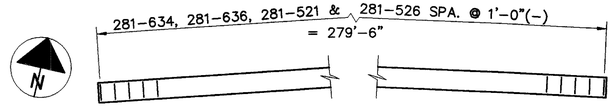


TRANSVERSE SECTION

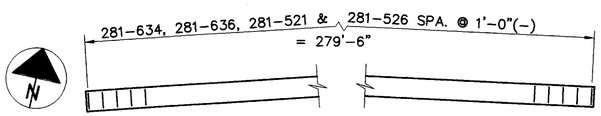
◑ L 3x3x5/16 @ SPECIFIED LOCATIONS.
SEE SHT. NO. 40/80.



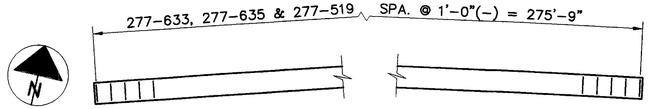
PLAN
NORTH PARAPET



PLAN
SOUTH MEDIAN BARRIER



PLAN
NORTH MEDIAN BARRIER



PLAN
SOUTH PARAPET

NOTES:

1. PREFIX "S" WILL BE ADDED TO ALL REBAR MARKS SHOWN FOR THE DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. FOR SLAB PLAN, SEE SHT. NO. 69/80.
4. FOR OVERHANG DIMENSIONS P, Q, R, & S, SEE SHT. NO. 77/80.
5. FOR DETAIL 12, SEE SHT. NO. 61/80.
6. FOR ADDITIONAL NOTES, SEE SHT. NO. 61/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
333 South High Street, Suite 201 Akron, Ohio 44311
330-572-2100 , Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
M.D.P.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
S.A.M.		5008255	

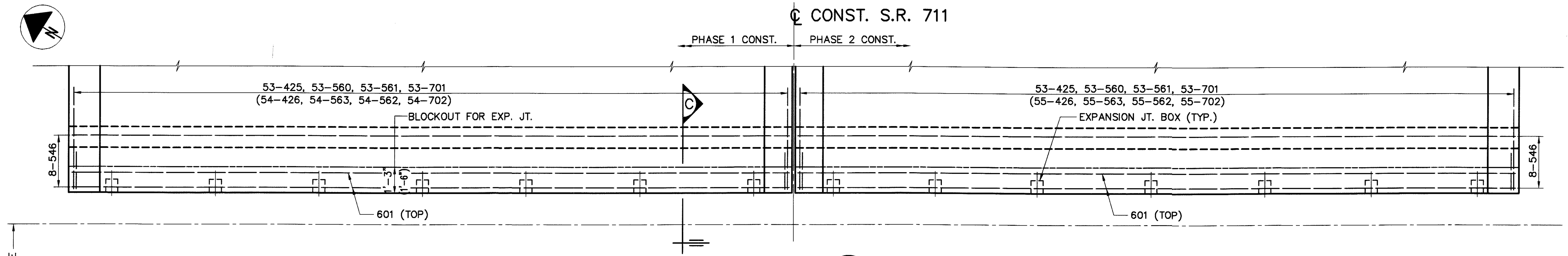
TRANSVERSE SECTION - UNIT NO. 5
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

70/80

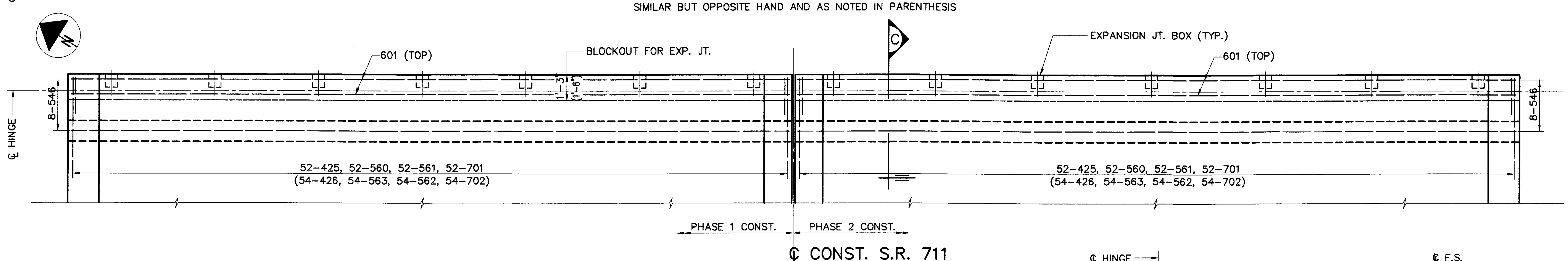
709/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SLAB.DWG
Date: 06-30-03 Time: 10:43 AM XW = 0d0'0.00"
Technician: RPRATT



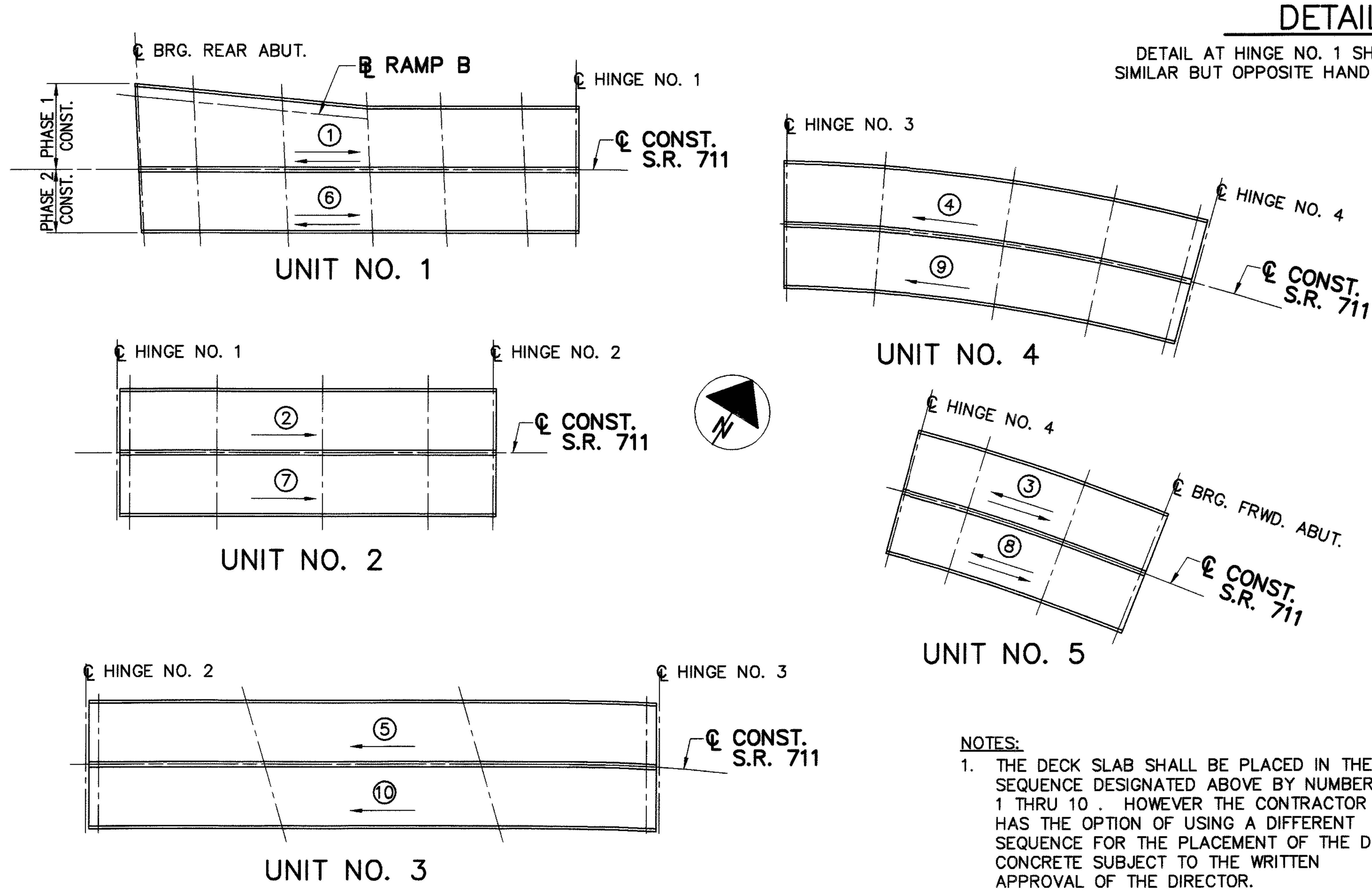
DETAIL 11

DETAIL AT HINGE NO. 1 SHOWN. DETAIL AT HINGE NO. 3 SIMILAR BUT OPPOSITE HAND AND AS NOTED IN PARENTHESIS



DETAIL 10

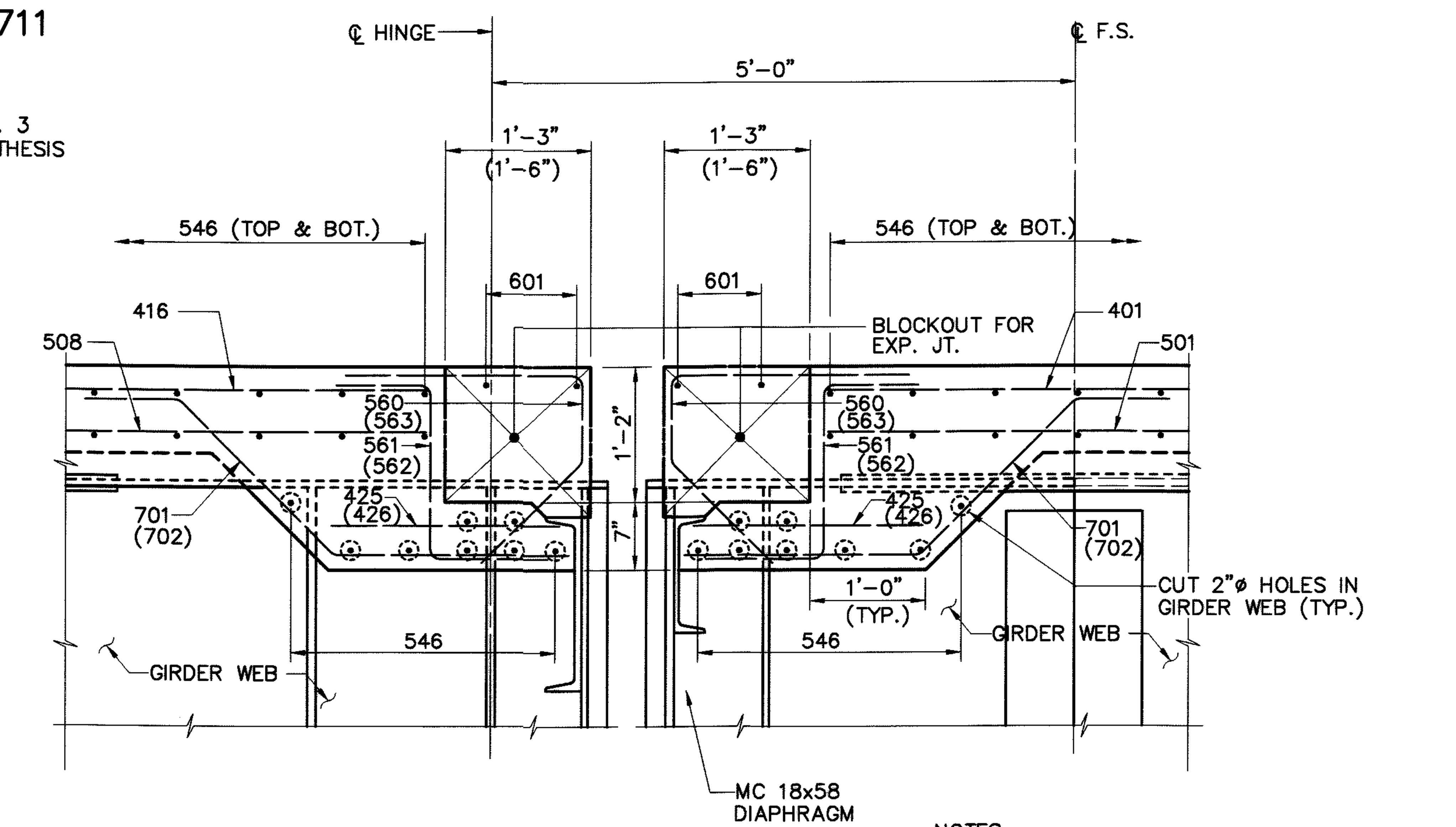
DETAIL AT HINGE NO. 1 SHOWN. DETAIL AT HINGE NO. 3 SIMILAR BUT OPPOSITE HAND AND AS NOTED IN PARENTHESIS



PLAN
DECK CONCRETE PLACEMENT SEQUENCE

NOTES:

1. THE DECK SLAB SHALL BE PLACED IN THE SEQUENCE DESIGNATED ABOVE BY NUMBERS 1 THRU 10 . HOWEVER THE CONTRACTOR HAS THE OPTION OF USING A DIFFERENT SEQUENCE FOR THE PLACEMENT OF THE DECK CONCRETE SUBJECT TO THE WRITTEN APPROVAL OF THE DIRECTOR.
2. EACH DECK UNIT SHALL BE POURED CONTINUOUSLY FROM EXPANSION JOINT TO EXPANSION JOINT.



SECTION C

NOTES:

1. PREFIX "S" SHALL BE ADDED TO ALL REBARS SHOWN FOR DECK SLAB. SEE REINFORCING SCHEDULE.
2. ALL REINFORCING SHALL BE EPOXY COATED.
3. MINIMUM CLEARANCE TO REBARS SHALL BE 2" UNLESS NOTES OTHERWISE.
4. FOR LOCATIONS OF DETAIL 10, SEE SHT. NOS. 59/80 & 64/80 .
5. FOR LOCATIONS OF DETAIL 11, SEE SHT. NOS. 62/80 & 66/80 .
6. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHT. NO. 56/80 .

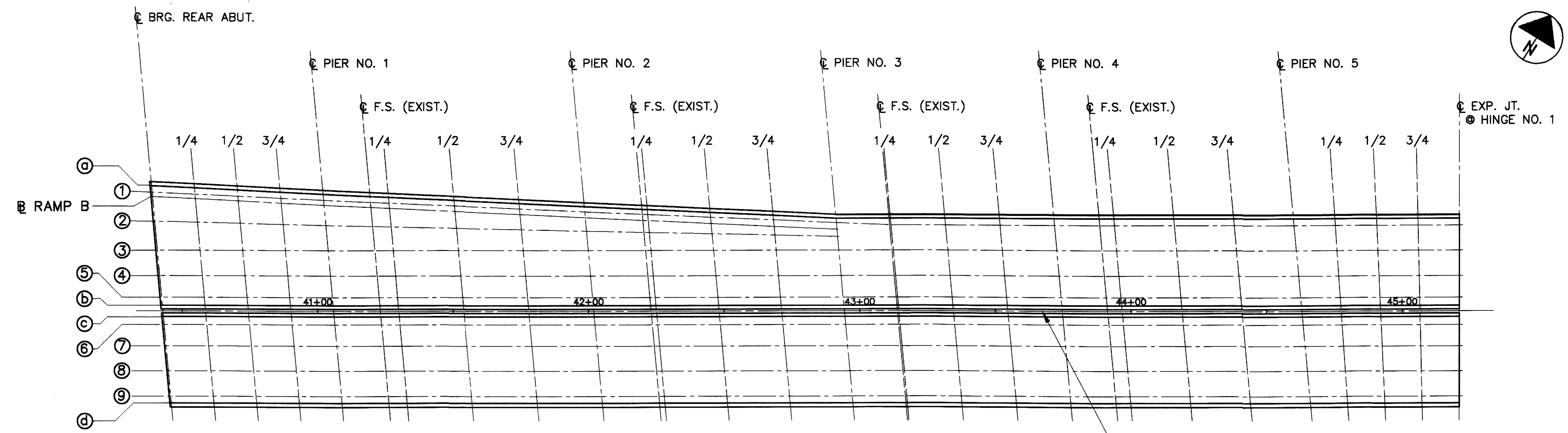
DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311 330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

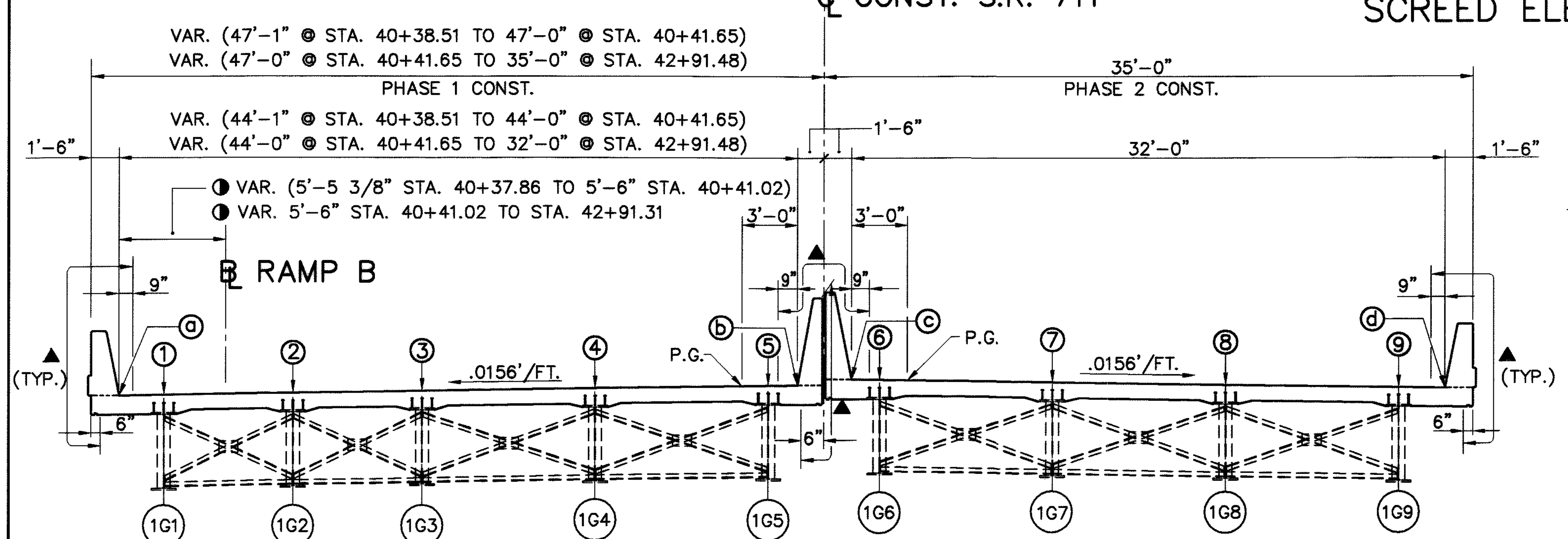
MISCELLANEOUS DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

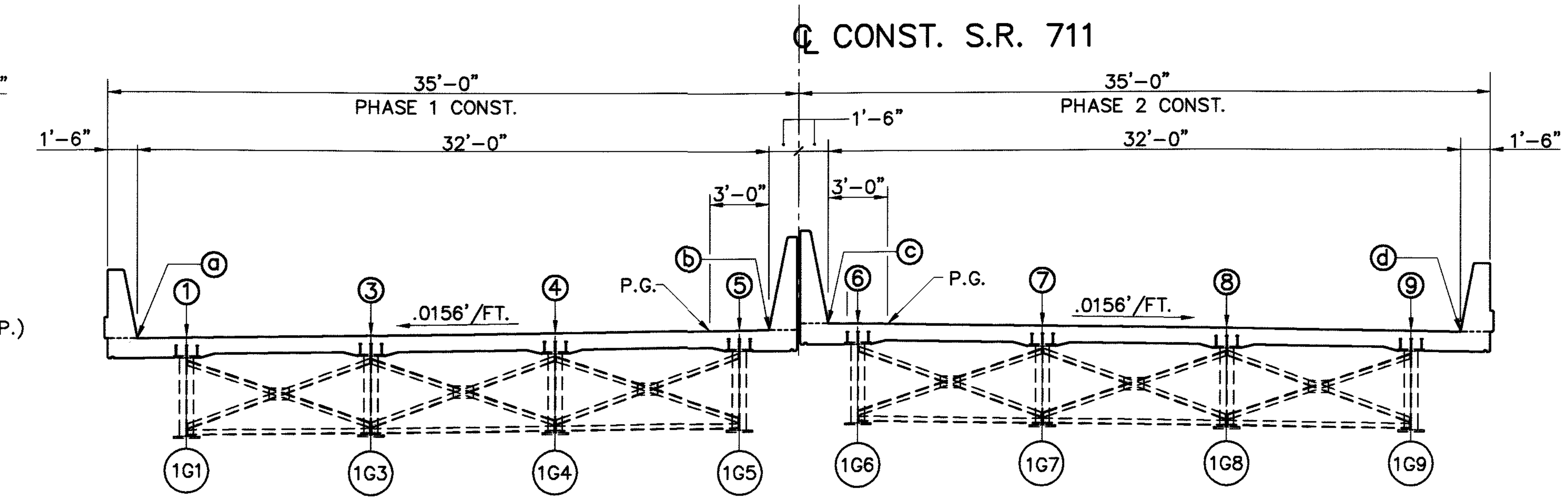
Cad File: G:\CIVIL\67028\91_103MOD-EXP-BLOCK.DWG
Date: 06-30-03 Time: 11:32 AM
Technician: RPRATT



PLAN
SCREED ELEVATIONS



TRANSVERSE SECTION
℄ BRG. REAR ABUT. TO PIER NO. 3



TRANSVERSE SECTION
PIER NO. 3 TO ℄ EXP. JT.

DECK SCREED ELEVATION TABLE

LOCATION		SPAN NO. 1				SPAN NO. 2					SPAN NO. 3					SPAN NO. 4					SPAN NO. 5					SPAN NO. 6		
	REAR ABUT.	1/4	1/2	3/4	PIER NO. 1	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 2	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 3	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 4	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 5	1/4	1/2	3/4	EXP. JT.
ⓐ	916.98	916.54	916.09	915.61	915.16	–	914.51	913.88	913.24	912.62	–	912.11	911.64	911.15	910.68	–	910.32	909.98	909.64	909.33	–	909.06	908.81	908.53	908.27	908.14	908.01	907.89	–
①	917.01	916.57	916.12	915.64	915.19	914.73	914.55	913.91	913.27	912.65	912.18	912.13	911.66	911.17	910.70	910.61	910.35	910.01	909.68	909.37	909.16	909.10	908.85	908.57	908.31	908.18	908.05	907.93	907.82
②	917.15	916.71	916.25	915.78	915.31	914.83	914.64	914.00	913.35	912.74	912.28	912.23	911.76	911.27	910.77	–	–	–	–	–	–	–	–	–	–	–	–	–	–
③	917.29	916.84	916.38	915.90	915.43	914.95	914.76	914.12	913.47	912.84	912.35	912.30	911.81	911.32	910.84	910.49	910.48	910.14	909.81	909.50	909.29	909.22	908.97	908.70	908.44	908.31	908.19	908.07	907.97
④	917.41	916.96	916.50	916.01	915.55	915.07	914.88	914.24	913.59	912.96	912.49	912.45	911.95	911.45	910.97	910.62	910.61	910.28	909.94	909.63	909.42	909.36	909.10	908.83	908.58	908.45	908.33	908.21	908.12
⑤	917.53	917.08	916.62	916.13	915.67	915.20	915.02	914.38	913.73	913.09	912.62	912.58	912.08	911.58	911.10	910.75	910.74	910.41	910.08	909.77	909.57	909.51	909.27	908.99	908.72	908.60	908.47	908.36	908.26
ⓑ	917.55	917.10	916.64	916.15	915.69	–	915.04	914.40	913.74	913.11	–	912.60	912.10	911.60	911.12	–	910.76	910.43	910.10	909.79	–	909.53	909.29	909.01	908.74	908.62	908.49	908.38	–
ⓒ	917.56	917.12	916.67	916.19	915.73	–	915.11	914.50	913.85	913.23	–	912.73	912.26	911.77	911.29	–	910.94	910.61	910.29	909.99	–	909.73	909.49	909.23	908.96	908.84	908.71	908.59	–
⑥	917.53	917.10	916.64	916.16	915.70	915.25	915.08	914.47	913.82	913.20	912.74	912.70	912.23	911.74	911.26	910.92	910.91	910.58	910.26	909.96	909.76	909.70	909.46	909.20	908.93	908.81	908.68	908.56	908.47
⑦	917.36	916.93	916.47	915.99	915.53	915.07	914.89	914.27	913.64	913.03	912.57	912.53	912.05	911.57	911.10	910.76	910.76	910.43	910.10	909.80	909.60	909.54	909.29	909.03	908.78	908.66	908.54	908.43	908.33
⑧	917.19	916.75	916.30	915.83	915.36	914.90	914.72	914.10	913.47	912.87	912.41	912.36	911.89	911.41	910.94	910.60	910.60	910.26	909.94	909.65	909.44	909.38	909.14	908.87	908.63	908.51	908.39	908.28	908.19
⑨	917.02	916.58	916.13	915.65	915.19	914.74	914.56	913.95	913.30	912.70	912.25	912.20	911.74	911.25	910.78	910.44	910.43	910.11	909.78	909.48	909.29	909.23	908.99	908.72	908.47	908.34	908.24	908.13	908.04
ⓓ	916.98	916.54	916.08	915.60	915.15	–	914.52	913.91	913.26	912.66	–	912.16	911.70	911.21	910.74	–	910.39	910.07	909.75	909.45	–	909.19	908.96	908.69	908.43	908.31	908.20	908.10	–

LEGEND

◑ MEASURED NORMAL TO ℄ RAMP B

▲ LIMITS OF ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY – URETHANE)

NOTE:

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

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311 330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

SCREED ELEVATIONS – UNIT NO. 1
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SCREED.DWG
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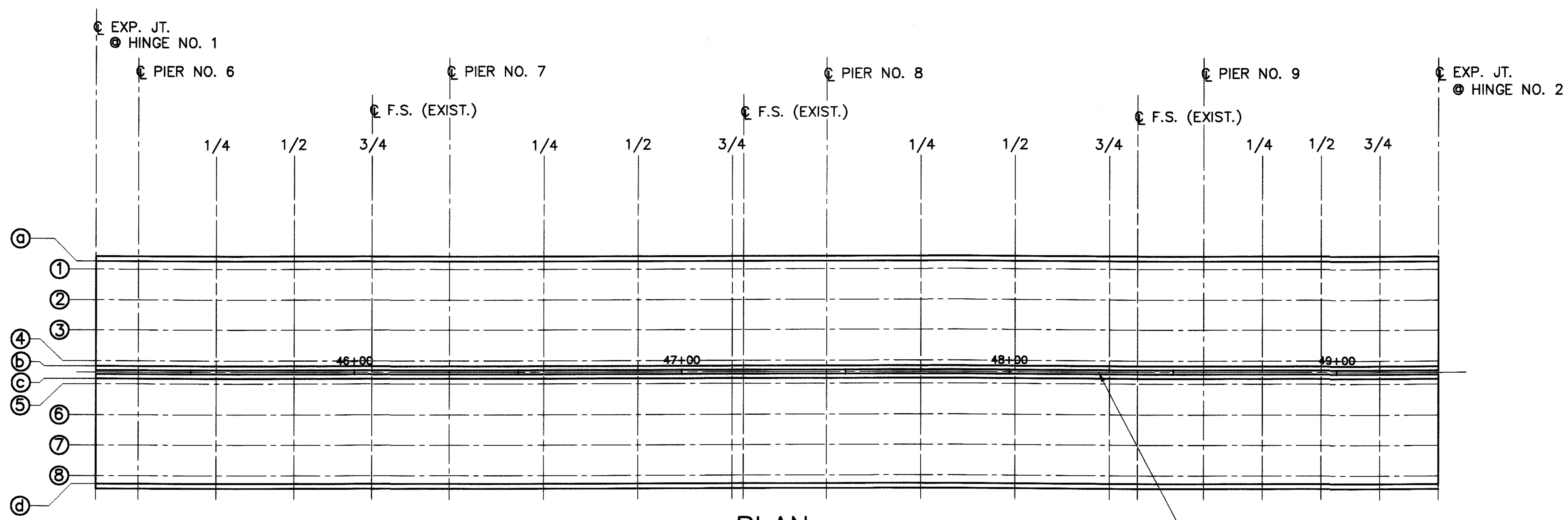
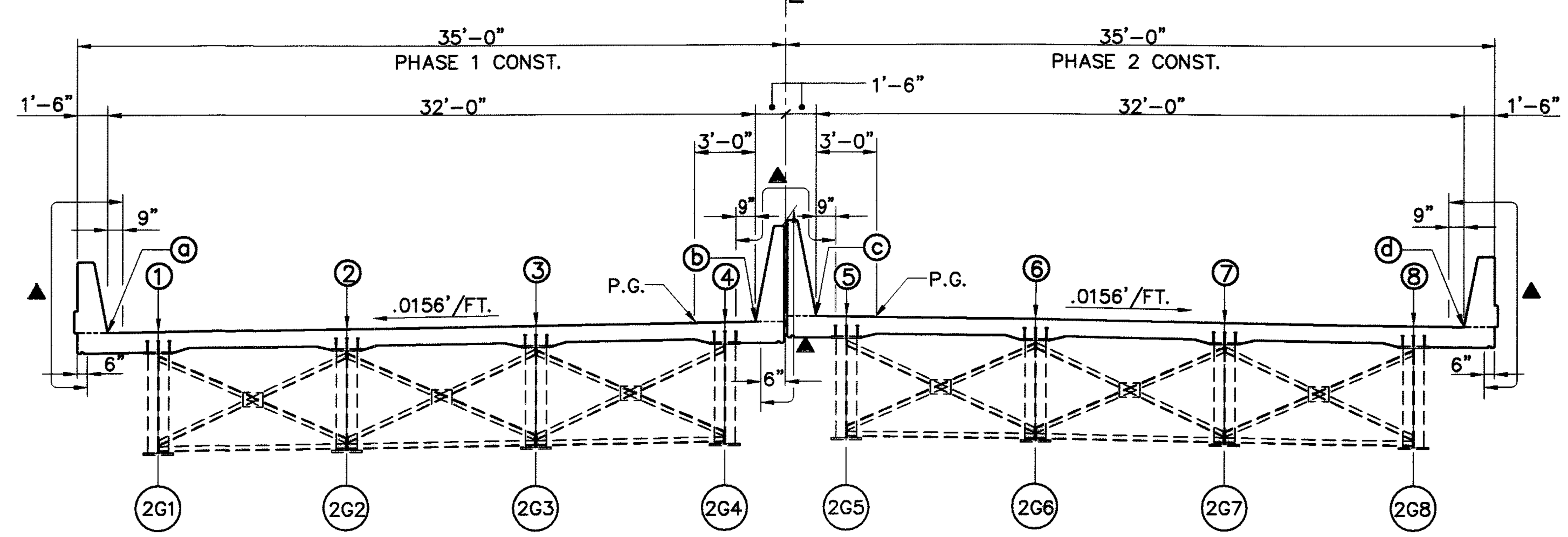
Technician: RPRATT



PLAN
SCREED ELEVATIONS



TRANSVERSE SECTION

DECK SCREED ELEVATION TABLE

LOCATION			SPAN NO. 7				SPAN NO. 8					SPAN NO. 9					SPAN NO. 10			
	EXP. JT.	PIER NO. 6	1/4	1/2	3/4	PIER NO. 7	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 8	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 9	1/4	1/2	3/4	EXP. JT.
ⓐ	–	907.73	907.67	907.60	907.52	907.48	907.54	907.65	907.72	–	907.86	908.12	908.42	908.66	–	908.87	909.04	909.23	909.40	–
①	907.82	907.77	907.71	907.65	907.57	907.53	907.59	907.70	907.78	907.79	907.91	908.18	908.48	908.72	908.78	908.92	909.09	909.28	909.45	909.61
②	907.97	907.91	907.84	907.76	907.70	907.66	907.72	907.81	907.90	907.92	908.04	908.29	908.59	908.83	908.90	909.06	909.23	909.41	909.58	909.75
③	908.12	908.06	907.99	907.91	907.84	907.81	907.86	907.96	908.04	908.06	908.19	908.44	908.73	908.97	909.04	909.20	909.37	909.56	909.72	909.90
④	908.26	908.21	908.14	908.07	908.00	907.96	908.03	908.12	908.21	908.23	908.35	908.57	908.90	909.14	909.21	909.36	909.53	909.70	909.87	910.05
ⓑ	–	908.23	908.16	908.09	908.01	907.98	908.04	908.13	908.22	–	908.36	908.57	908.91	909.15	–	909.37	909.54	909.72	909.89	–
ⓒ	–	908.45	908.39	908.31	908.23	908.18	908.24	908.33	908.41	–	908.52	908.77	909.06	909.29	–	909.49	909.66	909.83	910.00	–
⑤	908.47	908.42	908.35	908.28	908.20	908.15	908.20	908.30	908.37	908.39	908.49	908.74	909.03	909.26	909.31	909.46	909.63	909.80	909.97	910.13
⑥	908.33	908.28	908.21	908.14	908.05	908.01	908.06	908.14	908.22	908.24	908.35	908.61	908.86	909.10	909.17	909.32	909.49	909.66	909.83	909.99
⑦	908.19	908.13	908.06	907.99	907.91	907.87	907.92	908.00	908.07	908.09	908.21	908.44	908.72	908.96	909.02	909.18	909.34	909.52	909.67	909.85
⑧	908.04	907.99	907.91	907.84	907.76	907.72	907.76	907.86	907.93	907.95	908.05	908.29	908.58	908.81	908.88	909.02	909.19	909.36	909.52	909.70
ⓓ	–	907.95	907.88	907.80	907.72	907.68	907.73	907.82	907.90	–	908.02	908.26	908.54	908.78	–	908.99	909.16	909.33	909.49	–

LEGEND

▲ LIMITS OF ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY – URETHANE)

NOTE:

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

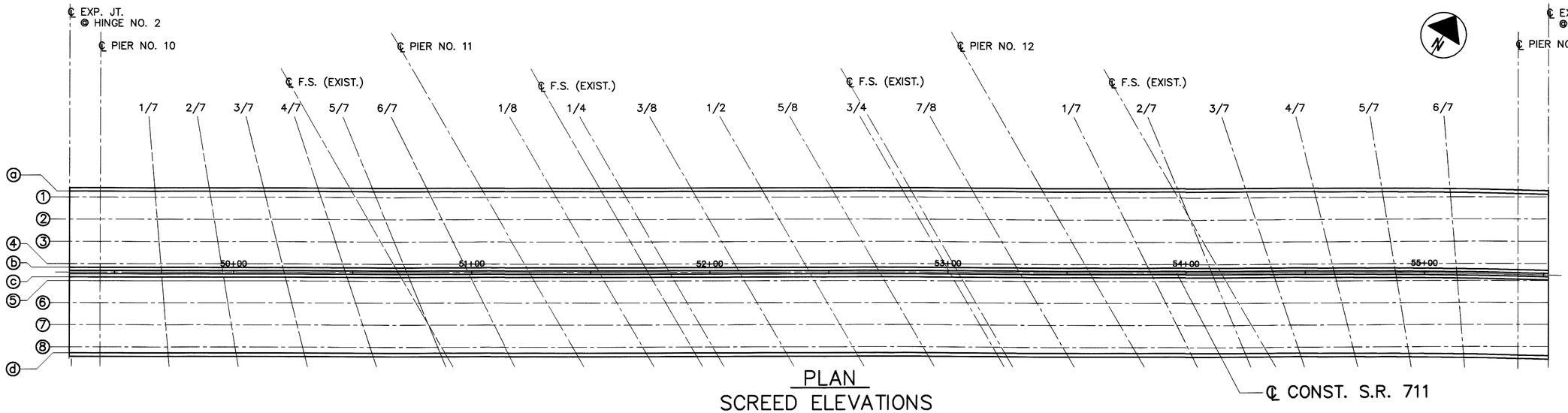
DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED P.J.W.	REVISED	STRUCTURE FILE NUMBER 5008255	

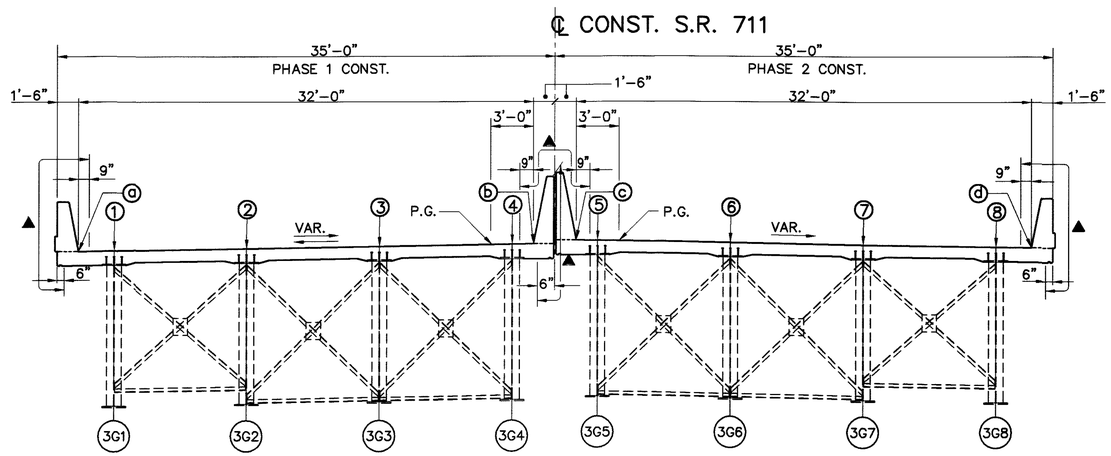
SCREED ELEVATIONS – UNIT NO. 2
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SCREED.DWG
Date: 06-30-03 Time: 11:33 AM TW = 0d0'0.00"
Technician: RPRATT



PLAN
SCREED ELEVATIONS



TRANSVERSE SECTION

DECK SCREED ELEVATION TABLE

LOCATION	SPAN NO. 11										SPAN NO. 12										SPAN NO. 13									
	EXP. JT.	PIER NO. 10	1/7	2/7	3/7	4/7	F.S. (EXIST.)	5/7	6/7	PIER NO. 11	1/8	F.S. (EXIST.)	1/4	3/8	1/2	5/8	3/4	F.S. (EXIST.)	7/8	PIER NO. 12	1/7	2/7	F.S. (EXIST.)	3/7	4/7	5/7	6/7	PIER NO. 13	EXP. JT.
ⓐ	–	909.67	909.92	910.14	910.37	910.57	–	910.76	910.97	911.18	911.57	–	911.99	912.40	912.78	913.11	913.39	–	913.60	913.79	913.96	914.11	–	914.27	914.35	914.34	914.25	914.09	–
①	909.61	909.72	909.97	910.19	910.42	910.62	910.75	910.82	911.03	911.25	911.63	911.99	912.04	912.44	912.81	913.13	913.40	913.43	913.60	913.77	913.93	914.07	914.07	914.21	914.27	914.25	914.16	914.02	913.99
②	909.75	909.85	910.11	910.35	910.58	910.80	910.94	911.00	911.21	911.44	911.80	912.14	912.18	912.55	912.89	913.19	913.41	913.44	913.58	913.72	913.84	913.94	913.94	914.02	914.03	913.97	913.85	913.67	913.62
③	909.90	910.00	910.27	910.53	910.77	910.98	911.15	911.19	911.40	911.64	911.97	912.27	912.31	912.65	912.96	913.23	913.42	913.45	913.55	913.65	913.72	913.79	913.79	913.81	913.78	913.68	913.52	913.31	913.25
④	910.05	910.15	910.43	910.69	910.95	911.18	911.37	911.39	911.61	911.83	912.12	912.40	912.43	912.74	913.03	913.26	913.40	913.42	913.50	913.56	913.60	913.60	913.60	913.58	913.49	913.35	913.16	912.92	912.87
ⓑ	–	910.17	910.45	910.71	910.96	911.19	–	911.40	911.63	911.85	912.14	–	912.45	912.75	913.03	913.26	913.40	–	913.49	913.55	913.59	913.59	–	913.56	913.47	913.31	913.11	912.85	–
ⓒ	–	910.27	910.56	910.83	911.08	911.31	–	911.50	911.71	911.94	912.24	–	912.56	912.88	913.16	913.35	913.48	–	913.55	913.58	913.61	913.61	–	913.60	913.53	913.40	913.21	912.97	–
⑤	910.13	910.24	910.53	910.80	911.05	911.28	911.45	911.48	911.69	911.92	912.22	912.51	912.54	912.85	913.14	913.33	913.45	913.47	913.52	913.55	913.58	913.57	913.57	913.55	913.47	913.34	913.15	912.92	912.85
⑥	909.99	910.10	910.41	910.70	910.95	911.18	911.37	911.39	911.59	911.83	912.12	912.41	912.44	912.75	913.03	913.23	913.34	913.36	913.40	913.42	913.43	913.41	913.39	913.34	913.22	913.06	912.84	912.59	912.50
⑦	909.85	909.96	910.28	910.58	910.85	911.08	911.29	911.29	911.50	911.73	912.02	912.31	912.35	912.66	912.92	913.11	913.22	913.23	913.27	913.28	913.28	913.23	913.19	913.11	912.95	912.76	912.51	912.23	912.12
⑧	909.70	909.81	910.13	910.44	910.73	910.97	911.19	911.18	911.39	911.63	911.92	912.20	912.24	912.55	912.80	912.98	913.09	913.10	913.12	913.13	913.12	913.01	912.94	912.85	912.65	912.42	912.14	911.83	911.70
ⓓ	–	909.77	910.11	910.42	910.70	910.94	–	911.16	911.37	911.61	911.90	–	912.21	912.52	912.78	912.96	913.06	–	913.10	913.10	913.09	912.98	–	912.81	912.60	912.35	912.05	911.72	–

LEGEND

▲ LIMITS OF ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY – URETHANE)

NOTE:

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

DESIGN AGENCY
CLAUS PYLE RICHOMME BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 South Main Street, Suite 2331, Akron, Ohio 44311
330-572-2100 FAX 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

SCREED ELEVATIONS – UNIT NO. 3
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH–711–0.47

74 / 80

713 / 886

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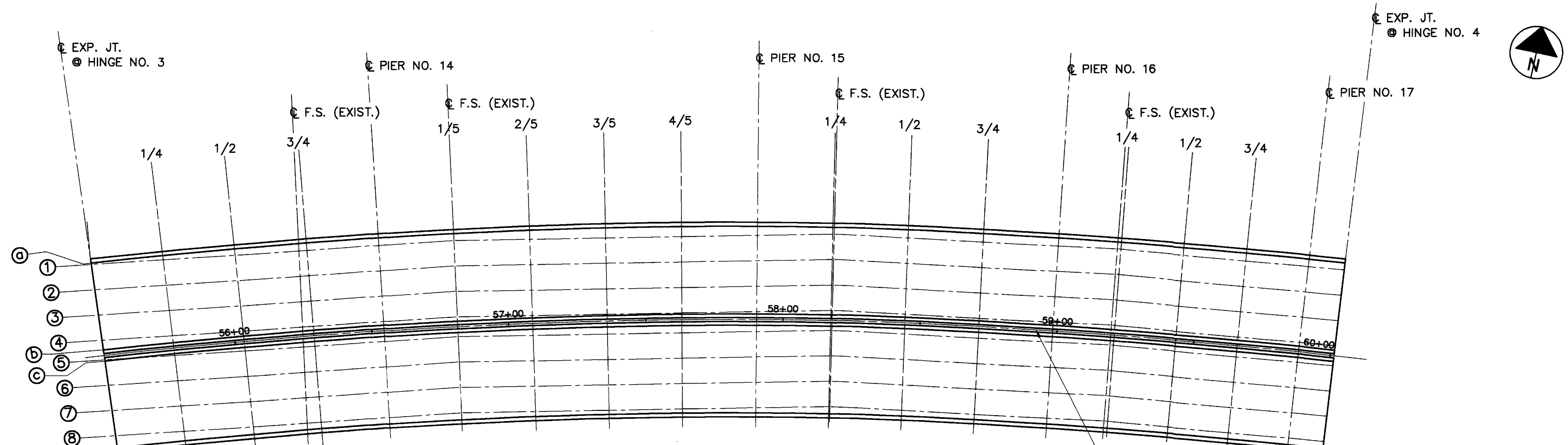
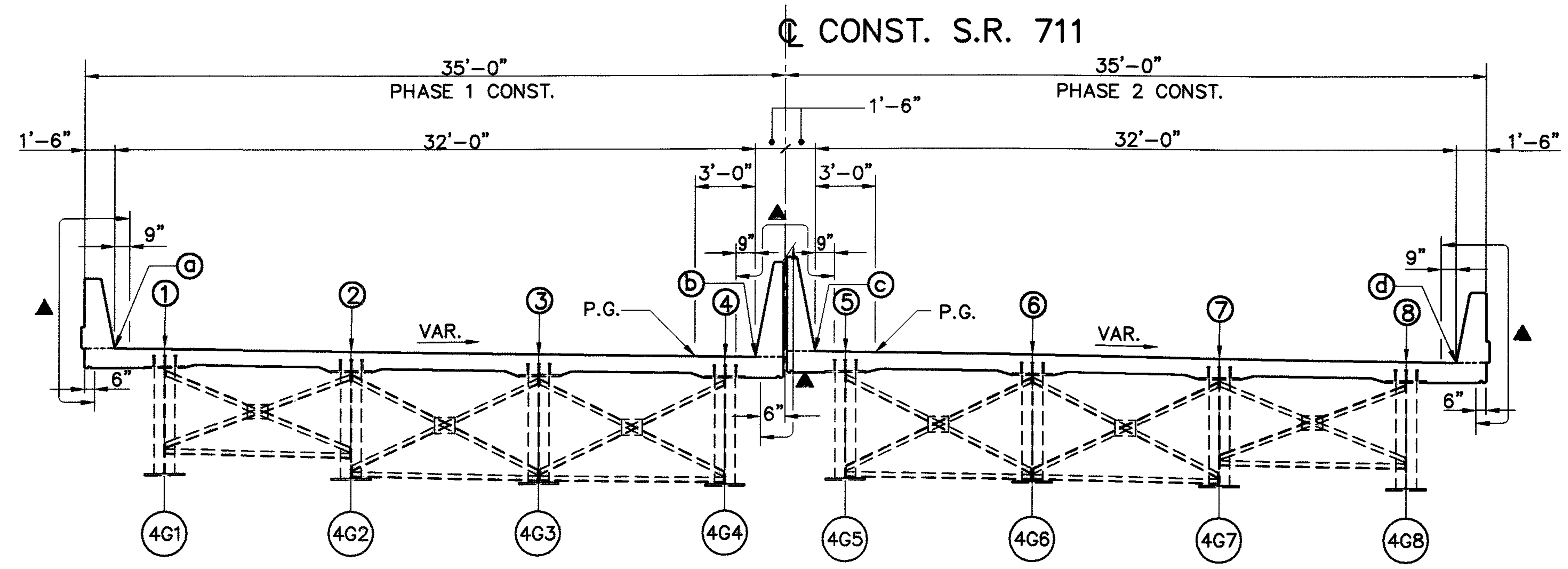
Technician: RPRATT



PLAN
SCREED ELEVATIONS



TRANSVERSE SECTION

DECK SCREED ELEVATION TABLE

LOCATION	SPAN NO. 14						SPAN NO. 15					SPAN NO. 16					SPAN NO. 17					
	EXP. JT.	1/4	1/2	F.S. (EXIST.)	3/4	PIER NO. 14	1/5	2/5	3/5	4/5	PIER NO. 15	1/4	F.S. (EXIST.)	1/2	3/4	PIER NO. 16	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 17	EXP. JT.
ⓐ	–	913.92	913.72	–	913.39	912.98	912.57	912.13	911.60	911.02	910.44	909.92	–	909.42	908.90	908.36	–	907.95	907.57	907.21	906.89	–
①	913.99	913.83	913.60	913.26	913.24	912.81	912.42	911.94	911.39	910.81	910.25	909.77	909.75	909.24	908.71	908.19	907.83	907.80	907.41	907.05	906.74	906.62
②	913.62	913.43	913.16	912.82	912.79	912.37	911.97	911.48	910.94	910.36	909.81	909.32	909.31	908.80	908.26	907.74	907.38	907.35	906.96	906.60	906.29	906.17
③	913.25	913.01	912.71	912.36	912.32	911.90	911.50	911.01	910.47	909.90	909.34	908.87	908.86	908.33	907.79	907.27	906.91	906.89	906.49	906.13	905.82	905.70
④	912.87	912.58	912.24	911.88	911.84	911.41	911.02	910.54	910.00	909.43	908.85	908.37	908.36	907.84	907.31	906.79	906.42	906.39	906.01	905.65	905.34	905.22
ⓑ	–	912.48	912.16	–	911.79	911.38	910.97	910.53	910.00	909.43	908.84	908.32	–	907.82	907.29	906.76	–	906.34	905.97	905.61	905.29	–
ⓒ	–	912.64	912.36	–	911.99	911.58	911.19	910.77	910.24	909.65	909.05	908.53	–	908.01	907.47	906.93	–	906.52	906.16	905.82	905.52	–
⑤	912.85	912.61	912.28	911.93	911.88	911.47	911.09	910.63	910.09	909.49	908.91	908.42	908.41	907.88	907.35	906.81	906.45	906.43	906.06	905.72	905.42	905.31
⑥	912.50	912.20	911.84	911.49	911.44	911.02	910.63	910.15	909.60	909.03	908.47	907.97	907.96	907.44	906.89	906.36	906.01	905.98	905.60	905.26	904.97	904.86
⑦	912.12	911.77	911.38	911.02	910.97	910.56	910.16	909.69	909.14	908.56	908.00	907.51	907.50	906.97	906.42	905.90	905.54	905.52	905.14	904.80	904.50	904.39
⑧	911.70	911.34	910.91	910.54	910.49	910.07	909.68	909.20	908.65	908.07	907.51	907.02	907.01	906.49	905.94	905.41	905.05	905.03	904.66	904.32	904.03	903.91
ⓓ	–	911.19	910.78	–	910.39	909.98	909.57	909.13	908.60	908.02	907.45	906.92	–	906.41	905.87	905.33	–	904.92	904.56	904.22	903.92	–

LEGEND

▲ LIMITS OF ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY – URETHANE)

NOTE:

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

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED	DRAWN	REVIEWED	DATE
B.J.M.	R.P.R.	K.S.J.	3-18-02
CHECKED	REVISED	STRUCTURE FILE NUMBER	
P.J.W.		5008255	

SCREED ELEVATIONS – UNIT NO. 4
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

714/886

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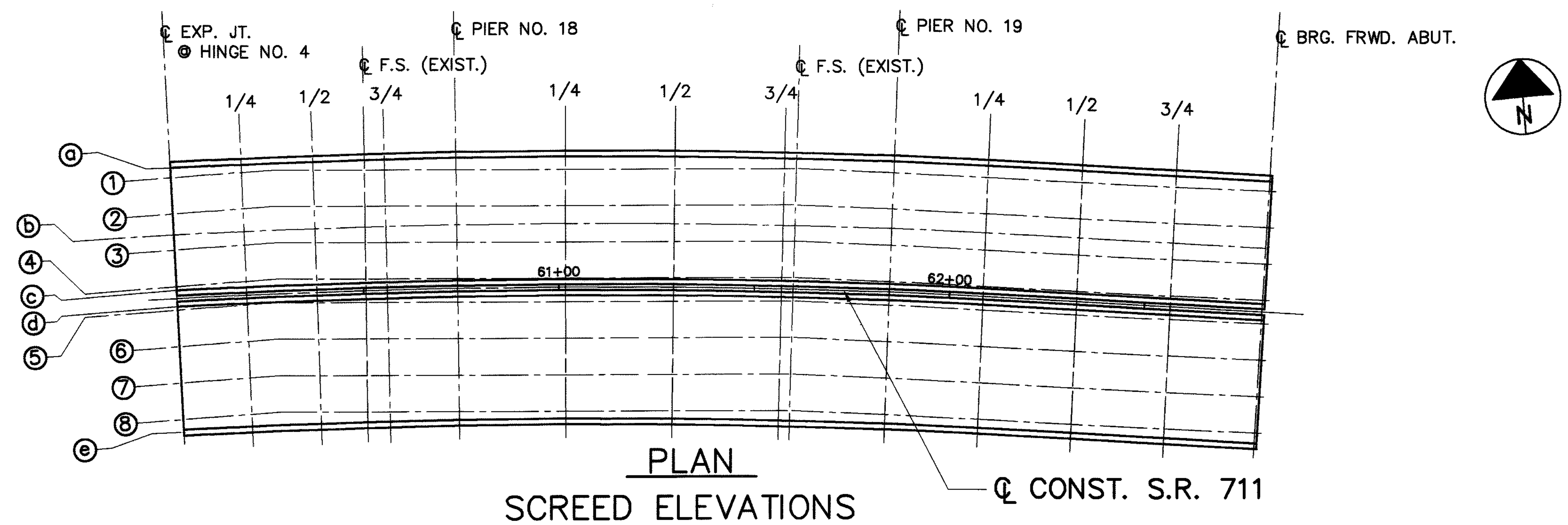
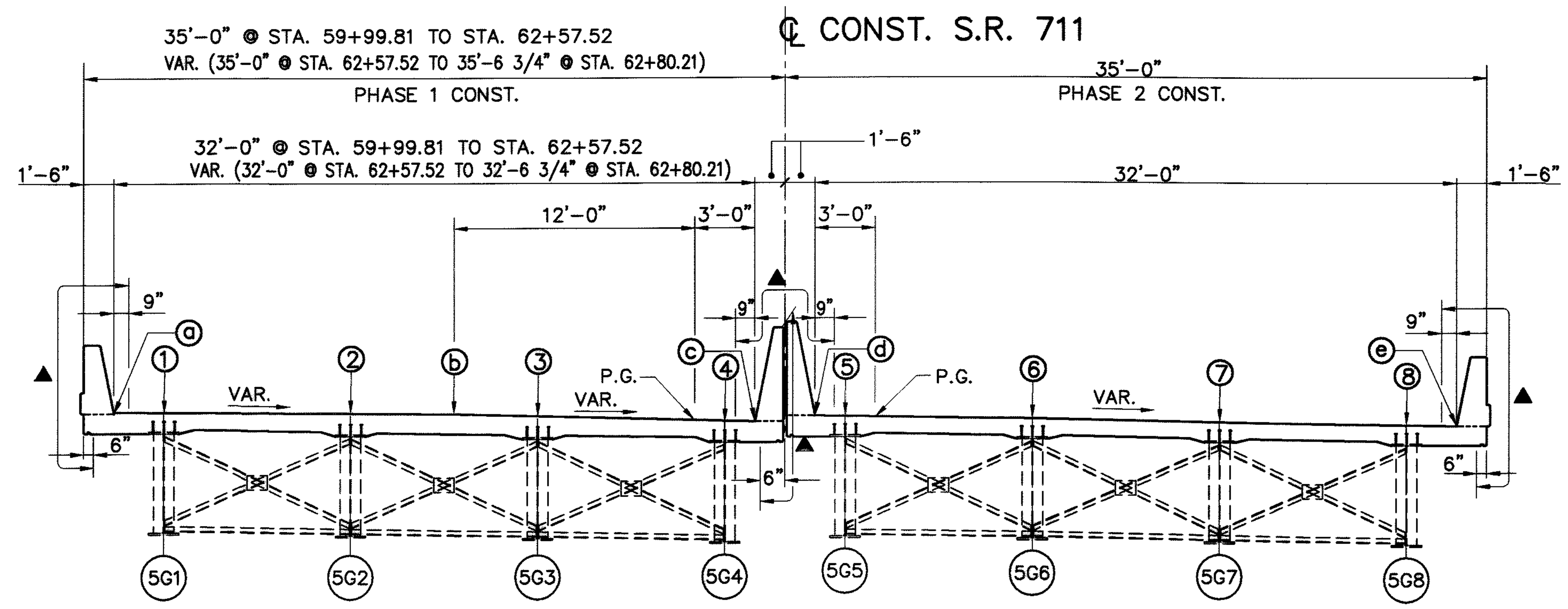
Technician: RPRATT



PLAN
SCREED ELEVATIONS



TRANSVERSE SECTION

DECK SCREED ELEVATION TABLE

LOCATION	SPAN NO. 18						SPAN NO. 19						SPAN NO. 20			
	EXP. JT.	1/4	1/2	F.S. (EXIST.)	3/4	PIER NO. 18	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 19	1/4	1/2	3/4	FRWD. ABUT.
ⓐ	–	906.59	906.41	–	906.25	906.05	905.84	905.66	905.49	–	905.40	905.42	905.51	905.63	905.77
①	906.62	906.46	906.30	906.15	906.10	905.88	905.68	905.53	905.39	905.39	905.31	905.35	905.45	905.58	905.74
②	906.17	906.00	905.85	905.70	905.66	905.47	905.29	905.19	905.11	905.11	905.08	905.16	905.29	905.46	905.67
ⓑ	–	–	–	–	–	–	–	–	–	–	–	–	–	905.40	905.62
③	905.70	905.54	905.38	905.24	905.20	905.03	904.91	904.85	904.82	904.82	904.84	904.96	905.13	905.33	905.56
④	905.22	905.06	904.89	904.74	904.71	904.58	904.51	904.51	904.52	904.53	904.58	904.74	904.97	905.19	905.40
ⓒ	–	904.99	904.80	–	904.65	904.55	904.50	904.50	904.50	–	904.57	904.74	904.96	905.18	905.39
ⓓ	–	905.24	905.08	–	904.95	904.85	904.84	904.85	904.85	–	904.92	905.11	905.36	905.60	905.82
⑤	905.31	905.17	905.02	904.89	904.85	904.73	904.70	904.73	904.76	904.77	904.82	905.02	905.28	905.53	905.77
⑥	904.86	904.70	904.57	904.44	904.41	904.29	904.23	904.26	904.35	904.36	904.48	904.70	904.98	905.27	905.57
⑦	904.39	904.24	904.10	903.97	903.94	903.82	903.76	903.80	903.93	903.96	904.11	904.37	904.69	905.01	905.35
⑧	903.91	903.77	903.62	903.50	903.46	903.35	903.29	903.34	903.52	903.55	903.73	904.02	904.37	904.75	905.13
ⓔ	–	903.63	903.47	–	903.35	903.25	903.21	903.25	903.43	–	903.66	903.96	904.32	904.70	905.08

LEGEND

▲ LIMITS OF ITEM 864 – SEALING OF CONCRETE SURFACES (EPOXY – URETHANE)

NOTE:

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

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
520 South Main Street, Suite 2531 Akron, Ohio 44311
330-572-2100, Fax 330-572-2101

DESIGNED B.J.M. | DRAWN R.P.R. | REVIEWED K.S.J. | DATE 3-18-02
CHECKED P.J.W. | REVISED | STRUCTURE FILE NUMBER 5008255

SCREED ELEVATIONS – UNIT NO. 5
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SCREED.DWG
Date: 06-30-03 Time: 11:33 AM TW = 0d0'0.00"
Technician: RPRATT

SLAB OVERHANG TABLE

LOCATION		SPAN NO. 1				SPAN NO. 2					SPAN NO. 3					SPAN NO. 4					SPAN NO. 5				
	REAR ABUT.	1/4	1/2	3/4	PIER NO. 1	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 2	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 3	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 4	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 5
DIM. 'P'	3'-11 3/8"	3'-11 3/8"	3'-10 3/4"	3'-10"	3'-9 1/2"	3'-10 1/8"	3'-9 7/8"	3'-9 1/8"	3'-8 3/8"	3'-6 3/4"	3'-1 1/8"	3'-1 1/8"	3'-0 3/4"	3'-0 1/2"	3'-0 1/8"	3'-10 3/4"	3'-10 3/4"	3'-11 1/4"	4'-0"	4'-0"	4'-1"	4'-1 1/8"	4'-1 7/8"	4'-2 3/8"	4'-3 1/8"
DIM. 'Q'	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	2'-9 5/8"	2'-9 5/8"	2'-9 5/8"	2'-9 5/8"	2'-9 3/8"	2'-10 1/8"	2'-10 1/4"	2'-11"	2'-11"	3'-0 3/8"	3'-0"	3'-0"	2'-11 1/8"	2'-10 7/8"	2'-10 3/8"	2'-9 7/8"	2'-9 3/4"	2'-9 1/4"	2'-8 5/8"	2'-8"
DIM. 'R'	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	2'-11 1/8"	3'-0 1/2"	3'-1 1/4"	3'-0 3/4"	3'-0 7/8"	3'-1"	3'-1 1/8"	3'-1 1/8"	3'-0 7/8"	3'-1 3/8"	3'-1 1/2"	3'-1 5/8"	3'-1 5/8"	3'-0 1/8"	3'-1 7/8"	3'-2"	3'-2"	3'-2"	3'-2"	3'-2 1/4"	3'-2 1/4"	3'-2 3/8"
DIM. 'S'	3'-11 1/4"	3'-11 1/8"	3'-11 1/8"	3'-11"	3'-10 7/8"	3'-10 3/4"	3'-10 3/4"	3'-10 5/8"	3'-10 1/2"	3'-10 3/8"	3'-10 1/4"	3'-10 1/4"	3'-10 1/8"	3'-10"	3'-9 7/8"	3'-9 3/4"	3'-9 3/4"	3'-9 5/8"	3'-9 1/2"	3'-9 3/8"	3'-9 3/8"	3'-9 1/4"	3'-9 1/8"	3'-9"	3'-8 7/8"

SLAB OVERHANG TABLE

LOCATION	SPAN NO. 6					SPAN NO. 7				SPAN NO. 8					SPAN NO. 9					SPAN NO. 10				
	1/4	1/2	3/4	EXP. JT.	PIER NO. 6	1/4	1/2	3/4 & F.S. (EXIST.)	PIER NO. 7	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 8	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 9	1/4	1/2	3/4	EXP. JT.	PIER NO. 10
DIM. 'P'	4'-3 1/2"	4'-4"	4'-4 5/8"	4'-4 3/8"	4'-4 5/8"	4'-5 3/8"	4'-6"	4'-6 3/4"	4'-7 1/4"	4'-8 1/4"	4'-9"	4'-10"	4'-10 1/8"	4'-10 7/8"	4'-11 5/8"	5'-0 1/2"	5'-1 1/2"	5'-1 3/4"	4'-9"	4'-7 3/4"	4'-6 3/8"	4'-5 1/4"	4'-4 1/4"	4'-5 3/4"
DIM. 'Q'	2'-7 3/4"	2'-7 3/8"	2'-6 7/8"	2'-6 1/2"	2'-5 1/4"	2'-4 5/8"	2'-4"	2'-3 3/8"	2'-2 3/4"	2'-2"	2'-1 3/8"	2'-0 5/8"	2'-0 1/2"	2'-0"	1'-11"	1'-10 3/4"	1'-11 5/8"	2'-0 1/8"	2'-1 7/8"	2'-2 5/8"	2'-3 7/8"	2'-4 7/8"	2'-6"	2'-5 5/8"
DIM. 'R'	3'-2 1/2"	3'-2 5/8"	3'-2 3/4"	3'-2 3/4"	3'-4"	3'-5 1/4"	3'-6 1/4"	3'-7 3/8"	3'-8 3/8"	3'-9 1/4"	3'-8 3/4"	3'-9 1/4"	3'-9 1/4"	3'-6 1/2"	3'-3 5/8"	3'-3 3/4"	3'-3 7/8"	3'-4"	3'-4 1/8"	3'-4 1/8"	3'-4 1/4"	3'-4 3/8"	3'-5"	3'-5 1/2"
DIM. 'S'	3'-8 7/8"	3'-8 3/4"	3'-8 5/8"	3'-9 5/8"	3'-9 5/8"	3'-9"	3'-8 3/8"	3'-7 3/4"	3'-7 1/8"	3'-7 3/4"	3'-8 3/8"	3'-8 1/2"	3'-8 1/2"	3'-7 7/8"	3'-7 1/2"	3'-7 5/8"	3'-7 1/4"	3'-7 1/8"	3'-6 3/4"	3'-7"	3'-7 3/8"	3'-7 3/4"	3'-8"	3'-6 7/8"

SLAB OVERHANG TABLE

LOCATION	SPAN NO. 11							SPAN NO. 12									SPAN NO. 13							
	1/7	2/7	3/7	4/7	F.S. (EXIST.)	5/7	6/7	PIER NO. 11	1/8	F.S. (EXIST.)	1/4	3/8	1/2	5/8	3/4	F.S. (EXIST.)	7/8	PIER NO. 12	1/7	2/7	F.S. (EXIST.)	3/7	4/7	5/7	6/7	PIER NO. 13
DIM. 'P'	4'-6 1/4"	4'-6 3/4"	4'-7 3/8"	4'-7 7/8"	4'-7 7/8"	4'-7 1/2"	4'-6 3/4"	4'-6 1/8"	4'-5 1/4"	4'-4 1/2"	4'-4 3/8"	4'-4"	4'-5 1/4"	4'-6 1/2"	4'-7 5/8"	4'-7 3/4"	4'-8 3/4"	4'-8 7/8"	4'-8 3/4"	4'-8 5/8"	4'-8 5/8"	4'-8 1/2"	4'-7 7/8"	4'-5 7/8"	4'-2"	3'-4 1/2"
DIM. 'Q'	2'-5"	2'-4 1/4"	2'-3 1/2"	2'-2 7/8"	2'-3 3/8"	2'-3 3/8"	2'-4"	2'-4 1/2"	2'-5 1/4"	2'-5 3/4"	2'-5 3/4"	2'-6"	2'-5"	2'-4 3/8"	2'-3"	2'-3"	2'-3"	2'-2 7/8"	2'-2 7/8"	2'-2 3/4"	2'-2 3/4"	2'-2 7/8"	2'-3 5/8"	2'-5 1/2"	2'-9 1/4"	3'-3 1/4"
DIM. 'R'	3'-5 1/2"	3'-5 5/8"	3'-5 5/8"	3'-5 3/4"	3'-5 1/2"	3'-5 1/2"	3'-5"	3'-4 3/8"	3'-3 3/8"	3'-4"	3'-4 1/8"	3'-4 7/8"	3'-5 1/2"	3'-6 1/4"	3'-7"	3'-7"	3'-7 3/4"	3'-8"	3'-8 1/4"	3'-8 1/4"	3'-8 1/4"	3'-8 1/4"	3'-7 1/2"	3'-5 1/2"	3'-2"	2'-8"
DIM. 'S'	3'-5 1/4"	3'-4 5/8"	3'-4 1/2"	3'-5"	3'-6 1/8"	3'-6 1/8"	3'-6 3/4"	3'-6 5/8"	3'-7 3/8"	3'-6 3/4"	3'-6 3/4"	3'-6"	3'-5 1/4"	3'-4 5/8"	3'-3 3/4"	3'-3 5/8"	3'-2 7/8"	3'-2 1/4"	3'-3"	3'-3 1/8"	3'-3 1/8"	3'-3 3/8"	3'-4 3/8"	3'-6 3/8"	3'-9 7/8"	4'-3 1/4"

SLAB OVERHANG TABLE

LOCATION		SPAN NO. 14						SPAN NO. 15					SPAN NO. 16					SPAN NO. 17					
	EXP. JT.	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 14	1/5 & F.S. (EXIST.)	2/5	3/5	4/5	PIER NO. 15	1/4	F.S. (EXIST.)	1/2	3/4	PIER NO. 16	F.S. (EXIST.)	1/4	1/2	3/4	PIER NO. 17
DIM. 'P'	3'-5"	3'-3 7/8"	4'-1 7/8"	4'-7 5/8"	4'-7 5/8"	4'-8 7/8"	4'-6 1/8"	5'-3 3/4"	5'-8 1/2"	5'-8 5/8"	5'-4"	4'-7 1/8"	4'-7 1/2"	5'-1 1/8"	5'-2 1/8"	4'-11"	4'-4 7/8"	4'-5 1/4"	4'-8 5/8"	4'-9"	4'-6 1/8"
DIM. 'Q'	3'-6"	3'-8 7/8"	2'-10 1/4"	2'-3 7/8"	2'-4 1/8"	2'-1 3/4"	2'-4 5/8"	1'-8"	1'-3 1/8"	1'-2 7/8"	1'-7 3/8"	2'-4 3/8"	2'-4 5/8"	1'-11"	1'-9 3/4"	2'-1 1/4"	2'-6 3/8"	2'-6 1/8"	2'-2 5/8"	2'-2 3/8"	2'-5 3/8"
DIM. 'R'	2'-5"	2'-1 7/8"	3'-0 1/8"	3'-6 1/8"	3'-6"	3'-8 1/4"	3'-5 1/2"	4'-2 1/2"	4'-6 3/4"	4'-6 1/2"	4'-1 1/2"	3'-5 1/4"	3'-5 1/4"	3'-10 5/8"	3'-11 5/8"	3'-8"	3'-2 1/4"	3'-2 1/2"	3'-6 1/4"	3'-6 7/8"	3'-4 1/8"
DIM. 'S'	4'-6 5/8"	4'-9 1/4"	3'-11 1/2"	3'-5 7/8"	3'-6"	3'-4"	3'-7"	2'-10"	2'-5 1/2"	2'-5 1/2"	2'-10 3/8"	3'-7 5/8"	3'-7 5/8"	3'-1 7/8"	3'-0 1/2"	3'-3 5/8"	3'-9 1/4"	3'-9 3/8"	3'-5 1/2"	3'-5"	3'-7 1/2"

SLAB OVERHANG TABLE

LOCATION	SPAN NO. 18						SPAN NO. 19					SPAN NO. 20				
	EXP. JT.	1/4	1/2	F.S. (EXIST.)	3/4	PIER NO. 16	1/4	1/2	3/4	F.S. (EXIST.)	PIER NO. 19	1/4	1/2	3/4	FRWD. ABUT.
DIM. 'P'	4'-3 5/8"	3'-11 1/8"	3'-11 3/8"	4'-5 1/2"	4'-6 7/8"	5'-0 1/4"	5'-3 3/4"	5'-2 1/2"	4'-8"	4'-7 3/4"	4'-11 1/2"	5'-1 1/4"	5'-0 7/8"	4'-11"	5'-2 1/2"
DIM. 'Q'	2'-8"	3'-0 1/4"	3'-0 1/8"	2'-6 3/8"	2'-4 7/8"	1'-11 3/4"	1'-8 3/8"	1'-10 7/8"	2'-3 3/4"	2'-4 3/8"	2'-0"	1'-10 1/2"	1'-10 7/8"	2'-0 7/8"	2'-4"
DIM. 'R'	3'-2"	2'-10"	2'-9 7/8"	3'-4"	3'-5"	3'-10 1/8"	4'-1 1/4"	4'-0"	3'-6"	3'-5"	3'-9 3/8"	3'-11 1/4"	3'-11"	3'-9 1/4"	3'-6 3/8"
DIM. 'S'	3'-9 7/8"	4'-4 1/4"	4'-4 7/8"	3'-11 1/4"	3'-9 3/4"	3'-4 3/4"	3'-1 1/2"	3'-2 3/4"	3'-8 5/8"	3'-9 5/8"	3'-5 1/8"	3'-3"	3'-3"	3'-4 5/8"	3'-7 1/4"

NOTE:

FOR LOCATION OF SLAB OVERHANG DIMENSIONS 'P', 'Q', 'R', AND 'S', SEE SHT. NOS. 61/80, 63/80, 65/80, 68/80, & 70/80.

DESIGN AGENCY
CPD ASSOCIATES
CLAUS PYLE SCHOMER BURNS & DEHAVEN INC.

DATE 3-18-02
REVIEWED K.S.J.
STRUCTURE FILE NUMBER 5008255
DRAWN C.M.K.
REVISED
DESIGNED B.J.M.
CHECKED P.J.W.

SUPERSTRUCTURE DETAILS
BRIDGE NO. MAH - 711 - 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

77/80

716/886

Cad File: G:\CIVIL\67028\91\103\DWG\67028_91_103SLAB2.DWG
Date: 06-30-03 Time: 11:37 AM IW = 0.00' 0.00'
Technician: RPRATT

ABUTMENT – PHASE 1, EPOXY COATED BARS

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS			
	REAR	FRWD.	TOTAL		(LB)		A	B	C	D
A501	10		10	30' 0"	313	ST				
A502	10		10	23' 6"	245	ST				
A504	5		5	3' 10"	20	105	2' 0"	2' 0"	1' 11 3/4"	
A506	2		2	11' 0"	23	134	0' 10"	4' 5"	0' 10"	
A507	5	5	10	0' 11"	10	ST				
A509	2		2	10' 5"	22	ST				
A510	6		6	15' 6"	97	ST				
A512	4		4	6' 11"	29	ST				
A513	4		4	7' 7"	32	ST				
A514	2		2	9' 7"	20	135	1' 0"	4' 9"	3' 11"	2' 6"
A515		12	12	39' 8"	496	ST				
A517		12	12	19' 11"	249	ST				
A518		2	2	15' 5"	32	ST				
A519		2	2	13' 10"	29	ST				
A520		8	8	12' 0"	100	ST				
A522		7	7	3' 10"	28	102	2' 0"	2' 0"		
A523		2	2	5' 3"	11	122	0' 10"	4' 7"	4' 6"	
A524		2	2	2' 4"	5	125	0' 11"	0' 10"	0' 2"	
A525	3	21	24	7' 5"	186	132				
A526		2	2	10' 0"	21	135	1' 0"	5' 3"	3' 10"	3' 5"
A527	8		8	11' 10"	99	ST				
A528	5		5	5' 9"	30	ST				
A529	3		3	5' 6"	17	138				
A530		5	5	9' 6"	50	ST				
A601	98	72	170	4' 9"	1,213	ST				
A602	49		49	8' 9"	644	103	1' 5"	3' 10"		
A603	49	37	86	6' 5"	829	103	0' 11"	2' 11"		
A604	2		2	8' 10"	27	134	2' 0"	2' 8"	1' 0"	
A605	12		12	5' 11"	108	ST				
A606	10		10	5' 3"	79	103	2' 3"	1' 8"		
A607	2		2	4' 0"	12	ST				
A608	1		1	11' 4"	17	103	1' 2"	5' 3"		
A609	1		1	9' 6"	14	103	1' 2"	4' 4"		
A610	4	4	8	8' 2"	98	103	1' 2"	3' 8"		
A611	12	26	38	3' 4"	190	ST				
A612		38	38	11' 1"	633	103	1' 5"	5' 0"		
A613		13	13	11' 2"	218	102	9' 2"	2' 2"		
A615		1	1	10' 8"	16	103	1' 2"	4' 11"		
A616		1	1	13' 0"	20	103	1' 2"	6' 1"		
A618		13	13	8' 0"	156	ST				
A619		22	22	7' 8"	253	103	1' 8"	3' 2"		
A620		2	2	5' 2"	16	ST				
A621		2	2	4' 4"	13	136				
A622	3	21	24	2' 11"	105	ST				
A623	3	21	24	3' 11"	141	137				
A624		1	1	19' 11"	30	ST				
A625	30		30	5' 4"	240	ST				
A801	33	25	58	4' 11"	761	116	2' 7"	1' 0"		

ABUTMENT – PHASE 2, EPOXY COATED BARS

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS			
	REAR	FRWD.	TOTAL		(LB)		A	B	C	D
A503	10		10	32' 10"	342	ST				
A505	5		5	3' 10"	20	122	2' 0"	2' 0"	1' 11 3/4"	
A507	5	5	10	0' 11"	10	ST				
A508	4		4	7' 10"	33	ST				
A509	2		2	10' 5"	22	ST				
A510	6		6	15' 6"	97	ST				
A511	2		2	8' 11"	19	135	1' 0"	4' 8"	3' 4"	2' 5"
A512	4	5	9	6' 11"	65	ST				
A516		12	12	32' 7"	408	ST				
A517		12	12	19' 11"	249	ST				
A518		2	2	15' 5"	32	ST				
A519		2	2	13' 10"	29	ST				
A520		4	4	12' 0"	50	ST				
A521		2	2	10' 0"	21	135	1' 0"	5' 4"	3' 9"	3' 6"
A522		6	6	3' 10"	24	102	2' 0"	2' 0"		
A523		2	2	5' 3"	11	122	0' 10"	4' 7"	4' 6"	
A525	3	21	24	7' 5"	186	132				
A527	8		8	11' 10"	99	ST				
A528	5		5	5' 9"	30	ST				
A529	3		3	5' 6"	17	138				
A601	64	66	130	4' 9"	927	ST				
A602	32		32	8' 9"	421	103	1' 5"	3' 10"		
A603	32	32	64	6' 5"	617	103	0' 11"	2' 11"		
A605	12		12	5' 11"	107	ST				
A606	10		10	5' 3"	79	103	2' 3"	1' 8"		
A607	2		2	4' 0"	12	ST				
A608	1		1	11' 4"	17	103	1' 2"	5' 3"		
A609	1		1	9' 6"	14	103	1' 2"	4' 4"		
A610	3	4	7	8' 2"	86	103	1' 2"	3' 8"		
A611	12	24	36	3' 4"	180	ST				
A612		32	32	11' 1"	533	103	1' 5"	5' 0"		
A614		26	26	6' 11"	270	ST				
A615		1	1	10' 8"	16	103	1' 2"	4' 11"		
A616		1	1	13' 0"	20	103	1' 2"	6' 1"		
A617		22	22	5' 5"	179	103	2' 1"	1' 10"		
A620		2	2	5' 2"	16	ST				
A621		2	2	4' 4"	13	136				
A622	3	21	24	2' 11"	105	ST				
A623	3	21	24	3' 11"	141	137				
A624		1	1	19' 11"	30	ST				
A625	30		30	5' 4"	240	ST				
A801	22	22	44	4' 11"	578	116	2' 7"	1' 0"		

FOR REINF. NOTES AND STANDARD BAR DIAGRAMS, SEE SHT. NO. 80/80.

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M.	DRAWN R.P.R.	REVIEWED K.S.J.	DATE 3-18-02
CHECKED S.A.M.	REVISED	STRUCTURE FILE NUMBER 5008255	

REINFORCING SCHEDULE

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

Technician: RPRATT

SLAB – PHASE 1, EPOXY COATED BARS

MARK	UNIT 1	2	3	4	5	TOTAL	LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS A	B	C	SERIES INC.
S401	890	742	1,134	826	495	4,087	30' 0"	81,903	ST				
S403	33					33	29' 1"	641	ST				
S404	164					164	8' 3"	904	ST				
S405				4		4	24' 10"	66	ST				
S407	37					37	31' 3"	772	ST				
S408	2					2	18' 0"	24	ST				
S409		408	617	235	38	1,298	9' 0"	7,803	ST				
S410				397	417	814	9' 10"	5,347	ST				
S411		53				53	13' 2"	466	ST				
S413				7		7	33' 2"	155	ST				
S415S				1 SER OF 43		1 SER OF 43	24' 10" TO 33' 2"	833	ST				2 3/8"
S416			54			54	22' 7"	815	ST				
S419					8	8	30' 6"	163	ST				
S420					4	4	26' 11"	72	ST				
S421S					1 SER OF 43	1 SER OF 43	26' 11" TO 30' 6"	825	ST				1"
S425	52	53				105	2' 4"	164	ST				
S426			54	54		108	2' 8"	192	ST				
S501	1,301	968	1,663	1,062	639	5,633	30' 0"	176,257	ST				
S502	10				13	23	34' 10"	836	ST				
S503	26					26	35' 9"	969	ST				
S504	283	156		54	108	601	18' 0"	11,283	ST				
S505				4		4	31' 2"	130	ST				
S506	41					41	38' 0"	1,625	ST				
S507				7		7	39' 5"	288	ST				
S508			43			43	31' 4"	1,409	ST				
S509S				1 SER OF 33		1 SER OF 33	31' 2" TO 39' 5"	1,634	ST				3"
S513		58				58	20' 3"	1,225	ST				
S514					13	13	30' 8"	416	ST				
S515S					1 SER OF 33	1 SER OF 33	30' 8" TO 34' 3"	1,503	ST				1 3/8"
S519	485	411	619	459	285	2,259	7' 5"	17,475	132				
S521	481	411	619	451	281	2,243	5' 3"	12,282	101	4' 8"			
S522			16			16	32' 10"	548	ST				
S523				6		6	13' 0"	81	ST				
S524				10		10	32' 8"	341	ST				
S526	481	411	619	451	281	2,243	4' 8"	10,917	ST				
S527		26		27		53	34' 9"	1,921	ST				
S528		26		26		52	31' 9"	1,722	ST				
S529			26			26	21' 0"	569	ST				
S530			27			27	24' 0"	676	ST				
S531			106			106	11' 0"	1,216	ST				
S532			26			26	19' 7"	531	ST				
S533			27			27	22' 7"	636	ST				
S534				106		106	28' 0"	3,096	ST				
S535S	2 SER. OF 10					2 SER. OF 10	2' 2" TO 40' 0"	592	ST				4' 2 1/2"
S536	524					524	23' 2"	12,661	ST				
S537	524					524	18' 1"	9,883	ST				
S538	93					93	23' 11"	2,320	ST				
S539	93					93	28' 3"	2,740	ST				
S540	93					93	21' 8"	2,101	ST				
S541	93					93	26' 0"	2,522	ST				
S542	93					93	19' 6"	1,891	ST				
S543	93					93	23' 9"	2,304	ST				
S544	93					93	17' 3"	1,673	ST				

SLAB – PHASE 1, EPOXY COATED BARS

MARK	UNIT 1	2	3	4	5	TOTAL	LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS A	B	C	D	SERIES INC.
S545	93					93	21' 6"	2,085	ST					
S546	926	1,642	2,476	1,836	1,068	7,948	34' 6"	285,997	ST					
S548S					2 SER OF 34	2 SER OF 34	34' 6" TO 35' 1"	3,319	ST					1/4"
S549	8	18	18	8	14	66	3' 6"	241	103	2' 1"	10"			
S550	8	18	18	8	14	66	10' 7"	729	141					
S551	14	14	14	14	7	63	7' 9"	509	140	1' 4"	1' 10"	2' 1"		
S552	8	12	12	8	8	48	4' 0"	200	ST					
S553	195					195	3' 0"	610	108	1' 0"	9"	6"		
S554	6					6	40' 0"	250	ST					
S557	152					152	26' 11"	4,267	ST					
S558	152					152	31' 2"	4,941	ST					
S559		7	7		7	21	14' 8"	321	140	7' 11"	2' 1"	2' 1"		
S560	52	53				105	4' 7"	502	144	3' 1"				
S561	52	53				105	4' 4"	475	143	1' 2"	1' 5"	2' 0"		
S562			54	54		108	4' 8"	526	143	1' 6"	1' 5"	2' 0"		
S563			54	54		108	4' 10"	544	144	3' 4"				
S564		1	1		1	3	10' 4"	32	ST					
S565		1	1		1	3	9' 0"	28	ST					
S566	32	88	96	8	48	272	5' 2"	1,465	ST					
S601	2	2	2	2		8	34' 6"	415	ST					
S612	34	28	44	31	18	155	30' 0"	6,984	ST					
S622		2				2	25' 0"	75	ST					
S623			2			2	12' 2"	37	ST					
S624	1					1	16' 10"	25	ST					
S626	1					1	12' 6"	19	ST					
S627				1		1	18' 3"	27	ST					
S628				1		1	37' 8"	57	ST					
S630					1	1	37' 3"	56	ST					
S631					1	1	33' 8"	51	ST					
S633	485	411	619	459	285	2,259	3' 6"	11,876	133	1' 6"	1' 1"			
S634	481	411	619	451	281	2,243	3' 3"	10,949	133	1' 8"	0' 8"			
S635	485	411	619	459	285	2,259	2' 5"	8,200	102	1' 6"	1' 1"			
S636	481	411	619	451	281	2,243	2' 7"	8,703	102	1' 8"	1' 1"			
S701	52	53				105	4' 10"	1,037	135	1' 9"	1' 10"	1' 4"	1' 6"	
S702			54	54		108	5' 1"	1,122	135	2' 0"	1' 10"	1' 4"	1' 6"	

SUMMARY AND GRAND TOTAL OF BAR WEIGHTS

ABUTMENT – PHASE 1	7,997
SLAB – PHASE 1	746,092
GRAND TOTAL	754,089

FOR REINF. NOTES AND STANDARD BAR DIAGRAMS, SEE SHT. NO. 80/80.

DESIGN AGENCY
GLAUS PYLE SCHOMER BURNS & DEHAVEN INC.
GPD ASSOCIATES
320 Springside Drive, Suite 320, Akron, Ohio 44333
330-572-2100, Fax 330-572-2101

DESIGNED B.J.M. | DRAWN R.P.R. | CHECKED S.A.M. | REVIEWED K.S.J. | DATE 3-18-02

STRUCTURE FILE NUMBER 5008255

REVISED

REINFORCING SCHEDULE
BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

718/886

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Technician: RPRATT

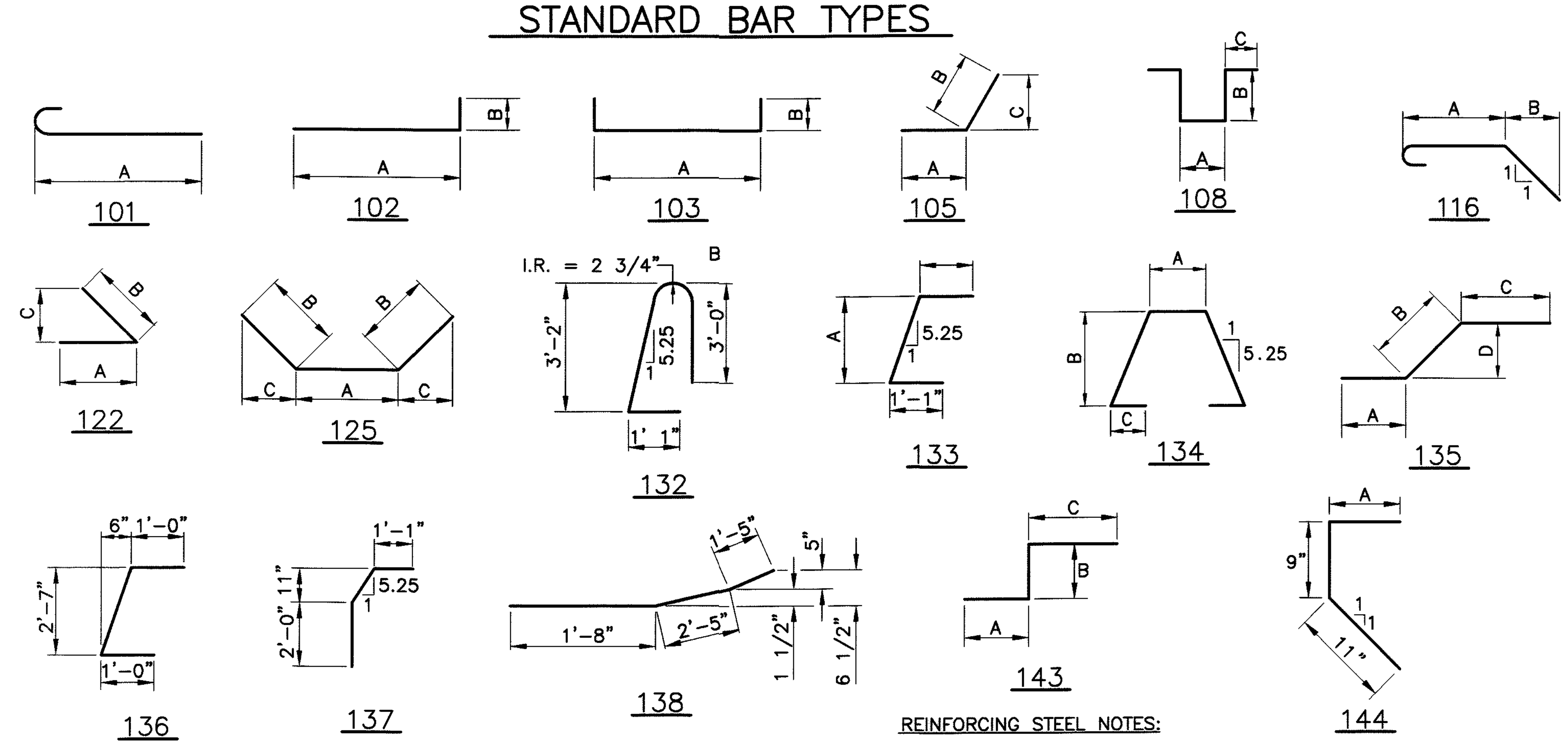
SLAB – PHASE 2, EPOXY COATED BARS

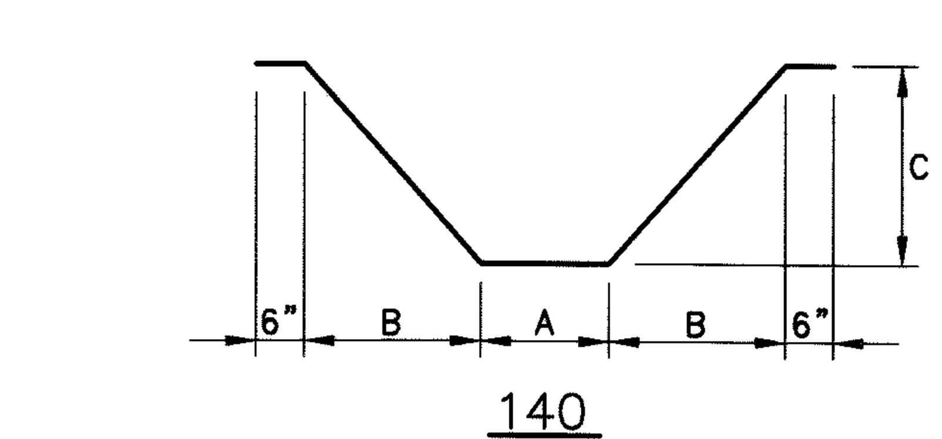
MARK	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TOTAL	LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	SERIES INC.
S401	832	742	1,134	836	502	4,046	30' 0"	81,081	ST				
S402	52					52	26' 8"	926	ST				
S406				7		7	24' 0"	112	ST				
S409			27	101	52	180	9' 0"	1,082	ST				
S410				96		96	9' 10"	631	ST				
S411		53				53	13' 2"	466	ST				
S416			54			54	22' 7"	815	ST				
S417				6		6	15' 9"	63	ST				
S418S				1 SER OF 43		1 SER OF 43	15' 9" TO 24' 0"	571	ST				2 3/8"
S422					6	6	26' 7"	107	ST				
S423					6	6	23' 0"	92	ST				
S424S					1 SER OF 43	1 SER OF 43	23' 0" TO 26' 7"	712	ST				1"
S425	52	53				105	2' 4"	164	ST				
S426			54	55		109	2' 8"	194	ST				
S501	1,227	982	1,663	1,060	647	5,579	30' 0"	174,567	ST				
S502	48					48	34' 10"	1,744	ST				
S504	255	156		55	110	576	18' 0"	10,814	ST				
S508			43			43	31' 4"	1,405	ST				
S510				6		6	30' 4"	190	ST				
S511				5		5	22' 0"	115	ST				
S512S				1 SER OF 33		1 SER OF 33	22' 0" TO 30' 4"	901	ST				3 1/8"
S513		59				59	20' 3"	1,246	ST				
S514					15	15	30' 8"	480	ST				
S517					11	11	26' 9"	307	ST				
S518S					1 SER OF 33	1 SER OF 33	26' 9" TO 30' 8"	919	ST				3"
S519	478	411	619	442	277	2,227	7' 5"	17,227	132				
S520	6					6	31' 7"	198	ST				
S521	481	411	619	451	281	2,243	5' 3"	12,281	101	4' 8"			
S522			16			16	32' 10"	548	ST				
S524				10		10	32' 8"	341	ST				
S525				6		6	23' 6"	147	ST				
S526	481	411	619	451	281	2,243	4' 8"	10,917	ST				
S527		26		28		54	34' 9"	1,957	ST				
S528		26		27		53	31' 9"	1,755	ST				
S529			26			26	21' 0"	569	ST				
S530			27			27	24' 0"	676	ST				
S531			106			106	11' 0"	1,216	ST				
S532			26			26	19' 7"	531	ST				
S533			27			27	22' 7"	636	ST				
S534				109		109	28' 0"	3,183	ST				
S546	1,910	1,642	2,476	1,800	1,120	8,948	34' 6"	321,980	ST				
S547S	2 SER OF 6					2 SER OF 6	2' 7" TO 29' 6"	201	ST				5' 4 5/8"
S549	8	14	18	8	14	62	3' 6"	226	103	2' 1"	10"		
S550	8	14	18	8	14	62	10' 7"	684	141				
S551	14	7	14	14	7	56	7' 9"	453	140	1' 4"	1' 10"	2' 1"	
S552	8	8	12	8	8	44	4' 0"	184	ST				
S553	509					509	3' 0"	1,593	108	1' 0"	9"	6"	
S555	8					8	19' 0"	159	ST				
S556	4					4	32' 0"	134	ST				
S559		7	7		7	21	14' 8"	321	140	7' 11"	2' 1"	2' 1"	

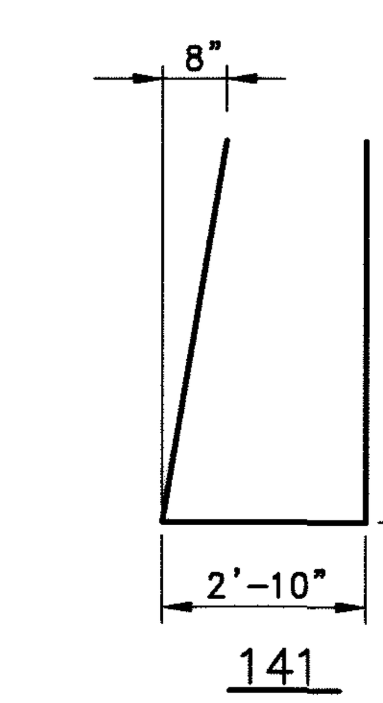
SLAB – PHASE 2, EPOXY COATED BARS

MARK	UNIT 1	UNIT 2	UNIT 3	UNIT 4	UNIT 5	TOTAL	LENGTH	WEIGHT (LB)	TYPE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	DIMENSIONS D	SERIES INC.
S560	52	53				105	4' 7"	502	144	3' 1"				
S561	52	53				105	4' 4"	475	143	1' 2"	1' 5"	2' 0"		
S562			54	55		109	4' 8"	531	143	1' 6"	1' 5"	2' 0"		
S563			54	55		109	4' 10"	549	144	3' 4"				
S564		1	1		1	3	10' 4"	32	ST					
S565		1	1		1	3	9' 0"	28	ST					
S566	32	88	40	8	32	200	5' 2"	1,078	ST					
S601	2	2	2	2		8	34' 6"	415	ST					
S612	33	28	44	30	18	153	30' 0"	6,894	ST					
S622		2				2	25' 0"	75	ST					
S623			2			2	12' 2"	37	ST					
S625	1					1	36' 11"	55	ST					
S626	1					1	12' 6"	19	ST					
S628				1		1	37' 8"	56	ST					
S629				1		1	28' 6"	43	ST					
S631					1	1	33' 8"	51	ST					
S632					1	1	29' 9"	45	ST					
S633	478	411	619	442	277	2,227	3' 6"	11,707	133	1' 6"	1' 1"			
S634	481	411	619	451	281	2,243	3' 3"	10,949	133	1' 8"	0' 8"			
S635	478	411	619	442	277	2,227	2' 5"	8,084	102	1' 6"	1' 1"			
S636	481	411	619	451	281	2,243	2' 7"	8,703	102	1' 8"	1' 1"			
S701	52	53				105	4' 10"	1,037	135	1' 9"	1' 10"	1' 4"	1' 6"	
S702			54	55		109	5' 1"	1,133	135	2' 0"	1' 10"	1' 4"	1' 6"	

STANDARD BAR TYPES







REINFORCING STEEL NOTES:

1. BAR DIMENSIONS ARE OUT TO OUT UNLESS NOTED OTHERWISE.
2. ALL BARS ARE EPOXY COATED.
3. I.R. DENOTES INSIDE RADIUS
4. BAR SIZE AND LOCATION ARE INDICATED IN THE BAR MARK. THE FIRST ALPHABETICAL LETTER INDICATES LOCATION. THE NEXT DIGIT OF THE THREE DIGIT SERIES INDICATES BAR SIZE NUMBER.

EXAMPLES:

A 501 — NO. 5 SIZE BAR; ABUTMENT

S 415S — SERIES BAR; NO. 4 SIZE BAR; SLAB

SUMMARY AND GRAND TOTAL OF BAR WEIGHTS

ABUTMENT – PHASE 2	6,365
SLAB – PHASE 2	710,319
GRAND TOTAL	716,684

DESIGN AGENCY
GPD ASSOCIATES

DESIGNED B.J.M. | CHECKED S.A.M. | DRAWN R.P.R. | REVISED | REVIEWED K.S.J. | DATE 3-18-02 | STRUCTURE FILE NUMBER 5008255

REINFORCING SCHEDULE

BRIDGE NO. MAH – 711 – 0067
S.R. 711 OVER MAHONING RIVER, RAILROADS & DIVISION ST.

MAH-711-0.47

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